REPORT UAG-92

WORLD DATA CENTER A
for
Solar-Terrestrial Physics

WORLD DATA CENTER B2

WORLD DATA CENTERS C1 (GEOMAGNETISM)
WORLD DATA CENTERS C2 (GEOMAGNETISM)

COMBINED INTERNATIONAL CATALOG OF GEOMAGNETIC DATA

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World Data Centers conduct international exchange of geophysical observations in accordance with the principles set forth by the International Council of Scientific Unions. WDC-A is established in the United States under the auspices of the National Academy of Sciences. Communications regarding data interchange matters in general and World Data Center A as a whole should be addressed to World Data Center A, Coordination Office (see address above). Inquiries and communications concerning data in specific disciplines should be addressed to the appropriate subcenter listed above.

WORLD DATA CENTER A
for
Solar-Terrestrial Physics

WORLD DATA CENTER B2

WORLD DATA CENTERS C1 (GEOMAGNETISM)

WORLD DATA CENTERS C2 (GEOMAGNETISM)

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PREFACE

World Data Centers conduct international exchange of geophysical observations in accordance with the principles set forth by the International Council of Scientific Unions (ICSU). They were established in 1957 by the International Geophysical Year Committee (CSAGI) as part of the fundamental international planning for the IGY program to collect data from the numerous and widespread IGY observational programs and to make such data readily accessible to interested scientists and scholars for an indefinite period of time. WDC-A was established in the U.S.A.; WDC-B in the U.S.S.R.; and WDC-C, in Western Europe, Australia, and Japan. This new system for exchanging geophysical data was found to be very effective, and the operations of the World Data Centers were extended by ICSU on a continuing basis to other international programs; the WDC's were under the supervision of the Comite International de Geophysique (CIG) for the period 1960 to 1967 and are now supervised by the ICSU Panel on World Data Centres.

The current plans for continued international exchange of geophysical data through the World Data Centers are set forth in the "Fourth Consolidated Guide to International Data Exchange through the World Data Centres", issued by the ICSU Panel on World Data Centres, June 1979. These plans are broadly similar to those adopted under ICSU auspices for the IGY and IQSY. ICSU-sponsored exchange visits have taken place between WDC-A (Boulder) and WDC-B (Moscow) working staff for the overall purpose of improving data exchange between these centers. One goal was the creation of common formats for computer inventories and catalog publications. By joint agreement the first discipline for this effort was the collection of geomagnetic data. While this joint effort was developing, WDC-C2 for Geomagnetism (Kyoto) published a computer-based catalog of their geomagnetic holdings. A digital tape of this catalog was shared with WDC-A. After reformatting, this information was added to the joint catalog of holdings at WDC-A and WDC-B and the combined catalogs were published in Report UAG-86. This report, UAG-92, updates and supercedes UAG-86.

Functions and Responsibilities of WDC's

The World Data Centers collect data and publications for the following disciplines: Glaciology; Meteorology; Oceanography; Rockets and Satellites; Solar-Terrestrial Physics disciplines (Solar and Interplanatary Phenomenia, Ionospheric Phenomena, Flare Associated Events and Geomagnetic Phenomena. Aurora, Cosmic Rays, Airglow); Solid-Earth Geophysics disciplines (Seismology, Tsunamis, Gravimetry, Earth Tides, Recent Movements of the Earth's Crust, Rotation of the Earth, Magnetic Measurements, Paleomagnetism and Archeomagnetism, Volocanology, Geothermics); and Marine Geology and Geophysics. In planning for the various scientific programs, decisions on data exchange were made by the scientific community through the international scientific unions and committees. In each discipline the specialists themselves determined the nature and form of data exchange, based on their needs as research workers. Thus the type and amount of data in the WDC's differ from discipline to discipline.

The objectives of establishing several World Data Centers for collecting observational data were: (1) to insure against loss of data by the catastrophic destruction of a single center, (2) to meet the geographical convenience of, and provide easy communication for, workers in different parts of the world. Each WDC is responsible for: (1) endeavoring to collect a complete set of data in the field or discipline for which it is responsible; (2) safekeeping of the incoming data; (3) correct copying and reproduction of data, maintaining adequate standards of clarity and durability; (4) supplying copies to other WDC's; (5) preparation of catalogs of all data in its charge; and (6) making data in the WDC's available to the scientific community. Operating expenses for the WDC's are met by the sponsoring national institution in each host country and by appropriate charges to users.

World Data Center A

The U.S. National Academy of Sciences has overall responsibility for World Data Center A through the Geophysics Research Board and its Committee on Geophysical Data. WDC-A consists of a Coordination Office at the NAS and discipline centers at scientific institutions in various parts of the United States. The GRB periodically reviews the activities of WDC-A and has conducted several studies on the effectiveness of the WDC system. As a result of these reviews and studies some of the centers have been relocated so that they could more effectively serve the scientific community. The addresses of the WDC-A centers and Coordination Office are given inside the front cover. For some data bases the responsibility is not simply based on discipline but may also reflect whether the data are collected on an experimental basis or for synoptic monitoring purposes and differing responsibilities of the sponsoring host institutions. For example, there are very close connections between WDC-A for Solar-Terrestrial Physics and WDC-A for Rockets and Satellites, which exchange solar-terrestrial geophysical data; if it is more convenient, data or requests may be sent to one WDC-A center through another.

SECTION I

Introduction

In this catalog we have attempted to: (1) consolidate all the geomagnetic data from standard, rapid-run, and digital measurements known to exist at all of the World Data Centers having responsibility for geomagnetic data; (2) indicate years of geomagnetic observatory operation from 1810; (3) provide the observed or simulated absolute 1980 values for all listed observatories; (4) provide first and most recent annual values for all listed observatories; (5) provide a list of alternate observatory names, and (6) provide a digital section including catalog inventory formats, data base design and all associated software coding necessary to manage, update, and produce the tables published here.

The World Data Centers with geomagnetic data holdings are located in Bombay, Boulder, Copenhagen, Edinburgh, Kyoto, and Moscow. Their holdings include data recorded before the IGY (when the WDC system was established). These geomagnetic data are held in the form of microfilm, magnetic tapes, yearbooks, and bulletins. They are in a variety of formats including magnetograms (normal, storm, and rapid-run), hourly values, 2.5-minute, 1-minute, and 10-second values, and various derived indices for individual observatories and global networks. Data from about 500 observatory locations are referenced in this catalog.

Section II, beginning on page 4, lists all observatories with their international 3-letter code, geographic, and geomagnetic coordinates. They are given first in alphabetical order and then sorted according to increasing geomagnetic co-latitude (dipole co-latitude). Some observatories are called by more than one name and where alternate names are known, these also are listed in Section II.

Section III is a map showing the location of all observatories listed in Tables 8a and 8b of this catalog.

Section IV is the main listing of the catalog and begins on page 63. It details for each observatory the years and months for which the WDC's retain digital data, magnetograms, or K and Q indices or annual values for the site. This information is also available on a standard magnetic tape in a common format adopted jointly by WDC-A for STP and WDC-B2.

Section V lists stations, codes, and dates for which there are holdings of high resolution geomagnetic digital data. These data are relatively new at the WDC's, most having come into existence as part of the program of data acquisition for the International Magnetospheric Study (IMS), 1976-1979. In general, where data exist with high time resolution there are also corresponding data averaged over less frequent sample times, e.g. 10-sec data also exist as 1-min and hourly averages. Often, summary values are plotted by computer on microfilm to provide a convenient means for visual examination of the high resolution data.

Section VI gives details about the availability of the principal derived magnetic activity indices other than the local K index for each observatory. Indices of geomagnetic activity may characterize the range and frequency of field variations at a single recording site or as measured by a physically significant array of observatories.

Section VII lists the actual software code prepared at WDC-A and WDC-B2 and used to manage this geomagnetic inventory and produce the various listings published here. The code is written in standard Fortran-77 and should operate on many different computer systems.

These geomagnetic data are available to users without restriction. Some WDC's must either recover their cost of data preparation or of reproduction. Inquiries and requests for data should be addressed to the nearest appropriate World Data Center. Their addresses are the following:

World Data Center-A for
Solar-Terrestrial Physics
NOAA/NGDC E/GC2
325 Broadway
Boulder, Colorado 80303
USA

World Data Center B2
Soviet Geophysical Committee
Academy of Sciences of the USSR
Moscow 117 296
USSR

World Data Center C1 (Geomagnetism)
Danish Meteorological Institute
Division of Geophysics
Lyngbyvej 100
DK-2100 Copenhagen
Denmark

World Digital Data Center-C1
for Geomagnetism
British Geological Survey
Geomagnetism Research Group
Murchison House
West Mains Road
Edinburgh EH9 3LA, Scotland

World Data Center C2
for Geomagnetism
Faculty of Sciences
Kyoto University
Kyoto 606
Japan

World Digital Data Center C2
for Geomagnetism
Indian Institute of Geomagnetism
Colaba
Bombay 400005, India

While data copies are available by mail, working visits to the Data Centers are also encouraged. Such visits enable the user to browse through the archives and to have access to all the facilities of the Centers, and it is usually possible to minimize copying costs. Copying machines, microfilm readers and reader-printers, and calculators are available. Special arrangements may be made for the use of computers and other equipment. Arrangements for visits should be made in advance with the proposed World Data Center.

World Data Center A (Boulder)

Activities of WDC-A are coordinated by the U.S. National Academy of Sciences. WDC-A for STP holds the archive of magnetiograms and digital geomagnetic data while WDC-A for Solid Earth is responsible for annual means and field models. Both are operated by the U.S. National Geophysical Data Center, NOAA.

Data received by WDC-A's (see inside front cover) are made available to the scientific community in a variety of ways: (1) in published reports containing data and results of experiments; (2) in digital form on magnetic tapes or discs; and (3) in tables, maps and analog records on either film or paper. WDC-A publications are exchanged with other Centers and data suppliers, and are available on a subscription basis to anyone. Observations in other formats are available upon request either in exchange for data of a comparable kind and quantity or for the cost of accessing and reproducing the measurements.

World Data Center B2 (Moscow)

The Academy of Sciences of the U.S.S.R. has overall responsibility for World Data Center B through the Soviet Geophysical Committee. WDC-B consists of two discipline centers: WDC-B1 (Glaciology, Meteorology and Oceanography) and WDC-B2 (Solar-Terrestrial Physics and Solid-Earth Geophysics). The addresses of the WDC-B centers are given above. The Soviet Geophysical Committee periodically reviews the activities of WDC-B and has conducted several studies on the effectiveness of the WDC system.

Data received by WDC-B are made available to the scientific community in the same ways as from the WDC-A centers--for the cost of accessing and reproducing the observational data.

World Data Center C1 (Copenhagen)

The Danish National IUGG Committee and the Danish Meteorological Institute are responsible for the administration of the WDC-C1 for Geomagnetism. The centre is part of the geomagnetic section of the Division of Geophysics. In the present catalogue normal-run magnetograms and geomagnetic hourly values are included. In addition the data collected in the center cover rapid-run magnetograms, tellurigrams, earth current, geomagnetic indices and a list of special events. Most of the data are held in the form of microfilm and microfiche, and some are publications such as annual reports.

World Digital Data Center C1 (Edinburgh)

WDDC-C1 for Geomagnetism was established in 1966 in response to an IAGA resolution which recommended the creation of several digital data centres to satisfy the growing demand for digital data. The principal type of digital data held by WDDC-C1 are: (1) Annual, hourly and 2.5-min values from the worldwide network of geomagnetic observatories; (2) Marine, aerial satellite and repeat station magnetic survey data; (3) U.K. observatory data: Annual, hourly and minute values; (4) Array magnetometer data covering both IGY and IMS epochs.

WDDC-C1 is operated by the Geomagnetism Research Group of the British Geological Survey, which in turn is a component body of the Natural Environment Research Council.

World Data Center C2 (Kyoto)

The World Data Center C2 for Geomagnetism is operated by the Data Analysis Center for Geomagnetism and Space Magnetism, Faculty of Science, Kyoto University. Data requests should be sent to the address on page 2. The following is a list of the WDC-C2's in Japan:

WDC-C2 for Airglow (Tokyo University)
WDC-C2 for Aurora (National Institute of Polar Research)
WDC-C2 for Solar Radio Emission (Nagoya University)
WDC-C2 for Solar-Terrestrial Activity (Institute for Space and Aeronautical Sciences)
WDC-C2 for Ionosphere (Radio Research Laboratories)
WDC-C2 for Nuclear Radiation (Japan Meteorological Agency)

World Digital Data Center C2 (Bombay)

The overall responsibility of the World Digital Data Centre C2 for Geomagnetism is with Director, Indian Institute of Geomagnetism, Colaba, Bombay 400005 India. The data received by this centre are made available to the scientific community in the same way as other WDC's at very nominal cost for reproducing the observations.

Catalog of Data

This catalog, UAG-92, covers the data of standard, rapid run and digital measurements, subdiscipin D.1 in the ICSU Fourth Consolidated Guide to International Data Exchange through the World Data Centres, June 1979 associated with the ground-based monitoring of geomagnetic phenomena by standard and rapid-run measurements that have been received by WDC-A, WDC-B2 and WDC-C2 in both analog and digital form. This publication supersedes all previous catalogs of these data published by WDC-A, WDC-B, WDC-C1's and WDC-C2's.

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SECTION II

Lists of Observatories, Codes, Coordinates, Annual Values and Years of Operation

Seven separate lists of geomagnetic observatories are presented in this section as described below. Tables 3 and 4 give all observatories ordered alphabetically and by geomagnetic co-latitude, respectively.

The listed observatories are those for which annual data are held in at least one of the WDC's. Their names, international 3-letter codes, and geographic coordinates are consistent with those given in the IAGA News of December 1979. We have corrected or updated entries where appropriate. Corrections to the information published here should be communicated to any appropriate World Data Center. Proposed new entries or other changes to this list should be approved by the appropriate IAGA Working Group or their designated agent.

Magnetic coordinates were calculated from the geographic coordinates for each observatory using the dipole, Gustaffsson, and Tsyganenko models. The geomagnetic dipole coordinates, co-latitude 0' and each longitude 0', were defined by Schmidt (1895) in "Mitteilungen uber eine neue Berechnung des Erdmagnetischen Potentials". For these dipole coordinate calculations, geographic coordinates used for the North Geomagnetic Pole were 11.32° co-latitude and 289.59° East longitude.

Gustaffsson's corrected geomagnetic coordinates were computed according to the method described in "A Revised Corrected Geomagnetic Coordinate System," Ark. Geophysics, 5, 595-617, and also given in Kiruna Geophysical Observatory Report no. 694 (April 1969). These coordinates are given for all observatories with geographic latitudes greater than 2° to 16°, depending on longitude. They are not defined for sites within a latitude band of varying width near the geomagnetic equator, and observatories in this region have no entry in this column in Tables 3 and 4.

Tsyganenko's corrected geomagnetic coordinates were computed according to the method described in Tsyganenko, N.A., "Subroutines and Tables for the Geomagnetic Field Computations," Materials for the WDC-B2, Moscow, 1979 and in "Numerical Models of Quiet and Distrubed Geomagnetic Field in the Cislunar Part of the Magnetosphere," Annales de Geophysique, 37, 381-394, 1981. These coordinates are not given for all observatories within +30° to -30° geographic latitudes and they have no entry in this column in Tables 3 and 4.

IGRF calculated annual mean values for 1980 were included in Tables 3 and 4 were no annual means for 1980 were available. IGRF calculated values are marked by an asterisk (*).

Table 1. Alphabetically Sorted Alternate Name List. Since some observatories are more commonly known by a label other than the one used in this catalog, we tabulate here their alternate name or names.

Table 2. Alphabetically Sorted List of Replacement Observatories. Here we tabulate stations that began near the site of a closed facility with perhaps a period of concurrent operation. We consider such sites as "replacement observatories".

Table 3. Alphabetical listing of all observatories for which data are held at WDC-A for STP, WDC-B2, WDC-C1's, WDC-C2's.

Table 4. Observatory listing sorted by increasing dipole geomagnetic co-latitude.

Table 5. Alphabetical listing of the earliest and latest complete annual values from each observatory.

Table 6. Alphabetical listing giving a complete log of years of operation for each observatory from 1810 - 1899.

Table 7. Alphabetical listing giving a complete log of year of operation for each observatory from 1900 - present.

Table 1 Alternate/Replacement Observatories

Other Name	Observatory Names used in this catalog	Other Name	Observatory Names in this catalog
Amsterdam Island	Martin de Vivies	N Stekoliniy	Magadan
Amundsen Scott	South Pole	Nida	Nyda
Arctica I (NP-6)	North Pole 6	Ny-Alesund	New Aalesund
Arctica II(NP-7)	North Pole 7	Paratunka	Petropavlovsk
Arctica (NP-8)	North Pole 8	Patrony	Irkutsk
Arctica (NP-10)	North Pole 10	Peking	Beijing
Arequipa	Characato	Pleshenitzi	Minsk
Athens	Pendeli	Podkamennaya Tunguska	P. Tunguska
Azores	Sao Miguel	Point Barrow	Barrow
Baudouin	Roi Baudouin	Puerto Rico	San Juan
Bereznyaki	Karaganda	Pruhonice	Prague
Bjornoya	Bear Island	Reykjavik	Leirvogur
Centro Geoficiso	Havana	She-shan	Sheshan
Chelyuskin	Cape Chelyuskin	Sanae Station	Sanae
Christchurch	Amberley	Shanghai	Sheshan
Colaba	Alibag	Syowa Base	Syowa Station
Crozet	Port Alfred	Stepanovka	Odessa
Dehra Dun	Sabhawala	Stekoliniy	Magadan
Dikson	Dixon Island	St. Petersburg	Leningrad
Druzhnaya	Heiss Island	Tevris	Tevriz
Dusheti	Tbilisi	Tahiti	Pamatai
Dymer	Kiev	Tenerife	Canarias
Fanning	Fanning Island	Thule/Camp Tuto	Thule AFB
Faraday	Argentine Islands	Thule/Qanaq	Thule
Genova	Monte Capellino	Thule I	Thule
Goose Bay	Melville AFB	Thule II	Thule
Gornotayezhnaya	Vladivostok	Tikhaya Bay	Heiss Bay
Hawaii	Honolulu	Tiksi Bay	Tixie Bay
Hachijo(Hachiyojima)	Hatizyo	Tortosa	Ebro
Hallett	Cape Hallett	Tunguska	P. Tunguska
Isla de Pascua	Easter Island	Uelen	Cape Wellen
Kamchatka	Petropavlovsk	Ussurisk	Vladivostok
Karavia	Elizabethville	Vannovskaya	Ashkhabad
Kazalinskaya	Novokazalinskaya	Voyeykovo	Leningrad
Kerguelen	Port-aux-Francais	V. Dubrovoa	Sverdlovsk
Kinshasa-Binza	Binza	Vyssokaya Dubrava	Sverdlovsk
Kleine Karmakul	Maliye Karmakuly	Voroshilov	Vladivostok
Klyuchi	Novosibirsk	Warsawa	Swider
Krasnaya Pakhra	Moscow	White Shell	Whiteshell
Las Mesas	Canarias	Wien Auhof	Wien-Kobenzl
Lazarev	Novolazarevskaya	Yangi-Bazar	Tashkent
Leopoldville	Binza	Zaymishche	Kazan
Lourenzo Marquez	Maputo	Zo-Se	Sheshan
Luanda Belas	Luanda	Zuy	Irkutsk
Loparskaye	Murmansk		

Table 2

REPLACEMENT OBSERVATORIES

MOST RECENT OBSERVATORY NAME	EARLIER OBSERVATORY NAME
Amatsia	Modiim, previously Nitsanim
Alibag	Colaba
Brorfelde	Rude Skov, previously Copenhagen
Castellaccio	Pola
Chambon-la-Foret	Val Joyeux
Dourbes	Uccle
Dumont d'Urville	Terre Adelie
Elizabethville	Karavia
Eskdalemuir	Kew
Fredericksburg	Cheltenham
Gnangara	Watheroo
Hartland	Abinger, previously Greenwich
Hatizyo	Hachijo
Hatizyo	Hatijo
Hermanus	Cape Town
Heiss Island	Tikhaya Bay
Kakioka	Tokyo
Lauder	Amberley, previously Christchurch
Misallat	Helwan
Muntinlupa	Antipolo, previously Manila
Niemegk	Seddin, previously Potsdam
Ottawa	Agincourt, previously Toronto
Pamatai	Tahiti
Patacamaya	La Paz
Plaisance	Mauritius
Roburent	Monte Capellino
Sabhawala	Dehra Dun
Sanae	Norway Station
San Pablo	Toledo
San Juan	Vieques
Tangerang	Kuyper, previously Batavia
Tihany	Budakeszi
Tilaron	Costa Rica
Vassouras	Rio de Janeiro
Wingst	Wilhelmshaven
Witteveen	De Bilt

TABLE 3

GEOMAGNETIC OBSERVATORY TABLE

FOR
1 9 8 0

(SEQUENCED BY OBSERVATORY NAME)

		GEOGRAPHIC COORDINATES			GEOMAGNETIC MODELS						ANNUAL VALUES				
					DIPOLE		GUSTAFFSSON		TSYGANENKO		OBSERVED OR CALCULATED(*)				
OBSERVATORY	CODE	LAT	E LONG	CO-LAT	CO-LAT	E LONG	CO-LAT	E LONG	CO-LAT	E LONG	D	H	Z	X	Y
ABINGER	ABN	51.19	359.61	38.81	36.30	84.46	42.10	79.20	42.11	79.18	-6.05	19024	43811	18918	-2005*
ABISKO	ABK	68.36	18.82	21.64	24.17	115.70	24.96	103.32	24.96	103.31	2.74	11798	51070	11784	566
ADAK	ADA	51.87	183.36	38.13	42.50	241.36	43.17	244.88	43.74	245.00	8.77	21897	42676	21641	3339*
ADDIS ABABA	AAE	9.03	38.77	80.97	84.83	110.50	90.96	109.98			-.58	36075	407	36073	-367
AGINCOURT	AGN	43.78	280.73	46.22	35.07	348.84	34.17	353.36	34.12	353.35	-9.27	16906	55313	16685	-2723*
ALERT	ALE	82.50	297.50	7.50	4.03	165.16	3.30	115.03	3.21	117.77	-76.93	3669	55887	829	-3574
ALIBAG	ABG	18.64	72.87	71.36	80.56	144.94	78.68	144.64			-.77	38282	17576	38278	-518
ALMA ATA	AAA	43.25	76.92	46.75	56.53	151.87	52.03	148.71	52.02	148.70	4.47	25416	47923	25339	1982
ALMERIA	ALM	36.85	357.54	53.15	49.69	76.58	60.58	73.76	60.66	73.72	-4.93	26689	33367	26590	-2294
AMATSIA	AMT	31.55	34.92	58.45	62.04	111.48	65.74	106.28	65.71	106.22	2.56	30447	31765	30417	1362
AMBERLEY	AML	-43.15	172.72	133.15	137.33	253.79	139.83	255.90	139.87	255.92	22.39	21312	-54641	19705	8118*
AMDERMA	AMD	69.47	61.42	20.53	29.27	147.68	25.54	138.05	25.55	137.94	23.34	9766	55773	8967	3869*
ANCHORAGE	AMU	61.24	210.13	28.76	28.75	259.73	29.25	262.11	29.26	262.06	25.64	15248	53429	13747	6598*
ANDREWS AFB	AWS	38.82	283.13	51.18	39.95	352.15	39.17	356.40	39.05	356.40	-9.05	19791	51815	19545	-3113*
ANGRA HEROISMO	ANH	38.32	332.78	51.68	43.93	50.70	52.98	54.33	53.01	54.39	-15.09	24661	37003	23811	-6420*
ANNAMALAINAGAR	ANN	11.37	79.68	78.63	88.50	150.72	87.22	151.24			-2.60	40309	4213	40267	-1832
ANTIPOLO	ANO	14.60	121.17	75.40	86.50	191.21	83.27	191.73			-.61	39293	10232	39291	-418*
APIA	API	-13.81	188.23	103.81	105.75	261.58	105.23	261.90			12.48	34393	-19991	33579	7436
ARCTIC ICE FLO	AIF	83.53	193.05	6.47	13.65	208.33	10.61	212.50	10.64	212.40	42.89	2301	57134	1686	1566*
ARCTIC VILLAGE	AVI	68.13	214.43	21.87	21.77	256.17	21.49	260.13	21.51	259.96	32.14	10425	56431	8827	5546*
ARGENTINE ISLAND	AIA	-65.25	295.74	155.25	143.96	4.37	139.30	9.17	139.22	8.99	16.83	22360	-34742	21401	6477
ARKHANGELSK	ARK	64.60	40.50	25.40	31.17	129.25	29.82	118.02	29.79	118.02	12.85	12777	51774	12457	2842*
ARTI	ARS	56.43	58.57	33.57	41.52	139.56	38.26	131.61	38.25	131.60	11.61	16653	52700	16312	3353
ASHKHABAD	ASH	37.95	58.11	52.05	59.57	134.30	57.30	129.78	57.31	129.77	4.03	27589	40940	27521	1941
ASO	ASO	32.88	131.01	57.12	67.74	199.35	64.36	201.99	64.37	202.01	-6.06	32222	34058	32042	-3402*
ATHENS	ATH	37.97	23.72	52.03	53.70	102.64	58.92	96.31	58.92	96.23	1.74	26287	36589	26275	798*
AU TAU	AUT	22.45	114.05	67.55	78.85	184.19	75.04	184.82	75.11	184.83	-1.58	38188	22969	38173	-1053*
AUCKLAND ISLAND	AU*	-50.87	166.08	140.87	145.98	250.20	149.22	253.12	149.27	253.19	27.46	15805	-60953	14024	7288*
AVERROES	AVE	33.30	352.59	56.70	52.22	70.44	65.34	69.15	65.50	69.13	-6.78	28095	30115	27899	-3317*
BACK	BKC	57.68	265.77	32.32	22.39	325.46	21.38	329.56	21.28	329.34	2.92	8042	60702	8032	410*
BAGUIO	BAG	16.42	120.60	73.58	84.71	190.60	81.36	191.18			-.95	39058	13113	39053	-648*
BAKER LAKE	BLC	64.33	263.97	25.67	16.18	317.71	15.36	323.91	15.21	323.69	2.48	4637	60650	4633	201
BALDWIN	BAL	38.78	264.83	51.22	41.15	330.24	40.41	330.94	40.34	330.77	6.31	20703	52096	20578	2275*
BANGKOK	BKK	13.72	100.57	76.28	87.47	171.23	85.06	171.55			-.32	41080	8248	41079	-229*
BANGUI	BNG	4.44	18.57	85.56	85.46	89.86	98.43	89.59			-3.12	32150	-9086	32102	-1750

(ALL VALUES AS OF 1980.5)

		GEOGRAPHIC COORDINATES			GEOMAGNETIC MODELS						ANNUAL VALUES				
					DIPOLE		GUSTAFFSSON		TSYGANENKO		OBSERVED OR IGRF CALCULATED(*)				
OBSERVATORY	CODE	LAT	E LONG	CO-LAT	CO-LAT	E LONG	CO-LAT	E LONG	CO-LAT	E LONG	D	H	Z	X	Y
BARNAUL	BM*	53.33	83.78	36.67	47.09	159.20	41.68	155.82	41.67	155.79	7.71	17958	55796	17796	2409*
BARRACKPORE	BAC	22.78	88.36	67.22	77.84	160.02	74.79	159.80	74.86	159.76	-.83	38598	23671	38594	-559*
BARROW	BRW	71.32	203.38	18.68	21.09	242.66	20.33	248.14	20.39	248.06	25.88	9798	56409	8815	4277
BARTER ISLAND	BTI	70.13	216.02	19.87	19.78	254.50	19.24	259.00	19.21	259.15	34.92	8940	56963	7330	5118*
BARTH	BAH	54.37	12.75	35.63	35.86	98.98	39.43	90.89	39.45	90.80	-.71	17471	45717	17470	-216*
BATAVIA	BTV	-6.18	106.83	96.18	107.48	177.12	106.08	177.69			.45	37396	-24118	37395	294*
BEAR ISLAND	BJN	74.50	19.20	15.50	19.05	125.03	18.96	110.18	18.90	110.05	3.25	9280	52920	9265	526
BEIJING	BJI	40.04	116.18	49.96	61.22	185.74	56.35	187.77	56.36	187.78	-5.99	29611	46183	29449	-3091
BELIY ISLAND	BEY	73.30	70.00	16.70	26.40	155.67	22.13	147.04	22.15	146.94	28.57	7436	57107	6531	3556*
BELOIT	BLT	39.48	261.87	50.52	40.77	326.62	40.10	326.94	40.07	326.83	8.28	20620	52271	20405	2970*
BELSK	BEL	51.84	20.79	38.16	39.80	105.12	42.59	96.62	42.65	96.59	2.62	19063	45418	19043	871
BEUTHEN	BEU	50.35	18.92	39.65	40.85	102.70	44.26	94.61	44.28	94.56	1.50	19437	44275	19430	509*
BEUTHEN MIKILOW	BMK	50.15	18.90	39.85	41.04	102.59	44.49	94.53	44.51	94.49	1.48	19539	44173	19532	505*
BIG DELTA	BDE	64.00	214.27	26.00	25.45	260.95	25.62	263.72	25.62	263.57	29.28	13011	55291	11349	6363*
BINZA	BIN	-4.27	15.37	94.27	93.34	85.01	106.87	85.68			-6.70	26563	-19703	26382	-3099*
BOCHUM	BOC	51.49	7.23	38.51	37.50	92.15	42.37	85.40	42.42	85.32	-2.77	18887	44122	18865	-913*
BODO	BOD	69.30	14.42	20.70	22.56	113.40	23.66	100.91	23.67	100.87	-.46	11217	50930	11217	-90*
BOROK	BOX	58.03	38.97	31.97	37.13	124.14	36.44	114.21	36.40	114.17	9.33	15688	49557	15480	2543*
BOSSEKOP	BOP	69.97	23.25	20.03	23.52	121.05	23.63	108.01	23.63	108.00	5.33	10908	51579	10861	1013*
BOULDER	BOU	40.14	254.76	49.86	40.96	318.22	40.72	317.98	40.67	317.83	12.23	21349	51156	20864	4525
BOUZAREAH	BZR	36.80	3.02	53.20	50.79	82.10	60.99	78.21	61.05	78.14	-3.20	26656	33738	26614	-1488*
BRESLAU	BS*	51.12	17.03	38.88	39.77	101.29	43.31	93.28	43.34	93.20	.91	19050	44506	19048	303*
BRISBANE	BRS	-27.53	152.92	117.53	125.35	228.63	126.56	226.68	126.80	228.28	10.97	28572	-46059	28050	5437*
BRORFELDE	BFE	55.63	11.67	34.37	34.46	98.71	37.94	90.50	37.97	90.42	-1.48	17204	46040	17198	-445
BUCHAREST	BVC	44.42	26.10	45.58	47.92	106.98	51.10	99.51	51.14	99.41	2.82	22618	41603	22591	1113*
BUDAKESZI	BUZ	47.52	18.90	42.48	43.55	101.44	47.53	93.84	47.55	93.78	1.35	20912	42771	20906	493*
BUDAPEST	HB*	47.50	19.03	42.50	43.60	101.56	47.55	93.96	47.58	93.89	1.39	20923	42771	20917	508*
BUDKOV	BDV	49.08	14.02	40.92	41.12	97.50	45.55	90.17	45.62	90.09	-.08	20323	43140	20323	-29
BURLINGTON	BRT	39.38	257.73	50.62	41.33	321.83	40.91	321.73	40.99	321.74	10.60	21213	51449	20851	3902*
BYRD STATION	BYR	-80.02	240.48	170.02	160.62	336.71	157.94	353.68	157.92	353.58	70.88	16257	-55648	5325	15360*
CAMBRIDGE BAY	CBB	69.20	255.00	20.80	13.09	297.09	12.21	303.93	12.21	303.59	27.41	3095	60054	2747	1425
CAMPBELL ISLAND	CAI	-52.50	169.20	142.50	146.96	254.43	150.26	258.16	150.25	258.14	29.97	15322	61148	13273	7654*
CANARIAS	TEN	28.48	343.74	61.52	55.36	59.99	70.16	61.38	71.64	61.39	-10.21	29232	24047	28768	-5185
CANBERRA	CAN	-35.32	149.36	125.32	133.61	226.14	135.71	226.06	135.76	225.62	12.14	23813	-53770	23280	5011
CAP THORDSEN	SL*	78.47	15.70	11.53	15.56	131.88	14.96	114.97	14.93	115.46	-.55	7631	53616	7631	-73*

(ALL VALUES AS OF 1980.5)

OBSERVATORY	CODE	GEOGRAPHIC COORDINATES LAT	E LONG	CO-LAT	GEOMAGNETIC MODELS DIPOLE CO-LAT	E LONG	GUSTAFFSSON CO-LAT	E LONG	TSYGANENKO CO-LAT	E LONG	ANNUAL VALUES OBSERVED OR IGRF CALCULATED(*) D	H	Z	X	Y
CAPE CHELYUSKIN	CCS	77.72	104.28	12.28	23.59	177.17	18.71	175.06	18.71	174.99	15.33	3460	59150	3337	915
CAPE GOOD HOPE	CGH	-33.93	18.48	123.93	122.96	81.40	131.56	80.30	131.66	80.36	-23.68	11287	-25855	10337	-4533*
CAPE HALLETT	HLL	-72.32	170.22	162.32	164.45	278.76	167.40	299.46	167.38	298.79	111.09	6994	-64985	-2517	6526*
CAPE KAMENNIY	CKA	68.50	73.60	21.50	31.34	155.53	26.67	148.28	26.67	148.16	23.28	9285	57525	8529	3670*
CAPE PARRY	CPY	70.17	235.28	19.83	16.01	271.95	15.29	276.44	15.21	276.11	44.58	5978	58582	4258	4196*
CAPE SCHMIDT	CPS	68.92	180:52	21.08	26.90	228.72	25.78	235.01	25.82	235.06	8.00	12539	54528	12417	1745*
CAPE TOWN	CTO	-33.95	18.47	123.95	122.98	81.38	131.58	80.27	131.67	80.34	-23.69	11286	-25852	10335	-4535*
CAPE WELLEN	CWE	66.16	190.17	23.84	27.89	238.48	27.61	243.70	27.58	243.71	14.78	14195	53530	13725	3622
CAPE ZHELANIA	CZA	77.00	68.60	13.00	22.77	157.58	18.76	148.26	18.77	148.08	32.04	6113	56855	5182	3243*
CAPODIMONTE	CPD	40.86	14.26	49.14	49.06	94.51	55.62	88.42	55.66	88.33	-.05	24561	37972	24561	-21*
CAPRI	CPI	40.55	14.22	49.45	49.36	94.37	56.02	88.33	56.05	88.24	-.07	24734	37730	24734	-30*
CARROLLTON	CAX	39.37	266.47	50.63	40.42	332.06	39.57	333.04	39.49	332.98	5.07	20178	52728	20099	1783*
CASEY	CSY	-66.28	110.53	156.28	167.59	181.76	170.79	154.48	170.86	154.86	-95.82	9223	-63241	-935	-9175*
CASPER	CSR	42.83	253.63	47.17	38.46	316.17	38.14	315.98	38.06	315.91	13.46	19625	53433	19086	4568*
CASTELLACCIO	CAO	44.43	8.93	45.57	44.58	90.64	51.01	84.73	51.07	84.63	-1.63	22570	40127	22561	-642*
CASTLE ROCK	CRC	37.24	237.87	52.76	46.36	300.27	47.12	299.72	47.12	299.66	16.24	24101	44746	23139	6740*
CEBU	CCP	10.30	123.90	79.70	90.67	194.07	87.78	194.42			.15	39400	3419	39400	103*
CHA PA	CPA	22.35	103.83	67.65	78.92	174.57	75.36	174.82	75.40	174.77	-.78	38929	23036	38925	-530*
CHAMBON-LA-FORET	CLF	48.02	2.26	41.98	39.83	85.57	46.14	80.31	46.20	80.24	-4.34	20844	42116	20784	-1579
CHANGCHUN	CNH	43.83	125.30	46.17	57.15	193.44	52.81	196.92	52.79	196.93	-8.91	26609	47480	26288	-4121*
CHARACATO	ARE	-16.47	288.52	106.47	95.15	358.96	92.32	359.33			1.29	25807	-2620	25800	581*
CHARCOT	CTX	-69.37	139.03	159.37	167.92	235.89	173.45	242.60	173.40	242.69	165.00	3413	-66275	-3297	883*
CHATONNAYE	CTE	46.67	06.83	43.33	42.02	89.50	48.10	83.61	48.19	83.50	-2.49	21364	41446	21344	-928*
CHELTENHAM	CLM	38.73	283.16	51.27	40.04	352.18	39.26	356.42	39.17	356.49	-9.06	19857	51719	19609	-3127*
CHESTERFIELD INL	CFI	63.33	269.28	26.67	16.52	327.34	15.12	330.07	15.64	333.68	-10.62	4659	60390	4579	-859*
CHICHIJIMA	CBI	27.08	142.17	62.92	72.60	210.15	70.56	212.32	70.62	212.35	-3.13	32694	24133	32645	-1792
CHICLAYO	CCL	-06.80	280.20	96.80	85.64	350.64	84.92	350.74			4.13	28768	5381	28693	2072*
CHIMBOTE	CMB	-09.10	281.40	99.10	87.90	351.90	86.87	352.11			4.00	28261	3257	28192	1971*
CHRISTCHURCH	CHR	-43.53	172.62	133.53	137.72	253.84	140.25	255.98	140.29	256.01	22.62	21087	-54935	19465	8110*
CLAUSTHAL	CLZ	51.81	10.34	38.19	37.81	95.30	42.25	88.00	42.25	87.93	-1.54	18725	44417	18718	-503*
CLIMAX	CLI	39.37	253.82	50.63	41.84	317.34	41.70	316.99	41.65	316.85	12.53	21635	50726	21120	4694*
COIMBRA	COI	40.22	351.58	49.78	45.29	71.54	55.10	69.79	55.15	69.75	-7.54	24865	36412	24650	-3266
COLLEGE	CMO	64.86	212.16	25.14	25.07	258.14	25.20	261.22	25.18	261.15	28.12	12997	55380	11462	6127
COLLMBERG	CLL	51.32	13.00	38.68	38.79	97.60	42.91	90.03	42.95	89.94	-.50	18959	44331	18958	-165*
COPENHAGEN	COP	55.68	12.58	34.32	34.58	99.59	37.92	91.26	37.97	91.18	-.84	16856	46259	16854	-247*

(ALL VALUES AS OF 1980.5)

OBSERVATORY	CODE	GEOGRAPHIC COORDINATES LAT	E LONG	CO-LAT	GEOMAGNETIC MODELS DIPOLE CO-LAT	E LONG	GUSTAFFSSON CO-LAT	E LONG	TSYGANENKO CO-LAT	E LONG	ANNUAL VALUES OBSERVED OR IGRF CALCULATED(*) D	H	Z	X	Y
COSTA RICA	SNJ	9.91	276.04	80.09	69.11	345.69	68.71	345.52			3.05	29778	23168	29736	1584*
CRACOW	CRA	50.05	19.95	39.95	41.34	103.52	44.65	95.37	44.65	95.35	1.80	19589	44210	19579	615*
CUAJIMALPA	CUA	19.37	260.72	70.63	60.84	328.54	61.44	328.03			7.67	29508	31718	29244	3938*
CUZCO	CUS	-13.53	288.03	103.53	92.21	358.48	89.86	358.81			.82	26566	-154	26563	380*
DALLAS	DAL	32.99	263.25	57.01	47.06	329.42	46.71	329.45	46.64	329.31	7.18	24015	46818	23827	3002*
DAR ES SALAAM	DM*	-6.82	39.32	96.82	100.48	108.08	107.10	110.02			-2.60	26712	-20876	26685	-1212*
DAVAO	DAV	7.05	125.38	82.95	93.84	195.70	91.13	195.97			.75	39308	-1588	39305	515*
DAVIS	DVS	-68.58	77.97	158.58	166.86	122.53	164.50	99.16	164.49	99.04	-75.97	16631	-52607	4032	-16135*
DE BILT	DBN	52.10	5.18	37.90	36.51	90.47	41.50	83.97	41.54	83.90	-3.72	18580	44360	18541	-1205*
DEHRA DUN	DDI	30.32	78.06	59.68	69.48	151.17	66.06	149.78	66.06	149.80	.50	33817	34734	33816	295*
DEKELEIA	DEK	38.10	23.77	51.90	53.58	102.73	58.76	96.38	58.76	96.29	1.76	26213	36704	26201	805*
DIXON ISLAND	DIK	73.54	80.56	16.46	26.91	162.31	22.13	155.83	22.11	155.74	27.27	6404	58315	5692	2934
DOMBAS	DOB	62.07	9.12	27.93	27.99	101.04	30.74	91.55	30.72	91.56	-3.35	14230	48348	14206	-832
DOURBES	DOU	50.10	4.60	39.90	38.31	88.86	43.77	82.80	43.86	82.75	-3.64	19863	43346	19823	-1263
DUBLIN	DL*	53.35	353.73	36.65	33.10	79.67	38.77	75.44	38.82	75.39	-9.43	17916	44989	17674	-2935*
DUMONT DURVILLE	DRV	-66.67	140.01	156.67	165.32	232.33	170.72	235.41	170.61	235.32	158.20	1177	-70123	-1093	-437
EAST PORT	EP*	44.90	293.02	45.10	33.81	4.35	34.18	11.47	34.09	11.62	-20.01	17400	53271	16350	-5954*
EASTER ISLAND	EIC	-27.17	250.58	117.17	108.18	323.87	110.21	325.89	110.18	325.87	15.14	27342	-20533	26393	7141*
EBRO	EBR	40.82	.49	49.18	46.41	80.90	55.32	76.96	55.34	76.93	-4.29	24464	37094	24395	-1830*
EIELSON AFB	ENB	64.67	212.92	25.33	25.10	259.02	25.23	262.02	25.23	261.92	28.99	12783	55300	11181	6195*
EIGHTS	EGS	-75.23	282.83	165.23	153.95	356.08	149.59	5.76	149.60	5.71	32.59	20278	-46498	17085	10922*
EL ABIOD SIDI	EAS	32.90	.55	57.10	54.10	78.46	66.44	75.49	66.80	75.44	-3.92	28588	29751	28521	-1954*
ELIZABETHVILLE	ELI	-11.66	27.47	101.66	102.96	95.40	112.86	97.26			-5.66	21545	-25323	21440	-2125*
ENKOPING	ENK	59.60	17.02	30.40	31.77	106.21	33.92	96.47	33.95	96.45	1.11	15090	47988	15087	292*
ESKDALEMUIR	ESK	55.32	356.80	34.68	31.85	84.04	36.88	78.62	36.93	78.60	-8.35	17294	45788	17110	-2513
ESKIMO POINT	EKP	61.10	265.93	28.90	19.04	323.51	18.11	328.75	18.02	328.62	.74	5911	60722	5911	76*
ESPANOLA	EPN	35.98	253.95	54.02	45.16	318.31	45.24	317.86	45.36	317.74	11.70	23500	47653	23012	4766*
ETTAYAPURAM	ETT	09.00	78.00	81.00	90.67	148.84	89.76	149.45			-2.94	39990	426	39937	-2051*
EUSEBIO	EUS	-3.89	321.56	93.89	84.29	32.06	91.26	33.75			-21.27	26896	-2023	25064	-9757*
EYREWELL	EYR	-43.42	172.35	133.42	137.65	253.51	140.18	255.63	140.23	255.66	22.51	21116	-54927	19507	8084*
FALMOUTH	FAL	50.15	354.92	39.85	36.37	79.15	42.72	75.19	42.80	75.15	-8.02	19509	43305	19318	-2722*
FANNING	FAN	3.91	200.61	86.09	85.98	270.23	85.14	270.43			9.48	32665	5985	32219	5380*
FLENSBURG	FLE	54.78	9.43	35.22	34.82	96.09	38.76	88.36	38.77	88.29	-2.16	17283	45736	17271	-651*
FORT CHURCHILL	FCC	58.77	265.90	31.23	21.32	325.02	20.33	329.46	20.19	329.25	2.36	7555	60697	7549	312
FORT RAE	FRA	62.80	243.90	27.20	20.81	292.95	20.23	294.90	20.18	294.64	32.54	8303	59633	7000	4466*

(ALL VALUES AS OF 1980.5)

OBSERVATORY	CODE	GEOGRAPHIC COORDINATES LAT	E LONG	CO-LAT	GEOMAGNETIC MODELS DIPOLE CO-LAT	E LONG	GUSTAFFSSON CO-LAT	E LONG	TSYGANENKO CO-LAT	E LONG	ANNUAL VALUES OBSERVED OR CALCULATED(*) D	H	Z	X	Y
FORT RAE 1	FE*	62.65	244.27	27.35	20.88	293.54	20.29	295.48	20.24	295.21	32.18	8318	59667	7040	4430*
FORT SIMPSON	FSP	61.75	238.77	28.25	22.72	288.15	22.33	289.42	22.32	289.29	32.72	10012	58896	8423	5412*
FORT SMITH	FSM	58.00	246.00	32.00	24.93	299.87	24.39	300.80	24.35	300.57	26.02	10902	59365	9797	4783*
FORT YUKON	FYU	66.57	214.73	23.43	23.08	258.48	23.00	261.89	22.99	261.73	31.20	11360	56106	9717	5885*
FREDERICKSBURG	FRD	38.21	282.63	51.79	40.59	351.57	39.76	355.59	39.64	355.61	-8.43	20449	51352	20228	-2998
FREETOWN	FTN	08.47	346.78	81.53	75.55	59.14	93.00	60.48			-12.19	31154	-1346	30452	-6578*
FREIBERG	FB*	50.92	13.35	39.08	39.24	97.73	43.39	90.18	43.43	90.09	-.37	19159	44156	19159	-124*
FUQUENE	FUQ	5.47	286.26	84.53	73.23	356.53	71.79	357.35			-2.27	28944	18761	28921	-1146
FURSTENFELDBRUCK	FUR	48.17	11.28	41.83	41.46	94.46	46.55	87.61	46.58	87.56	-.95	20820	42489	20817	-348
GENOVA	GEN	44.55	08.95	45.45	44.47	90.71	50.86	84.77	50.93	84.68	-1.63	22505	40208	22496	-640*
GIBILMANNA	GIB	37.99	14.02	52.01	51.79	93.34	59.30	87.69	59.37	87.62	-.17	26168	35617	26168	-78*
GILLAM	GIM	56.85	265.58	33.15	23.22	325.64	22.21	329.45	22.10	329.25	3.54	8600	60631	8584	531*
GJOAHAVN	GJO	68.63	264.08	21.37	12.13	311.67	11.39	320.90	11.29	320.36	-3.34	2229	59636	2225	-130*
GLENLEA	GLL	49.60	262.90	40.40	30.64	325.16	29.66	326.84	29.55	326.70	7.89	13860	58658	13729	1903*
GNANGARA	GNA	-31.78	115.95	121.78	133.01	187.40	134.37	185.90	134.37	185.94	-3.29	23409	-53652	23370	-1346
GODHAAB 1	GH*	64.18	308.28	25.82	15.50	31.48	18.41	39.16	18.36	39.27	-41.18	10110	54845	7609	-6657*
GODHAVN	GDH	69.25	306.47	20.75	10.43	34.62	13.37	41.91	13.25	41.84	-48.14	8537	56362	5696	-6358
GONZALES VIDELA	GVD	-64.82	297.15	154.82	143.56	5.40	138.89	9.76	138.81	9.66	16.00	22085	-34623	21229	6087*
GOTTINGEN	GT*	51.53	9.95	38.47	37.99	94.80	42.54	87.59	42.54	87.54	-1.67	18859	44267	18851	-550*
GREAT WHALE R.	GWC	55.27	282.22	34.73	23.56	349.44	23.16	356.71	23.00	356.80	-19.44	10665	59164	10057	-3550
GREENWICH	GRW	51.48	.00	38.52	36.10	85.00	41.81	79.61	41.79	79.59	-5.94	18876	43967	18775	-1953*
GROCKA	GCK	44.63	20.77	45.37	46.69	102.07	50.94	94.80	50.96	94.73	1.59	22693	41018	22684	630
GUAM	GUA	13.58	144.87	76.42	85.73	214.26	84.18	214.98			1.92	35805	7239	35785	1205
GUANGZHOU	GZH	23.09	113.34	66.91	78.21	183.52	74.36	184.16	74.62	203.81	-1.51	38104	23696	38090	-1004
HACKNEY WICK	HW*	51.55	359.97	38.45	36.01	85.01	41.72	79.61	41.58	79.38	-6.12	18800	44043	18693	-2004*
HACKNEY WICK 2	HW*	51.63	359.67	38.37	35.88	84.75	41.59	79.40	41.58	79.38	-6.12	18800	44042	18693	-2004*
HALLEY BAY	HBA	-75.52	333.32	165.52	156.04	25.20	150.98	28.21	150.76	28.19	-1.50	20200	-41500	20193	-529*
HAMBURG	HM*	53.55	9.98	36.45	36.08	95.90	40.22	88.32	40.21	88.26	-1.82	17869	45218	17860	-568*
HARTEBEESTHOEK	HBK	-25.88	27.71	115.88	116.93	92.49	126.10	93.60	126.18	93.65	-16.06	13197	26924	12681	-3652
HARTLAND	HAD	51.00	355.52	39.00	35.68	80.19	41.81	75.94	41.87	75.90	-7.73	19331	43769	19155	-2600
HATIZYO	HTY	33.07	139.83	56.93	66.82	207.28	64.42	210.31	64.48	210.32	-7.68	31415	31770	31133	-4201
HAVANA	HVN	22.97	277.86	67.03	55.99	346.93	55.10	347.90	55.02	347.84	-.31	26909	37949	26909	-146*
HEALY	HEA	63.86	211.03	26.14	26.19	258.16	26.44	261.08	26.42	261.01	27.49	13536	54714	12008	6248*
HEARD ISLAND	HII	-53.03	73.37	143.03	151.47	131.89	151.88	121.31	152.10	121.20	-57.14	17965	-47263	9748	-15091*
HEISS ISLAND	HIS	80.62	58.05	9.38	18.66	156.45	15.31	144.79	15.32	145.06	29.68	5481	56068	4762	2714*

(ALL VALUES AS OF 1980.5)

		GEOGRAPHIC COORDINATES			GEOMAGNETIC MODELS						ANNUAL VALUES				
					DIPOLE		GUSTAFFSSON		TSYGANENKO		OBSERVED OR IGRF CALCULATED(*)				
OBSERVATORY	CODE	LAT	E LONG	CO-LAT	CO-LAT	E LONG	CO-LAT	E LONG	CO-LAT	E LONG	D	H	Z	X	Y
HEL	HLP	54.61	18.82	35.39	36.80	104.72	39.48	95.93	39.49	95.85	1.19	17653	46127	17649	367
HELWAN	HLW	29.86	31.34	60.14	63.04	107.69	68.21	102.70	68.25	102.64	1.98	31031	29386	31012	1072*
HERMANUS	HER	-34.43	19.23	124.43	123.58	81.98	131.99	80.87	132.07	80.93	-23.51	11363	-25753	10420	-4533
HERMSDORF	HDF	50.76	16.24	39.24	39.95	100.38	43.68	92.51	43.73	92.44	.64	19234	44272	19233	215*
HOLLANDIA	HNA	-2.57	140.51	92.57	102.25	211.68	100.98	211.38			4.16	37411	-15199	37312	2714*
HOLSTEINSBORG 1	HS*	66.87	306.73	23.13	12.75	31.67	15.61	39.48	15.47	39.42	-45.50	8834	55273	6192	-6301*
HONG KONG	HKC	22.36	114.22	67.64	78.93	184.36	75.13	184.99	75.39	184.98	-1.55	38259	22569	38245	-1035*
HONOLULU	HON	21.32	202.00	68.68	68.65	267.96	68.17	268.68	68.14	268.68	11.53	27705	22311	27145	5542
HUANCAYO	HUA	-12.05	284.66	102.05	90.76	355.17	89.00	355.52			2.71	27225	985	27194	1290
HURBANOVO	HRB	47.87	18.19	42.13	43.08	100.92	47.10	93.34	47.13	93.25	1.15	20996	42772	20992	425
HYDERABAD	HYB	17.41	78.56	72.59	82.37	150.23	80.37	150.23			-1.64	39715	15194	39699	-1140
IBADAN	IBD	7.43	3.90	82.57	79.67	76.02	95.89	75.74			-5.86	32198	-4819	32030	-3287*
INUVIK	INK	68.25	226.70	21.75	19.29	267.09	18.87	270.56	18.86	270.36	38.75	8500	57837	6629	5320*
IRKUTSK	IRT	52.17	104.45	37.83	49.13	175.83	43.37	176.45	43.35	176.45	-2.36	19559	56902	19542	-807
ISLAND LAKE	ISL	53.88	265.32	36.12	26.17	326.66	25.14	329.66	25.02	329.50	4.70	10635	60138	10599	871*
ISTANBUL-KANDILL	ISK	41.06	29.06	48.94	51.71	108.61	54.92	101.60	54.92	101.57	2.94	24534	39645	24502	1258*
IVALO	IVA	68.60	27.48	21.40	25.43	122.68	25.25	110.12	25.25	110.06	7.71	11385	51503	11282	1527*
IVIGTUT	IVI	61.20	311.85	28.80	18.78	34.53	21.97	41.46	21.97	41.58	-36.20	11876	53747	9583	-7014*
IVIGTUT 1	IV*	61.20	311.73	28.80	18.77	34.36	21.94	41.33	21.84	41.44	-36.25	11861	53772	9565	-7014*
JAIPUR	JAI	26.92	75.80	63.08	72.65	148.69	69.69	147.54	69.70	147.53	-.76	35737	29594	35734	-477
JALUIT	JAL	5.92	169.65	84.08	89.80	239.53	88.77	239.87			9.60	34205	1537	33726	5704*
JAN MAYEN 1	JM*	71.00	351.53	19.00	16.83	97.02	19.50	86.20	19.52	86.20	-17.52	10339	51399	9859	-3112*
JARVIS ISLAND	JRV	-.38	199.97	90.38	90.29	270.43	89.51	270.51			9.66	33546	778	33070	5629*
JASSY	JSS	47.18	27.53	42.82	45.51	109.32	47.92	101.35	47.95	101.24	3.47	21100	43410	21061	1277*
JOHNSON POINT	JOP	72.47	241.70	17.53	12.93	272.78	11.97	279.07	11.90	278.72	50.86	3819	58635	2411	2962*
JULIANEHAAB	JUL	60.72	313.97	29.28	19.50	37.21	22.91	43.49	22.90	43.70	-34.81	12351	53218	10141	-7051*
KAKIOKA	KAK	36.23	140.19	53.77	63.69	207.26	61.27	210.76	61.25	210.73	-6.58	30192	34651	29993	-3464
KALININGRAD	KNG	54.70	20.62	35.30	37.04	106.43	39.46	97.46	39.46	97.38	2.35	17292	46383	17277	709*
KANDALAKSHA	KND	67.13	32.43	22.87	27.57	125.02	26.97	112.93	26.96	112.88	10.07	11888	51543	11705	2079*
KANOYA	KNY	31.42	130.88	58.58	69.21	199.35	65.85	201.80	65.87	201.81	-5.44	32988	31976	32839	-3127
KANOZAN	KNZ	35.25	139.96	54.75	64.69	207.17	62.25	210.52	62.25	210.51	-6.24	30539	33675	30358	-3320
KAP TOBIN	KTG	70.42	238.03	19.58	15.27	274.21	14.48	278.87	14.41	278.64	45.70	5370	58741	3750	3843*
KARAGANDA	KGD	49.82	73.08	40.18	49.67	149.75	45.13	145.04	45.09	145.03	7.66	20226	52344	20045	2698
KARAVIA	KVA	-11.64	27.42	101.64	102.93	95.37	112.84	97.22			-5.66	21545	-25323	21440	-2125*
KARSANI	KAS	41.83	44.70	48.17	53.71	123.16	53.45	116.59	53.43	116.56	4.90	24291	42193	24202	2075*

(ALL VALUES AS OF 1980.5)

OBSERVATORY	CODE	GEOGRAPHIC COORDINATES LAT	E LONG	CO-LAT	GEOMAGNETIC MODELS DIPOLE CO-LAT	E LONG	GUSTAFFSSON CO-LAT	E LONG	TSYGANENKO CO-LAT	E LONG	ANNUAL VALUES OBSERVED OR IGRF CALCULATED(*) D	H	Z	X	Y
KATUURA	KAT	33.63	135.95	56.37	66.64	203.73	63.76	206.67	63.78	206.73	-6.22	31463	33448	31278	-3409*
KAZAN	KZN	55.83	48.85	34.17	40.77	131.37	38.77	122.43	38.77	122.45	10.46	16830	50407	16550	3058
KELES	KEL	41.42	69.21	48.58	57.55	144.84	53.80	140.99	53.78	140.98	4.62	25720	45626	25636	2072*
KERGUELEN	KG*	-49.15	70.20	139.15	147.23	129.91	148.25	121.49	148.27	121.48	-52.52	18344	-44414	11162	-14557*
KEW	KEW	51.47	359.69	38.53	36.05	84.68	41.79	79.36	41.77	79.34	-6.08	18880	43961	18774	-2000*
KEY WEST	QW*	24.55	278.20	65.45	54.38	347.23	53.47	348.47	53.38	348.37	-.86	26349	39611	26346	-395*
KHABAROVSK	KHB	48.48	135.07	41.52	51.93	201.23	48.47	206.08	48.45	206.10	-11.34	23994	48491	23526	-4718*
KHARASAVEY	KHS	71.13	66.83	18.87	28.21	152.31	24.07	143.39	24.10	143.28	25.92	8627	56674	7759	3771*
KIEL	KE*	54.33	10.15	35.67	35.38	96.51	39.33	88.75	39.33	88.69	-1.81	17495	45572	17486	-553*
KIEV	KIV	50.72	30.30	39.28	42.63	113.24	43.92	104.54	44.02	104.51	4.99	19498	45618	19424	1696
KINGUAFJORD	KJ*	66.60	292.68	23.40	12.12	5.85	13.54	17.95	13.41	17.76	-49.38	6775	57438	4411	-5143*
KIRUNA	KIR	67.83	20.42	22.17	24.91	116.37	25.60	104.08	25.59	104.10	-5.69	11179	50928	11124	-1108
KLAGENFURT	KF*	46.62	14.30	43.38	43.54	96.71	48.47	89.76	48.54	89.65	-.00	21395	41879	21395	0*
KODAIKANAL	KOD	10.23	77.46	79.77	89.40	148.43	88.37	148.97			-2.38	39265	2444	39231	-1636
KONTAGORA	KNT	10.40	05.45	79.60	77.05	78.14	92.90	77.44			-4.73	33251	-601	33138	-2742*
KOROR	KOR	7.34	134.50	82.66	92.95	204.72	90.68	204.88			1.45	38172	-1184	38160	966*
KOTZEBUE	KOT	66.88	197.37	23.12	26.00	243.51	25.78	248.31	25.79	248.31	20.08	13037	54268	12245	4476*
KRAKAU (CRAKAU)	KX*	50.05	19.95	39.95	41.34	103.52	44.65	95.37	44.65	95.35	1.80	19589	44210	19579	615*
KREMSMUNSTER	KRE	48.06	14.13	41.94	42.12	97.16	46.77	89.98	46.81	89.89	-.06	20631	42699	20631	-22*
KSARA	KSA	33.82	35.89	56.18	60.00	112.95	62.93	107.39	62.91	107.30	2.82	28879	34262	28844	1421*
KUMASI	KUM	06.70	358.43	83.30	79.36	70.46	96.42	70.63			-7.85	31392	-5506	31098	-4288*
KUTCHINO	KTC	55.76	37.97	34.24	39.13	122.19	38.74	112.66	38.73	112.61	8.15	16756	48598	16587	2375*
KUYPER	KUY	-6.03	106.73	96.03	107.33	177.02	105.92	177.59			.45	37452	-23906	37451	294*
KZIL-AGACH	KZA	45.37	78.73	44.63	54.59	153.75	49.84	150.53	49.82	150.52	5.12	23551	50209	23457	2102*
L AQUILA	AQU	42.38	13.32	47.62	47.41	94.13	53.69	87.93	53.74	87.84	-.14	23943	38845	23943	-59
LA MADDALENA	LMD	41.23	09.40	48.77	47.75	89.91	55.18	84.35	55.17	84.29	-1.38	24325	37869	24318	-586*
LA PAZ	LPB	-16.54	291.90	106.54	95.21	2.22	92.38	2.41			-1.32	25376	-2518	25369	-585*
LA QUIACA	LQA	-22.10	294.40	112.10	100.81	4.52	98.54	4.44	98.17	4.44	-1.84	23584	-6559	23572	-759
LANZHOU	LZH	36.09	103.85	53.91	65.19	174.88	60.30	175.30	60.29	175.25	-1.78	31598	42469	31582	-990
LAS ACACIAS	LAS	-35.01	302.31	125.01	113.92	11.38	111.49	10.12	111.36	10.07	-3.75	20184	-13821	20141	-1320*
LAUDER	LAU	-45.04	169.68	135.04	139.72	251.36	142.45	253.60	142.47	253.57	23.17	19856	-56690	18254	7813*
LAZAREV	LZV	-69.97	12.90	159.97	155.97	56.70	152.03	52.93	152.06	52.93	-27.51	18687	-37020	16574	-8632*
LEADVILLE	LDV	39.28	253.72	50.72	41.94	317.24	41.82	316.87	41.77	316.75	12.55	21697	50630	21179	4715*
LEIRVOGUR	LRV	64.18	338.30	25.82	20.11	72.19	24.39	69.10	24.37	69.10	-20.98	12401	49993	11579	-4440
LENINGRAD	LNN	59.95	30.71	30.05	33.93	118.29	34.18	107.77	34.21	107.78	7.12	15216	49053	15098	1888

(ALL VALUES AS OF 1980.5)

		GEOGRAPHIC			GEOMAGNETIC MODELS						ANNUAL VALUES				
		COORDINATES			DIPOLE		GUSTAFFSSON		TSYGANENKO		OBSERVED OR IGRF CALCULATED(*)				
OBSERVATORY	CODE	LAT	E LONG	CO-LAT	CO-LAT	E LONG	CO-LAT	E LONG	CO-LAT	E LONG	D	H	Z	X	Y
LENINGRADSKAYA	LEN	-69.50	159.40	159.50	164.32	261.96	168.48	277.62	168.41	277.02	251.45	4729	-66109	-1504	-4483*
LERWICK	LER	60.13	358.82	29.87	27.76	89.62	31.80	82.55	31.78	82.53	-7.83	14952	47857	14812	-2039
LHASA	LSA	29.70	91.15	60.30	71.10	163.11	67.15	162.62	67.18	162.59	-.28	35250	34323	35250	-172*
LISBON	LIS	38.72	350.85	51.28	46.62	70.28	57.11	68.84	57.13	68.85	-7.82	25354	35369	25118	-3450*
LITTLE AMERICA	LAA	-78.18	197.80	168.18	163.94	312.23	163.67	335.07	163.71	334.72	104.95	11881	-61168	-3065	11479*
LOGRONO	LGR	42.46	357.50	47.54	44.25	78.44	52.81	74.95	52.88	74.93	-5.58	23551	38305	23439	-2290*
LORING AFB	LOB	46.92	291.88	43.08	31.78	2.97	32.05	10.27	31.96	10.34	-20.79	16154	54580	15102	-5734*
LOS ANGELES	LA*	34.05	241.75	55.95	48.84	305.33	49.62	304.77	49.62	304.73	14.44	25182	42912	24386	6280*
LOVO	LOV	59.35	17.83	30.65	32.16	106.75	34.25	97.00	34.26	96.98	1.51	15499	48027	15494	410
LOVOZERO	LOZ	67.97	35.02	22.03	27.21	127.73	26.24	115.54	26.24	115.47	11.72	11506	52026	11266	2337*
LUANDA	LUA	-8.92	13.17	98.92	97.47	81.94	111.05	82.70			-9.34	23227	-22792	22919	-3770*
LUBECK	LB*	53.87	10.70	36.13	35.93	96.76	39.90	89.02	39.89	88.96	-1.54	17714	45394	17708	-476*
LUKIAPANG	LKP	31.32	121.04	58.68	69.81	190.41	65.66	192.18	65.65	192.16	-4.57	33722	34711	33615	-2687*
LUNPING	LNP	25.00	121.17	65.00	76.11	190.79	72.37	191.98	72.36	191.98	-2.86	36584	25721	36538	-1825
LVOV	LVV	49.90	23.75	40.10	42.20	106.96	44.86	98.63	44.88	98.57	3.24	20077	44565	20045	1138
LWIRO	LWI	-2.25	28.80	92.25	94.00	98.59	103.44	99.82			-2.28	29160	-17547	29137	-1160*
LYNN LAKE	LYN	56.85	258.93	33.15	24.04	316.79	23.05	319.08	23.00	318.97	13.47	9336	60469	9079	2175*
M BOUR	MBO	14.39	343.04	75.61	69.09	56.40	85.95	58.53			-12.10	31944	7220	31234	-6697
MACQUARIE ISLAND	MCQ	-54.50	158.95	144.50	150.75	244.40	154.51	247.37	154.52	247.40	28.48	12723	-63768	11183	6067
MADRAS	MX*	13.07	80.25	76.93	86.86	151.44	85.34	151.84			-2.21	40321	7361	40291	-1555*
MADRID	MDD	40.42	356.32	49.58	46.00	76.50	55.41	73.57	55.50	73.52	-5.82	24609	36709	24482	-2495*
MAGADAN	MGD	60.12	151.02	29.88	39.04	211.56	36.68	218.04	36.70	218.04	-13.18	18047	52589	17571	-4117
MAGALLANES	MGS	-53.20	289.10	143.20	131.88	359.60	127.59	3.02	127.54	3.03	15.90	22438	-26116	21580	6147*
MAISACH	MAS	48.20	11.26	41.80	41.42	94.47	46.50	87.61	46.54	87.56	-1.01	20560	42587	20557	-362*
MAITUN	MAI	43.25	132.33	46.75	57.32	199.54	53.70	203.61	53.72	203.62	-9.60	26929	44763	26552	-4491*
MAJURO	MJR	7.08	171.38	82.92	88.36	241.01	87.26	241.32			9.83	33771	3353	33275	5766*
MAKERSTOUN	MQ*	55.58	357.48	34.42	31.72	84.90	36.66	79.26	36.72	79.24	-8.11	16885	45923	16716	-2382*
MALIYE KARMAKULY	MKL	72.30	52.50	17.70	25.62	143.81	22.67	132.32	22.67	132.27	22.51	9090	54931	8397	3480*
MANHAY	MAB	50.30	5.68	39.70	38.33	90.03	43.63	83.74	43.71	83.68	-3.28	19480	43462	19448	-1115*
MANILA	MAN	14.58	120.98	75.42	86.54	191.02	83.30	191.55			-.60	39320	10209	39318	-412*
MAPUTO	LMM	-25.92	32.58	115.92	117.91	97.31	126.22	98.66	126.27	98.71	-15.86	14011	-27108	13478	-3829
MARION ISLAND	MRN	-46.88	37.85	136.88	139.25	95.86	141.92	92.03	141.87	92.09	-36.91	15530	-28837	12417	-9327*
MARTIN DE VIVIES	AMS	-37.83	77.57	127.83	137.12	142.00	139.17	137.80	139.20	137.72	-38.41	19058	-45530	14934	-11840*
MATOCHKIN SHAR	MSR	73.26	56.40	16.74	25.16	147.14	21.88	136.09	21.88	136.02	24.82	8461	55505	7679	3552*
MAURITIUS	MRI	-20.09	57.55	110.09	116.75	123.97	120.49	125.06	120.50	125.06	-17.73	21484	-29691	20464	-6543*

(ALL VALUES AS OF 1980.5)

		GEOGRAPHIC COORDINATES			GEOMAGNETIC MODELS						ANNUAL VALUES				
					DIPOLE		GUSTAFFSSON		TSYGANENKO		OBSERVED OR IGRF CALCULATED(*)				
OBSERVATORY	CODE	LAT	E LONG	CO-LAT	CO-LAT	E LONG	CO-LAT	E LONG	CO-LAT	E LONG	D	H	Z	X	Y
MAWSON	MAW	-67.61	62.88	157.61	163.30	105.07	160.24	89.38	160.23	89.30	-63.09	18432	-46784	8340	-16437
MCMURDO	MCM	-77.85	166.70	167.85	168.81	294.30	169.84	328.08	169.92	327.04	146.00	9171	-63239	-7603	5128*
MEANOOK	MEA	54.62	246.67	35.38	28.05	302.95	27.61	303.33	27.54	303.16	22.14	13488	58501	12493	5084
MELBOURNE	MEL	-37.83	144.98	127.83	136.70	221.82	138.97	221.42	139.03	221.45	11.21	21489	-56855	21079	4178*
MELVILLE AFB	MEV	53.28	299.47	36.72	25.64	13.71	27.10	22.51	27.09	22.53	-29.53	13928	54897	12119	-6865*
MEMAMBETSU	MMB	43.91	144.19	46.09	55.71	209.68	53.49	214.34	53.49	214.35	-8.29	26495	41352	26218	-3822
MEXICO	TE*	19.42	260.92	70.58	60.78	328.75	61.36	328.25			7.75	31151	20941	30866	4201*
MIDWAY	MDY	28.21	182.62	61.79	65.61	247.73	65.25	248.69	65.28	248.61	10.07	26969	24708	26554	4716*
MINSK	MNK	54.50	27.88	35.50	38.58	112.82	39.91	103.49	40.29	102.15	5.29	17931	46832	17854	1655
MIRNY	MIR	-66.55	93.02	156.55	167.01	149.64	167.19	122.03	167.19	121.63	-83.93	14000	-58727	1480	-13922
MISALLAT	MLT	29.52	30.89	60.48	63.29	107.18	68.68	102.24	68.76	102.21	1.98	31299	28657	31280	1082
MIYAZU	MIU	35.32	135.12	54.68	64.93	203.13	60.62	205.08	62.01	206.01	-6.86	30813	35616	30592	-3680*
MIZUSAWA	MIZ	39.01	141.08	50.99	60.85	207.69	58.42	211.60	58.42	211.60	-7.40	28858	37235	28617	-3717
MOCA	MFP	3.34	8.66	86.66	84.59	79.92	99.98	79.79			-5.77	30892	-10470	30735	-3106*
MODIIM	MOD	31.93	34.98	58.07	61.69	111.64	65.29	106.37	65.28	106.32	2.52	29975	32156	29946	1318*
MOGADISCIO	MOG	02.03	45.35	87.97	92.89	115.68	97.53	116.65			-.78	33547	-9945	33544	-457*
MOLODEZHNAYA	MOL	-67.67	45.85	157.67	160.04	87.20	156.56	77.12	156.50	77.20	-50.63	19020	-41650	12064	-14703
MONTE CAPELLINO	MCP	44.55	8.96	45.45	44.47	90.71	50.86	84.77	50.93	84.68	-1.63	22505	40208	22496	-640*
MOSCOW	MOS	55.48	37.31	34.52	39.30	121.49	39.03	112.01	39.01	111.97	7.73	17294	48636	17137	2327
MOULD BAY	MBC	76.20	240.60	13.80	10.60	258.34	9.25	267.03	9.19	266.53	60.57	2602	58258	1278	2266
MT WILSON	MWC	34.22	241.93	55.78	48.65	305.48	49.42	304.92	49.41	304.87	14.47	25106	43121	24310	6273*
MUNICH	MNH	48.15	11.61	41.85	41.54	94.77	46.59	87.88	46.62	87.84	-.89	20586	42581	20584	-320*
MUNTINLUPA	MUT	14.38	121.02	75.62	86.74	191.07	83.51	191.58			-.63	39221	9691	39219	-432
MURCHISON BAY	MUB	80.50	18.25	9.50	14.57	138.99	13.38	121.50	13.37	122.08	.89	6754	54234	6753	105*
MURMANSK	MMK	68.25	33.08	21.75	26.65	126.54	25.88	114.21	25.88	114.13	12.28	11819	51547	11549	2514
NAGYCENK	NCK	47.63	16.72	42.37	43.03	99.43	47.34	92.04	47.39	91.95	.77	21126	42492	21124	285
NAIROBI	NAI	-1.33	36.82	91.33	94.62	106.65	101.69	107.87			-1.04	30542	-15546	30537	-554*
NANORTALIK 1	NN*	60.13	314.73	29.87	20.16	37.89	23.66	43.98	23.65	44.21	-33.89	12712	52930	10552	-7088*
NANTES	NTS	47.25	358.44	42.75	39.83	81.37	46.75	77.03	46.79	76.98	-5.87	21024	41583	20914	-2150*
NARSSARSSUAQ	NAQ	61.10	314.80	28.90	19.23	38.70	22.71	44.66	22.71	44.85	-34.19	12078	53850	9991	-6787*
NERTSCHINSK	NK*	51.32	119.62	38.68	49.87	188.17	44.81	191.51	44.81	191.47	-9.65	20915	54754	20619	-3506*
NEUFAHRWASSER	NF*	54.42	18.65	35.58	36.95	104.47	39.68	95.73	39.69	95.64	1.61	17431	46116	17424	490*
NEW AALESUND	NAL	78.92	11.93	11.08	14.70	131.33	14.27	113.87	14.22	114.39	-3.78	7458	53652	7442	-492*
NEW YEARS ISLAND	NYI	-54.65	295.85	144.65	133.38	4.97	129.03	7.26	128.91	7.26	11.71	21851	-25866	21396	4435*
NEWPORT	NEW	48.26	242.88	41.74	34.79	301.85	34.81	301.39	34.76	301.28	20.22	18196	54513	17074	6290

(ALL VALUES AS OF 1980.5)

		GEOGRAPHIC COORDINATES			GEOMAGNETIC MODELS						ANNUAL VALUES				
					DIPOLE		GUSTAFFSSON		TSYGANENKO		OBSERVED OR IGRF CALCULATED(*)				
OBSERVATORY	CODE	LAT	E LONG	CO-LAT	CO-LAT	E LONG	CO-LAT	E LONG	CO-LAT	E LONG	D	H	Z	X	Y
NICE	NCE	43.72	7.30	46.28	44.95	88.76	51.85	83.21	51.91	83.12	-2.13	22950	39548	22934	-853*
NIEMEGK	NGK	52.07	12.68	37.93	38.01	97.67	42.03	90.01	42.07	89.92	-.58	18825	44570	18824	-192
NITSANIM	NCK	31.73	34.60	58.27	61.81	111.23	65.57	105.99	65.53	105.92	2.47	30064	31918	30036	1296*
NIZHNEDEVITSK	NNV	51.52	38.37	38.48	43.27	120.70	43.17	111.95	43.18	111.95	6.81	18855	46874	18722	2236*
NORD	NRD	81.60	343.24	8.40	9.25	132.88	9.33	109.45	9.25	110.32	-30.72	5978	54388	5139	-3054*
NORILSK	NOK	69.40	88.10	20.60	31.40	165.67	26.05	161.43	26.06	161.34	18.80	7619	59374	7213	2455*
NORMAN WELLS	NOW	64.90	234.50	25.10	20.68	279.83	20.34	282.02	20.29	281.81	36.79	8998	58583	7206	5389*
NORTH POLE 6	NPF	84.00	94.00	6.00	17.18	174.54	13.14	168.50	13.20	168.66	45.00	2718	57166	1922	1922*
NORTH POLE 7	NPG	85.00	268.12	5.00	6.92	195.37	3.96	185.14	4.09	185.28	123.22	1928	56370	-1056	1613*
NORTH POLE 8	NPH	77.00	189.00	13.00	18.69	223.64	16.65	230.34	16.62	230.23	18.94	6593	56892	6236	2140*
NORTH POLE 10	NPJ	77.00	166.38	13.00	21.38	211.09	18.49	217.32	18.49	217.44	1.28	6700	57272	6698	150*
NORTH POLE 12	NPL	79.00	187.00	11.00	17.38	218.57	14.92	225.01	14.93	224.86	19.90	5271	57118	4956	1794*
NORTH POLE 13	NPM	81.00	165.00	9.00	18.01	204.62	14.68	209.29	14.69	209.16	7.74	3936	57502	3900	530*
NORTHWAY	NRW	63.02	218.20	26.98	25.56	265.62	25.77	267.80	25.84	267.59	30.36	13090	55601	11295	6616*
NORUSUND	NOR	77.00	15.55	13.00	16.56	128.06	16.30	111.89	16.25	112.23	-0.36	8233	53200	8233	-52*
NORWAY HOUSE	NHO	53.98	262.17	36.02	26.43	322.51	25.39	324.82	25.33	324.70	8.84	10895	60073	10766	1674*
NORWAY STATION	NWS	-70.50	357.47	160.50	154.10	45.08	150.05	43.19	150.03	43.22	-17.67	18912	-36508	18020	-5740*
NOVOKAZALINSK	NKK	45.80	62.10	44.20	52.38	139.54	49.14	133.99	49.14	134.01	6.42	22681	47490	22539	2536
NOVOLAZAREVSKAYA	NVL	-70.77	11.83	160.77	156.49	54.96	152.37	51.51	152.39	51.53	-27.16	18640	-37470	16584	-8510
NOVOSIBIRSK	NVS	55.03	82.90	34.97	45.34	158.77	39.93	155.02	39.93	155.00	8.44	17269	56457	17082	2535
NUMTO	NMT	63.50	71.40	26.50	36.04	152.03	31.40	145.00	31.41	144.92	18.47	12035	56605	11415	3813*
NURMIJARVI	NUR	60.51	24.66	29.49	32.34	113.51	33.38	103.05	33.37	103.04	4.21	15202	49039	15161	1116
NYDA	NDA	66.60	73.00	23.40	33.15	154.34	28.46	147.22	28.46	147.11	21.33	10284	57300	9580	3741*
O GYALLA	OGY	47.88	18.19	42.12	43.08	100.92	47.10	93.34	47.13	93.25	1.16	20727	42907	20723	420*
OASIS	OAS	-66.30	100.72	156.30	167.36	163.51	168.86	134.51	168.90	134.48	-89.05	11985	-60536	199	-11983*
ODESSA	ODE	46.78	30.88	43.22	46.51	112.23	48.34	104.26	48.36	104.18	2.28	21435	43532	21418	855
ONAGAWA	ONW	38.43	141.47	51.57	61.39	208.11	59.00	211.92	59.04	211.94	-7.27	29020	36935	28787	-3672*
ORANGE BAY	OB*	-55.52	291.92	145.52	134.19	1.83	129.77	5.11	129.71	5.08	14.93	22326	-27329	21572	5752*
ORCADAS DEL SUR	ORC	-60.73	315.22	150.73	140.24	19.30	136.31	19.27	136.26	19.23	1.88	20327	-28905	20316	667*
OSLO	OSL	59.91	10.72	30.09	30.28	100.74	33.15	91.62	33.17	91.63	-2.01	14967	47794	14958	-525*
OTOMARI	OTM	46.65	142.77	43.35	53.12	208.00	50.61	212.99	50.62	213.02	-9.81	25203	44444	24834	-4294*
OTTAWA	OTT	45.40	284.45	44.60	33.34	353.42	32.80	359.08	32.68	359.10	-14.03	16658	55605	16161	-4040
P. TUNGUSKA	POD	61.60	90.00	28.40	39.24	165.39	33.50	162.46	33.53	162.39	9.65	12418	59223	12242	2083
PALAU	PLA	7.33	134.48	82.67	92.95	204.70	90.68	204.86			1.45	38174	-1184	38162	966*
PALMYRA ISLAND	PAI	05.88	197.92	84.12	84.57	267.20	83.45	267.45			9.68	32308	7926	31848	5432*

(ALL VALUES AS OF 1980.5)

OBSERVATORY	CODE	GEOGRAPHIC COORDINATES LAT	E LONG	CO-LAT	GEOMAGNETIC MODELS DIPOLE CO-LAT	E LONG	GUSTAFFSSON CO-LAT	E LONG	TSYGANENKO CO-LAT	E LONG	ANNUAL VALUES OBSERVED OR IGRF CALCULATED(*) D	H	Z	X	Y
PAMATAI	PPT	-17.57	210.43	107.57	105.10	284.08	106.08	284.32			11.21	31375	-18907	30776	6103
PANAGYURISHTE	PAG	42.52	24.18	47.48	49.39	104.52	53.38	97.44	53.40	97.34	1.86	23721	39784	23708	773
PARAMARIBO	PAB	5.81	304.78	84.19	73.28	15.78	73.42	19.04			-14.48	28493	15430	27588	-7124*
PARC ST. MAUR	PSM	48.82	2.48	41.18	39.12	86.15	45.18	80.72	45.24	80.65	-4.41	20231	42563	20171	-1556*
PATRICK	PAT	28.21	279.39	61.79	50.68	348.35	49.66	350.21	49.61	350.18	-2.52	24885	43258	24861	-1094*
PELLY BAY	PEB	68.53	270.48	21.47	11.37	322.55	10.82	333.76	10.79	333.38	-31.72	2592	59389	2205	-1363*
PENANG	PNN	4.47	100.15	85.53	96.70	170.52	95.17	171.04			-.14	40768	-6075	40768	-100*
PENDELI	PEG	38.05	23.86	51.95	53.66	102.80	58.82	96.45	58.82	96.38	1.77	26243	36673	26230	811*
PERPIGNAN	PER	42.70	2.88	47.30	45.06	83.99	52.94	79.33	53.00	79.28	-3.58	23476	38611	23430	-1466*
PETROPAVLOVSK	PET	52.90	158.43	37.10	45.24	219.76	44.18	225.37	43.95	225.50	-5.30	22037	45831	21943	-2038
PETSAMO	PTS	69.53	31.25	20.47	25.21	126.47	24.53	113.71	24.53	113.66	10.14	10963	52070	10792	1930*
PHILADELPHIA	PH*	39.97	284.82	50.03	38.77	354.14	38.13	358.96	37.99	358.99	-11.04	19244	52312	18888	-3685*
PILAR	PIL	-31.67	296.12	121.67	110.40	5.91	107.70	5.66	107.45	5.70	.29	21416	-11985	21416	109
PIONERSKAYA	PIO	-69.73	95.50	159.73	170.32	149.87	169.82	113.25	169.86	112.87	-91.84	13534	-58492	-435	-13527*
PITLEKAJ	PL*	67.08	186.62	22.92	27.63	234.91	27.06	240.58	27.08	240.59	12.21	13578	53737	13271	2872*
PLAISANCE	PLS	-20.43	57.67	110.43	117.10	124.02	120.84	125.06	120.85	125.06	-18.17	21343	-29865	20279	-6656*
PLATEAU	PTU	-79.25	40.50	169.25	167.52	53.79	161.57	51.11	161.58	51.13	-53.83	18106	-47944	10686	-14616*
POLA	POL	44.86	13.85	45.14	45.13	95.57	50.58	88.96	50.65	88.84	-.13	22340	40759	22340	-51*
PORT ALFRED	CZT	-46.43	51.87	136.43	141.50	110.56	143.25	105.45	143.22	105.44	-42.44	16295	-33528	12024	-10998
PORT MORESBY	PMG	-9.41	147.15	99.41	108.27	219.29	107.93	219.01			6.47	35971	-23643	35742	4056
PORT-AUX-FRANCAI	KGL	-49.35	70.20	139.35	147.43	129.82	148.41	121.31	148.44	121.31	-51.40	18466	-43814	11521	-14432*
POTSDAM	POT	52.38	13.06	37.62	37.79	98.20	41.70	90.44	41.73	90.35	-.51	18432	44842	18431	-164*
PRICE	PCU	39.60	249.17	50.40	42.26	312.00	42.39	311.36	42.31	311.39	14.38	22021	49882	21331	5469*
PRUHONICE	PRU	49.99	14.55	40.01	40.35	98.42	44.50	90.86	44.56	90.80	.06	19629	43764	19629	21*
QUETTA	QUE	30.19	66.95	59.81	68.41	140.96	65.75	138.71	65.76	138.72	1.28	32802	33512	32794	738
RANKIN INLET	RIT	62.80	267.67	27.20	17.19	324.72	16.34	331.11	16.26	331.00	-5.35	4914	60526	4893	-458*
REGENSBERG	REG	47.48	8.44	42.52	41.56	91.42	47.22	85.11	47.28	85.04	-1.97	20938	42012	20926	-720*
RESOLUTE BAY	RES	74.70	265.10	15.30	6.82	292.86	6.08	312.48	5.95	310.77	-58.18	865	58556	456	-735
RIO DE JANEIRO	RDJ	-22.91	316.83	112.91	102.75	25.60	105.42	23.05	105.38	22.99	-19.30	20856	-11593	19684	-6893*
ROBURENT	ROB	44.30	7.89	45.70	44.51	89.55	51.13	83.83	51.20	83.74	-1.97	22637	39977	22624	-778*
ROI BAUDOUIN	RBD	-70.43	24.30	160.43	158.32	64.66	154.18	59.41	154.17	59.49	-35.61	18760	-38692	15252	-10923*
ROSTOCK	RO*	54.10	12.15	35.90	35.99	98.27	39.70	90.30	39.72	90.22	-.95	17601	45568	17599	-292*
RUDE SKOV	RSV	55.84	12.46	34.16	34.41	99.57	37.73	91.22	37.77	91.14	-.07	17069	46304	17067	-252
SABHAWALA	SAB	30.36	77.80	59.64	69.42	150.94	66.00	149.52	66.04	149.54	.38	33863	34446	33862	227
SACHS HARBOUR	SAH	72.00	235.00	18.00	14.61	267.47	13.75	272.94	13.67	272.53	47.73	5130	58397	3451	3796*

(ALL VALUES AS OF 1980.5)

		GEOGRAPHIC COORDINATES			GEOMAGNETIC MODELS						ANNUAL VALUES				
					DIPOLE		GUSTAFFSSON		TSYGANENKO		OBSERVED OR IGRF CALCULATED(*)				
OBSERVATORY	CODE	LAT	E LONG	CO-LAT	CO-LAT	E LONG	CO-LAT	E LONG	CO-LAT	E LONG	D	H	Z	X	Y
SAN FERNANDO	SFS	36.46	353.80	53.54	49.36	72.62	60.69	70.71	60.82	70.69	-6.46	26593	33248	26424	-2992*
SAN JOSE LAJAS	SJL	23.02	277.35	66.98	55.96	346.37	55.11	347.28	55.02	347.20	-.00	26934	37994	26934	0*
SAN JUAN	SJG	18.11	293.85	71.89	60.61	4.64	60.14	8.22			-9.60	27299	31010	26916	-4554
SAN PABLO-TOLEDO	SPT	39.55	355.65	50.45	46.71	75.53	56.51	72.85	56.63	72.79	-6.00	25054	35987	24917	-2619*
SANAE	SNA	-70.33	357.51	160.33	153.95	45.27	149.94	43.32	149.93	43.45	-17.81	18999	-36266	18088	-5813
SANTA CRUZ	SZT	28.48	343.72	61.52	55.35	59.98	70.15	61.38	71.64	61.39	-10.24	29575	25436	29104	-5258*
SANTIAGO	SNT	-33.45	289.30	123.45	112.13	359.73	109.04	.81	109.00	.82	7.14	22161	-13782	21989	2754*
SAO JOSE COMPOS	SJB	-23.20	314.13	113.20	102.83	23.04	104.63	20.72	104.58	20.65	-17.60	21081	-10848	20094	-6374*
SAO MIGUEL	SMG	37.77	334.35	52.23	44.72	52.30	54.21	55.51	54.26	55.59	-14.40	25013	36250	24227	-6220*
SCORESBYSUND	SCO	70.48	338.03	19.52	14.61	82.62	18.02	75.39	17.25	71.96	-30.95	9871	52336	8460	-5070*
SCOTT BASE	SBA	-77.85	166.78	167.85	168.80	294.35	169.83	328.07	169.90	327.04	145.87	9174	-63237	-7594	5147*
SEDDIN	SED	52.28	13.01	37.72	37.89	98.09	41.82	90.36	41.84	90.27	-.53	18482	44792	18481	-171*
SEOUL	SYO	38.58	127.05	51.42	62.29	195.36	58.30	198.43	58.30	198.45	-7.64	29561	41729	29299	-3930*
SEYKHA	SEY	70.10	72.50	19.90	29.70	155.51	25.16	147.81	25.15	147.71	25.14	8620	57419	7803	3662*
SHESHAN	SSH	31.10	121.19	58.90	70.03	190.54	65.90	192.31	65.89	192.29	-4.40	33711	34283	33611	-2590
SHILLONG	SHL	25.57	91.88	64.43	75.27	163.51	71.79	163.22	71.81	163.22	-.75	37468	27424	37465	-490*
SIMFEROPOL	SIM	44.83	34.07	45.17	48.97	114.44	50.46	106.84	50.47	106.77	4.33	22423	42770	22359	1693*
SIMOSATO	SSO	33.58	135.94	56.42	66.70	203.74	63.83	206.67	63.84	206.71	-6.20	31489	33385	31305	-3401*
SINGAPORE	SG*	1.28	103.85	88.72	99.98	174.17	98.20	174.68			.32	39857	-12780	39856	223*
SITKA	SIT	57.06	224.68	32.94	29.77	277.09	30.18	277.77	30.17	277.59	27.53	15877	54802	14078	7341
SLUTZK	SLU	59.69	30.49	30.31	34.14	117.94	34.46	107.48	34.49	107.49	6.92	14999	49120	14890	1807*
SODANKYLA	SOD	67.37	26.63	22.63	26.40	120.76	26.44	108.54	26.44	108.50	6.56	11932	50683	11854	1365
SOUTH GEORGIA	SGE	-54.28	323.52	144.28	134.50	27.19	132.39	24.33	132.36	24.26	-8.72	18227	-24251	18016	-2764
SOUTH POLE	SPA	-90.00	000.00	180.00	168.67	.04	163.99	19.51	163.80	18.14	-27.58	16006	-54650	14187	-7411*
SPITZBERGEN	SPB	78.50	15.10	11.50	15.44	131.69	14.88	114.70	14.85	115.20	-1.05	7622	53608	7621	-140*
SREDNIKAN	SRE	62.44	152.31	27.56	36.63	211.74	34.20	218.30	34.26	218.36	-10.43	16423	53575	16152	-2973*
SSAGASTYR	GY*	73.38	126.60	16.62	27.64	190.39	22.96	193.56	22.96	193.60	-13.65	6386	59377	6206	-1507*
ST HELIER	STH	49.19	357.91	40.81	37.86	81.72	44.26	77.21	44.33	77.17	-6.45	20020	42730	19893	-2249*
ST JOHNS	STJ	47.60	307.32	42.40	31.78	22.94	34.52	30.86	34.50	31.07	-24.90	18375	50133	16666	-7738
ST PETERSBURG	LN*	59.93	30.33	30.07	33.88	117.97	34.19	107.45	34.21	107.47	6.94	14886	49191	14777	1799*
STARA DALA	STA	47.88	18.19	42.12	43.08	100.92	47.10	93.34	47.12	93.27	1.17	20722	42913	20718	423*
STETTIN-ZABELSDO	SZA	53.45	14.57	36.55	37.07	100.17	40.55	92.04	40.59	91.94	.04	17907	45420	17907	13*
STONYHURST	STO	53.85	357.53	36.15	33.37	83.86	38.68	78.60	38.72	78.56	-7.64	17705	45140	17548	-2354*
SUKKERTOPPEN	SKT	65.42	307.10	24.58	14.18	30.73	17.01	38.60	16.92	38.61	-43.32	9445	55146	6872	-6480*
SURLARI	SUA	44.68	26.25	45.32	47.68	107.21	50.79	99.69	50.82	99.60	2.81	22725	41607	22698	1117

(ALL VALUES AS OF 1980.5)

OBSERVATORY	CODE	GEOGRAPHIC COORDINATES LAT	E LONG	CO-LAT	GEOMAGNETIC MODELS DIPOLE CO-LAT	E LONG	GUSTAFFSSON CO-LAT	E LONG	TSYGANENKO CO-LAT	E LONG	ANNUAL VALUES OBSERVED OR IGRF CALCULATED(*) D	H	Z	X	Y
SVERDLOVSK	SVD	56.73	61.07	33.27	41.54	141.69	37.99	134.02	37.97	134.01	13.10	16136	52743	15716	3657*
SWIDER	SWI	52.12	21.25	37.88	39.62	105.68	42.27	97.11	42.34	97.06	2.36	18542	45314	18526	764*
SYDNEY	SN*	-33.88	151.18	123.88	131.95	227.81	133.89	227.82	133.92	227.81	12.33	24624	-52530	24056	5258*
SYOWA STATION	SYO	-69.01	39.59	159.01	159.96	79.39	156.12	70.88	156.11	70.83	-46.41	18937	-40597	13056	-13716
TACUBAYA	TAC	19.41	260.81	70.59	60.80	328.63	61.39	328.13			7.65	29495	31769	29232	3926*
TAHITI	TAH	-17.56	210.39	107.56	105.10	284.03	106.07	284.28			12.25	32233	-19016	31499	6839*
TAIPEI	TAP	25.04	121.51	64.96	76.07	191.11	72.34	192.33	72.32	192.32	-2.99	36473	26012	36423	-1902*
TALARA	TAL	-04.63	278.70	94.63	83.52	349.07	83.06	349.11			4.44	29225	7385	29137	2262*
TALKEETNA	TLK	62.30	209.90	27.70	27.82	258.59	28.22	261.21	28.20	261.19	26.08	14619	53892	13131	6427*
TAMANRASSET	TAM	22.79	5.53	67.21	64.93	80.86	79.25	78.48	86.02	78.39	3.28	32897	17263	32843	1884
TAMBEY	TMB	71.50	71.80	18.50	28.28	155.76	23.82	147.73	23.84	147.63	26.71	8049	57340	7190	3618*
TANANARIVE	TAN	-18.92	47.55	108.92	113.88	113.95	119.40	115.93			-13.28	19579	-27232	19055	-4497*
TANGERANG	TNG	-6.17	106.63	96.17	107.46	176.91	106.08	177.48			.37	37307	-23904	37306	243
TASHKENT	TKT	41.33	69.62	48.67	57.69	145.18	53.90	141.40	53.89	141.40	4.57	25804	45303	25722	2060
TASUISAK	AJ*	65.62	322.45	24.38	16.03	54.24	19.88	56.09	19.88	56.21	-35.00	11044	52691	9047	-6335*
TATUOCA	TTB	-1.21	311.49	91.21	80.71	22.19	81.30	24.42			-17.85	27758	5656	26421	-8512
TBILISI	TFS	42.09	44.71	47.91	53.46	123.23	53.17	116.61	53.16	116.58	5.00	24161	42108	24069	2108
TEHRAN	TEH	35.74	51.38	54.26	60.75	127.73	59.79	122.90	59.77	122.90	3.53	28179	38189	28126	1735*
TEOLOYUCAN	TEO	19.75	260.82	70.25	60.46	328.60	61.03	328.11			7.65	29397	32185	29135	3913*
TEVRIZ	TEV	57.50	72.40	32.50	42.02	150.97	37.33	144.97	37.31	144.93	13.33	15432	55284	15016	3558*
THOMPSON	TMP	55.72	262.12	34.28	24.73	321.60	23.72	324.30	23.63	324.15	8.98	9694	60430	9575	1513*
THULE	THL	77.48	290.83	12.52	1.23	12.65	4.00	38.76	3.75	38.80	-74.46	3921	56688	1050	-3778
THULE AFB	THU	76.55	291.17	13.45	2.16	19.81	4.71	34.24	4.51	33.83	-73.03	4165	56403	1216	-3984*
TIHANY	THY	46.90	17.89	43.10	43.96	100.24	48.22	92.85	48.27	92.77	1.12	21482	42183	21478	423
TIKHAYA BAY	TKH	80.33	52.80	9.67	18.46	153.64	15.34	141.11	15.42	141.34	26.49	5866	55749	5250	2616*
TIXIE BAY	TIK	71.58	129.00	18.42	29.34	192.37	24.71	196.28	24.74	196.33	-16.50	7896	59528	7570	-2243
TOKYO	TOK	35.69	139.75	54.31	64.28	206.93	61.82	210.34	61.73	210.30	-6.58	30256	34646	30057	-3467*
TOLEDO	TOL	39.88	355.95	50.12	46.45	75.95	56.09	73.17	56.21	73.10	-5.76	25121	36042	24994	-2523
TOMSK	TMK	56.47	84.93	33.53	44.06	160.63	38.54	157.11	38.52	157.09	9.10	15737	57253	15539	2489*
TOOLANGI	TOO	-37.53	145.47	127.53	136.34	222.30	138.58	221.94	138.64	221.97	11.33	21739	-56548	21315	4271*
TORONTO	AG*	43.67	280.50	46.33	35.20	348.56	34.28	353.02	34.22	353.00	-8.98	16964	55282	16756	-2648*
TOULOUSE	TLS	43.61	1.46	46.39	43.90	82.90	51.68	78.39	51.71	78.37	-4.19	22974	39221	22913	-1679*
TOUNGOO	TGO	18.93	96.45	71.07	82.11	167.46	79.25	167.65			-.69	40179	17195	40176	-484*
TOYOHARA	TOH	46.95	142.75	43.05	52.83	207.94	50.32	212.97	50.29	212.99	-9.92	25041	44734	24667	-4314*
TRELEW	TRW	-43.25	294.69	133.25	121.95	4.36	118.30	5.23	118.15	5.27	7.18	21048	-18344	20883	2631*

(ALL VALUES AS OF 1980.5)

OBSERVATORY	CODE	GEOGRAPHIC COORDINATES LAT	E LONG	CO-LAT	GEOMAGNETIC MODELS DIPOLE CO-LAT	E LONG	GUSTAFFSSON CO-LAT	E LONG	TSYGANENKO CO-LAT	E LONG	ANNUAL VALUES OBSERVED OR IGRF CALCULATED(*) D	H	Z	X	Y
TRIVANDRUM	TRD	8.48	76.95	81.52	91.08	147.75	90.25	148.37			-2.77	39896	-232	39849	-1928
TROMSO	TRO	69.66	18.95	20.34	23.05	117.40	23.66	104.53	23.64	104.54	.53	11373	51561	11373	106
TSINGTAO	TSI	36.07	120.32	53.93	65.08	189.55	60.64	191.71	60.64	191.71	-5.73	31157	40720	31001	-3111*
TSUMEB	TSU	-19.22	17.70	109.22	108.45	84.24	119.96	85.15			-13.83	15873	-27011	15413	-3794
TUCSON	TUC	32.25	249.17	57.75	49.50	313.83	50.11	313.24	50.06	313.17	12.09	25618	42957	25049	5369
TULSA	TUL	35.91	264.21	54.09	44.05	330.04	43.47	330.39	43.42	330.25	6.70	22395	49618	22242	2613*
TUNTUNGAN	TUN	3.51	98.56	86.49	97.60	168.89	96.20	169.46			-.46	40345	-9619	40344	-324*
UCCLE	UCC	50.80	4.36	39.20	37.60	88.99	42.95	82.86	43.01	82.79	-3.90	19227	43683	19182	-1308*
UGUT	UGT	61.00	74.00	29.00	38.72	153.18	33.86	147.00	33.88	146.93	15.88	13288	56580	12781	3636*
UJJAIN	UJJ	23.18	75.78	66.82	76.35	148.23	73.80	147.52	74.02	147.48	-.51	37031	24388	37030	-330*
UKHTA	UKH	60.50	74.00	29.50	39.22	153.04	34.35	146.92	34.37	146.85	15.46	13580	56461	13089	3620*
ULAN BATOR	UBA	47.85	107.05	42.15	53.39	177.90	46.22	177.38	47.88	178.65	-3.57	22670	54115	22626	-1412*
URUMQI	WMQ	43.82	87.70	46.18	56.82	161.23	51.67	159.41	51.67	159.44	2.61	25389	50091	25362	1157
UTRECHT	WI*	52.08	5.12	37.92	36.52	90.40	41.52	83.91	41.55	83.85	-3.74	18590	44349	18550	-1213*
VAL JOYEUX	VLJ	48.82	2.02	41.18	39.01	85.69	45.13	80.35	45.20	80.29	-4.61	20230	42554	20165	-1626*
VALENTIA	VAL	51.93	349.75	38.07	33.68	74.70	39.94	71.77	39.91	71.74	-10.84	18980	44450	18641	-3570
VASSOURAS	VSS	-22.40	316.35	112.40	102.21	25.20	104.81	22.79	104.75	22.72	-19.23	21119	-11172	19940	-6956
VICTORIA	VIC	48.52	236.58	41.48	35.64	294.73	35.95	294.23	35.93	294.14	21.52	19016	52877	17690	6976
VIEQUES	VQS	18.15	294.55	71.85	60.59	5.41	60.24	9.13			-10.37	27392	31021	26945	-4931*
VLADIVOSTOK	VLA	43.68	132.17	46.32	56.90	199.35	53.25	203.47	53.27	203.47	-9.69	26961	44974	26576	-4540
VOSTOK	VOS	-78.45	106.87	168.45	179.41	111.68	173.22	52.90	173.33	53.65	118.73	13030	-59361	-6264	-11424
VYKHODNOY	VYK	73.24	56.73	16.76	25.23	147.33	21.91	136.34	21.91	136.26	24.93	8449	55541	7662	3561*
WAKE ISLAND	WKE	19.20	166.70	70.80	77.19	234.41	76.54	235.15			6.97	31011	14768	30782	3763*
WARSAW	SW*	52.22	21.03	37.78	39.48	105.52	42.17	96.95	42.23	96.90	2.29	18497	45336	18482	739*
WASHINGTON 1	CH*	38.88	283.00	51.12	39.90	351.99	39.11	356.22	38.98	356.22	-8.97	19755	51878	19513	-3080*
WASHINGTON 2	FR*	38.90	282.95	51.10	39.88	351.93	39.08	356.15	38.96	356.15	-8.93	19743	51900	19504	-3065*
WASHINGTON CITY	FR*	38.90	282.97	51.10	39.88	351.94	39.08	356.16	38.96	356.15	-8.93	19743	51900	19504	-3065*
WASHINGTON NEW	FR*	38.92	282.95	51.08	39.87	351.93	39.07	356.15	38.96	356.15	-8.93	19743	51900	19504	-3065*
WATHEROO	WAT	-30.32	115.88	120.32	131.55	187.24	132.71	185.97	132.71	186.02	-2.49	24207	-52753	24184	-1052*
WESTON	WES	42.38	288.68	47.62	36.31	358.86	36.05	4.92	35.96	4.95	-15.49	18240	53001	17577	-4871*
WHITESHELL	WHS	49.75	264.75	40.25	30.30	327.44	29.28	329.52	29.13	329.36	4.82	14089	58606	14039	1184*
WIEN-KOBENZL	WIK	48.27	16.32	41.73	42.35	99.32	46.59	91.87	46.63	91.79	.67	20808	42906	20807	246
WILHELMSHAVEN	WLH	53.53	8.15	36.47	35.74	94.13	40.08	86.86	40.11	86.79	-2.60	17886	45128	17868	-811*
WILKES	WIL	-66.25	110.58	156.25	167.56	181.85	170.77	154.72	170.84	155.07	-95.76	9202	-63259	-924	9156*
WINGST	WNG	53.74	9.07	36.26	35.73	95.14	39.92	87.67	39.92	87.61	-1.98	18092	45209	18081	-627

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		GEOGRAPHIC COORDINATES			GEOMAGNETIC MODELS						ANNUAL VALUES				
					DIPOLE		GUSTAFFSSON		TSYGANENKO		OBSERVED OR IGRF CALCULATED(*)				
OBSERVATORY	CODE	LAT	E LONG	CO-LAT	CO-LAT	E LONG	CO-LAT	E LONG	CO-LAT	E LONG	D	H	Z	X	Y
WINNIPEG	WNP	49.63	262.87	40.37	30.62	325.11	29.63	326.79	29.56	326.66	7.92	13864	58656	13732	1910*
WITTEVEEN	WIT	52.81	6.67	37.19	36.13	92.30	40.79	85.42	40.81	85.35	-3.05	18528	44662	18502	-986
WUHAN	WHN	30.53	114.56	59.47	70.77	184.52	66.40	185.67	66.38	185.67	-3.13	34738	34370	34686	-1897*
WUSTROW	WUS	54.35	12.40	35.65	35.80	98.65	39.43	90.60	39.45	90.51	-.85	17481	45690	17479	-259*
YAKUTSK	YAK	62.02	129.72	27.98	38.80	194.93	34.29	199.83	34.33	199.88	-19.32	15107	58127	14255	-4999
YANOV	YNV	49.90	23.73	40.10	42.20	106.94	44.86	98.62	44.88	98.55	2.88	19662	44472	19637	988*
YAUCA	YAU	-15.53	285.33	105.53	94.24	355.88	92.06	356.33			3.27	26443	-2149	26400	1508*
YELLOWKNIFE	YKC	62.40	245.50	27.60	20.89	295.29	20.27	297.26	20.14	296.98	27.84	8721	60179	7711	4073
YUZHNO SAKHALINS	YSS	46.95	142.72	43.05	52.83	207.91	50.31	212.94	50.31	212.97	-10.02	25255	44678	24870	-4394
ZARIA	ZAR	11.15	07.65	78.85	76.74	80.47	92.15	79.50			-4.03	33634	527	33551	-2364*
ZIKAWEI	ZKW	31.21	121.44	58.79	69.91	190.77	65.79	192.56	65.77	192.55	-4.61	33745	34495	33636	-2712*
ZINSEN	ZIN	37.48	126.63	52.52	63.42	195.06	59.43	197.96	59.42	197.98	-7.23	30179	40660	29939	-3798*

TABLE 4

GEOMAGNETIC OBSERVATORY TABLE

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(SEQUENCED BY DIPOLE CO-LAT)

		GEOGRAPHIC COORDINATES			GEOMAGNETIC MODELS				ANNUAL VALUES				
					DIPOLE		GUSTAFFSSON		TSYGANENKO		OBSERVED OR IGRF CALCULATED(*)				
OBSERVATORY	CODE	LAT	E LONG	CO-LAT	CO-LAT	E LONG	CO-LAT	E LONG	CO-LAT	E LONG	D	H	Z	X	Y
THULE	THL	77.48	290.83	12.52	1.23	12.65	4.00	38.76	3.75	38.80	-74.46	3921	56688	1050	-3778
THULE AFB	THU	76.55	291.17	13.45	2.16	19.81	4.71	34.24	4.51	33.83	-73.03	4165	56403	1216	-3984*
ALERT	ALE	82.50	297.50	7.50	4.03	165.16	3.30	115.03	3.21	117.77	-76.93	3669	55887	829	-3574
RESOLUTE BAY	RES	74.70	265.10	15.30	6.82	292.86	6.08	312.48	5.95	310.77	-58.18	865	58556	456	-735
NORTH POLE 7	NPG	85.00	268.12	5.00	6.92	195.37	3.96	185.14	4.09	185.28	123.22	1928	56370	-1056	1613*
NORD	NRD	81.60	343.24	8.40	9.25	132.88	9.33	109.45	9.25	110.32	-30.72	5978	54388	5139	-3054*
GODHAVN	GDH	69.25	306.47	20.75	10.43	34.62	13.37	41.91	13.25	41.84	-48.14	8537	56362	5696	-6358
MOULD BAY	MBC	76.20	240.60	13.80	10.60	258.34	9.25	267.03	9.19	266.53	60.57	2602	58258	1278	2266
PELLY BAY	PEB	68.53	270.48	21.47	11.37	322.55	10.82	333.76	10.79	333.38	-31.72	2592	59389	2205	-1363*
KINGUAFJORD	KJ*	66.60	292.68	23.40	12.12	5.85	13.54	17.95	13.41	17.76	-49.38	6775	57438	4411	-5143*
GJOAHAVN	GJO	68.63	264.08	21.37	12.13	311.67	11.39	320.90	11.29	320.36	-3.34	2229	59636	2225	-130*
HOLSTEINSBORG 1	HS*	66.87	306.73	23.13	12.75	31.67	15.61	39.48	15.47	39.42	-45.50	8834	55273	6192	-6301*
JOHNSON POINT	JOP	72.47	241.70	17.53	12.93	272.78	11.97	279.07	11.90	278.72	50.86	3819	58635	2411	2962*
CAMBRIDGE BAY	CBB	69.20	255.00	20.80	13.09	297.09	12.21	303.93	12.21	303.59	27.41	3095	60054	2747	1425
ARCTIC ICE FLO	AIF	83.53	193.05	6.47	13.65	208.33	10.61	212.50	10.64	212.40	42.89	2301	57134	1686	1566*
SUKKERTOPPEN	SKT	65.42	307.10	24.58	14.18	30.73	17.01	38.60	16.92	38.61	-43.32	9445	55146	6872	-6480*
MURCHISON BAY	MUB	80.50	18.25	9.50	14.57	138.99	13.38	121.50	13.37	122.08	.89	6754	54234	6753	105*
SACHS HARBOUR	SAH	72.00	235.00	18.00	14.61	267.47	13.75	272.94	13.67	272.53	47.73	5130	58397	3451	3796*
SCORESBYSUND	SCO	70.48	338.03	19.52	14.61	82.62	18.02	75.39	17.25	71.96	-30.95	9871	52336	8460	-5070*
NEW AALESUND	NAL	78.92	11.93	11.08	14.70	131.33	14.27	113.87	14.22	114.39	-3.78	7458	53652	7442	-492*
KAP TOBIN	KTG	70.42	238.03	19.58	15.27	274.21	14.48	278.87	14.41	278.64	45.70	5370	58741	3750	3843*
SPITZBERGEN	SPB	78.50	15.10	11.50	15.44	131.69	14.88	114.70	14.85	115.20	-1.05	7622	53608	7621	-140*
GODHAAB 1	GH*	64.18	308.28	25.82	15.50	31.48	18.41	39.16	18.36	39.27	-41.18	10110	54845	7609	-6657*
CAP THORDSEN	SL*	78.47	15.70	11.53	15.56	131.88	14.96	114.97	14.93	115.46	-.55	7631	53616	7631	-73*
CAPE PARRY	CPY	70.17	235.28	19.83	16.01	271.95	15.29	276.44	15.21	276.11	44.58	5978	58582	4258	4196*
TASUISAK	AJ*	65.62	322.45	24.38	16.03	54.24	19.88	56.09	19.88	56.21	-35.00	11044	52691	9047	-6335*
BAKER LAKE	BLC	64.33	263.97	25.67	16.18	317.71	15.36	323.91	15.21	323.69	2.48	4637	60650	4633	201
CHESTERFIELD INL	CFI	63.33	269.28	26.67	16.52	327.34	15.12	330.07	15.64	333.68	-10.62	4659	60390	4579	-859*
NORUSUND	NOR	77.00	15.55	13.00	16.56	128.06	16.30	111.89	16.25	112.23	-0.36	8233	53200	8233	-52*
JAN MAYEN 1	JM*	71.00	351.53	19.00	16.83	97.02	19.50	86.20	19.52	86.20	-17.52	10339	51399	9859	-3112*
NORTH POLE 6	NPF	84.00	94.00	6.00	17.18	174.54	13.14	168.50	13.20	168.66	45.00	2718	57166	1922	1922*
RANKIN INLET	RIT	62.80	267.67	27.20	17.19	324.72	16.34	331.11	16.26	331.00	-5.35	4914	60526	4893	-458*
NORTH POLE 12	NPL	79.00	187.00	11.00	17.38	218.57	14.92	225.01	14.93	224.86	19.90	5271	57118	4956	1794*
NORTH POLE 13	NPM	81.00	165.00	9.00	18.01	204.62	14.68	209.29	14.69	209.16	7.74	3936	57502	3900	530*
TIKHAYA BAY	TKH	80.33	52.80	9.67	18.46	153.64	15.34	141.11	15.42	141.34	26.49	5866	55749	5250	2616*

(ALL VALUES AS OF 1980.5)

OBSERVATORY	CODE	GEOGRAPHIC COORDINATES LAT	E LONG	CO-LAT	GEOMAGNETIC MODELS DIPOLE CO-LAT	E LONG	GUSTAFFSSON CO-LAT	E LONG	TSYGANENKO CO-LAT	E LONG	ANNUAL VALUES OBSERVED OR IGRF CALCULATED(*) D	H	Z	X	Y
HEISS ISLAND	HIS	80.62	58.05	9.38	18.66	156.45	15.31	144.79	15.32	145.06	29.68	5481	56068	4762	2714*
NORTH POLE 8	NPH	77.00	189.00	13.00	18.69	223.64	16.65	230.34	16.62	230.23	18.94	6593	56892	6236	2140*
IVIGTUT 1	IV*	61.20	311.73	28.80	18.77	34.36	21.94	41.33	21.84	41.44	-36.25	11861	53772	9565	-7014*
IVIGTUT	IVI	61.20	311.85	28.80	18.78	34.53	21.97	41.46	21.97	41.58	-36.20	11876	53747	9583	-7014*
ESKIMO POINT	EKP	61.10	265.93	28.90	19.04	323.51	18.11	328.75	18.02	328.62	.74	5911	60722	5911	76*
BEAR ISLAND	BJN	74.50	19.20	15.50	19.05	125.03	18.96	110.18	18.90	110.05	3.25	9280	52920	9265	526
NARSSARSSUAQ	NAQ	61.10	314.80	28.90	19.23	38.70	22.71	44.66	22.71	44.85	-34.19	12078	53850	9991	-6787*
INUVIK	INK	68.25	226.70	21.75	19.29	267.09	18.87	270.56	18.86	270.36	38.75	8500	57837	6629	5320*
JULIANEHAAB	JUL	60.72	313.97	29.28	19.50	37.21	22.91	43.49	22.90	43.70	-34.81	12351	53218	10141	-7051*
BARTER ISLAND	BTI	70.13	216.02	19.87	19.78	254.50	19.24	259.00	19.21	259.15	34.92	8940	56963	7330	5118*
LEIRVOGUR	LRV	64.18	338.30	25.82	20.11	72.19	24.39	69.10	24.37	69.10	-20.98	12401	49993	11579	-4440
NANORTALIK 1	NN*	60.13	314.73	29.87	20.16	37.89	23.66	43.98	23.65	44.21	-33.89	12712	52930	10552	-7088*
NORMAN WELLS	NOW	64.90	234.50	25.10	20.68	279.83	20.34	282.02	20.29	281.81	36.79	8998	58583	7206	5389*
FORT RAE	FRA	62.80	243.90	27.20	20.81	292.95	20.23	294.90	20.18	294.64	32.54	8303	59633	7000	4466*
FORT RAE 1	FE*	62.65	244.27	27.35	20.88	293.54	20.29	295.48	20.24	295.21	32.18	8318	59667	7040	4430*
YELLOWKNIFE	YKC	62.40	245.50	27.60	20.89	295.29	20.27	297.26	20.14	296.98	27.84	8721	60179	7711	4073
BARROW	BRW	71.32	203.38	18.68	21.09	242.66	20.33	248.14	20.39	248.06	25.88	9798	56409	8815	4277
FORT CHURCHILL	FCC	58.77	265.90	31.23	21.32	325.02	20.33	329.46	20.19	329.25	2.36	7555	60697	7549	312
NORTH POLE 10	NPJ	77.00	166.38	13.00	21.38	211.09	18.49	217.32	18.49	217.44	1.28	6700	57272	6698	150*
ARCTIC VILLAGE	AVI	68.13	214.43	21.87	21.77	256.17	21.49	260.13	21.51	259.96	32.14	10425	56431	8827	5546*
BACK	BKC	57.68	265.77	32.32	22.39	325.46	21.38	329.56	21.28	329.34	2.92	8042	60702	8032	410*
BODO	BOD	69.30	14.42	20.70	22.56	113.40	23.66	100.91	23.67	100.87	-.46	11217	50930	11217	-90*
FORT SIMPSON	FSP	61.75	238.77	28.25	22.72	288.15	22.33	289.42	22.32	289.29	32.72	10012	58896	8423	5412*
CAPE ZHELANIA	CZA	77.00	68.60	13.00	22.77	157.58	18.76	148.26	18.77	148.08	32.04	6113	56855	5182	3243*
TROMSO	TRO	69.66	18.95	20.34	23.05	117.40	23.66	104.53	23.64	104.54	.53	11373	51561	11373	106
FORT YUKON	FYU	66.57	214.73	23.43	23.08	258.48	23.00	261.89	22.99	261.73	31.20	11360	56106	9717	5885*
GILLAM	GIM	56.85	265.58	33.15	23.22	325.64	22.21	329.45	22.10	329.25	3.54	8600	60631	8584	531*
BOSSEKOP	BOP	69.97	23.25	20.03	23.52	121.05	23.63	108.01	23.63	108.00	5.33	10908	51579	10861	1013*
GREAT WHALE R.	GWC	55.27	282.22	34.73	23.56	349.44	23.16	356.71	23.00	356.80	-19.44	10665	59164	10057	-3550
CAPE CHELYUSKIN	CCS	77.72	104.28	12.28	23.59	177.17	18.71	175.06	18.71	174.99	15.33	3460	59150	3337	915
LYNN LAKE	LYN	56.85	258.93	33.15	24.04	316.79	23.05	319.08	23.00	318.97	13.47	9336	60469	9079	2175*
ABISKO	ABK	68.36	18.82	21.64	24.17	115.70	24.96	103.32	24.96	103.31	2.74	11798	51070	11784	566
THOMPSON	TMP	55.72	262.12	34.28	24.73	321.60	23.72	324.30	23.63	324.15	8.98	9694	60430	9575	1513*
KIRUNA	KIR	67.83	20.42	22.17	24.91	116.37	25.60	104.08	25.59	104.10	-5.69	11179	50928	11124	-1108
FORT SMITH	FSM	58.00	246.00	32.00	24.93	299.87	24.39	300.80	24.35	300.57	26.02	10902	59365	9797	4783*

(ALL VALUES AS OF 1980.5)

OBSERVATORY	CODE	GEOGRAPHIC COORDINATES LAT	E LONG	CO-LAT	GEOMAGNETIC MODELS DIPOLE CO-LAT	E LONG	GUSTAFFSSON CO-LAT	E LONG	TSYGANENKO CO-LAT	E LONG	ANNUAL VALUES OBSERVED OR IGRF CALCULATED(*) D	H	Z	X	Y
COLLEGE	CMO	64.86	212.16	25.14	25.07	258.14	25.20	261.22	25.18	261.15	28.12	12997	55380	11462	6127
EIELSON AFB	ENB	64.67	212.92	25.33	25.10	259.02	25.23	262.02	25.23	261.92	28.99	12783	55300	11181	6195*
MATOCHKIN SHAR	MSR	73.26	56.40	16.74	25.16	147.14	21.88	136.09	21.88	136.02	24.82	8461	55505	7679	3552*
PETSAMO	PTS	69.53	31.25	20.47	25.21	126.47	24.53	113.71	24.53	113.66	10.14	10963	52070	10792	1930*
VYKHODNOY	VYK	73.24	56.73	16.76	25.23	147.33	21.91	136.34	21.91	136.26	24.93	8449	55541	7662	3561*
IVALO	IVA	68.60	27.48	21.40	25.43	122.68	25.25	110.12	25.25	110.06	7.71	11385	51503	11282	1527*
BIG DELTA	BDE	64.00	214.27	26.00	25.45	260.95	25.62	263.72	25.62	263.57	29.28	13011	55291	11349	6363*
NORTHWAY	NRW	63.02	218.20	26.98	25.56	265.62	25.77	267.80	25.84	267.59	30.36	13090	55601	11295	6616*
MALIYE KARMAKULY	MKL	72.30	52.50	17.70	25.62	143.81	22.67	132.32	22.67	132.27	22.51	9090	54931	8397	3480*
MELVILLE AFB	MEV	53.28	299.47	36.72	25.64	13.71	27.10	22.51	27.09	22.53	-29.53	13928	54897	12119	-6865*
KOTZEBUE	KOT	66.88	197.37	23.12	26.00	243.51	25.78	248.31	25.79	248.31	20.08	13037	54268	12245	4476*
ISLAND LAKE	ISL	53.88	265.32	36.12	26.17	326.66	25.14	329.66	25.02	329.50	4.70	10635	60138	10599	871*
HEALY	HEA	63.86	211.03	26.14	26.19	258.16	26.44	261.08	26.42	261.01	27.49	13536	54714	12008	6248*
BELIY ISLAND	BEY	73.30	70.00	16.70	26.40	155.67	22.13	147.04	22.15	146.94	28.57	7436	57107	6531	3556*
SODANKYLA	SOD	67.37	26.63	22.63	26.40	120.76	26.44	108.54	26.44	108.50	6.56	11932	50683	11854	1365
NORWAY HOUSE	NHO	53.98	262.17	36.02	26.43	322.51	25.39	324.82	25.33	324.70	8.84	10895	60073	10766	1674*
MURMANSK	MMK	68.25	33.08	21.75	26.65	126.54	25.88	114.21	25.88	114.13	12.28	11819	51547	11549	2514
CAPE SCHMIDT	CPS	68.92	180.52	21.08	26.90	228.72	25.78	235.01	25.82	235.06	8.00	12539	54528	12417	1745*
DIXON ISLAND	DIK	73.54	80.56	16.46	26.91	162.31	22.13	155.83	22.11	155.74	27.27	6404	58315	5692	2934
LOVOZERO	LOZ	67.97	35.02	22.03	27.21	127.73	26.24	115.54	26.24	115.47	11.72	11506	52026	11266	2337*
KANDALAKSHA	KND	67.13	32.43	22.87	27.57	125.02	26.97	112.93	26.96	112.88	10.07	11888	51543	11705	2079*
PITLEKAJ	PL*	67.08	186.62	22.92	27.63	234.91	27.06	240.58	27.08	240.59	12.21	13578	53737	13271	2872*
SSAGASTYR	GY*	73.38	126.60	16.62	27.64	190.39	22.96	193.56	22.96	193.60	-13.65	6386	59377	6206	-1507*
LERWICK	LER	60.13	358.82	29.87	27.76	89.62	31.80	82.55	31.78	82.53	-7.83	14952	47857	14812	-2039
TALKEETNA	TLK	62.30	209.90	27.70	27.82	258.59	28.22	261.21	28.20	261.19	26.08	14619	53892	13131	6427*
CAPE WELLEN	CWE	66.16	190.17	23.84	27.89	238.48	27.61	243.70	27.58	243.71	14.78	14195	53530	13725	3622
DOMBAS	DOB	62.07	9.12	27.93	27.99	101.04	30.74	91.55	30.72	91.56	-3.35	14230	48348	14206	-832
MEANOOK	MEA	54.62	246.67	35.38	28.05	302.95	27.61	303.33	27.54	303.16	22.14	13488	58501	12493	5084
KHARASAVEY	KHS	71.13	66.83	18.87	28.21	152.31	24.07	143.39	24.10	143.28	25.92	8627	56674	7759	3771*
TAMBEY	TMB	71.50	71.80	18.50	28.28	155.76	23.82	147.73	23.84	147.63	26.71	8049	57340	7190	3618*
ANCHORAGE	AMU	61.24	210.13	28.76	28.75	259.73	29.25	262.11	29.26	262.06	25.64	15248	53429	13747	6598*
AMDERMA	AMD	69.47	61.42	20.53	29.27	147.68	25.54	138.05	25.55	137.94	23.34	9766	55773	8967	3869*
TIXIE BAY	TIK	71.58	129.00	18.42	29.34	192.37	24.71	196.28	24.74	196.33	-16.50	7896	59528	7570	-2243
SEYKHA	SEY	70.10	72.50	19.90	29.70	155.51	25.16	147.81	25.15	147.71	25.14	8620	57419	7803	3662*
SITKA	SIT	57.06	224.68	32.94	29.77	277.09	30.18	277.77	30.17	277.59	27.53	15877	54802	14078	7341

(ALL VALUES AS OF 1980.5)

OBSERVATORY	CODE	GEOGRAPHIC COORDINATES LAT	E LONG	CO-LAT	GEOMAGNETIC MODELS DIPOLE CO-LAT	E LONG	GUSTAFFSSON CO-LAT	E LONG	TSYGANENKO CO-LAT	E LONG	ANNUAL VALUES OBSERVED D	H	IGRF Z	CALCULATED(*) X	Y
OSLO	OSL	59.91	10.72	30.09	30.28	100.74	33.15	91.62	33.17	91.63	-2.01	14967	47794	14958	-525*
WHITESHELL	WHS	49.75	264.75	40.25	30.30	327.44	29.28	329.52	29.13	329.36	4.82	14089	58606	14039	1184*
WINNIPEG	WNP	49.63	262.87	40.37	30.62	325.11	29.63	326.79	29.56	326.66	7.92	13864	58656	13732	1910*
GLENLEA	GLL	49.60	262.90	40.40	30.64	325.16	29.66	326.84	29.55	326.70	7.89	13860	58658	13729	1903*
ARKHANGELSK	ARK	64.60	40.50	25.40	31.17	129.25	29.82	118.02	29.79	118.02	12.85	12777	51774	12457	2842*
CAPE KAMENNIY	CKA	68.50	73.60	21.50	31.34	155.53	26.67	148.28	26.67	148.16	23.28	9285	57525	8529	3670*
NORILSK	NOK	69.40	88.10	20.60	31.40	165.67	26.05	161.43	26.06	161.34	18.80	7619	59374	7213	2455*
MAKERSTOUN	MQ*	55.58	357.48	34.42	31.72	84.90	36.66	79.26	36.72	79.24	-8.11	16885	45923	16716	-2382*
ENKOPING	ENK	59.60	17.02	30.40	31.77	106.21	33.92	96.47	33.95	96.45	1.11	15090	47988	15087	292*
LORING AFB	LOB	46.92	291.88	43.08	31.78	2.97	32.05	10.27	31.96	10.34	-20.79	16154	54580	15102	-5734*
ST JOHNS	STJ	47.60	307.32	42.40	31.78	22.94	34.52	30.86	34.50	31.07	-24.90	18375	50133	16666	-7738
ESKDALEMUIR	ESK	55.32	356.80	34.68	31.85	84.04	36.88	78.62	36.93	78.60	-8.35	17294	45788	17110	-2513
LOVO	LOV	59.35	17.83	30.65	32.16	106.75	34.25	97.00	34.26	96.98	1.51	15499	48027	15494	410
NURMIJARVI	NUR	60.51	24.66	29.49	32.34	113.51	33.38	103.05	33.37	103.04	4.21	15202	49039	15161	1116
DUBLIN	DL*	53.35	353.73	36.65	33.10	79.67	38.77	75.44	38.82	75.39	-9.43	17916	44989	17674	-2935*
NYDA	NDA	66.60	73.00	23.40	33.15	154.34	28.46	147.22	28.46	147.11	21.33	10284	57300	9580	3741*
OTTAWA	OTT	45.40	284.45	44.60	33.34	353.42	32.80	359.08	32.68	359.10	-14.03	16658	55605	16161	-4040
STONYHURST	STO	53.85	357.53	36.15	33.37	83.86	38.68	78.60	38.72	78.56	-7.64	17705	45140	17548	-2354*
VALENTIA	VAL	51.93	349.75	38.07	33.68	74.70	39.94	71.77	39.91	71.74	-10.84	18980	44450	18641	-3570
EAST PORT	EP*	44.90	293.02	45.10	33.81	4.35	34.18	11.47	34.09	11.62	-20.01	17400	53271	16350	-5954*
ST PETERSBURG	LN*	59.93	30.33	30.07	33.88	117.97	34.19	107.45	34.21	107.47	6.94	14886	49191	14777	1799*
LENINGRAD	LNN	59.95	30.71	30.05	33.93	118.29	34.18	107.77	34.21	107.78	7.12	15216	49053	15098	1888
SLUTZK	SLU	59.69	30.49	30.31	34.14	117.94	34.46	107.48	34.49	107.49	6.92	14999	49120	14890	1807*
RUDE SKOV	RSV	55.84	12.46	34.16	34.41	99.57	37.73	91.22	37.77	91.14	-.07	17069	46304	17067	-252
BRORFELDE	BFE	55.63	11.67	34.37	34.46	98.71	37.94	90.50	37.97	90.42	-1.48	17204	46040	17198	-445
COPENHAGEN	COP	55.68	12.58	34.32	34.58	99.59	37.92	91.26	37.97	91.18	-.84	16856	46259	16854	-247*
NEWPORT	NEW	48.26	242.88	41.74	34.79	301.85	34.81	301.39	34.76	301.28	20.22	18196	54513	17074	6290
FLENSBURG	FLE	54.78	9.43	35.22	34.82	96.09	38.76	88.36	38.77	88.29	-2.16	17283	45736	17271	-651*
AGINCOURT	AGN	43.78	280.73	46.22	35.07	348.84	34.17	353.36	34.12	353.35	-9.27	16906	55313	16685	-2723*
TORONTO	AG*	43.67	280.50	46.33	35.20	348.56	34.28	353.02	34.22	353.00	-8.98	16964	55282	16756	-2648*
KIEL	KE*	54.33	10.15	35.67	35.38	96.51	39.33	88.75	39.33	88.69	-1.81	17495	45572	17486	-553*
VICTORIA	VIC	48.52	236.58	41.48	35.64	294.73	35.95	294.23	35.93	294.14	21.52	19016	52877	17690	6976
HARTLAND	HAD	51.00	355.52	39.00	35.68	80.19	41.81	75.94	41.87	75.90	-7.73	19331	43769	19155	-2600
WINGST	WNG	53.74	9.07	36.26	35.73	95.14	39.92	87.67	39.92	87.61	-1.98	18092	45209	18081	-627
WILHELMSHAVEN	WLH	53.53	8.15	36.47	35.74	94.13	40.08	86.86	40.11	86.79	-2.60	17886	45128	17868	-811*

(ALL VALUES AS OF 1980.5)

OBSERVATORY	CODE	GEOGRAPHIC COORDINATES LAT	E LONG	CO-LAT	GEOMAGNETIC MODELS DIPOLE CO-LAT	E LONG	GUSTAFFSSON CO-LAT	E LONG	TSYGANENKO CO-LAT	E LONG	ANNUAL VALUES OBSERVED OR IGRF CALCULATED(*) D	H	Z	X	Y
WUSTROW	WUS	54.35	12.40	35.65	35.80	98.65	39.43	90.60	39.45	90.51	-.85	17481	45690	17479	-259*
BARTH	BAH	54.37	12.75	35.63	35.86	98.98	39.43	90.89	39.45	90.80	-.71	17471	45717	17470	-216*
HACKNEY WICK 2	HW*	51.63	359.67	38.37	35.88	84.75	41.59	79.40	41.58	79.38	-6.12	18800	44042	18693	-2004*
LUBECK	LB*	53.87	10.70	36.13	35.93	96.76	39.90	89.02	39.89	88.96	-1.54	17714	45394	17708	-476*
ROSTOCK	RO*	54.10	12.15	35.90	35.99	98.27	39.70	90.30	39.72	90.22	-.95	17601	45568	17599	-292*
HACKNEY WICK	HW*	51.55	359.97	38.45	36.01	85.01	41.72	79.61	41.58	79.38	-6.12	18800	44043	18693	-2004*
NUMTO	NMT	63.50	71.40	26.50	36.04	152.03	31.40	145.00	31.41	144.92	18.47	12035	56605	11415	3813*
KEW	KEW	51.47	359.69	38.53	36.05	84.68	41.79	79.36	41.77	79.34	-6.08	18880	43961	18774	-2000*
HAMBURG	HM*	53.55	9.98	36.45	36.08	95.90	40.22	88.32	40.21	88.26	-1.82	17869	45218	17860	-568*
GREENWICH	GRW	51.48	.00	38.52	36.10	85.00	41.81	79.61	41.79	79.59	-5.94	18876	43967	18775	-1953*
WITTEVEEN	WIT	52.81	6.67	37.19	36.13	92.30	40.79	85.42	40.81	85.35	-3.05	18528	44662	18502	-986
ABINGER	ABN	51.19	359.61	38.81	36.30	84.46	42.10	79.20	42.11	79.18	-6.05	19024	43811	18918	-2005*
WESTON	WES	42.38	288.68	47.62	36.31	358.86	36.05	4.92	35.96	4.95	-15.49	18240	53001	17577	-4871*
FALMOUTH	FAL	50.15	354.92	39.85	36.37	79.15	42.72	75.19	42.80	75.15	-8.02	19509	43305	19318	-2722*
DE BILT	DBN	52.10	5.18	37.90	36.51	90.47	41.50	83.97	41.54	83.90	-3.72	18580	44360	18541	-1205*
UTRECHT	WI*	52.08	5.12	37.92	36.52	90.40	41.52	83.91	41.55	83.85	-3.74	18590	44349	18550	-1213*
SREDNIKAN	SRE	62.44	152.31	27.56	36.63	211.74	34.20	218.30	34.26	218.36	-10.43	16423	53575	16152	-2973*
HEL	HLP	54.61	18.82	35.39	36.80	104.72	39.48	95.93	39.49	95.85	1.19	17653	46127	17649	367
NEUFAHRWASSER	NF*	54.42	18.65	35.58	36.95	104.47	39.68	95.73	39.69	95.64	1.61	17431	46116	17424	490*
KALININGRAD	KNG	54.70	20.62	35.30	37.04	106.43	39.46	97.46	39.46	97.38	2.35	17292	46383	17277	709*
STETTIN-ZABELSDO	SZA	53.45	14.57	36.55	37.07	100.17	40.55	92.04	40.59	91.94	.04	17907	45420	17907	13*
BOROK	BOX	58.03	38.97	31.97	37.13	124.14	36.44	114.21	36.40	114.17	9.33	15688	49557	15480	2543*
BOCHUM	BOC	51.49	7.23	38.51	37.50	92.15	42.37	85.40	42.42	85.32	-2.77	18887	44122	18865	-913*
UCCLE	UCC	50.80	4.36	39.20	37.60	88.99	42.95	82.86	43.01	82.79	-3.90	19227	43683	19182	-1308*
POTSDAM	POT	52.38	13.06	37.62	37.79	98.20	41.70	90.44	41.73	90.35	-.51	18432	44842	18431	-164*
CLAUSTHAL	CLZ	51.81	10.34	38.19	37.81	95.30	42.25	88.00	42.25	87.93	-1.54	18725	44417	18718	-503*
ST HELIER	STH	49.19	357.91	40.81	37.86	81.72	44.26	77.21	44.33	77.17	-6.45	20020	42730	19893	-2249*
SEDDIN	SED	52.28	13.01	37.72	37.89	98.09	41.82	90.36	41.84	90.27	-.53	18482	44792	18481	-171*
GOTTINGEN	GT*	51.53	9.95	38.47	37.99	94.80	42.54	87.59	42.54	87.54	-1.67	18859	44267	18851	-550*
NIEMEGK	NGK	52.07	12.68	37.93	38.01	97.67	42.03	90.01	42.07	89.92	-.58	18825	44570	18824	-192
DOURBES	DOU	50.10	4.60	39.90	38.31	88.86	43.77	82.80	43.86	82.75	-3.64	19863	43346	19823	-1263
MANHAY	MAB	50.30	5.68	39.70	38.33	90.03	43.63	83.74	43.71	83.68	-3.28	19480	43462	19448	-1115*
CASPER	CSR	42.83	253.63	47.17	38.46	316.17	38.14	315.98	38.06	315.91	13.46	19625	53433	19086	4568*
MINSK	MNK	54.50	27.88	35.50	38.58	112.82	39.91	103.49	40.29	102.15	5.29	17931	46832	17854	1655
UGUT	UGT	61.00	74.00	29.00	38.72	153.18	33.86	147.00	33.88	146.93	15.88	13288	56580	12781	3636*

(ALL VALUES AS OF 1980.5)

		GEOGRAPHIC			GEOMAGNETIC MODELS						ANNUAL VALUES				
		COORDINATES			DIPOLE		GUSTAFFSSON		TSYGANENKO		OBSERVED OR IGRF CALCULATED(*)				
OBSERVATORY	CODE	LAT	E LONG	CO-LAT	CO-LAT	E LONG	CO-LAT	E LONG	CO-LAT	E LONG	D	H	Z	X	Y
PHILADELPHIA	PH*	39.97	284.82	50.03	38.77	354.14	38.13	358.96	37.99	358.99	-11.04	19244	52312	18888	-3685*
COLLMBERG	CLL	51.32	13.00	38.68	38.79	97.60	42.91	90.03	42.95	89.94	-.50	18959	44331	18958	-165*
YAKUTSK	YAK	62.02	129.72	27.98	38.80	194.93	34.29	199.83	34.33	199.88	-19.32	15107	58127	14255	-4999
VAL JOYEUX	VLJ	48.82	2.02	41.18	39.01	85.69	45.13	80.35	45.20	80.29	-4.61	20230	42554	20165	-1626*
MAGADAN	MGD	60.12	151.02	29.88	39.04	211.56	36.68	218.04	36.70	218.04	-13.18	18047	52589	17571	-4117
PARC ST. MAUR	PSM	48.82	2.48	41.18	39.12	86.15	45.18	80.72	45.24	80.65	-4.41	20231	42563	20171	-1556*
KUTCHINO	KTC	55.76	37.97	34.24	39.13	122.19	38.74	112.66	38.73	112.61	8.15	16756	48598	16587	2375*
UKHTA	UKH	60.50	74.00	29.50	39.22	153.04	34.35	146.92	34.37	146.85	15.46	13580	56461	13089	3620*
FREIBERG	FB*	50.92	13.35	39.08	39.24	97.73	43.39	90.18	43.43	90.09	-.37	19159	44156	19159	-124*
P. TUNGUSKA	POD	61.60	90.00	28.40	39.24	165.39	33.50	162.46	33.53	162.39	9.65	12418	59223	12242	2083
MOSCOW	MOS	55.48	37.31	34.52	39.30	121.49	39.03	112.01	39.01	111.97	7.73	17294	48636	17137	2327
WARSAW	SW*	52.22	21.03	37.78	39.48	105.52	42.17	96.95	42.23	96.90	2.29	18497	45336	18482	739*
SWIDER	SWI	52.12	21.25	37.88	39.62	105.68	42.27	97.11	42.34	97.06	2.36	18542	45314	18526	764*
BRESLAU	BS*	51.12	17.03	38.88	39.77	101.29	43.31	93.28	43.34	93.20	.91	19050	44506	19048	303*
BELSK	BEL	51.84	20.79	38.16	39.80	105.12	42.59	96.62	42.65	96.59	2.62	19063	45418	19043	871
CHAMBON-LA-FORET	CLF	48.02	2.26	41.98	39.83	85.57	46.14	80.31	46.20	80.24	-4.34	20844	42116	20784	-1579
NANTES	NTS	47.25	358.44	42.75	39.83	81.37	46.75	77.03	46.79	76.98	-5.87	21024	41583	20914	-2150*
WASHINGTON NEW	FR*	38.92	282.95	51.08	39.87	351.93	39.07	356.15	38.96	356.15	-8.93	19743	51900	19504	-3065*
WASHINGTON 2	FR*	38.90	282.95	51.10	39.88	351.93	39.08	356.15	38.96	356.15	-8.93	19743	51900	19504	-3065*
WASHINGTON CITY	FR*	38.90	282.97	51.10	39.88	351.94	39.08	356.16	38.96	356.15	-8.93	19743	51900	19504	-3065*
WASHINGTON 1	CH*	38.88	283.00	51.12	39.90	351.99	39.11	356.22	38.98	356.22	-8.97	19755	51878	19513	-3080*
ANDREWS AFB	AWS	38.82	283.13	51.18	39.95	352.15	39.17	356.40	39.05	356.40	-9.05	19791	51815	19545	-3113*
HERMSDORF	HDF	50.76	16.24	39.24	39.95	100.38	43.68	92.51	43.73	92.44	.64	19234	44272	19233	215*
CHELTENHAM	CLM	38.73	283.16	51.27	40.04	352.18	39.26	356.42	39.17	356.49	-9.06	19857	51719	19609	-3127*
PRUHONICE	PRU	49.99	14.55	40.01	40.35	98.42	44.50	90.86	44.56	90.80	.06	19629	43764	19629	21*
CARROLLTON	CAX	39.37	266.47	50.63	40.42	332.06	39.57	333.04	39.49	332.98	5.07	20178	52728	20099	1783*
FREDERICKSBURG	FRD	38.21	282.63	51.79	40.59	351.57	39.76	355.59	39.64	355.61	-8.43	20449	51352	20228	-2998
BELOIT	BLT	39.48	261.87	50.52	40.77	326.62	40.10	326.94	40.07	326.83	8.28	20620	52271	20405	2970*
KAZAN	KZN	55.83	48.85	34.17	40.77	131.37	38.77	122.43	38.77	122.45	10.46	16830	50407	16550	3058
BEUTHEN	BEU	50.35	18.92	39.65	40.85	102.70	44.26	94.61	44.28	94.56	1.50	19437	44275	19430	509*
BOULDER	BOU	40.14	254.76	49.86	40.96	318.22	40.72	317.98	40.67	317.83	12.23	21349	51156	20864	4525
BEUTHEN MIKILOW	BMK	50.15	18.90	39.85	41.04	102.59	44.49	94.53	44.51	94.49	1.48	19539	44173	19532	505*
BUDKOV	BDV	49.08	14.02	40.92	41.12	97.50	45.55	90.17	45.62	90.09	-.08	20323	43140	20323	-29
BALDWIN	BAL	38.78	264.83	51.22	41.15	330.24	40.41	330.94	40.34	330.77	6.31	20703	52096	20578	2275*
BURLINGTON	BRT	39.38	257.73	50.62	41.33	321.83	40.91	321.73	40.99	321.74	10.60	21213	51449	20851	3902*

(ALL VALUES AS OF 1980.5)

OBSERVATORY	CODE	GEOGRAPHIC COORDINATES LAT	E LONG	CO-LAT	GEOMAGNETIC MODELS DIPOLE CO-LAT	E LONG	GUSTAFFSSON CO-LAT	E LONG	TSYGANENKO CO-LAT	E LONG	ANNUAL VALUES OBSERVED OR IGRF CALCULATED(*) D	H	Z	X	Y
CRACOW	CRA	50.05	19.95	39.95	41.34	103.52	44.65	95.37	44.65	95.35	1.80	19589	44210	19579	615*
KRAKAU (CRAKAU)	KX*	50.05	19.95	39.95	41.34	103.52	44.65	95.37	44.65	95.35	1.80	19589	44210	19579	615*
MAISACH	MAS	48.20	11.26	41.80	41.42	94.47	46.50	87.61	46.54	87.56	-1.01	20560	42587	20557	-362*
FURSTENFELDBRUCK	FUR	48.17	11.28	41.83	41.46	94.46	46.55	87.61	46.58	87.56	-.95	20820	42489	20817	-348
ARTI	ARS	56.43	58.57	33.57	41.52	139.56	38.26	131.61	38.25	131.60	11.61	16653	52700	16312	3353
MUNICH	MNH	48.15	11.61	41.85	41.54	94.77	46.59	87.88	46.62	87.84	-.89	20586	42581	20584	-320*
SVERDLOVSK	SVD	56.73	61.07	33.27	41.54	141.69	37.99	134.02	37.97	134.01	13.10	16136	52743	15716	3657*
REGENSBERG	REG	47.48	8.44	42.52	41.56	91.42	47.22	85.11	47.28	85.04	-1.97	20938	42012	20926	-720*
CLIMAX	CLI	39.37	253.82	50.63	41.84	317.34	41.70	316.99	41.65	316.85	12.53	21635	50726	21120	4694*
LEADVILLE	LDV	39.28	253.72	50.72	41.94	317.24	41.82	316.87	41.77	316.75	12.55	21697	50630	21179	4715*
CHATONNAYE	CTE	46.67	06.83	43.33	42.02	89.50	48.10	83.61	48.19	83.50	-2.49	21364	41446	21344	-928*
TEVRIZ	TEV	57.50	72.40	32.50	42.02	150.97	37.33	144.97	37.31	144.93	13.33	15432	55284	15016	3558*
KREMSMUNSTER	KRE	48.06	14.13	41.94	42.12	97.16	46.77	89.98	46.81	89.89	-.06	20631	42699	20631	-22*
LVOV	LVV	49.90	23.75	40.10	42.20	106.96	44.86	98.63	44.88	98.57	3.24	20077	44565	20045	1138
YANOV	YNV	49.90	23.73	40.10	42.20	106.94	44.86	98.62	44.88	98.55	2.88	19662	44472	19637	988*
PRICE	PCU	39.60	249.17	50.40	42.26	312.00	42.39	311.36	42.31	311.39	14.38	22021	49882	21331	5469*
WIEN-KOBENZL	WIK	48.27	16.32	41.73	42.35	99.32	46.59	91.87	46.63	91.79	.67	20808	42906	20807	246
ADAK	ADA	51.87	183.36	38.13	42.50	241.36	43.17	244.88	43.74	245.00	8.77	21897	42676	21641	3339*
KIEV	KIV	50.72	30.30	39.28	42.63	113.24	43.92	104.54	44.02	104.51	4.99	19498	45618	19424	1696
NAGYCENK	NCK	47.63	16.72	42.37	43.03	99.43	47.34	92.04	47.39	91.95	.77	21126	42492	21124	285
HURBANOVO	HRB	47.87	18.19	42.13	43.08	100.92	47.10	93.34	47.13	93.25	1.15	20996	42772	20992	425
O GYALLA	OGY	47.88	18.19	42.12	43.08	100.92	47.10	93.34	47.13	93.25	1.16	20727	42907	20723	420*
STARA DALA	STA	47.88	18.19	42.12	43.08	100.92	47.10	93.34	47.12	93.27	1.17	20722	42913	20718	423*
NIZHNEDEVITSK	NNV	51.52	38.37	38.48	43.27	120.70	43.17	111.95	43.18	111.95	6.81	18855	46874	18722	2236*
KLAGENFURT	KF*	46.62	14.30	43.38	43.54	96.71	48.47	89.76	48.54	89.65	-.00	21395	41879	21395	0*
BUDAKESZI	BUZ	47.52	18.90	42.48	43.55	101.44	47.53	93.84	47.55	93.78	1.35	20912	42771	20906	493*
BUDAPEST	HB*	47.50	19.03	42.50	43.60	101.56	47.55	93.96	47.58	93.89	1.39	20923	42771	20917	508*
TOULOUSE	TLS	43.61	1.46	46.39	43.90	82.90	51.68	78.39	51.71	78.37	-4.19	22974	39221	22913	-1679*
ANGRA HEROISMO	ANH	38.32	332.78	51.68	43.93	50.70	52.98	54.33	53.01	54.39	-15.09	24661	37003	23811	-6420*
TIHANY	THY	46.90	17.89	43.10	43.96	100.24	48.22	92.85	48.27	92.77	1.12	21482	42183	21478	423
TULSA	TUL	35.91	264.21	54.09	44.05	330.04	43.47	330.39	43.42	330.25	6.70	22395	49618	22242	2613*
TOMSK	TMK	56.47	84.93	33.53	44.06	160.63	38.54	157.11	38.52	157.09	9.10	15737	57253	15539	2489*
LOGRONO	LGR	42.46	357.50	47.54	44.25	78.44	52.81	74.95	52.88	74.93	-5.58	23551	38305	23439	-2290*
GENOVA	GEN	44.55	08.95	45.45	44.47	90.71	50.86	84.77	50.93	84.68	-1.63	22505	40208	22496	-640*
MONTE CAPELLINO	MCP	44.55	8.96	45.45	44.47	90.71	50.86	84.77	50.93	84.68	-1.63	22505	40208	22496	-640*

(ALL VALUES AS OF 1980.5)

		GEOGRAPHIC COORDINATES			GEOMAGNETIC MODELS						ANNUAL VALUES				
					DIPOLE		GUSTAFFSSON		TSYGANENKO		OBSERVED OR IGRF CALCULATED(*)				
OBSERVATORY	CODE	LAT	E LONG	CO-LAT	CO-LAT	E LONG	CO-LAT	E LONG	CO-LAT	E LONG	D	H	Z	X	Y
ROBURENT	ROB	44.30	7.89	45.70	44.51	89.55	51.13	83.83	51.20	83.74	-1.97	22637	39977	22624	-778*
CASTELLACCIO	CAO	44.43	8.93	45.57	44.58	90.64	51.01	84.73	51.07	84.63	-1.63	22570	40127	22561	-642*
SAO MIGUEL	SMG	37.77	334.35	52.23	44.72	52.30	54.21	55.51	54.26	55.59	-14.40	25013	36250	24227	-6220*
NICE	NCE	43.72	7.30	46.28	44.95	88.76	51.85	83.21	51.91	83.12	-2.13	22950	39548	22934	-853*
PERPIGNAN	PER	42.70	2.88	47.30	45.06	83.99	52.94	79.33	53.00	79.28	-3.58	23476	38611	23430	-1466*
POLA	POL	44.86	13.85	45.14	45.13	95.57	50.58	88.96	50.65	88.84	-.13	22340	40759	22340	-51*
ESPANOLA	EPN	35.98	253.95	54.02	45.16	318.31	45.24	317.86	45.36	317.74	11.70	23500	47653	23012	4766*
PETROPAVLOVSK	PET	52.90	158.43	37.10	45.24	219.76	44.18	225.37	43.95	225.50	-5.30	22037	45831	21943	-2038
COIMBRA	COI	40.22	351.58	49.78	45.29	71.54	55.10	69.79	55.15	69.75	-7.54	24865	36412	24650	-3266
NOVOSIBIRSK	NVS	55.03	82.90	34.97	45.34	158.77	39.93	155.02	39.93	155.00	8.44	17269	56457	17082	2535
JASSY	JSS	47.18	27.53	42.82	45.51	109.32	47.92	101.35	47.95	101.24	3.47	21100	43410	21061	1277*
MADRID	MDD	40.42	356.32	49.58	46.00	76.50	55.41	73.57	55.50	73.52	-5.82	24609	36709	24482	-2495*
CASTLE ROCK	CRC	37.24	237.87	52.76	46.36	300.27	47.12	299.72	47.12	299.66	16.24	24101	44746	23139	6740*
EBRO	EBR	40.82	.49	49.18	46.41	80.90	55.32	76.96	55.34	76.93	-4.29	24464	37094	24395	-1830*
TOLEDO	TOL	39.88	355.95	50.12	46.45	75.95	56.09	73.17	56.21	73.10	-5.76	25121	36042	24994	-2523
ODESSA	ODE	46.78	30.88	43.22	46.51	112.23	48.34	104.26	48.36	104.18	2.28	21435	43532	21418	855
LISBON	LIS	38.72	350.85	51.28	46.62	70.28	57.11	68.84	57.13	68.85	-7.82	25354	35369	25118	-3450*
GROCKA	GCK	44.63	20.77	45.37	46.69	102.07	50.94	94.80	50.96	94.73	1.59	22693	41018	22684	630
SAN PABLO-TOLEDO	SPT	39.55	355.65	50.45	46.71	75.53	56.51	72.85	56.63	72.79	-6.00	25054	35987	24917	-2619*
DALLAS	DAL	32.99	263.25	57.01	47.06	329.42	46.71	329.45	46.64	329.31	7.18	24015	46818	23827	3002*
BARNAUL	BM*	53.33	83.78	36.67	47.09	159.20	41.68	155.82	41.67	155.79	7.71	17958	55796	17796	2409*
L AQUILA	AQU	42.38	13.32	47.62	47.41	94.13	53.69	87.93	53.74	87.84	-.14	23943	38845	23943	-59
SURLARI	SUA	44.68	26.25	45.32	47.68	107.21	50.79	99.69	50.82	99.60	2.81	22725	41607	22698	1117
LA MADDALENA	LMD	41.23	09.40	48.77	47.75	89.91	55.18	84.35	55.17	84.29	-1.38	24325	37869	24318	-586*
BUCHAREST	BVC	44.42	26.10	45.58	47.92	106.98	51.10	99.51	51.14	99.41	2.82	22618	41603	22591	1113*
MT WILSON	MWC	34.22	241.93	55.78	48.65	305.48	49.42	304.92	49.41	304.87	14.47	25106	43121	24310	6273*
LOS ANGELES	LA*	34.05	241.75	55.95	48.84	305.33	49.62	304.77	49.62	304.73	14.44	25182	42912	24386	6280*
SIMFEROPOL	SIM	44.83	34.07	45.17	48.97	114.44	50.46	106.84	50.47	106.77	4.33	22423	42770	22359	1693*
CAPODIMONTE	CPD	40.86	14.26	49.14	49.06	94.51	55.62	88.42	55.66	88.33	-.05	24561	37972	24561	-21*
IRKUTSK	IRT	52.17	104.45	37.83	49.13	175.83	43.37	176.45	43.35	176.45	-2.36	19559	56902	19542	-807
CAPRI	CPI	40.55	14.22	49.45	49.36	94.37	56.02	88.33	56.05	88.24	-.07	24734	37730	24734	-30*
SAN FERNANDO	SFS	36.46	353.80	53.54	49.36	72.62	60.69	70.71	60.82	70.69	-6.46	26593	33248	26424	-2992*
PANAGYURISHTE	PAG	42.52	24.18	47.48	49.39	104.52	53.38	97.44	53.40	97.34	1.86	23721	39784	23708	773
TUCSON	TUC	32.25	249.17	57.75	49.50	313.83	50.11	313.24	50.06	313.17	12.09	25618	42957	25049	5369
KARAGANDA	KGD	49.82	73.08	40.18	49.67	149.75	45.13	145.04	45.09	145.03	7.66	20226	52344	20045	2698

(ALL VALUES AS OF 1980.5)

OBSERVATORY	CODE	GEOGRAPHIC COORDINATES LAT	E LONG	CO-LAT	GEOMAGNETIC MODELS DIPOLE CO-LAT	E LONG	GUSTAFFSSON CO-LAT	E LONG	TSYGANENKO CO-LAT	E LONG	ANNUAL VALUES OBSERVED OR IGRF CALCULATED(*) D	H	Z	X	Y
ALMERIA	ALM	36.85	357.54	53.15	49.69	76.58	60.58	73.76	60.66	73.72	-4.93	26689	33367	26590	-2294
NERTSCHINSK	NK*	51.32	119.62	38.68	49.87	188.17	44.81	191.51	44.81	191.47	-9.65	20915	54754	20619	-3506*
PATRICK	PAT	28.21	279.39	61.79	50.68	348.35	49.66	350.21	49.61	350.18	-2.52	24885	43258	24861	-1094*
BOUZAREAH	BZR	36.80	3.02	53.20	50.79	82.10	60.99	78.21	61.05	78.14	-3.20	26656	33738	26614	-1488*
ISTANBUL-KANDILL	ISK	41.06	29.06	48.94	51.71	108.61	54.92	101.60	54.92	101.57	2.94	24534	39645	24502	1258*
GIBILMANNA	GIB	37.99	14.02	52.01	51.79	93.34	59.30	87.69	59.37	87.62	-.17	26168	35617	26168	-78*
KHABAROVSK	KHB	48.48	135.07	41.52	51.93	201.23	48.47	206.08	48.45	206.10	-11.34	23994	48491	23526	-4718*
AVERROES	AVE	33.30	352.59	56.70	52.22	70.44	65.34	69.15	65.50	69.13	-6.78	28095	30115	27899	-3317*
NOVOKAZALINSK	NKK	45.80	62.10	44.20	52.38	139.54	49.14	133.99	49.14	134.01	6.42	22681	47490	22539	2536
TOYOHARA	TOH	46.95	142.75	43.05	52.83	207.94	50.32	212.97	50.29	212.99	-9.92	25041	44734	24667	-4314*
YUZHNO SAKHALINS	YSS	46.95	142.72	43.05	52.83	207.91	50.31	212.94	50.31	212.97	-10.02	25255	44678	24870	-4394
OTOMARI	OTM	46.65	142.77	43.35	53.12	208.00	50.61	212.99	50.62	213.02	-9.81	25203	44444	24834	-4294*
ULAN BATOR	UBA	47.85	107.05	42.15	53.39	177.90	46.22	177.38	47.88	178.65	-3.57	22670	54115	22626	-1412*
TBILISI	TFS	42.09	44.71	47.91	53.46	123.23	53.17	116.61	53.16	116.58	5.00	24161	42108	24069	2108
DEKELEIA	DEK	38.10	23.77	51.90	53.58	102.73	58.76	96.38	58.76	96.29	1.76	26213	36704	26201	805*
PENDELI	PEG	38.05	23.86	51.95	53.66	102.80	58.82	96.45	58.82	96.38	1.77	26243	36673	26230	811*
ATHENS	ATH	37.97	23.72	52.03	53.70	102.64	58.92	96.31	58.92	96.23	1.74	26287	36589	26275	798*
KARSANI	KAS	41.83	44.70	48.17	53.71	123.16	53.45	116.59	53.43	116.56	4.90	24291	42193	24202	2075*
EL ABIOD SIDI	EAS	32.90	.55	57.10	54.10	78.46	66.44	75.49	66.80	75.44	-3.92	28588	29751	28521	-1954*
KEY WEST	QW*	24.55	278.20	65.45	54.38	347.23	53.47	348.47	53.38	348.37	-.86	26349	39611	26346	-395*
KZIL-AGACH	KZA	45.37	78.73	44.63	54.59	153.75	49.84	150.53	49.82	150.52	5.12	23551	50209	23457	2102*
SANTA CRUZ	SZT	28.48	343.72	61.52	55.35	59.98	70.15	61.38	71.64	61.39	-10.24	29575	25436	29104	-5258*
CANARIAS	TEN	28.48	343.74	61.52	55.36	59.99	70.16	61.38	71.64	61.39	-10.21	29232	24047	28768	-5185
MEMAMBETSU	MMB	43.91	144.19	46.09	55.71	209.68	53.49	214.34	53.49	214.35	-8.29	26495	41352	26218	-3822
SAN JOSE LAJAS	SJL	23.02	277.35	66.98	55.96	346.37	55.11	347.28	55.02	347.20	-.00	26934	37994	26934	0*
HAVANA	HVN	22.97	277.86	67.03	55.99	346.93	55.10	347.90	55.02	347.84	-.31	26909	37949	26909	-146*
ALMA ATA	AAA	43.25	76.92	46.75	56.53	151.87	52.03	148.71	52.02	148.70	4.47	25416	47923	25339	1982
URUMQI	WMQ	43.82	87.70	46.18	56.82	161.23	51.67	159.41	51.67	159.44	2.61	25389	50091	25362	1157
VLADIVOSTOK	VLA	43.68	132.17	46.32	56.90	199.35	53.25	203.47	53.27	203.47	-9.69	26961	44974	26576	-4540
CHANGCHUN	CNH	43.83	125.30	46.17	57.15	193.44	52.81	196.92	52.79	196.93	-8.91	26609	47480	26288	-4121*
MAITUN	MAI	43.25	132.33	46.75	57.32	199.54	53.70	203.61	53.72	203.62	-9.60	26929	44763	26552	-4491*
KELES	KEL	41.42	69.21	48.58	57.55	144.84	53.80	140.99	53.78	140.98	4.62	25720	45626	25636	2072*
TASHKENT	TKT	41.33	69.62	48.67	57.69	145.18	53.90	141.40	53.89	141.40	4.57	25804	45303	25722	2060
ASHKHABAD	ASH	37.95	58.11	52.05	59.57	134.30	57.30	129.78	57.31	129.77	4.03	27589	40940	27521	1941
KSARA	KSA	33.82	35.89	56.18	60.00	112.95	62.93	107.39	62.91	107.30	2.82	28879	34262	28844	1421*

(ALL VALUES AS OF 1980.5)

		GEOGRAPHIC			GEOMAGNETIC MODELS						ANNUAL VALUES				
		COORDINATES			DIPOLE		GUSTAFFSSON		TSYGANENKO		OBSERVED OR IGRF CALCULATED(*)				
OBSERVATORY	CODE	LAT	E LONG	CO-LAT	CO-LAT	E LONG	CO-LAT	E LONG	CO-LAT	E LONG	D	H	Z	X	Y
TEOLOYUCAN	TEO	19.75	260.82	70.25	60.46	328.60	61.03	328.11			7.65	29397	32185	29135	3913*
VIEQUES	VQS	18.15	294.55	71.85	60.59	5.41	60.24	9.13			-10.37	27392	31021	26945	-4931*
SAN JUAN	SJG	18.11	293.85	71.89	60.61	4.64	60.14	8.22			-9.60	27299	31010	26916	-4554
TEHRAN	TEH	35.74	51.38	54.26	60.75	127.73	59.79	122.90	59.77	122.90	3.53	28179	38189	28126	1735*
MEXICO	TE*	19.42	260.92	70.58	60.78	328.75	61.36	328.25			7.75	31151	20941	30866	4201*
TACUBAYA	TAC	19.41	260.81	70.59	60.80	328.63	61.39	328.13			7.65	29495	31769	29232	3926*
CUAJIMALPA	CUA	19.37	260.72	70.63	60.84	328.54	61.44	328.03			7.67	29508	31718	29244	3938*
MIZUSAWA	MIZ	39.01	141.08	50.99	60.85	207.69	58.42	211.60	58.42	211.60	-7.40	28858	37235	28617	-3717
BEIJING	BJI	40.04	116.18	49.96	61.22	185.74	56.35	187.77	56.36	187.78	-5.99	29611	46183	29449	-3091
ONAGAWA	ONW	38.43	141.47	51.57	61.39	208.11	59.00	211.92	59.04	211.94	-7.27	29020	36935	28787	-3672*
MODIIM	MOD	31.93	34.98	58.07	61.69	111.64	65.29	106.37	65.28	106.32	2.52	29975	32156	29946	1318*
NITSANIM	NCK	31.73	34.60	58.27	61.81	111.23	65.57	105.99	65.53	105.92	2.47	30064	31918	30036	1296*
AMATSIA	AMT	31.55	34.92	58.45	62.04	111.48	65.74	106.28	65.71	106.22	2.56	30447	31765	30417	1362
SEOUL	SYO	38.58	127.05	51.42	62.29	195.36	58.30	198.43	58.30	198.45	-7.64	29561	41729	29299	-3930*
HELWAN	HLW	29.86	31.34	60.14	63.04	107.69	68.21	102.70	68.25	102.64	1.98	31031	29386	31012	1072*
MISALLAT	MLT	29.52	30.89	60.48	63.29	107.18	68.68	102.24	68.76	102.21	1.98	31299	28657	31280	1082
ZINSEN	ZIN	37.48	126.63	52.52	63.42	195.06	59.43	197.96	59.42	197.98	-7.23	30179	40660	29939	-3798*
KAKIOKA	KAK	36.23	140.19	53.77	63.69	207.26	61.27	210.76	61.25	210.73	-6.58	30192	34651	29993	-3464
TOKYO	TOK	35.69	139.75	54.31	64.28	206.93	61.82	210.34	61.73	210.30	-6.58	30256	34646	30057	-3467*
KANOZAN	KNZ	35.25	139.96	54.75	64.69	207.17	62.25	210.52	62.25	210.51	-6.24	30539	33675	30358	-3320
MIYAZU	MIU	35.32	135.12	54.68	64.93	203.13	60.62	205.08	62.01	206.01	-6.86	30813	35616	30592	-3680*
TAMANRASSET	TAM	22.79	5.53	67.21	64.93	80.86	79.25	78.48	86.02	78.39	3.28	32897	17263	32843	1884
TSINGTAO	TSI	36.07	120.32	53.93	65.08	189.55	60.64	191.71	60.64	191.71	-5.73	31157	40720	31001	-3111*
LANZHOU	LZH	36.09	103.85	53.91	65.19	174.88	60.30	175.30	60.29	175.25	-1.78	31598	42469	31582	-990
MIDWAY	MDY	28.21	182.62	61.79	65.61	247.73	65.25	248.69	65.28	248.61	10.07	26969	24708	26554	4716*
KATUURA	KAT	33.63	135.95	56.37	66.64	203.73	63.76	206.67	63.78	206.73	-6.22	31463	33448	31278	-3409*
SIMOSATO	SSO	33.58	135.94	56.42	66.70	203.74	63.83	206.67	63.84	206.71	-6.20	31489	33385	31305	-3401*
HATIZYO	HTY	33.07	139.83	56.93	66.82	207.28	64.42	210.31	64.48	210.32	-7.68	31415	31770	31133	-4201
ASO	ASO	32.88	131.01	57.12	67.74	199.35	64.36	201.99	64.37	202.01	-6.06	32222	34058	32042	-3402*
QUETTA	QUE	30.19	66.95	59.81	68.41	140.96	65.75	138.71	65.76	138.72	1.28	32802	33512	32794	738
HONOLULU	HON	21.32	202.00	68.68	68.65	267.96	68.17	268.68	68.14	268.68	11.53	27705	22311	27145	5542
M BOUR	MBO	14.39	343.04	75.61	69.09	56.40	85.95	58.53			-12.10	31944	7220	31234	-6697
COSTA RICA	SNJ	9.91	276.04	80.09	69.11	345.69	68.71	345.52			3.05	29778	23168	29736	1584*
KANOYA	KNY	31.42	130.88	58.58	69.21	199.35	65.85	201.80	65.87	201.81	-5.44	32988	31976	32839	-3127
SABHAWALA	SAB	30.36	77.80	59.64	69.42	150.94	66.00	149.52	66.04	149.54	.38	33863	34446	33862	227

(ALL VALUES AS OF 1980.5)

OBSERVATORY	CODE	GEOGRAPHIC COORDINATES LAT	E LONG	CO-LAT	GEOMAGNETIC MODELS DIPOLE CO-LAT	E LONG	GUSTAFFSSON CO-LAT	E LONG	TSYGANENKO CO-LAT	E LONG	ANNUAL VALUES OBSERVED OR IGRF CALCULATED(*) D	H	Z	X	Y
DEHRA DUN	DDI	30.32	78.06	59.68	69.48	151.17	66.06	149.78	66.06	149.80	.50	33817	34734	33816	295*
LUKIAPANG	LKP	31.32	121.04	58.68	69.81	190.41	65.66	192.18	65.65	192.16	-4.57	33722	34711	33615	-2687*
ZIKAWEI	ZKW	31.21	121.44	58.79	69.91	190.77	65.79	192.56	65.77	192.55	-4.61	33745	34495	33636	-2712*
SHESHAN	SSH	31.10	121.19	58.90	70.03	190.54	65.90	192.31	65.89	192.29	-4.40	33711	34283	33611	-2590
WUHAN	WHN	30.53	114.56	59.47	70.77	184.52	66.40	185.67	66.38	185.67	-3.13	34738	34370	34686	-1897*
LHASA	LSA	29.70	91.15	60.30	71.10	163.11	67.15	162.62	67.18	162.59	-.28	35250	34323	35250	-172*
CHICHIJIMA	CBI	27.08	142.17	62.92	72.60	210.15	70.56	212.32	70.62	212.35	-3.13	32694	24133	32645	-1792
JAIPUR	JAI	26.92	75.80	63.08	72.65	148.69	69.69	147.54	69.70	147.53	-.76	35737	29594	35734	-477
FUQUENE	FUQ	5.47	286.26	84.53	73.23	356.53	71.79	357.35			-2.27	28944	18761	28921	-1146
PARAMARIBO	PAB	5.81	304.78	84.19	73.28	15.78	73.42	19.04			-14.48	28493	15430	27588	-7124*
SHILLONG	SHL	25.57	91.88	64.43	75.27	163.51	71.79	163.22	71.81	163.22	-.75	37468	27424	37465	-490*
FREETOWN	FTN	08.47	346.78	81.53	75.55	59.14	93.00	60.48			-12.19	31154	-1346	30452	-6578*
TAIPEI	TAP	25.04	121.51	64.96	76.07	191.11	72.34	192.33	72.32	192.32	-2.99	36473	26012	36423	-1902*
LUNPING	LNP	25.00	121.17	65.00	76.11	190.79	72.37	191.98	72.36	191.98	-2.86	36584	25721	36538	-1825
UJJAIN	UJJ	23.18	75.78	66.82	76.35	148.23	73.80	147.52	74.02	147.48	-.51	37031	24388	37030	-330*
ZARIA	ZAR	11.15	07.65	78.85	76.74	80.47	92.15	79.50			-4.03	33634	527	33551	-2364*
KONTAGORA	KNT	10.40	05.45	79.60	77.05	78.14	92.90	77.44			-4.73	33251	-601	33138	-2742*
WAKE ISLAND	WKE	19.20	166.70	70.80	77.19	234.41	76.54	235.15			6.97	31011	14768	30782	3763*
BARRACKPORE	BAC	22.78	88.36	67.22	77.84	160.02	74.79	159.80	74.86	159.76	-.83	38598	23671	38594	-559*
GUANGZHOU	GZH	23.09	113.34	66.91	78.21	183.52	74.36	184.16	74.62	203.81	-1.51	38104	23696	38090	-1004
AU TAU	AUT	22.45	114.05	67.55	78.85	184.19	75.04	184.82	75.11	184.83	-1.58	38188	22969	38173	-1053*
CHA PA	CPA	22.35	103.83	67.65	78.92	174.57	75.36	174.82	75.40	174.77	-.78	38929	23036	38925	-530*
HONG KONG	HKC	22.36	114.22	67.64	78.93	184.36	75.13	184.99	75.39	184.98	-1.55	38259	22569	38245	-1035*
KUMASI	KUM	06.70	358.43	83.30	79.36	70.46	96.42	70.63			-7.85	31392	-5506	31098	-4288*
IBADAN	IBD	7.43	3.90	82.57	79.67	76.02	95.89	75.74			-5.86	32198	-4819	32030	-3287*
ALIBAG	ABG	18.64	72.87	71.36	80.56	144.94	78.68	144.64			-.77	38282	17576	38278	-518
TATUOCA	TTB	-1.21	311.49	91.21	80.71	22.19	81.30	24.42			-17.85	27758	5656	26421	-8512
TOUNGOO	TGO	18.93	96.45	71.07	82.11	167.46	79.25	167.65			-.69	40179	17195	40176	-484*
HYDERABAD	HYB	17.41	78.56	72.59	82.37	150.23	80.37	150.23			-1.64	39715	15194	39699	-1140
TALARA	TAL	-04.63	278.70	94.63	83.52	349.07	83.06	349.11			4.44	29225	7385	29137	2262*
EUSEBIO	EUS	-3.89	321.56	93.89	84.29	32.06	91.26	33.75			-21.27	26896	-2023	25064	-9757*
PALMYRA ISLAND	PAI	05.88	197.92	84.12	84.57	267.20	83.45	267.45			9.68	32308	7926	31848	5432*
MOCA	MFP	3.34	8.66	86.66	84.59	79.92	99.98	79.79			-5.77	30892	-10470	30735	-3106*
BAGUIO	BAG	16.42	120.60	73.58	84.71	190.60	81.36	191.18			-.95	39058	13113	39053	-648*
ADDIS ABABA	AAE	9.03	38.77	80.97	84.83	110.50	90.96	109.98			-.58	36075	407	36073	-367

(ALL VALUES AS OF 1980.5)

		GEOGRAPHIC COORDINATES			GEOMAGNETIC MODELS					ANNUAL VALUES				
					DIPOLE		GUSTAFFSSON		TSYGANENKO	OBSERVED OR IGRF CALCULATED(*)				
OBSERVATORY	CODE	LAT	E LONG	CO-LAT	CO-LAT	E LONG	CO-LAT	E LONG	CO-LAT E LONG	D	H	Z	X	Y
BANGUI	BNG	4.44	18.57	85.56	85.46	89.86	98.43	89.59		-3.12	32150	-9086	32102	-1750
CHICLAYO	CCL	-06.80	280.20	96.80	85.64	350.64	84.92	350.74		4.13	28768	5381	28693	2072*
GUAM	GUA	13.58	144.87	76.42	85.73	214.26	84.18	214.98		1.92	35805	7239	35785	1205
FANNING	FAN	3.91	200.61	86.09	85.98	270.23	85.14	270.43		9.48	32665	5985	32219	5380*
ANTIPOLO	ANO	14.60	121.17	75.40	86.50	191.21	83.27	191.73		-.61	39293	10232	39291	-418*
MANILA	MAN	14.58	120.98	75.42	86.54	191.02	83.30	191.55		-.60	39320	10209	39318	-412*
MUNTINLUPA	MUT	14.38	121.02	75.62	86.74	191.07	83.51	191.58		-.63	39221	9691	39219	-432
MADRAS	MX*	13.07	80.25	76.93	86.86	151.44	85.34	151.84		-2.21	40321	7361	40291	-1555*
BANGKOK	BKK	13.72	100.57	76.28	87.47	171.23	85.06	171.55		-.32	41080	8248	41079	-229*
CHIMBOTE	CMB	-09.10	281.40	99.10	87.90	351.90	86.87	352.11		4.00	28261	3257	28192	1971*
MAJURO	MJR	7.08	171.38	82.92	88.36	241.01	87.26	241.32		9.83	33771	3353	33275	5766*
ANNAMALAINAGAR	ANN	11.37	79.68	78.63	88.50	150.72	87.22	151.24		-2.60	40309	4213	40267	-1832
KODAIKANAL	KOD	10.23	77.46	79.77	89.40	148.43	88.37	148.97		-2.38	39265	2444	39231	-1636
JALUIT	JAL	5.92	169.65	84.08	89.80	239.53	88.77	239.87		9.60	34205	1537	33726	5704*
JARVIS ISLAND	JRV	-.38	199.97	90.38	90.29	270.43	89.51	270.51		9.66	33546	778	33070	5629*
CEBU	CCP	10.30	123.90	79.70	90.67	194.07	87.78	194.42		.15	39400	3419	39400	103*
ETTAYAPURAM	ETT	09.00	78.00	81.00	90.67	148.84	89.76	149.45		-2.94	39990	426	39937	-2051*
HUANCAYO	HUA	-12.05	284.66	102.05	90.76	355.17	89.00	355.52		2.71	27225	985	27194	1290
TRIVANDRUM	TRD	8.48	76.95	81.52	91.08	147.75	90.25	148.37		-2.77	39896	-232	39849	-1928
CUZCO	CUS	-13.53	288.03	103.53	92.21	358.48	89.86	358.81		.82	26566	-154	26563	380*
MOGADISCIO	MOG	02.03	45.35	87.97	92.89	115.68	97.53	116.65		-.78	33547	-9945	33544	-457*
KOROR	KOR	7.34	134.50	82.66	92.95	204.72	90.68	204.88		1.45	38172	-1184	38160	966*
PALAU	PLA	7.33	134.48	82.67	92.95	204.70	90.68	204.86		1.45	38174	-1184	38162	966*
BINZA	BIN	-4.27	15.37	94.27	93.34	85.01	106.87	85.68		-6.70	26563	-19703	26382	-3099*
DAVAO	DAV	7.05	125.38	82.95	93.84	195.70	91.13	195.97		.75	39308	-1588	39305	515*
LWIRO	LWI	-2.25	28.80	92.25	94.00	98.59	103.44	99.82		-2.28	29160	-17547	29137	-1160*
YAUCA	YAU	-15.53	285.33	105.53	94.24	355.88	92.06	356.33		3.27	26443	-2149	26400	1508*
NAIROBI	NAI	-1.33	36.82	91.33	94.62	106.65	101.69	107.87		-1.04	30542	-15546	30537	-554*
CHARACATO	ARE	-16.47	288.52	106.47	95.15	358.96	92.32	359.33		1.29	25807	-2620	25800	581*
LA PAZ	LPB	-16.54	291.90	106.54	95.21	2.22	92.38	2.41		-1.32	25376	-2518	25369	-585*
PENANG	PNN	4.47	100.15	85.53	96.70	170.52	95.17	171.04		-.14	40768	-6075	40768	-100*
LUANDA	LUA	-8.92	13.17	98.92	97.47	81.94	111.05	82.70		-9.34	23227	-22792	22919	-3770*
TUNTUNGAN	TUN	3.51	98.56	86.49	97.60	168.89	96.20	169.46		-.46	40345	-9619	40344	-324*
SINGAPORE	SG*	1.28	103.85	88.72	99.98	174.17	98.20	174.68		.32	39857	-12780	39856	223*
DAR ES SALAAM	DM*	-6.82	39.32	96.82	100.48	108.08	107.10	110.02		-2.60	26712	-20876	26685	-1212*

(ALL VALUES AS OF 1980.5)

OBSERVATORY	CODE	GEOGRAPHIC COORDINATES LAT	E LONG	CO-LAT	GEOMAGNETIC MODELS DIPOLE CO-LAT	E LONG	GUSTAFFSSON CO-LAT	E LONG	TSYGANENKO CO-LAT	E LONG	ANNUAL VALUES OBSERVED OR IGRF CALCULATED(*) D	H	Z	X	Y
LA QUIACA	LQA	-22.10	294.40	112.10	100.81	4.52	98.54	4.44	98.17	4.44	-1.84	23584	-6559	23572	-759
VASSOURAS	VSS	-22.40	316.35	112.40	102.21	25.20	104.81	22.79	104.75	22.72	-19.23	21119	-11172	19940	-6956
HOLLANDIA	HNA	-2.57	140.51	92.57	102.25	211.68	100.98	211.38			4.16	37411	-15199	37312	2714*
RIO DE JANEIRO	RDJ	-22.91	316.83	112.91	102.75	25.60	105.42	23.05	105.38	22.99	-19.30	20856	-11593	19684	-6893*
SAO JOSE COMPOS	SJB	-23.20	314.13	113.20	102.83	23.04	104.63	20.72	104.58	20.65	-17.60	21081	-10848	20094	-6374*
KARAVIA	KVA	-11.64	27.42	101.64	102.93	95.37	112.84	97.22			-5:66	21545	-25323	21440	-2125*
ELIZABETHVILLE	ELI	-11.66	27.47	101.66	102.96	95.40	112.86	97.26			-5.66	21545	-25323	21440	-2125*
PAMATAI	PPT	-17.57	210.43	107.57	105.10	284.08	106.08	284.32			11.21	31375	-18907	30776	6103
TAHITI	TAH	-17.56	210.39	107.56	105.10	284.03	106.07	284.28			12.25	32233	-19016	31499	6839*
APIA	API	-13.81	188.23	103.81	105.75	261.58	105.23	261.90			12.48	34393	-19991	33579	7436
KUYPER	KUY	-6.03	106.73	96.03	107.33	177.02	105.92	177.59			.45	37452	-23906	37451	294*
TANGERANG	TNG	-6.17	106.63	96.17	107.46	176.91	106.08	177.48			.37	37307	-23904	37306	243
BATAVIA	BTV	-6.18	106.83	96.18	107.48	177.12	106.08	177.69			.45	37396	-24118	37395	294*
EASTER ISLAND	EIC	-27.17	250.58	117.17	108.18	323.87	110.21	325.89	110.18	325.87	15.14	27342	-20533	26393	7141*
PORT MORESBY	PMG	-9.41	147.15	99.41	108.27	219.29	107.93	219.01			6.47	35971	-23643	35742	4056
TSUMEB	TSU	-19.22	17.70	109.22	108.45	84.24	119.96	85.15			-13.83	15873	-27011	15413	-3794
PILAR	PIL	-31.67	296.12	121.67	110.40	5.91	107.70	5.66	107.45	5.70	.29	21416	-11985	21416	109
SANTIAGO	SNT	-33.45	289.30	123.45	112.13	359.73	109.04	.81	109.00	.82	7.14	22161	-13782	21989	2754*
TANANARIVE	TAN	-18.92	47.55	108.92	113.88	113.95	119.40	115.93			-13.28	19579	-27232	19055	-4497*
LAS ACACIAS	LAS	-35.01	302.31	125.01	113.92	11.38	111.49	10.12	111.36	10.07	-3.75	20184	-13821	20141	-1320*
MAURITIUS	MRI	-20.09	57.55	110.09	116.75	123.97	120.49	125.06	120.50	125.06	-17.73	21484	-29691	20464	-6543*
HARTEBEESTHOEK	HBK	-25.88	27.71	115.88	116.93	92.49	126.10	93.60	126.18	93.65	-16.06	13197	26924	12681	-3652
PLAISANCE	PLS	-20.43	57.67	110.43	117.10	124.02	120.84	125.06	120.85	125.06	-18.17	21343	-29865	20279	-6656*
MAPUTO	LMM	-25.92	32.58	115.92	117.91	97.31	126.22	98.66	126.27	98.71	-15.86	14011	-27108	13478	-3829
TRELEW	TRW	-43.25	294.69	133.25	121.95	4.36	118.30	5.23	118.15	5.27	7.18	21048	-18344	20883	2631*
CAPE GOOD HOPE	CGH	-33.93	18.48	123.93	122.96	81.40	131.56	80.30	131.66	80.36	-23.68	11287	-25855	10337	-4533*
CAPE TOWN	CTO	-33.95	18.47	123.95	122.98	81.38	131.58	80.27	131.67	80.34	-23.69	11286	-25852	10335	-4535*
HERMANUS	HER	-34.43	19.23	124.43	123.58	81.98	131.99	80.87	132.07	80.93	-23.51	11363	-25753	10420	-4533
BRISBANE	BRS	-27.53	152.92	117.53	125.35	228.63	126.56	226.68	126.80	228.28	10.97	28572	-46059	28050	5437*
WATHEROO	WAT	-30.32	115.88	120.32	131.55	187.24	132.71	185.97	132.71	186.02	-2.49	24207	-52753	24184	-1052*
MAGALLANES	MGS	-53.20	289.10	143.20	131.88	359.60	127.59	3.02	127.54	3.03	15.90	22438	-26116	21580	6147*
SYDNEY	SN*	-33.88	151.18	123.88	131.95	227.81	133.89	227.82	133.92	227.81	12.33	24624	-52530	24056	5258*
GNANGARA	GNA	-31.78	115.95	121.78	133.01	187.40	134.37	185.90	134.37	185.94	-3.29	23409	-53652	23370	-1346
NEW YEARS ISLAND	NYI	-54.65	295.85	144.65	133.38	4.97	129.03	7.26	128.91	7.26	11.71	21851	-25866	21396	4435*
CANBERRA	CAN	-35.32	149.36	125.32	133.61	226.14	135.71	226.06	135.76	225.62	12.14	23813	-53770	23280	5011

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		GEOGRAPHIC COORDINATES			GEOMAGNETIC MODELS						ANNUAL VALUES				
					DIPOLE		GUSTAFFSSON		TSYGANENKO		OBSERVED	OR	IGRF	CALCULATED(*)	
OBSERVATORY	CODE	LAT	E LONG	CO-LAT	CO-LAT	E LONG	CO-LAT	E LONG	CO-LAT	E LONG	D	H	Z	X	Y
ORANGE BAY	OB*	-55.52	291.92	145.52	134.19	1.83	129.77	5.11	129.71	5.08	14.93	22326	-27329	21572	5752*
SOUTH GEORGIA	SGE	-54.28	323.52	144.28	134.50	27.19	132.39	24.33	132.36	24.26	-8.72	18227	-24251	18016	-2764
TOOLANGI	TOO	-37.53	145.47	127.53	136.34	222.30	138.58	221.94	138.64	221.97	11.33	21739	-56548	21315	4271*
MELBOURNE	MEL	-37.83	144.98	127.83	136.70	221.82	138.97	221.42	139.03	221.45	11.21	21489	-56855	21079	4178*
MARTIN DE VIVIES	AMS	-37.83	77.57	127.83	137.12	142.00	139.17	137.80	139.20	137.72	-38.41	19058	-45530	14934	-11840*
AMBERLEY	AML	-43.15	172.72	133.15	137.33	253.79	139.83	255.90	139.87	255.92	22.39	21312	-54641	19705	8118*
EYREWELL	EYR	-43.42	172.35	133.42	137.65	253.51	140.18	255.63	140.23	255.66	22.51	21116	-54927	19507	8084*
CHRISTCHURCH	CHR	-43.53	172.62	133.53	137.72	253.84	140.25	255.98	140.29	256.01	22.62	21087	-54935	19465	8110*
MARION ISLAND	MRN	-46.88	37.85	136.88	139.25	95.86	141.92	92.03	141.87	92.09	-36.91	15530	-28837	12417	-9327*
LAUDER	LAU	-45.04	169.68	135.04	139.72	251.36	142.45	253.60	142.47	253.57	23.17	19856	-56690	18254	7813*
ORCADAS DEL SUR	ORC	-60.73	315.22	150.73	140.24	19.30	136.31	19.27	136.26	19.23	1.88	20327	-28905	20316	667*
PORT ALFRED	CZT	-46.43	51.87	136.43	141.50	110.56	143.25	105.45	143.22	105.44	-42.44	16295	-33528	12024	-10998
GONZALES VIDELA	GVD	-64.82	297.15	154.82	143.56	5.40	138.89	9.76	138.81	9.66	16.00	22085	-34623	21229	6087*
ARGENTINE ISLAND	AIA	-65.25	295.74	155.25	143.96	4.37	139.30	9.17	139.22	8.99	16.83	22360	-34742	21401	6477
AUCKLAND ISLAND	AU*	-50.87	166.08	140.87	145.98	250.20	149.22	253.12	149.27	253.19	27.46	15805	-60953	14024	7288*
CAMPBELL ISLAND	CAI	-52.50	169.20	142.50	146.96	254.43	150.26	258.16	150.25	258.14	29.97	15322	61148	13273	7654*
KERGUELEN	KG*	-49.15	70.20	139.15	147.23	129.91	148.25	121.49	148.27	121.48	-52.52	18344	-44414	11162	-14557*
PORT-AUX-FRANCAI	KGL	-49.35	70.20	139.35	147.43	129.82	148.41	121.31	148.44	121.31	-51.40	18466	-43814	11521	-14432*
MACQUARIE ISLAND	MCQ	-54.50	158.95	144.50	150.75	244.40	154.51	247.37	154.52	247.40	28.48	12723	-63768	11183	6067
HEARD ISLAND	HII	-53.03	73.37	143.03	151.47	131.89	151.88	121.31	152.10	121.20	-57.14	17965	-47263	9748	-15091*
EIGHTS	EGS	-75.23	282.83	165.23	153.95	356.08	149.59	5.76	149.60	5.71	32.59	20278	-46498	17085	10922*
SANAE	SNA	-70.33	357.51	160.33	153.95	45.27	149.94	43.32	149.93	43.45	-17.81	18999	-36266	18088	-5813
NORWAY STATION	NWS	-70.50	357.47	160.50	154.10	45.08	150.05	43.19	150.03	43.22	-17.67	18912	-36508	18020	-5740*
LAZAREV	LZV	-69.97	12.90	159.97	155.97	56.70	152.03	52.93	152.06	52.93	-27.51	18687	-37020	16574	-8632*
HALLEY BAY	HBA	-75.52	333.32	165.52	156.04	25.20	150.98	28.21	150.76	28.19	-1.50	20200	-41500	20193	-529*
NOVOLAZAREVSKAYA	NVL	-70.77	11.83	160.77	156.49	54.96	152.37	51.51	152.39	51.53	-27.16	18640	-37470	16584	-8510
ROI BAUDOUIN	RBD	-70.43	24.30	160.43	158.32	64.66	154.18	59.41	154.17	59.49	-35.61	18760	-38692	15252	-10923*
SYOWA STATION	SYO	-69.01	39.59	159.01	159.96	79.39	156.12	70.88	156.11	70.83	-46.41	18937	-40597	13056	-13716
MOLODEZHNAYA	MOL	-67.67	45.85	157.67	160.04	87.20	156.56	77.12	156.50	77.20	-50.63	19020	-41650	12064	-14703
BYRD STATION	BYR	-80.02	240.48	170.02	160.62	336.71	157.94	353.68	157.92	353.58	70.88	16257	-55648	5325	15360*
MAWSON	MAW	-67.61	62.88	157.61	163.30	105.07	160.24	89.38	160.23	89.30	-63.09	18432	-46784	8340	-16437
LITTLE AMERICA	LAA	-78.18	197.80	168.18	163.94	312.23	163.67	335.07	163.71	334.72	104.95	11881	-61168	-3065	11479*
LENINGRADSKAYA	LEN	-69.50	159.40	159.50	164.32	261.96	168.48	277.62	168.41	277.02	251.45	4729	-66109	-1504	-4483*
CAPE HALLETT	HLL	-72.32	170.22	162.32	164.45	278.76	167.40	299.46	167.38	298.79	111.09	6994	-64985	-2517	6526*
DUMONT DURVILLE	DRV	-66.67	140.01	156.67	165.32	232.33	170.72	235.41	170.61	235.32	158.20	1177	-70123	-1093	-437

(ALL VALUES AS OF 1980.5)

		GEOGRAPHIC COORDINATES			GEOMAGNETIC MODELS						ANNUAL VALUES				
					DIPOLE		GUSTAFFSSON		TSYGANENKO		OBSERVED	OR	IGRF	CALCULATED(*)	
OBSERVATORY	CODE	LAT	E LONG	CO-LAT	CO-LAT	E LONG	CO-LAT	E LONG	CO-LAT	E LONG	D	H	Z	X	Y
DAVIS	DVS	-68.58	77.97	158.58	166.86	122.53	164.50	99.16	164.49	99.04	-75.97	16631	-52607	4032	-16135*
MIRNY	MIR	-66.55	93.02	156.55	167.01	149.64	167.19	122.03	167.19	121.63	-83.93	14000	-58727	1480	-13922
OASIS	OAS	-66.30	100.72	156.30	167.36	163.51	168.86	134.51	168.90	134.48	-89.05	11985	-60536	199	-11983*
PLATEAU	PTU	-79.25	40.50	169.25	167.52	53.79	161.57	51.11	161.58	51.13	-53.83	18106	-47944	10686	-14616*
WILKES	WIL	-66.25	110.58	156.25	167.56	181.85	170.77	154.72	170.84	155.07	-95.76	9202	-63259	-924	9156*
CASEY	CSY	-66.28	110.53	156.28	167.59	181.76	170.79	154.48	170.86	154.86	-95.82	9223	-63241	-935	-9175*
CHARCOT	CTX	-69.37	139.03	159.37	167.92	235.89	173.45	242.60	173.40	242.69	165.00	3413	-66275	-3297	883*
SOUTH POLE	SPA	-90.00	000.00	180.00	168.67	.04	163.99	19.51	163.80	18.14	-27.58	16006	-54650	14187	-7411*
SCOTT BASE	SBA	-77.85	166.78	167.85	168.80	294.35	169.83	328.07	169.90	327.04	145.87	9174	-63237	-7594	5147*
MCMURDO	MCM	-77.85	166.70	167.85	168.81	294.30	169.84	328.08	169.92	327.04	146.00	9171	-63239	-7603	5128*
PIONERSKAYA	PIO	-69.73	95.50	159.73	170.32	149.87	169.82	113.25	169.86	112.87	-91.84	13534	-58492	-435	-13527*
VOSTOK	VOS	-78.45	106.87	168.45	179.41	111.68	173.22	52.90	173.33	53.65	118.73	13030	-59361	-6264	-11424

TABLE 5

O B S E R V E D G E O M A G N E T I C A N N U A L M E A N S

OBSERVATORY	CODE	EARLIEST COMPLETE YEAR						LATEST COMPLETE YEAR					
		ELE	YEAR	D	H	X	Y	Z	ELE	YEAR	D	H	X	Y	Z
ABINGER	ABN	DHZ	1925	-13.378	18597	18092	-4303	42946	DHZ	1956	-8.613	18750	18539	-2808	43376
ABISKO	ABK	DHZ	1921	-3.685	12354	12328	-794	49698	DHZ	1983	3.070	11745	11728	629	51094
ADDIS ABABA	AAE	DHZ	1958	-.437	36083	36082	-275	-634	DHZ	1982	-.761	36006	36003	-477	303
AGINCOURT	AGN		1899	-5.461	16491	16416	-1570	59789	DHZ	1968	-7.641	16287	16142	-2166	55987
ALERT	ALE	XYZ	1962	-79.205	3844	720	-3776	55379	XYZ	1983	-76.312	3627	860	-3524	55817
ALIBAG	ABG	DHI	1846	0.221	36541	36541	141	12318	DHZ	1983	-.698	38139	38136	-464	17773
ALMA ATA	AAA	DHZ	1964	4.685	25455	25370	2079	48272	DHZ	1982	4.480	25341	25264	1980	47927
ALMERIA	ALM	DHZ	1955	-7.822	25801	25561	-3511	33618	DHZ	1982	-4.646	26733	26645	-2164	33353
AMATSIA	AMT	DHZ	1976	2.368	30450	30424	1258	31657	DHZ	1981	2.620	30414	30382	1391	31790
AMBERLEY	AML	DHZ	1929	17.752	22365	21300	6819	-55252	XYZ	1977	21.865	21661	20103	8067	-54508
ANCHORAGE	AMU	DHZ	1958	26.075	15241	13690	6699	54116	DHZ	1958	26.075	15241	13690	6699	54116
ANNAMALAINAGAR	ANN	DHZ	1958	-2.742	40597	40551	-1942	3853	DHZ	1982	-2.599	40243	40202	-1824	4407
ANTIPOLO	ANO	DHZ	1911	.688	38072	38069	457	11140	DHZ	1938	.603	38356	38354	404	10844
APIA	API	DIH	1905	9.625	35672	35170	5964	-19912	XYZ	1983	12.483	34289	33479	7411	-19976
ARGENTINE ISLAND	AIA	DHZ	1958	17.180	23542	22492	6954	-36893	DHZ	1983	16.799	22184	21237	6411	-34499
ARTI	ARS	DHZ	1973	11.745	16663	16314	3392	52587	DHZ	1983	11.675	16590	16247	3357	52726
ASHKHABAD	ASH	DHZ	1959	4.460	27618	27534	2148	40966	DHZ	1982	4.050	27512	27443	1943	40957
ASO	ASO	DHZ	1958	-5.517	31760	31613	-3053	34398	DHZ	1958	-5.517	31760	31613	-3053	34398
ATHENS	ATH	DIH	1900	-5.705	26063	25934	-2591	33514	DIH	1908	-4.883	26197	26102	-2230	33613
AU TAU	AUT	DIH	1928	-.718	37478	37475	-470	22207	DIH	1939	-.633	37705	37703	-417	22133
AVERROES	AVE	DHF	1967	-8.262	27725	27437	-3983	30235	DHZ	1976	-7.230	28114	27890	-3538	29969
BAKER LAKE	BLC	XYZ	1952	2.617	3655	3651	167	60224	XYZ	1983	1.838	4708	4706	151	60572
BALDWIN	BAL	DHZ	1901	8.365	21953	21719	3194	55944	DHZ	1908	8.550	21714	21473	3228	55972
BANGUI	BNG	DHZ	1955	-5.028	32234	32110	-2825	-7933	DHZ	1983	-2.733	32111	32074	-1530	-9173
BARRACKPORE	BAC	DIH	1904	1.373	37224	37213	892	21781	DIH	1914	.537	37403	37401	350	22459
BARROW	BRW	DIH	1949	26.785	9387	8380	4230	56336	DHZ	1982	25.799	9734	8764	4236	56408
BARTER ISLAND	BTI	DHZ	1958	35.533	8825	7182	5129	57116	DHZ	1958	35.533	8825	7182	5129	57116
BARTH	BAH		1898	-10.375	18160	17863	-3270	44540	DIH	1903	-9.882	18261	17990	-3134	44363
BATAVIA	BTV	DHI	1884	1.921	36845	36824	1236	-19691	DHZ	1928	.890	36834	36830	572	-23226
BEAR ISLAND	BJN	DHZ	1951	1.505	9211	9208	242	51878	DHZ	1983	3.550	9200	9182	570	52905
BEIJING	BJI	DHI	1870	-2.491	28433	28406	-1236	43942	DHZ	1983	-6.036	29518	29354	-3103	46244
BELOIT	BLT	DHZ	1958	10.192	20822	20493	3684	53665	DHZ	1958	10.192	20822	20493	3684	53665
BELSK	BEL	DHZ	1960	1.867	18839	18829	614	44917	DHZ	1983	2.874	19033	19009	954	45499
BIG DELTA	BDE	DHZ	1958	29.847	12998	11274	6469	55372	DHZ	1958	29.847	12998	11274	6469	55372
BINZA	BIN	DHZ	1953	-9.162	27238	26890	-4337	-18110	DHZ	1973	-7.923	26730	26475	-3685	-19160
BOROK	BOX	HZF	1977		15938			49124	DHZ	1983	9.247	15856	15650	2548	49244
BOULDER	BOU	DHZ	1964	13.713	21235	20630	5034	51925	DHZ	1982	12.054	21315	20845	4451	51048
BOUZAREAH	BZR		1888	-13.906	24997	24264	-6008	34829		1888	-13.906	24997	24264	-6008	34829
BRORFELDE	BFE	DHZ	1980	-1.486	17204	17198	-445	46040	DHZ	1980	-1.499	17216	17210	-450	46034
BUDAKESZI	BUZ	DHZ	1949	-.570	20800	20799	-207	41756	DHZ	1955	.057	20840	20840	21	41986

		----------EARLIEST COMPLETE YEAR----------						----------LATEST COMPLETE YEAR----------					
OBSERVATORY	CODE	ELE	YEAR	D	H	X	Y	Z	ELE	YEAR	D	H	X	Y	Z
BUDKOV	BDV	DHZ	1967	-1.003	20097	20094	-352	42810	DHZ	1982	.132	20305	20305	47	43196
BURLINGTON	BRT	DHZ	1958	12.300	21150	20665	4506	52304	DHZ	1958	12.300	21150	20665	4506	52304
BYRD STATION	BYR	DHZ	1958	69.230	15893	5636	14860	-58669	DHZ	1967	70.483	16333	5457	15395	-57504
CAMBRIDGE BAY	CBB	DHZ	1972	31.558	2936	2502	1537	60025	XYZ	1983	25.812	3112	2802	1355	59989
CANARIAS	TEN	DHZ	1959	-12.770	28206	27508	-6235	25392	DHZ	1980	-10.219	29232	28768	-5185	24047
CANBERRA	CAN	DIF	1979	12.080	23842	23314	4990	-53777	DHZ	1983	12.270	23733	23191	5044	-53755
CAPE CHELYUSKIN	CCS	DHZ	1935	25.535	4024	3631	1735	57649	DHZ	1982	15.334	3420	3298	904	59060
CAPE GOOD HOPE	CGH		1842	-29.211	20659	18032	-10082	-27642		1845	-29.123	20795	18166	-10121	-28675
CAPE HALLETT	HLL	DHZ	1958	103.083	6170	-1397	6010	-67720	DHZ	1962	104.111	6282	-1532	6092	-66861
CAPE TOWN	CTO	DHZ	1933	-24.665	15050	13677	-6281	-29733	DHZ	1940	-24.267	14433	13158	-5932	-29164
CAPE WELLEN	CWE	DHZ	1935	16.053	13672	13139	3781	53559	DHZ	1982	14.834	14175	13703	3629	53520
CAPODIMONTE	CPD	DHI	1884	-10.523	23841	23440	-4354	36560	DIH	1911	-8.092	24171	23930	-3402	36099
CARROLLTON	CAX	DHZ	1958	6.933	19980	19834	2412	53772	DHZ	1958	6.933	19980	19834	2412	53772
CASEY	CSY	DHZ	1978	-89.072	9518	154	-9517	-64488	DHZ	1983	-90.533	9585	-88	-9584	-64326
CASPER	CSR	DHZ	1958	14.833	19620	18966	5023	54447	DHZ	1958	14.833	19620	18966	5023	54447
CASTELLACCIO	CAO	DIH	1933	-7.177	22087	21914	-2759	38616	DIH	1962	-3.582	22455	22411	-1403	39611
CASTLE ROCK	CRC	DHZ	1970	16.672	24326	23303	6979	44860	DHZ	1974	16.483	24298	23299	6894	44736
CHA PA	CPA	DHZ	1955	-.805	39122	39118	-550	22108	DHZ	1978	-.913	38859	38854	-619	22363
CHAMBON-LA-FORET	CLF	DHZ	1936	-9.482	20011	19738	-3297	41374	DHZ	1983	-3.908	20864	20815	-1421	42160
CHANGCHUN	CNH	DHZ	1980	-8.918	26609	26287	-4125	47480	DHZ	1983	-8.996	26532	26206	-4148	47539
CHELTENHAM	CLM	DHZ	1901	-5.083	20195	20116	-1789	56627	DHZ	1955	-7.202	18519	18373	-2322	53728
CHICHIJIMA	CBI	DHZ	1980	-3.134	32712	32663	-1788	24130	DHZ	1982	-3.186	32690	32639	-1816	24154
CHRISTCHURCH	CHR	DHZ	1902	16.252	22694	21787	6351	-55277	DHZ	1930	17.805	22108	21049	6760	-55570
COIMBRA	COI	DHZ	1867	-20.796	21775	20356	-7731	39609	DHZ	1983	-7.086	24948	24757	-3077	36362
COLLEGE	CMO	DHZ	1933	30.427	12572	10841	6367	55530	DHZ	1983	27.872	12914	11416	6037	55377
COPENHAGEN	COP	DHI	1892	-10.890	17341	17029	-3276	44781	DHI	1899	-10.263	17490	17210	-3116	44783
CUAJIMALPA	CUA	DIH	1904	7.382	33050	32776	4246	32960	DIH	1926	8.813	32274	31893	4945	33775
DALLAS	DAL	DHZ	1964	8.817	24340	24052	3731	47500	DHZ	1974	7.838	24386	24158	3326	46942
DAR ES SALAAM	DM*		1897	-8.505	29009	28690	-4290	-21745		1897	-8.505	29009	28690	-4290	-21745
DAVIS	DVS	DHZ	1981	-76.300	16587	3928	-16115	-52576	DHZ	1983	-76.423	16591	3895	-16126	-52464
DE BILT	DBN	DHZ	1899	-13.911	18502	17959	-4448	43701	DHZ	1938	-8.035	18219	18040	-2547	43262
DEHRA DUN	DDI	DIH	1903	2.692	33425	33388	1570	31437	DHZ	1942	.647	33525	33523	378	34199
DEKELEIA	DEK	DHZ	1935	-.958	25962	25958	-434	34810	DHZ	1939	-.573	26042	26041	-261	35002
DIXON ISLAND	DIK	DHZ	1933	28.527	6971	6125	3329	57430	DHZ	1982	27.167	6350	5649	2899	58290
DOMBAS	DOB	DHZ	1916	-11.217	14421	14146	-2805	46196	DHZ	1982	-3.091	14206	14185	-765	48388
DOURBES	DOU	DHZ	1955	-5.967	19289	19185	-2005	42830	DHZ	1983	-3.238	19874	19842	-1121	43400
DUBLIN	DL*		1842	-27.263	16000	14223	-7329	45689	DHI	1850	-26.470	16160	14466	-7203	45399
DUMONT DURVILLE	DRV	XYZ	1958	-99.994	461	-80	-454	-71446	XYZ	1983	-20.492	1294	-1212	-453	-69973
EAST PORT	EP*	DHZ	1860	-17.951	15230	14489	-4694	60570	DHZ	1864	-18.061	15260	14508	-4731	60180
EASTER ISLAND	EIC	DIH	1958	14.713	28808	27863	7317	-21809	DHZ	1963	16.148	28152	27041	7830	-21598

OBSERVATORY	CODE	----------EARLIEST COMPLETE YEAR----------						----------LATEST COMPLETE YEAR----------					
		ELE	YEAR	D	H	X	Y	Z	ELE	YEAR	D	H	X	Y	Z
EBRO	EBR	DHZ	1905	-13.948	23230	22545	-5599	37359	DHZ	1979	-4.303	24708	24638	-1854	36871
EIGHTS	EGS	DHZ	1964	32.693	21063	17726	11377	-48352	DHZ	1964	32.693	21063	17726	11377	-48352
ELIZABETHVILLE	ELI	DHZ	1935	-9.417	23700	23381	-3878	-24780	DHZ	1957	-8.548	22875	22621	-3400	-24950
ESKDALEMUIR	ESK	DHZ	1908	-18.555	16821	15947	-5353	45283	DHZ	1983	-7.861	17301	17138	-2365	45824
ESPANOLA	EPN	DHZ	1958	13.167	23700	23077	5398	48556	DHZ	1958	13.167	23700	23077	5398	48556
EYREWELL	EYR	DHZ	1978	22.073	21415	19845	8048	-54783	XYZ	1983	22.423	21317	19705	8131	-54626
FALMOUTH	FAL		1892	-19.218	18444	17416	-6071	43702	DHZ	1912	-17.403	18799	17938	-5623	43118
FANNING	FAN	DHZ	1958	9.483	32924	32474	5424	6149	DHZ	1958	9.483	32924	32474	5424	6149
FORT CHURCHILL	FCC	DHZ	1958	2.833	6658	6650	329	60641	XYZ	1983	1.734	7636	7633	231	60578
FORT YUKON	FYU	DHZ	1958	31.767	11250	9565	5923	56131	DHZ	1958	31.767	11250	9565	5923	56131
FREDERICKSBURG	FRD	DHZ	1956	-6.507	19000	18878	-2153	53300	DHZ	1983	-8.773	20521	20281	-3129	51015
FUQUENE	FUQ	DHZ	1955	1.170	30458	30452	622	20394	DHZ	1982	-2.594	28813	28783	-1303	18642
FURSTENFELDBRUCK	FUR	DHZ	1939	-4.895	20295	20221	-1732	41356	DHZ	1983	-.608	20812	20811	-220	42562
GIBILMANNA	GIB	DHZ	1956	-1.947	25855	25840	-878	34952	DHZ	1956	-1.947	25855	25840	-878	34952
GLENLEA	GLL	XYZ	1982	7.976	14004	13869	1943	58837	XYZ	1982	8.038	14068	13930	1967	58844
GNANGARA	GNA	DHZ	1959	-2.902	23954	23923	-1213	-53482	DHZ	1983	-3.319	23294	23255	-1348	-53730
GODHAVN	GDH	DHZ	1927	-58.473	8255	4317	-7037	55764	DHZ	1983	-47.358	8551	5793	-6289	56327
GONZALES VIDELA	GVD	DHZ	1961	14.945	22914	22139	5909	-36706	DHZ	1961	14.945	22914	22139	5909	-36706
GOTTINGEN	GT*		1867	-14.861	18412	17796	-4722	42938		1867	-14.861	18412	17796	-4722	42938
GREAT WHALE R.	GWC	DHZ	1966	-20.395	9719	9110	-3387	59269	XYZ	1983	-19.486	10816	10196	-3608	58981
GREENWICH	GRW	DHZ	1846	-22.826	17160	15816	-6657	44630	DHZ	1925	-13.165	18410	17926	-4193	43080
GROCKA	GCK	DHZ	1958	.542	22421	22420	212	40489	DHZ	1983	1.832	22674	22662	725	41102
GUAM	GUA	DHZ	1958	1.813	35524	35506	1124	8134	DHZ	1983	1.919	35829	35809	1200	7201
GUANGZHOU	GZH	DHZ	1958	-.933	38226	38221	-623	23399	DHZ	1981	-1.564	38100	38086	-1039	23749
HALLEY BAY	HBA	DHZ	1958	-1.352	20276	20270	-478	-43727	DHZ	1975	-1.058	20288	20285	-375	-42239
HAMBURG	HM*		1885	-12.603	17848	17418	-3894	43717		1896	-11.611	18061	17691	-3635	43921
HARTEBEESTHOEK	HBK	DHF	1973	-16.777	13599	13020	-3925	27495	DHZ	1983	-10.118	13057	12854	-2293	26692
HARTLAND	HAD	DHZ	1957	-10.287	18627	18328	-3326	43451	DHZ	1983	-7.251	19356	19201	-2442	43787
HATIZYO	HTY	DHZ	1980	-7.685	31415	31133	-4201	31770	DHZ	1983	-7.074	31483	31243	-3876	31918
HAVANA	HVN	DHZ	1968	1.758	27409	27396	841	38957	DHZ	1979	.182	27076	27076	86	37688
HEALY	HEA	DHZ	1958	27.903	13518	11946	6326	54869	DHZ	1958	27.903	13518	11946	6326	54869
HEARD ISLAND	HII	DHZ	1952	-49.968	18461	11874	-14135	-47099	DHZ	1953	-50.152	18471	11835	-14181	-47187
HEISS ISLAND	HIS	DHZ	1959	24.365	5486	4997	2263	56866	DHZ	1982	23.084	5320	4894	2086	57530
HEL	HLP	DHZ	1934	-2.592	17553	17535	-794	44384	DHZ	1983	1.477	17614	17608	454	46200
HELWAN	HLW	DHZ	1903	-3.373	30107	30055	-1771	25732	DHZ	1959	1.327	30905	30897	715	28697
HERMANUS	HER	DHZ	1941	-23.860	14252	13034	-5765	-29249	DHZ	1983	-23.266	11188	10278	-4418	-25496
HOLLANDIA	HNA	DHZ	1958	3.960	37314	37225	2577	-14315	DHZ	1961	3.980	37279	37189	2587	-14478
HONG KONG	HKC	DHI	1884	0.783	36026	36023	492	22902	DHZ	1978	-1.403	38078	38067	-933	22395
HONOLULU	HON	DHZ	1902	9.318	29255	28869	4737	24759	DHZ	1983	11.394	27651	27106	5463	22251
HUANCAYO	HUA	DHZ	1922	8.125	29734	29436	4202	324	DHZ	1983	2.214	27041	27021	1045	930

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OBSERVATORY	CODE	ELE	YEAR	D	H	X	Y	Z	ELE	YEAR	D	H	X	Y	Z
HURBANOVO	HRB	DHZ	1949	-.847	20632	20630	-305	41853	DHZ	1983	1.450	20964	20957	531	42857
HYDERABAD	HYB	DHZ	1965	-1.712	40142	40124	-1199	14996	DHZ	1982	-1.634	39613	39597	-1129	15341
IBADAN	IBD	DHZ	1956	-8.687	32016	31649	-4835	-3306	DHZ	1962	-8.118	32089	31767	-4531	-3580
IRKUTSK	IRT	DHI	1887	2.398	20101	20083	841	55423	DHZ	1983	-2.353	19480	19464	-799	56888
ISTANBUL-KANDILLI	ISK	DHZ	1947	1.998	24714	24699	862	38216	DHZ	1979	3.173	24982	24944	1383	39553
JAIPUR	JAI	DHZ	1979	-.760	35837	35834	-475	29661	DHZ	1983	-.713	35576	35573	-442	29708
JARVIS ISLAND.	JRV	DHZ	1958	9.270	34462	34012	5551	1345	DHZ	1958	9.270	34462	34012	5551	1345
JASSY	JSS	DIH	1931	.393	21438	21437	147	40604	DIH	1963	2.800	21231	21206	1037	42729
JULIANEHAAB	JUL	DHZ	1933	-43.347	11616	8447	-7973	52989	DHZ	1933	-43.347	11616	8447	-7973	52989
KAKIOKA	KAK	DHZ	1913	-5.169	29749	29628	-2680	34851	DHZ	1983	-6.661	30172	29968	-3499	34720
KANOYA	KNY	DHZ	1958	-4.993	32943	32818	-2867	32187	DHZ	1983	-5.534	32976	32822	-3179	32052
KANOZAN	KNZ	DHZ	1961	-6.071	30474	30303	-3222	33891	DHZ	1983	-6.316	30523	30338	-3357	33744
KARAGANDA	KGD	DHZ	1965	8.797	20160	19923	3083	52539	DHZ	1983	7.325	20046	19882	2556	52269
KARAVIA	KVA	DHZ	1958	-8.442	22935	22686	-3367	-24930	DHZ	1959	-8.323	22875	22634	-3311	-24969
KARSANI	KAS	DIH	1905	2.405	25488	25466	1070	38309	DHZ	1934	4.433	24570	24497	1899	40390
KAZAN	KZN		1892	7.513	18551	18391	2426	47343	DHZ	1983	10.562	16773	16489	3075	50445
KELES	KEL	DHZ	1936	5.392	25373	25261	2384	44280	DHZ	1963	4.798	25836	25745	2161	45673
KEW	KEW		1858	-21.901	17488	16226	-6523	44117	DHZ	1924	-13.752	18392	17865	-4372	43205
KEY WEST	QW*	DHI	1860	4.776	31110	31002	2590	43810	DHI	1866	4.496	30980	30885	2430	43400
KIEL	KE*		1885	12.901	17630	17185	3936	44498		1885	12.901	17630	17185	3936	44498
KIEV	KIV	DHZ	1959	5.005	19286	19212	1683	45125	DHZ	1983	5.165	19452	19373	1751	45686
KIRUNA	KIR	DHZ	1965	-6.143	11112	11048	-1189	50401	DHZ	1981	-5.610	11152	11099	-1090	50946
KODAIKANAL	KOD	DHZ	1902	-.300	37394	37393	-196	1985	DHZ	1981	-2.384	39220	39186	-1631	2502
KOROR	KOR	DHZ	1958	2.088	37847	37822	1379	-54	DHZ	1965	1.993	37937	37914	1320	-381
KOTZEBUE	KOT	DHZ	1958	19.917	13000	12222	4428	54428	DHZ	1958	19.917	13000	12222	4428	54428
KREMSMUNSTER	KRE	DIH	1901	-9.280	20708	20437	-3339	40803	DIH	1904	-9.040	20730	20473	-3257	40752
KSARA	KSA	DHZ	1937	1.862	28586	28571	929	31979	DHZ	1970	2.647	29022	28991	1340	33674
KUTCHINO	KTC	DHZ	1926	6.432	17965	17852	2013	46442	DHZ	1938	6.483	17280	17169	1951	47260
KUYPER	KUY	DHZ	1929	.900	36824	36819	578	-23245	DHZ	1961	1.257	37389	37380	820	-23679
L AQUILA	AQU	DHZ	1960	-1.565	23542	23533	-643	38457	DHZ	1983	.182	23946	23946	76	38921
LA PAZ	LPB	DHZ	1974	-.228	25593	25593	-102	-2126	DHZ	1976	-.520	25479	25478	-231	-2019
LA QUIACA	LQA	DHZ	1920	6.055	26621	26473	2808	-5979	DHZ	1983	-2.403	23387	23366	-980	-6571
LANZHOU	LZH	DHZ	1959	-1.702	32024	32010	-951	42642	DHZ	1983	-1.813	31464	31448	-994	42537
LAS ACACIAS	LAS	DHZ	1964	-1.583	21290	21282	-588	-13430	DHZ	1978	-3.612	20310	20270	-1279	-13627
LAUDER	LAU	DHZ	1979	22.715	20213	18645	7805	-56529	DHZ	1979	22.715	20213	18645	7805	-56529
LAZAREV	LZV	DHZ	1960	-27.327	19202	17059	-8815	-39609	DHZ	1960	-27.327	19202	17059	-8815	-39609
LEADVILLE	LDV	DHZ	1958	13.883	21820	21183	5236	51033	DHZ	1958	13.883	21820	21183	5236	51033
LEIRVOGUR	LRV	DHZ	1958	-23.745	11872	10867	-4780	49322	DHZ	1983	-19.758	12406	11676	-4193	49993
LENINGRAD	LNN	DHZ	1947	5.967	15006	14925	1560	48141	DHZ	1982	7.272	15178	15056	1921	49095
LERWICK	LER	DHZ	1923	-15.672	14655	14110	-3959	46655	DHZ	1983	-7.376	14941	14817	-1917	47895

OBSERVATORY	CODE	----------EARLIEST COMPLETE YEAR----------						-------------LATEST COMPLETE YEAR-----------					
		ELE	YEAR	D	H	X	Y	Z	ELE	YEAR	D	H	X	Y	Z
LHASA	LSA	DHZ	1957	-.383	35876	35875	-240	33912	DHZ	1974	-.290	35695	35695	-181	33750
LISBON	LIS		1858	-21.670	22102	20540	-8161	39311	DIH	1900	-17.300	23516	22452	-6993	37507
LITTLE AMERICA V	LAA	DHZ	1958	102.698	11250	-2473	10975	-63870	DHZ	1958	102.698	11250	-2473	10975	-63870
LOGRONO	LGR	DHZ	1958	-7.937	23029	22808	-3180	38181	DHZ	1976	-6.008	23702	23572	-2481	38187
LOS ANGELES	LA*	DHI	1883	14.513	27283	26412	6837	46339		1889	14.376	27220	26367	6759	46186
LOVO	LOV	DHZ	1929	-3.138	15582	15559	-853	46340	XYZ	1983	1.813	15464	15456	489	48089
LUANDA BELAS	LUA	DHZ	1954	-11.588	24494	23995	-4920	-21346	DHZ	1983	-8.869	22986	22711	-3543	-23017
LUBECK	LB*		1885	-12.495	17792	17371	-3849	44070		1893	-11.845	17904	17523	-3675	44140
LUKIAPANG	LKP	DIH	1909	-2.977	33187	33142	-1723	33879	DHZ	1933	-3.590	33329	33264	-2087	33791
LUNPING	LNP	DHZ	1966	-2.368	36624	36593	-1513	25627	DHZ	1983	-3.008	36568	36518	-1918	25827
LVOV	LVV	DHZ	1952	2.125	19828	19814	735	43770	DHZ	1982	3.394	20050	20015	1187	44625
LWIRO	LWI	DHZ	1959	-4.183	29884	29804	-2180	-16799	DHZ	1970	-3.345	29632	29582	-1729	-17198
M BOUR	MBO	DHZ	1952	-15.448	31404	30269	-8365	10597	DHZ	1983	-11.684	31943	31281	-6468	6842
MACQUARIE ISLAND	MCQ	DHZ	1951	23.847	13383	12240	5411	-64589	DHZ	1983	28.915	12652	11075	6117	-63674
MAGADAN	MGD	DHZ	1960	-10.378	16637	16365	-2997	54289	DHZ	1983	-13.316	17956	17473	-4135	52571
MAISACH	MAS	DHZ	1927	-6.875	20314	20168	-2432	40817	DHZ	1932	-5.988	20299	20188	-2118	41005
MAITUN	MAI	DHZ	1941	-8.688	26844	26536	-4055	44591	DHZ	1945	-8.788	26934	26618	-4115	44714
MAJURO	MJR	DHZ	1965	9.387	33395	32948	5447	3307	DHZ	1965	9.387	33395	32948	5447	3307
MANHAY	MAB	DHZ	1933	-8.545	19096	18884	-2837	42433	DHZ	1983	-2.844	19753	19729	-979	43641
MANILA	MAN	DHI	1891	0.828	37611	37607	544	11694	DIH	1904	.857	38215	38211	571	10961
MAPUTO	LMM	DHZ	1957	-15.950	15281	14693	-4199	-28881	DHZ	1983	-15.756	13913	13390	-3777	-26871
MARION ISLAND	MRN	DHZ	1974	-35.737	14522	11788	-8482	-30615	DHZ	1977	-36.172	14515	11717	-8567	-30319
MARTIN DE VIVIES	AMS	DHZ	1982	-40.733	19146	14508	-12492	-47422	XYZ	1983	-40.768	19144	14499	-12501	-47419
MATOCHKIN SHAR	MSR	DHZ	1924	20.625	9491	8883	3343	54326	DHZ	1944	23.272	8880	8158	3508	54500
MAURITIUS	MRI	DHZ	1892	-10.170	23943	23567	-4228	-33921	DHZ	1965	-17.052	22220	21243	-6516	-30495
MAWSON	MAW	DHZ	1956	-58.887	18282	9447	-15652	-49006	DHZ	1983	-63.443	18439	8244	-16492	-46503
MEANOOK	MEA	DIH	1917	27.768	12941	11451	6029	60450	XYZ	1983	21.665	13457	12506	4968	58396
MELBOURNE	MEL	DHI	1893	8.160	23432	23195	3326	-55957	DIH	1920	7.927	22874	22655	3154	-56384
MEMAMBETSU	MMB	DHZ	1952	-8.168	26468	26199	-3761	41707	DHZ	1983	-8.374	26446	26164	-3851	41415
MIDWAY	MDY	DHZ	1964	10.277	27813	27367	4962	26042	DHZ	1964	10.277	27813	27367	4962	26042
MINSK	MNK	DHZ	1961	4.948	17763	17697	1532	46363	DHZ	1982	5.429	17895	17815	1693	46883
MIRNY	MIR	DHZ	1957	-78.150	13788	2831	-13494	-60436	DHZ	1982	-84.249	14000	1403	-13929	-58550
MISALLAT	MLT	DHZ	1960	1.283	31067	31059	696	28372	DHZ	1980	1.980	31299	31280	1082	28657
MIZUSAWA	MIZ	DHZ	1969	-7.285	28843	28610	-3657	37274	DHZ	1983	7.475	28830	28585	3751	37304
MOCA	MFP	DHZ	1958	-7.660	30724	30450	-4095	-8827	DHZ	1971	-6.755	30698	30485	-3611	-9553
MODIIM	MOD	DHZ	1975	2.195	30076	30054	1152	31960	DHZ	1975	2.195	30076	30054	1152	31960
MOLODEZHNAYA	MOL	DHZ	1965	-49.190	18977	12402	-14363	-43219	DHZ	1982	-50.749	19005	12025	-14716	-41430
MONTE CAPELLINO	MCP	DHZ	1959	-3.488	22247	22206	-1353	39173	DHZ	1962	-3.258	22320	22284	-1269	39175
MOSCOW	MOS	DHZ	1946	7.083	17157	17026	2116	47707	DHZ	1982	7.844	17248	17087	2354	48673
MOULD BAY	MBC	DHZ	1963	65.613	2424	1001	2208	57940	XYZ	1983	59.999	2560	1281	2217	58219

		----------EARLIEST COMPLETE YEAR----------						----------LATEST COMPLETE YEAR----------					
OBSERVATORY	CODE	ELE	YEAR	D	H	X	Y	Z	ELE	YEAR	D	H	X	Y	Z
MUNICH	MNH		1842	-16.790	19282	18460	-5570	41860	DHZ	1913	-9.103	20623	20363	-3263	40609
MUNTINLUPA	MUT	DHZ	1951	.532	38871	38869	361	10019	DHZ	1982	-.716	39244	39241	-490	9729
MURMANSK	MMK	DHZ	1959	11.445	11549	11319	2292	51214	DHZ	1981	12.414	11798	11522	2536	51565
NAGYCENK	NCK	DHZ	1961	-.393	20816	20815	-143	42077	DHZ	1981	.873	21119	21117	322	42500
NAIROBI	NAI	DHZ	1964	-2.360	30918	30892	-1273	-15669	DHZ	1978	-1.160	30487	30481	-617	-15477
NANTES	NTS	DHZ	1923	-13.391	20212	19662	-4681	41009	DHZ	1958	-8.037	20678	20475	-2891	41564
NARSSARSSUAQ	NAQ	DHZ	1969	-36.610	11661	9360	-6954	53686	DHZ	1983	-33.306	12152	10156	-6672	53764
NEW YEARS ISLAND	NYI	DIH	1902	15.955	27306	26254	7506	-32808	DIH	1916	15.040	26771	25854	6947	-31519
NEWPORT	NEW	DHZ	1967	21.447	18034	16785	6594	54856	DHZ	1981	20.108	18187	17079	6253	54482
NICE	NCE	DHI	1885	-13.316	22035	21443	-5075	39298	DHI	1891	-12.715	22143	21600	-4874	39108
NIEMEGK	NGK	DHZ	1931	-5.603	18526	18437	-1809	42999	XYZ	1983	-.249	18809	18809	-82	44639
NITSANIM	NCK	DHZ	1967	2.368	30131	30105	1245	31600	DHZ	1967	2.368	30131	30105	1245	31600
NIZHNEDEVITSK	NNV	DHZ	1935	5.560	18588	18501	1801	45060	DHZ	1936	5.662	18556	18465	1831	45104
NORTHWAY	NRW	DHZ	1958	31.083	12900	11048	6660	55876	DHZ	1958	31.083	12900	11048	6660	55876
NORWAY STATION	NWS	DHZ	1960	-18.400	19537	18538	-6166	-38803	DHZ	1961	-18.383	19524	18528	-6156	-38665
NOVOKAZALINSK	NKK	DHZ	1974	6.438	22709	22566	2546	47466	DHZ	1983	6.464	22607	22463	2545	47512
NOVOLAZAREVSKAYA	NVL	DHZ	1961	-27.287	18881	16780	-8656	-39831	DHZ	1982	-26.999	18620	16591	-8452	-37260
NOVOSIBIRSK	NVS	DHZ	1967	9.033	17156	16943	2694	56645	DHZ	1983	8.445	17202	17015	2526	56448
NURMIJARVI	NUR	DHZ	1953	3.345	14994	14968	875	48230	XYZ	1983	4.470	15154	15108	1181	49098
O GYALLA	OGY	DIH	1900	-7.480	21153	20973	-2754	40733	DIH	1914	-5.983	21024	20909	-2191	40531
OASIS	OAS	DHZ	1957	-84.537	12020	1144	-11965	-62654	DHZ	1958	-84.993	12003	1048	-11957	-62653
ODESSA	ODE		1896	-4.826	22038	21960	-1854	42452	DHZ	1983	2.439	21392	21373	910	43607
ORCADAS DEL SUR	ORC	DHZ	1905	5.277	25667	25558	2360	-36006	DHZ	1962	1.972	21759	21746	749	-30083
OSLO	OSL	DHI	1843	-18.578	15502	14694	-4939	46929	DIH	1907	-11.017	16388	16086	-3132	47034
OTTAWA	OTT	DHZ	1969	-13.685	15760	15313	-3729	56467	XYZ	1983	-14.198	16813	16299	-4124	55304
P. TUNGUSKA	POD	DHZ	1969	10.598	12312	12102	2264	59244	DHZ	1983	9.734	12343	12165	2087	59209
PAMATAI	PPT	DHZ	1969	10.302	31613	31103	5654	-18713	DHZ	1983	11.237	31262	30663	6092	-18905
PANAGYURISHTE	PAG	DHZ	1948	.263	23436	23436	108	38794	DHZ	1982	2.020	23695	23680	835	39839
PARAMARIBO	PAB	DHZ	1958	-11.803	29119	28503	-5956	18427	DHZ	1974	-13.605	28612	27809	-6730	16067
PARC ST. MAUR	PSM		1883	-16.340	19351	18569	-5444	42112	DHZ	1900	-14.757	19558	18913	-4982	41736
PATRICK	PAT	DHZ	1955	.480	24920	24919	209	45533	DHZ	1955	.480	24920	24919	209	45533
PENDELI	PEG	DHZ	1959	.887	26177	26174	405	35976	DHZ	1960	.945	26183	26179	432	36021
PERPIGNAN	PER		1890	-14.446	22143	21443	-5524	38781	DHZ	1900	-13.622	22441	21810	-5285	38828
PETROPAVLOVSK	PET	DHZ	1969	-5.273	22105	22011	-2031	45965	DHZ	1982	-5.374	21981	21884	-2058	45857
PILAR	PIL	DHZ	1905	9.857	25892	25510	4432	-12655	DHZ	1983	-.191	21189	21189	-70	-12072
PIONERSKAYA	PIO	DHZ	1957	-85.713	13179	985	-13142	-60277	DHZ	1958	-86.235	13162	864	-13134	-60242
PLAISANCE	PLS	DHZ	1966	-16.600	21829	20919	-6236	-29396	DHZ	1976	-16.917	21723	20783	-6321	-29034
PLATEAU	PTU	DHZ	1966	-53.337	18215	10876	-14611	-49683	DHZ	1968	-53.438	18246	10869	-14655	-49574
POLA	POL	DHI	1883	-10.793	21854	21467	-4092	39146	DHZ	1922	-6.422	22049	21911	-2466	38690
PORT ALFRED	CZT	DHZ	1974	-41.507	16291	12200	-10796	-33810	DHZ	1982	-43.356	16272	11831	-11170	-33470

		----------EARLIEST COMPLETE YEAR----------						----------LATEST COMPLETE YEAR----------					
OBSERVATORY	CODE	ELE	YEAR	D	H	X	Y	Z	ELE	YEAR	D	H	X	Y	Z
PORT MORESBY	PMG	DHZ	1959	6.022	36483	36282	3827	-22789	DHZ	1983	6.544	35935	35701	4095	-23713
PORT-AUX-FRANCAIS	KGL	DHZ	1958	-47.823	18736	12580	-13885	-44064	DHZ	1982	-51.674	18412	11418	-14443	-43766
POTSDAM	POT	DHZ	1890	-10.955	18731	18390	-3559	43044	DHZ	1928	-5.970	18467	18367	-1921	43010
PRICE	PCU	DHZ	1958	15.917	22290	21435	6113	50379	DHZ	1958	15.917	22290	21435	6113	50379
PRUHONICE	PRU		1870	-12.015	19358	18934	-4030	41955	DHZ	1972	-.518	19749	19748	-179	43406
QUETTA	QUE	DHZ	1954	1.520	32915	32903	873	33655	DHZ	1983	1.312	32656	32647	748	33603
REGENSBERG	REG	DHZ	1957	-3.792	20719	20674	-1370	41411	DHZ	1975	-2.513	21134	21114	-927	41811
RESOLUTE BAY	RES	DHZ	1954	-95.340	924	-86	-920	57981	XYZ	1983	-56.177	910	506	-756	58485
RIO DE JANEIRO	RDJ	DHI	1899	-7.790	25030	24800	-3393	-5900	DHZ	1906	-8.922	24772	24472	-3842	-6155
ROBURENT	ROB	DHZ	1965	-3.120	22603	22570	-1230	39668	DHZ	1973	-2.495	22828	22806	-994	39781
ROI BAUDOUIN	RBD	DHZ	1965	-35.427	18929	15424	-10971	-40753	DHZ	1966	-35.482	18930	15415	-10987	-40631
RUDE SKOV	RSV	DHZ	1907	-9.805	17426	17171	-2968	44730	DHZ	1981	-.743	17072	17071	-220	46327
SABHAWALA	SAB	DHZ	1964	.348	34241	34240	208	34698	DHZ	1981	.392	33804	33803	231	34466
SAN FERNANDO	SFS	DHI	1891	-16.653	24329	23309	-6972	35905	DHZ	1977	-6.622	26812	26633	-3092	32951
SAN JOSE	SJL	DHZ	1965	2.178	27404	27384	1042	39206	DHZ	1973	1.028	27346	27342	491	38334
SAN JUAN	SJG	DHZ	1926	-4.352	27742	27662	-2105	35734	DHZ	1983	-10.051	27245	26827	-4754	30597
SANAE	SNA	DHZ	1963	-18.657	19464	18441	-6226	-38378	DHZ	1983	-17.799	18916	18011	-5781	-35920
SANTIAGO	SNT		1851	15.840	29858	28724	8150	-21359		1852	16.245	29770	28581	8328	-21312
SAO MIGUEL	SMG	DIH	1911	-19.948	22987	21608	-7843	41467	DHZ	1977	-13.043	25590	24929	-5775	37981
SCOTT BASE	SBA	DHZ	1958	156.565	9777	-8971	3888	-69454	DHZ	1979	156.462	10649	-9763	4253	-67511
SEDDIN	SED	DHZ	1908	-9.320	18890	18641	-3059	42974	DHZ	1931	-5.482	18450	18366	-1762	43106
SHESHAN	SSH	DHZ	1934	-3.412	33247	33188	-1978	33855	DHZ	1983	-4.509	33678	33574	-2647	34398
SHILLONG	SHL	DHZ	1979	-.738	37507	37504	-483	27372	DHZ	1981	-.763	37409	37406	-498	27479
SIMFEROPOL	SIM	DHZ	1959	4.372	22498	22433	1715	41843	DHZ	1959	4.372	22498	22433	1715	41843
SIMOSATO	SSO	DHZ	1955	-5.758	31500	31341	-3160	33420	DHZ	1977	-6.008	31546	31373	-3302	33071
SINGAPORE	SG*		1841	1.600	36707	36693	1025	-8287		1847	1.608	37351	37336	1048	-8559
SITKA	SIT	DHZ	1902	29.852	15441	13392	7686	56833	DHZ	1983	27.179	15838	14089	7234	54766
SLUTZK	SLU		1878	-1.128	16364	16361	-322	46686	DHZ	1944	5.650	15150	15076	1492	47807
SODANKYLA	SOD	DHZ	1914	.305	12905	12905	69	49260	DHZ	1983	6.854	11866	11781	1416	50712
SOUTH GEORGIA	SGE	DHZ	1975	-8.683	18666	18452	-2817	-24425	DHZ	1981	-8.721	18129	17919	-2748	-24226
SOUTH POLE	SPA	DHZ	1959	-27.398	15810	14037	-7275	-57112	DHZ	1971	-27.662	16006	14177	-7431	-55793
SREDNIKAN	SRE	DHZ	1936	-8.803	16142	15952	-2470	53995	DHZ	1966	-10.317	16763	16492	-3002	54054
SSAGASTYR	GY*		1883	4.805	7168	7143	600	59655		1883	4.805	7168	7143	600	59655
ST JOHNS	STJ	DHZ	1969	-26.835	17503	15618	-7901	50777	XYZ	1983	-24.474	18523	16859	-7674	49879
ST PETERSBURG	LN*		1869	-2.350	16275	16262	-667	46604	DHI	1877	-1.318	16396	16392	-377	47026
STARA DALA	STA	DHZ	1941	-1.785	20668	20658	-644	41550	DHZ	1944	-1.438	20674	20667	-519	41693
STONYHURST	STO	DHI	1876	-20.878	16840	15734	-6002	44676	DHZ	1967	-8.951	17646	17431	-2746	44796
SURLARI	SUA	DHZ	1950	1.653	22474	22465	648	40949	DHZ	1980	2.818	22725	22698	1117	41607
SVERDLOVSK	SVD	DHZ	1887	9.251	17815	17583	2864	50537	DHZ	1976	12.807	16143	15741	3578	52282
SWIDER	SWI	DHZ	1921	-3.505	18712	18677	-1144	43185	DHZ	1969	1.542	18365	18358	494	45216

		----------EARLIEST COMPLETE YEAR----------						----------LATEST COMPLETE YEAR----------					
OBSERVATORY	CODE	ELE	YEAR	D	H	X	Y	Z	ELE	YEAR	D	H	X	Y	Z
SYOWA STATION	SYO	DHZ	1958	-44.167	18911	13565	-13176	-43354	DHZ	1982	-46.459	19000	13088	-13772	-40381
TACUBAYA	TAC	DHZ	1895	7.760	33428	33122	4514	32701	DIH	1926	9.252	32141	31723	5167	34529
TAMANRASSET	TAM	DIH	1935	-7.860	31818	31519	-4351	17799	DHZ	1981	3.117	32912	32863	1790	17249
TANANARIVE	TAN	DHI	1890	-13.123	23030	22429	-5229	-32546	DHZ	1983	-13.118	19964	19443	-4530	-27050
TANGERANG	TNG	DHZ	1964	1.025	37171	37165	665	-23983	DHZ	1983	.162	37417	37417	106	-23991
TASHKENT	TKT		1883	5.623	27109	26978	2656	41590	DHZ	1982	4.610	25732	25649	2068	45366
TATUOCA	TTB	DHZ	1958	-15.283	28648	27635	-7551	8940	DIH	1980	-17.857	27758	26421	-8512	5656
TBILISI	TFS	DHI	1880	0.808	25748	25745	363	37468	DHZ	1982	5.082	24105	24010	2135	42146
TEHRAN	TEH	DHZ	1960	3.857	28343	28279	1906	37688	DHZ	1973	3.473	28329	28277	1716	37611
TEOLOYUCAN	TEO	DHZ	1914	8.827	32521	32136	4990	33596	DHZ	1975	7.930	29631	29348	4088	31846
THULE	THL	DHZ	1947	-77.808	4436	937	-4336	55761	DHZ	1980	-74.467	3921	1050	-3778	56688
TIHANY	THY	DHZ	1955	-.385	21166	21165	-142	41530	DHF	1983	1.400	21460	21454	525	42258
TIKHAYA BAY	TKH	DHZ	1933	21.182	6598	6152	2384	54611	DHZ	1957	26.243	6130	5498	2711	55066
TIXIE BAY	TIK	DHZ	1944	-11.948	7356	7197	-1523	59234	DH	1982	-16.749	7860	7526	-2265	
TOKYO	TOK	DHZ	1887	-4.118	29179	29104	-2096	34342	DIH	1912	-5.057	29996	29879	-2644	34379
TOLEDO	SPT	DHZ	1982	-5.498	25275	25159	-2421	35732	DHZ	1981	-5.608	25147	25027	-2456	36034
TOMSK	TMK	DHZ	1958	10.023	15783	15542	2747	57169	DHZ	1969	9.218	15945	15739	2554	57226
TOOLANGI	TOO	DIH	1919	8.130	23071	22839	3263	-55975	DHZ	1978	10.988	22099	21694	4212	-56304
TORONTO	AG*	DHZ	1842	-1.318	16300	16296	-375	62014	DHZ	1898	-4.916	16598	16537	-1423	60327
TOULOUSE	TLS		1894	-14.791	21834	21110	-5574	39738	DIH	1905	-13.995	22013	21360	-5324	39498
TOUNGOO	TGO	DIH	1905	.807	38675	38671	544	16394	DIH	1932	-.692	39306	39303	-474	16727
TOYOHARA	TOH	DHZ	1933	-8.947	25035	24730	-3893	44591	DHZ	1944	-9.492	25191	24846	-4154	44764
TRELEW	TRW	DHZ	1958	9.192	22821	22528	3645	-18827	DHZ	1978	7.250	21229	21059	2679	-18104
TRIVANDRUM	TRD	DHZ	1958	-2.905	40062	40011	-2030	-423	DHZ	1983	-2.738	39847	39802	-1902	9
TROMSO	TRO	DHZ	1931	-3.993	11549	11521	-804	50198	DHZ	1983	.835	11323	11322	165	51587
TSINGTAO	TSI	DIH	1908	-3.727	30766	30701	-2000	39890	DHZ	1936	-4.627	30935	30834	-2495	39741
TSUMEB	TSU	DHZ	1965	-15.967	17340	16671	-4769	-27004	DHZ	1983	-13.236	15623	15208	-3576	-26940
TUCSON	TUC	DHZ	1910	13.430	27379	26630	6359	46160	DHZ	1983	11.970	25545	24990	5298	42807
TUNTUNGAN		DHZ	1982	-.599	40309	40307	-421	-9556	DHZ	1982	-.599	40309	40307	-421	-9556
UCCLE	UCC		1893	-14.811	18774	18151	-4800	43123	DIH	1917	-12.320	18964	18527	-4046	42684
UJJAIN	UJJ	DHZ	1979	-.520	37147	37145	-337	24365	DHZ	1981	-.475	36969	36968	-306	24441
ULAN BATOR	UBA	DHZ	1966	-3.687	23116	23068	-1486	54363	DHZ	1977	-3.648	23088	23041	-1469	53920
URUMQI	WMQ	DHZ	1980	2.612	25389	25362	1157	50091	DHZ	1983	2.635	25276	25249	1162	50082
UTRECHT	WI*	DHI	1891	-14.618	18354	17760	-4632	43769	DHI	1898	-13.985	18487	17939	-4468	43623
VAL JOYEUX	VLJ	DHZ	1901	-15.200	19680	18992	-5160	42167	DHZ	1936	-9.945	19647	19352	-3393	41668
VALENTIA	VAL	DHI	1899	-21.583	17739	16495	-6525	45149	DHZ	1983	-10.348	19022	18713	-3416	44454
VASSOURAS	VSS	DHZ	1919	-11.180	24419	23956	-4735	-6669	DHZ	1983	-19.583	20886	19678	-6999	-11491
VICTORIA	VIC	DHZ	1956	23.003	18689	17203	7303	53427	XYZ	1983	21.223	19006	17717	6880	52773
VIEQUES	VQS	DIH	1904	-1.518	29264	29254	-775	33962	DHZ	1923	-4.138	27629	27557	-1994	34900
VLADIVOSTOK	VLA	DHZ	1952	-8.997	26885	26554	-4204	45510	DHZ	1983	-9.756	26906	26517	-4558	45024

		----------EARLIEST COMPLETE YEAR----------						----------LATEST COMPLETE YEAR----------					
OBSERVATORY	CODE	ELE	YEAR	D	H	X	Y	Z	ELE	YEAR	D	H	X	Y	Z
VOSTOK	VOS	DHZ	1958	116.600	12281	-5499	-10981	-61643	DHZ	1981	118.794	13067	-6293	-11450	-59269
VYKHODNOY	VYK	DHZ	1954	25.393	8648	7812	3709	54817	DHZ	1955	25.457	8622	7785	3706	54859
WARSAW	SW*		1893	-6.815	19005	18871	-2255	43325		1893	-6.815	19005	18871	-2255	43325
WASHINGTON 1	CH*	DHZ	1867	-2.801	19900	19876	-973	58160	DHZ	1868	-2.853	19960	19935	-994	58150
WASHINGTON 2	FR*	DHZ	1889	-4.025	19869	19820	-1395	58033	DHZ	1892	-4.236	19849	19794	-1466	57858
WASHINGTON NEW	FR*	DHZ	1894	-3.665	19979	19938	-1277	56644	DHZ	1894	-3.665	19979	19938	-1277	56644
WATHEROO	WAT	DHZ	1919	-4.380	24925	24852	-1903	-50780	DHZ	1958	-2.683	24858	24831	-1163	-52220
WHITESHELL	WHS	XYZ	1977	5.239	13985	13927	1277	58784	XYZ	1979	4.874	14054	14003	1194	58667
WIEN-KOBENZL	WIK		1892	-8.926	20657	20407	-3205	40986	DHZ	1983	.960	20787	20784	348	42986
WILHELMSHAVEN	WLH	DHI	1884	-13.923	17797	17274	-4282	43998	DHZ	1911	-11.470	18110	17748	-3601	43747
WILKES	WIL	DHZ	1958	-82.990	9314	1137	-9244	-65010	DHZ	1966	-86.547	9238	556	-9221	-64641
WINGST	WNG	DHZ	1939	-5.985	17636	17540	-1839	44092	DHZ	1983	-1.614	18093	18086	-509	45269
WITTEVEEN	WIT	DHZ	1938	-7.460	17952	17800	-2331	43571	DHZ	1982	-2.788	18528	18506	-900	44707
WUHAN	WHN	DHZ	1980	-3.133	34738	34686	-1899	34370	DHZ	1983	-3.246	34659	34603	-1962	34502
YAKUTSK	YAK	DHZ	1937	-16.818	14464	13845	-4185	57960	DHZ	1982	-19.481	15043	14182	-5016	58111
YANOV	YNV	DHZ	1934	.212	20081	20081	74	42863	DHZ	1934	.212	20081	20081	74	42863
YELLOWKNIFE	YKC	DHZ	1975	29.140	8660	7564	4217	60249	XYZ	1983	27.197	8706	7743	3979	60109
YUZHNO SAKHALINSK	YSS	DHZ	1942	-9.382	25149	24813	-4100	44700	DHZ	1983	-10.098	25200	24810	-4417	44733
ZIKAWEI	ZKW	DHI	1875	-1.996	32043	32024	-1116	33488	DIH	1907	-2.560	33056	33023	-1476	33768
ZINSEN	ZIN	DHZ	1918	-5.685	29978	29831	-2970	40170	DHZ	1943	-6.360	30229	30043	-3349	4034868

TABLE 6 GEOMAGNETIC ANNUAL MEAN LOG: 1810 - 1899

OBSERVATORY	CODE	YEAR 1810	1820	1830	1840	1850	1860	1870	1880	1890
		0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789
AGINCOURT	AGN									??
ALIBAG	ABG				3333	3333333333	3333333333	3333333333	3333333333	3333333333
ATHENS	ATH									?
AUCKLAND ISLAND	AU*							*		
BARNAUL	BM*				????????	??????????	??????????	????		
BARTH	BAH								?	??????????
BATAVIA	BTV								333333	333333333
BEIJING	BJI						??	3333333333	3333	
BEUTHEN	BEU									?
BOCHUM	BOC									???????
BOSSEKOP 1	BP*			*						
BOSSEKOP 2	BP*								*	
BOUZAREAH	BZR								?	
BRESLAU	BS*					?		??????		????
BUCHAREST	BVC									*
BUDAPEST	HB*							?	?? ??????????	
CAP THORDSEN	SL*								*	
CAPE GOOD HOPE	CGH			?????*						
CAPODIMONTE	CPD								33333333	3333333333
CLAUSTHAL	CLZ				?????	??????????	??????????	??????????	??????????	??????????
COIMBRA	COI						*222	2222222222	2222222222	2222222222
COPENHAGEN	COP									33333333
DAR ES SALAAM	DM*									??*
DE BILT	DBN									2
DUBLIN	DL*			????	??333?33	3				
EAST PORT	EP*						22222			
FALMOUTH	FAL									?????????
FLENSBURG	FLE									?????????
FORT RAE 1	FE*								*	
FREIBERG	FB*									??????????
GODHAAB 1	GH*								*	
GOTTINGEN	GT*			* ??????	??????????	???? ??		?		
GREENWICH	GRW		*? ?		??????2222	2222222222	?222222222	2222222222	2222222222	2222222222
HACKNEY WICK	HW*		*?*							
HACKNEY WICK 2	HW*		*?? ??*							

1=XHZ 2=DHZ 3=DIH 4=DI 5=DH 6=DZ 7=IHZ 8=IH 9=IZ D=D ONLY
F=F ONLY H=H ONLY I=I ONLY Z=Z ONLY Q=HZ P=DIF R=DHF S=XYF T=DHX U= HZ
*=INCOMPLETE YEAR ?=UNKNOWN ELEMENTS

OBSERVATORY	CODE	YEAR 1881 0123456789	1882 0123456789	1883 0123456789	1884 0123456789	1885 0123456789	1886 0123456789	1887 0123456789	1888 0123456789	1889 0123456789
HAMBURG	HM*								????? ?	? **
HAVANA	HVN									
HOLSTEINSBORG 1	HS*					?			333333	3333333333
HONG KONG	HKC								333	3333333333
IRKUTSK	IRT									
IVIGTUT 1	IV*						*			
JAN MAYEN 1	JM*								*	
KAZAN	KZN									??????
KERGUELEN	KG*							*		
KEW	KEW				?	* ?*??	??????????	??????????	????????*	??????????
KEY WEST	QW*						3333333			
KIEL	KE*					* *		*	?	*
KINGUAFJORD	KJ*								*	
KLAGENFURT	KF*									?????????
KRAKAU (CRAKAU)	KX*									?
KREMSMUNSTER	KRE									?????????
LISBON	LIS					?				??333333333
LOS ANGELES	LA*								*333333?	
LUANDA CAPELO	LUA								?33333 3	
LUBECK	LB*								????? ????	
MADRAS	MX*					?????				
MADRID	MDD								? ??????????	??????????
MAKERSTOUN	MQ*				?????????					
MALIYE KARMAKULY	MKL								*	
MANILA	MAN									3 3333333333
MAURITIUS	MRI									22222222
MELBOURNE	MEL									3333333
MEXICO	TE*								*	
MOSCOW	MO*								?????????	
MUNICH	MNH				?????????	??????????	??????????	??????????	???????	?
NANORTALIK 1	NN*								**	
NERTSCHINSK	NK*				?????????	??????????	?????			
NEUFAHRWASSER	NF*									?????
NICE	NCE								33333	33********
O GYALLA	OGY									??????

1=XHZ 2=DHZ 3=DIH 4=DI 5=DH 6=DZ 7=IHZ 8=IH 9=IZ D=D ONLY
F=F ONLY H=H ONLY I=I ONLY Z=Z ONLY Q=HZ P=DIF R=DHF S=XYF T=DHX U= HZ
*=INCOMPLETE YEAR ?=UNKNOWN ELEMENTS

OBSERVATORY	CODE	YEAR	1818 0123456789	1819 0123456789	1820 0123456789	1821 0123456789	1822 0123456789	1823 0123456789	1824 0123456789	1825 0123456789	1826 0123456789
ODESSA	ODE										????
ORANGE BAY	OB*									*	
OSLO	OSL					3333333	3333333333	3333333333	3333333333	3333333333	3333333333
PARC ST. MAUR	PSM									???????	??????????
PERPIGNAN	PER									?????	??????????
PHILADELPHIA	PH*				?????						
PITLEKAJ	PL*								*		
POLA	POL									??3333333	3333333333
POTSDAM	POT										2222222222
PRUHONICE	PRU			??????????	??????????	??????????	??????????	??????????	??????????	??????????	??????????
RIO DE JANEIRO	RDJ										3
ROSTOCK	RO*										??????
SAN FERNANDO	SFS									??????????	?333333333
SANTIAGO	SNT					*??					?
SCORESBYSUND 1	SY*										*
SINGAPORE	SG*				????????						
SLUTZK	SLU								??	??????????	??????????
SODANKYLA	SOD									*	
SOUTH GEORGIA	SGE									*	
SSAGASTYR	GY*									?	
ST HELIER	STH										??
ST PETERSBURG	LN*							? 3?333333			
STETTIN-ZABELSDO	SZA										????????
STONYHURST	STO						?????	??????3333	3333333333	3333333333	3333333333
SVERDLOVSK	SVD				?????????	??????????	??????????	?		222	2222222222
SYDNEY	SN*										*
TACUBAYA	TAC										2
TANANARIVE	TAN										33333
TASHKENT	TKT									? ?	
TASUISAK	AJ*										*
TBILISI	TFS								?	3333333333	3333333333
TOKYO	TOK									2	222
TORONTO	AG*				? 2?2	2??2	22 2	22222222	?222222222		222222222
TOULOUSE	TLS									?	??????
TRIVANDRUM	TRD					??????	??????????				

1=XHZ 2=DHZ 3=DIH 4=DI 5=DH 6=DZ 7=IHZ 8=IH 9=IZ D=D ONLY
F=F ONLY H=H ONLY I=I ONLY Z=Z ONLY Q=HZ P=DIF R=DHF S=XYF T=DHX U= HZ
*=INCOMPLETE YEAR ?=UNKNOWN ELEMENTS

OBSERVATORY	CODE	YEAR 0123456789 (1881)	0123456789 (1882)	0123456789 (1883)	0123456789 (1884)	0123456789 (1885)	0123456789 (1886)	0123456789 (1887)	0123456789 (1888)	0123456789 (1889)
UCCLE	UCC									?????????
UTRECHT	WI*									33333?3
VALENTIA	VAL									3
WARSAW	SW*									?
WASHINGTON 1	CH*						22*			
WASHINGTON 2	FR*									?2 222
WASHINGTON CITY	FR*				**					
WASHINGTON NEW	FR*									2
WIEN-KOBENZL	WIK									???????
WILHELMSHAVEN	WLH								333333	3333333333
WUSTROW	WUS									??????
ZIKAWEI	ZKW							33333	3333333333	3333333333

1=XHZ 2=DHZ 3=DIH 4=DI 5=DH 6=DZ 7=IHZ 8=IH 9=IZ D=D ONLY
F=F ONLY H=H ONLY I=I ONLY Z=Z ONLY Q=HZ P=DIF R=DHF S=XYF T=DHX U= HZ
*=INCOMPLETE YEAR ?=UNKNOWN ELEMENTS

TABLE 7 GEOMAGNETIC ANNUAL MEAN LOG: 1900 - PRESENT

OBSERVATORY	CODE	YEAR	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909
		R	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0
ABINGER	ABN					22222	2222222222	2222222222	2222222**			
ABISKO	ABK				2	2	2222 2	Q 2	2225	2222222DDD	DD 22222	2222222222 2222
ADAK	ADA										***	
ADDIS ABABA	AAE									22	2222222222	22222Q2222 222
AGINCOURT	AGN		2222222222	2222222222	2222222222	2222222222	22222*2222	2222222222	222222222*	*		
ALERT	ALE										*11111111	11*1111111 1111
ALIBAG	ABG		3333332222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222
ALMA ATA	AAA										*222222	2222222222 222
ALMERIA	ALM									22222	2222222222	2222222222 222
AMATSIA	AMT											2222 22
AMBERLEY	AML					2	2222222222	2222222222	2222222222	2222222222	22222211	
ANCHORAGE	AMU								*2			
ANGRA HEROISMO	ANH								ZZZ	ZZZZZZZZZZ	Z	
ANNAMALAINAGAR	ANN								*22	2222222222	2222222222	222
ANTIPOLO	ANO			233332222	2222222222	222222222D	D					
APIA	API		33333	3333333333	3332222332	2333322222	2222222222	2222222222	2222222222	2222222222	2222222222	2111
ARGENTINE ISLAND	AIA								*22	2222222222	2222222222	2222
ARTI	ARS										2222222	2222
ASHKHABAD	ASH								2	2222222222	2 22222222	222
ASO	ASO								2			
ATHENS	ATH		333333333									
AU TAU	AUT					*33	3333333333					
AVERROES	AVE										R 2 2	
BAKER LAKE	BLC								*11111111	1111111111	1111111111	1111
BALDWIN	BAL		22222222*									
BANGUI	BNG								*	22222	*222222222	2222222222 2222
BARRACKPORE	BAC			333333	33333							
BARROW	BRW						*		3	3333333333	3332222*22	2222222222 222
BARTER ISLAND	BTI									2		
BARTH	BAH		3333									
BATAVIA	BTV			*2332332	2332332222	222222222						
BEAR ISLAND	BJN						*			222222222	2222222222	2222222222 2222
BEIJING	BJI									222	2222222222	2222222222 2222
BELOIT	BLT									*2		
BELSK	BEL										2QQQQQ2222	2222222222 2222

1=XHZ 2=DHZ 3=DIH 4=DI 5=DH 6=DZ 7=IHZ 8=IH 9=IZ D=D ONLY
F=F ONLY H=H ONLY I=I ONLY Z=Z ONLY Q=HZ P=DIF R=DHF S=XYF T=DHX U= HZ
*=INCOMPLETE YEAR ?=UNKNOWN ELEMENTS

OBSERVATORY	CODE	YEAR	1901234567	1911234567	1921234567	1931234567	1941234567	1951234567	1961234567	1971234567	1981234567	1990
BEUTHEN	BEU		DDDDDDDDD	D								
BEUTHEN MIKILOW	BMK					DDDDD DDD						
BIG DELTA	BDE							*2				
BINZA	BIN							2222222	2222222222	2222		
BOCHUM	BOC		DDDDDDDDDD	DDDDDDDDDD	DDDDDDDDDD	DDDDD						
BOROK	BOX									?	222	
BOULDER	BOU								222222	2222222222	222	
BOUZAREAH	BZR		D*********	**********	**********	**********	**** ***	*				
BRORFELDE	BFE										2	
BUDAKESZI	BUZ						2	222222*				
BUDKOV	BDV									222	2222222222	222
BURLINGTON	BRT							2				
BYRD STATION	BYR							*22	222222	2*		
CAMBRIDGE BAY	CBB										22222111	1111
CANARIAS	TEN							2	222222	222	2Q22222222	2
CANBERRA	CAN										P	P222
CAPE CHELYUSKIN	CCS					22	2 222222	2	222222	2222222222	2222222222	222
CAPE HALLETT	HLL							*2*	**2			
CAPE TOWN	CTO					2222222	2					
CAPE WELLEN	CWE					D522222	2222	22D5222222	2222222222	2222222222	222	
CAPODIMONTE	CPD		3333333333	33888IIIII	II							
CARROLLTON	CAX							2				
CASEY	CSY										22	222
CASPER	CSR							2				
CASTELLACCIO	CAO					3333333	3333354333	3355333333	333	*III4		
CASTLE ROCK	CRC									22222		
CHA PA	CPA							2	*22	2222222222	222222222	
CHAMBON-LA-FORET	CLF					2222	2222222222	2222222222	2222222222	2222222222	2222	
CHANGCHUN	CNH										2	22
CHARCOT	CTX							ZZ				
CHELTENHAM	CLM		222222222	2222222222	2222222222	2222222222	2222222222	222222**				
CHICHIJIMA	CBI										222	
CHRISTCHURCH	CHR		22222222	2222222222	2222222222	2						
CLAUSTHAL	CLZ		DDDDDDDDDD	DDDDDDDDD								
COIMBRA	COI		2222222223	3223333322	2322322232	2222222222	2222222222	2222222222	2222222222	2222222222	2	22

1=XHZ 2=DHZ 3=DIH 4=DI 5=DH 6=DZ 7=IHZ 8=IH 9=IZ D=D ONLY
F=F ONLY H=H ONLY I=I ONLY Z=Z ONLY Q=HZ P=DIF R=DHF S=XYF T=DHX U= HZ
*=INCOMPLETE YEAR ?=UNKNOWN ELEMENTS

OBSERVATORY	CODE	YEAR	1901234567	1901234567	1902345678	1903456789	1904567890	1905678901	1906789012	1907890123	1908901234	1909012345
COLLEGE	CMO					2	*2222**22	2222222222	2222222222	2222222222	2222	
COSTA RICA	SNJ										*	
CRACOW	CRA		DDD4	D444	DDDDDD	D DDD						
CUAJIMALPA	CUA		D3344DD	D33	3							
DALLAS	DAL								222222	22222		
DAVAO	DAV									HH	HHHHHHHH	
DAVIS	DVS										*	222
DE BILT	DBN		3333333333	3333332222	2222222222	222222222						
DEHRA DUN	DDI		3322222	2222222222	2222222222	2222222222	222*					
DEKELEIA	DEK					25222						
DIXON ISLAND	DIK					2222222	22222 5 Q2	2222222222	2222222222	2222222222	222	
DOMBAS	DOB			2222	2222222222	2222222222	222222222D	DD22222222	2222222222	2222222222	222	
DOURBES	DOU							DDD22222	2222222222	2222222222	2222	
DUMONT DURVILLE	DRV							*1Z	1 11111111	1111111111	1111	
EASTER ISLAND	EIC							3*	**2 *			
EBRO	EBR		2 2	2222222222	2222222222	22222222	2222255	2222222222	2222222222	22222222	2	
EIGHTS	EGS								*2*			
EL ABIOD SIDI	EAS						DD	*DDDD				
ELIZABETHVILLE	ELI					***22222	2222222222	22222222*				
ESKDALEMUIR	ESK		22	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222	
ESPANOLA	EPN							2				
EUSEBIO	EUS									***		
EYREWELL	EYR									22	1	
FALMOUTH	FAL		2222222222	222								
FANNING	FAN							*2				
FLENSBURG	FLE		DDDD									
FORT CHURCHILL	FCC							*2	222222	2121221111	1111	
FORT YUKON	FYU							2				
FREDERICKSBURG	FRD							2222	2222222222	2222222222	2222	
FUQUENE	FUQ							*22222	2222222222	2222222222	2*2	
FURSTENFELDBRUCK	FUR						2 2222222222	2222222222	2222222222	2222222222	2222	
GIBILMANNA	GIB							* 2D				
GLENLEA	GLL											1
GNANGARA	GNA								2 2222222222	2222222222	2222	
GODHAVN	GDH					5222	2222222222	2222222222	2222222222	2222222222	2222	2222*

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OBSERVATORY	CODE	YEAR 0123456789	1901 0123456789	1902 0123456789	1903 0123456789	1904 0123456789	1905 0123456789	1906 0123456789	1907 0123456789	1908 0123456789	1909 0
GONZALES VIDELA	GVD							2			
GREAT WHALE R.	GWC								2222	1211221111	1111
GREENWICH	GRW		2222223333	3333332222	222222						
GROCKA	GCK							22	2222222222	2222222222	2222
GUAM	GUA							*22	2222222222	2222222222	2222
GUANGZHOU	GZH							22			22
HALLEY BAY	HBA							*22	2222222	2	
HARTEBEESTHOEK	HBK									RRRRRRR	2222
HARTLAND	HAD							222	2222222222	2222222222	2222
HATIZYO	HTY								*FF	F *	2222
HAVANA	HVN									5552	2222222
HEALY	HEA							*2			
HEARD ISLAND	HII					*	**22*				
HEISS ISLAND	HIS							2	2222222222	2222QQ2222	22
HEL	HLP				25		2	222	2222222222	2222222222	2222
HELWAN	HLW	2222222	2222222222	2222222222	2222222222	2222222222	22DDDD2222	*			
HERMANUS	HER					222222222	2222222222	2222222222	2222222222	2222222222	2222
HERMSDORF	HDF	DDDDDDDDD	DDDDDDDDDD	DDDDDDDDDD							
HOLLANDIA	HNA							*22	22*		
HONG KONG	HKC	3333333333	3333333333	333333333						22222	
HONOLULU	HON	22222222	2222222222	2222222222	2222222222	2222222*22	2222222222	2222222222	2222222222	2222222222	2222
HUANCAYO	HUA			22222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222
HURBANOVO	HRB					D2	2222222222	2222222222	2222222222	2222222222	2222
HYDERABAD	HYB								22222	2222222222	222
IBADAN	IBD							2222	222		
IRKUTSK	IRT	3333333333	3333322222	2222*22*22	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222
ISTANBUL-KANDILL	ISK						D222	2222222222	2222222222	2222222222	
JAIPUR	JAI										* 2222
JALUIT	JAL					DD	DDD				
JARVIS ISLAND	JRV							*2			
JASSY	JSS				333333333	3333	33333	333333338	I333 8 8 Q	Q	
JULIANEHAAB	JUL				*2*						
JULIANEHAAB II	JUL							*	** *		
KAKIOKA	KAK			2222555	5555222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222
KANOYA	KNY							22	2222222222	2222222222	2222

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OBSERVATORY	CODE	YEAR	1 9 0	1 9 1	1 9 2	1 9 3	1 9 4	1 9 5	1 9 6	1 9 7	1 9 8	1 9 9
			0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0
KANOZAN	KNZ								222222222	2222222222	2222	
KARAGANDA	KGD								22222	2222222222	2222	
KARAVIA	KVA							22 **				
KARSANI	KAS		33333	33332555	DDDDD32222	22222						
KATUURA	KAT						*DDD	DDDD				
KAZAN	KZN		2222222	22332222	**22222222	2222222222	2222222222	2222222222	2222222222	22255	22	2222
KELES	KEL					2222	2222222222	2222222222	2222*			
KEW	KEW		2222222222	2222222222	22222							
KIEV	KIV							*2	2222222222	2222222222	2222	
KIRUNA	KIR								2	2222222222	22	
KODAIKANAL	KOD		23322222	2222222222	222*			2222222222	2222222222	222222	222	22
KOROR	KOR							*2	5	*2*		
KOTZEBUE	KOT							2				
KREMSMUNSTER	KRE		D3333									
KSARA	KSA					*DDDDD5222	2222222222	2222222222	2222222222	2		
KUTCHINO	KTC				2233	2252	2					
KUYPER	KUY				2	2222222222	22222	D 2222222222	22			
L AQUILA	AQU								2222222222	2222222222	2222	
LA PAZ	LPB									222		
LA QUIACA	LQA				2222222222	2222	22222222	2222*2225	5222222222	2222222555	5552	
LANZHOU	LZH							2	22		2222	
LAS ACACIAS	LAS								2	22		
LAUDER	LAU									2		
LAZAREV	LZV								2			
LEADVILLE	LDV							2				
LEIRVOGUR	LRV							*22	2222222222	2222222222	2222	
LENINGRAD	LNN						222	2222222222	2222222222	2222222222	222	
LERWICK	LER				2232222	2222222222	2222222222	2222222222	2222222222	2222222222	2222	
LHASA	LSA							222	2222222222	22222		
LISBON	LIS		3									
LITTLE AMERICA	LAA				*							
LITTLE AMERICA I	LAA					*	*	*	*			
LITTLE AMERICA V	LAA							*2				
LOGRONO	LGR							*22	2222222222	2222222		
LOVO	LOV				52	2222322223	2333322222	2222222222	2222222222	2222222222	2111	

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OBSERVATORY	CODE	YEAR	1901	1902	1903	1904	1905	1906	1907	1908	1909
			0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0
LUANDA	LUA						55				
LUANDA BELAS	LUA						255222	2222222222	222222222*	*222	
LUANDA CAPELO	LUA		444444444	4444444444							
LUKIAPANG	LKP		*3	3333332222	2222222222	2222					
LUNPING	LNP								*2222	2222222222	2222
LVOV	LVV						25555222	2222222222	2222222222	222	
LWIRO	LWI							*2	2* ***2*22	2	
M BOUR	MBO						*2222222	2222222222	2222222222	2222	
MACQUARIE ISLAND	MCQ					*	*222222222	2222222222	2222222222	2222	
MAGADAN	MGD							2222522222	222222222Q	2222	
MAISACH	MAS				222	222					
MAITUN	MAI					5	2**22555				
MAJURO	MJR								*2*		
MANHAY	MAB				52D22222	222	2222	2222222222	2222222222	2222	2
MANILA	MAN		23333								
MAPUTO	LMM							222	2222222222	2222222222	2222
MARION ISLAND	MRN									*2222	
MARTIN DE VIVIES	AMS										*21
MATOCHKIN SHAR	MSR				*2	22	*22	222 22	266		
MAURITIUS	MRI		3333333333	3332222222	2222222222	2222222222	2222222222	2222255522	222222*		
MAWSON	MAW								*2222	2222222222	2222222222	2222
MEANOOK	MEA			*322	2332222222	3222222222	2222222222	2222222222	2222222222	2222222111	1111
MELBOURNE	MEL		3333333DDD	D3	33333	3					
MEMAMBETSU	MMB							**22222222	2222222222	2222222222	2222
MIDWAY	MDY								***		
MINSK	MNK								222222222	2222222222	222
MIRNY	MIR								*222	2222222222	2222222222	222
MISALLAT	MLT									*222222222	22222	2 2
MIZUSAWA	MIZ									2	2222222222	2222
MOCA	MFP								22	2222222222	22	
MODIIM	MOD										2	
MOLODEZHNAYA	MOL									22222	2222222222	222
MONTE CAPELLINO	MCP								*2	222		
MOSCOW	MOS						2222	2222222222	2222222222	2222222222	222
MOULD BAY	MBC								*2222222	2222222111	1111

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OBSERVATORY	CODE	YEAR	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909
			0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0
MUNICH	MNH		2222222222	2222DDDDDD	DDDDDDD							
MUNTINLUPA	MUT							222222222	2222222222	2222222222	222	
MURMANSK	MMK							*2	2222222222	2222222222	22	
NAGYCENK	NCK								222222222	2222222222	22	
NAIROBI	NAI								*2*222	222222222		
NANTES	NTS				2222222	2222222222	2222222222	222222222				
NARSSARSSUAQ	NAQ									*2	22********	***2*
NEW YEARS ISLAND	NYI		33333333	3333333								
NEWPORT	NEW									*222	2222222222	22*
NIEMEGK	NGK					222222222	2222222222	2222222222	2322222222	2222222222	1121	
NITSANIM	NCK								5	2		
NIZHNEDEVITSK	NNV					22DDD	5					
NORTHWAY	NRW							2				
NORWAY STATION	NWS								22*			
NOVOKAZALINSK	NKK										222222	2222
NOVOLAZAREVSKAYA	NVL								222222222	2222222222	222	
NOVOSIBIRSK	NVS									222	2222222222	2222
NURMIJARVI	NUR							2222222	2222222222	2222222222	2211	
O GYALLA	OGY		3333333333	333335555D	DDDD							
OASIS	OAS							22				
ODESSA	ODE		*D 3*	3	4333	2222	2 2	22	2222222222	2222222222	2222222222	2222
ORCADAS DEL SUR	ORC		22452	522DD* DDD	DDDDDDD5D*	522222222	2222222222	22222H5H22	52			
OSLO	OSL		3333333355	5555555555	5555555555	5						
OTOMARI	OTM				DDDDDDDDDD	DDDDDDDDDD	DDDD					
OTTAWA	OTT									*2	2222222211	1111
P. TUNGUSKA	POD									2	2222225555	2222
PALAU	PLA					DDDD	DDDDDDDDDD	DD				
PAMATAI	PPT									****	2222222222	2222
PANAGYURISHTE	PAG							22	2222222222	2222222222	2222222222	222
PARAMARIBO	PAB								*22	2222222222	22222	
PARC ST. MAUR	PSM		2									
PATRICK	PAT								*2*			
PENANG	PNN										*	
PENDELI	PEG									2	2	
PERPIGNAN	PER		2	DDD	D							

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OBSERVATORY	CODE	YEAR	1901234567	1901234567	1901234567	1901234567	1901234567	1901234567	1901234567	1901234567	1901234567	1 9 0
PETROPAVLOVSK	PET									2	2222222222	222
PILAR	PIL		22222	2222222222	2222222222	2222222222	2222222222	2222222555	*222222222	2222222222	2222	
PIONERSKAYA	PIO							22				
PLAISANCE	PLS								2QQQ	QQ	2	
PLATEAU	PTU								222			
POLA	POL		2233333333	3333332222	22							
PORT ALFRED	CZT										222222	222
PORT MORESBY	PMG							**2	2222222222	2222222222	2222	
PORT-AUX-FRANCAI	KGL							*22	2222222222	2222222222	222	
POTSDAM	POT		3333333333	3333332222	222222222							
PRICE	PCU							2				
PRUHONICE	PRU		55555DDDDD	DDDDDDDDDD	DDDDDDD		2222	2222222222	2222222222	222		
QUETTA	QUE							*222222	2222222222	222222	22	22 2
REGENSBERG	REG							5222	2222222222	D	2	
RESOLUTE BAY	RES							DD222222	2222222222	2221111111	1111	
RIO DE JANEIRO	RDJ		2222222D D	D								
ROBURENT	ROB									*22222	2222	
ROI BAUDOUIN	RBD							**		*22		
RUDE SKOV	RSV		222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	22	
SABHAWALA	SAB									222222	2222222222	22
SAN FERNANDO	SFS		2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	222222225		
SAN JOSE	SJL									*2552*	222255*	
SAN JUAN	SJG				2222	2222222222	2222222222	2222222222	2222222222	2222222222	2222	
SANAE	SNA								*2222222	2*2222222*	2222	
SANTIAGO	SNT		D 44444444									
SAO JOSE CAMPOS	SJB										*F*	
SÃO MIGUEL	SMG			355D33333	3333335333	3333333333	3333333333	3222222222	2222222222	22222222		
SCOTT BASE	SBA							*2*	* 222222	2222222222		
SEDDIN	SED		23	3333332222	2222222222	22						
SHESHAN	SSH					222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222
SHILLONG	SHL										2	22
SIMFEROPOL	SIM							2				
SIMOSATO	SSO							*22222	2222222222	22222222		
SITKA	SIT		23322222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	22222222**	2222	
SLUTZK	SLU		3333333333	3333332222	2222222222	2222222222	2* 2*					

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OBSERVATORY	CODE	YEAR 0123456789	1991 0123456789	1992 0123456789	1993 0123456789	1994 0123456789	1995 0123456789	1996 0123456789	1997 0123456789	1998 0123456789	1999 0
SODANKYLA	SOD		2222*2	2222222222	2222222222	22222*2222	2222222222	2222222222	2222222222	2222	
SOUTH GEORGIA	SGE								22222	22	
SOUTH POLE	SPA							2	2222222222	22	
SREDNIKAN	SRE					2222	5222222D22	2222222222	2222522*		
ST HELIER	STH	44444444									
ST JOHNS	STJ								*2	2222222111	1111
STARA DALA	STA				DDDDDD	DDDDDD444D	42222DDD				
STONYHURST	STO	3333333333	3333333333	3232233323	2333232223	2222			2222222		
SURLARI	SUA						5	2222222222	222222222*	*222222222	2
SVERDLOVSK	SVD	3333333333	3333332222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222		
SWIDER	SWI			222222222	2222222222	2222222222	2222222222	2222222222	555DD		
SYOWA STATION	SYO							22	*22 2222	2222222222	222
TACUBAYA	TAC	D I		3							
TAHITI	TAH							**			
TAIPEI	TAP			D	DDDDDDDDDD	DDDDDDDDDD	D	*DDDDDDDD	DDDDDDDD		
TAMANRASSET	TAM					***32222	*22555**55	5222222222	2222222222	2222222222	22
TANANARIVE	TAN	22222222	2222222222	222	2	2222222222	2222222222	2222222222	2222222222	2222222	* 2
TANGERANG	TNG								222222	2222222222	2222
TASHKENT	TKT	2 D D			D	22*2 24255*			222222	2222222222	222
TATUOCA	TTB					**		*22	2222222222	22 3	3
TBILISI	TFS	333333					*2	2222222222	2222222222	2222222222	222
TEHRAN	TEH								2222222222	2222	
TEOLOYUCAN	TEO			2 5DDD	*D22222222	2222222222	2222222*62	2222222222	2222222222	222222	
THULE	THL					**	222	222 *2222	2222222222	222222222*	2****
TIHANY	THY							22222	2222222222	2222222222	222R
TIKHAYA BAY	TKH					2222222	2222222	2H52222D			
TIXIE BAY	TIK						2222 2	2222222222	22222222	2222222222	225
TOKYO	TOK	2333333333	333								
TOLEDO	SPT						222	2222222222	2222222222	2222222222	222
TOMSK	TMK							22	2222222222		
TOOLANGI	TOO			3	3333222222	2222222333	2333*33332	2222222222	2222222222	222222222*	
TOULOUSE	TLS	*33333									
TOUNGOO	TGO		33333	3333332222	222*	3					
TOYOHARA	TOH					*2222222	*2222				
TRELEW	TRW							*22	2222222222	2 22	

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OBSERVATORY	CODE	YEAR	1901234567	1912345678	1923456789	1934567890	1945678901	1956789012	1967890123	1978901234	1989012345	1990
TRIVANDRUM	TRD							*22	2222222222	2222222222	2222	
TROMSO	TRO					5222222222	2222222222	2222222222	2222222222	2222222222	2222	
TSINGTAO	TSI		D3D	DD3	2222	2	222222	2222222				
TSUMEB	TSU								*22222	2222222222	2222	
TUCSON	TUC			2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222	
TULSA	TUL								*	***		
TUNTUNGAN											2	
UCCLE	UCC		2333333333	3333333344	444DDDDDD5	DDDDD	D	DD	DD			
UJJAIN	UJJ										2	22
ULAN BATOR	UBA								2222	22222222		
URUMQI	WMQ										2222	
VAL JOYEUX	VLJ		222333333	3333332222	2222222222	2222222						
VALENTIA	VAL		3333333333	3333333333	3333333333	3333333333	3333333333	3333222222	2222222222	2222222222	2222	
VASSOURAS	VSS			DDDD2	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222	
VICTORIA	VIC							**22	2222222222	2222222111	1111	
VIEQUES	VQS		322222	2222222222	2222*							
VLADIVOSTOK	VLA							D22222222	2222222222	2222222222	2222	
VOSTOK	VOS							22	22 2222222	2222222222	22	
VYKHODNOY	VYK						6	DDHZ22				
WATHEROO	WAT			2	2222222222	2222222222	2222222222	222222222*				
WHITESHELL	WHS									111	*	
WIEN-KOBENZL	WIK				2	2222222222	2222222222	2	22222	2222222222	2222222222	2222
WILHELMSHAVEN	WLH		2222222522	22		55						
WILKES	WIL							*22	2222222			
WINGST	WNG					2	2222222222	2222222222	2222222222	2222222222	2222	
WITTEVEEN	WIT					22	2222222222	2222222222	2222222222	2222222222	222	
WUHAN	WHN										2222	
WUSTROW	WUS		D									
YAKUTSK	YAK				5	*555225	5555555522	2222222222	2222222222	2222222222	222	
YANOV	YNV					2						
YELLOWKNIFE	YKC									22211	1111	
YUZHNO SAKHALINS	YSS						222DD	25	2222222222	2222222222	2222222222	2222
ZIKAWEI	ZKW		33333333*									
ZINSEN	ZIN			2	222222222	2222222222	2222Q					

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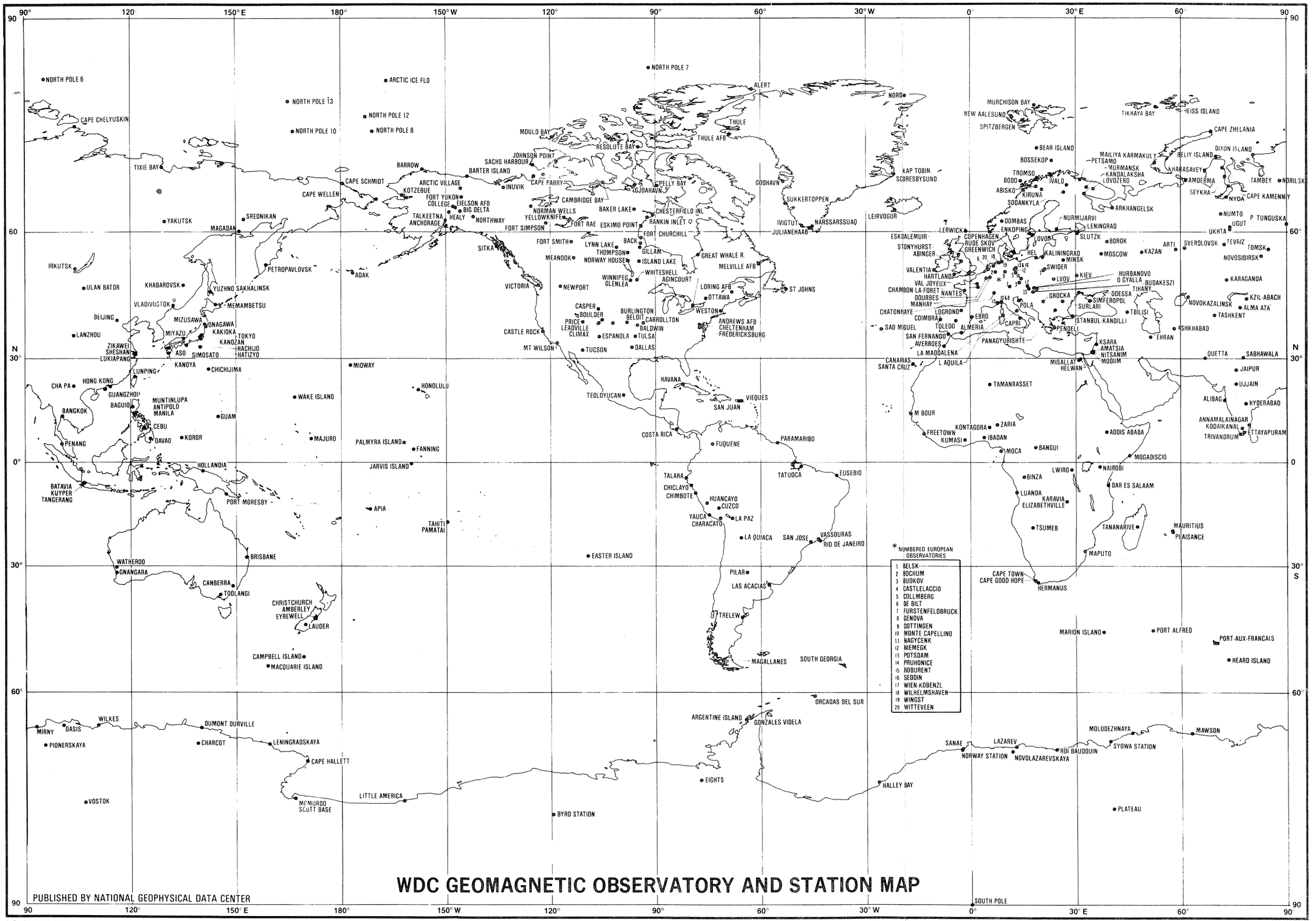
SECTION III

The map of geomagnetic observatories and stations producing data held at the WDC's is reproduced here from UAG-86. It does not include sites from which only annual means are available. We caution against scaling site coordinates from the map or adding sites unless allowance is made for the logarithmic scale of changing latitude used in this projection.



* NUMBERED EUROPEAN OBSERVATORIES

1	BELSK
2	BOCHUM
3	BUDKOV
4	CASTELLACCIO
5	COLLMBERG
6	DE BILT
7	FURSTENFELDBRUCK
8	GENOVA
9	GOTTINGEN
10	MONTE CAPELLINO
11	NAGYCENK
12	NIEMEGK
13	POTSDAM
14	PRUHONICE
15	ROBURENT
16	SEDDIN
17	WIEN-KOBENZL
18	WILHELMSHAVEN
19	WINGST
20	WITTEVEEN

WDC GEOMAGNETIC OBSERVATORY AND STATION MAP

PUBLISHED BY NATIONAL GEOPHYSICAL DATA CENTER

NOVEMBER 1982

MILLER'S MODIFIED MERCATOR PROJECTION

SECTION IV

CATALOG OF GEOMAGNETIC DATA HELD AT WDC-A, B2, C1's, OR C2's

Table 8a summarizes the observatory names and codes listed in Table 8b. This table is sequenced by observatory codes.

Table 8b contains the observatory names, international 3-letter codes, and geographic coordinates are consistent with those published in "IAGA News", December 1979. The coordinates are latitude and east longitude. Components measured at each observatory are either Declination (D), Horizontal (H), and Vertical (Z) or Geographic North (X), Geographic East (Y), and Vertical (Z). If local K indices were available for some months of the year, this is indicated by the letter "K". Availability of annual mean values are indicated by the letter "A" and Q indices by the letter "Q". For each type of geomagnetic data, there is shown a symbol indicating which World Data Center holds the data: A = WDC-A for STP(Boulder), B = WDC-B2 (Moscow), C = WDC-C2 for Geomagnetism (Kyoto), D = WDC-C1 (Copenhagen), E = WDC-C1 (Edinburgh), and I = WDDC (Bombay). The catalog does not contain sufficient detail to indicate when data are held for some months of a year by one WDC and for other months of the same year by another WDC.

Normal and rapid run magnetograms are usually archived on 35-mm microfilm but original magnetograms may also be retained in the archive. Hourly values "any medium" may include any or all of the formats in which hourly values are available, e.g. tables on microfilm, tables on paper, published in yearbooks and on magnetic tape. Hourly values "on tape" means specifically that the values exist in computer format on digital magnetic tape. High-resolution digital values (2.5-min or 1.0-min) are digital data either produced by digitizing analog magnetograms or originally recorded using digital magnetometer systems. The 1-minute data are indicated by an asterisk (*).

Table 8b reflects the data holdings in the World Data Centers B and C's as of January 1, 1985 and WDC-A as of April 1, 1985.

TABLE 8a SUMMARY OF OBSERVATORY NAMES AND CODES LISTED IN TABLE 8b

(SORTED BY OBSERVATORY CODE)

CODE/NAME	CODE/NAME	CODE/NAME	CODE/NAME	CODE/NAME
AAA=ALMA ATA	ARC=ARCTOWSKI	BKK=BANGKOK	CBB=CAMBRIDGE BAY	CPS=CAPE SCHMIDT
AAE=ADDIS ABABA	ARE=CHARACATO	BLC=BAKER LAKE	CBI=CHICHIJIMA	CPY=CAPE PARRY
ABG=ALIBAG	ARK=ARKHANGELSK	BLT=BELOIT	CCL=CHICLAYO	CRC=CASTLE ROCK
ABK=ABISKO	ARS=ARTI	BNG=BANGUI	CCP=CEBU	CRP=CHIRIPA
ABN=ABINGER	ASH=ASHKHABAD	BOC=BOCHUM	CCS=CAPE CHELYUSKIN	CSR=CASPER
ADA=ADAK	ASO=ASO	BOD=BODO	CFI=CHESTERFIELD INL	CTE=CHATONNAYE
AGN=AGINCOURT	AVE=AVERROES	BOP=BOSSEKOP	CGH=CAPE GOOD HOPE	CTO=CAPE TOWN
AIA=ARGENTINE ISLAND	AVI=ARCTIC VILLAGE	BOU=BOULDER	CHR=CHRISTCHURCH	CTX=CHARCOT
AIF=ARCTIC ICE FLO	AWS=ANDREWS AFB	BOX=BOROK	CKA=CAPE KAMENNIY	CUS=CUZCO
ALE=ALERT	BAG=BAGUIO	BRS=BRISBANE	CLF=CHAMBON-LA-FORET	CWE=CAPE WELLEN
ALM=ALMERIA	BAL=BALDWIN	BRT=BURLINGTON	CLH=CHELTENHAM	CZA=CAPE ZHELANIA
AMD=AMDERMA	BDE=BIG DELTA	BRW=BARROW	CLI=CLIMAX	CZT=PORT ALFRED
AML=AMBERLEY	BDV=BUDKOV	BTI=BARTER ISLAND	CLL=COLLMBERG	DAL=DALLAS
AMS=MARTIN DE VIVIES	BEL=BELSK	BTV=BATAVIA	CMB=CHIMBOTE	DAV=DAVAO
AMT=AMATSIA	BEY=BELIY ISLAND	BUZ=BUDAKESZI	CMO=COLLEGE	DBN=DE BILT
AMU=ANCHORAGE	BFE=BRORFELDE	BYR=BYRD STATION	CNH=CHANGCHUN	DIK=DIXON ISLAND
ANN=ANNAMALAINAGAR	BIN=BINZA	CAI=CAMPBELL ISLAND	COI=COIMBRA	DLR=DEL RIO
ANO=ANTIPOLO	BJI=BEIJING	CAN=CANBERRA	COP=COPENHAGEN	DOB=DOMBAS
API=APIA	BJN=BEAR ISLAND	CAO=CASTELLACCIO	CPA=CHA PA	DOU=DOURBES
AQU=L AQUILA	BKC=BACK	CAX=CARROLLTON	CPI=CAPRI	DRS=DAR ES SALAAM

(Table 8a continued)

CODE/NAME	CODE/NAME	CODE/NAME	CODE/NAME	CODE/NAME
DRV=DUMONT DURVILLE	IVA=IVALO	MCQ=MACQUARIE ISLAND	PAI=PALMYRA ISLAND	TEV=TEVRIZ
EBR=EBRO	IVI=IVIGTUT	MDY=MIDWAY	PCU=PRICE	TFS=TBILISI
EGS=EIGHTS	JAI=JAIPUR	MEA=MEANOOK	PEB=PELLY BAY	THL=THULE
EIC=EASTER ISLAND	JOP=JOHNSON POINT	MEV=MELVILLE AFB	PEG=PENDELI	THU=THULE AFB
EKP=ESKIMO POINT	JRV=JARVIS ISLAND	MFP=MOCA	PET=PETROPAVLOVSK	THY=TIHANY
ELI=ELIZABETHVILLE	JUL=JULIANEHAAB	MGD=MAGADAN	PIL=PILAR	TIK=TIXIE BAY
ENB=EIELSON AFB	KAK=KAKIOKA	MGS=MAGALLANES	PIO=PIONERSKAYA	TKH=TIKHAYA BAY
ENK=ENKOPING	KGD=KARAGANDA	MIR=MIRNY	PLS=PLAISANCE	TKT=TASHKENT
EPN=ESPANOLA	KGL=PORT-AUX-FRANCAI	MIZ=MIZUSAWA	PMG=PORT MORESBY	TLK=TALKEETNA
ESK=ESKDALEMUIR	KHB=KHABAROVSK	MJR=MAJURO	PNN=PENANG	TMB=TAMBEY
ETT=ETTAYAPURAM	KHS=KHARASAVEY	MKL=MALIYE KARMAKULY	POD=P. TUNGUSKA	TMK=TOMSK
EUS=EUSEBIO	KIR=KIRUNA	MLT=MISALLAT	POL=POLA	TMP=THOMPSON
EYR=EYREWELL	KIV=KIEV	MMB=MEMAMBETSU	POT=POTSDAM	TNG=TANGERANG
FAN=FANNING	KND=KANDALAKSHA	MMK=MURMANSK	PPT=PAMATAI	TOK=TOKYO
FCC=FORT CHURCHILL	KNG=KALININGRAD	MNK=MINSK	PRU=PRUHONICE	TOL=TOLEDO
FRA=FORT RAE	KNT=KONTAGORA	MOD=MODIIM	PTS=PETSAMO	TOO=TOOLANGI
FRD=FREDERICKSBURG	KNY=KANOYA	MOG=MOGADISCIO	PTU=PLATEAU	TRD=TRIVANDRUM
FSM=FORT SMITH	KNZ=KANOZAN	MOL=MOLODEZHNAYA	QUE=QUETTA	TRO=TROMSO
FSP=FORT SIMPSON	KOD=KODAIKANAL	MOS=MOSCOW	RBD=ROI BAUDOUIN	TRW=TRELEW
FTN=FREETOWN	KOR=KOROR	MRI=MAURITIUS	RDJ=RIO DE JANEIRO	TSU=TSUMEB
FUQ=FUQUENE	KOT=KOTZEBUE	MRN=MARION ISLAND	RES=RESOLUTE BAY	TTB=TATUOCA
FUR=FURSTENFELDBRUCK	KSA=KSARA	MUB=MURCHISON BAY	RIT=RANKIN INLET	TUC=TUCSON
FYU=FORT YUKON	KTG=KAP TOBIN	MUT=MUNTINLUPA	ROB=ROBURENT	TUL=TULSA
GCK=GROCKA	KUM=KUMASI	MWC=MT WILSON	RSV=RUDE SKOV	UBA=ULAN BATOR
GDH=GODHAVN	KUY=KUYPER	NAI=NAIROBI	SAB=SABHAWALA	UGT=UGUT
GEN=GENOVA	KVA=KARAVIA	NAL=NEW AALESUND	SAH=SACHS HARBOUR	UJJ=UJJAIN
GIM=GILLAM	KZA=KZIL-AGACH	NAQ=NARSSARSSUAQ	SBA=SCOTT BASE	UKH=UKHTA
GJO=GJOAHAVN	KZN=KAZAN	NCK=NAGYCENK	SCO=SCORESBYSUND	VAL=VALENTIA
GLL=GLENLEA	LAA=LITTLE AMERICA	NDA=NYDA	SED=SEDDIN	VIC=VICTORIA
GNA=GNANGARA	LAS=LAS ACACIAS	NEW=NEWPORT	SEO=SEOUL	VLA=VLADIVOSTOK
GRM=GRAHAMSTOWN	LAU=LAUDER	NGK=NIEMEGK	SEY=SEYKHA	VLJ=VAL JOYEUX
GRW=GREENWICH	LDV=LEADVILLE	NHO=NORWAY HOUSE	SFS=SAN FERNANDO	VOS=VOSTOK
GTT=GOTTINGEN	LEN=LENINGRADSKAYA	NKK=NOVOKAZALINSK	SGE=SOUTH GEORGIA	VQS=VIEQUES
GUA=GUAM	LER=LERWICK	NMP=NAMPULA	SIM=SIMFEROPOL	VSS=VASSOURAS
GVD=GONZALES VIDELA	LGR=LOGRONO	NMT=NUMTO	SIT=SITKA	WAT=WATHEROO
GWC=GREAT WHALE R.	LKP=LUKIAPANG	NOK=NORILSK	SJG=SAN JUAN	WES=WESTON
GZH=GUANGZHOU	LMD=LA MADDALENA	NOR=NORUSUND	SKT=SUKKERTOPPEN	WHN=WUHAN
HAD=HARTLAND	LMM=MAPUTO	NOW=NORMAN WELLS	SLU=SLUTZK	WHS=WHITESHELL
HBA=HALLEY BAY	LNN=LENINGRAD	NPF=NORTH POLE 6	SMG=SAO MIGUEL	WIK=WIEN-KOBENZL
HBK=HARTEBEESTHOEK	LNP=LUNPING	NPG=NORTH POLE 7	SNA=SANAE	WIL=WILKES
HEA=HEALY	LOB=LORING AFB	NPH=NORTH POLE 8	SNJ=COSTA RICA	WIT=WITTEVEEN
HER=HERMANUS	LOV=LOVO	NPJ=NORTH POLE 10	SOD=SODANKYLA	WKE=WAKE ISLAND
HII=HEARD ISLAND	LOZ=LOVOZERO	NPL=NORTH POLE 12	SPA=SOUTH POLE	WLH=WILHELMSHAVEN
HIS=HEISS ISLAND	LPB=LA PAZ	NPM=NORTH POLE 13	SPB=SPITZBERGEN	WMQ=URUMQI
HKC=HONG KONG	LQA=LA QUIACA	NRD=NORD	SRE=SREDNIKAN	WNG=WINGST
HLL=CAPE HALLETT	LRV=LEIRVOGUR	NRW=NORTHWAY	SSH=SHESHAN	WNP=WINNIPEG
HLP=HEL	LUA=LUANDA	NSM=NITSANIM	SSO=SIMOSATO	YAK=YAKUTSK
HLW=HELWAN	LVV=LVOV	NTS=NANTES	STJ=ST JOHNS	YAU=YAUCA
HNA=HOLLANDIA	LWI=LWIRO	NUR=NURMIJARVI	STO=STONYHURST	YKC=YELLOWKNIFE
HON=HONOLULU	LYN=LYNN LAKE	NVL=NOVOLAZAREVSKAYA	SUA=SURLARI	YSS=YUZHNO SAKHALIN
HRB=HURBANOVO	LYS=LYCKSELE	NVS=NOVOSIBIRSK	SVD=SVERDLOVSK	ZAR=ZARIA
HTY=HATIZYO	LZH=LANZHOU	NWS=NORWAY STATION	SWI=SWIDER	ZKW=ZIKAWEI
HUA=HUANCAYO	LZV=LAZAREV	OAS=OASIS	SYO=SYOWA STATION	
HVN=HAVANA	MAB=MANHAY	ODE=ODESSA	TAH=TAHITI	
HYB=HYDERABAD	MAN=MANILA	OGY=O GYALLA	TAL=TALARA	
IBD=IBADAN	MAW=MAWSON	ONW=ONAGAWA	TAM=TAMANRASSET	
INK=INUVIK	MBC=MOULD BAY	ORC=ORCADAS DEL SUR	TAN=TANANARIVE	
IRT=IRKUTSK	MBO=M BOUR	OTT=OTTAWA	TEH=TEHRAN	
ISK=ISTANBUL-KANDILL	MCM=MCMURDO	PAB=PARAMARIBO	TEN=CANARIAS	
ISL=ISLAND LAKE	MCP=MONTE CAPELLINO	PAG=PANAGYURISHTE	TEO=TEOLOYUCAN	

TABLE 8b

CATALOG LISTING OF ANALOG--DIGITAL GEOMAGNETIC DATA

WORLD DATA CENTER A=BOULDER B=MOSCOW C=KYOTO D=COPENHAGEN E=EDINBURGH I=BOMBAY

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
ABINGER	D 1925	A						I FMAMJ JASOND				
ABN	D 1926	A	A	JFMAMJ SO			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
(051.19 359.61)	D 1927	A	A	J MAM JA O D			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1928	A	A	M M J SO			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1929	A	A	FM JA ON			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1930	A	A	FM MJ J SOND			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1931	A	A	F J J O			A	E JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D 1932	A	A	J M M A O			A C	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1933	A	A	AM AS			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1934	A	A	F J S D			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1935	A	A	J MAMJ J SO			A	E JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D 1936	A	A	A J ON			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1937	A	A	FMAM ASO			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1938	A					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1939	A	A	FMAM JA O			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1940	KA	A	J MAMJ J SON			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1941	KA	A	M J JASO D			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1942	KA	A	FMA ON			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1943	KA	A	J MAM ASOND			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1944	KA	A	FMA D			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1945	KA	A	J M O D			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1946	KA	A	FMAMJ J S ND			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1947	KA	A	MAM AS ND			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1948	KA	A	M A O			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1949	KA	A	J M SOND			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1950	KA	A	JFM J ASOND			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1951	KA	A	FMA J J SO			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1952	KA	A	JFMAMJ JASOND			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1953	KA	A	JFMAMJ JASOND			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1954	KA	A	JFMAMJ JASOND			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1955	KA	A	JFMAMJ JASOND			A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1956	KA	A	JFMAMJ JASOND			A C	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1957	KA	BC	JFMAMJ JASOND			ABC	JFMAMJ JASOND				
ABISKO	D 1967	A	BCD	AM								
ABK	D 1968	A	ABCD	JFMAMJ JASOND			A	DE JFMAMJ JASOND	AB	EI JFMAMJ JASOND	A	JFMAMJ JASOND
(068.36 18.82)	D 1969	A	ABCD	JFMAMJ JASOND			A	DE JFMAMJ JASOND	AB	EI JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1970	A	ABCD	JFMAMJ JASOND			A	DE JFMAMJ JASOND	AB	EI JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1971	A	ABCD	JFMAMJ JASOND			A	DE JFMAMJ JASOND	AB	E JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1972	A	ABCD	JFMAMJ JASOND			A	DE JFMAMJ JASOND	AB	E JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1973	A	ABCD	JFMAMJ JASOND			AB	DE JFMAMJ JASOND	AB	E JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1974	A	ABCD	JFMAMJ JASOND			A	DE JFMAMJ JASOND	AB	E JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1975	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1976	A	ABCD	JFMAMJ JASOND			A	JFMA	A	JFMA	A	JFMA *
	D 1977	A	ABCD	JFMAMJ JASOND								
	D 1978	A	ABCD	JFMAMJ JASOND								
	D 1979	A	ABCD	JFMAMJ JASOND								
	D 1980	A	ABCD	JFMAMJ JASOND								
	D 1981	A	ABCD	JFMAMJ JASOND								
	D 1982	A	ABCD	JFMAMJ JASOND								

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
ABISKO	D 1983	A	ABCD	JFMAMJ JASOND								
ABK	D 1984		ABCD	JFMAMJ JAS								
(068.36 18.82)												
ADAK	D 1964	A	ABCD	JASOND								
ADA	D 1965	A	ABCD	JFMAMJ JASOND								
(051.87 183.36)	D 1966	A	AB	J								
ADDIS ABABA	D 1958	KA	ABCD	JFMAMJ JASOND				ABCDEI JFMAMJ JASOND	AB	E JFMAMJ JASOND		
AAE	D 1959	KA	ABCD	JFMAMJ JASOND				ABCDEI JFMAMJ JASOND	AB	E JFMAMJ JASOND		
(009.03 38.77)	D 1960	KA	ABCD	JFMAMJ JASOND				ABCDEI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		JFMAMJ JASOND
	D 1961	KA	ABCD	JFMAMJ JASOND				A EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		JFMAMJ JASOND
	D 1962	A	ABCD	JFMAMJ JASOND				A EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		JFMAMJ JASOND
	D 1963	A	ABCD	JFMAMJ JASOND				A EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		JFMAMJ JASOND
	D 1964	A	ABCD	JFMAMJ JASOND				ABCDE JFMAMJ JASOND	AB	EI JFMAMJ JASOND	A	JASOND
	D 1965	A	ABCD	JFMAMJ JASOND				A E JFMAMJ JASOND	AB	E JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1966	A	A	JFMAMJ JASOND				AB E JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D 1967	A	A	JFMAMJ JASOND				AB E JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D 1968	A	A	JFMAMJ JASOND				AB JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1969	A	ABCD	JFMAMJ JASOND				AB JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1970	A	ABCD	JFMAMJ JASOND				AB JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1971	A	ABCD	JFMAMJ JASOND				A JFMAMJ JASOND				
	D 1972	A	A	JFMAMJ JASOND				A JFMAMJ JASOND				
	D 1973	A	A	JFMAMJ JASOND				A JFMAMJ JASOND				
	D 1974	A	A	JFMAMJ JASOND				A JFMAMJ JASOND				
	D 1975	A	A	JFMAMJ JASOND				A JFMAMJ JASOND				
	D 1976	A	A	JFMAMJ JASOND				A JFMAMJ JASOND				
	D 1977	A	A	JFMAMJ JASOND				A JFMAMJ JASOND				
	D 1978	A	A	JF OND				A JFMAMJ JASOND				
	D 1979	A	A	JFMA OND				A JFMAMJ JASOND				
	D 1980	A	A	JFMAMJ J SOND				A JFMAMJ JASOND				
AGINCOURT	D 1908	A	A	JFMAMJ JASOND				A JFMAMJ JASOND				
AGN	D 1909	A	A	JFMAMJ JASOND				A JFMAMJ JASOND				
(043.78 280.73)	D 1910	A	A	JFMAMJ JASOND				A JFMAMJ JASOND				
	D 1911	A	A	JFMAMJ JASOND				A JFMAMJ JASOND				
	D 1912	A	A	JFMAMJ JASOND				A JFMAMJ JASOND				
	D 1913	A	A	JFMAMJ JASOND				A JFMAMJ JASOND				
	D 1914	A	A	JFMAMJ JASOND				A JFMAMJ JASOND				
	D 1915	A	A	JFMAMJ JASOND				A JFMAMJ JASOND				
	D 1916	A	A	JFMAMJ JASOND				A JFMAMJ JASOND				
	D 1917	A	A	MJ J								
	D 1918	A	A	JFMAMJ JASOND								
	D 1919	A	A	JFMAMJ JASOND								
	D 1920	A	A	JFMAMJ JASOND								
	D 1921	A	A	JFMAMJ JASOND								
	D 1922	A	A	JFMAMJ JASOND								
	D 1923	A	A	JFMAMJ JASOND								
	D 1924	A	A	JFMAMJ JASOND								
	D 1925	A	A	JFMAMJ JASOND								
	D 1926	A	A	JFMAMJ JASOND								
	D 1927	A	A	JFMAMJ JASOND								
	D 1928	A	A	JFMAMJ JASOND								

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
AGINCOURT	D 1929	A	A	JFMAMJ JASOND								
AGN	D 1930	A	A	JFMAMJ JASOND								
(043.78 280.73)	D 1931	A	A	JFMAMJ JASOND								
	D 1932	A	A	JFMAMJ JASOND			A I	JFMAMJ JASOND				
	D 1933	A	A	JFMAMJ JASOND			A I	JFMAMJ JASOND				
	D 1934	A	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1935	A	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1936	A	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1937	A	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1938	A	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1939	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1940	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1941	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1942	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1943	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1944	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1945	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1946	KA	A	JFM			ABC I	JFMAMJ JASOND				
	D 1947	KA	A	JASOND			ABC I	JFMAMJ JASOND				
	D 1948	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1949	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1950	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1951	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1952	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1953	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1954	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1955	KA	A	JFMAMJ JASOND			ABC	JFMAMJ JASOND				
	D 1956	KA	A	JFMAMJ JASOND			ABC	JFMAMJ JASOND				
	D 1957	KA	ABCD	JASOND			ABCD I	JFMAMJ JASOND				
	D 1958	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1959	KA	ABCD	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1960	KA	ABCD	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1961	KA	ABCD	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1962	KA	ABCD	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1963	KA	ABCD	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1964	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1965	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1966	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1967	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1968	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1969	KA	ABCD	JFM			ABCDEI	JFMAMJ JASOND	AB E	JFM		
ALERT	X 1961	A	ABCD	ND			ABCD I	JFMAMJ JASOND				
ALE	X 1962	A	AB	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
(082.50 297.50)	X 1963	A	ABCD	JFMAMJ JASOND			AB DEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	X 1964	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	AB	A JASOND
	X 1965	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	X 1966	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	X 1967	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	AM ASOND
	X 1968	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	AB	JFMAMJ JA
	X 1969	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JAS
	X 1970	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	M

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
ALERT	X	1971	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
ALE	X	1972	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(082.50 297.50)	X	1973	A	ABCD	JFMAMJ JASOND			C	JFMAMJ JASOND				
	X	1974	A	ABCD	JFMAMJ JASOND			C	JFMAMJ JASOND				
	X	1975	A	ABCD	J MAMJ JASOND			C	JFMAMJ JASOND				
	X	1976	A	ABCD	JFMAMJ JASOND								
	X	1977	A	ABCD	JFMAMJ JASOND			C	JFMAMJ JASOND				
	X	1978	A	ABCD	JFMAMJ JASOND			A C	JFMAMJ JASOND			A	JFMAMJ JASOND*
	X	1979	A	ABCD	JFMAMJ JASOND			ABC	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1980	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1981	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1982	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1983	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1984		ABCD	JFMAMJ JAS			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
ALIBAG	D	1921	A	A	M M S N			A	JFMAMJ JASOND				
ABG	D	1922	A	A	J M M SO			A	JFMAMJ JASOND				
(018.64 72.87)	D	1923	A	A	M J SO			A	JFMAMJ JASOND				
	D	1924	A	A	J MJ SO			A	JFMAMJ JASOND				
	D	1925	A	A	MJ ASO			A I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1926	A	A	JFMA J SO			A I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1927	A	A	A J JA O D			A I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1928	A	A	M M J O			A I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1929	A	A	FM J ON			A I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1930	A	A	F J SO D			A I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1931	A	A	F J O			A I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1932	A	A	J M M A			A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1933	A	A	F AM AS			A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1934	A	A	F J S D			A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1935	A	A	M M J SO			A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1936	A	A	A J ON			A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1937	A	A	A SO			A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1938	A	A	J AM			A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1939	A	A	F A A O			A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1940	KA	A	J MA J			A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1941	KA	A	FM JAS			A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1942	KA	A	FM O			A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1943	KA	A	F AS			A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1944	KA	A	A D			A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1945	KA	A	D			A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1946	KA					A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1947	KA					A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1948	KA					A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1949	KA					A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1950	KA					A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1951	KA		I JFMAMJ JASOND			A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1952	KA		I JFMAMJ JASOND			A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1953	KA		I JFMAMJ JASOND			A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1954	KA		I JFMAMJ JASOND			A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1955	KA		I JFMAMJ JASOND			A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1956	KA		I JFMAMJ JASOND			A C I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1957	KA	ABCD	I JFMAMJ JASOND	AB	JASOND	ABCD I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
ALIBAG	D 1958	KA	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
ABG	D 1959	KA	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
(018.64 72.87)	D 1960	KA	I	JFMAMJ JASOND	AB		A I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D 1961	KA	I	JFMAMJ JASOND	AB		ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1962	KA	I	JFMAMJ JASOND	AB		A CD I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D 1963	KA	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND	A CD I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D 1964	KA	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1965	KA	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1966	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB I	JFMAMJ JASOND	A	M
	D 1967	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D 1968	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D 1969	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D 1970	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D 1971	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D 1972	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D 1973	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D 1974	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D 1975	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D 1976	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	D 1977	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	D 1978	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	D 1979	KA	ABCD I	JFMAMJ JASOND			B D I	JFMAMJ JASOND				
	D 1980	KA	I	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1981	KA	I	JFMAMJ JASOND								
	D 1982	KA	I	JFMAMJ JASOND								
	D 1983	KA	I	JFMAMJ JASOND								
	D 1984	K										
	D 1985	K										
ALMA ATA	D 1963	A	ABC	JFMAMJ JASOND			ABC	JFMAMJ JASOND				
AAA	D 1964	KA	ABC	JFMAMJ JASOND			ABC	JFMAMJ JASOND				
(043.25 76.92)	D 1965	KA	ABC	JFMAMJ JASOND			ABC	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1966	KA	ABC	JFMAMJ JASOND			ABC	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1967	KA	ABC	JFMAMJ JASOND			ABC	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1968	KA	ABC	JFMAMJ JASOND			ABC	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1969	KA	ABC	JFMAMJ JASOND			ABC	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1970	KA	ABC	JFM			ABC	JFM				
	D 1971	KA	BC	JFMAMJ JA			BC	JFMAMJ JA				
	D 1972	KA	ABC	JFMAMJ JASOND			ABC	JFMAMJ JASOND				
	D 1973	KA	ABC	JFMAMJ JASOND			ABC	JFMAMJ JASOND				
	D 1974	KA	ABC	JFMAMJ JASOND			ABC	JFMAMJ JASOND				
	D 1975	KA	ABC	JFMAMJ JASOND			ABC	JFMAMJ JASOND				
	D 1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1983	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1984	K	ABCD	JFMAMJ JAS			ABCD	JFMAMJ JAS				
ALMERIA	D 1955	A					A C	JFMAMJ JASOND				
ALM												
(036.85 357.54)												

OBSERVATORY	YEAR COMP	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
ALMERIA	D 1956	A					A C	JFMAMJ JASOND				
ALM	D 1957	A	ABCD	JASOND			ABCD	JFMAMJ JASOND				
(036.85 357.54)	D 1958	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1959	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1960	A					ABCD	JFMAMJ JASOND				
	D 1961	A					ABCD	JFMAMJ JASOND				
	D 1962	KA					ABCD	JFMAMJ JASOND				
	D 1963	KA					A CD	JFMAMJ JASOND				
	D 1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1966	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB M		A	M
	D 1967	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1968	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1969	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1982	KA	ABCD	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1983	K	ABCD	JFMAMJ JASOND								
	D 1984	K	ABCD	JFMAMJ JASOND								
	D 1985	K										
AMATSIA	D 1975		B	JFMAMJ JASOND			B	JFMAMJ JASOND				
AMT	D 1976	A	AB D	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
(031.55 34.92)	D 1977	A					A D	JFMAMJ JASOND				
	D 1978	A	A	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1979	A	A	FMA J J ND			A D	JFMAMJ J ND				
	D 1980	A	A	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1981	A	A	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1982		A	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1983		A	JFMAMJ JASOND			A D	JFMAMJ JASOND				
AMBERLEY	D 1929	A					A I	JFMAMJ JASOND				
AML	D 1930	A					A I	JFMAMJ JASOND				
(-43.15 172.72)	D 1931	A					A C I	JFMAMJ JASOND				
	D 1932	A					A C I	JFMAMJ JASOND				
	D 1933	A					A C I	JFMAMJ JASOND				
	D 1934	A					A C I	JFMAMJ JASOND				
	D 1935	A					A C I	JFMAMJ JASOND				
	D 1936	A					A C I	JFMAMJ JASOND				
	D 1937	A					A C I	JFMAMJ JASOND				
	D 1938	A					A C I	JFMAMJ JASOND				
	D 1939	KA					A C I	JFMAMJ JASOND				
	D 1940	KA										

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
AMBERLEY	D	1941	KA					C					
AML	D	1942	KA					C					
(-43.15 172.72)	D	1943	KA					C					
	D	1944	KA					C					
	D	1945	KA					C					
	D	1946	KA						I JFMAMJ JASOND		I JFMAMJ JASOND		
	D	1947	KA						I JFMAMJ JASOND		I JFMAMJ JASOND		
	D	1948	KA					A C	I JFMAMJ JASOND		I JFMAMJ JASOND		
	D	1949	KA					A C	I JFMAMJ JASOND		I JFMAMJ JASOND		
	D	1950	KA					A C	I JFMAMJ JASOND		I JFMAMJ JASOND		
	D	1951	KA					A C	I JFMAMJ JASOND				
	D	1952	KA					A	I JFMAMJ JASOND				
	D	1953	KA					A	I JFMAMJ JASOND				
	D	1954	KA					A	I JFMAMJ JASOND				
	D	1955	KA					A	I JFMAMJ JASOND				
	D	1956	KA					ABCD	I JFMAMJ JASOND				
	D	1957	KA	ABCD	JASOND			ABCD	I JFMAMJ JASOND				
	D	1958	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB	E SOND		
	D	1959	KA	AB	JFMAMJ JASOND			ABCD	I JFMAMJ JASOND				
	D	1960	KA					ABCD	I JFMAMJ JASOND				
	D	1961	KA					ABCD	I JFMAMJ JASOND				
	D	1962	KA					ABCD	I JFMAMJ JASOND				
	D	1963	KA					ABCDEI	JFMAMJ JASOND	AB	E JFMAMJ JASOND	A	JFMAMJ JA
	D	1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB	E AM JASON	A	M JASON
	D	1965	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1966	KA					ABCD	JFMAMJ JASOND				
	D	1967	KA					ABCD	JFMAMJ JASOND				
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1969	KA	AB D	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1975	KA	AB D	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	X	1976	KA					ABCD	JFMAMJ JASOND				
	X	1977	KA					ABCD	JFMAMJ JASOND				
	X	1982						A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
AMDERMA	D	1973		ABCD	ND								
AMD	D	1974		ABCD	JFMAMJ JASOND								
(069.47 061.42)	D	1975		ABCD	JFMAMJ JASOND								
	D	1976		ABCD	JFMAMJ JASOND								
	D	1977		ABCD	JFMAMJ JASOND								
	D	1978		ABCD	JFMAMJ JASOND								
ANCHORAGE	D	1957	A	ABCD	AMJ JASOND			ABCDE	JASOND	AB	E JASOND		
AMU	D	1958	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB	E JFMAMJ JASOND		
(061.24 210.13)	D	1959		ABCD	J					AB	JFMAMJ JASOND		
ANDREWS AFB	D	1972				ABC	ASOND						
AWS													
(038.82 283.13)													

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
ANNAMALAINAGAR	D	1958	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
ANN	D	1959	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
(011.37 79.68)	D	1960	KA	I	JFMAMJ JASOND			A I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	D	1961	KA	I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	D	1962	KA	I	JFMAMJ JASOND			A CD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	D	1963	KA	ABCD I	JFMAMJ JASOND			A CD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	D	1964	KA	ABCD I	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1965	KA	ABCD I	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1966	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	D	1967	KA	ABCD I	JFMAMJ JASOND			A CDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	SO
	D	1968	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	D	1969	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	D	1970	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	D	1971	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	D	1972	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	D	1973	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	D	1974	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	D	1975	A	A CD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	D	1976	A	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	D	1977	A	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	D	1978	A	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1979	A	ABCD I	JFMAMJ JASOND			B D I	JFMAMJ JASOND				
	D	1980	A	I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1981	A	I	JFMAMJ JASOND								
	D	1982	A	I	JFMAMJ JASOND								
	D	1983		I	JFMAMJ JASOND								
ANTIPOLO	D	1911	A					A	JFMAMJ JASOND				
ANO	D	1912	A					A	JFMAMJ JASOND				
(014.60 121.17)	D	1913	A					A	JFMAMJ JASOND				
	D	1914	A					A	JFMAMJ JASOND				
	D	1915	A					A	JFMAMJ JASOND				
	D	1916	A					A	JFMAMJ JASOND				
	D	1917	A					A	JFMAMJ JASOND				
	D	1918	A					A	JFMAMJ JASOND				
	D	1919	A					A	JFMAMJ JASOND				
	D	1920	A					A	JFMAMJ JASOND				
	D	1921	A					A	JFMAMJ JASOND				
	D	1922	A					A	JFMAMJ JASOND				
	D	1923	A					A	JFMAMJ JASOND				
	D	1924	A					A	JFMAMJ JASOND				
	D	1925	A					A	JFMAMJ JASOND				
	D	1926	A					A	JFMAMJ JASOND				
	D	1927	A					A	JFMAMJ JASOND				
	D	1928	A					A	JFMAMJ JASOND				
	D	1929	A					A	JFMAMJ JASOND				
	D	1930	A					A	JFMAMJ JASOND				
	D	1931	A					A	JFMAMJ JASOND				
	D	1932	A					A C	JFMAMJ JASOND				
	D	1933	A					A C	JFMAMJ JASOND				
	D	1934	A					A	JFMAMJ JASOND				
	D	1935	A					A	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	NORMAL MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS WDC	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ON TAPE WDC	2.5-MINUTE 1.0-MINUTE(*) WDC
ANTIPOLO	D 1936	A			A JFMAMJ JASOND		
ANO	D 1937	A					
(014.60 121.17)	D 1938	A			A JFMAMJ JASOND		
APIA	D 1905	A			A I JFMAMJ JASOND		
API	D 1906	A			A I JFMAMJ JASOND		
(-13.81 188.23)	D 1907	A			A I JFMAMJ JASOND		
	D 1908	A			A I JFMAMJ JASOND		
	D 1909	A			A I JFMAMJ JASOND		
	D 1910	A			A I JFMAMJ JASOND		
	D 1911	A			A I JFMAMJ JASOND		
	D 1912	A					
	D 1913	A					
	D 1914	A					
	D 1915	A					
	D 1916	A					
	D 1917	A					
	D 1918	A					
	D 1919	A					
	D 1920	A					
	D 1921	A			A I JFMAMJ JASOND		
	D 1922	A			A I JFMAMJ JASOND		
	D 1923	A			A I JFMAMJ JASOND		
	D 1924	A			A I JFMAMJ JASOND		
	D 1925	A			A I JFMAMJ JASOND		
	D 1926	A			A I JFMAMJ JASOND		
	D 1927	A			A I JFMAMJ JASOND		
	D 1928	A			A I JFMAMJ JASOND		
	D 1929	A			A I JFMAMJ JASOND		
	D 1930	A			A I JFMAMJ JASOND		
	D 1931	A			A I JFMAMJ JASOND		
	D 1932	A			A C I JFMAMJ JASOND		
	D 1933	A			A C I JFMAMJ JASOND		
	D 1934	A			A I JFMAMJ JASOND		
	D 1935	A			A C I JFMAMJ JASOND		
	D 1936	A			A C I JFMAMJ JASOND		
	D 1937	A			A I JFMAMJ JASOND		
	D 1938	A			A I JFMAMJ JASOND		
	D 1939	KA			A I JFMAMJ JASOND		
	D 1940	KA			A I JFMAMJ JASOND		
	D 1941	KA			A C I JFMAMJ JASOND		
	D 1942	KA			A I JFMAMJ JASOND		
	D 1943	KA			A C I JFMAMJ JASOND		
	D 1944	KA			A C I JFMAMJ JASOND		
	D 1945	KA			A C I JFMAMJ JASOND		
	D 1946	KA			A I JFMAMJ JASOND		
	D 1947	KA			A I JFMAMJ JASOND		
	D 1948	KA			A C I JFMAMJ JASOND		
	D 1949	KA			A C I JFMAMJ JASOND		
	D 1950	KA			A C I JFMAMJ JASOND		
	D 1951	KA			A C I JFMAMJ JASOND		
	D 1952	KA			A I JFMAMJ JASOND		

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY	MEDIUM	WDC	HOURLY VALUES ON	TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
APIA	D 1953	KA					A	I	JFMAMJ JASOND					
API	D 1954	KA					A	I	JFMAMJ JASOND					
(-13.81 188.23)	D 1955	KA					A	I	JFMAMJ JASOND					
	D 1956	KA					A	I	JFMAMJ JASOND					
	D 1957	KA	ABCD	JASOND	ABC	JASOND	ABCDEI		JFMAMJ JASOND	AB E		JASOND		
	D 1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	I	JFMAMJ JASOND	AB	JFMAMJ	JASOND		
	D 1959	A					ABCD	I	JFMAMJ JASOND					
	D 1960	A					ABCD	I	JFMAMJ JASOND					
	D 1961	A					ABCDEI		JFMAMJ JASOND	AB E	JFMAMJ	JASOND		
	D 1962	A					ABCD	I	JFMAMJ JASOND					
	D 1963	A	AB	JFMAMJ JASOND			ABCDEI		JFMAMJ JASOND	AB E	JFMAMJ	JASOND	A	JFMAMJ JASOND
	D 1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI		JFMAMJ JASOND	AB E	JFMAMJ	JASOND	A	JFMAMJ
	D 1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI		JFMAMJ JASOND	AB E	JFMAMJ	JASOND	A	JFMAMJ JASOND
	D 1966	A					ABC		JFMAMJ JASOND					
	D 1967	A					ABC		JFMAMJ JASOND					
	D 1968	A	ABCD	JFMAMJ JASOND			ABC		JFMAMJ JASOND					
	D 1969	A					ABC	I	JFMAMJ JASOND	I	J	JAS		
	D 1970	A	ABCD	JFMAMJ JASOND			ABC		JFMAMJ JASOND					
	D 1971	A	ABCD	JFMAMJ JASOND			ABC		JFMAMJ JASOND					
	D 1972	A	A	JFMAMJ JASOND			ABC		JFMAMJ JASOND					
	D 1973	A	ABCD	JFMAMJ JASOND			ABC		JFMAMJ JASOND					
	D 1974	A	ABCD	JFMAMJ JASOND			ABC		JFMAMJ JASOND					
	D 1975	A	A	JFMAMJ JASOND			ABC		JFMAMJ JASOND					
	D 1976	A					ABC		JFMAMJ JASOND					
	D 1977	A					ABC		JFMAMJ JASOND					
	D 1978	A	ABCD	JFMAMJ JASOND			ABC		JFMAMJ JASOND					
	D 1979	A					ABC		JFMAMJ JASOND					
	D 1980	A					A C		JFMAMJ JASOND					
ARCTIC ICE FLO	D 1957		ABCD	JASOND										
AIF	D 1958		ABCD	JFMAMJ JASO										
(083.53 193.05)														
ARCTIC VILLAGE	D 1978												A	MAMJ JASOND*
AVI	D 1979												A	JFMAMJ JASOND*
(068.13 214.43)	D 1980												A	JFMAM A OND*
	D 1981												A	JFMAMJ JASOND*
	D 1982												A	JFMAMJ JASOND*
	D 1983												A	JFMAMJ JASOND*
ARCTOWSKI	D 1978	K					A		AMJ JASOND					
ARC	D 1979						A		JFMAMJ JASOND					
(-62.16 301.65)														
ARGENTINE ISLAND	D 1957	KA	ABCD	J JASOND			ABCDE		JFMAMJ JASOND	AB E		JFMAMJ JASOND		
AIA	D 1958	KA	ABCD	JFMAMJ JASOND			ABCDE		JFMAMJ JASOND	AB E		JFMAMJ JASOND		
(-65.25 295.74)	D 1959	KA	ABCD	JFMAMJ JASOND			ABCDE		JFMAMJ JASOND	AB E		JFMAMJ JASOND		
	D 1960	KA	ABCD	JFMAMJ JASOND			ABCDE		JFMAMJ JASOND	AB E		JFMAMJ JASOND		
	D 1961	KA	ABCD	JFMAMJ JASOND			ABCDE		JFMAMJ JASOND	AB E		JFMAMJ JASOND		
	D 1962	KA	ABCD	JFMAMJ JASOND			ABCDE		JFMAMJ JASOND	AB E		JFMAMJ JASOND		
	D 1963	KA	ABCD	JFMAMJ JASOND			ABCDE		JFMAMJ JASOND	AB E		JFMAMJ JASOND		
	D 1964	KA	ABCD	JFMAMJ JASOND			ABCDE		JFMAMJ JASOND	AB E		JFMAMJ JASOND		
	D 1965	KA	ABCD	JFMAMJ JASOND			ABCDE		JFMAMJ JASOND	AB E		JFMAMJ JASOND		

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
ARGENTINE ISLAND	D	1966	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
AIA	D	1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(-65.25 295.74)	D	1968	KA	ABCD	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1969	A	A D	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1970	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1971	A	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1972	A	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1973	A	AB	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1974	A	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1975	A	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1976	A	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1977	A	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1978	A	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1979	A	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1980	A	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1981	A	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1982	A	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	A C E	JFMAMJ JASOND		
	D	1983	A	A CD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
ARKHANGELSK	D	1969		BCD	JFMAMJ JASOND								
ARK	D	1970		BCD	JFMAMJ JASOND								
(064.60 040.50)	D	1971		BCD	JFMAMJ JASOND								
	D	1972		BCD	JFMAMJ JASOND								
	D	1976		ABCD	JFMA			ABCD	JFMA				
	D	1977		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979		ABCD	JFMAMJ JASOND			ABC	JFMAMJ JASOND				
	D	1980		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1981		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1982		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1983		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1984		ABCD	JFMAMJ JAS			ABCD	JFMAMJ JAS				
ARTI	D	1957	K										
ARS	D	1958	K										
(056.43 58.57)	D	1959	K										
	D	1960	K										
	D	1961	K										
	D	1962	K										
	D	1963	K										
	D	1964	K										
	D	1965	K										
	D	1966	K										
	D	1967	K										
	D	1968	K										
	D	1969	K										
	D	1970	K										
	D	1971	K	B	JFMAMJ JASOND								
	D	1972	K	AB	JFMAMJ JASOND								
	D	1973	KA	AB D	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1974	KA	B	JFMAMJ JASOND			B	JFMAMJ JASOND				
	D	1975	KA	AB D	JFMAMJ JASOND			B D	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
ARTI	D	1976	KA	AB D	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
ARS	D	1977	KA	AB D	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
(056.43 58.57)	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	BCD	JFMAMJ JASOND			BCD	JFMAMJ JASOND				
	D	1980	KA	BCD	JFMAMJ JASOND			BCD	JFMAMJ JASOND				
	D	1981	KA	B D	JFMAMJ JASOND			B D	JFMAMJ JASOND				
	D	1982	KA	B D	JFMAMJ JASOND			B D	JFMAMJ JASOND				
	D	1983	KA	B D	JFMAMJ JASOND			B D	JFMAMJ JASOND				
	D	1984		B D	JFMAMJ			B D	JFMAMJ				
ASHKHABAD	D	1958	K	ABCD	SOND	BC	J JASOND			AB	JFMAMJ JASOND		
ASH	D	1959	KA	ABCD	JFMAMJ JASOND	C	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
(037.95 58.11)	D	1960	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1961	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1962	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1963	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D	1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D	1966	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABC	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1967	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1968	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1969	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1970	KA	ABCD	JFMAMJ	ABC	JFMAMJ	ABCD	JFMAMJ				
	D	1971	K										
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1976	KA	AB D	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	KA	AB D	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1983	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1984	K		JFMAMJ				JFMAMJ				
ASO	D	1932						C	ASOND				
ASO	D	1933						C	JFMAMJ JA				
(032.88 131.01)													
	D	1957	K	ABCD	JASOND			ABCD	JASOND				
	D	1958	A	ABCD	AMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1959		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1964		ABCD	JFMAMJ JASOND								
	D	1965		ABCD	JFMAMJ JASOND								
AVERROES	D	1966		A	J J OND								
AVE	D	1967	A	A	JFMAMJ JASOND								
(033.30 352.59)	D	1968		A	JFMAMJ JASOND								
	D	1969		A	JFMAMJ JASOND								
	D	1970	K	A	JFMAMJ JASOND								
	D	1971	KA	A	JFMAMJ JASOND			AB D	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
AVERROES	D	1972	K	A	JFMAMJ JASOND			B	A				
AVE	D	1973		A	JFMAMJ JASOND								
(033.30 352.59)	D	1974		A	JFMAMJ JASOND								
	D	1975		A	JFMAMJ JASOND								
	D	1976	KA	A	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D	1977		A	JFMAMJ JASOND			A D	JFM				
	D	1978		A	JFMAMJ JASOND								
	D	1979		A	JFMAMJ JASOND								
	D	1980		A	FM								
BACK	D	1977										A	N *
BKC	D	1978										A	AMJ JASO *
(057.68 265.77)	D	1979										A	FMAMJ JASOND*
	D	1980										A	FMAMJ J *
BAGUIO	D	1961		ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
BAG	D	1962						A	JFMAMJ JASOND				
(016.42 120.60)	D	1963						A	JFMAMJ JASOND				
	D	1964		ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	A	O	A	O
	D	1965		ABCD	JFMAMJ JASOND			AB	JFMAMJ JASOND	AB	M	A	M
	D	1966		ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	ASO D	A	ASO D
	D	1967		ABCD	JFMAMJ JASOND			AB E	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JF AMJ
	D	1968		ABCD	JFMAMJ JASOND			AB DE	JFMAMJ JASOND	AB E	JFMAMJ JASO	A	JASO
	D	1969		ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1970		ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	D	1971		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1972		ABCD	JFMAMJ JASOND			A CD	JFMAMJ JASOND				
	D	1973		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1974		ABCD	JFMAMJ JASOND			A CD	JFMAMJ JASOND				
	D	1975		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1976		ABCD	JFMAMJ JASOND	B	SOND	ABCD	JFMAMJ JASOND				
	D	1977		ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1978		ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1979		ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1980		A CD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1981		A D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D	1982		ABCD	JFMAMJ JASOND								
	D	1983		A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1984		A	JFMAMJ JASOND								
BAKER LAKE	X	1951	KA	A	JFMAMJ JASOND								
BLC	X	1952	KA	A	JFMAMJ JASOND								
(064.33 263.97)	X	1953	KA	A	JFMAMJ JASOND								
	X	1954	KA	A	JFMAMJ JASOND								
	X	1955	KA	A	JFMAMJ JASOND								
	X	1956	A	A	JFMAMJ JASOND								
	X	1957	A	ABCD	JASOND			ABCD	JFMAMJ JASOND				
	X	1958	A	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	X	1959	A	ABCD	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	X	1960	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	X	1961	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	X	1962	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	X	1963	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	X	1964	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	SOND

OBSERVATORY	COMP	YEAR	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
BAKER LAKE	X	1965	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
BLC	X	1966	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JAS ND
(064.33 263.97)	X	1967	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	AM ASOND
	X	1968	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	MAMJ JASO
	X	1969	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	J JAS
	X	1970	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB I	JFMAMJ JASOND	A	M
	X	1971	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	ND	A	ND*
	X	1972	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1973	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1974	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1975	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1976	A	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1977	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1978	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	X	1979	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1980	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1981	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1982	A	ABCD	JFMAMJ JASOND			A-	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1983	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1984		ABCD	JFMAMJ JAS			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
BALDWIN	D	1901	A					A	JFMAMJ JASOND				
BAL	D	1902	A					A	JFMAMJ JASOND				
(038.78 264.83)	D	1903	A					A	JFMAMJ JASOND				
	D	1904	A					A	JFMAMJ JASOND				
	D	1905	A					A	JFMAMJ JASOND				
	D	1906	A					A	JFMAMJ JASOND				
	D	1907	A					A	JFMAMJ JASOND				
	D	1908	A					A	JFMAMJ JASOND				
	D	1909	A					A	JFMAMJ JAS				
BANGKOK	D	1966						A	JFMAMJ JASOND				
BKK													
(013.72 100.57)													
BANGUI	D	1955	A					A EI	JFMAMJ JASOND	A E	JFMAMJ JASOND		
BNG	D	1956	A					A EI	JFMAMJ JASOND	A E	JFMAMJ JASOND		
(004.44 18.57)	D	1957	KA	ABCD	JASOND			ABCDEI	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1958	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1959	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1960	KA	ABCD	JFMAMJ J			ABCDE	JFMAMJ J	A E	JFMAMJ J		
	D	1961	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	ASOND	A	ASOND
	D	1962	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1963	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1964	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	ON
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	M ND
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	AM ASO D
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JF AMJ
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JASO
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFM
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1972	KA	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JASOND

OBSERVATORY	YEAR COMP	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
BANGUI	D 1973	A	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JASOND
BNG	D 1974	KA	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JASOND
(004.44 18.57)	D 1975	KA	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1976	KA	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1977	KA	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1978	KA	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1979	KA	A CD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1980	KA	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1981	KA	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1982	KA	A CD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1983	KA	A CD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	E			
	D 1984	K	A CD	JFMAMJ JAS			A CDE	JFMAMJ JASOND				
BARROW	D 1949	A	A	OND								
BRW	D 1950	A	A	JFMAMJ JASOND								
(071.30 203.25)	D 1951	A	A	JFMAMJ JASOND								
	D 1952	A	A	JFMAMJ JASOND								
	D 1953	A	A	JFMAMJ JASOND								
	D 1954	A	A	JFMAMJ JASOND								
	D 1955	A	A	JFMAMJ JASOND								
	D 1956	A	A	JFMAMJ JASOND								
	D 1957	KA	ABCD	JFMAMJ JASOND	ABC	JASOND	ABCD	J JASOND				
	D 1958	KA	ABCD	JFMAMJ JASOND	ABC JFMAMJ	JASOND	ABCD	JFMAMJ JASOND				
	D 1959	KA	ABCD	JFMAMJ JASOND	ABC JFMAMJ	JASOND	ABCD	JFMAMJ JASOND				
	D 1960	KA	ABCD	JFMAMJ JASOND	ABC JFMAMJ	JASOND	ABCD	JFMAMJ JASOND				
	D 1961	KA	ABCD	JFMAMJ JASOND	ABC JFMAMJ	JASOND	ABCD	JFMAMJ JASOND				
	D 1962	KA	ABCD	JFMAMJ JASOND	ABC JFMAMJ	JASOND	ABCD	JFMAMJ JASOND				
	D 1963	KA	ABCD	JFMAMJ JASOND	ABC JFMAMJ	JASOND	ABCD	JFMAMJ JASOND				
	D 1964	KA	ABCD	JFMAMJ JASOND	ABC JFMAMJ	JASOND	ABCDE	JFMAMJ JASOND	AB EI	SOND	A	SOND
	D 1965	KA	ABCD	JFMAMJ JASOND	ABC JFMAMJ	JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1966	KA	ABCD	JFMAMJ JASOND	ABC JFMAMJ	JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1967	KA	ABCD	JFMAMJ JASOND	ABC JFMAMJ	JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1968	KA	ABCD	JFMAMJ JASOND	ABC JFMAMJ	JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1969	KA	ABCD	JFMAMJ JASOND	ABC JFMAMJ	JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1970	KA	ABCD	JFMAMJ JASOND	ABC JFMAMJ	JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1971	KA	ABCD	JFMAMJ JASOND	ABC JFMAMJ	JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1972	KA	ABCD	JFMAMJ JASOND	ABC JFMAMJ	JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1973	KA	ABCD	JFMAMJ JASOND	ABC JFMAMJ	JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1974	KA	ABCD	JFMAMJ JASOND	ABC JFMAMJ	JAS	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
(071.32 203.38)	D 1975	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	MJ JASOND*
	D 1976	A	AB D	JFMAMJ JASOND			AB DE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1977	A	AB D	JFMAMJ JASOND			A D	JFMAMJ JASOND	AB I	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1978	A	AB D	JFMAMJ JASOND			A D	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1979	A	A	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1980	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1981	A					A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1982	A					A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1983						A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
BARTER ISLAND	D 1957		ABCD	MJ JASOND			ABCD	MJ J SOND				
BTI	D 1958	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(070.13 216.02)	D 1959		ABCD	J			A	J				
BATAVIA	D 1867						A	JASOND				
BTV												
(-6.18 106.83)												

OBSERVATORY	YEAR COMP	KAQ	NORMAL MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS WDC	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ON TAPE WDC	2.5-MINUTE 1.0-MINUTE(*) WDC
BATAVIA	D 1868				A JFMAMJ JASOND		
BTV	D 1869				A JFMAMJ JASOND		
(-6.18 106.83)	D 1870				A JFMAMJ		
	D 1882				A JASOND		
	D 1883				A JFMAMJ JASOND		
	D 1884	A			A JFMAMJ JASOND		
	D 1885	A			A JFMAMJ JASOND		
	D 1886	A			A JFMAMJ JASOND		
	D 1887	A			A JFMAMJ JASOND		
	D 1888	A			A JFMAMJ JASOND		
	D 1889	A			A JFMAMJ JASOND		
	D 1890	A			A JFMAMJ JASOND		
	D 1891	A			A JFMAMJ JASOND		
	D 1892	A			A JFMAMJ JASOND		
	D 1893	A			A JFMAMJ JASOND		
	D 1894	A			A JFMAMJ JASOND		
	D 1895	A			A JFMAMJ JASOND		
	D 1896	A			A JFMAMJ JASOND		
	D 1897	A			A JFMAMJ JASOND		
	D 1898	A			A JFMAMJ JASOND		
	D 1899				A JFMAMJ JASOND		
	D 1900				A JFMAMJ JASOND		
	D 1901				A JFMAMJ JASOND		
	D 1902	A			A JFMAMJ JASOND		
	D 1903	A			A JFMAMJ JASOND		
	D 1904	A			A JFMAMJ JASOND		
	D 1905	A			A JFMAMJ JASOND		
	D 1906	A			A JFMAMJ JASOND		
	D 1907	A			A JFMAMJ JASOND		
	D 1908	A			A JFMAMJ JASOND		
	D 1909	A			A JFMAMJ JASOND		
	D 1910	A			A JFMAMJ JASOND		
	D 1911	A			A JFMAMJ JASOND		
	D 1912	A			A JFMAMJ JASOND		
	D 1913	A			A JFMAMJ JASOND		
	D 1914	A			A JFMAMJ JASOND		
	D 1915	A			A JFMAMJ JASOND		
	D 1916	A			A JFMAMJ JASOND		
	D 1917	A			A JFMAMJ JASOND		
	D 1918	A			A JFMAMJ JASOND		
	D 1919	A			A JFMAMJ JASOND		
	D 1920	A			A C JFMAMJ JASOND		
	D 1921	A			A JFMAMJ JASOND		
	D 1922	A			A C JFMAMJ JASOND		
	D 1923	A			A JFMAMJ JASOND		
	D 1924	A			A JFMAMJ JASOND		
	D 1925	A			A JFMAMJ JASOND		
	D 1926	A			A JFMAMJ JASOND		
	D 1927	A.			A JFMAMJ JASOND		
	D 1928	A			A JFMAMJ JASOND		

OBSERVATORY	YEAR COMP	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
BATAVIA	D 1929						A	JFMAMJ JASOND				
BTV	D 1930						A	JFMAMJ JASOND				
(-6.18 106.83)	D 1931						A	JFMAMJ JASOND				
	D 1932						A C	JFMAMJ JASOND				
	D 1933						A C	JFMAMJ JASOND				
	D 1934						A	JFMAMJ JASOND				
	D 1935						A	JFMAMJ JASOND				
	D 1936						A	JFMAMJ JASOND				
	D 1937						A	JFMAMJ JASOND				
	D 1938						A	JFMAMJ JASOND				
	D 1939						A	JFMAMJ JASOND				
	D 1940						A	JFMAMJ JASOND				
BEAR ISLAND	D 1956	A					C	JFMAMJ JASOND				
BJN	D 1957	KA										
(074.50 19.20)	D 1958	KA										
	D 1959	KA										
	D 1960	KA										
	D 1961	KA										
	D 1962	KA										
	D 1963	KA										
	D 1964	KA										
	D 1965	KA										
	D 1974	A	ABCD	JFMAMJ JASOND								
	D 1975	A	ABCD	JFMAMJ JASOND								
	D 1976	A	ABCD	JFMAMJ JASOND								
	D 1977	A	ABCD	JFMAMJ JASOND								
	D 1978	A	ABCD	JFMAMJ JASOND								
	D 1979	A	ABCD	JFMAMJ JASOND								
	D 1980	A	ABCD	JFMAMJ JASOND								
	D 1981	A	ABCD	JFMAMJ JASOND								
	D 1982	A	ABCD	JFMAMJ JASOND								
	D 1983	A	A CD	JFMAMJ JASOND								
	D 1984		A CD	JFMAMJ JASOND								
BEIJING	D 1957	A					ABCD	JFMAMJ JASOND				
BJI	D 1958	A					ABCD	JFMAMJ JASOND				
(040.04 116.18)	D 1959	A					ABCD	JFMAMJ JASOND				
	D 1960	A					ABCD	JFMAMJ JASOND				
	D 1961	A					ABCD	JFMAMJ JASOND				
	D 1962	A					ABCD	JFMAMJ JASOND				
	D 1963	A					ABCD	JFMAMJ JASOND				
	D 1964	A					ABCD	JFMAMJ JASOND				
	D 1965	A					D	JFMAMJ JASOND				
	D 1966	A					D	JFMAMJ JASOND				
	D 1967	A					D	JFMAMJ JASOND				
	D 1968	A					D	JFMAMJ JASOND				
	D 1969	A					D	JFMAMJ JASOND				
	D 1970	A					D	JFMAMJ JASOND				
	D 1971	A					D	JFMAMJ JASOND				
	D 1972	A					D	JFMAMJ JASOND				
	D 1973	A					D	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
BEIJING	D	1974	A					A D	JFMAMJ JASOND				
BJI	D	1975	A					A D	JFMAMJ JASOND				
(040.04 116.18)	D	1976	A					A	JFMAMJ JASOND				
	D	1977	A					A	JFMAMJ JASOND				
	D	1978	A					A	JFMAMJ JASOND				
	D	1979	A					A C	JFMAMJ JASOND				
	D	1980	A					A C	JFMAMJ JASOND				
	D	1981	A					A C	JFMAMJ JASOND				
BELIY ISLAND	D	1972		B	MJ JASOND								
BEY	D	1973		ABCD	ND								
(073.30 070.00)	D	1974		ABCD	JFMAMJ JASOND								
	D	1975		ABCD	JFMA J JASOND								
	D	1976		ABCD	JFMAMJ JASOND								
	D	1977		ABCD	JFMAMJ JASOND								
	D	1978		ABCD	JFMAMJ JASOND								
BELOIT	D	1957	A	ABCD	JASOND			ABCDE	JFMAMJ JASOND	AB E	JASOND		
BLT	D	1958	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(039.48 261.87)	D	1959		ABCD	J			A	J	AB	JFMAMJ JASOND		
BELSK	D	1960	KA										
BEL	D	1961	KA										
(051.84 20.79)	D	1962	KA										
	D	1963	KA										
	D	1964	KA										
	D	1965	KA										
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1968	KA	AB D	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1969	KA	AB	JASOND			ABCD I	JFMAMJ JASOND				
	D	1970	KA	AB	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1971	KA	AB	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1972	KA	AB	JFMAMJ			ABC EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1973	KA	AB	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D	1974	KA	AB	JFMAMJ JASOND			ABC I	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1975	KA					A C I	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1976	KA					A C I	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1977	KA					A C I	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1978	KA					ABC	JFMAMJ JASOND				
	D	1979	KA					AB	JFMAMJ JASOND				
	D	1980	KA					ABC	JFMAMJ JASOND				
	D	1981	KA					ABC	JFMAMJ JASOND				
	D	1982	KA					ABC	JFMAMJ JASOND				
	D	1983	KA					A C	JFMAMJ JASOND				
BIG DELTA	D	1957	A	ABCD	JASOND	ABC	JASOND	ABCDE	JASOND	AB E	JASOND		
BDE	D	1958	A	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(064.00 214.27)	D	1959		ABCD	J	ABC	J	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
BINZA	D	1954	A					A	JFMAMJ JASOND				
BIN	D	1955	A					A	JFMAMJ JASOND				
(-4.27 15.37)	D	1956	A					A	JFMAMJ JASOND				
	D	1957	KA										
	D	1958	KA					ABCD	JFMAMJ JASOND				
	D	1959	KA										

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
BINZA	D	1960	KA										
BIN	D	1961	KA	A	JFMAMJ JASOND								
(-4.27 15.37)	D	1962	KA	A	JFMAMJ JASOND								
	D	1963	KA	A	JFMAMJ JASOND								
	D	1964	KA	A	JFMAMJ JASOND								
	D	1965	KA	A	JFMAMJ JASOND								
	D	1966	KA	A	JFMAMJ JASOND								
	D	1967	KA	A	JFMAMJ JASOND								
	D	1968	KA	ABCD	JFMAMJ JASOND								
	D	1969	KA	AB D	JFMAMJ JASOND								
	D	1970	A	A	JFMAMJ JASOND								
	D	1971	A	A	JFMAMJ JASOND								
	D	1972	A	A	JFMAMJ JASOND								
	D	1973	A	A	JFMAMJ JASOND								
	D	1974		A	JFMAMJ JASOND								
	D	1975		A	JFMAMJ JASOND								
	D	1976	K	A	JFMAMJ JASOND								
	D	1977	K	A	JFMAMJ JASOND								
	D	1978	K										
	D	1979	K										
BOCHUM	D	1902	A					A	JFMAMJ JASOND				
BOC	D	1903	A					A	JFMAMJ JASOND				
(051.49 7.23)	D	1904	A					A	JFMAMJ JASOND				
	D	1905	A					A	JFMAMJ JASOND				
	D	1906	A					A	JFMAMJ JASOND				
	D	1907	A					A	JFMAMJ JASOND				
	D	1908	A					A	JFMAMJ JASOND				
	D	1909	A					A	JFMAMJ JASOND				
	D	1910	A					A	JFMAMJ JASOND				
BODO	D	1932						C	SOND				
BOD	D	1933						C	JFMAMJ JA				
(069.30 014.42)													
BOROK	D	1957	K			ABC	JFMA ASOND						
BOX	D	1958	K	A	FMAMJ JASOND	ABC	JFMAMJ JASOND						
(058.03 38.97)	D	1959	K	A	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D	1960	K			ABC	JFMAMJ JASOND						
	D	1961	K	A	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D	1962	K	A	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D	1963	K	A	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D	1964	K	A	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D	1965	K	A	JFMAMJ J	ABC	JFMAMJ JASOND						
	D	1966	K	A	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D	1968		A	JFMAMJ JASOND								
	D	1969		A	JFMAMJ JASOND								
	D	1970				B	JASOND						
	D	1971		A	JFMAMJ JASOND	B	JFMAMJ JASOND	A	JFMAMJ JASOND				
	D	1976	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
BOROK	D	1978	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
BOX	D	1979		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(058.03 38.97)	D	1980		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1981	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1982	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1983	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1984		BCD	JFMAMJ			BCD	JFMAMJ				
BOSSEKOP	D	1932						C	OND				
BOP	D	1933						C	JFMAMJ JA				
(069.97 023.25)													
BOULDER	D	1961		A	JFMAMJ JASOND								
BOU	D	1962		A	JFMAMJ JASOND								
(040.14 254.76)	D	1963	K	ABCD	JFMAMJ JASOND			A CD	AMJ JASOND				
	D	1964	KA	ABCD	JFMAMJ JASOND	ABC	MJ JASOND	ABCD	JFMAMJ JASOND	A	J SOND	A	J JASOND
	D	1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1966	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D	1967	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1968	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1969	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1970	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1971	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1972	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1973	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1974	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1978	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB I	JFMAMJ JASOND	A	AMJ JASOND*
	D	1979	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1980	A					A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1981	A					A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1982	A					A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1983	A					A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1984						A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
BRISBANE	D	1957	K										
BRS	D	1958	K										
(-27.53 152.92)	D	1959	K										
	D	1960	K										
	D	1961	K										
	D	1962	K										
	D	1963	K										
	D	1964	K										
BRORFELDE	D	1980	A					AB D	JFMAMJ JASOND				
BFE													
(055.63 11.67)	D	1982		AB D	JFMAMJ JASOND								
	D	1984	K										
	D	1985	K										
BUDAKESZI	D	1949	A					A	JFMAMJ JASOND				
BUZ	D	1950	A					A	JFMAMJ JASOND				
(047.52 18.90)													

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
BUDAKESZI	D	1951	A					A	JFMAMJ JASOND				
BUZ	D	1952	A					A	JFMAMJ JASOND				
(047.52 18.90)	D	1953	A					A	JFMAMJ JASOND				
	D	1954	A					A	JFMAMJ JASOND				
BUDKOV	D	1957	K					B	JFMAMJ JASOND				
BDV	D	1958	K	C	JF			BC	JFMAMJ JASOND				
(049.08 14.02)	D	1959	K					BC	JFMAMJ JASOND				
	D	1960	K					A	JFMAMJ JASOND				
	D	1961	K					AB	JFMAMJ JASOND				
	D	1962	K					AB	JFMAMJ JASOND				
	D	1963	K					AB	JFMAMJ JASOND				
	D	1964	K					AB	JFMAMJ JASOND				
	D	1965	K					AB	JFMAMJ JASOND				
	D	1966	K					A	JFMAMJ JASOND				
	D	1967	KA					AB D	JFMAMJ JASOND				
	D	1968	KA					AB D	JFMAMJ JASOND				
	D	1969	KA					A CD	JFMAMJ JASOND				
	D	1970	KA					AB D	JFMAMJ JASOND				
	D	1971	KA					AB D	JFMAMJ JASOND				
	D	1972	KA					B D	JFMAMJ JASOND				
	D	1973	KA					B D	JFMAMJ JASOND				
	D	1974	KA	A	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1975	KA	A	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1976	KA	A	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1977	KA	A	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1978	KA	A	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	A	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D	1980	KA	A	JFMAMJ			A	JFMAMJ				
	D	1981	KA										
	D	1982	KA										
	D	1983	K										
	D	1984	K										
	D	1985	K										
BURLINGTON	D	1957		ABCD	J JASOND			ABCD	J JASOND				
BRT	D	1958	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(039.38 257.73)	D	1959		ABCD	J			ABCD	J				
BYRD STATION	D	1957	KA	ABCD	JASOND	BC	D	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
BYR	D	1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(-79.98 240.00)	D	1959	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1960	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1961	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1962	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(-80.02 240.48)	D	1963	KA	AB	JFMAMJ JASOND	ABC	JFMAMJ JASOND	A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1965	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966		AB D	JFMAMJ JASOND	A C	JFMAMJ JASOND						
	D	1967	KA	AB D	JFMAMJ JASOND	A C	JFMAMJ JASOND	A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1968	KA	AB D	JFMAMJ JASOND	A C	JFMAMJ JASOND	A DE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ
	D	1969	K	AB D	JFMAMJ JASOND	A C	JFMAMJ JASOND						
	D	1970	K	AB D	JFMAMJ JASOND	A C	JFMAMJ JASOND	A MJ ND		A MJ ND		A MJ ND	
	D	1971	K	AB D	JFMAMJ JASO	A C	JFMAMJ JASO						

OBSERVATORY	COMP	YEAR	KAQ	NORMAL MAGNETOGRAMS WDC		RAPID RUN MAGNETOGRAMS WDC		HOURLY VALUES ANY MEDIUM WDC		HOURLY VALUES ON TAPE WDC		2.5-MINUTE 1.0-MINUTE(*) WDC	
CAMBRIDGE BAY	D	1972	A	ABCD	JASOND			ABCD	JFMAMJ JASOND	A	AMJ JASOND	A	AMJ JASOND*
CBB	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
(069.20 255.00)	D	1974	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1975	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1979	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1980	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1981	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1982	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1983	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND			A	JFMAMJ JASOND*
	X	1984		ABCD	JFMAMJ JAS			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
CAMPBELL ISLAND	D	1979	K										
CAI	D	1980	K										
(-52.50 169.20)	D	1981	K										
	D	1984	K										
	D	1985	K										
CANARIAS	D	1961	KA					ABCD	JFMAMJ JASOND				
TEN	D	1962	KA					ABCD	JFMAMJ JASOND				
(028.48 343.74)	D	1963	KA					ABCD	JFMAMJ JASOND				
	D	1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	J SOND
	D	1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ J O
	D	1966	K	ABCD	JFMAM			ABCD	JFMAMJ JASOND	A	M	A	M
	D	1967	KA	A CD	M			ABCD	JFMAMJ JASOND				
	D	1968	KA					ABCD	JFMAMJ JASOND				
	D	1969	KA					ABCD	JFMAMJ JASOND				
	D	1970	KA					ABCD	JFMAMJ JASOND				
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1981	K	ABCD	JFMAMJ JASOND			D	JFMAMJ JASOND				
	D	1982	K	ABCD	JFMAMJ JASOND								
	D	1983		A CD	JFMAMJ JASOND								
	D	1984	K										
CANBERRA	D	1979	KA					A	SOND	A	SOND		
CAN	D	1980	KA					A	JFMAM	A	JFMAM		
(-35.32 149.36)	D	1981	KA										
	D	1983	KA										
	D	1984	K										
	D	1985	K										
CAPE CHELYUSKIN	D	1955	KA										
CCS													

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
CAPE CHELYUSKIN	D	1956	KA										
CCS	D	1957	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(077.72 104.28)	D	1958	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1959	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1962	KA	ABCD	JFMAMJ JASOND	B	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D	1963	KA	ABCD	JFMAMJ JASOND	B	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D	1964	KAQ	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	SOND
	D	1965	KAQ	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	AB	JFMAMJ JASOND
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND								
	D	1981	KA	A CD	JFMAMJ JASOND								
	D	1982	KA	A CD	JFMAMJ JASOND								
	D	1983	K	A	JFMAMJ JASOND								
	D	1984	K										
CAPE GOOD HOPE	D	1841	A					A	AMJ JASOND				
CGH	D	1842	A					A	JFMAMJ JASOND				
(-33.93 018.48)	D	1843	A					A	JFMAMJ JASOND				
	D	1844	A					A	JFMAMJ JASOND				
	D	1845	A					A	JFMAMJ JASOND				
	D	1846	A					A	JFMAMJ				
CAPE HALLETT	D	1957	K	ABCD	JASOND			A	JASOND				
HLL	D	1958	K	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
(-72.32 170.22)	D	1959	K	ABCD	JFMAMJ JASOND								
	D	1960	K	ABCD	JFMAMJ JASOND								
	D	1961	K	ABCD	JFMAMJ JASOND								
	D	1962	K	ABCD	JFMAMJ JASOND								
CAPE KAMENNIY	D	1973		ABCD	ND								
CKA	D	1974		ABCD	JFMAMJ JASOND								
(068.50 073.60)	D	1975		ABCD	JFMAMJ JASOND								
	D	1976		ABCD	JFMAMJ JASOND								
	D	1977		BCD	JFMAMJ JASOND								
	D	1978		AB D	JFMAMJ JASOND								
CAPE PARRY	D	1977										A	ND*
CPY	D	1978										A	JFMAMJ JASOND*
(070.17 235.28)	D	1979										A	JFMAMJ JASOND*
	D	1980										A	JFMAMJ JASOND*

OBSERVATORY	COMP	YEAR	KAQ	NORMAL MAGNETOGRAMS WDC		RAPID RUN MAGNETOGRAMS WDC		HOURLY VALUES ANY MEDIUM WDC		HOURLY VALUES ON TAPE WDC		2.5-MINUTE 1.0-MINUTE(*) WDC	
CAPE PARRY	D	1981										A	JFMAMJ JA OND*
CPY	D	1982										A	JFMAMJ JASOND*
(070.17 235.28)	D	1983										A	JFMAMJ JASOND*
CAPE SCHMIDT	D	1967		AB	JASOND								
CPS	D	1968		AB	JASOND								
(068.92 180.52)	D	1973		B	JFMAMJ								
CAPE TOWN	D	1932						A	JFMAMJ JASOND	A	JFMAMJ JASOND		
CTO	D	1933	A					A	JFMAMJ JASOND	A	JFMAMJ JASOND		
(-33.95 18.47)	D	1934	A					A	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1935	A					A	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1936	A					A	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1937	A					A	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1938	A					A	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1939	A					A	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1940	KA					A	JFMAMJ JASOND	A	JFMAMJ JASOND		
CAPE WELLEN	D	1952	KA										
CWE	D	1953	KA										
(066.16 190.17)	D	1954	KA										
	D	1955	KA										
	D	1956	KA										
	D	1957	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				0
	D	1958	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1959	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1964	KAQ	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JASOND
	D	1965	KAQ	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1982	KA	ABCD	JFMAMJ JASOND								
	D	1983	K	AB	JFMAMJ JASOND								
	D	1984	K										
CAPE ZHELANIA	D	1974		ABCD	JF OND								
CZA	D	1975		B	JFMAMJ JASO								
(077.00 068.60)													

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
CAPE ZHELANIA	D	1976		B	JFMAMJ JASO								
CZA													
(077.00 068.60)													
CAPRI	D	1957	K	ABCD	JASOND			ABCD	JASOND				
CPI	D	1958	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(040.55 014.22)	D	1959		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JA				
	D	1961		ABCD	FMAMJ JASOND			ABCD	FMAMJ JASOND				
	D	1962		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1963		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1964		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1965		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1966		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1967		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1968		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1969		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1970		AB D	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1971		AB D	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1972		A D	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1973		A D	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1974		A	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1975		A	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1976		A	JFMAMJ			ABCD	JFMAMJ JASOND				
	D	1977						ABCD	JFMAMJ JASOND				
	D	1978						ABCD	JFMAMJ JASOND				
	D	1979						ABCD	JFMAMJ JASOND				
CARROLLTON	D	1957		ABCD	JASOND								
CAX	D	1958	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(039.37 266.47)	D	1959		ABC	JF			AB	J				
CASPER	D	1957		ABCD	JASOND			ABCD	ASOND				
CSR	D	1958	A	ABCD	JFMAMJ JASOND			ABCD	JF AMJ JASON				
(042.83 253.63)	D	1959		AB D	JF								
CASTELLACCIO	D	1933	A					A	JFMAMJ JASOND				
CAO	D	1934	A					A	JFMAMJ JASOND				
(044.43 8.93)	D	1935	A					A	JFMAMJ JASOND				
	D	1936	A					A	JFMAMJ JASOND				
	D	1937	A					A	JFMAMJ JASOND				
	D	1938	A					A	JFMAMJ JASOND				
	D	1939	A					A	JFMAMJ JASOND				
	D	1940	A					A	JFMAMJ JASOND				
	D	1941	A					A	JFMAMJ JASOND				
	D	1942	A					A	JFMAMJ JASOND				
	D	1943	A					A	JFMAMJ JASOND				
	D	1944	A					A	JFMAMJ JASOND				
	D	1945	A					A	JFMAMJ JASOND				
	D	1946	A					A	JFMAMJ JASOND				
	D	1947	A					A	JFMAMJ JASOND				
	D	1957	A	AB D	JASOND			ABCD	JFMAMJ JASOND				
	D	1958	A	AB D	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
CASTELLACCIO	D	1959	A	AB D	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
CAO	D	1960	A	AB D	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
(044.43 8.93)	D	1961	A	AB D	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1962	A	AB D	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
CASTLE ROCK	D	1970	A					A D	AMJ JASOND	A	AMJ JASOND	A	AMJ JASOND
CRC	D	1971	A					A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND
(037.24 237.87)	D	1972	A					A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1973	A					A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1974	A					A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND
CEBU	D	1961		ABCD	JASOND								
CCP													
(010.30 123.90)													
CHA PA	D	1957	A	ABCD	ASOND			ABCD	SOND				
CPA	D	1958	A	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
(022.35 103.83)	D	1959	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1960	A										
	D	1961	A					B	JFMAMJ JASOND				
	D	1962	A					B	JFMAMJ JASOND				
	D	1963	A					B	JFMAMJ JASOND				
	D	1964	A					I	JFMAMJ JASOND				
	D	1965	A					I	JFMAMJ JASOND				
	D	1966	A					B	JFMAMJ JASOND				
	D	1967	A					B	JFMAMJ JASOND				
CHAMBON-LA-FORET	D	1936	A					A	JFMAMJ JASOND				
CLF	D	1937	A					A	JFMAMJ JASOND				
(048.02 2.26)	D	1938	A					A	JFMAMJ JASOND				
	D	1939	A					A	JFMAMJ JASOND				
	D	1940	KA					A	JFMAMJ JASOND				
	D	1941	KA					A	JFMAMJ JASOND				
	D	1942	KA					A	JFMAMJ JASOND				
	D	1943	KA					A	JFMAMJ JASOND				
	D	1944	KA					A	JFMAMJ JASOND				
	D	1945	KA					A	JFMAMJ JASOND				
	D	1946	KA					A	JFMAMJ JASOND				
	D	1947	KA					A	JFMAMJ JASOND				
	D	1948	KA					A	JFMAMJ JASOND				
	D	1949	KA					A	JFMAMJ JASOND				
	D	1950	KA					A	JFMAMJ JASOND				
	D	1951	KA					A	JFMAMJ JASOND				
	D	1952	KA					A	JFMAMJ JASOND				
	D	1953	KA					A	JFMAMJ JASOND				
	D	1954	KA					A	JFMAMJ JASOND				
	D	1955	KA					A	JFMAMJ JASOND				
	D	1956	KA					A	JFMAMJ JASOND				
	D	1957	KA	ABCD	JFMAMJ JASOND	ABC	JASOND	AB D	JFMAMJ JASOND				
	D	1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	AB D	JFMAMJ JASOND				
	D	1959	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	AB D	JFMAMJ JASOND				
	D	1960	KA	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1961	KA	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1962	KA	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
CHAMBON-LA-FORET	D 1963	KA	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
CLF	D 1964	KA	ABCD	JFMAMJ JASOND			AB DE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(048.02 2.26)	D 1965	KA	ABCD	JFMAMJ JASOND			D	JFMAMJ JASOND				
	D 1966	KA	ABCD	JFMAMJ JASOND			D	JFMAMJ JASOND				
	D 1967	KA	ABCD	JFMAMJ JASOND			D	JFMAMJ JASOND				
	D 1968	KA	ABCD	JFMAMJ JASOND								
	D 1969	KA	ABCD	JFMAMJ JASOND								
	D 1970	KA	ABCD	JFMAMJ JASOND								
	D 1971	KA	ABCD	JFMAMJ JASOND								
	D 1972	KA	ABCD	JFMAMJ JASOND								
	D 1973	KA	ABCD	JFMAMJ JASOND								
	D 1974	KA	ABCD	JFMAMJ JASOND			A CD	JFMAMJ JASOND				
	D 1975	KA					A CD	JFMAMJ JASOND				
	D 1976	KA	A	JFMAMJ JASOND			A CD	JFMAMJ JASOND				
	D 1977	KA					ABCD	JFMAMJ JASOND				
	D 1978	KA					A CD	JFMAMJ JASOND				
	D 1979	KA	A	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1980	KA	A	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1981	KA	A	JFMAMJ JASOND			A CD	JFMAMJ JASOND				
	D 1982	KA	A	JFMAMJ JASOND								
	D 1983	KA	A	JFMAMJ JASOND								
	D 1984	K										
	D 1985	K										
CHANGCHUN	D 1980						A	JFMAMJ JASOND				
CNH												
(044.05 125.21)												
CHARACATO	D 1959		A	AMJ JASOND								
ARE	D 1960		A	F AMJ JASOND								
(-16.47 288.52)	D 1961		A	JFMAMJ JASOND								
	D 1962		A	JFMAMJ JASOND								
	D 1963		A	JFM MJ JASOND								
	D 1964		ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1965		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1966		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1967		A	JASOND								
	D 1968		ABCD	JFMAMJ JASOND								
	D 1969		ABCD	JFMAMJ JASOND								
	D 1970		ABCD	JFMAMJ JASOND								
	D 1971		A	JFMAMJ ASOND								
	D 1972		A	JFMAMJ JASOND								
	D 1973		A	JFMAMJ JASOND								
	D 1974		A	JFMAM ND								
	D 1975		A	JFMAMJ JASOND								
CHARCOT	D 1932						AB E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
CTX	D 1933						AB E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(-69.37 139.03)	D 1934						AB E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1935						AB E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1936						AB E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1937						AB E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1938						AB E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
CHARCOT	D	1939						AB E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
CTX	D	1940						AB E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(-69.37 139.03)													
	D	1957	KA	D	MJ JASOND			AB D	MJ JASOND				
	D	1958	KA	D J	ASOND			AB D JF	MJ JASOND				
CHATONNAYE	D	1967						AB	JFMAM ASOND				
CTE	D	1968						B	J J SO D				
(046.67 006.83)	D	1969						B	J ASOND				
	D	1970						B	A				
CHELTENHAM	D	1901	A	A	AMJ JASOND			A	AMJ JASOND	AB	AMJ JASOND		
CLH	D	1902	A	A	AM J			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
(038.73 283.16)	D	1903	A	A	A J JASO D			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1904	A	A	MAMJ JASO			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1905	A	A	FMA J JAS N			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1906	A	A	F MJ JAS D			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1907	A	A	JFM M JA ON			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1908	A	A	M M JAS			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1909	A	A	J M M ASO			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1910	A	A	MA ASO			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1911	A	A	FMAM ASO D			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1912	A	A	A O D			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1913	A	A	J MA SO			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1914	A	A	A J J SON			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1915	A	A	MA J ASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1916	A	A	J MAM A ON			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1917	A	A	JF A J JASO D			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1918	A	A	MAMJ ASOND			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1919	A	A	JF M ASO D			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1920	A	A	MAM S D			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1921	A	A	AM S N			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1922	A	A	J M SO			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1923	A	A	M J SO			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1924	A	A	J MJ O			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1925	A	A	ASO			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1926	A	A	JFMA J SO			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1927	A	A	J MAM JA O			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1928	A	A	M JASO			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1929	A	A	FM JA N			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1930	A	A	M MJ S D			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1931	A	A	J J SO			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1932	A	A	M M ASO			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1933	A	A	M JAS			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1934	A	A	F J S D			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1935	A	A	M MJ J SO			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1936	A	A	A J ON			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1937	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1938	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1939	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1940	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1941	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1942	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
CHELTENHAM	D	1943	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
CLH	D	1944	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(038.73 283.16)	D	1945	KA	A	D			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1946	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1947	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1948	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1949	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1950	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1951	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1952	KA	A	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1953	KA	A	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1954	KA	A	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1955	KA	A	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1956	KA	A	JFMAMJ JAS			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
CHESTERFIELD INL	D	1932						A	SOND				
CFI	D	1933						A	JFMAMJ JA				
(063.33 269.28)													
CHICHIJIMA	D	1973						A	JFMAMJ JASOND				
CBI	D	1974						A	JFMAMJ JASOND				
(027.08 142.17)	D	1975						A	JFMAMJ JASOND				
	D	1976						A	JFMAMJ JASOND				
	D	1980	A					A D	JFMAMJ JASOND				
	D	1981	A					A D	JFMAMJ JASOND				
	D	1982	A					A D	JFMAMJ JASOND				
CHICLAYO	D	1957		ABCD	ASOND			ABCD	ASOND				
CCL	D	1958		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(-06.80 280.20)	D	1959		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1960		ABCD	JF			ABCD	JF				
CHIMBOTE	D	1957		ABCD	OND			ABCD	OND				
CMB	D	1958		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(-09.10 281.40)	D	1959		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1960		ABCD	J			ABCD	J				
	D	1974						B	JFMAMJ JASOND				
	D	1975						B	JFMAMJ JASOND				
CHIRIPA	D	1982	A										
CRP													
(010.44 275.09)													
CHRISTCHURCH	D	1928	A					A	JFMAMJ JASOND				
CHR	D	1929	A					A	JFMAMJ JASOND				
(-43.53 172.62)	D	1930	A					A	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
CLIMAX	D 1957		BC	J JASOND			BC	J JASOND				
CLI	D 1958		BC	JFMAMJ JASOND			BC	MJ JASOND				
(039.37 253.82)	D 1959		BC	J			B	J				
COIMBRA	D 1921	A	A	MAM S N			A	JFMAMJ JASOND				
COI	D 1922	A	A	J M M O			A	JFMAMJ JASOND				
(040.21 351.58)	D 1923	A	A	M J SO			A	JFMAMJ JASOND				
	D 1924	A	A	M O			A	JFMAMJ JASOND				
	D 1925	A	A	MJ ASON			A	JFMAMJ JASOND				
	D 1926	A					A	JFMAMJ JASOND				
	D 1927	A					A	JFMAMJ JASOND				
	D 1928	A					A	JFMAMJ JASOND				
	D 1929	A					A	JFMAMJ JASOND				
(040.22 351.58)	D 1938	A					A	JFMAMJ JASOND				
	D 1939	A					A	JFMAMJ J				
	D 1940	A					A	JFMAMJ JASOND				
	D 1941	A					A	JFMAMJ JASOND				
	D 1951	A					A	OND				
	D 1952	KA					A	I JFMAMJ JASOND				
	D 1953	KA					A	I JFMAMJ JASOND				
	D 1954	KA					A	JFMAMJ JASOND				
	D 1955	KA					A	JFMAMJ JASOND				
	D 1956	KA					A	JFMAMJ JASOND				
	D 1957	KA	A	JASOND			A	JFMAMJ JASOND				
	D 1958	KA	A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1959	KA	A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1960	KA	A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1961	KA	A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1962	KA	A	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1963	KA	A	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1964	KA	A	JFMAMJ JASOND			A DE	JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D 1965	KA	A	JFMAMJ JASOND			A DE	JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D 1966	KA	A	JFMAMJ JASOND			A D I	JFMAMJ JASOND				
	D 1967	KA	A	JFMAMJ JASOND			A I	JFMAMJ JASOND				
	D 1968	KA	A	JFMAMJ JASOND			A I	JFMAMJ JASOND				
	D 1969	KA	A	JFMAMJ JASOND			A I	JFMAMJ JASOND				
	D 1970	KA	A	JFMAMJ JASOND			A I	JFMAMJ JASOND				
	D 1971	KA	A	JFMAMJ JASOND			A I	JFMAMJ JASOND				
	D 1972	KA	A	JFMAMJ JASOND			A I	JFMAMJ JASOND				
	D 1973	KA	A	JFMAMJ JASOND			A I	JFMAMJ JASOND				
	D 1974	KA	A	JFMAMJ JASOND			A D I	JFMAMJ JASOND				
	D 1975	KA	A	JFMAMJ JASOND			A D I	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
COIMBRA	D 1976	KA	A	JFMAMJ JASOND			A D	JFMAMJ JASOND				
COI	D 1977	KA	A	JFMAMJ JASOND			D	JFMAMJ JASOND				
(040.22 351.58)	D 1978	KA					B D	JFMAMJ JASOND				
	D 1979	KA					B	JFMAMJ JASOND				
	D 1980	KA					AB	JFMAMJ JASOND				
	D 1981	K										
	D 1982	KA										
	D 1983	KA										
	D 1984	K										
	D 1985	K										
COLLEGE	D 1932						A I	OND				
CMO	D 1933	A					A I	JFMAMJ JASOND				
(064.85 212.17)	D 1934						A I	JFM				
(064.87 212.18)	D 1941	KA	A	JASOND								
	D 1942	KA	A	JFMAMJ JASOND								
	D 1943	KA	A	JFMAMJ JASOND								
	D 1944	KA	A	JFMAMJ JASOND								
	D 1945	KA	A	JFMAMJ JASOND								
	D 1946	KA	A	JFMAMJ JASOND								
	D 1947	KA	A	JFMAMJ JASOND								
(064.86 212.16)	D 1948	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1949	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1950	KA	A C	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1951	KA	A C	JFMAMJ JASOND			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1952	KA	A C	JFMAMJ JASOND			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1953	KA	A C	JFMAMJ JASOND			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1954	KA	A C	JFMAMJ JASOND			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1955	KA	A C	JFMAMJ JASOND	A C	JASOND	A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1956	KA	A C	JFMAMJ JASOND	A C	JFMAMJ JASOND	A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1957	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		0
	D 1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1959	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1960	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1961	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1962	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	OND
	D 1963	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1966	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1967	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		JFMAMJ JASOND
	D 1968	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1969	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1970	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JF
	D 1971	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1972	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
COLLEGE	D	1973	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
CMO	D	1974	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
(064.86 212.16)	D	1975	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1976	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1977	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1978	KA	ABCD	JFMAMJ JASOND	ABC	JFM	ABCD	JFMAMJ JASOND	AB I	JFMAMJ JASOND	A	MAMJ JASOND*
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1983	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1984	K					A	JFMAMJ JASOND				
	D	1985	K					A	JFM				
COLLMBERG	D	1954	K										
CLL	D	1955	K										
(051.32 13.00)	D	1956	K										
	D	1957	K										
	D	1958	K										
	D	1959	K										
	D	1960	K										
	D	1961	K										
	D	1962	K										
	D	1963	K										
	D	1964	K										
	D	1965	K										
	D	1966	K										
	D	1967	K										
COPENHAGEN	D	1892	A					A	AMJ JASOND				
COP	D	1893	A					A	JFMAMJ JASOND				
(055.68 12.58)	D	1894	A					A	JFMAMJ JASOND				
	D	1895	A					A	JFMAMJ JASOND				
	D	1896	A					A	JFMAMJ JASOND				
	D	1897	A					A	JFMAMJ JASOND				
	D	1898	A					A	JFMAMJ JASOND				
	D	1899	A					A	JFMAMJ JASOND				
	D	1900						A	JFMAMJ JASOND				
COSTA RICA	D	1979	A	A	D			A	OND				
SNJ													
(9.91 276.04)													
CUZCO	D	1965		A	OND								
CUS	D	1966		A	JFMAM								
(-13.53 288.03)													
DALLAS	D	1964	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	J
DAL	D	1965	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
(032.99 263.25)	D	1966	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFM
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
DALLAS	D 1971	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	MAMJ JASOND
DAL	D 1972	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
(032.99 263.25)	D 1973	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ
	D 1975		ABCD	JFMAM								
DAR ES SALAAM	D 1968		A	ASOND								
DRS	D 1969		AB	JFMAMJ JASOND								
(-6.78 39.22)	D 1970		AB	JFMAMJ JASOND								
	D 1971		AB	JFMAMJ JASOND								
	D 1972		ABCD	JFMAMJ JASOND								
	D 1973		AB	JFMAMJ JASOND								
	D 1974		AB	JFMAM								
	D 1976		A	JFMAMJ JAS								
DAVAO	D 1965		ABCD	AMJ JASOND								
DAV	D 1966		ABCD	JFMAMJ JASOND								
(007.05 125.38)	D 1967		ABCD	JFMAMJ JASOND								
	D 1968	A	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D 1969	A	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D 1970	A	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D 1971	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1972	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1973	A	ABCD	JFMAMJ JASOND			A CD	JFMAMJ JASOND				
	D 1974	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1975	A	ABCD	JFMAMJ JASOND			A CD	JFMAMJ JASOND				
	D 1976	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1977	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1978		ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D 1979		ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1980		ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1981		ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1982	K	ABCD	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1983		A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1984		A	JFMAMJ JASO D			A	JFMAMJ JASO D				
DE BILT	D 1903	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
DBN	D 1904	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
(052.10 5.18)	D 1905	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1906	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1907	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1908	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1909	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1910	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1911	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1912	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1913	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1914	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1915	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1916	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1917	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1918	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1919	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		

OBSERVATORY	COMP	YEAR	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
DE BILT	D	1920	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
DBN	D	1921	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
(052.10 5.18)	D	1922	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1923	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1924	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1925	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1926	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1927	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1928	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1929	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1930	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1931	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1932	A					A C	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
	D	1933	A					A C	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
	D	1934	A					A C	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
	D	1935	A					A C	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
	D	1936	A					A C	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
	D	1937	A					A C	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
	D	1938	A					AB	JFMAMJ JASOND	AB	JFMAMJ		
DEL RIO	D	1982						A	SOND	A	SOND	A	SOND*
DLR	D	1983						A	JFMAMJ	A	JFMAMJ	A	JFMAMJ *
(029.49 259.08)													
DIXON ISLAND	D	1955	KA										
DIK	D	1956	KA										
(073.54 80.56)	D	1957	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				ON
	D	1958	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1959	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1964	KAQ	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	ASOND
	D	1965	KAQ	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	AB	JFMAMJ JASOND
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1982	KA	ABCD	JFMAMJ JASOND								

OBSERVATORY	YEAR COMP	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
DIXON ISLAND	D 1983	K	AB	JFMAMJ JASOND								
DIK	D 1984	K										
(073.54 80.56)												
DOMBAS	D 1916	A					C	AMJ JASOND				
DOB	D 1917	A					C	JFMAMJ JASOND				
(062.08 9.10)	D 1918	A					C	JFMAMJ JASOND				
	D 1919	A					C	JFMAMJ JASOND				
	D 1920	A					C	JFMAMJ JASOND				
	D 1921	A					C	JFMAMJ JASOND				
	D 1922	A					C	JFMAMJ JASOND				
	D 1923	A					C	JFMAMJ JASOND				
	D 1924	A					C	JFMAMJ JASOND				
	D 1925	A					C	JFMAMJ JASOND				
	D 1926	A					C	JFMAMJ JASOND				
	D 1927	A					C	JFMAMJ JASOND				
	D 1928	A					C	JFMAMJ JASOND				
	D 1929	A					C	JFMAMJ JASOND				
	D 1930	A					C	JFMAMJ JASOND				
	D 1931	A					C	JFMAMJ JASOND				
	D 1932	A					C	JFMAMJ JASOND				
	D 1938	A					I	JASOND				
	D 1939	A					I	JFMAMJ JASOND				
	D 1940	KA					I	JFMAMJ JASOND				
	D 1941	KA					I	JFMAMJ JASOND				
	D 1942	KA					I	JFMAMJ JASOND				
	D 1943	KA					I	JFMAMJ JASOND				
	D 1944	KA					I	JFMAMJ JASOND				
	D 1945	KA					I	JFMAMJ JASOND				
	D 1946	KA					I	JFMAMJ JASOND				
	D 1947	KA					I	JFMAMJ JASOND				
	D 1948	KA					I	JFMAMJ JASOND				
	D 1949	KA										
	D 1950	KA										
	D 1951	KA										
(062.07 9.12)	D 1952	KA					A D	I JFMAMJ JASOND				
	D 1953	KA					A CD	I JFMAMJ JASOND				
	D 1954	KA					A CD	I JFMAMJ JASOND				
	D 1955	KA					A CD	I JFMAMJ JASOND				
	D 1956	KA					A CD	I JFMAMJ JASOND				
	D 1957	KA					A CD	I JFMAMJ JASOND				
	D 1958	KA					ABCD	I JFMAMJ JASOND				
	D 1959	KA					ABCD	I JFMAMJ JASOND				
	D 1960	KA					ABCD	I JFMAMJ JASOND				
	D 1961	KA					ABCD	I JFMAMJ JASOND				
	D 1962	KA					ABCD	I JFMAMJ JASOND				
	D 1963	KA					ABCD	I JFMAMJ JASOND				
	D 1964	KA	ABCD	JFMAMJ JASOND			ABCDE	I JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1965	KA	ABCD	JFMAMJ JASOND			ABCDE	I JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1966	KA	ABCD	JFMAMJ JASOND			ABCD	I JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
DOMBAS	D	1967	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
DOB	D	1968	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
(062.07 9.12)	D	1969	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	J JAS
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND			A CD I	JFMAMJ JASOND				
	D	1977	KA	A CD	JFMAMJ JASOND			A D I	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND			ABC	JFMAMJ JASOND				
	D	1982	KA	ABCD	JFMAMJ JASOND				JFMAMJ JASOND				
	D	1983	K	A	JFMAMJ JASOND								
	D	1984	K										
	D	1985	K										
DOURBES	D	1955	KA										
DOU	D	1956	KA										
(050.10 4.60)	D	1957	KA	ABCD	JASOND	ABC	JASOND	ABCD I	JFMAMJ JASOND				
	D	1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND				
	D	1959	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND				
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1962	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1983	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1984	K	ABCD	JFM			ABCD	JFM				
	D	1985	K										
DUMONT DURVILLE	X	1951						A	AMJ JASOND				
DRV													
(-66.67 140.01)													

OBSERVATORY	YEAR COMP	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
DUMONT DURVILLE	X 1952						A	J				
DRV												
(-66.67 140.01)	X 1957	KA	ABCD	AMJ JASOND			ABCDE	AMJ JASOND	B E	JFMAMJ JASOND		
	X 1958	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	B E	JFMAMJ JASOND		
	X 1959	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	B E	JFMAMJ JASOND		
	X 1960	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	B E	JFMAMJ JASOND		
	X 1961	K					A E	JFMAMJ JASOND	B E	JFMAMJ JASOND		
	X 1962	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	B E	JFMAMJ JASOND		
	X 1963	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	B E	JFMAMJ JASOND		
	X 1964	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	SOND
	X 1965	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	X 1966	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	B E	JFMAMJ JASOND		
	X 1967	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	B E	JFMAMJ JASOND		
	X 1968	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	B E	JFMAMJ JASOND		
	X 1969	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	B E	JFMAMJ JASOND		
	X 1970	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	B E	JFMAMJ JASOND		
	X 1971	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	B E	JFMAMJ JASOND		
	X 1972	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	B E	JFMAMJ JASOND		
	X 1973	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	B E	JFMAMJ JASOND		
	X 1974	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	B E	JFMAMJ JASOND		
	X 1975	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1976	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1977	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	X 1978	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1979	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1980	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	X 1981	KA	ABCD	JFMAMJ JASOND			AB DE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	X 1982	A	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1983						A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
EASTER ISLAND	D 1958	A	ABCD	M MJ JA ON								
EIC												
(-27.17 250.58)	D 1960		ABCD	JFMAMJ JASOND								
	D 1961	A	ABCD	JFMAMJ J								
	D 1962	A	A	JFMAMJ JASOND								
	D 1963	A	ABCD	JFMAMJ JASOND			A C	FMAMJ JASOND				
	D 1964		A D	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	J
	D 1968	A	A	MAM								
EBRO	D 1910	A					A	JFMAMJ JASOND				
EBR	D 1911	A					A	JFMAMJ JASOND				
(040.82 0.49)	D 1912	A					A	JFMAMJ JASOND				
	D 1913	A					A	JFMAMJ JASOND				
	D 1914	A					A	JFMAMJ JASOND				
	D 1915	A					A	JFMAMJ JASOND				
	D 1916	A					A	JFMAMJ JASOND				
	D 1917	A					A	JFMAMJ JASOND				
	D 1918	A					A	JFMAMJ JASOND				
	D 1919	A					A	JFMAMJ JASOND				
	D 1920	A					A	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY	HOURLY VALUES MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
EBRO	D 1921	A					A		JFMAMJ JASOND				
EBR	D 1922	A					A		JFMAMJ JASOND				
(040.82 0.49)	D 1923	A					A		JFMAMJ JASOND				
	D 1924	A					A		JFMAMJ JASOND				
	D 1925	A					A		JFMAMJ JASOND				
	D 1926	A					A		JFMAMJ JASOND				
	D 1927	A					A		JFMAMJ JASOND				
	D 1928	A					A		JFMAMJ JASOND				
	D 1929	A					A		JFMAMJ JASOND				
	D 1930	A					A		JFMAM JASOND				
	D 1931	A					A		JFMAMJ OND				
	D 1932	A					A C		JFMAMJ JASOND				
	D 1933	A					A C		F AMJ JASOND				
	D 1934	A					A C		JFM JASOND				
	D 1935	A					A		JFMAMJ JASOND				
	D 1936	A					A		JFMAMJ JASOND				
	D 1937	A					A		JFMAMJ JASOND				
	D 1942	K											
	D 1943	KA											
	D 1944	KA											
	D 1945	KA											
	D 1946	KA											
	D 1947	KA											
	D 1948	KA											
	D 1949	KA											
	D 1950	KA											
	D 1951	KA											
	D 1952	KA											
	D 1953	KA											
	D 1954	KA											
	D 1955	KA											
	D 1956	KA											
	D 1957	KA	ABCD	JASOND				ABCD	JASOND				
	D 1958	KA	ABCD	JFMAMJ JASOND				ABCD	JFMAMJ JASOND				
	D 1959	KA						ABCD	JFMAMJ JASOND				
	D 1960	KA											
	D 1961	KA											
	D 1962	KA											
	D 1963	KA											
	D 1964	KA	ABCD	JFMAMJ JASOND									
	D 1965	KA	ABCD	JFMAMJ JASOND				ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1966	KA	ABCD	JFMAMJ JASOND				ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASO
	D 1967	KA	ABCD	JFMAMJ JASOND				ABCD	JFMAMJ JASOND	A	S	A	S
	D 1968	KA	ABCD	JFMAMJ JASOND				ABCD	JFMAMJ JASOND				
	D 1969	KA	ABCD	JFMAMJ JASOND				ABCD	JFMAMJ JASOND				
	D 1970	KA	ABCD	JFMAMJ JASOND				ABCD	JFMAMJ JASOND				
	D 1971	KA	ABCD	JFMAMJ JASOND				ABCD	JFMAMJ JASOND				
	D 1972	KA	ABCD	JFMAMJ JASOND				ABCD	JFMAMJ JASOND				
	D 1973	KA	ABCD	JFMAMJ JASOND				ABCD	JFMAMJ JASOND				
	D 1974	KA	ABCD	JFMAMJ JASOND	B	JFMAMJ JASOND		A CD	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
EBRO	D 1975	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
EBR	D 1976	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(040.82 0.49)	D 1977	A	A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1978		A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1979	A	A	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1983						A	ASO				
EIELSON AFB	D 1966		ABC	SOND								
ENB	D 1967		ABC	JFMAMJ JASOND								
(064.67 212.92)	D 1968		ABC	JFMAMJ JASOND								
	D 1969		ABC	JFMAMJ JASOND								
	D 1970		ABC	JFMAMJ JASOND								
	D 1971		ABC	JFMAMJ JASOND								
	D 1972		ABC	JFMAMJ JASOND								
	D 1973		A	JFMAMJ JASOND								
	D 1974		A	JFMAMJ JASOND								
	D 1976		B	JFMAMJ JASOND								
EIGHTS	D 1963	KA	A	J JASOND			A	J JASOND				
EGS	D 1964	KA	A	JFMAMJ JASOND	A	JFMAMJ JASOND	AB E	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	SOND
(-75.23 282.83)	D 1965	KA	A	JFMAMJ JASO	A	JFMAMJ JASO	AB E	JFMAMJ JASO	AB E	JFMAMJ JAS	A	JFMAMJ JAS
ELIZABETHVILLE	D 1932	A					A C	ND				
ELI	D 1933	A					A C	JFMAMJ JASOND				
(-11.66 27.47)	D 1934	A					A	JFMAMJ JAS				
	D 1938	A					A	JFMAMJ JASOND				
	D 1939	A					A	JFMAMJ JASOND				
	D 1940	A					A	JFMAMJ JASOND				
	D 1941	A					A	JFMAMJ JASOND				
	D 1942	A					A	JFMAMJ JASOND				
	D 1943	A					A	JFMAMJ JASOND				
	D 1944	A					A	JFMAMJ JASOND				
	D 1945	A					A	JFMAMJ JASOND				
ENKOPING	D 1965				BC	JFMAMJ JASOND						
ENK	D 1966				BC	JFMAMJ JASOND						
(059.60 017.02)	D 1967				BC	JFMAMJ JASOND						
	D 1968				ABC	JFMAMJ JASOND						
	D 1969				ABC	JFMAMJ JASOND						
	D 1970				ABC	JFMAMJ JASOND						
	D 1971				BC	JFMAMJ JASOND						
	D 1972				A C	JFMAMJ JASOND						
	D 1973				C	JFMAMJ JASOND						
	D 1974				A C	JFMAMJ JASOND						
	D 1975				A C	JFMAMJ JASOND						
	D 1977				A C	JFMAMJ JASOND						
	D 1978				A C	JFMAMJ JASOND						
	D 1979				A C	JFMAMJ JASOND						

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
ENKOPING ENK (059.60 017.02)	D	1980		A	JFMAMJ JASOND	A C	JFMAMJ JASOND						
ESKDALEMUIR ESK (055.32 356.80)	D	1911	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1912	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1913	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1914	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1915	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1916	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1917	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1918	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1919	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1920	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1921	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1922	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1923	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1924	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1925	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1926	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1927	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1928	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1929	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1930	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1931	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1932	A					A C E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1933	A					A C E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1934	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1935	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1936	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1937	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1938	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1939	A					A EI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1940	KA					A EI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1941	KA					A EI	JFMAMH JASOND	AB	JFMAMJ JASOND		
	D	1942	KA					A EI	JFMAMH JASOND	AB	JFMAMJ JASOND		
	D	1943	KA					A EI	JFMAMH JASOND	AB	JFMAMJ JASOND		
	D	1944	KA					A EI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1945	KA					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1946	KA					A E	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
	D	1947	KA					A E	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
	D	1948	KA					A E	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
	D	1949	KA					A EI	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
	D	1950	KA	AB D	JFMAMJ JASOND			AB DEI	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
	D	1951	KA	AB D	JFMAMJ JASOND			AB DEI	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
	D	1952	KA	AB D	JFMAMJ JASOND			AB DEI	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
	D	1953	KA	AB D	JFMAMJ JASOND			AB DEI	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
	D	1954	KA	AB D	JFMAMJ JASOND			AB DEI	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
	D	1955	KA	AB D	JFMAMJ JASOND			AB DEI	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
	D	1956	KA	AB D	JFMAMJ JASOND			AB DEI	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
	D	1957	KAQ	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	ABC	JFMAMJ JASOND		

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
ESKDALEMUIR	D	1958	KAQ	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
ESK	D	1959	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
(055.32 356.80)	D	1960	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
	D	1962	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	ABC	JFMAMJ JASOND		
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	ABC E	JFMAMJ JASOND		
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1981	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1982	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	E	JFMAMJ JASOND		
	D	1983	KA					A E	JFMAMJ JASOND	E	JFMAMJ JASOND		
	D	1984	K					E	JFMAMJ JASOND	E	JFMAMJ JASOND		
	D	1985						E	JFMAM	E	JFMAM		
ESKIMO POINT	D	1974		ABC	ASOND							A	SOND*
EKP	D	1975		ABC	JFMAMJ JASOND							A	MAMJ JASOND*
(061.10 265.93)	D	1976		ABC	JFMAMJ JASOND							A	J MAMJ JAS D*
	D	1977										A	JFMA *
	D	1978										A	J J *
	D	1979											
	D	1980											
	D	1981											
ESPANOLA	D	1957		ABCD	J JASOND			ABCD	J JASOND				
EPN	D	1958	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(035.98 253.95)	D	1959		ABCD	J			AB D	J				
ETTAYAPURAM	D	1976		A	FM								
ETT													
(009.00 078.00)													
EUSEBIO	D	1977	A									A	JASOND*
EUS	D	1978										A	MAMJ JASOND*
(-3.89 321.56)	D	1979										A	JFMAMJ JASOND*
	D	1980										A	JFMAMJ JASOND*
	D	1981										A	JFMAMJ JASOND*
	D	1982										A	JFMA *
EYREWELL	D	1978	KA										
EYR	D	1979	KA										

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
EYREWELL	D 1981	K	A	ND								
EYR												
(-43.42 172.35)	D 1983	KA										
	D 1984	K										
	D 1985	K										
FANNING	D 1957	A	ABCD	JASOND				ABCDE JASOND	AB E	JASOND		
FAN	D 1958	A	ABCD	JFMAMJ JASOND				ABCDE JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(003.91 200.61)	D 1959								AB	JFMAMJ JASOND		
FORT CHURCHILL	D 1957	A	ABCD	J JASOND				ABCD JFMAMJ JASOND				
FCC	D 1958	A	ABCD	JFMAMJ JASOND				ABCD I JFMAMJ JASOND				
(058.77 265.90)	D 1959		ABCD	JFMAMJ JASOND								
	D 1960		ABCD	JFMAMJ JASOND								
	D 1961		ABCD	JFMAMJ JASOND								
	D 1962		ABCD	JFMAMJ JASOND								
	D 1963		ABCD	JFMAMJ JASOND								
	D 1964	A	ABCD	JFMAMJ JASOND				ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	SOND
	D 1965	A	ABCD	JFMAMJ JASOND				ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1966	A	ABCD	JFMAMJ JASOND				ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1967	A	ABCD	JFMAMJ JASOND				ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1968	A	ABCD	JFMAMJ JASOND				ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1969	A	ABCD	JFMAMJ JASOND				ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1970	A	ABCD	JFMAMJ JASOND				ABCDE JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1971	A	ABCD	JFMAMJ JASOND				ABCDE JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1972	A	ABCD	JFMAMJ JASOND				ABCDE JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1973	A	ABCD	JFMAMJ JASOND				ABCDE JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1974	A	ABCD	JFMAMJ JASOND				ABCDE JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1975	A	ABCD	JFMAMJ JASOND				ABCDE JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1976	KA	ABCD	JFMAMJ JASOND				ABCDE JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1977	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1978	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1979	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1980	A	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1981	A	ABCD	JFMAMJ JASOND				A JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1982	A	ABCD	JFMAMJ JASOND				A JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1983	A	ABCD	JFMAMJ JASOND				A JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1984		ABCD	JFMAMJ JAS				A JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
FORT RAE	D 1932							A ASOND				
FRA	D 1933							A JFMAMJ JA				
(062.80 243.90)												
	D 1964							A JFMAMJ JASOND	A	JFMAMJ JASOND		
FORT SIMPSON	D 1977										A	JASOND*
FSP	D 1978										A	J MAMJ JASOND*
(061.75 238.77)	D 1979										A	JFM JA OND*
	D 1980										A	JFMAMJ JASOND*
	D 1981										A	JFMAMJ JASOND*
	D 1982										A	JFMAMJ JASOND*
	D 1983										A	JFMAMJ JASOND*
FORT SMITH	D 1977										A	D*
FSM	D 1978										A	A J JASOND*
(058.00 246.00)	D 1979										A	JFMAMJ JASOND*

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
FORT SMITH FSM (058.00 246.00)	D 1980 D 1981 D 1982 D 1983										A A A A	J SOND* FMAMJ JASOND* JFMAMJ JASOND* JFMAMJ JASOND*
FORT YUKON FYU (066.57 214.73)	D 1957 D 1958 D 1959 D 1968 D 1973 D 1974 D 1975 D 1976 D 1977 D 1978 D 1979 D 1980 D 1981 D 1982 D 1983	A	ABCD ABCD A A A A A	J JASOND JFMAMJ JASOND FM JFMAMJ JASOND JFMAMJ JASOND JFMAMJ JASOND JFMAMJ JASOND			ABCD ABCD	J JA OND JFMAMJ JASOND			A A A A A A A	S ND* MA ASOND* JFMAMJ JASOND* JFMAMJ JASOND* JFMAMJ JASOND* JFMAMJ JASOND* JFMAMJ JASOND*
FREDERICKSBURG FRD (038.21 282.63)	D 1956 D 1957 D 1958 D 1959 D 1960 D 1961 D 1962 D 1963 D 1964 D 1965 D 1966 D 1967 D 1968 D 1969 D 1970 D 1971 D 1972 D 1973 D 1974 D 1975 D 1976 D 1977 D 1978 D 1979 D 1980 D 1981 D 1982 D 1983 D 1984 D 1985	KA KA KA KA KA KA KA KA KA KA KA KA KA KA KA KA KA KA KA KA KA KA KA KA KA KA KA K K	A C ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD	JFMAMJ JASOND JFMAMJ JASOND	ABC ABC ABC ABC ABC ABC ABC ABC ABC ABC ABC ABC ABC ABC ABC ABC ABC ABC ABC ABC ABC ABC ABC ABC ABC A C	J JASOND JFMAMJ JASOND	A E ABCDEI ABCDEI ABCDEI ABCDEI ABCDEI ABCDEI ABCDE ABCDE ABCDE ABCDE ABCDE ABCDE ABCDE ABCDE ABCDE ABCDE ABCDE ABCDE ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD	JFMAMJ JASOND JFMAMJ JASOND	AB E AB E AB E AB E AB E AB E AB E AB E AB E AB E AB E AB E AB E AB E AB E AB E AB E AB E AB E AB AB AB AB A A	JFMAMJ JASOND JFMAMJ JASOND	A A A A A A A A A A A A A A A	ASOND ND JFMAMJ JASOND JFMAMJ JASOND JFMAMJ JASOND JFMAMJ JASOND JFMAMJ JASOND JFMAMJ JASOND JFM D JF MJ JA

OBSERVATORY	YEAR	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
	COMP											
FREETOWN	D 1961		ABCD	JASOND			ABCD	JASOND				
FTN	D 1962		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(008.47 346.78)	D 1963		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1964		ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	E	JFMAMJ JASOND		
	D 1965		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ				
	D 1966		ABCD	JFMAMJ JASOND								
	D 1967		ABCD	JF J								
FUQUENE	D 1955	A					A	JFMAMJ JASOND				
FUQ	D 1956	A					A C	JFMAMJ JASOND				
(005.47 286.26)	D 1957	KA	ABCD	JFM JASOND			ABCD	JFMAMJ JASOND				
	D 1958	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1959	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1961	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	ASOND
	D 1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	B I	JFMAMJ JASOND		
	D 1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	B I	JFMAMJ JASOND		
	D 1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1966	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ
	D 1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	ASO D	A	ASO D
	D 1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ	A	JF AMJ
	D 1969	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JASO	A	JASO
	D 1970	KA	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D 1971	KA	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D 1972	KA	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D 1973	KA	A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1974	KA	A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1975	KA	A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1978	KA	ABCD	JFMAMJ JASOND			ABC	JFMAMJ JASOND				
	D 1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1981	KA	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JAS				
	D 1982	A	A	JFMAMJ			A	JFMAMJ JASOND				
FURSTENFELDBRUCK	D 1940	A					ABCD	JFMAMJ JASOND				
FUR	D 1941	A					ABCD	JFMAMJ JASOND				
(048.17 11.28)	D 1942	A					ABCD	JFMAMJ JASOND				
	D 1943	A					ABCD	JFMAMJ JASOND				
	D 1944	KA					ABCD	JFMAMJ JASOND				
	D 1945	KA					ABCD	JFMAMJ JASOND				
	D 1946	KA					ABCD	JFMAMJ JASOND				
	D 1947	KA					ABCD	JFMAMJ JASOND				
	D 1948	KA					A CD I	JFMAMJ JASOND				
	D 1949	KA					A CD I	JFMAMJ JASOND				
	D 1950	KA					A CD I	JFMAMJ JASOND				
	D 1951	KA					A CD I	JFMAMJ JASOND				
	D 1952	KA					A CD I	JFMAMJ JASOND				
	D 1953	KA					A CD I	JFMAMJ JASOND				
	D 1954	KA					A CD	JFMAMJ JASOND				
	D 1955	KA					A CD I	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
FURSTENFELDBRUCK	D 1956	KA					A CD I	JFMAMJ JASOND				
FUR	D 1957	KA					ABCD I	JFMAMJ JASOND				
(048.17 11.28)	D 1958	KA					ABCD I	JFMAMJ JASOND				
	D 1959	KA					ABCD I	JFMAMJ JASOND				
	D 1960	KA					ABCD I	JFMAMJ JASOND				
	D 1961	KA					ABCD I	JFMAMJ JASOND				
	D 1962	KA					ABCD I	JFMAM@ JASOND				
	D 1963	KA					ABCD I	JFMAMJ JASOND				
	D 1964	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	SOND
	D 1965	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1966	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1967	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ SO
	D 1968	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMA O	A	JFMA O
	D 1969	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	MJ JAS	A	J JAS
	D 1970	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1971	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1972	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1973	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1975	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1977	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1978	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMA		
	D 1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1983	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1984		A	JFMAMJ JASOND			A	JFMAMJ JASOND				
GENOVA	D 1958						B I	JASOND				
GEN	D 1959						B I	JFMAMJ JASOND				
(044.55 008.95)	D 1960						BC	JFMAMJ JASOND				
	D 1961						BC I	JFMAMJ JASOND				
	D 1962						BC I	JFMAMJ JASOND				
GILLAM	D 1973		A	MJ JASOND							A	OND*
GIM	D 1974		ABC	JFMAM							A	MA J JASOND*
(056.85 265.58)	D 1975		ABC	ASOND							A	JFMAMJ JASOND*
	D 1976		ABC	JFMAM							A	JFMAMJ J *
	D 1977											
	D 1978											
	D 1979											
	D 1980											
GJOAHAVN	D 1903						A	ND				
GJO	D 1904						A	JFMAMJ JASOND				
(068.63 264.08)	D 1905						A	JFMAM				
GLENLEA	X 1980		AB	OND								
GLL	X 1981		ABCD	JFMAMJ JASOND								
(049.60 262.90)	X 1982	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1983		ABCD	JFMAMJ JASOND								
	X 1984		ABCD	JFMAMJ JAS								
GNANGARA	D 1957	K	ABCD	JASOND			A CDE	JASOND	E	ND		

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY	MEDIUM	WDC	HOURLY VALUES ON	TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
GNANGARA	D 1958	K	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND		E	JFMAMJ	JASOND		
GNA	D 1959	KA	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND		A E	JFMAMJ	JASOND		
(-31.78 115.95)	D 1960	KA	ABCD	JFMAMJ JASOND			A CD	JFMAMJ JASOND						
	D 1961	KA	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND		A E		ASOND	A	ASOND
	D 1962	KA	ABCD	JFMAMJ JASOND			A CD	JFMAMJ JASOND						
	D 1963	KA	ABCD	JFMAMJ JASOND			A CD	JFMAMJ JASOND						
	D 1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND		A EI	JFMAMJ	JASOND	A	JFMAMJ JASOND
	D 1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND		A EI	JFMAMJ	JASOND	A	JFMAMJ JASOND
	D 1966	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND		A EI	JFMAMJ	JASOND	A	JFMAMJ JASOND
	D 1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND		A EI	JFMAMJ	JASOND	A	JFMAMJ JASOND
	D 1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND		A EI	JFMAMJ	JASOND	A	JFMAMJ JASOND
	D 1969	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND		A EI	JFM	JASO	A	JFM JASO
	D 1970	KA	ABCD	JFMAMJ JASOND			A DE	JFMAMJ JASOND		A EI	JFM		A	JFM
	D 1971	KA	ABCD	JFMAMJ JASOND										
	D 1972	KA	ABCD	JFMAMJ JASOND										
	D 1973	KA	ABCD	JFMAMJ JASOND										
	D 1974	KA	A D	JFMAMJ JASOND										
	D 1975	KA	ABCD	JFMAMJ JASOND										
	D 1976	KA	AB D	JFMAMJ JASOND			A	JFMAMJ JASOND		A	JFMAMJ	JASOND		
	D 1977	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND		A	JFMAMJ	JASOND		
	D 1978	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND		A	JFMAMJ	JASOND		
	D 1979	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND		AB	JFMAMJ	JASOND		
	D 1980	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND		AB	JFMAMJ	JASOND		
	D 1981	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ		A	JFMAMJ			
	D 1982	KA	ABCD	JFMAMJ JASOND										
	D 1983	KA	A	JFMAMJ JASO										
	D 1984	K												
	D 1985	K												
GODHAVN	D 1926	A	D	JFMAMJ JASOND			A	FMAMJ JASOND						
GDH	D 1927	A	D	JFMAMJ JASOND			A	JFMAMJ JASOND						
(069.24 306.48)	D 1928	A	D	JFMAMJ JASOND			A	JFMAMJ JASOND						
	D 1929	A	D	JFMAMJ JASOND			A	JFMAMJ JASOND						
	D 1930	A	D	JFMAMJ JASOND			A	JFMAMJ JASOND						
	D 1931	A	D	JFMAMJ JASOND			A	JFMAMJ JASOND						
	D 1932	A	D	JFMAMJ			A	JFMAMJ JASOND						
	D 1933	A					A	JFMAMJ JASOND						
	D 1934	A					A	JFMAMJ JASOND						
	D 1935	A					A	JFMAMJ JASOND						
	D 1936	A					A	JFMAMJ JASOND						
	D 1937	A					A	JFMAMJ JASOND						
	D 1938	A					A	JFMAMJ JASOND						
	D 1939	A	D	JASOND			A	JFMAMJ JASOND						
	D 1940	A	D	JFMAMJ JASOND			A	JFMAMJ JASOND						
	D 1941	A	D	JFMAMJ JASOND			A	JFMAMJ JASOND						
	D 1942	A	D	JFMAMJ JASOND			A	JFMAMJ JASOND						
	D 1943	KA	D	JFMAMJ JASOND			A	JFMAMJ JASOND						
	D 1944	KA	D	JFMAMJ JASOND			A	JFMAMJ JASOND						
	D 1945	KA	D	JFMAMJ JASOND			A	JFMAMJ JASOND						
	D 1946	KA	D	JFMAMJ JASOND			A C	JFMAMJ JASOND						
	D 1947	KA	D	JFMAMJ JASOND			A C	JFMAMJ JASOND						
	D 1948	A	D	JFMAMJ JASOND			A C	I JFMAMJ JASOND						

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
GODHAVN	D 1949	A	D	JFMAMJ JASOND			A C I	JFMAMJ JASOND				
GDH	D 1950	A	D	JFMAMJ JASOND			A C I	JFMAMJ JASOND				
(069.24 306.48)	D 1951	KA	D	JFMAMJ JASOND			A C I	JFMAMJ JASOND				
	D 1952	KA	D	JFMAMJ JASOND			A C I	JFMAMJ JASOND				
	D 1953	KA	D	JFMAMJ JASOND			A C I	JFMAMJ JASOND				
	D 1954	KA	D	JFMAMJ JASOND			A C I	JFMAMJ JASOND				
	D 1955	KA	D	JFMAMJ JASOND			A I	JFMAMJ JASOND				
	D 1956	KA	D	JFMAMJ JASOND			A I	JFMAMJ JASOND				
	D 1957	KAQ	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1958	KAQ	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1959	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	B	JFMAMJ JASOND		
	D 1960	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	B	JFMAMJ JASOND		
	D 1961	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	B	JFMAMJ JASOND		
	D 1962	KA	ABCD	JFMAMJ JASOND			AB D I	JFMAMJ JASOND	B	JFMAMJ JASOND		
	D 1963	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	B	JFMAMJ JASOND		
	D 1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	SOND
	D 1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1966	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	M
	D 1967	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	SO D
	D 1968	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JF AMJ
	D 1969	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JASO
	D 1970	KA	ABCD	JFMAMJ JASOND			A CD I	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	M
	D 1971	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1972	KA	ABCD	JFMAMJ JASOND			A CD I	JFMAMJ JASOND				
	D 1973	KA	ABCD	JFMAMJ JASOND			A CD I	JFMAMJ JASOND				
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1975	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(069.25 306.47)	D 1976	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1977	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1978	A	ABCD	JFMAMJ JASOND								
	D 1979	A	ABCD	JFMAMJ JASOND								
	D 1980	A	ABCD	JFMAMJ JASOND								
	D 1981	A	ABCD	JFMAMJ J ND								
	D 1982	A	ABCD	JFMAMJ JASOND								
	D 1983	A	ABCD	JFMAMJ JASOND								
	D 1984	A	ABCD	JFMAMJ JASON								
GONZALES VIDELA GVD (-64.82 297.15)	D 1961	A	A	MAMJ JASOND			A	MAMJ JASOND				
GOTTINGEN	D 1957		AB D	JASOND								
GTT	D 1958		AB D	JFMAMJ JASOND								
(051.53 9.97)												
GRAHAMSTOWN	D 1974						A	JFMAMJ JASOND				
GRM	D 1975						A	JFMAMJ JASOND				
(-33.32 26.50)	D 1976						A	JFMAMJ JASOND				
	D 1977						A	JFMAMJ JASOND				
	D 1978						A	JFMAMJ JASOND				
	D 1979						A	JFMAMJ JASOND				
	D 1980						A	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
GREAT WHALE R.	D	1965		ABCD	JFM ASOND	ABC	JFM ASOND	A DE	SOND	A EI	SOND	A	SOND
GWC	D	1966	A	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	A DE	JFMAMJ JASOND	A EI	JFMAMJ JASOND	A	JFMAMJ JASOND
(055.27 282.22)	D	1967	A	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	A EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1968	A	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	A EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1969	A	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	A EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1970	A	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	A EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1971	A	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	AB DE	JFMAMJ JASOND	A EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1972	A	ABCD	JFMAMJ JASOND	ABC	JFMAMJ	ABCDE	JFMAMJ JASOND	A EI	JFMAMJ JASOND	A	OND*
	D	1973	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB I	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1974	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB I	JFMAMJ JASOND	AB	JFMAMJ JASOND*
	D	1975	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB I	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1979	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1980	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1981	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1982	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1983	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1984		ABCD	JFMAMJ JAS			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
GREENWICH	D	1916	A					A	JFMAMJ JASOND				
GRW	D	1917	A					A	JFMAMJ JASOND				
(051.48 0.00)	D	1918	A					A	JFMAMJ JASOND				
	D	1919	A					A	JFMAMJ JASOND				
	D	1920	A					A	JFMAMJ JASOND				
	D	1921	A					A	JFMAMJ JASOND				
	D	1922	A					A	JFMAMJ JASOND				
	D	1923	A					A	JFMAMJ JASOND				
	D	1924	A					A	JFMAMJ JASOND				
	D	1925	A					A	JFMAMJ JASOND				
	D	1926						A	JFMAM				
GROCKA	D	1958	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
GCK	D	1959	KA										
(044.63 20.77)	D	1960	KA										
	D	1961	KA										
	D	1962	KA										
	D	1963	KA										
	D	1964	KA	B	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1965	KA	B	JFMAMJ JASOND	A C	FMAMJ JASOND	AB	JFMAMJ JASOND				
	D	1966	KA										
	D	1967	KA										
	D	1968	KA										
	D	1969	KA										
	D	1970	KA										
	D	1971	KA										
	D	1972	KA										
GUAM	D	1957	KA	ABCD	JFMAMJ JASOND	ABC	JASOND	ABCDEI	JFMAMJ JASOND	A E	JASOND		
GUA	D	1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	A E	JFMAMJ JASOND		
(013.58 144.87)	D	1959	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1960	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1961	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	ASOND

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
GUAM	D	1962	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	OND
GUA	D	1963	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JA
(013.58 144.87)	D	1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1967	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1968	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1969	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1970	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFM
	D	1971	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1972	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1973	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1974	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1975	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1976	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1977	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1978	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1979	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1980	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1983	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
GUANGZHOU	D	1958	A					A	JFMAMJ JASOND				
GZH	D	1959	A					A	JFMAMJ JASOND				
(023.09 113.34)	D	1979						C	JFMAMJ JASOND				
	D	1980	A					A C	JFMAMJ JASOND				
	D	1981	A					A C	JFMAMJ JASOND				
HALLEY BAY	D	1957	KAQ	ABCD	MJ JASOND			ABCDE	AMJ JASOND	AB E	MAMJ JASOND		
HBA	D	1958	KAQ	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(-75.52 333.37)	D	1959	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(-75.52 333.35)	D	1960	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(-75.52 333.33)	D	1961	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(-75.52 333.32)	D	1962	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1965	KA	ABCD	JFMAMJ JASOND			A CD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1966	KA	ABCD	JFMAMJ JASOND			A CD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1967	K	ABCD	JFMAMJ JASOND			A CD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1968		A	JFMAMJ JASOND								
	D	1969		A	JFMAMJ JASOND								
	D	1970		A	JFMAMJ JASOND								
	D	1971		A	JFMAMJ JASOND								
	D	1972		A	JFMAMJ JASOND								
	D	1973		A	JFMAMJ JASOND								
	D	1974	K	ABCD	JFMAMJ JASOND								
	D	1975	A	ABCD	JFMAMJ JASOND								
	D	1976		ABCD	JFMAMJ JASOND								
	D	1977		ABCD	JFMAMJ JASOND								
	D	1978		ABCD	JFMAMJ JASOND								
	D	1979		ABCD	JFMAMJ JASOND								
	D	1980		ABCD	JFMAMJ JASOND								

OBSERVATORY	YEAR COMP	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
HARTEBEESTHOEK	D 1972						A	JFMAMJ JASOND				
HBK	D 1973						A	JFMAMJ JASOND				
(-25.88 27.71)	D 1974						A	JFMAMJ JASOND				
	D 1975						A	JFMAMJ JASOND				
	D 1976						A	JFMAMJ JASOND				
	D 1977	A					A D	JFMAMJ JASOND				
	D 1978	A					A D	JFMAMJ JASOND				
	D 1979	A					A D	JFMAMJ JASOND				
	D 1980	A					B D	JFMAMJ JASOND				
	D 1981	A					B D	JFMAMJ JASOND				
	D 1982	A					B D	JFMAMJ JASOND				
HARTLAND	D 1957	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
HAD	D 1958	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
(051.00 355.52)	D 1959	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1960	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1961	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1962	KA	A CD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1963	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1964	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	FMAMJ JASOND
	D 1965	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1966	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1967	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAM A O
	D 1968	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1969	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1970	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1971	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1972	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1973	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1975	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1976	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1977	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1978	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1979	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1980	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1981	KA	BCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1982	KA	BCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	E	JFMAMJ JASOND		
	D 1983						E	JFMAMJ JASOND	E	JFMAMJ JASOND		
	D 1984	K					A E	J MAMJ JASON	E	JFMAMJ JASOND		
	D 1985						E	JFMAN	E	JFMAM		
HATIZYO	D 1967	A					A	J JASOND				
HTY	D 1968	A					A	JFMAMJ JASOND				
(033.12 139.80)	D 1969	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1970	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1971		ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D 1972						AB D	JFMAMJ JASOND				
	D 1973						AB D	JFMAMJ JASOND				
(033.07 139.83)	D 1979	KA					A	JFMAMJ JASOND				
	D 1980	A	ABCD	JFMAMJ JASOND			ABC	JFMAMJ JASOND				
	D 1981	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1982	KA	A CD	JFMAMJ JASOND			A CD	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
HATIZYO	D	1983	A	CD	JFMAMJ JASOND								
HTY													
(033.07 139.83)													
HAVANA	D	1964	K	ABCD	ASOND			ABCD	ASOND				
HVN	D	1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND		
(022.97 277.86)	D	1966	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	SOND	A	SO D
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ	A	JF AMJ
	D	1969	K	AB	JFMAMJ JASOND			B	JFMAMJ JASOND				
	D	1970	K										
	D	1971	K										
	D	1972	K					B	JFMAMJ JASON				
	D	1974	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1975	A	B	JFMAMJ JASOND			B	JFMAMJ JASOND				
	D	1976	A	B	JFMAMJ JASOND			B	JFMAMJ				
	D	1978	A	B	JFMAMJ JASOND								
	D	1982	K										
HEALY	D	1957	A	ABCD	JASOND	ABC	JASOND	ABCD	JASOND				
HEA	D	1958	A	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
(063.86 211.03)	D	1959		A	J	A C	J						
HEARD ISLAND	D	1952	KA					A	MAMJ JASOND				
HII	D	1953	KA					A	JFMAMJ JASOND				
(-53.03 73.37)	D	1954	A					A	JFMAMJ JASO				
HEISS ISLAND	D	1957		BC	JFMAMJ JASOND			ABC	JFMAMJ JASOND				
HIS	D	1958	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(080.62 58.05)	D	1959	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1963	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASO D	ABCD	JFMAMJ JASOND				
	D	1964	KAQ	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1965	KAQ	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	OND
	D	1966	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFM MJ JA OND	A	JFM J J ND
	D	1967	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	ASO	A	ASO
	D	1968	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ	ABCD	JFMAMJ JASOND				
	D	1969	KA	ABCD	JFMAMJ JASOND	A C	JF	ABCD	JFMAMJ JASOND				
	D	1970	KA	ABCD	JFMAMJ JASOND	A C	MJ JASOND						
	D	1971	KA	ABCD	JFMAMJ JASOND	A C	JFM	A	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND								
	D	1973	KA	ABCD	JFMAMJ JASOND								
	D	1974	KA	ABCD	JFMAMJ JASOND								
	D	1975	KA	ABCD	JFMAMJ JASOND								
	D	1976	KA	ABCD	JFMAMJ JASOND								
	D	1977	KA	ABCD	JFMAMJ JASOND								
	D	1978	KA	ABCD	JFMAMJ JASOND								
	D	1979	KA	ABCD	JFMAMJ JASOND								
	D	1980	K	ABCD	JFMAMJ JASOND								

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
HEISS ISLAND	D	1981	KA	ABCD	JFMAMJ JASOND								
HIS	D	1982	KA	AB	JFMAMJ JASOND								
(080.62 58.05)	D	1983	K	AB	JFMAMJ JASOND								
	D	1984	K										
HEL	D	1957	KA	AB D	JASOND								
HLP	D	1958	KA	AB D	JFMAMJ JASOND								
(054.61 18.82)	D	1959	KA	AB D	JFMAMJ JASOND								
	D	1960	KA										
	D	1961	KA	ABCD	JFMAMJ JASOND								
	D	1962	KA										
	D	1963	KA										
	D	1964	KA	ABCD	JFMAMJ JASOND								
	D	1965	KA										
	D	1966	KA						C JFMAMJ JASOND				
	D	1967	KA						C JFMAMJ JASOND				
	D	1968	KA						C JFMAMJ JASOND				
	D	1969	KA						C JFMAMJ JASOND				
	D	1970	KA						C JFMAMJ JASOND				
	D	1971	KA						A C JFMAMJ JASOND				
	D	1972	KA						A C JFMAMJ JASOND				
	D	1973	KA						A C JFMAMJ JASOND				
	D	1974	KA						A C JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1975	KA						A C JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1976	KA						ABC JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1977	KA						ABC JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1978	KA						ABC JFMAMJ JASOND				
	D	1979	KA						ABC JFMAMJ JASOND				
	D	1980	KA						ABC JFMAMJ JASOND				
	D	1981	KA						AB JFMAMJ JASOND				
	D	1982	KA						ABC JFMAMJ JASOND				
	D	1983	KA						A C JFMAMJ JASOND				
HELWAN	D	1947	A						A JFMAMJ JASOND				
HLW	D	1948	A						A JFMAMJ JASOND				
(029.86 31.34)	D	1949	A						A JFMAMJ JASOND				
	D	1956	KA						A JFMAMJ JASOND				
	D	1957	KA						ABCD JFMAMJ JASOND				
	D	1958	KA						ABCD JFMAMJ JASOND				
	D	1959	KA						ABCD JFMAMJ JASOND				
	D	1960	KA										
	D	1979							A JFMAMJ JASOND				
	D	1980							A JFMAMJ JASOND				
HERMANUS	D	1941	KA						A EI JFMAMJ JASOND	AB E	JFMAMJ JASOND		
HER	D	1942	KA						A EI JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(-34.43 19.23)	D	1943	KA						A EI JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1944	KA						A EI JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1945	KA						A EI JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1946	KA						A EI JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1947	KA						A EI JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1948	KA						A EI JFMAMJ JASOND	AB E	JFMAMJ JASOND		

OBSERVATORY	YEAR COMP	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
HERMANUS	D 1949	KA					A EI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
HER	D 1950	KA					A EI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(-34.43 19.23)	D 1951	KA					A EI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1952	KA					A EI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1953	KA					A EI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1954	KA					A EI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1955	KA					A EI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1956	KA					A EI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1957	KA	ABCD	JASOND	ABC	JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1959	KA	ABC	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1960	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1961	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1962	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1963	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1964	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1965	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1966	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1967	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1968	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1969	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	FMA J JAS
	D 1970	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFM
	D 1971	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1972	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1973	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1975	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1976	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1977	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1978	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1979	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D 1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D 1981	KA	ABCD	JFMAMJ JASOND			A CD	JFMAMJ JASOND				
	D 1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1983	KA	ABCD	JFMAMJ JASOND			A CD	JFMAMJ JASOND				
	D 1984	K	A	JFMAMJ JA								
	D 1985	K										
HOLLANDIA	D 1957	KA	ABCD	JASOND	ABC	JAS	ABCD	JASOND				
HNA	D 1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
(-2.57 140.51)	D 1959	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1961	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1962	KA	ABCD	JFMAMJ JA			ABCD	JFMAMJ JASOND				
HONG KONG	D 1971		A	ND			A	ND				
HKC	D 1972		A	JFMAMJ JASOND			A	JFMAMJ JASOND				
(022.36 114.22)	D 1973		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1974	A	A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1975	A	A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1976	A	A	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D 1977	A	A	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D 1978	A	A	JFMAMJ JASOND			AB	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
HONOLULU	D 1902	A	A	AM J			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
HON	D 1903	A	A	A J JASO D			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
(021.32 201.94)	D 1904	A	A	MAMJ JASON			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1905	A	A	FMA JAS N			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1906	A	A	F MJ JAS D			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1907	A	A	FM M J ON			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1908	A	A	M M JAS			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1909	A	A	J M M ASO			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1910	A	A	J MA ASO			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1911	A	A	FMAM ASO D			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1912	A	A	AS D			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1913	A	A	J MA SO			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1914	A	A	A J J SON			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1915	A	A	MA J ASOND			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1916	A	A	J MAM JA ON			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1917	A	A	JF A J JASO D			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1918	A	A	MAMJ ASOND			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1919	A	A	JF M ASO D			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1920	A	A	MAM S D			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1921	A	A	AM S N			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1922	A	A	J M SO			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1923	A	A	M J SO			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1924	A	A	J MJ O			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1925	A	A	ASO			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1926	A	A	JFMA J SO			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1927	A	A	J M M JA O			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1928	A	A	M JASO			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1929	A	A	FM J N			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1930	A	A	M MJ S D			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1931	A	A	MJ O			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1932	A	A	M ASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1933	A	A	A JAS			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1934	A	A	F M J D			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1935	A	A	M MJ J SO			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1936	A	A	A J J ON			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1937	A	A	FMAM A O			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1938	KA	A	J AM S			A E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1939	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1940	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1941	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1942	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1943	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1944	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1945	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1946	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1947	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
(021.31 201.91)	D 1948	KA	A C	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1949	KA	A C	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1950	KA	A C	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1951	KA	A C	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1952	KA	A C	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
HONOLULU	D 1953	KA	A C	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
HON	D 1954	KA	A C	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
(021.31 201.91)	D 1955	KA	A C	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1956	KA	A C	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1957	KA	ABCD	JFMAMJ JASOND	ABC	JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1959	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1960	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1961	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	ASOND
(021.32 202.00)	D 1962	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1963	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1966	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1967	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1968	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1969	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1970	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFM
	D 1971	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1972	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1973	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1974	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1975	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1976	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1977	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1978	KA	ABCD	JFMAMJ JASOND	ABC	JFMAM ASO	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	MAMJ JASOND*
	D 1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND*
	D 1983	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND*
HUANCAYO	D 1922	A					A E	MAMJ JASOND				
HUA	D 1923	A					A E	JFMAMJ JASOND				
(-12.05 284.66)	D 1924	A					A E	JFMAMJ JASOND				
	D 1925	A					A E	JFMAMJ JASOND				
	D 1926	A					A E	JFMAMJ JASOND				
	D 1927	A					A E	JFMAMJ JASOND				
	D 1928	A					A E	JFMAMJ JASOND				
	D 1929	A					A E	JFMAMJ JASOND				
	D 1930	A					A E	JFMAMJ JASOND				
	D 1931	A					A E	JFMAMJ JASOND				
	D 1932	A					A E	JFMAMJ JASOND				
	D 1933	A					A E	JFMAMJ JASOND				
	D 1934	A					A E	JFMAMJ JASOND				
	D 1935	A					A E	JFMAMJ JASOND				
	D 1936	A					A EI	JFMAMJ JASOND				
	D 1937	KA					A E	JFMAMJ JASOND				
	D 1938	KA					A EI	JFMAMJ JASOND				
	D 1939	KA					A EI	JFMAMJ JASOND				
	D 1940	KA					A EI	JFMAMJ JASOND				
	D 1941	KA					A EI	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
HUANCAYO	D	1942	KA					A EI	JFMAMJ JASOND				
HUA	D	1943	KA					A EI	JFMAMJ JASOND				
(-12.05 284.66)	D	1944	KA					A EI	JFMAMJ JASOND				
	D	1945	KA					A EI	JFMAMJ JASOND				
	D	1946	KA					A EI	JFMAMJ JASOND				
	D	1947	KA					A EI	JFMAMJ JASOND				
	D	1948	KA	C	JFMAMJ JASOND			A C EI	JFMAMJ JASOND				
	D	1949	KA	C	JFMAMJ JASOND			A C EI	JFMAMJ JASOND				
	D	1950	KA	C	JFMAMJ JASOND			A C EI	JFMAMJ JASOND				
	D	1951	KA	C	JFMAMJ JASOND			A C EI	JFMAMJ JASOND				
	D	1952	KA	C	JFMAMJ JASOND			A C E	JFMAMJ JASOND				
	D	1953	KA	C	JFMAMJ JASOND			A C E	JFMAMJ JASOND				
	D	1954	KA	C	JFMAMJ JASOND			A C EI	JFMAMJ JASOND				
	D	1955	KA	C	JFMAMJ JASOND			A C EI	JFMAMJ JASOND				
	D	1956	KA	C	JFMAMJ JASOND			A C EI	JFMAMJ JASOND				
	D	1957	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	A	D		
	D	1958	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1959	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND				
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND				
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1962	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1963	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1964	KA	ABCD	JFMAMJ JASOND			AB E	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1965	KA	ABCD	JFMAMJ JASOND			A DE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1967	KA	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	A E	ASO D	A	ASO D
	D	1968	KA	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	A E	JFMAMJ	A	JF AMJ
	D	1969	KA	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	A E	JASO	A	JASO
	D	1970	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1971	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1974	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1980	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	A	JFMA		
	D	1981	KA	A C	JFMAMJ JASOND								
	D	1982	KA					A	JFMAMJ JASOND				
	D	1983	KA										
	D	1984	K										
HURBANOVO	D	1949	A					A I	JFMAMJ JASOND				
HRB	D	1950	A					A I	JFMAMJ JASOND				
(047.87 18.19)	D	1951	KA					A	JFMAMJ JASOND				
	D	1952	KA					A	JFMAMJ JASOND				
	D	1953	KA					A	JFMAMJ JASOND				
	D	1954	KA					A	JFMAMJ JASOND				
	D	1955	KA					A I	JFMAMJ JASOND				
	D	1956	KA					A I	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
HURBANOVO	D 1957	KA					AB D I	JFMAMJ JASOND				
HRB	D 1958	KA					AB D I	JFMAMJ JASOND				
(047.87 18.19)	D 1959	KA					AB D I	JFMAMJ JASOND				
	D 1960	KA					A CD I	JFMAMJ JASOND				
	D 1961	KA					ABC I	JFMAMJ JASOND				
	D 1962	KA					ABC I	JFMAMJ JASOND				
	D 1963	KA					ABC I	JFMAMJ JASOND				
	D 1964	KA					ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D 1965	KA					ABCDEI	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D 1966	KA					ABCD I	JFMAMJ JASOND				
	D 1967	KA					ABCD	JFMAMJ JASOND				
	D 1968	KA					ABCD	JFMAMJ JASOND				
	D 1969	KA					ABCD I	JFMAMJ JASOND				
	D 1970	KA					ABCD I	JFMAMJ JASOND				
	D 1971	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1972	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1973	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1975	KA	ABCD	JFMAMJ JASOND			A CD	JFMAMJ JASOND				
	D 1976	KA	BCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1977	KA					ABCD	JFMAMJ JASOND				
	D 1978	KA					ABCD	JFMAMJ JASOND				
	D 1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1980	KA					ABCD	JFMAMJ JASOND				
	D 1981	KA					ABCD	JFMAMJ JASOND				
	D 1982	KA					A CD	JFMAMJ JASOND				
	D 1983	KA										
	D 1984	K										
	D 1985	K										
HYDERABAD	D 1965	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	FM J JASOND
HYB	D 1966	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	A	J M D	A	J M D
(017.41 78.56)	D 1967	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	E	SOND		
	D 1968	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	A E	JFMAMJ	A	JFMAMJ
	D 1969	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1970	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1971	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1972	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1973	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1975	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1976	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1977	KA	A CD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1978	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1979	KA	ABCD	JFMAMJ JASOND			AB D I	JFMAMJ JASOND				
	D 1980	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1981	KA	ABCD	JFMAMJ JASOND								
	D 1982	KA	BCD	JFMAMJ JASOND								
	D 1983	K										
	D 1984	K										
	D 1985	K										
IBADAN	D 1957	A	ABCD	JASOND			ABCD	JASOND				
IBD												
(007.43 3.90)												

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
IBADAN	D	1958	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
IBD	D	1959	A	A	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(007.43 3.90)	D	1960	A	A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1961	A	A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1962	A	A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1963		A	JFMAMJ JASOND			A	MJ JASOND				
	D	1964		ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1965		ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	O	A	O
	D	1966		A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1967		A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1968		A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1969		A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1970		ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1971		ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1972		ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1973		A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1974		A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1975		A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1976		A	JFMAMJ JASOND								
	D	1977		A	JFMAMJ JASOND								
INUVIK	D	1977										A	OND*
INK	D	1978										A	JFMAMJ JASOND*
(068.25 226.70)	D	1979										A	JFMAMJ JASOND*
	D	1980										A	JFMAMJ JASOND*
	D	1981										A	JFMAMJ JASOND*
	D	1982										A	JFMAMJ JASOND*
	D	1983										A	JFMAMJ JASOND*
IRKUTSK	D	1941	KA										
IRT	D	1942	KA										
(052.46 104.04)	D	1943	KA										
	D	1944	KA										
	D	1945	KA										
	D	1946	KA										
	D	1952	KA										
	D	1953	KA										
	D	1954	KA										
	D	1955	KA										
	D	1956	KA										
	D	1957	KA	ABCD	JASOND	A	SOND	ABCDE	JASOND	AB E	JASOND		
	D	1958	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1959	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(052.17 104.45)	D	1960	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1962	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	J SOND
	D	1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JAS
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	AMJ ASOND
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ

OBSERVATORY	YEAR COMP	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
IRKUTSK	D 1969	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JASO
IRT	D 1970	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(052.17 104.45)	D 1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1983	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1984	K	ABCD	JFMAMJ JA			ABCD	JFMAMJ JA				
ISLAND LAKE	D 1976		A C	OND							A	JFMAMJ OND*
ISL	D 1977										A	FMAMJ JAS *
(053.88 265.32)	D 1978										A	JFMAMJ JAS D*
	D 1979										A	JFMAMJ J *
	D 1980										A	J JASOND*
	D 1981										A	JFMAM *
	D 1982											
ISTANBUL-KANDILL	D 1947	A					A	SOND				
ISK	D 1948	A					A	I JFMAMJ JASOND				
(041.06 29.06)	D 1949	A					A	I JFMAMJ JASOND				
	D 1950	A					A	I JFMAMJ JASOND				
	D 1951	A					A	I JFMAMJ JASOND				
	D 1952	KA					A C	I JFMAMJ JASOND				
	D 1953	KA					A C	I JFMAMJ JASOND				
	D 1954	KA					A	I JFMAMJ JASOND				
	D 1955	KA					A C	I JFMAMJ JASOND				
	D 1956	KA					A C	I JFMAMJ JASOND				
	D 1957	KA					ABCD	I JFMAMJ JASOND				
	D 1958	KA					ABCD	I JFMAMJ JASOND				
	D 1959	KA	AB	JFMAMJ JASOND			ABCD	I JFMAMJ JASOND				
	D 1960	KA	AB	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1961	KA	AB	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1962	KA	AB	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1963	KA	AB	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1964	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1965	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1966	KA	AB	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1967	KA	AB	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1968	KA	AB	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1969	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D 1970	KA	AB	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1971	KA	AB	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1972	KA	AB	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1973	KA	AB	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
ISTANBUL-KANDILL	D 1975	KA	AB	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
ISK	D 1976	KA	AB	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
(041.06 29.06)	D 1977	KA	AB	JFMAMJ JASOND			A CD I	JFMAMJ JASOND				
	D 1978	KA	AB	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1979	KA					ABCD	JFMAMJ JASOND				
	D 1980	K					A	JFMAMJ JASOND				
	D 1981	K					A C	JFMAMJ JASOND				
IVALO	D 1957		AB D	ASOND								
IVA	D 1958		AB D	JFMAMJ JASOND								
(068.60 027.48)	D 1959		AB D	J								
IVIGTUT	D 1943	K										
IVI	D 1944	K										
(061.20 311.85)	D 1945	K										
JAIPUR	D 1975		B	JASOND			B	JASOND				
JAI	D 1976		AB	JFMAMJ JASOND			B	JFM				
(026.92 75.80)	D 1977		AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D 1978		B	JFMAMJ JASOND			B	JFMAMJ JASOND				
	D 1979	A	B	JFMAMJ JASOND			B	JFMAMJ JASOND				
JARVIS ISLAND	D 1957	A	ABCD	JASOND			ABCDEI	JASOND	AB E	ASOND		
JRV	D 1958	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(-0.38 199.97)	D 1959						AB	JFMAMJ JASOND	AB	JFMAMJ JASOND		
JOHNSON POINT	D 1977										A	J ND*
JOP	D 1978										A	MAMJ JASOND*
(072.47 241.70)	D 1979										A	JFMAMJ JASOND*
	D 1980										A	M *
	D 1981										A	JASOND*
	D 1982										A	JFMA *
JULIANEHAAB	D 1932	A					A	SOND				
JUL	D 1933	A					A	JFMAMJ JA				
(060.72 313.97)	D 1957	A	ABCD	SOND								
	D 1958		ABCD	JF								
	D 1964	A	ABCD	MJ JASOND	ABC	MJ JASOND						
	D 1965		ABCD	JFMAM	ABC	JFMAMJ JASOND						
KAKIOKA	D 1913	A					A C	JFMAMJ JASOND				
KAK	D 1914	A					A	JFMAMJ JASOND				
(036.23 140.19)	D 1915	A					A	JFMAMJ JASOND				
	D 1916	A					A	JFMAMJ JASOND				
	D 1924	A	C	FMAMJ JASOND			A	FMAMJ JASOND				
	D 1925	A	C	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1926	A	C	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1927	A	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1928	A	C	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1929	A	C	JFMAMJ JASOND								
	D 1930	A	C	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1931	A	C	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1932	A	C	JFMAMJ JASOND								

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
KAKIOKA	D 1933	A	C	JFMAMJ JASOND								
KAK	D 1934	A	C	JFMAMJ JASOND								
(036.23 140.19)	D 1935	A	C	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1936	A	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1937	A	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1938	A	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1939	A	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1940	A	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1941	A	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1942	KA	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1943	KA	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1944	KA	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1945	KA	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1946	KA	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1947	KA	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1948	KA	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1949	KA	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1950	KA	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1951	KA	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1952	KA	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1953	KA	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1954	KA	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1955	KA	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1956	KA	C	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D 1957	KA	ABCD	JFMAMJ JASOND	ABC	JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1959	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1960	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1961	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	ASOND
	D 1962	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1963	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1964	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1965	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1966	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1967	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1968	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1969	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1970	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1971	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1972	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1973	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1975	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1976	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1977	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1980	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ OND*
	D 1983	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1984	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1985	K	A	JFM			A	JFM	A	JFM	A	JFM *

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
KALININGRAD	D 1971		AB	JFMAMJ JASOND								
KNG	D 1972		AB	JFMAMJ JASOND								
(054.70 020.62)	D 1973		AB	JFMAMJ JASOND								
	D 1974		AB	JFMAMJ JASOND								
	D 1975		AB	JFMAMJ JASOND								
	D 1976		ABCD	JFMAMJ JASOND								
	D 1977	K	ABCD	JFMAMJ JASOND								
	D 1978	K	ABCD	JFMAMJ JASOND								
	D 1979	K	ABCD	JFMAMJ JASOND			C	JFMA				
	D 1980	K	ABCD	JFMAMJ JASOND								
	D 1981		ABCD	JFMAMJ JASOND			C	D				
	D 1982	K	ABCD	JFMAMJ JASOND			C	JF				
	D 1983	K	BCD	JFMAMJ J								
	D 1984	K										
KANDALAKSHA	D 1933						C	SOND				
KND												
(067.13 032.43)												
KANOYA	D 1957		A	JASOND	A C	JASOND	A	JASOND				
KNY	D 1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
(031.42 130.88)	D 1959	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1960	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1961	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1962	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1963	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1965	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1966	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	MAMJ JASOND	A	M
	D 1967	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1968	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1969	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1970	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1971	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1972	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1973	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1974	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1975	KA	ABCD	JFMAMJ JASOND	BC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1976	KA	ABCD	JFMAMJ JASOND	BC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1977	KA	ABCD	JFMAMJ JASOND	BC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1978	KA	ABCD	JFMAMJ JASOND	BC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1979	KA	ABCD	JFMAMJ JASOND	C	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1980	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1981	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1982	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1983	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1984	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D 1985	K										
KANOZAN	D 1962						A	AMJ JASOND				
KNZ	D 1963						A	JFMAMJ JASOND				
(035.25 139.96)	D 1964						A	JFMAMJ JASOND				
	D 1965						A	AMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
KANOZAN	D 1966	A					AB	JFMAMJ JASOND				
KNZ	D 1967	A					ABC	JFMAMJ JASOND				
(035.25 139.96)	D 1968	A					ABC	JFMAMJ JASOND				
	D 1969	A					A C	JFMAMJ JASOND				
	D 1970	A					ABC	JFMAMJ JASOND				
	D 1971	A					A C	JFMAMJ JASOND				
	D 1972	A					A C	JFMAMJ JASOND				
	D 1973	A					A C	JFMAMJ JASOND				
	D 1974	A					A C	JFMAMJ JASOND				
	D 1975	A					A C	JFMAMJ JASOND				
	D 1976	A					A C	JFMAMJ JASOND				
	D 1977	A					A C	JFMAMJ JASOND				
	D 1978	A					A C	JFMAMJ JASOND				
	D 1979	A					C	JFMAMJ JA D				
	D 1980	A					ABC	JFMAMJ JASOND				
	D 1981	A					ABC	JFMAMJ JASOND				
	D 1982	A					ABC	JFMAMJ JASOND				
	D 1983	A					C	JFMAMJ JASOND				
	D 1984						C	JFMAMJ JASO				
KAP TOBIN	D 1957		ABCD	OND								
KTG	D 1958		ABCD	JFMAMJ JASOND								
(070.42 238.03)	D 1959		ABCD	JFMAMJ JA								
	D 1981						C	JFMAMJ JASOND				
	D 1982						C	JFMAMJ JASOND				
KARAGANDA	D 1965	A	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
KGD	D 1966	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
(049.82 73.08)	D 1967	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D 1968	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D 1969	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D 1970	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D 1971	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D 1972	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D 1973	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D 1974	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D 1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1983	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1984	K	ABCD	JFMAMJ A			ABCD	JFMAMJ A				
KARAVIA	D 1953						A	JFMAMJ JASOND				
KVA	D 1954						A	JFMAMJ JASOND				
(-11.64 27.42)	D 1955						A	JFMAMJ JASOND				
	D 1956						A	JFMAMJ JASOND				
	D 1957	K	A	JASOND								
	D 1958	KA	A	JFMAMJ JASOND			BCD	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
KARAVIA	D 1959	KA	A	JFMAMJ JASOND								
KVA	D 1960	A	A	OND								
(-11.64 27.42)	D 1961	A	A	JFMAMJ JASOND								
	D 1962		A	JFMA								
	D 1965		A	JF AS ND								
	D 1966		A	MAMJ JASOND								
	D 1967		A	JFMAM								
	D 1968		A	JFMAMJ JASOND								
	D 1969		A	JFMAMJ JASOND								
	D 1970		A	JFMAMJ JASOND								
	D 1971		A	JFMAMJ JASOND								
	D 1972		A	JFMAMJ JASOND								
	D 1973		A	JFMAMJ JASOND								
	D 1974		A	JFMAMJ JASOND								
	D 1975		A	JFMAMJ JASOND								
	D 1976		A	J JASOND								
	D 1977		A	JFMAMJ JA								
KAZAN	D 1932	A					C	SOND				
KZN	D 1933	A					C	JFMAMJ JASOND				
(055.83 48.85)												
	D 1941	KA										
	D 1942	KA										
	D 1943	KA										
	D 1944	KA										
	D 1945	KA										
	D 1946	KA										
	D 1956	KA										
	D 1957	KA	ABCD	JASOND			ABCD	JASOND				
	D 1958	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1959	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1961	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D 1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D 1966	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1967	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1968	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1969	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1975	K	ABCD	JFMAMJ JASOND								
	D 1976	K										
	D 1977	K										
	D 1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
KAZAN	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
KZN	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(055.83 48.85)	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1983	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1984	K	ABCD	JFMAMJ JAS			ABCD	JFMAMJ JAS				
KHABAROVSK	D	1973		B	J			B	J				
KHB	D	1974		B	JFMAMJ JASOND			B D	JFMAMJ JASOND				
(048.48 135.07)	D	1975		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1976		ABCD	JFMA			ABCD	JF				
KHARASAVEY	D	1973		B	ND								
KHS	D	1974		ABCD	JF ND								
(071.13 066.83)	D	1975		ABCD	JFMAMJ JASOND								
	D	1976		ABCD	JFMAMJ JASOND								
	D	1977		ABCD	JFMAMJ JASOND								
	D	1978		BCD	MAMJ JASOND								
KIEV	D	1957	K										
KIV	D	1958	KA	ABCD	JASOND	A C	J JASOND	ABCD	JASOND				
(050.72 30.30)	D	1959	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1960	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1961	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1962	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JA		
	D	1963	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1966	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1983	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1984	K	ABCD	JFMAMJ			ABCD	JFMAMJ				
KIRUNA	D	1957	K	ABCD	JASOND	A C	JAS						
KIR	D	1958	K	ABCD	JFMAMJ JASOND								
(067.83 20.42)	D	1959	K	ABCD	J								
	D	1960	K										
	D	1961	K	ABCD	ASOND								
	D	1962	K	ABCD	JFMAMJ JASOND			A E	OND	AB E	OND	A	OND
	D	1963	K	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	A E	JFMAMJ JA	AB E	JFMAMJ JA	A	JFMAMJ JA

OBSERVATORY	YEAR COMP	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
KIRUNA	D 1964	K	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	A E	SOND	AB E	SOND	A	SOND
KIR	D 1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
(067.83 20.42)	D 1966	K	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	A E	JFMAMJ	AB E	JFMAMJ	A	JFMAMJ
	D 1967	K	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	A E	SO	AB E	SO	A	SO
	D 1968	K	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D 1969	K	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D 1970	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	A E	J M	AB E	J M	A	J M
	D 1971	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D 1972	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D 1973	A	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	B E	JAS				
	D 1974	A	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D 1975	A	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	B E	JFMAMJ				
	D 1976	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D 1977	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D 1978	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D 1979	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D 1980	KA	ABCD	JFMAMJ JASOND	B	JFMAMJ JASOND						
	D 1981	KA	ABCD	JFMAMJ JASOND								
	D 1982	K	ABCD	JFMAMJ JASOND								
	D 1983	K	ABCD	JFMAMJ JASOND								
	D 1984	K	A CD	JFMAMJ								
KODAIKANAL	D 1950	A					A I	JFMAMJ JASOND				
KOD	D 1951	A					A I	JFMAMJ JASOND				
(010.23 77.46)	D 1952	A					A I	JFMAMJ JASOND				
	D 1953	A					A C I	JFMAMJ JASOND				
	D 1954	A					A I	JFMAMJ JASOND				
	D 1955	A					A I	JFMAMJ JASOND				
	D 1956	A					A I	JFMAMJ JASOND				
	D 1957	KA	ABCD	JASOND			ABCD I	JFMAMJ JASOND				
	D 1958	KA	ABCD	JFMAMJ JASOND			AB D I	JFMAMJ JASOND				
	D 1959	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1960	KA					A C I	JFMAMJ JASOND				
	D 1961	KA					A C I	JFMAMJ JASOND				
	D 1962	KA					A C I	JFMAMJ JASOND				
	D 1963	KA	ABCD	JFMAMJ JASOND			A C I	JFMAMJ JASOND				
	D 1964	KA	ABCD	JFMAMJ JASOND			A C I	JFMAMJ JASOND				
	D 1965	KA	ABCD	JFMAMJ JASOND			A C I	JFMAMJ JASOND				
	D 1966	KA	ABCD	JFMAMJ JASOND			A I	JFMAMJ JASOND				
	D 1967	KA	ABCD	JFMAMJ JASOND			A C I	JFMAMJ JASOND				
	D 1968	KA	ABCD	JFMAMJ JASOND			A I	JFMAMJ JASOND				
	D 1969	KA	ABCD	JFMAMJ JASOND			A	JASOND				
	D 1970	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1971	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1972	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1973	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1975	A	A CD	JFMAMJ JASOND			AB D I	JFMAMJ JASOND				
	D 1976		ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1977	A	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1978	A	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1979	A	ABCD	JFMAMJ JASOND			B D I	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
KODAIKANAL	D 1980	A					ABCD I	JFMAMJ JASOND				
KOD												
(10.23 77.46)												
KONTAGORA	D 1964		A CD	D								
KNT	D 1965		A CD	JFMAMJ JASOND								
(010.40 05.45)												
KOROR	D 1957	KA	ABCD	JASOND	ABC	JASOND	ABCDE	JASOND	AB EI	JASOND		
KOR	D 1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
(007.33 134.50)	D 1961	A										
(007.34 134.50)	D 1964	A	ABCD	MJ JASOND	B	ON	A E	MJ JASOND	AB EI	MJ JASOND	A	MJ JASOND
	D 1965	A	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1966	A	ABCD	JFM			A E	JFM	AB EI	JFM	A	JFM
KOTZEBUE	D 1957		ABCD	MJ ASOND			ABCD	M OND				
KOT	D 1958	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(066.88 197.37)	D 1959		AB D	J			ABC	J				
KSARA	D 1931	A					C	JFMAMJ JASOND				
KSA	D 1932	A					C	JFMAMJ JASOND				
(033.82 35.89)	D 1933	A					C	JFMAMJ JASOND				
	D 1949	KA										
	D 1950	KA										
	D 1951	KA										
	D 1952	KA										
	D 1953	KA										
	D 1954	KA										
	D 1955	KA										
	D 1956	KA										
	D 1957	KA										
	D 1958	KA										
	D 1959	KA					D	JFMAMJ JASOND				
	D 1960	KA					D	JFMAMJ JASOND				
	D 1961	KA					D	JFMAMJ JASOND				
	D 1962	KA										
	D 1963	KA										
	D 1964	KA	ABCD	JFMAMJ JASOND								
	D 1965	KA	ABCD	JFMAMJ JASOND								
	D 1966	KA										
	D 1967	KA										
	D 1968	KA										
	D 1969	KA										
	D 1970	KA										
	D 1971	K										
	D 1972	K										
	D 1973	K										
	D 1974	K										
	D 1975	K										
	D 1976	K										

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
KSARA	D	1977	K										
KSA	D	1978	K										
(033.82 35.89)	D	1979	K										
KUMASI	D	1972						C	JFMAMJ JASOND				
KUM													
(006.70 358.43)													
KUYPER	D	1957	KA	ABCD	JASOND			ABCD I	JFMAMJ JASOND				
KUY	D	1958	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
(-6.03 106.73)	D	1959	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1961	KA	ABCD	JFMAMJ JA			ABCD	JFMAMJ JASOND				
	D	1962	K					ABC	J				
KZIL-AGACH	D	1974		ABCD	M JASOND								
KZA	D	1975		ABCD	JFMAMJ JASOND								
(045.37 078.73)													
L AQUILA	D	1958	K	AB D	MJ JASOND			A	OND				
AQU	D	1959	K	AB D	JFMAMJ JASOND			AB D	JFM				
(042.38 13.32)	D	1960	KA	AB D	JFMAMJ JASOND			A D I	JFMAMJ JASOND				
	D	1961	KA	AB D	JFMAMJ JASOND			AB D I	JFMAMJ JASOND				
	D	1962	KA	AB D	JFMAMJ JASOND			AB D I	JFMAMJ JASOND				
	D	1963	KA	A	JFMAMJ JASOND			AB D I	JFMAMJ JASOND				
	D	1964	KA	ABCD	JFMAMJ JASOND			AB DEI	JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D	1965	KA	ABCD	JFMAMJ JASOND			AB DEI	JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D	1966	KA	A	JFMAMJ JASOND			AB D I	JFMAMJ JASOND				
	D	1967	KA	A	JFMAMJ JASOND			AB D I	JFMAMJ JASOND				
	D	1968	KA	A	JFMAMJ JASOND			AB D I	JFMAMJ JASOND				
	D	1969	KA	A	JFMAMJ JASOND			A D I	JFMAMJ JASOND				
	D	1970	KA	A	JFMAMJ JASOND			A D I	JFMAMJ JASOND				
	D	1971	KA	A	JFMAMJ JASOND			A D I	JFMAMJ JASOND				
	D	1972	KA	A	JFMAMJ JASOND			A D I	JFMAMJ JASOND				
	D	1973	KA	A	JFMAMJ JASOND			A D I	JFMAMJ JASOND				
	D	1974	KA	A	JFMAMJ JASOND			A D I	JFMAMJ JASOND				
	D	1975	KA	A	JFMAMJ JASOND			A D I	JFMAMJ JASOND				
	D	1976	KA	A	JFMAMJ JASOND			A D I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1977	KA	A	JFMAMJ JASOND			A D I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1978	KA	A	JFMAMJ JASOND			A D I	JFMAMJ JASOND				
	D	1979	KA	A	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D	1980	KA					A CD	JFMAMJ JASOND				
	D	1981	KA					A D	JFMAMJ JASOND				
	D	1982	KA					A D	JFMAMJ JASOND				
	D	1983	KA										
	D	1984	K										
	D	1985	K										
LA MADDALENA	D	1958	K										
LMD	D	1959	K										
(041.23 09.40)	D	1960	K										
	D	1961	K										
	D	1962	K										
	D	1963	K										

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
LA PAZ	D 1964						A	JFMAMJ JASOND	A	JFMAMJ JASOND		
LPB												
(-16.54 291.90)	D 1972		A	JFMAMJ JASON								
	D 1973		A	JFMAMJ JASOND								
	D 1974	A	A	FMAMJ JASOND								
	D 1975	A	A	JFMAMJ JASON								
LA QUIACA	D 1957	A					AB	JASOND				
LQA	D 1958	A					AB	JFMAMJ JASOND				
(-22.10 294.40)	D 1959		A	ON			A	JFMAMJ JASOND				
	D 1960	A	A	MAMJ JASOND			A	MAM SOND				
	D 1961	A	A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1962	A	ABC	JFMAMJ JASOND			A	JF AMJ JASOND				
	D 1963	A	ABCD	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D 1964	KA	ABCD	JFMAMJ JASOND			AB EI	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D 1965	KA	ABCD	JFMAMJ JASOND			AB I	JFMAMJ JASOND				
	D 1966	KA	ABCD	JFMAMJ JASOND			AB I	JFMAMJ JASOND	A	M	A	M
	D 1967	KA	ABCD	JFMAMJ JASOND			AB I	JFMAMJ JASOND				
	D 1968	KA	A	JFMAMJ JASOND			AB I	JFMAMJ JASOND				
	D 1969	A	A	JFMAMJ JASOND			AB I	JFMAMJ JASOND				
	D 1970	A	A	JFMAMJ JASOND			AB I	JFMAMJ JASOND				
	D 1971	A	A	JFMAMJ JASOND								
	D 1972	A	A	JFMAMJ JASOND								
	D 1973	A	A	JFMAMJ JASOND								
	D 1974	A	A	JFMAMJ JASOND								
	D 1975	A	A	JFMAMJ JASOND								
	D 1976	A										
	D 1977	A	ABC	J			B	J				
	D 1978	A										
	D 1979	A										
	D 1980	A										
	D 1981	A										
	D 1982	A										
LANZHOU	D 1959	A					A	JFMAMJ JASOND				
LZH	D 1960	A					A	JFMAMJ JASOND				
(036.09 103.85)	D 1961	A					A	JFMAMJ JASOND				
	D 1979						A C	JFMAMJ JASOND				
	D 1980	A					A C	JFMAMJ JASOND				
	D 1981	A					A C	JFMAMJ JASOND				
LAS ACACIAS	D 1964	KA	ABCD	JFMAMJ JASOND								
LAS	D 1965	K	ABCD	JFMAMJ JASOND								
(-35.01 302.31)	D 1966	K	ABCD	MAMJ JASOND								
	D 1967	K	ABCD	JFMAMJ JASOND								
	D 1968	K	ABCD	JFMAMJ JASOND								
	D 1969	K	ABCD	JFMAMJ JASOND								
	D 1970	K	ABCD	JFMAMJ JASOND								
	D 1971	K	ABCD	JFMAMJ JASOND								
	D 1972	K	A	JFMAMJ JASOND								
	D 1973	K	A	JFMAMJ JASOND								
	D 1974		AB	JFMAMJ JASOND								

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
LAS ACACIAS	D 1975	K	AB	JFMAMJ JASOND								
LAS	D 1976	K	AB	JFMAMJ JASOND								
(-35.01 302.31)	D 1977	KA	AB	JFMAMJ JASOND								
	D 1978	KA	ABCD	JFMAMJ JASOND								
	D 1979	K										
	D 1980	K										
	D 1981	K										
	D 1982	K										
	D 1983	K										
	D 1984	K										
LAUDER	D 1979	KA										
LAU												
(-45.04 160.68)	D 1981	K										
	D 1982	K										
	D 1983	K										
	D 1984	K										
	D 1985	K										
LAZAREV	D 1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
LZV	D 1961	K	ABCD	JF			ABCD	JF				
(-69.97 12.90)												
LEADVILLE	D 1957		A D	JASOND			A DE	J JASOND				
LDV	D 1958	A	A D	JFMAMJ JASOND			A DE	MJ JASOND				
(039.28 253.72)	D 1959		A D	J			A E	J				
LEIRVOGUR	D 1957	A	ABCD	ASOND	ABC	ASOND	ABCDEI	ASOND				
LRV	D 1958	A	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND				
(064.18 338.30)	D 1959	A	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND				
	D 1960	A	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND				
	D 1961	A	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND				
	D 1962	A	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	SOND	A	OND
	D 1963	A	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JA	A	JFMAMJ JA
	D 1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	SOND
	D 1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1966	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1967	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1968	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1969	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1970	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1971	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1972	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1973	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1974	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1975	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1976	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D 1977	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ	ABCDEI	JFMAMJ JASOND				
	D 1978	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND				
	D 1979	KA	ABCD	JFMAMJ JASOND	C	JFMAMJ JAS	ABCDE	JFMAMJ JASOND				
	D 1980	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND				
	D 1981	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND				
	D 1982	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	NORMAL MAGNETOGRAMS WDC		RAPID RUN MAGNETOGRAMS WDC		HOURLY VALUES ANY MEDIUM WDC		HOURLY VALUES ON TAPE WDC		2.5-MINUTE 1.0-MINUTE(*) WDC	
LEIRVOGUR	D 1983	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND				
LRV	D 1984	K	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND				
(064.18 338.30)	D 1985	K	A	JF			A	JF				
LENINGRAD	D 1949	A					C	JFMAMJ JASOND				
LNN	D 1950	A					C	JFMAMJ JASOND				
(059.95 30.71)	D 1951	A					A C I	JFMAMJ JASOND				
	D 1952	A					A C I	JFMAMJ JASOND				
	D 1953	A					A C I	JFMAMJ JASOND				
	D 1954	A					C	JFMAMJ JASOND				
	D 1955	KA					C	JFMAMJ JASOND				
	D 1956	KA					C	JFMAMJ JASOND				
	D 1957	KA	ABCD	JASOND			ABCD	JFMAMJ JASOND				
	D 1958	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1959	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1961	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1966	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	M
	D 1967	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1968	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1969	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1983	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1984	K	ABCD	JFMAMJ			ABCD	JFMAMJ				
LENINGRADSKAYA	D 1971		AB	AMJ JASOND			AB	AMJ JASOND				
LEN	D 1972		AB	J AMJ JASOND			AB	J AMJ JASOND				
(-69.50 159.40)	D 1973		AB	JFM			B	JFM				
LERWICK	D 1926	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
LER	D 1927	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
(060.13 358.82)	D 1928	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1929	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1930	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1931	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1932	A					A C E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1933	A					A C E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1934	A					A E	JFMAMJ JASOND	AB	JFMAMJ JASOND		

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY	MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
LERWICK	D 1935	A					A	E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
LER	D 1936	A					A	E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
(060.13 358.82)	D 1937	A					A	E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1938	A					A	EI	JFMAMJ JASOND	AB	J@MAMJ JASOND		
	D 1939	A					A	EI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1940	KA					A	EI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1941	KA					A	EI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1942	KA					A	EI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1943	KA					A	EI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1944	KA					A	EI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1945	KA					A	E	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1946	KA					A	EI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1947	KA					A	EI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1948	KA					A	EI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1949	KA					A	EI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1950	KA	AB D	JFMAMJ JASOND			AB	DEI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1951	KA	AB D	JFMAMJ JASOND			AB	DEI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1952	KA	AB D	JFMAMJ JASOND			AB	DEI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1953	KA	AB D	JFMAMJ JASOND			AB	DEI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1954	KA	AB D	JFMAMJ JASOND			AB	DEI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1955	KA	AB D	JFMAMJ JASOND			AB	DEI	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1956	KA	AB D	JFMAMJ JASOND			AB	DEI	JFMAMJ JASOND	AB	JFMAMJ JAS@ND		
	D 1957	KAQ	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1958	KAQ	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1959	KA	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1960	KA	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1961	KA	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1962	KA	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1963	KA	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	SOND
	D 1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1966	KA	ABCD	JFMAMJ JASOND	ABC	M	ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	M
	D 1967	KA	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1968	KA	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1969	KA	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1970	KA	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFM
	D 1971	KA	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1972	KA	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1973	KA	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	JFMA@J JASOND		
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1975	KA	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1976	KA	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1977	KA	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1978	KA	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1979	KA	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	JFMAMJ JAS@ND		
	D 1980	KA	ABCD	JFMAMJ JASOND			ABCDE		JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1981	KA	ABCD	JFMAMJ JASOND			ABCDE		JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1982	KA	ABCD	JFMAMJ JASOND			ABCDE		JFMAMJ JASOND		JFMAMJ JASOND		
	D 1983	KA					A	E	JFMAMJ JASOND		JFMAMJ JASOND		
	D 1984	K					A	E	JFMAMJ JASON		JFMAMJ JASOND		
	D 1985							E	JFMAM		JFMAM		
LITTLE AMERICA	D 1957	K	ABCD	JFMAMJ JASOND	ABC	JASOND	ABCDE		JASOND	A	E JASOND		
LAA													
(-78.18 197.80)													

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
LITTLE AMERICA LAA (-78.18 197.80)	D 1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND		
LOGRONO LGR (042.46 357.50)	D 1957	KA	ABCD	JASOND			ABCD	JFMAMJ JASOND				
	D 1958	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1959	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1960	KA	A	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1961	KA	A	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1962	KA	A	JFMAMJ JASOND			A CD	JFMAMJ JASOND				
	D 1963	KA	A	JFMAMJ JASOND			A CD	JFMAMJ JASOND				
	D 1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1966	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	M	A	M
	D 1967	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1968	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1969	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1970	KA	ABCD	JFMAMJ JASOND			A CD	JFMAMJ JASOND				
	D 1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1977	K										
LORING AFB LOB (046.92 291.88)	D 1966		A C	OND								
	D 1967		ABC	JFMAMJ JASOND								
	D 1968		ABC	JFMAMJ JASOND								
	D 1969		ABC	JFMAMJ JASOND								
	D 1970		ABC	JFMAMJ JASOND								
	D 1971		ABC	JFMAMJ JASOND								
	D 1972		ABC	JFMAMJ JASOND								
	D 1973		A	JFMAMJ JASOND								
	D 1974		A	JFMAMJ JASOND								
LOVO LOV (059.35 17.83)	D 1928	A					A E	FMAMJ JASOND				
	D 1929	A					A E	JFMAMJ JASOND				
	D 1930	A					A E	JFMAMJ JASOND				
	D 1931	A					A E	JFMAMJ JASOND				
	D 1932	A					A E	JFMAMJ JASOND				
	D 1933	A					A E	JFMAMJ JASOND				
	D 1934	A					C E	JFMAMJ JASOND				
	D 1935	A					A C E	JFMAMJ JASOND				
	D 1936	A					A C E	JFMAMJ JASOND				
	D 1937	A					A C EI	JFMAMJ JASOND				
	D 1938	A					A EI	JFMAMJ JASOND				
	D 1939	A					A EI	JFMAMJ JASOND				
	D 1940	KA					A EI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1941	KA					A EI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1942	KA					A EI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1943	KA					A EI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1944	KA					A EI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
LOVO	D 1945	KA					A EI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
LOV	D 1946	KA					A EI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(059.35 17.83)	D 1947	KA					A EI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1948	KA					A EI	JFMAMJ JASOND	AB E	JFMAMJ JASO@D		
	D 1949	KA					A EI	JFMAMJ JASOND				
	D 1950	KA					A EI	JFMAMJ JASOND	AB E	JFMA@J JASOND		
	D 1951	KA					A EI	JFMAMJ JASOND				
	D 1952	KA					A EI	JFMAMJ JASOND				
	D 1953	KA					A C EI	JFMAMJ JASOND				
	D 1954	KA					A EI	JFMAMJ JASOND				
	D 1955	KA					A EI	JFMAMJ JASOND				
	D 1956	KA					A C EI	JFMAMJ JASOND				
	D 1957	KA	ABCD	JASOND	ABC	JASOND	ABCDEI	JFMAMJ JASOND				
	D 1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	E	JFMAMJ JASOND		
	D 1959	KA	ABCD	JFMAMJ JASOND	C	JFMAMJ	ABCDEI	JFMAMJ JASOND				
	D 1960	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND				
	D 1961	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND				
	D 1962	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND				
	D 1963	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND				
	D 1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	SOND
	D 1965	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	AMJ JASOND
	D 1966	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	M
	D 1967	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1968	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1969	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1970	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1971	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1972	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1973	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1975	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1976	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND				
	D 1977	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1978	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1979	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1980	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	X 1981	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND				
	X 1982	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND				
	X 1983	KA	ABCD	JFMAMJ								
	X 1984	K										
	X 1985	K										
LOVOZERO	D 1957	K			ABC	ASOND		JASOND				
LOZ	D 1958	K	A	MJ JASOND	ABC	JFMAMJ JASOND	A	JFMA				
(067.97 035.02)	D 1959	K			ABC	JFMAMJ JASOND						
	D 1960	K			ABC	JFMAMJ JASOND						
	D 1964				ABC	JFMAMJ JASOND						
	D 1965				ABC	JFMAMJ JASOND						
	D 1966				ABC	JFMAMJ JASOND						
	D 1967				ABC	JFMAMJ JASOND						
	D 1968				ABC	JFMAMJ JASOND						

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
LOVOZERO	D 1969				ABC	JFMAMJ JASOND						
LOZ	D 1970				ABC	JFMAMJ JASOND						
(067.97 035.02)	D 1971				A C	JFMAMJ		C X				
	D 1972				ABC	JASOND						
	D 1973				ABC	AMJ JASOND		ABC AMJ JASOND				
	D 1974				ABC	JFMAMJ		BC JFMAMJ				
LUANDA	D 1957	KA						ABCD JASOND				
LUA	D 1958	KA						ABCD JFMAMJ JASOND				
(-08.92 013.17)	D 1959	KA										
	D 1960	KA										
	D 1961	KA						ABCD JFMAMJ JASOND				
	D 1962	KA						ABCD JFMAMJ JASOND				
	D 1963	KA						ABCDE JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1964	KA						ABCDE JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1965	KA						ABCD JFMAMJ JASOND				
	D 1966	KA						ABCDE JFMAMJ JASOND	AB E	SO	A	SO
	D 1967	KA	A	SO				ABCD JFMAMJ JASOND				
	D 1968	KA						ABCD JFMAMJ JASOND				
	D 1969	KA						ABCD JFMAMJ JASOND				
	D 1970	KA						ABCD JFMAMJ JASOND				
	D 1971	KA										
	D 1972	KA										
	D 1973	KA										
	D 1974	KA										
	D 1975	KA										
	D 1976	KA										
	D 1977	KA										
	D 1978	KA										
	D 1979	KA										
	D 1980	KA										
	D 1981	KA										
	D 1982	KA										
	D 1983	KA										
	D 1984	K										
LUKIAPANG	D 1932	A						C JFMAMJ JASOND				
LKP	D 1933	A						C JFMAMJ JASOND				
(031.32 121.04)												
LUNPING	D 1965	KA	AB	JASOND				A I JASOND				
LNP	D 1966	KA	ABCD	JFMAMJ JASOND				A I JFMAMJ JASOND				
(025.00 121.17)	D 1967	KA	ABCD	JFMAMJ JASOND				A JFMAMJ JASOND				
	D 1968	KA	ABCD	JFMAMJ JASOND				A JFMAMJ JASOND				
	D 1969	KA	ABCD	JFMAMJ JASOND				A JFMAMJ JASOND				
	D 1970	KA	ABCD	JFMAMJ JASOND				A C I JFMAMJ JASOND				
	D 1971	KA	ABCD	JFMAMJ JASOND				A C I JFMAMJ JASOND				
	D 1972	KA	ABCD	JFMAMJ JASOND	B	JFMAMJ JASOND		A C I JFMAMJ JASOND				
	D 1973	A	ABCD	JFMAMJ JASOND	B	JFMAMJ JASOND		A C I JFMAMJ JASOND				
	D 1974	KA	ABCD	JFMAMJ JASOND	B	JFMAMJ JASOND		A C I JFMAMJ JASOND				
	D 1975	A	A C	JFMAMJ JASOND				A C I JFMAMJ JASOND				
	D 1976	KA	ABCD	JFMAMJ JASOND				A C I JFMAMJ JASOND				
	D 1977	KA	ABCD	JFMAMJ JASOND				A C I JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
LUNPING	D	1978	KA	ABCD	JFMAMJ JASOND	B	JFMAMJ JASOND	A C I	JFMAMJ JASOND				
LNP	D	1979	KA	ABCD	JFMAMJ JASOND			A C	JFMAMJ JASOND				
(025.00 121.17)	D	1980	KA	ABCD	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D	1982	KA	ABCD	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D	1983	KA	ABCD	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D	1984	K	A	JFMAMJ JASOND			A C	JFMAMJ JASOND				
	D	1985	K					A	JF				
LVOV	D	1955	KA										
LVV	D	1956	KA										
(049.90 23.75)	D	1957	KA	ABCD	JASOND			ABCD	JASOND	AB	JASOND		
	D	1958	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1959	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1983	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1984	K	BCD	JFM			BCD	JFM				
LWIRO	D	1958	KA	A	J JASOND			ABCD I	JASOND				
LWI	D	1959	KA	A	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
(-2.25 28.80)	D	1960	KA	A	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1961	A	A	J JASOND			ABCD I	JFMAMJ JASOND				
	D	1962						C I	JFMAMJ JASOND				
	D	1963	A	A	MJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1964	A	ABCD	JFMAMJ JASO			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASO		
	D	1965	A	ABCD	MAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	MAMJ JASOND		
	D	1966	A	A	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1967	A	A	JFMAMJ JAS			ABCD I	JFMAMJ JASOND				
	D	1968	A	A	J MAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1969	A	A	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1970	A	A	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				

OBSERVATORY	YEAR	COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
LWIRO LWI (-2.25 28.80)	D	1971		A	JFMAMJ JASOND								
	D	1972		A	JFMAMJ JASOND								
	D	1973		A	JFMAMJ JASOND								
	D	1974		A	JFMAMJ JASOND								
	D	1975		A	JFMA								
LYCKSELE LYS (064.62 18.77)	D	1970											
LYNN LAKE LYN (056.85 258.93)	D	1977										A	ASOND*
	D	1978										A	MAMJ JASOND*
	D	1979										A	JFMAMJ JASOND*
	D	1980										A	JFMAMJ JASOND*
	D	1981										A	JFMAMJ JASOND*
	D	1982										A	JFMAMJ JASOND*
	D	1983										A	JFMAMJ JASOND*
M BOUR MBO (014.39 343.04)	D	1952	KA					A	MAMJ JASOND	AB	JFMAMJ JASOND		
	D	1953	KA					A EI	JFMAMJ JASOND				
	D	1954	KA					A EI	JFMAMJ JASOND				
	D	1955	KA					A EI	JFMAMJ JASOND				
	D	1956	KA					A EI	JFMAMJ JASOND				
	D	1957	KA	ABCD	JASOND			ABCDEI	JFMAMJ JASOND	AB E	JASOND		
	D	1958	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1959	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1962	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1964	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	OND
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ @ASOND	A	JFMAMJ JASOND
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JAS	A	JFMAMJ JAS
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	M	A	M
	D	1971	KA	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1972	KA	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1973	A	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1974	A	A CD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1975	KA	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	AB E	JFMAMJ JASO@D		
	D	1976	KA	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1977	A	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1978	A	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND				
	D	1979	A	A CD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1980	A	A CD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1981	A	A CD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1982	KA	A CD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1983	KA	A CD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND				
	D	1984		A CD	JFMAMJ JAS			A CDE	JFMAMJ JASOND				
MACQUARIE ISLAND MCQ (-54.50 158.95)	D	1950	A					A	ASOND				
	D	1951	A					A	JFMA				

OBSERVATORY	YEAR	COMP	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
MACQUARIE ISLAND	D	1952	KA					A	AMJ JASOND				
MCQ	D	1953	KA					A	JFMAMJ JASOND				
(-54.50 158.95)	D	1954	KA					A	JFMAMJ JASOND				
	D	1955	KA										
	D	1956	KA										
	D	1957	KA	ABCD	JASOND			A CD	JFMAMJ JASOND				
	D	1958	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1959	KA	ABCD	JFMAMJ JASOND								
	D	1960	KA	ABCD	JFMAMJ JASOND								
	D	1961	KA	ABCD	JFMAMJ JASOND			A CD	JFMAMJ JASOND				
	D	1962	KA	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	AB E	SOND	A	OND
	D	1963	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	A CDE	JFMAMJ JASOND	AB E	JFMAMJ JA	A	JFMAMJ JA
	D	1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	SOND
	D	1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	A DE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFM
	D	1967	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	SO	A	SO
	D	1968	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	A E	JFMA	AB E	JFMA	A	JFMA
	D	1969	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D	1970	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D	1971	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D	1972	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D	1973	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND						
	D	1974	KA	A	JFMAMJ JASOND	A C	JFMAMJ JASOND						
	D	1975	KA	A	JFMAMJ JASOND	A C	JFMAMJ JASOND						
	D	1976	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND						
	D	1977	KA	A	JFMAMJ JASOND	A C	JFMAMJ JASOND						
	D	1978	KA	A	JFMAMJ JASOND								
	D	1979	KA	A	JFMAMJ JASOND								
	D	1980	KA	ABCD	JFMAMJ JASOND								
	D	1981	KA										
	D	1982	KA										
	D	1983	KA										
	D	1984	K										
MAGADAN	D	1966	A	AB	OND			AB	OND				
MGD	D	1967	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
(060.12 151.02)	D	1968	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1969	KA	AB	JFMAMJ OND			AB	JFMAMJ JASOND				
	D	1970	KA	AB	JFMAMJ OND			AB	JFMAMJ JASOND				
	D	1971	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1972	KA	AB	JFMAMJ JAS			AB	JFMAMJ JASOND				
	D	1973	A	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1974	A	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1975	KA	AB	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1983	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
MAGADAN MGD (60.12 151.02)	D	1984	K										
MAGALLANES MGS (-53.20 289.10)	D	1933						A	JFMAMJ JA				
MAJURO	D	1964	A	ABCD	ASOND								
MJR	D	1965	A	ABCD	JFMAMJ JASOND								
(007.08 171.38)	D	1966	A	ABCD	JF								
MALIYE KARMAKULY	D	1882						C	OND				
MKL	D	1883						C	JFMAMJ JA				
(072.30 052.50)	D	1977		B D	J JASOND								
	D	1978		B D	JFMAMJ JAS ND								
MANHAY	D	1932	A					A	SOND				
MAB	D	1933	A					A	JFMAMJ JA				
(050.30 5.68)	D	1940	KA										
	D	1941	KA										
	D	1942	KA										
	D	1943	K										
	D	1947	KA										
	D	1948	KA										
	D	1949	KA										
	D	1950	KA										
	D	1951	KA										
	D	1952	KA										
	D	1953	KA										
	D	1954	KA										
	D	1955	KA										
	D	1956	KA										
	D	1957	KA	ABCD	JASOND								
	D	1958	KA	ABCD	JFMAMJ JASOND								
	D	1959	KA										
	D	1960	KA										
	D	1961	KA										
	D	1962	KA										
	D	1963	KA										
	D	1964	KA										
	D	1965	KA										
	D	1966	KA										
	D	1967	KA										
	D	1968	KA										
	D	1969	KA										
	D	1970	KA										
	D	1971	KA										
	D	1972	KA										
MANILA MAN (014.58 120.98)	D	1900	A					A	JASOND				

OBSERVATORY	YEAR COMP	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
MANILA	D 1901	A					A	JFMAMJ JASOND				
MAN	D 1902	A					A	JFMAMJ JASOND				
(014.58 120.98)	D 1903	A					A	JFMAMJ JASOND				
	D 1904	A					A	JFMAMJ JASOND				
	D 1983	K										
	D 1984	K										
MAPUTO	D 1964	KA										
LMM	D 1965	KA	A	JFMAMJ JASOND								
(-25.92 32.58)	D 1966	KA	A	JFMAMJ JASOND								
	D 1967	KA	A	JFMAMJ JASOND								
	D 1968	KA	A	JFMAMJ JASOND								
	D 1969	KA	A	JFMAMJ JASOND								
	D 1970	KA	A	JFMAMJ JASOND								
	D 1971	KA	A	JFMAMJ JASOND								
	D 1972	KA	A	JFMAMJ JASOND								
	D 1973	KA	A	JFMAMJ JASOND								
	D 1974	KA	A	JFMAMJ JASOND								
	D 1975	KA	A	JFMAMJ JASOND								
	D 1976	KA	A	JFMAMJ JASOND								
	D 1977	A	A	JFMAMJ JASOND								
	D 1978	A	A	JFMAMJ JASOND								
	D 1979	KA	A	JFMAMJ JASOND								
	D 1980	KA	A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1981	KA	A	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D 1982	KA	A	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D 1983	KA	A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1984	K					A	JFMA				
MARION ISLAND	D 1973	A					ABCD	JASOND				
MRN	D 1974	A					ABCD	JFMAMJ JASOND				
(-46.88 37.85)	D 1975	A					ABCD	JFMAMJ JASOND				
	D 1976	A					A CD	JFMAMJ JASOND				
	D 1977	A					ABCD	JFMAMJ JASOND				
	D 1978						A	JASOND				
	D 1979						A	JFMAMJ JASOND				
	D 1980						A E	JFMAMJ JASOND				
MARTIN DE VIVIES	D 1981	A					B D	AMJ JASOND				
AMS	D 1982	A					A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
(-37.83 77.57)	D 1983	A					A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
MAURITIUS	D 1916	A					A	JFMAMJ JASOND				
MRI	D 1917	A					A	JFMAMJ JASOND				
(-20.09 57.55)	D 1918	A					A	JFMAMJ JASO				
	D 1919	A					A	JFMAMJ JASOND				
	D 1920	A					A	JFMAMJ JASOND				
	D 1921	A					A	JFMAMJ JASOND				
	D 1922	A					A	JFMAMJ JASOND				
	D 1923	A					A	JFMAMJ JASOND				
	D 1924	A					A	JFMAMJ JASOND				
	D 1925	A					A	JFMAMJ JASOND				
	D 1926	A					A	JFMAMJ JASOND				
	D 1927	A					A	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
MAURITIUS	D	1928	A					A	JFMAMJ JASOND				
MRI	D	1929	A					A	JFMAMJ JASOND				
(-20.09 57.55)	D	1930	A					A	JFMAMJ JASOND				
	D	1931	A					A	JFMAMJ JASOND				
	D	1932	A					A C	JFMAMJ JASOND				
	D	1933	A					A C	JFMAMJ JAS				
	D	1934	A					A	J JASOND				
	D	1935	A					A	JFMAMJ JASOND				
	D	1936	A					A	JFMAMJ JASOND				
	D	1937	A					A	JFMAMJ JASOND				
	D	1938	A					A	JFMAMJ JASOND				
	D	1943	A					A	JFMAMJ JASOND				
	D	1944	A					A	JFMAMJ JASOND				
	D	1945	A					A	JFMAMJ JASOND				
	D	1946	A					A	JFMAMJ JASOND				
	D	1947	A					A	JFMAMJ JASOND				
	D	1948	A					A	JFMAMJ JASOND				
	D	1949	A					A	JFMAMJ JASOND				
	D	1950	A					A	JFMAMJ JASOND				
	D	1956	KA										
	D	1957	KA										
	D	1958	KA										
	D	1959	KA										
	D	1960	KA										
MAWSON	D	1952						A	AMJ JASOND				
MAW	D	1953						A	JFMAMJ JASOND				
(-67.61 62.88)	D	1954						A	JFMAMJ JASOND				
	D	1955	A					A C	ASOND				
	D	1956	KA					A I	JFMAMJ JASOND				
	D	1957	KAQ	ABCD	JASOND			A CD	JFMAMJ JASOND				
	D	1958	KAQ	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1959	KA	ABCD	JFMAMJ JASOND								
	D	1960	KA	ABCD	JFMAMJ JASOND								
	D	1961	KA	ABCD	JFMAMJ JASOND								
	D	1962	KA	ABCD	JFMAMJ JASOND								
	D	1963	KA	ABCD	JFMAMJ JASOND								
	D	1964	KA	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	SOND
	D	1965	KA	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A JFM	SOND
	D	1966	KA	ABCD	JFMAMJ JASOND			A E	J	AB E	J	A	J
	D	1967	KA	ABCD	JFMAMJ JASOND								
	D	1968	KA	ABCD	JFMAMJ JASOND								
	D	1969	KA	ABCD	JFMAMJ JASOND								
	D	1970	KA	ABCD	JFMAMJ JASOND								
	D	1971	KA	ABCD	JFMAMJ JASOND								
	D	1972	KA	ABCD	JFMAMJ JASOND								
	D	1973	KA	ABCD	JFMAMJ JASOND								
	D	1974	KA	ABCD	JFMAMJ JASOND								
	D	1975	KA	ABCD	JFMAMJ JASOND								
	D	1976	KA	ABCD	JFMAMJ JASOND								

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
MAWSON	D	1977	KA	ABCD	JFMAMJ JASOND								
MAW	D	1978	KA	ABCD	JFMAMJ JASOND								
(-67.61 62.88)	D	1979	KA	ABCD	JFMAMJ JASOND								
	D	1980	KA	ABCD	JFMAMJ JASOND								
	D	1981	KA	AB D	JFMAMJ JASOND								
	D	1982	KA	A	J								
	D	1983	KA										
	D	1984	K										
MCMURDO	D	1981		C	FM								
MCM													
(-77.85 166.70)													
MEANOOK	D	1916	A	A	D								
MEA	D	1917	A	A	JFMAMJ JASOND								
(054.62 246.67)	D	1918	A	A	JFMAMJ JASOND								
	D	1919	A	A	JFMAMJ JASOND								
	D	1920	A	A	JFMAMJ JASOND								
	D	1921	A	A	JFMAMJ JASOND								
	D	1922	A	A	JFMAMJ JASOND								
	D	1923	A	A	JFMAMJ JASOND								
	D	1924	A	A	JFMAMJ JASOND								
	D	1925	A	A	JFMAMJ JASOND								
	D	1926	A	A	JFMAMJ JASOND								
	D	1927	A	A	JFMAMJ JASOND								
	D	1928	A	A	JFMAMJ JASOND								
	D	1929	A	A	JFMAMJ JASOND								
	D	1930	A	A	JFMAMJ JASOND								
	D	1931	A	A	JFMAMJ JASOND								
	D	1932	A	A	JFMAMJ JASOND				A JFMAMJ JASOND				
	D	1933	A						A JFMAMJ JASOND				
	D	1934	A						ABC JFMAMJ JASOND				
	D	1935	A						ABC JFMAMJ JASOND				
	D	1936	A						ABC JFMAMJ JASOND				
	D	1937	A						ABC JFMAMJ JASOND				
	D	1938	A						ABC I JFMAMJ JASOND				
	D	1939	KA						ABC I JFMAMJ JASOND				
	D	1940	KA						ABC I JFMAMJ JASOND				
	D	1941	KA	A	JFMAMJ JASOND				ABC I JFMAMJ JASOND				
	D	1942	KA	A	JFMAMJ JASOND				ABC I JFMAMJ JASOND				
	D	1943	KA	A	JFMAMJ JASOND				ABC I JFMAMJ JASOND				
	D	1944	KA	A	JFMAMJ JASOND				ABC I JFMAMJ JASOND				
	D	1945	KA	A	JFMAMJ JASOND				ABC I JFMAMJ JASOND				
	D	1946	KA	A	JFMAMJ JASOND				ABC I JFMAMJ JASOND				
	D	1947	KA	A	JFMAMJ JASOND				ABC I JFMAMJ JASOND				
	D	1948	KA	A	JFMAMJ JASOND				ABC I JFMAMJ JASOND				
	D	1949	KA	A	JFMAMJ JASOND				ABC I JFMAMJ JASOND				
	D	1950	KA	A	JFMAMJ JASOND				ABC I JFMAMJ JASOND				
	D	1951	KA	A	JFMAMJ JASOND				ABC I JFMAMJ JASOND				
	D	1952	KA	A	JFMAMJ JASOND				ABC I JFMAMJ JASOND				
	D	1953	KA	A	JFMAMJ JASOND				ABC I JFMAMJ JASOND				
	D	1954	KA	A	JFMAMJ JASOND				ABC I JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
MEANOOK	D 1955	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
MEA	D 1956	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
(054.62 246.67)	D 1957	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1958	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1959	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1960	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1961	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1962	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1963	KA	ABCD	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D 1964	KA	ABCD	JFMAMJ JASOND			ABC EI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	J SOND
	D 1965	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1966	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1967	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1968	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ
	D 1969	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	J JAS
	D 1970	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	ND*
	D 1971	KA	ABCD	JFMAMJ JASOND			AB	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1981	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1982	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1983	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1984	K	ABCD	JFMAMJ JAS			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1985	K										
MELVILLE AFB	D 1966		ABC									
MEV	D 1967		ABC									
(053.28 299.47)	D 1968		ABC									
	D 1969		ABC									
	D 1970		ABC									
	D 1971		ABC									
	D 1972		ABC									
	D 1973		A	J								
	D 1974		A	JFMAMJ JASOND								
MEMAMBETSU	D 1952	KA										
MMB	D 1953	KA										
(043.91 144.19)	D 1954	KA										
	D 1955	KA										
	D 1956	KA										
	D 1957	KA	ABCD	JASOND	ABC	JASOND	ABCD I	JFMAMJ JASOND				
	D 1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1959	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1960	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1961	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1962	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
MEMAMBETSU	D	1963	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
MMB	D	1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	J SOND
(043.91 144.19)	D	1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ
	D	1967	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1968	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1969	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1970	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1971	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1972	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1973	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1974	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1975	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1976	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JAS *
	D	1977	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1978	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1979	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1980	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1981	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1982	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1983	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1984	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1985	K										
MIDWAY	D	1964	A	ABCD	MJ JASOND								
MDY	D	1965	A	ABCD	JFMAMJ JASOND								
(028.21 182.62)	D	1966	A	A	J								
	D	1978										A	MAMJ JASOND*
	D	1979										A	JFMAM JASOND*
	D	1980										A	JFMAM J *
	D	1981										A	FMA *
MINSK	D	1958				C	MJ						
MNK	D	1959		B	OND								
(054.50 27.88)	D	1960		AB	JFMAMJ JASOND								
	D	1961	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND	B	JFMAM	ABCD	JFMAMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
MINSK	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
MNK	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
(054.50 27.88)	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1981	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D	1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1983	K	ABCD	JFMAMJ JASOND	A C	JFM JASOND	ABCD	JFMAMJ JASOND				
	D	1984	K	ABCD	JFMAMJ JAS			ABCD	JFMAMJ JAS				
MIRNY	D	1956	KA	B	JASOND			A	JASOND				
MIR	D	1957	KA	ABCD	JFMAMJ JASOND	ABC	JASOND	ABCD	JFMAMJ JASOND				
(-66.55 93.02)	D	1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D	1959	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1964	KAQ	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	SOND
	D	1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB I	M	A	M
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	SO	A	SO
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND	B	MAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1976	KA	ABCD	JFMAMJ JASOND			B	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1981	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1982	KA	AB	JFMAMJ JASOND			B	JFMAMJ JASOND				
	D	1983	K	AB	JASOND			B	JFMAMJ JASOND				
	D	1984	K										
MISALLAT	D	1957						A	JFMAMJ JASOND				
MLT	D	1958						A	JFMAMJ JASOND				
(029.52 30.89)	D	1959						A	JFMAMJ JASOND				
	D	1960	KA	A	AMJ JASOND			ABCD	AMJ JASOND				
	D	1961	KA	A	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1962	KA	A	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	J SOND
	D	1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1968	KA	A	JFMAMJ JASOND			A CD	JFMAMJ JASOND				
	D	1969	KA	A	JFMAMJ JASOND			A CD	JFMAMJ JASOND				
	D	1970	KA	A	JFMAMJ JASOND			A CD	JFMAMJ JASOND				
	D	1971	KA	A	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
MISALLAT	D	1972	KA	A	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
MLT	D	1973	KA	A	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(029.52 30.89)	D	1974	KA	AB	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1975	K	AB	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1976	K	AB	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1977		AB	JFMAMJ JASOND								
	D	1978		AB	JFMAMJ JASOND								
	D	1979	A	AB	JFMA			A	JFMAMJ JASOND				
	D	1980	A					A	JFMAMJ JASOND				
MIZUSAWA	D	1969	A					A	AMJ JASOND				
MIZ	D	1970	A					A	JFMAMJ JASOND				
(039.01 141.08)	D	1971	A					A	JFMAMJ JASOND				
	D	1972	A					A	JFMAMJ JASOND				
	D	1973	A					ABC	JFMAMJ JASOND				
	D	1974	A					ABC	JFMAMJ JASOND				
	D	1975	A					ABC	JFMAMJ JASOND				
	D	1976	A					ABC	JFMAMJ JASOND				
	D	1977	A					ABC	JFMAMJ JASOND				
	D	1978	A					ABC	JFMAMJ JASOND				
	D	1979	A					ABC	JFMAMJ JASOND				
	D	1980	A					ABC	JFMAMJ JASOND				
	D	1981	A					ABC	JFMAMJ JASOND				
	D	1982	A					ABC	JFMAMJ JASOND				
MOCA	D	1958	KA	ABCD	OND			ABCD	JFMAMJ JASOND				
MFP	D	1959	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(003.34 8.66)	D	1960	KA					ABCD	JFMAMJ JASOND				
	D	1961	KA					ABCD	JFMAMJ JASOND				
	D	1962	KA					ABCD	JFMAMJ JASOND				
	D	1963	KA					A CD	JFMAMJ JASOND				
	D	1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND	A C	JASOND	ABC E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JAS
	D	1967	KA	ABCD	JFMAMJ JASOND	A C	JAS	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	SO D
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ	A	JF AMJ
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JASO	A	JASO
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1971	KA	ABCD	JFMAMJ JASON			ABCD	JFMAMJ JASOND				
MODIIM	D	1975	A	A D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
MOD													
(31.93 34.98)													
MOGADISCIO	D	1932						A	ASOND				
MOG	D	1933						A	JFMAMJ J				
(002.03 045.35)													
MOLODEZHNAYA	D	1966	A	B	JFMAMJ JASOND			B	JFMAMJ JASOND				
MOL	D	1967	A	B	JFMAMJ JASOND			B	JFMAMJ JASOND				
(-67.67 45.85)	D	1968	A	B	JFMAMJ JASOND			B	JFMAMJ JASOND				
	D	1969	A	B	JFMAMJ JASOND			B	JFMAMJ JASOND				
	D	1970	A	B	JFMAMJ JASOND			B	JFMAMJ JASOND				
	D	1971	A	B	JFMAMJ JASOND			B	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
MOLODEZHNAYA	D	1972	A	B	JFMAMJ JASOND			B	JFMAMJ JASOND				
MOL	D	1973	A	B	JFMAMJ JASOND			B	JFMAMJ JASOND				
(-67.67 45.85)	D	1974	A	B	JFMAMJ JASOND			B	JFMAMJ JASOND				
	D	1975	A	B	JFMAMJ JASOND			B	JFMAMJ JASOND				
	D	1976	KA	B	JFMAMJ JASOND			B	JFMAMJ JASOND				
	D	1977	KA	B	JFMAMJ JASOND			B	JFMAMJ JASOND				
	D	1978	KA	B	JFMAMJ JASOND			B	JFMAMJ JASOND				
	D	1979	KA	B	JFMAMJ JASOND			B	JFMAMJ JASOND				
	D	1980	A	B	JFMAMJ JASOND			B	JFMAMJ JASOND				
	D	1981	A	B	JFMAMJ JASOND			B	JFMAMJ JASOND				
	D	1982	A	B	JFMAMJ JASOND			B	JFMAMJ JASOND				
	D	1983	K	B	JFMAMJ JASOND			B	JFMAMJ JASOND				
	D	1984	K										
MONTE CAPELLINO	D	1963		AB D	JFMAMJ JASOND								
MCP	D	1964		AB D	JFMAMJ JASOND								
(044.55 8.96)													
MOSCOW	D	1945	K										
MOS	D	1946	KA										
(055.48 37.31)	D	1956	KA										
	D	1957	KA	ABCD	JASOND			ABCD	JASOND	AB	JASOND		
	D	1958	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1959	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1983	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1984	K	ABCD	JFMAMJ JASO			ABCD	JFMAMJ JASO				
MOULD BAY	D	1961		AB D	D								
MBC	D	1962	A	AB	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	ASOND		
(076.20 240.60)													

OBSERVATORY	YEAR COMP	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
MOULD BAY	D 1963	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
MBC	D 1964	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	SOND
(076.20 240.60)	D 1965	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1966	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1967	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JF SO
	D 1968	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASO
	D 1969	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	J JASO
	D 1970	A	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1971	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1972	A	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1973	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	A C E	JFMAMJ JASOND		
	D 1974	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1975	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1976	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	X 1977	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	X 1978	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	MAMJ JA	A	MAMJ JA *
	X 1979	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	X 1980	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1981	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1982	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1983	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1984		ABCD	JFMAMJ JAS			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
MT WILSON	D 1926		A	JFMAMJ JASOND								
MWC	D 1927		A	JFMAMJ JASOND								
(034.22 241.93)	D 1928		A	JFMAMJ JASOND								
	D 1929		A	JFMAMJ JASOND								
	D 1930		A	JFMAMJ JASOND								
	D 1931		A	JFMAMJ JASOND								
	D 1932		A	JFMAMJ JASOND								
	D 1933		A	JFMAMJ JASOND								
	D 1934		A	JFMAMJ JASOND								
	D 1935		A	JFMAMJ JASOND								
	D 1936		A	JFMAMJ JASOND								
	D 1937		A	JFMAMJ JASOND								
	D 1938		A	JFMAMJ JASOND								
	D 1939		A	JFMAMJ JASOND								
	D 1940		A	JFMAMJ JASOND								
	D 1941		A	JFMAMJ JASOND								
	D 1942		A	JFMAMJ JASOND								
	D 1943		A	JFMAMJ JASOND								
	D 1944		A	JFMAMJ JASOND								
	D 1945		A	JFMAMJ JASOND								
	D 1946		A	JFMAMJ JASOND								
	D 1947		A	JFMAMJ JASOND								
	D 1948		A	JFMAMJ JASOND								
	D 1949		A	JFMAMJ JASOND								
	D 1950		A	JFMAMJ JASOND								
	D 1951		A	JFMAMJ JASOND								
	D 1952		A	JFMAMJ JASOND								
	D 1953		A	JFMAMJ JASOND								
	D 1954		A	JFMAMJ JASOND								

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
MT WILSON	D	1955		A	JFMAMJ JASOND								
MWC	D	1956		A	JFMAMJ JASOND								
(034.22 241.93)	D	1957		A	JFMAMJ JASOND								
	D	1958		A	JFMAMJ JASOND								
MUNTINLUPA	D	1953	A						A JFMAM				
MUT	D	1954	A						A JFMAMJ JASOND				
(014.38 121.02)	D	1955	A						A JFMAMJ JASOND				
	D	1956	A						A JFMAMJ JASOND				
	D	1957	A	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND				
	D	1958	A	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND				
	D	1959	A	BCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND				
	D	1960	A	BCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND				
	D	1961	A	D	JFMAMJ JASOND				A D JFMAMJ JASOND				
	D	1962	A	ABCD	JFMAMJ JASOND				A D JFMAMJ JASOND				
	D	1963	A	ABCD	JFMAMJ JASOND				A E JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D	1964	KA	ABCD	JFMAMJ JASOND				ABCDE JFMAMJ JASOND	AB	EI JFMAMJ JASOND	A	SOND
	D	1965	KA	ABCD	JFMAMJ JASOND				AB E JFMAMJ JASOND	AB	EI JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND				A E JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D	1967	KA	ABCD	JFMAMJ JASOND				A E JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D	1968	KA	ABCD	JFMAMJ JASOND				A E JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D	1969	KA	ABCD	JFMAMJ JASOND				A E JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D	1970	KA	ABCD	JFMAMJ JASOND				A E JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D	1971	KA	ABCD	JFMAMJ JASOND				A E JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D	1972	KA						A E JFMAMJ JASOND	ABC	EI JFMAMJ JASOND		
	D	1973	A						ABCD JFMAMJ JASOND				
	D	1974	KA						ABCD JFMAMJ JASOND				
	D	1975	KA						ABCD JFMAMJ JASOND				
	D	1976	KA						ABCD JFMAMJ JASOND				
	D	1977	KA						ABCD JFMAMJ JASOND				
	D	1978	KA						ABCD JFMAMJ JASOND				
	D	1979	KA						A D JFMAMJ JASOND				
	D	1980	KA						ABCD JFMAMJ JASOND				
	D	1981	KA						A JFMAMJ				
	D	1982	KA										
	D	1983	K										
	D	1984	K										
	D	1985	K										
MURCHISON BAY	D	1957	Q	ABCD	ASOND	ABC	SOND		ABCD ASOND				
MUB	D	1958	Q	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCD JFMAMJ JASOND				
(080.50 018.25)	D	1959	Q	ABCD	JFMAMJ J				ABCD JFMAMJ J				
MURMANSK	D	1957	K	ABCD	JASOND				A JASOND				
MMK	D	1958	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND				
(068.95 33.05)	D	1959	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1960	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1961	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND				
(068.25 33.08)	D	1962	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1963	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1964	KA	ABCD	JFMAMJ JASOND				ABCDE JFMAMJ JASOND	AB	EI JFMAMJ JASOND	A	SOND
	D	1965	KA	ABCD	JFMAMJ JASOND				ABCDE JFMAMJ JASOND	AB	EI JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND				ABCDE JFMAMJ JASOND	AB	EI JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1967	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
MURMANSK	D 1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMA	A	JFMA
MMK	D 1969	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(068.25 33.08)	D 1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1981	KA										
	D 1982	K										
	D 1983	K										
	D 1984	K										
NAGYCENK	D 1958	K										
NCK	D 1959	K										
(047.63 16.72)	D 1960											
	D 1961	KA										
	D 1962	KA										
	D 1963	KA										
	D 1964	KA	A CD	JFMAMJ JASOND								
	D 1965	KA	A CD	JFMAMJ JASOND								
	D 1966	KA										
	D 1967	KA										
	D 1968	KA										
	D 1969	KA										
	D 1970	KA										
	D 1971	KA										
	D 1972	KA										
	D 1973	KA										
	D 1974	KA										
	D 1975	KA										
	D 1976	KA										
	D 1977	KA										
	D 1978	KA										
NAIROBI	D 1964	A	ABCD	FMAMJ JASOND			ABCDE	FMAMJ JASOND	AB EI	SOND	A	SOND
NAI	D 1965	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
(-1.33 36.82)	D 1966	A	ABCD	JFM			ABCDE	JFM M	AB EI	JFM	A	JFM
	D 1967	A	AB	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	MAM	A	AM
	D 1968	A	AB	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1969	A	AB	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1970	A	AB	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1971	A	AB	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1972	A	AB	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1973	A	AB	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1974	A	AB	JFMAMJ JASOND			A CD	JFMAMJ JASOND				
	D 1975	A	AB	JFMAMJ JASOND			A CD	JFMAMJ JASOND				
	D 1976	A	ABCD	JFMAMJ JASOND								

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
NAIROBI	D 1977	A	A	JFMAMJ JASOND			A	JFMAMJ JASOND				
NAI												
(-1.33 36.82)	D 1979		A	D			A	JFMAMJ JASOND				
	D 1980		A	J AM			A	JFMAMJ JASOND				
NAMPULA	D 1982						A	JFMAMJ JASOND				
NMP	D 1983						A	JFMAMJ JASOND				
(-15.13 39.27)	D 1984						A	JFMAMJ JASO				
NANTES	D 1932	A					C	JFMAMJ JASOND				
NTS	D 1933	A					C	JFMAMJ JASOND				
(047.25 358.44)												
	D 1951	KA										
	D 1952	KA										
	D 1953	KA										
	D 1954	KA										
	D 1955	KA										
	D 1956	KA										
	D 1957	KA										
	D 1958	KA										
	D 1959	K										
NARSSARSSUAQ	D 1968	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
NAQ	D 1969	A	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
(061.10 314.80)	D 1970	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1971	A	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1972	A	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1973	A	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1974	A	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1975	A	ABCD	JFMAMJ JASOND			AB	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1976	A	ABCD	JFMAMJ JASOND								
	D 1977	A	ABCD	JFMAMJ JASOND								
	D 1978	A	ABCD	JFMAMJ JASOND								
	D 1979	A	ABCD	JFMAMJ JASOND							A	J JASOND*
	D 1980	A	ABCD	JFMAMJ JASOND							A	JFMAMJ JASOND*
	D 1981	A	ABCD	JFMAMJ JASOND			D	JFMAMJ JASOND			A	JFMAMJ JASOND*
	D 1982	A	ABCD	JFMAMJ JASOND			D	JFMAMJ JASOND			A	JFMAMJ JASOND*
	D 1983	A	ABCD	JFMAMJ JASOND							A	JFMAMJ JASOND*
	D 1984	A	ABCD	JFMAMJ JASON								
NEW AALESUND	D 1969		D	S								
NAL												
(078.92 011.93)	D 1974		ABCD	JFMAMJ JASOND								
	D 1975		ABCD	JFMAMJ JASOND								
	D 1976		ABCD	JFMAMJ JASOND								
	D 1977		ABCD	JFMAMJ JASOND								
	D 1978		ABCD	JFMAMJ JASOND								
	D 1979		ABCD	JFMAMJ JASOND								
	D 1980		ABCD	JFMAMJ JASOND								
	D 1981		ABCD	JFMAMJ JASOND								
	D 1982		ABCD	JFMAMJ JASOND								
	D 1983		A CD	JFMAMJ JASOND								
	D 1984		A CD	JFMAMJ JASOND								

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
NEWPORT	D 1966	KA	ABCD	AMJ JASOND			ABCDE	MAMJ JASOND	AB EI	MAMJ JASOND	A	AMJ JASOND
NEW	D 1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
(048.26 242.88)	D 1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1969	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1970	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1971	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1972	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1973	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1975	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1976	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JA	A	SOND	A	SOND*
	D 1983		ABCD	JFMAMJ JASOND								
NIEMEGK	D 1917						A C	JFMAMJ JASOND				
NGK	D 1918						A C	JFMAMJ JASOND				
(052.07 12.68)	D 1919						A C	JFMAMJ JASOND				
	D 1920						A C	JFMAMJ JASOND				
	D 1921						A C	JFMAMJ JASOND				
	D 1922						A C	JFMAMJ JASOND				
	D 1923						A C	JFMAMJ JASOND				
	D 1924						A C	JFMAMJ JASOND				
	D 1925						A C	JFMAMJ JASOND				
	D 1926						A C	JFMAMJ JASOND				
	D 1927						A C	JFMAMJ JASOND				
	D 1928						A C	JFMAMJ JASOND				
	D 1929						A C	JFMAMJ JASOND				
	D 1930						A C	JFMAMJ JASOND				
	D 1931	A					A C	JFMAMJ JASOND				
	D 1932	A					A I	JFMAMJ JASOND				
	D 1933	A					A I	JFMAMJ JASOND				
	D 1934	A					A C I	JFMAMJ JASOND				
	D 1935	A					A I	JFMAMJ JASOND				
	D 1936	A					A I	JFMAMJ JASOND				
	D 1937	KA					A I	JFMAMJ JASOND				
	D 1938	KA					A I	JFMAMJ JASOND				
	D 1939	KA					A I	JFMAMJ JASOND				
	D 1940	KA					A I	JFMAMJ JASOND				
	D 1941	KA					A I	JFMAMJ JASOND				
	D 1942	KA					A I	JFMAMJ JASOND				
	D 1943	KA					A I	JFMAMJ JASOND				
	D 1944	KA					A I	JFMAMJ JASOND				
	D 1945	KA										
	D 1946	KA					A I	JFMAMJ JASOND				
	D 1947	KA					A I	JFMAMJ JASOND				
	D 1948	KA					A I	JFMAMJ JASOND				
	D 1949	KA					A I	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY	MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
NIEMEGK	D	1950	KA					A	I	JFMAMJ JASOND				
NGK	D	1951	KA					A	I	JFMAMJ JASOND				
(052.07 12.68)	D	1952	KA					A C	I	JFMAMJ JASOND				
	D	1953	KA					A	I	JFMAMJ JASOND				
	D	1954	KA					A C	I	JFMAMJ JASOND				
	D	1955	KA					A C	I	JFMAMJ JASOND				
	D	1956	KA					A C	I	JFMAMJ JASOND				
	D	1957	KA	ABCD	JASOND			ABCD	I	JFMAMJ JASOND				
	D	1958	KA	ABCD	JFMAMJ JASOND			ABCD	I	JFMAMJ JASOND				
	D	1959	KA	ABCD	JFMAMJ JASOND			ABCD	I	JFMAMJ JASOND				
	D	1960	KA	B	JFMAMJ JASOND			ABC	I	JFMAMJ JASOND				
	D	1961	KA	B	JFMAMJ JASOND			ABCD		JFMAMJ JASOND				
	D	1962	KA	B	JFMAMJ JASOND			ABCD	I	JFMAMJ JASOND				
	D	1963	KA	B	JFMAMJ JASOND			ABC	I	JFMAMJ JASOND				
	D	1964	KA	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D	1965	KA	ABCD	JFMAMJ JASOND			ABCDE	I	JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCD	I	JFMAMJ JASOND				
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCD	I	JFMAMJ JASOND				
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCD	I	JFMAMJ JASOND				
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCD	I	JFMAMJ JASOND				
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCD	I	JFMAMJ JASOND				
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCD	I	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD	I	JFMAMJ JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD	I	JFMAMJ JASOND				
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCD		JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD		JFMAMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	I	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	I	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	I	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	I	JFMAMJ JASOND				
	X	1980	KA	ABCD	JFMAMJ JASOND			ABCD		JFMAMJ JASOND				
	X	1981	KA	ABCD	JFMAMJ JASOND			ABCD		JFMAMJ JASOND				
	X	1982	KA	ABCD	JFMAMJ JASOND			ABCD		JFMAMJ JASOND				
	X	1983	KA	ABCD	JFMAMJ JASOND			ABCD		JFMAMJ JASOND				
	X	1984	K	ABCD	JFMAMJ JAS			ABCD		JFMAMJ JASOND				
NITSANIM	D	1963	A					ABCD		JFMAMJ JASOND				
NSM														
(031.73 34.60)	D	1967	KA					A D		JFMAMJ JASOND				
	D	1968						A D		JFMAMJ JASOND				
NORD	D	1969						AB D		ASOND				
NRD	D	1970						AB D		JFMAMJ JASOND				
(081.60 343.24)	D	1971						AB D		JFMAMJ JASOND				
	D	1972						AB D		JFM				
NORILSK	D	1973		AB	ND									
NOK	D	1974		ABCD	JFMAMJ JASOND									
(069.40 088.10)	D	1975		ABCD	JFMAMJ J									
NORMAN WELLS	D	1977											A	JASOND*
NOW	D	1978											A	JFMAMJ JASOND*
(064.90 234.50)	D	1979											A	JFMAMJ JASOND*
	D	1980											A	JFMAMJ JASON *

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
NORMAN WELLS	D 1981										A	JFMAMJ JASOND*
NOW	D 1982										A	JFMAMJ JASOND*
(064.90 234.50)	D 1983										A	JFMAMJ JASOND*
NORTH POLE 6	D 1957		ABCD	JASOND			ABCD	JASOND				
NPF	D 1958	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(084.00 094.00)	D 1959	K	ABCD	JFMAMJ JAS			ABCD	JFMAMJ JAS				
NORTH POLE 7	D 1957		ABCD	JASOND			ABCD	JASOND				
NPG	D 1958		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(085.00 268.12)	D 1959		ABCD	JFM			ABCD	JFM				
NORTH POLE 8	D 1959	K	ABCD	MJ JASOND			ABCD	MJ JASOND				
NPH	D 1960	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(077.00 189.00)	D 1961	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1962		ABCD	JF			ABCD	JF				
NORTH POLE 10	D 1961		A CD	ND			A CD	ND				
NPJ	D 1962		A CD	JFMAM			A CD	JFMAM				
(077.00 166.38)												
NORTH POLE 12	D 1963	K	A CD	MJ JASOND			A CD	MJ JASOND				
NPL	D 1964	K	A CD	JFMA			A CD	JFMA				
(079.00 187.00)												
NORTH POLE 13	D 1964		A CD	MJ JASOND			A CD	MJ JASOND				
NPM	D 1965		A CD	JFMAMJ JASOND			CD	JFMAMJ JASOND				
(081.00 165.00)												
NORTHWAY	D 1957		ABCD	AMJ JASOND			ABCD	AMJ JASOND				
NRW	D 1958	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(063.02 218.20)	D 1959		B	J								
NORUSUND	D 1978						BC	JFMAMJ JASOND				
NOR	D 1979						BC	JFMAMJ JASOND				
(077.00 015.55)												
NORWAY HOUSE	D 1973		A	MJ JASOND								
NHO	D 1974		ABC	JFMAMJ JASOND								
(053.98 262.17)	D 1975		A	J								
	D 1976		ABC	F N								
NORWAY STATION	D 1960	A					ABCD	JFMAMJ JASOND				
NWS	D 1961	A					ABCD	JFMAMJ JASOND				
(-70.50 357.47)	D 1962	A					A D	JF				
NOVOKAZALINSK	D 1965											
NKK	D 1966	K										
(045.80 62.10)	D 1967	K										
	D 1968	K										
	D 1969	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1970	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1971	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1972	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1973	K	ABCD	JFMAMJ JASOND			ABCD	ASOND				
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
NOVOKAZALINSK	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
NKK	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(045.80 62.10)	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1983	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1984	K	ABCD	JFMAMJ JASO			ABCD	JFMAMJ JASO				
NOVOLAZAREVSKAYA	D	1961	KA	ABCD	FMAMJ JASOND			ABCD	FMAMJ JASOND	ABCD			
NVL	D	1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	ABCD			
(-70.77 11.83)	D	1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1964	KAQ	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1965	KAQ	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	SO	A	SO
	D	1968	KA	ABCD	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1970	KA	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1971	KA	ABCD	JFMAMJ JASOND			B	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1974	KA	ABCD	JFMAMJ JASOND			ABC	JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND								
	D	1979	KA	ABCD	JFMAMJ JASOND								
	D	1980	KA	AB D	JFMAMJ JASOND								
	D	1981	KA	AB D	JFMAMJ JASOND								
	D	1982	A	AB	JFMAMJ JASOND								
	D	1983	K										
	D	1984	K										
NOVOSIBIRSK	D	1967	A	AB	JFMAMJ JAS			AB	JFMAMJ JAS				
NVS	D	1968	A	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
(055.03 82.90)	D	1969	A	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1970	A	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1971	A	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1972	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1973	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1974	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1983	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1984	K	ABCD	JFMAMJ JASO			ABCD	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
NUMTO	D 1974		ABCD	FMAMJ JASOND								
NMT	D 1975		B	JFMAMJ JASOND								
(063.50 071.40)	D 1976		ABCD	JFMAMJ JASOND								
	D 1977		B	JFMAMJ JASOND								
	D 1978		ABCD	JFMAMJ JASOND								
NURMIJARVI	D 1953	KA						A C E JFMAMJ JASOND	AB E	JFMAMJ JASOND		
NUR	D 1954	KA						A C E JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(060.51 24.66)	D 1955	KA						A C E JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1956	KA						A C EI JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1957	KA	ABCD	JASOND	ABC	JASOND		ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1959	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1960	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1961	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1962	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1963	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	J SOND
	D 1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1966	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1967	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ SO
	D 1968	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1969	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1970	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	M
	D 1971	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1972	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1973	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1974	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCD I JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1975	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCD I JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1976	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCD I JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1977	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCD I JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1978	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCD I JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1979	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCD I JFMAMJ JASOND	A	JFMAMJ JASOND		
	D 1980	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCD JFMAMJ JASOND	A	JFMAMJ JASOND		
	D 1981	KA	ABCD	JFMAMJ JASOND	C	JF		ABCD JFMAMJ JASOND	A	JFMAMJ JASOND		
	X 1982	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND	A	JFMAMJ JASOND		
	X 1983	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND				
	X 1984	K	ABCD	JFMAMJ JASON				ABCD JFMAMJ JASON				
	X 1985	K	A	JF				A JF				
NYDA	D 1974		ABCD	JFMAMJ JASOND								
NDA	D 1975		B	JFMAMJ JASOND								
(066.60 073.00)	D 1976		ABCD	JFMAMJ JASOND								
	D 1977		B	JFMAMJ JASOND								
	D 1978		ABCD	JFMAMJ JASOND								
	D 1979		ABCD	JFMAMJ JASOND								
O GYALLA	D 1905	A						A JFMAMJ JASOND				
OGY	D 1906	A						A JFMAMJ JASOND				
(047.88 18.19)	D 1907	A						A JFMAMJ JASOND				
	D 1908	A						A JFMAMJ JASOND				
	D 1909	A						A JFMAMJ JASOND				
	D 1910	A						A JFMAMJ JASOND				
	D 1911	A						A JFMAMJ JASOND				
	D 1912	A						A JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
O GYALLA	D	1913	A					A	JFMAMJ JASOND				
OGY													
(047.88 18.19)	D	1916	A					A	JFMAMJ JASOND				
	D	1917	A					A	JFMAMJ JASOND				
	D	1932						C	JFMAMJ JASOND				
	D	1933						C	JFMAMJ JASOND				
	D	1939						A	JFMAMJ JASOND				
	D	1940						A	JFMAMJ JASOND				
	D	1941						A	JFMAMJ JASOND				
	D	1942						A	JFMAMJ JASOND				
	D	1943						A	JFMAMJ JASOND				
OASIS	D	1957	KA	ABCD	J JASOND			ABCD	J JASOND				
OAS	D	1958	KA	ABCD	JFMAMJ JASON			ABCD	JFMAMJ JASON				
(-66.30 100.72)													
ODESSA	D	1955	KA										
ODE	D	1956	KA										
(046.78 30.88)	D	1957	KA	ABCD	JASOND			AB D	JASOND	AB	JFMAMJ JASOND		
	D	1958	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1959	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	AMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASO D
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	SO D
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JF AMJ
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JASO
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1983	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1984	K	ABCD	JFMAMJ JAS			ABCD	JFMAMJ JAS				
ONAGAWA	D	1957	K			ABC	JASOND						
ONW	D	1958	K			ABC	JFMAMJ JASOND						
(038.43 141.47)	D	1959	K										

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
ORCADAS DEL SUR	D	1969	K										
ORC	D	1970	K										
(-60.73 315.22)	D	1971		ABCD	JFMAMJ JASOND								
	D	1972		AB D	JFMAMJ JASOND								
	D	1973		ABCD	JFMAMJ JASOND								
	D	1974		A	JFMAMJ JASOND								
OTTAWA	D	1968	A	ABCD	J JASOND				ABCDEI JFMAMJ JASOND	AB E	JASOND		
OTT	D	1969	KA	ABCD	JFMAMJ JASOND				ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(045.40 284.45)	D	1970	KA	ABCD	JFMAMJ JASOND				ABCDEI JFMAMJ JASOND	AB E	JFM SOND	A	SOND*
	D	1971	KA	ABCD	JFMAMJ JASOND				ABCD I JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1972	KA	ABCD	JFMAMJ JASOND				ABCD I JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1973	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1974	KA	ABCD	JFMAMJ JASOND				ABCD I JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1975	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1976	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1977	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1978	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1979	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1980	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1981	KA	ABCD	JFMAMJ JASOND				A JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1982	KA	ABCD	JFMAMJ JASOND				A JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1983	KA	ABCD	JFMAMJ JASOND				A JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1984	K	ABCD	JFMAMJ JAS				A JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1985	K										
P. TUNGUSKA	D	1969	A	AB	JFMAMJ JASOND				AB JFMAMJ JASOND				
POD	D	1970	A	AB	JFMAMJ JASOND				AB JFMAMJ JASOND				
(061.60 90.00)	D	1971	A	AB	JFMAMJ JASOND				AB JFMAMJ JASOND				
	D	1972	A	AB	JFMAMJ JASOND				AB JFMAMJ JASOND				
	D	1973	A	AB	JFMA JASOND				AB JFMAMJ JASOND				
	D	1974	A	AB	JFMAMJ JAS				AB JFMAMJ JAS				
	D	1975	KA	ABCD	AMJ JASOND				ABCD AMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND				
	D	1982	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND				
	D	1983	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND				
	D	1984	K	ABCD	JFMAMJ AS				ABCD JFMAMJ AS				
PALMYRA ISLAND	D	1957		ABCD	OND				ABCD OND				
PAI	D	1958		BCD	JFMAMJ JA				ABCD JFMAMJ JA			A	JFMAMJ JA
(005.88 197.92)													
PAMATAI	D	1966	A	ABCD	JFMAMJ JASOND				A E M	A	JFMAMJ JASOND	A	M
PPT													
(-17.57 210.43)	D	1968	KA	ABCD	JFMAMJ JASOND				A E JFMA	A E	JFMAMJ JASOND	A	JFMA
	D	1969	KA	ABCD	JFMAMJ JASOND				A E MJ JAS	A E	JFMAMJ JASOND	A	J JAS
	D	1970	KA	ABCD	JFMAMJ JASOND				ABCDE JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFM
	D	1971	KA	ABCD	JFMAMJ JASOND				ABCDE JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY	MEDIUM	WDC	HOURLY VALUES ON	TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
PAMATAI	D	1972	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ	JASOND	A E	JFMAMJ	JASOND	A	JFMAMJ JASOND
PPT	D	1973	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ	JASOND	A E	JFMAMJ	JASOND	A	JFMAMJ JASOND
(-17.57 210.43)	D	1974	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ	JASOND	A E	JFMAMJ	JASOND	A	JFMAMJ JASOND
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ	JASOND	A E	JFMAMJ	JASOND	A	JFMAMJ JASOND
	D	1976	KA	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ	JASOND	A E	JFMAMJ	JASOND	A	JFMAMJ JASOND
	D	1977	KA	ABCD	JFMAMJ JASOND			A C E	JFMAMJ	JASOND					
	D	1978	KA	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ	JASOND				A	MAMJ JASOND*
	D	1979	KA	A CD	JFMAMJ JASOND			A CDE	JFMAMJ	JASOND	AB E	JFMAMJ	JASOND	A	JFMAMJ JASOND
	D	1980	KA	A CD	JFMAMJ JASOND			A CDE	JFMAMJ	JASOND	AB E	JFMAMJ	JASOND	A	JFMAMJ JASOND
	D	1981	KA	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ	JASOND	A E	JFMAMJ	JASOND	A	JFMAMJ JASOND
	D	1982	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ	JASOND				A	JFMA *
	D	1983	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ	JASOND					
	D	1984		A CD	JFMAMJ JAS			A CDE	JFMAMJ	JASOND					
PANAGYURISHTE	D	1956	A	C	JFMAMJ JASOND			ABC I	JFMAMJ	JASOND					
PAG	D	1957	KA	ABCD	JASOND			ABCD I	JFMAMJ	JASOND					
(042.52 24.18)	D	1958	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ	JASOND					
	D	1959	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ	JASOND					
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ	JASOND					
	D	1961	KA					ABCD I	JFMAMJ	JASOND					
	D	1962	KA					ABCD I	JFMAMJ	JASOND					
	D	1963	KA					ABCD I	JFMAMJ	JASOND					
	D	1964	KA	B	JFMAMJ JASOND			ABCDEI	JFMAMJ	JASOND	AB E	JFMAMJ	JASOND		
	D	1965	KA					ABCDEI	JFMAMJ	JASOND	AB E	JFMAMJ	JASOND		
	D	1966	KA	AB	JFMAMJ JASOND			ABCD I	JFMAMJ	JASOND					
	D	1967	KA	B	JFMAMJ JASOND			ABCD I	JFMAMJ	JASOND					
	D	1968	KA	B	JFMAMJ JASOND			ABCD I	JFMAMJ	JASOND					
	D	1969	KA	AB	JFMAMJ JASOND			ABCD I	JFMAMJ	JASOND					
	D	1970	KA	AB	JFMAMJ JASOND			ABCD I	JFMAMJ	JASOND					
	D	1971	KA					ABCD I	JFMAMJ	JASOND					
	D	1972	KA					ABCD I	JFMAMJ	JASOND					
	D	1973	A	AB	JFMAMJ JASOND			ABCD I	JFMAMJ	JASOND					
	D	1974	KA	AB	JFMAMJ JASOND			ABCD I	JFMAMJ	JASOND					
	D	1975	KA	AB	JFMAMJ JASOND			ABCD	JFMAMJ	JASOND					
	D	1976	KA	AB	JFMAMJ JASOND			ABCD I	JFMAMJ	JASOND					
	D	1977	KA	AB	JFMAMJ JASOND			ABCD I	JFMAMJ	JASOND					
	D	1978	A	AB	JFMAMJ JASOND			ABCD I	JFMAMJ	JASOND					
	D	1979	A	AB	JFMAMJ JASOND										
	D	1980	A	AB	JFMAMJ JASOND										
	D	1981	A	C	JFMAMJ JASOND										
PARAMARIBO	D	1957	KA	ABCD	JASOND	ABC	JASOND								
PAB	D	1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD I	JFMAMJ	JASOND					
(005.81 304.78)	D	1959	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ	JASOND					
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ	JASOND					
	D	1961	A	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ	JASOND					
	D	1962	A	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ	JASOND					
	D	1963	A	ABCD	JFMAMJ JASOND			A C I	JFMAMJ	JASOND					
	D	1964	A	ABCD	JFMAMJ JASOND	ABC	JASOND	ABCDEI	JFMAMJ	JASOND	AB E	JFMAMJ	JASOND	A	J SOND
	D	1965	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ	JASOND	AB E	JFMAMJ	@ASOND	A	JFMAMJ JASOND
	D	1966	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ	JASOND	AB E	JFMAMJ	JASOND	A	JFMAMJ J ND
	D	1967	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ	JASOND	AB E		ASOND	A	ASO D
	D	1968	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ	JASOND	AB E	JFMAMJ	JASON	A	JF AMJ

OBSERVATORY	COMP	YEAR	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
PARAMARIBO	D	1969	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JASO	A	JASO
PAB	D	1970	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(005.81 304.78)	D	1971	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1972	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1973	A	AB D	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1974	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1975		ABCD	JFMAMJ			ABCD	JFMAMJ				
PELLY BAY	D	1977										A	JASOND*
PEB	D	1978										A	JF AMJ JASOND*
(068.53 270.48)	D	1979										A	JFM *
PENANG	D	1976	A					ABCD	MJ JASOND				
PNN	D	1977						A CD	JFMAMJ JASOND				
(004.47 100.15)													
	D	1979						A C	SOND				
	D	1980						A C	JF				
PENDELI	D	1959	KA					A	JFMAMJ JASOND				
PEG	D	1960	KA					A	JFMAMJ JASOND				
(038.05 23.86)	D	1961	K	A	SOND			A	JFMAMJ JASOND				
	D	1962	K	A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1963	K	A	JFMAMJ JASOND								
	D	1964	K	A	JFMAMJ JASOND								
	D	1965	K	A	JFMAMJ JASOND								
	D	1966	K	A	JFMAMJ JASOND								
	D	1967	K	A	JFMAMJ JASOND								
	D	1968	K	A	JFMAMJ JASOND								
	D	1969	K	A	JFMAMJ JASOND								
	D	1970	K	A	JFMAMJ JASOND								
	D	1971	K	A CD	JFMAMJ JASOND								
	D	1972	K	A C	JFMAMJ JASOND								
	D	1973	K	A	JFMAMJ JASOND								
	D	1974	K	A	JFMAMJ JASOND								
	D	1975	K	A	JFMAMJ JASOND								
	D	1976	K	A	JFMAMJ JASOND								
	D	1977	K	A	JFMAMJ JASOND								
	D	1978	K	A	JFMAMJ JASOND								
	D	1979	K	A	JFMAMJ JASOND								
	D	1980	K	A	JFMAMJ JASOND								
	D	1981	K	A	JFMAMJ JASOND								
	D	1982	K										
	D	1983	K										
	D	1984	K										
PETROPAVLOVSK	D	1957	K			ABC	ASOND	A	ASOND				
PET	D	1958	K			ABC	JFMAMJ JASOND	A	JFMA JA				
(052.90 158.43)	D	1959	K			ABC	JFMAMJ JASOND	A	JFMAMJ JASOND				
	D	1960	K			ABC	JFMAMJ JASOND	A	JFMAMJ JASOND				
	D	1961	K			ABC	JFMAMJ JASOND						
	D	1962	K			ABC	JFMAMJ JASOND						
	D	1963	K			ABC	JFMAMJ JASOND						
	D	1964	K			ABC	JFMAMJ JASOND						
	D	1965	K			ABC	JFMA						
	D	1966	K										

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
PETROPAVLOVSK	D	1967	K										
PET	D	1968	K	AB	JASOND			AB	JASOND				
(052.90 158.43)	D	1969	KA	AB	JFMAMJ JASOND	A C	J	AB	JFMAMJ JASOND				
	D	1970	KA	AB	JFMAMJ JASOND			AB	JFMAMJ				
	D	1971	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1972	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1973	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1974	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JAS			AB D	JFMAMJ JA				
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1983	K		JFMAMJ JASOND				JFMAMJ JASOND				
	D	1984	K										
PETSAMO	D	1932						A	ASOND				
PTS	D	1933						A	JFMAMJ JA				
(069.53 031.25)													
PILAR	D	1940	KA					A I	JFMAMJ JASOND				
PIL	D	1941	KA					A I	JFMAMJ JASOND				
(-31.67 296.12)	D	1942	KA					A I	JFMAMJ JASOND				
	D	1943	KA					A I	JFMAMJ JASOND				
	D	1944	KA					A I	JFMAMJ JASOND				
	D	1945	KA					A I	JFMAMJ JASOND				
	D	1946	KA					A I	JFMAMJ JASOND				
	D	1947	KA					A I	JFMAMJ JASOND				
	D	1948	KA					A I	JFMAMJ JASOND				
	D	1949	KA					A I	JFMAMJ JASOND				
	D	1950	KA					A I	JFMAMJ JASOND				
	D	1951	KA					A	JFMAMJ JASON				
	D	1952	A										
	D	1953	A										
	D	1954	A										
	D	1955	A										
	D	1956	KA										
	D	1957	KA	A	JASOND			AB DE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1958	KA	A	JFMAMJ JASOND			AB DE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1959	KA	A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1964	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	OND
	D	1965	KA	ABCD	JFMAMJ JASOND			ABC E	JFMAMJ JASOND	AB E	JF AMJ JASOND	A	J JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ	A	JFMAMJ

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY	MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
PILAR	D	1969	KA	A	JFMAMJ JASOND			AB I	JFMAMJ	JASOND				
PIL	D	1970	KA	A	JFMAMJ JASOND			AB I	JFMAMJ	JASOND				
(-31.67 296.12)	D	1971	KA	A	JFMAMJ JASOND									
	D	1972	KA	A	JFMAMJ JASOND			A	JFMAMJ	JASOND				
	D	1973	KA	A	JFMAMJ JASOND			A	JFMAMJ	JASOND				
	D	1974	KA	A	JFMAMJ JASOND			A	JFMAMJ	JASOND				
	D	1975	KA	A	JFMAMJ JASOND			A	JFMAMJ	JASON				
	D	1976	KA											
	D	1977	KA	ABC	J			BC		J				
PIONERSKAYA	D	1957	KA	ABCD	JASOND			ABCD		JASOND				
PIO	D	1958	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ	JASOND				
(-69.73 95.50)														
	D	1971		ABC	JFMAMJ JASOND			ABC	JFMAMJ	JASOND				
	D	1972		ABC	JF			ABC	JF					
PLAISANCE	D	1966	A	AB	JFMAMJ JASOND									
PLS														
(-20.43 57.67)														
PLATEAU	D	1966	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ	JASOND	AB E	FMAMJ	JASOND	
PTU	D	1967	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ	JASOND	AB E	JFMAMJ	JASOND	
(-79.25 40.50)	D	1968	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ	JASOND	AB E	JFMAMJ	JASON	
POLA	D	1892	A					A	JFMAMJ	JASOND				
POL														
(044.86 13.85	D	1896	A					A	JFMAMJ	JASOND				
	D	1897	A					A	JFMAMJ	JASOND				
	D	1898	A					A	JFMAMJ	JASOND				
	D	1899	A					A	JFMAMJ	JASOND				
	D	1900	A					A	JFMAMJ	JASOND				
	D	1901	A					A	JFMAMJ	JASOND				
	D	1902	A					A	JFMAMJ	JASOND				
	D	1903	A					A	JFMAMJ	JASOND				
	D	1904	A					A	JFMAMJ	JASOND				
	D	1905	A					A	JFMAMJ	JASOND				
	D	1906	A					A	JFMAMJ	JASOND				
	D	1907	A					A	JFMAMJ	JASOND				
	D	1908	A					A	JFMAMJ	JASOND				
	D	1909	A					A	JFMAMJ	JASOND				
	D	1910	A					A	JFMAMJ	JASOND				
	D	1911	A					A	JFMAMJ	JASOND				
	D	1912	A					A	JFMAMJ	JASOND				
	D	1913	A					A	JFMAMJ	JASOND				
	D	1914	A					A	JFMAMJ	JASOND				
	D	1915	A					A	JFMAMJ	JASOND				
	D	1916	A					A	JFMAMJ	JASOND				
	D	1917	A					A	JFMAMJ	JASOND				
	D	1918	A					A	JFMAMJ	JASOND				
	D	1919	A					A	JFMAMJ	JASOND				
	D	1920						A	JFMAMJ	JASOND				
	D	1921	A					A	JFMAMJ	JASOND				
	D	1922	A					A	JFMAMJ	JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
PORT ALFRED	D	1972	K										
CZT	D	1973	K										
(-46.43 51.87)	D	1974	KA					ABCD I	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1975	KA					ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1976	KA					A CD I	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1977	KA					ABCD I	JFMAMJ JASOND				
	D	1978	KA					ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1979	KA					ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1980	KA	A D	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1981	KA	A D	JFMAMJ JASOND			A D	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1982	A					A	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1983						A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
PORT MORESBY	D	1958	KA	ABCD	FMAMJ JASOND			ABCD	AMJ JASOND				
PMG	D	1959	KA	ABCD	JFMAMJ JASOND	ABC	OND	A CD	JFMAMJ JASOND				
(-9.41 147.15)	D	1960	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	A CD	JFMAMJ JASOND				
	D	1961	KA	ABCD	JFMAMJ JASOND			A CDE	JFMAMJ JASOND	AB E	ASOND	A	ASOND
	D	1962	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	A CD	JFMAMJ JASOND				
	D	1963	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	A CD	JFMAMJ JASOND				
	D	1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	J SOND
	D	1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	A DE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1967	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFM SO D
	D	1968	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ	A	JF AMJ
	D	1969	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	A DE	JFMAMJ JASOND	AB EI	JASO	A	JASO
	D	1970	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	A DE	JFMAMJ JASOND	AB EI	JFM	A	JFM
	D	1971	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND						
	D	1972	KA	ABCD	JFMAMJ JASOND								
	D	1973	KA	ABCD	JFMAMJ JASOND								
	D	1974	KA	ABCD	JFMAMJ JASOND								
	D	1975	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1976	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1977	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1978	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1979	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1980	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ	AB	JFMAMJ		
	D	1981	KA	A	JFMAMJ JASOND			A	JFMAMJ J	A	JFMAMJ		
	D	1982	KA	ABCD	JFMAMJ JASOND								
	D	1983	KA										
	D	1984	K										
	D	1985	K										
PORT-AUX-FRANCAI	D	1957	A	ABCD	OND			ABCD	OND				
KGL	D	1958	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
(-49.35 70.20)	D	1959	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1962	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1964	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1965	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JF ON
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFM J J ND
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		

OBSERVATORY	YEAR COMP	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
PORT-AUX-FRANCAI	D 1968	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
KGL	D 1969	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
(-49.35 70.20)	D 1970	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1971	KA	ABCD	JFMAMJ JASOND			A CD I	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1972	A	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1973	A	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1975	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1976	KA	ABCD	JFMAMJ JASOND			A CD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1977	KA	A CD	JFMAMJ JASOND			A CD I	JFMAMJ JASOND				
	D 1978	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1979	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1981	KA	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D 1982	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1983		C	F			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
POTSDAM	D 1890	A					A	JFMAMJ JASOND				
POT	D 1891	A					A	JFMAMJ JASOND				
(052.38 13.06)	D 1892	A					A	JFMAMJ JASOND				
	D 1893	A					A	JFMAMJ JASOND				
	D 1894	A					A	JFMAMJ JASOND				
	D 1895	A					A	JFMAMJ JASOND				
	D 1896	A					A	JFMAMJ JASOND				
	D 1897	A					A	JFMAMJ JASOND				
	D 1898	A					A	JFMAMJ JASOND				
	D 1899	A					A	JFMAMJ JASOND				
	D 1900	A					A	JFMAMJ JASOND				
	D 1901	A					A	JFMAMJ JASOND				
	D 1902	A					A	JFMAMJ JASOND				
	D 1903	A					A	JFMAMJ JASOND				
	D 1904	A					A	JFMAMJ JASOND				
	D 1905	A					A	JFMAMJ JASOND				
	D 1906	A					A	JFMAMJ JASOND				
	D 1907	A					A	JFMAMJ JASOND				
PRICE	D 1957		ABCD	J JASOND			ABCDE	J JASOND				
PCU	D 1958	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND				
(039.60 249.17)	D 1959		AB D	J			AB DE	J				
PRUHONICE	D 1952	KA					A	JFMAMJ JASOND				
PRU	D 1953	KA					A	JFMAMJ JASOND				
(049.99 14.55)	D 1954	KA					A C I	JFMAMJ JASOND				
	D 1955	KA					A I	JFMAMJ JASOND				
	D 1956	KA					A I	JFMAMJ JASOND				
	D 1957	KA	ABCD	JASOND			ABCD I	JFMAMJ JASOND				
	D 1958	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1959	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1960	KA	AB D	JFMAMJ JASOND			AB D I	JFMAMJ JASOND				
	D 1961	KA					AB D I	JFMAMJ JASOND				
	D 1962	KA					AB D I	JFMAMJ JASOND				
	D 1963	KA					AB D I	JFMAMJ JASOND				
	D 1964	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1965	KA					AB D	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
PRUHONICE	D 1966	KA					AB	D I JFMAMJ JASOND				
PRU	D 1967	KA					AB	D I JFMAMJ JASOND				
(049.99 14.55)	D 1968	KA					AB	D I JFMAMJ JASOND				
	D 1969	KA					ABCD	I JFMAMJ JASOND				
	D 1970	KA					AB	D I JFMAMJ JASOND				
	D 1971	KA					AB	D JFMAMJ JASOND				
	D 1972	KA					AB	D I JFMAMJ JASOND				
	D 1973							I JFMAMJ JASOND				
QUETTA	D 1953	A					A	OND				
QUE	D 1954	A					A	JFMAMJ JASOND				
(030.19 66.95)	D 1955	KA					A	JFMAMJ JASOND				
	D 1956	KA					A	JFMAMJ JASOND				
	D 1957	KA										
	D 1958	KA										
	D 1959	KA					ABCD	JFMAMJ JASOND				
	D 1960	KA					ABCD	JFMAMJ JASOND				
	D 1961	KA					ABCD	JFMAMJ JASOND				
	D 1962	KA					ABCD	JFMAMJ JASOND				
	D 1963	KA					A CD	JFMAMJ JASOND				
	D 1964	KA					A CD	JFMAMJ JASOND				
	D 1965	KA					ABCD	JFMAMJ JASOND				
	D 1966	KA					ABCD	JFMAMJ JASOND				
	D 1967	KA										
	D 1968	KA										
	D 1969	KA										
	D 1970	KA										
	D 1971	KA										
	D 1972	KA										
	D 1973	KA										
	D 1974	KA										
	D 1975	KA										
	D 1976	K										
	D 1977	K										
	D 1978	KA										
	D 1979	KA										
	D 1980	KA										
	D 1984	K										
	D 1985	K										
RANKIN INLET	D 1973		A	MJ J							A	AS ND*
RIT	D 1974		ABC	J JASOND							A	MAMJ JASOND*
(062.80 267.67)	D 1975		ABC	JFMAMJ JASOND							A	JFMAMJ JASOND*
	D 1976		ABC	JFMAMJ JASOND							A	JFMA *
	D 1977										A	OND*
	D 1978										A	JF AM *
	D 1979											
	D 1980											
	D 1981											
	D 1982											
RESOLUTE BAY	D 1952	KA										
RES	D 1953	KA	A D	ND								
(074.70 265.10)												

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
RESOLUTE BAY	D	1954	KA	AB D	JFMAMJ JASOND								
RES	D	1955	KA	AB D	JFMAMJ JASOND								
(074.70 265.10)	D	1956	A	AB D	JFMAMJ JASOND								
	D	1957	A	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1958	A	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1959	A	AB D	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D	1960	A	AB	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1961	A	AB	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1962	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1963	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1964	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	SOND
	D	1965	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ ND
	D	1967	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	ASOND
	D	1968	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	AB	JFMAMJ
	D	1969	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	J JASO
	D	1970	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFM
	D	1971	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1972	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	X	1973	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JASOND*
	X	1974	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1975	A	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1976	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1977	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1978	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1979	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1980	A	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1981	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1982	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1983	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1984		ABCD	JFMAMJ JAS			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
RIO DE JANEIRO	D	1924						C	JFMAMJ JASOND				
RDJ	D	1925						C	JFMAMJ JASOND				
(-22.91 316.83)													
ROBURENT	D	1964	KA	A	JASOND			AB D I	SOND	A	SOND		
ROB	D	1965	KA	A	JFMAMJ JASOND			AB DEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
(044.30 7.89)	D	1966	KA	A	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1967	KA	A	JFMAMJ JASOND			AB D I	JFMAMJ JASOND				
	D	1968	KA	A	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1969	KA	A	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1970	KA	A	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1971	KA	A	JFMAMJ JASOND			AB D I	JFMAMJ JASOND				
	D	1972	KA	A	JFMAMJ JASOND			AB D I	JFMAMJ JASOND				
	D	1973	KA	A	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1974		A	JFMAMJ JASOND								
	D	1975		A	JFMAMJ JASOND								
	D	1976		A	JFMAMJ JASOND								
	D	1977		A	JFMAMJ JASOND								
	D	1978		A	JFMAMJ JASOND								
	D	1979		A	JFMAMJ JASOND								

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
ROBURENT ROB (44.30 7.89)	D 1980	A	A	JFMAMJ JASOND								
ROI BAUDOUIN RBD	D 1958	A					A	MJ JASOND				
	D 1959	A					A	JF				
(-70.43 24.30)	D 1964	KA	ABCD	J JASOND			AB D I	J JASOND	A	I J		
	D 1965	KA	ABCD	JFMAMJ JASOND			AB DE	JFMAMJ JASOND	A	EI JFMAMJ JASOND		JF
	D 1966	KA	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND	A	M	A	M
RUDE SKOV RSV (055.84 12.46)	D 1927	A					A	JFMAMJ JASOND				
	D 1928	A					A	JFMAMJ JASOND				
	D 1929	A					A	JFMAMJ JASOND				
	D 1930	A					A	JFMAMJ JASOND				
	D 1931	A					A	JFMAMJ JASOND				
	D 1932	A					A C I	JFMAMJ JASOND				
	D 1933	A					A C	JFMAMJ JASOND				
	D 1934	A					A I	JFMAMJ JASOND				
	D 1935	A					A I	JFMAMJ JASOND				
	D 1936	A					A	JFMAMJ JASOND				
	D 1937	A					A I	JFMAMJ JASOND				
	D 1938	A					A I	JFMAMJ JASOND				
	D 1939	A					A I	JFMAMJ JASOND				
	D 1940	KA					A I	JFMAMJ JASOND				
	D 1941	KA					A I	JFMAMJ JASOND				
	D 1942	KA					A I	JFMAMJ JASOND				
	D 1943	KA					A I	JFMAMJ JASOND				
	D 1944	KA					A I	JFMAMJ JASOND				
	D 1945	KA					A I	JFMAMJ JASOND				
	D 1946	KA					A I	JFMAMJ JASOND				
	D 1947	KA					A I	JFMAMJ JASOND				
	D 1948	KA					A I	JFMAMJ JASOND				
	D 1949	KA					A I	JFMAMJ JASOND				
	D 1950	KA					A I	JFMAMJ JASOND				
	D 1951	KA					A C I	JFMAMJ JASOND				
	D 1952	KA					A C I	JFMAMJ JASOND				
	D 1953	KA					A I	JFMAMJ JASOND				
	D 1954	KA					A C I	JFMAMJ JASOND				
	D 1955	KA					A C	JFMAMJ JASOND				
	D 1956	KA										
	D 1957	KA	ABCD	JASOND			ABCD I	JFMAMJ JASOND				
	D 1958	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D 1959	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	B	JFMAMJ JASOND		
	D 1960	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	B	JFMAMJ JASOND		
	D 1961	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	B	JFMAMJ JASOND		
	D 1962	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	B	JFMAMJ JASOND		
	D 1963	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	B	JFMAMJ JASOND		
	D 1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	J
	D 1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1966	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB I	JFMAMJ JASOND	A	M
	D 1967	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	B	JFMAMJ JASOND		

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
RUDE SKOV	D	1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JA@OND	AB EI	JFMAMJ JASOND	A	JFMA
RSV	D	1969	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	B	JFMAMJ JASOND		
(055.84 12.46)	D	1970	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB I	JFMAMJ JASOND	A	M
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	B	JFMAMJ JASOND		
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	B	JFMAMJ JASOND		
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	B	JFMAMJ JASOND		
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	B	JFMAMJ JASOND		
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	B	JFMAMJ JASOND		
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	B	JFMAMJ JASOND		
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	B	JFMAMJ JASOND		
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	B	JFMAMJ JASOND		
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND								
	D	1982	K										
	D	1983	K										
	D	1984	K										
SABHAWALA	D	1964	A					A E	JFMAMJ JASOND				
SAB	D	1965	KA					AB E	JFMAMJ JASOND				
(030.36 77.80)	D	1966	A					AB E	JFMAMJ JASOND				
	D	1967	A					A	JFMAMJ JASOND				
	D	1968	A					A	JFMAMJ JASOND				
	D	1969	A					A	JFMAMJ JASOND				
	D	1970	A					A	JFMAMJ JASOND				
	D	1971	KA					A CD	JFMAMJ JASOND				
	D	1972	KA					ABCD	JFMAMJ JASOND	E			
	D	1973	KA					ABCD	JFMAMJ JASOND	E			
	D	1974	KA					ABCD	JFMAMJ JASOND	E			
	D	1975	A					ABCD	JFMAMJ JASOND				
	D	1976	A					ABCD	JFMAMJ JASOND				
	D	1977	KA					ABCD	JFMAMJ JASOND				
	D	1978	KA					ABCD	JFMAMJ JASOND				
	D	1979	KA					B D	JFMAMJ JASOND				
	D	1980	A					ABCD	JFMAMJ JASOND				
SACHS HARBOUR	D	1977										A	SOND*
SAH	D	1978										A	MAMJ JASOND*
(072.00 235.00)	D	1979										A	JFMAMJ JASOND*
	D	1980										A	JFMAMJ JASOND*
	D	1981										A	JFMAMJ JASOND*
	D	1982										A	JFMAMJ JASOND*
	D	1983										A	JFMAMJ JASOND*
SAN FERNANDO	D	1904	A					A	JFMAMJ JASOND				
SFS	D	1905	A					A	JFMAMJ JASOND				
(036.46 353.80)	D	1906	A					A	JFMAMJ JASOND				
	D	1907	A					A	JFMAMJ JASOND				
	D	1908	A					A	JFMAMJ JASOND				
	D	1909	A					A	JFMAMJ JASOND				
	D	1910	A					A	JFMAMJ JASOND				
	D	1911	A					A	JFMAMJ JASOND				
	D	1912	A					A	JFMAMJ JASOND				
	D	1920	A					A	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
SAN FERNANDO	D 1921	A					A	JFMAMJ JASOND				
SFS	D 1922	A					A	JFMAMJ JASOND				
(036.46 353.80)	D 1923	A	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1924	A	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1925	A	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1926	A	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1927	A	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1928	A	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1929	A	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1930	A	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1931	A	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1932	A	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1933	A	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1934	A	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1935	A	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1936	A	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1937	A	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1938	A	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1939	A	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1940	KA	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1941	KA	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1942	KA	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1943	KA	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1944	KA	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1945	KA	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1946	KA	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1947	KA	D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1948	KA	CD	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1949	KA	CD	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1950	KA	CD	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1951	KA	CD	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1952	KA	CD	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1953	KA	CD	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1954	KA	CD	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D 1955	KA	CD	JFMAMJ JASOND			A CD	JFMAMJ JASOND				
	D 1956	KA	CD	JFMAMJ JASOND			A CD	JFMAMJ JASOND				
	D 1957	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1958	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1959	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1961	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1966	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	M	A	M
	D 1967	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1968	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1969	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
SAN FERNANDO	D 1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
SFS	D 1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(036.46 353.80)	D 1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1978	KA										
	D 1979	K										
	D 1980	K										
	D 1981	K										
SAN JUAN	D 1926	A	A	FM SO			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
SJG	D 1927	A	A	O			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
(018.38 293.88)	D 1928	A	A	M JA O			A C E	JFMAMJ JASOND	AB E	FMAMJ JASOND		
	D 1929	A	A	FM JA N			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1930	A	A	M MJ S D			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1931	A	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1932	A	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1933	A	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1934	A	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1935	A	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1936	A	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1937	A	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1938	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1939	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1940	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1941	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1942	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1943	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1944	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1945	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1946	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1947	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1948	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1949	KA	A	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1950	KA	A	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1951	KA	A	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1952	KA	A	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1953	KA	A	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1954	KA	A	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1955	KA	A	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1956	KA	A	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1957	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1958	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1959	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1960	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1961	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	ASOND
	D 1962	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	OND
	D 1963	KA	ABCD	JFMAMJ JASOND			A CDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1964	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1965	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
(018.11 293.85)	D 1966	KA	ABCD	JFMAMJ JASOND	ABC	ASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
SAN JUAN	D	1967	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
SJG	D	1968	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
(018.11 293.85)	D	1969	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMA
	D	1970	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1971	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1972	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1973	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1974	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1975	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1976	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1977	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1978	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB I	JFMAMJ JASOND	A	M ND*
	D	1979	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1980	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	F AMJ SO D*
	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND*
	D	1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND*
	D	1983	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND*
SANAE	D	1961						A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
SNA	D	1962	A					ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
(-70.30 357.63)	D	1963	A					ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1964	KA					ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1965	A					ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1966	A					ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1967	A					ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1968	A					ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1969	A					BB DEI	JFMAMJ JASOND	ABC EI	JFMAMJ JASOND		
	D	1970	KA					ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1971	A					ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1972	A					ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1973	A					ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1974	A					ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1975	A					ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1976	A					ABCD	JFMAMJ JASOND				
	D	1977	A					ABCD	JFMAMJ JASOND				
	D	1978	A					A CD	JFMAMJ JASOND				
	D	1979	A					ABCD	JFMAMJ JASOND				
	D	1980	A					ABCD	JFMAMJ JASOND				
(-70.31 357.60)	D	1981	A					ABCD	JFMAMJ JASOND				
	D	1982	A					ABCD	JFMAMJ JASOND				
	D	1983	A					ABCD	JFMAMJ JASOND				
SAO MIGUEL	D	1932	A					A C	ASOND				
SMG	D	1933	A					A C	JFMAMJ JA				
(037.77 334.35)													
	D	1951	KA										
	D	1952	KA										
	D	1953	KA										
	D	1954	KA										
	D	1955	KA										
	D	1956	KA										
	D	1957	KA	A	JASOND								
	D	1958	KA	A	JFMAMJ JASOND								

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
SAO MIGUEL	D	1959	KA	A	JFMAMJ J								
SMG	D	1960	KA	A	JFMAMJ JASOND			A	JFMAMJ JA D				
(037.77 334.35)	D	1961	KA	A	JFMAMJ JASOND			A	JF				
	D	1962	KA	A	JFMAMJ JASOND								
	D	1963	KA										
	D	1964	KA	ABCD	JFMAMJ JASOND								
	D	1965	KA	ABCD	JFMAMJ JASOND			E	SON	AB E	SON	A	ON
	D	1966	KA	A	JFMAMJ								
	D	1967	KA	A	JFMAMJ JASOND								
	D	1968	KA	A	JFMAMJ JASOND								
	D	1969	KA										
	D	1970	KA										
	D	1971	KA	A	JFMAMJ JASOND								
	D	1972	KA	A	JFMAMJ JASOND								
	D	1973	KA	A	JFMAMJ JASOND								
	D	1974	KA	A	JFMAMJ JASOND								
	D	1975	KA	A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1976	KA	A	JFMAMJ JASOND								
	D	1977	KA	A	JFMAMJ JASOND								
	D	1978	K										
	D	1979	K										
	D	1980	K										
SCORESBYSUND	D	1932						A	D				
SCO	D	1933						A	JFMAMJ JA				
(070.48 338.03)													
SCOTT BASE	D	1957	KA	ABCD	JASOND	ABC	JASOND	ABCD	JASOND				
SBA	D	1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
(-77.85 166.78)	D	1959	KA										
	D	1960	KA										
	D	1961	K										
	D	1962	K										
	D	1963	K										
	D	1964	KA	ABCD	JFMAMJ JASOND			AB E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1965	KA	ABCD	JFMAMJ JASOND			AB E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1966	KA	ABCD	JFMAMJ JASOND								
	D	1967	KA										
	D	1968	KA	ABCD	JFMAMJ JASOND								
	D	1969	KA										
	D	1970	KA										
	D	1971	KA										
	D	1972	KA										
	D	1973	KA										
	D	1974	KA										
	D	1975	KA										
	D	1976	KA	ABCD	JFMAMJ JASOND			D	JFMAMJ JASOND				
	D	1977	KA										
	D	1978	KA										
	D	1979	KA										
	D	1980	K										
	D	1981	K										

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
SCOTT BASE	D 1983	K										
SBA	D 1984	K										
(-77.85 166.78)	D 1985	K										
SEDDIN	D 1908	A					A	JFMAMJ JASOND				
SED	D 1909	A					A	JFMAMJ JASOND				
(052.28 13.01)	D 1910	A					A	JFMAMJ JASOND				
	D 1911	A					A	JFMAMJ JASOND				
	D 1912	A					A	JFMAMJ JASOND				
	D 1913	A					A	JFMAMJ JASOND				
	D 1914	A					A	JFMAMJ JASOND				
	D 1915	A					A	JFMAMJ JASOND				
	D 1916	A					A	JFMAMJ JASOND				
SEOUL	D 1965						D	MAMJ JASOND				
SEO												
(038.58 127.05)												
SEYKHA	D 1973		ABCD	ND								
SEY	D 1974		ABCD	JFMAMJ JASOND								
(070.10 072.50)	D 1975		ABCD	JFMAMJ JASOND								
	D 1976		ABCD	JFMAMJ JASOND								
	D 1977		ABCD	JFMAMJ JASOND								
	D 1978		ABCD	JFMAMJ JASOND								
SHESHAN	D 1933						C	JFMAMJ JASOND				
SSH												
(031.10 121.19)	D 1936	A					C	JFMAMJ JASOND				
	D 1937	A					C	JFMAMJ JASOND				
	D 1947	A					A C	JFMAMJ JASOND				
	D 1948	A					A C	JFMAMJ JASOND				
	D 1949	A					A C	JFMAMJ JASOND				
	D 1950	A					ABCD	JFMAMJ JASOND				
	D 1951	A					ABCD	JFMAMJ JASOND				
	D 1952	A					ABCD	JFMAMJ JASOND				
	D 1953	A					ABCD	JFMAMJ JASOND				
	D 1954	A					ABCD	JFMAMJ JASOND				
	D 1955	A					ABCD	JFMAMJ JASOND				
	D 1956	A					ABCD	JFMAMJ JASOND				
	D 1957	A					ABCD	JFMAMJ JASOND				
	D 1958	A					ABCD	JFMAMJ JASOND				
	D 1959	A					ABCD	JFMAMJ JASOND				
	D 1960	A					ABCD	JFMAMJ JASOND				
	D 1961	A					ABCD	JFMAMJ JASOND				
	D 1962	A					ABCD	JFMAMJ JASOND				
	D 1963	A					ABCD	JFMAMJ JASOND				
	D 1964	A					ABCD	JFMAMJ JASOND				
	D 1965	A					ABCD	JFMAMJ JASOND				
	D 1966	A					ABCD	JFMAMJ JASOND				
	D 1967	A					ABCD	JFMAMJ JASOND				
	D 1968	A					ABCD	JFMAMJ JASOND				
	D 1969	A					ABCD	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
SHESHAN	D 1970	A						ABCD JFMAMJ JASOND				
SSH	D 1971	A						ABCD JFMAMJ JASOND				
(031.10 121.19)	D 1972	A						ABCD JFMAMJ JASOND				
	D 1973	A						ABCD JFMAMJ JASOND				
	D 1974	A						ABCD JFMAMJ JASOND				
	D 1975	A						A D JFMAMJ JASOND				
	D 1976	A						A D JFMAMJ JASOND				
	D 1977	A						A D JFMAMJ JASOND				
	D 1978	A						A JFMAMJ JASOND				
	D 1979	A						ABC JFMAMJ JASOND				
	D 1980	A						ABC JFMAMJ JASOND				
	D 1981	A						ABC JFMAMJ JASOND				
SIMFEROPOL	D 1957				ABC	JASOND						
SIM	D 1958				ABC	JFMAMJ JASOND						
(044.83 34.07)	D 1959	A			ABC	JFMAMJ JASOND						
SIMOSATO	D 1954	KA						A CD SOND				
SSO	D 1955	KA						A CD I JFMAMJ JASOND				
(033.58 135.94)	D 1956	KA						A CD I JFMAMJ JASOND				
	D 1957	KA	ABCD	JASOND	ABC	JASOND		ABCD I JFMAMJ JASOND				
	D 1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCD I JFMAMJ JASOND				
	D 1959	KA	B	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCD I JFMAMJ JASOND				
	D 1960	KA			ABC	JFMAMJ JASOND		ABCD I JFMAMJ JASOND				
	D 1961	KA			ABC	JFMAMJ JASOND		ABCD I JFMAMJ JASOND				
	D 1962	KA			ABC	JFMAMJ JASOND		ABCD I JFMAMJ JASOND				
	D 1963	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCD I JFMAMJ JASOND				
	D 1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCDE JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D 1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCDE JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D 1966	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCD JFMAMJ JASOND				
	D 1967	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCD I JFMAMJ JASOND				
	D 1968	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCD I JFMAMJ JASOND				
	D 1969	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCD I JFMAMJ JASOND				
	D 1970	KA	ABCD	JFMAMJ JASOND	B	JFMAMJ JASOND		ABCD I JFMAMJ JASOND				
	D 1971	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCD I JFMAMJ JASOND				
	D 1972	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCD I JFMAMJ JASOND				
	D 1973	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCD I JFMAMJ JASOND				
	D 1974	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCD I JFMAMJ JASOND				
	D 1975	KA	ABCD	JFMAMJ JASOND				ABCD I JFMAMJ JASOND				
	D 1976	KA	ABCD	JFMAMJ JASOND				ABCD JFMAMJ JASOND				
	D 1977	KA						ABCD I JFMAMJ JASOND				
	D 1978							ABC I JFMAMJ JASOND				
	D 1979		B	JFMAMJ JASOND								
SITKA	D 1902	A	A	AM J				A C E JFMAMJ JASOND	AB	E MAMJ JASOND		
SIT	D 1903	A	A	A J JASO D				A C E JFMAMJ JASOND	AB	E JFMAMJ JASOND		
(057.05 224.67)	D 1904	A	A	MAMJ JASON				A C E JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D 1905	A	A	FMA J JAS N				A E JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D 1906	A	A	F MJ JAS D				A E JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D 1907	A	A	JFM M JA ON				A C E JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D 1908	A	A	M JAS				A C E JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D 1909	A	A	M M ASO				A E JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D 1910	A	A	J MA ASO				A E JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D 1911	A	A	JFMA ASO D				A C E JFMAMJ JASOND	AB	E JFMAMJ JASOND		

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
SITKA	D 1912	A	A	MA AS D			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
SIT	D 1913	A	A	J MA SO			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(057.05 224.67)	D 1914	A	A	A J J SON			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1915	A	A	MA J ASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1916	A	A	J MAM JA ON			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1917	A	A	JF A J JASO D			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1918	A	A	MAMJ ASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1919	A	A	JF M ASO D			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1920	A	A	MAM S D			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1921	A	A	AM S N			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1922	A	A	J SO			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1923	A	A	M J SO			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1924	A	A	J MJ O			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1925	A	A	ASO			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1926	A	A	JFMA J SO			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1927	A	A	J MAM JA O			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1928	A	A	M JASO			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1929	A	A	FM JA N			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1930	A	A	MJ S D			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1931	A	A	J J SO			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1932	A	A	M M ASO			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1933	A	A	AM JAS			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1934	A	A	M M J S D			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1935	A	A	MAMJ J S			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1936	A	A	A J J OND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1937	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1938	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1939	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(057.06 224.68)	D 1940	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1941	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1942	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1943	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1944	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1945	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1946	KA	A C	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1947	KA	A	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1948	KA	A C	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1949	KA	A C	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1950	KA	A C	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1951	KA	A C	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1952	KA	A C	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1953	KA	A C	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1954	KA	A C	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1955	KA	A C	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1956	KA	A C	JFMAMJ JASOND			A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1957	KA	ABCD	JFMAMJ JASOND	ABC	JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1959	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1960	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1961	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1962	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
SITKA	D	1963	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
SIT	D	1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAM SOND
(057.06 224.68)	D	1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1967	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1968	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1969	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1970	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JF
	D	1971	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1972	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	A
	D	1973	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1974	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1979	KA	ABCD	JFMAMJ JASOND			A CD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1983	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
SLUTZK	D	1882	A					C	ASOND				
SLU	D	1883	A					C	JFMAMJ JA				
(059.69 39.49)	D	1932	A					C	JFMAMJ JASOND				
	D	1933	A					C	JFMAMJ JASOND				
SODANKYLA	D	1914	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
SOD	D	1915	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(067.37 26.65)	D	1916	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1917	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1918	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1919	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1920	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1921	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1922	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1923	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1924	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1925	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1926	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1927	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1928	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1929	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1930	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1931	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1932	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1933	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1934	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1935	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1936	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1937	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1938	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
SODANKYLA	D 1939	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
SOD	D 1940	KA					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(067.37 26.65)	D 1941	KA					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1942	KA					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1943	A					A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1944	A					A C E	JFMAMJ JASOND	AB E	JFMAMJ JAS		
	D 1945	A										
(067.37 26.63)	D 1946	A					A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1947	KA					A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1948	KA					A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1949	KA					A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1950	KA					A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1951	KA					A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1952	KA					A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1953	KA					A C E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1954	KA					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1955	KA					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1956	KA					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1957	KAQ	ABCD	J JASOND	ABC	JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1958	KAQ	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1959	KAQ	B D	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1960	KAQ					AB DE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1961	KAQ					AB DE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1962	KAQ					ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1963	KAQ					AB DE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1964	KAQ	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1965	KAQ	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1966	KAQ	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1967	KAQ	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	AB DE	JFMAMJ JASOND	AB E	JFMAM	A	JFMAM
	D 1968	KAQ	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	MJ JAS	A	J JAS
	D 1969	KAQ	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND				
	D 1970	KAQ	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D 1971	KAQ	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D 1972	KAQ	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	F	A	F
	D 1973	KAQ	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D 1974	KAQ	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D 1975	KAQ	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D 1976	KAQ	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D 1977	KAQ	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D 1978	KAQ	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D 1979	KAQ	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D 1980	KAQ	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D 1981	KAQ	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND*
	D 1982	KAQ	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D 1983	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1984	K Q	ABCD	JFMAMJ JASON			A	JF				
	D 1985	K Q	A	JF								
SOUTH GEORGIA	D 1975	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
SGE	D 1976	A	A CD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
(-54.28 323.52)	D 1977	A	A CD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1978	A	ABCD	JFMAMJ JASOND			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		

OBSERVATORY	YEAR	COMP	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
SOUTH GEORGIA	1979	D	A	ABCD	JFMAMJ JASOND			A C	JFMAMJ JASOND	AB	JFMAMJ JASOND		
SGE	1980	D	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
(-54.28 323.52)	1981	D	A	ABCD	JFMAMJ JASOND								
	1982	D		A	JFM								
SOUTH POLE	1957	D		BCD	J JASOND								
SPA	1958	D		BCD	JFMAMJ JASOND								
(-90.00 00.00)	1959	D	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASON		
	1960	D	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	FMAMJ JASOND		
	1961	D	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	1962	D	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFM MJ JA
	1963	D	KA	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	1964	D	KA	ABCD	JFMAMJ JASOND			ABCDE	MAMJ JASOND	AB E	MAMJ JASOND	A	MAMJ
	1965	D	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	1966	D	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	1967	D	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	1968	D	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	1969	D	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	1970	D	KA	AB D	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	1971	D	KA	A	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	1972	D	K	A D	JFMAMJ JASOND								
	1973	D	K	A D	JFMAMJ JASOND								
	1974	D	K	A	JFMAMJ JASO								
	1977	D		B	MAMJ JASOND								
	1978	D		B	JFMAMJ JASON								
SPITZBERGEN	1932	D						A	SOND				
SPB	1933	D						A	JFMAMJ JA				
(078.50 015.10)													
SREDNIKAN	1940	D	KA										
SRE	1941	D	KA										
(062.44 152.31)													
	1943	D	KA										
	1944	D	KA										
	1945	D	KA										
	1946	D	KA										
	1955	D	KA										
	1956	D	KA										
	1957	D	KA	ABCD	JASOND			ABCD	JASOND				
	1958	D	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	1959	D	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	1960	D	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	1961	D	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	1962	D	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	1963	D	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	1964	D	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	1965	D	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	1966	D	KA	ABCD	JFMAMJ JASO			ABCD	JFMAMJ JASOND				
	1967	D	KA										
	1968	D	K										

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
SREDNIKAN	D	1969	K										
SRE	D	1970	K										
(062.44 152.31)	D	1971	K										
ST JOHNS	D	1968	KA	ABCD	JASOND			ABCDE	ASOND	AB E	ASOND		
STJ	D	1969	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	D*
(047.59 307.32)	D	1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1971	KA	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
(047.60 307.32)	X	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1979	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1980	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1981	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1982	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1983	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1984		ABCD	JFMAMJ JAS			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
STONYHURST	D	1958		ABCD	MAMJ JASOND								
STO													
(053.85 357.53)	D	1960	K										
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1967	A					AB D	JFMAMJ JASOND	A	JFMAMJ JASOND		
SUKKERTOPPEN	D	1964		ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND						
SKT	D	1965		A CD	JFMAMJ JASOND	A C	JFMAMJ JASOND	A E	SON	AB E	SON	A	ON
(065.42 307.10)	D	1966		A	M			A	M	AB	M	A	M
SURLARI	D	1957	KA	AB D	J JASOND			ABCD	J JASOND				
SUA	D	1958	KA	AB D	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(044.68 26.25)	D	1959	KA	AB D	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1960	KA	AB D	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1961	KA	AB D	JFMAMJ JASOND			AB DE	JFMAMJ JASOND	AB E	ASOND	A	ASOND
	D	1962	KA	AB D	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1963	KA	AB D	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1964	KA	AB D	JFMAMJ JASOND			AB DE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	J SOND
	D	1965	KA	AB D	JFMAMJ JASOND			AB DE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFM
	D	1966	KA	AB D	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1967	KA	AB D	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1968	KA	AB D	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1969	KA	AB D	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1970	KA	AB D	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1971	KA	AB D	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1972	KA	AB D	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1973	KA	AB D	JFMAMJ JASOND			AB D	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY	MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
SURLARI	D	1974	KA	A	JFMAMJ			AB D	JFMAMJ	JASOND				
SUA	D	1975	KA					AB D	JFMAMJ	JASOND				
(044.68 26.25)	D	1976	KA					AB D	JFMAMJ	JASOND				
	D	1977	KA					AB D	JFMAMJ	JASOND				
	D	1978	KA					AB D	JFMAMJ	JASOND				
	D	1979	KA					ABCD	JFMAMJ	JASOND				
	D	1980	KA					ABCD	JFMAMJ	JASOND				
	D	1981	K					ABCD	JFMAMJ	JASOND				
	D	1982	K					ABCD	JFMAMJ	JASOND				
	D	1983	K					ABCD	JFMAMJ	JASOND				
SVERDLOVSK	D	1932	A					C	JFMAMJ	JASOND				
SVD														
(056.73 61.07)	D	1939	KA											
	D	1940	KA											
	D	1941	KA											
	D	1942	KA											
	D	1943	KA											
	D	1944	KA											
	D	1945	KA											
	D	1946	KA											
	D	1947	KA											
	D	1955	KA											
	D	1956	KA											
	D	1957	KA	ABCD	JASOND			ABCD	JASOND		AB	JFMAMJ JASOND		
	D	1958	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ	JASOND	AB	JFMAMJ JASOND		
	D	1959	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ	JASOND	AB	JFMAMJ JASOND		
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ	JASOND	AB	JFMAMJ JASOND		
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ	JASOND	AB	JFMAMJ JASOND		
	D	1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ	JASOND	AB	JFMAMJ JASOND		
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ	JASOND	AB	JFMAMJ JASOND		
	D	1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ	JASOND	AB E	JFMAMJ JASOND	A	J SOND
	D	1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ	JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ	JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ	JASOND	AB E	JFMAMJ JASOND	A	SO D
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ	JASOND	AB E	JFMAMJ JASOND	A	JF AMJ J
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ	JASOND	AB E	JFMAMJ JASOND	A	JFMA
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ	JASOND	AB E	JFMAMJ JASOND		
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ	JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ	JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ	JASOND				
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ	JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ	JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ	JASOND				
	D	1977	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ	JASOND				
	D	1978	K	ABC	JFMAMJ JASOND			A C	JFMAMJ	JASOND	ABC			
	D	1979	K	ABC	JFMAMJ JASOND			A C	JFMAMJ	JASOND	ABC	JFMAMJ JASOND		
	D	1980	K	ABC	JFMAMJ JASOND			A C	JFMAMJ	JASOND	ABC	JFMAMJ JASOND		
	D	1981		ABC	JFMAMJ JASOND			A C	JFMAMJ	JASOND	ABC			
	D	1982		ABC	JFMAMJ JASOND			A C	JFMAMJ	JASOND	ABC			

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
SVERDLOVSK	D 1983	K	ABC	JFMAMJ JASOND			A C	JFMAMJ JASOND	ABC			
SVD	D 1984	K	ABC	JFMAMJ JASO			A C	JFMAMJ JASO	ABC			
(056.73 61.07)												
SWIDER	D 1921	A					A	JFMAMJ JASOND				
SWI	D 1922	A					A	JFMAMJ JASOND				
(052.12 21.25)	D 1923	A					A	JFMAMJ JASOND				
	D 1924	A					A	JFMAMJ JASOND				
	D 1925	A					A	JFMAMJ JASOND				
	D 1926	A					A	JFMAMJ JASOND				
	D 1927	A					A	JFMAMJ JASOND				
	D 1928	A					A	JFMAMJ JASOND				
	D 1929	A					A	JFMAMJ JASOND				
	D 1930	A					A C	JFMAMJ JASOND				
	D 1931	A					A C	JFMAMJ JASOND				
	D 1932	A					A C	JFMAMJ JASOND				
	D 1933	A					A C	JFMAMJ JASOND				
	D 1934	A					A C	JFMAMJ JASOND				
	D 1935	A					A C	JFMAMJ JASOND				
	D 1936	A					A	JFMAMJ JASOND				
	D 1937	KA					A C	JFMAMJ JASOND				
	D 1938	KA					A C	JFMAMJ JASOND				
	D 1939	KA					A C	JFMAMJ JASOND				
	D 1940	KA					A C	JFMAMJ JASOND				
	D 1941	KA					A C	JFMAMJ JASOND				
	D 1942	KA					A	JFMAMJ JASOND				
	D 1943	KA					A C	JFMAMJ JASOND				
	D 1944	KA					A C	JFMAMJ JASOND				
	D 1945	KA					A C	JFMAMJ JASOND				
	D 1946	KA					A C	JFMAMJ JASOND				
	D 1947	KA					A C	JFMAMJ JASOND				
	D 1948	KA					A C	JFMAMJ JASOND				
	D 1949	KA					A C	JFMAMJ JASOND				
	D 1950	KA					A C	JFMAMJ JASOND				
	D 1951	KA					ABC	JFMAMJ JASOND				
	D 1952	KA					ABC	JFMAMJ JASOND				
	D 1953	KA					A C	JFMAMJ JASOND				
	D 1954	KA					A	JFMAMJ JASOND				
	D 1955	KA					A C	JFMAMJ JASOND				
	D 1956	KA					A C	JFMAMJ JASOND				
	D 1957	KA	AB D	JASOND			ABCD	JFMAMJ JASOND				
	D 1958	KA	AB D	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1959	KA	AB D	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1960	KA	AB D	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1961	KA					ABCD	JFMAMJ JASOND				
	D 1962	KA					ABCD	JFMAMJ JASOND				
	D 1963	KA					ABC	JFMAMJ JASOND				
	D 1964	KA					ABC E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1965	KA					ABC E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1966	KA					ABC	JFMAMJ JASOND				
	D 1967	KA										

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
SWIDER	D 1968	KA										
SWI	D 1969	KA										
(052.12 21.25)	D 1970	KA										
	D 1971	KA										
	D 1972	KA										
	D 1973	KA										
	D 1974	KA										
	D 1975	K										
SYOWA STATION	D 1959		ABCD	FMAMJ JASOND								
SYO	D 1960		AB	J								
(-69.01 39.59)												
	D 1966		ABCD	MAMJ JASOND								
	D 1967	K	ABCD	J								
	D 1968	K	ABCD	FMAMJ JASOND	ABC	FMAMJ JASOND						
	D 1969	K	A CD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D 1970	K	A CD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D 1971	K	A CD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D 1972	K	A CD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D 1973		A CD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D 1974		ABCD	JFMAMJ JASOND	ABC	J						
	D 1975	K	ABCD	JFMAMJ JASOND								
	D 1976	K	ABCD	JFMAMJ JASOND								
	D 1977	K	ABCD	JFMAMJ JASOND								
	D 1978	K	ABCD	JFMAMJ JASOND								
	D 1979	K	ABCD	JFMAMJ JASOND								
	D 1980	K	ABCD	JFMAMJ JASOND								
	D 1981	K	ABCD	JFMAMJ JASOND								
	D 1982	K	ABCD	JFMAMJ JASOND								
	D 1983	K	A CD	JFMAMJ JASOND								
	D 1984	K	A	J								
TAHITI	D 1958	A	ABCD	AMJ JASOND			ABCD	JFMAMJ JASOND				
TAH	D 1959	A	ABCD	JF			ABCD	JFMAMJ JASOND				
(-17.56 210.39)	D 1960						B	JF				
TALARA	D 1957		ABCD	J JASOND			ABCD	J JASOND				
TAL	D 1958		ABCD	FMAMJ JASOND			ABC	F MJ JASOND				
(-04.63 278.70)	D 1959		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1960		ABCD	JF			ABCD	JF				
TALKEETNA	D 1977										A	A N *
TLK	D 1978										A	AM JASOND*
(062.30 209.90)	D 1979										A	JFMAMJ JASOND*
	D 1980										A	JFMAMJ JASOND*
	D 1981										A	JFMAMJ JASOND*
	D 1982										A	JFMAMJ JASOND*
	D 1983		A								A	JFMAMJ JASOND*
TAMANRASSET	D 1952	KA										
TAM	D 1953	KA					A	JFMAMJ JASOND				
(022.79 5.53)	D 1954	KA					A	JFMAMJ JASOND				
	D 1955	KA										
	D 1956	KA										
	D 1957	KA	ABCD	JASOND								
	D 1958	KA	ABCD	JFMAMJ JASOND								

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
TAMANRASSET	D	1959	KA	ABCD	JFMAMJ JASOND			B D	JFMAMJ JASOND				
TAM	D	1960	KA	A	JFMAMJ JASOND			B D	JFMAMJ JASOND				
(022.79 5.53)	D	1961	KA	A	JFMAMJ JASOND			B D	JFMAMJ JASOND				
	D	1962	KA	A	JFMAMJ JASOND			B D	JFMAMJ JASOND				
	D	1963	KA	A	JFMAMJ JASOND			B D	JFMAMJ JASOND				
	D	1964	KA	A	JFMAMJ JASOND			B D	JFMAMJ JASOND				
	D	1965	KA	A	JFMAMJ JASOND								
	D	1966	KA	A	JFMAMJ JASOND								
	D	1967	KA	A	JFMAMJ JASOND								
	D	1968	KA	A	JFMAMJ JASOND								
	D	1969	KA	A	JFMAMJ JASOND								
	D	1970	KA	A	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D	1971	KA	A	JFMAMJ JASOND								
	D	1972	KA	A	JFMAMJ JASOND								
	D	1973	KA	A	JFMAMJ JASOND								
	D	1974	KA	A	JFMAMJ JASOND								
	D	1975	KA	A	JFMAMJ JASOND								
	D	1976	KA	A	JFMAMJ JASOND								
	D	1977	KA	A	JFMAMJ JASOND								
	D	1979	KA										
	D	1980	KA										
TAMBEY	D	1973		ABCD	ND								
TMB	D	1974		ABCD	JFMAMJ JASOND								
(071.50 071.80)	D	1975		ABCD	JFMAMJ JASOND								
	D	1976		ABCD	JFMAMJ JASOND								
	D	1977		ABCD	JFMAMJ JASON								
	D	1978		ABCD	JFMAMJ JASOND								
TANANARIVE	D	1950	KA										
TAN	D	1951	KA										
(-18.92 47.55)	D	1952	KA										
	D	1953	KA					A C	JFMAMJ JASOND				
	D	1954	KA					A C	JFMAMJ JASOND				
	D	1955	KA					A C	JFMAMJ JASOND				
	D	1956	KA					A C	JFMAMJ JASOND				
	D	1957	KA	ABCD	JASOND			ABCD	JFMAMJ JASOND				
	D	1958	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1959	KA	AB	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	J SOND
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	ASOND	A	ASO D
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ	A	JF AMJ
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JASO	A	JASO
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFM	A	JFM
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
TANANARIVE	D 1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
TAN	D 1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(-18.92 47.55)	D 1975	KA	A	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1976	KA	AB	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1980						D	FMAMJ JAS D				
	D 1981	KA					AB	FMAMJ JAS D				
	D 1982	K										
TANGERANG	D 1964	KA	ABCD	AMJ JASOND			A DE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
TNG	D 1965	KA	ABCD	JFMAMJ JASOND			A DE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
(-6.17 106.63)	D 1966	KA	ABCD	OND			A DE	JFMAMJ JASOND	AB EI	SOND	A	OND
	D 1967	KA	ABCD	JFMAMJ JASOND			A DE	FMAMJ JASOND	AB EI	MAM SOND	A	AM SOND
	D 1968	KA	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D 1969	KA	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	MJ JASO	A	J JAS
	D 1970	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1971	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1972	KA	ABCD	JFMAMJ JASOND								
	D 1973	KA	ABCD	JFMAMJ JASOND								
	D 1974	KA	ABCD	JFMAMJ JASOND								
	D 1975	KA	A	JFMAMJ JA								
	D 1976	KA	ABCD	MJ JASOND								
	D 1977	KA	A	JFMAMJ JASON								
	D 1978	KA	A	MJ JASOND								
	D 1979	KA	ABCD	JFMAMJ JASOND								
	D 1980	KA	A	JFM J JAS								
	D 1981	A	A	FMAMJ JASOND								
	D 1982	A	A	JFMAM								
TASHKENT	D 1941	K										
TKT	D 1942	K										
(041.33 69.62)	D 1943	K										
	D 1944	K										
	D 1945	K										
	D 1946	K										
	D 1955	K										
	D 1956	K										
	D 1957	K	ABCD	JASOND			ABCD	JASOND	AB	JFMAMJ JASOND		
	D 1958	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1959	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1960	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1961	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1962	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1963	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1966	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JASOND
	D 1969	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	J JASO
	D 1970	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
TASHKENT	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
TKT	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(041.33 69.62)	D	1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1983	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1984	K	ABCD	JFMAMJ JA			ABCD	JFMAMJ JA				
TATUOCA	D	1933	A					A C	SOND				
TTB	D	1934	A					A C	J				
(-1.21 311.49)													
	D	1957	KA	AB D	ASOND			ABCD I	ASOND				
	D	1958	KA	AB D	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1959	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D	1960	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D	1961	KA	A	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D	1962	KA	A	JFMAMJ JASOND			ABC	JFMAMJ JASOND				
	D	1963	KA	A	JFMAMJ JASOND								
	D	1964	A	ABCD	JFMAMJ JASOND			A E	SOND	AB E	SOND	A	SOND
	D	1965	A	ABCD	JFMAMJ JASOND			A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	A	A	JFMAMJ JASOND								
	D	1967	A	A	JFMAMJ JASOND								
	D	1968	A	ABCD	JFMAMJ JASOND								
	D	1969	A	ABCD	JFMAMJ JASOND								
	D	1970	A	ABCD	JFMAMJ JASOND								
	D	1971	A	A	JFMAMJ JASOND								
	D	1972		A	JFMAMJ JASOND								
	D	1973		AB D	JFMAMJ JASOND								
	D	1974		ABCD	JFMAMJ JASOND								
	D	1975		A	JFMAMJ JASOND								
	D	1976		A	JFMAMJ JASOND								
TBILISI	D	1940	K										
TFS	D	1941	K										
(042.09 44.71)	D	1942	K										
	D	1943	K										
	D	1944	K										
	D	1945	K										
	D	1946	K										
	D	1955	K										
	D	1956	K										
	D	1957	KA	ABCD	JASOND	ABC	JASOND	ABCD	JASOND				
	D	1958	KA	ABCD	JFMAMJ JASOND	ABC	MAMJ JASOND	ABCD	JFMAMJ JASOND				
	D	1959	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1960	KA	ABCD	JFMAMJ JASOND	ABC	JFMAM	ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
TBILISI	D	1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
TFS	D	1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
(042.09 44.71)	D	1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	SO D
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JF AMJ
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1983	K	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1984	K	ABCD	JFMAMJ JASO			ABCD	JFMAMJ JASO				
TEHRAN	D	1957	K	A C	SO								
TEH	D	1958	K	ABCD	FMAMJ JASON								
(035.74 51.38)	D	1959	K	ABCD	MAM ASON								
	D	1960	KA	B D	FM								
	D	1961	KA										
	D	1962	KA										
	D	1963	KA					C	JFMAMJ JASOND				
	D	1964	KA					C	JFMAMJ JASOND				
	D	1965	KA	ABCD	JFMAMJ JASOND			AB E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1966	KA	A	JFMAM			AB	JFMAMJ JASOND	AB I	M	A	M
	D	1967	KA	A	A			ABCDE	JFMAMJ JASOND	AB EI	AS	A	A
	D	1968	KA					ABC	JFMAMJ JASOND				
	D	1969	KA					ABC	JFMAMJ JASOND				
	D	1970	A					ABC	JFMAMJ JASOND				
	D	1971	A					ABC	JFMAMJ JASOND				
	D	1972	A					ABC	JFMAMJ JASOND				
	D	1973	A					ABC	JFMAMJ JASOND				
TEOLOYUCAN	D	1951	KA										
TEO	D	1952	KA										
(019.75 260.82)	D	1953	KA										
	D	1954	KA										
	D	1955	KA										
	D	1956	KA										
	D	1957	KA	ABCD	JFMAMJ JASOND			BCD	MJ JASOND				
	D	1958	KA	ABCD	JFMAMJ JASOND			B D	JFMAMJ JASOND				
	D	1959	KA	A	JFMAMJ JASOND			D	JFMAMJ JASOND				
	D	1960	KA	A	JFMAMJ JASOND			D	JFMAMJ JASOND				
	D	1961	KA	A	JFMAMJ JASOND			CD	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
TEOLOYUCAN	D	1962	KA	A	JFMAMJ JASOND				CD JFMAMJ JASOND				
TEO	D	1963	KA	A	JFMAMJ JASOND				CD JFMAMJ JASOND				
(019.75 260.82)	D	1964	KA	ABCD	JFMAMJ JASOND				CD I JFMAMJ JASOND				
	D	1965	KA	ABCD	JFMAMJ JASOND				A DEI JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1966	KA	A	JFMAMJ JASOND				ABCD I JFMAMJ JASOND				
	D	1967	KA	A	JFMAMJ JASOND				A D I JFMAMJ JASOND				
	D	1968	KA	A	JFMAMJ JASOND				ABCD I JFMAMJ JASOND				
	D	1969	KA	A	JFMAMJ JASOND				ABCD I JFMAMJ JASOND				
	D	1970	KA	A	JFMAMJ JASOND				ABCD I JFMAMJ JASOND				
	D	1971	KA	A	JFMAMJ JASOND				ABCD I JFMAMJ JASOND				
	D	1972	KA	A	JFMAMJ JASOND				ABCD JFMAMJ JASOND				
	D	1973	KA	A	JFMAMJ JASOND				ABCD I JFMAMJ JASOND				
	D	1974	KA	A	JFMAMJ JASOND				ABC I JFMAMJ JASOND				
	D	1975	KA	A	JFMAMJ JASO				ABCD JFMAMJ JASOND				
	D	1982		A	J								
TEVRIZ	D	1974		ABCD	JFMA J JA OND								
TEV	D	1975		BCD	JFMAMJ JASOND								
(057.50 072.40)	D	1976		ABCD	JFMAMJ JASOND								
	D	1977		B	JFMAMJ JASOND								
	D	1978		ABCD	JFMAMJ JASOND								
	D	1979		ABCD	JFMAMJ JASOND								
THOMPSON	D	1973		A	JAS ND								
TMP	D	1974		ABC	JFMAMJ JASOND								
(055.72 262.12)	D	1975		ABC	JFMAMJ JASOND								
	D	1976		ABC	JFMAMJ JASOND								
	D	1978										A	JFMAMJ *
THULE	D	1932	A						A ASOND				
THL	D	1933	A						A JFMAMJ J				
(076.54 290.94)													
	D	1947	A	D	JFMAMJ JASOND								
	D	1948	A	D	JFMAMJ JASOND								
	D	1949	A	D	JFMAMJ JASOND								
	D	1950	A	A D	JFMAMJ JASOND								
	D	1951	A	A D	JFMAMJ JASOND								
	D	1952	A	A D	JFMAMJ JA								
(077.48 290.83)	D	1955	KA	A D	SOND								
	D	1956	KA	A D	JFMAMJ JASOND								
	D	1957	KAQ	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCD I JFMAMJ JASOND				
	D	1958	KAQ	ABCD	JFMAMJ JASOND				ABCD I JFMAMJ JASOND				
	D	1959	KA	ABCD	JFMAMJ JASOND				ABCD I JFMAMJ JASOND	B	JFMAMJ JASOND		
	D	1960	KA	ABCD	JFMAMJ JASOND				ABCD I JFMAMJ JASOND	B	JFMAMJ JASOND		
	D	1961	KA	ABCD	JFMAMJ JASOND				ABCD I JFMAMJ JASOND	B	JFMAMJ JASOND		
	D	1962	KA	ABCD	JFMAMJ JASOND				ABCD I JFMAMJ JASOND	B	JFMAMJ JASOND		
	D	1963	KA	ABCD	JFMAMJ JASOND				ABCD I JFMAMJ JASOND	B	JFMAMJ JASOND		
	D	1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	SOND
	D	1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND		ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND				ABCD I JFMAMJ JASOND	AB	JFMAMJ JASOND	A	M
	D	1967	KA	ABCD	JFMAMJ JASOND				ABCDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND	AB	JFMAMJ JASOND

OBSERVATORY	COMP	YEAR	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
THULE	D	1968	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMA D
THL	D	1969	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	B	JFMAMJ JASOND		
(077.48 290.83)	D	1970	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	B	JFMAMJ JASOND		
	D	1971	A	ABCD	JFMAMJ JASOND	B	ND	A CD I	JFMAMJ JASOND				
	D	1972	A	ABCD	JFMAMJ JASOND			A CD I	JFMAMJ JASOND				
	D	1973	A	ABCD	JFMAMJ JASOND			A CD I	JFMAMJ JASOND				
	D	1974	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1975	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1976	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1980	A	ABCD	JFMAMJ JASOND								
	D	1981	A	ABCD	JFMAMJ JASOND								
	D	1982	A	ABCD	JFMAMJ JASOND								
	D	1983	A	ABCD	JFMAMJ JASOND								
	D	1984	A	A CD	JFMAMJ JASON								
THULE AFB	D	1957	K										
THU	D	1958	K										
(076.55 291.17)	D	1959	K										
	D	1960	K										
	D	1961	K										
	D	1962	K										
	D	1963	K										
	D	1964	K										
	D	1965	K										
	D	1966	K	ABC	JFMAMJ JASOND								
	D	1967	K	ABC	JFMAMJ JASOND								
	D	1968	K	ABC	JFMAMJ JASOND								
	D	1969	K	ABC	JFMAMJ JASOND								
	D	1970	K	ABC	JFMAMJ JASOND								
	D	1971		ABC	JFMAMJ JASOND								
	D	1972		ABC	JFMAMJ JASOND								
	D	1973		A	JFM								
	D	1983											
TIHANY	D	1951						D	JFMAMJ JASOND				
THY	D	1952						D	JFMAMJ JASOND				
(046.90 17.89)	D	1953						D	JFMAMJ JASOND				
	D	1954						D	JFMAMJ JASOND				
	D	1955	KA					AB D I	JFMAMJ JASOND				
	D	1956	KA					AB D I	JFMAMJ JASOND				
	D	1957	KA	ABCD	JASOND			ABCD I	JFMAMJ JASOND				
	D	1958	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1959	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1961	KA					ABCD I	JFMAMJ JASOND				
	D	1962	KA					ABCD I	JFMAMJ JASOND				
	D	1963	KA					ABCD I	JFMAMJ JASOND				
	D	1964	KA	B	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1965	KA	B	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
TIHANY	D	1966	KA					ABCD	I JFMAMJ JASOND				
THY	D	1967	KA					ABCD	I JFMAMJ JASOND				
(046.90 17.89)	D	1968	KA					ABCD	I JFMAMJ JASOND				
	D	1969	KA					ABCD	I JFMAMJ JASOND				
	D	1970	KA					ABCD	I JFMAMJ JASOND				
	D	1971	KA					ABCD	I JFMAMJ JASOND				
	D	1972	KA					ABCD	I JFMAMJ JASOND				
	D	1973	KA					ABCD	I JFMAMJ JASOND				
	D	1974	KA					ABCD	I JFMAMJ JASOND				
	D	1975	KA					ABCD	I JFMAMJ JASOND				
	D	1976	KA	ABC	JFMAMJ JASOND			ABCD	I JFMAMJ JASOND				
	D	1977	KA	ABC	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	KA	ABC	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABC	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1980	KA	ABC	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1981	KA	ABC	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1982	KA	ABC	JFMAMJ JASO			A	JFMAMJ JASOND				
	D	1983	A	B	JFMA								
TIKHAYA BAY	D	1955	KA										
TKH	D	1956	KA										
(080.33 52.80)	D	1957	KA	A D	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D	1958	KA	A D	JFMAMJ JA			A D	JFMAMJ JA				
	D	1979						C	JFMAMJ JASOND				
TIXIE BAY	D	1955	KA										
TIK	D	1956	KA										
(071.58 129.00)	D	1957	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1958	KAQ	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1959	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1960	KA	ABCD	JFMAMJ JASOND	A	JFMAM	ABCD	JFMAMJ JASOND				
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1964	KAQ	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	SOND
	D	1965	KAQ	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1967	KA	ABCD	JFMAMJ JASO			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASO
	D	1968	K	ABCD	FMAMJ JASOND			A DE	M MJ JASOND	AB E	M MJ JASOND	A	M MJ JASOND
	D	1969	K	ABCD	JFMAMJ JA D			A DE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JA D
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND		
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND			AB	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
TIXIE BAY	D	1982	KA	ABCD	JFMAMJ JASOND								
TIK	D	1983	K	AB	JFMAMJ JASOND								
(071.58 129.00)	D	1984	K										
TOKYO	D	1897	A					A	JFMAMJ JASOND				
TOK	D	1898	A					A	JFMAMJ JASOND				
(035.69 139.75)	D	1899	A					A	JFMAMJ JASOND				
	D	1900	A					A	JFMAMJ JASOND				
	D	1901	A					A	JFMAMJ JASOND				
	D	1902	A					A	JFMAMJ JASOND				
	D	1903	A										
	D	1904	A					A	JFMAMJ JASOND				
	D	1905	A										
	D	1906	A					A	JFMAMJ JASOND				
	D	1907						A	JFMAMJ JASOND				
	D	1908						A	JFMAMJ JASOND				
	D	1909						A	JFMAMJ JASOND				
	D	1910	A					A	JFMAMJ JASOND				
	D	1911	A					A	JFMAMJ JASOND				
	D	1912	A					A	JFMAMJ JASOND				
TOLEDO	D	1948	KA										
TOL	D	1949	KA										
(039.88 355.95)	D	1950	KA					A I	JFMAMJ JASOND				
	D	1951	KA					A I	JFMAMJ JASOND				
	D	1952	KA					A I	JFMAMJ JASOND				
	D	1953	KA					A I	JFMAMJ JASOND				
	D	1954	KA					A	JFMAMJ JASOND				
	D	1955	KA					A D	JFMAMJ JASOND				
	D	1956	KA					A D	JFMAMJ JASOND				
	D	1957	KA	ABCD	JASOND			ABCD	JFMAMJ JASOND				
	D	1958	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1959	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1960	KA					ABCD	JFMAMJ JASOND				
	D	1961	KA					ABCD	JFMAMJ JASOND				
	D	1962	KA					ABCD	JFMAMJ JASOND				
	D	1963	KA					ABCD	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	J SOND
	D	1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND	A	J JA	ABCDE	JFMAMJ JASOND	AB EI	OND	A	ND
	D	1967	KA	ABCD	JFMAMJ JASOND	A	JAS	ABCDE	JFMAMJ JASOND	AB EI	MAM SOND	A	AM SO D
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ	A	JF AMJ
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JASO	A	JASO
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	SOND		

OBSERVATORY	COMP	YEAR	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
TOLEDO	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMA		
TOL	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(039.88 355.95)	D	1982	KA	ABCD	JFMAMJ JASOND			A D	JFMAMJ JASOND				
	D	1983	K	ABCD	JFMAMJ JASOND								
	D	1984	K	ABCD	JFMAMJ JAS								
	D	1985	K										
TOMSK	D	1958	KA	AB	JASOND								
TMK	D	1959	KA	AB	JFMAMJ JASOND								
(056.47 84.93)	D	1960	KA	AB	JFMAMJ JASOND								
	D	1961	KA	AB	JFMAMJ JASOND								
	D	1962	KA	AB	JFMAMJ JASOND								
	D	1963	KA	AB	JFMAMJ JASOND			AB	JASOND				
	D	1964	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1965	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1966	KA	B	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1967	KA	B	JFMAMJ JASOND			B	JFMAMJ JASOND				
	D	1968	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1969	KA	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D	1970	K										
TOOLANGI	D	1924	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
TOO	D	1925	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(-37.53 145.47)	D	1926	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1927	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1928	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1929	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1930	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1931	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1932	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1933	A					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1934	A										
	D	1935	A					A	JFMAMJ JASOND				
	D	1936	A										
	D	1937	A										
	D	1938	A										
	D	1939	A										
	D	1940	A										
	D	1941	KA										
	D	1942	KA										
	D	1943	KA										
	D	1944	KA										
	D	1945	KA										
	D	1946	KA										
	D	1947	KA										
	D	1948	KA										
	D	1949	KA					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1950	KA					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1951	KA					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1952	KA					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1953	KA					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1954	KA					A E	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1955	KA					A CDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
TOOLANGI	D	1956	KA					A	CDEI JFMAMJ JASOND	AB E	JFMAMJ JASOND		
TOO	D	1957	KA	ABCD	JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(-37.53 145.47)	D	1958	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1959	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1960	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1961	KA	ABCD	JFMAMJ JASOND			A	CDE JFMAMJ JASOND	AB E	ASOND	A	ASOND
	D	1962	KA	ABCD	JFMAMJ JASOND			A	CD JFMAMJ JASOND				
	D	1963	KA	ABCD	JFMAMJ JASOND			A	CD JFMAMJ JASOND				
	D	1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	J SOND
	D	1965	KA	ABCD	JFMAMJ JASOND			A	CDE JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND			A	DE JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAM ASO D
	D	1968	KA	ABCD	JFMAMJ JASOND			A	CDE JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ
	D	1969	KA	ABCD	JFMAMJ JASOND			A	DE JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JASO
	D	1970	KA	ABCD	JFMAMJ JASOND			A	DE JFMAMJ JASOND	AB E	JFM	A	JFM
	D	1971	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND								
	D	1974	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND								
	D	1976	KA	AB	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1977	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1978	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1979	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1980	K	ABCD	JFMAMJ JASOND								
	D	1981	K	A	JFMA								
	D	1983	K										
	D	1984	K										
TRELEW	D	1957	KA	ABCD	SOND			ABCD	I JASOND				
TRW	D	1958	KA	ABCD	JFMAMJ JASOND			ABCD	I JFMAMJ JASOND				
(-43.25 294.69)	D	1959	KA	ABCD	JFMAMJ JASOND			ABCD	I JFMAMJ JASOND				
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCD	I JFMAMJ JASOND				
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCD	I JFMAMJ JASOND				
	D	1962	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1963	KA	ABCD	JFMAMJ JASOND								
	D	1964	KA	ABCD	JFMAMJ JASOND			A	E J SOND	A E	J SOND	A	J SOND
	D	1965	KA	ABCD	JFMAMJ JASOND			A	E JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND			A	E JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1967	KA	ABCD	JFMAMJ JASOND			A	E JFMAMJ JASOND	A E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1968	KA	ABCD	JFMAMJ JASOND			A	E JFMAMJ JASOND	A E	JFM	A	JFM
	D	1969	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D	1970	KA	ABCD	JFMAMJ JASOND								
	D	1971	K	A	JFMAMJ JASOND								
	D	1972	K	A	JFMAMJ JASOND								
	D	1973	K	A	JFMAMJ JASOND								
	D	1974		A	JFMAMJ JASOND								
	D	1975		A	JFMAMJ JASO								
	D	1976	K	ABCD	JFMAMJ JASOND			C	JFMAMJ JASOND				
	D	1977	KA	AB	JFMAMJ JASOND								
	D	1978	KA	ABCD	JFMAMJ JASOND								

OBSERVATORY	YEAR	COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
TRELEW	1979	D	K	ABCD	JFMAMJ JASOND								
TRW	1980	D	K	ABCD	JFMAMJ JASOND								
(-43.25 294.69)	1981	D	K	A	J								
	1982	D	K										
	1983	D	K										
	1984	D	K										
TRIVANDRUM	1957	D	KA	ABCD	JASOND			ABCD	OND				
TRD	1958	D	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
(008.48 76.95)	1959	D	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	1960	D	KA	I	JFMAMJ JASOND			A I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	1961	D	KA	I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	1962	D	KA	I	JFMAMJ JASOND			A CD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	1963	D	KA	ABCD I	JFMAMJ JASOND			A CD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	1964	D	KA	ABCD I	JFMAMJ JASOND	AB	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	1965	D	KA	ABCD I	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	1966	D	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	1967	D	KA	ABCD I	JFMAMJ JASOND			A CD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	1968	D	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	1969	D	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	1970	D	KA	A CD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	1971	D	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	1972	D	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	1973	D	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	1974	D	KA	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	I	JFMAMJ JASOND		
	1975	D	A	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	1976	D	A	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	1977	D	A	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	1978	D	A	ABCD I	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	1979	D	A	ABCD I	JFMAMJ JASOND			B D I	JFMAMJ JASOND				
	1980	D	A	I	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	1981	D	A	I	JFMAMJ JASOND								
	1982	D	A	I	JFMAMJ JASOND								
TROMSO	1930	D	A					A I	JFMAMJ JASOND				
TRO	1931	D	A					A I	JFMAMJ JASOND				
(069.66 18.95)	1932	D	A					A I	JFMAMJ JASOND				
	1933	D	A					A I	JFMAMJ JASOND				
	1934	D	A					A I	JFMAMJ JASOND				
	1935	D	A					A I	JFMAMJ JASOND				
	1936	D	A					A I	JFMAMJ JASOND				
	1937	D	A					A I	JFMAMJ JASOND				
	1938	D	A					A I	JFMAMJ JASOND				
	1939	D	A					A I	JFMAMJ JASOND				
	1940	D	A					A I	JFMAMJ JASOND				
	1941	D	A					A I	JFMAMJ JASOND				
	1942	D	A					A I	JFMAMJ JASOND				
	1943	D	A					A I	JFMAMJ JASOND				
	1944	D	A					A I	JFMAMJ JASOND				
	1945	D	A					A I	JFMAMJ JASOND				
	1946	D	A					A I	JFMAMJ JASOND				
	1947	D	KA					A I	JFMAMJ JASOND				
	1948	D	KA					A I	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
TROMSO	D 1949	KA					A I	JFMAMJ JASOND				
TRO	D 1950	KA					A I	JFMAMJ JASOND				
(069.66 18.95)	D 1951	KA					A I	JFMAMJ JASOND				
	D 1952	KA					A I	JFMAMJ JASOND				
	D 1953	KA					A	JFMAMJ JASOND				
	D 1954	KA					A	JFMAMJ JASOND				
	D 1955	KA					A	JFMAMJ JASOND				
	D 1956	KA					A C	JFMAMJ JASOND				
	D 1957	KA	D	JASOND			ABC	JFMAMJ JASOND				
	D 1958	KA	D	JF AMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1959	KA					A CD	JFMAMJ JASOND				
	D 1960	KA					A CD	JFMAMJ JASOND				
	D 1961	KA					A CD	JFMAMJ JASOND				
	D 1962	KA					A CD	JFMAMJ JASOND				
	D 1963	KA					A CD	JFMAMJ JASOND				
	D 1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1966	KA	ABCD	JFMAMJ JASOND								
	D 1967	KA	ABCD	JFMAMJ JASOND								
	D 1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMA	A	JFMA
	D 1969	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1979	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1980	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1982	A	ABCD	JFMAMJ JASOND								
	D 1983	A	ABCD	JFMAMJ JASOND								
	D 1984		ABCD	JFMAMJ JASOND								
TSUMEB	D 1964	A	ABCD	ASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
TSU	D 1965	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
(-19.22 17.70)	D 1966	A	A	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1967	A	A	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1968	A	A	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1969	A	A	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1970	A	A	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1971	A	A	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1972	A	A	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1973	A	A	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1974	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D 1975	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D 1976	A					ABCDEI	JFMAMJ JASOND	E	JFMAMJ JASOND		
	D 1977	A					ABCD I	JFMAMJ JASOND				
	D 1978	A					ABCD I	JFMAMJ JASOND				

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
TSUMEB	D	1979	A					ABCD I	JFMAMJ JASOND				
TSU	D	1980	A					ABCD	JFMAMJ JASOND				
(-19.22 17.70)	D	1981	A					ABCD I	JFMAMJ JASOND				
	D	1982	A					ABCD	JFMAMJ JASOND				
	D	1983	A					A CD	JFMAMJ JASOND				
TUCSON	D	1909		A	ND			A EI	JFMAMJ JASOND	AB EI	OND		
TUC	D	1910	A	A	MA ASO			A EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
(032.25 249.17)	D	1911	A	A	FMAM ASO D			A EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1912	A	A	A ASO D			A EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1913	A	A	J MA SO			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1914	A	A	A J J SON			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1915	A	A	MA J ASOND			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1916	A	A	J MAM JA ON			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1917	A	A	JF A J JAS D			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1918	A	A	MAMJ ASOND			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1919	A	A	JF M ASO D			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1920	A	A	MAM S D			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1921	A	A	AM S N			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1922	A	A	J M SO			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1923	A	A	M J SO			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1924	A	A	J MJ O			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1925	A	A	ASO			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1926	A	A	JFMA J SO			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1927	A	A	J MAM JA O			A E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1928	A	A	M JASO			A E	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1929	A	A	FM JA N			A EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1930	A	A	M MJ S D			A EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1931	A	A	F MJ SO			A EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1932	A	A	M M A O			A EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1933	A	A	AM JAS			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1934	A	A	M M J S D			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1935	A	A	M MJ J S			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1936	A	A	A J ON			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1937	A	A	FMAM ASO			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1938	KA	A	J A J SO			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1939	KA	A	JFMAMJ JASOND			A EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1940	KA	A	JFMAMJ JASOND			A EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1941	KA	A	JFMAMJ JASOND			A EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1942	KA	A	JFMAMJ JASOND			A EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1943	KA	A	JFMAMJ JASOND			A EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1944	KA	A	JFMAMJ JASOND			A EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1945	KA	A	JFMAMJ JASOND			A DEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1946	KA	A	JFMAMJ JASOND			A DEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1947	KA	A	JFMAMJ JASOND			A DEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1948	KA	A	JFMAMJ JASOND			A EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1949	KA	A C	JFMAMJ JASOND			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1950	KA	A C	JFMAMJ JASOND			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1951	KA	A C	JFMAMJ JASOND			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1952	KA	A C	JFMAMJ JASOND			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1953	KA	A C	JFMAMJ JASOND			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1954	KA	A C	JFMAMJ JASOND			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
TUCSON	D	1955	KA	A C	JFMAMJ JASOND			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
TUC	D	1956	KA	A C	JFMAMJ JASOND			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
(032.25 249.17)	D	1957	KA	ABCD	JFMAMJ JASOND	ABC	JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1959	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1960	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1961	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	ASOND
	D	1962	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1963	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1967	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1968	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1969	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1970	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JF
	D	1971	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1972	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1973	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1974	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1975	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1976	KA	ABCD	JFMAMJ JASOND	ABC	JF	ABCD	JFMAMJ JASOND	AB I	JFMAMJ JASOND		
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB I	JFMAMJ JASOND	A	J S ND*
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB I	JFMAMJ JASOND	A	MAMJ JASOND*
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND*
	D	1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND*
	D	1983	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND*
TULSA	D	1961		ABCD	JASOND								
TUL	D	1962		ABCD	JFMAMJ JASOND								
(035.91 264.21)	D	1963		ABCD	JFMAMJ JASOND								
	D	1964		ABCD	JFMAMJ JASOND								
	D	1965		ABCD	JFMAMJ JASOND								
	D	1966		ABCD	JFMAMJ JASOND								
	D	1967		ABCD	JFMAMJ JASOND								
	D	1968	A	ABCD	JFMAMJ JASOND								
	D	1969		ABCD	JFMAMJ JASOND								
	D	1970		ABCD	JFMAMJ JASOND								
	D	1971		ABCD	JFMAMJ JASOND								
	D	1972		ABCD	JFMAMJ JASOND								
	D	1973		ABCD	JFMAMJ JASOND								
	D	1974		ABCD	JFMAMJ JASOND								
	D	1975		ABCD	JFMAMJ JASOND								
	D	1976		ABCD	JFMAMJ JASOND								
	D	1977		ABCD	JFMAMJ JASOND								
	D	1978		ABCD	JFMAMJ JASOND								
	D	1979		ABCD	JFMAMJ JASOND								
	D	1980		ABCD	JFMAMJ JASOND								
	D	1981		AB D	JFMAMJ JASOND								
	D	1982	A	ABCD	JFMAMJ JASOND								

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
TULSA	D 1983	A	A	JFMAMJ JASOND								
TUL	D 1984	A	A	JFMAMJ JASOND								
(035.91 264.21)												
UGUT	D 1974		AB D	MAMJ JASOND								
UGT	D 1975		B	JFMAMJ JASOND								
(061.00 074.00)	D 1976		ABCD	JFMAMJ JASOND								
	D 1977		B	JFMAMJ JASOND								
	D 1978		ABCD	JFMAMJ JASOND								
	D 1979		ABCD	JFMAMJ JASOND								
UJJAIN	D 1975		B	JASOND			B	JASOND				
UJJ	D 1976		AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
(023.18 75.78)	D 1977		B	JFM			B	JFM				
	D 1978		B	JFMAMJ JASOND			B	JFMAMJ JASOND				
	D 1979	A	B	JFMA OND								
UKHTA	D 1974		C	MA OND								
UKH												
(060.50 074.00)												
ULAN BATOR	D 1966	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
UBA	D 1967	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(047.85 107.05)	D 1968	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1969	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1971	KA										
	D 1972	KA										
	D 1973	KA										
	D 1974	KA										
	D 1975	KA										
	D 1976	A					ABCD	JFMAMJ JASOND				
	D 1977	A					ABCD	JFMAMJ JASOND				
	D 1978	K					B	JFMAMJ JASOND				
	D 1979	K										
	D 1980	K										
	D 1981	K										
	D 1982	K										
	D 1983	K										
	D 1984	K										
URUMQI	D 1980						A	JFMAMJ JASOND				
WMQ	D 1981						A	JFMAMJ JASOND				
(043.82 087.70)												
VAL JOYEUX	D 1923	A					A	JFMAMJ JAOSND				
VLJ	D 1924	A					A	JFMAMJ JASOND				
(048.82 2.02)	D 1925	A					A	JFMAMJ JASOND				
	D 1926	A					A	JFMAMJ JASOND				
	D 1927	A					A	JFMAMJ JASOND				
	D 1928	A					A	JFMAMJ JASOND				
	D 1929	A					A	JFMAMJ JASOND				
	D 1930	A					A	JFMAMJ JASOND				
	D 1931	A					A	JFMAMJ JASOND				

OBSERVATORY	YEAR	COMP	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
VAL JOYEUX	D	1932	A					A C	JFMAMJ JASOND				
VLJ	D	1933	A					A C	JFMAMJ JASOND				
(048.82 2.02)	D	1934	A					A	JFMAMJ JASOND				
	D	1935	A					A	JFMAMJ JASOND				
	D	1936	A					A	JFMAMJ JASOND				
VALENTIA	D	1954	KA					A I	JFMAMJ JASOND				
VAL	D	1955	KA					A I	JFMAMJ JASOND				
(051.93 349.75)	D	1956	KA					A I	JFMAMJ JASOND				
	D	1957	KA	ABCD	JASOND			ABCD I	JFMAMJ JASOND				
	D	1958	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1959	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1960	KA	ABCD	JFMAMJ JASOND			A I	JFMAMJ JASOND				
	D	1961	KA	ABCD	JFMAMJ JASOND			A I	JFMAMJ JASOND				
	D	1962	KA	ABCD	JFMAMJ JASOND			A I	JFMAMJ JASOND				
	D	1963	KA	ABCD	JFMAMJ JASOND			A C I	JFMAMJ JASOND				
	D	1964	KA	ABCD	JFMAMJ JASOND			A C EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1965	KA	ABCD	JFMAMJ JASOND			ABC EI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1974	KA	A CD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABC I	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			BCD	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND			BCD	JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND			BCD	JFMAMJ JASOND				
	D	1982	KA	ABCD	JFMAMJ JASOND			BCD	JFMAMJ JASOND				
	D	1983	KA	ABCD	JFMAMJ JASOND								
	D	1984	K	A	JFMAMJ								
	D	1985	K										
VASSOURAS	D	1915	A					C	JFMAMJ JASOND				
VSS	D	1916	A					C	JFMAMJ JASOND				
(-22.40 316.35)	D	1917	A					C	JFMAMJ JASOND				
	D	1918	A					C	JFMAMJ JASOND				
	D	1919	A					C	JFMAMJ JASOND				
	D	1920	A					C	JFMAMJ JASOND				
	D	1921	A					C	JFMAMJ JASOND				
	D	1922	A					C	JFMAMJ JASOND				
	D	1923	A					C	JFMAMJ JASOND				
	D	1924	A					A	JFMAMJ JASOND				
	D	1925	A					A	JFMAMJ JASOND				
	D	1926	A					A	JFMAMJ JASOND				
	D	1927	A					A	JFMAMJ JASOND				
	D	1928	A					A	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS		WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM		WDC	HOURLY VALUES ON TAPE		WDC	2.5-MINUTE 1.0-MINUTE(*)	
VASSOURAS	D 1929	A						A	I	JFMAMJ JASOND						
VSS	D 1930	A						A	I	JFMAMJ JASOND						
(-22.40 316.35)	D 1931	A						A	I	JFMAMJ JASOND						
	D 1932	A						A	I	JFMAMJ JASOND						
	D 1933	A						A	I	JFMAMJ JASOND						
	D 1934	A						A	I	JFMAMJ JASOND						
	D 1935	A						A	I	JFMAMJ JASOND						
	D 1936	A						A	I	JFMAMJ JASOND						
	D 1937	A						A	I	JFMAMJ JASOND						
	D 1938	A						A	I	JFMAMJ JASOND						
	D 1939	A						A	I	JFMAMJ JASOND						
	D 1940	A						A	I	JFMAMJ JASOND						
	D 1941	A						A	I	JFMAMJ JASOND						
	D 1942	A						A	I	JFMAMJ JASOND						
	D 1943	A							I	JFMAMJ JASOND						
	D 1944	A														
	D 1945	A														
	D 1946	A														
	D 1947	A														
	D 1948	A														
	D 1949	A						A	C	I JFMAMJ JASOND						
	D 1950	A						A	C	I JFMAMJ JASOND						
	D 1951	A						A	C	I JFMAMJ JASOND						
	D 1952	KA						A	C	I JFMAMJ JASOND						
	D 1953	KA						A	C	I JFMAMJ JASOND						
	D 1954	KA						A	D	JFMAMJ JASOND						
	D 1955	KA						A	D	JFMAMJ JASOND						
	D 1956	KA						A	D	JFMAMJ JASOND						
	D 1957	KA	ABCD		JASOND			ABCD		JFMAMJ JASOND						
	D 1958	KA	ABCD	JFMAMJ	JASOND			ABCD		JFMAMJ JASOND						
	D 1959	KA	ABCD	JFMAMJ	JASOND			ABCDE		JFMAMJ JASOND	AB	EI	SOND	A		SOND
	D 1960	KA	A	JFMAMJ	JASOND			ABCD		JFMAMJ JASOND						
	D 1961	KA	A	JFMAMJ	JASOND			ABCD		JFMAMJ JASOND						
	D 1962	KA	A	JFMAMJ	JASOND			ABCD		JFMAMJ JASOND						
	D 1963	KA	A	JFMAMJ	JASOND											
	D 1964	KA	ABCD	JFMAMJ	JASOND											
	D 1965	A	A	JFMAMJ	JASOND											
	D 1966	A	A	JFMAMJ	JASOND											
	D 1967	A	A	JFMAMJ	JASOND			A		JFMAMJ JASOND	AB		JFMAMJ JASOND			
	D 1968	A	A	JFMAMJ	JASOND			A		JFMAMJ JASOND	AB		JFMAMJ JASOND			
	D 1969	A	A	JFMAMJ	JASOND			A		JFMAMJ JASOND	AB		JFMAMJ JASOND			
	D 1970	A	AB	JFMAMJ	JASOND			A		JFMAMJ JASOND	AB		JFMAMJ JASOND			
	D 1971	A	A	JFMAMJ	JASOND			A		JFMAMJ JASOND	AB		JFMAMJ JASOND			
	D 1972	A	A	JFMAMJ	JASOND			A		JFMAMJ JASOND						
	D 1973	A	A	JFMAMJ	JASOND											
	D 1974	A	A	JFMAMJ	JASOND											
	D 1975	A	A	JFMAMJ	JASOND											
	D 1976	A	ABCD	JFMAMJ	JASOND											
	D 1977	A	ABCD	JFMAMJ	JASOND											
	D 1978	A	ABCD	JFMAMJ	JASOND											
	D 1979	A	A	JFMAMJ				A		JFMAMJ JASOND	AB		SOND			

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
VASSOURAS	D	1980	A	ABCD	JFMAMJ JASOND			A	JASOND	A	FMA		
VSS	D	1981	A					A	JFMAMJ J				
(-22.40 316.35)													
VICTORIA	D	1956	KA										
VIC	D	1957	KA	ABCD	JASOND			ABCD I	JASOND				
(048.52 236.58)	D	1958	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1959	KA					ABCD I	JFMAMJ JASOND				
	D	1960	KA					ABC I	JFMAMJ JASOND				
	D	1961	KA					ABCD I	JFMAMJ JASOND				
	D	1962	KA					ABCD I	JFMAMJ JASOND				
	D	1963	KA	ABCD	SOND			ABCD I	JFMAMJ JASOND				
	D	1964	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1965	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JASOND
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFM
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	A	ND	A	ND*
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1981	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1982	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1983	KA	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1984	K	ABCD	JFMAMJ JAS			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1985	K										
VIEQUES	D	1903		A	AMJ JASOND			A C E	MAMJ JASOND	A E	MAMJ JASOND		
VQS	D	1904	A	A	JFMAMJ JASOND			A C E	JFMAMJ JASOND	A E	JFMAMJ JASOND		
(018.15 294.55)	D	1905	A	A	FMA JAS N			A E	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1906	A	A	F M AS D			A E	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1907	A	A	FM M JA ON			A E	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1908	A	A	M M JAS			A E	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1909	A	A	J M M ASO			A C E	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1910	A	A	MA ASO			A C E	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1911	A	A	FMAM ASO D			A C E	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1912	A	A	A A O D			A C E	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1913	A	A	MA SO			A C E	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1914	A	A	A J J SON			A C E	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1915	A	A	A J ASOND			A C E	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1916	A	A	J MAM JA ON			A C E	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1917	A	A	JF A J JASO D			A C E	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1918	A	A	MAMJ ASOND			A C E	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D	1919	A	A	JF M ASO D			A C E	JFMAMJ JASOND	A E	JFMAMJ JASOND		

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
VIEQUES	D 1920	A	A	MAM S D			A C E	JFMAMJ JASOND	A E	JFMAMJ JASOND		
VQS	D 1921	A	A	AM S N			A C E	JFMAMJ JASOND	A E	JFMAMJ JASOND		
(018.15 294.55)	D 1922	A	A	J M SO			A C E	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D 1923	A	A	M J SO			A C E	JFMAMJ JASOND	A E	JFMAMJ JASOND		
	D 1924	A	A	J MJ O			A C E	JFMAMJ JASOND	A E	JFMAMJ JASO		
VLADIVOSTOK	D 1952	K										
VLA	D 1953	K										
(043.78 132.03)	D 1954	K										
	D 1955	K										
	D 1956	K					ABCD	JASOND				
	D 1957	K	ABCD	JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1958	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
(043.68 132.17)	D 1959	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1961	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1963	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1965	KA	ABCD	J AMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1966	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1967	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1968	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1969	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1983	KA	ABCD	JFMAMJ JASOND								
	D 1984	K	ABCD	JFMAMJ								
VOSTOK	D 1958	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
VOS	D 1959	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
(-78.45 106.87)	D 1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1961	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1962	K										
	D 1963	KA	ABCD	MJ JASOND			ABCD	MJ JASOND				
	D 1964	KAQ	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D 1965	KAQ	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	0
	D 1966	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	M
	D 1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND	A	JFMAMJ JASOND
	D 1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND				
	D 1969	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		

OBSERVATORY	YEAR COMP	KAQ	NORMAL MAGNETOGRAMS WDC	NORMAL MAGNETOGRAMS	RAPID RUN MAGNETOGRAMS WDC	RAPID RUN MAGNETOGRAMS	HOURLY VALUES ANY MEDIUM WDC	HOURLY VALUES ANY MEDIUM	HOURLY VALUES ON TAPE WDC	HOURLY VALUES ON TAPE	2.5-MINUTE 1.0-MINUTE(*) WDC	2.5-MINUTE 1.0-MINUTE(*)
VOSTOK	D 1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
VOS	D 1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
(-78.45 106.87)	D 1973	KA	ABCD	JFMAMJ JASOND			A CD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1976	KA	ABCD	JFMAMJ JASOND			AB	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D 1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1980	KA	AB D	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D 1982	K	AB	JFMAMJ JASOND			AB	JFMAMJ JASOND				
	D 1983	K										
	D 1984	K										
WAKE ISLAND	D 1978										A	MAMJ JASOND*
WKE	D 1979										A	JFMAMJ JASOND*
(019.20 166.70)	D 1980										A	JFMAMJ JASOND*
	D 1981										A	JFMAMJ JASOND*
	D 1982										A	JFMAM *
WATHEROO	D 1919	A					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
WAT	D 1920	A					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
(-30.32 115.88)	D 1921	A					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1922	A					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1923	A					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1924	A					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1925	A					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1926	A					A	E JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D 1927	A					A	E JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D 1928	A					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1929	A					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1930	A					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1931	A					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1932	A					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1933	A					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1934	A					A	E JFMAMJ JASOND	AB	E JFMAMJ JASOND		
	D 1935	A					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1936	A					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1937	KA					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1938	KA					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1939	KA					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1940	KA					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1941	KA					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1942	KA					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1943	KA					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1944	KA					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1945	KA					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1946	KA					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1947	KA					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1948	KA					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1949	KA					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1950	KA					A	EI JFMAMJ JASOND	AB	EI JFMAMJ JASOND		

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
WATHEROO	D 1951	KA					A DEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
WAT	D 1952	KA					A DEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
(-30.32 115.88)	D 1953	KA					A DEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1954	KA					A DEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1955	KA					A DEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1956	KA					A DEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1957	KA	ABCD	JASOND	ABC	JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D 1959	KA										
WESTON	D 1960		A	FMAMJ JASOND			A	JAS				
WES	D 1961		A	JFMAMJ JASOND			A	JFMAMJ JASOND				
(042.38 288.68)	D 1962		A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1963		A	JFMAMJ JA D			A	JFMAMJ JASOND				
	D 1964		A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1965		A C	JFMAMJ JASOND	B	MAMJ JASOND	A	JFMAMJ JASOND				
	D 1966		A C	JFMAMJ JASOND	B	JFMAMJ JASOND	A	JFMAMJ JASOND				
	D 1967		A C	JFMAMJ JASOND	B	JFMAMJ JASOND	A	JFMAMJ JASOND				
	D 1968		A C	JFMAMJ JASOND	B	JFMAMJ J	A	JFMAMJ JASOND				
	D 1969		A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1970		A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1971		A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1972		A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1973		A	JFMAMJ JASOND			A	JFMAMJ JASOND				
	D 1974		A	JFMAMJ JASOND			A	JFMAMJ				
	D 1975		A	JFMAMJ JASOND								
	D 1976		A	JFMAM								
	D 1978		A	S								
WHITESHELL	X 1972		A	JFMAMJ JASOND			C	JFMAMJ JASOND				
WHS	X 1973		A	JFMAMJ JASOND			C	JFMAMJ JASOND				
(049.75 264.75)	X 1974		A	JFMAMJ JASOND			C	JFMAMJ JASOND				
	X 1975		A	JFMAMJ JASOND			C	JFMAMJ JASOND				
	X 1976		ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1977	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1978	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	X 1979	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1980	A	ABCD	JFMAMJ JASOND			AB D	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X 1981		A	JFMAMJ JAS			A	JFMA				
WIEN-KOBENZL	D 1941						AB	JFMAMJ JASOND				
WIK	D 1942						AB	JFMAMJ JASOND				
(048.20 16.24)	D 1943						I	JFMAMJ JASOND				
	D 1944						I	JFMAMJ JASOND				
	D 1945						I	JFMAMJ JASOND				
	D 1946						I	JFMAMJ JASOND				
	D 1947						I	JFMAMJ JASOND				
	D 1948						I	JFMAMJ JASOND				
	D 1949						I	JFMAMJ JASOND				
	D 1950						I	JFMAMJ JASOND				
	D 1951						I	JFMAMJ JASOND				
	D 1952						I	JFMAMJ JASOND				
	D 1953						I	JFMAMJ JASOND				

OBSERVATORY	YEAR COMP	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
WIEN-KOBENZL	D 1954							I JFMAMJ JASOND				
WIK	D 1955	A						I JFMAMJ JASOND				
(048.27 16.32)	D 1956	A					A	I JFMAMJ JASOND				
	D 1957	KA	AB D	JASOND			ABCD	I JFMAMJ JASOND				
	D 1958	KA	AB D	JFMAMJ JASOND			ABCD	I JFMAMJ JASOND				
	D 1959	A					ABCD	I JFMAMJ JASOND				
	D 1960	A					ABCD	I JFMAMJ JASOND				
	D 1961	A					ABCD	I JFMAMJ JASOND				
	D 1962	A					ABCD	I JFMAMJ JASOND				
	D 1963	A					ABCD	I JFMAMJ JASOND				
	D 1964	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1965	A	ABCD	JFMAMJ JASOND			ABCDEI	JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1966	A					ABCD	I JFMAMJ JASOND				
	D 1967	A					ABCD	I JFMAMJ JASOND				
	D 1968	A					ABCD	I JFMAMJ JASOND				
	D 1969	A					ABCD	I JFMAMJ JASOND				
	D 1970	A					ABCD	I JFMAMJ JASOND				
	D 1971	A					ABCD	I JFMAMJ JASOND				
	D 1972	A					ABCD	I JFMAMJ JASOND				
	D 1973	A					ABCD	I JFMAMJ JASOND				
	D 1974	A					ABCD	JFMAMJ JASOND				
	D 1975	A					ABCD	I JFMAMJ JASOND				
	D 1976	A					ABCD	I JFMAMJ JASOND				
	D 1977	A					ABCD	I JFMAMJ JASOND				
	D 1978	A					ABCD	JFMAMJ JASOND				
	D 1979	A					ABCD	JFMAMJ JASOND				
	D 1980	A					ABCD	JFMAMJ JASOND				
	D 1981	A					ABCD	JFMAMJ JASOND				
WILHELMSHAVEN	D 1882						C	D				
WLH	D 1883						C	JFMAMJ JASOND				
(053.53 8.15)												
WILKES	D 1957	KA	ABCD	JFMAMJ JASOND	ABC	JASOND	ABCDEI	JASOND	AB	EI JASOND		J
WIL	D 1958	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDEI	JFMAMJ JASOND	AB	EI JFMAMJ JASOND		J
(-66.25 110.58)	D 1959	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D 1960	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D 1961	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	A E	ASOND	AB	EI ASOND		J
	D 1962	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D 1963	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND						
	D 1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	AB DE	SOND	AB	EI SOND		
	D 1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	AB DE	JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D 1966	KA	ABCD	JFMAMJ JASOND	ABA	JFMAMJ JASOND	A DE	J	AB	EI J		
	D 1967	K	ABCD	J								
WINGST	D 1940	KA										
WNG	D 1941	KA										
(053.74 9.07)	D 1942	KA										
	D 1943	KA					C	JFMAMJ JASOND				
	D 1944	KA										
	D 1945	KA										
	D 1946	KA										
	D 1947	KA										

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
WINGST	D	1948	KA					C	JFMAMJ JASOND				
WNG	D	1949	KA					A C	JFMAMJ JASOND				
(053.74 9.07)	D	1950	KA					A C	JFMAMJ JASOND				
	D	1951	KA					A C	JFMAMJ JASOND				
	D	1952	KA					A C	JFMAMJ JASOND				
	D	1953	KA					A C	JFMAMJ JASOND				
	D	1954	KA					A C	JFMAMJ JASOND				
	D	1955	KA					A C	JFMAMJ JASOND				
	D	1956	KA					A C	JFMAMJ JASOND				
	D	1957	KA	ABC	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1958	KA	ABC	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1959	KA	ABC	JFMAMJ JASOND			ABC	JFMAMJ JASOND				
	D	1960	KA	ABC	JFMAMJ JASOND			ABC	JFMAMJ JASOND				
	D	1961	KA	ABC	JFMAMJ JASOND			ABC	JFMAMJ JASOND				
	D	1962	KA	ABC	JFMAMJ JASOND			ABC	JFMAMJ JASOND				
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1964	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D	1965	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB	EI JFMAMJ JASOND		
	D	1966	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D	1967	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D	1968	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D	1969	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D	1970	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D	1971	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D	1974	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JAS	ABCD	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JAS	ABCD	JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	C	OND				
	D	1982	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	A	JFM OND				
	D	1983	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	A	AMJ JASOND				
	D	1984	K	A D	JFMAMJ JASOND			A	J				
	D	1985	K										
WINNIPEG	D	1973		A	MJ JASOND								
WNP	D	1974		ABC	JFMAMJ JASOND								
(049.63 262.87)	D	1975		ABC	JFMAMJ JAS								
WITTEVEEN	D	1938	A					A	I JFMAMJ JASOND	AB	JFMAMJ JASOND		
WIT	D	1939	A					A	I JFMAMJ JASOND	AB	JFMAMJ JASOND		
(052.81 6.67)	D	1940	KA					A	I JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1941	KA					A	I JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1942	KA					A	I JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1943	KA					A	I JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1944	KA					A	I JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1945	KA					A	I JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1946	KA					A	I JFMAMJ JASOND	AB	JFMAMJ JASOND		
	D	1947	KA					A	I JFMAMJ JASOND	AB	JFMAMJ JASOND		

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS		WDC	RAPID RUN MAGNETOGRAMS		WDC	HOURLY VALUES ANY MEDIUM			WDC	HOURLY VALUES ON TAPE			WDC	2.5-MINUTE 1.0-MINUTE(*)	
WITTEVEEN	D	1948	KA							A	I	JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
WIT	D	1949	KA							A C	I	JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
(052.81 6.67)	D	1950	KA							A	I	JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1951	KA							A	I	JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1952	KA							A	I	JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1953	KA							A	I	JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1954	KA							A C	I	JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1955	KA							A C	I	JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1956	KA							A	I	JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1957	KA	ABCD		JASOND	ABC		JASOND	ABCD	I	JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1958	KA	ABCD	JFMAMJ	JASOND	ABC	JFMAMJ	JASOND	ABCD	I	JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1959	KA	ABCD	JFMAMJ	JASOND	ABC	JFMAMJ	JASOND	ABCD	I	JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1960	KA	ABCD	JFMAMJ	JASOND				ABCD	I	JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1961	KA	ABCD	JFMAMJ	JASOND				ABCD	I	JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1962	KA	ABCD	JFMAMJ	JASOND				ABCD	I	JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1963	KA	ABCD	JFMAMJ	JASOND				ABCD	I	JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1964	KA	ABCD	JFMAMJ	JASOND	ABC	JFMAMJ	JASOND	ABCDE	I	JFMAMJ	JASOND	AB	EI	JFMAMJ	JASOND			
	D	1965	KA	ABCD	JFMAMJ	JASOND	ABC	JFMAMJ	JASOND	ABCDE		JFMAMJ	JASOND	AB	EI	JFMAMJ	JASOND			
	D	1966	KA	ABCD	JFMAMJ	JASOND	ABC	JFMAMJ	JASOND	ABCD	I	JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1967	KA	ABCD	JFMAMJ	JASOND	ABC	JFMAMJ	JASOND	ABCD		JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1968	KA	ABCD	JFMAMJ	JASOND	ABC	JFMAMJ	JASOND	ABCD		JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1969	KA	ABCD	JFMAMJ	JASOND	ABC	JFMAMJ	JASOND	ABCD		JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1970	KA	ABCD	JFMAMJ	JASOND	ABC	JFMAMJ	JASOND	ABCD		JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1971	KA	ABCD	JFMAMJ	JASOND	ABC	JFMAMJ	JASOND	ABCD		JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1972	KA	ABCD	JFMAMJ	JASOND	ABC	JFMAMJ	JASOND	ABCD		JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1973	KA	ABCD	JFMAMJ	JASOND	ABC	JFMAMJ	JASOND	ABCD		JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1974	KA	ABCD	JFMAMJ	JASOND	ABC	JFMAMJ	JASOND	ABCD		JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1975	KA	ABCD	JFMAMJ	JASOND	ABC	JFMAMJ	JASOND	ABCD		JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1976	KA	ABCD	JFMAMJ	JASOND	ABC	JFMAMJ	JASOND	ABCD		JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1977	KA	ABCD	JFMAMJ	JASOND	A	JFMAMJ	JASOND	A CD		JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1978	KA	ABCD	JFMAMJ	JASOND	ABC	JFMAMJ	JASOND	ABCD		JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1979	KA	AB D	JFMAMJ	JASOND	A	JFMAMJ	JASOND	ABCD		JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1980	KA	ABCD	JFMAMJ	JASOND	A	JFMAMJ		ABCD		JFMAMJ	JASOND	AB		JFMAMJ	JASOND			
	D	1981	KA	ABCD	JFMAMJ	JASOND				ABCD		JFMAMJ	JASOND	A		JFMAMJ	JASOND			
	D	1982	KA	ABCD	JFMAMJ	JASOND				A		JFMAMJ	JASOND	A		JFMAMJ	JASOND			
	D	1983	K																	
	D	1984	K																	
	D	1985	K																	
WUHAN	D	1980								A		JFMAMJ	JASOND							
WHN	D	1981								A		JFMAMJ	JASOND							
(030.53 114.56)																				
YAKUTSK	D	1939	KA																	
YAK	D	1940	KA																	
(062.02 129.72)	D	1941	KA																	
	D	1942	KA																	
	D	1943	KA																	
	D	1944	KA																	
	D	1945	KA																	
	D	1946	KA																	
	D	1952	A																	

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
YAKUTSK	D	1953	A										
YAK	D	1954	A										
(062.02 129.72)	D	1955	KA										
	D	1956	KA										
	D	1957	KA	ABCD	JASOND			ABCD	JASOND				
	D	1958	KA	ABCD	JFMAMJ JASOND	ABC	SOND	ABCD	JFMAMJ JASOND				
	D	1959	KA	ABCD	JFMAMJ JASOND	ABC	JFMAMJ	ABCD	JFMAMJ JASOND				
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1964	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	J SOND
	D	1965	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND		
	D	1966	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ JASOND	A	JFMAMJ JA ND
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	MAMJ ASOND	A	MJ ASOND
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	JFMAMJ	A	JFMAMJ
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	AB EI	MJ JASO	A	JAS
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCDE	JFMAMJ JASOND	ABC EI	JFMAMJ JASOND		
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1982	KA	AB D	JFMAMJ JASOND			AB D	JFMAMJ JASOND				
	D	1983	K	A	JFMAMJ JASOND								
	D	1984	K										
YAUCA	D	1957		ABCD	SOND			ABCD	SOND				
YAU	D	1958		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
(-15.53 285.33)	D	1959		ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1960		ABCD	J			ABCD	J				
YELLOWKNIFE	D	1957		ABCD	JASOND			ABCD I	JFMAMJ JASOND				
YKC	D	1958		ABCD	JFMAMJ JASOND			ABCD I	JFMAMJ JASOND				
(062.40 245.50)													
	D	1972		A	JFMAMJ JASOND			C	JFMAMJ JASOND				
	D	1973		A	JFMAMJ JASOND			C	JFMAMJ JASOND				
	D	1974		ABCD	JFMAMJ JASOND			ABC	JFMAMJ JASOND	A	OND	A	OND*
	D	1975	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1976	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	D	1977	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1978	A	A CD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1979	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1980	A	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1981	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1982	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	AB	JFMAMJ JASOND	A	JFMAMJ JASOND*
	X	1983	A	ABCD	JFMAMJ JASOND			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
YELLOWKNIFE	X	1984		ABCD	JFMAMJ JAS			A	JFMAMJ JASOND	A	JFMAMJ JASOND	A	JFMAMJ JASOND*
YKC													
(62.40 245.50)													
YUZHNO SAKHALINS	D	1954	KA										
YSS	D	1955	KA										
(046.95 142.72)	D	1956	KA										
	D	1957	KA	ABCD	JASOND			ABCD	JASOND				
	D	1958	KA	ABCD	JFMAMJ JASOND	A C	FMAMJ J	ABCD	JFMAMJ JASOND				
	D	1959	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCD	JFMAMJ JASOND				
	D	1960	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1961	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1962	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1963	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1964	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1965	KA	ABCD	JFMAMJ JASOND	A C	JFMAMJ JASOND	ABCDE	JFMAMJ JASOND	AB E	JFMAMJ JASOND		
	D	1966	KA	ABCD	JFMAMJ JAS			ABCD	JFMAMJ JAS	A	M	A	M
	D	1967	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1968	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1969	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1970	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1971	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1972	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1973	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1974	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1975	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1976	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1977	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1978	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1979	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1980	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1981	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1982	KA	ABCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1983	KA	BCD	JFMAMJ JASOND			ABCD	JFMAMJ JASOND				
	D	1984	K					A	JFMAMJ				
ZARIA	D	1960		B	J AMJ JAS								
ZAR	D	1961		B	OND								
(011.15 007.65)	D	1962		AB	JFMAMJ JASOND								
	D	1963		AB	JFMAMJ JASOND								
	D	1964		ABCD	JFMAMJ JASOND								
	D	1965		ABCD	JFMAMJ JASOND								
	D	1966		AB	JFMAMJ JASOND								
	D	1967		AB	JFMAMJ JASOND								
	D	1968		AB	JFMAMJ JASOND								
	D	1969		AB	JFMAMJ JASOND								
	D	1970		AB	JFMAMJ JASOND								
	D	1971		AB	JFMAMJ JASOND								
	D	1972		AB	JFMAMJ JASOND								
	D	1973		AB	JFMAMJ JASOND								
	D	1974		AB	JFMAMJ JASOND								
	D	1975		AB	JFMAMJ JASOND								

OBSERVATORY	COMP	YEAR	KAQ	WDC	NORMAL MAGNETOGRAMS	WDC	RAPID RUN MAGNETOGRAMS	WDC	HOURLY VALUES ANY MEDIUM	WDC	HOURLY VALUES ON TAPE	WDC	2.5-MINUTE 1.0-MINUTE(*)
ZARIA	D	1976		AB	JFMAMJ JASOND								
ZAR	D	1977		AB	JFMAMJ JASOND								
(011.15 007.65)													
ZIKAWEI	D	1889	A					A	JFMAMJ JASOND				
ZKW	D	1890	A					A	JFMAMJ JASOND				
(031.21 121.44)	D	1891	A					A	JFMAMJ JASOND				
	D	1892	A					A	JFMAMJ JASOND				
	D	1893	A					A	JFMAMJ JASOND				
	D	1894	A					A	JFMAMJ JASOND				
	D	1895	A					A	JFMAMJ JASOND				
	D	1896	A					A	JFMAMJ JASOND				
	D	1897	A					A	JFMAMJ JASOND				
	D	1898	A					A	JFMAMJ JASOND				
	D	1899	A					A	JFMAMJ JASOND				
	D	1900	A					A	JFMAMJ JASOND				
	D	1901	A					A	JFMAMJ JASOND				
	D	1902	A					A	JFMAMJ JASOND				
	D	1903	A					A	JFMAMJ JASOND				
	D	1904	A					A	JFMAMJ JASOND				
	D	1905	A					A	JFMAMJ JASOND				
	D	1906	A					A	JFMAMJ JASOND				
	D	1907	A					A	JFMAMJ JASOND				
	D	1908	A					A	JF ASOND				
	D	1909						A	JFMAMJ JASOND				
	D	1910						A	JFMAMJ JASOND				
	D	1911						A	JFMAMJ JASOND				
	D	1912						A	JFMAMJ JASOND				
	D	1913						A	JFMAMJ JASOND				
	D	1914						A	JFMAMJ JASOND				
	D	1915						A	JFMAMJ JASOND				
	D	1916						A	JFMAMJ JASOND				
	D	1921						A	JFMAMJ JASOND				
	D	1922						A	JFMAMJ JASOND				

SECTION V

CATALOG OF HIGH-RESOLUTION GEOMAGNETIC DIGITAL DATA (TABLE 9)

High-resolution (10-second) geomagnetic digital data were acquired from a network of sites in North and South America, the Caribbean, and Pacific Islands during years of the International Magnetospheric Study (IMS, 1976-1979). After some smoothing and noise removal, 1-minute average values were prepared and are listed in the main catalog given in Section IV. The sometimes noisy 10-sec data from these temporary sites were transmitted via GOES satellite communication platforms to the NOAA/ERL Space Environment Laboratory where it was partially smoothed by removal of noise spikes and then used in their forecasting activity. Copies of the full resolution tapes were deposited with WDC-A for STP at the end of each month. After the end of the observational phase of the IMS, many of the network stations continue operating through the MAGSAT satellite interval and a reduced number have continue transmitting 10 second data though 1982. Some continue in the RGON system but only at 1-minute intervals.

Station names and their international 3-letter codes are given for each high-resolution station. Also given are the years and months of data acquisition at each site and the symbol of the WDC where the data are available. Coordinate listings for these sites may be found in Tables 3 and 4 of Section II.

Owing to the quantity of data involved and the complex encoding algorithm that combined into each record data from all sites, only copies on the original binary magnetic tapes can be provided by WDC-A for STP.

TABLE 9

HIGH-RESOLUTION GEOMAGNETIC DIGITAL DATA

OBSERVATORY	CODE	YEAR	WDC	10-SECOND DATA	
ARCTIC VILLAGE	AVI	1978	A	MAMJ	JASOND
		1979	A	JFMAMJ	JASOND
		1980	A	JFMAM	A OND
		1981	A	JFMAMJ	JASOND
		1982	A	JFMAMJ	JASOND
		1983	A	JFMAMJ	JASOND
BACK	BKC	1977	A		N
		1978	A	AMJ	JASO
		1979	A	FMAMJ	JASOND
		1980	A	FMAMJ	J
BOULDER	BOU	1979	A	JFMAMJ	JASOND
		1980	A	JFMAMJ	JASOND
		1981	A	JFMAMJ	JASOND
		1982	A	JFMAMJ	JASOND
		1983	A	JFMAMJ	JASOND
CAPE PARRY	CPY	1977	A		ND
		1978	A	JFMAMJ	JASOND
		1979	A	JFMAMJ	JASOND
		1980	A	JFMAMJ	JASOND
		1981	A	JFMAMJ	JA OND
		1982	A	JFMAMJ	JASOND
		1983	A	JFMAMJ	JASOND
COLLEGE	CMO	1981	A	JFMAMJ	JASOND
		1983	A	JFMAMJ	JASOND
ESKIMO POINT	EKP	1977	A		SOND
		1978	A	MAMJ	JASOND
		1979	A	JFMAMJ	JAS D
		1980	A	JFMA	
		1981	A	J	J
EUSEBIO	EUS	1977	A		JASOND
		1978	A	MAMJ	JASOND
		1979	A	JFMAMJ	JASOND
		1980	A	JFMAMJ	JASOND
		1981	A	JFMAMJ	JASOND
		1982	A	JFMA	
FORT SIMPSON	FSP	1977	A		JASOND
		1978	A	J MAMJ	JASOND
		1979	A	JFM	JA OND
		1980	A	JFMAMJ	JASOND
		1981	A	JFMAMJ	JASOND
		1982	A	JFMAMJ	JASOND
		1983	A	JFMAMJ	JASOND
FORT SMITH	FSM	1977	A		D
		1978	A	A J	JASOND
		1979	A	JFMAMJ	JASOND
		1980	A	J	SOND
		1981	A	FMAMJ	JASOND
		1982	A	JFMAMJ	JASOND
		1983	A	JFMAMJ	JASOND
FORT YUKON	FYU	1977	A		S ND
		1978	A	MA	ASOND
		1979	A	JFMAMJ	JASOND
		1980	A	JFMAMJ	JASOND
		1981	A	JFMAMJ	JASOND
		1982	A	JFMAMJ	JASOND
		1983	A	JFMAMJ	JASOND
GILLAM	GIM	1977	A		OND
		1978	A	MA J	JASOND
		1979	A	JFMAMJ	JASOND
		1980	A	JFMAMJ	J
HONOLULU	HON	1981	A	JFMAMJ	JASOND
		1982	A	JFMAMJ	JASOND
		1983	A	JFMAMJ	JASOND
INUVIK	INK	1977	A		OND
		1978	A	JFMAMJ	JASOND
		1979	A	JFMAMJ	JASOND
		1980	A	JFMAMJ	JASOND
		1981	A	JFMAMJ	JASOND
		1982	A	JFMAMJ	JASOND
		1983	A	JFMAMJ	JASOND
ISLAND LAKE	ISL	1977	A	JFMAMJ	OND
		1978	A	FMAMJ	JAS
		1979	A	JFMAMJ	JAS D
		1980	A	JFMAMJ	J
		1981	A	J	JASOND
		1982	A	JFMAM	

OBSERVATORY	CODE	YEAR	WDC	10-SECOND DATA	
JOHNSON POINT	JOP	1977	A		J ND
		1978	A	MAMJ	JASOND
		1979	A	JFMAMJ	JASOND
		1980	A	M	
		1981	A		JASOND
		1982	A	JFMA	
LYNN LAKE	LYN	1977	A		ASOND
		1978	A	MAMJ	JASOND
		1979	A	JFMAMJ	JASOND
		1980	A	JFMAMJ	JASOND
		1981	A	JFMAMJ	JASOND
		1982	A	JFMAMJ	JASOND
		1983	A	JFMAMJ	JASOND
MIDWAY	MDY	1978	A	MAMJ	JASOND
		1979	A	JFMAM	JASOND
		1980	A	JFMAM	J
		1981	A	FMA	
NORMAN WELLS	NOW	1977	A		JASOND
		1978	A	JFMAMJ	JASOND
		1979	A	JFMAMJ	JASOND
		1980	A	JFMAMJ	JASON
		1981	A	JFMAMJ	JASOND
		1982	A	JFMAMJ	JASOND
		1983	A	JFMAMJ	JASOND
PELLY BAY	PEB	1977	A		JASOND
		1978	A	JF AMJ	JASOND
		1979	A	JFM	
RANKIN INLET	RIT	1977	A		AS ND
		1978	A	MAMJ	JASOND
		1979	A	JFMAMJ	JASOND
		1980	A	JFMA	
		1981	A		OND
		1982	A	JF AM	
SACHS HARBOUR	SAH	1977	A		SOND
		1978	A	MAMJ	JASOND
		1979	A	JFMAMJ	JASOND
		1980	A	JFMAMJ	JASOND
		1981	A	JFMAMJ	JASOND
		1982	A	JFMAMJ	JASOND
		1983	A	JFMAMJ	JASOND

OBSERVATORY	CODE	YEAR	WDC	10-SECOND DATA	
SAN JUAN	SJG	1981	A	JFMAMJ	JASOND
		1982	A	JFMAMJ	JASOND
		1983	A	JFMAMJ	JASOND
TALKEETNA	TLK	1977	A		A N
		1978	A	AMJ	JASOND
		1979	A	JFMAMJ	JASOND
		1980	A	JFMAMJ	JASOND
		1981	A	JFMAMJ	JASOND
		1982	A	JFMAMJ	JASOND
		1983	A	JFMAMJ	JASOND
TUCSON	TUC	1981	A	JFMAMJ	JASOND
		1982	A	JFMAMJ	JASOND
		1983	A	JFMAMJ	JASOND
WAKE ISLAND	WKE	1978	A	MAMJ	JASOND
		1979	A	JFMAMJ	JASOND
		1980	A	JFMAMJ	JASOND
		1981	A	JFMAMJ	JASOND
		1982	A	JFMAM	

SECTION VI

Geomagnetic Indices

This section lists the various kinds of geomagnetic indices and the forms in which they are held. These indices include: AE, DST, Q,K, Kn, Ks, Km, Kp, Ap, Cp, Ci, C9, and aa.

1. Auroral Electrojet (AE) indices (including Supplementary AU, AL and AO indices)

Magnetic Tape

Hourly Values

AE	July 1957	December 1981
AL, AO and AU	September 1964	December 1981

2.5-Minute Values

AE, AL, AO and AU	September 1964	December 1974

1.0-Minute Values *

AE, AL, AO and AU	January 1975	December 1975
	January 1978	December 1981

Microfilm

Hourly Values (Tabular)

AE, AU, AL and AO	July 1957	December 1964
	January 1966	December 1975
	January 1978	December 1981
AE Plots	July 1957	December 1964
	January 1966	December 1975
	January 1978	December 1981

2.5-Minute Values

AE, AU and AL Plots	September 1964	December 1974
AO Plots	January 1966	December 1974

1.0-Minute Values

AE, AU, AL and AO Plots	January 1975	December 1975
	January 1978	December 1981

*Beginning with January 1975, WDC-A for STP has computed AE indices with 1-minute resolution but stopped routine index derivation after completing 1975. WDC-C2 (Geomagnetism) in Kyoto, Japan, produced 1-minute AE indices for the IMS years 1978 - 1979 and has continued production through 1981. Cooperation between WDC-A (Boulder) and WDC-C2 (Kyoto) has produced provisional AE indices for NASA for part of 1982 and all of 1983.

Publications

Hourly Values of the Auroral Electrojet Activity Index AE, UAG-R Series, Geophysical Institute, University of Alaska, July 1957 - December 1964.

The hourly values of AE, AU, AL and AO and the plots derived from the 2.5-minute or 1.0-minute values of the same indices have been published by WDC-A for Solar-Terrestrial Physics in the following issues of its UAG Report series:

Data for	Published in	Data for	Published in
1966	UAG-37 AE(10)	1971	UAG-39 AE(11)
1967	UAG-33 AE(10)	1972	UAG-45 AE(11)
1968	UAG-29 AE(11)	1973	UAG-47 AE(11)
1969	UAG-31 AE(11)	1974	UAG-59 AE(11)
1970	UAG-22 AE(11)	1975(Jan-Jun)	UAG-73 AE(12)
		1975(Jul-Dec)	UAG-76 AE(12)
1978(Jan-Jun)	WDC-C2 Data Book No. 3	1980(Jan-Jun)	WDC-C2 Data Book No 7
1978(Jul-Dec)	WDC-C2 Data Book No. 4	1980(Jul-Dec)	WDC-C2 Data Book No 8
1979(Jan-Jun)	WDC-C2 Data Book No. 5	1981(Jan-Jun)	WDC-C2 Data Book No 9
1979(Jul-Dec)	WDC-C2 Data Book No. 6	1981(Jul-Dec)	WDC-C2 Data Book No 10

Beginning with January 1966, the AE,AU,AL,AO data published in the UAG Report series have been systemtically derived from the original data taken by the number of observatories enclosed in parentheses. For example, AE(10) indicates 10 observatories. The data listed here on magnetic tape were also produced by this systematic analysis program for the period beginning in January 1966.

Provisional AE indices from a reduced 7 or 8-station network were published by WDC-A for STP in Reports UAG-60,62,63 and 64 for the first months of the IMS, January - April 1976.

2. Equatorial Dst Indices

Hourly Values 1957-1982

Publications

Hourly values of equatorial Dst for the interval January 1957 - February 1973 (several publications) by M. Sugiura and D.J. Poros, Goddard Space Flight Center, NASA.

Monthly tables beginning with the data for April 1973 are compiled by M. Sugiura and D. J. Poros and distributed by World Data Center A for Rockets and Satellites National Spaces Science Data Center.

Beginning with the data for May 1973, the Dst indices are published each month in Solar Geophysical Data.

Beginning with the data for 1970, the Dst indices are published in the IAGA Bulletins, Series No. 32.

SECTION VII

This section contains the following: (1) the digital formats used for the catalog inventories; (2) the software used to create the catalog tables (Tables 3-9); (3) the software used to manage the main catalog data base; and (4) two programs used for managing the geomagnetic hourly value and 2.5-minute data archives (Tables 12 and 13).

The catalog update and listing software were designed to run on a variety of computers with minimal changes. The programs require a computer with a minumum of 256 kilobytes of memory, 5 megabytes of disk and a standard Fortran-77 compiler.

The catalog and mapout systems are operational at WDC-A in Boulder. The published programs are preliminary versions intended to give a user a general idea of the type of coding used, data bases used, formats, and general capabilities. The code may contain errors and should not be key punched from these listings. The most current version of this software, data bases, and user manual are available upon request from WDC-A in Boulder at the cost of copying the data on 9-track magnetic tape (800, 1600, or 6250 bpi) or IBM compatible 5 1/4 " floppy disks. The Gamma system is operational at WDC-B in Moscow and available in a similar manner. This software presentation is included to encourage all data centers to seriously consider the advantages of jointly used and jointly developed software.

The catalog system includes three data bases, (1) the geomagnetic model and 1980 annual means data base (GEOFILE1), (2) main catalog data base (GEOBASE) and (3) the annual mean data base (GEOANNUAL).

Data Base Formats

1) Geomagnetic model and 1980 annual mean format

```
1682 ********************************************
1683 *     R E C O R D    F O R M A T  (GEOFILE1) *
1684 ********************************************
1685 *     CC 1-16  OBSERVATORY NAME             *
1686 *       17     BLANK                        *
1687 *       18-20  CODE                         *
1688 *       21-26  GEOGRAPHIC LATITUDE          *
1689 *       27-32  GEOGRAPHIC LONGITUDE         *
1690 *       33-38  GEOGRAPHIIC CO-LATITUE       *
1691 *       39     BLANK                        *
1692 *       40-45  DIPOLE CO-LATITUDE           *
1693 *       46-51  DIPOLE LONGITUDE             *
1694 *       52     BLANK                        *
1695 *       53-58  GUSTAFFSSON CO-LATITUTE      *
1696 *       59-64  GUSTAFFSSON LONGITUDE        *
1697 *       65     BLANK                        *
1698 *       66-71  TSYGANENKO CO-LATITUDE       *
1699 *       72-77  TSYGANENKO LONGITUDE         *
1700 *       78     BLANK                        *
1701 *       79-84  OBSERVED YEAR (1966.5)       *
1702 *       85-90  D OBSERVED                   *
1703 *       91-96  H OBSERVED                   *
1704 *       97-102 Z OBSERVED                   *
1705 *      103-108 X OBSERVED                   *
1706 *      109-114 Y OBSERVED                   *
1707 *      115-117 OBSERVED ELEMENTS            *
1708 *      118     BLANK                        *
1709 *      119-124 CALCULATED YEAR (1980.5)     *
1710 *      125-130 D CALCULATED                 *
1711 *      131-136 H CALCULATED                 *
1712 *      137-142 Z CALCULATED                 *
1713 *      143-148 X CALCULATED                 *
1714 *      149-154 Y CALCULATED                 *
1715 *      155-160 BLANK                        *
1716 ********************************************
```

2) Main Catalog data base format

```
35 ************************************************************
36 *                                                          *
37 *        R E C O R D   F O R M A T  (GEOBASE)              *
38 ************************************************************
39 *                                                          *
40 *     KOUT CC 1  -  16  = OBSERVATORY NAME                 *
41 *             17 -  19  = OBSERVATORY CODE                 *
42 *             21 -  25  = LATITUDE (+90.00 TO -90.00)      *
43 *             26 -  30  = LONGITUDE (0.00  TO 360.00 EAST)*
44 *             31 -  34  = YEAR (1983)                      *
45 *             35        = K INDICES                        *
46 *             36-   38  = ELEMENTS (DHZ OR XYZ)            *
47 *             39        = ANNUAL MEANS (A OR SPACE)        *
48 *             40        = Q INDICES                        *
49 *             41 -  46  = NORMAL CENTERS (ABCDEI)          *
50 *             47 -  58  = NORMAL MONTHS (JFMAMJJASOND)     *
51 *             59 -  64  = RAPID RUN CENTERS                *
52 *             65 -  76  = RAPID RUN MONTHS                 *
53 *             77 -  82  = HOURLY ANY CENTERS               *
54 *             83 -  94  = HOURLY ANY MONTHS                *
55 *             95 - 100  = HOURLY DIGITAL CENTERS           *
56 *            101 - 112  = HOURLY DIGITAL MONTHS            *
57 *            113 - 118  = 2.5-MINUTE CENTERS               *
58 *            119 - 130  = 2.5-MINUTE MONTHS                *
59 *            131 - 136  = 1.0-MINUTE CENTERS               *
60 *            137 - 148  = 1.0-MINUTE MONTHS                *
61 *            149 - 154  = 10-SECOND CENTERS                *
62 *            155 - 166  = 10-SECOND MONTHS                 *
63 *            167 - 171  = NORMAL MAGNETOGRAM FILM NUMBER 1*
64 *            172 - 176  = NORMAL MAGNETOGRAM FILM NUMBER 2*
65 *            177 - 181  = RAPID RUN          FILM NUMBER  *
66 *            182 - 186  = STORM              FILM NUMBER  *
67 *            187 - 191  = K INDICES          FILM NUMBER  *
68 *            192 - 196  = HOURLY VALUE       FILM NUMBER  *
69 *            197 - 200  = NOT USED                        *
70 ************************************************************
```

3) Annual Mean Data Base Format

```
*************************************************************
*        CC 1   -  19  = OBSERVATORY NAME                   *
*           20         = not used                          *
*           21  -  23  = OBSERVATORY CODE                  *
*           24         = not used                          *
*           25  -  32  = DATE                              *
*           33  -  40  = LATITUDE                          *
*           41  -  48  = LONGITUDE (East)                  *
*           49  -  54  = ELEVATION (Meters)                *
*           55  -  62  = DECLINATION          (D)          *
*           63  -  70  = INCLINATION          (I)          *
*           71  -  76  = HORIZONTAL INTENSITY (H)          *
*           77  -  82  = NORTH COMPONENT      (X)          *
*           83  -  88  = EAST  COMPONENT      (Y)          *
*           89  -  95  = VERTICAL   INTENSITY (Z)          *
*           96  - 101  = TOTAL      INTENSITY (F)          *
*          102  -        not used                          *
*          103           RECORD TYPE FLAG                  *
*          104  - 106  = FOOT NOTE                        *
*          107  - 111  = DATA SOURCE                      *
*          112  - 116  = SOURCE CODE                      *
*          117  - 119  = ELEMENT CODE                     *
*          120  -        not used                         *
*          121  - 123  = COUNTRY CODE                     *
*          124  -        not used                         *
*          125  - 130  = RECORD NUMBER                    *
*************************************************************
```

DATA BASE DESIGN

1) Geomagnetic model and 1980 annual mean (GEOFILE1)

The GEOFILE1 data base consists of one record for each listed observatory, approx. 500 records. Each record contains the graphic coordinates for the the observatory, its geomagnetic coordinates calculated using the Dipole, Gustaffsson, and Tsyganenko models, the latest or the 1980 observatory annual mean values, and the RIF calculated annual mean values for 1980 if no observed mean values are known. Th software only lists the data, and makes no attempt to update or manage the data base.

2) Main Catalog Data Base (GEOBASE)

The GEOBASE data base consists of one record for each observatory year for which any one or more o the WDC's hold some type of geomagnetic data. Each record contains the observatory name and code, year, K indices, Q indices, availability of annual means, normal magnetograms, rapid run magnetograms, hourly values from any source, digital hourly values, digital 2.5-minute data, and digital 1.0-minute data.

Although not listed in this publication, each record also contains the film numbers of 35MM film and 105mm fiche containing the normal magnetograms, rapid run magnetograms, storm magnetograms, K indices and hourly values.

A custom data base design was used to minimise the conversion problems associated with moving the data bases and software system to a variety of computers.

The design consists of the data base plus three sets of indexes at the beginning. The first index indicates the beginning record number for each observatory. The second index contains the observatory code for each observatory. The third index gives the beginning year for each observatory. When GEOBASE is loaded, a vacant position is inserted for all missing years between the beginning and end years of each observatory. Therefore, it is possible to calculate from the indices the record position of any observatory/year and to retrieve it with a single random access read. It is also possible to quickly list every record for a given year from all observatories or all records for a given observatory.

During the GEOBASE load, five vacant slots are inserted between each observatory. This space is used for adding new records. A limitation of the design is that only 5 new years for a given observatory at either the beginning or end of an observatory may be added. If more years are required, then the first 5 records are added, the data base is dumped to a sequential file and then reloaded, permitting 5 additional records to be added. The sequential file is 1.45 million characters and the GEOBASE file is 2.2 million characters.

3) Annual mean data base (GEOANNUAL)

The GEOANNUAL data base consists of one record for each observatory year for which an annual mean value exists. The data base presented here is a standard sequential file. The indexed version and the associated update and management software is available but not presented here.

Table 10 is the software necessary to dump, load and update the GEOBASE data base. Table 11 is th software necessary to create the listings from all three data bases as presented in Tables 3-9.

Table 10

GEOMAGNETIC CATALOG UPDATE PROGRAM

```
1  ************************************************************
2  *    PROGRAM:    GEOUPDATE                                 *
3  *    WRITTEN BY: CARL ABSTON                               *
4  *    DATE:       APRIL 1985                                *
5  *    LANGUAGE:   FORTRAN-77                                *
6  *    COMPUTER:   CHARLES RIVER MC6800 MICRO SYSTEM         *
7  *                                                          *
8  *    ADDRESS:    WORLD DATA CENTER-A                       *
9  *                325 BROADWAY                              *
10 *                BOULDER, COLORADO                         *
11 *                80303-USA                                 *
12 *    PHONE:      303-497-6276                              *
13 ************************************************************
14
15 ************************************************************
16 *     THE PURPOSE OF THIS PROGRAM IS THE FOLLOWING         *
17 *                                                          *
18 *     1)  TO UPDATE THE INTERNATIONAL GEOMAGNETIC          *
19 *         INVENTORY                                        *
20 *     2)  TO ALLOW THE USER TO RUN THIS SYSTEM ON ANY      *
21 *         COMPUTER WITH VERY FEW CHANGES                   *
22 *     3)  TO BE REASONABLY FAST AND USER FRIENDLY          *
23 *     4)  TO BE UNDERSTANDABLE AND EASY TO CHANGE          *
24 ************************************************************
25
26 ************************************************************
27 *     TO ACCOMPLISH THESE GOALS                            *
28 *     THE FOLLOWING COMPROMISES WERE MADE:                 *
29 *                                                          *
30 *     1)  FORTRAN-77 WAS USED                              *
31 *     2)  A CUSTOM DATA BASE STRUCTURE WAS USED            *
32 *     3)  ONLY THE SIMPLEST PROGRAMMING STYLE WAS USED     *
33 ************************************************************
34
35 ************************************************************
36 *                                                          *
37 *          D A T A   R E C O R D   F O R M A T              *
38 *          ----------------------------------              *
39 *                                                          *
40 *     KOUT CC 1  -  16  = OBSERVATORY NAME                 *
41 *             17 -  19  = OBSERVATORY CODE                 *
42 *             21 -  25  = LATITUDE (+90.00 TO -90.00)      *
43 *             26 -  30  = LONGITUDE (0.00  TO 360.00 EAST)*
44 *             31 -  34  = YEAR (1983)                      *
45 *             35        = K INDICES                        *
46 *             36-   38  = ELEMENTS (DHZ OR XYZ)            *
47 *             39        = ANNUAL MEANS (A OR SPACE)        *
48 *             40        = Q INDICES                        *
49 *             41 -  46  = NORMAL CENTERS (ABCDEI)          *
50 *             47 -  58  = NORMAL MONTHS (JFMAMJJASOND)     *
51 *             59 -  64  = RAPID RUN CENTERS                *
52 *             65 -  76  = RAPID RUN MONTHS                 *
53 *             77 -  82  = HOURLY ANY CENTERS               *
54 *             83 -  94  = HOURLY ANY MONTHS                *
55 *             95 - 100  = HOURLY DIGITAL CENTERS           *
56 *            101 - 112  = HOURLY DIGITAL MONTHS            *
57 *            113 - 118  = 2.5-MINUTE CENTERS               *
58 *            119 - 130  = 2.5-MINUTE MONTHS                *
59 *            131 - 136  = 1.0-MINUTE CENTERS               *
60 *            137 - 148  = 1.0-MINUTE MONTHS                *
61 *            149 - 154  = 10-SECOND CENTERS                *
62 *            155 - 166  = 10-SECOND MONTHS                 *
63 *            167 - 171  = NORMAL MAGNETOGRAM FILM NUMBER 1*
64 *            172 - 176  = NORMAL MAGNETOGRAM FILM NUMBER 2*
65 *            177 - 181  = RAPID RUN          FILM NUMBER  *
66 *            182 - 186  = STORM              FILM NUMBER  *
67 *            187 - 191  = K INDICES          FILM NUMBER  *
68 *            192 - 196  = HOURLY VALUE       FILM NUMBER  *
69 *            197 - 200  = NOT USED                        *
70 ************************************************************
71
72 ************************************************************
73 *           D A T A   B A S E   D E S I G N                *
74 *           -------------------------------                *
75 *                                                          *
76 *     THE FIRST 34 RECORD POSITIONS ARE RESERVED FOR       *
77 *     INDEXES                                              *
78 *     ALL DATA RECORDS MUST BE IN SEQUENCE BY OBSERVATORY *
79 *                      NAME AND YEAR                       *
80 *     EACH OBSERVATORY IS SEPARATED BY 5 BLANK RECORDS     *
81 *                                                          *
82 *     THERE ARE 3 SETS OF INDEX RECORDS                    *
83 *     1)  INDEX RECORDS 1-10 = OBSERVATORY POINTERS        *
84 *     2)  INDEX RECORDS 11-20= OBSERVATORY CODES           *
85 *     3)  INDEX RECORDS 21-30= OBSERVATORY BEGIN YEARS     *
86 *         ---------------------------------------------    *
87 *         RECORD POSITIONS 31-33 ARE NOT USED              *
88 *         RECORD POSITION  34 = NUMBER OF RECORDS IN FILE  *
89 *                                                          *
90 *     WITH THIS DESIGN                                     *
91 *     ----------------                                     *
92 *     IT IS POSSIBLE TO ADD UP TO FIVE NEW                 *
93 *     YEARS FOR EACH OBSERVATORY WITHOUT PROBLEMS          *
94 *     IT IS POSSIBLE TO ADD MISSING YEARS WITHOUT PROBLEMS*
95 *     IT IS POSSIBLE TO LOCATE ANY OBS-YEAR WITH ONE READ  *
96 *                                                          *
97 *     IT IS NOT POSSIBLE TO ADD MORE THAN 5 YEARS (RECORDS*
98 *     TO THE END OF ANY OBSERVATORY WITHOUT DUMPING AND    *
99 *     RELOADING THE DATA BASE                              *
100*                                                          *
```

```
C     NEW OBSERVATORIES                                              *
C     ----------------                                               *
C     NEW OBSERVATORIES CAN BE ADDED, HOWEVER THEY WILL BE*
C     ADDED AT THE END OF THE DATA BASE                              *
C     WHEN YOU PRINTOUT THE DATA ALL NEWLY ENTERED OBS               *
C     WIL BE OUT OF SEQUENCE                                         *
C     TO SOLVE THIS PROBLEM, IT IS NECESSARY TO:                     *
C     1) DUMP THE DATA BASE (GEOBASE) USING THE DUMP                 *
C        ROUTINE USING A FILE CALLED SEQ                             *
C     2) SORT THE SEQ DATA BASE USING THE SYSTEM SORT                *
C     3) LOAD THE SEQ DATA BASE USING THE LOAD ROUTINE               *
C*****************************************************************
C     1)  KCODE=AN ARRAY CONTAINING UP TO 500 (3 DIGIT)              *
C         CODES                                                      *
C     2)  KNUM= AN ARRAY CONTAINING UP TO 500 POINTS                 *
C               EACH POINTER CORRESPONDS TO THE BEGINNING            *
C               LOCATION OF EACH OBSERVATORY CODE                    *
C     3)  K19YR=AN ARRAY CONTAINING THE BEGINNING YEAR               *
C               OF EACH DIFFERENT OBSERVATORY                        *
C*****************************************************************

      INTEGER*4 KNUM,K19YR
      DIMENSION KNUM(500),KOUT1(50),K19YR(500)
      CHARACTER*3   ICODE
      CHARACTER*3   JCODE
      CHARACTER*6   KCENT
      CHARACTER*3   KCODE (500)
      CHARACTER*4   KEYR
      CHARACTER*16  KNAME
      CHARACTER*5   KLAT
      CHARACTER*5   KLONG
      CHARACTER*12  KMON
      CHARACTER*2   KMODE
      CHARACTER*2   KMODEX
      CHARACTER*2   KOP
      CHARACTER*200 KOUT
      CHARACTER*200 KOUT2
      CHARACTER*200 KSPACE
      CHARACTER*4   KYR
      CHARACTER*71  KZ
      CHARACTER*50  PASS

      KPAD = 0
      KREIN = 0

      DO 99 I=1,200
      KSPACE (I:I)=' '
99    CONTINUE
      KSCAN = 0

      PRINT *,
     -'                                                              '
1000  PRINT *,
     -'| WELCOME TO THE GEOMAGNETIC CATALOG UPDATE SYSTEM           |'
      PRINT *,
     -'|             VERSION 2.1   APRIL 1, 1985                    |'
      PRINT *,
     -'|_____________________________________________________________|'
      PRINT *, 'ENTER PASSWORD'
      READ (*,10)PASS
10    FORMAT (A)
      IF (PASS (1:6) .EQ. 'GEOMAG') GO TO 1001
      PRINT *, 'INVALID PASSWORD'
      GO TO 9999
1001  PRINT *, '                                                    '
      PRINT *, '|  ENTER U = UPDATE DATA BASE                      |'
      PRINT *, '|  ENTER I = LIST INDEX                            |'
      PRINT *, '|  -------------------------                       |'
      PRINT *, '|  ENTER L = LOAD DATA BASE                        |'
      PRINT *, '|  ENTER D = DUMP DATA BASE                        |'
      PRINT *, '|__________________________________________________|'
      READ (*,10)KMODE
      IF (KMODE (1:1) .EQ. 'U') GO TO 2000
      IF (KMODE (1:1) .EQ. 'L') GO TO 1010
      IF (KMODE (1:1) .EQ. 'D') GO TO 1050
      IF (KMODE (1:1) .EQ. 'I') GO TO 2000
      GO TO 1001
C*****************************************************************
C
C                  L O A D   D A T A   B A S E
C                  ___________________________
C
C*****************************************************************
C     CREATE A RANDOM ACCESS DATA BASE FROM A SEQUENTIAL FILE
C     1)  THE SEQUENTIAL FILE RECORDS ARE 200 CHARACTERS EACH
C
C     2)  THERE ARE NO END OF RECORD TERMINATORS IN THE SEQUE
C     3)  UNIT 21 IS THE INPUT FILE  (SEQUENTIAL FILE)
C     4)  UNIT 20 IS THE OUTPUT FILE (RANDOM ACCESS FILE WITH
C*****************************************************************
1010  PRINT *,'ENTER SYSTEM PASSWORD'
      READ (*,10)PASS
      IF (PASS (1:7) .EQ. 'GEOLOAD') GO TO 1011
      GO TO 9999
1011  PRINT *, '***** THE BASE BASE ---GEOBASE---WILL BE DEL
      PRINT *, 'ARE YOU SURE YOU WANT TO CONTINUE ENTER Y/N'
      READ (*,10)PASS
      IF (PASS(1:1) .NE. 'Y')GO TO 9999

      PRINT *, 'OPEN INPUT (SEQ) AND OUTPUT (GEOBASE) FILES'
```

```
      OPEN (21,FILE='SEQ',ACCESS='DIRECT',
     -RECL=200,FORM='UNFORMATTED')
      OPEN (20,FILE='GEOBASE',ACCESS='DIRECT',
     -RECL=200,FORM='UNFORMATTED',STATUS='NEW')
      PRINT *, 'FILES ARE OPENED'
*************************************************************
*     1)  READ THE SEQUINTIAL FILE AND WRITE DIRECT ACCESS  *
*         RECORDS BEGINNING AT RECORD POSITION 35           *
*     2)  CREATE AN INDEX ARRAY CONTAINING ALL OBSERVATORY  *
*         CODES IN THE DATA BASE                            *
*     3)  CREATE AN ARRAY OF POINTERS TO THE FIRST RECORD   *
*         FOR EACH CODE                                     *
*     4)  CREATE AN ARRAY CONTAINING THE BEGINNING YEAR     *
*         OF EACH OBSERVATORY                               *
*     5)  THE DATA FROM EACH DIFFERENT OBSERVATORY          *
*         IS SEPARATED WITH 5 BLANK RECORDS                 *
*     6)  MISSING YEARS ARE PADDED WITH BLANK RECORDS       *
*     7)  THE BLANK RECORDS WILL BE USED TO HOLD NEW DATA   *
*************************************************************
      I1=1
      I3=1
      INUM=35
      J=1
*********************************************************
*     READ FIRST RECORD                                 *
*********************************************************
      READ (21,REC=J,ERR=1020)KOUT
      KCODE (I1)=KOUT(17:19)
      KNUM (I1) = INUM
*********************************************************
*     CONVERT CC 31-34 IN KOUT (YEAR) INTO BINARY       *
*     IN FIRST RECORD ONLY                              *
*********************************************************
      READ (KOUT,FMT='(30X,I4)')L
      PRINT *,KCODE(I1), ' ', L
      K19YR(I1) = L
      LYR = L
      GO TO 1016

*********************************************************
*     READ REST OF RECORDS                              *
*********************************************************
1012  READ (21,REC=J,ERR=1020)KOUT
1013  IF (KOUT(17:19) .EQ. KCODE (I1)) GO TO 1015
      I1=I1+1
      KCODE (I1) = KOUT (17:19)
*********************************************************
*     CONVERT CC 31-34 IN KOUT (YEAR) INTO BINARY       *
*********************************************************
      READ (KOUT,FMT='(30X,I4)')L
      LYR=L
      K19YR (I1) = L
      PRINT *,KCODE (I1), I1,LYR
*********************************************************
*     WRITE 5 BLANK RECORDS BETWEEN DIFFERENT           *
*     OBSERVATORIES                                     *
*********************************************************
      KSPACE (31:34) = '    '
      DO 1014 I =1,5
      WRITE (20,REC=INUM)KSPACE
      INUM=INUM+1
1014  CONTINUE
      KNUM  (I1) = INUM
      K19YR (I1) = L
      GO TO 1016
*********************************************************
*     CONVERT CC 31-34 IN KOUT (YEAR) INTO BINARY       *
*********************************************************
1015  READ (KOUT,FMT='(30X,I4)')L
      PRINT *,KCODE(I1), ' ', L
10155 LYR=LYR +1
      IF (L .EQ. LYR) GO TO 1016
      WRITE (KSPACE(31:34),FMT='(I4)')LYR
      WRITE (20,REC=INUM)KSPACE
      INUM = INUM + 1
      GO TO 10155
1016  WRITE (20,REC=INUM)KOUT
      INUM = INUM +1
      J=J+1
      GO TO 1012
*********************************************************
*     END OF CREATING THE DATA BASE                     *
*     1) NOW WRITE THE CODES AND POINTERS               *
*     2) RECORD POSITIONS 1-35 ARE AVAILABLE FOR THIS   *
*        PURPOSE                                        *
*     3) POINTERS ARE 32 BIT BINARY                     *
*     4) CODES ARE 3-DIGITS EACH (LIKE; GWR)            *
*     5) RECORD 24 CONTAINS THE POSITION OF THE LAST    *
*        RECORD                                         *
*********************************************************

*********************************************************
*     WRITE 5 BLANK RECORDS AT END OF DATA BASE         *
*     ADD 999 AS THE LAT POSITION OF THE KCODE ARRAY    *
*********************************************************
1020  KSPACE (31:34) = '    '
      DO 10202 I =1,5
      WRITE (20,REC=INUM)KSPACE
      INUM=INUM+1
      I1=I1+1
```

```
      KCODE(I1) ='999'
10202 CONTINUE
      PRINT *, 'ALL DATA HAVE BEEN WRITTEN TO FILE GEOBASE'
      PRINT *, 'NUMBER OF RECORDS = ',INUM
      KOUT1(1) = INUM
      WRITE (20,REC=34)KOUT1

10203 J=1
      INUM=1
10201 DO 1021 I=1,50
      KOUT1(I) = KNUM (J)
      J=J+1
1021  CONTINUE
      WRITE (20,REC=INUM)KOUT1
      INUM=INUM +1
      IF (INUM .GT. 10) GO TO 1022
      GO TO 10201
************************************************
*      WRITE OUT CODE RECORDS                  *
*                                              *
************************************************

1022  INUM =11
      I1=1
      I2=3
      I3=1
1023  DO 1024 I=1,50
      KOUT (I1:I2) = KCODE (I3)
      I1=I1+3
      I2=I2+3
      I3=I3+1
1024  CONTINUE
      WRITE (20,REC=INUM)KOUT
      PRINT *,KOUT
      INUM = INUM +1
      IF (INUM .GT. 20) GO TO 1025
      I1=1
      I2=3
      GO TO 1023
******************************************************
*     LOAD BEGIN YEARS                               *
******************************************************
1025  INUM=21
      J=1
1026  DO 1027 I=1,50
      KOUT1(I) = K19YR (J)
      J=J+1
1027  CONTINUE
      WRITE (20,REC=INUM)KOUT1
      INUM = INUM + 1
      IF (INUM .GT. 30) GO TO 1030
      GO TO 1026
******************************************************
*     END OF LOADING INDEXES                         *
******************************************************

1030  PRINT *,
     -'DATA BASE AND INDEX POINTERS HAVE BEEN LOADED'
      GO TO 99999
******************************************************
*                                                    *
*     U P D A T E   R O U T I N E                    *
*     ___________________________                    *
*                                                    *
*     1) OPEN THE RANDOM ACCESS FILE                 *
*     2) LOAD INTO MEMORY THE CODE, POINTER INDEX,   *
*        AND BEGINNING YEAR                          *
******************************************************

2000  PRINT *,'WELCOME TO UPDATE ROUTINE'
      OPEN (20,FILE='GEOBASE',ACCESS='DIRECT',RECL=200,
     -FORM='UNFORMATTED')
      PRINT *, 'FILE GEOBASE OPENED'
      PRINT *, ' '
      PASS(1:6) = '      '
      KCENT(1:6) = '      '
20000 PRINT *, 'ENTER YOUR CENTER CODE OR END'
      PRINT *,
     -'A=BOULDER  B=MOSCOW  C=KYOTO  D=DENMARK  E=EDINBURGH
      READ (*,10)PASS
      IF (PASS(1:3) .EQ. 'END')GO TO 20011
      IF (PASS(1:1) .EQ. 'A') KCENT(1:1) = 'A'
      IF (PASS(1:1) .EQ. 'B') KCENT(2:2) = 'B'
      IF (PASS(1:1) .EQ. 'C') KCENT(3:3) = 'C'
      IF (PASS(1:1) .EQ. 'D') KCENT(4:4) = 'D'
      IF (PASS(1:1) .EQ. 'E') KCENT(5:5) = 'E'
      IF (PASS(1:1) .EQ. 'I') KCENT(6:6) = 'I'
      GO TO 20000
******************************************************
*     LOAD POINTER INDICES (FIRST 10 RECORDS)        *
******************************************************
20011 INUM=1
      J=1
2001  READ (20,REC=INUM)KOUT1
      PRINT *, 'RECORD NUMBER = ',INUM, 'POINTER NUMBER = ',
      DO 2002 I=1,50
      KNUM(J) = KOUT1 (I)
      J=J+1
2002  CONTINUE
      INUM = INUM + 1
```

```
      IF (INUM .GT. 10) GO TO 2003
      GO TO 2001
*********************************************************
*     LOAD  CODE INDICES INTO ARRAY                     *
*********************************************************
2003  PRINT *, 'POINTER INDEX LOADED'
      INUM=11
      I1=1
      I2=3
      I3=1
2004  READ (20,REC=INUM)KOUT
      DO 2005 I=1,50
      KCODE(I3) = KOUT (I1:I2)
      I1=I1+3
      I2=I2+3
      I3=I3+1
2005  CONTINUE
      INUM = INUM + 1
      IF (INUM .GT. 20) GO TO 2006
      I1=1
      I2=3
      GO TO 2004
*******************************************
*     LOAD BEGIN YEARS                    *
*******************************************
2006  INUM =21
      J=1

2007  READ (20,REC=INUM)KOUT1
      DO 2008 I=1,50
      K19YR (J) = KOUT1 (I)
      J=J+1
2008  CONTINUE
      INUM =INUM + 1
      IF (INUM .GT. 30) GO TO 2009
      GO TO 2007
2009  PRINT *, 'ALL INDICES ARE LOADED'
      IF (KMODE .EQ. 'I') GO TO 8000
      PRINT *, ' '

*****************************************************
*                                                   *
*     BEGIN UPDATING DATA BASE                      *
*           --------                                *
*****************************************************
2010  PRINT *,
     -'_____________________________________________________
      PRINT *,
     -'|                          ENTER
      PRINT *,
     -'|_____________________________________________________
      PRINT *,
     -'|  A = ADD     ONE RECORD        | D = DELETE ONE RECO
      PRINT *,
     -'|  C = CORRECT ONE RECORD        | L = LIST   ONE RECO
      PRINT *,
     -'|                                |
      PRINT *,
     -'|  CG= CORRECT GROUP OF RECORDS  | S = SCAN AN OBSERVA
      PRINT *,
     -'|  AG= ADD CENTERS TO GROUP      | AN= ALTERNATE NAME
      PRINT *,
     -'|                          E = END OF ROUTINE
      PRINT *,
     -'|_____________________________________________________
      PRINT *,' '
20101 READ (*,10)KMODE
      IF (KMODE .EQ. 'E') GO TO 9999
      IF (KMODE (1:2) .EQ. 'AN') GO TO 7050

2011  PRINT *, 'ENTER INTERNATIONAL CODE (3-DIGITS) OR END'
      READ (*,10)ICODE
      IF (ICODE (1:3) .EQ. 'END') GO TO 2010

      IF (KMODE .EQ. 'S')GO TO 2013
2012  PRINT *, 'ENTER YEAR (LIKE 1982)'
      READ (*,10)KYR
      IF (KYR (1:1) .NE. '1') GO TO 2012
      READ (KYR,FMT='(I4)')L
      PRINT *,L

20121 IF (KMODE(1:2) .EQ. 'CG')GO TO 20122
      IF (KMODE(1:2) .EQ. 'AG')GO TO 20122
      GO TO 2013
20122 PRINT *,'ENTER END YEAR (LIKE 1984)'
      READ (*,10)KEYR
      IF (KEYR (1:1) .NE. '1') GO TO 20121
      READ (KEYR,FMT='(I4)')LE
      PRINT *,'END YEAR = ',LE
*************************************************************
*     1) FIND OUT FROM THE INDEX--LOCATION OF ICODE DATA    *
*************************************************************
2013  J=1
      DO 2014 I=1,500
      IF (ICODE(1:3) .EQ. KCODE (I)) GO TO 2015
      J=J+1
2014  CONTINUE
      IF (KMODE(1:2) .EQ. 'A ') GO TO 2017
      PRINT*, 'NO SUCH OBSERVATORY CODE-TRY AGAIN'
      PRINT*, 'POSSIBLE CODES ARE AS FOLLOWS:'
```

```
      PRINT *,'                                                '
*************************************************************
*                                                           *
*     1) IF NO SUCH CODE EXIST THEN PRINTOUT ALL CODES      *
*        WITH THEIR NAMES USING THE FIRST LETTER            *
*        IN OTHER WORDS, IF CODE GGG WAS REQUESTED          *
*        PRINTOUT ALL CODES BEGINNING WITH G                *
*************************************************************

      DO 20141 I=1,500
      JCODE(1:3) = KCODE(I)
      IF (JCODE(1:1) .NE. ICODE(1:1)) GO TO 20141
      INUM = KNUM (I)
      READ (20,REC=INUM)KOUT
      PRINT *, JCODE(1:3),' = ',KOUT(1:16)
20141 CONTINUE
20142 PRINT *, '                                               '
      GO TO 2010
*************************************************************
*     FOUND THE OBSERVATORY CODE                            *
*     NOW CALCULATE LOCATION FOR OBS-YEAR POSITION          *
*     KNUM (J)  = BEGINNING LOCATION OF OBSERVATORY         *
*     K19YR (J) = BEGINNING YEAR OF REQUESTED OBSERVATORY   *
*     INUM = RECORD POSITION TO BE READ                     *
*     IC   = POSITION OF THE NEXT OBSERVATORY               *
*************************************************************

2015  INUM = KNUM (J)

      IHOLD=INUM

      IC =KNUM (J+1)
      IF (IC .LT. INUM ) IC = INUM + 1
      IA = INUM
      PRINT *, 'LOCATION OF FIRST OBS RECORD = ',INUM
      IF (KMODE (1:1) .EQ. 'S') GO TO 2080
      INUM = INUM+ (L - K19YR (J))
      KBEGIN=INUM

      PRINT *, 'LOCATION OF REQUESTED OBS-YEAR =',INUM
      IF (INUM .LE. IC) GO TO 2020
      PRINT *,'NO POSITION AVAILABLE FOR THIS RECORD'
      PRINT *,'AFTER COMPLETION OF THIS OPERATION'
      PRINT *,'PLEASE DUMP AND RELOAD THE DATA BASE'
      INUM = IC - 1
      GO TO 2020
*************************************************************
*                                                           *
*           A D D   N E W   O B S E R V A T O R Y           *
*           _____________________________________           *
*                                                           *
*     THIS ICODE DOES NOT EXISTS THEREFORE:                 *
*     1) FIND A BLANK RECORD POSITION ALPHEBETICLY          *
*        BY OBSERVATORY TO ADD THIS RECORD                  *
*     2) ADD RECORD                                         *
*     3) EXIT PROGRAM                                       *
*     4) DUMP DATA BASE                                     *
*     5) RELOAD DATA BASE                                   *
*************************************************************
2017  J=1
      JB=0
      PRINT *,'_____________________________________________'
      PRINT *,'THIS OBSERVATORY DOES NOT NOW EXIST IN THE DA
      PRINT *,'1--ADD ONE RECORD ONLY'
      PRINT *,'2--DUMP DATA BASE'
      PRINT *,'3--RELOAD DATA BASE'
      PRINT *,'_____________________________________________'
      PRINT *,'ENTER NAME OF OBSERVATORY'
      READ (*,10)KNAME

      DO 2018 I=1,500
      INUM = KNUM (J)
      J=J+1
      READ (20,REC=INUM)KOUT
      IF (KNAME(1:16) .GT. KOUT(1:16))GO TO 2018
      GO TO 2019
2018  CONTINUE
*************************************************************
*     YOU HAVE FOUND THE FIRST RECORD SMALLER               *
*     THAN THE NEW OBSERVATORY NAME                         *
*     STEP BACK ONE POSITION AND HOPE FOR A BLANK SLOT      *
*     IF BLANK SLOT IS AVAILABLE--GO TO ADD ROUTINE         *
*     IF NO BLANK SLOT IS AVAILABLE STEP BACK ONE MORE      *
*     AFTER 5 UNSUCCESSFUL TRIES-NO BLANKS EXISTS           *
*     THEREFORE--YOU MUST EXIT PROGRAM,DUMP, AND RELOAD     *
*************************************************************
2019  INUM = INUM -1
      READ (20,REC=INUM)KOUT
      IF (KOUT(1:16) .EQ. '                ')GO TO 20192
      JB = JB + 1
      IF(JB .GT. 5)GO TO 20191
      GO TO 2019
20191 PRINT *,'**THE CORRECT LOCATION FOR THIS NEW RECORD IS
      PRINT *,'THEREFORE: YOU MUST DUMP AND RELOAD DATA BASE
      PRINT *,'           BEFORE YOU CAN ADD THIS RECORD
      GO TO 99999
20192 PRINT *,'NEW RECORD WILL BE SERTED BY POSITION ', INUM
      PRINT *, 'ENTER NEW LATITUDE'
      READ (*,10)KLAT
      PRINT *, 'ENTER NEW LONGITUTE'
```

```
      READ (*,10)KLONG
      JB=999
      GO TO 2050
*****************************************************************
*     1) YOU HAVE FOUND THE FIRST RECORD FOR A GIVEN            *
*        OBSERVATORY                                            *
*     2) FIND THE LAST YEAR FOR DATA                            *
*     3) IF IA (BEGINNING LOCATION OF OBSERVATORY)              *
*        AND GREATER THAN IB THEN YOU ARE FOR DATA              *
*        BEFORE THE BEGINNING                                   *
*****************************************************************
2020  IB = INUM - 1
      IF (IB .LT.  IA) IB = IA
      READ (20,REC=IB,ERR=2025)KOUT
      IF (KOUT(3:34) .NE. '     ')GO TO 2021
      INUM = INUM - 1
      GO TO 2020
*****************************************************************
*     STORE OBS NAME LATITUTE AND LONGITUDE OF LATEST YEAR*
*****************************************************************
2021  KNAME = KOUT(1:16)
      KLAT = KOUT(21:25)
      KLONG= KOUT(26:30)
      PRINT *,'IA = ',IA
      PRINT *,'IB = ',IB
      PRINT *,'IC = ',IC
      INUM=KBEGIN
      PRINT *,'INUM=',INUM
*****************************************************************
*     READ THE SELECTED RECORD                                  *
*****************************************************************
      READ (20,REC=INUM,ERR=2025)KOUT

2022  IF (KMODE (1:2) .EQ. 'A ') GO TO 2050
      GO TO 2028
2025  PRINT *, 'YOU ARE BEYOND THE LIMITS OF THE DATA BASE'
      GO TO 2010
*****************************************************************
*     NO RECORD IS PRESENT FOR THIS OBSERVATORY-YEAR            *
*****************************************************************

2027  IF (KMODE (1:2) .EQ. 'A ') GO TO 2050
      IF (KMODE (1:1) .EQ. 'S') GO TO 2010
      PRINT *, 'NO SUCH RECORD EXISTS-TRY AGAIN'
      GO TO 2010
2028  IF (KMODE(1:1) .EQ. 'C') GO TO 3000
      IF (KMODE(1:1) .EQ. 'D') GO TO 4000

      IF (KMODE(1:1) .EQ. 'L') GO TO 4000
      IF (KMODE(1:2) .EQ. 'AG')GO TO 7000
      IF (KMODE(1:1) .EQ. 'E') GO TO 9999
      PRINT *, 'THIS RECORD ALREADY EXISTS-TRY AGAIN'
      GO TO 2010
*****************************************************************
*                                                               *
*                  ADD ROUTINE                                  *
*                  -----------                                  *
*                                                               *
*    1)  NO RECORD FOR THIS OBSERVATORY-YEAR IS PRESENT         *
*    2)  WE ARE LOCATED AT THE FIRST BLANK RECORD               *
*****************************************************************

2050  PRINT *, 'WELCOME TO THE ADD ROUTINE'
      IF (KOUT(1:5) .NE. '     ')GO TO 2066
      KOUT = KSPACE
2051  PRINT *, 'IS THERE A K-INDICES ENTER Y/N'
      READ (*,10)PASS
      IF (PASS(1:1) .EQ. 'Y') KOUT (35:35) = 'K'
2052  PRINT *, 'ENTER ELEMENTS (DHZ OR XYZ)'
      READ (*,10)PASS
      KOUT (36:38) = PASS (1:3)
2054  PRINT *, 'ENTER TYPE OF DATA OR END'
      PRINT *,'ENTER E = END OF DATA'
      PRINT *,'ENTER 1 = NORMAL MAGNETOGRAMS'
      PRINT *,'ENTER 2 = RAPID RUN MAGNETOGRAMS'
      PRINT *,'ENTER 3 = ANY HOURLY VALUES'
      PRINT *,'ENTER 4 = DIGITAL HOURLY VALUES'
      PRINT *,'ENTER 5 = 2.5-MINUTE VALUES'
      PRINT *,'ENTER 6 = 1.0-MINUTE VALUES'
      PRINT *,'ENTER 7 = 10-SECOND VALUES'
      READ (*,10)KMODE
      IF (KMODE (1:1) .EQ. 'E') GO TO 2060
2055  PRINT *, 'ENTER MONTHS (01,02,03, OR ALL) OR SAME=SAME
      READ (*,10)PASS
      PRINT *,PASS
      IF (PASS (1:3) .EQ. 'ALL') GO TO 2059
2056  I1=1
      I2=2
      KMON(1:12) = '
      DO 2057 I=1,12
      IF (PASS(I1:I2) .EQ. '01')KMON (1:1)='J'
      IF (PASS(I1:I2) .EQ. '02')KMON (2:2)='F'
      IF (PASS(I1:I2) .EQ. '03')KMON (3:3)='M'
      IF (PASS(I1:I2) .EQ. '04')KMON (4:4)='A'
      IF (PASS(I1:I2) .EQ. '05')KMON (5:5)='M'
      IF (PASS(I1:I2) .EQ. '06')KMON (6:6)='J'
      IF (PASS(I1:I2) .EQ. '07')KMON (7:7)='J'
      IF (PASS(I1:I2) .EQ. '08')KMON (8:8)='A'
      IF (PASS(I1:I2) .EQ. '09')KMON (9:9)='S'
      IF (PASS(I1:I2) .EQ. '10')KMON (10:10)='O'
```

```
      IF (PASS(I1:I2) .EQ. '11')KMON (11:11)='N'
      IF (PASS(I1:I2) .EQ. '12')KMON (12:12)='D'
      I1=I1+3
      I2=I2+3
 2057 CONTINUE

 2058 IF (KMODE (1:1) .EQ. '1') KOUT (47:58)   = KMON(1:12)
      IF (KMODE (1:1) .EQ. '2') KOUT (65:76)   = KMON(1:12)
      IF (KMODE (1:1) .EQ. '3') KOUT (83:94)   = KMON(1:12)
      IF (KMODE (1:1) .EQ. '4') KOUT (101:112) = KMON(1:12)
      IF (KMODE (1:1) .EQ. '5') KOUT (119:130) = KMON(1:12)
      IF (KMODE (1:1) .EQ. '6') KOUT (137:148) = KMON(1:12)
      IF (KMODE (1:1) .EQ. '7') KOUT (155:166) = KMON(1:12)

      IF (KMODE (1:1) .EQ. '1') KOUT (41:46)   = KCENT(1:6)
      IF (KMODE (1:1) .EQ. '2') KOUT (59:64)   = KCENT(1:6)
      IF (KMODE (1:1) .EQ. '3') KOUT (77:82)   = KCENT(1:6)
      IF (KMODE (1:1) .EQ. '4') KOUT (95:100)  = KCENT(1:6)
      IF (KMODE (1:1) .EQ. '5') KOUT (113:118) = KCENT(1:6)
      IF (KMODE (1:1) .EQ. '6') KOUT (131:136) = KCENT(1:6)
      IF (KMODE (1:1) .EQ. '7') KOUT (149:154) = KCENT(1:6)
      GO TO 2054
 2059 KMON (1:12) = 'JFMAMJJASOND'
      GO TO 2058

 2060 PRINT *, 'DO YOU HAVE FILM NUMBERS ENTER Y/N'
      READ (*,10)PASS
      IF (PASS(1:1) .NE. 'Y') GO TO 2061
      PRINT *, 'ENTER NORMAL (1) FILM NUMBER'
      READ (*,10) PASS
      KOUT(167:171) = PASS(1:5)
      PRINT *, 'ENTER NORMAL (2) FILM NUMBER'
      READ (*,10)PASS
      KOUT (172:176) = PASS(1:5)
      PRINT *, 'ENTER RAPID RUN FILM NUMBER'
      READ (*,10) PASS
      KOUT (177:181) = PASS(1:5)
      PRINT *, 'ENTER STORM FILM NUMBER'
      READ (*,10) PASS
      KOUT (182:186) = PASS(1:5)
      PRINT *, 'ENTER K FILM NUMBER'
      READ (*,10)PASS
      KOUT(187:191) = PASS (1:5)
      PRINT *, 'ENTER HV FILM NUMBER'
      READ (*,10)PASS
      KOUT(192:196) = PASS(1:5)
 2061 KOUT(1:16) = KNAME (1:16)
      KOUT (17:19) = ICODE (1:3)
      KOUT (31:34) = KYR (1:4)
      KOUT(21:25) = KLAT (1:5)
      KOUT(26:30) = KLONG (1:5)
      IF (KOUT(1:5) .NE. '     ') GO TO 2062
      PRINT *,'ENTER OBSERVATORY NAME'
      READ (*,10)KOUT(1:16)
      PRINT *,'ENTER LATITUDE (LIKE -1825 FOR -18.25)'
      READ (*,10)KOUT(21:25)
      PRINT *, 'ENTER LONGITUDE (LIKE 34000 FOR 340.00)'
      READ (*,10)KOUT(26:30)
 2062 CALL GEOLST (KOUT)
 2063 PRINT *, 'IS THIS RECORD CORRECT ENTER Y/N'
      READ (*,10)PASS
      IF (PASS(1:1) .EQ. 'Y') GO TO 2064
      GO TO 30001
 2064 WRITE (20,REC=INUM)KOUT
      IF (JB .EQ. 999) GO TO 99999
      IF (KPAD .EQ. 0) GO TO 2010
      KPAD = 0
*****************************************************************
*     THE NEW OBSERVTORY HAS BEEN WRITTEN
*     1)  WRITE 5 BLANK RECORDS
*     2)  WRITE A NEW NEW POSITION IN RECORD 34
*****************************************************************
      KSPACE (31:34) = '    '
      INUM=INUM +1
      DO 2065 I =1,5
      WRITE (20,REC=INUM)KSPACE
      INUM=INUM+1
 2065 CONTINUE
      KOUT1(1) = INUM
      PRINT *, 'NEW LAST POSITION = ',KOUT1(1)
      WRITE (20,REC=34) KOUT1
      GO TO 2010
 2066 PRINT *, '**** OBSERVATORY YEAR ALREADY EXISTS---USE C
      GO TO 2010
*****************************************************************
*
*                       SCAN OBSERVATORY
*                       ----------------
*           AND PRINTOUT ALL YEARS FOR GIVEN OBSERVATORY
*
*     KSCAN IS 0 AT BEGINNING OF PROGRAM
*     THE FIRST TIME A SCAN IS USED KSCAN IS SET TO 1
*     AND THE UNIT=19 IS OPENED
*     ALL RESULTS FROM THE SCAN ROUTINE IS PRINTED
*     AT THE USER TERMINAL AND WRITTEN TO FILE=GEOPRINTB
*****************************************************************

 2080 IF (KSCAN .EQ. 1) GO TO 20801
      KSCAN = 1
```

```
      OPEN (19,FILE= 'GEOPRINTB',STATUS='NEW',FORM='FORMATTE
20801 READ (20,REC=INUM,ERR=2083)KOUT
      KZ (1:54) = '
      PRINT *,KZ
      WRITE (19,101)KZ
101   FORMAT (A71)
      KZ(1:16) = '|  OBSERVATORY = '
      KZ(17:32)= KOUT (1:16)
      KZ(33:40)= '  CODE = '
      KZ(41:43)= KOUT(17:19)
      KZ(44:54)= '          | '
      PRINT *,KZ
      WRITE (19,101)KZ

      KZ(1:54) = '|                    ____________          __
      PRINT *,KZ
      WRITE (19,101)KZ

      KZ(1:54) = '|  LATITUDE =
      KZ (13:15) = KOUT (21:23)
      KZ (16:16) = '.'
      KZ (17:18) = KOUT (24:25)
      KZ (19:24) = ' NORTH'
      IF (KOUT(21:21) .EQ. '-') KZ(19:24) = ' SOUTH'
      IF (KOUT(22:22) .EQ. '-') KZ(19:24) = ' SOUTH'
      KZ (30:41) = 'LONGITUDE = '
      KZ (42:44) = KOUT (26:28)
      KZ (45:45) = '.'
      KZ (46:47) = KOUT (29:39)
      KZ (48:55) = ' EAST | '
      PRINT *,KZ
      WRITE (19,101)KZ

      KZ (1:54) ='| ____________________________________________
      PRINT *,KZ
      WRITE (19,101)KZ

      PRINT *, ' '
      KZ(1:54) ='YEAR  KAQ   MAGNETOGRAMS    HV-ANY       HV
      KZ(55:65) = '2.5-MINUTE'
      PRINT *,KZ
      WRITE (19,101)KZ

      KZ(1:40) = '
      KZ(41:54) = '              '
      KZ(55:68) = '1.0-MINUTE(*)'
      PRINT *,KZ
      WRITE (19,101)KZ

      KZ(1:30) = '___ __   ___________ __'
      KZ(31:39)= '_______ '
      KZ(41:68)= ' ____________________'
      PRINT *,KZ
      WRITE (19,101)KZ
      INUM=INUM+1
      GO TO 2082

2081  READ (20,REC=INUM,ERR=2083)KOUT
      INUM= INUM + 1
      IF (KOUT(1:3) .EQ. '   ') GO TO 2081
      IF (KOUT(17:19) .NE. ICODE(1:3)) GO TO 2083
2082  KZ(55:66) = KOUT(119:130)
      KZ(67:67)= ' '
      IF (KOUT(137:148) .NE. '            ')
     -KZ(55:66) = KOUT (137:148)
      IF (KOUT(137:148) .NE. '            ')
     -KZ(67:67) ='*'
      KZ(1:4) = KOUT (31:34)
      KZ (5:6) = '  '
      KZ (7:7) = KOUT(35:35)
      KZ (8:8) = KOUT (39:40)
      KZ (9:12) = '    '
      KZ (13:24) = KOUT (47:58)
      KZ (25:26) = ' '
      KZ (27:38) = KOUT (83:94)
      KZ (39:40) =  '  '
      KZ (41:52) = KOUT (101:112)
      KZ (53:54) = '  '
      PRINT *,KZ
      WRITE (19,101)KZ

20822 GO TO 2081

2083  GO TO 2010

*****************************************************************
*                                                               *
*                    CORRECT A RECORD                           *
*                    ----------------                           *
*****************************************************************

3000  IF (KOUT(17:19) .NE. '   ')GO TO 30002
      PRINT *, 'RECORD DOES NOT EXIST--TRY AGAIN'
      GO TO 2010

30002 IF (KMODE .EQ. 'CG') GO TO 6000
      PRINT *, 'WELCOME TO THE CORRECT ROUTINE'
30004 PRINT *, ' '
      KLC=2
      GO TO 4000
```

```
30001 KLC=0
      KBEGIN=INUM
      PRINT *, ' '
      PRINT *, 'DO YOU WANT A DESCRIPTION OF THE POSSIBLE
     - CHANGES  ENTER Y/N'
      READ (*,10)PASS
      IF (PASS(1:1) .EQ. 'N') GO TO 3002
3001  PRINT *, '
      PRINT *, 'YOU MAY NOT CHANGE OBSERVATORY CODE OR YEAR'
      PRINT *, 'ENTER E = TO END THE CORRECTION ROUTINE'
      PRINT *, 'ENTER 1 = TO CHANGE THE OBS NAME'
      PRINT *, 'ENTER 3 = TO CHANGE THE IAGA CODE'
      PRINT *, 'ENTER 4 = TO CHANGE THE GEOMAG LATITUTDE'
      PRINT *, 'ENTER 5 = TO CHANGE THE GEOMAG LONGITUTE'
      PRINT *, 'ENTER 7 = TO CHANGE THE K INDEX'
      PRINT *, 'ENTER 8 = TO CHANGE THE ELEMENTS'
      PRINT *, 'ENTER 9 = TO CHANGE THE NORMAL CENTER'
      PRINT *, 'ENTER 10 =TO CHANGE THE NORMAL MONTHS'
      PRINT *, 'ENTER 11 =TO CHANGE THE RAPID RUN CENTER'
      PRINT *, 'ENTER 12 =TO CHANGE THE RAPID RUN MONTHS'
      PRINT *, 'ENTER 13 =TO CHANGE THE ANY-SOURCE HV CENTER
      PRINT *, 'ENTER 14 =TO CHANGE THE ANY-SOURCE HV MONTHS
      PRINT *, 'ENTER 15 =TO CHANGE THE DIGITAL    HV CENTER
      PRINT *, 'ENTER 16 =TO CHANGE THE DIGITAL    HV MONTHS
      PRINT *, 'ENTER 17 =TO CHANGE THE 2.5-MINUTE    CENTER
      PRINT *, 'ENTER 18 =TO CHANGE THE 2.5-MINUTE    MONTHS
      PRINT *, 'ENTER 19 =TO CHANGE THE 1.0-MINUTE    CENTER
      PRINT *, 'ENTER 20 =TO CHANGE THE 1.0-MINUTE    MONTHS
      PRINT *, 'ENTER 21 =TO CHANGE THE 10-SECOND     CENTER
      PRINT *, 'ENTER 22 =TO CHANGE THE 10-SECOND     MONTHS
      PRINT *, 'ENTER 23 =TO CHANGE THE ANNUAL
      PRINT *, 'ENTER 24 =TO CHANGE THE Q-INDEX'
      PRINT *, 'ENTER 25 =TO CHANGE THE 1ST NORMAL FILM NUMB
      PRINT *, 'ENTER 26 =TO CHANGE THE 2ND NORMAL FILM NUMB
      PRINT *, 'ENTER 27 =TO CHANGE THE RAPID RUN  FILM NUMB
      PRINT *, 'ENTER 28 =TO CHANGE THE STORM      FILM NUMB
      PRINT *, 'ENTER 29 =TO CHANGE THE K          FILM NUMB
      PRINT *, 'ENTER 30 =TO CHANGE THE HV         FILM NUMB
3002  PRINT *, ' '
      PRINT *, 'ENTER ITEM NUMBER OF CHANGE 3-30 OR E=END'
      READ(*,10)KOP
30022 IF (KOP(1:1) .EQ. 'E') GO TO 3050
      IF (KOP(1:2) .EQ. '03')GO TO 3003
      IF (KOP(1:2) .EQ. '04')GO TO 3004
      IF (KOP(1:2) .EQ. '05')GO TO 3005
      IF (KOP(1:2) .EQ. '07')GO TO 3007
      IF (KOP(1:2) .EQ. '08')GO TO 3008
      IF (KOP(1:2) .EQ. '09')GO TO 3009
      IF (KOP(1:2) .EQ. '23') GO TO 3023
      IF (KOP(1:2) .EQ. '24') GO TO 3024
      IF (KOP(1:2) .EQ. '25') GO TO 3025
      IF (KOP(1:2) .EQ. '26') GO TO 3026
      IF (KOP(1:2) .EQ. '27') GO TO 3027
      IF (KOP(1:2) .EQ. '28') GO TO 3028
      IF (KOP(1:2) .EQ. '29') GO TO 3029
      IF (KOP(1:2) .EQ. '30') GO TO 3030
      IF (KOP(1:2) .EQ. '10') GO TO 3010
      IF (KOP(1:2) .EQ. '12') GO TO 3010
      IF (KOP(1:2) .EQ. '14') GO TO 3010
      IF (KOP(1:2) .EQ. '16') GO TO 3010
      IF (KOP(1:2) .EQ. '18') GO TO 3010
      IF (KOP(1:2) .EQ. '20') GO TO 3010
      IF (KOP(1:2) .EQ. '22') GO TO 3010
      IF (KOP(1:2) .EQ. '11') GO TO 3015
      IF (KOP(1:2) .EQ. '13') GO TO 3016
      IF (KOP(1:2) .EQ. '15') GO TO 3017
      IF (KOP(1:2) .EQ. '17') GO TO 3018
      IF (KOP(1:2) .EQ. '19') GO TO 3019
      IF (KOP(1:2) .EQ. '21') GO TO 3020
      IF (KOP(1:1) .EQ. '3')GO TO 3003
      IF (KOP(1:1) .EQ. '4')GO TO 3004
      IF (KOP(1:1) .EQ. '5')GO TO 3005
      IF (KOP(1:1) .EQ. '7')GO TO 3007
      IF (KOP(1:1) .EQ. '8')GO TO 3008
      IF (KOP(1:1) .EQ. '9')GO TO 3009
      IF (KOP(1:1) .EQ. '1') GO TO 3031
      IF (KOP(1:2) .EQ. '01')GO TO 3031
30021 PRINT *, 'INVALID--TRY AGAIN'
      GO TO 3002

3003  PRINT *, 'ENTER NEW IAGA CODE'
      READ (*,10)PASS
      KOUT(20:20)=PASS(1:1)
      GO TO 3062
3004  PRINT *, 'ENTER NEW LATITUDE'
      READ (*,10)PASS
      KOUT(21:25) = PASS(1:5)
      GO TO 3062
3005  PRINT *, 'ENTER NEW LONGITUTE'
      READ (*,10)PASS
      KOUT (26:30) = PASS (1:5)
      GO TO 3062
3007  PRINT *, 'ENTER NEW K INDEX'
      READ (*,10)PASS
      KOUT (35:35) = PASS (1:1)
      GO TO 3062
3008  PRINT *, 'ENTER NEW ELEMENTS DHZ OR XYZ'
      READ (*,10)PASS
      KOUT(36:38) = PASS(1:3)
      GO TO 3062
```

```
1001 3009  PRINT *, 'ENTER NEW NORMAL CENTERS'
1002       READ (*,10)PASS
1003       KOUT(41:46) = PASS(1:12)
1004       GO TO 3062
1005 3010  PRINT *, 'ENTER MONTHS (01,02,03, OR ALL)'
1006       READ (*,10)PASS
1007       PRINT *,PASS
1008       IF (PASS (1:3) .EQ. 'ALL') GO TO 3014
1009 3011  I1=1
1010       I2=2
1011       KMON(1:12) = '
1012       DO 3012 I=1,12
1013       IF (PASS(I1:I2) .EQ. '01')KMON (1:1)='J'
1014       IF (PASS(I1:I2) .EQ. '02')KMON (2:2)='F'
1015       IF (PASS(I1:I2) .EQ. '03')KMON (3:3)='M'
1016       IF (PASS(I1:I2) .EQ. '04')KMON (4:4)='A'
1017       IF (PASS(I1:I2) .EQ. '05')KMON (5:5)='M'
1018       IF (PASS(I1:I2) .EQ. '06')KMON (6:6)='J'
1019       IF (PASS(I1:I2) .EQ. '07')KMON (7:7)='J'
1020       IF (PASS(I1:I2) .EQ. '08')KMON (8:8)='A'
1021       IF (PASS(I1:I2) .EQ. '09')KMON (9:9)='S'
1022       IF (PASS(I1:I2) .EQ. '10')KMON (10:10)='O'
1023       IF (PASS(I1:I2) .EQ. '11')KMON (11:11)='N'
1024       IF (PASS(I1:I2) .EQ. '12')KMON (12:12)='D'
1025       I1=I1+3
1026       I2=I2+3
1027 3012  CONTINUE
1028
1029 3013  IF (KOP (1:2) .EQ. '10') KOUT (47:58)   = KMON(1:12)
1030       IF (KOP (1:2) .EQ. '12') KOUT (65:76)   = KMON(1:12)
1031       IF (KOP (1:2) .EQ. '14') KOUT (83:94)   = KMON(1:12)
1032       IF (KOP (1:2) .EQ. '16') KOUT (101:112) = KMON(1:12)
1033       IF (KOP (1:2) .EQ. '18') KOUT (119:130) = KMON(1:12)
1034       IF (KOP (1:2) .EQ. '20') KOUT (137:148) = KMON(1:12)
1035       IF (KOP (1:2) .EQ. '22') KOUT (155:166) = KMON(1:12)
1036       GO TO 3062
1037 3014  KMON (1:12) = 'JFMAMJJASOND'
1038       GO TO 3013
1039
1040 3015  PRINT *, 'ENTER NEW RAPID RUN CENTERS'
1041       READ (*,10)PASS
1042       KOUT(59:64) = PASS(1:12)
1043       GO TO 3062
1044 3016  PRINT *, 'ENTER NEW HV ANY CENTERS'
1045       READ (*,10)PASS
1046       KOUT(77:82) = PASS(1:12)
1047       GO TO 3062
1048 3017  PRINT *, 'ENTER NEW HV DIGITAL CENTERS'
1049       READ (*,10)PASS
1050       KOUT(95:100) = PASS(1:12)
1051       GO TO 3062
1052 3018  PRINT *, 'ENTER NEW 2.5-MINUTE CENTERS'
1053       READ (*,10)PASS
1054       KOUT(113:118) = PASS(1:12)
1055       GO TO 3062
1056 3019  PRINT *, 'ENTER NEW 1.0-MINUTE CENTERS'
1057       READ (*,10)PASS
1058       KOUT(131:136) = PASS(1:12)
1059       GO TO 3062
1060 3020  PRINT *, 'NTER NEW 10-SECOND CENTERS'
1061       READ (*,10)PASS
1062       KOUT(149:154) = PASS(1:12)
1063       GO TO 3062
1064
1065
1066 3023  PRINT *, 'ENTER NEW ANNUAL NOTATION'
1067       READ (*,10)PASS
1068       KOUT (39:39) = PASS(1:1)
1069       GO TO 3062
1070 3024  PRINT *, 'ENTER NEW Q-INDEX'
1071       READ (*,10)PASS
1072       KOUT (40:40) = PASS(1:1)
1073       GO TO 3062
1074 3025  PRINT *, 'ENTER NEW FILM NUMBER FOR 1ST NORMAL'
1075       READ (*,10)PASS
1076       KOUT (167:171) = PASS(1:5)
1077       GO TO 3062
1078 3026  PRINT *, 'ENTER NEW FILM NUMBER FOR 2ND NORMAL'
1079       READ (*,10)PASS
1080       KOUT (172:176) = PASS(1:5)
1081       GO TO 3062
1082 3027  PRINT *, 'ENTER NEW FILM NUMBER FOR RAPID RUN'
1083       READ (*,10)PASS
1084       KOUT (177:181) = PASS(1:5)
1085       GO TO 3062
1086 3028  PRINT *, 'ENTER NEW FILM NUMBER FOR STORM'
1087       READ (*,10)PASS
1088       KOUT (182:186) = PASS(1:5)
1089       GO TO 3062
1090 3029  PRINT *, 'ENTER NEW FILM NUMBER FOR K INDICES'
1091       READ (*,10)PASS
1092       KOUT (187:191) = PASS (1:5)
1093       GO TO 3062
1094 3030  PRINT *, 'ENTER NEW FILM NUMBER FOR HOURLY VALUES'
1095       READ (*,10)PASS
1096       KOUT (192:196) = PASS(1:5)
1097       GO TO 3062
1098
1099 3031  IF (KOUT(1:5) .NE. '     ') GO TO 30021
1100       PRINT *,'ENTER NAME OF OBSERVATORY'
```

```
      READ (*,10)KOUT(1:16)
      GO TO 3062

3050  IF (KMODE (1:2) .EQ. 'CG')GO TO 2010
      KLC=1
      GO TO 4000
3051  KLC=0
      PRINT *, 'IS THIS RECORD CORRECT ENTER Y/N'
      READ (*,10)PASS
      IF (PASS(1:1) .EQ. 'Y' ) GO TO 3052
      GO TO 3062
3052  WRITE (20,REC=INUM)KOUT
      GO TO 2010

*************************************************************
*                    GROUP CORRECT                          *
*                    -------------                          *
*     FOR CG (GROUP CORRECT SECTION)                        *
*     CORRECT EACH RECORD FOR ONE ITEM AT A TIME            *
*************************************************************

3062  IF (KMODE(1:2) .EQ. 'C ')GO TO 3002
      PRINT *,'                                          '
      PRINT *,'|  THE FOLLOWING RECORDS WERE CORRECTED  |'
      PRINT *,'|                                        |'
      PRINT *,'|                                        |'

30622 WRITE (20,REC=INUM)KOUT
      PRINT *,KOUT(1:34)
      INUM=INUM+1
      IF (INUM .GT. INUME)GO TO 3064
3063  READ(20,REC=INUM)KOUT
      GO TO 6020

3064  INUM=KBEGIN
      PRINT *,'INUM= ',INUM
      READ(20,REC=INUM)KOUT
      GO TO 3002
4000  CALL GEOLST (KOUT)
      IF (KMODE .EQ. 'D') GO TO 4001
      IF (KLC .EQ. 1) GO TO 3051
      IF (KLC .EQ. 2) GO TO 30001
      IF (KLC .EQ. 4) GO TO 2063
      PRINT *,'ENTER A=ADD C=CORRECT D=DELETE L=LIST
     -E=END CG=CORRRECT GROUP'
      GO TO 20101

*************************************************************
*                                                           *
*                    DELETE A RECORD                        *
*                    --------------                         *
*************************************************************

4001  PRINT *, 'DO YOU REALLY WANT TO DELETE THIS RECORD'
      PRINT *, 'ENTER Y/N'
      READ (*,10)PASS
      IF (PASS(1:1) .EQ. 'Y') GO TO 4002
      GO TO 2010
4002  WRITE (20,REC=INUM)KSPACE
      GO TO 2010
5000  GO TO 9999

*************************************************************
*
*     CORRRECT A GROUP OF YEARS FOR THE SAME OBSERVATORY
*
*************************************************************

6000  PRINT *,'WELCOME TO THE GROUP CORRECT'
      PRINT *, ' '
      INUME = IHOLD + (LE - K19YR (J))
      PRINT *,'LOCATION OF LAST REQUESTED OBS/YEAR = ',INUME
      READ (20,REC=INUME,ERR=2025)KOUT2
      IF (KOUT(1:16) .NE. KOUT2(1:16))GO TO 6010
6001  GO TO 30004

6010  PRINT *,'*** ERROR *** NO SUCH LAST RECORD--TRY AGAIN'
      PRINT *,KOUT2(1:50)
      GO TO 2010
6020  IF (KOP(1:2) .EQ. '03')GO TO 6023
      IF (KOP(1:2) .EQ. '04')GO TO 6024
      IF (KOP(1:2) .EQ. '05')GO TO 6025
      IF (KOP(1:2) .EQ. '07')GO TO 6027
      IF (KOP(1:2) .EQ. '08')GO TO 6028
      IF (KOP(1:2) .EQ. '09')GO TO 6029
      IF (KOP(1:2) .EQ. '23') GO TO 6043
      IF (KOP(1:2) .EQ. '24') GO TO 6044
      IF (KOP(1:2) .EQ. '25') GO TO 6045
      IF (KOP(1:2) .EQ. '26') GO TO 6046
      IF (KOP(1:2) .EQ. '27') GO TO 6047
      IF (KOP(1:2) .EQ. '28') GO TO 6048
      IF (KOP(1:2) .EQ. '29') GO TO 6049
      IF (KOP(1:2) .EQ. '30') GO TO 6050
      IF (KOP(1:2) .EQ. '10') GO TO 6030
      IF (KOP(1:2) .EQ. '12') GO TO 6030
      IF (KOP(1:2) .EQ. '14') GO TO 6030
      IF (KOP(1:2) .EQ. '16') GO TO 6030
      IF (KOP(1:2) .EQ. '18') GO TO 6030
      IF (KOP(1:2) .EQ. '20') GO TO 6030
      IF (KOP(1:2) .EQ. '22') GO TO 6030
```

```
      IF (KOP(1:2) .EQ. '24') GO TO 6030
      IF (KOP(1:2) .EQ. '11') GO TO 6035
      IF (KOP(1:2) .EQ. '13') GO TO 6036
      IF (KOP(1:2) .EQ. '15') GO TO 6037
      IF (KOP(1:2) .EQ. '17') GO TO 6038
      IF (KOP(1:2) .EQ. '19') GO TO 6039
      IF (KOP(1:2) .EQ. '21') GO TO 6040
      IF (KOP(1:1) .EQ. '3')GO TO 6023
      IF (KOP(1:1) .EQ. '4')GO TO 6024
      IF (KOP(1:1) .EQ. '5')GO TO 6025
      IF (KOP(1:1) .EQ. '7')GO TO 6027
      IF (KOP(1:1) .EQ. '8')GO TO 6028
      IF (KOP(1:1) .EQ. '9')GO TO 6029
      IF (KOP(1:1) .EQ. '1') GO TO 6051
      IF (KOP(1:2) .EQ. '01')GO TO 6051

 6023 KOUT(20:20)=PASS(1:1)
      GO TO 30622
 6024 KOUT(21:25) = PASS(1:5)
      GO TO 30622
 6025 KOUT (26:30) = PASS (1:5)
      GO TO 30622
 6027 KOUT (35:35) = PASS (1:1)
      GO TO 30622
 6028 KOUT(36:38) = PASS(1:3)
      GO TO 30622
 6029 KOUT(41:46) = PASS(1:6)
      GO TO 30622
 6030 IF (KOP (1:2) .EQ. '10') KOUT (47:58)   = KMON(1:12)
      IF (KOP (1:2) .EQ. '12') KOUT (65:76)   = KMON(1:12)
      IF (KOP (1:2) .EQ. '14') KOUT (83:94)   = KMON(1:12)
      IF (KOP (1:2) .EQ. '16') KOUT (101:112) = KMON(1:12)
      IF (KOP (1:2) .EQ. '18') KOUT (119:130) = KMON(1:12)
      IF (KOP (1:2) .EQ. '20') KOUT (137:148) = KMON(1:12)
      IF (KOP (1:2) .EQ. '22') KOUT (155:166) = KMON(1:12)
      GO TO 30622
 6035 KOUT(59:64) = PASS(1:6)
      GO TO 30622
 6036 KOUT(77:82) = PASS(1:6)
      GO TO 30622
 6037 KOUT(95:100) = PASS(1:6)
      GO TO 30622
 6038 KOUT(113:118) = PASS(1:6)
      GO TO 30622
 6039 KOUT(131:136) = PASS(1:6)
      GO TO 30622
 6040 KOUT(149:154) = PASS(1:6)
      GO TO 30622

 6043 KOUT (39:39) = PASS(1:1)
      GO TO 30622
 6044 KOUT (40:40) = PASS(1:1)
      GO TO 30622
 6045 KOUT (167:171) = PASS(1:5)
      GO TO 30622
 6046 KOUT (172:176) = PASS(1:5)
      GO TO 30622
 6047 KOUT (177:181) = PASS(1:5)
      GO TO 30622
 6048 KOUT (182:186) = PASS(1:5)
      GO TO 30622
 6049 KOUT (187:191) = PASS(1:5)
      GO TO 30622
 6050 KOUT (192:196) = PASS(1:5)
      GO TO 30622
 6051 GO TO 30622
 6052 GO TO 30622
************************************************************
*                                                          *
*        ADD CORRECTIONS TO GROUP OF RECORDS               *
*        ___________________________________               *
*                                                          *
************************************************************
 7000 CALL SUBAG (KOUT,INUM,L,LE)
      GO TO 2010
************************************************************
*                                                          *
*        LIST OUT ALTERNATE OBSERVATORY NAMES              *
*        ____________________________________              *
************************************************************
 7050 CALL SUBAN
      GO TO 2010

************************************************************
*     LIST OUT THE INDEX AND POINTERS                      *
************************************************************
 8000 DO 8001 I=1,500,5
      PRINT *,KCODE (I),KNUM(I), ' ',KCODE (I+1),
     -KNUM (I+1),' ',
     -KCODE(I+2),KNUM(I+2), ' ',KCODE (I+3),KNUM(I+3),' ',
     -KCODE(I+4),KNUM(I+4)
 8001 CONTINUE
      GO TO 2010
************************************************************
*                                                          *
*                D U M P   D A T A   B A S E               *
*                _____________________________             *
*                                                          *
*     1)  DUMP RANDOM ACCESS FILE INTO SEQUENTIAL FILE     *
*     2)  DELETE ALL BLANK RECORDS                         *
```

```
1301 ************************************************************
1302
1303 1050  PRINT *,'ENTER SYSTEM PASSWORD'
1304       READ (*,10)PASS
1305       IF (PASS (1:7) .EQ. 'GEODUMP') GO TO 1051
1306       GO TO 9999
1307 1051  PRINT *, 'OPEN INPUT (GEOBASE) AND OUTPUT (SEQ) FILES'
1308       OPEN (20,FILE='GEOBASE',ACCESS='DIRECT',
1309      -RECL=200,FORM='UNFORMATTED')
1310       OPEN (21,FILE='SEQ',ACCESS='DIRECT',
1311      -RECL=200,FORM='UNFORMATTED',STATUS='NEW')
1312       PRINT *, 'FILES ARE OPENED'
1313 1052  INUM = 35
1314       J=1
1315       KLOOP=0
1316 1053  READ (20,REC=INUM,ERR=1054) KOUT
1317       INUM = INUM + 1
1318       IF (KOUT(17:19) .EQ. '   ') GO TO 1053
1319       WRITE (21,REC=J)KOUT
1320       J = J+1
1321       KLOOP=KLOOP+1
1322       IF (KLOOP .NE. 1000) GO TO 1053
1323       KLOOP=0
1324       PRINT *,'RECORD JUST WRITTEN = ',KOUT(17:19),' ',
1325      - KOUT(31:34),' ',J
1326       GO TO 1053
1327
1328 1054  PRINT *, 'ALL RECORDS HAVE BEEN WRITTEN TO FILE: SEQ'
1329       PRINT *, 'NUMBER RECORDS = ',J
1330       CLOSE (21)
1331 ************************************************************
1332 *                                                          *
1333 *                     END OF PROGRAM                       *
1334 *                     ______________                       *
1335 ************************************************************
1336 9999  PRINT *, 'END OF GEOMAGNETIC UPDATE PROGRAM'
1337       IF (KSCAN .EQ. 1)
1338      -PRINT *,'RESULTS FROM SCAN ARE ON FILE GEOPRINTB'
1339       IF (KREIN .EQ. 0) GO TO 99999
1340 ************************************************************
1341 *     A NEW OBSERVATORY HAS ADDED                          *
1342 *     1)  REWRITE ALL INDICES                              *
1343 ************************************************************
1344       GO TO 10203
1345
1346 99999 END
1347
1348
1349
```

```
 4000  SUBROUTINE GEOLST (KOUT)
*************************************************************
*                                                           *
*     LIST ONE RECORD                                       *
*                                                           *
*************************************************************
      CHARACTER*200 KOUT
      CHARACTER*71  KZ

      PRINT *, 'LIST ONE RECORD '
      KZ(1:30)='______________________________'
      KZ(31:71)='_________________________________________'
      PRINT *,KZ

      KZ(1:38) = '|  OBSERVATORY NAME        (01)     | '
      KZ(39:54)= KOUT(1:16)
      KZ(55:64) = '          |'
      PRINT *,KZ

      KZ(1:38) = '|  OBSERVATORY CODE        (02)     | '
      KZ(39:41)= KOUT(17:19)
      KZ(42:64) = '                       |           '
      PRINT *,KZ

      KZ(1:38) = '|  YEAR                    (06)     | '
      KZ(39:42)= KOUT(31:34)
      KZ(43:64) = '                      |        '
      PRINT *,KZ

      IF (KOUT(20:20) .NE. ' ')
     -PRINT *, '(03) IAGA CODE           ::      ',
     -KOUT(20:20)

      KZ(1:38) = '|  LATITUDE (NORTH)        (04)     | '
      KZ(39:43)= KOUT(21:25)
      KZ(44:45) = ' ('
      KZ(46:48) = KOUT(21:23)
      KZ(49:49) = '.'
      KZ(50:51) = KOUT (24:25)
      KZ(53:53) = ')'
      KZ(54:64) = '          |        '
      PRINT *,KZ

      KZ(1:38) = '|  LONGITUDE (EAST)        (05)     | '
      KZ(39:43)= KOUT(26:30)
      KZ(44:45) = ' ('
      KZ(46:48) = KOUT(26:28)
      KZ(49:49) = '.'
      KZ(50:51) = KOUT (29:30)
      KZ(53:53) = ')'
      KZ(54:64) = '          |        '
      PRINT *,KZ
      KZ(1:30)='______________________________'
      KZ(31:71)='_________________________________________'

      PRINT *,KZ

      KZ(1:22) = '           TYPE OF DATA'
      KZ(23:48)= '            CENTERS       '
      KZ(49:71)= ' MONTHS                  '
      PRINT *,KZ
      KZ(1:30)='______________________________'
      KZ(31:71)='_________________________________________'
      PRINT *,KZ

      KZ(1:34) = '| NORMAL MAGNETOGRAMS       (09) | '
      KZ(35:40)= KOUT(41:46)
      KZ(41:43)= ' | '
      KZ(44:55) = KOUT(47:58)
      KZ(56:64) = ' | (10) | '
      PRINT *,KZ

      KZ(1:34) = '| RAPID RUN MAGNETOGRAMS   (11) | '
      KZ(35:40) = KOUT(59:64)
      KZ(41:43) = ' | '
      KZ(44:55) = KOUT(65:76)
      KZ(56:64) = ' | (12) | '
      PRINT *,KZ

      KZ(1:34) = '| HOURLY VALUES-ANY SOURCE (13) | '
      KZ(35:40)=  KOUT(77:82)
      KZ(41:43)= ' | '
      KZ(44:55)=  KOUT(83:94)
      KZ(56:64) = ' | (14) | '
      PRINT *,KZ

      KZ(1:34) = '| HOURLY VALUES-DIGITAL    (15) | '
      KZ(35:40)=  KOUT(95:100)
      KZ(41:43)= ' | '
      KZ(44:55)=  KOUT(101:112)
      KZ(56:64) = ' | (16) | '
      PRINT *,KZ

      KZ(1:34) = '| 2.5-MINUTE               (17) | '
      KZ(35:40)=  KOUT(113:118)
      KZ(41:43)= ' | '
      KZ(44:55)=  KOUT(119:130)
      KZ(56:64) = ' | (18) | '
      PRINT *,KZ
```

```
1450        KZ(1:34) = '|  1.0-MINUTE                    (19) | '
1451        KZ(35:40)=  KOUT(131:136)
1452        KZ(41:43)= ' | '
1453        KZ(44:55)=  KOUT(137:148)
1454        KZ(56:64) = ' |  (20) | '
1455        PRINT *,KZ
1456
1457        KZ(1:34) = '|  1.0-SECOND                    (21) | '
1458        KZ(35:40)=  KOUT(149:154)
1459        KZ(41:43)= ' | '
1460        KZ(44:55)=  KOUT(155:166)
1461        KZ(56:64) = ' |  (22) | '
1462        PRINT *,KZ                                          '
1463        KZ(1:30)='_____________________________
1464        KZ(31:71)='_____________________________________
1465
1466        PRINT *,KZ
1467
1468        KZ(1:27) = '|  K INDEX                 (07) |  '
1469        KZ(28:28)= KOUT(35:35)
1470        KZ(29:36) = '      || '
1471        KZ(37:62) = 'OBSERVED ELEMENTS  (08) |  '
1472        KZ(63:65) = KOUT(36:38)
1473        KZ(66:71) = '     | '
1474        PRINT *,KZ
1475
1476        KZ(1:27) = '|  ANNUAL NOTATION    (23) | '
1477        KZ(28:28)= KOUT(39:39)
1478        KZ(29:36) = '      || '
1479        KZ(37:62) = 'Q INDEX                (24) | '
1480        KZ(63:63) = KOUT(40:40)
1481        KZ(64:71) = '       | '
1482        PRINT *,KZ
1483
1484        KZ(1:27) = '|  FILM---NORMAL 1    (25) | '
1485        KZ(28:32)= KOUT(167:171)
1486        KZ(33:36) = ' || '
1487        KZ(37:62) = 'FILM---NORMAL 2     (26) | '
1488        KZ(63:67) = KOUT(172:176)
1489        KZ(68:71) = '   | '
1490        PRINT *,KZ
1491
1492        KZ(1:27) = '|  FILM---RAPID RUN  (27) | '
1493        KZ(28:32)= KOUT(177:181)
1494        KZ(33:36) = ' || '
1495        KZ(37:62) = 'FILM---STORM        (28) | '
1496        KZ(63:67) = KOUT(182:186)
1497        KZ(68:71) = '   | '
1498        PRINT *,KZ
1499
1500        KZ(1:27) = '|  FILM---K INDICES  (29) | '
1501        KZ(28:32)= KOUT(187:191)
1502        KZ(33:36) = ' || '
1503        KZ(37:62) = 'FILM---HV           (30) | '
1504        KZ(63:67) = KOUT(192:196)
1505        KZ(68:71) = '   | '
1506        PRINT *,KZ
1507
1508        RETURN
1509        END
1510
```

```
      SUBROUTINE SUBAG (KOUT,INUM,L,LE)
*************************************************************
*                                                           *
*        ADD CORRECTIONS TO GROUP OF RECORDS                *
*        ___________________________________                *
*                                                           *
*************************************************************
      CHARACTER*2   KOP
      CHARACTER*200 KOUT
      CHARACTER*200 KOUT2
      CHARACTER*12  PASS
10    FORMAT (A)
      PRINT *,'SUBROUTINE K19YRX = ',K19YRX
7000  PRINT *,'WELCOME TO ADD OR DELETE CENTERS'
      PRINT *,'    TO A GROUP OF RECORDS          '
      PRINT *,'                                   '
      PRINT *,'| 1) YOU MAY DELETE ANY CENTERS AND |'
      PRINT *,'| 2)  YOU MAY ADD    ANY CENTERS    |'
      PRINT *,'| THE CENTERS ARE LISTED AS ABCDEI   |'
      PRINT *,'| TO ADD    ONE OR MORE CENTERS      |'
      PRINT *,'| ENTER A-I IN CORRECT POSITION      |'
      PRINT *,'                                   '
      PRINT *,'TO DELETE ONE OR MORE CENTERS'
      PRINT *,'ENTER X  IN CORRECT POSITIONS'
      PRINT *,' '
70001 INUME = INUM + (LE - L)
      PRINT *,'LOCATION OF LAST REQUESTED OBS/YEAR = ',INUME
      READ (20,REC=INUME,ERR=9999)KOUT2
      IF (KOUT(1:16) .NE. KOUT2(1:16))GO TO 9999

      CALL GEOLST (KOUT)
      KK=0
7001  PRINT *,'
      PRINT *, '| ENTER E = TO END THE CORRECTION      ROUTI
      PRINT *, '| ENTER 9 = TO CHANGE THE NORMAL        CENT
      PRINT *, '| ENTER 11 =TO CHANGE THE RAPID RUN     CENT
      PRINT *, '| ENTER 13 =TO CHANGE THE ANY-SOURCE HV CENT
      PRINT *, '| ENTER 15 =TO CHANGE THE DIGITAL    HV CENT
      PRINT *, '| ENTER 17 =TO CHANGE THE 2.5-MINUTE    CENT
      PRINT *, '| ENTER 19 =TO CHANGE THE 1.0-MINUTE    CENT
      PRINT *, '| ENTER 21 =TO CHANGE THE 10-SECOND     CENT
      PRINT *,'
      PRINT *,' '

7002  READ (*,10)KOP
7003  IF (KOP(1:1) .EQ. 'E') GO TO 9999

7008  IF (KOP(1:1) .EQ. '9') GO TO 7009
      IF (KOP(1:2) .EQ. '09')GO TO 7009
      IF (KOP(1:2) .EQ. '11')GO TO 7011
      IF (KOP(1:2) .EQ. '13')GO TO 7013
      IF (KOP(1:2) .EQ. '15')GO TO 7015
      IF (KOP(1:2) .EQ. '17')GO TO 7017
      IF (KOP(1:2) .EQ. '19')GO TO 7019
      IF (KOP(1:2) .EQ. '21')GO TO 7021
      GO TO 7001

7009  PRINT *, 'ENTER NEW NORMAL CENTERS'
      READ (*,10)PASS
70091 K=40
      DO 70092 I=1,6
      K=K+1
      IF (PASS(I:I) .EQ. 'X') KOUT(K:K) = ' '
      IF (PASS(I:I) .EQ. 'X') GO TO 70092
      IF (PASS(I:I) .EQ. ' ') GO TO 70092
      KOUT(K:K) = PASS(I:I)
70092 CONTINUE
      GO TO 7062
7011  PRINT *, 'ENTER NEW RAPID-RUN CENTERS'
      READ (*,10)PASS

70111 K=58
      DO 70112 I=1,6
      K=K+1
      IF (PASS(I:I) .EQ. 'X') KOUT(K:K) = ' '
      IF (PASS(I:I) .EQ. 'X') GO TO 70112
      IF (PASS(I:I) .EQ. ' ') GO TO 70112
      KOUT(K:K) = PASS(I:I)
70112 CONTINUE
      GO TO 7062
7013  PRINT *, 'ENTER NEW HV-ANY MEDIUM CENTERS'
      READ (*,10)PASS
70131 K=76
      DO 70132 I=1,6
      K=K+1
      IF (PASS(I:I) .EQ. 'X') KOUT(K:K) = ' '
      IF (PASS(I:I) .EQ. 'X') GO TO 70132
      IF (PASS(I:I) .EQ. ' ') GO TO 70132
      KOUT(K:K) = PASS(I:I)
70132 CONTINUE
      GO TO 7062
7015  PRINT *, 'ENTER NEW HV-DIGITAL CENTERS'
      READ (*,10)PASS
70151 K=94
      DO 70152 I=1,6
      K=K+1
      IF (PASS(I:I) .EQ. 'X') KOUT(K:K) = ' '
      IF (PASS(I:I) .EQ. 'X') GO TO 70152
      IF (PASS(I:I) .EQ. ' ') GO TO 70152
      KOUT(K:K) = PASS(I:I)
```

```
70152 CONTINUE
      GO TO 7062
7017  PRINT *, 'ENTER NEW 2.5-MINUTE CENTERS'
      READ (*,10)PASS
70171 K=112
      DO 70172 I=1,6
      K=K+1
      IF (PASS(I:I) .EQ. 'X') KOUT(K:K) = ' '
      IF (PASS(I:I) .EQ. 'X') GO TO 70172
      IF (PASS(I:I) .EQ. ' ') GO TO 70172
      KOUT(K:K) = PASS(I:I)
70172 CONTINUE
      GO TO 7062
7019  PRINT *, 'ENTER NEW 1.0-MINUTE CENTERS'
      READ (*,10)PASS
70191 K=130
      DO 70192 I=1,6
      K=K+1
      IF (PASS(I:I) .EQ. 'X') KOUT(K:K) = ' '
      IF (PASS(I:I) .EQ. 'X') GO TO 70192
      IF (PASS(I:I) .EQ. ' ') GO TO 70192
      KOUT(K:K) = PASS(I:I)
70192 CONTINUE
      GO TO 7062
7021  PRINT *, 'ENTER NEW 10-SECOND CENTERS'
      READ (*,10)PASS
70211 K=148
      DO 70212 I=1,6
      K=K+1
      IF (PASS(I:I) .EQ. 'X') KOUT(K:K) = ' '
      IF (PASS(I:I) .EQ. 'X') GO TO 70212
      IF (PASS(I:I) .EQ. ' ') GO TO 70212
      KOUT(K:K) = PASS(I:I)
70212 CONTINUE
      GO TO 7062

7018  IF (KOP(1:1) .EQ. '9') GO TO 70091
      IF (KOP(1:2) .EQ. '09')GO TO 70091
      IF (KOP(1:2) .EQ. '11')GO TO 70111
      IF (KOP(1:2) .EQ. '13')GO TO 70131
      IF (KOP(1:2) .EQ. '15')GO TO 70151
      IF (KOP(1:2) .EQ. '17')GO TO 70171
      IF (KOP(1:2) .EQ. '19')GO TO 70191
      IF (KOP(1:2) .EQ. '21')GO TO 70211

7062  KK=KK+1
      IF (KK .GT. 1)GO TO 7063
      PRINT *,'
      PRINT *,'  THE FOLLOWING RECORDS WERE CORRECTED
      PRINT *,'
      PRINT *,'
      PRINT *,'

7063  WRITE (20,REC=INUM)KOUT
      PRINT *,KOUT(1:34)
      INUM=INUM+1
      IF (INUM .GT. INUME)GO TO 7065
7064  READ(20,REC=INUM)KOUT
      GO TO 7018

7065  INUM=KBEGIN
      PRINT *,'INUM= ',INUM
      READ(20,REC=INUM)KOUT
      GO TO 9999
9999  RETURN
      END
```

```
      SUBROUTINE SUBAN
C
C*********************************************************
C*         ALTERNATINE NAME SUBROUTINE                   *
C*********************************************************
C
      CHARACTER*46 KNAME (94)

      KNAME (1) = 'AMSTERDAM ISLAND     = MARTIN DE VIVIES (
      KNAME (2) = 'AMUNDSEN SCOTT       = SOUTH POLE       (
      KNAME (3) = 'ARCTICA I  (NP-6)    = NORTH POLE 6     (
      KNAME (4) = 'ARCTICA II (NP-7)    = NORTH POLE 7     (
      KNAME (5) = 'ARCTICA    (NP-8)    = NORTH POLE 8     (
      KNAME (6) = 'ARCTICA    (NP-10)   = NORTH POLE 10    (
      KNAME (7) = 'AREQUIPA             = CHARACATO        (
      KNAME (8) = 'ATHENS               = PENDELI          (
      KNAME (9) = 'AZORES               = SAO MIGUEL       (
      KNAME (10)= 'BAUDOUIN             = ROI BAUDOUIN     (
      KNAME (11)= 'BEREZNYAKI           = KARAGANDA        (
      KNAME (12)= 'BJORNOYA             = BEAR ISLAND      (
      KNAME (13)= 'CENTRO GEOFICISO     = HAVANA           (
      KNAME (14)= 'CHELYUSKIN           = CAPE CHELYUSKIN  (
      KNAME (15)= 'CHRISTCHURCH         = AMBERLEY         (
      KNAME (16)= 'COLABA               = ALIBAG           (
      KNAME (17)= 'CROZET               = PORT ALFRED      (
      KNAME (18)= 'DEHRA DUN            = SABHAWALA        (
      KNAME (19)= 'DIKSON               = DIXON ISLAND     (
      KNAME (20)= 'DRUZHNAYA            = HEISS ISLAND     (
      KNAME (21)= 'DUSHETI              = TBILISI          (
      KNAME (22)= 'DYMER                = KIEV             (
      KNAME (23)= 'FANNING ISLAND       = FANNING          (
      KNAME (24)= 'FARADAY              = ARGENTINE ISLANDS(
      KNAME (25)= 'GENOVA               = MONTE CAPELLINO  (
      KNAME (26)= 'GOOSE BAY            = MELVILLE AFB     (
      KNAME (27)= 'GORNOTAYEZHNAYA      = VLADIVOSTOK      (
      KNAME (28)= 'HAWAII               = HONOLULU         (
      KNAME (29)= 'HATIJO (HACHIYOJIMA) = HACHIJO          (
      KNAME (30)= 'HALLETT              = CAPE HALLETT     (
      KNAME (31)= 'ISLA DE PASCUA       = EASTER ISLAND    (
      KNAME (32)= 'KAMCHATKA            = PETROPAVLOVSK    (
      KNAME (33)= 'KARAVIA              = ELIZABETHVILLE   (
      KNAME (34)= 'KAZALINSKAYA         = NOVOKAZALINSKAY  (
      KNAME (35)= 'KERGUELIN            = PORT-AUX-FRANCAIS(
      KNAME (36)= 'KINSHASA-BINZA       = BINZA            (
      KNAME (37)= 'KLEINE KARMAKUL      = MALIYE KARMAKULY (
      KNAME (38)= 'KLYUCHI              = NOVOSIBIRSK      (
      KNAME (39)= 'KRASNAYA PAKHRA      = MOSCOW           (
      KNAME (40)= 'LAS MESAS            = CANARIAS         (
      KNAME (41)= 'LAZAREV              = NOVOLAZAREVSKAYA (
      KNAME (42)= 'LEOPOLDVILLE         = BINZA            (
      KNAME (43)= 'LOURENZO MARQUEZ     = MAPUTO           (
      KNAME (44)= 'LAUNDA BELAS         = LUANDA           (
      KNAME (45)= 'LOPARSKOYE           = MURMANSK         (
      KNAME (46)= 'N STEKOLINIY         = MAGADAN          (
      KNAME (47)= 'NIDA                 = NYDA             (
      KNAME (48)= 'NY-ALESUND           = NEW AALESUND     (
      KNAME (49)= 'PARATUNKA            = PETROPAVLOVSK    (
      KNAME (50)= 'PATRONY              = IRKUTSK          (
      KNAME (51)= 'PEKING               = BEIJING          (
      KNAME (52)= 'PLESHNITZI           = MINSK            (
      KNAME (53)= 'PODKAMENNAYA TUNGUSKA= P. TUNGUSKA      (
      KNAME (54)= 'POINT BARROW         = BARROW           (
      KNAME (55)= 'PUERTO RICO          = SAN JUAN         (
      KNAME (56) ='PRUHONICE            = PRAGUE           (
      KNAME (57) ='RED LAKE             = LENINGRAD        (
      KNAME (58) ='REYKJAVIK            = LEIRVOGUR        (
      KNAME (59) ='SANAE STATION        = SANAE            (
      KNAME (60) ='SHE-SHAN             = SHESHAN          (
      KNAME (61) ='SHANGHAI             = SHESHAN          (
      KNAME (62) ='SYOWA BASE           = SYOWA STATION    (
      KNAME (63) ='STEPANOVKA           = ODESSA           (
      KNAME (64) ='STEKOLINIY           = MAGADAN          (
      KNAME (65) ='ST. PETERBURG        = LENINGRAD        (
      KNAME (66) ='TAHITI               = PAMATAI          (
      KNAME (67) ='TENERIFE             = CANARIAS         (
      KNAME (68) ='TEVRIS               = TEVRIZ           (
      KNAME (69) ='THULE/CAMP TUTO      = THULE AFB        (
      KNAME (70) ='THULE/QANAQ          = THULE            (
      KNAME (71) ='THULE I              = THULE            (
      KNAME (72) ='THULE II             = THULE            (
      KNAME (73) ='TIKSI BAY            = TIXIE BAY        (
      KNAME (74) ='TORTOSA              = EBRO             (
      KNAME (75) ='TUNGUSKA             = P. TUNGUSKA      (
      KNAME (76) ='UELEN                = CAPE WELLEN      (
      KNAME (77) ='USSURISK             = VLADIVOSTOK      (
      KNAME (78) ='VANNOVSKAYA          = ASHKHABAD        (
      KNAME (79) ='V. DUBROVO           = SVERDLOVSK       (
      KNAME (80) ='VOYEYKOVO            = LENINGRAD        (
      KNAME (81) ='VOROSHILOV           = VLADIVOSTOK      (
      KNAME (82) ='WARSAWA              = SWIDER           (
      KNAME (83) ='WHITE SHELL          = WHITESHELL       (
      KNAME (84) ='WIEN AUHOF           = WIEN-KOBENZL     (
      KNAME (85) ='WIEN AYHOF           = WIEN-KOBENZL     (
      KNAME (86) ='YANGI-BAZAR          = TASHKENT         (
      KNAME (87) ='ZAYMISHCHE           = KAZAN            (
      KNAME (88) ='ZO-SE                = SHESHAN          (
      KNAME (89) ='ZUY                  = IRKUTSK          (

      PRINT *,    'OLD NAME               CATALOG NAME     C
      PRINT *,    '____________________   ________________
 1000 DO 1001 I=1,89
      PRINT *,KNAME (I)
 1001 CONTINUE
      RETURN
      END
```

Table 11

GEOMAGNETIC CATALOG LIST PROGRAM

```
1  ******************************************************
2  *                                                    *
3  *       PROGRAM:        GEOLIST                      *
4  *       WRITTEN BY:     CARL ABSTON                  *
5  *       DATE:           JANUARY 1985                 *
6  *       LANGUAGE:       FORTRAN-77                   *
7  *       COMPUTER:       CHARLES RIVER MC68000 MICRO  *
8  *                       SYSTEM                       *
9  *       ADDRESS:        WORLD DATA CENTER-A          *
10 *                       CODE E/GC4                   *
11 *                       325 BROADWAY                 *
12 *                       BOULDER, COLORADO            *
13 *                       80303/USA                    *
14 *       PHONE:          303-497-6276                 *
15 ******************************************************
16
17 ******************************************************
18 *                                                    *
19 *      THE PURPOSE OF THIS PROGRAM IS THE FOLLOWING  *
20 *      ------------------------------------------    *
21 *      1)  READ THE CATALOG INVENTORY                *
22 *      2)  READ THE FILE1   INVENTORY                *
23 *      3)  READ THE ANNUAL  DATA BASE                *
24 *      4)  CREATE TABLES 1-7                         *
25 ******************************************************
26
27 ************************************************************
28 *                                                          *
29 *          D A T A   R E C O R D   F O R M A T              *
30 *          ----------------------------------              *
31 *                                                          *
32 *     KOUT CC 1  -  16  = OBSERVATORY NAME                 *
33 *             17 -  19  = OBSERVATORY CODE                 *
34 *             20 -  25  = LATITUDE (+90.00 TO -90.00)      *
35 *             26 -  30  = LONGITUDE (0.00  TO 360.00 EAST)*
36 *             31 -  34  = YEAR (1983)                      *
37 *             35        = K INDICES                        *
38 *             36 -  38  = ELEMENTS (DHZ OR XYZ)            *
39 *             39        = ANNUAL MEANS (A OR SPACE)        *
40 *             40        = Q INDICES                        *
41 *             41 -  46  = NORMAL CENTERS (ABCDEI)          *
42 *             47 -  58  = NORMAL MONTHS (JFMAMJJASOND)     *
43 *             59 -  64  = RAPID RUN CENTERS                *
44 *             65 -  76  = RAPID RUN MONTHS                 *
45 *             77 -  82  = HOURLY ANY CENTERS               *
46 *             83 -  94  = HOURLY ANY MONTHS                *
47 *             95 - 100  = HOURLY DIGITAL CENTERS           *
48 *            101 - 112  = HOURLY DIGITAL MONTHS            *
49 *            113 - 118  = 2.5-MINUTE CENTERS               *
50 *            119 - 130  = 2.5-MINUTE MONTHS                *
51 *            131 - 136  = 1.0-MINUTE CENTERS               *
52 *            137 - 148  = 1.0-MINUTE MONTHS                *
53 *            149 - 154  = 10-SECOND CENTERS                *
54 *            155 - 166  = 10-SECOND MONTHS                 *
55 *            167 - 171  = NORMAL MAGNETOGRAM FILM NUMBER 1*
56 *            172 - 176  = NORMAL MAGNETOGRAM FILM NUMBER 2*
57 *            177 - 181  = RAPID RUN          FILM NUMBER  *
58 *            182 - 186  = STORM              FILM NUMBER  *
59 *            187 - 191  = K INDICES          FILM NUMBER  *
60 *            192 - 196  = HOURLY VALUE       FILM NUMBER  *
61 *            197 - 200  = NOT USED                        *
62 ************************************************************
63
64 ************************************************************
65 *            D A T A   B A S E   D E S I G N               *
66 *            -------------------------------               *
67 *                                                          *
68 *     THE FIRST 34 RECORD POSITIONS ARE RESERVED FOR       *
69 *     INDEXES                                              *
70 *     ALL DATA RECORDS MUST BE IN SEQUENCE BY OBSERVATORY  *
71 *                      NAME AND YEAR                       *
72 *     EACH OBSERVATORY IS SEPARATED BY 5 BLANK RECORDS     *
73 *                                                          *
74 *     THERE ARE 3 SETS OF INDEX RECORDS                    *
75 *     1)  INDEX RECORDS 1-10 = OBSERVATORY POINTERS        *
76 *     2)  INDEX RECORDS 11-20= OBSERVATORY CODES           *
77 *     3)  INDEX RECORDS 21-30= OBSERVATORY BEGIN YEARS     *
78 *         ----------------------------------------         *
79 *         RECORD POSITIONS 31-33 ARE NOT USED              *
80 *         RECORD POSITION  34 = NUMBER OF RECORDS IN FILE  *
81 *                                                          *
82 *     WITH THIS DESIGN                                     *
83 *     ----------------                                     *
84 *     IT IS POSSIBLE TO ADD UP TO FIVE NEW                 *
85 *     YEARS FOR EACH OBSERVATORY WITHOUT PROBLEMS          *
86 *     IT IS POSSIBLE TO ADD MISSING YEARS WITHOUT PROBLEMS*
87 *     IT IS POSSIBLE TO LOCATE ANY OBS-YEAR WITH ONE READ  *
88 *                                                          *
89 *     IT IS NOT POSSIBLE TO ADD MORE THAN 5 YEARS (RECORDS*
90 *     TO THE END OF ANY OBSERVATORY WITHOUT DUMPING AND    *
91 *     RELOADING THE DATA BASE                              *
92 *                                                          *
93 *     NEW OBSERVATORIES                                    *
94 *     -----------------                                    *
95 *     NEW OBSERVATORIES CAN BE ADDED, HOWEVER THEY WILL BE*
96 *     ADDED AT THE END OF THE DATA BASE                    *
97 *     WHEN YOU PRINTOUT THE DATA ALL NEWLY ENTERED OBS     *
98 *     WIL BE OUT OF SEQUENCE                               *
99 *     TO SOLVE THIS PROBLEM, IT IS NECESSARY TO:           *
100*     1) DUMP THE DATA BASE (GEOBASE) USING THE DUMP       *
```

```
*        ROUTINE USING A FILE CALLED SEQ                    *
*     2) SORT THE SEQ DATA BASE USING THE SYSTEM SORT       *
*     3) LOAD THE SEQ DATA BASE USING THE LOAD ROUTINE      *
*************************************************************
*     1)  KCODE=AN ARRAY CONTAINING UP TO 500 (3 DIGIT)     *
*         CODES                                             *
*     2)  KNUM= AN ARRAY CONTAINING UP TO 500 POINTS        *
*               EACH POINTER CORRESPONDS TO THE BEGINNING   *
*               LOCATION OF EACH OBSERVATORY CODE           *
*     3)  K19YR=AN ARRAY CONTAINING THE BEGINNING YEAR      *
*               OF EACH DIFFERENT OBSERVATORY               *
*************************************************************

      INTEGER*4 KNUM,K19YR
      DIMENSION KNUM (500), KOUT1(50),K19YR(500)

      CHARACTER*3 KCOD (500)
      CHARACTER*132  KX1
      CHARACTER*132  KH1
      CHARACTER*132  KH2
      CHARACTER*132  KH3
      CHARACTER*132  KH4
      CHARACTER*132  KH5
      CHARACTER*132  KH6
      CHARACTER*132  KH7

      CHARACTER*132  KF1
      CHARACTER*132  KF2
      CHARACTER*132  KF3
      CHARACTER*132  KF4
      CHARACTER*132  KF5
      CHARACTER*72   KZ
      CHARACTER*132  KSPACE
      CHARACTER*200  KOUT
      CHARACTER*16   KOBS
      CHARACTER*3    KCODE
      CHARACTER*5    KLAT
      CHARACTER*5    KLONG
      CHARACTER*30   PASS
      CHARACTER*1    KPAGE
      CHARACTER*10   KLL
      CHARACTER*4    KYEAR


      KPAGE (1:1) = ''

      KX1(1:27) = '                          '
      KX1(28:28)= '| '
      KX1(29:48)= '                    '
      KX1(49:49)= '| '
      KX1(50:66) = '                 '
      KX1(67:67) = '| '
      KX1(68:88) = '                     '
      KX1(89:89) = '| '
      KX1(90:110) = '                     '
      KX1(111:111)= '| '
      KX1(112:131) = '                    '
      KX1(132:132) = '| '

      KH1(1:7)    = 'TABLE V'
      KH1(8:35)   = '                           '
      KH1(36:61)  = 'CATALOG LISTING OF ANALOG'
      KH1(62:86)  = ' DIGITAL GEOMAGNETIC DATA'

      KH2(1:28)   = '                            '
      KH2(29:46)  = 'WORLD DATA CENTER '
      KH2(47:73)  = 'A=BOULDER B=MOSCOW C=KYOTO '
      KH2(74:106) = 'D=COPENHAGEN E=EDINBURGH I=BOMBAY'

      KH3(1:11)   = 'OBSERVATORY'
      KH3(12:19)  = '        '
      KH3(20:26)  = 'YEAR KA'
      KH3(27:36)  = 'Q         '
      KH3(37:45)  = '  NORMAL'
      KH3(46:54)  = '         '
      KH3(55:65)  = 'RAPID RUN'
      KH3(66:74)  = '         '
      KH3(75:88)  = ' HOURLY VALUES'
      KH3(89:97)  = '         '
      KH3(98:110) = 'HOURLY VALUES'
      KH3(111:118)= '        '
      KH3(119:129)= ' 2.5-MINUTE'

      KH4(1:16)   = '                '
      KH4(17:21)  = 'COMP '
      KH4(22:29)  = '       '
      KH4(29:32)  = ' WDC'
      KH4(33:47)  = '   MAGNETOGRAMS'
      KH4(48:53)  = '  WDC '
      KH4(54:65)  = 'MAGNETOGRAMS'
      KH4(66:74)  = '    WDC  '
      KH4(75:87)  = '  ANY  MEDIUM'
      KH4(88:99)  = '    WDC     '
      KH4(100:112) = 'ON  TAPE     '
      KH4(113:118)= ' WDC  '
      KH4(119:132)= ' 1.0-MINUTE(*)'

      KH5(1:16)   = '----------------'
      KH5(17:34)  = ' - ---- --- ------'
      KH5(35:48)  = ' -------------'
```

```
      KH5(49:53)  = ' ---'
      KH5(54:66)  = '------------'
      KH5(67:74)  = '  ------'
      KH5(75:88)  = ' -------------'
      KH5(90:98)  = '  ------ '
      KH5(99:111) = '-------------'
      KH5(112:117)= '  ----'
      KH5(118:131)= ' -------------'

      KF1(1:7)    = 'TABLE V'
      KF1(8:35)   = '                          '
      KF1(36:61)  = 'CATALOG LISTING OF ANALOG'
      KF1(62:86)  = ' DIGITAL GEOMAGNETIC DATA'
      KF1(87:109) = '  BY MICROFILM NUMBERS '

      KF3(1:11)   = 'OBSERVATORY'
      KF3(12:19)  = '        '
      KF3(20:26)  = 'YEAR KA'
      KF3(27:36)  = 'Q         '
      KF3(37:43)  = 'NORMAL'
      KF3(44:54)  = '          '
      KF3(55:65)  = 'RAPID RUN'
      KF3(66:74)  = '         '
      KF3(75:87)  = 'HOURLY VALUES'
      KF3(88:90)  = '     '
      KF3(91:132) = '**** F I L M   N U M B E R S    ****'


      KF4(1:16)   = '                '
      KF4(17:21)  = 'COMP '
      KF4(22:29)  = '        '
      KF4(29:31)  = 'WDC'
      KF4(33:46)  = '  MAGNETOGRAMS'
      KF4(47:53)  = '   WDC '
      KF4(54:65)  = 'MAGNETOGRAMS'
      KF4(66:74)  = '    WDC  '
      KF4(75:87)  = '  ANY  MEDIUM'
      KF4(88:119) = '    NORM1 NORM2 RAPID STORM HOUR'
      KF4(120:127)= '  K-INDC'

      KF5(1:16)   = '----------------'
      KF5(17:32)  = ' - ---- --- ----'
      KF5(33:46)  = ' ---------------'
      KF5(48:53)  = '  ---'
      KF5(54:65)  = '-------------'
      KF5(66:74)  = '   ------'
      KF5(75:88)  = ' -------------'
      KF5(89:126) = '   ----- ----- ----- ----- ----- -----'


1000  PRINT *,
     -'_____________________________________________________
      PRINT *,
     - '|  WELCOME TO THE GEOMAGNETIC CATALOG LIST SYSTEM  |
      PRINT *,
     - '|          VERSION 2.1 -  APRIL 1. 1985            |
      PRINT *,
     - '|_____________________________________________________|
      KLOOP=0
      K3LOOP=0
*********************************************************
*     OPEN DATA BASE                                    *
*********************************************************
1001  OPEN (20,FILE='GEOBASE',ACCESS='DIRECT',RECL=200,
     -FORM='UNFORMATTED')
1010  PRINT* ,'ENTER 1 = CATALOG   LISTING'
      PRINT* ,'ENTER 2=  FILM      LISTING'
      PRINT* ,'ENTER 3=  10-SECOND LISTING'
      PRINT* ,'ENTER 4=  LIST ALL OBS. FOR A GIVEN YEAR'
      PRINT* ,'ENTER 5=  LIST ALL YEARS FOR A GIVEN OBS'
      PRINT*, 'ENTER 6=  LIST FILE1--
     - GEOMAG MODEL COORDINATES (OBS. SORT)'
      PRINT*, 'ENTER 7=  LIST FILE1--
     - GEOMAG MODEL COORDINATES (CO-LAT SORT)'
      PRINT* ,'ENTER 8=  ALL LISTINGS FOR ANNUAL DATA BASE'
      PRINT *,'ENTER 9=  CATALOG   LISTING FOR ONE OBS'
      PRINT* ,'ENTER E=  END OF LIST ROUTINE    '
      READ (*,10)PASS
10    FORMAT(A)
      IF (PASS(1:1) .EQ. '1') GO TO 2000
      IF (PASS(1:1) .EQ. '2') GO TO 3000
      IF (PASS(1:1) .EQ. '3') GO TO 4000
      IF (PASS(1:1) .EQ. '4') GO TO 5000
      IF (PASS(1:1) .EQ. '5') GO TO 5000
      IF (PASS(1:1) .EQ. '6') GO TO 6000
      IF (PASS(1:1) .EQ. '7') GO TO 6000
      IF (PASS(1:1) .EQ. '8') GO TO 7000
      IF (PASS(1:1) .EQ. '9') GO TO 8000
      IF (PASS(1:1) .EQ. 'E') GO TO 9999
      IF (PASS(1:1) .EQ. 'e') GO TO 9999
      GO TO 1010
*************************************************
*    CATALOG LISTING                            *
*    1) FIRST PRINT LET BEGINNING HEADERS       *
*    2) NEXT PRINT  PAGE          HEADERS       *
*    3) HANDLE RECORDS 1,2, AND 3 DIFFERENTLY   *
*    4) ALL OTHER RECORDS ARE THE SAME          *
```

```
*************************************************
2000  OPEN (19,FILE='GEOPRINT',STATUS='NEW',FORM='FORMATTED'
      PRINT *, 'YOU OUTPUT LISTING IS NAMED GEOPRINT'
2001  INUM=35
      WRITE (19,99) KPAGE
      WRITE (19,100)KH1
      WRITE (19,100)KH2
      WRITE (19,100)KSPACE
      KCOUNT = 3
100   FORMAT (A132)
**************************
*     PRINT PAGE HEADERS  *
**************************
2002  WRITE (19,100)KH3
      WRITE (19,100)KH4
      WRITE (19,100)KH5
      KCOUNT = KCOUNT + 3
      KPCNT = 0
*********************************************************
*     FIRST RECORD                                      *
*                                                       *
*     EACH OBSERVATORY IS SEPARATED BY BLANK RECORDS    *
*********************************************************
*     KOUT CC 1- 16  = OBSERVATORY NAME                 *
*          CC 17-19  = OBSERVATORY CODE                 *
*          CC 21-25  = LATITUDE                         *
*          CC 26-30  = LONGITUTE                        *
*          CC 31-34  = YEAR                             *
*          CC 35     = K INDICES                        *
*          CC 36-38  = ELEMENTS                         *
*          CC 39     = ANNUAL MEANS                     *
*          CC 40     = Q INDICES                        *
*          CC 41-46  = NORMAL CENTERS                   *
*          CC 47-58  = NORMAL MAGNEOTGRAM MONTHS        *
*          CC 59-64  = RAPID RUN CENTERS                *
*          CC 65-76  = RAPID RUN MONTHS                 *
*          CC 77-82  = HOURLY ANY CENTERS               *
*          CC 83-94  = HOURLY ANY MONTHS                *
*          CC 95-100 = HOURLY DIGITAL CENTERS           *
*          CC 101-112= HOURLY DIGITAL MONTHS            *
*          CC 113-118= 2.5-MIN CENTERS                  *
*          CC 119-130= 2.5-MIN MONTHS                   *
*          CC 131-136= 1.0-MIN CENTERS                  *
*          CC 137-148= 1.0-MIN MONTHS                   *
*          CC 149-154= 1.0-SECOND CENTERS               *
*          CC 155-166= 1.0-SECOND MONTHS                *
*          CC 167-171= NORMAL MAGNETOGRAM FILM 1        *
*          CC 172-176= NORMAL MAGNETOGRAM FILM 2        *
*          CC 177-181= RAPID RUN          FILM          *
*          CC 182-186= STORM              FILM          *
*          CC 187-191= K INDICES          FILM          *
*          CC 192-196= HOURLY VALUE       FILM          *
*          CC 197-200= NOT USED                         *
*********************************************************

2004  READ (20,REC=INUM,ERR=9998)KOUT
      INUM = INUM + 1
      IF (KOUT(17:19) .EQ. '   ') GO TO 2004
***********************************
*     CONVERT YEAR TO BINARY      *
***********************************
2005  READ (KOUT,FMT='(30X,I4)')LYR
      LYR = LYR + 1
      KOBS(1:16) = KOUT(1:16)
      KLAT(1:5) = KOUT (21:25)
      KLONG(1:5)  = KOUT(26:30)
      KCODE(1:3) = KOUT(17:19)
2006  KH7(1:16) = KOUT (1:16)
      KH7(17:17) = ' '
      KH7(18:18) = KOUT (36:36)
      KH7 (19:19) = ' '
      KH7 (20:23) = KOUT (31:34)
      KH7 (24:24) = ' '
      KH7 (25:25) = KOUT (35:35)
      KH7 (26:27) = KOUT (39:40)
      KH7 (28:28) = '| '
      KH7 (29:34) = KOUT (41:46)
      KH7 (35:35) = ' '
      KH7 (36:41) = KOUT (47:52)
      KH7 (42:42) = ' '
      KH7 (43:48) = KOUT (53:58)
      KH7 (49:49) = '| '
      KH7 (50:52) = KOUT (59:61)
      KH7 (53:53) =  ' '
      KH7 (54:59) = KOUT (65:70)
      KH7 (60:60) = ' '
      KH7 (61:66) = KOUT (71:76)
      KH7 (67:68) = '| '
      KH7 (69:74) = KOUT (77:82)
      KH7 (75:75) = ' '
      KH7 (76:81) = KOUT (83:88)
      KH7 (82:82) = ' '
      KH7 (83:88) = KOUT (89:94)
      KH7 (89:90) = '| '
      KH7 (91:96) = KOUT (95:100)
      KH7 (97:97) = ' '
      KH7 (98:103) = KOUT (101:106)
      KH7 (104:104) = ' '
      KH7 (105:110) = KOUT (107:112)
      KH7 (111:112) = '| '
```

```
      KH7 (113:116) = KOUT (113:118)
      KH7 (117:117) = ' '
      KH7 (118:123) = KOUT (119:124)
      KH7 (124:124) = ' '
      KH7 (125:130) = KOUT (125:130)
      KH7 (131:131) = ' '
      KH7 (132:132) = '| '
      IF (KOUT(131:136) .EQ. '      ') GO TO 2007
      KH7(113:116) = KOUT (131:136)
      KH7(117:117) = ' '
      KH7(118:123) = KOUT (137:142)
      KH7(124:124) = ' '
      KH7(125:130) = KOUT (143:148)
      KH7(131:131) = '*'
2007  WRITE (19,100)KH7
      KCOUNT = KCOUNT + 1
      IF (KCOUNT .GT. 54) GO TO 2022


************************************
*     SECOND RECORD                *
************************************
2008  READ (20,REC=INUM,ERR=9998)KOUT
      INUM = INUM + 1
      IF (KOUT(17:19) .EQ. '   ') GO TO 2008
      IF (KOUT(1:16) .EQ. KOBS (1:16)) GO TO 2009
      GO TO 2020
2009  READ(KOUT,FMT='(30X,I4)')L
      IF (L .NE. LYR) GO TO 20091
      LYR=L+1
      GO TO 20092
20091 WRITE (19,100)KX1
      KCOUNT = KCOUNT +1
      LYR=L
20092 KH7 (1:3)   = KOUT (17:19)
      KH7 (4:16)  = '
      KH7(18:18) = KOUT (36:36)
      KH7 (19:19) = ' '
      KH7 (20:23) = KOUT (31:34)
      KH7(24:24) = ' '
      KH7 (25:25) = KOUT (35:35)
      KH7(26:27) = KOUT (39:40)
      KH7 (28:28) = '| '
      KH7 (29:34) = KOUT (41:46)
      KH7 (35:35) = ' '
      KH7 (36:41) = KOUT (47:52)
      KH7 (42:42) = ' '
      KH7 (43:48) = KOUT (53:58)
      KH7 (49:49) = '| '
      KH7 (50:52) = KOUT (59:61)
      KH7 (53:53) = ' '
      KH7 (54:59) = KOUT (65:70)
      KH7 (60:60) = ' '
      KH7 (61:66) = KOUT (71:76)
      KH7 (67:68) = '| '
      KH7 (69:74) = KOUT (77:82)
      KH7 (75:75) = ' '
      KH7 (76:81) = KOUT (83:88)
      KH7 (82:82) = ' '
      KH7 (83:88) = KOUT (89:94)
      KH7 (89:90) = '| '
      KH7 (91:96) = KOUT (95:100)
      KH7 (97:97) = ' '
      KH7 (98:103) = KOUT (101:106)
      KH7 (104:104) = ' '
      KH7 (105:110) = KOUT (107:112)
      KH7 (111:112) = '| '
      KH7 (113:116) = KOUT (113:118)
      KH7 (117:117) = ' '
      KH7 (118:123) = KOUT (119:124)
      KH7 (124:124) = ' '
      KH7 (125:130) = KOUT (125:130)
      KH7 (131:131) = ' '
      KH7 (132:132) = '| '
      IF (KOUT(131:136) .EQ. '      ') GO TO 20099
      KH7(113:116) = KOUT (131:136)
      KH7(117:117) = ' '
      KH7(118:123) = KOUT (137:142)
      KH7(124:124) = ' '
      KH7(125:130) = KOUT (143:148)
      KH7(131:131) = '*'

20099 WRITE (19,100)KH7
      KCOUNT = KCOUNT + 1
      IF (KCOUNT .GT. 54) GO TO 2023
************************************
*     THIRD RECORD                 *
************************************
2010  READ (20, REC=INUM,ERR=9998)KOUT
      KLL(1:10) =KOUT(21:30)
      INUM = INUM + 1
      IF (KOUT(17:19) .EQ. '   ') GO TO 2010
      IF (KOUT (1:16) .NE. KOBS (1:16)) GO TO 2021
      READ (KOUT,FMT='(30X,I4)')L
      IF (L .NE. LYR)GO TO 20102
      LYR=L+1
      GO TO 20101
20102 WRITE (19,100)KX1
      KCOUNT = KCOUNT + 1
      LYR=L+1
```

```
20101 KH7(1:1)   = '('
      KH7 (2:4)  = KOUT (21:23)
      IF (KH7(2:2) .EQ. ' ') KH7(2:2) = '0'
      IF (KH7(3:3) .EQ. ' ') KH7(3:3) = '0'
      IF (KH7(3:3) .EQ. '-') KH7(2:2) = ' '
      KH7 (5:5)  = '.'
      KH7 (6:7)  = KOUT (24:25)
      KH7 (8:8) = ' '
      KH7 (9:11)  = KOUT (26:28)
      KH7 (12:12) = '.'
      KH7 (13:14) = KOUT (29:30)
      KH7 (15:16) = ') '
      KH7(17:17) = ' '
      KH7(18:18) = KOUT (36:36)
      KH7 (19:19) = ' '
      KH7 (20:23) = KOUT (31:34)
      KH7 (24:24) = ' '
      KH7 (25:25) = KOUT (35:35)
      KH7 (26:27) = KOUT (39:40)
      KH7 (28:28) = '| '
      KH7 (29:34) = KOUT (41:46)
      KH7 (35:35) = ' '
      KH7 (36:41) = KOUT (47:52)
      KH7 (42:42) = ' '
      KH7 (43:48) = KOUT (53:58)
      KH7 (49:49) = '| '
      KH7 (50:52) = KOUT (59:61)
      KH7 (53:53) =  ' '
      KH7 (54:59) = KOUT (65:70)
      KH7 (60:60) = ' '
      KH7 (61:66) = KOUT (71:76)
      KH7 (67:68) = '| '
      KH7 (69:74) = KOUT (77:82)
      KH7 (75:75) = ' '
      KH7 (76:81) = KOUT (83:88)
      KH7 (82:82) = ' '
      KH7 (83:88) = KOUT (89:94)
      KH7 (89:90) = '| '
      KH7 (91:96) = KOUT (95:100)
      KH7 (97:97) = ' '
      KH7 (98:103) = KOUT (101:106)
      KH7 (104:104) = ' '
      KH7 (105:110) = KOUT (107:112)
      KH7 (111:112) = '| '
      KH7 (113:116) = KOUT (113:118)
      KH7 (117:117) = ' '
      KH7 (118:123) = KOUT (119:124)
      KH7 (124:124) = ' '
      KH7 (125:130) = KOUT (125:130)
      KH7 (131:131) = ' '
      KH7 (132:132) = '| '
      IF (KOUT(131:136) .EQ. '      ') GO TO 2011
      KH7(113:116) = KOUT (131:136)
      KH7(117:117) = ' '
      KH7(118:123) = KOUT (137:142)
      KH7(124:124) = ' '
      KH7(125:130) = KOUT (143:148)
      KH7(131:131) = '*'
2011  WRITE (19,100)KH7
      KCOUNT = KCOUNT + 1
      IF (KCOUNT .GT. 54) GO TO 2050
      KH7(1:16) = '                '
*********************************************
*     REST OF RECORDS                       *
*********************************************
2012  READ (20,REC=INUM,ERR=9998)KOUT
      INUM=INUM + 1
      IF (KOUT(17:19) .EQ. '   ') GO TO 2012
      IF (KOUT(1:16) .EQ. KOBS(1:16)) GO TO 2013
      WRITE (19,100)KH5
      GO TO 2005
2013  READ (KOUT,FMT='(30X,I4)')L
      IF (L .NE. LYR) GO TO 20132
      LYR=L+1
      GO TO 20133
20132 WRITE (19,100)KX1
      KCOUNT = KCOUNT + 1
      LYR = L+1
20133 KH7(17:17) = ' '
      IF (KOUT(21:30) .EQ. KLL(1:10)) GO TO 20131
      KLL(1:10) = KOUT (21:30)
      GO TO 20101
20131 KH7(18:18) = KOUT (36:36)
      KH7 (19:19) = ' '
      KH7 (20:23) = KOUT (31:34)
      KH7(24:24) = ' '
      KH7 (25:25) = KOUT (35:35)
      KH7(26:27) = KOUT (39:40)
      KH7 (28:28) = '| '
      KH7 (29:34) = KOUT (41:46)
      KH7 (35:35) = ' '
      KH7 (36:41) = KOUT (47:52)
      KH7 (42:42) = ' '
      KH7 (43:48) = KOUT (53:58)
      KH7 (49:49) = '| '
      KH7 (50:52) = KOUT (59:61)
      KH7 (53:53) =  ' '
      KH7 (54:59) = KOUT (65:70)
      KH7 (60:60) = ' '
      KH7 (61:66) = KOUT (71:76)
```

```
      KH7 (67:68) = '| '
      KH7 (69:74) = KOUT (77:82)
      KH7 (75:75) = ' '
      KH7 (76:81) = KOUT (83:88)
      KH7 (82:82) = ' '
      KH7 (83:88) = KOUT (89:94)
      KH7 (89:90) = '| '
      KH7 (91:96) = KOUT (95:100)
      KH7 (97:97) = ' '
      KH7 (98:103) = KOUT (101:106)
      KH7 (104:104) = ' '
      KH7 (105:110) = KOUT (107:112)
      KH7 (111:112) = '| '
      KH7 (113:116) = KOUT (113:118)
      KH7 (117:117) = ' '
      KH7 (118:123) = KOUT (119:124)
      KH7 (124:124) = ' '
      KH7 (125:130) = KOUT (125:130)
      KH7 (131:131) = ' '
      KH7 (132:132) = '| '
      IF (KOUT(131:136) .EQ. '      ') GO TO 2014
      KH7(113:116) = KOUT (131:136)
      KH7(117:117) = ' '
      KH7(118:123) = KOUT (137:142)
      KH7(124:124) = ' '
      KH7(125:130) = KOUT (143:148)
      KH7(131:131) = '*'
2014  WRITE (19,100)KH7
      KCOUNT = KCOUNT + 1
      IF (KCOUNT .GT. 54) GO TO 2050
      GO TO 2012
C*************************************************************
C*    FIRST RECORD WAS PRINTED                               *
C*    BUT NEW OBSERVATORY READ                               *
C*    PADD OUT RECORDS 2 AND 3                               *
C*    AND GO TO BEGIN SEQUENCE AGAIN                         *
C*************************************************************

2020  KSPACE (1:3) = KCODE (1:3)
      WRITE (19,100)KSPACE
      KSPACE(1:1) = '('
      IF (KH7(2:2) .EQ. ' ') KH7(2:2) = '0'
      IF (KH7(3:3) .EQ. ' ') KH7(3:3) = '0'
      IF (KH7(3:3) .EQ. '-') KH7(2:2) = ' '
      KSPACE (2:4)  = KLAT (1:3)
      KSPACE (5:5)  = '.'
      KSPACE (6:7)  = KLAT(4:5)
      KSPACE (8:8) = ' '
      KSPACE (9:11)  = KLONG (1:3)
      KSPACE (12:12) = '.'
      KSPACE (13:14) = KLONG (4:5)
      KSPACE (15:16) = ') '
      KLL(1:10) = KOUT (21:30)
      KSPACE(17:17) = ' '
      WRITE (19,100)KSPACE
      KSPACE (1:16) = '
      WRITE (19,100)KH5
      KCOUNT = KCOUNT + 3
      IF (KCOUNT .GT. 54) GO TO 2050
      GO TO 2005
2021  KSPACE(1:1)   = '('
      KSPACE (2:4)  = KLAT (1:3)
      KSPACE (5:5)  = '.'
      KSPACE (6:7)  = KLAT (4:5)
      KSPACE (8:8) = ' '
      IF (KSPACE(2:2) .EQ. ' ') KSPACE(2:2) = '0'
      IF (KSPACE(3:3) .EQ. ' ') KSPACE(3:3) = '0'
      IF (KSPACE(3:3) .EQ. '-') KSPACE(2:2) = ' '
      KLL(1:10) = KOUT (21:30)
      KSPACE (9:11)  = KLONG (1:3)
      KSPACE (12:12) = '.'
      KSPACE (13:14) = KLONG (4:5)
      KSPACE (15:16) = ') '
      KSPACE(17:17) = ' '
      WRITE (19,100) KSPACE
      KSPACE (1:16) = '
      WRITE (19,100) KH5
      KCOUNT = KCOUNT + 2
      IF (KCOUNT .GT. 54) GO TO 2050
      GO TO 2005

2022  KSPACE (1:3) = KCODE (1:3)
      WRITE (19,100)KSPACE
      KSPACE(1:1)   = '('
      KSPACE (2:4)  = KLAT (1:3)
      KSPACE (5:5)  = '.'
      KSPACE (6:7)  = KLAT(4:5)
      IF (KSPACE(2:2) .EQ. ' ') KSPACE(2:2) = '0'
      IF (KSPACE(3:3) .EQ. ' ') KSPACE(3:3) = '0'
      IF (KSPACE(3:3) .EQ. '-') KSPACE(2:2) = ' '
      KLL(1:10) = KOUT (21:30)
      KSPACE (8:8) = ' '
      KSPACE (9:11)  = KLONG (1:3)
      KSPACE (12:12) = '.'
      KSPACE (13:14) = KLONG (4:5)
      KSPACE (15:16) = ') '
      KSPACE(17:17) = ' '
      WRITE (19,100)KSPACE
      KSPACE (1:16) = '
      WRITE (19,100)KH5
```

```
      KCOUNT = KCOUNT + 3
      IF (KCOUNT .GT. 54) GO TO 2050
      GO TO 2050
2023  KSPACE(1:1)   = '('
      KSPACE (2:4)  = KLAT (1:3)
      KSPACE (5:5)  = '.'
      KSPACE (6:7)  = KLAT (4:5)
      IF (KSPACE(2:2) .EQ. ' ') KSPACE(2:2) = '0'
      IF (KSPACE(3:3) .EQ. ' ') KSPACE(3:3) = '0'
      IF (KSPACE(3:3) .EQ. '-') KSPACE(2:2) = ' '
      KLL(1:10) = KOUT (21:30)
      KSPACE (8:8) = ' '
      KSPACE (9:11)  = KLONG (1:3)
      KSPACE (12:12) = '.'
      KSPACE (13:14) = KLONG (4:5)
      KSPACE (15:16) = ') '
      KSPACE(17:17) = ' '
      WRITE (19,100) KSPACE
      KSPACE (1:16) = '
      WRITE (19,100) KH5
      KCOUNT = KCOUNT + 2
      GO TO 2050

*********************************************
*      NEW PAGE                             *
*********************************************
2050  WRITE (19,99)KPAGE
99    FORMAT (A1)
      WRITE (19,100)KH3
      WRITE (19,100)KH4
      WRITE (19,100)KH5
      KCOUNT = 4
      KPCNT = KPCNT + 1
      IF( KPCNT .NE. 10) GO TO 2004
      KPCNT = 0
      PRINT *, 'CATALOG LISTING IS AT ',KOUT(1:16),' ',
     - KOUT(31:34)
      GO TO 2004



*********************************************************
*                                                       *
*     F I L M  C A T A L O G                            *
*                                                       *
*********************************************************

3000  OPEN (19,FILE='GEOPRINTX',STATUS='NEW',FORM='FORMATTED
      PRINT *, 'OUTPUT FILE IS NAMED  GEOPRINTX'

3001  INUM=35
      WRITE (19,99) KPAGE
      WRITE (19,100)KF1
      WRITE (19,100)KF2
      WRITE (19,100)KSPACE
      KCOUNT = KCOUNT + 3
***************************
*     PRINT PAGE HEADERS  *
***************************
3002  WRITE (19,100)KF3
      WRITE (19,100)KF4
      WRITE (19,100)KF5
      KCOUNT = KCOUNT + 3
      IF (KCOUNT .GT. 54) KCOUNT = 3
*********************************************************
*     FIRST RECORD                                      *
*                                                       *
*     EACH OBSERVATORY IS SEPARATED BY BLANK RECORDS    *
*********************************************************
3004  READ (20,REC=INUM,ERR=9998)KOUT
      INUM = INUM + 1
      IF (KOUT(17:19) .EQ. '   ') GO TO 3004
3005  KOBS(1:16) = KOUT(1:16)
      KLAT(1:5) = KOUT (21:25)
      KLONG(1:5)  = KOUT(26:30)
      KCODE(1:3) = KOUT(17:19)
3006  KH7(1:16) = KOUT (1:16)
      KH7(17:17) = ' '
      KH7(18:18) = KOUT (36:36)
      KH7 (19:19) = ' '
      KH7 (20:23) = KOUT (31:34)
      KH7(24:24) = ' '
      KH7 (25:25) = KOUT (35:35)
      KH7 (26:27) = KOUT (39:40)
      KH7 (28:28) = '|'
      KH7 (29:34) = KOUT (41:46)
      KH7 (35:35) = ' '
      KH7 (36:41) = KOUT (47:52)
      KH7 (42:42) = ' '
      KH7 (43:48) = KOUT (53:58)
      KH7 (49:49) = '|'
      KH7 (50:52) = KOUT (59:61)
      KH7 (53:53) =  ' '
      KH7 (54:59) = KOUT (65:70)
      KH7 (60:60) = ' '
      KH7 (61:66) = KOUT (71:76)
      KH7 (67:68) = '|'
      KH7 (69:74) = KOUT (77:82)
      KH7 (75:75) = ' '
      KH7 (76:81) = KOUT (83:88)
```

```
      KH7 (82:82) = ' '
      KH7 (83:88) = KOUT (89:94)
      KH7 (89:91) = '|| '
      KH7 (92:96) = KOUT (167:171)
      KH7 (97:97) = ' '
      KH7 (98:102) = KOUT (172:176)
      KH7 (103:103) = ' '
      KH7 (104:108) = KOUT (177:181)
      KH7 (109:109) = ' '
      KH7 (110:114) = KOUT (182:186)
      KH7 (115:115) = ' '
      KH7 (116:120) = KOUT (187:191)
      KH7 (121:121) = ' '
      KH7 (122:126) = KOUT (192:196)
      KH7 (131:131) = ' '
      KH7 (132:132) = '| '
3007  WRITE (19,100)KH7
      KCOUNT = KCOUNT + 1
      IF (KCOUNT .GT. 54) GO TO 3022
************************************
*     SECOND RECORD                *
************************************
3008  READ (20,REC=INUM,ERR=9998)KOUT
      INUM = INUM + 1
      IF (KOUT(17:19) .EQ. '   ') GO TO 3008
      IF (KOUT(1:16) .EQ. KOBS (1:16)) GO TO 3009
      GO TO 3020
3009  KH7 (1:3)   = KOUT (17:19)
      KH7 (4:16)  = '
      KH7(17:17) = ' '
      KH7(18:18) = KOUT (36:36)
      KH7 (19:19) = ' '
      KH7 (20:23) = KOUT (31:34)
      KH7(24:24) = ' '
      KH7 (25:25) = KOUT (35:35)
      KH7(26:27) = KOUT (39:40)
      KH7 (28:28) = '| '
      KH7 (29:34) = KOUT (41:46)
      KH7 (35:35) = ' '
      KH7 (36:41) = KOUT (47:52)
      KH7 (42:42) = ' '
      KH7 (43:48) = KOUT (53:58)
      KH7 (49:49) = '| '
      KH7 (50:52) = KOUT (59:61)
      KH7 (53:53) =  ' '
      KH7 (54:59) = KOUT (65:70)
      KH7 (60:60) = ' '
      KH7 (61:66) = KOUT (71:76)
      KH7 (67:68) = '| '
      KH7 (69:74) = KOUT (77:82)
      KH7 (75:75) = ' '
      KH7 (76:81) = KOUT (83:88)
      KH7 (82:82) = ' '
      KH7 (83:88) = KOUT (89:94)
      KH7 (89:91) = '|| '
      KH7 (92:96) = KOUT (167:171)
      KH7 (97:97) = ' '
      KH7 (98:102) = KOUT (172:176)
      KH7 (103:103) = ' '
      KH7 (104:108) = KOUT (177:181)
      KH7 (109:109) = ' '
      KH7 (110:114) = KOUT (182:186)
      KH7 (115:115) = ' '
      KH7 (116:120) = KOUT (187:191)
      KH7 (121:121) = ' '
      KH7 (122:126) = KOUT (192:196)
      KH7 (131:131) = ' '
      KH7 (132:132) = '| '
30099 WRITE (19,100)kH7
      KCOUNT = KCOUNT + 1
      IF (KCOUNT .GT. 54) GO TO 3023
****************************************
*     THIRD RECORD                     *
****************************************
3010  READ (20,REC=INUM,ERR=9998)KOUT
      INUM = INUM + 1
      IF (KOUT(17:19) .EQ. '   ') GO TO 3010
      IF (KOUT (1:16) .NE. KOBS (1:16)) GO TO 3021
      KH7(1:1) = '('
      KH7(2:4) = KOUT (21:23)
      IF (KH7(2:2) .EQ. ' ')KH7(2:2) = '0'
      KH7(5:5) = ' '
      KH7(6:7) = KOUT (24:25)
      KH7(8:8) = ' '
      KH7(9:11) = KOUT (26:28)
      KH7(12:12) = ' '
      KH7(13:14) = KOUT (29:30)
      KH7(15:16) = ')'
      KH7(17:17) = ' '
      KH7(18:18) = KOUT (36:36)
      KH7 (19:19) = ' '
      KH7 (20:23) = KOUT (31:34)
      KH7(24:24) = ' '
      KH7 (25:25) = KOUT (35:35)
      KH7(26:27) = KOUT (39:40)
      KH7 (28:28) = '| '
      KH7 (29:34) = KOUT (41:46)
      KH7 (35:35) = ' '
      KH7 (36:41) = KOUT (47:52)
      KH7 (42:42) = ' '
```

```
      KH7 (43:48) = KOUT (53:58)
      KH7 (49:49) = '| '
      KH7 (50:52) = KOUT (59:61)
      KH7 (53:53) =  ' '
      KH7 (54:59) = KOUT (65:70)
      KH7 (60:60) = ' '
      KH7 (61:66) = KOUT (71:76)
      KH7 (67:68) = '| '
      KH7 (69:74) = KOUT (77:82)
      KH7 (75:75) = ' '
      KH7 (76:81) = KOUT (83:88)
      KH7 (82:82) = ' '
      KH7 (83:88) = KOUT (89:94)
      KH7 (89:91) = '|| '
      KH7 (92:96) = KOUT (167:171)
      KH7 (97:97) = ' '
      KH7 (98:102) = KOUT (172:176)
      KH7 (103:103) = ' '
      KH7 (104:108) = KOUT (177:181)
      KH7 (109:109) = ' '
      KH7 (110:114) = KOUT (182:186)
      KH7 (115:115) = ' '
      KH7 (116:120) = KOUT (187:191)
      KH7 (121:121) = ' '
      KH7 (122:126) = KOUT (192:196)
      KH7 (131:131) = ' '
      KH7 (132:132) = '| '
3011  WRITE (19,100)KH7
      KCOUNT = KCOUNT + 1
      IF (KCOUNT .GT. 54) GO TO 3050
      KH7(1:16) = '                '
*********************************************
*     REST OF RECORDS                       *
*********************************************
3012  READ (20,REC=INUM,ERR=9998)KOUT
      INUM = INUM + 1
      IF (KOUT(17:19) .EQ. '   ') GO TO 3012
      IF (KOUT (1:16) .EQ. KOBS (1:16)) GO TO 3013
      WRITE (19,100)KF5
      GO TO 3005
3013  KH7(17:17) = ' '
      KH7(18:18) = KOUT (36:36)
      KH7 (19:19) = ' '
      KH7 (20:23) = KOUT (31:34)
      KH7(24:24) = ' '
      KH7 (25:25) = KOUT (35:35)
      KH7(26:27) = KOUT (39:40)
      KH7 (28:28) = '| '
      KH7 (29:34) = KOUT (41:46)
      KH7 (35:35) = ' '
      KH7 (36:41) = KOUT (47:52)
      KH7 (42:42) = ' '
      KH7 (43:48) = KOUT (53:58)
      KH7 (49:49) = '| '
      KH7 (50:52) = KOUT (59:61)
      KH7 (53:53) =  ' '
      KH7 (54:59) = KOUT (65:70)
      KH7 (60:60) = ' '
      KH7 (61:66) = KOUT (71:76)
      KH7 (67:68) = '| '
      KH7 (69:74) = KOUT (77:82)
      KH7 (75:75) = ' '
      KH7 (76:81) = KOUT (83:88)
      KH7 (82:82) = ' '
      KH7 (83:88) = KOUT (89:94)
      KH7 (89:91) = '|| '
      KH7 (92:96) = KOUT (167:171)
      KH7 (97:97) = ' '
      KH7 (98:102) = KOUT (172:176)
      KH7 (103:103) = ' '
      KH7 (104:108) = KOUT (177:181)
      KH7 (109:109) = ' '
      KH7 (110:114) = KOUT (182:186)
      KH7 (115:115) = ' '
      KH7 (116:120) = KOUT (187:191)
      KH7 (121:121) = ' '
      KH7 (122:126) = KOUT (192:196)
      KH7 (131:131) = ' '
      KH7 (132:132) = '| '
3014  WRITE (19,100)KH7
      KCOUNT = KCOUNT + 1
      IF (KCOUNT .GT. 54) GO TO 3050
      GO TO 3012

*********************************************
*                                           *
*********************************************
3020  KSPACE (1:3) = KCODE (1:3)
      WRITE (19,100)KSPACE
      KSPACE(1:1)   = '('
      KSPACE (2:4)  = KLAT (1:3)
      KSPACE (5:5)  = '.'
      KSPACE (6:7)  = KLAT(4:5)
      KSPACE (8:8) = ' '
      KSPACE (9:11)  = KLONG (1:3)
      KSPACE (12:12) = '.'
      KSPACE (13:14) = KLONG (4:5)
      KSPACE (15:16) = ') '
      KSPACE(17:17) = ' '
      WRITE (19,100)KSPACE
```

```
      KSPACE (1:16) = '
      WRITE (19,100)KF5
      KCOUNT = KCOUNT + 3
      IF (KCOUNT .GT. 55) GO TO 3050
      GO TO 3005
3021  KSPACE(1:1)   = '('
      KSPACE (2:4)  = KLAT (1:3)
      KSPACE (5:5)  = '.'
      KSPACE (6:7)  = KLAT (4:5)
      KSPACE (8:8) = ' '
      KSPACE (9:11)  = KLONG (1:3)
      KSPACE (12:12) = '.'
      KSPACE (13:14) = KLONG (4:5)
      KSPACE (15:16) = ') '
      KSPACE(17:17) = ' '
      WRITE (19,100) KSPACE
      KSPACE (1:16) = '
      WRITE (19,100) KF5
      KCOUNT = KCOUNT + 2
      GO TO 3005

3022  KSPACE (1:3) = KCODE (1:3)
      WRITE (19,100)KSPACE
      KSPACE(1:1)   = '('
      KSPACE (2:4)  = KLAT (1:3)
      KSPACE (5:5)  = '.'
      KSPACE (6:7)  = KLAT(4:5)
      KSPACE (8:8) = ' '
      KSPACE (9:11)  = KLONG (1:3)
      KSPACE (12:12) = '.'
      KSPACE (13:14) = KLONG (4:5)
      KSPACE (15:16) = ') '
      KSPACE(17:17) = ' '
      WRITE (19,100)KSPACE
      KSPACE (1:16) = '
      WRITE (19,100)KF5
      KCOUNT = KCOUNT + 3
      GO TO 3050
3023  KSPACE(1:1)   = '('
      KSPACE (2:4)  = KLAT (1:3)
      KSPACE (5:5)  = '.'
      KSPACE (6:7)  = KLAT (4:5)
      KSPACE (8:8) = ' '
      KSPACE (9:11)  = KLONG (1:3)
      KSPACE (12:12) = '.'
      KSPACE (13:14) = KLONG (4:5)
      KSPACE (15:16) = ') '
      KSPACE(17:17) = ' '
      WRITE (19,100) KSPACE
      KSPACE (1:16) = '
      WRITE (19,100) KF5
      KCOUNT = KCOUNT + 2
      GO TO 3050

*********************************************
*      NEW PAGE                             *
*********************************************
3050  WRITE (19,99)KPAGE
      WRITE (19,100)KF3
      WRITE (19,100)KF4
      WRITE (19,100)KF5
      KCOUNT = 3
      GO TO 3004
4000  K3LOOP=K3LOOP+1
      PASS (1:1) = '0'
      IF (K3LOOP .NE. 1) PASS(1:1) ='1'
4001  CALL GEOSB1 (PASS)
      GO TO 1010

*********************************************************
*                                                       *
*     SCANNING                                          *
*                                                       *
*********************************************************
5000  PASS(2:2) = '1'
      IF (KLOOP .EQ. 0) PASS(2:2) = '0'
      CALL GEOSUB (PASS)
      GO TO 1010
*********************************************************
*     LIST GEOMAGNETIC MODEL COORDINATES                *
*********************************************************
6000  PASS(2:2) = '1'
      IF (KLOOP .EQ. 0) PASS(2:2) = '0'

      CALL GEOSB2 (PASS)
      GO TO 1010

*********************************************************
*     LIST GEOMAGNETIC ANNUAL DATA BASE                 *
*********************************************************
7000  CALL GEOANN (PASS)
      GO TO 1010
*********************************************************
*     CATALOG LISTING FOR ONE OBSERVATORY               *
*********************************************************
8000  CALL GE01SB (PASS)

9998  WRITE (19,100)KH5
      WRITE (19,99)KPAGE
9999  PRINT *, 'END OF LISTING SYSTEM'
      END
```

```
      SUBROUTINE GEOSUB (PASS)
*************************************************************
*     SUBROUTINE                                            *
*************************************************************

      INTEGER*4 KNUM,K19YR
      DIMENSION KNUM (500), KOUT1(50),K19YR(500)
      CHARACTER*3 KCOD (500)
      CHARACTER*71 KS1
      CHARACTER*71 KS2
      CHARACTER*71 KS3
      CHARACTER*71 KS4
      CHARACTER*71 KS5
      CHARACTER*71 KS6
      CHARACTER*71 KZ
      CHARACTER*30  PASS
      CHARACTER*200 KOUT
      CHARACTER*3   ICOD
      CHARACTER*10  KYEAR
1000  PRINT *,PASS(1:2)
      IF (PASS(2:2) .NE. '0') GO TO 5004

      KS1 (1:17)  = 'OBSERVATORY      '
      KS1 (18:20) = 'COD '
      KS1 (21:25) = ' KAQ '
      KS1 (26:40) = '|  NORMAL MONTHS'
      KS1 (41:55) = '|   RAPID RUN   '
      KS1 (56:71) = '|   HOURLY ANY  |'

      KS2 (1:17) = '---------------- '
      KS2 (18:25) = '--- ---  '
      KS2 (26:54) = '  -------------  ------------'
      KS2 (55:71) = '  ------------ '

      KS4 (1:17)  = 'OBSERVATORY      '
      KS4 (18:20) = 'COD '
      KS4 (21:25) = ' KAQ '
      KS4 (26:40) = '| HOURLY DIGITAL'
      KS4 (41:55) = '|   2.5-MINUTE  '
      KS4 (56:71) = '|   1.0-MINUTE  |'

      KS5 (1:17)  = 'OBSERVATORY      '
      KS5 (18:20) = 'COD '
      KS5 (21:25) = ' KAQ '
      KS5 (26:28) = '    '
      KS5 (29:34) = 'NORM1 '
      KS5 (35:40) = 'NORM2 '
      KS5 (41:46) = 'RAPID '
      KS5 (47:52) = 'STORM '

      KS5 (53:58) = 'HOUR  '
      KS5 (59:68) = 'Q-INDICES'

      KS6 (1:17) = '---------------- '
      KS6 (18:26) = '--- ---  '
      KS6 (27:57) = '  ----- ----- ----- ----- ------'
      KS6 (58:71) = ' ------------ '
*************************************************************
*                                                           *
*     LIST OUT ALL OBSERVATORIES FOR A GIVEN YEAR           *
*                                                           *
*************************************************************

*********************************
*     LOAD INDEXES              *
*********************************
5080  INUM = 1
      J= 1
5081  READ (20,REC=INUM)KOUT1
      DO 5082 I=1,50
      KNUM (J) = KOUT1 (I)
      J=J+1
5082  CONTINUE
      INUM = INUM + 1
      IF (INUM .GT. 10) GO TO 5083
      GO TO 5081

5083  INUM = 11
      I1 = 1
      I2 = 3
      I3 = 1
5084  READ (20,REC=INUM)KOUT
      DO 5085 I=1,50
      KCOD (I3) = KOUT (I1:I2)
      I1 = I1 + 3
      I2 = I2 + 3
      I3 = I3 + 1
5085  CONTINUE
      INUM = INUM + 1
      IF (INUM .GT. 20) GO TO 5086
      I1 = 1
      I2 = 3
      GO TO 5084

5086  INUM=21
      J=1
5087  READ (20,REC=INUM)KOUT1
      DO 5088  I = 1,50
      K19YR (J) = KOUT1 (I)
      J= J+1
5088  CONTINUE
      INUM = INUM + 1
      IF (INUM .GT. 30) GO TO 5001
```

```
      GO TO 5087

*************************************************
*     ALL INDEXES ARE LOADED                    *
*************************************************
5001  OPEN (19,FILE='GEOPRINTA',STATUS='NEW',
     - FORM='FORMATTED')
5004  IF (PASS(1:1) .EQ. '5') GO TO 6000
      PRINT *,'WELCOME TO SELECT BY YEAR ROUTINE'

5003  PRINT *,'ENTER YEAR (LIKE 1980) OR END'
10    FORMAT (A)
      READ (*,10)KYEAR
      IF (KYEAR (1:1) .EQ. 'E') GO TO 5011
      IF (KYEAR(1:1) .NE. '1')GO TO 5001
      READ (KYEAR,FMT='(I4)')L
      PRINT *,L
      J=1
      PRINT *, 'ENTER 1 = ANALOG  LISTING'
      PRINT *, 'ENTER 2 = DIGITAL LISTING'
      PRINT *, 'ENTER 3 = FILM    LISTING'
      READ (*,10)PASS
      IF (PASS(1:1) .EQ. '2') GO TO 5020
      IF (PASS(1:1) .EQ. '3') GO TO 5030
      KS3(1:20) = '                   '
      KS3(21:33) ='             '
      KS3(34:41) = '________'
      PRINT *,KS3
      WRITE (19,101)KS3
      KS3(34:35) = '| '
      KS3(36:39) = KYEAR(1:4)
      KS3(40:41) =' |'
      PRINT *,KS3
      WRITE (19,101)KS3
      KS3(34:41) = '--------'
      PRINT *,KS3
      WRITE (19,101)KS3

      PRINT *,KS1
      PRINT *,KS2
      WRITE (19,101)KS1
      WRITE (19,101)KS2
101   FORMAT (A71)
*************************************************
*     CALCULATE LOCATIONS OF EACH OBS-YEAR      *
*************************************************

50016 INUM = KNUM (J) + (L - K19YR (J))
      READ (20,REC=INUM,ERR=5010)KOUT
      J=J+1
      IF (J .GT. 500) GO TO 5010
      IF (KOUT(1:5) .EQ. '     ') GO TO 50016
      IF (KYEAR(1:4) .EQ. KOUT(31:34)) GO TO 5002
      GO TO 50016
5002  KS3(1:16)  = KOUT (1:16)
      KS3(17:17) = ' '
      KS3(18:20) = KOUT (17:19)
      KS3(21:21) = ' '
      KS3(22:22) = KOUT (35:35)
      KS3(23:24) = KOUT (39:40)
      KS3(25:26) = '|| '
      KS3(27:27) = KOUT (41:41)
      KS3(28:28) = ' '
      KS3(29:40) = KOUT (47:58)
      KS3(41:41) = '| '
      KS3(42:42) = KOUT (59:59)
      KS3(43:43) = ' '
      KS3(44:55) = KOUT(65:76)
      KS3(56:56) = '| '
      KS3(57:57) = KOUT (77:77)
      KS3(58:58) = ' '
      KS3(59:70) = KOUT(83:94)
      KS3(71:71) = '| '
      PRINT *,KS3
      WRITE (19,101)KS3
      GO TO 50016
5010  GO TO 5003
5011  PRINT *,'YOUR LISTING IS ON FILE GEOPRINTA'
      GO TO 9999
5020  KS3(1:34) = '
      KS3(34:41) = '________'
      PRINT *,KS3
      WRITE (19,101)KS3
      KS3(34:35) = '| '
      KS3(36:39) = KYEAR(1:4)
      KS3(40:41) =' |'
      PRINT *,KS3
      WRITE (19,101)KS3
      KS3(34:41) = '--------'
      PRINT *,KS3
      WRITE (19,101)KS3

      PRINT *,KS4
      PRINT *,KS2
      WRITE (19,101)KS4
      WRITE (19,101)KS2
5021  INUM = KNUM (J) + (L - K19YR (J))
      READ (20,REC=INUM,ERR=5010)KOUT
      J=J+1
      IF (J .GT. 500) GO TO 5010
```

```
      IF (KOUT(1:5) .EQ. '     ') GO TO 5021
      IF (KYEAR(1:4) .EQ. KOUT(31:34)) GO TO 5022
      GO TO 5021
5022  KS3(1:16)  = KOUT (1:16)
      KS3(17:17) = ' '
      KS3(18:20) = KOUT (17:19)
      KS3(21:21) = ' '
      KS3(22:22) = KOUT (35:35)
      KS3(23:24) = KOUT (39:40)
      KS3(25:26) = '|| '
      KS3(27:27) = KOUT (95:95)
      KS3(28:28) = ' '
      KS3(29:40) = KOUT (101:112)
      KS3(41:41) = '| '
      KS3(42:42) = KOUT (113:113)
      KS3(43:43) = ' '
      KS3(44:55) = KOUT (119:130)
      KS3(56:56) = '| '
      KS3(57:57) = KOUT (131:131)
      KS3(58:58) = ' '
      KS3(59:70) = KOUT(137:148)
      KS3(71:71) = '| '
      PRINT *,KS3
      WRITE (19,101)KS3
      GO TO 5021
*****************************************
*     FILM                              *
*****************************************
5030  KS3(1:20) = '                    '
      KS3(21:33) = '            '
      KS3(34:41) = '________'
      PRINT *,KS3
      WRITE (19,101)KS3
      KS3(34:35) = '| '
      KS3(36:39) = KYEAR(1:4)
      KS3(40:41) =' | '
      PRINT *,KS3
      WRITE (19,101)KS3
      KS3(34:41) = '--------'
      PRINT *,KS3
      WRITE (19,101)KS3

      PRINT *,KS5
      PRINT *,KS6
      WRITE (19,101)KS5
      WRITE (19,101)KS6
5031  INUM = KNUM (J) + (L - K19YR (J))
      READ (20,REC=INUM,ERR=5010)KOUT
      J=J+1
      IF (KOUT(1:5) .EQ. '     ') GO TO 5031
      IF (J .GT. 500) GO TO 5010
      IF (KYEAR(1:4) .EQ. KOUT(31:34)) GO TO 5032
      GO TO 5031
5032  KS3(1:16)  = KOUT (1:16)
      KS3(17:17) = ' '
      KS3(18:20) = KOUT (17:19)
      KS3(21:21) = ' '
      KS3(22:22) = KOUT (35:35)
      KS3(23:23) = ' '
      KS3(24:25) = KOUT (39:40)
      KS3(26:29) = ' || '
      KS3(30:34) = KOUT(167:171)
      KS3(35:35) = ' '
      KS3(36:40) = KOUT(172:176)
      KS3(41:41) = ' '
      KS3(42:46) = KOUT(177:181)
      KS3(47:47) = ' '
      KS3(48:52) = KOUT(182:186)
      KS3(53:53) = ' '
      KS3(54:58) = KOUT(187:191)
      KS3(59:59) = ' '
      KS3(60:64) = KOUT (192:196)
      WRITE (19,101)KS3
      PRINT *,KS3
      GO TO 5031
*************************************************************
*                                                           *
*     LISTOUT ARE YEARS OF DATA FOR A GIVEN OBSERVATORY     *
*                                                           *
*************************************************************

6000  PRINT *,'WELCOME TO SELECT BY OBSERVATORY'
6001  PRINT *, 'ENTER OBSERVATORY CODE--(LIKE IRT)'
      READ (*,10)ICOD
      J=1
      DO 6080 I=1,500
      IF (ICOD (1:3) .EQ. KCOD (I)) GO TO 6081
      J=J+1
6080  CONTINUE
      PRINT *, 'NO SUCH OBSERVATORY--TRY AGAIN'
      GO TO 9999

6081  INUM =KNUM (J)
      PRINT *, 'LOCATION OF FIRST RECORD IN OBS = ', INUM
      READ (20,REC=INUM,ERR=9999)KOUT
      KZ (1:29) = '_____________________________'
      KZ (30:54)= '_________________________'
      PRINT *,KZ
      WRITE (19,101)KZ
      KZ(1:16) = '| OBSERVATORY = '
```

```
      KZ(17:32)= KOUT (1:16)
      KZ(33:40)= ' CODE = '
      KZ(41:43)= KOUT(17:19)
      KZ(44:54)= '          | '
      PRINT *,KZ
      WRITE (19,101)KZ

      KZ(1:29) = '|                 ____________'
      KZ(30:55)= '_          ___          |'
      PRINT *,KZ
      WRITE (19,101)KZ

      KZ(1:29) = '| LATITUDE =                 '
      KZ(30:54)= '                            | '
      KZ (13:15) = KOUT (21:23)
      KZ (16:16) = '.'
      KZ (17:18) = KOUT (24:25)
      KZ (19:24) = ' NORTH'
      IF (KOUT(21:21) .EQ. '-') KZ(18:23) = 'SOUTH'
      IF (KOUT(22:22) .EQ. '-') KZ(18:23) = 'SOUTH'
      KZ (30:41) = 'LONGITUDE = '
      KZ (42:44) = KOUT (26:28)
      KZ (45:45) = '.'
      KZ (46:47) = KOUT (29:39)
      KZ (48:55) = ' EAST | '
      PRINT *,KZ
      WRITE (19,101)KZ

      KZ (1:29) ='| ____________________________'
      KZ(30:54) ='____________________________|'
      PRINT *,KZ
      WRITE (19,101)KZ
      PRINT *, ' '
      KZ(1:40) ='YEAR  KAQ   MAGNETOGRAMS    HV-ANY      '
      KZ(41:65) = '  HV DIGITAL   2.5-MINUTE'
      PRINT *,KZ
      WRITE (19,101)KZ

      KZ(1:30) = '                                '
      KZ(31:54) = '                          '
      KZ(55:68) = '1.0-MINUTE(*)'
      PRINT *,KZ
      WRITE (19,101)KZ

      KZ(1:40) = '____ ___   ____________ ____________'
      KZ(41:68)= '  ____________________________'
      PRINT *,KZ
      WRITE (19,101)KZ
      GO TO 6003

 6002 READ (20,REC=INUM,ERR=9999)KOUT
      IF (KOUT(31:34) .EQ. '    ') GO TO 9999
 6003 KZ(55:66) = KOUT(119:130)
      KZ(67:67)= ' '
      IF (KOUT(137:148) .NE. '            ')
     - KZ(55:66) = KOUT (137:148)
      IF (KOUT(137:148) .NE. '            ')
     - KZ(67:67) ='*'
      KZ(1:4) = KOUT (31:34)
      KZ (5:6) = '  '
      KZ (7:7) = KOUT(35:35)
      KZ (8:8) = KOUT (39:40)
      KZ (9:12) = '    '
      KZ (13:24) = KOUT (47:58)
      KZ (25:26) = ' '
      KZ (27:38) = KOUT (83:94)
      KZ (39:40) =  '  '
      KZ (41:52) = KOUT (101:112)
      KZ (53:54) = '  '
      PRINT *,KZ
      WRITE (19,101)KZ

      INUM= INUM + 1
      GO TO 6002

 9999 RETURN
      END
```

```
      SUBROUTINE GEOSB1 (PASS)
*************************************************************
*                                                           *
*     10-SECOND TYPE CATALOG LISTING                        *
*                                                           *
*************************************************************


      CHARACTER*132 KSPACE
      CHARACTER*200 KOUT
      CHARACTER*132 KTEMP
      CHARACTER*132 KH1
      CHARACTER*132 KH2
      CHARACTER*132 KH3
      CHARACTER*30  PASS
      CHARACTER*3   KCODE
      CHARACTER*3   KCODE2
      CHARACTER*1   KPAGE

      KPAGE (1:1) = ''
      KH1 (1:8) = 'TABLE VI'
      KH1 (9:35) = '                           '
      KH1 (36:71) = 'HIGH-RESOLUTION GEOMAGNETIC DIGITAL '
      KH1 (72:75) = 'DATA'

      KH2 (1:16) = 'OBSERVATORY     '
      KH2 (17:21) = ' CODE'
      KH2 (22:49) = '   YEAR  WDC   10-SECOND DATA'
      KH2 (50:61) = '           '
      KH2 (62:90) = 'OBSERVATORY      CODE  YEAR'
      KH2 (91:110) = ' WDC   10-SECOND DATA'

      KH3 (1:17) = '----------------- '
      KH3 (18:52) = '----  ----  ---   ------  ------'
      KH3 (53:61) = '          '
      KH3 (62:97) = '----------------- ----  ----  ---  '
      KH3 (98:110)= '--- ---  ------'

      KSPACE(1:30)   = '                              '
      KSPACE(31:60)  = '                              '
      KSPACE(61:90)  = '                              '
      KSPACE(91:120) = '                              '
      KSPACE(121:132)= '            '
      PRINT *,
     -'------------------------------------------------------'
      PRINT *,
     -'|     WELCOME TO 10-SECOND CATALOG LISTING          |'
      PRINT *,
     -'|                                                    |'
      PRINT *,
     -'|     THIS ROUTINE PERFORMS TWO FUNCTIONS            |'
      PRINT *,
     -'| 1)   THE MASTER DATA BASE IS SEARCHED AND A        |'
      PRINT *,
     -'|     FILE IS CREATED CONTAINING 10-SECOND DATA      |'
      PRINT *,
     -'|                                                    |'
      PRINT *,
     -'| 2)   A 10-SECOND LISTING IS CREATED FROM THE       |'
      PRINT *,
     -'|     NEW DATA BASE                                  |'
      PRINT *,
     -'|                                                    |'
      PRINT *,
     -'|     THE NEW DATA BASE IS SAVED AND MAYBE USED      |'
      PRINT *,
     -'|     PRODUCE ADDITIONAL LISTINGS                    |'
      PRINT *,
     -'|                                                    |'
      PRINT *,
     -'| 3)   THE LISTING FILE IS NAMED GEOPRINTC           |'
      PRINT *,
     -'|____________________________________________________|'

      PRINT *,'DO YOU HAVE A 10-SECOND DATA BASE--
     - ENTER Y/N'
      READ (*,10)PASS
10    FORMAT (A)

1000  INUM=35
      J=1

      IF (PASS(1:1) .EQ. '1') GO TO 10001
      OPEN (25,FILE='GEOTEMP',ACCESS='DIRECT',RECL=200,
     -FORM='UNFORMATTED')
10001 IF (PASS(1:1) .EQ. 'Y') GO TO 2001
*************************************************************
*     READ ALL RECORDS IN MAIN DATA BASE-SECOND DATA        *
*     SELECT ONLY RECORDS WHICH HAVE 10 SECOND DATA         *
*     SEPARATE OBSERVATORIES WITH A BLANK RECORD            *
*************************************************************
1001  READ (20,REC=INUM,ERR=2000)KOUT
      INUM = INUM+1
      IF (KOUT(149:149) .NE. 'A') GO TO 1001

1002  IF (J .EQ. 1) KCODE (1:3) = KOUT(17:19)
      IF(KCODE (1:3) .EQ. KOUT(17:19))GO TO 1003
      KSPACE(17:19) = KCODE(1:3)
      KSPACE(1:5) = '     '
      WRITE (25,REC=J)KSPACE
```

```
      J=J+1
      KCODE(1:3) = KOUT(17:19)
1003  WRITE (25,REC=J)KOUT
      J=J+1
      GO TO 1001
*************************************************************
*     ALL DATA HAS BEEN SELECTED                            *
*     BUILD A PAGE WITH TWO COLUMNS                         *
*************************************************************
2000  PRINT *,'ALL 10-SECOND HAS BEEN SELECTED'
      PRINT *,'NUMBER OF RECORDS = ', J
2001  OPEN (26,FILE='GEOPRINTC',STATUS='NEW',
     -FORM='FORMATTED')
*************************************************************
*     FIND BEGINNING OF AN OBSERVATORY ONE PAGE DOWN        *
*     FOR THE SECOND COLUMN                                 *
*************************************************************
      J=1
      K=40
4000  READ (25,REC=K)KOUT
      K=K+1
      PRINT *,K,' ',KOUT(1:35)
      IF (KOUT(1:5) .EQ. '     ') GO TO 4002

      GO TO 4000
4002  WRITE (26,100)KPAGE
      WRITE (26,100)KH1
      WRITE (26,100)KSPACE
      WRITE (26,100)KH2
      WRITE (26,100)KH3
      WRITE (26,100)KSPACE
      KHOLD = K
      PRINT *,'SECOND DATA COLUMN BEGINS AT POSITION = ',K
100   FORMAT (A132)

*************************************************************
*     FIRST HALF OF PAGE
*************************************************************
2002  IF (J .GE. KHOLD) GO TO 2050
      READ (25,REC=J,ERR=9999)KOUT
      J=J+1
      KTEMP(1:49) = '
      IF (KOUT(17:19) .EQ. KCODE(1:3)) GO TO 2003
      KTEMP(1:16) = KOUT(1:16)
      KTEMP(17:18) = '  '
      KTEMP(19:21) = KOUT(17:19)
      KTEMP (22:23) = '  '
      KCODE(1:3) = KOUT(17:19)
2003  IF (KOUT(1:5) .EQ. '     ') GO TO 2004
      KTEMP (24:27) = KOUT (31:34)
      KTEMP (28:29) = '  '
      KTEMP (30:35) = KOUT (149:154)
      KTEMP (36:41) = KOUT (155:160)
      KTEMP (42:43) = '  '
      KTEMP (44:49) = KOUT (161:166)
*************************************************************
*     SECOND HALF OF PAGE                                   *
*************************************************************
2004  READ (25,REC=K,ERR=3000)KOUT
      K=K+1
      KTEMP(50:82) = '
      IF (KOUT(17:19) .EQ. KCODE2(1:3)) GO TO 2005
      KTEMP (62:77) = KOUT(1:16)
      KTEMP (78:79) = '  '
      KTEMP (80:82) = KOUT(17:19)
      KTEMP (84:85) = '  '
      KCODE2(1:3)   = KOUT(17:19)

2005  KTEMP (86:89)  = KOUT (31:34)
      KTEMP (90:91)  = '  '
      KTEMP (92:97)  = KOUT (149:154)
      KTEMP (98:103) = KOUT (155:160)
      KTEMP (104:105)= '  '
      KTEMP (106:111)= KOUT (161:166)

      WRITE (26,100)KTEMP
      GO TO 2002
*************************************************************
*     END OF A PAGE                                         *
*************************************************************
2050  KTEMP(1:30) = '                              '
      KTEMP(31:49)= '                   '
2051  READ (25,REC=K,ERR=9999)KOUT
      K=K+1
      KTEMP(50:61) = '           '
      KTEMP(62:77) = '                '
      KTEMP(78:82) = '     '
      IF (KOUT(17:19) .EQ. KCODE2(1:3)) GO TO 2052
      J=K
      K=K+40
      PRINT *,'J = ',J
      PRINT *,'K = ',K
      READ (25,REC=J)KOUT
      PRINT *,KOUT
      J= J-1
      READ (25,REC=J)KOUT
      PRINT *,KOUT
      GO TO 4000

2052  KTEMP (86:89)  = KOUT (31:34)
```

```
1684       KTEMP (90:91)  = '  '
1685       KTEMP (92:97)  = KOUT (149:154)
1686       KTEMP (98:103) = KOUT (155:160)
1687       KTEMP (104:105)= '  '
1688       KTEMP (106:111)= KOUT (161:166)
1689
1690       WRITE (26,100)KTEMP
1691       GO TO 2002
1692 ************************************************************
1693 *     END OF GEOTEMP FILE                                  *
1694 *     NO ADDITIONAL SECOND COLUMNS                         *
1695 ************************************************************
1696 3000  KTEMP(50:82) = '                                      '
1697       KTEMP(83:113) = '                                     '
1698
1699       WRITE(26,100)KTEMP
1700 3001  IF (J .GE. KHOLD) GO TO 9999
1701       READ (25,REC=J,ERR=9999)KOUT
1702       J=J+1
1703       KTEMP(1:30) = '                              '
1704       KTEMP(31:49)= '                 '
1705       IF (KOUT(17:19) .EQ. KCODE(1:3)) GO TO 3003
1706       KTEMP(1:16) = KOUT(1:16)
1707       KTEMP(17:18) = '  '
1708       KTEMP(19:21) = KOUT(17:19)
1709       KTEMP (22:23) = '  '
1710       KCODE(1:3) = KOUT(17:19)
1711 3003  IF (KOUT(1:5) .EQ. '     ') GO TO 3004
1712       KTEMP (24:27) = KOUT (31:34)
1713       KTEMP (28:29) = '  '
1714       KTEMP (30:35) = KOUT (149:154)
1715       KTEMP (36:41) = KOUT (155:160)
1716       KTEMP (42:43) = '  '
1717       KTEMP (44:49) = KOUT (161:166)
1718 3004  WRITE (26,100)KTEMP
1719       GO TO 3001
1720
1721 9999  PRINT *, 'THE LISTING IS ON FILE    GEOPRINTC'
1722       RETURN
1723       END
1724
```

```
      SUBROUTINE GEOSB2 (PASS)

*********************************************
*     LISTS TABLE 1 AND TABLE 2             *
*********************************************
*     FILE1 FORMAT                          *
*********************************************
*     CC 1-16  OBSERVATORY NAME             *
*       17     BLANK                        *
*       18-20  CODE                         *
*       21-26  GEOGRAPHIC LATITUDE          *
*       27-32  GEOGRAPHIC LONGITUDE         *
*       33-38  GEOGRAPHIC CO-LATITUE        *
*       39     BLANK                        *
*       40-45  DIPOLE CO-LATITUDE           *
*       46-51  DIPOLE LONGITUDE             *
*       52     BLANK                        *
*       53-58  GUSTAFFSSON CO-LATITUTE      *
*       59-64  GUSTAFFSSON LONGITUDE        *
*       65     BLANK                        *
*       66-71  TSYGANENKO CO-LATITUDE       *
*       72-77  TSYGANENKO LONGITUDE         *
*       78     BLANK                        *
*       79-84  OBSERVED YEAR (1966.5)       *
*       85-90  D OBSERVED                   *
*       91-96  H OBSERVED                   *
*       97-102 Z OBSERVED                   *
*      103-108 X OBSERVED                   *
*      109-114 Y OBSERVED                   *
*      115-117 OBSERVED ELEMENTS            *
*      118     BLANK                        *
*      119-124 CALCULATED YEAR (1980.5)     *
*      125-130 D CALCULATED                 *
*      131-136 H CALCULATED                 *
*      137-142 Z CALCULATED                 *
*      143-148 X CALCULATED                 *
*      149-154 Y CALCULATED                 *
*      155-160 BLANK                        *
*********************************************

      CHARACTER*10  PASS
      CHARACTER*160 KOUT
      CHARACTER*132 KH1
      CHARACTER*132 KH11
      CHARACTER*132 KH12
      CHARACTER*132 KH2
      CHARACTER*132 KH22
      CHARACTER*132 KH3
      CHARACTER*132 KH4
      CHARACTER*132 KH5
      CHARACTER*132 KH6
      CHARACTER*132 KH7
      CHARACTER*132 KH8
      CHARACTER*132 KSPACE
      CHARACTER*10  KL
      CHARACTER*1   KNPAGE


      KNPAGE (1:1) = ''

      KSPACE(1:30)   = '                              '
      KSPACE(31:60)  = '                              '
      KSPACE(61:90)  = '                              '
      KSPACE(91:120) = '                              '
      KSPACE (121:132) = '            '

      KH1(1:7) = 'TABLE 1'
      KH1(8:30) = '                      '
      KH1(31:50)= '                  '
      KH1(51:86) = 'GEOMAGNETIC OBSERVATORY TABLE'

      KH11(1:40) = '                                        '
      KH11(41:70) = '                       FOR'
      KH12(1:40) = '                                        '
      KH12(41:70) = '                     1  9  8  0'
      KH2(1:32) = '(SEQUENCED BY OBSERVATORY NAME)'

      KH22(1:32) = '(ALL VALUES AS OF 1980.5)'

      KH3(1:20) = '                    '
      KH3(21:46) = '  G E O G R A P H I C   '
      KH3(47:87) = '     G E O M A G N E T I C  M O D E L S
      KH3 (88:120) = '              A N N U A L  V A '
      KH3 (121:130)= 'L U E S'


      KH4(1:24) = '                        '
      KH4(25:49) = '  COORDINATES           '
      KH4(50:79) = ' DIPOLE       GUSTAFFSSON     '
      KH4(80:109) = 'TSYGANENKO          OBSERVED  '
      KH4(110:131)= 'OR  IGRF CALCULATED(*)    '

      KH5(1:29) = 'OBSERVATORY      CODE  LAT  E'
      KH5(30:42)= ' LONG CO-LAT '
      KH5(43:79) = '   CO-LAT E LONG   CO-LAT E LONG   CO'
      KH5(80:91) = '-LAT E LONG '
      KH5(92:131) = '       D      H      Z      X      Y '
      KH6(1:38) = '--------------- ---- ------------ ---'
      KH6(39:53)= '---    --------'
```

```
      KH6(54:91) = '-----  --------------   -------------'
      KH6(92:130) = '      -----  -----  -----  -----  -----
      KH8(1:20) = '                    '
      KH8(21:43) = '  -------------------  '
      KH8(44:80) = '  ---------------------------------'
      KH8(81:94) = ' -----------    '
      KH8(95:97) = '   '
      KH8(98:130) = '---------------------------------'
      KLOOP = 0
      KPAGE = 0

      PRINT *,'WELCOME TO FILE-1 LISTING'

1000  INUM=1
      IF (PASS(1:1) .EQ. '7')GO TO 10002
      OPEN (25,FILE='GEOFILE1',ACCESS='DIRECT',RECL=160,
     -FORM='UNFORMATTED')
      KH1(1:8) = 'TABLE 1'
      KH2(1:32)='(SEQUENCED BY OBSERVATORY NAME)'
      OPEN (26,FILE='GEOPRINTD',STATUS='NEW',
     -FORM='FORMATTED')
      GO TO 10003

10002 OPEN (25,FILE='GEOFILE1C',ACCESS='DIRECT',RECL=160,
     -FORM='UNFORMATTED')
      OPEN (26,FILE='GEOPRINTD2',STATUS='NEW',
     -FORM='FORMATTED')
      KH1(1:8) = 'TABLE 2 '
      KH2(1:32)= '(SEQUENCED BY DIPOLE CO-LAT)   '

10003 WRITE (26,100)KNPAGE
      WRITE (26,100)KH1
      WRITE (26,100)KH11
      WRITE (26,100)KH12
      WRITE (26,100)KSPACE
      WRITE (26,100)KSPACE
      WRITE (26,100)KH2
      WRITE (26,100)KSPACE
      WRITE (26,100)KH3
      WRITE (26,100)KH8
      WRITE (26,100)KH4
      WRITE (26,100)KH5
      WRITE (26,100)KH6
      WRITE (26,100)KH7

*************************************************
*     GEOGRAPHIC COORDINATES                    *
*************************************************

1001  READ (25,REC=INUM,ERR=2000)KOUT
      INUM = INUM + 1
      KH7(1:20) = KOUT(1:20)
      KH7(21:21) = ' '
      KH7(22:27) = KOUT(21:26)
      KH7(28:28) = ' '
      KH7(29:34) = KOUT(27:32)
      KH7(35:35) = ' '
      KH7(36:41) = KOUT(33:38)
*************************************************
*     DIPOLE                                    *
*************************************************
1002  KH7(42:45) = '    '
      KH7(46:51) = KOUT(40:45)
      KH7(52:52) = ' '
      KH7(53:58) = KOUT(46:51)
      KH7(59:61) = '   '
*************************************************
*     GUSTAFFSSON                               *
*************************************************
1003  KH7(62:67) = KOUT(53:58)
      KH7(68:68) = ' '
      KH7(69:74) = KOUT(59:64)
      KH7(75:77) = '   '
      IF (KH7(69:71) .EQ. '999')
     -KH7(62:74) = '            '
*************************************************
*     TSYGANENKO                                *
*************************************************
1004  KH7(78:83) = KOUT(66:71)
      KH7(84:84) = ' '
      KH7(85:90) = KOUT(72:77)
      IF (KH7(85:87) .EQ. '999')KH7(78:90) = '
*************************************************
*                ANNUAL MEANS                   *
*************************************************
1005  KH7(91:110) = '                    '
      KH7(111:132) = '                      '
      IF (KOUT(79:84) .NE. '1980.5')GO TO 1006
*************************************************
*                OBSERVED DATA                  *
*                -------------                  *
*     D ELEMENT                                 *
*************************************************
      KH7(97:102) = KOUT(85:90)
****************************************
*     H ELEMENT                        *
****************************************
      KH7(103:104) = '  '
```

```
      KH7(105:109) = KOUT(92:96)
      KH7(110:110) = ' '
****************************************
*     Z ELEMENT                        *
****************************************
      KH7(111:116) = KOUT(97:102)
      KH7(117:117) = ' '
****************************************
*     X ELEMENT                        *
****************************************
      KH7(118:123) = KOUT(103:108)
****************************************
*     Y ELEMENT                        *
****************************************
      KH7(125:130) = KOUT(109:114)
      GO TO 1007

*****************************************
*       C A L C U L A T E D   D A T A   *
*       ___________________________     *
*     D ELEMENT                         *
*****************************************
1006  KH7(97:102) = KOUT(125:130)
************************************
*     H ELEMENT                    *
************************************
      KH7(103:104) = '  '
      KH7(105:109) = KOUT(132:136)
      KH7(110:110) = ' '
************************************
*     Z ELEMENT                    *
************************************
      KH7(111:116) = KOUT(137:142)
      KH7(117:117) = ' '

************************************
*     X ELEMENT                    *
************************************
      KH7(118:123) = KOUT(143:148)
      KH7(124:124) = ' '
************************************
*     Y ELEMENT                    *
************************************
      KH7(125:130) = KOUT(149:154)
      KH7(131:131) = '*'
1007  WRITE (26,100)KH7
      KLOOP = KLOOP + 1
      IF (KLOOP .EQ. 5) GO TO 1009
      GO TO 1001

1009  KLOOP = 0
      WRITE (26,100)KSPACE
100   FORMAT (A132)
      KPAGE = KPAGE + 1
      IF (KPAGE .GE. 7) GO TO 1011
      GO TO 1001

1011  WRITE (26,100)KNPAGE
      WRITE (26,100)KSPACE
      WRITE (26,100)KSPACE
      WRITE (26,100)KSPACE
      WRITE (26,100)KH22
      WRITE (26,100)KSPACE
      WRITE (26,100)KH3
      WRITE (26,100)KH8
      WRITE (26,100)KH4
      WRITE (26,100)KH5
      WRITE (26,100)KH6
      WRITE (26,100)KSPACE
      KPAGE = 0
      KPAGE = 0
      GO TO 1001

2000  PRINT *,'END OF COPY NUMBER OF RECORDS = ',INUM
      IF (PASS(1:1) .EQ. '7')GO TO 2001
      PRINT *,'LISTING IS ON FILE  GEOPRINTD'
      GO TO 2002
2001  PRINT *,'LISTING IS ON FILE  GEOPRINTD2'
2002  RETURN
      END
*****************************************************
*                                                   *
*            LIST ONE OBSERVATORY                   *
*            99999999999999999999                   *
*****************************************************
```

```
      SUBROUTINE GEO1SB (PASS)

      INTEGER*4 KNUM,K19YR
      DIMENSION KNUM (500), KOUT1(50),K19YR(500)
      CHARACTER*3 KCOD (500)

      CHARACTER*200  KOUT
      CHARACTER*132  KH1
      CHARACTER*132  KH2
      CHARACTER*132  KH3
      CHARACTER*132  KH4
      CHARACTER*132  KH5
      CHARACTER*132  KH6
      CHARACTER*132  KH7
      CHARACTER*1    KPAGE
      CHARACTER*10   KLL
      CHARACTER*4    KYEAR
      CHARACTER*132  KSPACE
      CHARACTER*1    PASS
      CHARACTER*3    ICOD
      CHARACTER*16   KOBS
      CHARACTER*3    KCODE
      CHARACTER*5    KLAT
      CHARACTER*5    KLONG


      KPAGE (1:1) = ''
      KH1(1:7)    = 'TABLE V'
      KH1(8:35)   = '                           '
      KH1(36:61)  = 'CATALOG LISTING OF ANALOG'
      KH1(62:86)  = ' DIGITAL GEOMAGNETIC DATA'

      KH2(1:28)   = '                            '
      KH2(29:46)  = 'WORLD DATA CENTER '
      KH2(47:73)  = 'A=BOULDER B=MOSCOW C=KYOTO '
      KH2(74:106) = 'D=COPENHAGEN E=EDINBURGH I=BOMBAY'

      KH3(1:11)   = 'OBSERVATORY'
      KH3(12:19)  = '        '
      KH3(20:26)  = 'YEAR KA'
      KH3(27:36)  = 'Q         '
      KH3(37:45)  = '  NORMAL'
      KH3(46:54)  = '         '
      KH3(55:65)  = 'RAPID RUN'
      KH3(66:74)  = '         '
      KH3(75:88)  = ' HOURLY VALUES'
      KH3(89:97)  = '         '
      KH3(98:110) = 'HOURLY VALUES'
      KH3(111:118)= '        '
      KH3(119:129)= ' 2.5-MINUTE'

      KH4(1:16)   = '
      KH4(17:21)  = 'COMP '
      KH4(22:29)  = '        '
      KH4(29:32)  = ' WDC'
      KH4(33:47)  = '   MAGNETOGRAMS'
      KH4(48:53)  = '  WDC '
      KH4(54:65)  = 'MAGNETOGRAMS'
      KH4(66:74)  = '    WDC  '
      KH4(75:87)  = '  ANY  MEDIUM'
      KH4(88:99)  = '    WDC      '
      KH4(100:112) = 'ON  TAPE     '
      KH4(113:118)= ' WDC  '
      KH4(119:132)= ' 1.0-MINUTE(*)'

      KH5(1:16)   = '----------------'
      KH5(17:34)  = ' - ---- --- ------'
      KH5(35:48)  = ' -------------'
      KH5(49:53)  = ' ---'
      KH5(54:66)  = '------------'
      KH5(67:74)  = '  ------'
      KH5(75:88)  = ' -------------'
      KH5(90:98)  = '  ------ '
      KH5(99:111) = '-------------'
      KH5(112:117)= '  ----'
      KH5(118:131)= ' -------------'
 99   FORMAT (A1)

*********************************
*     LOAD INDEXES              *
*********************************
 5080 INUM = 1
      J= 1
 5081 READ (20,REC=INUM)KOUT1
      DO 5082 I=1,50
      KNUM (J) = KOUT1 (I)
      J=J+1
 5082 CONTINUE
      INUM = INUM + 1
      IF (INUM .GT. 10) GO TO 5083
      GO TO 5081

 5083 INUM = 11
      I1 = 1
      I2 = 3
      I3 = 1
 5084 READ (20,REC=INUM)KOUT
      DO 5085 I=1,50
      KCOD (I3) = KOUT (I1:I2)
      I1 = I1 + 3
```

```
      I2 = I2 + 3
      I3 = I3 + 1
5085  CONTINUE
      INUM = INUM + 1
      IF (INUM .GT. 20) GO TO 5086
      I1 = 1
      I2 = 3
      GO TO 5084

5086  INUM=21
      J=1
5087  READ (20,REC=INUM)KOUT1
      DO 5088  I = 1,50
      K19YR (J) = KOUT1 (I)
      J= J+1
5088  CONTINUE
      INUM = INUM + 1
      IF (INUM .GT. 30) GO TO 1000
      GO TO 5087
*****************************
*     INDEXES ARE LOADED  *
*****************************

1000  OPEN (19,FILE='GEOPRINT9',STATUS='NEW',FORM='FORMATTED
      PRINT *, 'YOU OUTPUT LISTING IS NAMED GEOPRINT9'

1001  PRINT *, 'ENTER OBSERVATORY CODE (LIKE VOS) OR END'
      READ (*,10)ICOD
10    FORMAT (A)
      IF (ICOD (1:3) .EQ. 'END') GO TO 9999
      J=1
1002  DO 1003 I=1,500
      IF (ICOD (1:3) .EQ. KCOD (I)) GO TO 1004
      J=J+1
1003  CONTINUE
      PRINT *, 'NO SUCH OBSERVATORY CODE'
      GO TO 1001
1004  INUM = KNUM (J)
      PRINT *, 'BEGIN LOCATION OF OBSERVATORY = ',  INUM

      WRITE (19,99) KPAGE
      WRITE (19,100)KH1
      WRITE (19,100)KH2
      WRITE (19,100)KSPACE
      KCOUNT = 3
100   FORMAT (A132)
*****************************
*     PRINT PAGE HEADERS  *
*****************************
2002  WRITE (19,100)KH3
      WRITE (19,100)KH4
      WRITE (19,100)KH5
      KCOUNT = KCOUNT + 3
      KPCNT = 0
2004  READ (20,REC=INUM,ERR=9999)KOUT
      INUM = INUM + 1
      IF (KOUT(17:19) .EQ. '   ') GO TO 2004
2005  KOBS(1:16) = KOUT(1:16)
      KLAT(1:5) = KOUT (21:25)
      KLONG(1:5)  = KOUT(26:30)
      KCODE(1:3) = KOUT(17:19)
2006  KH7(1:16) = KOUT (1:16)
      KH7(17:17) = ' '
      KH7(18:18) = KOUT (36:36)
      KH7 (19:19) = ' '
      KH7 (20:23) = KOUT (31:34)
      KH7 (24:24) = ' '
      KH7 (25:25) = KOUT (35:35)
      KH7 (26:27) = KOUT (39:40)
      KH7 (28:28) = '|'
      KH7 (29:34) = KOUT (41:46)
      KH7 (35:35) = ' '
      KH7 (36:41) = KOUT (47:52)
      KH7 (42:42) = ' '
      KH7 (43:48) = KOUT (53:58)
      KH7 (49:49) = '|'
      KH7 (50:52) = KOUT (59:61)
      KH7 (53:53) = ' '
      KH7 (54:59) = KOUT (65:70)
      KH7 (60:60) = ' '
      KH7 (61:66) = KOUT (71:76)
      KH7 (67:68) = '|'
      KH7 (69:74) = KOUT (77:82)
      KH7 (75:75) = ' '
      KH7 (76:81) = KOUT (83:88)
      KH7 (82:82) = ' '
      KH7 (83:88) = KOUT (89:94)
      KH7 (89:90) = '|'
      KH7 (91:96) = KOUT (95:100)
      KH7 (97:97) = ' '
      KH7 (98:103) = KOUT (101:106)
      KH7 (104:104) = ' '
      KH7 (105:110) = KOUT (107:112)
      KH7 (111:112) = '|'
      KH7 (113:116) = KOUT (113:118)
      KH7 (117:117) = ' '
      KH7 (118:123) = KOUT (119:124)
      KH7 (124:124) = ' '
      KH7 (125:130) = KOUT (125:130)
      KH7 (131:131) = ' '
```

```
      KH7 (132:132) = '| '
      IF (KOUT(131:136) .EQ. '      ') GO TO 2007
      KH7(113:116) = KOUT (131:136)
      KH7(117:117) = ' '
      KH7(118:123) = KOUT (137:142)
      KH7(124:124) = ' '
      KH7(125:130) = KOUT (143:148)
      KH7(131:131) = '*'
2007  WRITE (19,100)KH7
      KCOUNT = KCOUNT + 1

************************************
*     SECOND RECORD                *
************************************
2008  READ (20,REC=INUM,ERR=9999)KOUT
      INUM = INUM + 1
      IF (KOUT(17:19) .EQ. '   ') GO TO 2008
      IF (KOUT(1:16) .EQ. KOBS (1:16)) GO TO 2009
      GO TO 1001
2009  KH7 (1:3)   = KOUT (17:19)
      KH7 (4:16)  = '              '
      KH7(18:18) = KOUT (36:36)
      KH7 (19:19) = ' '
      KH7 (20:23) = KOUT (31:34)
      KH7(24:24) = ' '
      KH7 (25:25) = KOUT (35:35)
      KH7(26:27) = KOUT (39:40)
      KH7 (28:28) = '| '
      KH7 (29:34) = KOUT (41:46)
      KH7 (35:35) = ' '
      KH7 (36:41) = KOUT (47:52)
      KH7 (42:42) = ' '
      KH7 (43:48) = KOUT (53:58)
      KH7 (49:49) = '| '
      KH7 (50:52) = KOUT (59:61)
      KH7 (53:53) =  ' '
      KH7 (54:59) = KOUT (65:70)
      KH7 (60:60) = ' '
      KH7 (61:66) = KOUT (71:76)
      KH7 (67:68) = '| '
      KH7 (69:74) = KOUT (77:82)
      KH7 (75:75) = ' '
      KH7 (76:81) = KOUT (83:88)
      KH7 (82:82) = ' '
      KH7 (83:88) = KOUT (89:94)
      KH7 (89:90) = '| '
      KH7 (91:96) = KOUT (95:100)
      KH7 (97:97) = ' '
      KH7 (98:103) = KOUT (101:106)
      KH7 (104:104) = ' '
      KH7 (105:110) = KOUT (107:112)
      KH7 (111:112) = '| '
      KH7 (113:116) = KOUT (113:118)
      KH7 (117:117) = ' '
      KH7 (118:123) = KOUT (119:124)
      KH7 (124:124) = ' '
      KH7 (125:130) = KOUT (125:130)
      KH7 (131:131) = ' '
      KH7 (132:132) = '| '
      IF (KOUT(131:136) .EQ. '      ') GO TO 20099
      KH7(113:116) = KOUT (131:136)
      KH7(117:117) = ' '
      KH7(118:123) = KOUT (137:142)
      KH7(124:124) = ' '
      KH7(125:130) = KOUT (143:148)
      KH7(131:131) = '*'

20099 WRITE (19,100)KH7
      KCOUNT = KCOUNT + 1

************************************
*     THIRD RECORD                 *
************************************
2010  READ (20, REC=INUM,ERR=9999)KOUT
      KLL(1:10) =KOUT(21:30)
      INUM = INUM + 1
      IF (KOUT(17:19) .EQ. '   ') GO TO 2010
      IF (KOUT (1:16) .NE. KOBS (1:16)) GO TO 1001
20101 KH7(1:1)   = '('
      KH7 (2:4)  = KOUT (21:23)
      IF (KH7(2:2) .EQ. ' ') KH7(2:2) = '0'
      IF (KH7(3:3) .EQ. ' ') KH7(3:3) = '0'
      IF (KH7(3:3) .EQ. '-') KH7(2:2) = ' '
      KH7 (5:5)  = '.'
      KH7 (6:7)  = KOUT (24:25)
      KH7 (8:8) = ' '
      KH7 (9:11)  = KOUT (26:28)
      KH7 (12:12) = '.'
      KH7 (13:14) = KOUT (29:30)
      KH7 (15:16) = ') '
      KH7 (17:17) = ' '
      KH7 (18:18) = KOUT (36:36)
      KH7 (19:19) = ' '
      KH7 (20:23) = KOUT (31:34)
      KH7 (24:24) = ' '
      KH7 (25:25) = KOUT (35:35)
      KH7 (26:27) = KOUT (39:40)
      KH7 (28:28) = '| '
      KH7 (29:34) = KOUT (41:46)
      KH7 (35:35) = ' '
```

```
      KH7 (36:41) = KOUT (47:52)
      KH7 (42:42) = ' '
      KH7 (43:48) = KOUT (53:58)
      KH7 (49:49) = '|'
      KH7 (50:52) = KOUT (59:61)
      KH7 (53:53) = ' '
      KH7 (54:59) = KOUT (65:70)
      KH7 (60:60) = ' '
      KH7 (61:66) = KOUT (71:76)
      KH7 (67:68) = '|'
      KH7 (69:74) = KOUT (77:82)
      KH7 (75:75) = ' '
      KH7 (76:81) = KOUT (83:88)
      KH7 (82:82) = ' '
      KH7 (83:88) = KOUT (89:94)
      KH7 (89:90) = '|'
      KH7 (91:96) = KOUT (95:100)
      KH7 (97:97) = ' '
      KH7 (98:103) = KOUT (101:106)
      KH7 (104:104) = ' '
      KH7 (105:110) = KOUT (107:112)
      KH7 (111:112) = '|'
      KH7 (113:116) = KOUT (113:118)
      KH7 (117:117) = ' '
      KH7 (118:123) = KOUT (119:124)
      KH7 (124:124) = ' '
      KH7 (125:130) = KOUT (125:130)
      KH7 (131:131) = ' '
      KH7 (132:132) = '|'
      IF (KOUT(131:136) .EQ. '      ') GO TO 2011
      KH7(113:116) = KOUT (131:136)
      KH7(117:117) = ' '
      KH7(118:123) = KOUT (137:142)
      KH7(124:124) = ' '
      KH7(125:130) = KOUT (143:148)
      KH7(131:131) = '*'
2011  WRITE (19,100)KH7
      KCOUNT = KCOUNT + 1
      KH7(1:16) = '
*****************************************
*     REST OF RECORDS                   *
*****************************************
2012  READ (20,REC=INUM,ERR=9999)KOUT
      INUM=INUM + 1
      IF (KOUT(17:19) .EQ. '   ') GO TO 2012
      IF (KOUT(1:16) .EQ. KOBS(1:16)) GO TO 2013
      WRITE (19,100)KH5
      GO TO 1001
2013  KH7(17:17) = ' '
      IF (KOUT(21:30) .EQ. KLL(1:10)) GO TO 20131
      KLL(1:10) = KOUT (21:30)
      GO TO 20101
20131 KH7(18:18) = KOUT (36:36)
      KH7 (19:19) = ' '
      KH7 (20:23) = KOUT (31:34)
      KH7(24:24) = ' '
      KH7 (25:25) = KOUT (35:35)
      KH7(26:27) = KOUT (39:40)
      KH7 (28:28) = '|'
      KH7 (29:34) = KOUT (41:46)
      KH7 (35:35) = ' '
      KH7 (36:41) = KOUT (47:52)
      KH7 (42:42) = ' '
      KH7 (43:48) = KOUT (53:58)
      KH7 (49:49) = '|'
      KH7 (50:52) = KOUT (59:61)
      KH7 (53:53) = ' '
      KH7 (54:59) = KOUT (65:70)
      KH7 (60:60) = ' '
      KH7 (61:66) = KOUT (71:76)
      KH7 (67:68) = '|'
      KH7 (69:74) = KOUT (77:82)
      KH7 (75:75) = ' '
      KH7 (76:81) = KOUT (83:88)
      KH7 (82:82) = ' '
      KH7 (83:88) = KOUT (89:94)
      KH7 (89:90) = '|'
      KH7 (91:96) = KOUT (95:100)
      KH7 (97:97) = ' '
      KH7 (98:103) = KOUT (101:106)
      KH7 (104:104) = ' '
      KH7 (105:110) = KOUT (107:112)
      KH7 (111:112) = '|'
      KH7 (113:116) = KOUT (113:118)
      KH7 (117:117) = ' '
      KH7 (118:123) = KOUT (119:124)
      KH7 (124:124) = ' '
      KH7 (125:130) = KOUT (125:130)
      KH7 (131:131) = ' '
      KH7 (132:132) = '|'
      IF (KOUT(131:136) .EQ. '      ') GO TO 2014
      KH7(113:116) = KOUT (131:136)
      KH7(117:117) = ' '
      KH7(118:123) = KOUT (137:142)
      KH7(124:124) = ' '
      KH7(125:130) = KOUT (143:148)
      KH7(131:131) = '*'
2014  WRITE (19,100)KH7
      KCOUNT = KCOUNT + 1
      GO TO 2012
```

```
 9999  RETURN
       END

       SUBROUTINE GEOANN (PASS)
*****************************************************
*                                                   *
*     CREATES TABLES 3,4,5 FROM ANNUAL DATA BASE    *
*                                                   *
*     TABLE 3 = BEGINNING AND ENDING ANNUAL VALUES  *
*               FOR EACH OBSERVATORY                *
*     TABLE 4 = LOG OF YEARS FOR 1810-1899 WHERE    *
*               ANNUAL MEAN VALUES EXIST            *
*     TABLE 5 = LOG OF YEARS FOR 1900-1990 WHERE    *
*               ANNUAL MEAN VALUES EXIST            *
*****************************************************

*****************************************************
*                                                   *
*     R E C O R D   F O R M A T (GEOANNUAL)         *
*****************************************************
*   KOUT CC 1   -  19  = OBSERVATORY NAME           *
*           20  -      = not used                   *
*           21  -  23  = OBSERVATORY CODE           *
*           24         = not used                   *
*           25  -  32  = DATE                       *
*           33  -  40  = LATITUDE                   *
*           41  -  48  = LONGITUDE (East)           *
*           49  -  54  = ELEVATION (Meters)         *
*           55  -  62  = DECLINATION          (D)   *
*           63  -  70  = INCLINATION          (I)   *
*           71  -  76  = HORIZONTAL INTENSITY (H)   *
*           77  -  82  = NORTH COMPONENT      (X)   *
*           83  -  88  = EAST  COMPONENT      (Y)   *
*           89  -  95  = VERTICAL INTENSITY   (Z)   *
*           96  - 101  = TOTAL    INTENSITY   (F)   *
*          102         = not used                   *
*          103         = RECORD TYP FLAG            *
*          104  - 106  = FOOT NOTE                  *
*          107  - 111  = DATA SOURCE                *
*          112  - 116  = SOURCE CODE                *
*          117  - 119  = ELEMENT CODE               *
*          120         = not used                   *
*          121  - 123  = COUNTRY CODE               *
*          124         = not used                   *
*          125  - 130  = RECORD NUMBER              *
*****************************************************

      CHARACTER*130 KOUT
      CHARACTER*10  PASS
      CHARACTER*1   KE

      CHARACTER*131 KH11
      CHARACTER*131 KH12
      CHARACTER*131 KH13
      CHARACTER*131 KH14
      CHARACTER*131 KSPACE
      CHARACTER*2   KNPAGE

      CHARACTER*131 KH21
      CHARACTER*131 KH22
      CHARACTER*131 KH23
      CHARACTER*131 KH24
      CHARACTER*131 KH25
      CHARACTER*131 KH26
      CHARACTER*131 KH27
      CHARACTER*131 KH28
      CHARACTER*131 KH29
      CHARACTER*131 KH210
      CHARACTER*131 KH211
      CHARACTER*131 KH212
      CHARACTER*131 KH213
      CHARACTER*131 KH214
      CHARACTER*131 KH215
      CHARACTER*131 KH216
      CHARACTER*131 KH217
      CHARACTER*131 KH218
      CHARACTER*131 KH31
      CHARACTER*131 KH32
      CHARACTER*131 KH33
      CHARACTER*131 KH34
      CHARACTER*131 KH35

      KNPAGE (1:1) = ''

      KSPACE (1:30) = '                              '
      KSPACE (31:60) = '                             '
      KSPACE (61:90) = '                             '
      KSPACE (91:120) = '                            '
      KSPACE (121:131) = '           '

      KH11(1:35) = '                                  '
      KH11(36:72) = 'A N N U A L   G E O M A G N E T I C'
      KH11(73:94) = '   D A T A   B A S E'
      KH11(1:35) = '                                  '

      KH12(1:20) = ' OBSERVATORY       '
      KH12(21:25) = 'CODE  '
      KH12(26:56) = '  YEAR     LAT    LONG     ALT '
      KH12(57:92) = '   D       I      H     X     Y   '
      KH12(93:120) = ' Z     F  FLG N    S  DN EL'
      KH12(121:131) ='E  CT NUMBER'

      KH13(1:20) = ' ------------------ '
```

```
KH13(21:25) = '---- '
KH13(26:60) = '-------- ------- -------   ---  --'
KH13(61:71) = '----  ------ '
KH13(72:100) = ' ----- ----- -----  ----- --'
KH13(101:116)= '--- -  -   -- ---'
KH13(117:131) = ' ---  -- ------'

KH21(1:20) = 'TABLE 5                '
KH21(21:62) = '   G E O M A G N E T I C   A N N U A L'
KH21(63:80) = 'M E A N   L O G:'
KH21(81:110) = '     1 9 0 0  -  PRESENT'

KH218(1:20) = '                    '
KH218(21:42)= '   ----------------'
KH218(43:70)= '----------------------------'
KH218(71:110)= '--------------'
KH22(1:27)   = '                         Y   1'
KH22(28:38)  = '           1'
KH22(39:49)  = '           1'
KH22(50:60)  = '           1'
KH22(61:71)  = '           1'
KH22(72:82)  = '           1'
KH22(83:93)  = '           1'
KH22(94:104) = '           1'
KH22(105:115)= '           1'
KH22(116:126)= '           1'

KH23(1:27)   = '                         E   9'
KH23(28:38)  = '           9'
KH23(39:49)  = '           9'
KH23(50:60)  = '           9'
KH23(61:71)  = '           9'
KH23(72:82)  = '           9'
KH23(83:93)  = '           9'
KH23(94:104) = '           9'
KH23(105:115)= '           9'
KH23(116:126)= '           9'
KH24(1:27)   = '                         A   0'
KH24(28:38)  = '           1'
KH24(39:49)  = '           2'
KH24(50:60)  = '           3'
KH24(61:71)  = '           4'
KH24(72:82)  = '           5'
KH24(83:93)  = '           6'
KH24(94:104) = '           7'
KH24(105:115)= '           8'
KH24(116:126)= '           9'

KH25(1:26)   = 'OBSERVATORY     CODE  R    '
KH25(27:37)   = '0123456789 '
KH25(38:48)   = '0123456789 '
KH25(49:59)   = '0123456789 '
KH25(60:70)   = '0123456789 '
KH25(71:81)   = '0123456789 '
KH25(82:92)   = '0123456789 '
KH25(93:103)  = '0123456789 '
KH25(104:114) = '0123456789 '
KH25(115:125) = '0123456789 '
KH25(126:131) = '0      '

KH26(1:40)= '--------------- ----      ---------- -'
KH26(41:58)='---------- ----------'
KH26(59:90) = ' ---------- ---------- ---------'
KH26(91:113) = '-- ---------- ----------'
KH26(114:131) = ' ---------- -     '

KH214(1:22) = 'TABLE 4                 '
KH214(23:62) = ' G E O M A G N E T I C   A N N U A L'
KH214(63:80) = 'M E A N   L O G:'
KH214(81:110) = '     1 8 1 0  -  1 8 9 9'

KH29(1:27)   = '                         Y   1'
KH29(28:38)  = '           1'
KH29(39:49)  = '           1'
KH29(50:60)  = '           1'
KH29(61:71)  = '           1'
KH29(72:82)  = '           1'
KH29(83:93)  = '           1'
KH29(94:104) = '           1'
KH29(105:115)= '           1'

KH210(1:27)   = '                         E   8'
KH210(28:38)  = '           8'
KH210(39:49)  = '           8'
KH210(50:60)  = '           8'
KH210(61:71)  = '           8'
KH210(72:82)  = '           8'
KH210(83:93)  = '           8'
KH210(94:104) = '           8'
KH210(105:115)= '           8'

KH211(1:27)   = '                         A   1'
KH211(28:38)  = '           2'
KH211(39:49)  = '           3'
KH211(50:60)  = '           4'
KH211(61:71)  = '           5'
KH211(72:82)  = '           6'
KH211(83:93)  = '           7'
KH211(94:104) = '           8'
```

```
      KH211(105:115)= '         9'

      KH212(1:26)   = 'OBSERVATORY     CODE  R   '
      KH212(27:37)   = '0123456789 '
      KH212(38:48)   = '0123456789 '
      KH212(49:59)   = '0123456789 '
      KH212(60:70)   = '0123456789 '
      KH212(71:81)   = '0123456789 '
      KH212(82:92)   = '0123456789 '
      KH212(93:103)  = '0123456789 '
      KH212(104:114) = '0123456789 '
      KH212(115:125) = '0123456789 '

      KH213(1:40)   ='--------------- ----      ---------- -
      KH213(41:58)  =' --------- ----------'
      KH213(59:90)  = ' ---------- ---------- --------'
      KH213(91:113) ='-- ---------- ----------'
      KH213(114:131)= ' ----------'

      KH215(1:20)   = '                    '
      KH215(21:54)  = '1=XHZ     2=DHZ     3=DIH     4=DI '
      KH215(55:90)  = '      5=DH      6=DZ      7=IHZ    '
      KH215(91:105) = ' 8=IH      9=IZ    '
      KH215(106:115)= '  D=D ONLY'

      KH216(1:20)   = '                    '
      KH216(21:60)  = 'F=F ONLY  H=H ONLY  I=I ONLY  Z=Z ONL
      KH216(61:90) = 'Q=HZ      P=DIF     R=DHF     '
      KH216(91:115) = ' S=XYF     T=DHX  U=   HZF'

      KH217(1:20) = '                    '
      KH217(21:57)= '*=INCOMPLETE YEAR   -----------------'
      KH217(58:91) = '-----------------------------------'
      KH217(92:115) = '---   ?=UNKNOWN ELEMENTS'

      KH31(1:30) = 'TABLE 3                         '
      KH31(31:69) = 'O B S E R V E D   G E O M A G N E T I C
      KH31(70:100) = '   A N N U A L   M E A N S'

      KH32(1:30) = '                          ----'
      KH32(31:54)= '------EARLIEST COMPLETE '
      KH32(55:87) ='YEAR------------        --------'
      KH32(88:130) = '------LATEST COMPLETE YEAR-----------'
      KH33(1:23) = 'OBSERVATORY        CODE'
      KH33(24:50) = '   ELE YEAR    D       H  '
      KH33(51:71) =  '    X       Y       Z   '
      KH33(72:99) = '        ELE YEAR     D       '
      KH33(100:131)= 'H      X       Y       Z'

      KH35(1:24) = '-----------------  ---  '
      KH35(25:49) = '  --- ---- -------  -----'
      KH35(50:72) = '  -----  -----  ------ '
      KH35(73:100) = '        --- ---- -------  ---'
      KH35(101:125)= '--  -----  -----  ------'
      OPEN (25,FILE='GEOANNUAL',ACCESS='DIRECT',RECL=130,
     -FORM='UNFORMATTED')
10    FORMAT (A)
      PRINT *,
     - '_____________________________________________________'
      PRINT *,
     - '|  WELCOME TO GEOMAGNETIC/ANNUAL LISTING SYSTEM  |'
      PRINT *,
     - '|_____________________________________________________|'
      PRINT *,' '

1001  PRINT *, '
      PRINT *, '|   ENTER 1 = COMPLETE  ANNUAL VALUE LISTING
      PRINT *, '|   ENTER 2 = LOG OF    ANNUAL VALUE LISTING
      PRINT *, '|   ENTER 3 = BEGIN/END ANNUAL VALUE LISTING
      PRINT *, '|   ENTER E = END PROGRAM
      PRINT *, '|_____________________________________________'
      K1=0
      K3=0
      READ (*,10)PASS
      IF (PASS(1:1) .EQ. '1') GO TO 2000
      IF (PASS(1:1) .EQ. '2') GO TO 3000
      IF (PASS(1:1) .EQ. '3') GO TO 4000
      GO TO 9999
*************************************************************
*     COMPLETE ANNUAL VALUE FILE LISTING
*************************************************************
2000  K1=K1+1
      IF (K1 .NE. 1)GO TO 20000
      OPEN (26,FILE='GEOPRINTE',STATUS='NEW',FORM='FORMATTED
20000 INUM=1
      WRITE (26,11)KNPAGE
      WRITE (26,11)KH11
      WRITE (26,11)KSPACE
      WRITE (26,11)KH12
      WRITE (26,11)KH13
      WRITE (26,11)KSPACE
      KL=4
2001  READ (25,REC=INUM,ERR=7777)KOUT
      INUM=INUM+1
      WRITE (26,11)KOUT
11    FORMAT (A131)
      KL=KL+1
      IF (KL .GT. 58) GO TO 2002
```

```
      GO TO 2001
2002  WRITE (26,11)KNPAGE
      WRITE (26,11)KH12
      WRITE (26,11)KH13
      WRITE (26,11)KSPACE
      KL=4
      GO TO 2001
************************************************************
*     LOG LISTING (TABLES 4 AND 5)                         *
************************************************************
3000  KC=-1
      KCC=0
      KB=-1
      KBB=0
      K2=K2+1

      IF (K2 .NE. 1) GO TO 3001
      OPEN (26,FILE='GEOPRINTH',STATUS='NEW',
     -FORM='FORMATTED')
      OPEN (27,FILE='GEOPRINTJ',STATUS='NEW',
     -FORM='FORMATTED')
      PRINT *,
     -'LOG LISTING FOR 1900-PRESENT IS ON FILE GEOPRINTH'
      PRINT *,
     -'LOG LISTING FOR 1800-1899    IS ON FILE GEOPRINTJ'

3001  WRITE (26,11)KNPAGE
      WRITE (26,11)KH21
      WRITE (26,11)KH218
      WRITE (26,11)KSPACE
      WRITE (26,11)KH22
      WRITE (26,11)KH23
      WRITE (26,11)KH24
      WRITE (26,11)KH25
      WRITE (26,11)KH26

      WRITE (27,11)KNPAGE
      WRITE (27,11)KH214
      WRITE (27,11)KH218
      WRITE (27,11)KSPACE
      WRITE (27,11)KH29
      WRITE (27,11)KH210
      WRITE (27,11)KH211
      WRITE (27,11)KH212
      WRITE (27,11)KH213

      INUM=1
3002  READ (25,REC=INUM,ERR=6666)KOUT
      INUM=INUM+1
3003  READ (KOUT,FMT='(26X,I2)')KYR
      KE(1:1)='?'
      IF (KOUT(117:119) .EQ. 'DHZ') KE='2'
      IF (KOUT(117:119) .EQ. 'DIH') KE='3'
      IF (KOUT(117:119) .EQ. 'DHI') KE='3'
      IF (KOUT(117:119) .EQ. 'DI ') KE='4'
      IF (KOUT(117:119) .EQ. 'XYZ') KE='1'
      IF (KOUT(117:119) .EQ. 'DH ') KE='5'
      IF (KOUT(117:119) .EQ. ' DH') KE='5'
      IF (KOUT(117:119) .EQ. 'DZ ') KE='6'
      IF (KOUT(117:119) .EQ. 'IHZ') KE='7'
      IF (KOUT(117:119) .EQ. 'IH ') KE='8'
      IF (KOUT(117:119) .EQ. 'IZ ') KE='9'
      IF (KOUT(117:119) .EQ. 'HZ ') KE='Q'
      IF (KOUT(117:119) .EQ. ' HZ') KE='Q'
      IF (KOUT(117:119) .EQ. 'D  ') KE='D'
      IF (KOUT(117:119) .EQ. '  D') KE='D'
      IF (KOUT(117:119) .EQ. 'H  ') KE='H'
      IF (KOUT(117:119) .EQ. 'Z  ') KE='Z'
      IF (KOUT(117:119) .EQ. 'I  ') KE='I'
      IF (KOUT(117:119) .EQ. 'DIF') KE='P'
      IF (KOUT(117:119) .EQ. 'DHF') KE='R'
      IF (KOUT(117:119) .EQ. 'F  ') KE='F'
      IF (KOUT(117:119) .EQ. 'XYF') KE='S'
      IF (KOUT(117:119) .EQ. 'DHX') KE='T'
      IF (KOUT(30:31) .NE. '50')    KE='*'

3004  IF (KOUT(25:26) .EQ. '19') GO TO 3005
      IF (KOUT(25:26) .EQ. '18') GO TO 3015
      IF (KOUT(25:26) .EQ. '  ') GO TO 3002
      PRINT *,'ERROR',' ',KOUT(1:40)
      GO TO 3002
************************************************************
*     1900-PRESENT LOG LISTING                             *
*     ARRAY POSITION BEGINS IN 27                          *
*     AND INCREASES 10 POSITIONS FOR                       *
*     FOR EACH 9 YEARS                                     *
************************************************************

3005  IF (KH27(1:16) .EQ. KOUT(1:16))GO TO 3007
      WRITE (26,11)KH27

3006  KH27(1:16) = KOUT(1:16)
      KH27(17:17) = ' '
      KH27(18:20) =KOUT(21:23)
      KH27(21:21) = ' '
      KH27(22:23) = '  '
      KH27(24:26) = '
      KH27(27:60) = '
      KH27(61:96) = '
      KH27(97:131)= '
```

```
      KC=KC+1
      IF (KC .GE. 5)GO TO 3008
 3007 KD = KYR /10
      KPOS = 27 + KYR + KD
      KH27(KPOS:KPOS) = KE(1:1)
      GO TO 3002
 3008 WRITE (26,11)KH26
      KC=0
      KCC=KCC+1
      IF (KCC .GE. 7) GO TO 3009
      GO TO 3007
 3009 WRITE (26,11)KH26
      WRITE (26,11)KSPACE
      WRITE (26,11)KH215
      WRITE (26,11)KH216
      WRITE (26,11)KH217

      WRITE (26,11)KNPAGE
      WRITE (26,11)KSPACE
      WRITE (26,11)KH22
      WRITE (26,11)KH23
      WRITE (26,11)KH24
      WRITE (26,11)KH25
      WRITE (26,11)KH26
      KCC=0
      GO TO 3007
*****************************************************
*     LOG LISTING 1800-1899 (TABLE 4)               *
*****************************************************
 3015 IF (KH28(1:16) .EQ. KOUT(1:16))GO TO 3017
      WRITE (27,11)KH28

 3016 KH28(1:16) = KOUT(1:16)
      KH28(17:17) = ' '
      KH28(18:20) =KOUT(21:23)
      KH28(21:21) = ' '
      KH28(22:23) = '  '
      KH28(24:26) = '   '
      KH28(27:60) = '
      KH28(61:96) = '
      KH28(97:131)= '
      KB=KB+1
      IF (KB .GE. 5)GO TO 3018

 3017 KD = KYR /10
      KPOS = 16 + KYR + KD
      KH28(KPOS:KPOS) = KE(1:1)
      GO TO 3002
 3018 WRITE (27,11)KH213
      KB=0
      KBB=KBB+1
      IF (KBB .GE. 7) GO TO 3019
      GO TO 3017
 3019 WRITE (27,11)KH213
      WRITE (27,11)KSPACE
      WRITE (27,11)KH215
      WRITE (27,11)KH216
      WRITE (27,11)KH217

      WRITE (27,11)KNPAGE
      WRITE (27,11)KSPACE
      WRITE (27,11)KH29
      WRITE (27,11)KH210
      WRITE (27,11)KH211
      WRITE (27,11)KH212
      WRITE (27,11)KH213
      KBB=0
      GO TO 3017
*****************************************************
*     TABLE 3    BEGIN/END LISTING                  *
*****************************************************
 4000 K3=K3+1
      IF (K3 .NE. 1)GO TO 4001
      OPEN (26,FILE='GEOPRINTG',STATUS='NEW',
     -FORM='FORMATTED')
      PRINT *,'FILE = GEOPRINTG - OPENED'
 4001 WRITE (26,11)KNPAGE
      WRITE (26,11)KH31
      WRITE (26,11)KSPACE
      WRITE (26,11)KH32
      WRITE (26,11)KSPACE
      WRITE (26,11)KH33
      WRITE (26,11)KH35
      WRITE (26,11)KSPACE
      INUM=1
      KC=0
      KCC=0
*************************************************
*     BEGINNING YEAR                            *
*************************************************
 4002 READ (25,REC=INUM,ERR=8888)KOUT
      INUM=INUM+1
      IF (KOUT(30:30) .NE. '5') GO TO 4002
      IF (KOUT(58:62) .EQ. '0.000') GO TO 4002
      IF (KOUT(58:62) .EQ. ' .000') GO TO 4002
      IF (KOUT(72:76) .EQ. '    0') GO TO 4002
      IF (KOUT(91:95) .EQ. '    0') GO TO 4002
      IF (KOUT(102:102) .EQ. 'D')   GO TO 4002
      IF (KOUT(102:102) .EQ. 'Q')   GO TO 4002
      KH34(1:17) = KOUT(1:17)
```

```
      KH34(18:19) = '  '
      KH34(20:22) = KOUT(21:23)
      KH34(23:26) = '    '
      KH34(27:29) = KOUT(117:119)
      KH34(30:30) = ' '
      KH34(31:34) = KOUT(25:28)
      KH34(35:35) = ' '
      KH34(36:42) = KOUT(56:62)
      KH34(43:44) = '  '
      KH34(45:49) = KOUT(72:76)
      KH34(50:51) = '  '
      KH34(52:56) = KOUT(78:82)
      KH34(57:57) = ' '
      KH34(58:63) = KOUT(83:88)
      KH34(64:65) = '  '
      KH34(66:71) = KOUT(90:95)
      KH34(72:79) = '        '
*********************************************
*                                           *
*     LATEST YEAR                           *
*********************************************
4003  READ (25,REC=INUM,ERR=8880)KOUT
      INUM=INUM+1
      IF (KOUT(1:17) .EQ. KH34(1:17))GO TO 4003
4004  INUM=INUM-2
4005  READ (25,REC=INUM,ERR=8888)KOUT
      IF (KOUT(30:30) .NE. '5')GO TO 4007
      IF (KOUT(58:62) .EQ. '0.000') GO TO 4007
      IF (KOUT(58:62) .EQ. ' .000') GO TO 4007
      IF (KOUT(72:76) .EQ. '    0') GO TO 4007
      IF (KOUT(91:95) .EQ. '    0') GO TO 4007
      IF (KOUT(102:102) .EQ. 'D')   GO TO 4007
      IF (KOUT(102:102) .EQ. 'Q')   GO TO 4007
      INUM=INUM +1
4006  KH34(80:82) = KOUT(117:119)
      KH34(83:83) = ' '
      KH34(84:87) = KOUT(25:28)
      KH34(88:88) = ' '
      KH34(89:95) = KOUT(56:62)
      KH34(96:97) = '  '
      KH34(98:102) = KOUT(72:76)
      KH34(103:104) = '  '
      KH34(105:109) = KOUT(78:82)
      KH34(110:110) = ' '
      KH34(111:116) = KOUT(83:88)
      KH34(117:118) = '  '
      KH34(119:124) = KOUT(90:95)
      WRITE(26,11)KH34
      KC=KC+1
      IF (KC .EQ. 5)GO TO 4010
      GO TO 4002
4007  J=INUM-1
4008  READ (25,REC=J,ERR=8888)KOUT
      J=J-1
      IF (KOUT(58:62) .EQ. '0.000') GO TO 4008
      IF (KOUT(58:62) .EQ. ' .000') GO TO 4008
      IF (KOUT(72:76) .EQ. '    0') GO TO 4008
      IF (KOUT(91:95) .EQ. '    0') GO TO 4008
      IF (KOUT(102:102) .EQ. 'D')   GO TO 4008
      IF (KOUT(102:102) .EQ. 'Q')   GO TO 4008

      IF (KOUT(30:30) .EQ. '5')GO TO 4009
      GO TO 4008
4009  INUM=INUM+1
      GO TO 4006
4010  WRITE (26,11)KSPACE
      KC=0
      KCC=KCC+1
      IF (KCC .EQ. 7)GO TO 4011
      GO TO 4002
4011  WRITE (26,11)KNPAGE
      WRITE (26,11)KH32
      WRITE (26,11)KSPACE
      WRITE (26,11)KH33
      WRITE (26,11)KH35
      WRITE (26,11)KSPACE
      KCC=0
      GO TO 4002
6666  WRITE (26,11)KH27
      WRITE (26,11)KH26
      WRITE (26,11)KH26
      WRITE (26,11)KH215
      WRITE (26,11)KH216
      WRITE (26,11)KH217
6667  WRITE (27,11)KH28
      WRITE (27,11)KH213
      WRITE (27,11)KH213
      WRITE (27,11)KH215
      WRITE (27,11)KH216
      WRITE (27,11)KH217
      PRINT *,
     -'END OF LOG LIST--OUTPUT FILE 1900 IS GEOPRINTH'
      PRINT *,
     -'                  OUTPUT FILE 1800 IS GEOPRINTJ'
      GO TO 1001
7777  PRINT *,
     -'END OF ANNUAL LISTING--OUTPUT FILE IS GEOPRINTE'
      GO TO 1001
8880  INUM=INUM-1
8881  READ (25,REC=INUM,ERR=8888)KOUT
      INUM=INUM -1
```

```
3013        IF (KOUT(1:17) .NE. KH34(1:17))GO TO 8884
3014        IF (KOUT(30:30) .NE. '5')GO TO 8881
3015        IF (KOUT(58:62) .EQ. '0.000') GO TO 8881
3016        IF (KOUT(58:62) .EQ. ' .000') GO TO 8881
3017        IF (KOUT(72:76) .EQ. '    0') GO TO 8881
3018        IF (KOUT(91:95) .EQ. '    0') GO TO 8881
3019        IF (KOUT(102:102) .EQ. 'D')   GO TO 8881
3020        IF (KOUT(102:102) .EQ. 'Q')   GO TO 8881
3021 8882  KH34(78:80) = KOUT(117:119)
3022        KH34(81:81) = ' '
3023        KH34(82:85) = KOUT(25:28)
3024        KH34(86:86) = ' '
3025        KH34(87:93) = KOUT(56:62)
3026        KH34(94:95) = '  '
3027        KH34(96:100) = KOUT(72:76)
3028        KH34(101:102) =  '  '
3029        KH34(103:107) = KOUT(78:82)
3030        KH34(108:108) = ' '
3031        KH34(109:114) = KOUT(83:88)
3032        KH34(115:116) = '  '
3033        KH34(117:122) = KOUT(90:95)
3034        WRITE(26,11)KH34
3035        GO TO 8888
3036
3037 8884  KH34(78:122) = '
3038        WRITE (26,11)KH34
3039
3040 8888  PRINT *,
3041       -'END OF BEGIN/END ANNUAL LISTING--OUTPUT FILE IS GEOPR
3042        GO TO 1001
3043 9999  PRINT *,'END OF COPY NUMBER OF RECORDS = ', INUM
3044        RETURN
3045        END
```

Table 12

GEOMAGNETIC HOURLY VALUE GAMMA PROGRAM

```
1 CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
2 CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
3 C                                                                   C
4 C        PROGRAM:    GAMMA                                          C
5 C                                                                   C
6 C        WRITTEN BY: N.E.PAPITASHVILI,                              C
7 C                    WDC-B2                                         C
8 C                    MOSCOW,USSR                                    C
9 C                                                                   C
10 C                   V.O.PAPITASHVILI,                              C
11 C                   IZMIRAN                                        C
12 C                   MOSCOW REGION,USSR                             C
13 C                                                                  C
14 C         LANGUAGE:  FORTRAN-4                                     C
15 C                                                                  C
16 C         COMPUTER:  IBM-360 (ES series)                           C
17 C                    PDP-1140 (SM-4)                               C
18 CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
19
20 CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
21 C                    INTRODUCTION                                   C
22 C                    ------------                                   C
23 C    THE PROGRAM WAS DEVELOPED ON BASIS OF THE                      C
24 C    HOURLY MAGNETIC AND METEOLOGICAL DATA EDITING                  C
25 C    ROUTINE (MORRIS J., GUPTA J.C. PROGRAM DATACK.-                C
26 C    EPRINT. DIVISION OF GEOMAGNETISM, EPB/EMR CANADA,              C
27 C    OTTAWA, 1979, 15 P.).                                          C
28 C    FOR THE EDITING OF 2.5-MINUTE DATA                             C
29 C    THE ESSENTIAL CHANGES AND SUPPLEMENTS WERE INCLUDED            C
30 C    AND THE PROGRAM WAS ADAPTED FOR IBM/360 (ES SERIES)            C
31 C    OR PDP 11/40 OR SM-4 COMPATIBLE COMPUTERS.                     C
32 CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
33
34 CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
35 C    THE PURPOSE OF THIS PROGRAM IS AS FOLLOWS:                     C
36 C    ------------------------------------------                     C
37 C    THE PROGRAM CAN VERIFY THE STANDARD IAGA-FORMATED              C
38 C    FILES OF HOURLY OR 2.5-MINUTE VALUES OF GEOMAGNETIC            C
39 C    DATA (THE LOGICAL RECORD LENGTH IS 120 BYTES)                  C
40 C    AND CORRECT WRONG DATA USING EDITING FUNCTIONS.                C
41 C                                                                   C
42 C    THE FORMAT OF THE VERIFICATION CARDS                           C
43 C    ------------------------------------                           C
44 C    1-ST CARD CC  1-40  ARBITRARY HEADER                           C
45 C    (THE FIRST FOUR CHARACTERS MUST BE <HOUR> OR <2.5->)           C
46 C    2-ND CARD                                                      C
47 C    CC  1- 4  MAXIMUM PERMISSIBLE                                  C
48 C              JUMP FOR H/X COMPONENT DATA (NT)                     C
49 C    CC  5- 8  THE SAME FOR D/Y (TENTH OF MINUTES)                  C
50 C    CC  9-12  THE SAME FOR Z [NT]                                  C
51 C    CC 13-16  THE CORRECTION PRINTOUT   OPTION: < YES> OR          C
52 C              BLANKS                                               C
53 C    CC 17-20  THE NEW COPY OF IAGA-FILE OPTION: < YES> OR          C
54 C              BLANKS                                               C
55 C    CC 21-25  MAXIMUM PERMIS. ERRORS (BLANKS FOR 10000 OR          C
56 C              MORE)                                                C
57 C              THE EDITING FUNCTIONS UNITED IN TWO GROUPS:          C
58 C                                                                   C
59 C    GROUP I - DELETE, INSERT, REPLACE                              C
60 C    1-ST CARD   DE1.                                               C
61 C    2-ND CARD   MOS8507D1520                                       C
62 C    1-ST CARD   IN15.                                              C
63 C    2-ND CARD   MOS8507H1600___0100999999999999999999             C
64 C                                999999999999999999999              C
65 C    3-RD CARD   99999999999999999999999999999999999999             C
66 C                                999999999999999999999              C
67 C    1-ST CARD   RE2.                                               C
68 C    2-ND CARD   MOS8507Z1522___0420999999999999999999             C
69 C                                999999999999999999999              C
70 C    3-RD CARD   99999999999999999999999999999999999999             C
71 C                                999999999999999999999              C
72 C    4-TH CARD   MOS8507Z1523___0420999999999999999999             C
73 C                                999999999999999999999              C
74 C    5-TH CARD   99999999999999999999999999999999999999             C
75 C                                999999999999999999999              C
76 C                                                                   C
77 C      THE REAL VALUE (FOLLOWING FUNCTION SYMBOLS) MEANS            C
78 C      THE NUMBER OF RECORDS WHICH WILL BE CORRECT.                 C
79 C      FOR THE <DE> OR <RE> FUNCTIONS THE NUMBER                    C
80 C      OF FOLLOWING CARDS MUST CORRESPOND IT.                       C
81 C      USING <IN1.> FUNCTION THE SINGLE RECORD CAN BE               C
82 C      INSERTED INTO FILE, FOR THE A=REAL(N>1)                      C
83 C      A FEW EMPTY (9999) RECORDS CAN BE INSERTED                   C
84 C      INTO FILE AUTOMATICALLY.                                     C
85 C                                                                   C
86 C      GROUP II  -  MULTIPLY, ADD, SUBSTRACT                        C
87 C      1-ST CARD    MU2.5 (OR) AD1276. (OR) SU570.                  C
88 C      2-ND CARD    MOS8507H1600MOS8508H1500                        C
89 C      3-RD CARD    0025                                            C
90 C      THE REAL VALUE (A) CHARACTERIZES THE PARAMETER               C
91 C      OF FUNCTION FOR THE DATA INTERVAL APPOINTED                  C
92 C      IN THE SECOND CARD. THE THIRD CARD LIMITS THE                C
93 C      NUMBER OF HOURS (OR 2.5-MINUTES) INSIDE RECORD               C
94 C      WHICH MUST BE EDITING (00 - BASE EDITING,                    C
95 C      01-24 - DATA EDITING, 25 - AVERAGE VALUE EDITING).           C
96 C      ACKNOWLEDGEMENTS: AUTHORS THANKS TO                          C
97 C      J.GUPTA FOR PROVIDING REPRINT OF                             C
98 C      PROGRAM DATACK.                                              C
99 CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
100
```

```
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
C                                                                 C
C                                                                 C
C     THIS PROGRAM IS DESIGNED TO SEARCH AND CORRECT              C
C     THE ERRORS IN THE STANDARD IAGA FORMAT FILES OF THE         C
C     HOURLY OR 2,5-MINUTE VALUES OF GEOMAGNETIC DATA             C
C     (FORTRAN-4 LANGUAGE,IBM/360(370) COMPATIBLE                 C
C     OPERATIONAL SYSTEM)                                         C
C     THIS PROGRAM WILL NOT FUNCTION IF DATA PRECEEDS             C
C     THE YEAR 1900                                               C
C     INPUT : TAPE OR DISC (LOGICAL UNIT 9).                      C
C     OUTPUT: TAPE OR DISC (LOGICAL UNIT 8).                      C
C     THE READER (LOGICAL UNIT 5) IS ASSIGNED FOR THE             C
C     CARDS INPUT.                                                C
C     THE PRINTER OUTPUT IS SYSTEM ONE,                           C
C     THE PROCESSING OF FORBIDDEN SYMBOLS-REPLACING               C
C     IT BY ZEROS.                                                C
C                                                                 C
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

      LOGICAL END,CORECT,INDCTR,OK
      DIMENSION TITLE(10),IKC(3),FG(7),FF(7)
      COMMON IVAL(32),JH,JD,JZ,IPLOT,ERROR,IC,F(7)
      COMMON ILINE(24),IFL
      COMMON /WW/ IW,IPRC,IKNT(3),ICOUNT(3)
      COMMON /IFIXDK/ IREC(32),END,CORECT,FACT
      COMMON /IND/ INDCTR,OK,IERORC
      DATA IERROR/10000/
      DATA BLNK/4H    /,YNO/4H NO /, YES/4H YES/
      DATA HOUR/4H CPE/,TPFM/4H 2.5/
      DATA FG/'(A3,','2I2,','A1,I','2,A2',',4X,',
     *'26I4',')'/
      DATA FF/'(A3,','2I2,','A1,I','2,I2',',4X,',
     *'26I4',')'/
      IERORC=0
      CORECT=.FALSE.
      END=.FALSE.
      INDCTR=.FALSE.
      OK=.TRUE.
      ERROR=BLNK                                                  A
      IPRC=0
      IFL=0
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
C     TITLE                                                       C
C     JH,JD,JZ - PERMISSIBLE JUMP IN DATA VALUES                  C
C     IRROR - PERMISSIBLE NUMBER OF ERRORS IN THE                 C
C     VERIFIED FILE                                               C
C     IPRINT=YES FOR FULL PRINTOUT OF THE CORRECTED FILE          C
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

      READ 150, TITLE,JH,JD,JZ,PRNC,PRNT,IRROR
      IF(TITLE(2).EQ.TPFM) IFL=1
      IF(TITLE(2).NE.TPFM.AND.TITLE(2).NE.HOUR) GO TO 120
      IF (PRNC.EQ.BLNK) PRNC=YNO
      IF (PRNC.EQ.YES) IPRC=1
      IF (PRNT.EQ.BLNK) PRNT=YNO
      IF (IRROR.GT.0) IERROR=IRROR
      PRINT 180, TITLE,JH,JD,JZ,IERROR, PRNT,PRNC
      DO 10 IT=1,7
      IF(IFL.EQ.0) F(IT)=FG(IT)
      IF(IFL.EQ.1) F(IT)=FF(IT)
   10 CONTINUE
      DO 11 IT=1,3
      IKNT(IT)=0
   11 ICOUNT(IT)=0
C     READ FIRST RECORD FROM INPUT FILE
      READ(9,F,END=100) IVAL
   30 CALL PROCES
   40 ICOUNT(IC)=ICOUNT(IC)+1
      IF(ERROR.EQ.BLNK) GOTO 50
      IF(IFL.EQ.0) PRINT 170, IVAL
      IF(IFL.EQ.1) PRINT 190, IVAL
      PRINT 200, ILINE
      IERORC=IERORC+1
   50 IF(IERORC.LE.IERROR) GO TO 60
      PRINT 210, IERORC
      GO TO 90
   60 ERROR=BLNK
      IVECTR=IVAL(4)

CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
C     READ SECOND AND FOLLOWING RECORDS                           C
C     FROM INPUT FILE AND CHECK THE                               C
C     COMPONENT INDEX                                             C
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

      READ(9,F,END=100) IVAL
      IF(IVECTR.NE.IVAL(4)) GOTO 30
      CALL PROENT
      GO TO 40
   90 IF (.NOT.CORECT) GO TO 100
      IF (.NOT.END) PRINT 230, (IREC(JO),JO=1,5)
  100 PRINT 220, ICOUNT
      PRINT 240, IKNT
      IF(IFL.EQ.0) PRINT 260, IVAL(4),IVAL(1),
     *IVAL(5),IVAL(3),IVAL(2)
      IF(IFL.EQ.1) PRINT 250, IVAL(4),IVAL(1),
     *IVAL(6),IVAL(5),IVAL(3),IVAL(2)
      END FILE 8
      IF (PRINT.EQ.YNO) GOTO 130
```

```
      REWIND 8
C     PRINTER DUMP OF THE OUTPUT FILE (IF REQUTED)
  110 READ(8,F,END=130) IVAL
      IF(IFL.EQ.0) PRINT 170, IVAL
      IF(IFL.EQ.1) PRINT 190, IVAL
      GO TO 110
  120 PRINT 140
  130 CONTINUE
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
C     THE END OF PROGRAM *GAMMA*                C
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
  140 FORMAT(//1X,50('*')//
     *'  *INTERRUPTION* WRITE TRUE HEADER, PLEASE:'//
     *' FILE 2,5 MINUTE... (OR) FILE HOURLY...'/)
  150 FORMAT (10A4/3I4,2A4,I4)
  180 FORMAT (4X,10A4//' MAX. PERMIS. JUMP IN H/X=',
     * I5//' MAX. PERMIS. JUMP IN D/Y=',I5//
     *' MAX. PERMIS. JUMP IN  Z =',I5//
     *' TOTAL ERRORS PERMITTED BEFORE PROGRAM WILL ABO IS'
     *,I6//
     *' THE PRINT OPTION FOR THE OUTPUT FILE IS',A4//
     *' THE PRINT OPTION FOR THE CORRECTION CARDS IS',/)
  170 FORMAT(1X,A3,2I2,A1,I2,A2,4X,26I4)
  190 FORMAT(1X,A3,2I2,A1,2I2,4X,26I4)
  200 FORMAT(1X,20X,24A4)
  210 FORMAT(///' ***THE PERMISSIBLE NUMBER OF ERRORS
     * IN THE FILE = ',I7,' ,PROGRAM WILL ABORT ****')
  220 FORMAT(///' $$ THERE WERE READ ',I6,' RECORDS OF
     * H/X COMPONENT,'
     * ,I6,' RECORDS OF D/Y COMPONENT AND',I6,
     *' RECORDS OF Z COMPONENT $$')
  230 FORMAT(//1X,50('*')//' * FROM DATE ',A3,2I2,A1,2I2,
     *' ALL CORRECTIONS WERE NOT PROCESSED *'//1X,50('*'))
  240 FORMAT(//' $$ THERE WERE WRITTEN',I6,'
     * RECORDS OF H/X COMPONENT,'
     * ,I6,' RECORDS OF D/Y COMPONENT AND',I6,
     *' RECORDS OF Z COMPONENT $$')
  250 FORMAT(//5X,' THE LAST PROCESSED RECORD CONTAINED ',A1
     *' COMP. OF ',A3,' OBS.  FOR THE DATE ',3(I2,1H/),I2,
     *' (HOUR/DAY/MONTH/YEAR)'/)
  260 FORMAT(//5X,' THE LAST PROCESSED RECORD CONTAINED ',A1
     *' COMP. OF ',A3,' OBS.  FOR THE DATE ',2(I2,1H/),I2,
     *' (DAY/MONTH/YEAR)'/)
      STOP
      END
C
C
C
C
```

```
      SUBROUTINE PROCES
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
C     THE MANAGER OF THE VERIFICATION PROCESS          C
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

      LOGICAL INDCTR,OK,END
      COMMON IVAL(32),IE(5),IC,F(7),ILINE(24),IFL
      COMMON/IFIXDK/ IREC(32),END
      COMMON /IND/ INDCTR,OK
      COMMON /WW/ IW,IPRC,IKNT(3)
      DATA IDD/1HD/,III/1HI/,IRR/1HR/
    5 CALL KORECT
      IF (END) GO TO 10
      CALL KORENT
      IF (OK.AND.IW.EQ.IDD) GO TO 40
      IF (OK.AND.IW.EQ.III) GO TO 5
      IF (OK.AND.IW.EQ.IRR) GO TO 5
C     THE DATE IS SET ACCODING THE FIRST RECORD
   10 IF(IFL.EQ.0) CALL HOURCK
      IF(IFL.EQ.1) CALL TPFMCK
C     THE COMPONENT INDEX IS SET
      CALL NAMECK
C     CHECK THE DATA ON ABNORMAL JUMPS
      CALL JUMPCK(1)
C     CHECK THE AVERAGE VALUES
      CALL MEANCK(1)
      GO TO 30
      ENTRY PROENT
   15 CALL KORECT
      IF (END) GO TO 20
      CALL KORENT
      IF (OK.AND.IW.EQ.IDD) GO TO 40
      IF (OK.AND.IW.EQ.III) GO TO 15
      IF (OK.AND.IW.EQ.IRR) GO TO 15
C     ARE THE DATES SEQUENTAL?
   20 IF(IFL.EQ.0) CALL HOURCK
      IF(IFL.EQ.1) CALL TPFMCK
C     CHECK THE MNEMONIC NAME OF THE OBSERVATORY
      CALL NAMENT
C     CHECK THE DATA ON ABNORMAL JUMPS
      CALL JUMPCK(2)
C     DO THE CURRENT RECORD DUBLICATE THE PREVIOUS?
      CALL MEANCK(2)
C     WRITE THE CURRENT RECORD INTO OUTPUT FILE
   30 WRITE(8,F) IVAL
      IKNT(IC)=IKNT(IC)+1
   40 CONTINUE
      RETURN
      END
C
```

```
      SUBROUTINE KORECT
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
C     THIS SUBROUTINE INPUTS AND                              C
C     ANALYSES THE CORRECTION CARDS                           C
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

      LOGICAL END,CORRCT,INDCTR,OK
      COMMON IVAL(32),JC(6),F(7),ILINE(24),IFL
      COMMON /WW/ IW,IPRC
      COMMON /DD/ IDATE(5)
      COMMON /IFIXDK/IREC(32),END,CORRCT,FACT
      COMMON /IND/ INDCTR,OK
      DATA IBLNK/4H    /
      DATA IEE/1HE/,INN/1HN/,IDD/1HD/,III/1HI/
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
C     IF THE LOGICAL VARIABLE OK=.TRUE.                       C
C     THIS SUBROUTINE WILL READ THE NEXT TWO OR TREE          C
C     CORRECTION CARDS FROM FT05F001                          C
C     THE FIRST CARD CONTAINES THE CORRECT DIRECTIVE,         C
C     THE SECOND- THE SEARCH KEY ON THE                       C
C     CORRECTED RECORD DATE                                   C
C     THE THIRD- COMPLETE THE LOGICAL RECORD                  C
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
      IF (.NOT.OK) RETURN
      READ (5,100,END=70) IW,JW,FACT
      IF(IPRC.GT.0) PRINT 140,IW,JW,FACT
      IF (JW.LT.IEE.OR.JW.GT.INN) GOTO 30
      IF(IFL.EQ.0) READ(5,115,END=70) (IREC(I),I=1,17)
      IF(IFL.EQ.1) READ(5,110,END=70) (IREC(I),I=1,17)
      IF (IW.NE.IDD) GO TO 20
      IF(IPRC.EQ.0) GO TO 55
      IF(IFL.EQ.0) PRINT 175,(IREC(I),I=1,5)
      IF(IFL.EQ.1) PRINT 170,(IREC(I),I=1,6)
      GO TO 55
   20 READ(5,120,END=70) (IREC(I),I=18,32)
      GO TO 60
   30 READ(5,130,END=70) (IREC(I),I=1,14)
   40 DO 50 I=15,32
      IREC(I)=IBLNK
   50 CONTINUE
      IF(IPRC.GT.0) PRINT 150,(IREC(I),I=1,14)
      GO TO 55
   60 IF(IPRC.EQ.0) GO TO 55
      IF(IFL.EQ.0) PRINT 165, IREC
      IF(IFL.EQ.1) PRINT 160, IREC
   55 DO 65 IO=1,5
      IDATE(IO)=IREC(IO+1)
   65 CONTINUE
      IF(IW.EQ.III.AND.IFL.EQ.0) CALL HOUENT
      IF(IW.EQ.III.AND.IFL.EQ.1) CALL TPFENT
      CORRCT=.TRUE.
      OK=.FALSE.
      RETURN
   70 CONTINUE
      END=.TRUE.
      OK=.FALSE.
      RETURN
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
C     ADDITIONAL ENTRY FOR BRANCHING ACCORDDING               C
C     TO CORRION FUNCTIONS                                    C
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
      ENTRY KORENT
      IF (JW.LT.IEE.OR.JW.GT.INN) GOTO 90
      CALL DIRFUN
      RETURN
   90 CALL MASFUN
      RETURN
  100 FORMAT(2A1,F10.0)
  110 FORMAT (A3,2I2,A1,2I2,4X,11I4)
  115 FORMAT(A3,2I2,A1,I2,A2,4X,11I4)
  120 FORMAT (15I4)
  130 FORMAT (A3,2I2,A1,2I2,A3,2I2,A1,2I2/2I2)
  140 FORMAT(/' $$$$ CORRECTION CARDS PRINTOUT $$$$'
     *1X,2A1,8X,F10.0)
  150 FORMAT (1X,2(A3,2I2,A1,2I2),2I2)
  160 FORMAT (1X,A3,2I2,A1,2I2,4X,26I4)
  165 FORMAT(1X,A3,2I2,A1,I2,A2,4X,26I4)
  170 FORMAT (1X,A3,2I2,A1,2I2)
  175 FORMAT(1X,A3,2I2,A1,I2)
      END
C
      SUBROUTINE HOURCK
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
C     THE MANAGER OF THE SEQUENCE DATE VERIFICATION           C
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
      DIMENSION MO(12)
      COMMON IVAL(32),JC(3),IPLOT
      COMMON /DD/ IDATE(4)
      DATA MO/31,28,31,30,31,30,31,31,30,31,30,31/
      DATA KYR/0/
      IPLOT=0
C     CHECKING OF THE YEAR
   10 IF (IVAL(2).EQ.KYR) GO TO 30
      MO(2)=28
      ILN=IVAL(2)+1900
      IF (ILN.EQ.(ILN/4)*4) MO(2)=29
      IF(KYR.EQ.0)GO TO61
C     CHECKING OF THE MONTH
   20 IF (KMO.EQ.12.AND.KDAY.EQ.31.AND.IVAL(2).EQ.
     *KYR+1.AND.IVAL(3).EQ.1.AND.IVAL(5).EQ.1) GOTO 61
```

```
   30 IF (IVAL(3).EQ.KMO) GO TO 40
      IF (KDAY.EQ.MO(IVAL(3)-1).AND.IVAL(3).EQ.KM
     *O+1.AND.IVAL(5).EQ.1) GO TO 61
      GO TO 50
C     CHECKING OF THE DAY
   40 IF (IVAL(5).EQ.KDAY+1) GO TO 60
   50 I1=KYR*10000+KMO*100+KDAY
      I2=IVAL(2)*10000+IVAL(3)*100+IVAL(5)
C     THE SEQUENCE OF THE DATES IS NOT CORRECT
      IF(I1.LT.I2) PRINT 70,KDAY,KMO,KYR,
     *IVAL(5),IVAL(3),IVAL(2),IVAL(4)
      IF(I1.EQ.I2) PRINT 80,KDAY,KMO,KYR,
     *IVAL(5),IVAL(3),IVAL(2),IVAL(4)
      IF(KDAY.EQ.MO(IVAL(3)).AND.IVAL(3).EQ.KMO.
     *AND.IVAL(5).EQ.1) GO TO61
      IF(I1.GT.I2) PRINT 90,KDAY,KMO,KYR,
     *IVAL(5),IVAL(3),IVAL(2),IVAL(4)
      GO TO 60
   61 IPLOT=1
   60 KDAY=IVAL(5)
      KMO=IVAL(3)
      KYR=IVAL(2)
      RETURN
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
C     THE ADDITIONAL ENTRY FOR THE PREVIOUS RECORD    C
C     DATA CALCULATION                                C
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
      ENTRY HOUENT
      IF (IDATE(4).EQ.1) GO TO 62
      IDATE(4)=IDATE(4)-1
      RETURN
   62 IF (IDATE(2).EQ.1) GO TO 64
      IDATE(2)=IDATE(2)-1
      IDATE(4)=MO(IDATE(2))
      IF(IDATE(2).NE.2) RETURN
      ILN=IDATE(1)+1900
      IF (ILN.EQ.(ILN/4)*4) IDATE(4)=29
      RETURN
   64 IDATE(1)=IDATE(1)-1
      IDATE(2)=12
      IDATE(4)=31
      RETURN
      ENTRY HOUINT
      MO(2)=28
      ILN=IVAL(2)+1900
      IF(ILN.EQ.(ILN/4)*4) MO(2)=29
      KYR=IVAL(2)
      KMO=IVAL(3)
      KDAY=IVAL(5)
      RETURN
   70 FORMAT(/' **** DATA MISSING BETWEEN ****'/10X,
     *2(I2,1H/),
     * I2,5H AND ,2(I2,1H/),I2,'   FOR COMP. ',A1)
   80 FORMAT(/' **** RECORD IS REPEATED ****'/10X,
     *2(I2,1H/),
     * I2,5H AND ,2(I2,1H/),I2,'   FOR COMP. ',A1)
   90 FORMAT(/' **** DATE IS INCORRECT ****'/10X,
     *2(I2,1H/),
     * I2,5H AND ,2(I2,1H/),I2,'   FOR COMP. ',A1)
      END
C
      SUBROUTINE TPFMCK
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
C     THE MANAGER OF THE SEQUENCE HOURS               C
C     VERIFICATION                                    C
C     (ANALOGOUSLY TO THE SUBROUTINE HOURCK)          C
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
      DIMENSION MO(12)
      COMMON IVAL(32),JC(3),IPLOT
      COMMON /DD/ IDATE(5)
      DATA MO/31,28,31,30,31,30,31,31,30,31,30,31/
      DATA KYR/0/
      IPLOT=0
   10 IF (IVAL(2).EQ.KYR) GO TO 30
      MO(2)=28
      ILN=IVAL(2)+1900
      IF (ILN.EQ.(ILN/4)*4) MO(2)=29
      IF(KYR.EQ.0)GO TO61
   20 IF(KMO.EQ.12.AND.KDAY.EQ.31.AND.KHR.EQ.23.AND.
     *IVAL(2).EQ.KYR+1.AND.IVAL(3).EQ.1.AND.
     *IVAL(5).EQ.1.AND.IVAL(6).EQ.0) GOTO 61
   30 IF (IVAL(3).EQ.KMO) GO TO 40
      IF(KDAY.EQ.MO(IVAL(3)-1).AND.IVAL(3).EQ.KMO+1.AND.
     *KHR.EQ.23.AND.IVAL(5).EQ.1.AND.IVAL(6).EQ.0) GOTO 61
      GO TO 50
   40 IF (IVAL(5).EQ.KDAY) GO TO 44
      IF(IVAL(5).EQ.KDAY+1.AND.IVAL(6).EQ.0.AND.
     *KHR.EQ.23) GOTO 65
      GO TO 50
   44 IF (IVAL(6).EQ.KHR+1) GO TO 60
   50 I1=KYR*1000000+KMO*10000+KDAY*100+KHR
      I2=IVAL(2)*1000000+IVAL(3)*10000+IVAL(5)*100+IVAL(6)
      IF (I1.LT.I2) PRINT 70,KHR,KDAY,KMO,KYR,IVAL(6),
     *IVAL(5),IVAL(3),IVAL(2),IVAL(4)
      IF (I1.EQ.I2) PRINT 80,KHR,KDAY,KMO,KYR,IVAL(6),
     *IVAL(5),IVAL(3),IVAL(2),IVAL(4)
      IF(KDAY.EQ.MO(IVAL(3)).AND.IVAL(3).EQ.KMO.
     *AND.IVAL(5).EQ.1.AND.IVAL(6).EQ.0) GO TO 61
      IF (I1.GT.I2) PRINT 90,KHR,KDAY,KMO,KYR,IVAL(6),
     *IVAL(5),IVAL(3),IVAL(2),IVAL(4)
```

```
      GO TO 60
   65 IF(IVAL(5).GT.MO(IVAL(3))) PRINT 90, KHR,KDAY,KMO,KYR,
     *IVAL(6),IVAL(5),IVAL(3),IVAL(2),IVAL(4)
   61 IPLOT=1
   60 KDAY=IVAL(5)
      KHR=IVAL(6)
      KMO=IVAL(3)
      KYR=IVAL(2)
      RETURN
      ENTRY TPFENT
      IF (IDATE(5).EQ.0) GO TO 63
      IDATE(5)=IDATE(5)-1
      RETURN
   63 IF (IDATE(4).EQ.1) GO TO 62
      IDATE(4)=IDATE(4)-1
      IDATE(5)=23
      RETURN
   62 IF (IDATE(2).EQ.1) GO TO 64
      IDATE(2)=IDATE(2)-1
      IDATE(4)=MO(IDATE(2))
      IDATE(5)=23
      IF (IDATE(2).NE.2) RETURN
      ILN=IDATE(1)+1900
      IF (ILN.EQ.(ILN/4)*4) IDATE(4)=29
      RETURN
   64 IDATE(1)=IDATE(1)-1
      IDATE(2)=12
      IDATE(4)=31
      IDATE(5)=23
      RETURN
      ENTRY TPFINT
      MO(2)=28
      ILN=IVAL(2)+1900
      IF(ILN.EQ.(ILN/4)*4) MO(2)=29
      KYR=IVAL(2)
      KMO=IVAL(3)
      KDAY=IVAL(5)
      KHR=IVAL(6)
      RETURN
   70 FORMAT(' **** DATA MISSING BETWEEN ****'/10X,3(I2,1H/)
     * I2,5H AND ,3(I2,1H/),I2,'   FOR COMP. ',A1)
   80 FORMAT(/' **** RECORD IS REPEATED ****'/10X,3(I2,1H/),
     * I2,5H AND ,3(I2,1H/),I2,'   FOR COMP. ',A1)
   90 FORMAT(/' **** DATE IS INCORRECT ****'/10X,3(I2,1H/),
     * I2,5H AND ,3(I2,1H/),I2,'   FOR COMP. ',A1)
      END
C
      SUBROUTINE NAMECK
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
C     THE MANAGER OF THE COMPONENT INDEX                  C
C     AND MNEMONIC OBSERVATORY CODE VERIFICATION          C
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
      LOGICAL BEGIN
      DIMENSION IVECTR(3,4)
      COMMON IVAL(32),JC(3),IPLOT,ERROR,IC,F(7),ILINE(24),IF
      DATA BEGIN/.TRUE./, YES/2H A/
C     THE ARRAY OF PERMISSIBLE INDICES OF COMPONENTS
      DATA IVECTR/1H3,1H1,1H7,1H5,1H6,1H7,
     *1HH,1HD,1HZ,1HX,1HY,1HZ/
      IF(BEGIN)GOTO 10
      IF(IPLOT.EQ.1) GO TO 20
      ERROR=YES
      PRINT  60, KP,IVAL(4)
      GOTO 20
   10 IF(IFL.EQ.0) PRINT 75,IVAL(4),IVAL(1),
     *IVAL(5),IVAL(3),IVAL(2)
      IF(IFL.EQ.1) PRINT 70,IVAL(4),IVAL(1),
     *IVAL(6),IVAL(5),IVAL(3),IVAL(2)
      KOD=IVAL(1)
   20 DO 40 M=1,3
      DO 30 N=1,4
      IF (IVAL(4).NE.IVECTR(M,N)) GOTO 30
      IC=M
      GOTO 50
   30 CONTINUE
   40 CONTINUE
      ERROR=YES
      PRINT 80, IVAL(4)
   50 CONTINUE
      BEGIN=.FALSE.
      KP=IVAL(4)
C     THE CHECKING OF THE OBSERVATORY CODE
      ENTRY NAMENT
      IF (KOD.EQ.IVAL(1)) RETURN
      ERROR=YES
      PRINT 90, KOD,IVAL(1)
      KOD=IVAL(1)
      RETURN
   60 FORMAT(/' **** THE CURRENT COMPONENT ',A1,
     *' IS MIXED WITH COMP. ',A1,5H ****)
   70 FORMAT (//5X,' THE FIRST RECORD CONTAINES ',A1,' COMP.
     *A3,'  FOR THE DATE ',3(I2,1H/),I2,' (HOUR/DAY/MONTH/YE
   75 FORMAT(//5X,' THE FIRST RECORD CONTAINES ',A1,' COMP.
     *A3,' FOR THE DATE ',2(I2,1H/),I2,' (DAY/MONTH/YEAR)'/)
   80 FORMAT(/' **** INDEX OF COMP. ',A1,
     *' IS NOT RECOGNIZABLE ****')
   90 FORMAT(' **** THE MNEMONIC CODE OF THE OBS.
     *WAS CHANGED FROM ', A3,6H  TO  ,A3,6H  ****)
      END
C
```

```
      SUBROUTINE JUMPCK(I)
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
C     THIS SUBROUTINE CHECKS DATA ON ABNORMAL JUMPS    C
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
      LOGICAL START
      COMMON IVAL(32),JJ(3),IPLOT,ERROR,IC,F(7),ILINE(24),IF
      DATA IBLNK/4H    /,IFILL/4H----/
      DATA IDD/1HD/,ID1/1H1/,YES/3HYES/
      NN=8
      NO=0
      DO 10 MM=1,24
   10 ILINE(MM)=IBLNK
      GO TO (20,30),I
   20 START=.TRUE.
   30 IF (.NOT.START) GO TO 50
      IFCT=100
      IF (IVAL(4).EQ.IDD.OR.IVAL(4).EQ.ID1) IFCT=600
      ICHKB=IVAL(7)*IFCT
   70 N8=NN
      DO 40 J=N8,31
      IF (IVAL(J).EQ.9999) GO TO 40
      START=.FALSE.
      NN=J+1
      ICHK=IVAL(7)+ICHKB
      GO TO 50
   40 CONTINUE
      GO TO 90
   50 IF(NN.GE.31) GO TO 90
      DO 80 J=NN,31
      NN=J
      IF (IVAL(J).EQ.9999) GO TO 70
      IVL=IVAL(J)+ICHKB
      IF(IABS(IVL-ICHK).LE.JJ(IC)) GOTO 60
      ERROR=YES
      NO=1
      ILINE(J-7)=IFILL
      IF(ILINE(1).NE.IBLNK) IOLD=ICHK-ICHKB
   60 ICHK=IVL
   80 CONTINUE
   90 IF (NO.NE.0) PRINT 100
      IF (NO.NE.0.AND.ILINE(1).NE.IBLNK) PRINT 110,ICHKB,IOL
      RETURN
  100 FORMAT(/'  **** EXCESSIVE CHANGE IN HOURLY VALUES ****
  110 FORMAT(7X,' (THE BASE OF THE PREVIOUS RECORD = ',I6,
     *', THE PAST VALUE OF THE COMPONENT =',I4,')')
      END
C
      SUBROUTINE MEANCK(I)
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
C     THIS SUBROUTINE CHECKS THE AVERAGE VALUE   C
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
      DIMENSION IOLD(31)
      COMMON IVAL(32),JC(3),IPLOT,ERROR
      DATA YES/3HYES/
      GOTO (10,30), I
   10 IK=0
      ISM=0
      DO 20 J=8,31
      IOLD(J)=IVAL(J)
      IF (IVAL(J).EQ.9999) GOTO 20
      ISM=ISM+IVAL(J)
      IK=IK+1
   20 CONTINUE
      GOTO 50
   30 IC=0
      DO 40 J=8,31
      IF (IVAL(J).EQ.9999) IC=IC+1
      IF (IOLD(J).NE.IVAL(J)) GOTO 10
   40 CONTINUE
      IF (IC.EQ.24) GOTO 10
      PRINT 70
      ERROR=YES
      GOTO 10
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
C     VERIFY THE AVERAGE VALUE                          C
C     (IF NO MEAN EXISTS                                C
C     ONE WILL BE CREATED AND PUT INTO OUTPUT RECORD)C
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

   50 IF(IVAL(32).EQ.0.OR.IVAL(32).EQ.9999.OR.IK.LE.0)
     * GO TO 60
      IDIFF=ISM/IK-IVAL(32)
      IF (IABS(IDIFF).LE.2) RETURN
      PRINT 80
      ERROR=YES
      RETURN
   60 IVAL(32)=9999
      IF (IK.GE.1) IVAL(32)=ISM/IK
      RETURN
   70 FORMAT(/'  **** THE PREVIOUS RECORD IS REPEATED ****')
   80 FORMAT(/'  **** INCORRECT AVERAGE VALUE ****')
      END
C
      SUBROUTINE DIRFUN
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
C     THIS SUBROUTINE WILL TAKE CARE OF             C
C     ALL DELETE,INSERT AND REPLACE DIRECTIVES      C
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
      LOGICAL INDCTR,OK
      DIMENSION MO(12)
```

```
      COMMON IVAL(32),JC(3),IPLOT,ERROR,IC,F(7),ILN(24),IFL
      COMMON /IFIXDK/ IREC(32),END,CORRCT,FACT
      COMMON /DD/ IDATE(5)
      COMMON /WW/ IW,IPRC,IKNT(3),ICNT(3)
      COMMON /IND/ INDCTR,OK,IRROR
      DATA MO/31,28,31,30,31,30,31,31,30,31,30,31/
      DATA IDD/1HD/,IRR/1HR/,III/1HI/,BLNK/4H    /
      IF (IREC(1).NE.IVAL(1)) RETURN
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
C     CHECK THE RECORDS OF A DATE COINCIDENCE  C
C     WITH A CORRECTING CARD                   C
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
      DO 10 IO=2,6
      IF (IDATE(IO-1).NE.IVAL(IO)) RETURN
   10 CONTINUE
      IFACT=FACT+0.5
      OK=.TRUE.
C     IS IT A REPLACE REQUESTED?
      IF (IW.EQ.IRR) GO TO 20
C     DELETE OLD RECORD
      IF (IW.EQ.IDD) GOTO 40
C     IS IT A INSERT REQUESTED?
      IF (IW.EQ.III) GO TO 50
C     UNKNOWN DIRECTIVE
      PRINT  80,   (IREC(IO),IO=1,5)
      RETURN
C     REPLACE OLD RECORD
   20 DO 30 JX=1,32
      IVAL(JX)=IREC(JX)
   30 CONTINUE
      IF (IFACT.EQ.1) RETURN
      DO 35 IX=2,IFACT
      WRITE(8,F) IVAL
      READ(9,F) IVAL
      READ 90, IVAL
      IF(IFL.EQ.0) CALL HOUINT
      IF(IFL.EQ.1) CALL TPFINT
      IF(IFL.EQ.0) CALL HOURCK
      IF(IFL.EQ.1) CALL TPFMCK
      CALL NAMENT
      CALL JUMPCK(2)
      CALL MEANCK(2)
   35 CONTINUE
      IKNT(IC)=IKNT(IC)+IFACT-1
      ICNT(IC)=ICNT(IC)+IFACT-1
      RETURN
   40 IF (IFACT.EQ.1) RETURN
      DO 45 IX=2,IFACT
      READ(9,F) IVAL
   45 CONTINUE
      ICNT(IC)=ICNT(IC)+IFACT-1
      RETURN
C     INPUT RECORD
   50 IF(IFL.EQ.0) CALL HOURCK
      IF(IFL.EQ.1) CALL TPFMCK
      CALL NAMENT
      CALL JUMPCK(2)
      CALL MEANCK(2)
      WRITE(8,F) IVAL
      IKNT(IC)=IKNT(IC)+1
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
C     THE PRINT OF ERRONEOUS RECORD AFTER  C
C     CORRESPONDING INFORMATION            C
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
      PRINT 100, IVAL
      PRINT 110, ILN
      ERROR=BLNK
      IRROR=IRROR+1
   55 DO 60 JX=1,32
      IVAL(JX)=IREC(JX)
   60 CONTINUE
      IF (IFACT.EQ.1) RETURN
      MO(2)=28
      IYR=IVAL(2)+1900
      DO 70 IX=2,IFACT
      WRITE(8,F) IVAL
      IF(IX.EQ.IFACT.AND.IFL.EQ.0) CALL HOUINT
      IF(IX.EQ.IFACT.AND.IFL.EQ.1) CALL TPFINT
      IF(IFL.EQ.0) GO TO 65
      IVAL(6)=IVAL(6)+1
      IF (IVAL(6).LE.23) GOTO 70
      IVAL(6)=0
   65 IVAL(5)=IVAL(5)+1
      IF (IYR.EQ.(IYR/4)*4) MO(2)=29
      IF (IVAL(5).LE.MO(IVAL(3))) GOTO 70
      IVAL(5)=1
      IVAL(3)=IVAL(3)+1
      IF (IVAL(3).LE.12) GOTO 70
      IVAL(3)=1
      IVAL(2)=IVAL(2)+1
   70 CONTINUE
      IKNT(IC)=IKNT(IC)+IFACT-1
      RETURN
   80 FORMAT(/' **** UNKNOWN DATA UPDATE DIRECTIVE ( ',
     *A3,2I2,A1,2I2,7H ) ****)
   90 FORMAT (A3,2I2,A1,2I2,4X,16I4/10I4)
  100 FORMAT (1X,A3,2I2,A1,2I2,4X,26I4)
  110 FORMAT(1X,20X,24A4)
      END
C
```

```
      SUBROUTINE MASFUN
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
C     THIS SUBROUTINE WILL ADD,SUBSTRACT OR MULTIPLY C
C     A COMMON FACTOR TO SPECIFIED VALUES           C
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
      LOGICAL INDCTR,OK
      COMMON IVAL(32)
      COMMON /IFIXDK/ IREC(32),END,CORRCT,FACT
      COMMON /WW/IW
      COMMON /IND/ INDCTR,OK
      DATA ISS/1HS/, IMM/1HM/, NS/1/
      IF (NS.EQ.0) GOTO 30
      IF (INDCTR) GOTO 20
      DO 10 JX=1,6
      IF (IREC(JX).NE.IVAL(JX)) RETURN
   10 CONTINUE
      INDCTR=.TRUE.
      NS=IREC(13)
      ISET=0
      IFACT=FACT+0.5
C     IS THE NUMBER SUBSTRACTED?
      IF(IW.EQ.ISS) IFACT=-IFACT
C     IS THE DATA MULTIPLIED?
      IF (IW.EQ.IMM) ISET=1
      GOTO 30
   20 NS=1
   30 IF (IREC(7).NE.IVAL(1)) GO TO 50
      DO 40 JX=2,6
      IF (IREC(JX+6).NE.IVAL(JX)) GO TO 50
   40 CONTINUE
      INDCTR=.FALSE.
      OK=.TRUE.
      NF=IREC(14)
      GOTO 60
   50 NF=25
   60 IF (ISET.GE.1) GOTO 80
      IF (NS.EQ.0) GO TO 100
C     ADD THE NUMBER
      DO 70 I=NS,NF
      IF (IVAL(I+7).EQ.9999) GO TO 70
      IVAL(I+7)=IVAL(I+7)+IFACT
   70 CONTINUE
      GO TO 110
  100 IVAL(7)=IVAL(7)+IFACT
      IF (OK) NS=1
  110 RETURN
   80 IF (NS.EQ.0) GO TO 120
C     MULTIPLY THE NUMBER
      DO 90 I=NS,NF
      IF (IVAL(I+7).EQ.9999) GO TO 90
      IVAL(I+7)=FLOAT(IVAL(I+7))*FACT+0.5
   90 CONTINUE
      GO TO 130
  120 IVAL(7)=FLOAT(IVAL(7))*FACT+0.5
      IF (OK) NS=1
  130 RETURN
      END
```

Table 13 GEOMAGNETIC HOURLY VALUE MAPOUT PROGRAM

```
 1 ************************************************************
 2 *                                                          *
 3 *       PROGRAM :      MAPOUT                              *
 4 *                                                          *
 5 *       WRITTEN BY:    CARL ABSTON                         *
 6 *                      WORLD DATA CENTER-A                 *
 7 *                      BOULDER, COLORADO                   *
 8 *                                                          *
 9 *       LANGUAGE:      COBOL-74                            *
10 *                                                          *
11 *       COMPUTER:      DATA GENERAL ECLIPSE SERIES         *
12 ************************************************************
13
14 ************************************************************
15 *                                                          *
16 *   THE PURPOSE OF THIS PROGRAM IS TO GIVE A SUMMARIZED    *
17 *   PRINTOUT OF THE CONTENTS OF A TAPE CONTAINING          *
18 *   2.5-MIN GEOMAGNETIC OR GEOMAGNETIC HOURLY VALUES       *
19 *   THE OUTPUT IS ON THE PRINTER.  INCLUDED IN THE         *
20 *   SUMMARY IS                                             *
21 *   (1)---THE DATE WHEN THE MAPOUT (PRINTOUT) WAS MADE     *
22 *   (2)---THE FIRST LOGICAL RECORD ON THE TAPE             *
23 *   (3)---A TABLE SHOWING THE OBSERVATORIES DATES          *
24 *   ELEMENTS CONTAINED ON THE TAPE                         *
25 *   (4)---THE TOTAL NUMBER OF LOGICAL RECORDS ON THE       *
26 *   TAPE                                                   *
27 *                                                          *
28 ************************************************************
29
30 IDENTIFICATION DIVISION.
31 PROGRAM-ID.
32     MAPOUT.
33 AUTHOR.
34     CARL ABSTON.
35 ENVIRONMENT DIVISION.
36 CONFIGURATION SECTION.
37 SOURCE-COMPUTE
38     ECLIPSE.
39 OBJECT-COMPUTER.
40     ECLIPSE.
41 INPUT-OUTPUT SECTION.
42 FILE-CONTROL
43     SELECT INA20 ASSIGN TO TAPE10
44     RESERVE AREAS.
45     SELECT INE20 ASSIGN TO TAPE10
46     RESERVE AREAS.
47     SELECT INA40 ASSIGN TO TAPE10
48     RESERVE 4 AREAS
49     FILE STATUS IS FILE-STATUS.
50     SELECT INE40 ASSIGN TO TAPE10
51     RESERVE 4 AREAS.
52     SELECT PRINTFILE ASSIGN TO PRINTER TAPE41.
53     SELECT ARCHIVE-FILE ASSIGN TO TAPE40.
54     SELECT SEQ-FILE ASSIGN TO 'SEQFILE'.
55 DATA DIVISION.
56 FILE SECTION.
57 FD SEQ-FILE
58     LABEL RECORDS ARE OMITTED
59     DATA RECORD IS SEQ-RECORD.
60 01 SEQ-RECORD PIC X(2200).
61 FD ARCHIVE-FILE
62     LABEL RECORDS ARE OMITTED
63     DATA RECORD IS ARCHIVE-RECORD.
64 01 ARCHIVE-RECORD.
65     02 ATYPE PIC XX.
66     02 ADATE PIC X(6).
67     02 ATAPE PIC X(6).
68     02 AFILE PIC 999.
69     02 ABTAPE PIC X(6).
70     02 ADATA PIC X(133).
71     02 ACOUNT PIC 9(6).
72 FD  INA20
73     BLOCK CONTAINS 20 RECORDS
74     LABEL RECORDS ARE OMITTED
75     DATA RECORD IS INA20-RECORD.
76 01 INA20-RECORD.
77     02 INA20-13 PIC X(13).
78     02 FILLER PIC X(107).
79 FD  INA40
80     BLOCK CONTAINS 40 RECORDS
81     LABEL RECORDS ARE OMITTED
82     DATA RECORD IS INA40-RECORD.
83 01 INA40-RECORD.
84     02 INA40-13 PIC X(13).
85     02 FILLER PIC X(107).
86 FD  INE20
87     BLOCK CONTAINS 20 RECORDS
88     LABEL RECORDS ARE OMITTED
89     DATA RECORD IS INE20-RECORD
90     CODE-SET IS EBCDIC.
91 01 INE20-RECORD.
92     02 INE20-13 PIC X(13).
93     02 FILLER PIC X(107).
94 FD  INE40
95     BLOCK CONTAINS 40 RECORDS
96     LABEL RECORDS ARE OMITTED
97     DATA RECORD IS INE40-RECORD
98     CODE-SET IS EBCDIC.
99 01 INE40-RECORD.
100    02 INE40-13 PIC X(13).
```

```
101      02 FILLER PIC X(107).
102  FD  PRINTFILE
103      LABEL  RECORDS ARE OMITTED
104      DATA  RECORD IS PRINT-LINE-ALC.
105  01      PRINT-LINE-ALC.
106      02 PRINT-LINE.
107        03 FILLER PIC X(120).
108        03 PCOUNT PIC ---------9.
109        03 PEND REDEFINES PCOUNT PIC  X(10).
110        03 FILLER PIC X(6).
111  WORKING-STORAGE SECTION.
112  01  INCOMING-RECORD.
113      03 CHECK-AREA.
114          04  FULL-HEADER-STORE.
115            05 OBSYRMOEDA.
116              06 OBSYRMO.
117                    07 OBSYR.
118                       08  OBSM  PIC  XXX.
119                       08  YRM   PIC  XX.
120                    07 MOM       PIC  XX.
121                    07 MON REDEFINES  MOM PIC  99.
122                06  ELE   PIC  X.
123                06  DAM   PIC XX.
124                06  DAN  REDEFINES  DAM  PIC  99.
125              05  HRM PIC  XX.
126        04 COUNTX PIC X.
127      03  FILLER  PIC  X(107).
128  01 FIRST-RECORD REDEFINES INCOMING-RECORD.
129      02 REELX PIC X(4).
130      02 FILLER PIC X(6).
131      02 HOURLY-VALUE PIC XX.
132      02 MM-TV-VALUE PIC X.
133      02 FILLER PIC X(107).
134  01 INC-1 REDEFINES INCOMING-RECORD.
135      02 FILLER PIC X(14).
136      02 CC-15 PIC X.
137      02 FILLER PIC X.
138      02 CC-17-20 PIC XXXX.
139      02 FILLER PIC X(100).
140  01 XX PIC X.
141  01 AATAPE PIC X.
142  01 OBSMM PIC X(3).
143  01 DAMM PIC XX.
144  01 DAMH PIC XX.
145  01 ELA PIC X.
146  01 PRINT-COUNT PIC S9(6) COMP VALUE 0.
147  01 INCOUNT PIC 9(6) VALUE 0.
148  01 SUB-W PIC S9(10) COMP VALUE 0.
149  01 INCR PIC S9(4) COMP VALUE 0.
150  01 LOOP-CONTROLX PIC S9(4) COMP VALUE 0.
151  01 SUBJ PIC S9(4) COMP VALUE 0.
152  01 SUBL PIC S9(4) COMP VALUE 1.
153  01 TCOUNT PIC 9(8) VALUE 0.
154  01 HOBS PIC XXX.
155  01 HDATE PIC X(6).
156  01 HTAPE PIC X(6).
157  01 HBTAPE PIC X(6).
158  01 TAPE40 PIC X(20).
159  01 TAPE41 PIC X(20).
160  01 TAPE10.
161      02 FILLER PIC X(7).
162      02 TN.
163        03 TN1 PIC X.
164        03 TN2 PIC X.
165        03 TN3 PIC X.
166      02 TNN REDEFINES TN PIC 999.
167  01 INCREMENT PIC S9(4) COMP VALUE 0.
168  01 IPL-DATE.
169      02 IPL-YR PIC XX.
170      02 IPL-MO PIC XX.
171      02 IPL-DA PIC XX.
172  01 HEADERB.
173          03  FILLER  PIC X(44)  VALUE
174      'OBSYRMO ***** ***** ***** ***** ***** ******'.
175          03  FILLER  PIC X(42)  VALUE
176          '      ***** ***** ***** ***** ***** ******'.
177          03  FILLER  PIC X(42)  VALUE
178          '      ***** ***** ***** ***** ***** ******'.
179  01 HEADERA.
180          03  FILLER  PIC  X(44) VALUE
181      '                D-X-F-T  VALUES                '.
182          03  FILLER  PIC  X(44) VALUE
183      '                 H-Y-I   VALUES                '.
184          03  FILLER  PIC  X(44) VALUE
185      '                    Z VALUES                   '.
186  01 DATA-LINEA.
187          03  D-L-OBSYRMO     PIC X(7).
188          03  FILLER          PIC X.
189          03  DATA-POSD OCCURS  39 TIMES  PIC X.
190          03  FILLER  PIC  X(3).
191          03  DATA-POSH OCCURS  39 TIMES  PIC X.
192          03  FILLER  PIC  X(3).
193          03  DATA-POSZ OCCURS  39 TIMES  PIC X.
194  01 DATA-LINEB.
195          03  D-L-OBSYRMO-B   PIC X(7).
196          03  FILLER          PIC X.
197          03  DATA-POST  OCCURS 39 TIMES  PIC X.
198  01      NAME-LINE.
199          03 FILLER  PIC  X(57) VALUE  SPACE.
200          03 OBS-NL  PIC  XXX.
```

```
           03 FILLER  PIC  XXX  VALUE  ' = '.
           03 OBS-NAME  PIC X(18).
01         OVERFLOW-ALC  PIC X.
01         J-B   PIC X(41)   VALUE
    'JOB BEGIN MAPOUT 2.5-MIN OR HOURLY VALUES'.
01         J-A   PIC X(23)   VALUE
    'JOB ABORT MAP-OUT  '.
01         01-STORAGE.
    02  MESS-LINE.
           03  FILLER      PIC  X(51).
           03  MESS        PIC  X(30).
    02 DUPLICATE-COUNT PIC S9(4) COMP VALUE 0.
    02 LINE-COUNT PIC S9(4) COMP VALUE 0.
    02  HV-MESS.
           03  FILLER  PIC  X(48)  VALUE SPACE.
           03  FILLER  PIC  X(37)  VALUE
    'H O U R L Y   V A L U E   M A P O U T'.
           03  FILLER  PIC  X(48)  VALUE  SPACE.
    02  TV-MESS.
           03  FILLER  PIC  X(45)  VALUE SPACE.
           03  FILLER  PIC  X(43)  VALUE
    'T A B U L A R   V A L U E       M A P O U T'.
           03  FILLER  PIC  X(44)  VALUE SPACE.
    02  MM-MESS.
           03  FILLER  PIC  X(49)  VALUE SPACE.
           03  FILLER  PIC  X(35)  VALUE
    'M I L L I M E T E R     M A P O U T'.
           03  FILLER  PIC  X(48)  VALUE  SPACE.
    02  BUILD-MESS.
          03 FILLER PIC X(39) VALUE SPACES.
          03 MESSAGEX PIC X(41).
           03  FILLER  PIC X(5)   VALUE SPACE.
           03  DATEX.
               04 DATEX-YR PIC XX.
               04 FILLER PIC X VALUE '/'.
               04 DATEX-MO PIC XX.
               04 FILLER PIC X VALUE '/'.
               04 DATEX-DA PIC XX.
           03  FILLER  PIC X(15)  VALUE SPACE.
           03  MTAPE PIC X(15) VALUE SPACES.
           03 MFILE PIC X(13).
    02  NO-DATA   PIC  X(23)  VALUE
    'NO DATA ON THIS TAPE   '.
    02  INVALID-DATA    PIC  X(23)  VALUE
    'INVALID OBSERVATORY    '.
    02  EXITX PIC X  VALUE '0'.
    02  SECOND-ARRAY  PIC X  VALUE '0'.
    02  PREVIOUS-HEADER.
           03  PREVIOUS-OBSYRMOEDAHR.
           04  PREVIOUS-OBSYRMOEDA.
           05  PREVIOUS-OBSYRMO.
               06  PREVIOUS-OBSYR.
                   07  PREVIOUS-OBS  PIC  XXX.
                   07  PREVIOUS-YR   PIC  XX.
               06  PREVIOUS-MO       PIC  XX.
           05  PREVIOUS-E     PIC X.
           05  PREVIOUS-DA    PIC XX.
       04      PREVIOUS-HR    PIC XX.
       03      PREVIOUS-COUNT PIC X.
    02  OUT-OF-SEQ  PIC X(24)  VALUE
    '***  SEQUENCE ERROR  ***'.
    02  J-E-1.
           03  FILLER  PIC  X(32)  VALUE  SPACE.
           03  FILLER  PIC  X(23)  VALUE
           'NUMBER INPUT RECORDS = '.
           03  NUMBER-INPUT  PIC -------9.
           03  FILLER  PIC  X(5)  VALUE  SPACE.
           03  FILLERX PIC  X(27) VALUE
           'NUMBER DUPLICATE RECORDS = '.
           03  NUMBER-DUP  PIC  -----9.
           03  FILLER  PIC X(31) VALUE  SPACE.
01 RECORD-COUNTX PIC S9(8) COMP VALUE 0.
01 BINARY-DAY PIC S9(2) COMP VALUE 0.
01 SUBM PIC S9(8) COMP VALUE 0.
*************************************************************
*                                                           *
*    TABLE OF OBSERVATORY CODES AND THEIR FULL NAMES        *
*                                                           *
*************************************************************
01 TABLE-CODE.
    02 TABLEPOS OCCURS 6 TIMES PIC X(2200).
01 TABLE-CODEX REDEFINES TABLE-CODE.
    02  TABLENAMECODE  OCCURS  600  TIMES.
           03  TABLE-CODEPOS  PIC  XXX.
           03 FILLER PIC X.
           03  TABLE-NAMEPOS  PIC  X(18).
01 SUBTABLE PIC S9(6) COMP VALUE 0.
01 AETYPE PIC X.
01 BLOCKTYPE PIC XX.
01 SHORTTYPE PIC X.
01 DISCTYPE PIC X VALUE ' '.
01 FILE-STATUS PIC XX.
```

```
301 ************************************************************
302 *
303 *   THIS PROGRAM PRODUCES A CATALOG OF GEOMAGNETIC DATA FOR
304 *   1---GEOMAGNETIC MILLIMETER VALUES
305 *   2---GEOMAGNETIC 2.5-MINUTE ABSOLUTE VALUES
306 *       (TABULAR VALUES)
307 *   3---GEOMAGNETIC INDICES (AE,AL,AO,AU,DST)
308 *   4---GEOMAGNETIC HOURLY ABSOULTE VALUES
309 *   WHICH EXIST ON A GIVEN MAGNETIC TAPE OR DISK FILE
310 *
311 ************************************************************
312 PROCEDURE DIVISION.
313 BEGINX SECTION.
314 X1000A.
315     DISPLAY '****WELCOME TO MAPOUT PROGRAM ****'.
316     OPEN INPUT SEQ-FILE.
317     MOVE 1 TO SUBTABLE.
318     DISPLAY 'LOAD OBS NAMES AND CODES'.
319 X1001A.
320     READ SEQ-FILE AT END GO TO X1002A.
321     IF SUBTABLE > 6
322     DISPLAY 'OVER 500 NAMES READ IN--STOP RUN'
323     STOP RUN.
324     MOVE SEQ-RECORD TO TABLEPOS (SUBTABLE).
325     ADD 1 TO SUBTABLE.
326     GO TO X1001A.
327 X1002A.
328     DISPLAY 'TABL-CODEPOS = ' TABLE-CODEPOS (1).
329     DISPLAY 'TABLE-CODEPOS = ' TABLE-CODEPOS (201).
330     CLOSE SEQ-FILE.
331 1000B.
332     DISPLAY '************************************'.
333     DISPLAY 'ENTER A IF INPUT IS ASCII'.
334     DISPLAY 'ENTER E IF INPUT IS EBCDIC'.
335     ACCEPT AETYPE.
336     IF AETYPE NOT = 'E' AND NOT = 'A' GO TO 1000B.
337 1000C.
338     DISPLAY 'ENTER 20 IF INPUT IS BLOCK 20'.
339     DISPLAY 'ENTER 40 IF INPUT IS BLOCK 40'.
340     DISPLAY 'ENTER D  IF INPUT IS ON DISK'.
341     ACCEPT BLOCKTYPE.
342     IF BLOCKTYPE = 'D' MOVE '20' TO BLOCKTYPE
343                        MOVE 'D' TO DISCTYPE.
344     IF BLOCKTYPE NOT = '20' AND NOT = '40' GO TO 1000C.
345     IF AETYPE = 'A' AND BLOCKTYPE = '20'
346                     ALTER LOOP-CONTROL TO PROCEED TO UREADA2
347     IF AETYPE = 'E' AND BLOCKTYPE = '20'
348                     ALTER LOOP-CONTROL TO PROCEED TO UREADE2
349     IF AETYPE = 'A' AND BLOCKTYPE = '40'
350                     ALTER LOOP-CONTROL TO PROCEED TO UREADA4
351     IF AETYPE = 'E' AND BLOCKTYPE = '20'
352                     ALTER LOOP-CONTROL TO PROCEED TO UREADE4
353 1000D.
354     DISPLAY '************************************'.
355     DISPLAY
356     'DO YOU WANT TO ADD TO THE SHORTMAP FILE ENTER Y/N'.
357     ACCEPT SHORTTYPE.
358     IF SHORTTYPE NOT = 'N' AND NOT = 'Y' GO TO 1000D.
359     DISPLAY '************************************'.
360     DISPLAY 'ENTER NAME OF MAPOUT PRINT FILE'.
361     ACCEPT TAPE41.
362     DISPLAY '************************************'.
363     EXPUNGE PRINTFILE.
364     OPEN OUTPUT PRINTFILE.
365 1000A.
366     DISPLAY 'ENTER INPUT UNIT NAME---LIKE TAPE1F OR CARL'.
367     DISPLAY 'DISC INPUT CAN BE ANYTHING'.
368     DISPLAY 'TAPE INPUT SHOULD BE NAMED TAPE10:0'.
369     DISPLAY 'REMEMBER BEFORE EXECUTING THIS PROGRAM'.
370     DISPLAY 'YOU SHOULD ISSUED A MOUNT COMMEND FOR A TAPE'.
371     DISPLAY
372     'TAPE MOUNT COMMOMD = MOUNT TAPE10 WO011-9TRACK-1600'.
373     ACCEPT TAPE10.
374     MOVE TAPE10 TO MFILE.
375     IF DISCTYPE = 'D' GO TO 1000E.
376     IF TN3 = ' ' MOVE TN2 TO TN3
377                  MOVE TN1 TO TN2
378                  MOVE '0' TO TN1.
379     IF TN3 = ' ' MOVE TN2 TO TN3
380                  MOVE TN1 TO TN2
381                  MOVE '0' TO TN1.
382     MOVE TN TO MFILE.
383     DISPLAY 'ENTER REAL TAPE NUMBER LIKE WO0923'.
384     ACCEPT HTAPE.
385 1000E.
386     IF SHORTTYPE = 'N' GO TO 1001A.
387     DISPLAY
388     'ENTER H FOR HOURLY VALUES, 2 FOR 2.5-MIN DATA'.
389     ACCEPT XX.
390     IF XX = 'H' MOVE 'ARCHIVEHV' TO TAPE40 ELSE
391                 MOVE 'ARCHIVE25' TO TAPE40.
392 1000F.
393     OPEN EXTEND ARCHIVE-FILE.
394     MOVE SPACES TO ARCHIVE-RECORD.
395     MOVE HTAPE TO ATAPE.
396     DISPLAY 'ENTER READ TAPE NUMBER BACKUP IF ANY'.
397     ACCEPT HBTAPE.
398     MOVE HBTAPE TO ABTAPE.
399     ACCEPT HDATE FROM  DATE.
400     MOVE HDATE TO ADATE.
```

```
401      MOVE TNN TO AFILE.
402      DISPLAY 'ENTER H=HOURLY VALUE, 2=2.5-MIN VALUE DATA'.
403      ACCEPT AATAPE.
404      MOVE AATAPE TO ATYPE.
405  1001A.
406      MOVE  SPACES  TO  PREVIOUS-HEADER.
407      MOVE SPACES TO DATA-LINEA.
408      MOVE SPACES TO DATA-LINEB.
409      MOVE 1 TO SUBM.  MOVE 0 TO  RECORD-COUNTX.
410      MOVE  0 TO  DUPLICATE-COUNT.
411  ************************************************************
412  *
413  *   PRINTOUT RECORD DESCRIPTION FOR 2.5-MIN GEOMAGENTIC  OR
414  *   GEOMAGNETIC HOURLY VALUES
415  *
416  ************************************************************
417  1002A.
418      MOVE SPACES TO PRINT-LINE-ALC.
419      PERFORM PRINTNEWPAGE.
420      MOVE '**** THE FOLLOWING IS A FORMAT OF THE DATA RECORDS
421      TO PRINT-LINE PERFORM PRINT.
422      MOVE '-------------------------------------------------
423      TO PRINT-LINE PERFORM PRINT.
424      MOVE 'CC 1-3  = OBSERVATORY CODE (CO =COLLEGE)'
425      TO PRINT-LINE PERFORM PRINT.
426      MOVE 'CC 4-5 = YEAR (78 = 1978)'
427      TO PRINT-LINE PERFORM PRINT.
428      MOVE 'CC 6=7 = MONTH (12 = DECEMBER)'
429      TO PRINT-LINE PERFORM PRINT.
430      MOVE 'CC 8   = ELEMENT (D,H,Z,X,Y,F)'
431      TO PRINT-LINE PERFORM PRINT.
432      MOVE '   D= DECLARATION'
433      TO PRINT-LINE PERFORM PRINT.
434          MOVE '   H= HORIZONTAL INSTENSITY'
435      TO PRINT-LINE PERFORM PRINT.
436          MOVE '   Z= VERTICAL INTENSITY'
437      TO PRINT-LINE PERFORM PRINT.
438          MOVE '   F= TOTAL INTENSITY'
439      TO PRINT-LINE PERFORM PRINT.
440          MOVE '   X= X COMPONENT OF HORIZONTAL INTENSITY'
441      TO PRINT-LINE PERFORM PRINT.
442          MOVE '   Y= Y COMPONENT OF HORIZONTAL INTENSITY'
443      TO PRINT-LINE PERFORM PRINT.
444      MOVE 'CC 8-10 = DAY (01 = FIRST DAY OF MONTH)'
445      TO PRINT-LINE PERFORM PRINT.
446      MOVE 'CC 11-12 = HOUR (00-23)'
447      TO PRINT-LINE PERFORM PRINT.
448          MOVE 'IF FORMAT IS HOURLY VALUES---NO HOUR'
449      TO PRINT-LINE PERFORM PRINT.
450      MOVE 'CC 13-16 = NOT USED'
451      TO PRINT-LINE PERFORM PRINT.
452      MOVE 'CC 17-20 = TAB BASE '
453      TO PRINT-LINE PERFORM PRINT.
454          MOVE 'IF ELEMENT = D AND TAB BASE = 1 (1 DGREE)'
455      TO PRINT-LINE PERFORM PRINT.
456          MOVE 'IF ELEMENT NOT = D AND TAB = 550 (55000 GAMMAS
457      TO PRINT-LINE PERFORM PRINT.
458      MOVE 'CC 21-116 = 24 4-DIGIT DATA VALUES'
459      TO PRINT-LINE PERFORM PRINT.
460      MOVE 'CC 117-120 = MEAN OF RECORD'
461      TO PRINT-LINE PERFORM PRINT.
462          MOVE 'IF HOURLY THEN MEAN = DAILY MEAN'
463      TO PRINT-LINE PERFORM PRINT.
464          MOVE 'IF 2.5-MIN RECORD THEN MEAN = HOURLY MEAN'
465      TO PRINT-LINE PERFORM PRINT.
466      MOVE '*****************************************'
467      TO PRINT-LINE PERFORM PRINT.
468      IF BLOCKTYPE = '20'  AND DISCTYPE NOT = 'D'
469      MOVE
470      'THE 120 CHARACTERS ARE BLOCKED 20 (2400 CHARACTERS/PHYS
471      TO PRINT-LINE PERFORM PRINT.
472      IF BLOCKTYPE = '40'
473      MOVE
474      'THE 120 CHARACTER RECORDS ARE BLOCKED 40 (4800 CHAR/PHY
475      TO PRINT-LINE PERFORM PRINT.
476      IF AETYPE = 'E'
477      MOVE 'THE DATA IS IN EBCDIC CODE' TO PRINT-LINE PERFORM
478      MOVE SPACES TO PRINT-LINE PERFORM PRINT.
479      PERFORM PRINTNEWPAGE.
480  ************************************************************
481  *                                                          *
482  *   GET TODAYS DATE FROM COMPUTER                          *
483  *   SEPARATE YEAR MONTH AND DAY WITH / MARKS               *
484  *                                                          *
485  ************************************************************
486  1003A.
487      ACCEPT IPL-DATE FROM DATE.
488      IF BLOCKTYPE = '20' AND AETYPE = 'A'
489      OPEN INPUT INA20 GO TO 1003B.
490      IF BLOCKTYPE = '40' AND AETYPE = 'A'
491      OPEN INPUT INA40 GO TO 1003B.
492      IF BLOCKTYPE = '20' AND AETYPE = 'E'
493      OPEN INPUT INE20 GO TO 1003B.
494      IF BLOCKTYPE = '40' AND AETYPE = 'E'
495      OPEN INPUT INE40 GO TO 1003B.
496      DISPLAY 'NO INPUT WAS OPENED'.
497      STOP RUN.
498  1003B.
499      MOVE  J-B  TO MESSAGEX.
500      MOVE HTAPE  TO MTAPE.
```

```
501      MOVE IPL-YR TO DATEX-YR.
502      MOVE IPL-MO TO DATEX-MO.
503      MOVE IPL-DA TO DATEX-DA.
504      PERFORM MOVE-PRINT-MESS.
505      MOVE 0 TO INCOUNT.
506  1004A.
507      PERFORM UREADIT.
508      IF BLOCKTYPE = '20' AND AETYPE = 'A'
509      MOVE INA20-RECORD TO INCOMING-RECORD.
510      IF BLOCKTYPE = '40' AND AETYPE = 'A'
511      MOVE INA40-RECORD TO INCOMING-RECORD.
512      IF BLOCKTYPE = '20' AND AETYPE = 'E'
513      MOVE INE20-RECORD TO INCOMING-RECORD.
514      IF BLOCKTYPE = '40' AND AETYPE = 'E'
515      MOVE INE40-RECORD TO INCOMING-RECORD.
516      ADD 1 TO INCOUNT TCOUNT.
517      GO TO 1006A.
518  ****************************************************************
519  *                                                              *
520  *   PRINTOUT FIRST DATA RECORD                                 *
521  *                                                              *
522  ****************************************************************
523  1006A.
524      MOVE INCOMING-RECORD TO PRINT-LINE.
525      PERFORM PRINT2LINES.
526      DISPLAY INCOMING-RECORD ' ' TN.
527  1007A.
528      GO TO 1009A.
529  ****************************************************************
530  *   IF FIRST 3-DIGITS (OBSERVATORY CODE CODE GWR)              *
531  *   ARE NOT ALPHABETIC----YOU PROBABLY HAVE THE WRONG DATA     *
532  *                                                              *
533  ****************************************************************
534  1008A.
535      IF  OBSM        IS NOT ALPHABETIC
536      MOVE INVALID-DATA TO MESSAGEX
537          PERFORM  MOVE-PRINT-MESS
538          GO TO JOB-ABORT.
539  1009A.
540      MOVE  OBSYRMO        TO D-L-OBSYRMO.
541  ****************************************************************
542  *                                                              *
543  *  LOOKUP THE ENGLISH TRANSLATION FOR THE                      *
544  *  CODE (CO = COLLEGE)                                         *
545  *                                                              *
546  ****************************************************************
547  1010A.
548      MOVE  OBSM TO OBS-NL.
549      PERFORM LOOKUP.
550      IF ELE = '*' PERFORM INDICES.
551  ****************************************************************
552  *                                                              *
553  *   IF THE FIRST DATA RECORD HAS NO HOUR                       *
554  *   PRINT THE HOURLY VALUE MESSAGE                             *
555  *   OTHERWISE YOU HAVE 2.5-MIN DATA AND PRINTOUT               *
556  *   2.5-MIN MESSAGE                                            *
557  *                                                              *
558  ****************************************************************
559  1011A.
560      IF HRM  = '  ' MOVE HV-MESS TO PRINT-LINE
561      PERFORM PRINT2LINES
562          GO TO 1012A.
563  ****************************************************************
564  *                                                              *
565  *   IF YOU HAVE 2.5-MIN VALUE DATA-----THERE ARE TWO TYPES     *
566  *   (1)---MILLIMETER SCALING DATA WHICH A SEQ NUMBER           *
567  *         IN CC13-17                                           *
568  *   (2)--- TV DATA (ABSOLUTE  GEOMAGNETIC VALUES               *
569  *         IN CC13-17 = BLANK*                                  *
570  *                                                              *
571  ****************************************************************
572      IF COUNTX  = ' '
573          MOVE  TV-MESS TO PRINT-LINE
574        ELSE MOVE MM-MESS TO PRINT-LINE.
575      PERFORM PRINT2LINES.
576  ****************************************************************
577  *                                                              *
578  *   IF YOU HAVE HOURLY VALUES THERE 2 TYPES                    *
579  *   (1)--- MILLIMETER VALUES ---CC 17-20 = BLANKS              *
580  *   (2)--- TV TABULAR VALUES OR ABSOLUTE VALUE)                *
581  *          IN CC17-20 = TAB                                    *
582  *                                                              *
583  ****************************************************************
584  1012A.
585      IF HRM NOT =     '  '  GO TO 1013A.
586      IF  CC-17-20  IS NOT EQUAL TO  '
587      MOVE TV-MESS TO PRINT-LINE
588     ELSE
589      MOVE MM-MESS TO PRINT-LINE.
590      PERFORM  PRINTERX.
591      GO TO 1013A.
592  1013A.
593      IF CC-15 = ' '  GO TO 1014A.
594      MOVE SPACES TO PRINT-LINE.
595      IF CC-15 = 'A'
596      MOVE 'ASMO' TO PRINT-LINE.
597      IF CC-15  = 'F'  MOVE 'FLEXGATE' TO PRINT-LINE.
598      IF CC-15  = 'T'  MOVE 'TRIPLE SENSOR' TO PRINT-LINE.
599      PERFORM PRINTERX.
600      GO TO 1014A.
```

```
601 *************************************************************
602 *                                                           *
603 *   BEGIN A NEW PAGE                                        *
604 *                                                           *
605 *************************************************************
606 1014A.
607     MOVE '*' TO OVERFLOW-ALC.
608     PERFORM PAGE-CHECK.
609     MOVE SPACES TO PRINT-LINE.
610     PERFORM PRINT2LINES.
611 *************************************************************
612 *                                                           *
613 *   STORE THE PRESENT INPUT ID                              *
614 *                                                           *
615 *************************************************************
616 1015A.
617     MOVE  CHECK-AREA TO PREVIOUS-HEADER.
618     GO TO 1019A.
619 *************************************************************
620 *                                                           *
621 *   D CHECK TO SEE IF PRESENT INPUT RECORD IS >              *
622 *   PREVIOUS INPUT RECORD                                   *
623 *   IF THIS STATEMENT IS TRUE CONTINUE---                   *
624 *           OTHERWISE YOU HAVE A                            *
625 *   IF THIS STATEMENT IS TRUE CONTINUE---                   *
626 *           ELSE THERE IS A PROGRAM*                        *
627 *   (1) DUPLICATE RECORD OR (2) OUT OF SEQUENCE RECORD      *
628 *                                                           *
629 *************************************************************
630 1016A.
631     IF  FULL-HEADER-STORE >
632                               PREVIOUS-OBSYRMOEDAHR
633     GO TO 1017A   ELSE
634         GO TO PROBLEM-CHECK.
635 *************************************************************
636 *                                                           *
637 *   IF YOU HAVE HOURLY VALUES----THIS CHECK  MEANS NOTHING  *
638 *   IF YOU HAVE VALUES---THIS CHECK DOES NOT MEAN ANYTHING  *
639 *   FOR 2.5-MIN VALUES---WE ONLY MAKE AN ENTRY ONE TIME     *
640 *   THEREFORE---AFTER ONE ENTRY HAS BEEN MADE DO NOT CHECK  *
641 *   FOR OTHER HOUR RECORDS FOR THE SAME DAY                 *
642 *                                                           *
643 *************************************************************
644 1017A.
645    IF   OBSYRMOEDA = PREVIOUS-OBSYRMOEDA
646         GO TO LOOP-CONTROL.
647 *************************************************************
648 *                                                           *
649 *   IF THE OBSERVATORY YEAR AND MONTH = PREVIOUS RECORD     *
650 *   CONTINUE ACCUMLATING ARRAY                  ELSE        *
651 *   YOU HAVE TO DO SOME HOUSECLEANING                       *
652 *                                                           *
653 *************************************************************
654 1018A.
655     IF OBSYRMO = PREVIOUS-OBSYRMO
656     MOVE CHECK-AREA TO PREVIOUS-HEADER GO TO 1019A.
657     GO TO  PRINT-LINE-LOOP.
658 *************************************************************
659 *                                                           *
660 *   THIS PARAGRAPH IS THE HEART OF THE PROGRAM              *
661 *   WE ARE BUILDING AN ARRAY                                *
662 *   WE ARE MAKING AN ENTRY FOR EACH DAY ELEMENT             *
663 *   DAYS ARE GROUPED INTO 5 DAYS AT A TIME SEPARATED        *
664 *   BY A SPACE                                              *
665 *   SO IF YOU HAVE DAY 1 YOU MAKE AN ENTRY INTO POSITION    *
666 *   ONE                                                     *
667 *   SO YOU HAVE DAY 6 YOU MAKE AN ENTRY INTO POSITION 7     *
668 *   (L+1)                                                   *
669 *                                                           *
670 *************************************************************
671 1019A.
672     IF DAM > '31' DISPLAY INA20-RECORD.
673     IF DAM < '01' DISPLAY INA20-RECORD.
674     IF DAM NOT NUMERIC DISPLAY INA20-RECORD.
675     MOVE DAM TO DAMH.
676    MOVE  DAN TO BINARY-DAY.
677     IF DAMH >
678             25  ADD 5 TO BINARY-DAY  GO TO 1020A.
679     IF DAMH >
680             20  ADD 4 TO BINARY-DAY  GO TO 1020A.
681     IF DAMH >
682             15  ADD 3 TO BINARY-DAY  GO TO 1020A.
683     IF DAMH >
684             10  ADD 2 TO BINARY-DAY  GO TO 1020A.
685     IF DAMH >
686             05  ADD 1 TO BINARY-DAY  GO TO 1020A.
687 *************************************************************
688 *                                                           *
689 *   AS WE BUILD THE ARRAY---THE ENTRY WE ARE MAKING IS      *
690 *   (1)-----D IF ELEMENT DECLINATION OR H,Z(F,X,Y           *
691 *                                                           *
692 *************************************************************
693 1020A.
694     MOVE ELE TO ELA.
695     IF ELA = 'D'  MOVE  'D' TO DATA-POSD (BINARY-DAY) GO TO
696     LOOP-CONTROL.
697     IF ELA = 'H'  MOVE  'H' TO DATA-POSH (BINARY-DAY) GO TO
698     LOOP-CONTROL.
699     IF ELA = 'Z'  MOVE  'Z' TO DATA-POSZ (BINARY-DAY) GO TO
700     LOOP-CONTROL.
```

```
701      IF ELA = '*'  MOVE  '*' TO DATA-POSD (BINARY-DAY) GO TO
702      LOOP-CONTROL.
703      IF ELA = 'X' GO TO 1021A.
704      IF ELA = 'Y' GO TO 1022A.
705      IF ELA = 'I' MOVE  'I'  TO DATA-POST (BINARY-DAY)
706      MOVE '1' TO SECOND-ARRAY  GO TO LOOP-CONTROL.
707      IF ELA = 'F' MOVE  'F'  TO DATA-POST (BINARY-DAY)
708      MOVE '1' TO SECOND-ARRAY  GO TO LOOP-CONTROL.
709      GO TO JOB-ABORT.
710  1021A.
711      IF DATA-POSD (BINARY-DAY) = ' ' MOVE  'X' TO
712         DATA-POSD (BINARY-DAY)  ELSE
713            MOVE 'X' TO DATA-POST (BINARY-DAY) MOVE '1' TO
714      SECOND-ARRAY.
715      GO TO LOOP-CONTROL.
716  1022A.
717      IF DATA-POSH (BINARY-DAY) = ' '  MOVE  'Y' TO
718         DATA-POSH (BINARY-DAY)  ELSE
719         MOVE 'Y'  TO  DATA-POST (BINARY-DAY) MOVE  '1' TO
720         SECOND-ARRAY.
721  LOOP-CONTROL.
722      GO TO LOOP-CONTROL1.
723  LOOP-CONTROL1.
724      IF BLOCKTYPE = '20' AND AETYPE = 'A' GO TO UREADA20.
725      IF BLOCKTYPE = '40' AND AETYPE = 'A' GO TO UREADA40.
726      IF BLOCKTYPE = '20' AND AETYPE = 'E' GO TO UREADE20.
727      IF BLOCKTYPE = '40' AND AETYPE = 'E' GO TO UREADE40.
728      DISPLAY 'ERROR--IN READ'.
729      STOP RUN.
730  UREADA20.
731      READ INA20
732      AT END DISPLAY TCOUNT ' ' INCOUNT
733      GO TO JOB-END-1.
734      MOVE INA20-13 TO INCOMING-RECORD.
735      GO TO UEXIT.
736  UREADA40.
737      READ INA40 INTO INCOMING-RECORD
738      AT END DISPLAY TCOUNT  ' ' INCOUNT
739      GO TO JOB-END-1.
740      GO TO UEXIT.
741  UREADE20.
742      READ INE20
743      AT END DISPLAY TCOUNT ' ' INCOUNT
744      GO TO JOB-END-1.
745      MOVE INE20-13 TO INCOMING-RECORD.
746      GO TO UEXIT.
747  UREADE40.
748      READ INE40
749      AT END DISPLAY TCOUNT ' ' INCOUNT
750      GO TO JOB-END-1.
751      MOVE INE40-13 TO INCOMING-RECORD.
752  UEXIT.
753      ADD 1 TO INCOUNT TCOUNT.
754      GO TO 1016A.
755  PRINT-LINE-LOOP.
756      IF  OBSYR NOT =    PREVIOUS-OBSYR
757          MOVE  '1' TO EXITX.
758  PRINT-LINE-LOOP-1.
759      PERFORM PAGE-CHECK.
760      IF OBSM  NOT =    PREVIOUS-OBS
761      MOVE OBSM TO OBS-NL
762      PERFORM LOOKUP.
763  PRINT-LINE-LOOP-2.
764      MOVE  DATA-LINEA TO PRINT-LINE.
765      WRITE PRINT-LINE-ALC.
766      ADD 1 TO PRINT-COUNT.
767      IF PRINT-COUNT  > 50  MOVE '*' TO OVERFLOW-ALC
768      MOVE 0 TO PRINT-COUNT.
769
770      IF SHORTTYPE NOT = 'N'
771      MOVE DATA-LINEA TO ADATA WRITE ARCHIVE-RECORD.
772      MOVE SPACES TO DATA-LINEA.
773
774      IF SECOND-ARRAY  = '1'  MOVE '0' TO SECOND-ARRAY
775          MOVE DATA-LINEB TO ADATA PERFORM WRITEARCH
776          MOVE DATA-LINEB  TO PRINT-LINE
777          PERFORM PRINTERX    MOVE SPACE TO DATA-LINEB.
778  PRINT-LINE-LOOP-2A.
779      IF  EXITX  = '1'
780          MOVE '0' TO EXITX GO TO PRINT-LINE-LOOP-3.
781  PRINT-LINE-LOOP-2B.
782      MOVE CHECK-AREA TO PREVIOUS-HEADER.
783      MOVE  OBSYRMO TO D-L-OBSYRMO.
784      GO TO 1019A.
785  PRINT-LINE-LOOP-3.
786      IF OVERFLOW-ALC = '*'
787          PERFORM PAGE-CHECK
788          GO TO PRINT-LINE-LOOP-2B.
789      MOVE  NAME-LINE  TO PRINT-LINE
790      PERFORM PRINT2LINES.
791      MOVE SPACES TO PRINT-LINE
792      PERFORM PRINT2LINES
793      MOVE SPACES TO DATA-LINEA
794      MOVE SPACES TO DATA-LINEB    GO TO
795      PRINT-LINE-LOOP-2B.
796  PROBLEM-CHECK.
797      IF  FULL-HEADER-STORE        = PREVIOUS-OBSYRMOEDAHR
798          ADD 1 TO DUPLICATE-COUNT
799          GO TO LOOP-CONTROL.
800  SEQUENCE-ERROR.
```

```
801      PERFORM PAGE-CHECK.
802      PERFORM PRINT-LINE-LOOP-2.
803      MOVE  OUT-OF-SEQ TO PRINT-LINE
804      PERFORM PRINT2LINES.
805      MOVE INCOMING-RECORD TO PRINT-LINE PERFORM PRINT.
806      IF OBSM  NOT =   OBS-NL
807          PERFORM 1010A.
808      GO TO   PRINT-LINE-LOOP-2B.
809  PAGE-CHECK.
810      IF OVERFLOW-ALC = '*'
811      MOVE ' ' TO OVERFLOW-ALC
812          MOVE  HEADERA TO PRINT-LINE
813      PERFORM PRINTNEWPAGE
814          MOVE  HEADERB TO PRINT-LINE
815      PERFORM PRINT2LINES
816          MOVE NAME-LINE  TO PRINT-LINE
817      PERFORM PRINT2LINES
818      MOVE SPACES TO PRINT-LINE
819      PERFORM PRINT.
820  UTILITY SECTION.
821  PRINTERX.
822      WRITE PRINT-LINE-ALC.
823      ADD 1 TO PRINT-COUNT.
824      IF PRINT-COUNT  > 50  MOVE '*' TO OVERFLOW-ALC
825      MOVE 0 TO PRINT-COUNT.
826  MOVE-PRINT-MESS.
827      MOVE BUILD-MESS  TO PRINT-LINE.
828      PERFORM PRINT2LINES.
829      IF OVERFLOW-ALC = '*'  PERFORM PAGE-CHECK.
830  JOB-END-1.
831      IF INCOUNT = 0 GO TO JOB-END-2.
832      IF BLOCKTYPE = '20' AND AETYPE = 'A'
833      MOVE INA20-RECORD TO INCOMING-RECORD
834      IF BLOCKTYPE = '40' AND AETYPE = 'A'
835      MOVE INA40-RECORD TO INCOMING-RECORD.
836      IF BLOCKTYPE = '20' AND AETYPE = 'E'
837      MOVE INE20-RECORD TO INCOMING-RECORD.
838      IF BLOCKTYPE = '40' AND AETYPE = 'E'
839      MOVE INE40-RECORD TO INCOMING-RECORD.
840      IF BLOCKTYPE = '20' AND AETYPE = 'A' CLOSE INA20.
841      IF BLOCKTYPE = '40' AND AETYPE = 'A' CLOSE INA40.
842      IF BLOCKTYPE = '20' AND AETYPE = 'E' CLOSE INE20.
843      IF BLOCKTYPE = '40' AND AETYPE = 'E' CLOSE INE40.
844      PERFORM PRINT-LINE-LOOP-2.
845      MOVE SPACES TO PRINT-LINE PERFORM PRINT.
846      MOVE INCOMING-RECORD TO PRINT-LINE PERFORM PRINT.
847      MOVE DUPLICATE-COUNT TO NUMBER-DUP.
848      MOVE INCOUNT TO NUMBER-INPUT.
849      MOVE J-E-1 TO PRINT-LINE.
850      PERFORM PRINT2LINES.
851      IF INCOUNT = 0         GO TO JOB-END-2.
852      IF DISCTYPE = 'D'      GO TO JOB-END-2.
853      MOVE INCOUNT TO ACOUNT PERFORM WRITEARCH.
854      MOVE 0 TO INCOUNT.
855      ADD 1 TO TNN.
856      MOVE TN TO MFILE.
857      MOVE SPACES TO PRINT-LINE PERFORM PRINTNEWPAGE.
858      PERFORM 1001A.
859      IF BLOCKTYPE = '20' AND AETYPE = 'A' OPEN INPUT INA20.
860      IF BLOCKTYPE = '40' AND AETYPE = 'A' OPEN INPUT INA40.
861      IF BLOCKTYPE = '20' AND AETYPE = 'E' OPEN INPUT INE20.
862      IF BLOCKTYPE = '40' AND AETYPE = 'E' OPEN INPUT INE40.
863      IF FILE-STATUS = '34' GO TO JOB-END-2.
864      MOVE TNN    TO AFILE.
865      MOVE 0 TO PRINT-COUNT.
866      GO TO 1003B.
867  JOB-END-2.
868      IF SHORTTYPE NOT = 'N'
869      CLOSE ARCHIVE-FILE.
870      MOVE SPACES TO PRINT-LINE PERFORM PRINT.
871      MOVE TCOUNT TO NUMBER-INPUT.
872      MOVE 0 TO NUMBER-DUP.
873      MOVE J-E-1 TO PRINT-LINE PERFORM PRINT.
874      DISPLAY 'TO PRINT THE MAPOUT   QPRINT ' TAPE41.
875      STOP RUN.
876  JOB-ABORT.
877      MOVE J-A TO MESSAGEX.
878      PERFORM  MOVE-PRINT-MESS.
879      MOVE SPACES TO PRINT-LINE
880      PERFORM PRINTERX.
881      MOVE  INCOMING-RECORD TO PRINT-LINE  PERFORM PRINTERX.
882      STOP RUN.
883  WRITEARCH.
884      IF SHORTTYPE NOT = 'N' WRITE ARCHIVE-RECORD.
885  ***************************************************************
886  *   IF THE ELEMENT IS AN *8 THEN THE OBSERVATORY CODE      *
887  *   REFERS TO THE TYPE OF INDICES AE,AL,AO,AU,DST          *
888  ***************************************************************
889  INDICES.
890      MOVE OBSM TO OBSMM.
891      IF OBSMM   =  'AE '     MOVE
892      'AE INDICES          ' TO OBS-NAME.
893      IF OBSMM   =  'AL '     MOVE
894      'AL INDICES          ' TO OBS-NAME.
895      IF OBSMM   =  'AO '     MOVE
896      'AO INDICES          ' TO OBS-NAME.
897      IF OBSMM   = 'AO' MOVE
898      'AU INDICES          ' TO OBS-NAME.
899      IF OBSMM   =  'DST'     MOVE
900      'DST INDICES         ' TO OBS-NAME.
```

```
901 ************************************************************
902 *                                                          *
903 *   TO STRAGY IS TO GO TO MIDDLE OF THE ARRAY AND          *
904 *   CHECK OBS. CODE.  THIS WAY WE HAVE DIVIDED             *
905 *   THE TABLE INTO 2 PARTS AND WE NOW ONLY HAVE            *
906 *   TO BE CONCERNED ABOUT 1 PART.   WE CONTINUE            *
907 *   THIS HALFING PROCESS UNTIL WE FIND THE CORRECT         *
908 *   OBSERVATORY CODE AND GET THE OBSERVATORY NAME          *
909 *                                                          *
910 ************************************************************
911 LOOKUP SECTION.
912 1000AT.
913     IF ELE   = '*' PERFORM INDICES GO TO R-2001.
914     IF OBS-NL = HOBS GO TO R-2001.
915     MOVE  300 TO SUB-W.
916     MOVE 150 TO INCREMENT.
917     MOVE 0 TO LOOP-CONTROLX.
918     MOVE 0 TO INCR.
919 COMPARE.
920     IF SUB-W < 1 GO TO FOUND-NO-NAME.
921     IF SUB-W > 600 GO TO FOUND-NO-NAME.
922     IF OBS-NL     =  TABLE-CODEPOS (SUB-W)
923     GO TO FOUND-NAME.
924 COMPARE-2.
925     IF LOOP-CONTROLX  =  1
926     GO TO FOUND-NO-NAME.
927 COMPARE-3.
928     IF SUB-W > 600 GO TO FOUND-NO-NAME.
929     IF OBS-NL      <  TABLE-CODEPOS (SUB-W)
930     GO TO COMPARE-INCR   ELSE
931     ADD INCREMENT  TO SUB-W
932     MOVE 1 TO INCR  GO TO COMPARE-INCREMENT.
933 COMPARE-INCR.
934     IF INCR  =  1
935     SUBTRACT  INCREMENT  FROM SUB-W  GO TO COMPARE-INCREMENT
936     ELSE MOVE INCREMENT TO SUB-W
937     GO TO COMPARE-INCREMENT.
938 COMPARE-INCREMENT.
939     IF INCREMENT  =  1
940     MOVE 1 TO LOOP-CONTROLX GO TO COMPARE
941     ELSE
942     COMPUTE  INCREMENT  ROUNDED  =  INCREMENT  /  2
943     GO TO COMPARE.
944 *** WE HAVE NOT FOUND THE OBS  CODE
945 FOUND-NO-NAME.
946     MOVE SPACES TO OBS-NAME.
947     GO TO R-2000.
948 FOUND-NAME.
949 R-2000.
950     MOVE TABLE-NAMEPOS (SUB-W)  TO OBS-NAME.
951     MOVE OBS-NL TO HOBS.
952 R-2001.
953     EXIT.
954 UTILITY1 SECTION.
955 PRINT.
956     WRITE PRINT-LINE-ALC.
957 PRINT2LINES.
958     WRITE PRINT-LINE-ALC AFTER ADVANCING 2 LINES.
959     ADD 2 TO PRINT-COUNT.
960     IF PRINT-COUNT > 50 MOVE '*' TO
961     OVERFLOW-ALC MOVE 0 TO PRINT-COUNT.
962 PRINTNEWPAGE.
963     WRITE PRINT-LINE-ALC AFTER ADVANCING PAGE.
964 UREADIT SECTION.
965 UREAD.
966     IF BLOCKTYPE = '20' AND AETYPE = 'A' GO TO UREADA20X.
967     IF BLOCKTYPE = '40' AND AETYPE = 'A' GO TO UREADA40X.
968     IF BLOCKTYPE = '20' AND AETYPE = 'E' GO TO UREADE20X.
969     IF BLOCKTYPE = '40' AND AETYPE = 'E' GO TO UREADE40X.
970     DISPLAY 'ERROR--IN READ'.
971     STOP RUN.
972 UREADA20X.
973     READ INA20
974     AT END DISPLAY TCOUNT ' ' INCOUNT
975     GO TO JOB-END-1.
976     MOVE INA20-13 TO INCOMING-RECORD.
977     GO TO UEXITX.
978 UREADA40X.
979     READ INA40
980     AT END DISPLAY TCOUNT  ' ' INCOUNT
981     GO TO JOB-END-1.
982     MOVE INA40-13     TO INCOMING-RECORD.
983     GO TO UEXITX.
984 UREADE20X.
985     READ INE20
986     AT END DISPLAY TCOUNT ' ' INCOUNT
987     GO TO JOB-END-1.
988     MOVE INE20-13 TO INCOMING-RECORD.
989     GO TO UEXITX.
990 UREADE40X.
991     READ INE40
992     AT END DISPLAY TCOUNT ' ' INCOUNT
993     GO TO JOB-END-1.
994     MOVE INE40-13 TO INCOMING-RECORD.
995 UEXITX.
996     EXIT.
997
998
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UAG- 6 INTERNATIONAL GEOPHYSICAL CALENDARS 1957-1969, by A.H. Shapley and J. Virginia Lincoln, ESSA Re search Laboratories, now NOAA, Boulder, CO, March 1969, 25 pp.

UAG- 7 OBSERVATIONS OF THE SOLAR ELECTRON CORONA: FEBRUARY 1964 - JANUARY 1968, by Richard T. Hansen, High Altitude Observatory, NCAR, Boulder, CO, and Kamuela, HI, October 1969, 12 pp.

UAG- 8 DATA ON SOLAR-GEOPHYSICAL ACTIVITY OCTOBER 24 - NOVEMBER 6, 1968, Parts 1 and 2, compiled by J. Virginia Lincoln, World Data Center A, Upper Atmosphere Geophysics, ESSA now NOAA, Boulder, CO, March 1970, 312 pp, $1.75 (includes Parts 1 and 2).

UAG- 9 DATA ON COSMIC RAY EVENT OF NOVEMBER 18, 1968, AND ASSOCIATED PHENOMENA, compiled by J. Virgini Lincoln, World Data Center A, Upper Atmosphere Geophysics, ESSA now NOAA, Boulder, CO, April 1970, 109 pp.

UAG-10 ATLAS OF IONOGRAMS, edited by A.H. Shapley, ESSA Research Laboratories now NOAA, Boulder, CO, May 1970, 243 pp, $1.50.

UAG-12 SOLAR-GEOPHYSICAL ACTIVITY ASSOCIATED WITH THE MAJOR GEOMAGNETIC STORM OF MARCH 8, 1970, Parts 1, 2 and 3, compiled by J. Virginia Lincoln and Dale B. Bucknam, World Data Center A, Upper Atmosphere Geophysics, ESSA now NOAA, Boulder, CO, April 1971, 466 pp, $3.00 (includes Parts 1-3)

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UAG-16 TEMPORAL DEVELOPMENT OF THE GEOPHYSICAL DISTRIBUTION OF AURORAL ABSORPTION FOR 30 SUBSTORM EVENTS IN EACH OF IQSY (1964-65) AND IASY (1960), by F.T. Berkey, University of Alaska, Fairbanks, AK; V.M. Driatskiy, Arctic and Antarctic Research Institute, Leningrad, USSR; K. Henriksen, Auroral Observatory, Tromso, Norway; D.H. Jelly, Communications Research Center, Ottawa, Canada; T.I. Shchuka, Arctic and Antarctic Research Institute, Leningrad, USSR; A. Theander, Kiruna Geophysical Observatory, Kiruna, Sweden; and J. Yliniemi, University of Oulu, Oulu, Finland, September 1971, 131 pp, $1.50 (microfiche only).

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UAG-24 DATA ON SOLAR-GEOPHYSICAL ACTIVITY ASSOCIATED WITH THE MAJOR GROUND LEVEL COSMIC RAY EVENTS OF 24 JANUARY AND 1 SEPTEMBER 1971, Parts 1 and 2, compiled by Helen E. Coffey and J. Virginia Lincoln, World Data Center A for Solar-Terrestrial Physics, NOAA, Boulder, CO, December 1972, 462 pp, $2.00 (includes Parts 1 and 2).

UAG-25 OBSERVATIONS OF JUPITER'S SPORADIC RADIO EMISSION IN THE RANGE 7.6-41 MHZ, 9 SEPTEMBER 1968 THROUGH 9 DECEMBER 1971, by James W. Warwick, George A. Dulk and David G. Swann, University of Colorado, Boulder, CO, February 1973, 35 pp.

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UAG-28 COLLECTED DATA REPORTS ON AUGUST 1972 SOLAR-TERRESTRIAL EVENTS, Parts 1, 2 and 3, edited by Helen E. Coffey, World Data Center A for Solar-Terrestrial Physics, NOAA, Boulder, CO, July 1973, 932 pp, $4.50.

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UAG-30 CATALOGUE OF DATA ON SOLAR-TERRESTRIAL PHYSICS, prepared by NOAA Environmental Data Service, Boulder, CO, October 1973, 317 pp, $1.75. Supersedes catalogs UAG-11, 15 and 20.

UAG-31 AURORAL ELECTROJET MAGNETIC ACTIVITY INDICES AE(11) FOR 1969, by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, February 1974, 142 pp.

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UAG-40 H-ALPHA SYNOPTIC CHARTS OF SOLAR ACTIVITY FOR THE PERIOD OF SKYLAB OBSERVATIONS, MAY 1973 - MARCH 1974, by Patrick S. McIntosh, NOAA Space Environment Laboratory, Boulder, CO, February 1975, 32 pp.

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UAG-42 OBSERVATIONS OF JUPITER'S SPORADIC RADIO EMISSION IN THE RANGE 7.6-80 MHZ, 10 DECEMBER 1971 THROUGH 21 MARCH 1975, by James W. Warwick, George A. Dulk and Anthony C. Riddle, University of Colorado, Boulder, CO, April 1975, 49 pp.

UAG-43 CATALOG OF OBSERVATION TIMES OF GROUND-BASED SKYLAB-COORDINATED SOLAR OBSERVING PROGRAMS, compiled by Helen E. Coffey, World Data Center A for Solar-Terrestrial Physics, NOAA, Boulder, CO, May 1975, 159 pp, $3.00.

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UAG-48A SYNOPTIC OBSERVATIONS OF THE SOLAR CORONA DURING CARRINGTON ROTATIONS 1580-1596 (11 OCTOBER 197 - 15 JANUARY 1973), [Re-issue of UAG-48 with quality images], by R.A. Howard, M.J. Koomen, D.J. Michels, R. Tousey, C.R. Detwiler, D.E. Roberts, R.T. Seal, and J.D. Whitney, U.S. Naval Research Laboratory, Washington, DC; and R.T. Hansen and S.F. Hansen, C.J. Garcia and E. Yasukawa High Altitude Observatory, NCAR, Boulder, CO, February 1976, 200 pp, $4.27. Supersedes UAG-48.

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UAG-61 COLLECTED DATA REPORTS FOR STIP INTERVAL II 20 MARCH - 5 MAY 1976, edited by Helen E. Coffey an John A. McKinnon, World Data Center A for Solar-Terrestrial Physics, Boulder, CO, August 1977, 313 pp, $2.95.

UAG-62 GEOMAGNETIC DATA FOR FEBRUARY 1976 [AE(7) INDICES AND STACKED MAGNETOGRAMS], by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, September 1977, 55 pp.

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UAG-84 CATALOG OF AURORAL RADIO ABSORPTION DURING 1976-1979 AT ABISKO, SWEDEN, by J.K. Hargreaves, C.M Taylor and J.M. Penman, Environmental Sciences Department, University of Lancaster, Lancaster, UK, July 1982, 69 pp, $3.00.

UAG-85 CATALOG OF IONOSPHERE VERTICAL SOUNDINGS DATA, edited by Raymond O. Conkright and H. Irene Brophy, National Geophysical Data Center, NOAA, Boulder, CO, July 1982, 107 pp. Supersedes UAG-54

UAG-86 INTERNATIONAL CATALOG OF GEOMAGNETIC DATA, compiled by J.H. Allen and C.C. Abston, National Geophysical Data Center, NOAA, Boulder, CO; E.P. Kharin and N.E. Papitashvili, Academy of Sciences of the USSR, World Data Center B2, Moscow, USSR; and V.O. Papitashvili, IZMIRAN, Moscow Region, USSR, November 1982, 191 pp. Supersedes UAG-35 and 49.

UAG-87 CHANGES IN THE GLOBAL ELECTRIC FIELDS AND CURRENTS FOR MARCH 17-19, 1978, FROM SIX IMS MERIDIAN CHAINS OF MAGNETOMETERS, by Y. Kamide, Kyoto Sangyo University, Kyoto, Japan; H.W. Kroehl, National Geophysical Data Center, NOAA, Boulder, CO; and A.D. Richmond, NOAA Space Environment Laboratory, Boulder, CO, November 1982, 102 pp, $3.50.

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UAG-89 ATMOSPHERIC HANDBOOK: ATMOSPHERIC DATA TABLES AVAILABLE ON COMPUTER TAPE, by V.E. Derr, NOAA Environmental Research Laboratories, Boulder, CO, July 1984, 56 pp.

UAG-90 EXPERIENCE WITH PROPOSED IMPROVEMENTS OF THE INTERNATIONAL REFERENCE IONOSPHERE (IRI): CONTRIBUTED PAPERS, MAINLY FROM THE URSI-COSPAR WORKSHOP HELD IN BUDAPEST IN 1980, edited by K. Rawer, University of Freiburg, Federal Republic of Germany, and C.M. Minnis, former Secretary General of URSI, Brussels, Belgium, May 1984, 233 pp, $6.00.

UAG-91 COMBINED CATALOG OF IONOSPHERE VERTICAL SOUNDINGS DATA, compiled by Raymond O. Conkright and Marcus O. Ertle, National Geophysical Data Center, NOAA, Boulder, CO; December 1984, 174 pp.

UAG-92 INTERNATIONAL CATALOG OF GEOMAGNETIC DATA, compiled by C.C. Abston, National Geophysical Data Center, NOAA, Boulder, CO; N.E. Papitashvili, Academy of Sciences of the USSR, World Data Center B2, Moscow, USSR; and V.O. Papitashvili, IZMIRAN, Moscow Region, USSR, August 1985, 291 pp. Supersedes UAG-35, 49, 86.

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DATA ANNOUNCEMENT

STP-85-3
March 1985

UNITED STATES AND CANADIAN DIGITAL GEOMAGNETIC OBSERVATORY DATA 1978-1983

The National Geophysical Data Center (NGDC) announces the availability of digital geomagnetic data from the United States and Canadian Standard Observatory Networks. The United States observatories are operated by the United States Geological Survey (USGS). The Canadian observatories are operated by the Energy Mines and Resources Canada, Division of Seismology and Geomagnetism. Both organizations supply their data to NGDC/WDC-A for STP. The data are 1.0-minute average samples of geomagnetic variations relative to absolute baselines and hourly averages. It should be noted that in the near future all 12 U.S. standard observatories will be converted to digital recording systems.

Locations of Observatories—United States

Observatories		Corrected Geomagnetic Coordinates N LAT	E LONG	Geographic Coordinates LAT	W LONG
BRW	Barrow, AK	21.1	242.6	71.3	156.8
BOU	Boulder, CO	41.0	318.2	40.1	105.2
CMO	College, AK	25.1	258.1	64.9	147.8
SIT	Sitka, AK	29.8	277.1	57.1	135.3

Locations of Observatories—Canada

ALE	Alert	4.0	165.2	82.5	62.5
BLC	Baker Lake	16.2	317.7	64.3	96.0
CBB	Cambridge Bay	13.2	297.3	69.1	105.0
FCC	Fort Churchill	21.3	325.0	58.8	94.1
GLL	Glenlea	30.6	325.2	49.6	97.1
GWC	Great Whale River	23.5	349.5	55.3	77.8
MEA	Meanook	28.0	303.0	54.6	113.3
MBC	Mould Bay	10.6	258.3	76.2	119.4
OTT	Ottawa	33.3	353.4	45.4	75.6
RES	Resolute Bay	6.8	292.9	74.7	94.9
STJ	St. John's	31.8	22.9	47.6	52.7
VIC	Victoria	35.6	294.7	48.5	123.4
YKC	Yellowknife	20.8	295.4	62.4	114.4

The data are available on magnetic tape at the following costs; Two (2) observatory years on one (1) tape at 9 track, 1600 bpi, ASCII or EBCDIC for $100; Six (6) observatory years on one (1) tape at 9 track, 6250 bpi, ASCII or EBCDIC for $115.

To order, either call (303) 497-6475 or write the National Geophysical Data Center, Solar-Terrestrial Physics Division (E/GC2), 325 Broadway, Boulder, CO 80303 U.S.A. With your written request please include check or money order payable in U.S. currency to COMMERCE, NOAA/NGDC. Payment may be made through American Express, MasterCard or VISA credit cards. Please include the correct name of credit card holder, card number, and expiration date. Prices are subject to change.

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