International Geophysical Calendar for 1972

(See other side for information on the use of this Calendar)

JANUARY

S	M	T	W	T	F	S
						1
2	[3	[4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

FEBRUARY

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29				

MARCH

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12*	13*	14*	15*	16*	17*	18*
19	20	21	22	23	24	25
26	27	28	29	30	31	

APRIL

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	[21	[22
23	24	25	26	27	28	29
30						

MAY

S	M	T	W	T	F	S
	1	2	3	[4]	[5]	[6]
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

JUNE

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	[8]*	[9]*	[10]*
[11]*	[12]*	13*	14*	15	16	17
18	19	20	21	22	[23]	[24]
25	26	27	28	29	30	

JULY

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26]	[27]	[28]	[29]
[30]	31]					

AUGUST

S	M	T	W	T	F	S
		1]	2	3	4	5
6	7	8	9	[10	[11	[12
[13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

SEPTEMBER

S	M	T	W	T	F	S
					1	2
3	4*	5*	6*	7*	8*	9*
10*	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

OCTOBER

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	[20]	[21]
22	23	24	25	26	27	28
29	30	31				

NOVEMBER

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	[16]	[17]	18
19	20	21	22	23	24	25
26	27	28	29	30		

DECEMBER

S	M	T	W	T	F	S
					1	2*
3*	4]*	5]*	6]*	7*	8*	9
10	11	[12]	[13]	[14]	15	16
17	18	19	20	21	[22	23
24	25	26	27	28	29	30
31						

1973 JANUARY

S	M	T	W	T	F	S
	1	2	[3]	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

(18) Regular World Day (RWD)

(16) Priority Regular World Day (PRWD)

◇19 Quarterly World Day (QWD) also a PRWD and RGD

5 Regular Geophysical Day (RGD)

10 Day of Solar Eclipse

* Micropulsation Interval Day

10 11 World Geophysical Interval (WGI)

[3 Day with unusual meteor shower activity, Northern Hemisphere

4] Day with unusual meteor shower activity, Southern Hemisphere

12 13 Airglow and Aurora Period

Notes: D-region Winter Anomaly Program planned Jan. 15 — Feb. 15, 1972.
Atmospheric Electricity Intensification Interval of Ten Year Program is Jan. 26 — Feb. 25, 1972.
Campaign for Integrated Observation of Solar Flares (CINOF) planned 5-10, 12-17 and 19-24 June 1972.
International Hydrological Decade Field Year continues through Sept. 30, 1972.

EXPLANATIONS

This Calendar continues the series begun for the IGY years 1957-58, and is issued annually to recommend dates for solar and geophysical observations which cannot be carried out continuously. Thus, the amount of observational data in existence tends to be larger on Calendar days. The recommendations on data reduction and especially the flow of data to **World Data Centers (WDCs)** in many instances emphasize Calendar days. The Calendar is prepared by the **International Ursigram and World Days Service (IUWDS)** with the advice of spokesmen for the various scientific disciplines. For greater detail concerning explanations or recommendations your attention is called to information published periodically in **STP Notes, IAGA News, IUGG Chronicle, URSI Information Bulletin** or other scientific journals.

The definitions of the designated days remain as described on previous Calendars. **Universal Time (UT)** is the standard of time for all world days. **Regular Geophysical Days (RGD)** are each Wednesday. **Regular World Days (RWD)** are three consecutive days each month, always Tuesday, Wednesday and Thursday near the middle of the month. **Priority Regular World Days (PRWD)** are the RGD which fall on Wednesdays. **Quarterly World Days (QWD)** are one day each quarter and are the PRWD which fall in the **World Geophysical Intervals (WGI)**. The **WGI** are fourteen consecutive days in each season, beginning on the second Monday of the selected months, and normally shift from year to year. In 1972 the **WGI** will be in January, April, July and October.

The **Solar Eclipses** are January 4 (annular) observable from tip of South America across Antarctica and Western Australia into Indian Ocean, and July 10 (total) observable from Siberia across northern coast of Alaska and Hudson Bay to mid-Atlantic. Geophysical stations in the eclipse zones and their conjugate areas treat these days as world days and undertake special programs to study eclipse effects on the earth's atmosphere.

Meteor Showers (selected by P. M. Millman, Ottawa) include important visual showers and also unusual showers observable mainly by radio and radar techniques. The dates are coded to indicate whether the shower is observable in the northern or southern hemisphere.

The occurrence of unusual solar or geophysical conditions is announced or forecast by the IUWDS through various types of geophysical **"Alerts"** which are widely distributed by telegram and radio broadcast on a current schedule. Stratospheric warmings **(STRATWARM)** are also designated. The meteorological telecommunications network coordinated by WMO carries these worldwide Alerts once daily soon after 0400 UT. For definitions of Alerts see IUWDS "Synoptic Codes for Solar and Geophysical Data, Second Revised Edition 1969" and its amendments. **Retrospective World Intervals** are selected and announced in **STP Notes** and elsewhere to provide additional analyzed data for particular events studied in the Inter-Union Commission on Solar-Terrestrial Physics (IUCSTP) projects.

RECOMMENDED SCIENTIFIC PROGRAMS
OPERATIONAL EDITION

(The following material was reviewed in 1971 by spokesmen of IUCSTP and at the XIV Meeting of COSPAR and at XV IUGG Assembly as suitable for coordinated geophysical programs in 1972).

Airglow and Auroral Phenomena. Airglow and auroral observatories operate with their full capacity around the New Moon periods. However, for progress in understanding the mechanism of, inter alia, low latitude aurora, the coordinated use of all available techniques, optical and radio, from the ground and in space is required. Thus, for the airglow and aurora periods on the Calendar ionosonde, incoherent scatter, special satellite or balloon observations, etc., are especially encouraged.

Atmospheric Electricity. Not-continuous measurements and data reduction for continuous measurements of atmospheric electric current density, field, conductivities, space charges, ion number densities, ionosphere potentials, condensation nuclei, etc.; both at ground as well as with radiosondes, aircraft, rockets; should be done with first priority on the **RGD** each Wednesday, beginning on 5 January 1972 at 0600 UT, 12 January at 1200 UT, 19 January at 1800 UT, 26 January at 0000 UT, 2 February at 0600 UT, etc. (beginning hour shifts six hours each week, but is always on a Wednesday). Minimum program is at the same time on **PRWD** beginning with 19 January at 1800 UT. Data reduction for continuous measurements should be extended, if possible, to cover at least the full RGD including, in addition, at least 6 hours prior to indicated beginning time. Measurements prohibited by bad weather should be done 24 hours later. Results on sferics and ELF are wanted with first priority for the same hours, short-period measurements centered around the minutes 35-50 of the hours indicated. The World Data Centre for Atmospheric Electricity, 7 Karbysheva, Leningrad K-18, USSR, is the collection point for data and information on measurements. The fourth Intensification Interval of the Ten Year Program will be 26 January – 25 February 1972 with highest priority 14-25 February.

Geomagnetic Phenomena. It has always been a leading principle for geomagnetic observatories that operations should be as continuous as possible and the great majority of stations undertake the same program without regard to the Calendar. Special efforts recommended are:

(a) Micropulsations: to improve the cooperation between observatories in the analysis of worldwide distribution of different types of micropulsations, it is recommended both to the fixed observatories as well as to research groups making special investigations of micropulsations to conduct quick run registrations of pulsations in the following time intervals during the year: March 12-18, June 8-14, September 4-10, December 2-8. These periods coincide with the **Airglow and Aurora Periods.**

(b) Stations equipped for making magnetic observations, but which cannot carry out such observations and reductions on a continuous schedule are encouraged to carry out such work at least on **RWD** (and during times of **MAGSTORM** Alert).

Ionospheric Phenomena. Special attention is continuing on particular events which cannot be forecast in advance with reasonable certainty. These will be identified by Retrospective World Intervals. The importance of obtaining full observational coverage is therefore stressed even if it is possible to analyze the detailed data only for the chosen events. In the case of vertical incidence soundings, the need to obtain quarter-hourly ionograms at as many stations as possible is particularly stressed and takes priority over recommendation (a) below when both are not practical.

For the vertical incidence (VI) sounding program, the summary recommendations are: (a) soundings to be made at five minute intervals on **RWDs** for stations normally making observations every quarter hour; all other stations are recommended to make at least quarter-hourly observations on RWDs; (b) f-plots are made for high latitude stations and for the so-called "representative" stations at lower latitudes for all days (i.e., including **RWDs** and **WGIs**), (Continuous records of ionospheric parameters are acceptable in place of f-plots at temperate and low latitude stations); (c) profile parameters hc, qc or recommended similar parameters to be determined and sent to WDCs for **RWDs** for all stations except those undertaking full profile programs or producing monthly median profiles; (d) copies of hourly ionograms with appropriate scales for **RWDs** are to be sent to WDCs; (e) stations in the eclipse zone and its conjugate area should take continuous observations on solar eclipse days and special observations on adjacent days. See also recommendations under **Airglow and Auroral Phenomena.**

For incoherent scatter observation program, every effort should be made to obtain measurements at least on all **RWDs** and intensive series should be attempted whenever possible in **WGIs** or the **Airglow and Aurora Periods.** The need for collateral VI observations with not more than quarter-hourly spacing at least during all observation periods is stressed.

For the ionospheric drifts program, observations are made at least on all **RWDs**, on all **WGIs**, on every Wednesday **(RGDs)** and on every Thursday. It is essential that sufficient observations be made to determine the diurnal variations. Hourly tabulations for all days mentioned are sent to the WDCs.

For the ionospheric absorption program, hourly observations are made at least on all **RWDs** and hourly tabulations sent to WDCs. Observations should be continuous on **solar eclipse** days for stations in eclipse zone and in its conjugate area. Special efforts should be made to obtain additional absorption measurements at temperate latitude stations during the period of Absorption Winter Anomaly, particularly on days of abnormally high or abnormally low absorption (approximately November-March, Northern Hemisphere; May-September, Southern Hemisphere). January 15 to February 15, 1972, there will be a D-region winter anomaly program, primarily for rocket experimenters at Wallops Island. Details are available from Dr. C. F. Sechrist, Jr., Aeronomy Laboratory, Dept. EE, University of Illinois, Urbana, Ill., 61801.

For back-scatter and forward-scatter programs, observations should be made and analyzed on all **RWDs** at least.

For synoptic observations of mesospheric (D region) electron densities, several groups have agreed on using the **RGD** for the hours around noon.

For ELF noise measurements involving the earth-ionosphere cavity resonances any special effort should be concentrated during the **WGIs.**

It is recommended that more intensive observations in all programs be considered on days of **unusual meteor activity.**

Meteorology. Particular efforts should be made to carry out an intensified program on the **RGD** – each Wednesday, UT. A desirable goal would be the scheduling of meteorological rocketsondes, ozone sondes and radiometer sondes on these days, together with maximum-altitude rawinsonde ascents at both 0000 and 1200 UT.

During **WGI** and **STRATWARM** Alert intervals, intensified programs are also desirable, preferably by the implementation of **RGD**-type programs (see above) on Mondays and Fridays, as well as on Wednesdays.

Solar Phenomena. Observatories making specialized studies of solar phenomena, particularly using new or complex techniques, such that continuous observation or reporting is impractical, are requested to make special efforts to provide to WDCs data for **solar eclipse** days, **RWDs**, and during **PROTONALERTs** or **XRAYALERTs.** The attention of those recording solar noise spectra, solar magnetic fields and doing specialized optical studies is particularly drawn to this recommendation. A special international campaign will be held between June 5-24, 1972 to study the life history of at least one solar flare by a complete set of integrated observations (CINOF) under chairmanship of C. de Jager, Astronomical Institute at Utrecht, Netherlands.

Space Research, Interplanetary Phenomena, Cosmic Rays, Aeronomy. Experimenters should take into account that observational effort in other disciplines tends to be intensified on the days marked on the Calendar, and schedule balloon and rocket experiments accordingly if there are no other geophysical reasons for choice. In particular it is desirable to make rocket measurements of ionospheric characteristics on the same day at as many locations as possible; where feasible, experimenters should endeavor to launch rockets to monitor at least normal conditions on the **Quarterly World Days (QWD)** or on **RWDs**, since these are also days when there will be maximum support from ground observations. Also, special efforts should be made to assure recording of telemetry on **QWD and Airglow and Aurora Periods** of experiments on satellites and of experiments on spacecraft in orbit around the sun. An intercomparison of meteorological rockets is planned for February 1972 at Thumba.

The International Ursigram and World Days Service (IUWDS) is a permanent scientific service of the International Union of Radio Science (URSI), with the participation of the International Astronomical Union and the International Union Geodesy and Geophysics. IUWDS adheres to the Federation of Astronomical and Geophysical Services of the International Council of Scientific Unions. The IUWDS coordinates the international aspects of the world days program and rapid data interchange, and also publishes subsequently **Condensed Calendar Records** of solar and geophysical indices and events, published in STP Notes.

This Calendar for 1972 has been drawn up by A. H. Shapley, Chairman, and J. V. Lincoln, Deputy Secretary, of the IUWDS Steering Committee, in close association with the IUCSTP Commission and the Reporters and spokesmen for the various scientific disciplines and COSPAR. Similar Calendars have been issued annually beginning with the IGY, 1957-58, and have been published in various widely available scientific publications.

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Additional copies are available upon request to IUWDS Secretary, Dr. P. Simon, Ursigrammes Observatoire, 92 Meudon, France, or IUWDS Deputy Secretary, Miss J. V. Lincoln, WDC-A Upper Atmosphere Geophysics, NOAA, Boulder, Colorado, 80302, U.S.A.