U.S. DEPARTMENT OF COMMERCE
Maurice H. Stans, Secretary
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
Robert M. White, Administrator
ENVIRONMENTAL DATA SERVICE
Thomas S. Austin, Director

ENVIRONMENTAL RESEARCH LABORATORIES

Solar-Geophysical Data

(Prompt Reports)

NUMBER 322 PART I
DATA FOR
MAY 1971
APRIL 1971

DATA COMPILED BY AERONOMY AND SPACE DATA CENTER
BOULDER, COLORADO

WASHINGTON, D.C.
JUNE 1971

SOLAR-GEOPHYSICAL DATA

Table of Contents

	Page
Part I	
Index for 1970 and 1971	2
Data for May 1971	3-27
Data for April 1971	29-103
Part II	
Index for 1970 and 1971	2
Data for December 1970	3-82
Data for November 1970	83-91
Miscellaneous Data X-ray Spectroheliograms--OSO-5 February 1971	93-97

Edited by:
Miss Hope I. Leighton under the supervision of
Miss J. Virginia Lincoln, Aeronomy and Space Data Center.

For obtaining bulletins on a data exchange basis, send request to World Data Center A, Upper Atmosphere Geophysics, NOAA, Boulder, Colorado 80302.

For sale through the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402. Catalog Order Number: C52.18. Subscription Price: $30.50 annually for both Part I (Prompt Reports) and Part II (Comprehensive Reports) or $15.50 annually for either part. Extra issue included. For foreign mailing add $8.00 for both parts or $4.00 for either part. Single issue price $1.25 for either part and 75¢ for the extra issue. To order single issues include Issue No. and Part No. with Catalog No.; for example, C52.18: (No. 316) Part I.

To standardize referencing these reports in the open literature, the following format is recommended:

Solar-Geophysical Data, CRPL-FB 135*, pages, issue date, U.S. Department of Commerce, (Boulder, Colorado, U.S.A. 80302)

*CRPL-FB 135 through 269
IER-FB 270 through 298
299 Part I or 299 Part II to number of current issue

INDEX FOR 1970 - 1971 DATA PUBLISHED IN "SOLAR-GEOPHYSICAL DATA"

		1970 Sep	Oct	Nov	Dec	1971 Jan	Feb	Mar	Apr	May
A.	Solar and Interplanetary Phenomena									
A.1	Sunspot Drawings	315	316	317	318	319	320	321	322	
A.2a	Zürich Provisional Relative Sunspot Numbers R_Z	314	315	316	317	318	319	320	321	322
A.2b	Zürich Final Sunspot Numbers R_Z	319	319	319	319					
A.2c	American Relative Sunspot Numbers R_A	314	315	316	317	318	319	320	321	322
A.3a	Mt. Wilson Magnetograms	315	316	317	318	319	320	321	322	
A.3b	Mt. Wilson Magnetic Characteristics of Sunspots	315	316	317	318	319	320	321	322	
A.4	Hα Spectroheliograms	315	316	317	318	319	320	321	322	
A.5	Calcium Plage Drawings - McMath (or Catania)	315	316	317	318	319	320	321	322	
A.5a	Calcium Plage (McMath) and Sunspot Regions	315	316	317	318	319	320	321	322	
A.5b	McMath Daily Calcium Plage Index	---	---	---	320	320	320	321	322	
A.7b	Coronal Line Emission	315	316	317	318	319	320	321	322	
A.8aa	2800 MHz - Daily Values of Solar Flux (ARO-Ottawa)	314	315	316	317	318	319	320	321	322
A.8ac	2800 MHz - Daily Values of Adjusted Solar Flux (ARO-Ottawa)	314	315	316	317	318	319	320	321	322
A.8g	15,400, 8800, 4995, 2695, 1415, 606, 245 MHz Adj. Solar Flux (AFCRL)	314	315	316	317	318	319	320	321	322
A.9a	9.1 cm Radio Maps of the Sun (Stanford)	315	316	317	318	319	320	321	322	
A.9b	21 cm Radio Maps of the Sun (Fleurs)	315	316	317	318	319	320	321	322	
A.9c	8.6 mm Radio Maps of the Sun (Prospect Hill)	315	316	317	318	319	320	321	322	
A.10a	169 MHz - Interferometric Observations (Nançay)	314	315	316	318	318	319	320	321	322
A.10b	408 MHz - Interferometric Observations (Nançay)	314	315	316	318	318	319	320	321	322
A.10c	21 cm East-West Solar Scans (Fleurs)	314	315	316	317	318	319	320	321	322
A.10d	43 cm East-West Solar Scans (Fleurs)	314	315	316	317	318	319	320	321	322
A.10e	10.7 cm East-West Solar Scans (Ottawa-ARO)	314	315	316	317	318	319	320	321	322
A.11aa	Solar X-ray Radiation (Explorer 37)	315	316	317	318	319	320	321	322	
A.11ab	Solar X-ray Radiation (Explorer 37) (Graphs)	319	320	321	322					
A.11e	Solar X-ray Spectroheliograms (OSO-5)	316	316	317	318	319	322	321	322	
A.12aa	Solar Protons (Explorer 41) Daily hourly values									
A.12ab	Solar Protons (Explorer 41) Graphs									
A.12ba	Cosmic Ray Protons (Pioneers 6 & 7)	314	315	316	317	318	319	320	321	322
A.12bb	Cosmic Ray Protons (Pioneers 8 & 9)	314	315	316	317	318	319	320	321	322
A.12c	Cosmic Ray Protons (ATS-1)	314	315	316	317	318	319	320	321	322
A.13a	Solar Wind (Pioneers 6 & 7)	314	315	316	317	318	319	320	321	322
A.13b	Solar Wind (Vela 3 & 5)	314	315	316	317	318	319	320	321	322
B.	Ionospheric (and Radio Wave Propagation) Phenomena									
B.51ca	High Latitude Quality Figures and Forecasts	315	316	317	318	319	320	321	322	
B.51cb	High Latitude Comparison Graphs	315	316	317	318	319	320	321	322	
B.52	Graphs of Transmission Frequency Range	315	316	317	318	319	320	321	322	
B.53	Quality Figures based on Frequency Ranges	314	315	316	317	318	319	320	321	
C.	Flare-Associated Events									
C.1a	Optical Observations Flares	314	315	316	317	318	319	320	321	322
C.1ba	Optical Observations Flares (Including Standardized Data)	319	320	321						
C.1d	Flare Patrol Observations	314	315	316	317	318	319	320	321	322
C.1e	Flare Indices (by day)	319	320	321	322					
C.1f	Flare index by region	320	321	322						
C.3	Solar Radio Waves - Fixed Frequencies - Outstanding Occurrences	319	320	321	322					
	- Selected	---	---	---	---	---	319	320	321	322
C.4aa	10-2000 MHz - (Fort Davis)	315	316	317	318	319	320	321	322	
C.4b	7.6-80 MHz - (University of Colorado)	---	317	317	318	319	320	321	322	
C.4d	8-8000 MHz - (Culgoora)	315	316	317	318	319	320	321	322	
C.4e	30-1000 MHz - (Weissenau, G.F.R.)	315	316	318	318	319	320	321	322	
C.4f	24-48 MHz - (AFCRL, Sagamore Hill)	315	316	317	318	319	320	321	322	
C.4g	20-60 MHz - (Clark Lake Radio Observatory)	315						321	322	
C.5b	Solar X-ray Radiation (Explorers 33 & 35)	319	320	321	322					
C.5c	Solar X-ray Radiation (Explorer 37)	315	316	317	318	319	320	321	322	
C.6	Sudden Ionospheric Disturbances	314	315	316	317	318	319	320	321	322
D.	Geomagnetic and Magnetospheric Phenomena									
D.1a	Geomagnetic Indices Ci, Cp, Kp, Ap - Selected Days	315	316	317	318	319	320	321	322	
D.1b	27-Day Chart of Kp Indices for Year	318	318	318	318					
D.1c	27-Day Chart of C9 for Year	318	318	318	318					
D.1d	Principal Magnetic Storms	315	316	317	318	319	320	321	322	
D.1e	Reduced Magnetograms	---	320	321	322					
D.1f	Sudden Commencement and Solar Flare Effects	317	318	318	318	319	320	321	322	
F.	Cosmic Rays									
F.1a	Cosmic Ray Neutron Counts (Deep River)	315	316	317	318	319	320	321	322	
F.1b	Cosmic Ray Neutron Counts (Climax)	315	316	317	318	319	320	321	322	
F.1c	Cosmic Ray Neutron Counts (Dallas)	315	316	317	318	319	320	321	322	
F.1d	Cosmic Ray Neutron Counts (Churchill)	315	316	317	318	319	320	321	322	
F.1e	Cosmic Ray Neutron Counts (Alert)	315	316	317	318	319	320	321	322	
F.1f	Cosmic Ray Neutron Counts (Calgary)					319	320	321	322	
F.1g	Cosmic Ray Neutron Counts (Sulphur Mountain)					319	320	321	322	
H.	Miscellaneous									
H.60	IUWDS Alert Decisions	314	315	316	317	318	319	320	321	322
H.62	Abbreviated Calendar Record	320	321	322						

Table of Contents
for May 1971 Data

	Page
Alert Period	
IUWDS Alert Periods (Advance and Worldwide)	5
Daily Solar Indices	
12-Month Tables Sunspot Numbers, R_Z, and 2800 MHz Flux Adjusted to 1 A.U.	6
Combined Table Sunspot Numbers and Solar Fluxes	7
Graphs of Sunspot Cycle	8
Zurich Smoothed Observed and Predicted Sunspot Numbers	9
Solar Flares	
Flares of Numerical Importance 1 or Greater	10-11
Subflares	12
No-Flare-Patrol Chart	13
Solar Radio Waves	
408 MHz Solar Interferometric Chart - Nançay	14
169 MHz Solar Interferometric Chart - Nançay	15
10.7 cm East-West Solar Scans - ARO, Ottawa	16
21 cm East-West Solar Scans - Fleurs	17
43 cm East-West Solar Scans - Fleurs	18
Selected Fixed-Frequency Occurrences	19-20
Selected Solar Noise Burst	21
Solar Wind	
Pioneer 6 and 7	22
Vela 3 and 5	23
Cosmic Ray Protons	
Pioneers 6 and 7	24
Pioneers 8 and 9	25
ATS-1	26-27

For explanations of the data contained herein see "Descriptive Text" published in February 1971.

ALERT PERIODS

INTERNATIONAL URSIGRAM
AND WORLD DAYS SERVICE

MAY 1971

MAY 1971	TIME OF ISSUE UT	ADVANCE GEOPHYSICAL ALERT	WORLDWIDE GEOPHYSICAL ALERT	
			NO.	TYPE INCLUDING FLARE ACTIVITY EXPECTED
01	0400			EIGHT QUIET; SOLNIL
02	0400			FIVE QUIET; SOLNIL
03	0400			SEVEN QUIET; SOLNIL
	1419	CANARIES TENFLARE 203 PERCENT 03/1412A IN PROGRESS AT 03/1419Z		
04	0400			SIX QUIET; SOLNIL
05	0400			N14E23 ERUPTIVE; SIX QUIET; SOLNIL
06	0400			N13E10 ERUPTIVE; FOUR QUIET; SOLNIL
07	0400		07239	MAGSTORM BEGINS 05/16XX GRADUAL COMMENCEMENT
			07240	SOLALERT; N13W02 ERUPTIVE; THREE QUIET
08	0400		08241	MAGSTORM EXISTS MINOR
			08242	SOLALERT; N13W13 ERUPTIVE; THREE QUIET
09	0400		09243	MAGSTORM EXISTS MINOR
			09244	SOLALERT; N13W29 ERUPTIVE; TWO QUIET
10	0400		10245	MAGSTORM ENDS 09/06XX
			10246	SOLALERT; N13W40 ERUPTIVE; FOUR QUIET
11	0400		11247	SOLALERT; N13W51 ERUPTIVE; FIVE QUIET
12	0400		12248	SOLALERT; N13W69, N04E71 ERUPTIVE; SIX QUIET
13	0400		13249	SOLALERT; N12W82 ACTIVE; N06E58 ERUPTIVE; FOUR QUIET
	1937	OTTAWA TENFLARE 258 FLUX UNITS ABOVE BACKGROUND. 13/1904Z IN PROGRESS		
14	0400		14250	SOLALERT; N12W90 ACTIVE; N06E45 ERUPTIVE; SEVEN QUIET
	1450	OTTAWA TENFLARE 255 FLUX UNITS ABOVE BACKGROUND 14/1411Z 18 MINUTES IN DURATION PBI IN PROGRESS 14/1445Z		
15	0400			N04E34, N05E07 ERUPTIVE; SEVEN QUIET; SOLNIL
16	0400			N04E15 ERUPTIVE; EIGHT QUIET; SOLNIL
17	0400			N05E03 ERUPTIVE; TWELVE QUIET; SOLNIL
	1243	BOULDER MAGSTORM BEGINS 17/0030Z GRADUAL ONSET		
18	0208	KAKIOKA MAGSTORM BEGINS 17/0625Z		
	0400		18251	MAGSTORM BEGINS 17/00XX MINOR; EIGHT QUIET
19	0400		19252	MAGSTORM EXISTS MINOR; SIX QUIET
20	0400		20253	MAGSTORM ENDS 19/09XX; SIX QUIET; SOLNIL
21	0400			FIVE QUIET; SOLNIL
22	0400			FOUR QUIET; SOLNIL
23	0400			FOUR QUIET; SOLNIL
24	0400			TWO QUIET; SOLNIL
25	0400			THREE QUIET; SOLNIL
26	0400			N12E38 ERUPTIVE; ZERO QUIET; SOLNIL
27	0400			S07W22 ERUPTIVE; ONE QUIET; SOLNIL
28	0400			S08W37 ERUPTIVE; TWO QUIET; SOLNIL
29	0400			S07W50 ERUPTIVE; FOUR QUIET; SOLNIL
30	0400		30254	MAGALERT 31 MAY/5 JUNE; FIVE QUIET
31	0400		31255	MAGSTORM BEGINS 30/0737Z MINOR; SIX QUIET

RELATIVE SUNSPOT NUMBERS

ZURICH, R_Z

	1970 FINAL							1971 PROVISIONAL				
DAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY
1	102	137	77	98	63	86	91	58	77	76	59	41
2	92	153	68	104	57	82	78	62	78	90	56	46
3	64	155	64	110	43	80	78	62	68	82	58	52
4	63	159	59	115	55	78	76	69	80	70	56	59
5	59	165	65	120	75	67	88	52	65	53	65	65
6	57	161	68	133	53	89	90	52	73	47	58	64
7	58	125	72	136	72	86	91	56	75	47	59	72
8	61	115	82	125	76	69	100	66	60	46	61	70
9	60	104	76	116	78	77	96	74	37	35	43	67
10	92	90	71	103	79	78	110	70	37	34	52	73
11	122	81	75	82	75	97	120	68	62	43	46	61
12	138	74	73	76	80	89	110	75	50	63	86	62
13	153	79	92	73	84	105	90	70	63	76	100	76
14	165	68	94	76	87	117	85	67	60	65	113	73
15	168	61	108	75	87	125	84	61	69	68	126	75
16	153	61	100	68	94	133	68	65	66	76	104	81
17	148	59	99	65	84	135	63	68	62	76	98	62
18	134	56	108	75	76	135	79	86	68	79	104	43
19	105	92	113	98	83	132	95	98	87	63	110	40
20	99	92	117	114	70	128	104	104	91	50	103	40
21	96	120	117	129	69	119	101	106	91	51	98	38
22	96	122	108	109	73	105	97	105	100	55	82	30
23	87	106	101	104	89	96	85	96	87	55	55	15
24	102	110	116	129	100	77	66	99	98	51	50	16
25	126	122	114	114	111	62	75	82	93	48	44	25
26	127	138	109	107	117	65	64	88	69	49	53	35
27	114	153	91	87	142	74	53	111	66	55	50	49
28	113	146	101	85	131	89	50	99	71	49	49	65
29	124	153	114	81	139	78	59	95		44	48	56
30	127	122	120	77	126	103	74	74		56	36	58
31		108	111		117		68	76		52		60
MEAN	106.8	112.5	93.0	99.5	86.6	95.2	83.5	77.9	71.5	58.2	70.7	53.8

1970 yearly mean = 104.5

DAILY SOLAR FLUX AT 2800 MHz
OTTAWA ARO

FLUX ADJUSTED TO 1 A.U., S_a

	1970							1971				
DAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY
1	145.6	179.9	134.0*	154.1	128.7	163.3	146.4	130.5	165.6	129.2	100.5	95.3
2	141.8	189.0*	128.5	156.7	125.4	159.1	148.4*	134.8	160.5	125.8	107.6	99.6
3	133.4	194.6*	127.9	163.2*	126.0	153.2*	148.1	134.7	154.7	121.7	109.0	106.2
4	131.7	195.0	127.4	163.4*	137.3	148.3	154.0	140.2	148.6*	116.0*	107.7	112.6
5	132.9*	191.0	128.4	162.3*	134.5	147.5	161.9*	146.1	144.7	113.7	108.3	117.9
6	130.0	186.4	128.0	161.5	128.0*	149.8	167.5	146.9	143.7	109.1	107.3*	125.6
7	134.5*	166.3	128.2	164.4	133.3	150.6	166.5*	150.2	133.4	105.2	113.2	131.1
8	134.2	160.4	131.8	156.9	142.0	141.1	167.3	149.1	123.2	104.0	110.1	132.7
9	138.2	148.4	138.3	157.2	144.9*	141.9	171.5	152.8*	110.4	104.5	108.9	138.3
10	145.9	143.8	137.3	143.9	147.6	147.8	170.9	152.1	109.5	107.0	109.8	135.8*
11	169.5	137.7	127.2	134.4	142.8	155.6	172.6*	149.0	109.7	109.5	124.1	135.3*
12	171.7	135.4	136.9*	126.1	135.4	165.1*	178.4*	150.5	110.5	115.3	129.7	130.2
13	200.3*	130.7	149.7	120.1	131.8*	179.1	164.3	148.1	113.2	112.5	139.6*	125.0
14	207.4*	126.3	167.0*	121.9	134.9*	186.4*	154.6	153.9	114.8	111.7	141.0	122.3
15	209.2	121.9	169.1	118.0	140.2*	200.0	154.1	153.7	117.1*	110.3	140.0*	118.0
16	198.6	121.4	162.5	118.4	134.0	193.5	146.7	156.4*	129.8	114.5	139.6	116.1
17	190.6	125.9	151.6*	116.9	131.5	184.1*	146.8	155.3	132.6	116.1	139.9	112.8
18	181.8	131.0	149.0	120.7	138.5	193.1*	151.6*	160.3	130.4	114.2	137.2*	111.2
19	175.1*	135.8	145.4	134.7*	139.0	185.5*	152.4*	165.8	138.5*	109.1	138.4*	109.8*
20	163.3	136.4	148.6	146.9	137.2	173.7	155.6	169.2*	136.2*	106.3*	136.8	106.0
21	160.6	150.6*	142.8	149.4	136.5	163.3*	146.3*	178.7	136.1	112.6	128.9	102.0
22	150.1*	163.8	141.7	155.2	135.0	154.2	136.8*	180.6	143.6	112.4	120.5	93.4
23	143.7	158.7*	146.2	161.6	149.0	142.4	132.1	182.9	143.2	108.2	117.5*	89.7
24	142.3	164.0	140.2	156.0*	161.2*	133.9	124.4	177.0	147.5	107.8	109.1*	88.9
25	149.3	169.0	136.5	155.8	168.6*	127.9	124.0	168.6*	146.4	108.3	106.0	92.3
26	151.4	176.3	135.7	155.9	187.1	129.3	122.3	164.9	143.2	107.8	104.8	93.7
27	160.0	185.9	137.2*	145.0	191.8	135.1	119.8	166.7	140.0	108.5	101.7	103.9
28	160.5	182.1	141.6	144.5*	190.3	148.9	117.3	166.2	136.6	106.2	97.5	107.0
29	168.0*	161.0	148.7	138.7	189.0	148.4	123.4	160.7		103.4	95.8	108.5
30	174.8	156.1	149.0	134.7	175.2	152.5	129.0*	163.0		100.9	94.8	110.3
31		141.5	154.5		168.6		133.3	170.1		102.9		111.6
MEAN	159.9	157.0	141.6	144.6	147.3	158.5	148.0	157.4	134.4	110.8	117.5	112.4

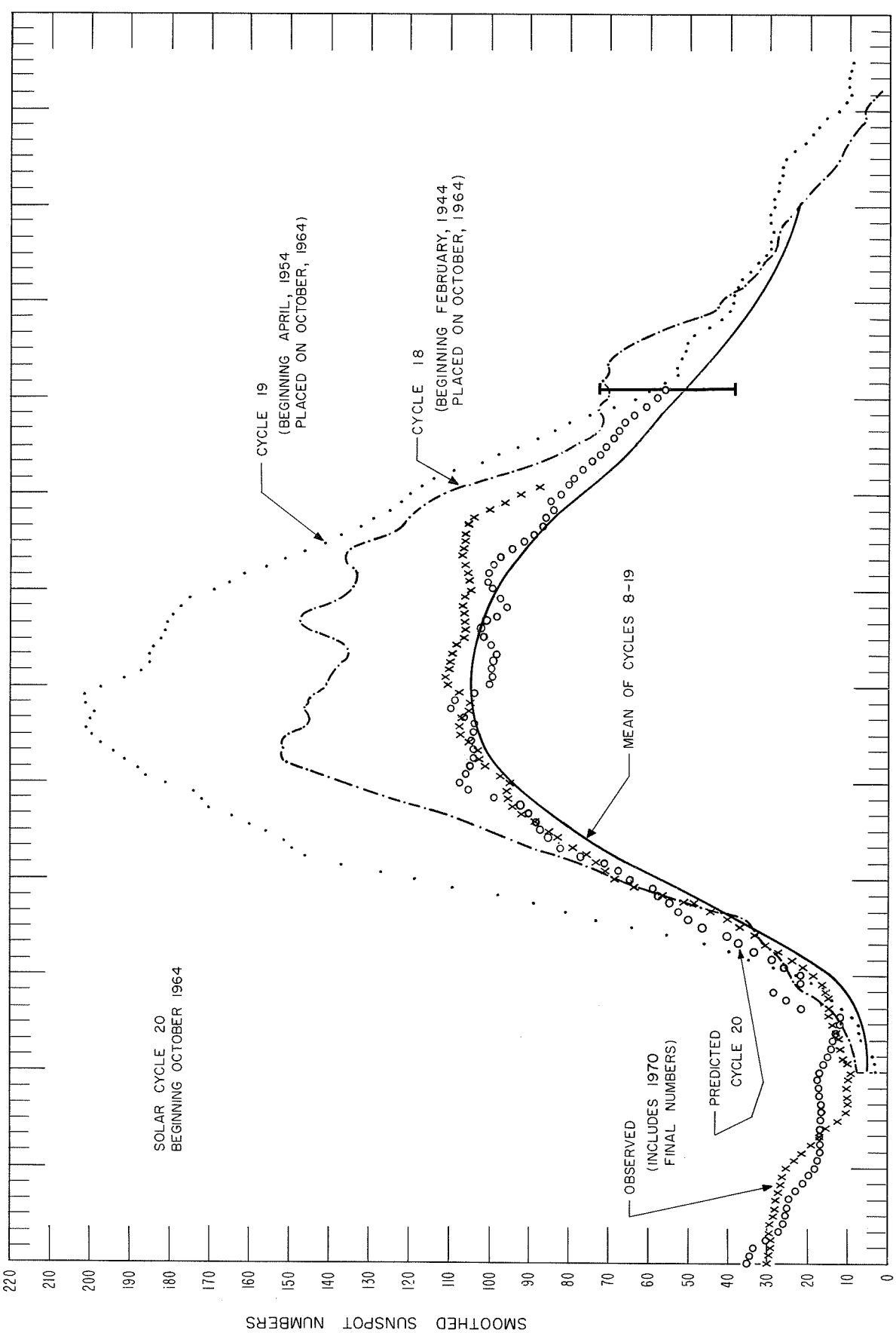
* adjusted for burst

DAILY SOLAR INDICES

MAY 1971

MAY 1971	YEAR DAY	BARTELS 27-DAY CYCLE NUMBER	SUNSPOT NUMBERS		OBSERVED FLUX OTTAWA 2800	SOLAR FLUX ADJUSTED TO 1 A.U.							
			R_Z	$R_{A'}$		AFCRL 15400	AFCRL 8800	AFCRL 4995	OTTAWA 2800	AFCRL 2695	AFCRL 1415	AFCRL 606	AFCRL 245
01	121	11	41	42	93.8	513	217	159	95.3	90.9	62.3	46.9	9.7
02	122	12	46	47	98.0	519	226	166	99.6	94.5	63.5	47.9	9.7
03	123	13	52	48	104.4	532	228	171	106.2	100.2	67.9	50.7	--
04	124	14	59	61	110.7	519	230	180	112.6	107.1	71.7	52.2	11.4
05	125	15	65	66	115.8	527	242	193	117.9	112.8	71.8	54.9	12.7
06	126	16	64	60	123.4	529	250	205	125.6	120.5	75.3	57.0	20.9
07	127	17	72	62	128.7	530	251	217	131.1	123.1	72.7	62.2	28.5
08	128	18	70	63	130.2	521	246	215	132.7	124.8	75.9	60.3	22.0
09	129	19	67	65	135.7	532	245	215	138.3	127.9	87.2	60.9	38.2
10	130	20	73	73	133.1*	528	242	209	135.8*	132.1	87.1	60.9	18.0
11	131	21	61	83	132.6*	529	247	210	135.3*	132.1	82.8	61.8	11.7
12	132	22	62	79	127.5	525	243	199	130.2	123.4	82.3	60.7	11.1
13	133	23	76	82	122.4	524	238	191	125.0	120.8	85.5	61.1	9.9
14	134	24	73	77	119.7	525	239	192	122.3	116.0	82.0	59.9	9.5
15	135	25	75	65	115.5	521	234	180	118.0	112.9	76.0	60.6	9.6
16	136	26	81	58	113.5	519	230	175	116.1	110.9	79.3	58.6	9.4
17	137	27	62	53	110.3	520	231	175	112.8	110.6	76.1	56.1	9.0
18	138	1	43	43	108.6	521	229	174	111.2	106.6	74.0	55.2	8.8
19	139	2	40	44	107.2*	517	231	176	109.8*	106.6	74.1	52.0	9.2
20	140	3	40	43	103.5	518	226	170	106.0	102.7	73.5	53.4	8.9
21	141	4	38	40	99.5	507	218	165	102.0	98.3	67.3	49.5	9.0
22	142	5	30	36	91.1	513	218	147	93.4	82.9	64.2	46.0	8.9
23	143	6	15	10	87.4	507	222	151	89.7	82.8	57.6	45.5	8.7
24	144	7	16	15	86.6	508	221	154	88.9	82.0	58.5	46.9	8.5
25	145	8	25	84	90.0	510	221	160	92.3	85.8	60.3	47.1	10.1
26	146	9	35	36	91.2	508	224	161	93.7	91.4	60.8	48.0	10.1
27	147	10	49	53	101.2	513	232	171	103.9	99.0	66.2	50.2	26.7
28	148	11	65	66	104.2	513	231	171	107.0	102.3	70.1	51.5	17.6
29	149	12	56	67	105.5	518	233	172	108.5	103.0	69.7	52.3	12.3
30	150	13	58	73	107.3	521	233	169	110.3	102.3	72.5	50.9	17.8
31	151	14	60	58	108.6	518	233	176	111.6	104.3	72.0	50.1	15.4
MEAN			53.8	54.6	109.9	529	233	180	112.4	106.8	72.3	53.9	13.8

* Adjusted for Burst



PREDICTED AND OBSERVED SUNSPOT NUMBERS

SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS
CYCLE 20

MONTH	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1964										9.6	10.2	11.0
1965	11.7	12.0	12.5	13.6	14.6	15.0	15.5	16.4	17.4	19.7	22.3	24.5
1966	27.7	31.3	34.5	37.4	40.7	44.6	50.3	56.6	63.1	67.6	70.2	72.7
1967	75.0	78.8	82.2	84.6	87.4	91.3	94.1	95.3	95.3	95.0	97.1	100.6
1968	102.6	102.9	104.7	107.2	107.6	106.6	105.2	104.8	107.0	109.9	110.6	110.1
1969	110.0	109.6	108.0	106.4	106.2	106.1	105.8	106.4	105.4	104.1	104.6	104.9
1970	105.6	106.0	106.2	106.1	105.8	105.3	103.3	99.5	96.2	91.9	87.2	83.7 (3)
1971	80.1 (5)	76.6 (6)	74.0 (7)	71.0 (8)	67.6 (9)	65.1 (10)	63.6 (11)	61.9 (12)	59.5 (14)	57.2 (16)	55.6 (17)	54.0 (17)
1972	52.4 (18)	51.3 (19)	50.1 (19)	49.0 (18)	47.8 (19)	46.3 (19)	43.8 (20)	41.1 (21)	39.3 (23)	38.4 (25)	37.5 (25)	36.3 (26)
1973	35.1 (26)	34.0 (26)	32.8 (25)	31.3 (25)	30.2 (25)	29.1 (24)	28.2 (23)	27.7 (23)	26.9 (23)	25.8 (23)	24.6 (21)	23.6 (20)
1974	22.5 (20)	21.3 (20)	20.2 (21)	19.5 (21)	19.0 (21)	18.2 (21)	17.2 (20)	16.0 (19)	14.8 (18)	13.6 (18)	12.5 (17)	11.7 (17)
1975	11.5 (16)	11.2 (15)										

For each month, the upper figure is the observed or predicted Zürich smoothed sunspot number. The lower figure in parenthesis is the corresponding absolute value of the 90% prediction interval, an indication of the uncertainty above and below the predicted number. Observed numbers are those with no prediction intervals. The observed smoothed sunspot numbers are based on final Zürich numbers through 1970.

Beginning in July 1968 the predicted sunspot numbers were derived from a regression analysis based on Cycles 1 through 19. At that time new statistical tests were performed to determine whether the population was homogeneous. From the results of these tests it was not possible to prove conclusively that the first 7 cycles were from a different population. Recently, more sophisticated statistical techniques have been applied to this problem. Although it has still not been proven conclusively that the first 7 cycles are from a different population, there is more evidence now that this may be the case. Until this question has been resolved, the predicted sunspot numbers will be derived from a regression analysis based on Cycles 8 through 19 instead of 1 through 19.

SOLAR FLARES

PARTIAL LISTING

Solar Flares for which at least one observatory has assigned a numerical importance of "1" or greater.

MAY 1971

OBSERVATORY	OBSERVED UT DATE 1971 MAY	START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	DURATION MIN.	IMPORTANCE	OBS. COND.	TYPE	MEASUREMENTS TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	REMARKS
RAMY	03	1410	1427	1412	N15	E48	.779		7.2	17	SB	2	C		1.34				F
CAPF	03	1412	1420D		N15	E49	.789	11294	7.3	8D	1N		P	1413	1.65	2.72			
MCMA	03	1412	1428	1413	N15	E48	.779	11294	7.2	16	SB		C	1413	.93	1.50			E
BOUL	03	1415	1427	1415	N15	E45	.748	11294	7.0	12	1B	3	V						
CATA	03	1415	1430	1415	N13	E48	.773		7.2	15	SB		C	1415	.58	.94		309	
HERS	03	1416E	1420	1416E	N18	E46	.770		7.0	4D	SB		P	1416	.89	1.20			CDJ
PALE	04	0423	0438D	0432	N14	E32	.594		6.6	15D	SN	1	C		.45				
MANI	04	0430	0445	0434	N12	E32	.582	11294	6.6	15	1B	1		0434	1.03	1.30			
MANI	04	0654	0700	0656	N12	E34	.607	11294	6.8	6	1B	1		0656	.62	.77			
PALE	05	0135	0213	0149	N12	E22	.454		6.7	38	SN	3	C		.72				F
KODA	05	0136E	0202		N13	E22	.462	11294	6.7	26D	1N		P	0142	2.53	2.50			
CAPF	05	1210E	1225D		N12	E16	.381	11294	6.7	15D	1N		P	1213	3.30	3.68			
RAMY	05	1211	1231D	1218	N13	E15	.382		6.6	20D	1B	3	C		5.00				ZU
MEUD	05	1211	1219D		N12	E18	.404		6.9	8D	1N			1219	3.09	3.30			UZ
MONT	05	1212	1243D	1220	N11	E15	.358		6.6	31D	1B		C	1220	5.67				H
MCMA	05	1225E	1430		N13	E17	.404	11294	6.8	125D	1B		C	1230	2.58	2.80			FHIL
MEUD	05	1225E	1250		N13	E18	.415		6.9	25D	1N			1230	4.13	4.40			H
MONT	05	1229E	1243D	1230	N15	E20	.459		7.0	14D	SN		C	1230	.52				
HERS	05	1231E	1248	1231E	N14	E17	.415	11294	6.8	17D	1N		P	1231	2.37	2.60		115	EL
CAPF	07	0655E	0740D		N15	W03	.322	11294	7.1	45D	2N		P	0657	6.81	7.26			
HTPR	07	0655	0656D		N14	W05	.313		6.9	1D	SN			0656	1.34	1.40			E
CATA	07	0700E	0725D	0705	N14	W03	.306		7.1	25D	SN		P	0705	1.62	1.72		186	Z
LOCK	07	1625E	1645D	1625E	N15	W 8	.345		7.1	20D	SF		C						
MONT	07	1634	1643	1635	N13	W07	.309		7.2	9	SN		C	1635	.72				
ONDR	07	1635E	1641		N14	W09	.337		7.0	6D	1F		V	1636			2.40		CJ
MCMA	07	1635	1641	1636	N13	W07	.309	11294	7.2	6	SF		C	1636	.41	.40			E
CATA	07	1635	1645	1635	N13	W08	.315		7.1	10	SN		C	1635	.69	.74		190	
ONDR	08	0642E	0653		N05	E63	.895	11301	13.0	11D	1N		V	0646			2.70		C
CAPF	08	0810E	0830D		N11	W20	.416	11294	6.8	20D	1F		P	0813	3.92	4.37			
ARCE	08	0900	1000D	0915	N06	E90	1.000	11305	15.1	60D	1F		C	0915	.42	2.40			H
CATA	08	0910	0935	0915	N04	E90	1.000		15.1	25	SF		C	0915	.52			135	
CATA	08	0950	1025D	0955	N04	E90	1.000		15.2	35D	SN		P	0955	.40			158	
RAMY	08	1304	1330	1311	N15	W18	.433		7.2	26	SB	3	C		.83				D
HTPR	08	1305	1326	1313	N15	W18	.433		7.2	21	SN			1313	1.03	1.10			E
MONT	08	1305	1326	1315	N16	W19	.455		7.1	21	1B		C	1315	2.58				
CAPS	08	1305	1330		N16	W14	.405		7.5	25	SB	3	V	1307	.60	.70		204	C
ONDR	08	1306E	1326		N13	W22	.459	11294	6.9	20D	1B		V	1311			3.40		CJ
WEND	08	1308	1329	1316	N15	W18	.433	11294	7.2	21	1N		P		6.19				
MCMA	09	1416	1435	1420	N08	E40	.662	11301	12.6	19	SB		C	1420	.41	.60			EH
WEND	09	1416	1436	1421	N04	E42	.677	11301	12.7	20	1N		P		4.13				
ONDR	09	1417	1431		N05	E40	.654	11301	12.6	14	1N		V	1420			3.00		CHJ
CAPS	09	1420	1439		N06	E43	.694		12.8	19	SF	1	V	1422	.70	1.00		152	C
WEND	11	0856	0930D		N13	W65	.917	11294	6.5	34D	1N		P		3.09				
MANI	12	0131E	0322	0201	N15	W72	.959		6.7	111D	SB	2		0201	3.61	8.50			
KODA	12	0152	0229	0200	N13	W70	.947	11294	6.8	37	1N		C	0154	3.27	3.30	2.12		K
MANI	12	0201E	0216	0212	N05	E80	.986	11313	18.1	15D	1N	2		0212	.93	2.39			
WEND	12	0923E	0955D		N15	W80	.988	11294	6.4	32D	1N		V		3.09				
MONT	12	0946E	0958D	0949	N14	W78	.982		6.6	12D	SN		C	0949	1.55				
CATA	12	0950E	1010D	1005	N14	W90	1.000		5.7	20D	1F		P	1005	1.27			138	
MEUD	12	0957E	1022		N13	W90	1.000		5.7	25D	SF								
MEUD	12	1049	1101D		N13	W90	1.000		5.7	12D	SF								
MONT	12	1051E	1101	1051	N12	W85	.997		6.1	10D	SN		C	1051	.72				
CATA	12	1055E	1125D	1055	N13	W90	1.000	11294	5.7	30D	1B		P	1055	1.04		204.00		
LOCK	12	1833	1905	1842	N12	W81	.990	11294	6.7	32	1F		C						
ONDR	13	0803	0838		N04	E53	.803	11313	17.3	35	1N		V	0815			2.60		CHJK
MANI	13	0806	0820	0813	N05	E57	.843		17.6	14	SN	2		0813	1.03	1.78			
ISTA	13	0807	0818		N05	E56	.834		17.5	11	SB								D
CAPS	13	0808	0826		N02	E52	.790		17.2	18	SB	1	V	0810	.50	.80			C
MONT	13	0809E	0824	0815	N03	E56	.832		17.5	15D	SB		C	0815	2.06				
ARCE	13	0810E	0831		N06	E52	.795		17.2	21D	SN		C	0810	.59	1.00			
ARCE	13	0845	0952D	0910	N04	E27	.467		15.4	67D	SN		C	0910	1.17	1.30			K
MONT	13	0846	1002	0939	N03	E29	.494	11312	15.5	76	1N		C	0939	2.58				
CATA	13	0925E	1010D	0925	N03	E27	.464		15.4	45D	SB		P	0925	1.44	1.64		214	T
MONT	13	1020	1027	1023	N03	E55	.822		17.6	7	SN		C	1023	1.55				
HURB	13	1024E	1037D	1025	N05	E55	.824	11313	17.6	13D	1F						1.64		
BOUL	13	1750U	1808	1753U	N 9	W81	.989		7.7	18U	SF	1	C	1753	.11	-0.00			
MCMA	13	1751	1830	1756	N12	W90	1.000	11294	7.0	39	2B		C	1756					XY
PALE	13	1752	1815	1801	N08	W90	1.000		7.0	23	1N	2	C		.72				F
BOUL	13	1817	1822	1818	N11	W90	1.000		7.0	5	SN	2	V						
HTPR	14	0802	0818	0806	N02	E13	.239		15.3	16	SF			0806	.72	.70			
CATA	14	0810E	0900D	0825	N03	E14	.261		15.4	50D	SN		P	0825	2.02	2.09		186	

SOLAR FLARES

MAY 1971

OBSERVATORY	OBSERVED UT DATE 1971 MAY	START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	DURATION MIN.	IMPORTANCE	OBS. COND.	TYPE	MEASUREMENTS TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	REMARKS
ARCE	14	0816	0845	0820	N04	E15	.283		15.5	29	SN		C	0820	1.10	1.40			H
MANI	14	0820E	0827D	0822	N02	E16	.287		15.5	7D	SN	2		0822	.83	.86			
CAPS	14	0822	0837		N05	E18	.335		15.7	15	SF	4	V	0824	.60	.70		152	CH
HURB	14	0846E	0910D	0848	N04	E14	.268	11312	15.4	24D	1N						2.20		
HURB	14	0857E	0921D	0902	N05	E42	.678	11313	17.5	24D	1N						2.08		
ONDR	14	1022E	1044		N06	E19	.357	11312	15.9	22D	2N		V	1028			2.80		CJ
HTPR	14	1023	1035	1027	N02	E12	.224		15.3	12	SN			1027	1.03	1.00			E
RAMY	14	1023	1059	1027	N03	E12	.230		15.3	36	SN	1	C		1.24				D
MONT	14	1024	1034	1027	N04	E15	.283		15.6	10	SN		C	1027	1.55				
CAPS	14	1025	1052		N06	E14	.284	11312	15.5	27	1N	3	P	1028	2.20	2.30		182	C
HURB	14	1025E	1032D	1026	N04	E15	.283		15.6	7D	1N						1.79		
ISTA	14	1025	1035		N02	E10	.192		15.2	10	SF								
CATA	14	1042E	1050D	1042	N03	E13	.246		15.4	8D	SN		P	1042	1.39	1.43		174	
RAMY	14	1410	1550	1417	N03	E10	.200		15.3	100	1B	2	C		4.54				US
HTPR	14	1410	1455	1428	N05	E10	.219		15.3	45	1B			1428	5.16	5.00			ET
MCMA	14	1411	1720	1425	N03	E10	.200	11312	15.3	189	1B		C	1425	3.61	3.50			FLSX
ONDR	14	1411	1520		N03	E15	.277	11312	15.7	69	3B		V	1418			5.10		CFJLR
CAPS	14	1412	1551	1434	N05	E10	.219	11312	15.3	99	2B	2	P	1434	8.50	8.70		288	CU
CATA	14	1415E	1440D	1435	N03	E11	.215		15.4	25D	2B		P	1435	6.96	7.14		339	
BOUL	14	1416E	1442D	1421	N 3	E10	.200		15.3	26D	1N	1	C	1421	2.58	2.58			
HURB	14	1420E	1521	1423	N04	E10	.209		15.3	61D	2B						2.55		
HERS	14	1439E	1525D	1439E	N03	E10	.200	11312	15.4	46D	1B		P	1439	4.46	4.50			BF
LOCK	14	1440E	1630	1440	N 4	E11	.224		15.4	110D	2B		C						
PALE	14	1619E	1637	U	N03	E11	.215		15.5	18D	SF	2	C						F
MCMA	18	1440E	1545	1502	N03	W17	.306	11313	17.3	65D	1B		C	1502	2.32	2.30			EV
LOCK	18	1445	1535	1510	N 5	W19	.348		17.2	50	1N		C						
CATA	18	1451E	1520D	1451	N04	W17	.311		17.3	29D	1B		P	1451	2.32	2.44		269	T
ONDR	18	1456	1509E	1505	N04	W16	.296	11313	17.4	13D	2N		V	1505			3.00		CJ
HERS	18	1515E	1540	1515E	N05	W18	.333	11313	17.3	25D	1N		P	1515	4.75	4.80		46	F
RAMY	19	2114	2132	2118	N05	W34	.570		17.3	18	SN	2	C		1.03				F
LOCK	19	2123E	2123D	2123U	N 4	W36	.595	11313	17.2		1N		C						
WEND	20	0603	0835	0639	N04	W40	.649	11313	17.3	152	3B		P		25.78				
ONDR	20	0604E	0655	0615	N02	W39	.632	11313	17.3	51D	2N		V	0615			2.90		CHJK
BUCA	20	0605E	0812D		N06	W41	.666	11313	17.2	127D	2F		C	0630	4.42	5.80			
CAPS	20	0719	0737		N05	W40	.651	11313	17.3	18	3F	1	P	0724	9.00	12.60		189	BU
LOCK	22	1627	1640	1632	N 8	E36	.605		25.4	13	SF		C						
PALE	22	1630	1728	1656	N09	E34	.582		25.2	58	1B	3	C		2.07				UD
CATA	22	1640E	1720D	1705	N08	E34	.578		25.2	40D	1B		P	1705	1.86	2.26		224	
LOCK	22	1650	1730	1657	N 8	E33	.564		25.2	40	SB		C						
MCMA	22	1655E	1725		N10	E33	.573	11328	25.2	30D	SB		C	1700	.83	1.00			E
CATA	24	0940	0945D	0940	N10	E63	.897	11338	29.1	5D	1N		P	0940	1.04	2.38		186	T
HURB	24	0943E	0955D	0945	N15	E63	.902		29.1	12D	SN						1.77		D
HURB	25	0601E	0619D	0609	N12	E48	.761	11338	28.9	18D	1B						2.59		H
MANI	25	0712E	0756	0729	N14	E50	.787		29.0	44D	SN	2		0729	.52	.83			
CATA	25	0725	0800	0730	N10	E50	.778		29.1	35	SN		C	0730	.80	1.35		282	T
CAPF	25	0727E	0750D		N12	E51	.793	11338	29.1	23D	1N		P	0730	2.27	3.96			
MONT	25	0840	0912D	0910	N13	E51	.795		29.2	32D	SN		C	0910	1.13				H
CATA	25	0910	1000	0945	N10	E49	.767		29.1	50	SB		C	0945	.93	1.47		269	T
HURB	25	0911E	1000D	0911	N12	E47	.750	11338	28.9	49D	1N						2.13		
ARCE	25	0916E	1003D		N12	E49	.772		29.1	47D	SN		C	0916	.62	1.00			
HURB	27	0753E	0800D	0753	S08	W25	.435	11340	25.5	7D	1N						2.10		
MEUD	27	0754	0759D		S09	W27	.469		25.3	5D	SF			0756	.62	.70			ET
MCMA	29	1206	1231	1213	N13	E60	.876	11344	3.0	25	SB		C	1213	.83	1.70			E
RAMY	29	1206	1226	1211	N14	E60	.877		3.0	20	SN	3	C		.93				F
CATA	29	1212E	1220D	1212	N12	E60	.874		3.0	8D	1B		P	1212	1.16	2.47		224	
MCMA	31	1704	1714	1709	N03	E85	.996	11352	7.1	10	SB		C	1709					EL
RAMY	31	1706E	1715	1708	N02	E86	.998		7.2	9D	SN	2	C						D
BOUL	31	1707	1715	1708	N06	E82	.991	11352	6.9	8	1N	3	V						

SOLAR FLARES

Date, time (UT) and coordinates of Subflares not included in preceding table.

MAY 1971

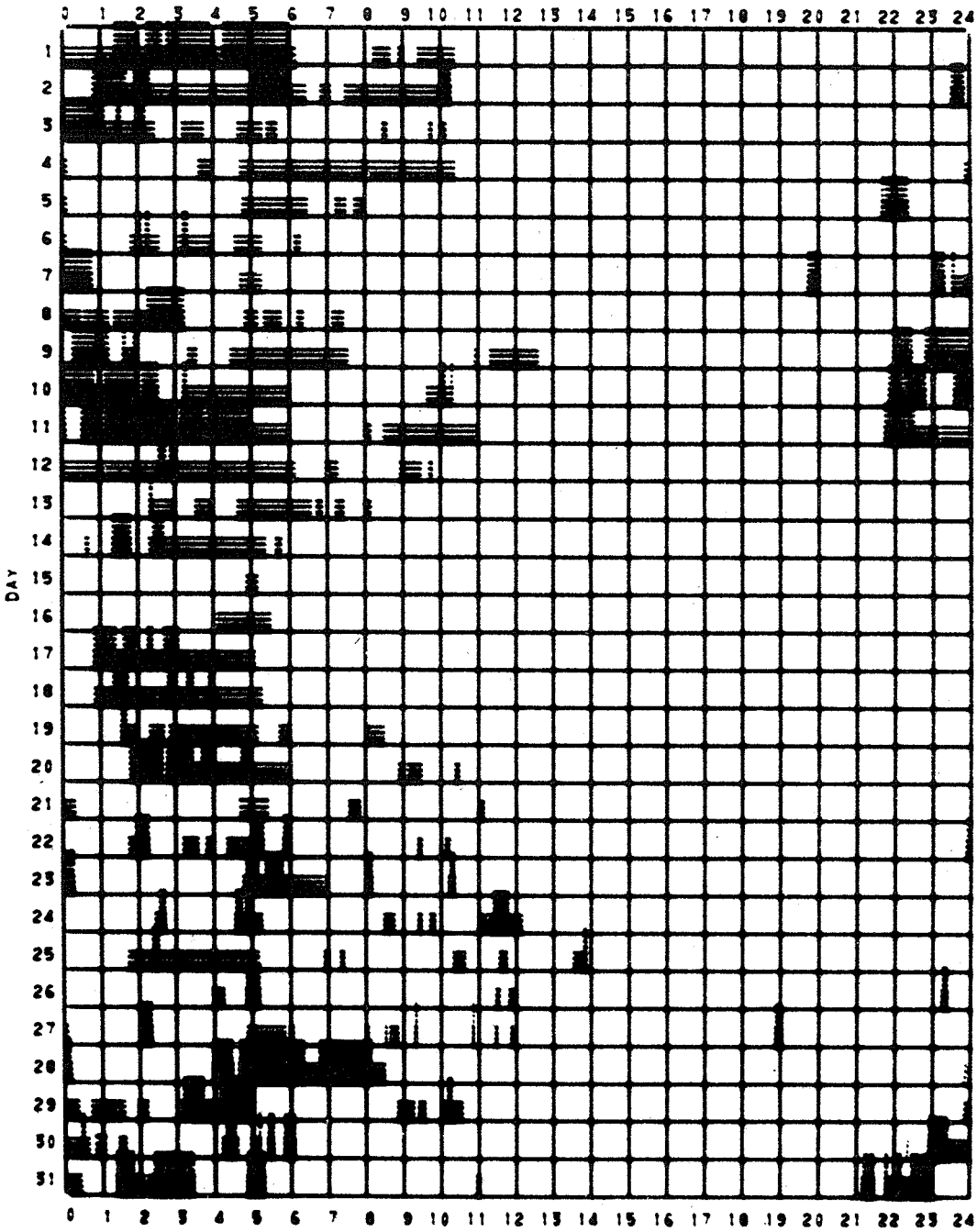
01 1148 S07 W00	01 1211 N20 E20	01 1212 N19 E18	01 1526 N17 E85	02 1023 N08 W63	02 1027 N13 E62
02 1756 N12 E77	02 1758 N12 E76	03 0105E N19 W02	03 0413 N14 E51	03 0730 N15 E48	03 0900E N14 E55
03 0905 N14 E50	03 1140 N21 W04	03 1155 S05 W30	03 1255 N15 E48	03 1703 S08 W31	03 1905 S09 W32
03 2027 S11 E68	03 2138 N12 E40	04 0020 N14 E37	04 0022E N12 E43	04 0119 N14 E37	04 0230 N13 E36
04 0319E N14 E56	04 0322 N13 E35	04 0324 N12 E34	04 0455 N12 E35	04 0638 N12 E35	04 0721 N12 E34
04 0820 N18 W17	04 0820 N18 W20	04 0849 N12 E34	04 1156 N12 E55	04 1211 N11 E29	04 1307 N17 E32
04 1308 N16 E32	04 1333 N12 E50	04 1336 N12 E50	04 1657 N13 E27	04 1657 N13 E28	04 1657E N12 E27
04 1728 N17 W02	04 1729 N15 W04	04 2050 N14 E47	04 2236 N13 E26	04 2247E N13 E29	04 2352 N13 E26
05 0004E N13 E26	05 0315 N19 E28	05 0323E N13 E24	05 0352 N15 W10	05 0357 N18 W15	05 0540 N13 E23
05 0630E N13 E18	05 0800 N14 E22	05 0830 N13 E24	05 0933 N12 E17	05 0935E N12 E17	05 1025E N12 E17
05 1038E N10 E15	05 1140 N15 E20	05 1141 N16 E20	05 1144E N16 E17	05 1455 N11 E15	05 1542 N15 E18
05 1548 N13 E15	05 1550 S11 E37	05 1551 N16 E15	05 1552 N14 E21	05 1904 N13 E12	05 1907 N12 E12
05 1931E N13 E18	05 2110 N16 E15	05 2255 N12 E10	05 2300E N13 E12	06 0145E N13 E13	06 0520 S13 E28
06 0609 N12 E04	06 0720 N13 E08	06 0735 N09 00	06 0745 N09 E01	06 0745 N08 E02	06 0900 N11 E05
06 1020 N12 E08	06 1118 N13 E06	06 1118 N13 E05	06 1145 N13 E05	06 1145 N13 E06	06 1151E N13 E04
06 1158E N13 E04	06 1158E N13 E08	06 1213 N16 E30	06 1515 N15 E03	06 1520E N15 E04	06 1521E N15 E06
06 1612E N20 W40	06 1640E N22 W42	06 1645E N12 E03	06 2045 N15 E01	06 2051 N14 E03	06 2220 N11 W05
07 0001E N13 E02	07 0212 N13 E01	07 0354 N15 W02	07 0835 N15 E13	07 0837 N17 E14	07 0842 N16 E11
07 0905 N13 W07	07 0950 N15 W05	07 0950 N15 W06	07 1240E N16 W07	07 1410E N14 W07	07 1413 N13 W07
07 1414 N13 W06	07 1505E N16 W08	07 1539 N13 W07	07 1539 N13 W06	07 1725 N14 W10	07 2005 N13 W12
07 2111 N14 W11	07 2144 N14 W11	07 2353E N13 W12	07 2353 N14 W12	08 0056 N15 W12	08 0112E N13 W14
08 0312E N15 W15	08 0430 N16 W15	08 0509 N14 W15	08 0510E N13 W16	08 0610 N14 W17	08 1220 N12 W21
08 1240 N14 W18	08 1615 N16 W22	08 1619 N16 W20	08 1619 N17 W21	08 1619 N16 W22	08 1628E N17 W20
08 1823E N11 W26	08 1913E N08 E55	09 0402E N07 E50	09 0828 N05 E45	09 0830 N07 E42	09 0832 N07 E45
09 0905 N07 E46	09 1055E N05 E44	09 1813 N 5 E71	09 1825E N06 E70	09 2104E N13 W45	10 0942 N12 W48
10 1212E N14 W43	10 1450 N14 W57	10 1451 N13 W57	10 1451E N14 W56	10 1607 N10 W55	10 1607 N11 W56
10 1650 N10 W52	10 1650 N09 W51	10 1700E N11 W52	10 2314E N15 W51	11 0004 N14 W62	11 0343E N14 W63
11 0655E N14 W64	11 0702 N16 W63	11 0705E N12 W65	11 0751 N15 W64	11 0814 N16 W64	11 0935 N15 W65
11 0957 N05 E52	11 0958 N16 W65	11 1101 N16 W65	11 1107 N14 W67	11 1232E N05 E85	11 1325 N04 E78
11 1637 N13 W70	11 1639 N12 W69	11 1708 N11 W69	11 1709 N08 E82	11 1722 N07 E46	11 1805 N12 W73
11 1806 N11 W72	11 1934 N02 E48	11 1954 N13 W73	11 1955 N12 W73	12 0103E N15 W72	12 0649 N14 W77
12 0652 N17 W76	12 0712E N13 W79	12 0801 N15 W80	12 0913 N15 W80	12 1244 N11 W86	12 1245 N14 W88
12 1247 N15 W83	12 1247 N15 W80	12 1418 N12 W83	12 1541 N00 E35	12 1609 N18 E02	12 1653 S06 E12
12 1738 N20 E 1	12 1738 N18 E01	13 0702 N18 W08	13 0703E N06 E54	13 0740E N04 E53	13 0816 N15 W70
13 0817 N16 W70	13 0820E N15 W72	13 1054 N19 W10	13 1101 N19 W10	13 1105 N13 W90	13 1107E N18 W07
13 1108 N06 W05	13 1226 N04 E52	13 1310 N13 W90	13 1334 N06 W06	13 1335 N05 W07	13 1507 N06 W07
13 1615 N14 W81	13 1701U N11 W81	14 0418 N04 E43	14 0525 N01 E15	14 0900 N05 E17	14 0900 N05 E16
14 0905E N05 E15	14 0934 N05 E40	14 0937E N04 E40	14 2200 N 5 E31	15 0021 N03 E32	15 0023E N04 E31
15 0133 N05 E31	15 0135 N04 E30	15 0212E N05 W57	15 0248E S10 W81	15 0321 N06 E29	15 0324E N03 E31
15 0403 S01 E01	15 0907 N05 E25	15 0909 N07 E27	15 0910 N04 E26	15 1215 N04 E25	15 1347 N06 E25
15 1349 N06 E25	15 1350 N04 E24	15 2255 N 3 E18	15 2300E N03 E20	15 2313 N03 E25	16 0036 N04 E17
16 0139 N02 W41	16 0230 N02 E16	16 1120 N02 W14	16 1310 N12 W02	16 1315 N12 W02	16 1335E N12 W01
16 1345 N13 E10	16 1348 N03 E09	16 1808 N04 E07	16 1820 N 5 E 5	16 2218E S07 W54	16 2355 N 3 W22
17 0825 S03 W58	17 0835 N04 W01	17 1020 N05 W00	17 1040E N08	17 1405 S03 W81	17 1644 N05 W30
17 1709E N02 W09	17 1848 N05 W31	17 2015 N04 W33	17 2015 N 5 W34	17 2016 N04 W33	17 2253E S04 W68
18 0305E N06 W11	18 0306 N05 W10	18 1045 S05 W72	18 1309 S05 W73	18 1416 N06 W15	18 1420 N04 W16
18 1914 S03 W82	18 2000 S03 W82	19 0217 N05 W24	19 0347 N03 W81	19 0628 S03 W85	19 0910E N04 W27
19 0911 N05 W26	19 0912 N05 W25	19 0912 N05 W25	19 1045 N11 E78	19 1141 N11 E78	19 1147E N13 E70
19 1301 N11 E77	19 1308 N15 E74	19 1515E N13 E70	19 1605 N15 E73	19 1607 N11 E76	19 1607 N15 E44
19 1607 N14 E71	19 1619 N 4 W31	19 1628 S 2 W82	19 1634 N 2 W60	19 1634 N04 W32	19 1634 N04 W58
19 1635E N04 W32	19 1635E N13 E69	19 1636 N04 W58	19 1636 N03 W58	19 1755 N14 E71	19 2000U N 4 W33
19 2006 N04 W33	19 2010E N 4 W34	19 2024 N13 E69	20 1440E N12 E57	21 0104 S12 W04	21 0327 N09 E56
21 0523 S11 W08	21 1346 N04 W83	21 1741 N08 E46	21 2058 N01 W61	22 0733E N05 W69	22 1115 N03 W36
22 1815 N11 E27	22 1818 N12 E28	22 1820 N12 E28	23 1655 N11 E15	23 1659 N11 E16	23 1940 N19 W14
24 0837 N10 E62	24 0858 N03 E10	24 0900 N10 E58	24 0905 N11 E63	24 1030 N11 E62	24 1242U N11 E61
24 2237 N16 E56	25 0631 N13 E49	25 0645 N09 E49	25 0805 N13 E50	25 0825 N09 E50	25 1734 N10 E43
25 2251 N11 E40	25 2320 N11 E40	26 0035 N11 E43	26 0037E N13 E42	26 0136 N13 E42	26 0154 N13 E39
26 0156 N12 E38	26 0740E S08 W12	26 1010E S08 W14	26 1450 N10 E31	26 1454 N12 E31	26 1525E S08 W17
26 1625E N11 E30	26 1724 S 8 W18	26 1725 S08 W18	26 1818 S07 E17	26 1819 N15 E90	27 0058 N12 E27
27 0620E S08 W27	27 1143E S08 W29	27 1208 S09 W29	27 1208E S08 W30	27 1232E S08 W29	27 2346U N15 E21
28 0705 S08 W42	28 0855 S08 W43	28 0922E S09 W42	28 1030 S08 W42	28 1040 N10 E78	28 1122 N13 E74
28 1254 S08 W44	28 1255 S07 W45	28 1634 N12 E69	28 1803U S 8 W46	28 1846 S09 W47	28 1847 S 7 W48
28 1850U S 7 W48	28 1950 S07 W48	28 1950 S08 W46	28 2008E S08 W46	28 2014 S07 W48	28 2059 N11 E14
28 2100 N11 E13	28 2244 N11 E13	29 0515E N09 E09	29 0821 N13 W05	29 0825E N13 W06	29 1215 S06 W57
29 1420 N13 W08	29 1523 N13 W08	29 1529E N13 W10	29 1545 S 9 W61	29 1546 S08 W60	29 1546 S09 W60
29 1546 S08 W61	29 1547E S08 W60	29 1548 S09 W55	29 1749E S07 W58	30 0210E N11 W03	30 0808E N12 E47
30 1005 N09 W25	30 1007 N09 W25	30 1243 N10 E45	30 1243 N12 E40	30 1247 N12 E38	30 1247 N16 E42
30 1351 S22 W65	30 1355E S20 W64	30 1356 S18 W65	30 1425E S20 W65	30 1446 N08 W12	30 1523 S17 W64
30 1547 S18 W65	30 2330 N11 W12	31 0058E N08 W34	31 0635 N27 E25	31 1010 S07 W81	31 1352 N02 E86
31 1354 N04 E85	31 1512 N09 W42	31 1620 S03 E85	31 1622E S04 E89	31 1645 N 9 W38	31 1645 N08 W39
31 1706 N13 E32	31 1707 N13 E31	31 1710 N12 E32	31 1712 N09 E33	31 1832 N12 W35	31 2132E N07 W46

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

MAY 1971

HOUR - UT



Observatories included in total patrol:

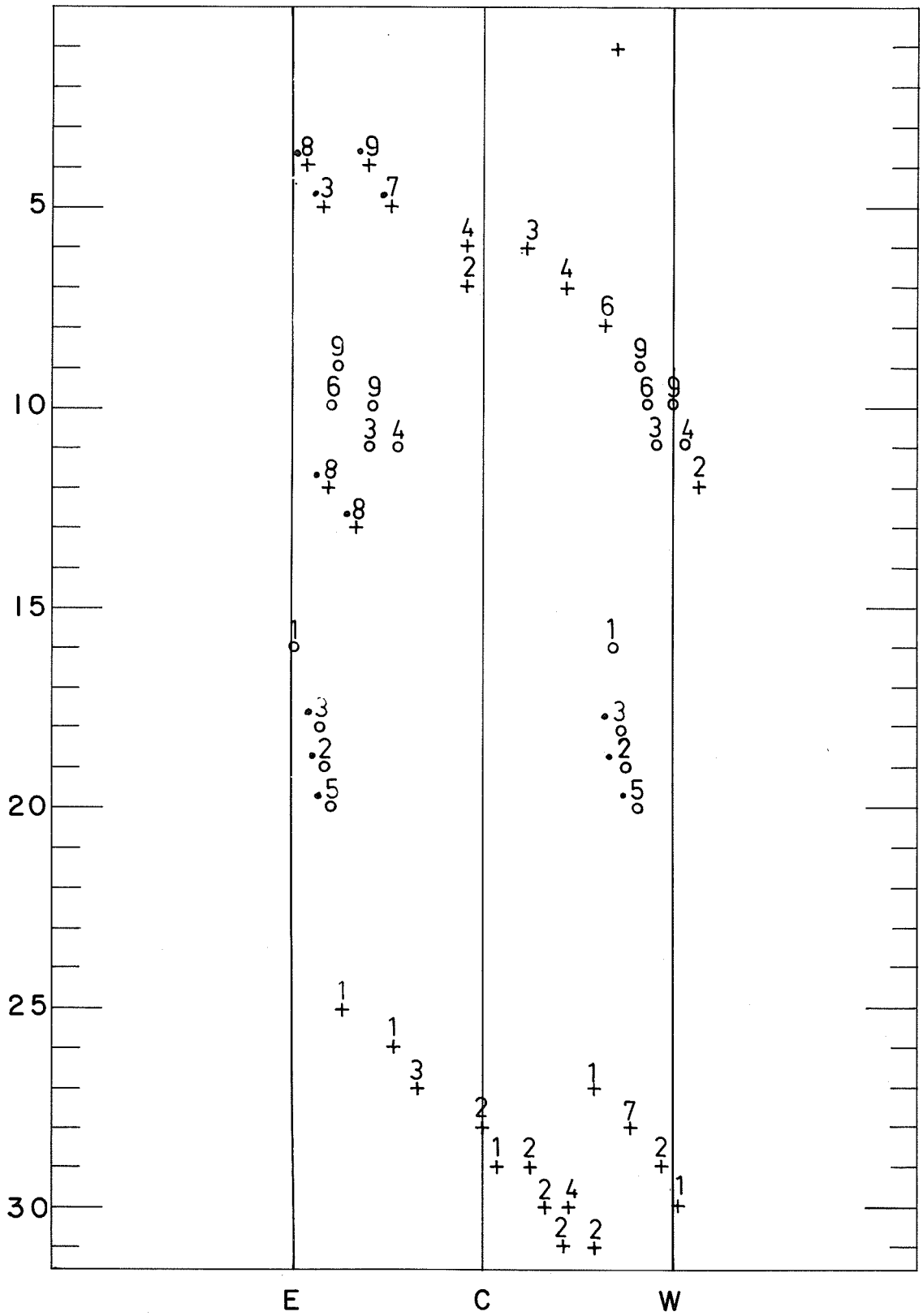
Arcetri	Capri-S (Swedish)	Hurbanovo	Manila	Ondrejov
Boulder	Catania	Istanboul	Meudon	Palehua
Bucharest	Haute Provence	Kodaikanal	McMath-Hulbert	Ramey
Capri-F (German)	Herstmonceux	Lockheed	Monte Mario	Wendelstein

Times of no flare patrol are shown by the shaded area for each day divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATION

MAY 1971

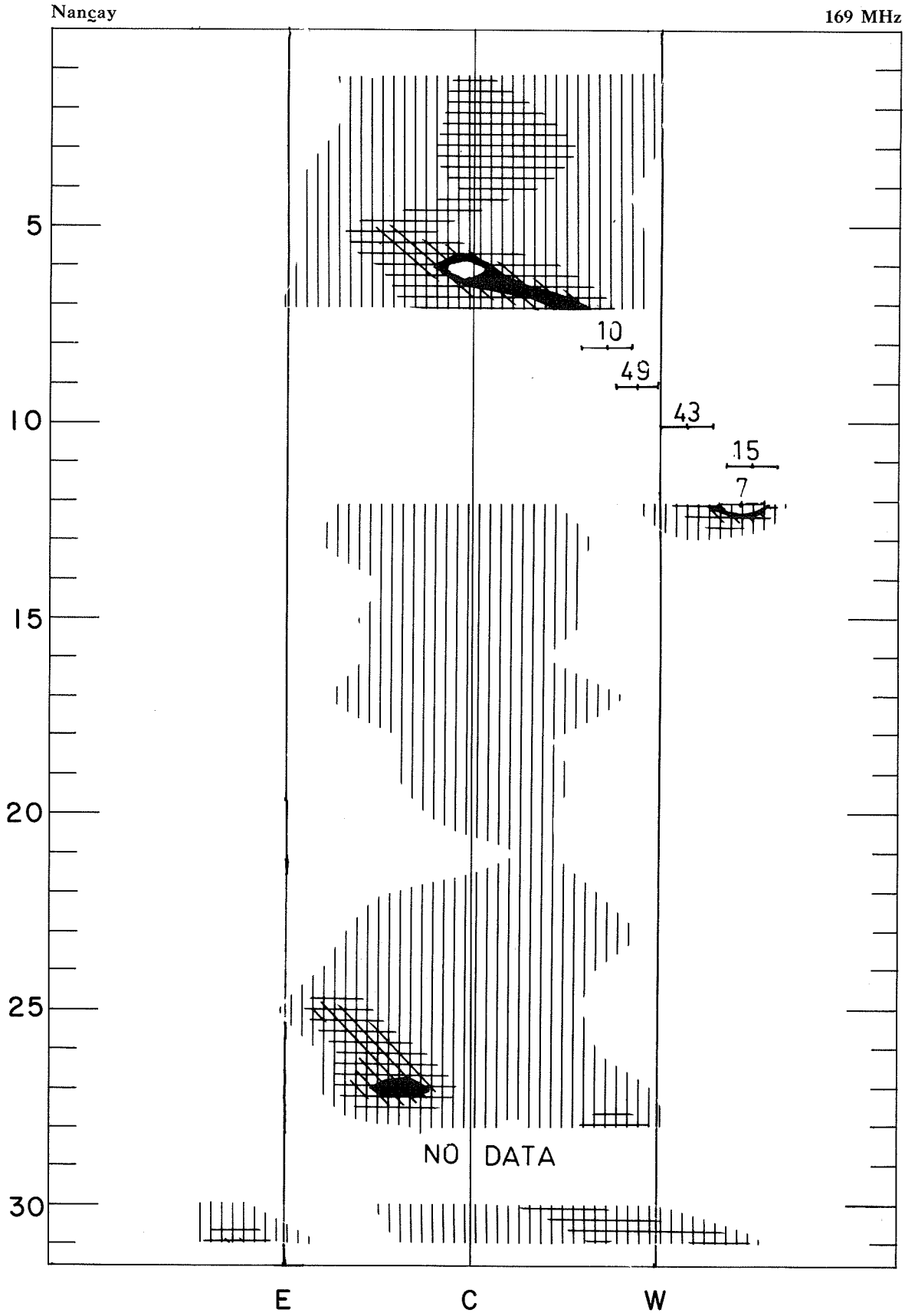
Nançay 408 MHz



Because of the distance between the main lobes there is sometimes an ambiguity about the position East or West of the Center of Activity. The two possible positions are indicated by circles on the chart.

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATION

MAY 1971

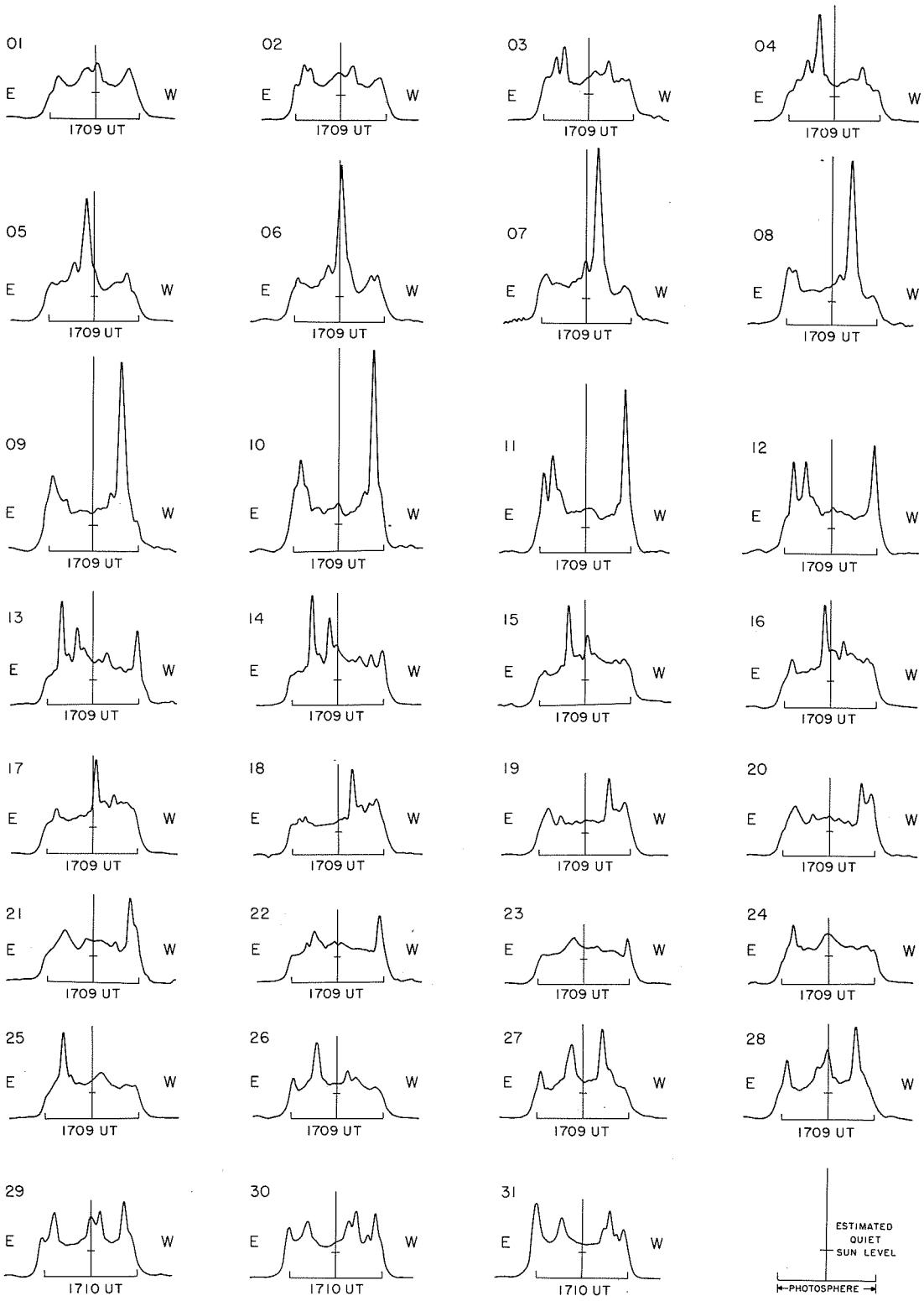


EAST - WEST SOLAR SCANS

May 1971

ALGONQUIN RADIO OBSERVATORY
CANADA

10·7 cm
Fan-Beam with 1·5 minutes of arc
E - W Resolution

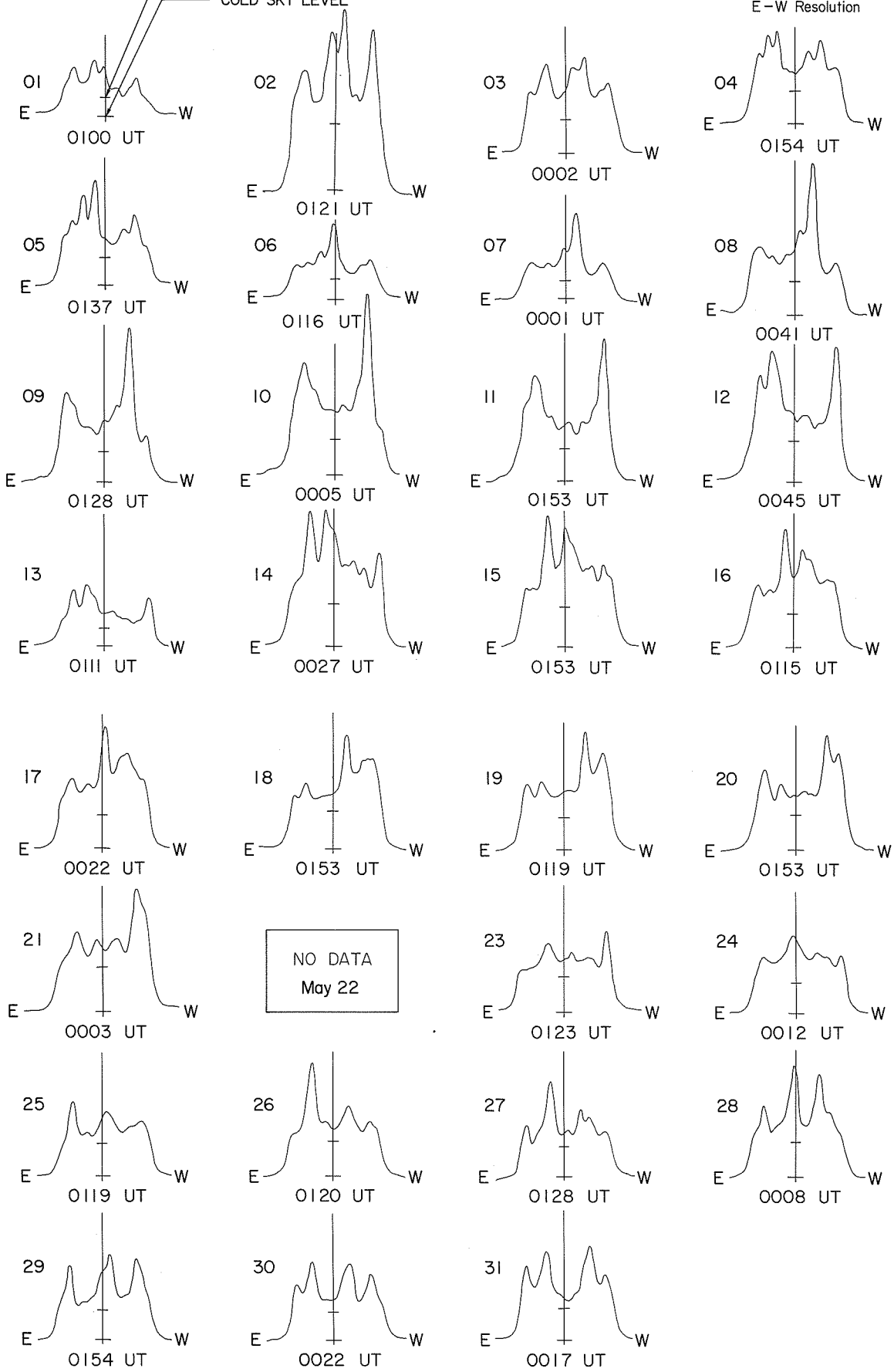


EAST-WEST SOLAR SCANS

MAY 1971

Fleurs, Australia

21 cm
Fan-Beam with 2 minutes of arc
E-W Resolution

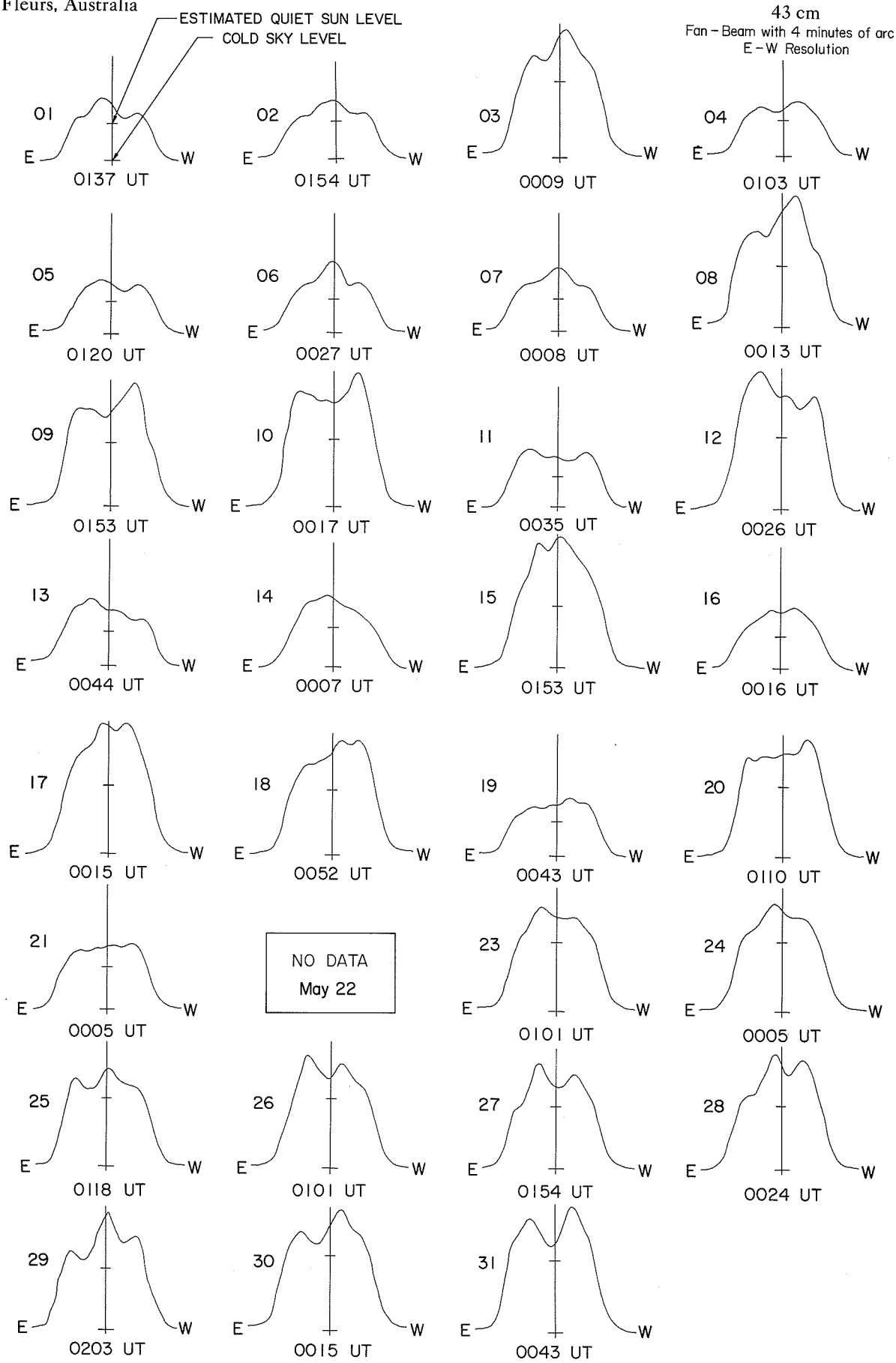


EAST-WEST SOLAR SCANS

MAY 1971

Fleurs, Australia

43 cm
Fan-Beam with 4 minutes of arc
E-W Resolution



SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

MAY 1971

MAY 1971	FREQUENCY STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	MEAN	INT	REMARKS
3	2695 MANI	1	0905.9	0906.7	1.1	4.9	2.4		
	8800 SGMR	4	1411.1	1412.4	10.7	224.0	88.0		
	2800 OTTA	4	1411.7	1413	7.3	150.0	33.0		
	2695 SGMR	4	1411.7	1412.8	14.8	140.0	61.0		
	2695 CANR	45	1412	1413.5	5.5			2	
	2695 BOUL	3	1413	1414.5	5.5			2	
	2800 OTTA	31	1419	1430	50	-2.0	-0.8		
	2800 OTTA	2	1910	1913	5	2.8	1.4		
4	2695 MANI	1	0853.6	0850.7	.2	4.9	2.4		
	2695 SGMR	1	1015.9	1016.6	3	2.9	1.4		
	2800 OTTA	20	1305	1308	130	4.2	2.0		
	2695 SGMR	1	1307.1	1308.3	8.6	5.8	2.9		
	2695 PENT	20	2335	2350	85	2.8	1.4		
5	2695 PENT		0134	0140.5	8 D	40.0			
	2695 CRON	1	0140	0141	3			1	
	2800 OTTA	1	1138	1141	7	2.8	1.2		
	2800 OTTA	21	1210	1230	260	14.8	7.0		
	2800 OTTA	45	1211.5	1213.5	6.5	13.6	6.8		
	8800 SGMR	20	1211.7	1215.7	41.8	30.4	6.3		
	2695 SGMR	23	1211.7	1213.5	76.9	15.2	3.2		
	2695 CANR	5	1213.5	1221.5	10.5			1	
	2800 OTTA	1	1220	1220.8	2	8.6	4.0		
	2695 SGMR	3	1220.4	1220.8	1.5	12.1	3.1		
	2800 OTTA	20	1720	1910	220	3.6	1.8		
	2800 OTTA	21	2105	2200	105	5.0	3.0		
	2800 OTTA	1	2111	2112	5	3.0	1.5		
	2695 PENT	20	2255	2305	30	4.2	2.1		
	2695 PENT	20	2350	2430	105	4.6	1.3		
6	2800 OTTA	20	1120	1210	125	4.2	2.1		
	2800 OTTA	20	1515	1517	40	2.8	2.0		
	2800 OTTA	20	1940	2100	110	2.4	1.2		
	2695 PENT	24	2320		18	2.0			
7	2695 PENT	24	0050		10	3.0			
	8800 MANI	3	0654.5	0655.9	3	17.8	8.9		
	2695 MANI	3	0654.5	0655.9	5.8	25.0	9.4		
	2800 OTTA	24	1830		65	4.8			
	2800 OTTA	20	2010	2030	60	3.8	1.9		
	2800 OTTA	20	2145	2149	55	4.8	2.4		
8	2695 PENT	20	0056	0101	11	2.4	1.2		
	8800 SGMR	21	1304.2	1313.4	29.3	12.3	4.1		
	8800 SGMR	3	1304.5	1304.6	6	35.8	7.8		
	2800 OTTA	20	2105	2120	90	2.4	1.2		
10	2695 CANR	3	0944.5	0945.5	2.5			1	
	2800 OTTA	22	1625	1653	115	4.0	2.0		
11	2695 PENT	1	0132	0135	6	3.2	1.6		
	8800 MANI	3	0340.2	0342	6.8	36.9	12.3		
	2695 MANI	3	0341.9	0342	2.3	15.5	2.6		
	2800 OTTA	20	1155	1255	100	2.8	1.4		
	2695 SGMR	1	1353	1353.3	1	2.1	.4		
	2800 OTTA	20	1515	1545	65	2.4	1.2		
	2800 OTTA	21	1630	2005	460	8.6	4.8		
	2800 OTTA	2	1640	1640.5	1.5	5.0	2.8		
	2800 OTTA	2	1806	1809	7	4.2	2.1		
	8800 SGMR	20	1806.9	1808.9	13.1	7.1	1.7		
	2695 SGMR	1	1807.6	1809	6	4.4	1.1		
	2800 OTTA	1	2139	2140.2	3.5	5.8	2.4		
	2800 OTTA	3	2214	2214.5	2	12.4	3.4		
	2695 BOUL	3	2215.5	2216	1.5			1	
	2695 PENT	20	2340	2345	30	2.8	1.4		
	8800 MANI	4	2358.7	0000.4	8.1	15.4	3.9		
12	2695 PENT	25	0115		15	6.0			
	2695 PENT	3	0129	0129.2	2	13.6	6.0		
	2695 CRON	45	0145	0158.5	28.5			2	
	8800 MANI	4	0145.8	0200.1	30.2	270.0	58.0		
	2695 MANI	46	0145.8	0157.8	30.2	205.0	59.0		
	8800 SGMR	22	1245.6	1246.2	15.4	13.6	2.5		
	2800 OTTA	22	1745	1800	30	8.8	4.4		
	8800 SGMR	20	1940.4	1941.4	18.6	6.3	1.8		
13	2695 SGMR	20	1750.7	1801.3	27.4	7.5	3.5		
	2800 OTTA	21	1825		320	4.6	2.3		
	2695 SGMR	20	1826	1835.1	26	7.8	3.9		
	2800 OTTA	20	1830	1837	18	6.2	3.0		
	2800 OTTA	4	1904	1923	60	260.0	92.0		
	8800 SGMR	20	1906.8	1922.5	74.1	157.0	62.0		
	2695 SGMR	22	1905.8	1923.1	81	254.0	102.0		
	2695 CANR	40	1906.5	1929	22 D			2	
	2695 BOUL	20	1908.5	1924	66			2	
	2800 OTTA	29	2004		45	16.0	4.0		
14	8800 MANI	3	0815	0822.5	29.5	85.0	37.0		
	2695 MANI	3	0817.3	0820.8	25.2	52.0	22.0		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

MAY 1971

MAY 1971	FREQUENCY STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY $10^{-22}Wm^{-2}Hz^{-1}$ PEAK	MEAN	INT	REMARKS
14	2800 OTTA	46	1411	1415	17	225.0	65.0		
	2800 OTTA	46	1411	1415	5	225.0			
	2800 OTTA	46	1416	1417.2	12	168.0			
	2695 SGMR	45	1411.3	1415.1	16.6	220.0	45.0		
	8800 SGMR	21	1411.7	1430.5	73.3	48.0	20.0		
	2695 BOUL	45	1412	1416	25.5			2	
	8800 SGMR	45	1413.8	1414.3	5.5	42.3	20.0		
	2695 SGMR	30	1427.9	1427.9	104.9	20.5	10.0		
	2800 OTTA	30	1428		120	23.0	8.0		
	2800 OTTA	1	1506	1509	8	4.6	2.3		
	2695 SGMR	1	1508.7	1509	5.8	3.0	1.5		
	2800 OTTA	22	1737	1749	18	3.0	1.8		
	2800 OTTA	20	1756	1759	15	13.0	3.6		
	2695 SGMR	3	1756.7	1758.8	7.8	12.5	6.0		
	2695 SGMR	22	1821.5	1859.8	94.6	127.0	60.0		
	2800 OTTA	45	1822	1832	100	90.0	47.0		
	2800 OTTA	45	1822	1832	32	90.0			
	2800 OTTA	45	1854	1905	68	87.0			
	8800 SGMR	20	1825.3	1840.3	87.7	41.0	20.5		
	2695 BOUL	21	1829	1838	86			2	
	2800 OTTA	29	2002		120	8.4	4.0		
15	8800 SGMR	22	1740.4	1741.2	42.6	9.5	1.9		
17	2800 OTTA	1	2015	2016.5	5	2.0	1.0		
	2695 BOUL	45	2157.5	2158.5	1.5			1	
18	2800 OTTA	21	1405	1505	100	5.0	2.5		
	2800 OTTA	2	1415	1417	3	6.2	2.1		
	8800 SGMR	20	1416.3	1432.3	37.2U	9.1	1.8		
	2695 SGMR	20	1416.5	1417.7	37 U	5.5	1.1		
19	2800 OTTA	21	1615	1645	55	2.2	1.1		
	2800 OTTA	1	1640	1641.5	3	5.8	2.9		
	2800 OTTA	3	2115.5	2117.1	3	17.6	6.0		
	2695 SGMR	3	2116.9	2117.4	3.2	11.5	4.8		
	2695 BOUL	3	2117.5	2118.5	2			1	
	2800 OTTA	29	2118.5		15	4.0	2.0		
25	2695 BOUL	40	1749	1749.5	15.5			2	
26	2800 OTTA	20	1414	1440	95	3.0	1.8		
27	2800 OTTA	21	1205	1240	140	5.6	2.8		
	2800 OTTA	40	1234	1242.5	13	32.0			
28	2800 OTTA	20	1355	1430	110	2.2	1.1		
29	2800 OTTA	1	1209.5	1210.2	3	6.4	2.2		
	2800 OTTA	1	1214	1215	2	7.0	3.0		
	2800 OTTA	2	1545.5	1547	2.5	2.4	1.2		
	8800 SGMR	22	1546.4	1547.5	25.4	5.6	1.2		
	2695 SGMR	22	1546.2	1546.8	26.3	5.5	1.2		
30	2800 OTTA	2	2212	2212.8	1.2	2.2	1.1		
31	2800 OTTA	20	1700	1730	70	2.0	1.0		

Observatories:

BOUL = Boulder CRON = Carnarvon (1-12, 20-31) OTTA = Ottawa PENT = Penticton SGMR = Sagamore Hill
CANR - Canaries (1-12, 20-27) MANI = Manila

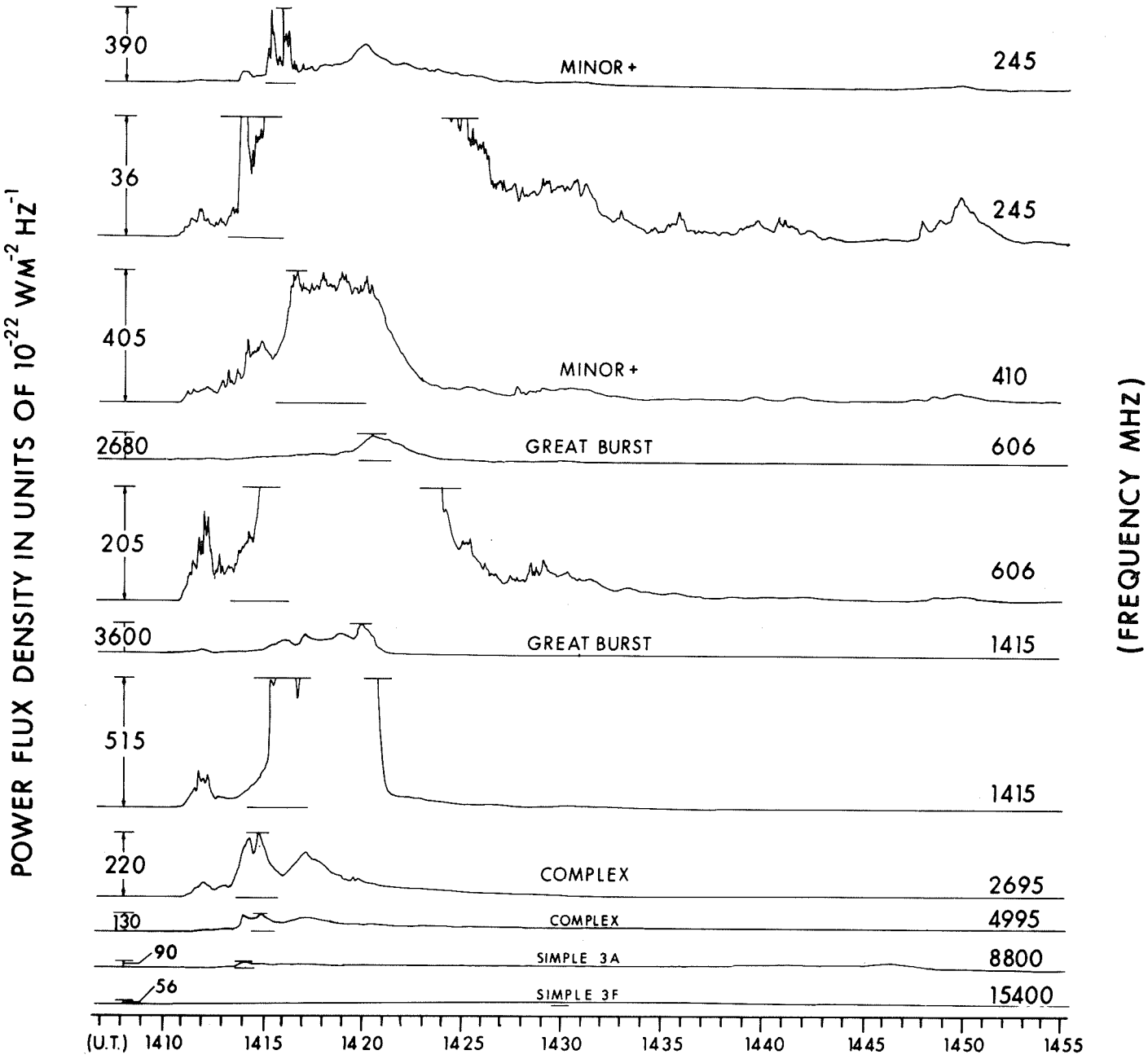
Explanation of Type Code:

1 Simple 1	6 Minor	22 Simple 3F	27 Rise and Fall	32 Absorption	44 Noise Storm in Progress
2 Simple 1F	7 Minor +	23 Simple 3AF	28 Precursor	40 Fluctuation	45 Complex
3 Simple 2	8 Spike	24 Rise	29 Post Burst Increase	41 Group of Bursts	46 Complex F
4 Simple 2F	20 Simple 3	25 Rise A	30 Post Burst Increase A	42 Series of Bursts	47 Great Burst
5 Simple	21 Simple 3A	26 Fall	31 Post Burst Decrease	43 Onset of Noise Storm	48 Major
					49 Major +

Radio bursts observed at Boulder, Canary Islands and Carnarvon (1420, 2695 and 4995 MHz) are scaled on a relative intensity scale of 1-3 where, within a factor of three or less, 1 = <100 fu ($10^{-22}Wm^{-2}Hz^{-1}$), 2 = 100 - 1000 fu and 3 = >1000 fu.

SELECTED SOLAR NOISE BURST

14 May 1971



RADIO BURST OBSERVED 14 MAY, 1971 AT SAGAMORE HILL RADIO OBSERVATORY HAMILTON, MASS.

SOLAR WIND VELOCITY
and
CO-ROTATION DELAY TIMES

MAY 1971

NASA Ames Research Center

DATE	PIONEER VI				PIONEER VII			
May 1971	Time (Z)	Pass	U_H^+	TAU	Time (Z)	Pass	U_H^+	TAU
1								
2								
3	0203	1964	566	3.2				
4								
5								
6	2212	1968	566	3.2	1830	1724	388	11.5
7								
8								
9	0001	1969	339	3.6				
10	0212	1971	383	3.3				
11	0351	1972	383	3.3				
	1200	1973	383	3.3				
12	1200	1974	339	3.4				
13	0400	1975	383	3.3				
14	1200	1976	383	3.3				
15	0422	1977	302	3.5				
16	0408	1978	448	3.1				
17	0413	1979	566	3.0				
18	0400	1980	448	3.1				
19	0400	1981	448	3.1				
20	1200	1982	448	3.0				
21								
22	0215	1983	506	2.9				
	0944	1984	506	2.9				
23	1300	1985	448	3.0				
24	2228	1986	383	3.1				
25	1200	1987	339	3.2				
26	0222	1987	339	3.2				
27	1200	1989	506	2.8				
28								
29								
30								
31								

SOLAR WIND
VELA 3 & 5
MAY 1971

Date	UT	Spacecraft	Velocity V_{H+} (km/sec)	Density N_{H+} (cm^{-3})
02	1900	VELA-5B	424	--
	2200	5B	365	--
	2300	5B	348	--
03	0000	5B	384	--
	0200	5B	348	--
	0300	5B	384	2.0
	0400	5B	365	--
	0500	5B	384	--
	0540	5B	384	2.0
	1400	5A	348	--
	2300	5B	404	--
04	0300	5B	384	--
	0400	5B	348	--
06	0600	5A	470	--
	0800	5A	520	--
	1100	5A	520	--
	1200	5A	547	3.8
	1400	5A	586	--
	1500	5A	637	--
	1700	5A	707	--
	1900	5A	672	2.7
	2200	5A	637	--
07	0200	5A	606	2.6
	0400	5B	424	--
	0500	5A		10.0
	0600	5A	637	--
	0700	5A	606	2.3
	0800	5B	637	--
	1000	5B	637	--
	1100	5B	672	1.2
	1200	5B	637	--
	1300	5B	672	--
	1400	5B	637	1.7
	1500	5A	637	--
	1600	5A	672	1.6
	1800	5B	637	--
	2007	5B	672	1.3
	2200	5A	637	--
08	0000	5B	637	--
	0300	5B	707	--
	0600	5B	637	--
	0700	5B	637	1.1
	0900	5B	576	--
	1000	5B	637	--
	1253	5B	576	1.3
	1600	5B	576	--
	1900	5B	576	1.0
	2100	5B	520	--
09	0400	5B	576	--
10	1900	5A	424	--
	2200	5A	348	--
11	1400	5A	331	--
	2100	5A	315	--
12	1200	5B	348	--
	1300	5B	315	--
	1400	5B	331	2.4
	1500	5B	315	--
	1600	5B	272	1.6
	2000	5B	315	--
13	0300	5B	315	--
	0400	5B	286	--
	0500	5B	315	--
	1700	5B	246	--
15	1100	5A	259	--
16	0330	5A	348	3.6
	0700	5A	348	--
	1000	5A	315	--
	1900	5B	315	2.2
	2100	5B	300	3.9
	2300	5A	348	4.9
17	0200	5A	348	--
	0500	5B	348	3.9
	0700	5A	520	--
	0800	5A	446	--
	1100	5B	470	--
	1300	5B	470	--
	1400	5B	495	4.7
	1700	5A	470	--
	1800	5B	520	--
	2200	5B	470	--
18	0300	5B	446	8.4
	0400	5B	424	--
	0500	5B	424	--
	0700	5B	470	--
	1100	5B	404	--
20	1100	5A	348	--
	1800	5A	315	--
21	1100	5A	384	--
	1400	5A	424	--
	1700	5A	404	2.2
	1800	5A	384	--
	1900	5A	384	--
	2000	5A	348	--
	2300	5A	365	--
22	0000	5B	348	--
	0100	5B	348	2.0
	0200	5A	348	--
	0300	5B	384	--
	0500	5A	315	--
	0700	5B	384	--
	0800	5B	365	2.3
	0900	5B	384	--
	1000	5B	348	--
	1200	5B	348	--
	2200	5B	348	2.3
23	0100	5B	348	--
	0300	5B	348	--
	0500	5B	348	--
25	0000	5A	315	--
	0400	5A	384	--
	0600	5A	384	--
	0800	5A	424	--
	1000	5A	404	--
	1100	5A	424	1.8
	1400	5A	424	--
	1730	5A	424	2.1
	2100	5A	424	--
26	0100	5A	424	--
	0300	5A	424	--
	0500	5A	424	--
	0600	5A	404	2.5
	0700	5A	384	2.3
	1200	5B	315	--
	2000	5B	365	1.8
	2200	5B	384	1.4
30	0000	5A	348	--
	1600	5A	520	2.4
	1700	5A	520	--
	2300	5A	446	1.9
31	0100	5B	470	1.0
	0500	5A	946	--
	0800	5B	424	--
	1100	5B	384	--
	1300	5B	384	--
	1500	5B	384	--
	1900	5B	424	1.7

COSMIC RAY PROTONS

MAY 1971

Counting Rates (particles/sec)

Univ. of Chicago

PIONEER VI									
DATE MAY	TIME (UT)	0.6-13 Mev*	13-175 Mev**	>175 Mev	DATE MAY	TIME (UT)	0.6-13 Mev*	13-175 Mev**	>175 Mev
3	0200	.435	Q	Q	17	0200	540	1.43	Q
6	2200	.450	Q	Q	17	1000	∿585	.581	Q
9	0000	2.49	Q	Q	17	1900	266	.319	Q
10	0200	5.84	Q	Q	18	0400	117	.183	Q
10	0500	3.10	Q	Q	18	1900	36.0	.125	Q
11	0400	5.63	Q	Q	19	0400	14.3	Q	Q
11	1200	5.52	Q	Q	19	1200	12.2	Q	Q
11	1400	5.52	Q	Q	19	2100	9.93	Q	Q
11	2300	10.6	Q	Q	20	1000	6.90	Q	Q
12	1400	195	.376	Q	20	2100	13.6	Q	Q
13	0900	117	.094	Q	22	0230	16.7	Q	Q
14	0200	62.7	.087	Q	22	1200	12.4	Q	Q
15	0800	≳300	.606	Q	23	1200	11.5	Q	Q
15	2300	960	.229	Q	24	2200	18.3	Q	Q
16	0400	>585	.165	Q	25	1200	19.5	Q	Q
					26	0200	28.5	Q	Q
					27	1200	55.2	Q	Q

PIONEER VII									
DATE MAY	TIME (UT)	0.6-13 Mev*	13-175 Mev**	>175 Mev					
15	1800	15.0	Q	Q					

* Includes He 0.6-13 Mev/nucleons and electrons ∿0.5 Mev -see J. Retzler and J. A. Simpson, J. Geophys. Res., 74, 9, 2149-2160, 1969 for discussion of the electron response of Pioneer VII.

** Includes He >13 Mev/nucleon.

Q Used to indicate that a rate is at its quiescent level.

Notes:
(1) Data are subject to future determination of possible saturation during enhanced flux observations.
(2) Pioneer heliographic longitude is given in the solar wind tabulations in terms of "co-rotation" delay time (days).
(3) Unidirectional geometrical factors are 5.8×10^{-4}, 1.15×10^{-4}, $1.7 \times 10^{-4} m^2$ster for the three ascending energy intervals given above. The two higher energy intervals have a bidirectional response at energies greater than ∿100 Mev/nucleon. See Fan, Pick, Pyle, Simpson, and Smith, J. Geophys. Res., 73, 5, 1555-1582 for a description of the University of Chicago instruments.
(4) The symbol "Q" is used to indicate that a rate is at its quiescent level. Quiescent counting rates at present are approximately:
Pioneer 6 0.1, 0.055, 0.250 counts per second,
Pioneer 7 0.1, 0.055, ∿0.100 counts per second for the three ascending energy intervals.
(5) Times are only approximate (time accurate to approximately ± 15 minutes).

COSMIC RAY PROTONS

MAY 1971

Counting Rates (particles/sec)

University of New Hampshire

Pioneer VIII							
Date May	Time (UT)	>13.9 Mev	>64 Mev	Date May	Time (UT)	>13.9 Mev	>64 Mev
8	2130	5.06	.80	19	0000	4.94	.58
18	0200	4.66	.59	19	2000	5.43	.82
18	2100	4.94	.65				

Pioneer IX							
Date May	Time (UT)	>13.9 Mev	>40 Mev	Date May	Time (UT)	>13.9 Mev	>40 Mev
1	2300	4.01	.82	17	1600	4.35	.95
2	2300	4.00	.91	18	1630	20.0	-
4	2200	4.21	.77	19	1700	27.0	-
6	1600	3.93	1.26	20	1700	6.0	-
8	1624	3.94	.71	21	2300	2.0	-
9	2300	3.98	.77	22	1830	2.0	-
11	1730	4.04	.88	24	2000	1.0	-
13	2200	4.00	.81	25	2300	3.71	1.32
15	1600	4.24	.62	27	2030	3.84	1.58
16	2250	4.18	.87				

SOLAR PROTON MONITORING ATS-1 (1966-110A)

MAY 1971

AEROSPACE CORP

ENERGY LEVEL 5-21 MEV - HOURLY AVERAGES (PARTICLES CM^{-2} SEC^{-1})

DATE	HOUR 01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
01	0.10	0.26	0.05	0.15	0.15	0.05	0.10	0.10	0.21	0.15	0.10	--	0.31	0.10	0.14	0.14	0.21	0.05	0.14	0.14	0.15	0.21	0.15	0.31
02	0.21	0.10	0.15	0.15	0.10	0.15	0.05	0.15	0.10	0.26	0.10	0.15	0.10	0.21	0.14	0.14	0.14	0.14	0.15	0.14	0.21	0.26	0.36	0.21
03	0.15	0.31	0.26	0.14	0.10	0.10	0.15	0.14	0.14	0.21	0.36	0.15	0.15	--	0.54	--	0.27	0.21	0.40	0.47	0.15	0.21	0.31	--
04	0.21	0.05	--	--	0.31	0.15	0.36	0.26	0.31	0.42	0.15	0.21	0.42	0.26	0.27	0.26	0.42	0.21	--	--	0.47	0.36	--	--
05	0.27	0.14	0.27	0.27	0.27	0.27	0.14	0.14	0.14	0.40	0.14	0.27	0.27	--	--	--	0.27	0.27	0.27	0.27	0.14	0.54	0.42	0.42
06	0.36	0.26	0.36	0.36	0.31	0.15	0.26	0.15	0.36	0.15	0.42	0.10	0.05	--	--	--	--	0.36	--	--	--	--	0.15	0.10
07	0.15	0.15	0.15	0.21	0.26	0.36	0.15	0.05	0.21	0.10	0.15	0.15	0.21	--	--	0.26	0.10	--	--	--	0.10	0.14	0.15	0.14
08	0.27	0.21	0.05	0.21	0.05	0.10	--	0.10	--	0.05	0.10	0.26	0.21	0.14	0.15	0.10	--	0.21	0.27	0.27	0.14	0.21	0.05	--
09	--	--	--	0.21	0.15	0.15	0.10	--	0.14	0.26	0.10	0.15	0.21	0.14	0.21	0.05	0.26	--	--	0.40	0.10	0.14	0.14	0.14
10	0.54	0.10	0.10	0.26	0.15	0.05	0.15	0.21	--	0.05	0.15	0.05	0.10	--	0.15	0.05	0.42	0.14	0.36	0.05	0.10	0.31	0.26	0.15
11	0.21	0.21	--	0.26	--	0.26	0.05	0.21	0.10	0.10	0.42	0.15	0.26	0.27	0.40	0.42	0.21	0.10	0.10	0.27	0.42	0.68	0.36	0.14
12	0.42	0.52	0.42	0.10	0.42	1.31	3.32	4.27	3.48	4.27	4.38	4.06	2.58	3.37	2.90	2.48	2.26	0.67	2.48	1.79	2.16	2.90	5.75	5.27
13	4.11	5.27	--	3.58	3.85	2.48	2.16	1.31	1.21	0.95	1.84	0.73	0.73	0.95	0.89	1.00	1.26	0.81	--	--	--	1.21	0.84	1.00
14	0.73	1.53	1.31	1.74	1.37	1.58	1.21	0.95	1.00	2.63	2.42	1.95	2.58	1.79	1.74	1.31	2.42	2.30	1.84	1.74	2.58	--	--	--
15	9.18	21.4	6.65	9.07	11.6	10.4	11.8	11.6	12.2	10.3	9.60	6.12	7.49	7.91	7.86	5.85	5.96	4.32	5.06	4.90	3.37	4.38	3.90	2.74
16	2.79	1.79	1.79	1.68	1.68	1.37	1.10	0.95	0.73	0.68	0.63	0.89	0.36	0.84	3.85	20.2	81.0	111.	116.	101.	118.	173.	214.	231.
17	269.	280.	335.	386.	342.	316.	266.	110.	137.	81.3	46.4	49.2	58.3	31.8	22.5	20.9	20.5	79.1	22.3	21.3	17.5	15.8	15.7	16.2
18	14.9	14.3	24.7	10.0	8.91	9.50	8.55	9.50	8.86	9.02	7.07	6.38	6.22	6.33	4.90	6.33	5.43	3.24	2.58	3.11	2.63	2.11	2.21	1.63
19	2.05	3.27	--	--	--	--	--	--	--	3.00	2.00	2.32	1.63	1.53	1.37	0.84	0.73	0.81	0.52	0.73	0.79	0.42	0.73	1.42
20	0.68	0.42	0.73	0.47	0.47	0.47	0.63	0.58	0.73	0.36	0.58	0.52	0.58	0.63	0.31	0.26	0.31	0.14	--	0.10	0.26	0.15	0.31	0.26
21	0.47	0.42	0.36	--	--	--	--	--	--	0.42	0.21	0.84	0.47	0.81	--	--	--	0.68	0.36	0.31	0.26	0.10	0.31	0.15
22	0.42	0.58	0.54	--	0.42	0.52	0.52	0.42	0.40	0.54	0.21	0.36	0.40	0.14	0.36	0.21	0.31	0.14	0.15	0.42	0.10	0.40	0.15	0.40
23	0.54	0.73	0.42	0.68	0.79	0.52	0.63	0.73	0.31	0.79	0.68	0.89	0.36	0.42	0.52	0.26	0.36	0.54	0.52	0.73	0.95	1.05	0.84	0.63
24	0.73	0.79	0.89	0.68	1.21	1.47	0.84	0.84	0.95	0.68	0.40	0.54	0.58	0.73	0.47	0.54	0.54	0.27	0.36	0.36	0.52	0.73	0.68	0.79
25	0.68	0.58	0.95	--	0.68	0.89	0.58	0.84	0.58	0.63	0.42	0.63	0.42	0.36	0.47	0.52	0.36	0.54	0.54	0.26	0.14	0.27	0.27	0.81
26	1.05	0.89	0.68	0.73	1.00	0.63	0.52	0.84	0.52	0.95	0.84	0.84	--	--	0.68	0.95	0.84	0.67	--	0.58	0.81	0.63	0.52	0.58
27	0.89	0.47	0.15	0.36	0.47	0.42	0.36	0.52	0.42	0.52	0.58	0.42	0.31	0.42	0.63	0.15	0.52	0.27	--	--	--	0.54	0.52	0.42
28	0.26	0.58	0.31	0.42	0.26	0.95	0.52	0.21	0.73	0.58	0.58	0.26	0.58	0.36	0.84	0.73	0.54	0.68	0.95	--	--	0.52	--	--
29	--	--	0.47	1.16	--	--	--	--	--	--	--	--	--	--	--	0.52	0.63	0.54	1.31	0.68	1.26	0.89	1.00	1.31
30	0.36	0.79	0.26	0.58	--	--	--	--	--	--	--	--	--	0.79	0.47	0.47	0.52	0.40	0.36	0.42	0.52	0.36	0.54	--
31	--	--	0.31	0.63	0.26	0.15	0.42	0.15	--	--	--	--	--	--	--	0.21	0.15	0.14	0.21	0.10	0.10	0.26	0.36	0.14

SOLAR PROTON MONITORING ATS-1 (1966-110A)

MAY 1971

AEROSPACE CORP

ENERGY LEVEL 21-70 MEV - HOURLY AVERAGES (PARTICLES CM^{-2} SEC^{-1})

DATE	HOUR 01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
01	0.38	0.43	0.50	0.47	0.46	0.44	0.49	0.46	0.38	0.50	0.34	0.56	0.35	0.52	0.47	0.41	0.48	0.42	0.50	0.54	0.37	0.51	0.47	0.40
02	0.43	0.47	0.41	0.54	0.43	0.51	0.36	0.47	0.37	0.42	0.47	0.46	0.45	0.43	0.57	0.36	0.34	0.45	0.44	0.36	0.45	0.52	0.58	0.52
03	0.37	0.47	0.51	0.44	0.47	0.46	0.43	0.57	0.42	0.57	0.48	0.52	0.43	--	0.40	0.44	0.50	0.46	0.47	0.48	0.47	0.43	0.45	0.47
04	0.43	0.38	0.52	--	0.46	0.44	0.47	0.38	0.47	0.48	0.40	0.41	0.48	0.47	0.34	0.42	0.45	--	--	--	0.48	0.44	--	0.43
05	0.48	0.45	0.44	--	0.44	0.46	0.41	0.41	0.47	0.41	0.42	0.53	0.31	--	--	--	0.38	0.41	0.34	0.51	0.41	0.43	0.40	0.47
06	0.36	0.46	0.42	0.52	0.46	0.51	0.52	0.38	0.57	0.53	0.37	0.42	0.38	--	--	--	--	0.50	--	--	--	--	0.46	0.48
07	0.49	0.43	0.42	0.56	0.38	0.47	0.39	0.40	0.47	0.52	0.48	0.40	0.40	--	--	0.45	0.38	--	--	--	0.45	0.34	0.45	0.38
08	0.48	0.48	0.52	0.47	0.43	0.43	0.38	0.46	0.46	0.41	0.46	0.43	0.43	0.37	0.47	0.47	0.58	0.40	0.40	0.44	0.40	0.38	0.41	0.27
09	--	--	--	0.42	0.40	0.44	0.48	0.48	0.38	0.43	0.46	0.44	0.49	0.43	0.47	0.46	0.32	0.45	0.45	0.43	0.52	0.44	0.47	0.43
10	0.45	0.43	0.43	0.45	0.47	0.38	0.47	0.48	0.48	0.47	0.43	0.48	0.50	0.33	0.51	0.47	0.46	0.34	0.49	0.55	0.47	0.48	0.44	0.47
11	0.52	0.43	--	0.38	0.46	0.38	0.40	0.42	0.43	0.49	0.49	0.48	0.41	0.54	0.46	0.40	0.46	3.21	0.47	0.41	0.48	0.36	0.46	0.50
12	0.44	0.45	0.41	0.53	0.92	1.05	1.23	1.06	0.90	0.98	0.76	0.80	0.68	0.66	0.58	0.62	0.65	1.35	0.56	0.50	0.55	0.51	0.55	0.63
13	0.48	0.66	--	0.55	0.55	0.58	0.41	0.48	0.48	0.50	0.51	0.57	0.43	0.42	0.55	0.53	0.37	0.55	--	--	--	0.57	0.57	0.60
14	0.60	0.64	0.49	0.61	0.43	0.56	0.47	0.51	0.44	0.54	0.58	0.53	0.48	0.60	0.55	0.50	0.53	0.72	1.26	1.16	1.72	--	--	--
15	2.58	2.37	2.30	2.27	2.15	1.87	1.96	1.84	1.95	1.74	1.62	1.45	1.34	1.46	1.25	1.15	1.25	0.76	1.07	0.85	0.75	0.84	0.72	0.86
16	0.74	0.63	0.68	0.75	0.47	0.63	0.70	0.62	0.53	0.57	0.68	0.60	0.53	1.46	9.83	16.9	21.2	24.4	19.9	18.3	18.5	20.9	19.1	15.4
17	13.3	12.2	13.8	13.5	11.7	10.4	8.45	4.37	7.01	5.72	2.30	2.37	1.75	3.10	1.35	1.30	1.21	2.71	1.16	1.08	1.10	0.97	0.83	1.08
18	0.89	0.81	0.76	0.78	0.68	0.63	0.67	0.65	0.70	0.59	0.71	0.73	0.64	0.64	0.66	0.66	0.67	0.70	0.68	0.55	0.53	0.52	0.63	0.55
19	0.54	1.90	--	--	--	--	--	--	--	0.48	0.52	0.62	0.41	0.50	1.92	0.53	0.53	0.37	1.91	0.49	0.51	0.56	0.48	0.47
20	0.47	0.44	0.51	0.46	0.51	0.46	0.47	0.41	0.49	0.43	0.51	0.43	0.43	0.47	0.45	0.45	0.47	0.43	0.63	0.52	0.46	0.42	0.46	0.46
21	0.50	0.38	0.50	--	--	--	--	--	--	0.51	0.45	0.42	0.47	0.65	0.40	--	--	0.41	0.43	0.43	0.40	0.41	0.41	0.37
22	0.42	0.42	0.43	--	0.50	0.35	0.44	0.48	0.40	0.50	0.47	0.42	0.48	0.34	0.48	0.36	0.43	0.68	0.41	0.55	0.43	0.44	0.45	0.64
23	0.41	0.40	0.59	0.50	0.53	0.41	0.45	0.45	0.45	0.51	0.43	0.47	0.48	0.51	0.49	0.50	0.47	0.36	0.50	0.46	0.49	0.43	0.48	0.48
24	0.53	0.43	0.47	0.46	0.46	0.43	0.52	0.49	0.38	0.37	0.57	0.36	0.41	0.50	0.45	0.36	0.38	0.61	0.53	0.45	0.41	0.50	0.46	0.39
25	0.52	0.42	0.40	--	0.42	0.43	0.57	0.49	0.45	0.48	0.47	0.39	0.42	0.43	0.51	0.46	0.45	0.70	0.53	0.51	0.51	0.33	0.50	0.50
26	0.43	0.38	0.45	0.51	0.52	0.44	0.58	0.47	0.44	0.47	0.46	0.50	--	--	0.65	0.34	0.55	0.58	--	0.52	0.54	0.46	0.48	0.58
27	0.50	0.47	0.69	0.48	0.51	0.50	0.53	0.47	0.57	0.51	0.52	0.36	0.50	0.52	0.57	0.53	0.47	0.34	--	--	--	0.28	0.50	0.50
28	0.46	0.47	0.40	0.52	0.54	0.38	0.55	0.50	0.51	0.43	0.51	0.38	0.50	0.55	0.57	0.49	0.45	0.38	0.49	--	--	0.52	--	--
29	--	--	0.49	0.47	--	--	--	--	--	--	--	--	--	--	--	0.50	0.46	0.67	0.50	0.48	0.53	1.88	0.43	0.42
30	0.53	0.41	0.46	0.47	--	--	--	--	--	--	--	--	--	0.47	0.51	0.41	0.43	0.40	0.47	0.52	0.42	0.51	0.65	--
31	--	--	0.41	0.47	0.41	0.47	0.45	0.60	--	--	--	--	--	--	--	0.45	0.47	0.36	0.46	0.55	0.50	0.40	0.41	0.41

Table of Contents
for April 1971 Data

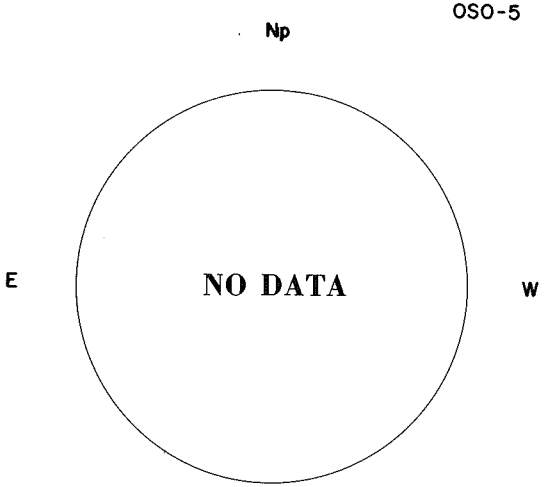
	Page
Daily Solar Activity Centers	
X-ray, 8.6mm, 9.1 cm and 21 cm Spectroheliograms Magnetograms and Calcium Plages	31-60
H α Spectroheliograms, Sunspots and Corona	61-70
Individual Regions of Solar Activity	71-79
Daily Calcium Indices	79
Solar X-ray Radiation	
Naval Research Laboratory - Explorer 37	80-82
Sudden Ionospheric Disturbances	
Table of Events	83-84
Number of Events in each Plage Region	84
Selected Event	85
Solar Radio Waves	
Spectral Observations	86-93
Cosmic Rays	
Neutron Monitors Daily Values - Churchill, Deep River, Calgary, Sulphur Mt., Climax, Dallas	94
Chart of Variations - Deep River, Alert, Calgary, Sulphur Mt.	95
Geomagnetic Indices	
Table of Indices Kp, Ci, Cp, Ap	96
Chart of Kp by Solar Rotations and 12-Month Table of Daily Average Ap	97
Principal Magnetic Storms	98
Sudden Commencements and Solar Flare Effects	99
Radio Propagation Indices	
North Atlantic Quality Figures and Forecasts	100
Charts of North Atlantic Short-term Forecasts and Quality and High Latitude Advance Forecasts	101
Transmission Frequency Ranges - North Atlantic Path	102-103

For explanations of the data contained herein see "Descriptive Text" published in February 1971.

APRIL 1, 1971 (P = -26.19, B_o = -6.55, L_o = 24.08)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

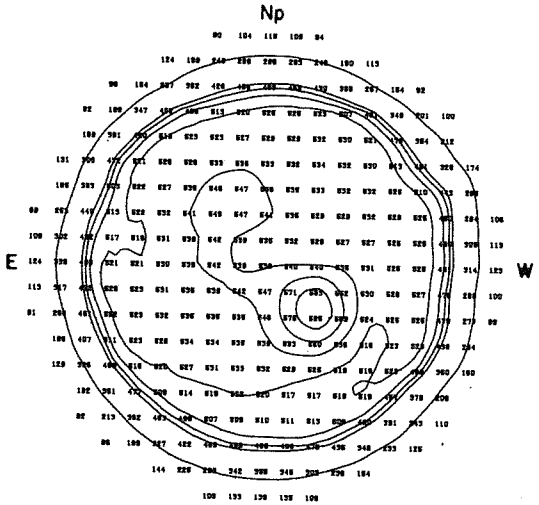
X-RAY
OSO-5



Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm



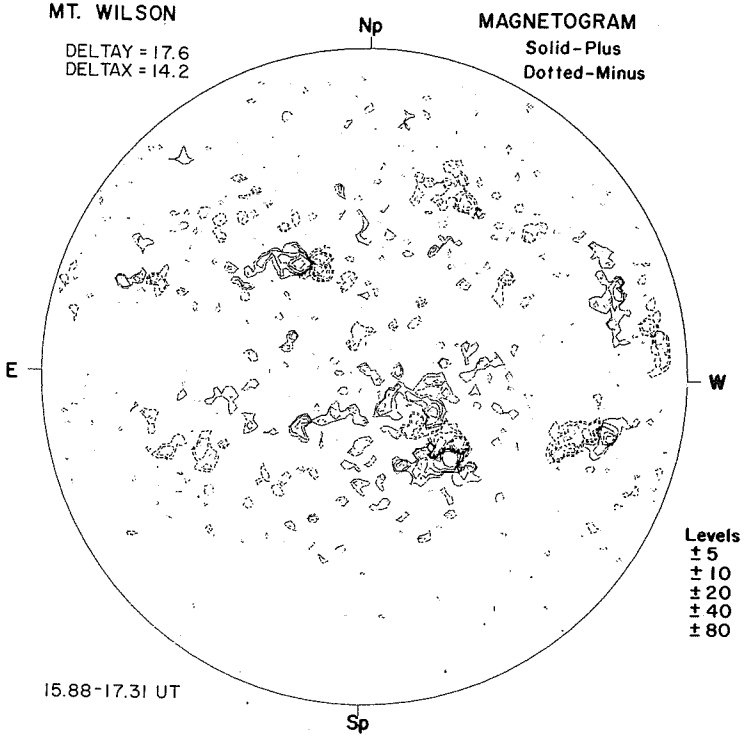
1454 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

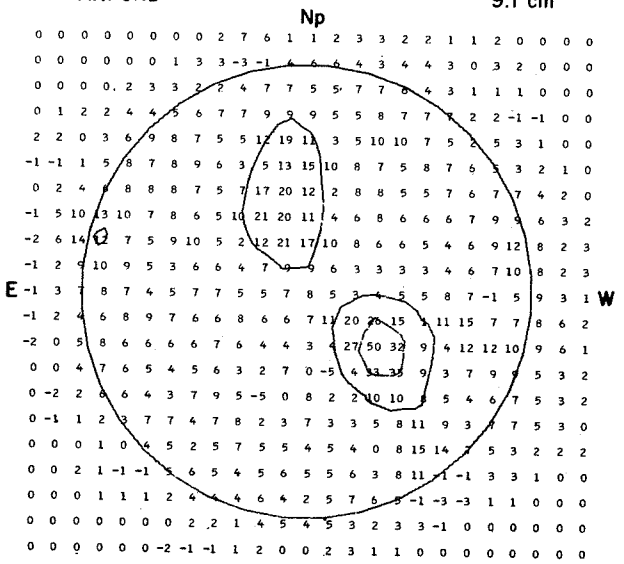


Levels
±5
±10
±20
±40
±80

15.88-17.31 UT

STANFORD

9.1 cm

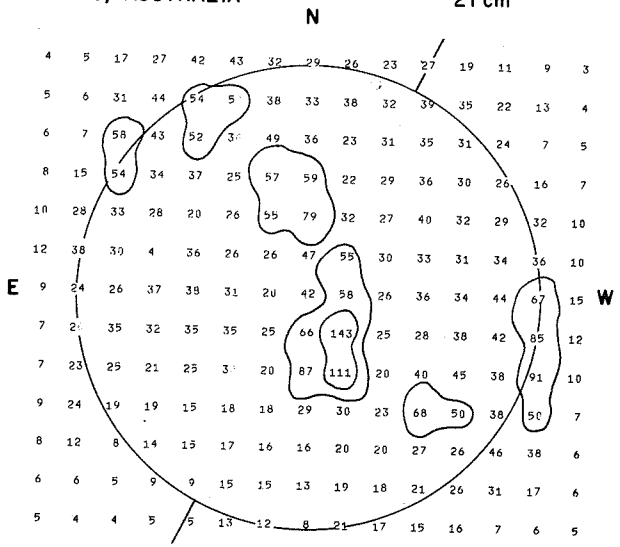


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

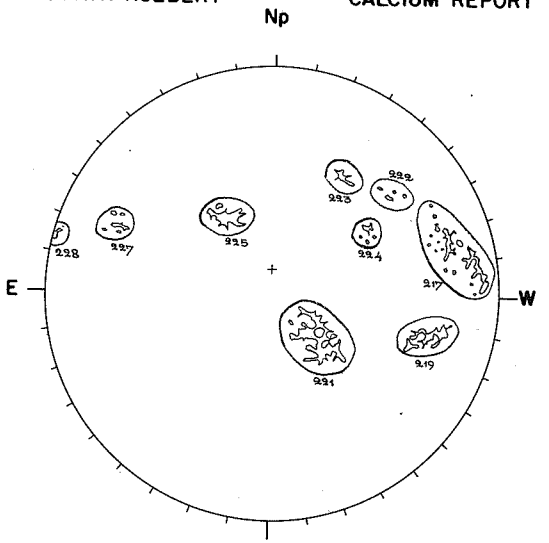


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



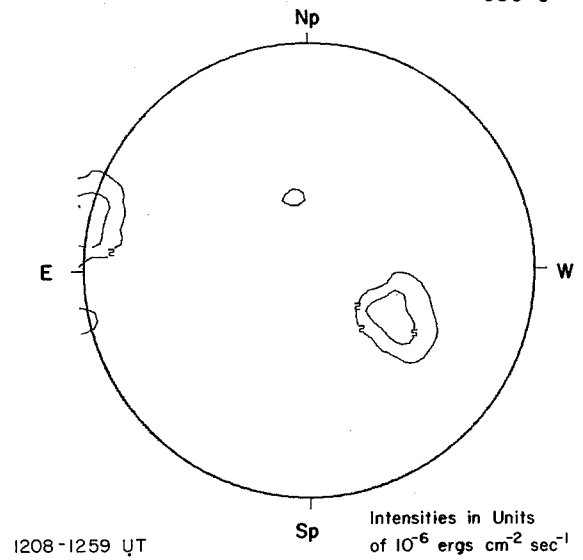
FAIR	M
19-15-2.5	
21-24-4.5	
25-10-3.0	

1340 UT

APRIL 2, 1971 (P=-26.24, B_o=-6.50, L_o=10.89)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

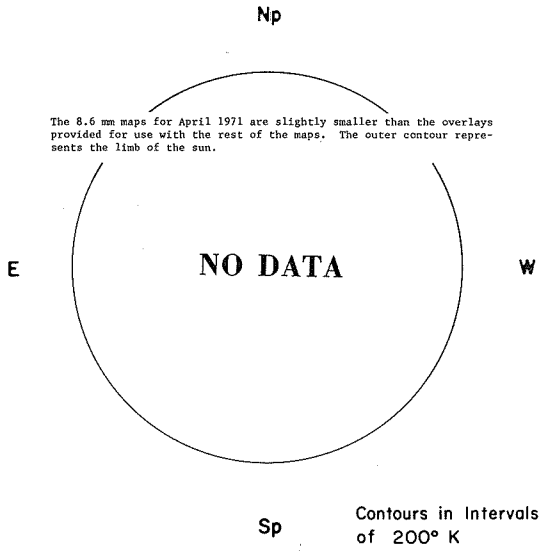


1208-1259 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm



The 8.6 mm maps for April 1971 are slightly smaller than the overlays provided for use with the rest of the maps. The outer contour represents the limb of the sun.

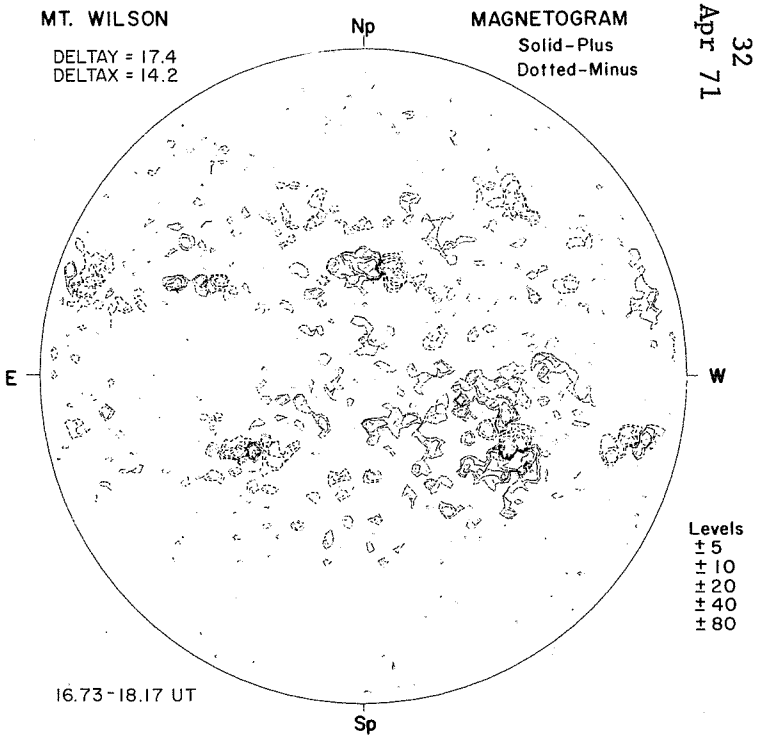
NO DATA

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.4
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

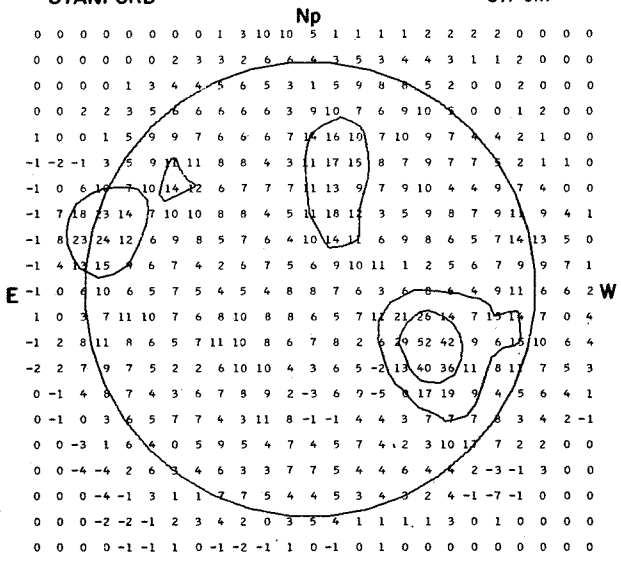


Levels
±5
±10
±20
±40
±80

16.73-18.17 UT

STANFORD

9.1 cm

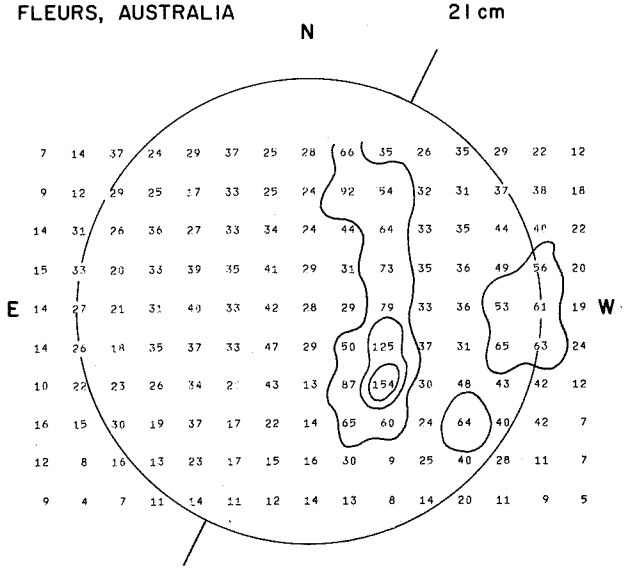


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

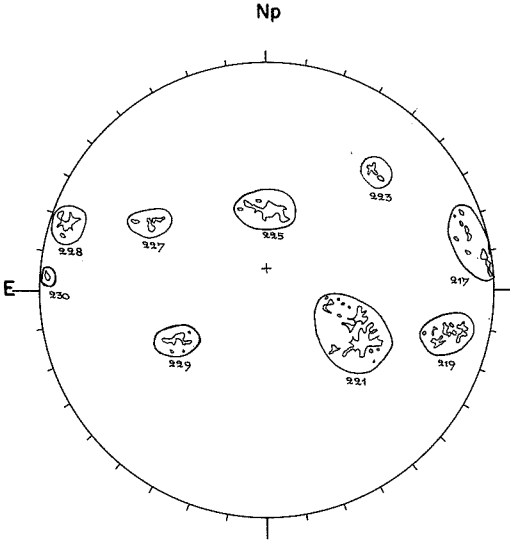


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



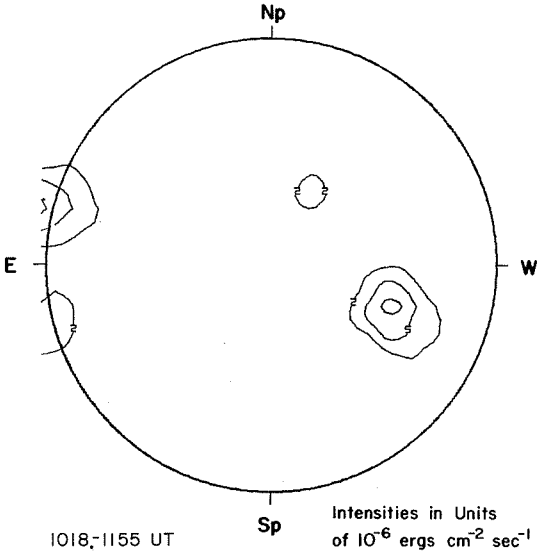
FAIR	M
19-11-2.5	
21-25-4.0	
25-11-3.0	
29-04-2.5	

1310 UT

APRIL 3, 1971 (P=-26.27, B_o=-6.44, L_o=357.70)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

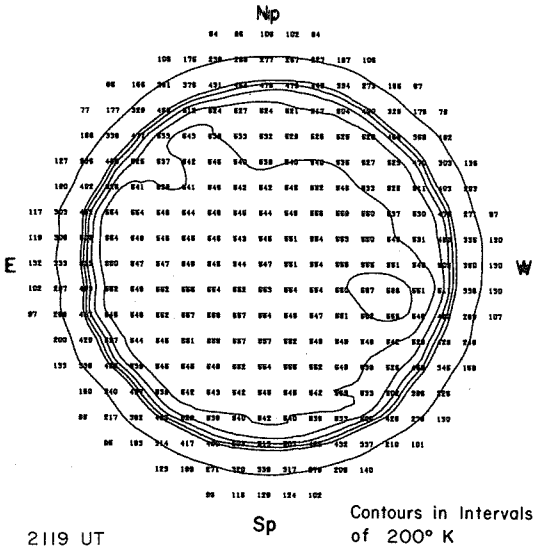


1018-1155 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm



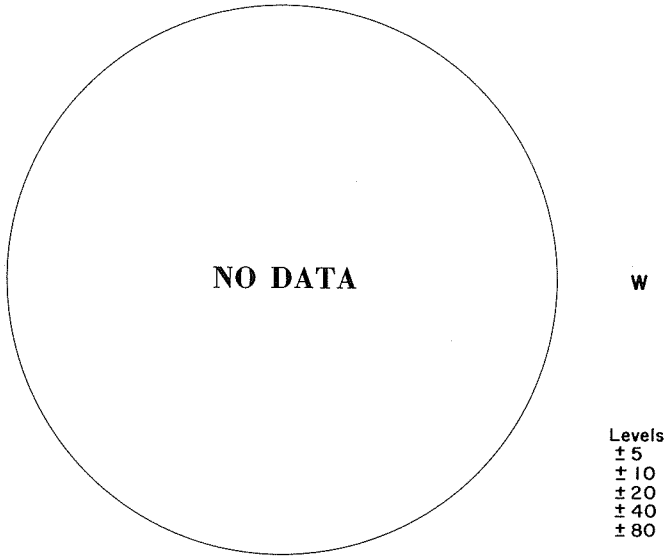
2119 UT

Contours in Intervals of 200° K

MT. WILSON

Np

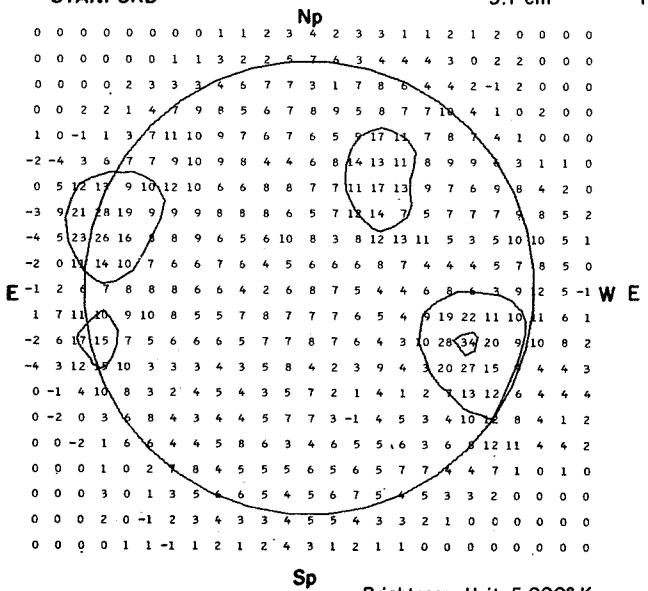
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

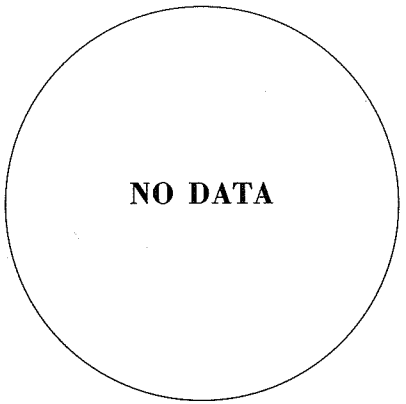


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

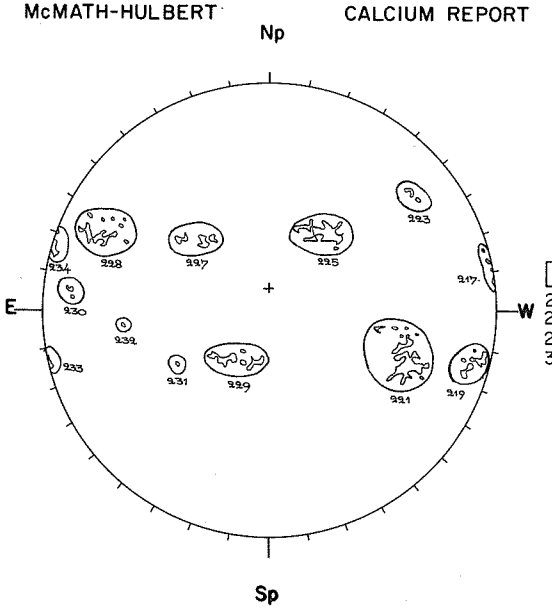


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



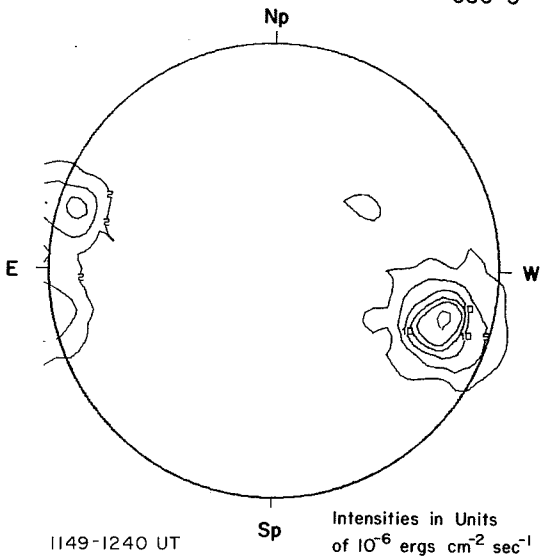
FAIR	M
21-24	3.5
25-13	3.5
29-08	2.5
34-12	3.0

1345 UT

APRIL 4, 1971 (P=-26.30, B_o=-6.38, L_o=344.50)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

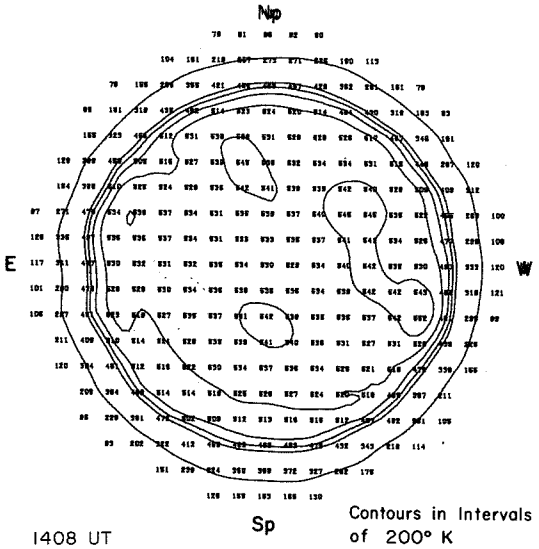


1149-1240 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

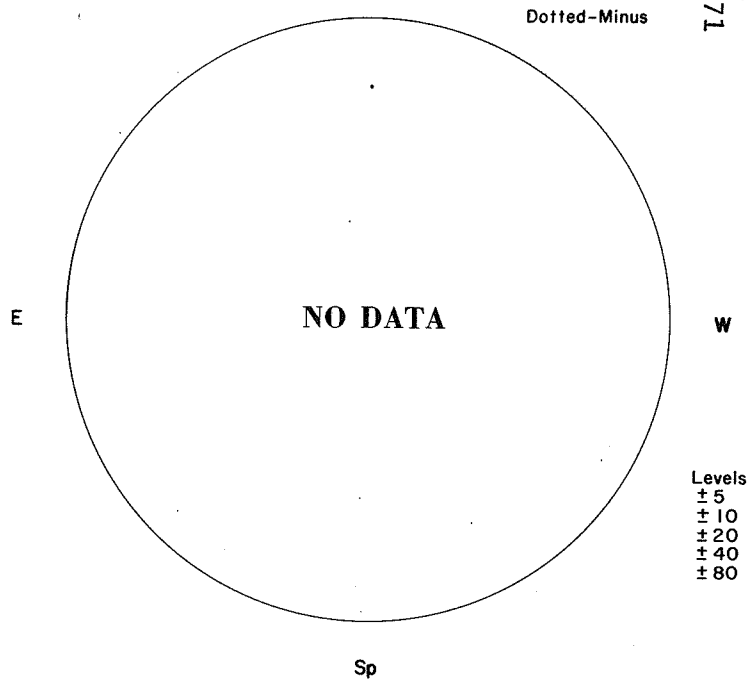


1408 UT

Contours in Intervals of 200° K

MT. WILSON

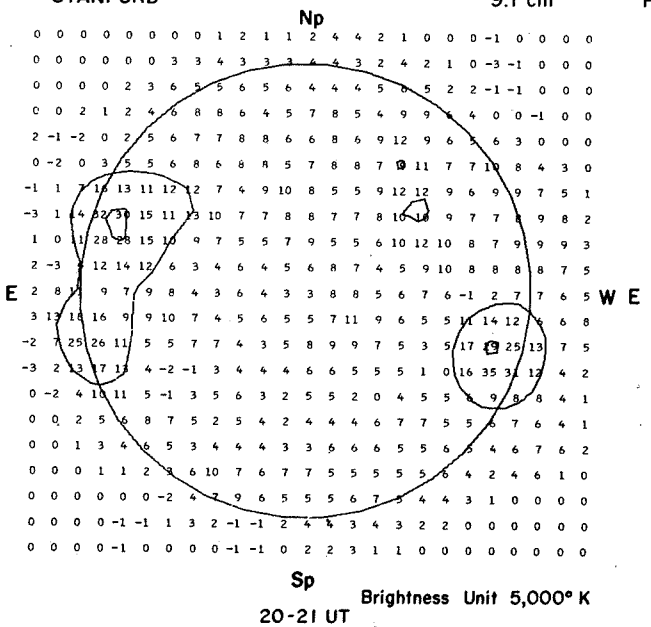
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

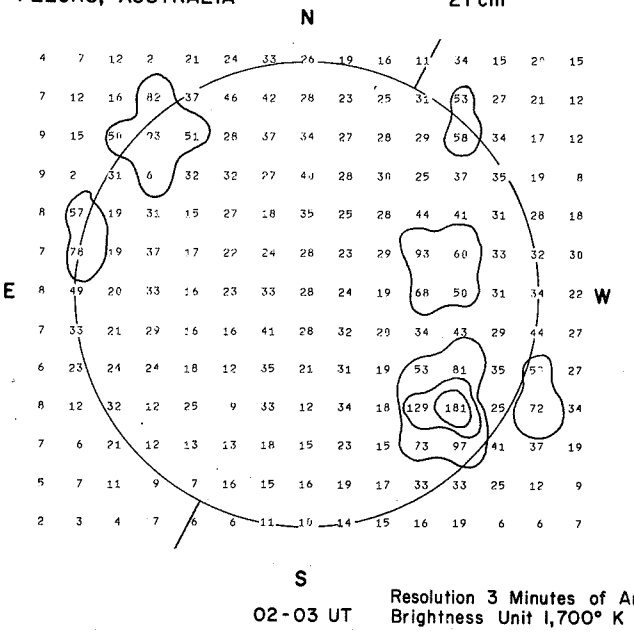


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

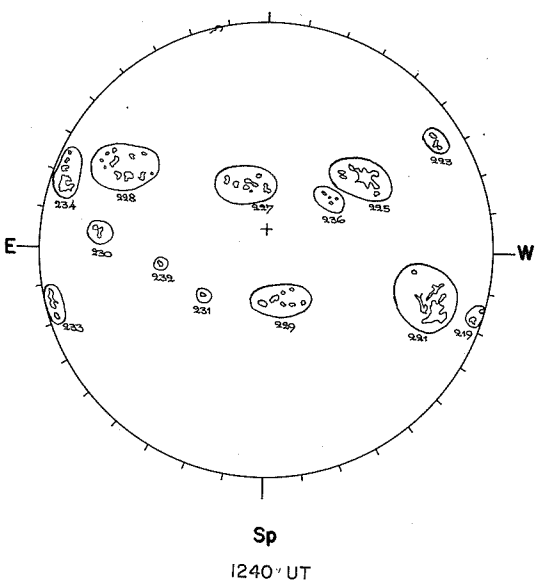


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



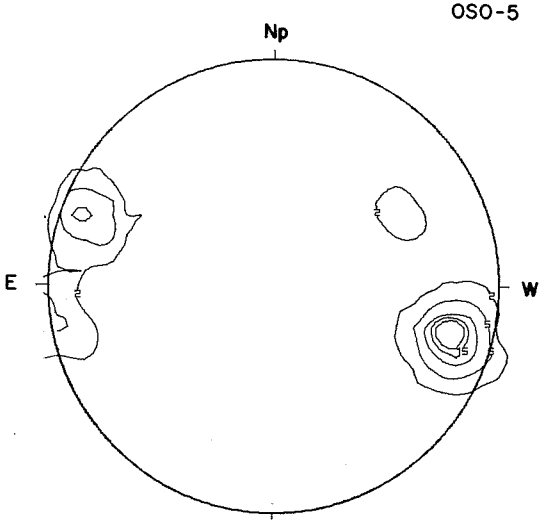
FAIR	D
21-24	-3.5
25-13	-3.0
29-06	-2.5
33-12	-3.0
34-15	-3.5

1240 UT

APRIL 5, 1971 (P=-26.32, B_o=-6.32, L_o=331.31)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

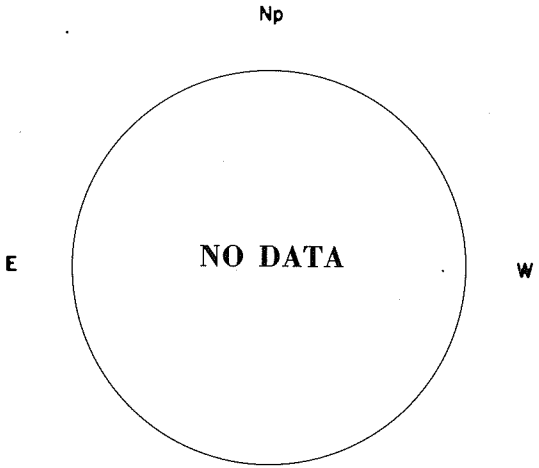


1000-1057 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

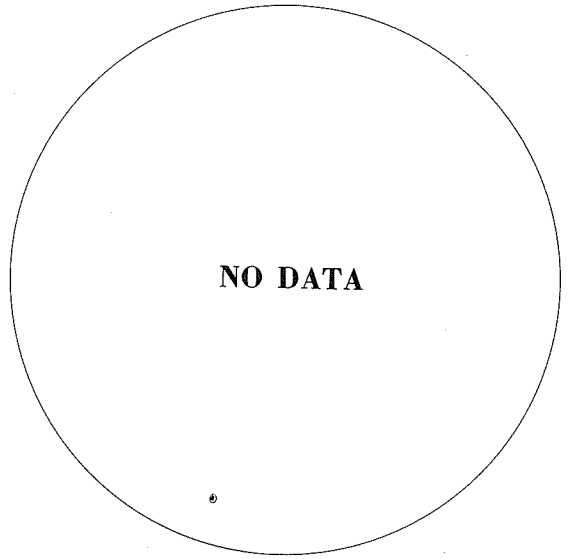
8.6 mm



Contours in Intervals of 200° K

MT. WILSON

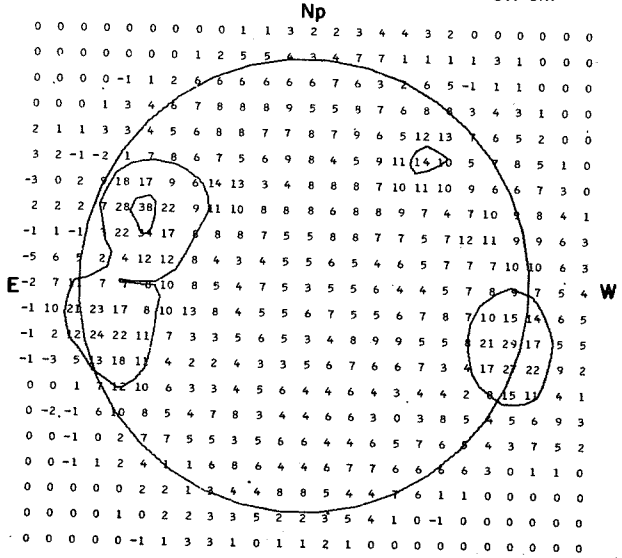
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

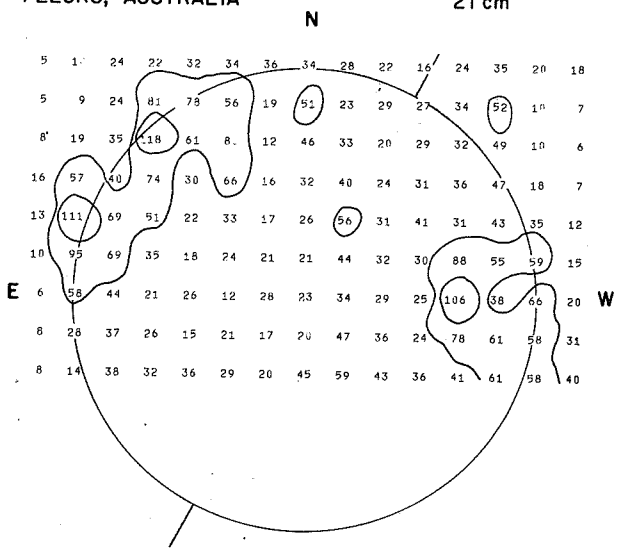


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

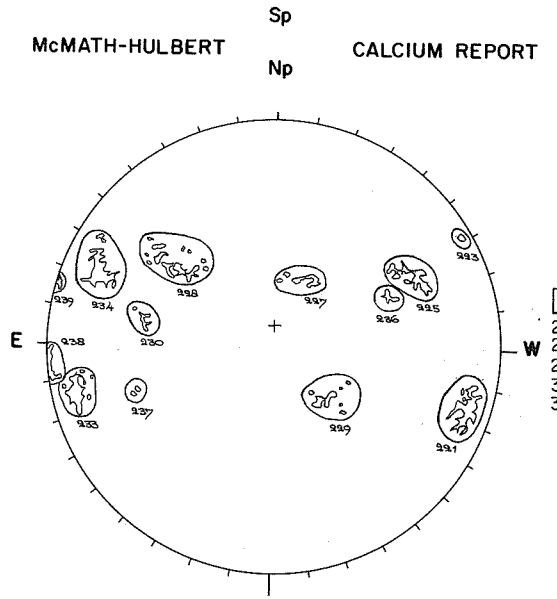


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



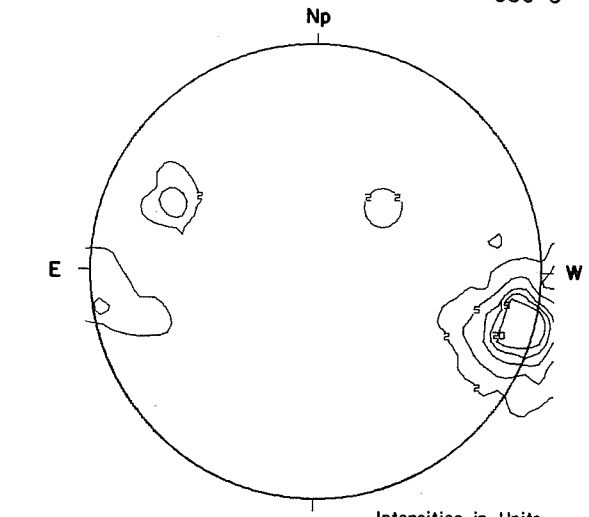
FAIR	M
21-26	-3.5
25-11	-2.5
29-06	-2.5
33-19	-3.0
34-23	-3.5

1245 UT

APRIL 6, 1971 (P=-26.34, B_o=-6.26, L_o=318.11,

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

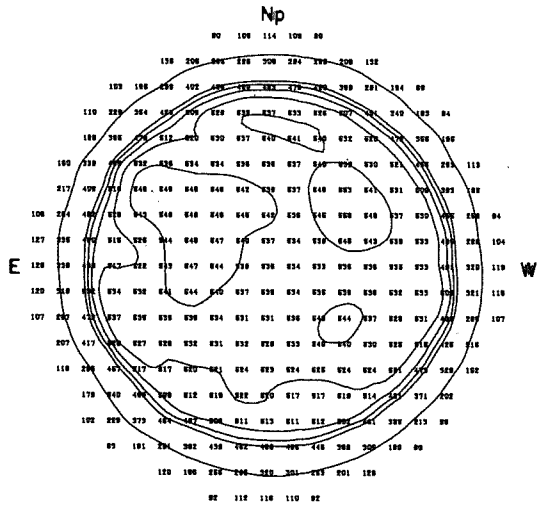


1151-1255 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

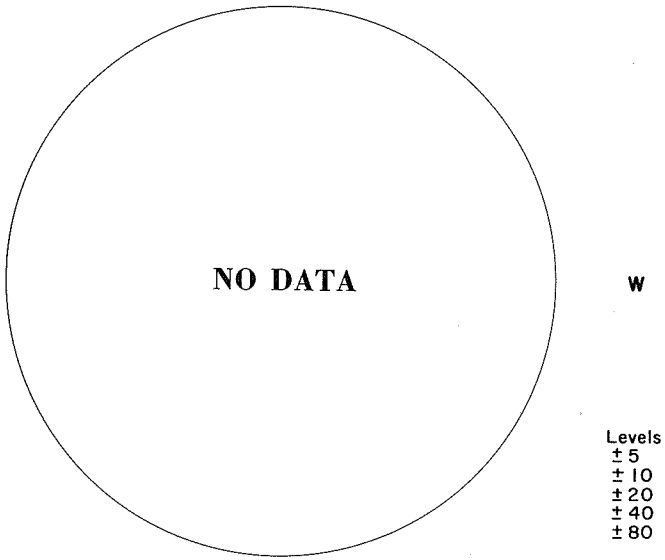


1420 UT

Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

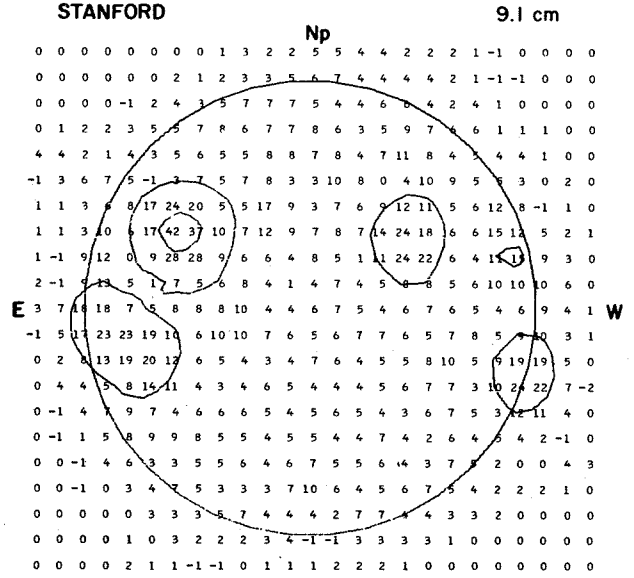


NO DATA

Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

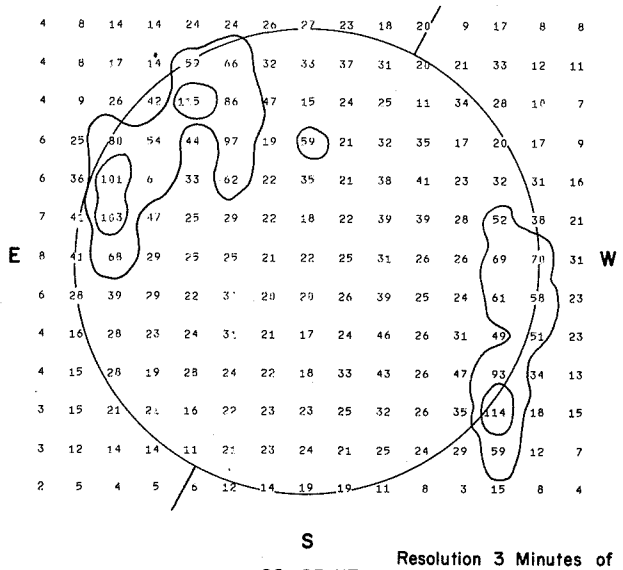


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

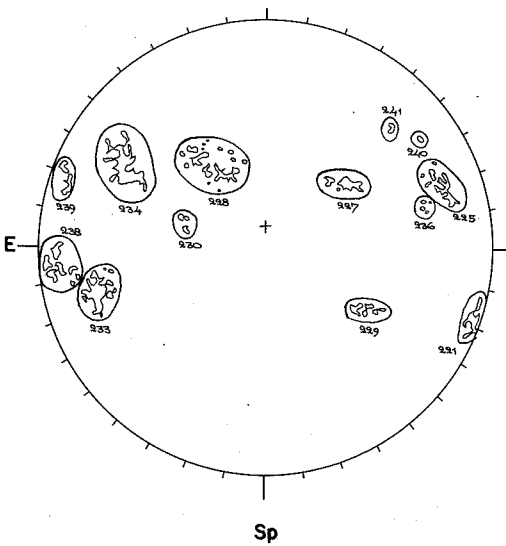


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



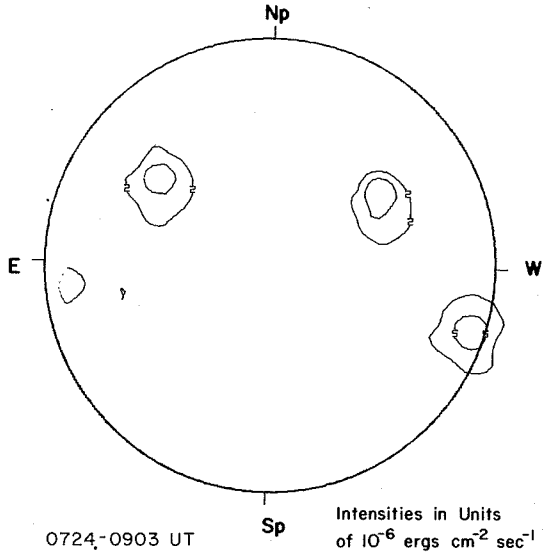
FAIR	M
21 - 17	-3.0
25 - 13	-2.5
27 - 09	-4.0
33 - 22	-3.0
34 - 24	-3.5
38 - 22	-2.5

1245 UT

APRIL 7, 1971 (P=-26.34, B_o=-6.20, L_o=304.92)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

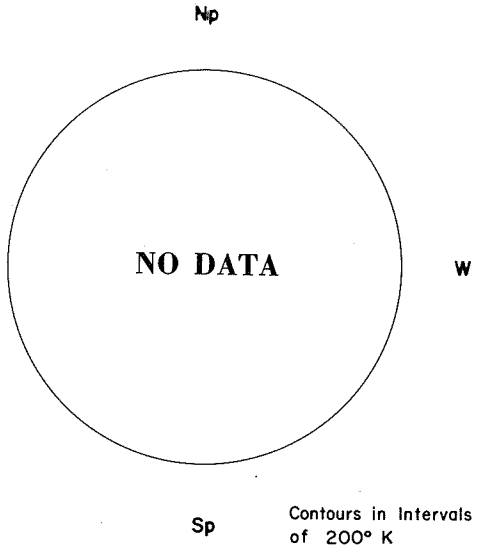


0724-0903 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

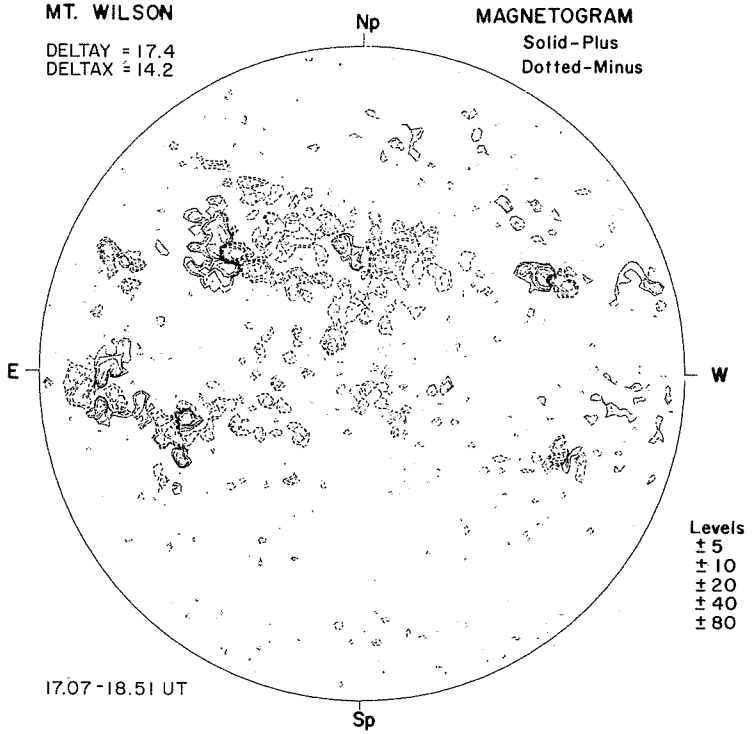


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.4
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

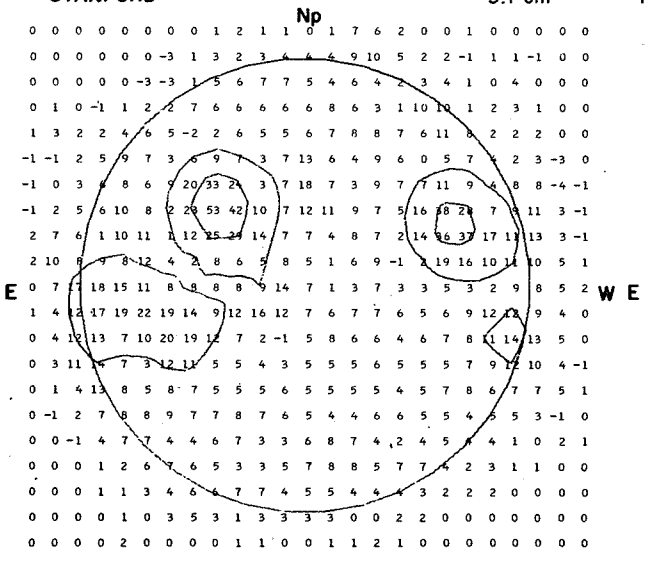


Levels
±5
±10
±20
±40
±80

17.07-18.51 UT

STANFORD

9.1 cm

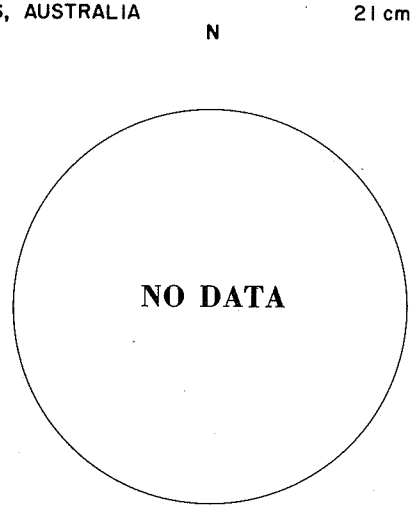


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

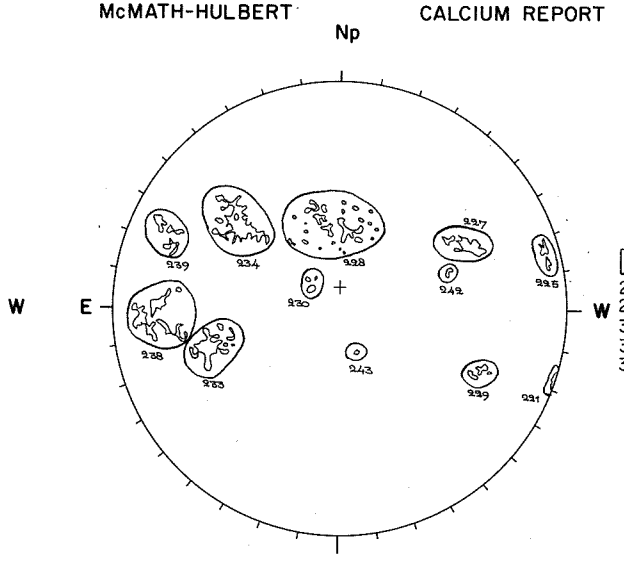


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



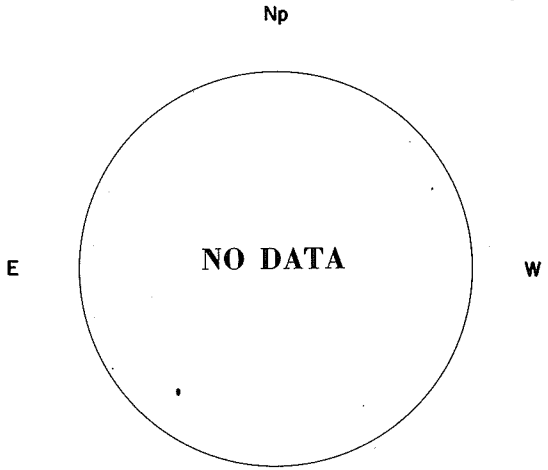
FAIR	M
25	10 - 3.0
27	10 - 3.5
33	20 - 3.0
34	26 - 3.5
38	23 - 2.5

1250 UT

APRIL 8, 1971 (P=-26.34, B_o=-6.13, L_o=291.72)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

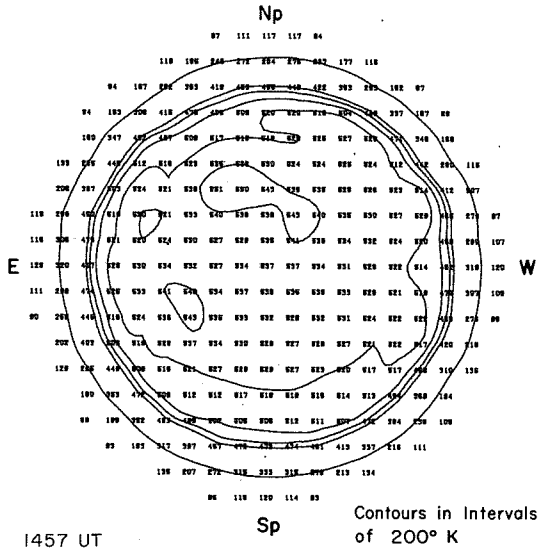
X-RAY
OSO-5



Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm



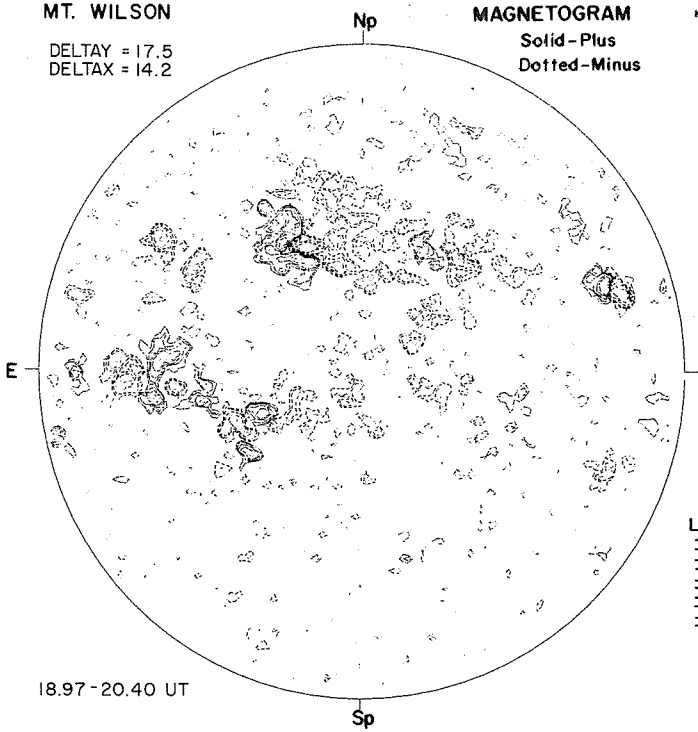
1457 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.5
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

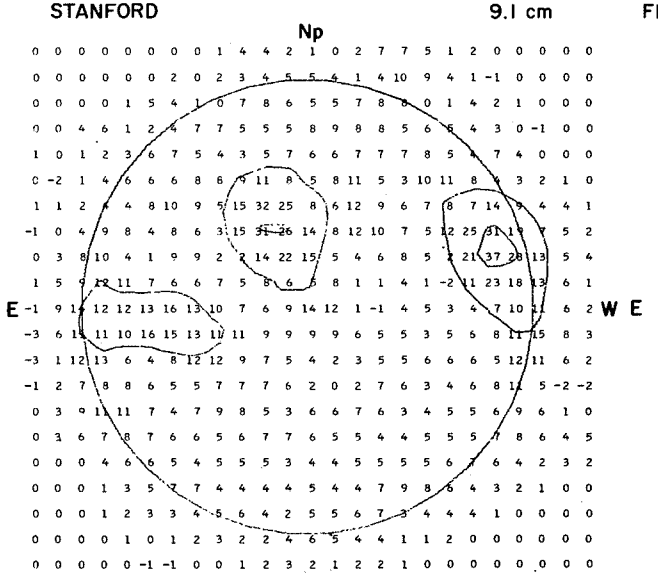


Levels
±5
±10
±20
±40
±80

18.97-20.40 UT

STANFORD

9.1 cm

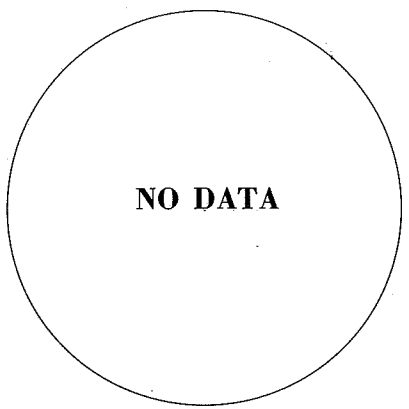


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

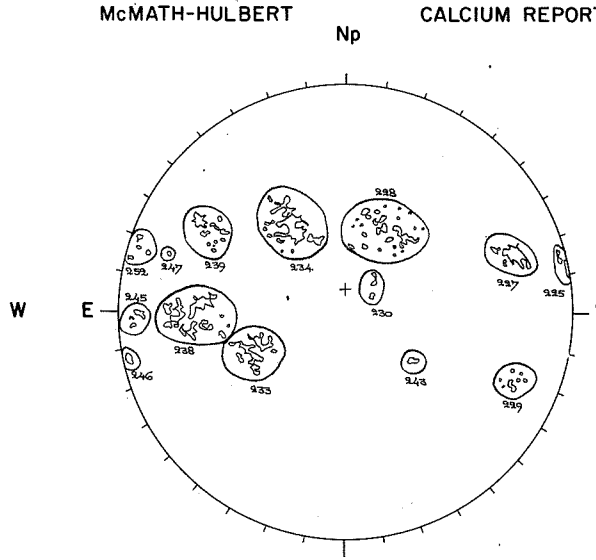


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



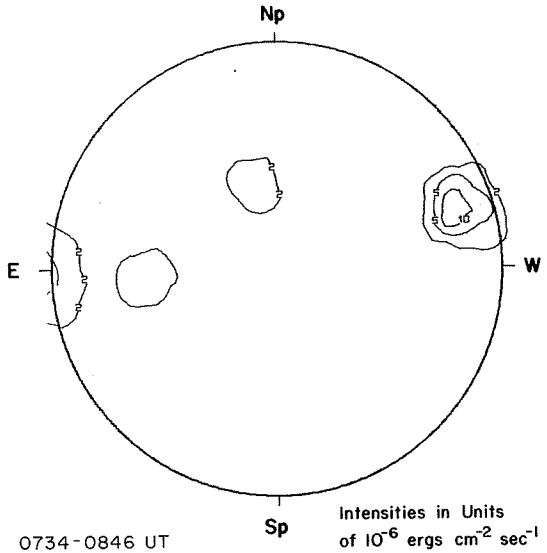
GOOD	M
27	13 - 3.5
28	13 - 2.5
33	14 - 2.5
34	24 - 3.5
38	20 - 2.5

1325 UT

APRIL 9, 1971 (P=-26.33, B_o=-6.07, L_o=278.52)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

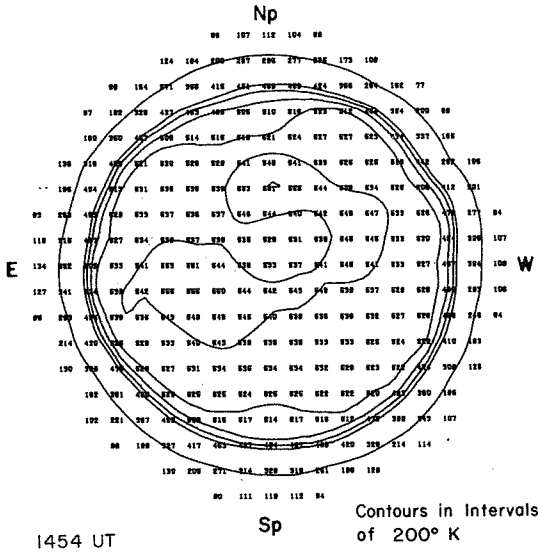


0734-0846 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm



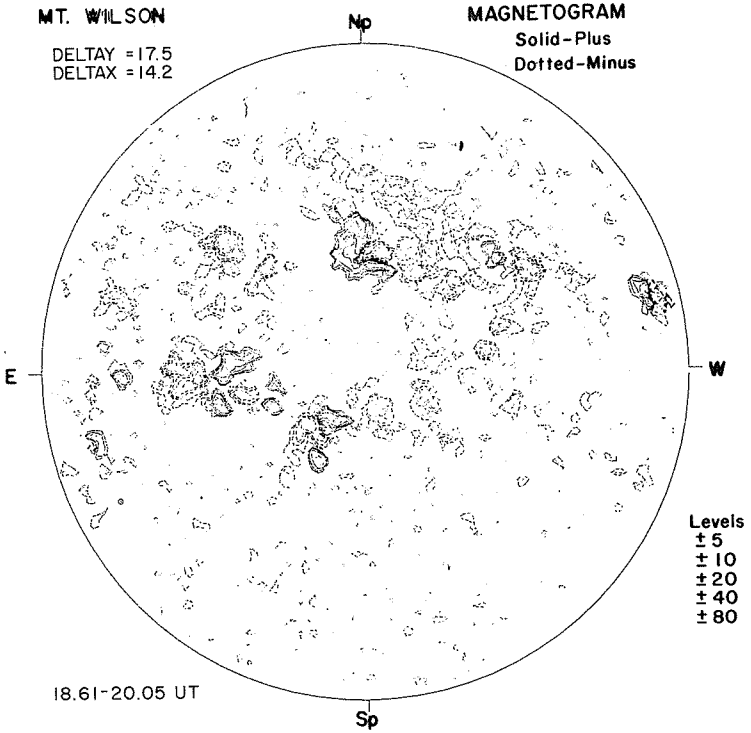
1454 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.5
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

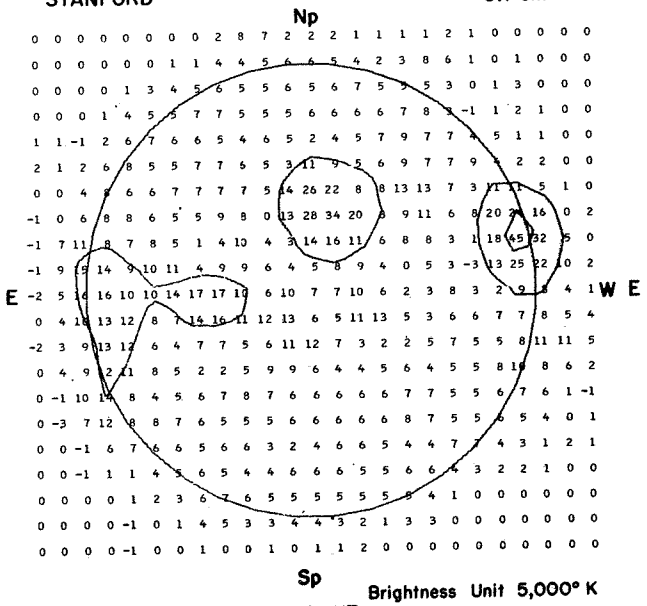


Levels
±5
±10
±20
±40
±80

18.61-20.05 UT

STANFORD

9.1 cm

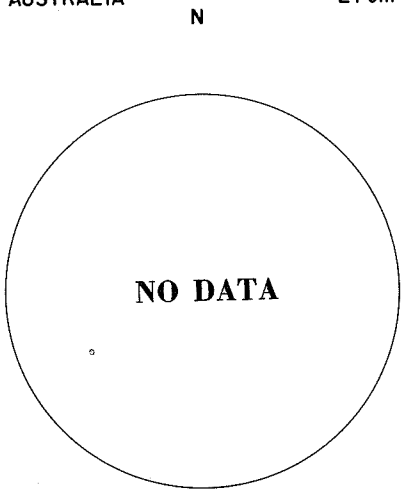


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

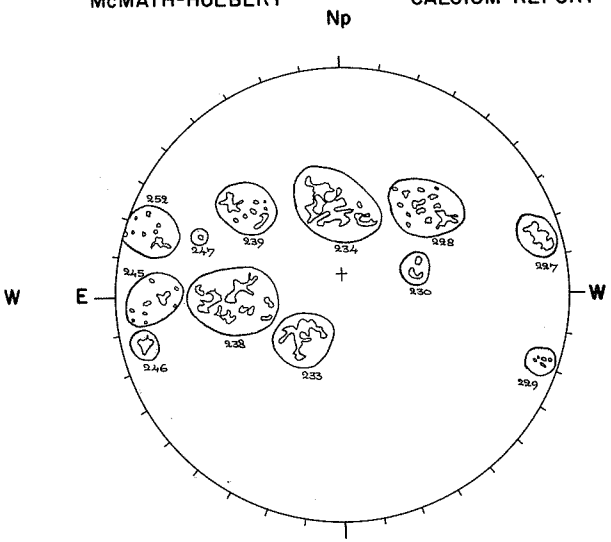


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



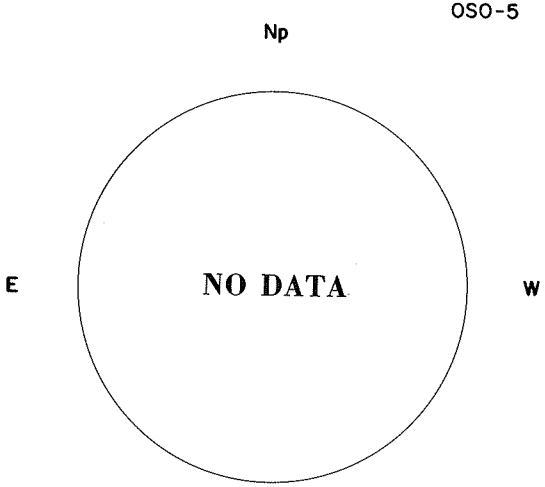
FAIR	M
27-15	-3.5
33-14	-2.5
34-23	-3.0
38-21	-2.5
39-11	-2.5

1315 UT

APRIL 10, 1971 (P=-26.32, B_o=-6.00, L_o=265.32)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

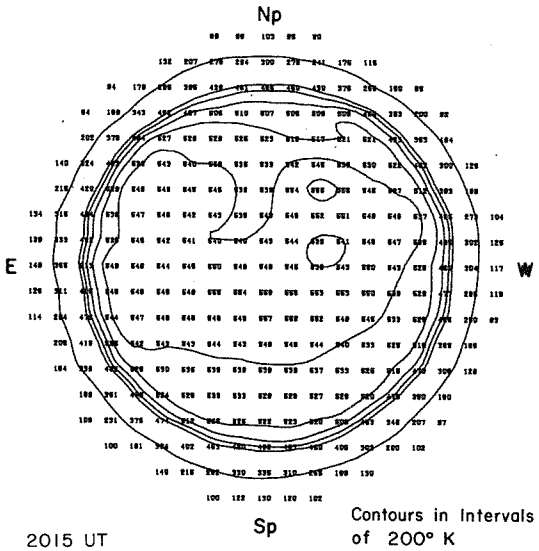
X-RAY
OSO-5



Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm



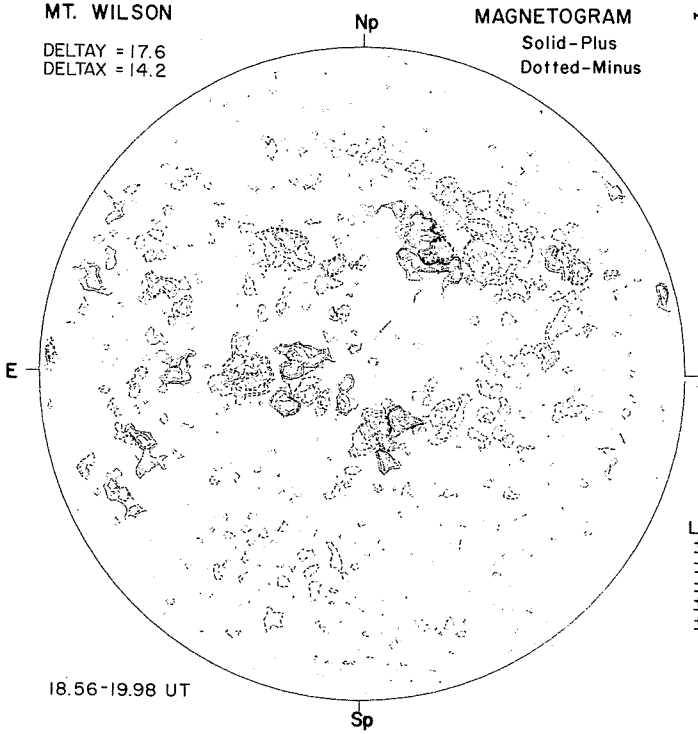
2015 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

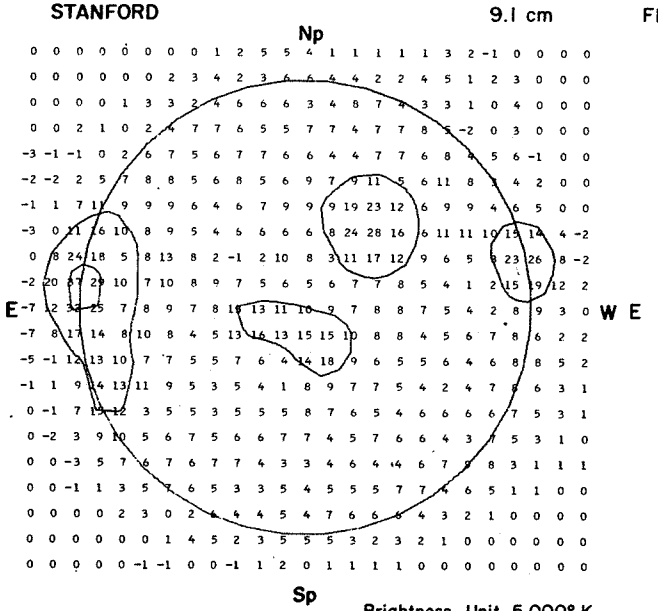


Levels
±5
±10
±20
±40
±80

18.56-19.98 UT

STANFORD

9.1 cm

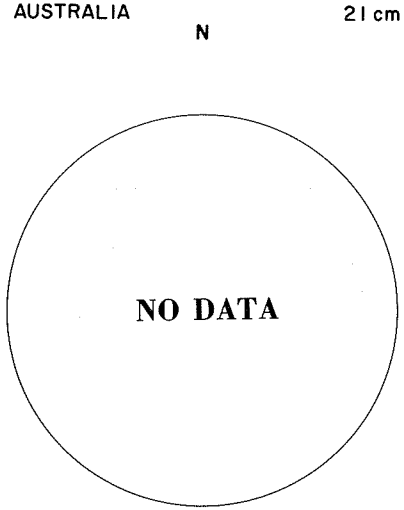


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

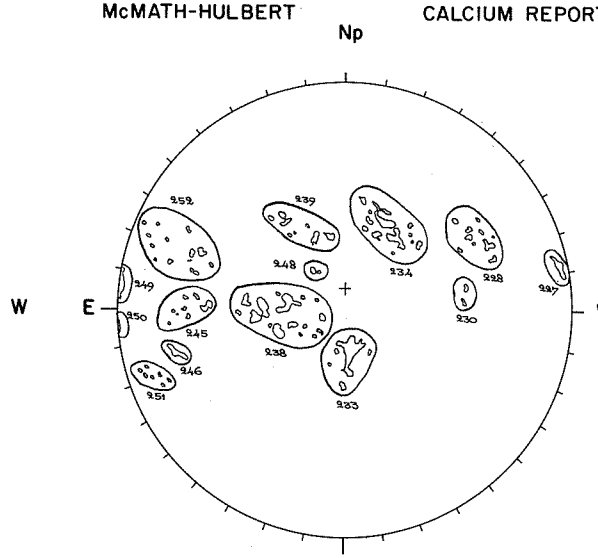


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



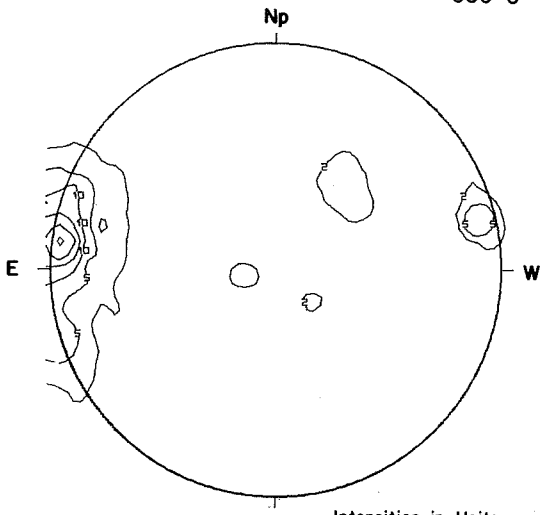
FAIR	S
27-15	3.5
33-14	2.5
34-23	3.0
38-25	2.5
39-10	2.5
46-07	2.5
49-15	3.5

1223 UT

APRIL 11, 1971 (P=-26.30, B_o=-5.93, L_o=252.12)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

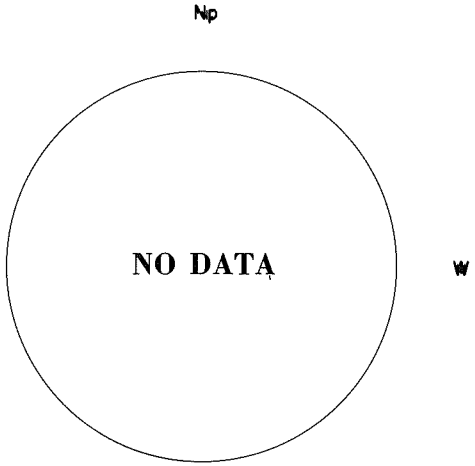


0749-0957 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

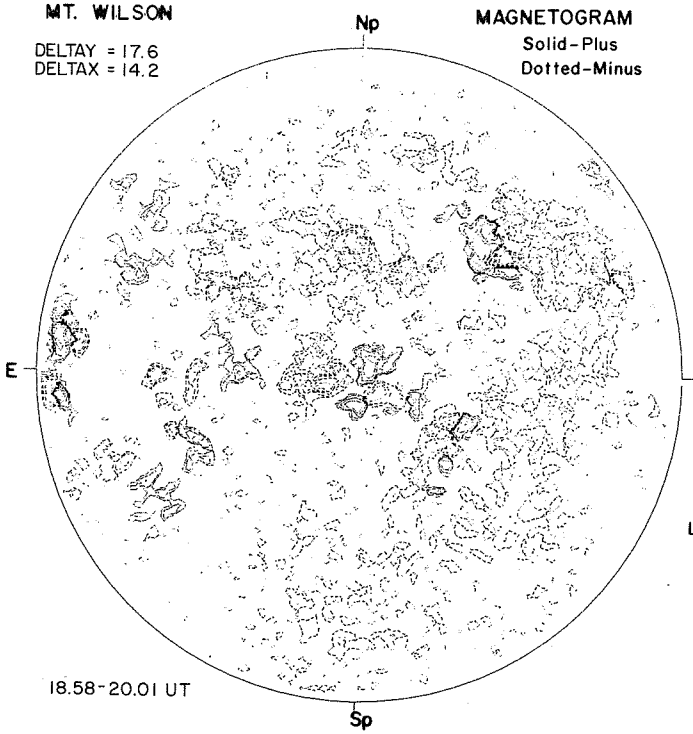


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

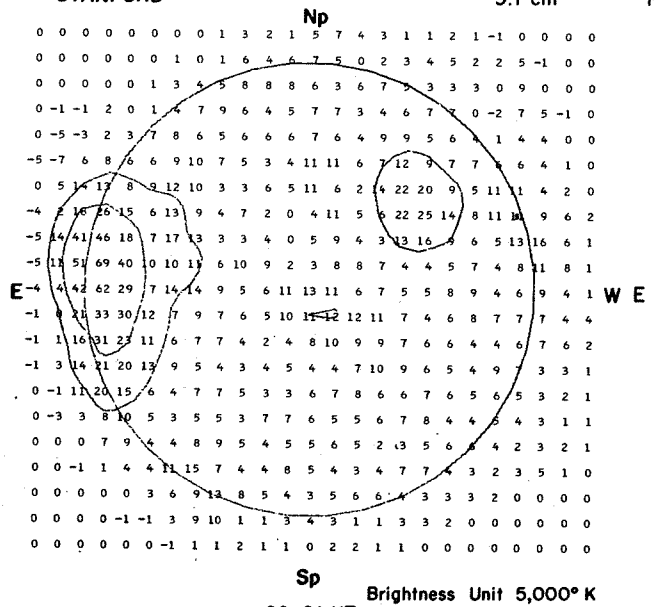


Levels
±5
±10
±20
±40
±80

18.58-20.01 UT

STANFORD

9.1 cm

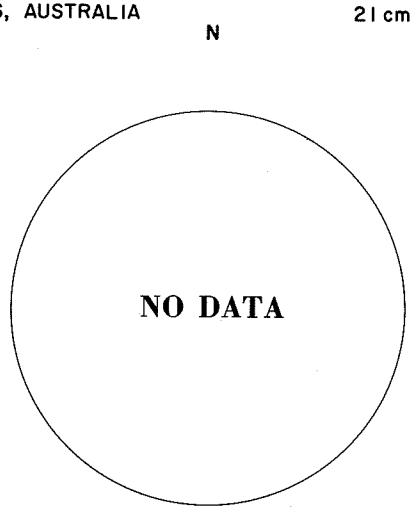


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

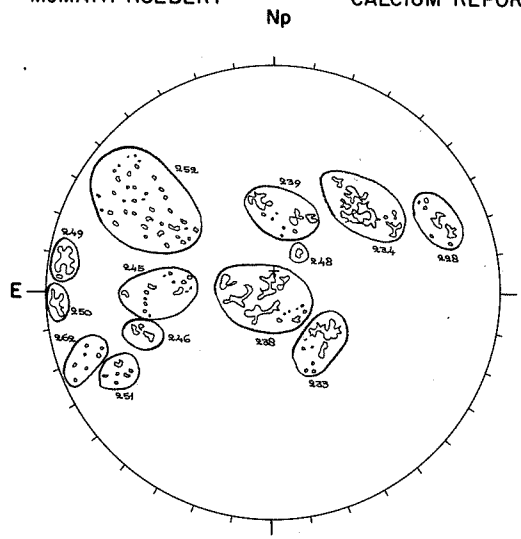


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



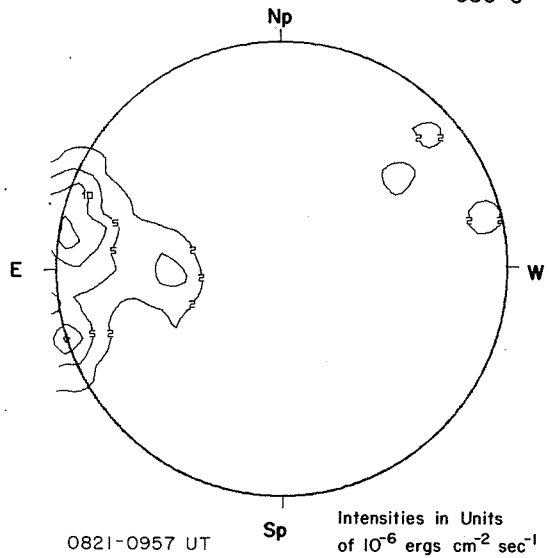
FAIR	M
33-13	2.5
34-23	3.0
38-25	2.5
39-10	2.5
49-24	3.5
50-15	2.5

1250 UT

APRIL 12, 1971 (P=-26.27, B_o=-5.85, L_o=238.92)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

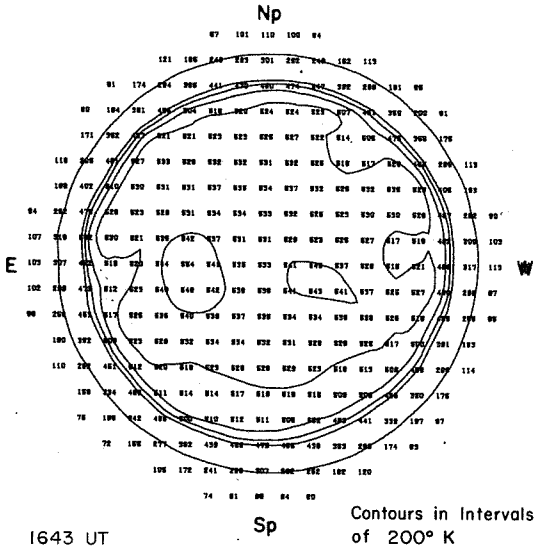


0821-0957 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm



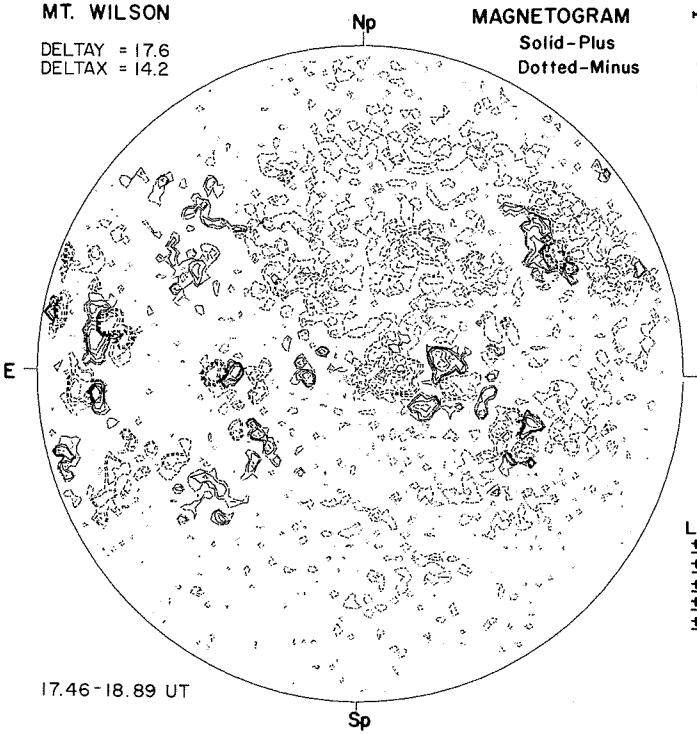
1643 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

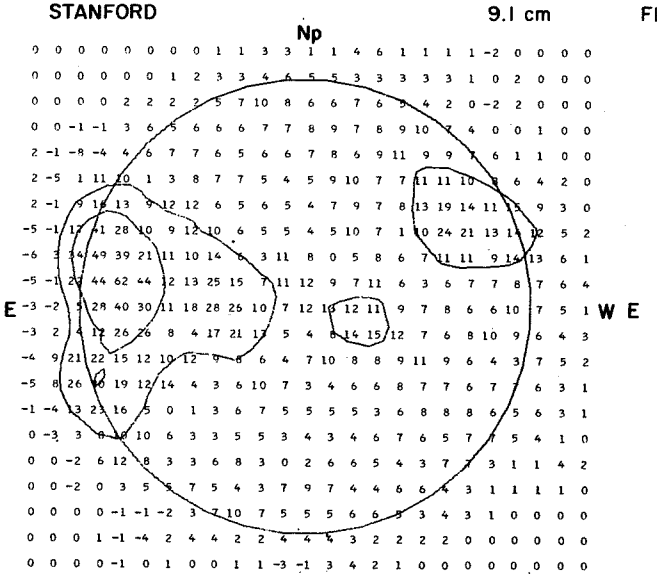


Levels
±5
±10
±20
±40
±80

17.46-18.89 UT

STANFORD

9.1 cm

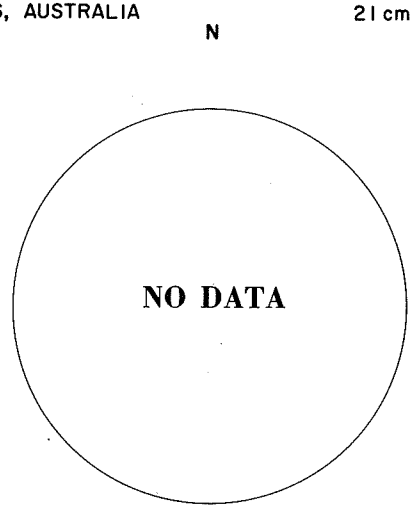


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

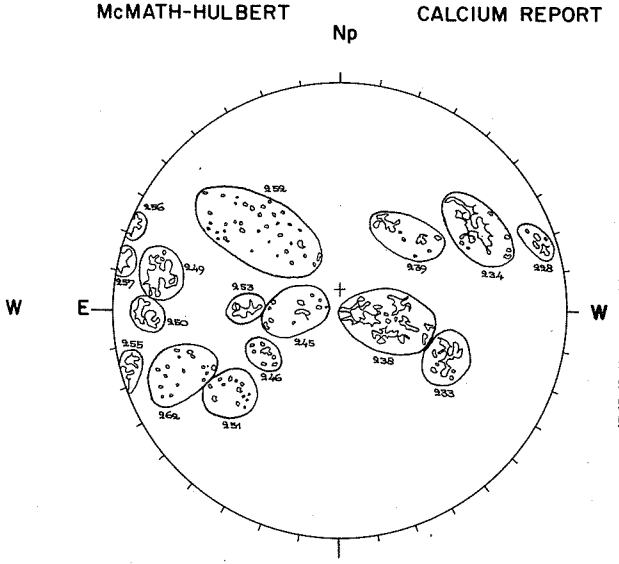


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



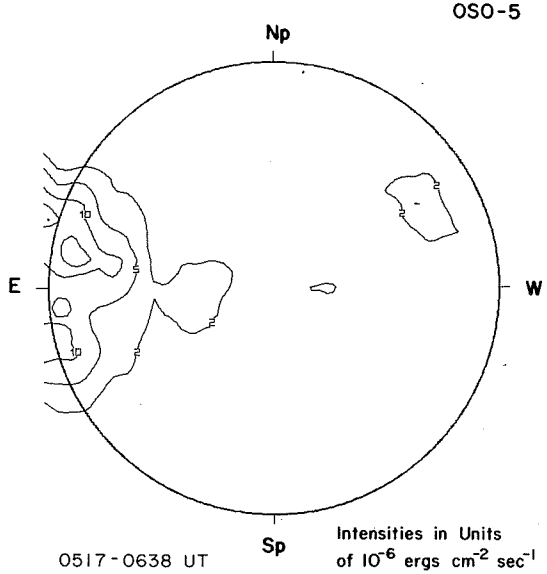
FAIR	D
33	13 - 2.5
34	22 - 2.5
38	25 - 2.5
39	09 - 2.5
49	23 - 3.5
50	13 - 3.0
53	09 - 3.5
55	20 - 3.0
56	14 - 3.0
57	16 - 3.0

1750 UT

APRIL 13, 1971 (P=-26.23, B_o=-5.78, L_o=225.72)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

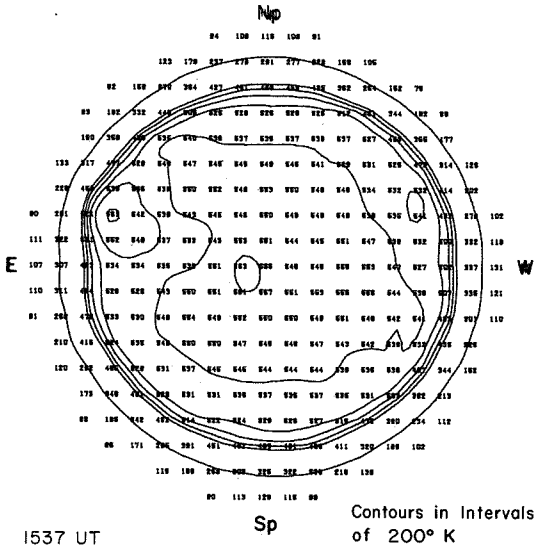


0517-0638 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm



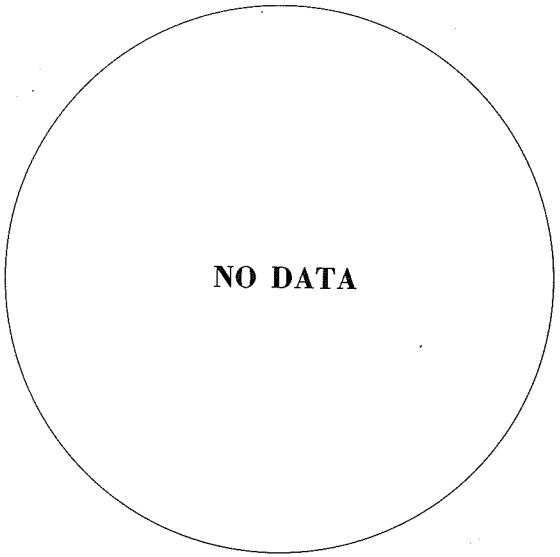
1537 UT

Contours in Intervals of 200° K

MT. WILSON

Np

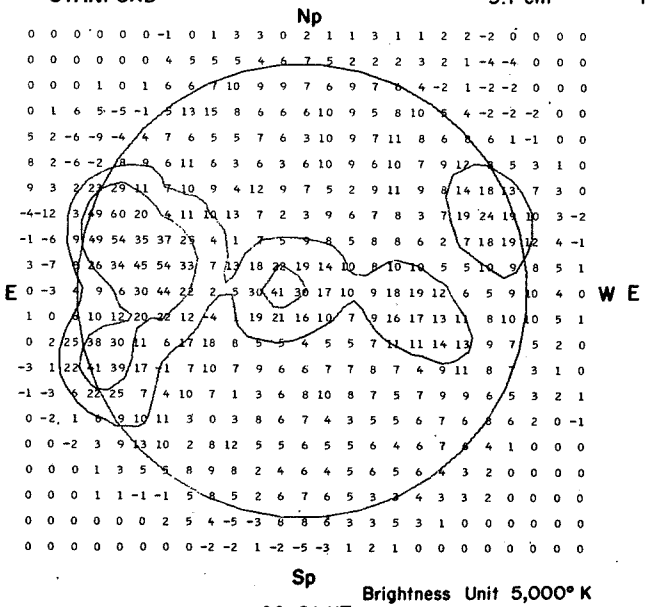
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm



20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

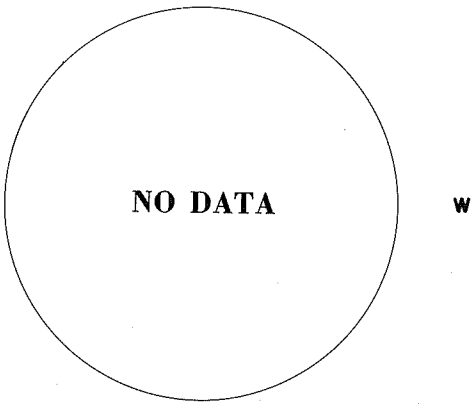
02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

Np

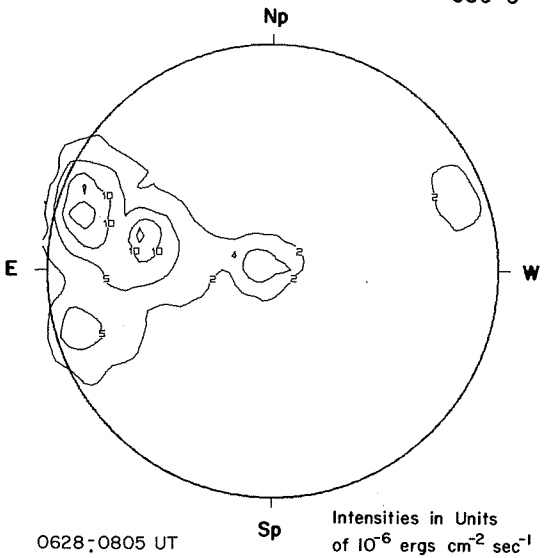
CALCIUM REPORT



APRIL 14, 1971 (P=-26.18, B_o=-5.70, L_o=212.51)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

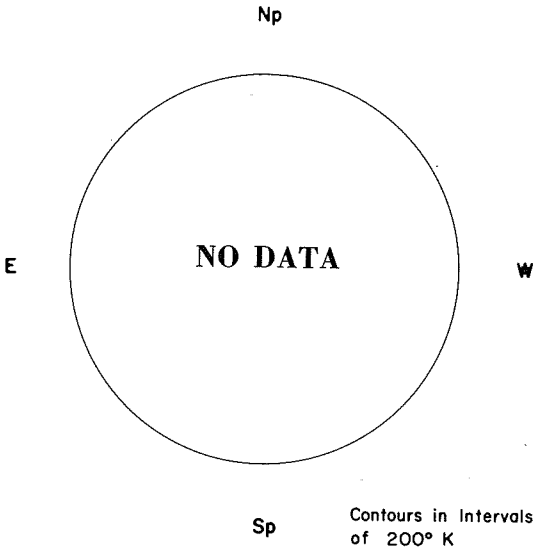


0628-0805 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

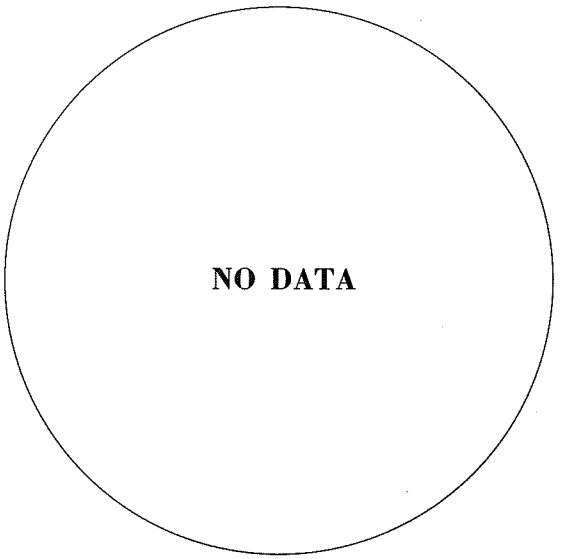
8.6 mm



Contours in Intervals of 200° K

MT. WILSON

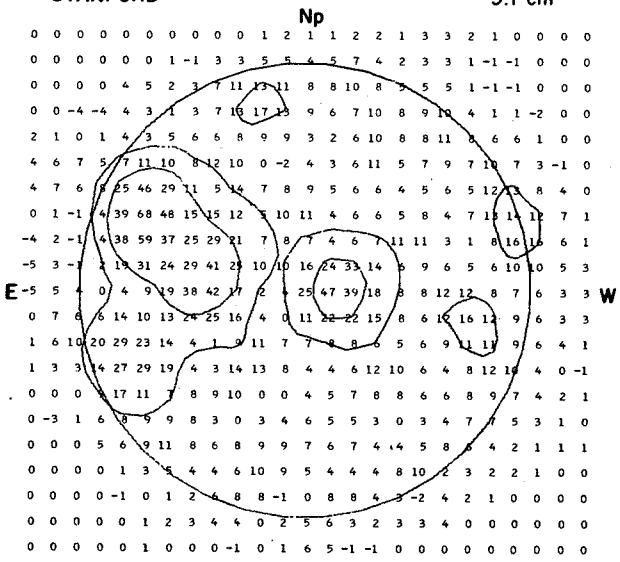
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

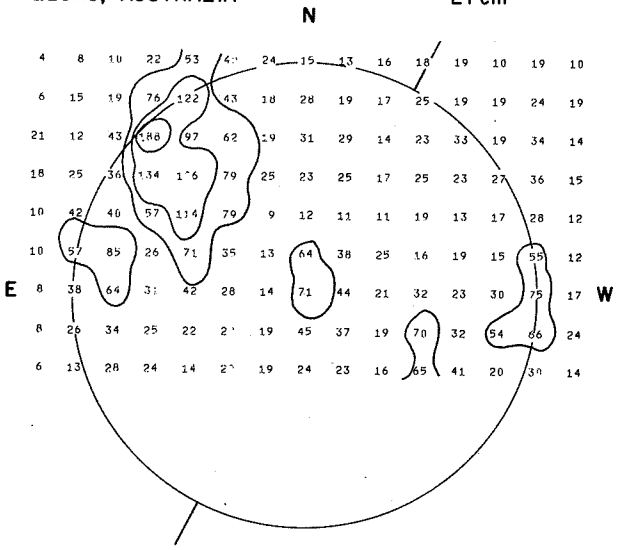


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

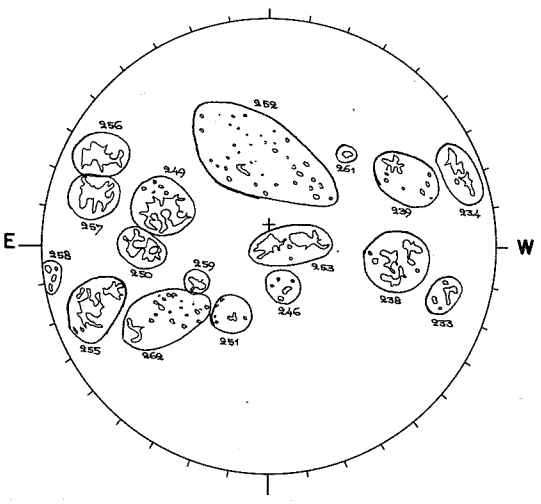


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



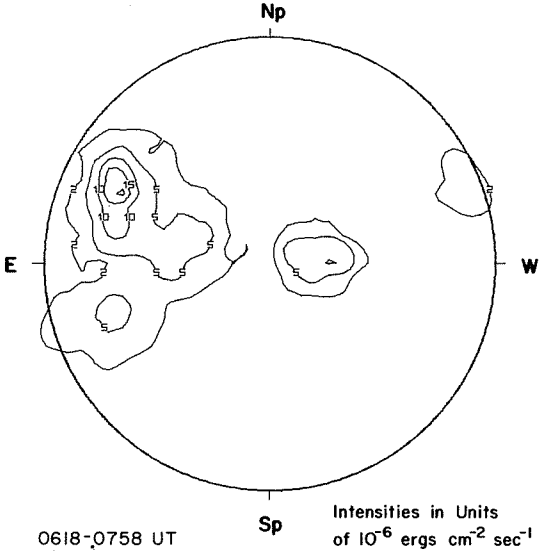
POOR	M
38-21	-2.5
49-24	-3.5
50-12	-3.0
53-18	-3.5
55-30	-3.5
56-27	-3.0
57-28	-3.0
59-04	-2.5

1245 UT

APRIL 15, 1971 (P=-26.13, B_o=-5.63, L_o=199.31)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

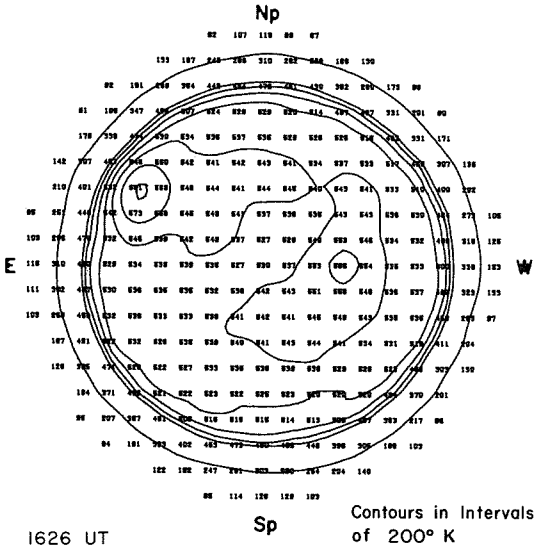


0618-0758 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm



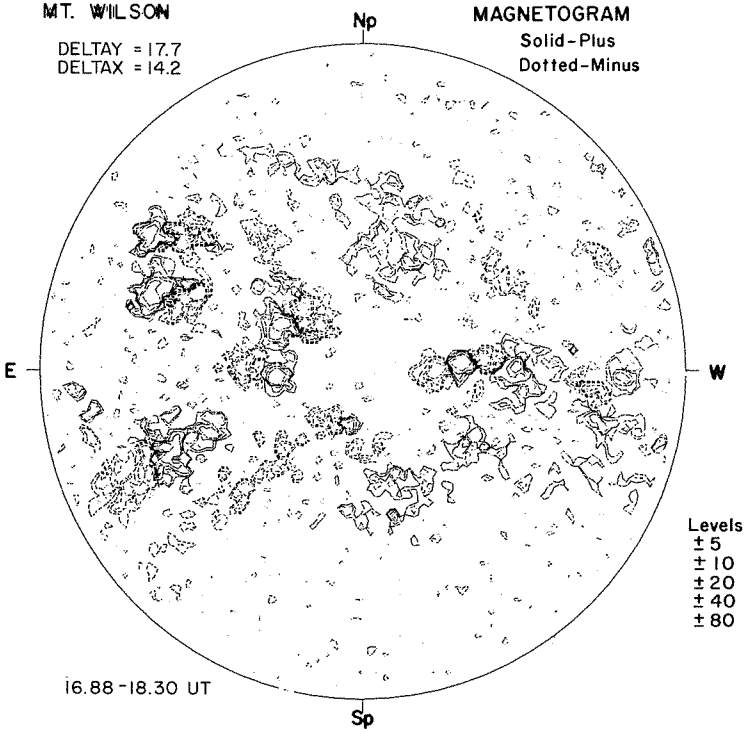
1626 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.7
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

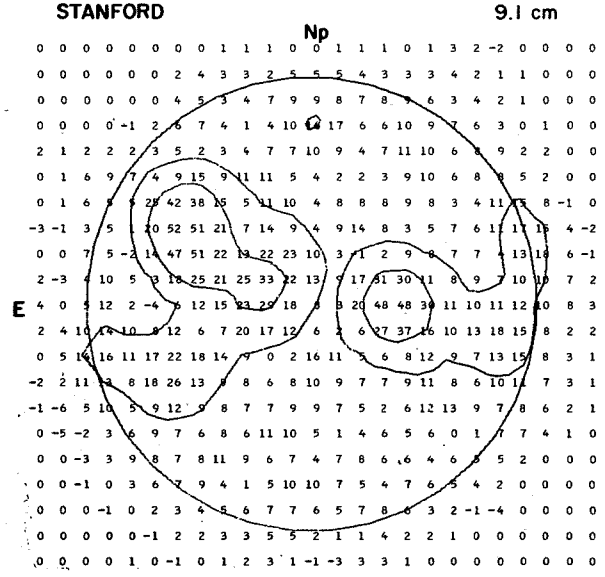


Levels
±5
±10
±20
±40
±80

16.88-18.30 UT

STANFORD

9.1 cm

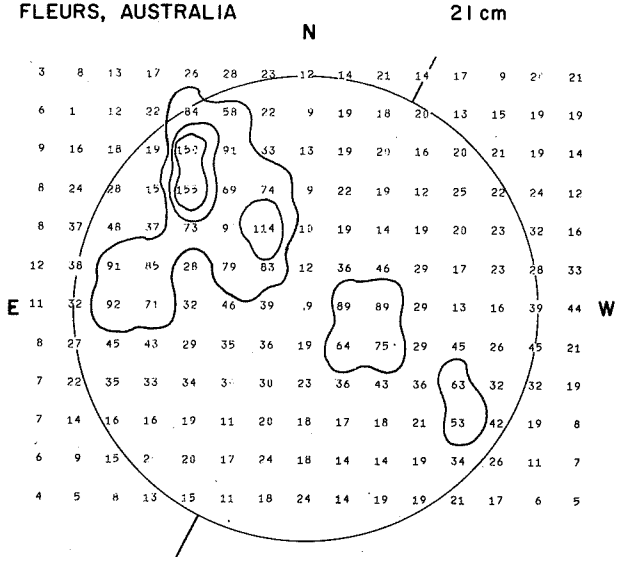


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

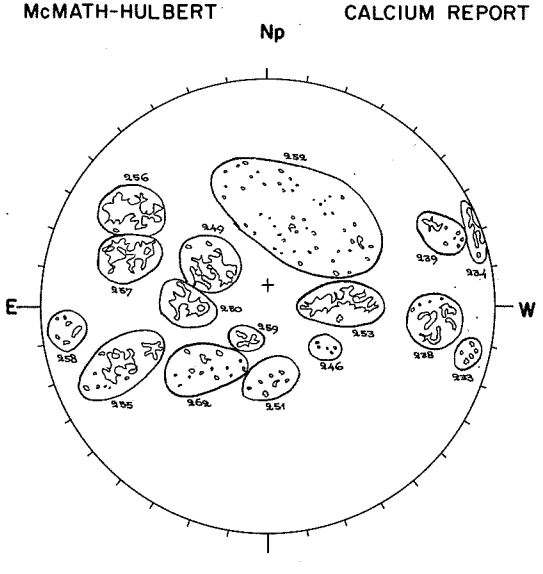


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



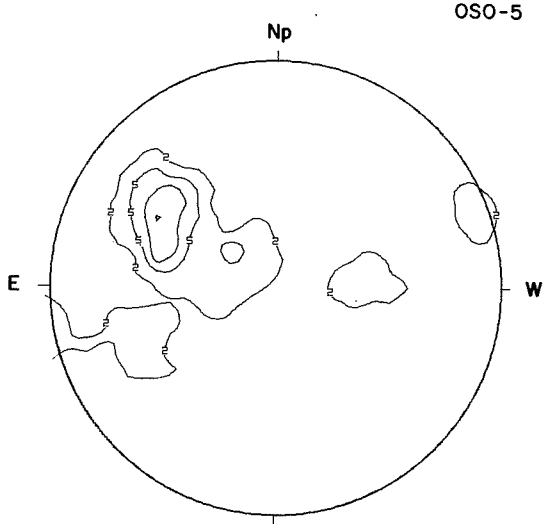
FAIR	M
38	18 - 2.5
49	20 - 3.0
50	14 - 3.0
53	19 - 3.5
55	28 - 3.0
56	31 - 3.0
57	24 - 3.0
59	04 - 2.5

1240 UT

APRIL 16, 1971 (P = -26.07, B_o = -5.55, L_o = 186.11)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

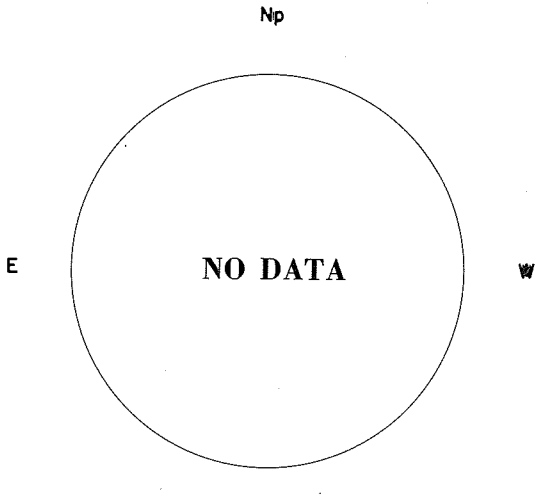


0706-0748 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

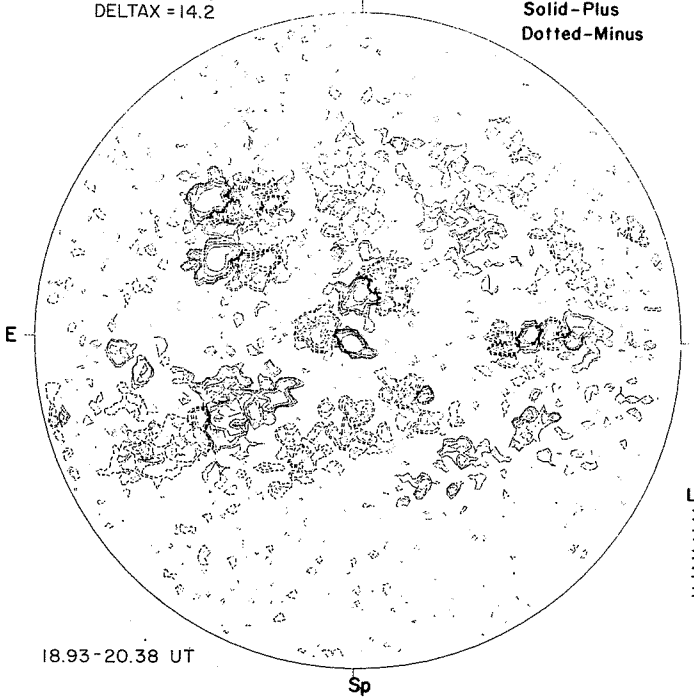
8.6 mm



Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

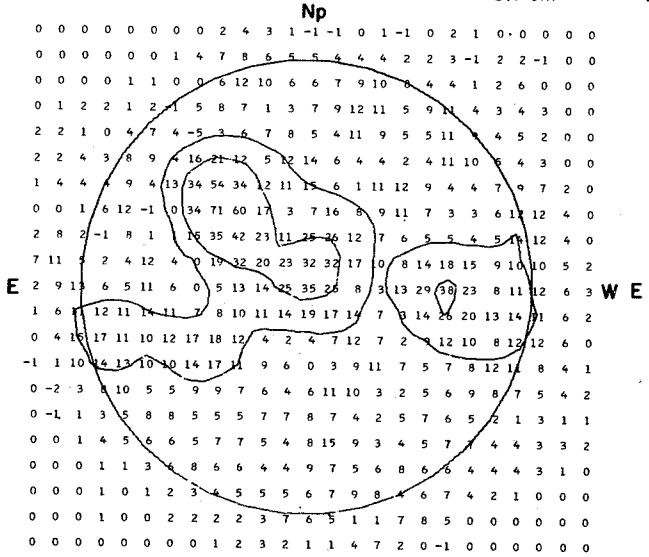


Levels
±5
±10
±20
±40
±80

18.93-20.38 UT

STANFORD

9.1 cm

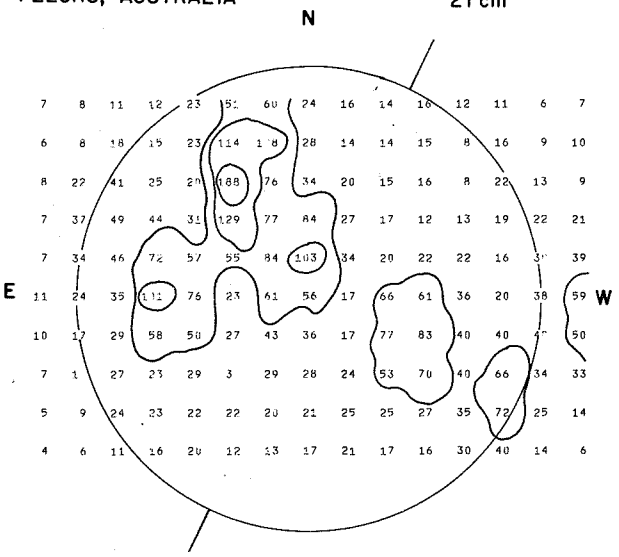


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

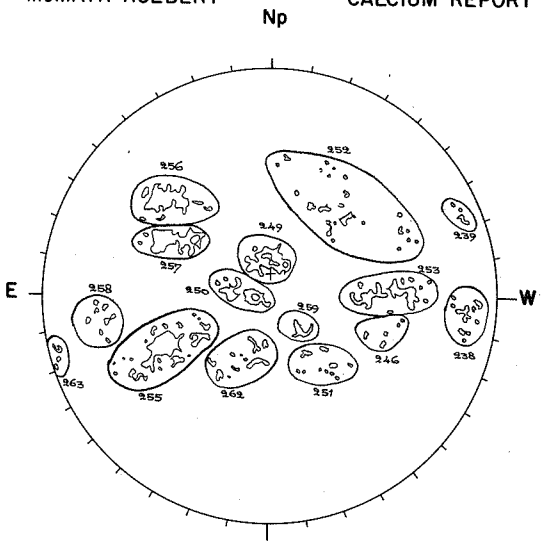


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



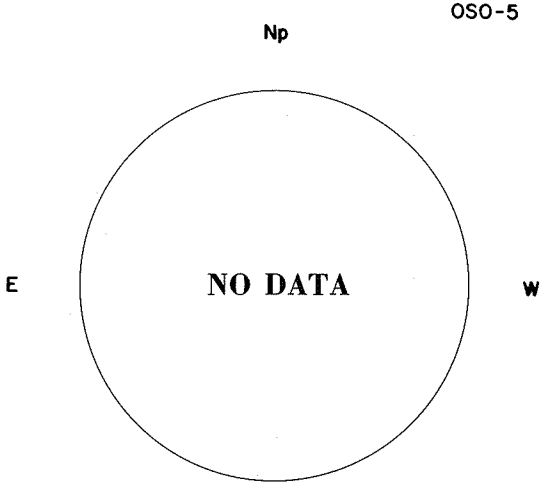
FAIR	S
38	16 - 2.5
49	20 - 3.0
50	14 - 2.5
53	25 - 3.5
55	30 - 3.0
56	33 - 3.5
57	28 - 3.0
59	05 - 2.5
63	10 - 2.5

1245 UT

APRIL 17, 1971 (P=-26.01, B_o=-5.47, L_o=172.90)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

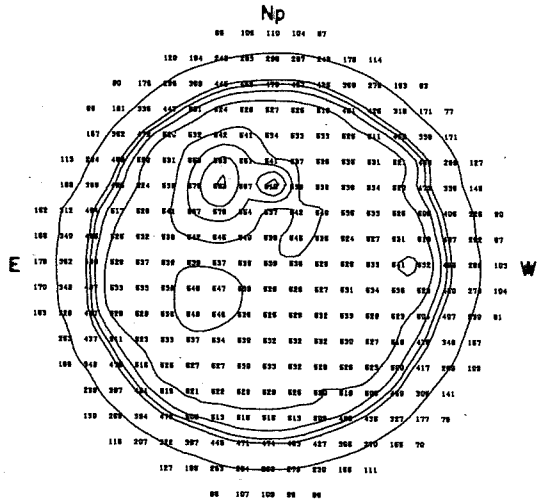
X-RAY
OSO-5



Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

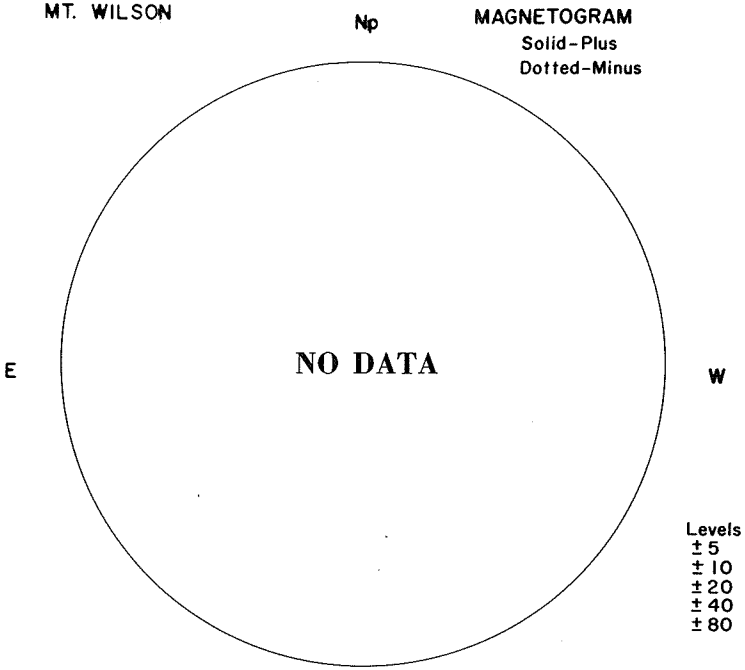


1512 UT

Contours in Intervals of 200° K

MT. WILSON

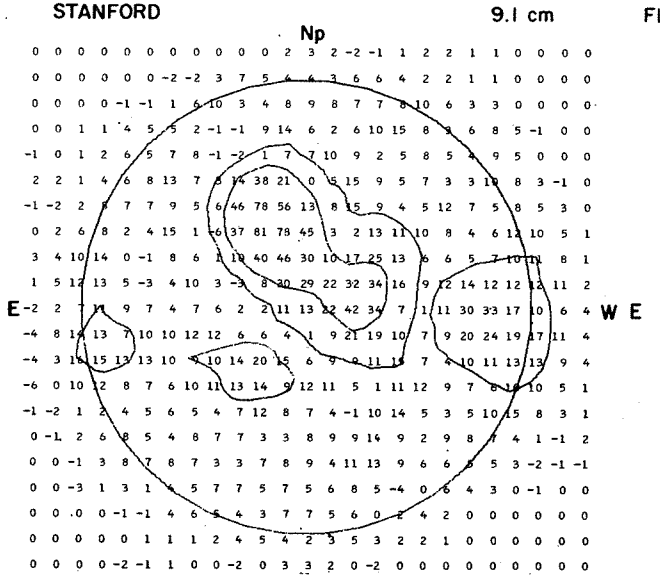
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

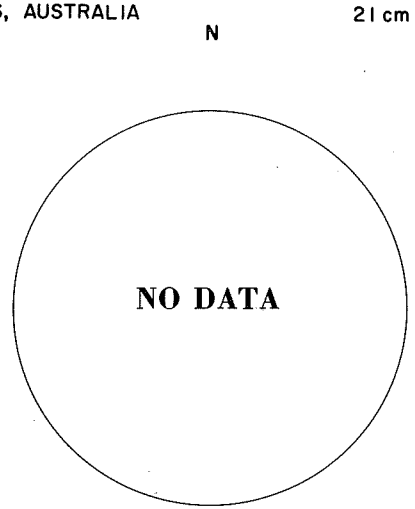


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

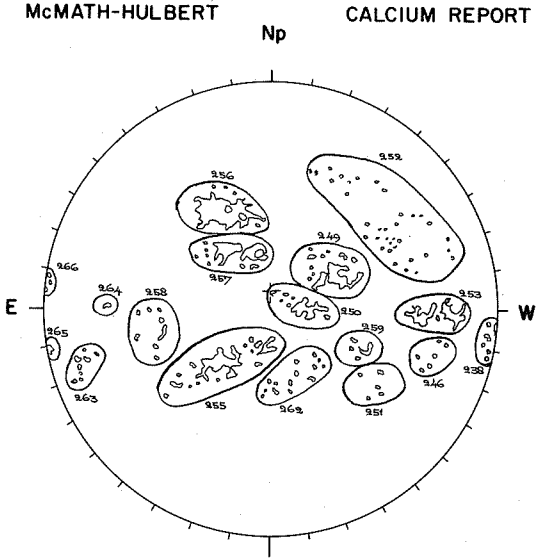


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



FAIR	S
49-20	3.0
50-15	2.5
53-23	3.5
55-30	3.0
56-37	3.0
57-25	3.0
59-05	2.5
63-10	2.5
65-07	3.0

1725 UT

APRIL 18, 1971 (P=-25.93, B_o=-5.39, L_o=159.70)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E

NO DATA

W

Sp

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np

E

NO DATA

W

Sp

Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

Np

E

NO DATA

W

Sp

Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

Np

0	0	0	0	0	0	0	0	2	11	10	2	1	1	0	0	0	1	3	1	1	0	0	0	0
0	0	0	0	0	0	1	-1	3	3	4	4	3	4	6	4	4	4	3	2	2	1	0	0	0
0	0	0	0	0	1	3	4	4	4	4	5	7	11	7	5	7	8	5	1	0	4	0	0	0
0	0	-1	0	4	5	5	5	4	7	7	4	2	10	8	3	7	10	10	3	-1	1	7	-1	0
2	1	1	3	5	5	7	10	8	6	-3	-11	-3	10	7	8	10	8	9	10	-1	-1	3	0	0
2	1	2	5	6	8	9	7	8	9	3	4	41	26	-2	10	20	9	1	6	5	3	2	1	0
-1	0	3	7	8	6	6	7	10	6	-3	41	83	62	16	7	14	19	8	5	9	9	2	3	0
0	2	5	7	6	8	4	4	11	-2	-11	34	73	71	41	7	3	14	9	5	10	12	7	2	1
0	3	10	9	8	9	-2	-6	4	11	-4	-1	27	49	36	12	16	22	18	6	9	10	7	5	1
-5	1	8	9	5	10	11	0	0	8	5	-3	4	19	20	17	27	35	20	7	12	18	12	5	3
-3	-5	6	11	6	9	10	7	5	8	10	1	1	12	25	23	39	38	17	6	24	21	21	6	4
-4	0	12	17	10	5	9	12	9	9	9	6	6	9	0	-1	23	23	9	5	17	26	25	13	1
-2	3	13	16	12	8	8	8	7	9	16	12	14	13	6	5	9	9	9	11	10	16	16	8	2
-3	1	6	9	6	3	4	7	7	8	13	12	13	12	10	8	2	5	13	12	6	8	11	8	3
0	-1	1	4	5	4	3	3	5	5	7	11	9	6	9	8	4	9	11	9	7	9	9	7	4
0	-1	-2	2	8	7	1	4	7	6	3	6	7	7	8	6	9	12	12	7	5	5	5	4	2
0	0	-1	0	6	7	7	5	4	4	5	6	7	7	6	5	10	14	9	5	10	6	3	0	-2
0	0	-1	1	1	2	4	5	5	4	5	5	6	10	10	7	6	7	7	9	7	1	0	0	0
0	0	0	0	-1	0	4	5	2	3	6	7	7	6	7	6	8	4	-1	-3	-2	0	0	0	0
0	0	0	0	0	0	1	2	3	4	6	6	4	4	5	4	3	0	-2	0	0	0	0	0	0
0	0	0	0	-1	-1	0	1	2	1	1	3	3	3	1	0	0	0	0	0	0	0	0	0	0

E W

Sp

Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

N

3	4	8	9	11	15	14	13	21	11	11	11	7	7	6												
3	4	15	18	18	2	20	16	30	17	16	16	10	8	7												
5	7	32	18	11	15	18	3[illegible]	60	23	14	13	17	11	7												
7	11	36	19	20	22	18	87	196	28	21	24	16	17	13												
7	24	36	17	30	36	17	99	271	33	21	26	15	17	11												
12	39	36	26	56	36	27	75	141	47	74	26	33	23	20												
9	2	27	14	43	52	66	18	52	123	68	16	33	32	13												
7	22	27	16	34	88	98	13	50	126	73	26	44	39	14												
8	12	21	11	21	35	52	22	31	69	27	39	81	41	15												
6	11	21	22	23	23	36	27	29	44	42	30	64	49	12												
5	6	13	16	23	2[illegible]	22	30	27	22	25	31	42	32	9												
4	4	8	8	18	16	17	20	19	15	22	20	19	12	7												
3	3	5	5	9	1[illegible]	11	11	9	17	16	7	7	4	6												

E W

S

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT

Np

E W

Sp

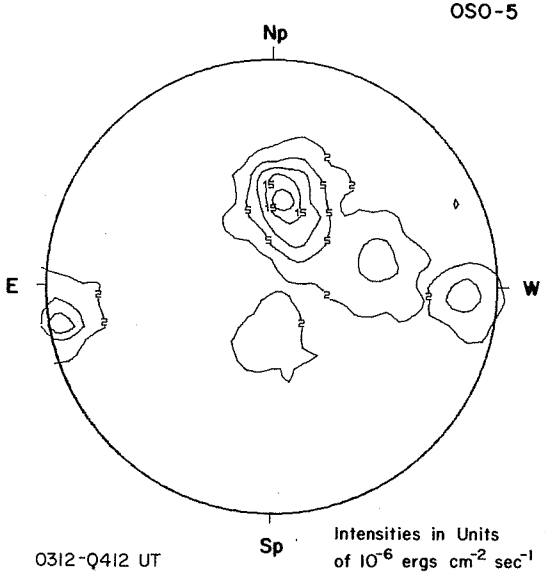
1320 UT

GOOD	D
49	16 - 3.5
50	13 - 2.5
53	20 - 3.0
55	27 - 2.5
56	35 - 3.5
57	24 - 3.0
65	10 - 3.0

APRIL 19, 1971 (P=-25.85, B_o=-5.30, L_o=146.49)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

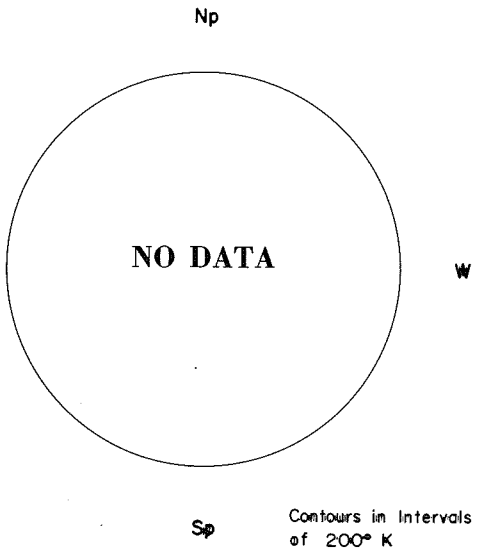


0312-0412 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

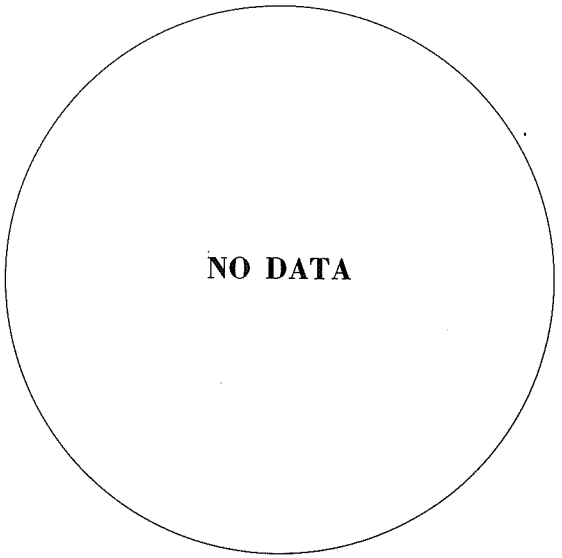
8.6 mm



Contours in Intervals of 200° K

MT. WILSON

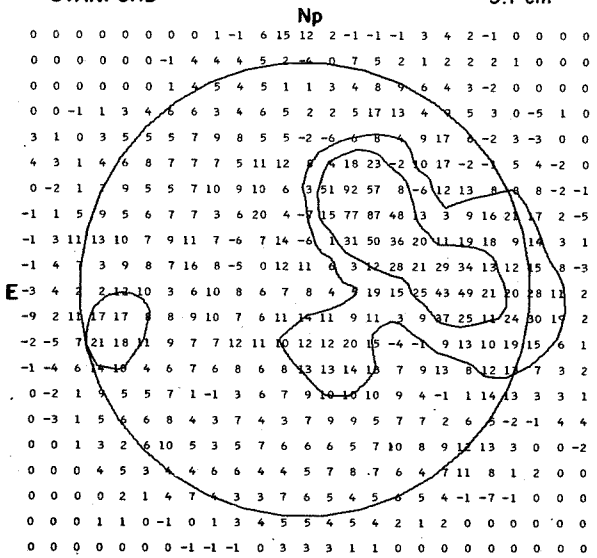
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

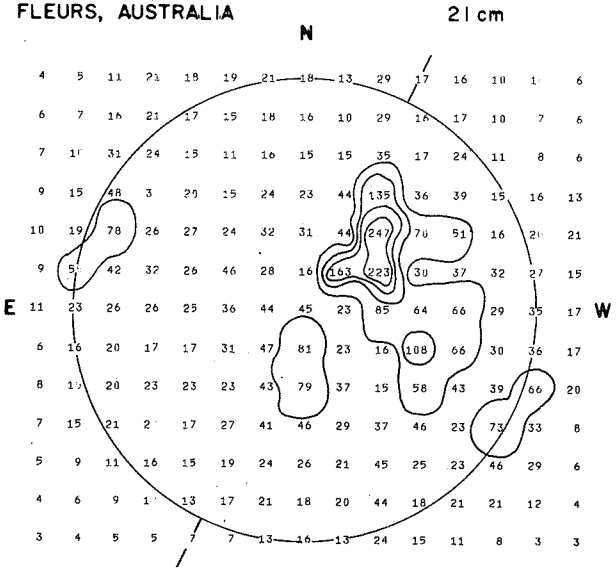


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

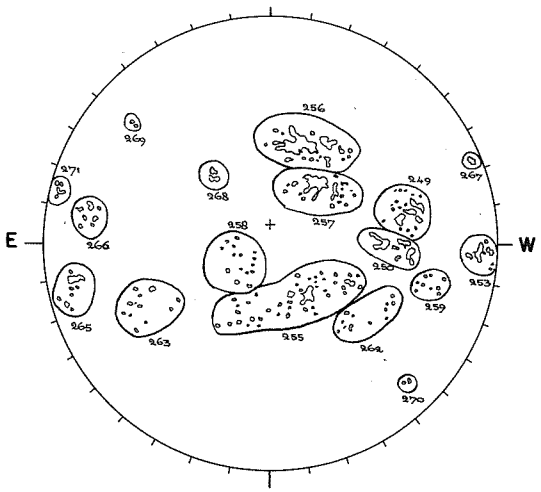


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



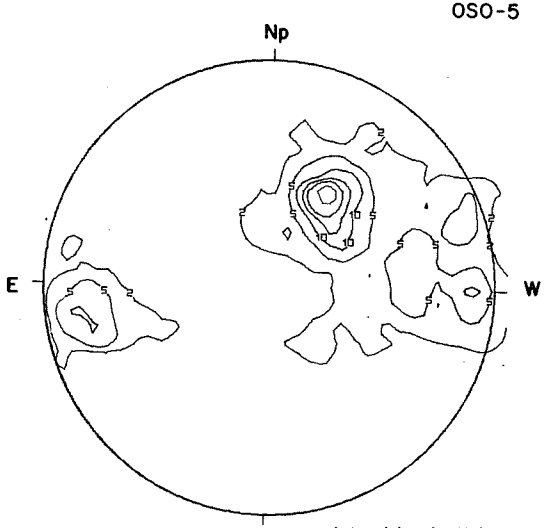
1215 UT

FAIR	D
49	16 - 3.5
50	13 - 3.0
53	17 - 3.0
55	27 - 3.5
56	33 - 3.0
57	20 - 3.0
63	07 - 2.5
65	13 - 3.0
67	05 - 3.5
68	04 - 2.5

APRIL 20, 1971 (P=-25.76, B_o=-5.22, L_o=133.28)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

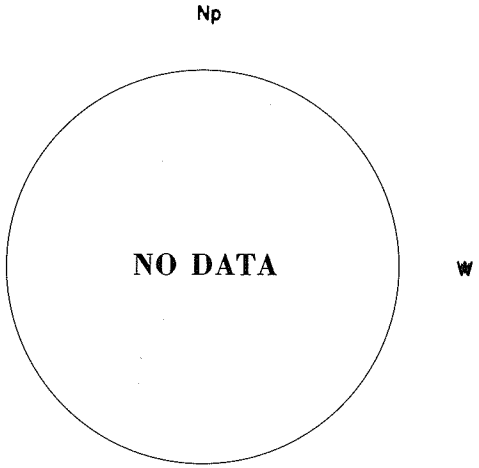


0443-0538 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

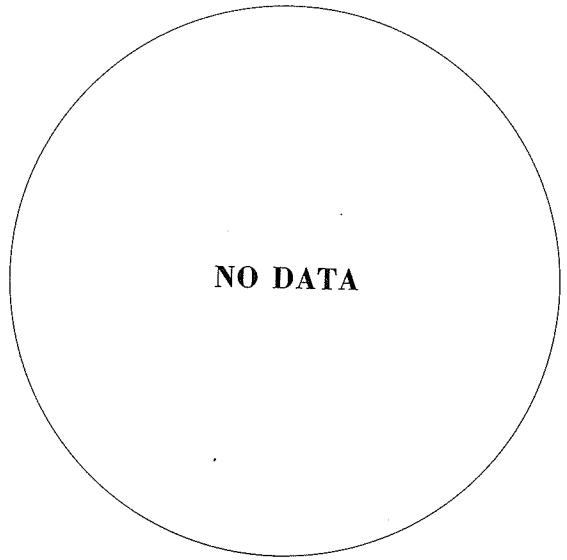
8.6 mm



Contours in Intervals of 200° K

MT. WILSON

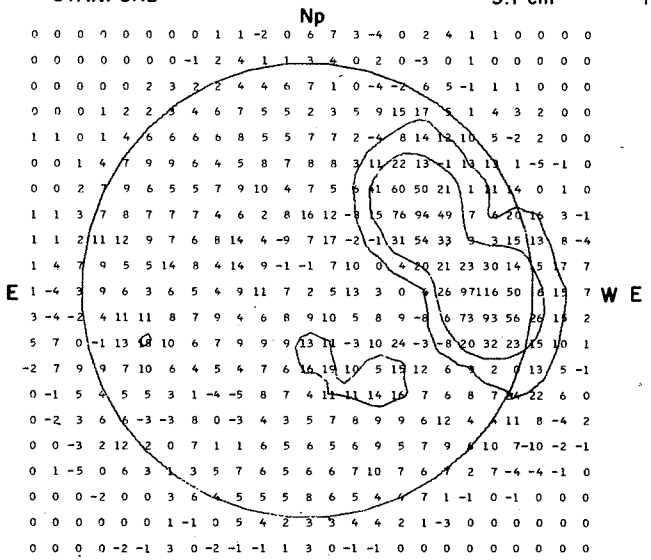
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

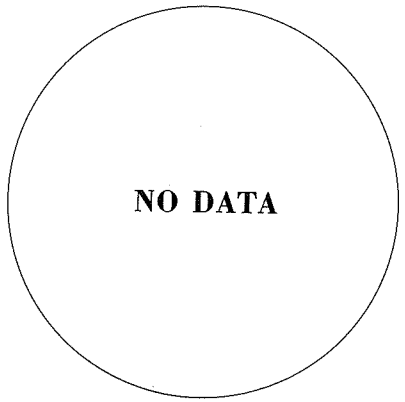


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

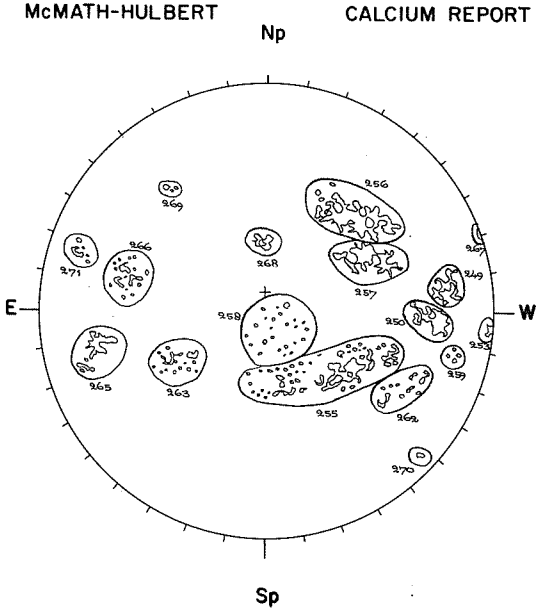


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



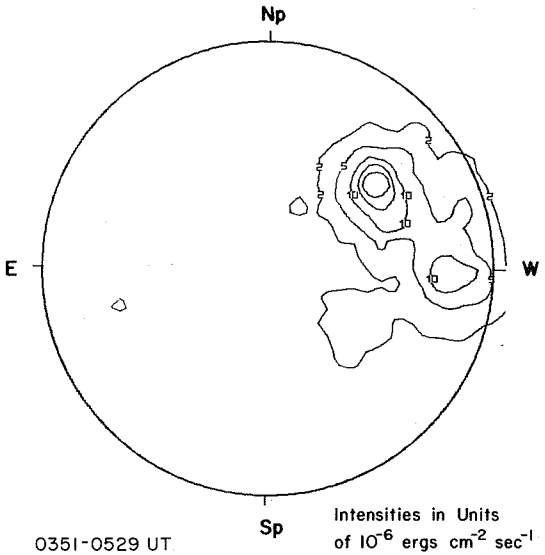
1250 UT

GOOD	B
49-14	3.0
50-20	3.0
53-10	2.5
55-29	2.5
56-36	3.5
57-17	3.0
63-07	2.5
65-13	3.5
68-04	3.0

APRIL 21, 1971 (P=-25.67, B_o=-5.13, L_o=120.07)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

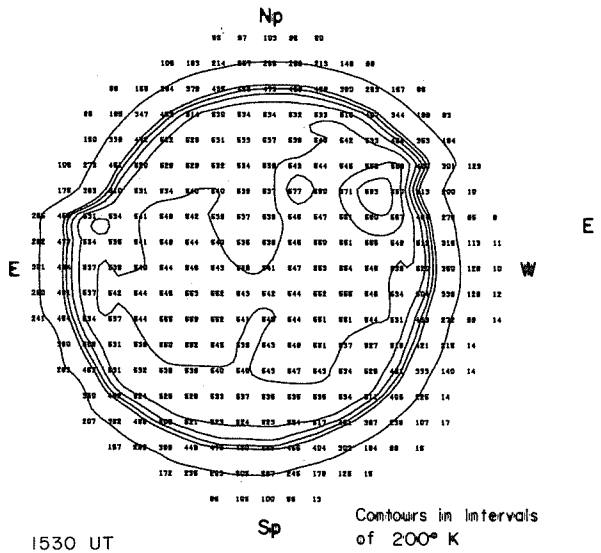


0351-0529 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

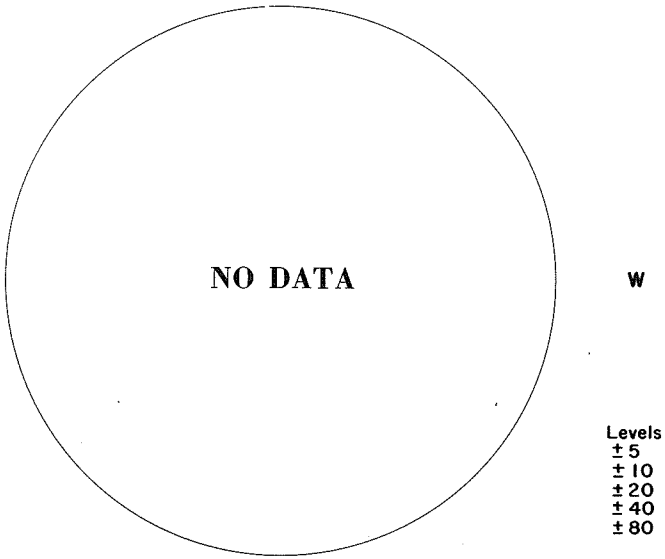


1530 UT

Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

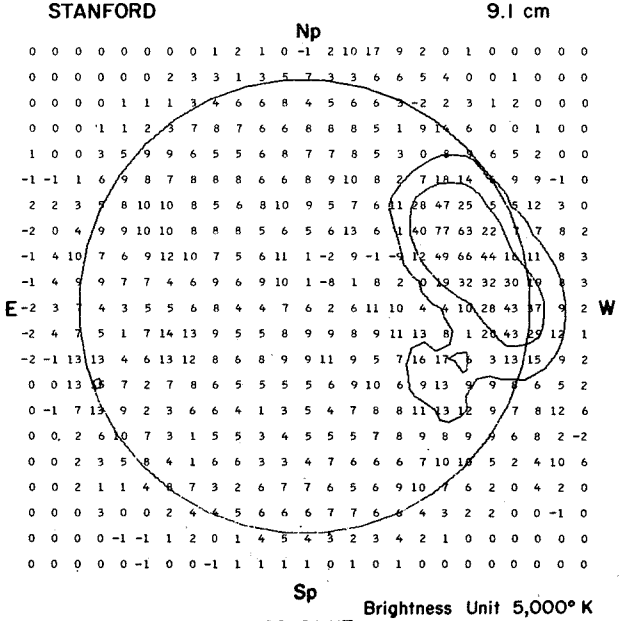


NO DATA

Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

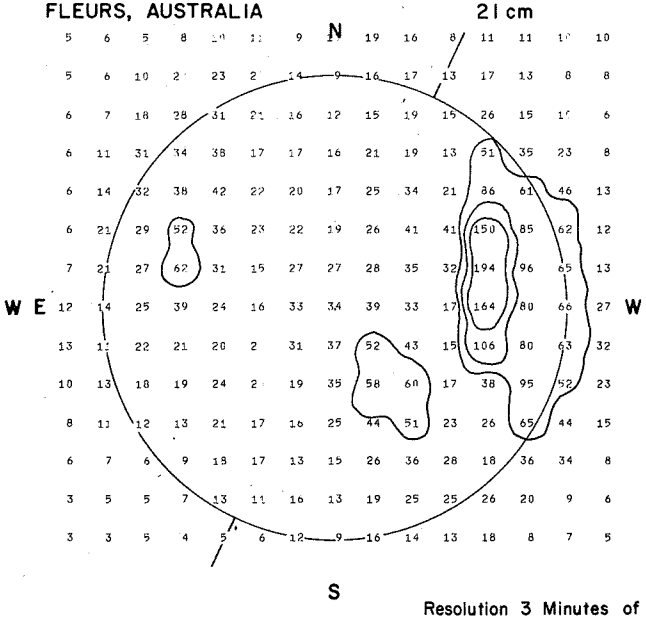


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

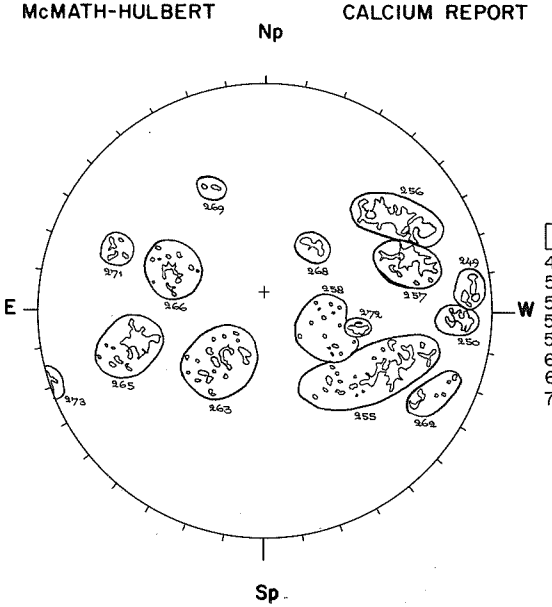


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



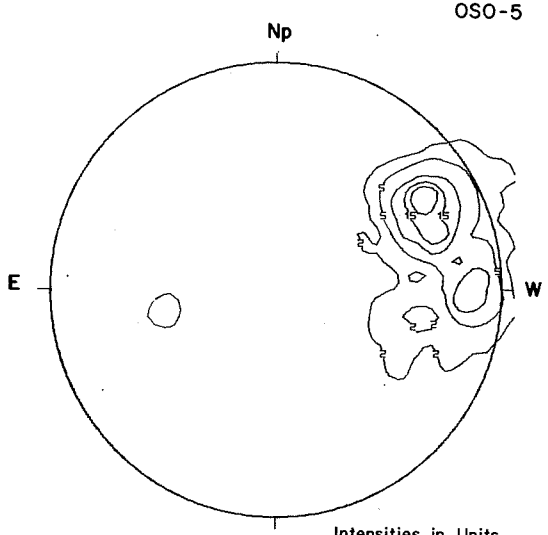
FAIR	M
49-14-2.5	
50-22-3.5	
55-31-2.5	
56-36-3.5	
57-20-3.5	
65-14-2.5	
68-04-2.5	
72-06-2.5	

1345 UT

APRIL 22, 1971 (P=-25.56, B_o=-5.04, L_o=106.87)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

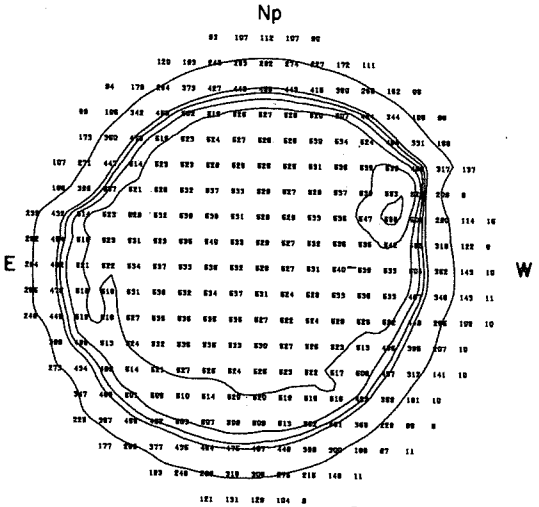


0205-0346 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm



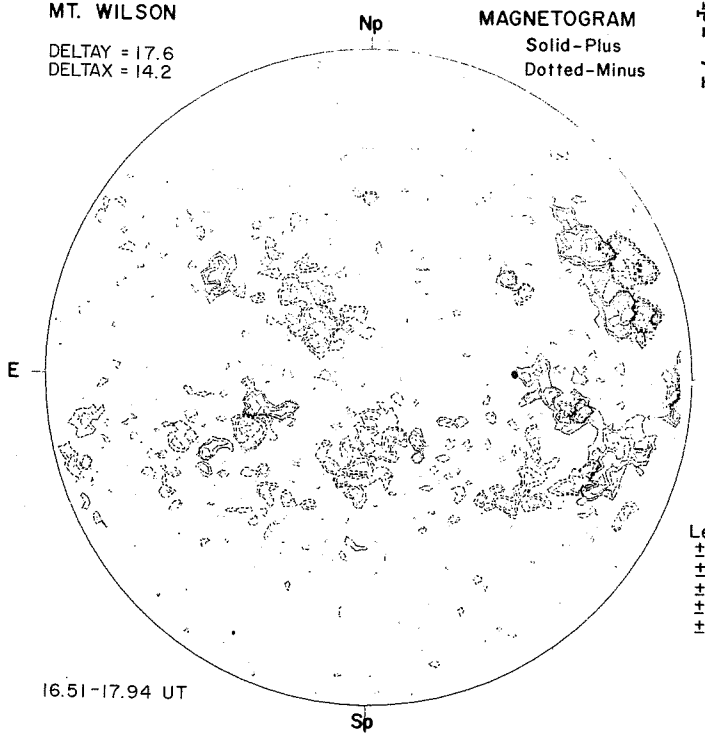
1346 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

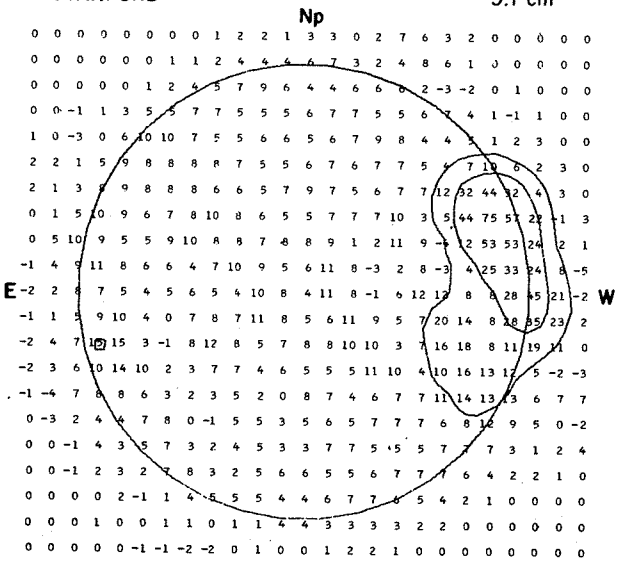


Levels
±5
±10
±20
±40
±80

16.51-17.94 UT

STANFORD

9.1 cm

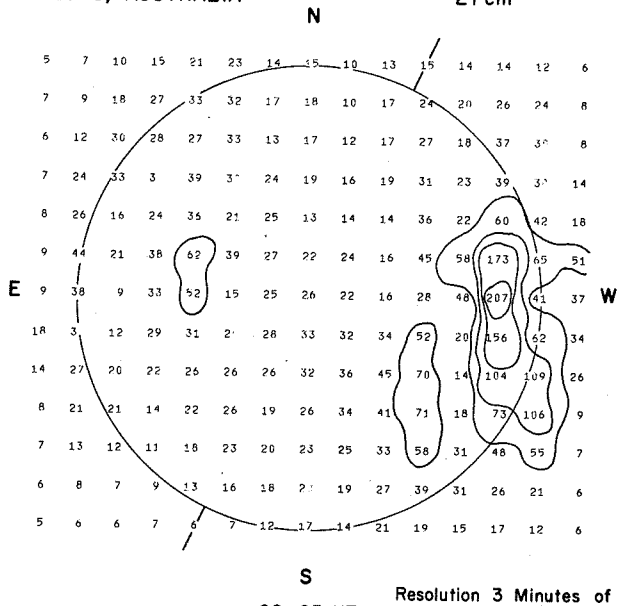


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

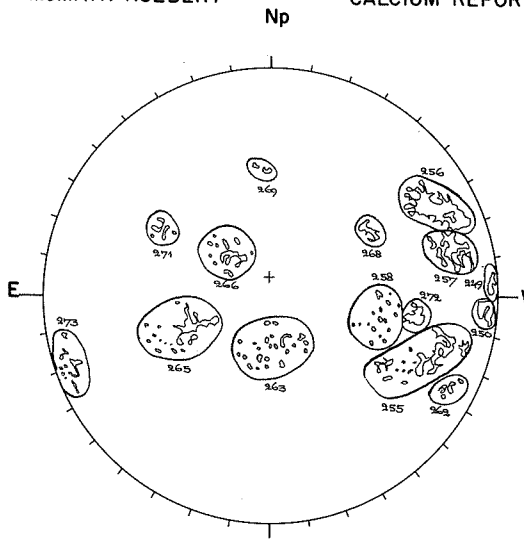


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



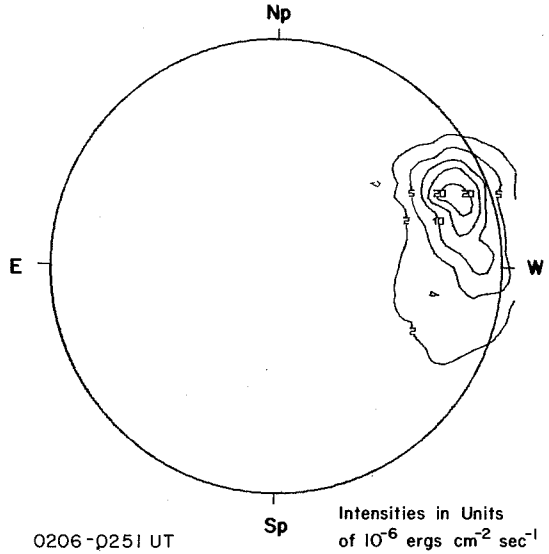
GOOD	M
50-23	2.5
55-28	3.0
56-42	3.5
57-23	3.0
65-12	2.5
68-04	2.5
72-09	2.5

1545 UT

APRIL 23, 1971 (P=-25.45, B_o=-4.95, L_o=93.66)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

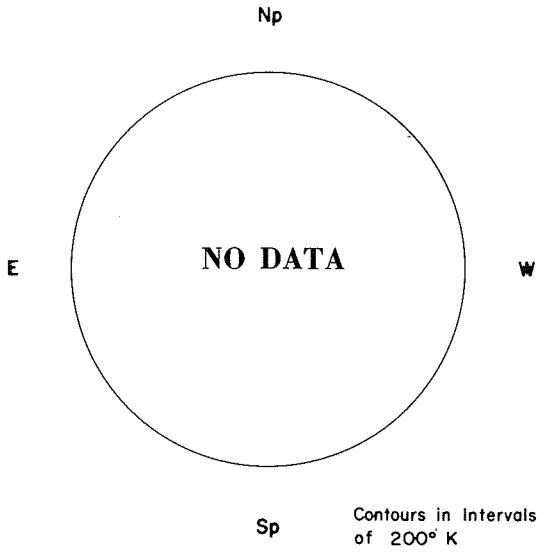


0206-0251 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

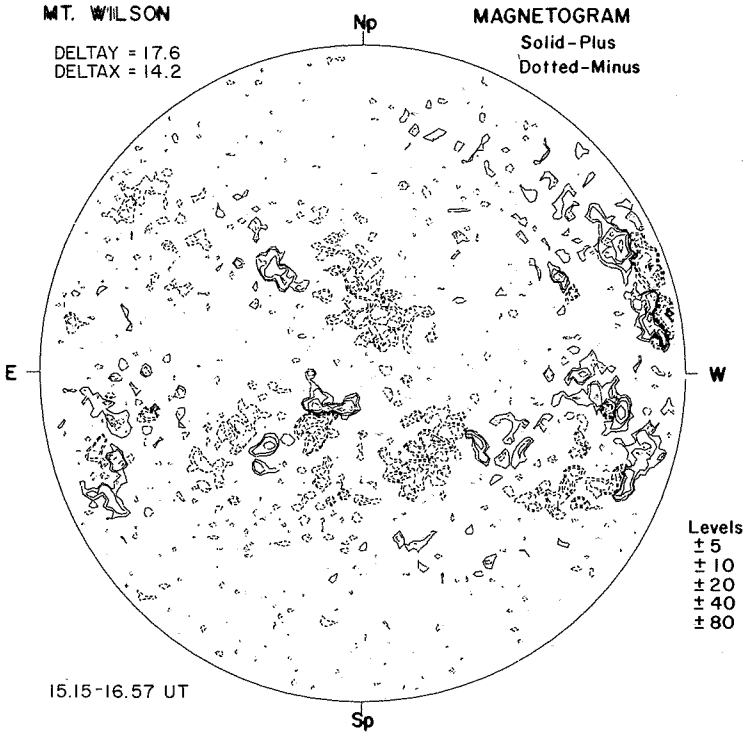


Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.6
DELTAX = 14.2

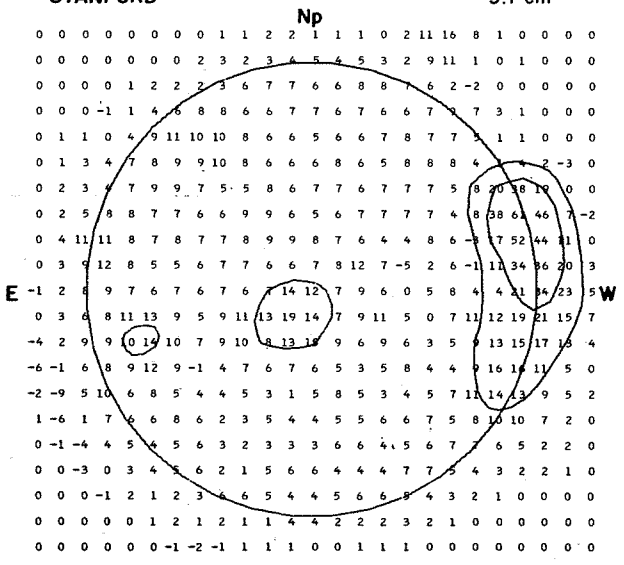


Levels
±5
±10
±20
±40
±80

15.15-16.57 UT

STANFORD

9.1 cm

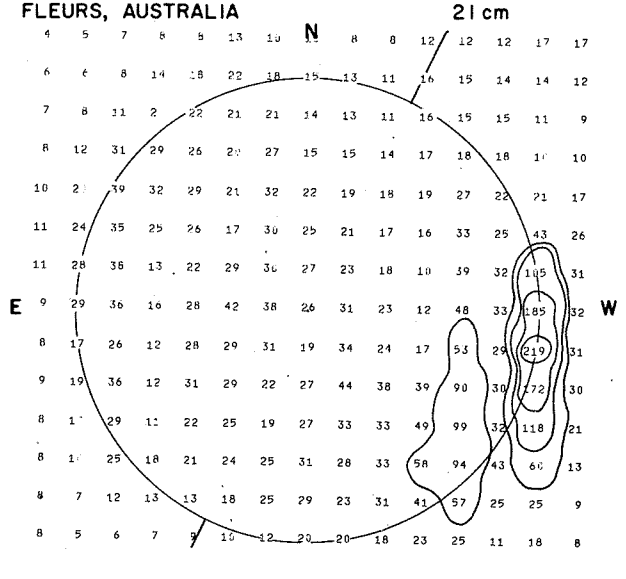


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

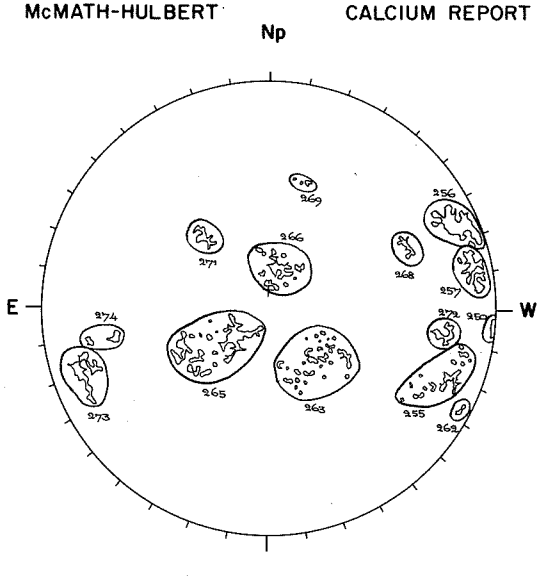


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



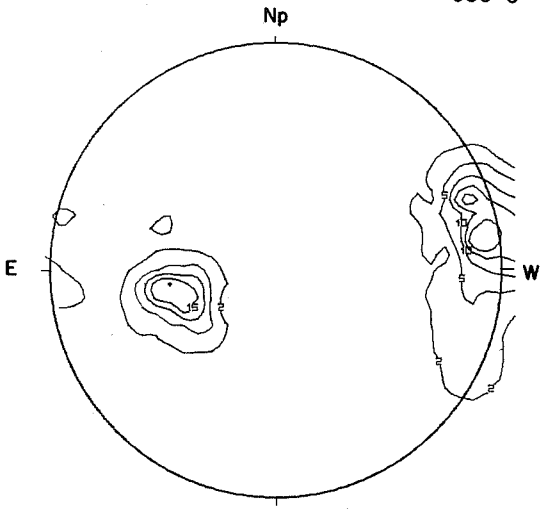
1300 UT

FAIR	B
55-23	2.5
56-47	3.0
57-26	3.5
65-16	3.0
72-09	3.0
74-06	3.0

APRIL 24, 1971 (P=-25.34, B_o=-4.86, L_o=80.45)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

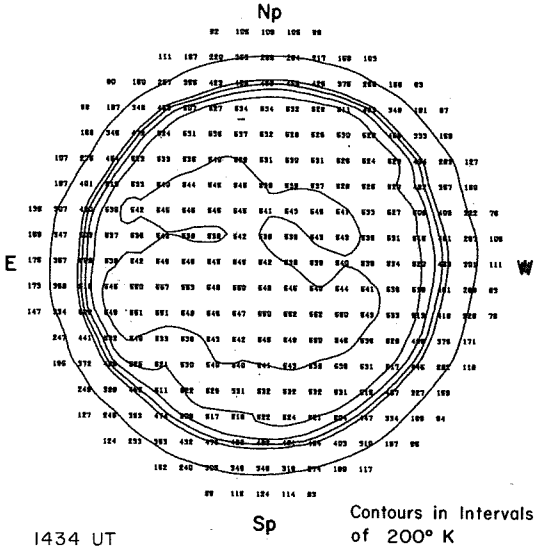


2142-2215 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

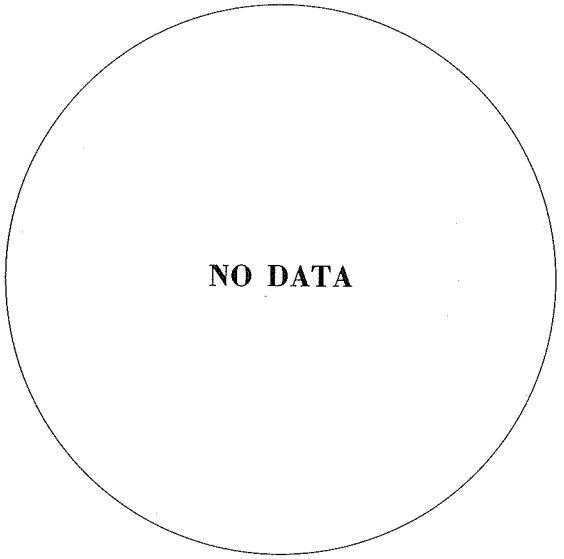


1434 UT

Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

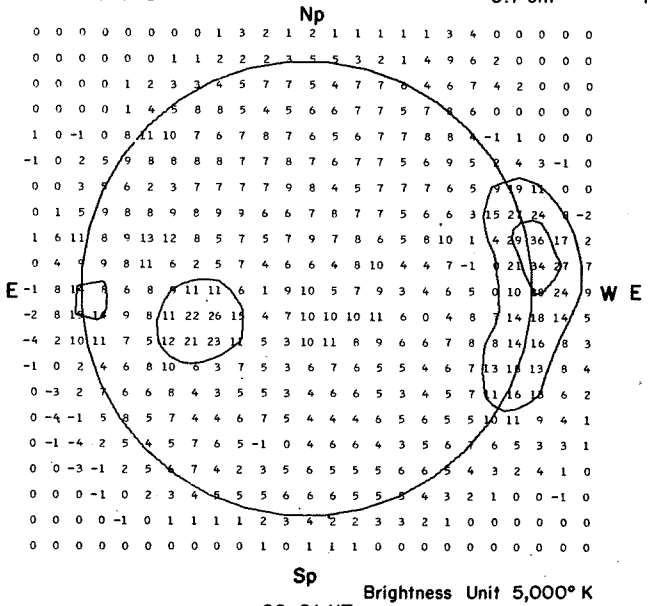


NO DATA

Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

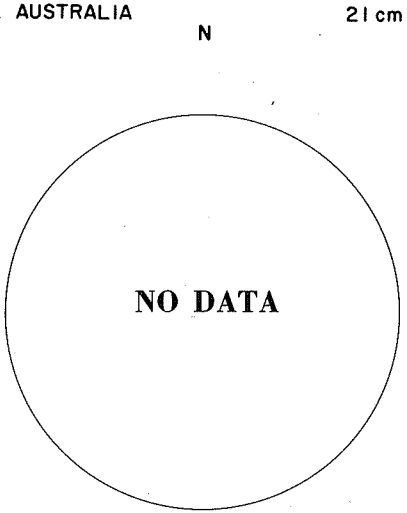


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm



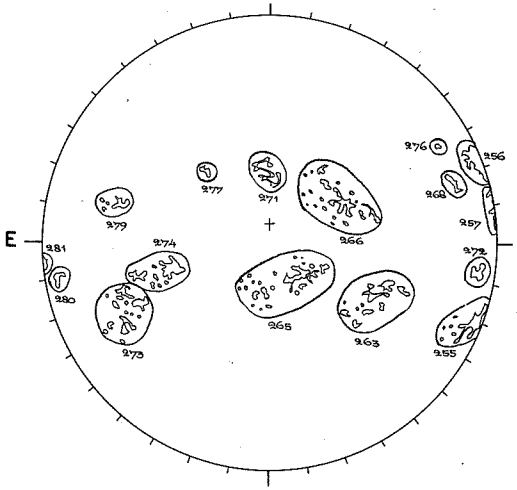
NO DATA

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



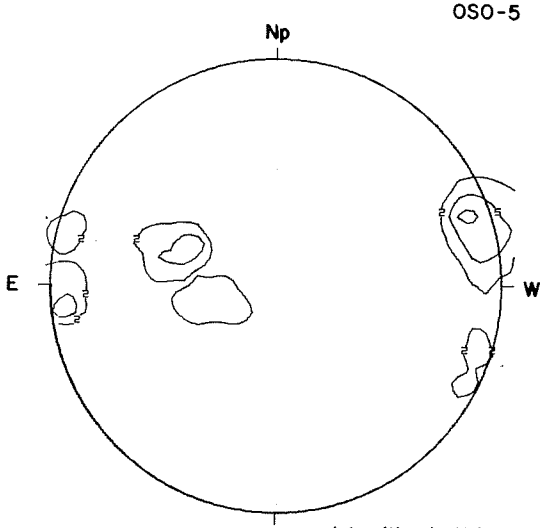
GOOD	M
56-40-2.5	
65-14-2.5	
72-10-2.5	
74-14-3.5	
79-06-3.0	

1900 UT

APRIL 25, 1971 (P=-25.21, B_o=-4.77, L_o=67.23)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

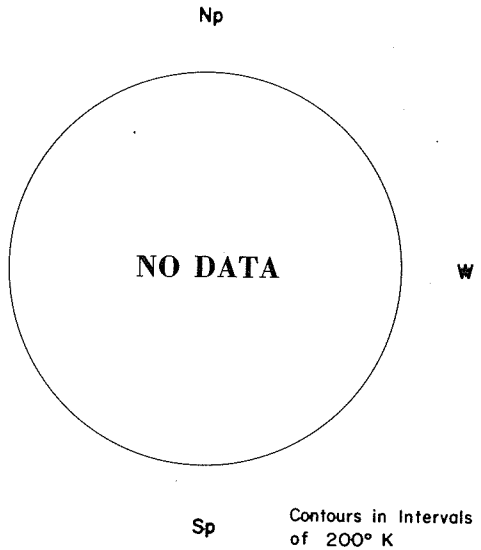


2354-0131 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm



Contours in Intervals of 200° K

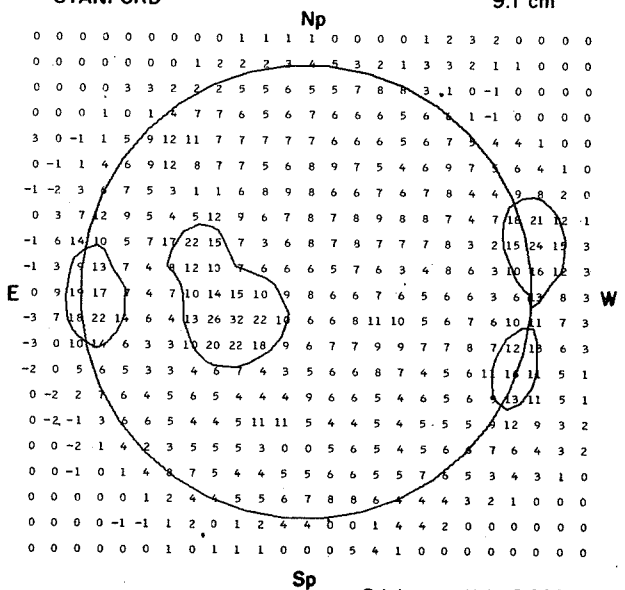
MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

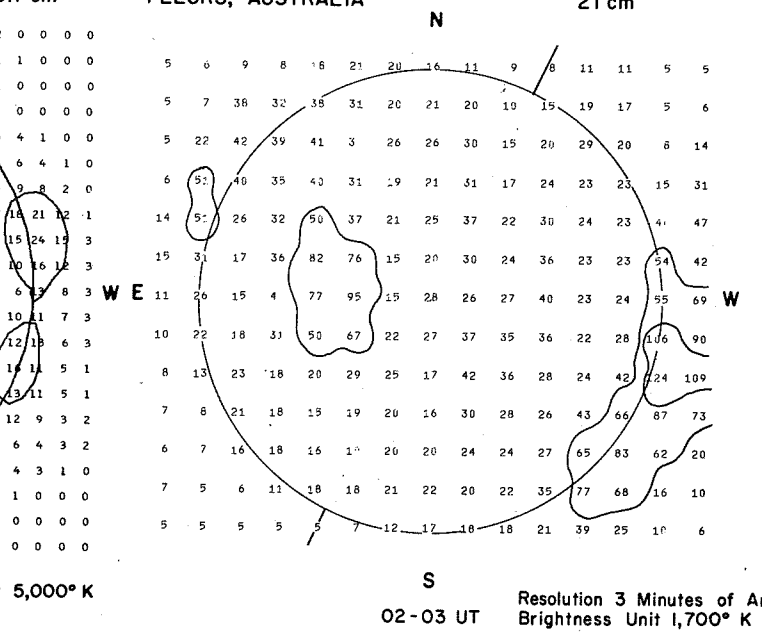


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

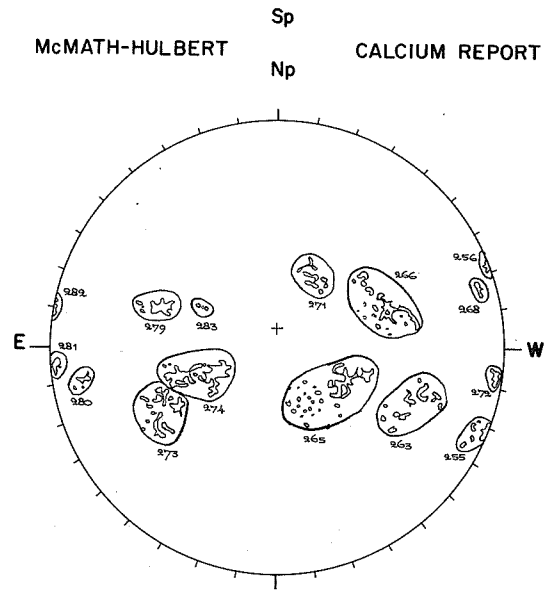


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



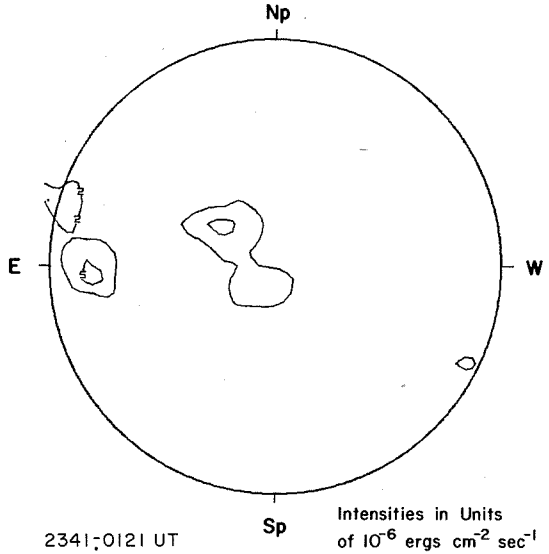
GOOD	M
65	14 - 2.5
66	13 - 2.5
72	09 - 2.5
74	21 - 3.5
79	09 - 3.0
81	13 - 3.0

1300 UT

APRIL 26, 1971 (P=-25.08, B_o=-4.68, L_o=54.02)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

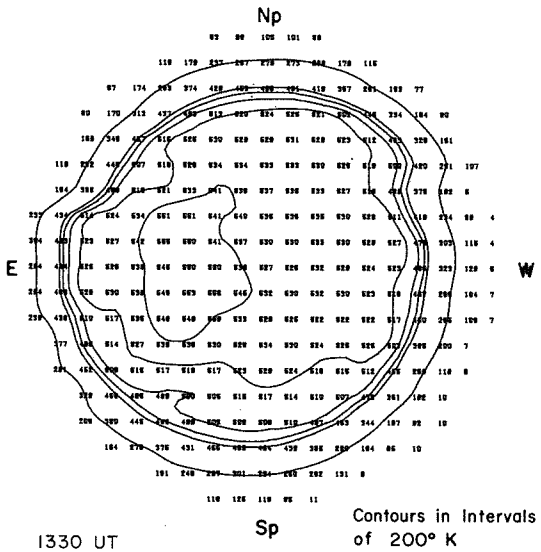


2341-0121 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

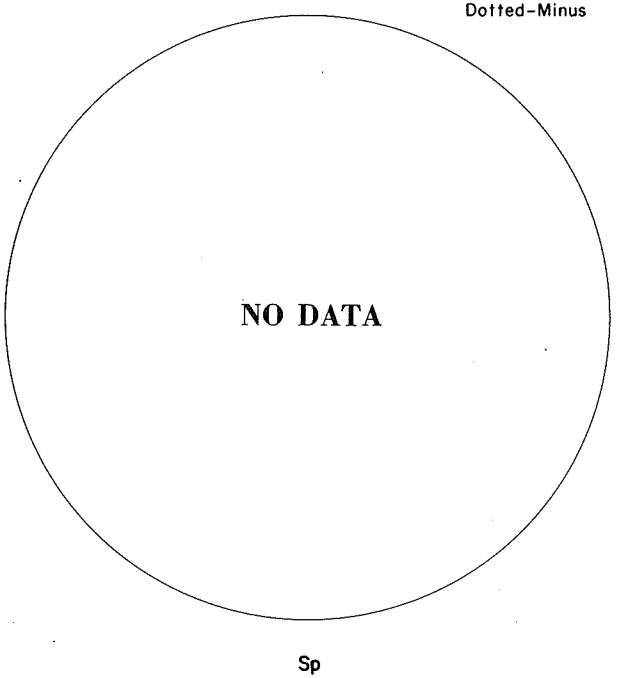


1330 UT

Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

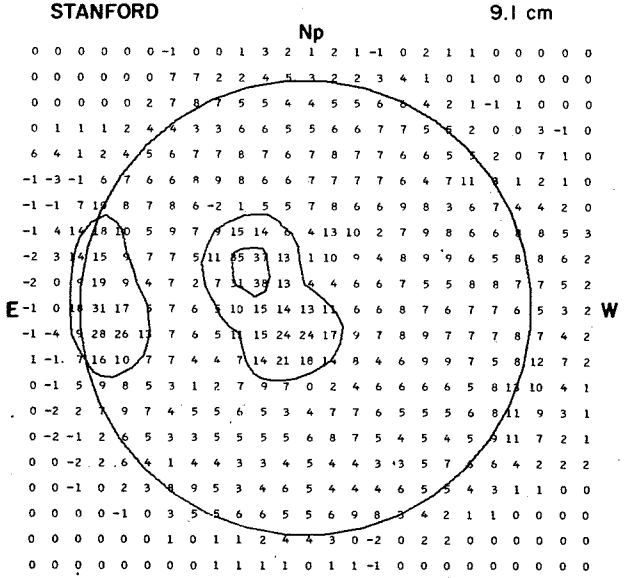


NO DATA

Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

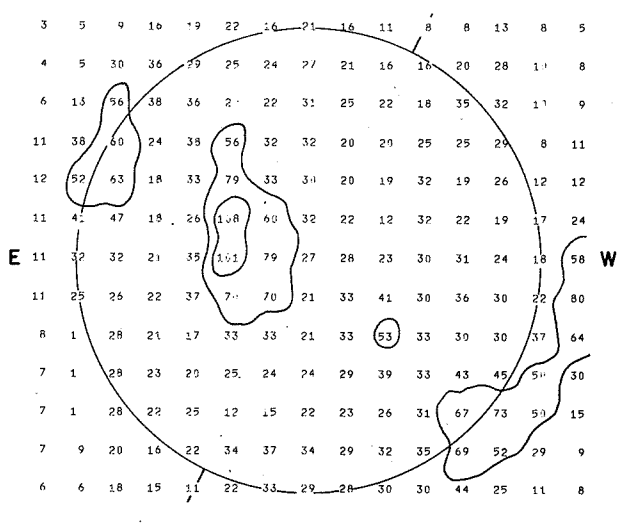


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

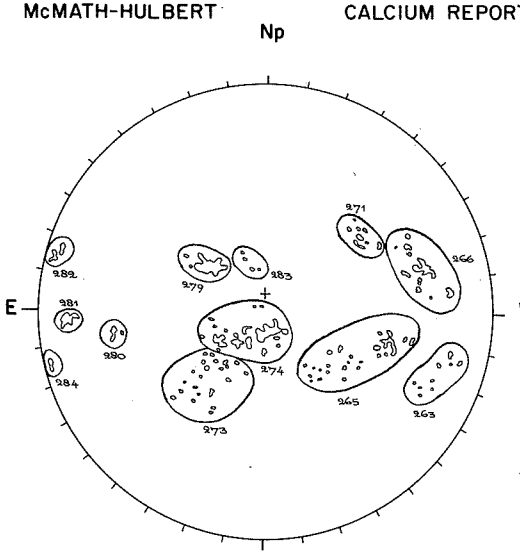


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



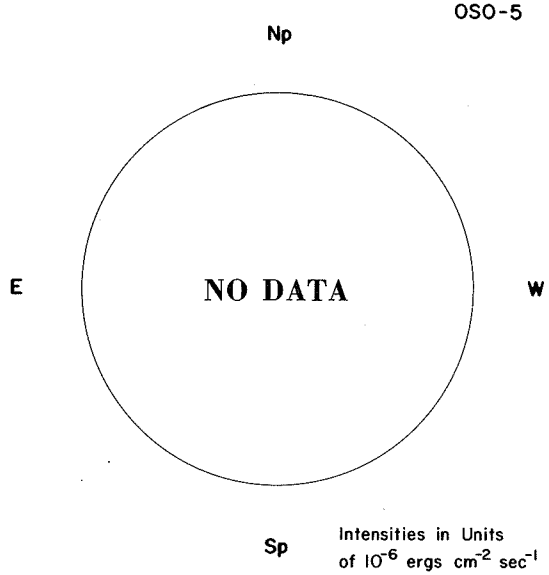
FAIR	D
74-21-3.5	
79-14-3.5	
81-12-3.0	

1915 UT

APRIL 27, 1971 (P=-24.94, B_o=-4.58, L_o=40.81)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

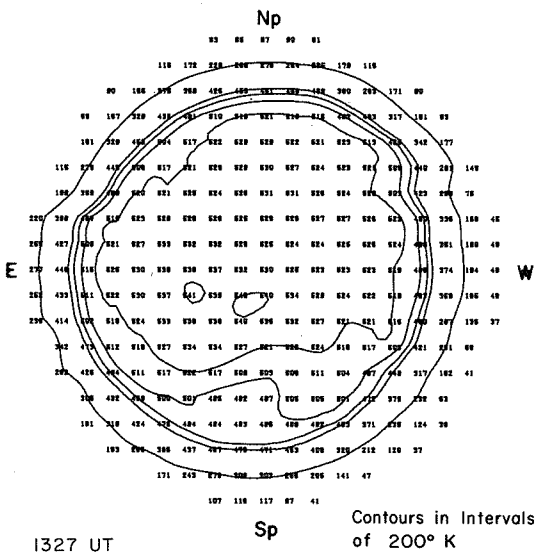
X-RAY
OSO-5



Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm



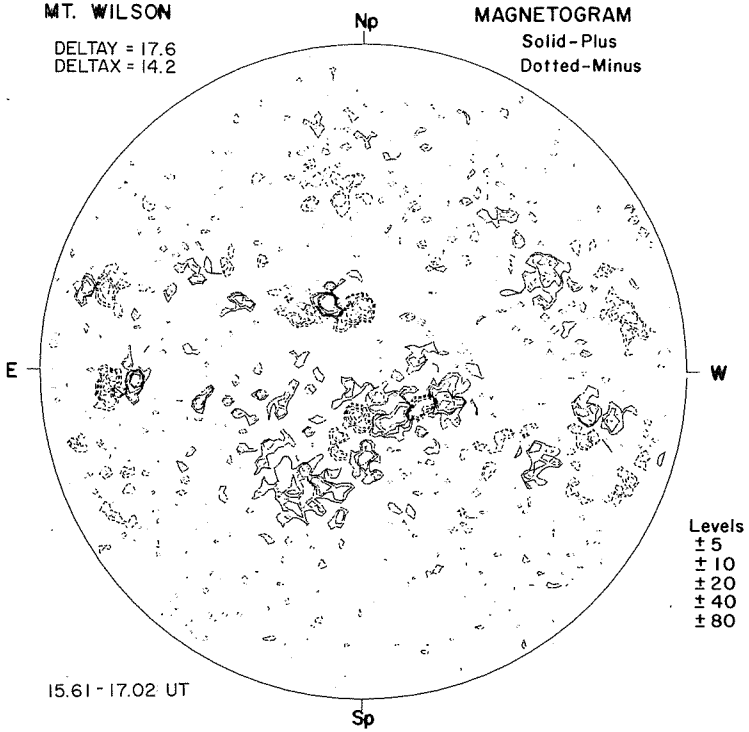
1327 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

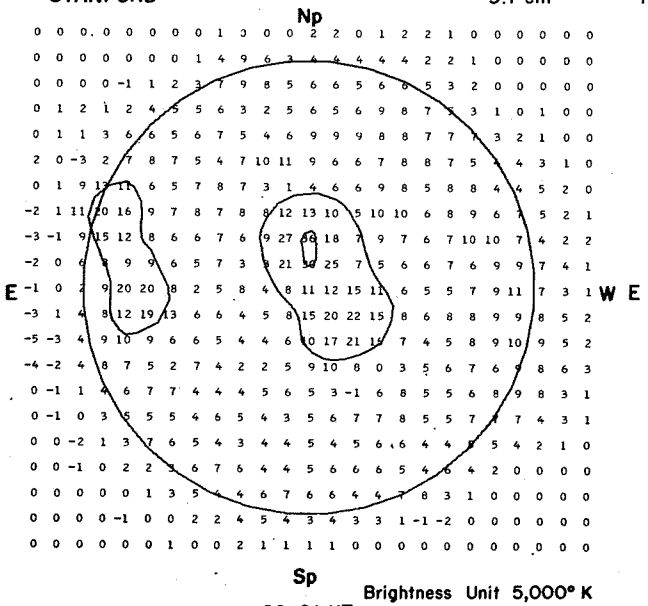


Levels
±5
±10
±20
±40
±80

15.61-17.02 UT

STANFORD

9.1 cm

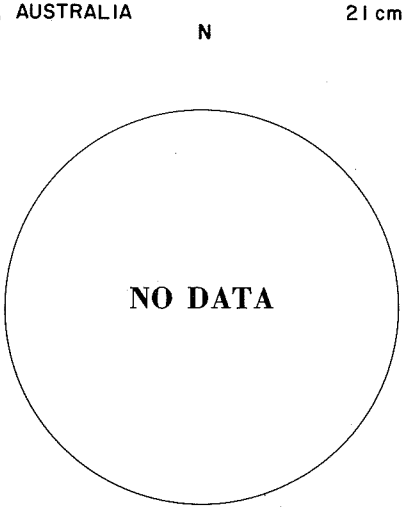


Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

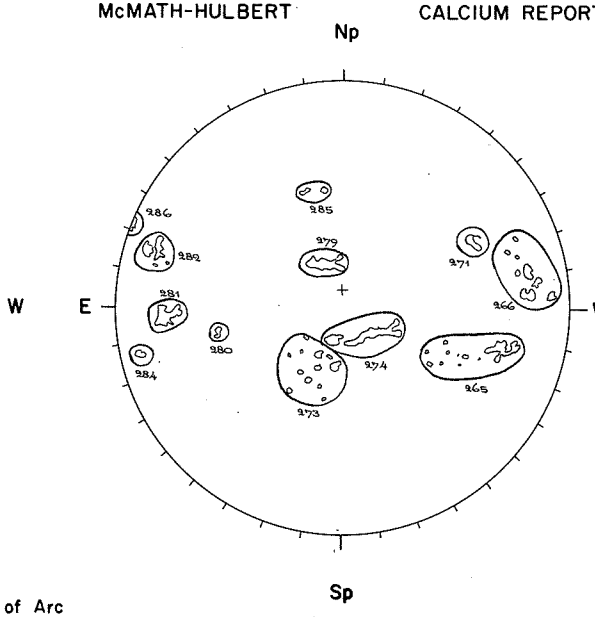


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



V POOR	M
74-21-3.5	
79-14-3.5	
81-13-3.0	
84-04-2.5	

1300 UT

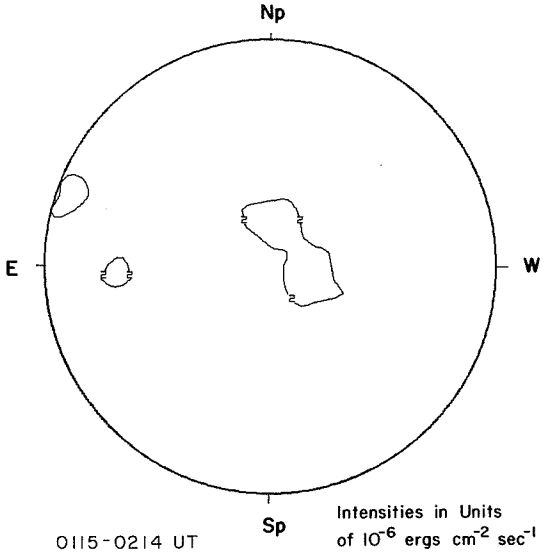
57
Apr 71

APRIL 28, 1971 (P=-24.79, B_o=-4.49, L_o=27.60)

58
Apr 71

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

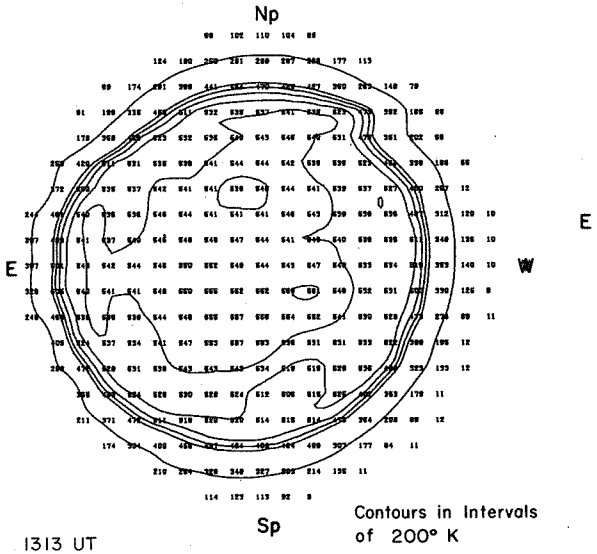


0115-0214 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

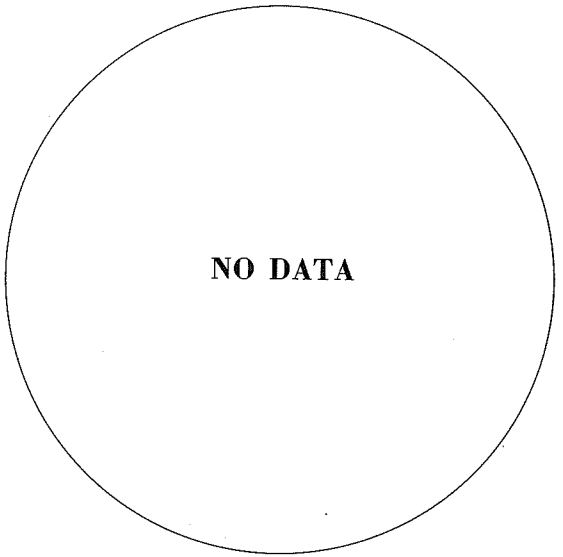


1313 UT

Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

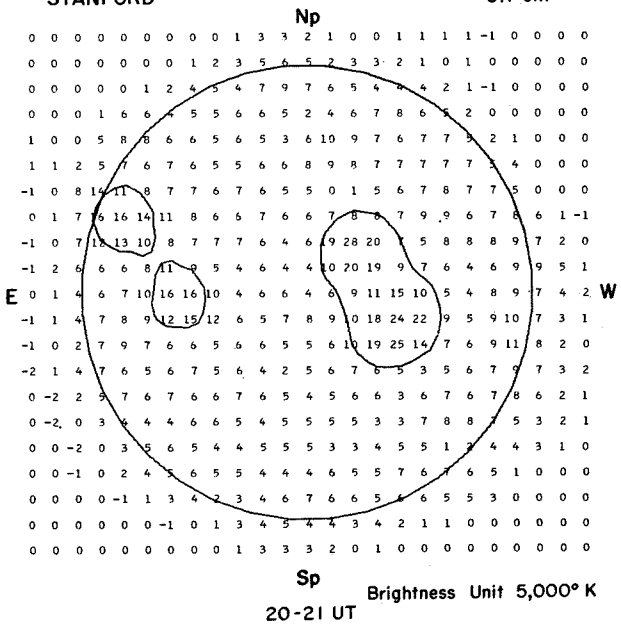


NO DATA

Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

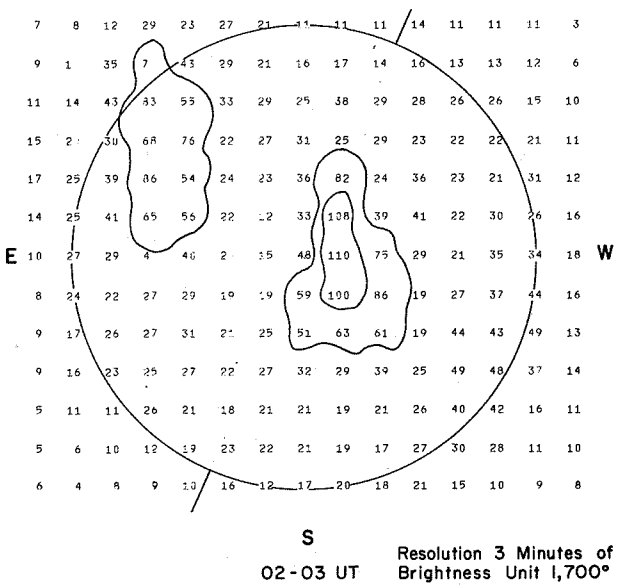


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

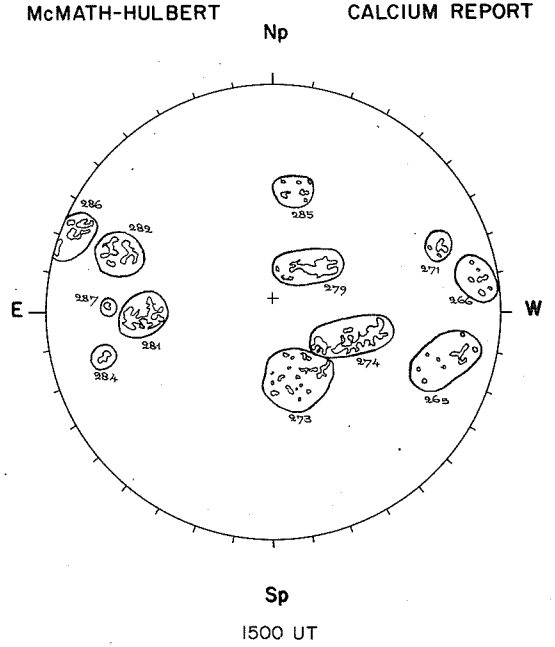


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



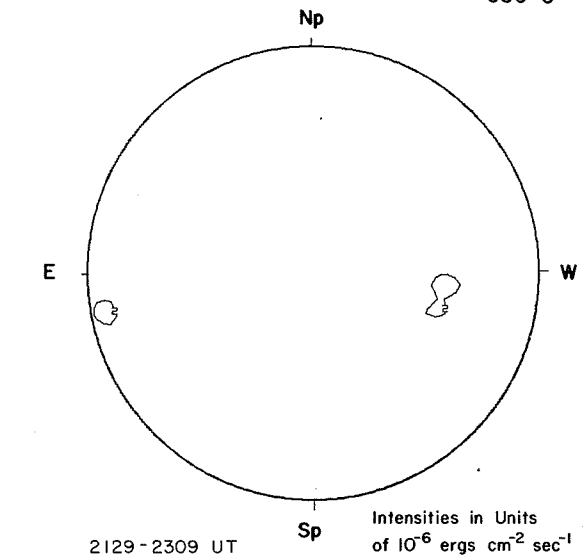
POOR	M
74 - 19 - 3.5	
79 - 15 - 3.5	
81 - 15 - 3.0	
82 - 10 - 2.5	
84 - 04 - 2.5	
86 - 20 - 2.5	

1500 UT

APRIL 29, 1971 (P=-24.63, B_o=-4.39, L_o=14.38)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

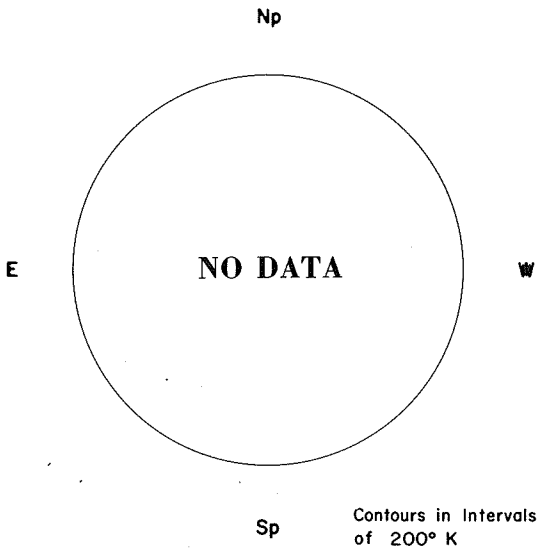


2129-2309 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

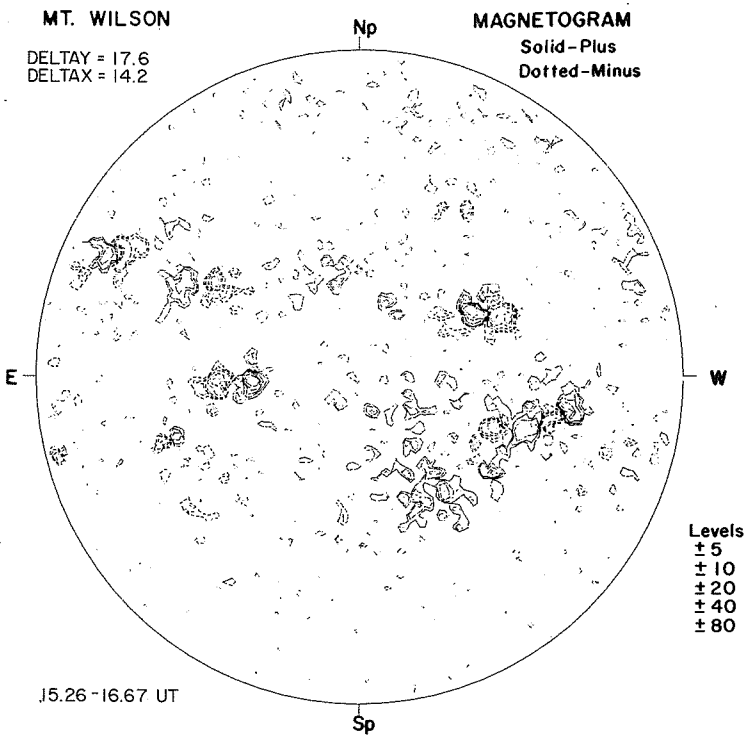


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

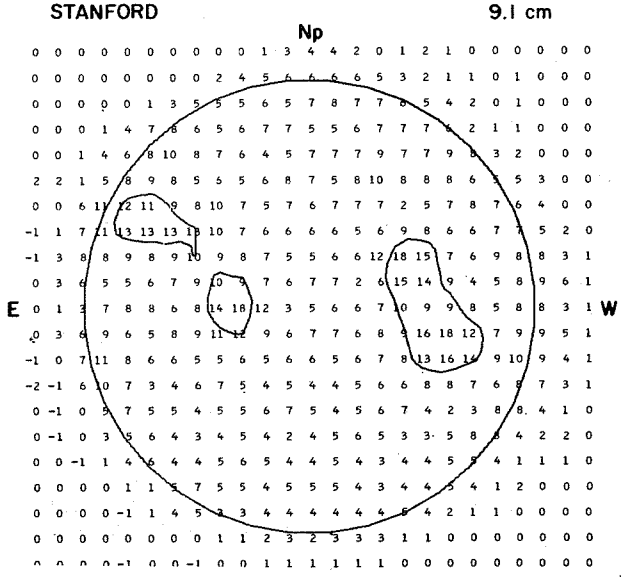


Levels
±5
±±10
±±20
±±40
±±80

15.26-16.67 UT

STANFORD

9.1 cm

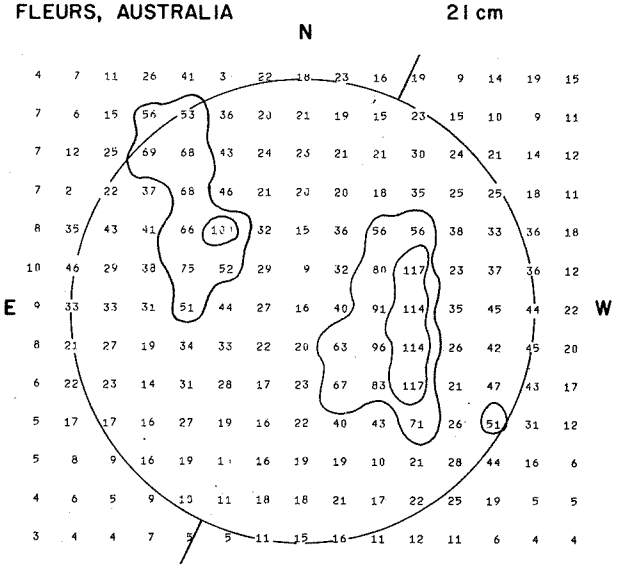


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

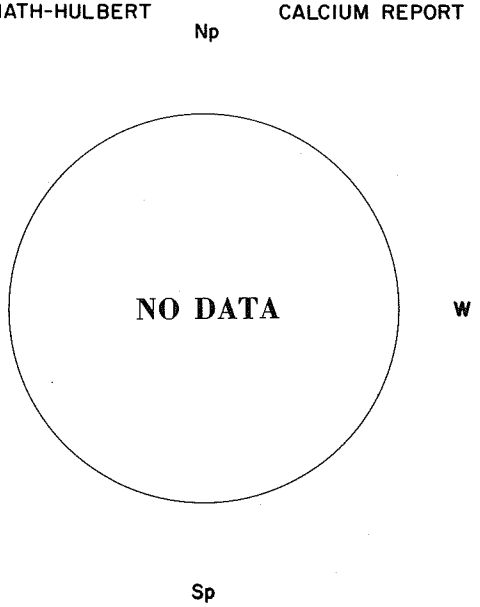


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

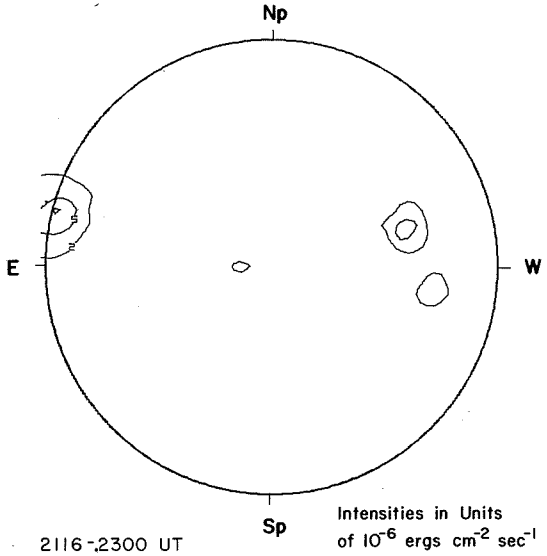
CALCIUM REPORT



APRIL 30, 1971 (P=-24.47, B_o=-4.29, L_o=1.17)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

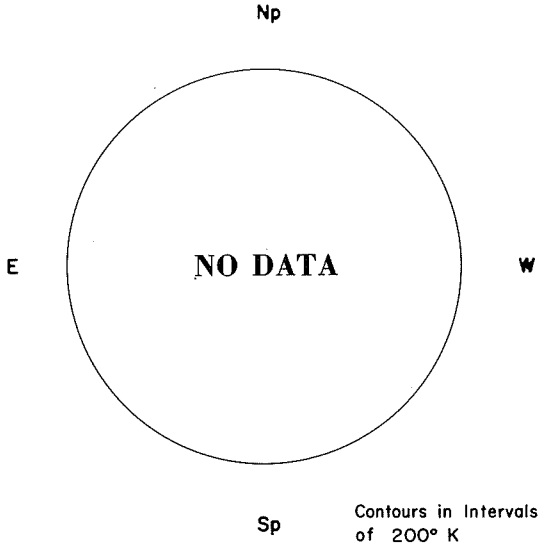


2116-2300 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

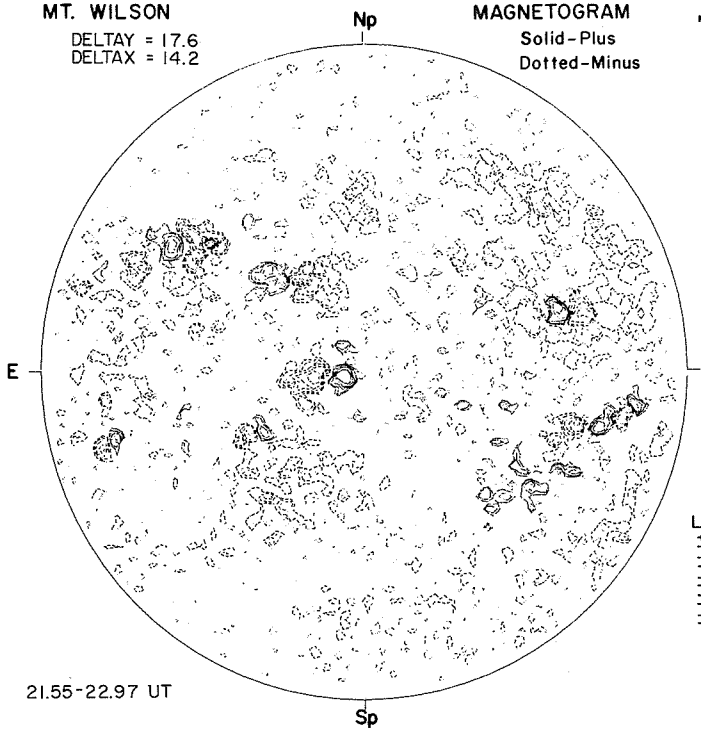


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

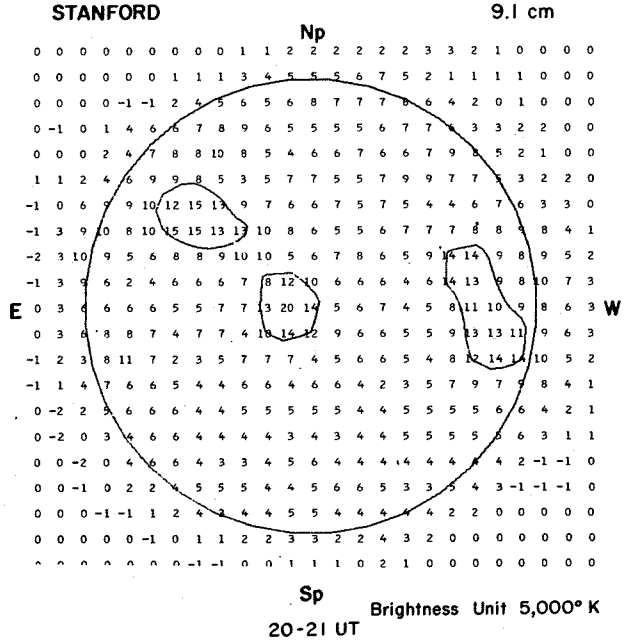


Levels
±5
±10
±20
±40
±80

21.55-22.97 UT

STANFORD

9.1 cm

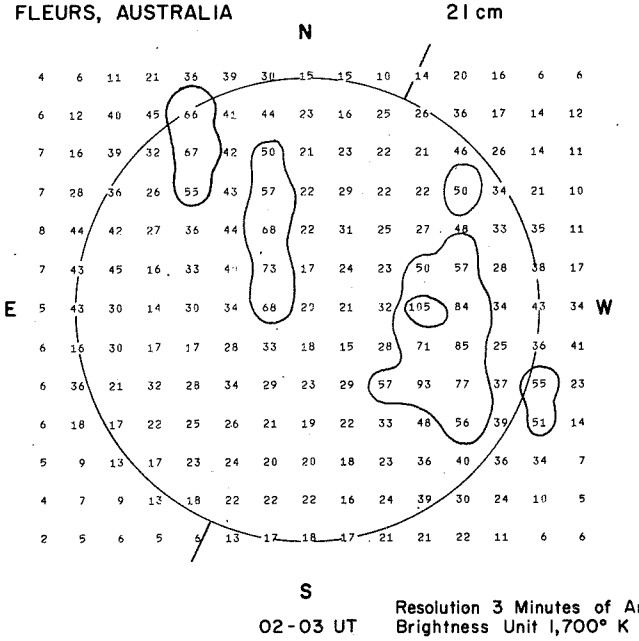


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

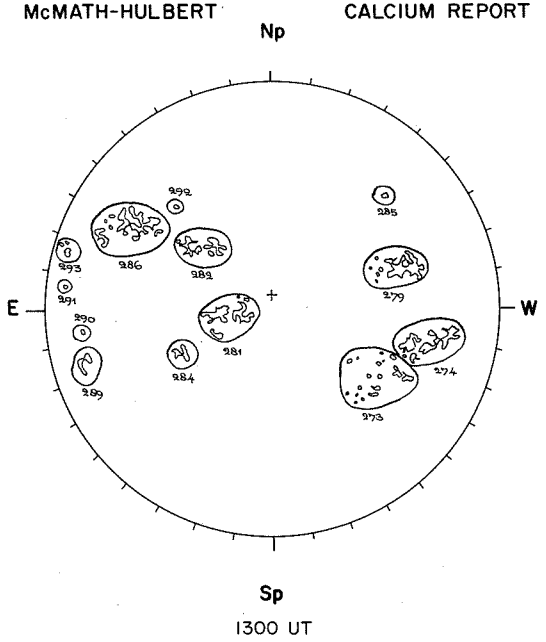


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



FAIR	M
74-16	-3.0
79-14	-3.0
81-12	-3.0
82-09	-2.5
86-17	-2.5
89-05	-2.5

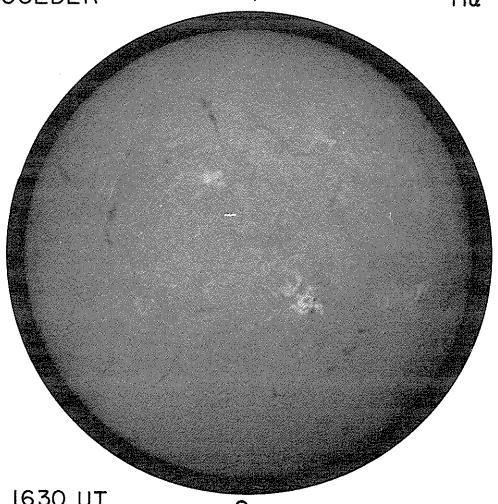
1300 UT

Hα SPECTROHELIOGRAMS

SUNSPOTS AND CORONA

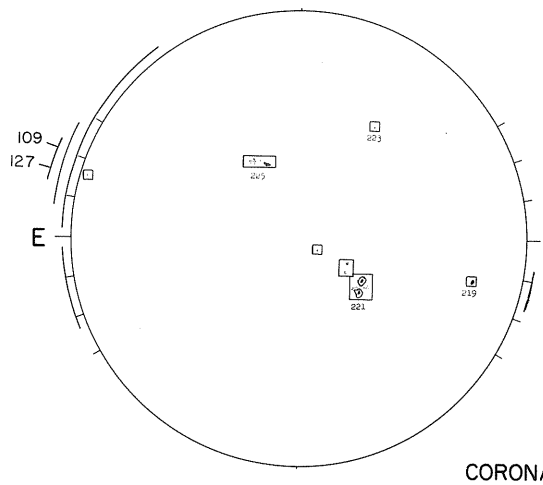
APRIL, 1971

BOULDER
1



1630 UT

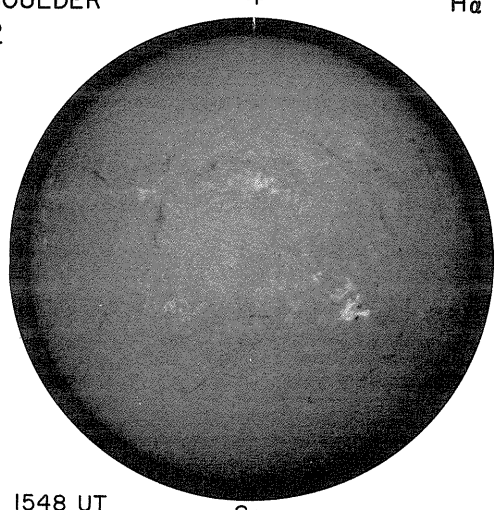
BOULDER



1515 UT

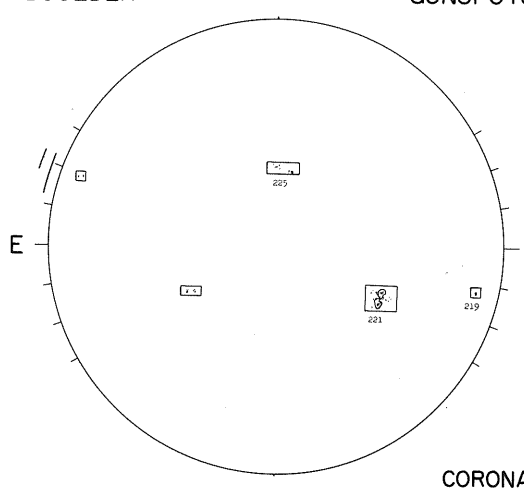
CORONA
NORIKURA

BOULDER
2



1548 UT

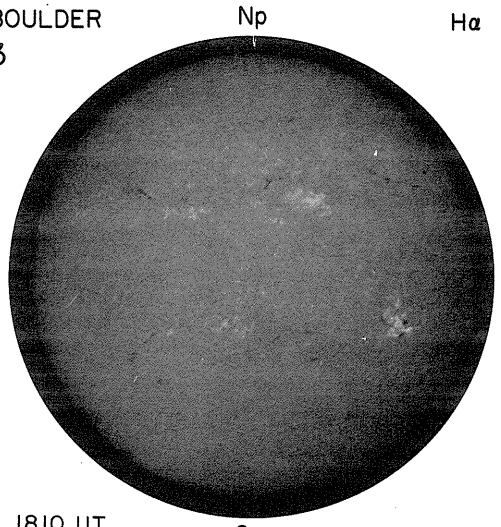
BOULDER



1530 UT

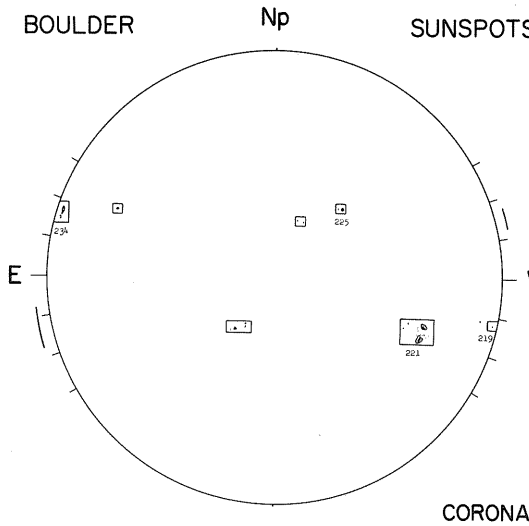
CORONA
KISLOVODSK

BOULDER
3



1810 UT

BOULDER

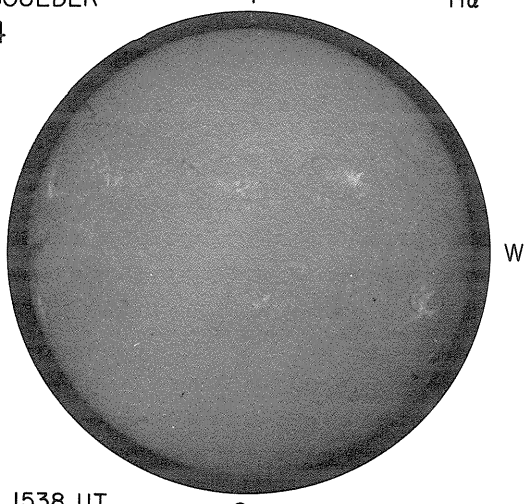


1655 UT

CORONA
KISLOVODSK
INCOMPLETE DATA

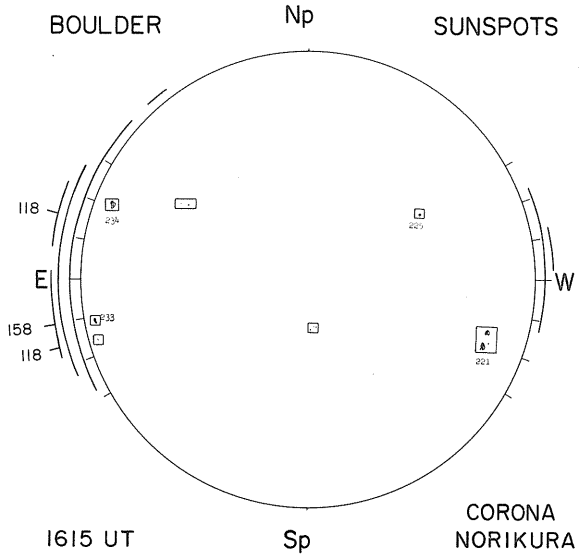
APRIL, 1971

BOULDER
4



1538 UT

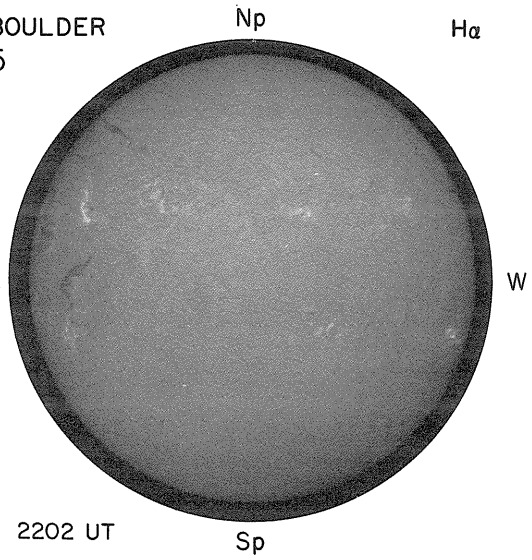
BOULDER



1615 UT

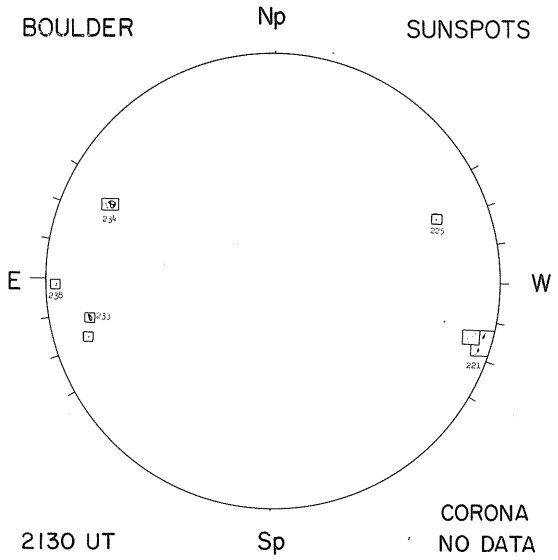
CORONA
NORIKURA

BOULDER
5



2202 UT

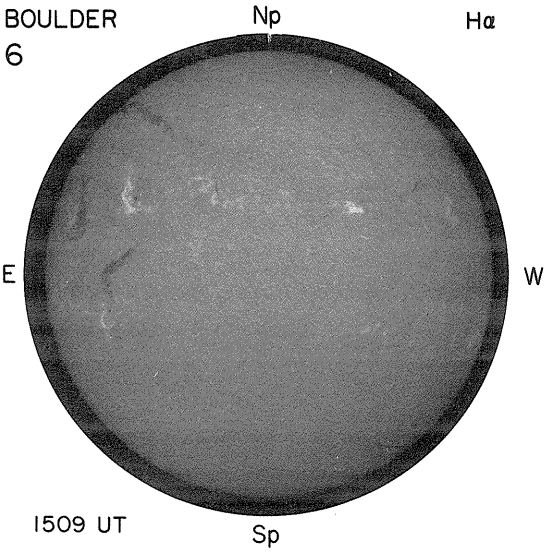
BOULDER



2130 UT

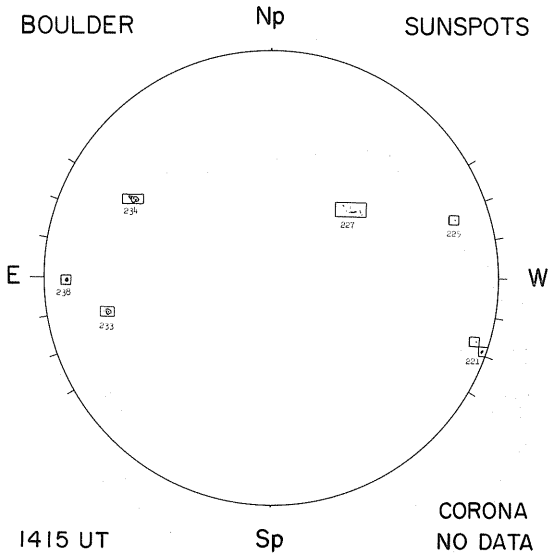
CORONA
NO DATA

BOULDER
6



1509 UT

BOULDER

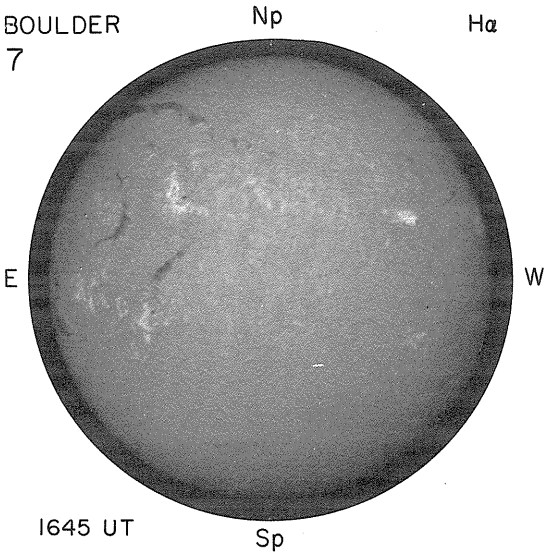


1415 UT

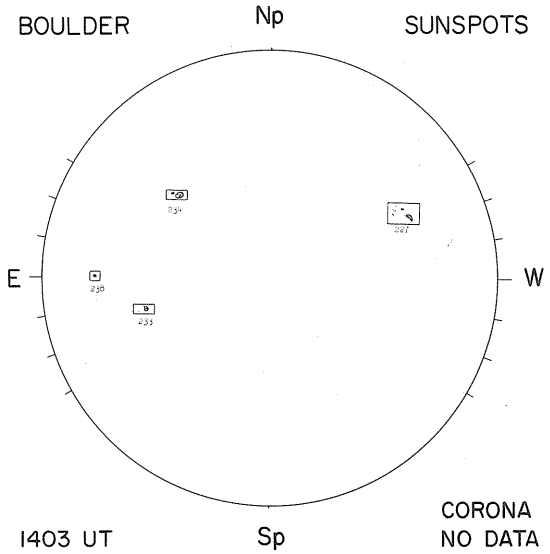
CORONA
NO DATA

APRIL, 1971

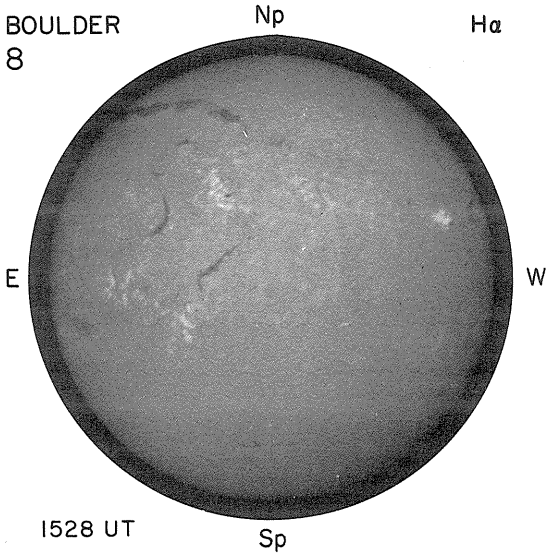
BOULDER
7



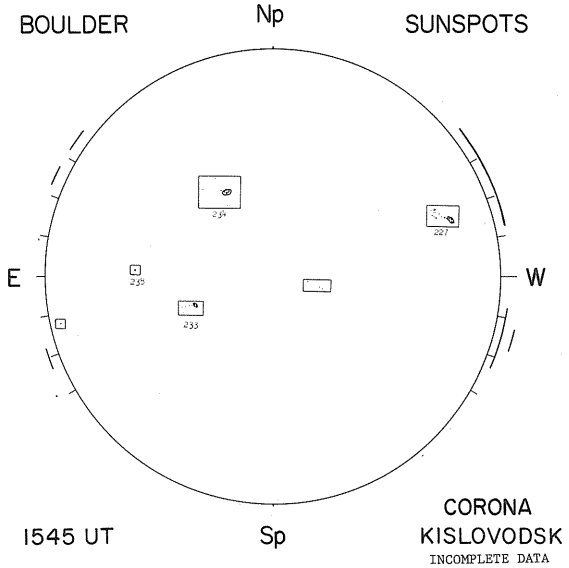
BOULDER



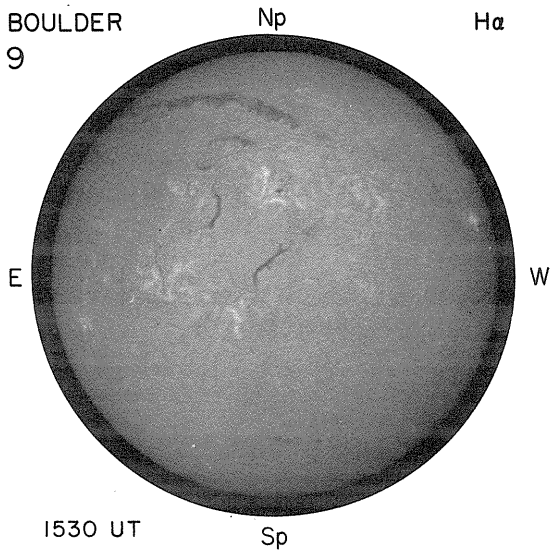
BOULDER
8



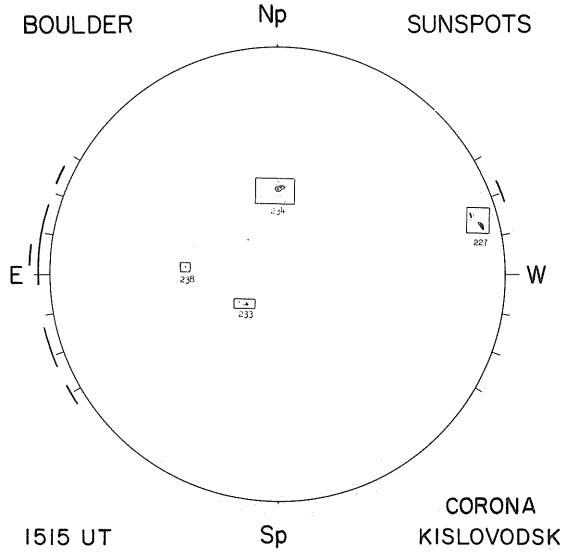
BOULDER



BOULDER
9

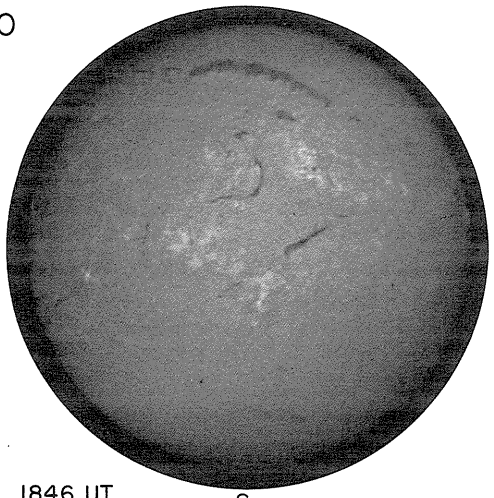


BOULDER



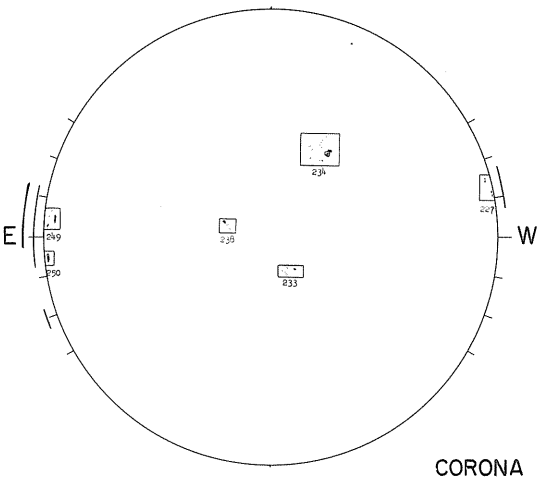
APRIL, 1971

BOULDER Np Hα
10



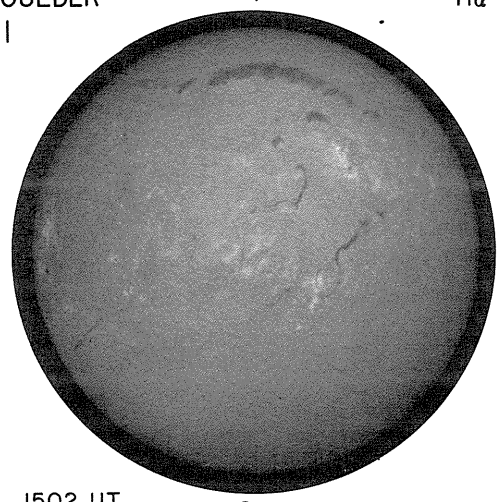
E W
1846 UT Sp

BOULDER Np SUNSPOTS



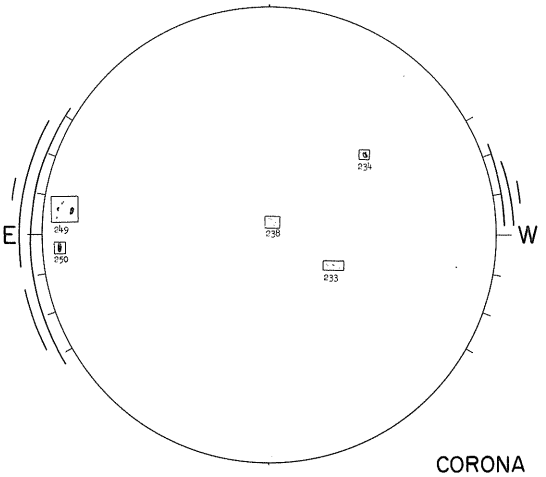
E W
1835 UT Sp CORONA NORIKURA

BOULDER Np Hα
11



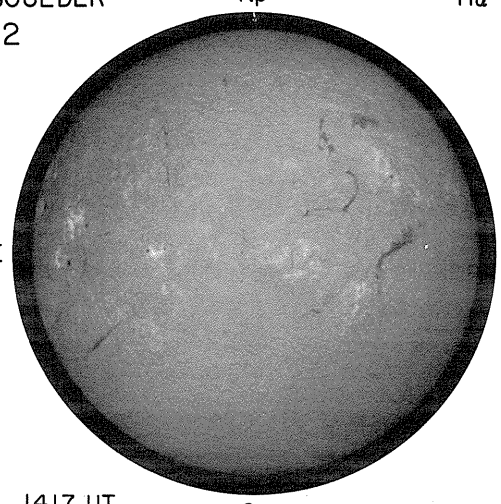
E W
1502 UT Sp

BOULDER Np SUNSPOTS



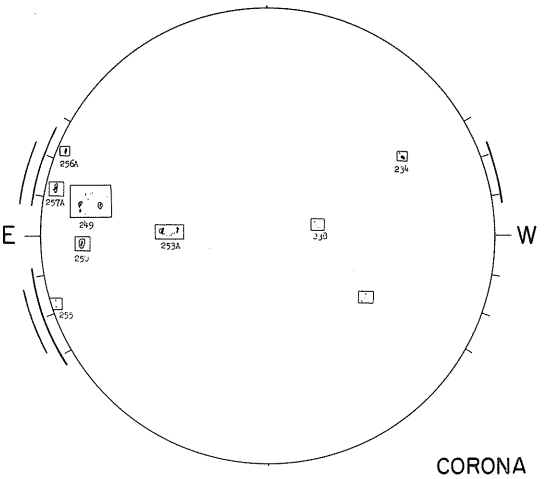
E W
1630 UT Sp CORONA PIC-DU-MIDI

BOULDER Np Hα
12



E W
1417 UT Sp

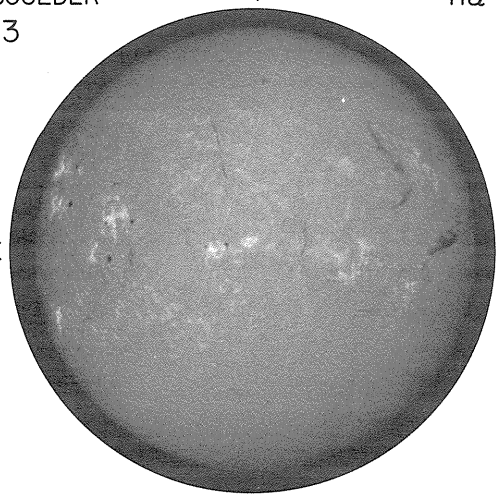
BOULDER Np SUNSPOTS



E W
1450 UT Sp CORONA NORIKURA

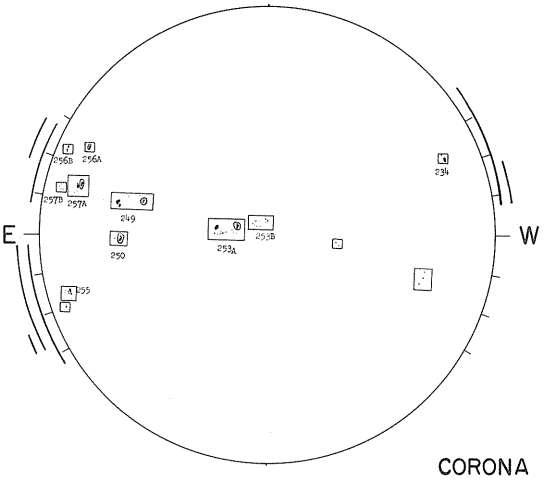
APRIL, 1971

BOULDER
13



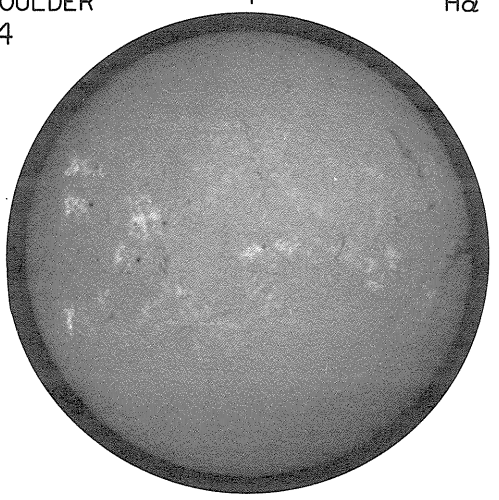
1837 UT

BOULDER
Np
SUNSPOTS



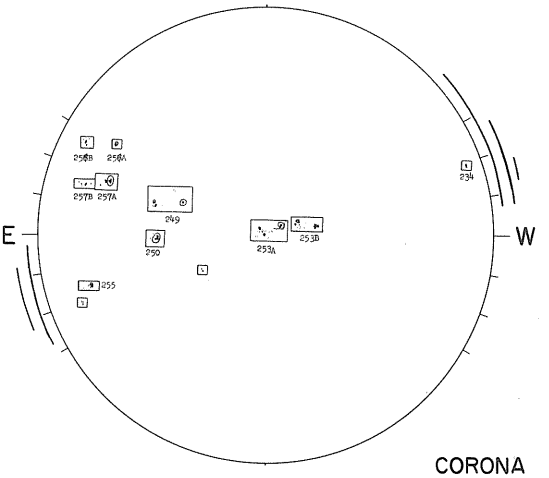
1915 UT
Sp
CORONA
PIC-DU-MIDI

BOULDER
14



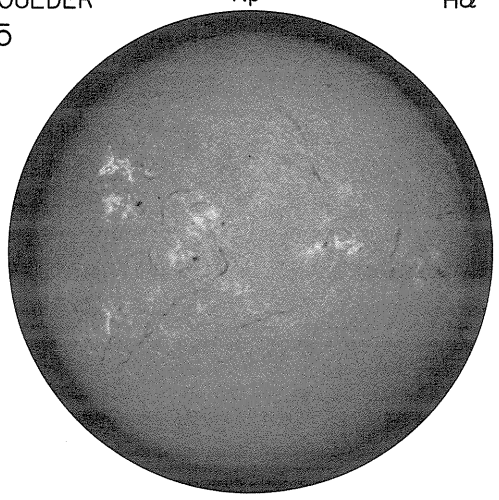
1427 UT

BOULDER
Np
SUNSPOTS



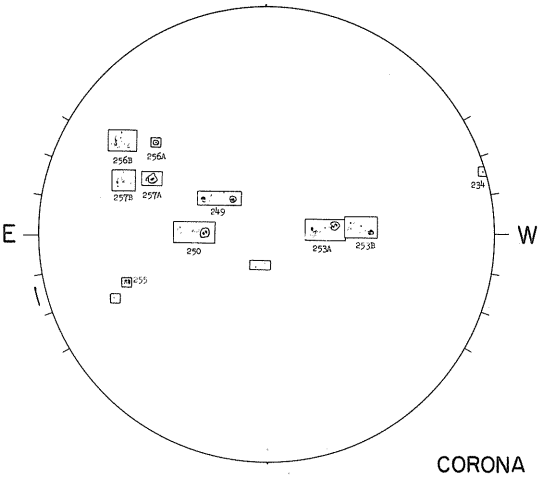
1510 UT
Sp
CORONA
NORIKURA

BOULDER
15



1636 UT

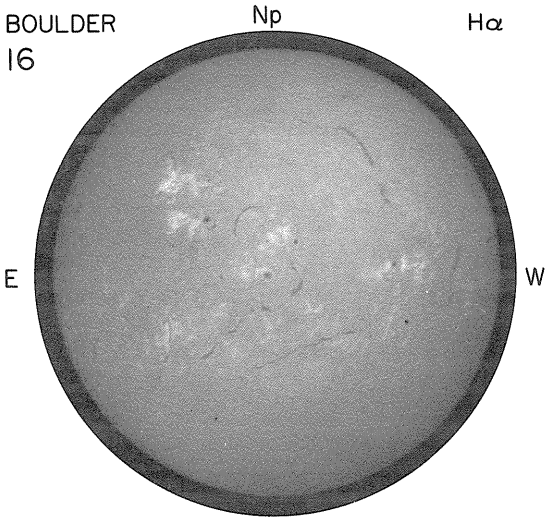
BOULDER
Np
SUNSPOTS



1545 UT
Sp
CORONA
LOMNICKY-STIT

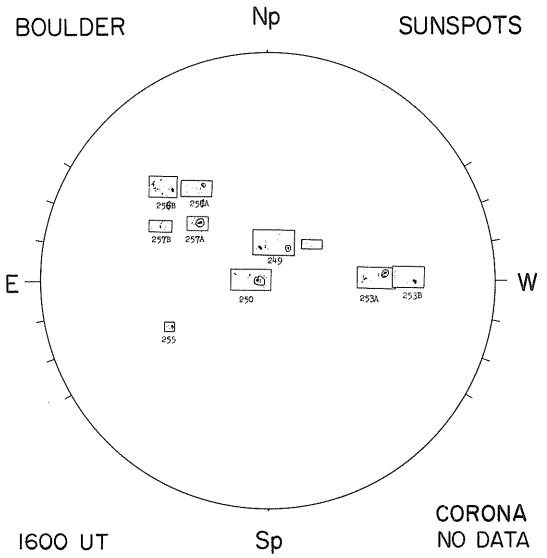
APRIL, 1971

BOULDER
16



1523 UT

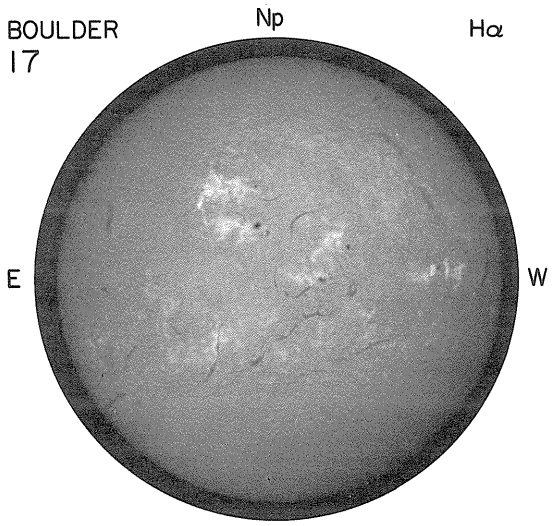
BOULDER



1600 UT

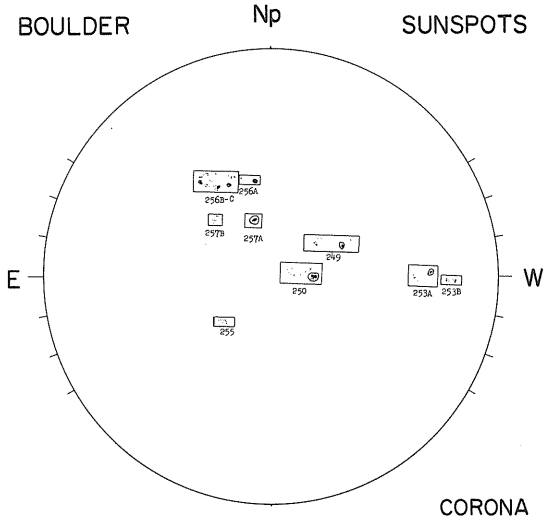
CORONA
NO DATA

BOULDER
17



1522 UT

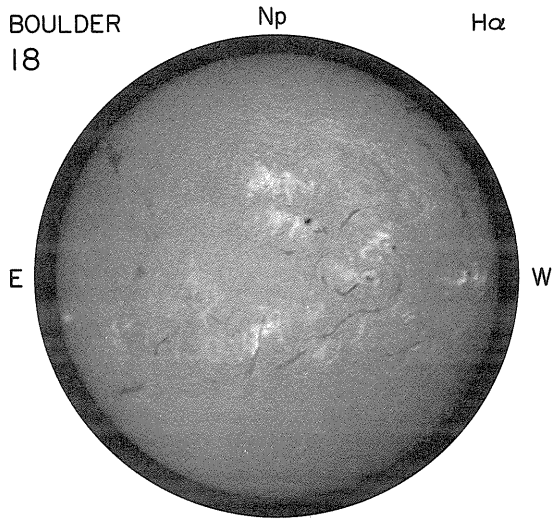
BOULDER



1700 UT

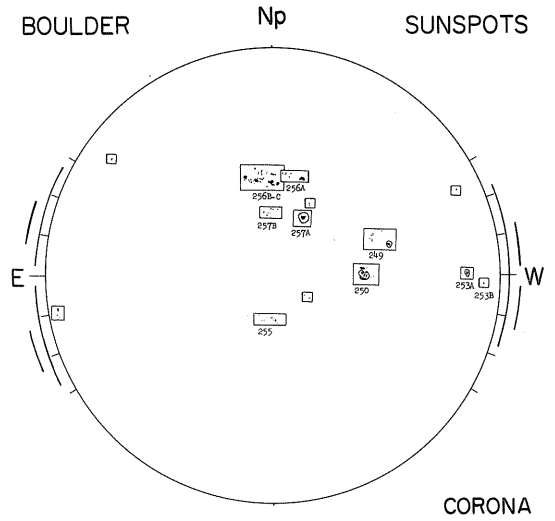
CORONA
NO DATA

BOULDER
18



1501 UT

BOULDER

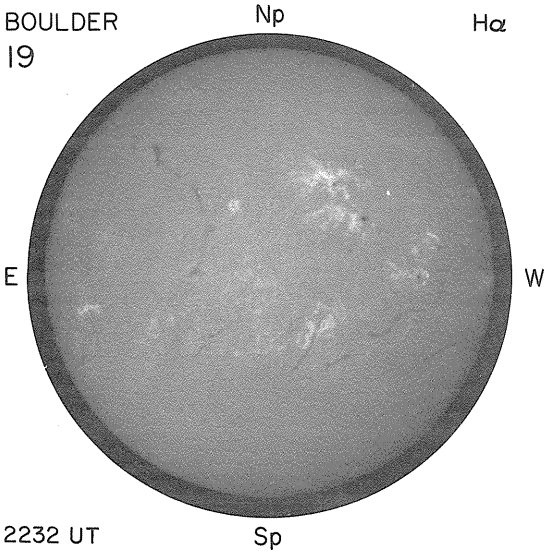


1700 UT

CORONA
NORIKURA

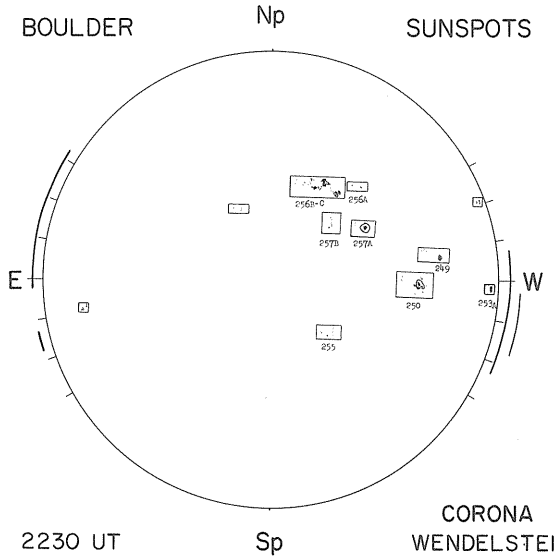
APRIL, 1971

BOULDER
19



2232 UT

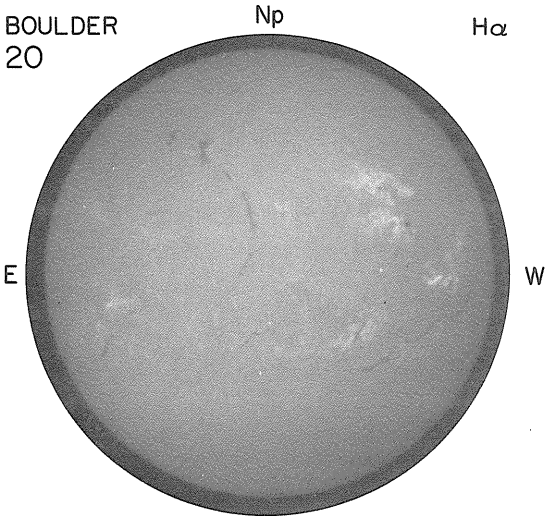
BOULDER



2230 UT

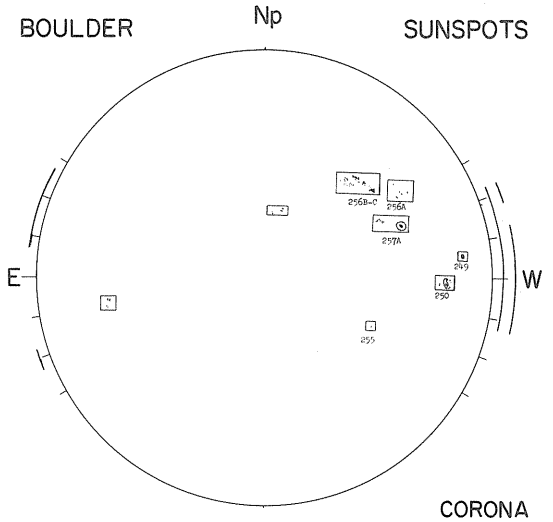
CORONA
WENDELSTEIN

BOULDER
20



2111 UT

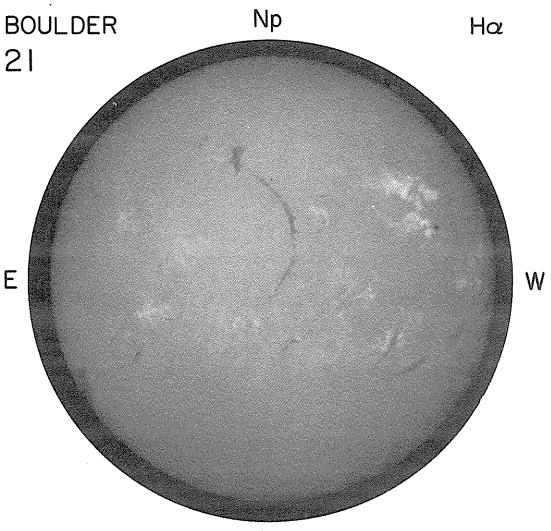
BOULDER



2150 UT

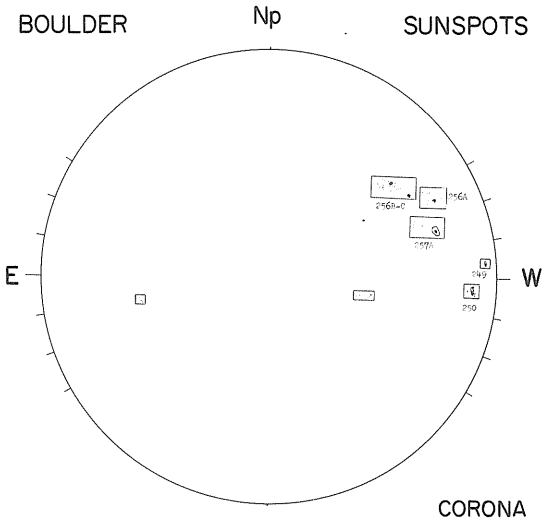
CORONA
NORIKURA

BOULDER
21



1430 UT

BOULDER

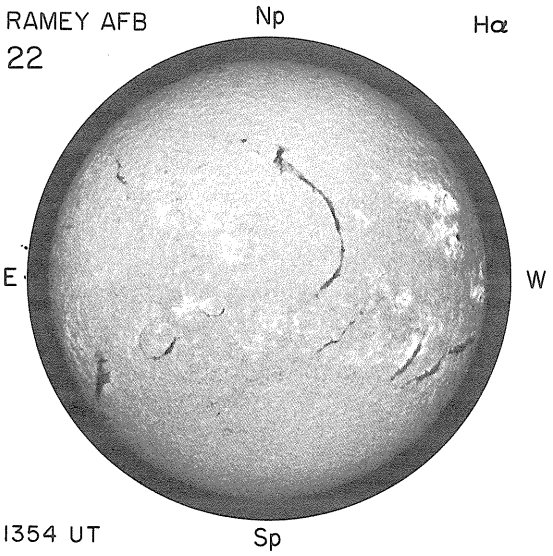


1440 UT

CORONA
KISLOVODSK

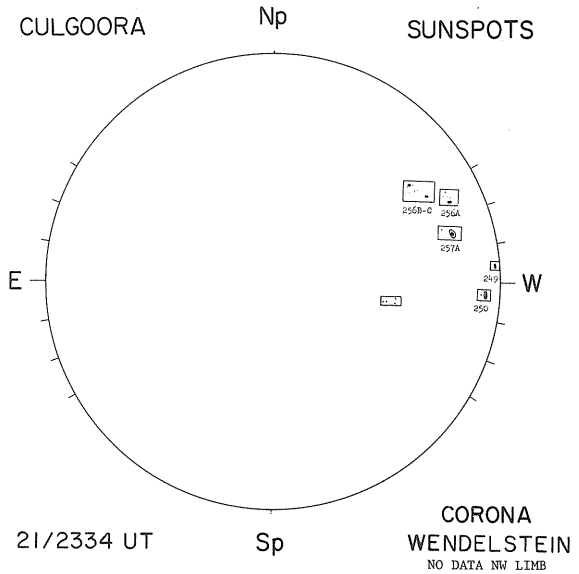
APRIL, 1971

RAMEY AFB
22



1354 UT

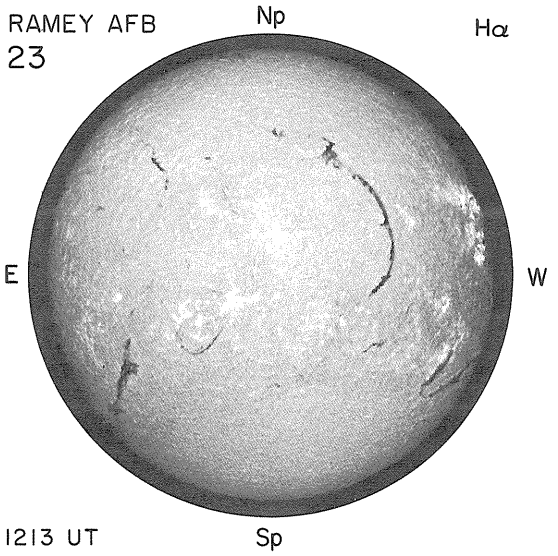
CULGOORA



21/2334 UT

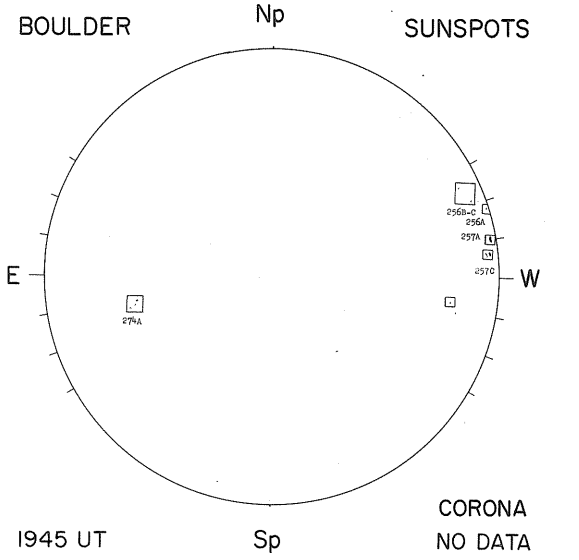
CORONA
WENDELSTEIN
NO DATA NW LIMB

RAMEY AFB
23



1213 UT

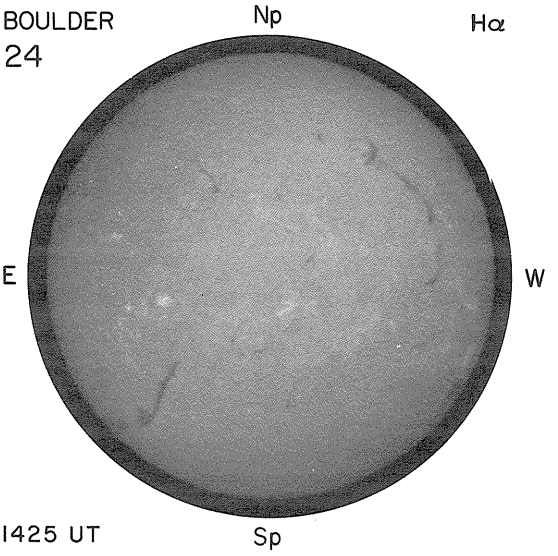
BOULDER



1945 UT

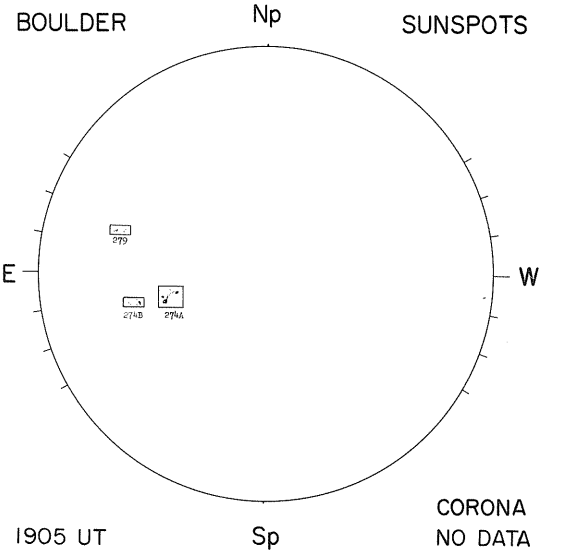
CORONA
NO DATA

BOULDER
24



1425 UT

BOULDER

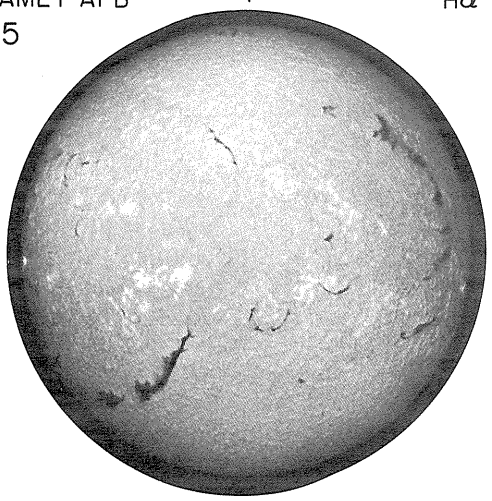


1905 UT

CORONA
NO DATA

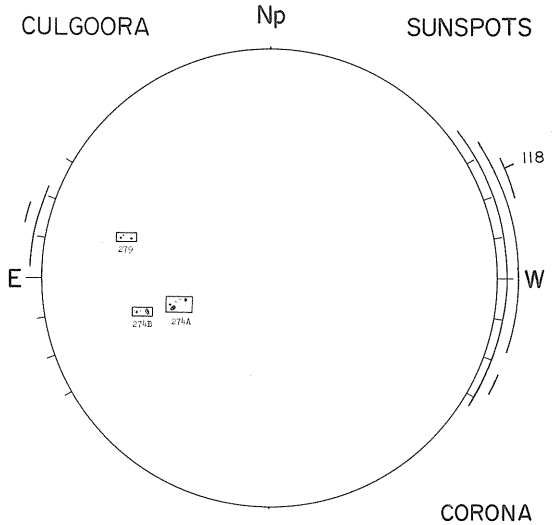
APRIL, 1971

RAMEY AFB
25



1156 UT

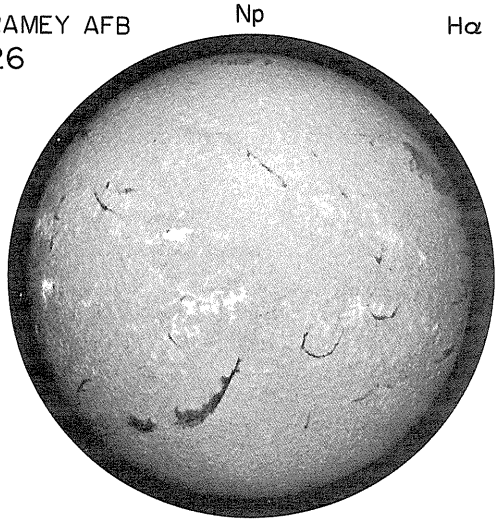
CULGOORA



24/2330 UT

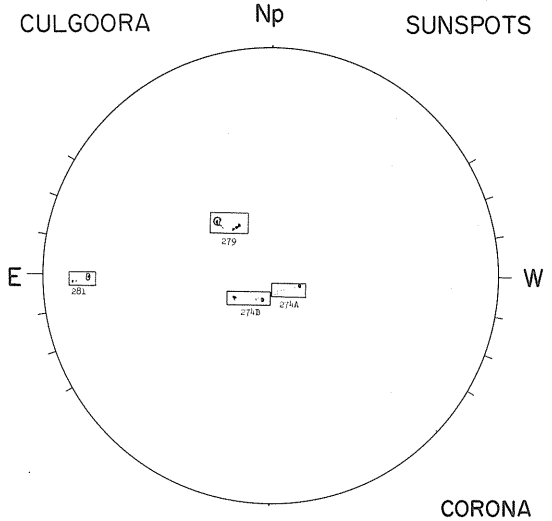
CORONA
NORIKURA

RAMEY AFB
26



1115 UT

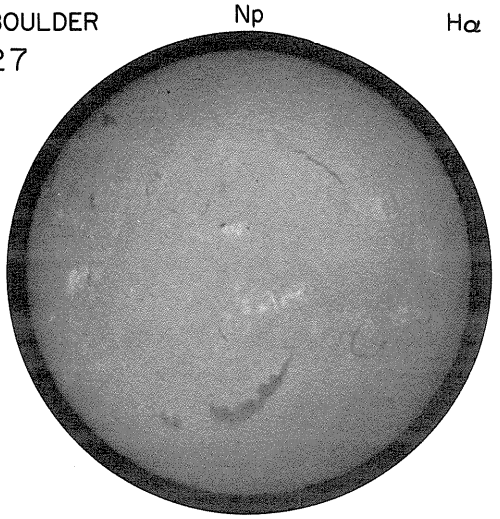
CULGOORA



2350 UT

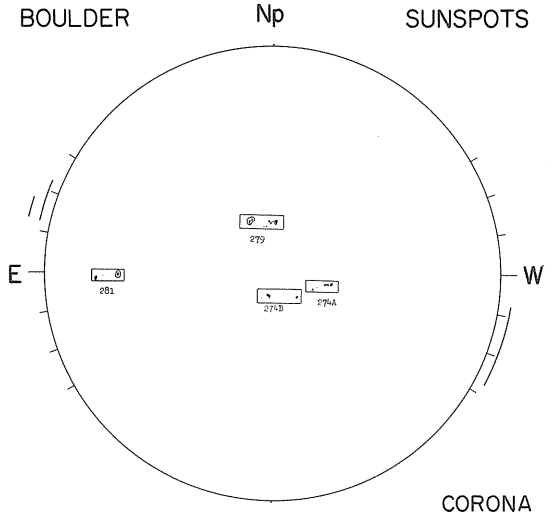
CORONA
NO DATA

BOULDER
27



1354 UT

BOULDER

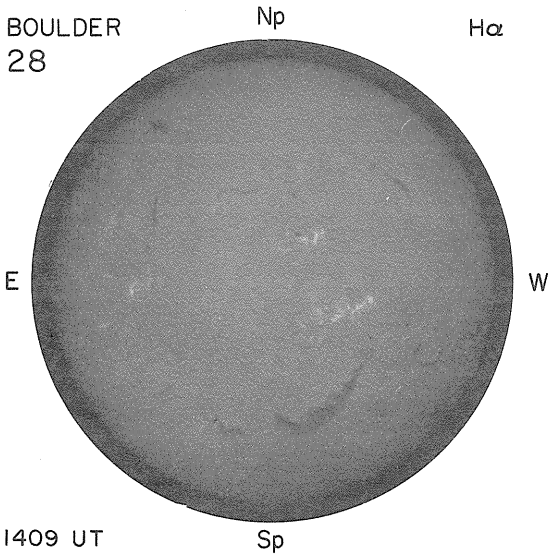


1355 UT

CORONA
NORIKURA

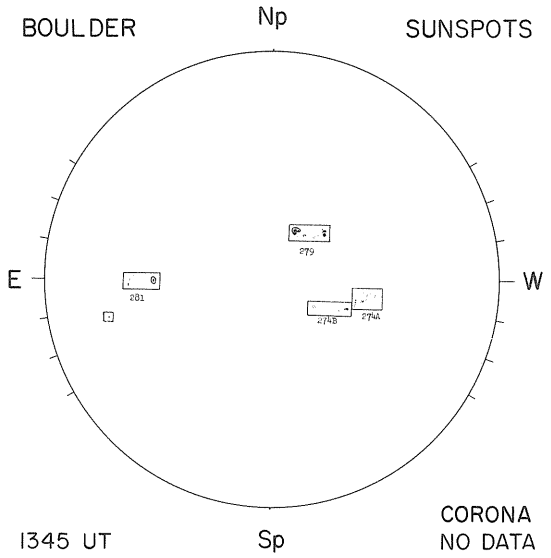
APRIL, 1971

BOULDER
28



1409 UT

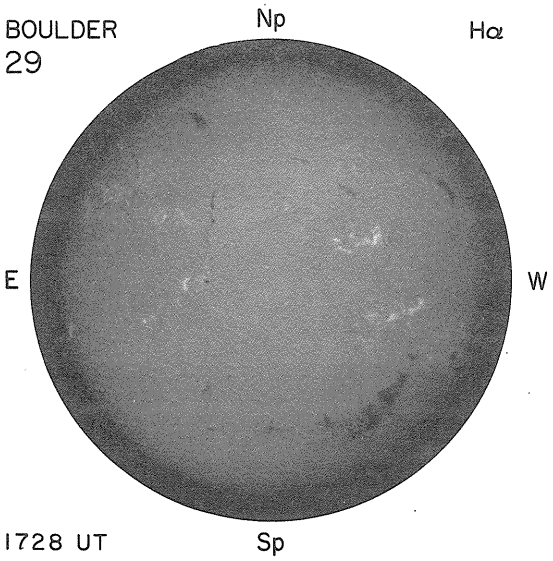
BOULDER



1345 UT

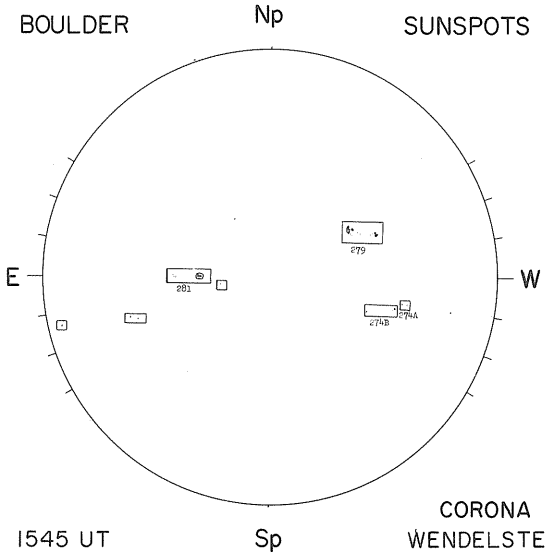
CORONA
NO DATA

BOULDER
29



1728 UT

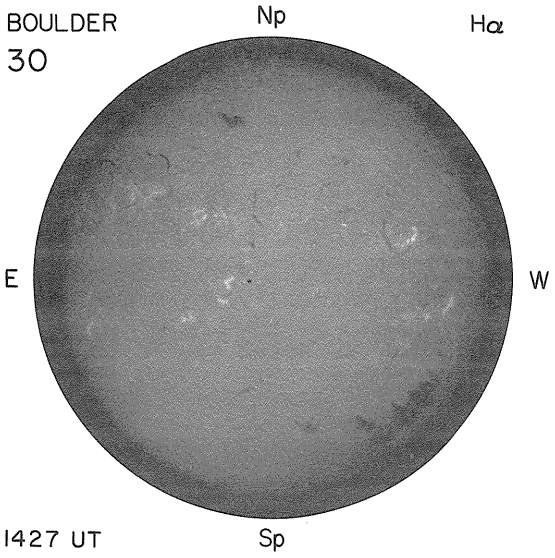
BOULDER



1545 UT

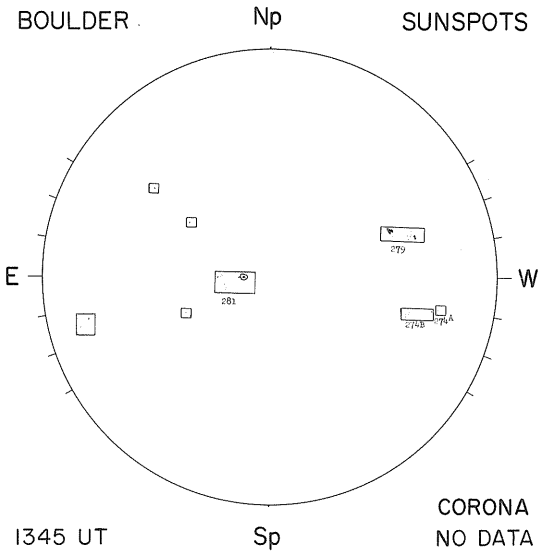
CORONA
WENDELSTEIN

BOULDER
30



1427 UT

BOULDER



1345 UT

CORONA
NO DATA

REGIONS OF SOLAR ACTIVITY

APRIL 1971

MCMATH REGION 11225 CMP DATE 2.6

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	3	28	11225	N15 E75	354	600	3.0
71	3	29					
71	3	30	11225	N15 E40	3	1000	3.0
71	3	31	11225	N15 E27	2	900	3.0
71	4	1	11225	N14 E13	3	1000	3.0
71	4	2	11225	N14 W01	3	1100	3.0
71	4	3	11225	N14 W14	4	1300	3.5
71	4	4	11225	N14 W26	4	1300	3.0
71	4	5	11225	N14 W38	3	1100	2.5
71	4	6	11225	N14 W52	3	1300	2.5
71	4	7	11225	N14 W66	3	1000	3.0
71	4	8	11225	N14 W80	4	800	2.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18384	N14 E52	3	(AP)	2	0	1	A		
18384	N14 E38	4	(B)	4	20	2	D	3	1
18384	N13 E24	4	(B)	4	30	7	D	10	3
18384	N14 E12	4	(BP)	5	30	13	D	8	3
18384	N13 W05	4	(BP)	3	30	8	C	5	2
18384	N13 W17	6	(BP)	4	20	2	H		
18384	N12 W32	7	(AP)	2	20	1	H		
18384	N12 W45	6	(AP)	2	0	1	A		
18384	N12 W59	7	(AP)	3	0	1	A	4	1
18384	N14 W72	8	AP						

MCMATH REGION 11240 CMP DATE 2.8

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	6	11240	N25 W49	0	100	1.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX

MCMATH REGION 11236 CMP DATE 3.2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	3	11236				
71	4	4	11236	N08 W17	355	200	1.5
71	4	5	11236	N09 W32	357	300	2.0
71	4	6	11236	N08 W45	356	200	1.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18389	N08 W06	355	(B)	1	0	2	B		

MCMATH REGION 11241 CMP DATE 3.6

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	6	11241	N28 W39	350	200	1.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX

MCMATH REGION 11229 CMP DATE 4.4

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	2	11229	S17 E25	338	400	2.5
71	4	3	11229	S17 E11	339	800	2.5
71	4	4	11229	S18 W03	341	600	2.5
71	4	5	11229	S18 W15	340	600	2.5
71	4	6	11229	S19 W28	339	600	2.0
71	4	7	11229	S19 W41	338	500	2.0
71	4	8	11229	S20 W54	338	400	1.5
71	4	9	11229	S19 W67	338	400	1.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18388	S18 E20	340	(B)	2	20	6	D		
18388	S19 E09	340	(BF)	3	30	8	D		
18388	S18 W05	340	BF		0	3	A		

MCMATH REGION 11227 CMP DATE 5.0 RETURN OF REGION 11186 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	3	30	11227	N14 E75	329	500	2.5
71	3	31	11227	N14 E59	331	400	2.5
71	4	1	11227	N13 E45	332	500	2.0
71	4	2	11227	N13 E31	332	400	2.0
71	4	3	11227	N13 E19	331	500	2.0
71	4	4	11227	N13 E06	332	700	2.0
71	4	5	11227	N12 W07	332	700	2.0
71	4	6	11227	N12 W21	332	900	4.0
71	4	7	11227	N12 W34	331	1000	3.5
71	4	8	11227	N12 W47	331	1300	3.5
71	4	9	11227	N13 W63	334	1500	3.5
71	4	10	11227	N11 W77	336	1500	3.5

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18394	N12 W24	332	(BP)	3	20	13	C	8	3
18394	N12 W38	334	(BP)	5	70	13	D	19	6
18394	N12 W56	335	(BP)	5	120	25	C	14	5
18394	N12 W66	335	(BP)	5	140	10	D	18	6
18394	N12 W88	341	BP		170	4	D	10	3

MCMATH REGION 11242 CMP DATE 5.3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	7	11242	N05 W29	326	100	1.5

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX

REGIONS OF SOLAR ACTIVITY

APRIL 1971

MCMATH REGION 11231 CMP DATE 5.8

CALCIUM PLAGE DATA								SUNSPOT DATA								9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	4	3	11231	S19 E26	324	100	1.5										
71	4	4	11231	S18 E17	321	100	1.0										

MCMATH REGION 11232 CMP DATE 6.6

CALCIUM PLAGE DATA								SUNSPOT DATA								9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	4	3	11232	S09 E41	309	100	1.5										
71	4	4	11232	S09 E28	310	100	1.5										

MCMATH REGION 11243 CMP DATE 7.3

CALCIUM PLAGE DATA								SUNSPOT DATA								9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	4	7	11243	S18 W03	300	100	1.0										
71	4	8	11243	S18 W17	301	200	1.5										

MCMATH REGION 11228 CMP DATE 7.7

CALCIUM PLAGE DATA								SUNSPOT DATA								9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	4	1	11228	N13 E81	296	400	2.0	18387	N14 E76	301	(AP)	4	10	1	A	4	1
71	4	2	11228	N16 E68	295	1200	2.0	18387	N14 E59	301	(AP)	2	10	2	C	9	3
71	4	3	11228	N16 E53	297	1200	2.0	18387	N13 E46	303	(BP	2	10	1	H		
71	4	4	11228	N16 E41	297	1500	2.0	18387	N13 E34	301	BP		10	3	C		
71	4	5	11228	N16 E28	297	1300	2.0										
71	4	6	11228	N16 E15	296	1500	2.0									5	2
71	4	7	11228	N16 E02	295	1500	2.0									5	2
71	4	8	11228	N16 W10	294	1300	2.5									4	1
71	4	9	11228	N16 W24	295	1300	2.0									4	1
71	4	10	11228	N16 W37	296	1300	2.0										
71	4	11	11228	N15 W50	294	1200	2.0									5	2
71	4	12	11228	N15 W66	295	1000	1.5										

MCMATH REGION 11230 CMP DATE 8.1

CALCIUM PLAGE DATA								SUNSPOT DATA								9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	4	2	11230	N04 E77	286	400	1.0										
71	4	3	11230	N03 E63	287	300	1.0										
71	4	4	11230	N02 E50	288	300	1.0										
71	4	5	11230	N02 E35.	290	300	1.0										
71	4	6	11230	N02 E22	289	200	1.0										
71	4	7	11230	N02 E08	289	200	1.0										
71	4	8	11230	N01 W06	290	200	1.0										
71	4	9	11230	N01 W19	290	200	1.5										
71	4	10	11230	N01 W32	291	200	1.0										

MCMATH REGION 11237 CMP DATE 8.5

CALCIUM PLAGE DATA								SUNSPOT DATA								9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	4	5	11237	S16 E39	286	200	1.0										

MCMATH REGION 11234 CMP DATE 9.7

CALCIUM PLAGE DATA								SUNSPOT DATA								9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	4	3	11234	N16 E84	266	1200	3.0	18390	N15 E79	270	(AP)	4	180	5	H	9	3
71	4	4	11234	N18 E70	268	1500	3.5	18390	N16 E62	273	(AP)	4	170	2	H	11	4
71	4	5	11234	N17 E56	269	2300	3.5	18390	N16 E49	272	(BP)	4	150	8	C	12	4
71	4	6	11234	N17 E42	269	2400	3.5	18390	N16 E36	272	(AP)	5	130	3	H	16	5
71	4	7	11234	N17 E28	269	2600	3.5	18390	N16 E24	272	(BP)	5	130	4	H	25	8
71	4	8	11234	N17 E14	270	2400	3.5	18390	N17 E17	262	(AP)	5	110	12	C	14	5
71	4	9	11234	N17 E02	269	2300	3.0	18390	N16 W03	272	(AP)	5	110	12	C	13	4
71	4	10	11234	N17 W10	269	2300	3.0	18390	N18 W18	271	(BP)	5	100	14	C	14	5
71	4	11	11234	N17 W23	267	2300	3.0	18390	N16 W28	270	(AP)	5	60	4	H	9	3
71	4	12	11234	N17 W39	268	2200	2.5	18390	N16 W41	269	(AP)	4	50	2	H		
71	4	13						18390	N16 E52	269	AP					8	2
71	4	14	11234	N17 W63	269	2100	2.0		N16 W67				40	2	H	6	2
71	4	15	11234	N17 W77	270	2000	1.5	18390	N16 W88	277	AP		10	1	A	5	2

REGIONS OF SOLAR ACTIVITY

APRIL 1971

MCMATH REGION 11233 CMP DATE 10.5 RETURN OF REGION 11191 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	3	11233	S13 E85	265	500	1.0
71	4	4	11233	S15 E76	262	1200	3.0
71	4						
71	4	5	11233	S15 E65	260	1900	3.0
71	4						
71	4	6	11233	S15 E52	259	2200	3.0
71	4	7	11233	S15 E38	259	2000	3.0
71	4	8	11233	S16 E26	258	1400	2.5
71	4	9	11233	S16 E12	259	1400	2.5
71	4	10	11233	S16 W01	260	1400	2.5
71	4	11	11233	S16 W14	258	1300	2.5
71	4	12	11233	S16 W30	259	1300	2.5
71	4	13					
71	4	14	11233	S15 W54	260	800	2.0
71	4	15	11233	S15 W68	261	600	1.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18391	S14 E89	260	AP						
18391	S13 E69	266	(AP)	3	110	2	H	8	3
18392	S18 E70	265	(AP)	1	0	1	H		
18391	S13 E57	264	(AP)	3	110	2	H	6	2
18392	S19 E60	261	(AP)	1	0	1	A		
18391	S12 E44	264	(AP)	4	110	5	H	8	3
18391	S12 E32	264	(AP)	3	50	4	C	8	3
18391	S12 E16	263	(BP)	4	50	9	C	3	1
18391	S13 E06	263	(AP)	4	20	9	C		
18391	S14 W08	261	(BP)	3	20	8	D	6	2
18391	S13 W18	260	(BP)	2	10	7	B		
18391	S14 W33	261	(AP)	1	0	3	A		
18391	S13 W45	262							
								5	2
								5	2

MCMATH REGION 11248 CMP DATE 11.0

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	10	11248	N04 E07	252	200	1.5
71	4	11	11248	N04 W07	251	100	1.5

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX

MCMATH REGION 11239 CMP DATE 11.5 RETURN OF REGION 11192 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	5	11239	N16 E85	240	500	1.0
71	4	6	11239	N16 E70	241	900	1.5
71	4	7	11239	N16 E56	241	900	2.0
71	4	8	11239	N17 E41	243	1100	2.0
71	4	9	11239	N17 E28	243	1100	2.5
71	4	10	11239	N17 E14	245	1000	2.5
71	4	11	11239	N17 W01	245	1000	2.5
71	4	12	11239	N17 W16	245	900	2.5
71	4	14	11239	N17 W39	245	900	2.0
71	4	15	11239	N17 W52	245	700	1.5
71	4	16	11239	N17 W64	243	500	1.5

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX

MCMATH REGION 11238 CMP DATE 11.8 RETURN OF REGION 11206 & 11207 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	5	11238	S05 E83	242	1000	2.0
71	4	6	11238	S06 E69	242	2200	2.5
71	4	7	11238	S06 E57	240	2300	2.5
71	4	8	11238	S06 E45	239	2000	2.5
71	4	9	11238	S06 E30	241	2100	2.5
71	4	10	11238	S06 E17	242	2500	2.5
71	4	11	11238	S06 E04	240	2500	2.5
71	4	12	11238	S06 W12	241	2500	2.5
71	4	13					
71	4	14	11238	S06 W36	242	2100	2.5
71	4	15	11238	S06 W49	242	1800	2.5
71	4	16	11238	S06 W62	241	1600	2.5
71	4	17	11238	S06 W77	240	1000	1.5

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18393	S03 E75	246	(AP)	2	10	2	A		
18393	S03 E62	246	(AP)	4	50	3	H	7	2
18393	S03 E49	247	(AP)	3	20	2	H	8	3
18393	S03 E33	246	(AP)	2	10	2	A	7	2
18393	S03 E23	246	(AP)	1	10	2	A	5	2
18393	S02 E08	245	(AP)	2				5	2
18393	S03 W03	245	(AP)	1	10	5	B	3	1
18400	S08 W10	238	AP		0	3	A		
18400	S08 W21	238	AP					6	2

MCMATH REGION 11247 CMP DATE 12.6

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	8	11247	N11 E54	230	100	1.0
71	4	9	11247	N11 E40	231	100	1.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX

MCMATH REGION 11261 CMP DATE 12.9

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	14	11261	N19 W21	227	200	1.5

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX

REGIONS OF SOLAR ACTIVITY

APRIL 1971

MCMATH REGION 11245 CMP DATE 13.7 RETURN OF REGION 11195 ROTATION 3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	8	11245	S04 E70	214	500	1.5
71	4	9	11245	S04 E58	213	700	2.0
71	4	10	11245	S04 E44	215	700	2.0
71	4	11	11245	S05 E30	214	700	2.0
71	4	12	11245	S05 E13	216	600	1.5

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
								5	2

MCMATH REGION 11246 CMP DATE 14.2 RETURN OF REGION 11201* ROTATION 5

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	8	11246	S12 E80	204	600	2.0
71	4	9	11246	S13 E65	206	900	2.0
71	4	10	11246	S14 E50	209	700	2.5
71	4	11	11246	S14 E37	207	500	2.0
71	4	12	11246	S15 E21	208	500	2.0
71	4	14	11246	S16 W04	210	300	1.5
71	4	15	11246	S16 W16	209	200	1.0
71	4	16	11246	S15 W30	209	400	1.5
71	4	17	11246	S15 W48	211	400	1.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
	S14 E75				0	1	A		
								4	1

MCMATH REGION 11253 CMP DATE 14.2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	11					
71	4	12	11253	S05 E24	205	900	3.5
71	4	13					
71	4						
71	4	14	11253	S05 W05	211	1800	3.5
71	4						
71	4	15	11253	S05 W18	211	1900	3.5
71	4						
71	4	16	11253	S05 W31	210	2500	3.5
71	4						
71	4	17	11253	S05 W50	213	2300	3.5
71	4						
71	4	18	11253	S04 W59	211	2000	3.0
71	4						
71	4	19	11253	S04 W71	211	1700	3.0
71	4	20	11253	S04 W84	210	1000	2.5

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18397	S05 E36	206	(BF)	2					
18397	S05 E23	205	(B)	4	80	13	D		
18402	S03 E04	213	B					14	4
18397	S05 E12	205	BP						
	S05 W01				190	24	D	21	7
	S04 W10				90	22	D		
18402	S03 W26	215	(BP)	4	70	21	C	19	6
18397	S04 W17	206	(BP)	5	160	30	D		
18402	S03 W38	214	(BP)	4	40	10	C		
18397	S04 W29	205	(BP)	5	140	15	D		
	S04 W44				120	6	C	13	4
	S04 W53				30	10	D		
18402	S04 W75	222	AP		20	1	H	11	4
18397	S04 W61	208	BP		110	1	H		
	S04 W77				100	3	H	9	3

MCMATH REGION 11267 CMP DATE 14.2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	18	11267	N20 W58	210	100	1.5
71	4	19	11267	N20 W72	212	500	3.5
71	4	20	11267	N20 W86	212	400	1.5

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
	N20 W60				10	1	H		
	N19 W78				20	4	B	5	2
								6	2

MCMATH REGION 11252 CMP DATE 14.5 RETURN OF REGION 11196, 11204, 11197 ROTATION 4 & 5

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	8	11252	N17 E80	204	600	1.0
71	4	9	11252	N18 E70	201	800	1.0
71	4	10	11252	N17 E54	205	600	1.5
71	4	11	11252	N18 E40	204	1500	2.0
71	4	12	11252	N19 E25	204	1500	1.5
71	4	14	11252	N19 E00	206	1600	1.5
71	4	15	11252	N20 W10	203	1400	1.0
71	4	16	11252	N20 W22	201	1400	1.0
71	4	17	11252	N20 W36	199	1200	1.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX

MCMATH REGION 11251 CMP DATE 15.3 RETURN OF REGION 11201* ROTATION 5

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	10	11251	S21 E65	194	500	1.0
71	4	11	11251	S21 E50	194	400	1.0
71	4	12	11251	S23 E38	191	600	1.0
71	4	14	11251	S22 E10	196	500	1.5
71	4	15	11251	S23 W01	194	500	1.5
71	4	16	11251	S23 W17	196	500	1.0
71	4	17	11251	S23 W31	194	300	1.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX

* An asterisk beside the "Return of Region" number indicates that the new region is only part of the area of the old region

REGIONS OF SOLAR ACTIVITY

APRIL 1971

MCMATH REGION 11270 CMP DATE 15.6

CALCIUM PLAGE DATA									SUNSPOT DATA									9.1 CM	
YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	4	19	11270	S40	W52	192	200	1.5											
71	4	20	11270	S40	W65	191	200	1.5											

MCMATH REGION 11259 CMP DATE 16.0

CALCIUM PLAGE DATA									SUNSPOT DATA									9.1 CM	
YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	4	14	11259	S14	E19	187	400	2.5		S15	E17				10	2	H		
71	4	15	11259	S14	E06	187	400	2.5	18404	S15	E00	189	(AP)	2	10	2	B		
71	4	16	11259	S14	W07	186	500	2.5											
71	4	17	11259	S14	W24	187	500	2.5											
71	4	18	11259	S14	W34	186	500	1.5											
71	4	19	11259	S14	W47	187	500	1.5											
71	4	20	11259	S13	W58	184	300	1.0											

MCMATH REGION 11249 CMP DATE 16.6

CALCIUM PLAGE DATA									SUNSPOT DATA									9.1 CM	
YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	4	10	11249	N05	E83	176	1500	3.5	18395	N04	E75	178	(BP)	5	140	5	D	15	5
71	4	11	11249	N05	E70	174	2400	3.5	18395	N04	E63	179	(BP)	5	170	9	D	30	10
71	4	12	11249	N05	E54	175	2300	3.5	18395	N03	E50	178	(B)	4	220	10	E		
71	4	13							18395	N03	E39	178	BP					20	7
71	4	14	11249	N04	E28	178	2400	3.5		N03	E25				180	7	D	19	6
71	4	15	11249	N04	E14	179	2000	3.0	18395	N02	E09	180	(BP)	4	140	13	D	11	3
71	4	16	11249	N04	E01	178	2000	3.0	18395	N02	W04	180	(BP)	5	150	11	D		
71	4									N03	W10				0	3	A		
71	4	17	11249	N04	W17	180	2000	3.0		N03	W16				140	8	D	17	5
71	4	18	11249	N05	W25	177	1600	3.5	18395	N02	W34	181	BP		120	10	C	16	5
71	4	19	11249	N05	W37	177	1600	3.5		N04	W45				70	4	C	17	5
71	4	20	11249	N04	W54	180	1400	3.0		N03	W61				80	1	H	50	15
71	4	21	11249	N04	W67	179	1400	2.5	18395	N03	W80	187	(AP)	2	50	1	H	18	6
71	4	22	11249	N04	W80	178	1600	2.0										16	5

MCMATH REGION 11250 CMP DATE 17.0

CALCIUM PLAGE DATA									SUNSPOT DATA									9.1 CM	
YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	4	10	11250	S04	E86	173	400	2.0	18396	S05	E79	174	(AP)	4	170	1	H	5	2
71	4	11	11250	S04	E75	169	1500	2.5	18396	S06	E67	175	(AP)	4	190	1	H		
71	4	12	11250	S04	E60	169	1300	3.0	18396	S06	E53	175	(AP)	5	220	2	H		
71	4	13							18396	S06	E42	175	AP						
71	4	14	11250	S04	E35	171	1200	3.0		S06	E29				250	4	H		
71	4	15	11250	S04	E21	172	1400	3.0	18396	S07	E14	175	(BP)	5	210	13	C		
71	4	16	11250	S05	E06	173	1400	2.5	18396	S06	E04	172	(BP)	6	310	11	C		
71	4	17	11250	S05	W10	173	1500	2.5		S05	W09				290	23	C		
71	4	18	11250	S04	W20	172	1300	2.5	18396	S06	W26	173	BP		260	15	H		
71	4									S11	W09				0	3	B		
71	4	19	11250	S04	W33	173	1300	3.0		S05	W41				210	20	C		
71	4	20	11250	S04	W47	173	2000	3.0		S04	W54				220	9	H		
71	4	21	11250	S04	W60	172	2200	3.5	18396	S07	W67	174	(AP)	3	200	5	H		
71	4	22	11250	S04	W75	173	2300	2.5	18396	S06	W77	175	(AP)	3					
71	4	23	11250	S04	W87	173	800	2.0											

MCMATH REGION 11262 CMP DATE 17.1 RETURN OF REGION 11203 ROTATION 5

CALCIUM PLAGE DATA									SUNSPOT DATA									9.1 CM	
YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	4	11	11262	S21	E62	182	600	1.0										4	1
71	4	12	11262	S22	E50	179	800	1.0											
71	4	14	11262	S22	E27	179	1000	1.5											
71	4	15	11262	S22	E15	178	800	1.5											
71	4	16	11262	S21	E08	171	1000	1.5											
71	4	17	11262	S21	W07	170	800	2.0											
71	4	18	11262	S22	W17	169	900	1.5											
71	4	19	11262	S22	W29	169	700	1.5											
71	4	20	11262	S23	W42	168	600	1.5											
71	4	21	11262	S23	W55	167	600	1.5											
71	4	22	11262	S24	W67	165	600	1.0											
71	4	23	11262	S25	W76	162	600	1.0											

REGIONS OF SOLAR ACTIVITY

APRIL 1971

MCMATH REGION 11257 CMP DATE 18.5

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT
71	4	11						
71	4	12	11257	N13	E78	151	1600	3.0
71	4	13						
71	4	14	11257	N11	E52	154	2800	3.0
71	4							
71	4	15	11257	N09	E39	154	2400	3.0
71	4							
71	4	16	11257	N09	E26	153	2800	3.0
71	4							
71	4	17	11257	N10	E10	153	2500	3.0
71	4							
71	4	18	11257	N10	E00	152	2400	3.0
71	4							
71	4							
71	4	19	11257	N10	W13	153	2000	3.0
71	4							
71	4	20	11257	N09	W27	153	1700	3.0
71	4	21	11257	N10	W40	152	2000	3.5
71	4	22	11257	N09	W55	153	2300	3.0
71	4							
71	4	23	11257	N09	W67	153	2600	3.5
71	4							
71	4	24	11257	N09	W82	152	1300	2.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT	CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18398	N10	E88	154	AP						
18398	N10	E70	158	(BP)	5	200	2	H		
18398	N10	E64	153	BP						
	N10	E45				250	4	C		
	N10	E54				20	7	C		
18398	N09	E33	156	(BP)	6	220	10	H		
	N09	E41				20	14	B		
18398	N09	E21	155	(BP)	5	200	6	H		
	N09	E28				10	11	A		
	N09	E04				210	1	H		
	N10	E14				10	7	A		
18398	N09	W09	156	BP		210	1	H		
	N10	E00				10	8	B		
	N13	W10				0	2	A		
	N08	W25				250	5	C		
	N10	W15				10	7	B		
	N10	W34				230	9	C		
18398	N10	W55	162	(AP)	3	230	5	C		
18398	N09	W60	158	(AP)	5					
18408	N05	W56	154	AP						
18398	N09	W75	161	(AP)	4					
18408	N05	W69	155	(A)	2					

MCMATH REGION 11256 CMP DATE 18.7 RETURN OF REGION 11214 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT
71	4	11						
71	4	12	11256	N22	E79	150	1400	3.0
71	4	13						
71	4							
71	4	14	11256	N21	E53	153	2700	3.0
71	4							
71	4	15	11256	N22	E40	153	3100	3.0
71	4							
71	4	16	11256	N20	E28	151	3300	3.5
71	4							
71	4	17	11256	N21	E13	150	3700	3.0
71	4							
71	4	18	11256	N21	E00	152	3500	3.5
71	4							
71	4	19	11256	N21	W12	152	3300	3.0
71	4							
71	4	20	11256	N21	W25	151	3600	3.5
71	4							
71	4	21	11256	N21	W38	150	3600	3.5
71	4							
71	4							
71	4							
71	4							
71	4	22	11256	N21	W53	151	4200	3.5
71	4							
71	4							
71	4	23	11256	N20	W65	151	4700	3.0
71	4							
71	4							
71	4	24	11256	N20	W79	149	4000	2.5
71	4	25	11256	N20	W89	149	1000	2.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT	CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18399	N20	E86	156	AP						
18399	N20	E70	158	(AP)	4	60	1	H		
18399	N20	E59	158	AP					25	8
18403	N20	E70	147							
	N20	E44				50	1	H	31	10
	N21	E57				50	4	C		
18399	N19	E29	160	(AP)	4	50	1	H	20	6
18403	N19	E41	148	(BF)	3	20	27	B		
18399	N20	E18	158	(AP)	4	50	10	C	28	9
18403	N19	E28	148	(B)	4	50	32	D		
	N20	E04				50	1	H	37	12
	N20	E15				150	41	E		
18399	N19	W12	159	AP		40	1	H	43	14
18403	N18	W02	149	B		160	52	E		
	N20	W24				10	3	C	36	11
	N20	W15				150	44	E		
	N19	W39				20	5	B	39	12
	N20	W26				80	35	E		
18406	N21	W58	165	(B)	2				32	10
18399	N20	W58	165	(AP)	2					
18403	N21	W46	153	(BP)	3	70	29	E		
	N19	W47				0	3	B		
	N17	W50				20	6	C		
18406	N20	W63	161	(BP)	4				28	9
18399	N19	W63	161	(AP)	3					
18403	N20	W53	151	(BY)	4					
18406	N19	W72	158	(B)	2				23	7
18399	N18	W72	158	(AP)	2					
18403	N20	W65	151	(A)	2					
18406	N17	W79	151	(AF)	2				14	4
									9	3

MCMATH REGION 11255 CMP DATE 19.2 RETURN OF REGION 11209 ROTATION 3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT
71	4	12	11255	S19	E75	154	2000	3.0
71	4	13						
71	4	14	11255	S19	E52	154	3000	3.5
71	4							
71	4	15	11255	S19	E40	153	2800	3.0
71	4							
71	4	16	11255	S18	E31	148	3000	3.0
71	4	17	11255	S18	E15	148	3000	3.0
71	4	18	11255	S19	E09	143	2700	2.5
71	4	19	11255	S19	W04	144	2700	3.5
71	4	20	11255	S19	W18	144	2900	2.5
71	4	21	11255	S19	W32	144	3100	2.5
71	4	22	11255	S19	W47	145	2800	3.0
71	4	23	11255	S19	W59	145	2300	2.5
71	4	24	11255	S21	W74	144	2400	2.0
71	4	25	11255	S22	W84	144	1300	2.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT	CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18401	S18	E80	148	(BP)	3	10	2	C		
18401	S19	E69	148	BP					18	6
	S17	E54				60	7	C	13	4
	S21	E60				10	3	H		
18401	S18	E37	152	(AP)	3	30	6	D	9	3
	S21	E46				0	1	A		
18401	S18	E27	149	(BP)	3	30	6	H		
	S17	E11				20	9	C	7	2
18401	S18	W03	150	BP		20	9	C	4	1
	S17	W16				10	7	B	6	2
	S17	W29				0	1	A		
									5	2

REGIONS OF SOLAR ACTIVITY

APRIL 1971

MCMATH REGION 11272 CMP DATE 19.8

CALCIUM PLAGE DATA								SUNSPOT DATA									9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX	
71	4	21	11272	S09 W24	136	600	2.5	18407	S10 W36	137	(A)	2	10	5	B			
71	4	22	11272	S09 W40	138	900	2.5	18407	S10 W40	138	(BP)	3				6	1	
71	4	23	11272	S09 W53	139	900	3.0	18407	S10 W52	138	(BF)	2						
71	4	24	11272	S09 W68	138	1000	2.5											
71	4	25	11272	S09 W78	138	900	2.5											

MCMATH REGION 11258 CMP DATE 20.2 RETURN OF REGION 11211 ROTATION 3

CALCIUM PLAGE DATA								SUNSPOT DATA									9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX	
71	4	14	11258	S07 E77	129	800	1.0											
71	4	15	11258	S07 E64	129	400	1.5									4	1	
71	4	16	11258	S10 E49	130	600	1.5											
71	4	17	11258	S10 E32	131	700	1.5											
71	4	18	11258	S10 E22	130	1000	1.5											
71	4	19	11258	S10 E09	131	800	1.5											
71	4	20	11258	S10 W03	129	700	1.0											
71	4	21	11258	S10 W16	128	500	1.0											
71	4	22	11258	S10 W30	128	500	1.0											

MCMATH REGION 11268 CMP DATE 20.6

CALCIUM PLAGE DATA								SUNSPOT DATA									9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX	
71	4	19	11268	N13 E14	126	400	2.5		N13 E08				10	5	B			
71	4	20	11268	N13 E01	125	400	3.0		N12 W03				10	6	B			
71	4	21	11268	N13 W13	125	400	2.5											
71	4	22	11268	N13 W27	125	400	2.5											
71	4	23	11268	N13 W38	124	400	2.0											
71	4	24	11268	N13 W54	124	400	2.0											
71	4	25	11268	N13 W65	125	400	2.0											

MCMATH REGION 11276 CMP DATE 20.7

CALCIUM PLAGE DATA								SUNSPOT DATA									9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX	
71	4	24	11276	N22 W54	124	100	1.0											

MCMATH REGION 11264 CMP DATE 21.1

CALCIUM PLAGE DATA								SUNSPOT DATA									9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX	
71	4	17	11264	S03 E47	116	200	1.5											
71	4	18	11264	S03 E34	118	100	1.0											

MCMATH REGION 11263 CMP DATE 22.5 RETURN OF REGION 11216 ROTATION 4

CALCIUM PLAGE DATA								SUNSPOT DATA									9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX	
71	4	16	11263	S18 E80	99	1000	2.5											
71	4	17	11263	S18 E63	100	1000	2.5											
71	4	18	11263	S18 E50	102	800	2.0											
71	4	19	11263	S20 E36	104	700	2.5											
71	4	20	11263	S18 E24	102	700	2.5											
71	4	21	11263	S18 E12	100	900	2.0											
71	4	22	11263	S17 W01	99	800	2.0											
71	4	23	11263	S17 W13	99	1100	2.0											
71	4	24	11263	S18 W28	98	1200	2.0											
71	4	25	11263	S19 W40	100	1100	2.0											
71	4	26	11263	S18 W55	98	600	1.0									3	1	

MCMATH REGION 11269 CMP DATE 22.9

CALCIUM PLAGE DATA								SUNSPOT DATA									9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX	
71	4	18							N28 E53				0	1	A			
71	4	19	11269	N28 E43	97	200	2.0											
71	4	20	11269	N28 E29	97	200	1.5											
71	4	21	11269	N28 E16	96	200	1.5											
71	4	22	11269	N28 E03	95	200	1.0											
71	4	23	11269	N28 W10	96	200	1.0											

REGIONS OF SOLAR ACTIVITY

APRIL 1971

MCMATH REGION 11266 CMP DATE 23.5 RETURN OF REGION 11217* ROTATION 4

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	17	11266	N06 E85	78	700	1.0
71	4	18	11266	N05 E66	86	800	1.5
71	4	19	11266	N05 E53	87	600	2.0
71	4	20	11266	N05 E38	88	800	2.0
71	4	21	11266	N05 E25	87	800	2.0
71	4	22	11266	N05 E11	87	800	2.0
71	4	23	11266	N05 W03	89	1000	2.0
71	4	24	11266	N06 W18	88	1300	2.0
71	4	25	11266	N07 W28	88	1300	2.5
71	4	26	11266	N07 W45	88	1600	2.0
71	4	27	11266	N07 W57	90	1400	2.0
71	4	28	11266	N07 W70	89	1000	2.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX

MCMATH REGION 11265 CMP DATE 24.5 RETURN OF REGION 11219 ROTATION 3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	17	11265	S11 E86	77	700	3.0
71	4	18	11265	S11 E75	77	1000	3.0
71	4	19	11265	S13 E64	76	1300	3.0
71	4	20	11265	S13 E50	76	1300	3.5
71	4	21	11265	S13 E35	77	1400	2.5
71	4	22	11265	S13 E22	76	1200	2.5
71	4	23	11265	S14 E12	74	1600	3.0
71	4	24	11265	S14 W03	73	1400	2.5
71	4	25	11265	S14 W14	74	1400	2.5
71	4	26	11265	S15 W28	71	1400	2.0
71	4	27	11265	S14 W40	73	1400	2.0
71	4	28	11265	S13 W55	74	1200	2.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
								5	1
18405	S10 E71	76			40	4	D	5	2
	S11 E56				20	10	B	6	2
	S10 E44				20	4	C	5	1
18405	S11 E32	75	(A)	2	0	4	A	3	1
								6	2
								4	1

MCMATH REGION 11271 CMP DATE 24.9 RETURN OF REGION 11217* ROTATION 4

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	19	11271	N12 E72	68	300	1.0
71	4	20	11271	N13 E58	68	500	1.0
71	4	21	11271	N13 E44	68	500	1.5
71	4	22	11271	N13 E30	68	400	1.5
71	4	23	11271	N13 E18	68	500	2.0
71	4	24	11271	N13 E02	68	500	2.0
71	4	25	11271	N13 W10	70	500	2.0
71	4	26	11271	N14 W26	69	500	1.5
71	4	27	11271	N13 W36	69	500	1.5
71	4	28	11271	N13 W50	69	500	2.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX

MCMATH REGION 11277 CMP DATE 26.1

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	24	11277	N13 E17	53	200	1.5

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX

MCMATH REGION 11283 CMP DATE 27.1

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	25	11283	N06 E19	41	100	1.5
71	4	26	11283	N06 E04	39	200	1.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18412	N06 E18	41	(AP)	2					

MCMATH REGION 11274 CMP DATE 27.2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	4	22					
71	4	23	11274	S11 E50	36	600	3.0
71	4	24	11274	S11 E30	40	1400	3.5
71	4						
71	4	25	11274	S12 E22	38	2100	3.5
71	4						
71	4	26	11274	S11 E05	38	2100	3.5
71	4						
71	4	27	11274	S12 W06	39	2100	3.5
71	4						

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18409	S19 E64	34	(AP)	3					
18409	S12 E42	44	(BF)	2				3	1
18409	S12 E29	43	(BF)	4	80	18	D	10	3
18410	S13 E39	33	(BP)	3	20	6	C		
18409	S12 E15	44	(BF)	3				13	4
18410	S13 E26	33	(BP)	4					
18409	S11 E03	43	(BP)	3				9	13
18410	S14 E13	33	(BP)	4					
18409	S10 W13	46	(BP)	4	80	15	D	7	2
18410	S12 W03	36	(BP)	3	40	4	H		

(Cont'd)

REGIONS OF SOLAR ACTIVITY

APRIL 1971

(Cont'd)

71	4	28	11274	S11 W20	39	1900	3.5	18409	S10 W27	45	BF		20	18	C	12	4
71	4							18410	S12 W17	35	BP		20	7	C		
71	4	29						18409	S10 W40	47	BP		0	2	A	6	2
71	4							18410	S12 W28	35	(BP)	3	10	3	B		
71	4	30	11274	S12 W45	39	1600	3.0	18410	S11 W49	38	(BP	2	10	5	C	5	2
71	4								S11 W49				0	1	A		
71	5	1	11274	S10 W60	39	1500	3.5	18410	S12 W56	34	(BP	1					
71	5	2	11274	S11 W70	37	1300	2.0										
71	5	3	11274	S12 W82	35	1000	1.5										

MCMATH REGION 11279 CMP DATE 27.8

CALCIUM PLAGE DATA								SUNSPOT DATA									9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	4	24	11279	N07 E42	28	600	3.0	18411	N06 E44	28	(BF)	3	20	7	D	3	1
71	4	25	11279	N07 E32	28	900	3.0	18411	N07 E30	29	(BF)	3				7	2
71	4	26	11279	N07 E15	28	1400	3.5	18411	N06 E27	19	(B)	4				16	5
71	4	27	11279	N07 E04	29	1400	3.5	18411	N08 E03	30	(B)	5	260	19	D	12	4
71	4	28	11279	N07 W10	29	1500	3.5	18411	N08 W11	29	BF		200	24	D	11	3
71	4	29						18411	N08 W24	31	(BF)	5	90	18	D	7	2
71	4	30	11279	N06 W35	29	1400	3.0	18411	N07 W43	32	(BF)	4	80	14	D	6	2
71	5	1	11279	N07 W49	28	1400	3.5	18411	N07 W53	31	(B)	2					
71	5	2	11279	N07 W60	27	1400	1.5	18411	N06 W70	33	AP						
71	5	3	11279	N07 W75	28	1100	2.0										

MCMATH REGION 11273 CMP DATE 28.0 RETURN OF REGION 11221 ROTATION 2

CALCIUM PLAGE DATA								SUNSPOT DATA									9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	4	21	11273	S18 E81	31	500	1.0									4	1
71	4	22	11273	S20 E70	28	1300	1.5									3	1
71	4	23	11273	S21 E60	26	1600	2.0										
71	4	24	11273	S22 E44	26	1500	2.0										
71	4	25	11273	S21 E33	27	1700	2.0										
71	4	26	11273	S22 E15	28	1400	2.0										
71	4	27	11273	S21 E06	27	1300	2.0										
71	4	28	11273	S21 W07	26	1200	2.0										
71	4	30	11273	S21 W30	24	900	2.0										
71	5	1	11273	S21 W44	23	800	1.5										
71	5	2	11273	S21 W57	24	500	1.0										
71	5	3	11273	S20 W70	23	600	1.0										
71	5	4	11273	S20 W80	20	400	1.0										

MCMATH REGION 11285 CMP DATE 28.1

CALCIUM PLAGE DATA								SUNSPOT DATA									9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	4	27	11285	N27 E07	26	300	1.5										
71	4	28	11285	N27 W06	25	400	1.5										
71	4	30	11285	N27 W34	28	100	1.5										
71	5	1	11285	N28 W46	25	200	1.0										
71	5	2	11285	N28 W58	25	300	1.0										

MCMATH REGION 11280 CMP DATE 30.1

CALCIUM PLAGE DATA								SUNSPOT DATA									9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	4	24	11280	S12 E73	358	700	2.0										
71	4	25	11280	S11 E61	-0	400	2.0										
71	4	26	11280	S11 E42	1	300	2.0										
71	4	27	11280	S11 E34	-0	200	1.5										

Note: Region 11228 has formed near the location of remnants of old plage from region 11187 of the previous rotation.
Region 11234 has developed among the weak remnants of old plage 11190.
Region 11253 has formed on the disk in the midst of old plage 11245.
Region 11262 is made up of weak remnants of old plage 11203.
No calcium spectroheliograms were secured at the McMath-Hulbert Observatory on April 13 and 29, 1971
No sunspot observations were made at Mt. Wilson Observatory on April 14, 17, and 20, 1971. April 19 was incomplete.

DAILY CALCIUM PLAGE INDEX

YR	MO	DAY	INDEX	YR	MO	DAY	INDEX	YR	MO	DAY	INDEX
71	4	1	19.0	71	4	11	27.3	71	4	21	35.4
71	4	2	17.1	71	4	12	32.0	71	4	22	29.0
71	4	3	16.3	71	4	13	*	71	4	23	25.7
71	4	4	16.4	71	4	14	45.8	71	4	24	21.1
71	4	5	18.0	71	4	15	42.6	71	4	25	22.3
71	4	6	22.2	71	4	16	48.8	71	4	26	22.7
71	4	7	24.0	71	4	17	46.5	71	4	27	22.8
71	4	8	23.4	71	4	18	41.2	71	4	28	23.7
71	4	9	23.3	71	4	19	40.8	71	4	29	*
71	4	10	24.7	71	4	20	36.8	71	4	30	18.3

* NO OBSERVATIONS

SOLAR X-RAYS MEASURED BY SATELLITE
SOLRAD 9-EXPLORER 37

APRIL 1971

NAVAL RESEARCH LABORATORY 1=8A HOURLY AVERAGES (10^{-3} ergs/cm^2/sec.)

DAY \ HOUR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0.36	0.25	0.23	0.23	0.19	3.91	0.65	0.19	0.22	0.17	0.24	0.27	0.35	2.59	2.43	0.39	0.47	0.59	0.93	0.59	0.62	0.61	0.29	0.32
2	0.25	0.19	0.84	0.30	0.19	0.36	0.34	0.39	0.18	0.21	0.19	0.29	0.31	0.37	0.44	0.51	0.27	0.21	0.42	0.63	0.52	0.88	5.75	4.73
3	1.27	0.64	0.37	0.38	0.30	0.22	0.22	0.26	0.49	0.61	0.28	0.21	0.24	0.30	0.30	0.48	0.31	0.53	0.29	0.28	0.21	0.22	0.25	0.35
4	0.37	0.37	0.32	0.33	0.60	0.21	0.20	3.23	5.65	2.84	1.60	1.61	0.53	0.45	0.29	0.27	0.31	0.26	0.25	0.20	0.33	0.18	0.20	0.24
5	0.22	0.29	0.24	0.46	0.27	0.22	0.31	0.30	0.21	0.39	0.52	0.31	0.31	0.69	0.38	0.44	0.44	0.26	0.26	0.46	0.46	0.58	0.65	0.38
6	0.22	0.28	0.61	0.25	0.23	0.22	0.38	0.22	0.43	0.52	4.85	1.16	0.64	0.35	3.65	0.59	0.28	0.29	0.28	1.63	0.23	0.21	0.22	0.21
7	0.22	0.20	0.22	0.24	0.22	0.28	0.41	0.25	0.28	0.32	0.37	0.31	0.41	0.34	0.71	0.44	0.40	0.44	0.45	0.41	0.60	0.52	0.44	1.07
8	1.09	0.28	0.30	2.23	1.10	0.98	0.76	1.05	0.58	0.35	0.60	0.34	0.36	0.37	0.29	0.41	0.35	0.31	0.30	0.27	0.34	0.49	0.52	0.31
9	0.29	0.26	0.35	0.26	0.24	0.21	0.23	0.18	0.27	0.33	0.28	0.25	0.32	0.30	0.46	0.34	0.35	0.30	0.27	0.29	0.27	0.32	0.25	0.26
10	0.27	0.24	0.24	0.26	0.21	0.26	0.24	0.21	0.27	0.26	0.26	0.35	0.81	0.45	0.37	0.32	0.35	0.27	0.30	0.31	0.39	0.36	0.50	0.50
11	0.39	0.40	0.46	0.44	1.82	2.84	0.74	0.54	0.73	0.42	0.37	0.53	0.41	0.73	0.47	0.57	0.95	1.25	1.55	1.17	1.10	0.85	0.79	0.58
12	0.54	0.45	0.52	0.65	0.54	0.71	0.53	0.42	0.87	0.42	1.31	0.89	0.60	0.40	0.65	0.70	0.48	0.44	0.87	0.68	0.54	0.47	0.52	0.58
13	0.40	0.50	0.41	0.42	0.71	0.67	0.47	0.73	1.69	0.84	0.47	0.51	0.75	1.46	2.66	0.85	0.73	0.40	0.46	0.48	0.74	0.56	0.55	0.58
14	0.45	0.66	0.53	0.69	0.58	0.62	0.43	0.42	0.41	2.06	1.48	0.95	0.41	0.69	0.53	0.44	0.43	0.67	1.12	1.01	1.03	1.25	0.73	1.91
15	0.86	0.49	0.63	0.52	0.47	0.68	0.85	0.37	0.63	0.54	0.57	0.43	0.48	0.99	0.80	0.89	0.65	0.46	0.41	0.36	0.32	0.43	0.38	0.42
16	0.60	0.32	0.33	0.33	0.34	0.33	0.35	3.02	0.42	0.45	0.36	0.46	0.36	0.40	0.50	0.40	0.37	0.46	0.34	0.33	0.38	0.37	0.39	0.55
17	0.65	0.46	0.45	0.78	0.47	0.65	1.54	0.71	0.44	0.64	0.64	0.54	0.44	1.17	0.95	0.86	0.53	0.44	0.47	0.46	0.93	0.37	0.82	0.45
18	0.94	0.98	0.87	0.67	0.60	0.49	0.43	0.58	0.47	0.57	0.67	1.50	0.82	0.48	0.54	1.01	0.88	1.61	0.51	0.53	0.64	0.56	0.74	0.89
19	0.76	0.75	0.72	0.60	0.44	0.47	0.52	0.50	0.45	0.50	0.42	0.57	2.62	1.15	0.51	0.54	0.43	0.38	0.67	0.85	0.68	1.92	1.37	0.88
20	1.16	11.9	0.99	0.63	2.60	85.0	2.78	0.95	0.86	5.59	0.67	0.60	1.47	0.79	0.95	0.44	0.60	0.48	0.41	12.5	9.65	2.54	1.27	1.24
21	0.66	0.56	0.60	0.58	0.51	0.40	2.35	0.73	0.98	0.70	0.65	2.44	0.65	0.89	0.51	0.98	0.46	0.70	0.41	0.66	0.57	0.46	0.54	0.54
22	0.50	0.54	0.45	0.69	0.36	0.66	0.40	0.53	0.45	1.88	1.34	0.61	0.69	0.64	1.57	1.07	1.32	4.35	0.91	0.60	0.54	1.22	5.65	0.79
23	0.52	0.51	0.40	0.36	0.52	0.51	0.66	4.39	2.09	1.24	1.65	1.62	1.15	1.18	1.65	1.12	1.27	0.76	0.61	0.46	2.27	1.33	0.67	0.43
24	0.46	0.67	0.36	0.53	0.41	2.27	0.78	0.73	0.64	2.17	1.31	0.84	0.59	0.59	0.58	0.49	0.82	0.65	0.45	0.64	0.78	0.82	0.84	0.76
25	0.62	0.45	0.43	0.54	0.46	0.46	0.39	0.56	0.56	0.28	0.49	0.78	0.38	0.46	0.42	0.35	0.66	0.34	0.43	0.61	0.34	0.30	0.34	0.29
26	0.33	0.32	0.68	0.42	0.28	0.28	0.29	0.47	0.51	0.27	0.30	0.52	0.25	0.27	0.26	0.33	0.22	0.25	0.21	0.25	0.24	0.18	0.16	0.17
27	0.15	0.17	0.16	0.19	0.20	0.33	0.26	0.24	0.21	0.22	0.22	0.20	0.18	0.16	0.20	0.17	0.22	0.18	0.18	0.20	0.17	0.21	0.18	0.51
28	0.22	0.17	0.16	0.43	0.21	0.16	0.21	0.17	0.24	0.22	0.25	0.21	0.20	0.23	0.17	0.28	0.18	0.16	0.15	0.18	0.20	0.15	0.13	0.18
29	0.14	0.15	0.17	0.18	0.17	0.16	0.18	0.20	0.24	0.16	0.24	0.17	0.17	0.22	0.18	0.21	0.23	0.30	0.16	0.18	0.15	0.14	0.17	0.14
30	0.17	0.15	0.18	0.19	0.17	0.17	0.19	0.26	0.15	0.19	0.17	0.16	0.20	0.16	0.23	0.14	0.19	0.22	0.15	0.19	0.14	0.16	0.21	0.16

SOLAR X-RAYS MEASURED BY SATELLITE
SOLRAD 9 - EXPLORER 37

APRIL 1971

NAVAL RESEARCH LABORATORY 8=20A HOURLY AVERAGES (10^{-2} ergs/cm^2/sec.)

DAY \ HOUR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0.50	0.36	0.36	0.36	0.33	1.20	0.62	0.36	0.36	0.33	0.38	0.35	0.34	1.38	1.70	0.66	0.45	0.53	0.62	0.57	0.70	0.68	0.43	0.44
2	0.38	0.37	0.57	0.49	0.36	0.44	0.55	0.48	0.38	0.40	0.36	0.40	0.43	0.52	0.54	0.68	0.44	0.49	0.49	0.76	0.65	0.89	2.65	2.48
3	1.26	0.82	0.60	0.60	0.52	0.43	0.47	0.47	0.64	0.66	0.48	0.42	0.41	0.41	0.44	0.49	0.55	0.73	0.55	0.49	0.43	0.45	0.43	0.50
4	0.52	0.53	0.52	0.55	0.68	0.48	0.46	1.60	2.88	2.00	1.46	1.49	0.82	0.67	0.51	0.44	0.45	0.46	0.46	0.45	0.53	0.46	0.46	0.45
5	0.46	0.51	0.49	0.59	0.49	0.43	0.54	0.54	0.45	0.58	0.70	0.56	0.55	0.71	0.64	0.63	0.65	0.43	0.50	0.68	0.63	0.75	0.82	0.68
6	0.49	0.50	0.70	0.47	0.43	0.44	0.50	0.43	0.59	0.69	3.35	1.26	0.86	0.59	1.18	0.71	0.51	0.41	0.49	1.18	0.48	0.44	0.44	0.42
7	0.40	0.39	0.43	0.45	0.47	0.58	0.60	0.49	0.48	0.47	0.43	0.48	0.52	0.51	0.72	0.66	0.64	0.71	0.73	0.70	0.82	0.78	0.71	1.08
8	1.14	0.62	0.58	1.63	1.16	1.02	0.90	1.09	0.79	0.54	0.65	0.52	0.55	0.51	0.52	0.54	0.54	0.46	0.55	0.51	0.48	0.69	0.75	0.64
9	0.61	0.60	0.62	0.58	0.53	0.45	0.45	0.48	0.57	0.60	0.59	0.54	0.61	0.63	0.69	0.63	0.53	0.52	0.54	0.51	0.54	0.52	0.54	0.59
10	0.58	0.56	0.54	0.54	0.52	0.51	0.55	0.53	0.58	0.56	0.56	0.57	0.88	0.78	0.71	0.63	0.61	0.64	0.68	0.67	0.75	0.73	0.88	0.84
11	0.83	0.82	0.85	0.86	1.54	2.09	1.32	1.02	1.09	0.88	0.86	0.82	0.85	0.83	0.92	0.95	1.29	1.50	1.77	1.70	1.66	1.42	1.35	1.15
12	1.06	0.98	1.04	1.10	1.05	1.15	1.03	0.89	1.09	0.94	1.29	1.25	1.03	0.87	0.89	1.11	0.93	0.93	1.25	1.12	1.02	0.95	0.98	1.07
13	0.91	1.07	0.91	0.90	1.14	1.01	0.95	1.11	1.64	1.21	1.00	0.95	1.20	1.26	2.22	1.30	1.20	0.93	0.88	0.92	1.14	1.08	1.04	1.03
14	0.94	1.13	1.05	1.21	1.10	1.08	0.94	0.92	0.88	1.67	1.56	1.27	0.87	0.90	0.89	0.82	0.90	0.97	1.40	1.36	1.33	1.37	1.06	1.77
15	1.24	0.98	1.06	0.94	0.94	1.10	1.22	0.88	1.04	1.09	0.98	0.96	0.94	1.22	1.26	1.27	1.15	0.90	0.86	0.81	0.78	0.76	0.79	0.83
16	0.92	0.80	0.74	0.78	0.76	0.70	0.78	1.75	1.01	0.82	0.76	0.77	0.82	0.79	0.89	0.83	0.80	0.87	0.75	0.76	0.77	0.78	0.86	0.89
17	1.09	0.92	0.90	1.14	0.90	1.03	1.52	1.17	0.88	0.97	1.01	0.98	0.96	1.27	1.17	1.26	0.96	0.84	0.88	0.85	1.20	0.85	1.02	0.87
18	1.10	1.22	1.26	1.06	1.11	1.00	0.84	0.97	0.86	0.78	0.82	1.33	1.05	0.87	0.97	1.33	1.19	1.60	0.94	0.91	1.08	0.94	1.09	1.23
19	1.12	1.08	1.10	1.03	0.92	0.86	0.94	0.85	0.82	0.78	0.78	0.85	1.72	1.59	0.97	0.95	0.88	0.79	0.94	1.24	1.05	1.62	1.48	1.18
20	1.33	4.63	1.37	1.06	1.83	19.9	2.46	1.28	1.19	2.88	0.86	0.79	1.25	1.17	0.95	0.86	0.99	0.93	0.89	5.00	6.26	2.34	1.59	1.52
21	1.19	1.03	1.05	0.98	1.00	0.83	1.71	1.08	1.22	1.01	0.98	1.68	1.04	1.18	0.91	1.15	0.83	1.00	0.80	0.91	0.90	0.81	0.84	0.88
22	0.90	0.91	0.85	0.98	0.80	0.92	0.76	0.83	0.81	1.27	1.39	1.01	1.04	1.04	1.39	1.32	1.18	2.38	1.23	1.03	0.94	1.22	2.56	1.25
23	0.97	0.91	0.81	0.80	0.86	0.91	1.05	2.24	1.81	1.49	1.58	1.81	1.59	1.60	1.77	1.55	1.59	1.27	1.06	0.94	1.82	1.60	1.12	0.93
24	0.86	1.01	0.77	0.84	0.76	1.64	1.16	1.07	0.94	1.51	1.32	1.14	0.97	0.93	0.96	0.93	1.07	1.00	0.84	0.93	1.07	1.12	1.20	1.18
25	1.04	0.89	0.83	0.83	0.75	0.78	0.74	0.82	0.77	0.58	0.68	0.99	0.76	0.77	0.71	0.64	0.77	0.66	0.70	0.84	0.67	0.61	0.64	0.59
26	0.57	0.60	0.83	0.70	0.55	0.50	0.53	0.59	0.48	0.49	0.55	0.66	0.52	0.50	0.48	0.54	0.47	0.48	0.45	0.47	0.49	0.43	0.39	0.37
27	0.35	0.38	0.37	0.39	0.41	0.49	0.46	0.38	0.42	0.39	0.39	0.40	0.38	0.35	0.40	0.37	0.36	0.36	0.35	0.35	0.38	0.38	0.35	0.48
28	0.40	0.31	0.29	0.49	0.32	0.34	0.35	0.30	0.31	0.33	0.41	0.37	0.35	0.40	0.32	0.29	0.26	0.26	0.25	0.27	0.26	0.25	0.25	0.26
29	0.24	0.25	0.24	0.23	0.23	0.27	0.28	0.32	0.23	0.23	0.25	0.25	0.25	0.26	0.23	0.28	0.30	0.29	0.27	0.27	0.27	0.25	0.23	0.22
30	0.21	0.22	0.22	0.21	0.24	0.21	0.26	0.23	0.22	0.21	0.21	0.22	0.25	0.23	0.24	0.25	0.27	0.28	0.28	0.29	0.28	0.28	0.36	0.29

SOLAR X-RAYS BY SATELLITE

EXPLORER 37

APRIL 1971

NAVAL RESEARCH LABORATORY

OUTSTANDING EVENTS

DAY	START TIME	0.5-3A FLUX XE-5	PEAK TIME	1-8A FLUX XE-4	PEAK TIME	8-20A FLUX XE-3	PEAK TIME	END TIME	COMMENTS
1	0553	120.00	0554	300.00	0554	67.00	0554	0558	
1	1353E	5.60	1359	56.00	1357	28.00	1358	1412	
2	2238E	13.00	2256	67.00	2252	29.00	2254	2339D	
4	0743	21.00	0746	73.00	0753	40.00	0755	0908	
6	1007E	12.00D	1008E	130.00D	1008E	80.00D	1008E	1035	
8	0335	5.60	0340	47.00	0345	27.00	0347	0354	
11	0521	17.00	0531	50.00	0526	27.00	0534	0542	
13	1400E			46.00	1403	28.00	1411	1414	
14	0945	4.50D	0945E	43.00	0950	22.00	0952	0953	
14	2345			44.00	2352	27.00	2351	2353D	
16	0745	39.00	0746	130.00	0749	40.00	0753	0756	
19	1238	10.00	1241	48.00	1245	27.00	1250	1255	
19	2131			47.00	2135	27.00	2139	2145	
20	0057	120.00D	0126E	560.00D	0126E	93.00D	0126E	0158	
20	0419	27.00	0422	97.00	0422	40.00	0428	0432	
20	0515	120.00D	0516E	4900.00	0521	690.00	0525	0611	
20	0859	56.00	0908	130.00	0911	67.00	0912	0925	
20	1926	91.00	1943	300.00	1951	120.00	1956	2059	
21	0614	16.00	0616	60.00	0617	28.00	0620	0628	
21	1116	28.00	1119	92.00	1120	40.00	1125	1128	
22	0943			86.00	0948	40.00	0950	0959	
22	1656	65.00D	1656E	130.00	1658	40.00	1658	1740	
22	2201	120.00	2204	300.00	2204	80.00	2205	2229	
23	0724	60.00	0727	130.00	0729	40.00	0741	0800	
23	1428	6.70	1431	37.00	1431	25.00	1432	1433	
23	2027	12.00	2037	41.00	2032	25.00	2042	2045	
24	0505	8.90	0509	48.00	0508	25.00	0510	0513	

SUDDEN IONOSPHERIC DISTURBANCES

APRIL 1971

DAY	UNIVERSAL TIME START	END	MAX	IMP	WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD	KNOWN FLARE	MCMATH REGION
01	0552	0615	0555	1+	5	5			3		2	1	0554	11221
01	1308	1435	1335	1-	3	2		1	1				1309E	11221
01	1728	1805	1732	1-	3				2		2		1727	11221
01	1849	1935	1902	1-	3				1		2		1845	11221
01	2010	2100	2020	1-	3				2				2006	11221
02	0212	0246	0223	1-	1				1				0212	11221
02	1910	1912	1911	1-	1							1	1910	11221
02	1930	1945	1930	1	1					1	1		1923E	11221
02	2103	2203	2111	1-	3				2			1	2056	11221
02	2147	2200	2150	1	3				1	1	1		2143	11221
03	0924	0945	0928	1	1				1				0924	11221
03	1940	1945	1942	1-	3	1				1	1		1937E	11228
04	0100	0200		1-	1				1				0104	11221
04	0740	0810	0754	1	3	1			2		2		0739	11221
06	0935	1035	0953	2	5	5	2	3	2		3		0940E	11221
06	1410	1440	1416	1-	3	1			2				1405E	11227
07	0237	0315	0242	1-	1					2	2		0234	11221
07	1403	1420	1419	1	1					1	1		1405	11227
08	0317	0336	0320	1-	1	1							0317	11221
08	0326	0453	0354	1-	1				1				0325	11221
10	1322	1352	1330	1-	1	1							1317	11249
11	1500	1540	1527	1	1					1	1		1500	11234
11	1643	1659	1645	1-	1	1							1637	11249
11	1810	1845	1840	1-	1					1	1		1810	11249
12	0535	0620	0544	1-	1				1				0538	11249
12	1434	1510	1445	1	3	1				2	2		1436	11238
12	1658	1722	1720	1	1					1	1		1650	11233
12	1841	1845	1845	1	3					2	2		1838	11233
13	0142	0213	0150	1	3					5	5		0135E	11253
13	1324	1420	1343	1	3	2			1		1		1323E	11257
13	1340	1430	1348	1	3		1	1	1		1		1341	11257
14	1403	1430	1409	1-	3	2			1				1401	11255
14	1802	1900	1812	1+	3					2	2		1802	11256
14	2258	2336	2337	1	3				1	2	2		2300	11256
15	0510	0525	0525	1	3					2	2		0507	11238
15	1254	1313	1309	1+	1					1	1		1305E	11253
15	1932	1950	1940	1	1	1							1935E	11256
16	0014	0014D		1-	1							1	0015	11253
16	0655	0830	0705	1-	1					1	1		0659	11256
16	0743	0815	0749	1+	5	3	1	1	3	1	4		0742	11256
16	1610U	1930	1614	1	1	1							1601	11256
17	0151	0236	0156	1-	1				1				*	
17	2200	2252	2207	1-	1				1				2155	11256
18	1710	1736	1720	1-	2	2			1				1712	11256
19	0658	0725	0704	1+	1					1	1		0659	11250
19	1232	1310	1245	2-	2	2			1				1239E	11255
19	1830	1831	1830	1-	1							1	1830	11256
19	2124	2234	2151	1-	2				3				2123E	11266
19	2200	2300		1-	1				1				2202E	11250
20	0053	0250	0118	3-	5	2	1		7	3	3		0054E	11256
20	0414	0503	0426	1-	3	1			1	3	3		0405	11265
20	0514	0715	0523	3	5	9	4	3	5	2	4		0511	11256
20	0857	0955	0912	2	3	3	1	2	1	2			0856	11256
20	1218	1250	1227	1-	3	1			1		1		1219	11250
20	1521	1532	1529	1-	1	1							1520	11250
20	1924	2104	1946	2	5	4		3	5	3	5		1919	11250
21	0600	0655	0610	1-	1						1		0603	11256
21	0616	0652	0623	1-	3	2			1		1		0615	11256
21	1117	1155	1125	2	3	3	1	2	1		2		1114	11256
21	1330	1410	1350	1	1					1	1		1339	11256
21	2258	0100	0001	2	3	1				1	1		2254	11271
22	0942	1030	0954	1+	3	4	1	2	1		2		0942E	11256
22	1656	1720	1702	1+	5	3		6	8	2	6		1653	11256
22	1754	1756	1755	1-	1							1	1800E	11256
22	2143	2145D	2145	1-	1				1				2143	11265
22	2200	2320	2208	2	5	1		4	7	7	9		2200	11256

SUDDEN IONOSPHERIC DISTURBANCES

APRIL 1971

DAY	UNIVERSAL TIME START	END	MAX	IMP	WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD	KNOWN FLARE	McMATH REGION
23	0724	0755	0732	1	5	1	1	4	3	2	5		0724E	11256
23	2025	2120	2030	1-	3				2				2025	11256
29	1504	1510	1505	1-	1	1							1507	11289

STATIONS REPORTING FOR APRIL 1971
AAVSO (A1, A6, A8, A17, A22, A23, A26, A27, A29) (SEA) (A1, A21) (SES)
ANCHORAGE (AN) (SWF, SCNA, SPA)
ATHENS (AT) (SWF)
ATTU (LORAN-C) (TT) (LF-SPA, SES)
BAHRAIN (BH) (SWF)
BEARLEY (BY) (SWF)
BOULDER (BO) (SCNA, SEA)
CAPE RACE (LORAN-C) (CP) (LF-SPA, SES)
DARMSTADT (DA) (SWF)
ENKOPING (SW) (SWF)
FORESTPORT (FP) (SPA)
GESASHI (LORAN-C) (GE) (LF-SPA, SES)
HAWAII (HA) (SPA, SFD)
HIRAISO (HI) (SWF)
HOBART (TA) (SEA)
HOKKAIDO (LORAN-C) (HO) (LF-SPA, SES)
HONGKONG (HK) (SWF)
HUANCAYO (HU) (SWF)
INUBO (IN) (SPA)
JUPITER (LORAN-C) (JP) (LP-SPA, SES)
KUHLUNGSBORN (KU) (SWF, SEA, SPA)
KURE (LORAN-C) (KR) (LF-SPA, SES)
MANILA (MA) (SWF, SCNA, SPA)
MARCUS (LORAN-C) (MR) (LF-SPA, SES)
MCMATH (MC) (SWF, SCNA)
NANTUCKET (LORAN-C) (NT) (LF-SPA, SES)
NEUSTRELITZ (NU) (SCNA)
NEW DELHI (ND) (SWF, SCNA, SES, SFD)
OKINAWA (OK) (SWF)
PANSKA VES (PU) (SWF, SEA, SES)
POITIERS (PO) (SEA)
PORT CLARENCE (LORAN-C) (PC) (LF-SPA, SES)
PRESTON (LO) (SEA)
PYRAMID ROCK (PR) (SPA)
ROME (RO) (SCNA, SEA)
SAN DIEGO (SD) (SPA)
SANDUR (LORAN-C) (SA) (LF-SPA, SES)
SAO PAULO (UM) (SPA, SES)
SITKINAK (LORAN-C) (SK) (LF-SPA, SES)
SOFIA (SF) (SES)
SOMERTON (SO) (SWF)
SYLT (LORAN-C) (ST) (LF-SPA, SES)
TABLE MOUNTAIN (TM) (SWF, SPA, LF-SPA)
TRINIDAD (TR) (SWF, SPA)
UPOLO POINT (LORAN-C) (UP) (LF-SPA, SES)
WHITE SANDS (WS) (SWF)
YAP (LORAN-C) (YP) (LF-SPA, SES)

PERIODS OF NO OBSERVATIONS:

DATE	TIME (UT) and STATION
01-04	0000-2315 A22
01-08	0000-2400 PU
01-24	0000-2330 A8
01	1300-2400 AT, 1655-2400 UM
02	0000-0145 UM, 0000-1100 AT, 1355-1445 UM, 1550-2400 UM, 1830-1835 TM, 1913-1919 TM, 2310-2313 TM, 2346-2348 TM
03	0000-0145 UM
04	0350-0411 TM
06	0304-0332 TM
08	0327-0359 TM, 2213-2400 TM
09	0000-0120 TM, 1400-1725 UM, 1625-2400 TM
10	0000-0102 TM
11	1851-1859 TM
12	1701-1704 TM
13	0010-0016 TM, 0128-0138 TM
14	1811-1912 TM, 1952-2033 TM, 2315-2332 TM
15	1700-2130 UM, 2338-2349 TM
16	0000-1225 MC, 0000-1533 TM, 1400-1715 UM
17-30	0000-2400 PU
17	1445-1500 UM
18-30	0000-2400 HO
19	0844-1610 TM
20-23	1200-0215 A26
23	1405-1745 UM, 1845-1910 TM
24	0000-2400 OK
25	0347-0350 TM
26-30	0000-2400 OK
26	0034-1835 TM
30	2203-2210 TM

SID's BY McMATH REGION

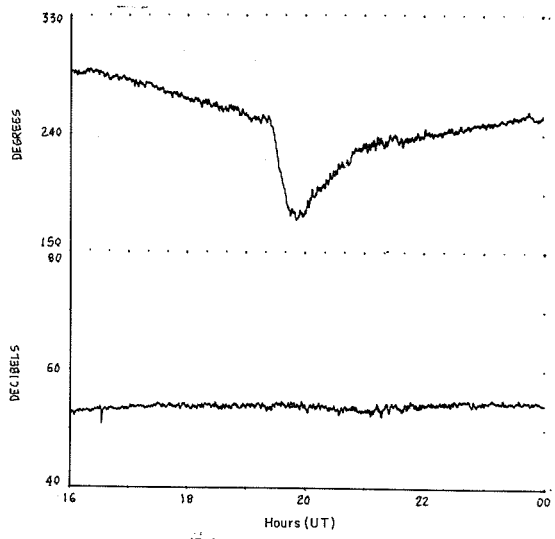
APRIL 1971

DAY	21	27	28	33	34	38	49	50	53	55	56	57	65	66	71	23	X-RAY	UN-KNOWN	NO FP
01	5																		
02	5																		
03	1		1																
04	2																		
05																			
06	1	1																	
07	1	1																	
08	2																		
09																			
10							1												
11					1		2												
12				2		1	1												
13									1			2							
14										1	2								
15						1			1		1								
16									1		3								
17											1								1
18											1								
19								2		1	1			1					
20								3		1	3								
21											4				1				
22											4		1						
23											2								
24																			
25																			
26																			
27																			
28																			
29																1			
30																			

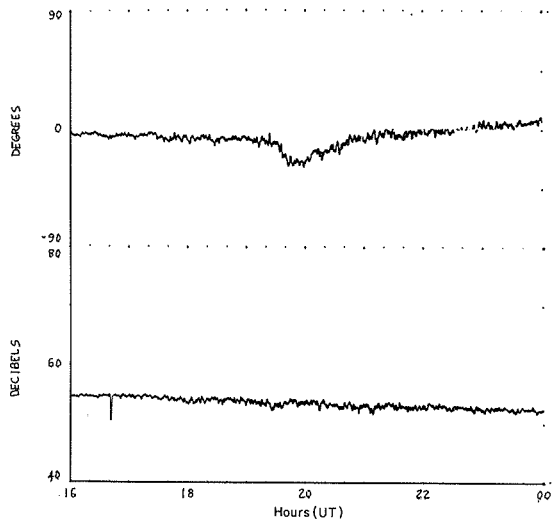
SELECTED SID EVENTS

20 APRIL 1971

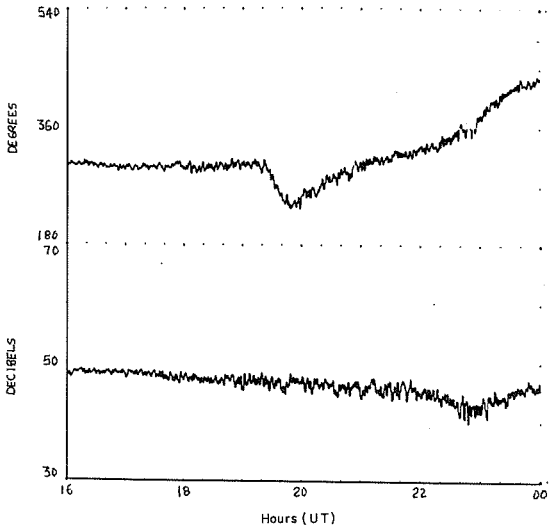
SDL Table Mountain Geophysical Monitoring Station



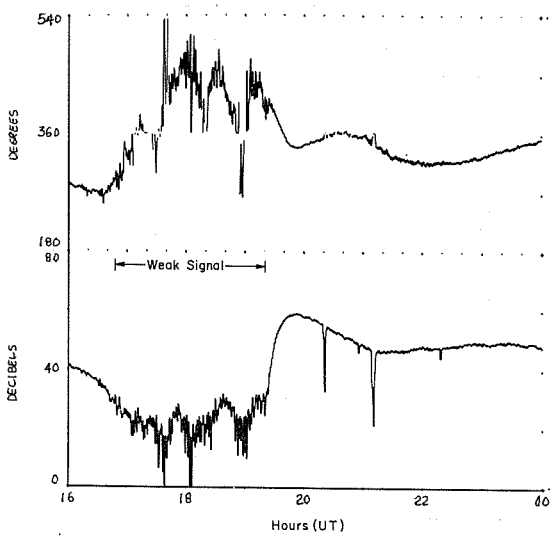
13.6 kHz Omega Haiku, HAWAII



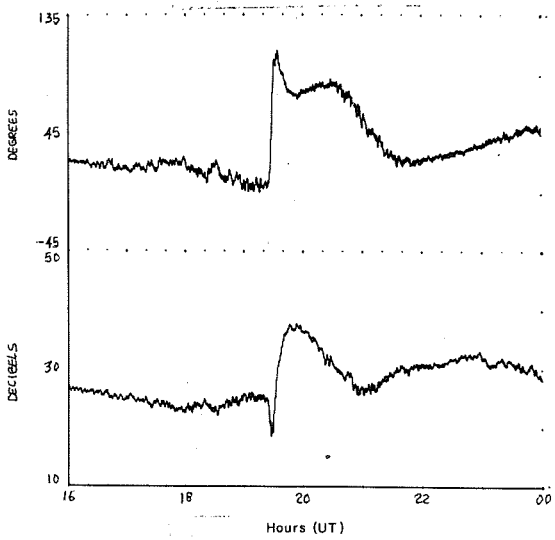
13.6 kHz Omega, NEW YORK



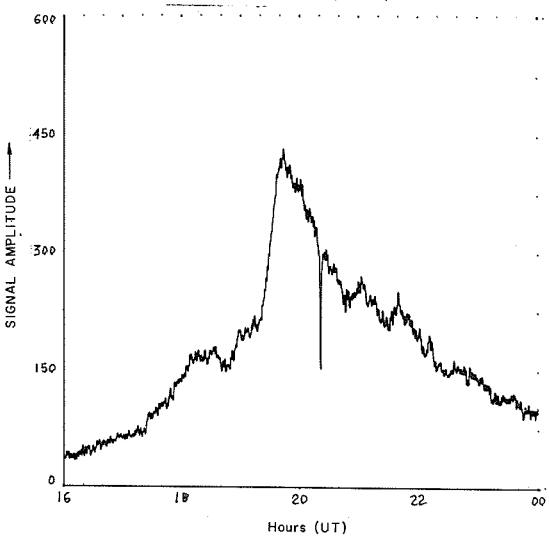
13.6 kHz Omega Trinidad, W.I.



100 kHz Loran-C Cape Fear, N.C.



100 kHz Loran-C Jupiter, FLA.



26 kHz Sferics Amplitude

Note: Above data scaled with a thirty second time constant.

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

APRIL 1971

APR 1971	TIMES OF OBSERVATION		STATION	EVENTS												SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	
01	0000	0049	HARV													
	0000	0135	CULG							0055	0056	2				IIIG
	0000	0139	BOUL							0055.3	0056.2	1	0055.3	0056.2	1	IIIG
	0140	0235	CULG													
	0250	0504	CULG							0450		1				IIIB,W
			CULG							0550	0553	1				I
	0519	0651	CULG				0551	0553	1	0550.5	0553	3				IIIGG
	0547	1715	WEIS							0551.0	0552.8	2				IIIGG
			CULG							0557.5		1				IIIB,W
	0700	0716	CULG													
	0725	0727	CULG													
			WEIS							0841.1	0841.4	1				IIIG
	1002	2300	SGMR										1205.9	1209.0		III
			WEIS							1251	1504	1				IN,CONT
			SGMR										1253.2	1328.0		CONT
			WEIS							1259	1330	2				IIIGG
			WEIS							1308.5	1350.5	2				IIIGG
	1316	2400	HARV				1316 E	1423	3	1316 E	1357	2				IIIS
			SGMR										1328.0	1421.0		IV
	1355	0157	BOUL							1353.4	1525	2	1353.4	1525	2	IV
			BOUL							1456.5	1459.2	1	1456.5	1459.2	1	IIIG
			HARV				1500	1501	2							I
			BOUL							1656.6	1656.7				1	III
	1628	2354	CLRO										1751.7	1752.7	2	IIIG
			BOUL							1751.9	1753.1	2	1751.9	1753.1	2	IIIG
			SGMR										1752.6	1753.0		III
			HARV				1856	1857	1							I
			BOUL							2206.1	2206.3	1				III
	2027	2400	CULG							2206.5		1				IIIB,W
			CULG							2308	2400	1				I
02	0000	0727	CULG							0000	0026	1				I
	0000	0050	HARV													
			CULG							0130	0159	1				I
			CULG							0302		1				IIIB,W
			CULG							0307.5		1				IIIB,W
			CULG							0430.5	0454	1				IIIS
			CULG							0508		1				IIIB,W
			CULG							0606	0643.5	1				IIIS
			CULG							0607	0643	1				I
	0545	1110	WEIS							0615	0620	1				UNCL,G
			CULG							0703		1				IIIB
	1008	2300	SGMR										1231.0	1241.2		CONT
	1125	1716	WEIS							1236.7	1236.9	1				IIIB
			SGMR										1307.5	1327.1		CONT
	1354	0152	BOUL							1402.8	1405.1	2			2	IIIG
			SGMR										1403.0	1405.0		III
			BOUL							1410.2	1410.4	1	1410.2	1410.4	1	III
			BOUL							1505.2	1505.5	1				III
			SGMR										1523.1	1523.8		III
			WEIS							1553.2	1553.5	1				IIIB
			BOUL							1553.7	1553.9	1	1553.7	1553.9	1	III
	1317	2400	HARV							1608	1610	1				IIIGG
			BOUL							1608.2	1608.3	1	1608.2	1608.3	1	III
			BOUL							1641.7	1641.9	1	1641.7	1641.9	1	III
			BOUL							1651.3	1652.4	1	1651.3	1652.4	1	IIIG
			BOUL							1657.5	1657.6	1				III
	1638	2310	CLRO										1732.7	1737	1	IIIG
			HARV							1733	1737	2				IIIGG
			BOUL							1733.1	1743.9	1	1733.1	1743.9	1	IIIG
			HARV							1759	1800	1				IIIGG
			CLRO										1759.2	1800.5	2	IIIG
			SGMR										1759.2	1800.0		III
			BOUL							1759.9	1800.1	2	1759.9	1800.1	2	IIIG
			HARV							1832	1834	3	1832	1834	3	IIIG
			CLRO										1832.4	1833.2	2	IIIG
			SGMR										1832.7	1833.7		III
			BOUL							1833.0	1833.9	3	1833.0	1833.9	3	IIIG
			CLRO										1903.5	1904.2	1	IIIG
			BOUL							1903.7	1904.2	2	1903.7	1904.2	2	IIIG
			BOUL							1916.3	1921.0	3	1916.3	1921.0	3	IIIGG
			CLRO										1916.3	1926.5	2	IIIG
			SGMR										1916.8	1921.1		CONT
			HARV							1918	1920	1				IIIGG
			CLRO										1949.5	1950	1	III
			CLRO										2002	2007.5	2	IIIG
			BOUL							2002.2	2008.9	2	2002.2	2008.9	2	IIIGG
			HARV							2005	2007	1				IIIGG
			CLRO										2006	2206	1	IIIN
			BOUL							2023.6	2100.0	1	2023.6	2100.0	1	IIIG
	2027	2400	CULG							2055.5	2250	1				I
			CULG							2102		1				IIIB,W
			BOUL							2122.4	2154	1	2122.4	2154	1	IIIN
			CULG							2127	2259	1				IIIS
			BOUL							2159.6	2307.2	2	2159.6	2307.2	2	CONT
			CLRO										2206	2237	1	CONT
			CULG							2306	2307.5	1				IIIG
			CULG							2307		2				IIIB
			CLRO										2307.2	2307.4	1	III
03	0000	0051	HARV													

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

APRIL 1971

APR 1971	TIMES OF OBSERVATION		STATION	EVENTS												SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	
03	0000	0725	CULG							0020.5		1				IIIB,W
	0000	0201	BOUL							0040.6	0040.7	1				III
			CULG							0149	0200.5	1				IIIGG,W
	0546	0833	WEIS				0718.7	0719.0	1							IIIG
	1028	2308	SGMR										1312.1	1313.2		III
	0837	1719	WEIS							1312.9	1313.1	1				IIIB
	1303	2400	BOUL							1313.1	1316.5	1	1313.1	1316.5	1	IIIG
	1316	2400	HARV							1316	1317	1				IIIG
			BOUL							1533.8	1535.0	1	1533.8	1535.0	1	III
			BOUL							1644.1	1644.3	1	1644.1	1644.3	1	III
			BOUL							1654.2	1700	1	1654.2	1700	1	IIIG
			HARV							1657	1701	1				IIIGG
	1555	0004	CLRO										1657.2	1659.2	1	IIIG
			BOUL							1923.5	1924.6	1	1923.5	1924.6	1	IIIG
			CLRO										1924.3	1926.3	1	IIIG
			BOUL							1934.6	1939.2	2	1934.6	1939.2	2	IIIG
			CLRO										1935.7	1941	2	IIIG
			HARV							1936	1939	1				IIIGG
			SGMR										1936.8	1937.4		III
			BOUL							2125.5	2125.6	1				III
	2027	2400	CULG							2126.5		1				IIIB,W
			BOUL							2225	2227.6	2	2225	2227.6	2	IIIG
			CULG							2226	2228.5	1				IIIG
			CLRO										2227	2228	1	IIIG
			CULG							2322.5	2324	1				IIIG,W
			BOUL							2322.7	2322.9	1				III
			CULG							2332		1				IIIB,W
04	0000	0053	HARV													
	0000	0726	CULG				0110.5	0111	1	0109.5	0115	1				IIIGG
			CULG							0111		2				IIIB
			CULG							0153.5		1				IIIB,W
	0540	1718	WEIS													
			CULG							0718	0719.5	1				IIIG,W
	1316	2400	HARV													
	1517	0230	BOUL							1636.3	1636.7	1				III
			BOUL							1900.2	1900.3	1				III
	1607	2355	CLRO										1907.8	1908.5	2	III
	1135	2308	SGMR										1907.8	1908.2		III
			BOUL							1908.6	1909.1	1	1908.6	1908.7	1	III
	2027	2400	CULG							2123.5	2126	1				IIIG
			CULG							2137.5	2138.5	1				IIIG
			BOUL							2139.4	2139.5	1	2139.4	2139.5	1	III
			CULG							2321.5	2323	1				IIIG,W
			CULG							2331		1				IIIB,W
05	0000	0720	CULG													
	0000	0054	HARV				0017		2							I
	0541	0833	WEIS													
	0834	1722	WEIS													
	1010	2309	SGMR													
	1354	0147	BOUL							1652.5	1652.6	1	1652.5	1652.6	1	III
			BOUL							1744.2	1744.3	1				III
	1638	0012	CLRO										1928	2120	1	IIIN
			BOUL							1942.1	1942.3	1	1942.1	1942.3	1	III
	2027	2400	CULG							2118		1				IIIB,W
	1304	2400	HARV				2144	2147	2							I
			CULG							2213	2213.5	1				IIIG,W
06	0000	0727	CULG													
	0000	0056	HARV													
	0538	0912	WEIS													
	1012	2310	SGMR													
	1320	1723	WEIS													
	1301	2400	HARV				1411	1412	1							IIIG
	1354	0230	BOUL							1646.5	1646.7	1	1646.5	1646.7	1	III
			BOUL							1655.8	1655.9	1	1655.8	1655.9	1	III
			BOUL							1811.5	1811.6	1	1811.5	1811.6	1	III
			BOUL							2008.3	2008.6	1				III
	1623	2400	CLRO										2008.5	2008.7	1	III
			CLRO										2115	2115.5	1	III
	2027	2400	CULG							2215	2216	1				IIIG
			BOUL							2215.1	2215.5	2	2215.1	2215.5	2	III
			BOUL							2352.8	2353	1				III
07	0000	0058	HARV													
	0000	0727	CULG							0523.5	0527	1				IIIG
			CULG				0549.5	0551	1							I
	0646	0830	WEIS													
	1003	2308	SGMR													
	0848	1725	WEIS							1245	1645	1				IS
	1437	2400	HARV													
	1354	2300	BOUL							1612.1	1647.2	1				IV
			BOUL							2028.1	2028.4	1	2028.1	2028.4	1	III
	1634	0010	CLRO										2028.5	2028.9	1	III
			CLRO										2214	2214.6	2	III
	2027	2400	CULG							2214	2214.5	1				IIIG,V,U
			BOUL							2214.0	2214.8	2	2214.0	2214.8	2	III
			BOUL							2215.9	2216.9	1	2215.9	2216.9	1	IIIG
			CULG							2216.5	2218	1				IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

APRIL 1971

APR 1971	TIMES OF OBSERVATION		STATION	EVENTS													SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.		
07			CLRO										2217.5	2217.9	1		III
			CULG							2344	2400	1					I,W,CONT
08	0000	0616	CULG							0000	0106	1					I,W,CONT
	0000	0100	HARV														
			CULG							0320.5	0326	2					IIIGG
	0535	1230	WEIS							0629.1	0629.4	1					IIIG
	0948	2309	SGMR														
			WEIS							1004.0	1225	1					IN
	1300	1725	WEIS							1330	1633	1					IS
	1301	2400	HARV							1338	1520	1					I
	1355	0157	BOUL														
			HARV							1520	1914	1					IN
	1630	2400	CLRO														
			HARV							1914	2000	1					I
			HARV							2000	2400	1					IN
09	0000	0102	HARV							0000	0051	1					I
	0331	0721	CULG							0342		1					IIIB,W
	0533	1725	WEIS							0553	0926	1					IS
	0959	2312	SGMR														
	1301	2400	HARV							1304	1515	1					IN
			HARV							1515	1940	1					I
	1650	0010	CLRO														
			HARV							2203	2400	1					I
	2027	2400	CULG							2210	2400	1					I
			CULG							2302	2303	1					IIIG
	1304	2400	BOUL							2302.6	2302.8	1	2302.6	2302.8	1		III
			BOUL							2316.6	2316.7	1					III
10	0000	0726	CULG							0000	0435	1					IS
	0000	0103	HARV							0000	0102	1					I
	0000	0156	BOUL							0020.1	0020.4	1					III
			CULG							0435	0726	1					IN,W
	0531	0900	WEIS							0537	0737	1					IS
	0914	1724	WEIS							1029.5	1033.0	1					IIIGG
	1234	0232	BOUL							1251.8	1548	2	1251.8	1548	2	IV	
	1302	2400	HARV							1302	2250	1					I
	0948	2315	SGMR										1309.0	1458.0		IV	
	1755	0006	CLRO										2009.4	2009.8	2		III
			BOUL							2009.5	2010.0	2	2009.5	2010.0	2		III
	2034	2400	CULG							2034	2130	2					I
			CULG							2039	2337.5	1					IIIN
			CULG							2130	2302	1					I
11	0000	0105	HARV														
	0000	0716	CULG				0014.5	0015	1								IIIG
			CULG							0246.5	0247	1					IIIG,W
			CULG							0449		1					IIIB,W
	0532	1646	WEIS							0540	0900	1					IS
			WEIS							0905.3	0906.2	2					IIIGG
	1205	0235	BOUL							1433.2	1700.0	2	1433.2	1700.0	2	IV	
	1301	2400	HARV				1503	1533	1	1301	1543	1					I
	0950	2314	SGMR										1519.0	1816.0			CONT
			HARV				1636	1640	1	1636	1640	2	1636	1640	1		IIIGG
			BOUL							1636	1636.9	3	1636.5	1636.9	3		III
			WEIS							1639.2	1639.8	2					III
			BOUL							1639.4	1640.9	3	1639.4	1640.9	3		IIIG
			HARV							1640	2400	1					IN
			HARV				1656	1711	2							IV	
			BOUL							1700.0	2130	2	1700.0	2130	2		CONT
			HARV				1751	1752	1	1751	1752	1					IIIGG
			HARV							1755		1	1755		1		IIIG
			BOUL							1755	1755.4	3	1755	1755.4	3		IIIG
			BOUL							1806.1	1812.8	3	1806.1	1812.8	3		IIIGG
			HARV				1810	1811	1	1807	1812	2					IIIGG
			HARV							1814	1815	1					IIIG
	1837	2400	CLRO										1837	2105	2		CONT
	2020	2400	CULG							2026	2400	1					IS,W
			CULG							2111.5		1					IIIB
			CULG							2117.5	2118	1					IIIG
			CULG				2132	2132.5	1	2132	2132.5	1					IIIG,U
			CULG							2147		2					IIIB,U
			HARV				2148	2149	2	2147	2149	2					IIIG
			CULG				2148.5	2149	2	2148.5	2149	2					IIIG,U
			BOUL										2148.9	2150.0	1		III
			CULG				2159.5	2200	1								IIIG
			CULG							2212	2213.5	1					IIIG
			BOUL							2212	2213.6	2	2212	2213.6	2		IIIG
			CLRO										2212.1	2212.3	2		III
12	0000	0107	HARV							0000	0059	1					IN
	0000	0721	CULG							0000	0100	1					IN,W
			CULG							0006	0006.5	1					IIIG,W
			CULG							0150	0201	1					IW
			CULG							0335	0541	1					IW
			CULG							0541	0710	1					I
			CULG							0646		1					IIIB,W
	1010	1727	WEIS							1021.4	1021.8	1					IIIG
			WEIS							1027.0	1556	1					IS

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

APRIL 1971

APR 1971	TIMES OF OBSERVATION		STATION	EVENTS													SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.		
12	1302	2100	BOUL														
	1301	2400	HARV							1306	2020	1					I
	0957	2317	SGMR										1458.6	1459.1			III
			WEIS							1459.5	1459.8	1					IIIG
	1550	0040	CLRO										1910	2005	1		CONT
			HARV							2020	2400	2					I
			CLRO										2021.4	2021.7	1		III
	2020	2400	CULG				2029	2159	1	2027	2400	2					IS
			CLRO										2030	2032	1		IIIG
			CULG							2038	2400	1					IIIS
			CLRO										2040.5	2040.8	2		III
			CLRO										2046.5	2047	1		III
			CLRO										2053.3	2053.6	1		III
			CLRO										2112.2	2112.5	1		III
13	0000	0109	HARV							0000	0109	1					I
	0000	0720	CULG							0000	0415	1					IN,W
			CULG							0000	0307	1					IIIN,W
			CULG							0050.5	0052	1					IIIG
			HARV				0051	0052	1	0051	0052	2					IIIG
			CULG							0052	0304	1					IIIS
			CULG							0052.5	0304	1					I
			CULG				0219	0219.5	1								IIIG,W
			CULG				0242	0242.5	1								IIIG,W
			CULG							0358	0720	1					IIIN,W
			CULG							0415	0720	2					IS
			CULG							0443	0445	2					IIIG
			CULG							0517	0520	1					IIIG
	0525	1728	WEIS							0535	1350	1					IN
			CULG							0708	0713	1					IIIG
			WEIS							0814.1	0814.4	1					IIIB
	0947	2315	SGMR														
	1301	2400	HARV							1302	1600	1					I
			HARV							1820	1940	1					IN
	1618	0010	CLRO										1826.2	1826.4	1		III
			CLRO										1936	2006	1		IIIN
			HARV							1940	2340	1					I
	1711	0201	BOUL							1955.7	2005.7	1					IIIG
			CLRO										2030	2130	1		CONT
	2035	2336	CULG							2035	2250	2					IS,CONT
			CULG							2039.5	2329.5	1					IIIN
			BOUL							2049.6	2049.7	1	2049.6	2049.7	1		III
			BOUL							2111	2334	1	2111	2334	1		CONT
			CLRO										2235	2250	1		CONT
			CULG							2250	2336	1					IS
14	0000	0110	HARV														
	0122	0721	CULG							0124	0220	1					I
			CULG				0147	0147.5	1								IIIG,W
			CULG							0205.5	0703	1					IIIN,W
			CULG							0220	0250	2					I
			CULG							0250	0545	1					I
			CULG				0521	0522	1								I
	0526	0745	WEIS							0530	0740	1					IS
			CULG							0545	0615	2					I
			CULG							0615	0719	1					I
	0834	1010	WEIS														
	1022	1759	WEIS														
	1301	2400	HARV							1301	1524	1					I
	1309	0140	BOUL							1308 E	1500	1	1308	1500	1		CONT
			HARV							1524	1726	1					IN
			BOUL							1546.8	1547.1	1					III
			BOUL							1630	1631.6	1	1630	1631.6	1		IIIG
	1650	0010	CLRO										1650	2310	2		CONT
			BOUL							1714	0108 D	3	1714	0108 D	3		CONT
	0943	2316	SGMR										1718.8	2150.0			CONT
			HARV							1726	1816	2					I
			HARV							1816	2400	1					I
			HARV				1920	1921	1	1920	1921	1					IIIG
			HARV				2021	2100	2	2047	2058	1					IIIS
	2035	2400	CULG							2035	2400	1					IS
			CULG							2048.5	2350.5	1					IIIS
			HARV				2050	2058	2								I
			HARV				2135	2200	2	2133	2324	1					IIIN
			CULG				2157.5	2158	1								IIIG
			CULG				2159	2159.5	1								IIIG
			CULG				2309	2309.5	1	2309	2309.5	1					IIIG
			CULG				2313.5	2314.5	1	2313.5	2314	1					IIIG
			CULG							2323.5		2					IIIB
			CULG							2330.5	2331	1					IIIG
			CULG							2350	2355.5	1					IIIN,W
15	0000	0721	CULG							0000	0330	1					IS
	0000	0111	HARV							0000	0107	1					I
			CULG							0013	0721	1					IIIS
			CULG							0615	0721	1					I
	0530	1330	WEIS							0615	1303	1					I
			WEIS							0621.8	0623.0	1					IIIG
	1009	2320	SGMR										1059.0	1931.0			CONT
	1306	0147	BOUL							1305 E	0112 D	2	1305 E	0012 D	2		CONT

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

APRIL 1971

APR 1971	TIMES OF OBSERVATION		STATION	EVENTS													SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.		
15	1337	1432	WEIS														
	1302	2400	HARV				1500	1647	1	1302	1800	1					I
			HARV							1529	1928	1	1529	1928	1		IIIN
	1625	2400	CLRO										1655	2255	2		CONT
			HARV				1816	1827	1	1800	2223	1					IN
			CULG							2039	2400	1					IIIS
	2039	2400	CULG							2039	2400	1					IS
			CULG							2039	2050	1					
16	0000	0721	CULG							0000	0721	1					IS,W
			CULG							0000	0721	1					N,RS,DP
			CULG							0000	0721	1					IIIS,W
	0000	0111	HARV				0002	0106	1	0000	0106	1					IN
			CULG							0010		2					IIIB
			CULG							0011	0011.5	2					IIIG
			CULG							0030	0030.5	2					IIIG
			CULG							0148	0149	2					IIIG,U
			CULG							0321	0322	2					IIIG,U
			CULG							0323.5	0324	2					IIIG
			CULG							0433.5		2					IIIB
	0528	1529	WEIS														
	0948	2322	SGMR														
	1219	0136	BOUL							1247.9	1248.0	1	1247.9	1248.0	1		III
			BOUL										1303.6	1303.7	1		III
			BOUL							1319.5	1319.6	1	1319.5	1319.6	1		III
			BOUL							1320	1507	1	1320	1507	1		CONT
	1301	1728	HARV				1443	1507	1	1301	2400	1					IN
	1533	1741	WEIS														
			BOUL							1614	0055 D	2	1614	0055 D	2		CONT
			BOUL							1634.8	1634.9	1	1634.8	1634.9	1		III
	1609	0012	CLRO										1710	2320	2		CONT
			BOUL							1714.2	1714.6	2	1714.2	1714.3	2		III
	1730	1852	HARV														
	1855	2208	HARV														
	2037	2400	CULG							2037	2400	1					IIIN,W
			CULG							2037	2400	1					IN,W
	2217	2248	HARV														
	2252	2400	HARV							2336	2340	1					IIIG
17	0000	0112	HARV							0000	0111	1					IN
	0000	0721	CULG							0000	0718	1					IN
			CULG							0000	0714	1					IIIN
			CULG							0258.5	0300	2					IIIG
			CULG				0520	0524	1								I
	0513	1740	WEIS							0522	1628	2					IN
			WEIS							0617.6	0617.9	1					IIIB
			WEIS							0636.3	0637.6	1					IIIG
			CULG							0637.5		2					IIIB
			WEIS							0905.7	0917.5	2					IIIGG,RS
	0944	2322	SGMR										1109.0	1337.0			CONT
	1302	2400	HARV							1302	1420	1					I
			HARV				1543	2358	1	1420	2356	1					IN
			HARV				1600	1626	1								IIIS
	2015	0010	CLRO										2035.5	2035.7	1		III
			CLRO										2037	2037.2	1		III
	2037	2400	CULG							2037	2400	1					IW
			CULG							2039	2353	1					IIIN,W
			CLRO										2043	2047	1		CONT
			CULG							2128.5	2129	2					IIIG,U
			CLRO										2129	2129.5	2		III
			CLRO										2135	2135.4	1		III
			CULG							2135	2134.5	1					IIIG,U
18	0000	0113	HARV				0000	0100	1	0000	0105	1					IN
			CULG							0004	0716.5	1					IIIN,W
	0000	0721	CULG				0146	0420	1	0000	0629	1					IW
			CULG							0205.5	0210	1					IIIGG
			CULG							0219		1					IIIB
	0512	1625	WEIS							0715	1546	1					IN
	1211	2323	SGMR														
	1302	2038	HARV				1635	1820	1	1302	1820	1					IN
	2051	2103	HARV				1820	1914	1	1820	1918	1					I
	1605	2050	CLRO										1904.3	1904.6	1		III
	2105	2400	HARV				1911	1914	1								IIIG
			HARV							1918	2400	1					IN
	2037	2400	CULG							2048		1					IIIB
			CULG							2135	2356	1					IIIN,W
			HARV				2314	2316	1	2314	2316	1					IIIG
			CULG				2314.5	2316	1	2314.5	2315.5	1					IIIG
19	0000	0114	HARV				0007	0110	1	0007	0112	1					IN
	0000	0721	CULG							0034	0353.5	1					IIIN,W
			CULG				0130	0148	1	0013.5	0215	1					I,W
			CULG							0458		1					IIIB,W
	0816	1711	WEIS							0817.7	0818.0	1					IIIG,DP
	0933	2322	SGMR										1222.9	1226.4			IIIG
			WEIS							1223.0	1226.4	1					IIIGG
			WEIS							1320.4	1323.0	1					IIIG
			SGMR										1412.0	1412.4			III
			SGMR										1436.9	1437.7			III

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

APRIL 1971

APR 1971	TIMES OF OBSERVATION		STATION	EVENTS													SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.		
19			SGMR										1521.8	1523.7			IIIG
			WEIS							1521.9	1523.5	1					IIIG
	1301	1908	HARV							1522	1524	2	1522	1524	2		IIIG
			SGMR										1546.9	1551.8			IIIG
			WEIS							1551.4	1551.6	1					IIIB
			SGMR										1703.9	1704.4			III
			WEIS							1710.7	1711.5	2					IIIG,RS
			HARV				1711	1712	3	1711	1712	2					IIIG
	1635	2236	CLRO										1745.6	1746.4	2		III
			SGMR										1745.8	1811.0			IIIG
			CLRO										1754.2	1754.6	2		III
			CLRO										1810	1811	2		IIIG
			CLRO										1819.5	1819.8	1		III
			CLRO										1829.5	1830.5	1		IIIG
			CLRO										1919	1919.3	1		III
			CLRO										1929.5	1929.8	1		III
			CLRO										1935	2000	1		CONT
	2037	2400	CULG							2038.5	2400	1					I,W
	1944	2400	HARV				2040	2318	1	2040	2400	1					I
			CULG							2042	2043	1					IIIG
			CLRO										2042.2	2043	2		IIIG
			CULG							2046	2339	1					IIIN,W
			CULG							2145	2146	1					IIIG
			CLRO										2145.2	2146	2		III
20	0000	0720	CULG							0001	0655	1					IW
	0000	0115	HARV							0003	0110	1					I
			CULG							0053	0709.5	1					IIIN,W,U
			CULG							0140	0141	1					IIIG
			CULG							0142		2					IIIB
			CULG	0518	0520	1	0518	0520	1							IV	
	0511	1000	WEIS							0520	1705	2					IN
			CULG							0716.5	0717.5	2					IIIG,U
	1016	1744	WEIS							1219.0	1220.2	2					III,GG,DP
	1302	1602	HARV				1521	1524	3	1521	1524	3					IIIGG
			WEIS							1521.0	1524.2	3					IIIGG,RS
	1643	1653	HARV														
	1613	1639	HARV				1648	1709	1	1648	1709	1					I
	1700	2400	HARV				1916	1959	3	1918	1950	1					IIIS,V
			HARV							1916	1952	1					I
	1620	0006	CLRO										1918	2020	3		CONT
	0937	2315	SGMR										1919.9	2007.1			CONT
			HARV							1926	1946	2	1932	1940	1	II	
			HARV							1952	2055	1					IN
			HARV				2022	2023	1								IIIG
	2049	2400	CULG														
			CULG							2055	2055.5	2					IIIG,U
			CULG							2115	2144	1					I
			CULG							2217	2217.5	1					IIIG,U
			HARV				2217	2218	1	2217	2218	1					IIIG
21	0000	0115	HARV														
	0000	0716	CULG							0205.5		1					IIIB,W
			CULG							0619.5	0621.5	2				IIH	
			CULG							0644	0645	2					IIIG,V,U
	0506	1550	WEIS							0644.0	0644.8	1					IIIG
			WEIS							1115.3	1117.0	1					IIIG
			WEIS							1121.0	1125.7	2				II	
	0932	2327	SGMR										1124.9	1126.0			III
	1602	1747	WEIS														
	1301	2400	HARV				1911		1	1911	1912	1					IIIG
	1640	0006	CLRO										1912.2	1912.4	1		III
			HARV				2024	2025	1	2024	2025	2	2024	2025	1		IIIGG
			CLRO										2024.4	2025	2		III
			SGMR										2024.4	2025.1			III
			HARV							2027	2028	2					IIIG
	2037	2400	CULG				2036.5	2037	1	2036.5	2037	1					IIIG
			CULG				2039	2041	1	2039	2041	1					IIIG,W
			CULG							2057	2058	2					IIIG,U
			HARV				2057		1	2057	2058	1					IIIG
			CULG							2120.5	2129.5	1					IIIN,W
			CULG							2204.5	2205	1					IIIG,W
			CULG							2221	2221.5	1					IIIG
			CULG							2222	2224.5	1					IIIG,W
			HARV				2257	2258	1	2257	2258	3					IIIG
			CULG				2257.5	2258	2	2257.5	2258	2					IIIG,V,U
22	0000	0115	HARV														
	0000	0620	CULG							0147	0148	1					IIIG,W
			CULG							0336.5	0337.5	1					IIIG,W
			CULG							0445.5	0446	1					IIIG
			CULG							0454.5		1					IIIB,W
	0935	2328	SGMR										1115.9	1129.0			V
	0502	1750	WEIS							1655.6	1707.0	3					IIIGG,DP
	1302	2400	HARV				1656	1700	2	1656	1701	3					IIIGG,V,U
			WEIS							1720.7	1722.3	1					IIIGG,DP
			HARV							1721	1724	1					I
	1620	0006	CLRO										1825	1825.4	2		III
			HARV				2203	2208	2	2203	2209	1					IIIGG
23	0000	0115	HARV														

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

APRIL 1971

APR 1971	TIMES OF OBSERVATION		STATION	EVENTS												SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	
23	0000	0721	CULG							0709	0710.5	1				IIIG,V
	0459	0745	WEIS							0709.3	0710.2	1				IIIG,DP
	0820	1749	WEIS							0856.7	0857.3	1				IIIG,RS
	0935	2330	SGMR													
			WEIS							1122.4	1124.3	2				IIIG
	1302	2400	HARV							1405	1406	2				IIIG
			WEIS							1405.0	1405.7	3				IIIG,DP,RS
			WEIS							1448.2	1458.7	1				IIIG,DP
	1625	0006	CLRO										1900	1910	1	IIIN
	1615	0245	BOUL							1903	1906	2	1903	1906	2	IIIG
	2037	2400	CULG							2149.5		1				IIIB,W
24	0000	0202	CULG													
	0000	0116	HARV													
	0205	0721	CULG													
	0500	0930	WEIS													
	0921	2331	SGMR													
	0941	1115	WEIS													
	1355	0212	BOUL							1645.9	1646.2	1	1645.9	1646.2	1	III
	1302	2400	HARV							1649	1920	1				IN
			BOUL							1651.5	1723	1	1651.5	1723	1	IIIN
			HARV				1920	1932	1	1920	2400	1				I
			BOUL							1937.3	1938.0	1	1937.3	1938.0	1	IIIG
	1530	0005	CLRO										1937.5	1938.5	1	IIIG
	2037	2045	CULG													
	2100	2321	CULG							2104.5	2205	1				IS
			CULG							2133.5	2218	2				IIIS
			BOUL							2137.9	2138	1	2137.9	2138	1	III
			BOUL							2140.0	2223.9	1	2140.0	2223.9	1	CONT
			CLRO										2141	2250	1	CONT
			HARV				2154	2209	1	2140	2208	1				IIIS
			CULG							2205	2335	3				IS
			CULG							2218	2316.5	1				IIIN
			BOUL							2238.5	2242.1	1				IIIG
			BOUL							2301.0	2301.1	1				III
			BOUL							2308.4	2316.2	1	2308.4	2316.2	1	IIIG
	2324	2400	CULG							2335	2400	1				IS
25	0000	0008	CULG							0000	0008	1				IW
	0000	0117	HARV							0000	0115	1				IN
	0022	0621	CULG							0022	0345	1				IW
			CULG							0226	0240	1				IIIN
			CULG							0411.5	0509	1				IIIN
			CULG							0420.5	0459.5	1				I
			CULG							0603.5		1				IIIB,W
			CULG							0614.5		1				IIIB,W
	0625	0710	CULG							0651		1				IIIB,W
	0918	2335	SGMR													
	1255	0132	BOUL							1301.8	1450.0	1	1301.8	1450.0	1	CONT
			BOUL							1420	1421.8	1	1420	1421.8	1	IIIG
			BOUL							1525.2	1525.4	1				III
			BOUL							1530.4	1531.9	1	1530.4	1531.9	1	IIIG
			BOUL							1542.2	1542.3	1	1542.2	1542.3	1	III
	1302	2400	HARV				1553	1856	1	1307	2400	1				IN
			HARV				1814	1815	3							IIIG
	1835	0016	CLRO										1842.5	1843	2	III
			BOUL							1842.6	1842.9	1	1842.6	1842.7	1	III
			CLRO										1908	1908.3	1	III
			CLRO										1926.2	1926.5	1	III
	2037	2321	CULG							2136.5	2400	1				I
			CULG							2138	2321	1				IIIN,W
			BOUL							2243.3	2243.8	1	2243.3	2243.8	1	IIIG
			BOUL							2303.7	2305.0	1	2303.7	2305.0	1	III
	2325	2336	CULG							2325	2336	1				IIIN,W
	2340	2400	CULG							2340	2341	1				IIIN,W
26	0000	0125	CULG							0000	0125	1				IW
	0000	0118	HARV							0007	0114	1				IN
			CULG							0030	0125	1				IIIN,W
	0130	0721	CULG							0130	0229	1				IW
			CULG							0130	0221	1				IIIN,W
			CULG							0417	0658	1				IW
			CULG							0446		1				IIIB,W
	0929	2332	SGMR													
	1301	2400	HARV													
	1346	1749	WEIS													
	1530	2310	CLRO										1729	1738	1	CONT
	1314	2051	BOUL							1729	1737.2	1				CONT
			BOUL							1755.2	1804.6	1	1755.2	1804.6	1	CONT
			CLRO										1756	1802	1	CONT
			CLRO										1920	1920.3	1	III
			CLRO										1928.8	1929	1	III
			CLRO										1934	1934.3	1	III
	2037	2400	CULG							2140.5	2148	1				I
			CLRO										2207.8	2208.1	1	III
			CULG							2208		1				IIIB,W
27	0000	0119	HARV													
	0000	0721	CULG							0320		1				IIIB,U
	0500	1630	WEIS													

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

APRIL 1971

APR 1971	TIMES OF OBSERVATION		STATION	EVENTS												SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	
27			CULG							0522	0523	1				IIIG,W
			CULG							0544.5	0709	1				IW
	0931	2334	SGMR													
	1254	2400	BOUL													
	1301	2400	HARV							1301	1515	1				I
	1520	2320	CLRO													
	1650	1748	WEIS													
			HARV							2000	2351	1				IN
	2031	2037	CULG							2120	2356	1				IIIN
	2045	2400	CULG							2141	2329	1				IW
28	0000	0120	HARV							0000	0114	1				IN
	0000	0725	CULG							0003	0336	1				IIIN,W
	0000	0152	BOUL							0003.2	0003.5	1				III
			CULG							0012.5	0201	1				IW
			BOUL							0029.8	0030	1				III
	0500	1758	WEIS													
			CULG							0521.5	0552	1				IIIG
			CULG							0537	0705	1				IW
	0907	2335	SGMR													
	1255	2400	BOUL							1328.2	1328.4	1				III
			BOUL							1332.5	1332.7	1				III
			BOUL							1644.8	1644.9	1	1644.8	1644.9	1	III
	1301	2400	HARV							1702	2350	1				IN
	1523	2306	CLRO										1709.7	1710	2	III
			BOUL							1710	1710.1	1	1710	1710.1	1	III
			BOUL							1714.4	1714.5	1				III
			BOUL							1754	1754.2	1				III
			BOUL							2016.3	2016.5	1				III
			BOUL							2021.5	2021.6	1				III
			BOUL							2108	2108.1	1				III
	2045	2400	CULG							2244	2322	1				IW
29	0000	0725	CULG							0000	0001	1				IIIG,U
	0000	0121	HARV													
	0000	0142	BOUL							0000.3	0000.5	1	0000.3	0000.5	1	III
			CULG							0058.5		1				IIIB,W
			CULG							0317.5		1				IIIB,W
			CULG							0356		1				IIIB,W
			CULG							0442		1				IIIB,W
	0450	0812	WEIS													
			CULG							0454	0455	1				IIIG,U
	0822	1134	WEIS													
	1300	2400	HARV													
	1256	0131	BOUL							1329.6	1330.5	2	1329.6	1329.7	2	III
	0912	2336	SGMR										1329.8	1330.3		III
	1645	1759	WEIS													
			BOUL							1653.9	1745.0	1				IIIN
	1525	2330	CLRO										1933	1933.3	1	III
			BOUL							2005	2005.1	1				III
			BOUL							2014.1	2014.3	1				III
			CLRO										2014.5	2014.8	1	III
			CLRO										2026.5	2026.8	1	III
			BOUL							2026.5	2042.4	1				IIIN
			CLRO										2033	2033.3	1	III
			CLRO										2035	2035.3	1	III
	2045	2400	CULG													
			BOUL							2120.8	2121.0	1				III
			BOUL							2326.0	2331.8	1				IIIG
30	0000	0123	HARV													
	0000	0703	CULG							0214		1				IIIB,W
			CULG							0230.5		1				IIIB
			CULG							0301.5		1				IIIB
			CULG							0331		1				IIIB
			CULG							0349	0351	2	0350	0351	1	IIIG
			CULG							0616.5	0618.5	1				IIIG
	0700	1626	WEIS													
	0705	0726	CULG													
	0925	2337	SGMR													
	1245	2400	HARV													
	1535	2330	CLRO													
	1633	1800	WEIS													
	1255	0130	BOUL							1721.4	1721.5	1				III
	2035	2400	CULG													
			BOUL							2101.5	2101.6	1				III

The symbols used in connection with the spectral type in describing the important bursts are as follows:

B = Single burst
G = Small group (< 10) of bursts
GG = Large group (> 10) of bursts
C = Underlying continuum (particularly with type I)
S = Storm in the sense of intermittent but apparently connected activity
N = Intermittent activity in this period
U = U-shaped burst of Type III
RS = Reverse slope burst
DP = Drifting pairs
DC = Drifting Chains
H = Herringbone
W = Weak
CONT = Continuum
UNCLF = Unclassified activity

COSMIC RAY INDICES
(Neutron Monitors)

APRIL 1971

APR 1971	CHURCHILL DAILY AVERAGE COUNTS PER HOUR	DEEP RIVER DAILY AVERAGE COUNTS PER HOUR	CALGARY DAILY AVERAGE COUNTS PER HOUR	SULPHUR MT. DAILY AVERAGE COUNTS PER HOUR	CLIMAX DAILY AVERAGE COUNTS PER HOUR	DALLAS DAILY AVERAGE COUNTS PER HOUR
1	6140.2	6686.9	11117.4	-- (0)	4008.6	6110.8
2	6133.9	6684.5	11181.1	8230.9(2)	3998.8	6117.7
3	6158.6	6733.8	11255.8	8261.2	4030.5	6145.3
4	6144.6	6707.8	11211.3	8225.7	4015.1*	6129.3
5	6091.5	6664.3	11100.2	8168.1	3987.7*	6086.8
6	6119.6	6695.9	11144.6	8252.2	3986.8	6120.5
7	6122.5	6713.0	11162.4	8299.7	3995.3	6126.0
8	6155.3	6725.1	11215.0	8315.0	4013.1	6134.1
9	6152.2	6716.6	11173.6	8304.9	4028.7	6136.9
10	6136.9	6707.3	11170.4	8307.4	4026.5	6128.3
11	6150.6	6713.2	11239.3	8335.2	4025.8	6123.9
12	6160.1	6707.4	11252.5	8325.0	4032.0	6128.8
13	6168.8	6721.5	11284.8	8352.8	4030.0	6139.5
14	6147.7	6719.4	11184.4	8316.5	4000.0	6115.7
15	5977.3	6554.0	10876.5	8096.2	3930.3*	6007.5
16	5982.0	6562.2	10907.7	8105.4	3914.1	6003.3
17	6020.9	6598.0	10987.8	8173.8	3933.8	6016.7
18	6036.7	6639.9	11070.5	8242.6	3991.4	6046.9
19	6050.7	6648.7	11072.9	8254.3	3999.1	6050.7
20	6068.8	6663.6	11094.8	8298.8	3994.7	6059.0
21	6048.1	6663.7	11040.3	8268.1	3992.1	6061.2
22	6079.9	6688.3	11087.0	8304.8	4020.7	6076.9
23	6059.8	6652.0	11042.7	8266.5	3962.2	6029.3
24	6077.8	6684.3	11057.0	8267.8	3974.5	6047.9
25	6109.3	6706.1	11150.3	8301.4	4000.9	6051.0
26	6151.5	6748.0	11236.7	8362.1	4028.6	6083.8
27	6180.9	6759.9	11264.6	8418.4	4026.1	6112.8
28	6143.3	6706.9	11170.7	8347.3	3987.3	6083.0
29	6137.3	6706.3	11145.1	8340.7	3988.5	6066.8
30	6160.8	6741.2	11215.2	8375.5	4007.1	6092.5

( ) Number of hours for which data are available if less than 24.
* Sum of both sections less than 40 hours.

Churchill Super Neutron Monitor, Scaling Factor 120.

Deep River Super Neutron Monitor, Scaling Factor 300.

Calgary and Sulphur Mountain Super Neutron Monitors, Scaling Factors 100.

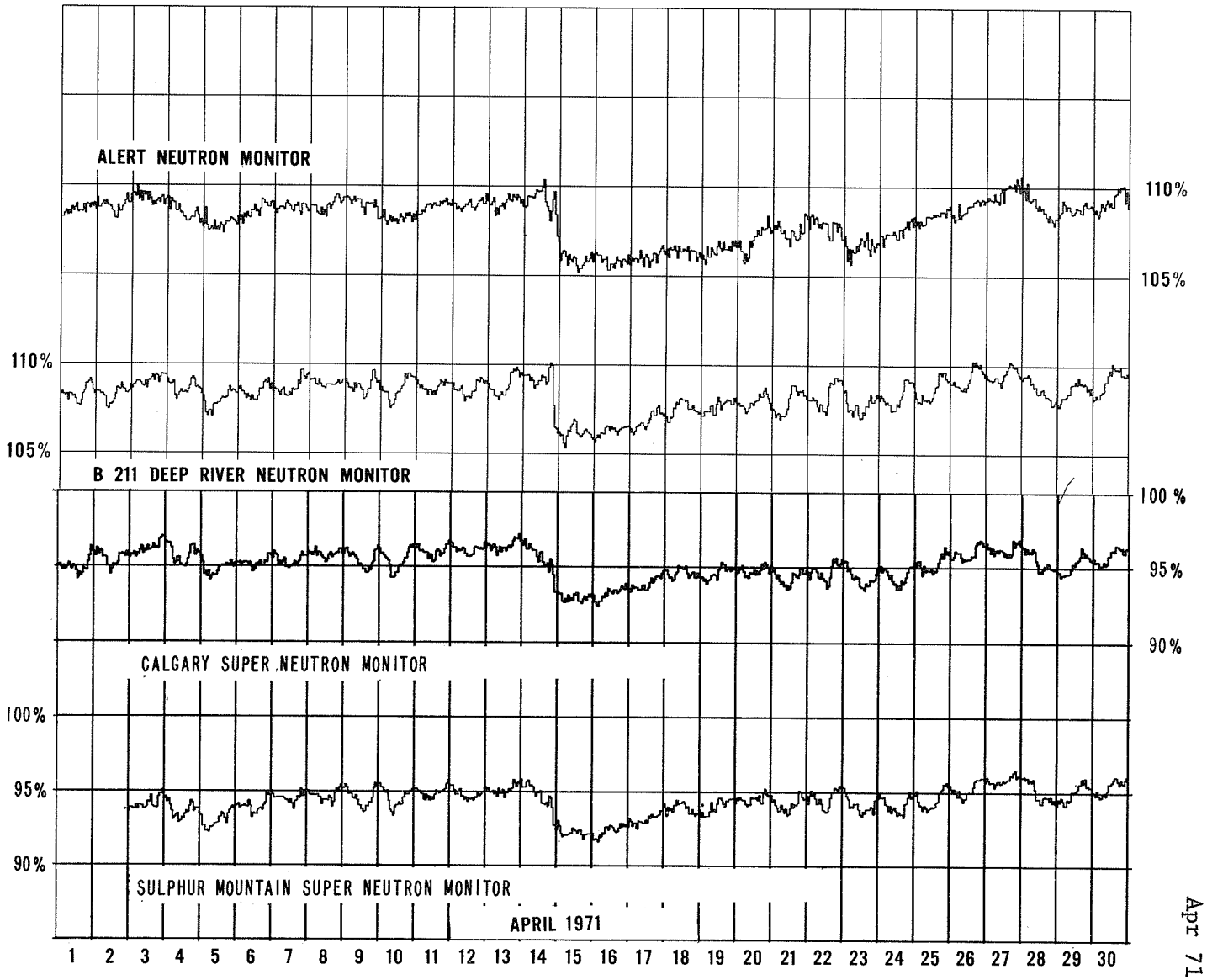
Climax IGC Station B305, Scaling Factor 100. One section normalized by multiplicative factor.

Dallas Super Neutron Monitor, Scaling Factor 120.

COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)

APRIL 1971

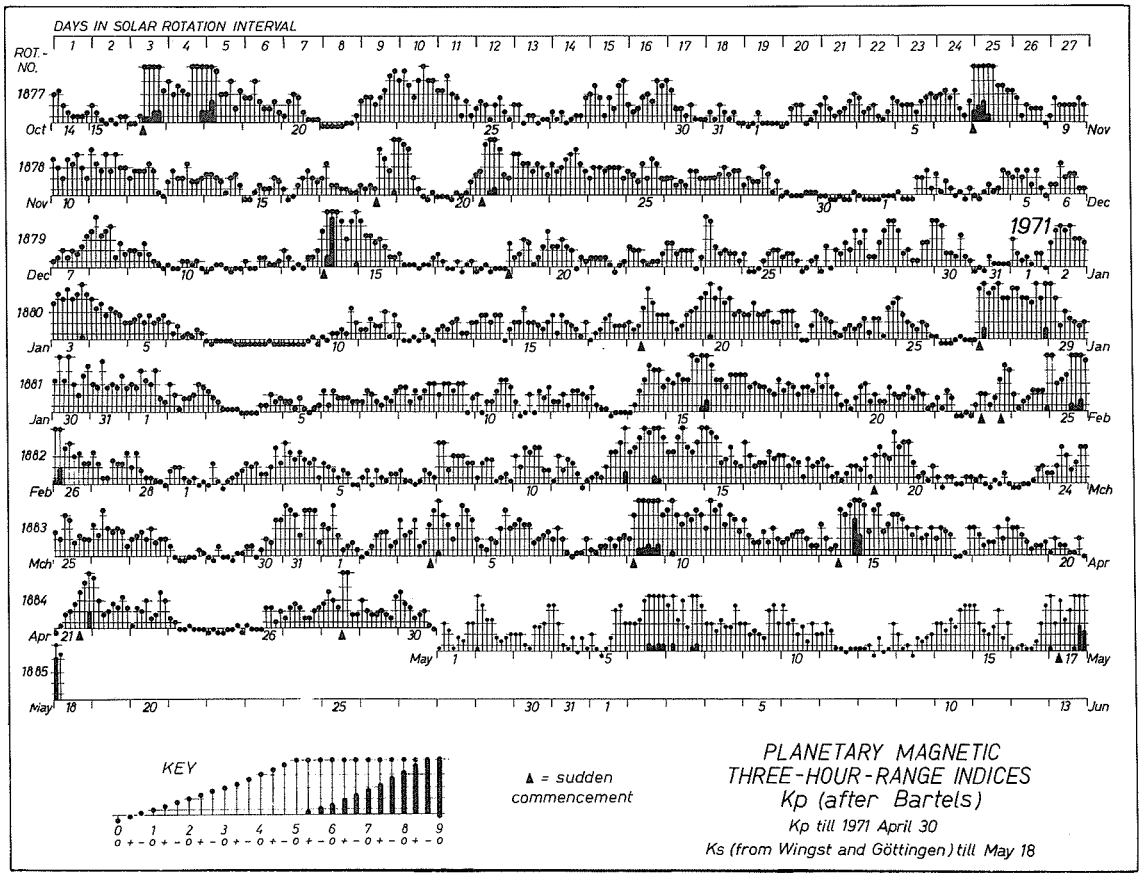


GEOMAGNETIC ACTIVITY INDICES

APRIL 1971

DAY		K_p THREE-HOUR RANGE INDICES 1	2	3	4	5	6	7	8	SUM	C_i	C_p	A_p
1		3+	3	5-	2+	1	1+	2-	1	18+	0.6	0.7	12
2	Q	0+	1-	1+	2+	3-	3-	1+	2-	13	0.4	0.3	7
3		4-	2+	3-	4-	1+	2-	3+	4+	23	1.1	0.9	16
4	D	5+	4	3+	2	3+	5-	4+	4-	31-	1.3	1.2	27
5		2	1+	1	2	2-	3	4+	3	18+	0.7	0.7	11
6		3+	4-	3+	3+	2-	2	2+	3-	22+	0.5	0.8	14
7	Q	2	3	2	1-	0+	1-	1-	2	11+	0.1	0.3	6
8	QQ	1	1-	1+	1+	2	1+	2	2+	12	0.3	0.3	6
9	D	2	4	6-	6-	6	6-	6	4	39	1.6	1.6	53
10	D	4+	5+	4	3+	4	4-	4+	4	33	1.3	1.3	30
11		3	5	4+	5-	3+	4	4-	3-	31-	1.3	1.2	27
12		4-	2+	2-	2-	3-	2-	3	2	19-	0.5	0.6	10
13		2-	2	2+	3-	3-	2	1+	1+	16	0.4	0.4	8
14	D	3+	2	1	1+	4+	4	5-	8-	28+	1.4	1.4	39
15	D	7-	5-	3-	4+	5-	3-	3+	4	33	1.4	1.4	36
16		4	4-	3	2+	3	2	2+	3	23+	0.8	0.8	15
17	Q	2	3	3-	2+	0+	0+	1-	3	14+	0.4	0.4	8
18		3	2+	1+	2-	2-	3	2	4-	19-	0.6	0.6	11
19	Q	3	3	2+	2-	1	1+	1+	2-	15+	0.3	0.4	8
20	QQ	1-	2	1+	1+	1-	1-	2	0+	9	0.1	0.2	4
21		0	1-	2-	2	3-	4-	4+	6+	21+	1.0	1.1	22
22		5-	3	2-	2	3-	2+	3+	2+	22	0.9	0.8	14
23		1-	2+	2	3	1+	2-	4-	3	18-	0.7	0.6	10
24	QQ	1+	1	0+	0+	1-	0+	0+	0+	5-	0.0	0.0	3
25	QQ	0	0+	0	0	0+	0+	1-	0	2-	0.0	0.0	1
26	QQ	1-	0+	0+	0+	2+	2+	1	2	9+	0.1	0.2	5
27	Q	1+	2+	3-	2+	1+	1+	2	2+	16-	0.3	0.4	8
28		3-	4-	3	2+	5	5	2-	2-	25	1.2	1.1	21
29		3	2	2-	2-	2	2-	1+	3+	17-	0.6	0.5	9
30		4-	3-	2+	1+	2-	2	1-	0+	15-	0.5	0.4	8
										MEAN	0.68	0.69	15

GEOMAGNETIC ACTIVITY INDICES



DAILY AVERAGE INDICES Ap

DAY	1970 MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	1971 JAN.	FEB.	MAR.	APR.
1	11	28	10	4	23	10	2	1	6	16	4	12
2	9	9	11	6	18	9	4	4	19	9	4	7
3	10	11	24	4	15	14	8	4	33	4	9	16
4	6	8	26	4	11	25	7	5	16	4	14	27
5	12	6	16	3	8	9	9	8	9	4	5	11
6	6	3	15	8	5	6	12	8	4	6	4	14
7	6	9	5	12	6	4	58	8	1	6	4	6
8	4	13	10	26	8	2	8	19	0	10	15	6
9	4	5	87	19	5	2	8	6	1	10	6	53
10	2	6	34	7	6	7	17	3	6	10	15	30
11	3	4	10	9	1	15	20	2	8	5	7	27
12	15	5	14	9	5	16	10	4	3	6	20	10
13	6	10	10	6	24	9	9	4	6	4	39	8
14	13	8	9	4	19	8	7	65	9	16	29	39
15	10	13	5	7	11	4	4	14	8	29	22	36
16	6	9	6	21	8	37	5	4	7	28	14	15
17	10	13	8	115	8	34	6	3	6	13	9	8
18	5	27	5	36	10	39	18	3	15	12	6	11
19	6	8	5	14	18	11	18	10	13	9	16	8
20	13	18	6	4	15	7	3	8	29	8	13	4
21	8	17	30	5	23	1	30	4	12	7	3	22
22	6	4	12	6	12	18	18	6	10	3	3	14
23	7	4	9	7	6	29	21	7	6	13	3	10
24	6	6	26	4	6	14	12	14	10	13	14	3
25	7	6	92	8	8	6	13	4	9	43	12	1
26	2	13	21	17	6	4	8	4	2	31	15	5
27	15	35	14	12	19	5	10	8	37	10	9	8
28	45	7	4	12	7	15	8	18	39	6	2	21
29	13	6	45	10	5	13	2	12	16		2	9
30	11	5	7	5	9	9	1	13	26		9	8
31	6		14	12		4		2	17		26	
MEAN	9	10	19	13	11	12	12	9	12	12	11	15

PRINCIPAL MAGNETIC STORMS

APRIL 1971

DATE 1971 MO DA	STORM TIME UT START	STORM TIME UT END MO. DA. HR	OBS.	GEO-MAG. LAT.	SUDDEN COMMENCEMENT TYPE	AMPLITUDES D(')	AMPLITUDES H(γ)	AMPLITUDES Z(γ)	C FIGURE DEGREE OF ACTIVITY	MAXIMAL ACTIVITY ON K-SCALE 0 TO 9 MO. DA.	3-HOUR PERIOD	K INDEX	RANGES D (')	RANGES H (γ)	RANGES Z (γ)	STORM NUMBERS
04 03	003-	04 04 23	COLL	64.6N	••	••	••	••	MS	04 03	4	6	130	1310	550	14
	2139	04 04 23	NEWP	55.1N	SC *	4	32	--	M	04 04	1,8	5	22	140	127	14
	2139	04 04 24	WITT	54.1N	SC	- 1	+52	0	M	04 03	8					14
										04 04	1,6,7	5	20	150	90	14
	2139	04 04 23	FRED	49.6N	SC *	+ 3	+59	- 8	M	04 04	1	6	28	115	56	14
	2139	04 05 00	BOUL	49.0N	SC *	+ 1	+39	--	M	04 04	1,6	5	19	90	70	14
	2140	04 04 23	IRKU	40.8N	SC *	- 3.6	26	2	M	04 04	6,7	5	21	91	19	14
	2139	04 04 23	TUCS	40.4N	SC	- 1	+36	+ 1	M	04 03	8	5	10	90	10	14
										04 04	1	5				14
	2139	04 04 23	SJUA	29.9N	SC	+ 1.0	+25	+ 7	M	04 03	8	5	7	78	16	14
										04 04	6	5				14
	2139	04 05 00	MBOR	21.3N	SC	0	+37	- 3	M	04 03	8	5	1	72	6	14
	2139	04 05 00	HONO	21.1N	SC	- 0.5	+23	+ 8	M	04 03	8	5	5	90	10	14
	2139	04 04 23	ALIB	9.5N	SC	- 0.7	+28	- 9	M	04 04	6,7	5	4	138	41	14
	2137	04 04 23	HYDE	7.6N	SC	- 0.6	+28	- 1	M	04 04	6,7	5	4	147	19	14
	2139	04 04 19	GUAM	4.0N	SC	--	22	-07	M	04 04	6	5	0	40	10	14
	2139	04 04 23	ANNA	1.5N	SC	- 1.1	+32	+18	M	-- --	-	-	4	202	56	14
	2139	04 04 23	TVAN	1.1S	SC	+ 0.3	+24	+32	M	-- --	-	-	2	229	130	14
	2139	04 05 04	APIA	16.1S	SC	- 1	+25	- 4	M	04 03	8	5	5	103	30	14
	2139	04 05 00	PMOR	18.6S	SC *	- 1.1*	+22	+20	M	04 03	8	5	5	100	50	14
										04 04	6					
04 03	2139	04 05 01	HRMN	33.3S	SC	+ 3	+35	+27	M	04 04	6	5	19	94	96	14
04 09	0428	04 12 15	COLL	64.6N	SC *	+ 1	+41	+ 6	MS	04 09	4,6	7	334	1510	940	15
	0427	04 12 03	SITK	60.0N	SC *	-	+ *	+	MS	04 09	4	7	90	1160	590	15
										04 10	2	7				15
										04 11	4	7				15
	0429	04 12 03	NEWP	55.1N	SC	1	18	--	MS	04 09	3	6	52	263	363	15
										04 10	2	6				15
	0428	04 10 23	WITT	54.1N	SC	- 2	+10	0	MS	04 09	7	7	35	220	125	15
	0429	04 12 04	FRED	49.6N	SC	0	+15	- 2	MS	04 09	3,4	6	43	142	114	15
	0428	04 12 12	BOUL	49.0N	SC	--	+15	--	MS	04 09	3	6	32	210	80	15
	0428	04 11 21	IRKU	40.8N	SC	0.8	19	2	MS	04 09	5	7	30	184	74	15
	0430	04 12 03	TUCS	40.4N	••	••	••	••	MS	04 09	3,4	6	16	180	20	15
	0428	04 10 05	SJUA	29.9N	SC	--	+ 8	+ 2	M	04 09	3,4,5	5	16	122	54	15
	0429	04 12 03	MBOR	21.3N	SC	- 0.2	+10	- 1	M	04 09	5,6,7	5	4	59	44	15
	0427	04 12 03	HONO	21.1N	SC	--	+10	+ 3	MS	04 09	4	6	5	140	30	15
	0428	04 09 23	ALIB	9.5N	SC	- 0.4	+21	- 6	MS	04 09	3,4,5	6	6	266	68	15
	0428	04 11 22	HYDE	7.6N	SC	- 0.2	+23	- 3	M	04 09	4,5	7	7	280	36	15
	0428	04 12 04	GUAM	4.0N	SC *	--	19	-05	MS	04 09	3	6	0	120	10	15
	0428	04 09 23	ANNA	1.5N	SC	- 0.9	+37	+ 9	MS	-- --	-	-	5	324	85	15
	0428	04 09 23	TVAN	1.1S	SC	+ 0.0	+37	+38	MS	-- --	-	-	4	355	225	15
	0430	04 12 05	APIA	16.1S	SC	+ 0	+10	- 4	MS	04 09	3	6	5	167	37	15
	0428	04 11 21	PMOR	18.6S	SC *	+ 0.6*	+14	+15	MS	04 09	5	6	7	200	90	15
	0427	04 12 01	HRMN	33.3S	SC	+ 0.4	+10	+ 6	MS	04 09	6	6	32	171	144	15
	0428	04 11 18	GNAN	43.2S	SC	- 0	+ 9	- 2	MS	04 09	6	6	20	140	190	15
	0428	04 12 06	TOOL	46.7S	SC *	+ 1.2	+19	+ 3	MS	04 09	4	6	26	170	110	15
	0429	04 11 17	AMBE	47.7S	SC *	+ 0.7	+18.8	+ 4.2	M	04 09	3,4,5	5	34	151	78	15
	0428	04 12 07	KGLN	57.3S	SC	--	--	--	MS	04 09	6,7	6	--	--	--	15
04 14	082-	04 16 17	COLL	64.6N	••	••	••	••	MS	04 14	5	6	143	1300	720	16
										04 16	4	6				16
	1242	04 15 14	SITK	60.0N	SC *	- *	- *	-	MS	04 15	1	7	70	720	560	16
	1243	04 16 13	NEWP	55.1N	SC	6	18	3	MS	04 14	8	6	39	231	376	16
										04 15	1	6				16
	1243	04 15 14	WITT	54.1N	SC *	- 5 *	+48 *	0	MS	04 14	8	7	60	260	140	16
	1243	04 16 12	FRED	49.6N	SC *	+ 1	+10	- 1	MS	04 15	1	7	36	123	166	16
	1243	04 16 15	BOUL	49.0N	SC	- 3	+ 9	--	MS	04 15	1	7	42	135	130	16
	1242	04 15 15	IRKU	40.8N	SC *	2.8	34	7	MS	04 14	8	6	28	201	63	16
	1243	04 15 11	TUCS	40.4N	SC	+ 2	+15	--	MS	04 15	1	6	20	160	30	16
	1343	04 15 06	SJUA	29.9N	SC	- 0.5	+ 5	+ 2	MS	04 14	7,8	6	20	145	25	16
										04 15	1					16
	1243	04 16 14	MBOR	21.3N	SC *	- 1.8*	+31	-10	MS	04 15	1	6	3	79	16	16
	1242	04 16 05	HONO	21.1N	SC	+ 0.5	+15	+ 5	M	04 14	8	5	5	160	15	16
	1242	04 15 14	ALIB	9.5N	SC	- 0.2	+17	- 3	M	04 14	5,7,8	5	7	127	48	16
										04 15	1,5					
	1242	04 15 19	HYDE	7.6N	SC	- 0.2	+16	- 1	M	04 14	7,8	5	6	129	20	16
										04 15	1,4,5					16
	1243	04 15 14	GUAM	4.0N	SC	--	17	-05	M	04 14	7	5	0	70	10	16
	1242	04 15 14	ANNA	1.5N	SC	- 0.7	+21	+10	M	-- --	-	-	5	127	45	16
	1242	04 15 14	TVAN	1.1S	SC	+ 0.2	+16	+24	M	-- --	-	-	4	169	93	16
	1242	04 15 14	APIA	16.1S	SC	0	+13	- 1	M	04 14	7,8	5	5	157	37	16
	1243	04 15 15	PMOR	18.6S	SC	+ 0.2	+21	+17	M	04 15	5	5	7	130	50	16
	1243	04 15 14	HRMN	33.3S	SC *	+ 3	+16	+17	MS	04 14	8	6	26	116	136	16
	1242	04 16 16	GNAN	43.2S	SC	+ 1	+19	+ 5	MS	04 14	7,8	6	20	130	130	16
										04 15	5					16
	1243	04 16 00	TOOL	46.7S	SC	--	+32	+ 6	M	04 14	7,8	5	24	190	60	16
	1243	04 15 14	AMBE	47.7S	SC	+ 0.2	+28.2	+ 2.2	M	04 14	7,8	5				16
										04 15	4	5	24	216	101	16
	1243	04 16 16	KGLN	57.3S	SC *	--	--	--	S	04 14	8	8	--	--	--	16

PRINCIPAL MAGNETIC STORMS

APRIL 1971

DATE 1971 MO. DA.	STORM TIME UT START	STORM TIME UT END MO. DA. HR.	OBS.	GEO-MAG. LAT.	SUDDEN COMMENCEMENT TYPE	AMPLITUDES D(')	AMPLITUDES H(γ)	AMPLITUDES Z(γ)	C FIGURE DEGREE OF ACTIVITY	MAXIMAL ACTIVITY ON K-SCALE 0 TO 9 MO. DA	3-HOUR PERIOD	K INDEX	RANGES D (')	RANGES H (γ)	RANGES Z (γ)	STORM NUMBERS
04 21	1628	04 22 03	WITT	54.1N	SC	- 1	+20	0	M	04 21	8					17
										04 22	1	5	20	125	90	17
	10--	04 22 03	IRKU	40.8N	..	..	..	..	M	04 21	6,8	5	18	114	33	17
										04 22	1	5				17
	1332	04 23 00	MBOR	21.3N	SC *	- 0.2	+ 4	- 4	M	04 21	7,8	5	2	62	14	17
	0600	04 22 11	HYDE	7.6N	..	..	..	..	M	04 21	5,6,7,8	4	4	138	20	17
	1333	04 22 10	GUAM	4.0N	..	..	06	-01	M	04 22	1	5	0	70	10	17
	1334	04 22 03	HRMN	33.3S	SC *	--	+ 2	--	M	04 21	7,8	5	15	75	93	17
	1628	04 22 08	AMBE	47.7S	..	..	..	..	M	04 21	8	5	9	122	30	17
04 28	01--	04 28 17	COLL	64.6N	..	..	..	..	MS	04 28	6	7	158	1210	520	18
	04--	04 30 08	TUCS	40.4N	..	..	..	..	M	04 28	6	5	10	65	10	18
	1305	04 30 08	MBOR	21.3N	SC	- 2.7	+40	-13	M	04 28	5	5	7	73	19	18
	1304	04 30 08	HYDE	7.6N	SC	- 0.9	+29	- 1	M	04 28	5,6	5	3	148	20	18
	2028	04 30 07	GUAM	4.0N	..	..	04	..	M	04 30	1	5	0	50	20	18
	1307	04 28 17	HRMN	33.3S	SC	+ 2	+26	+21	M	04 28	5	5	6	49	67	18

SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

APRIL 1971

PRELIMINARY REPORT ON RAPID MAGNETIC VARIATIONS (by Dr. A. Romana)

The meaning of the station-symbols is given in the IAGA-Bulletins nr. 12.1 and 12.2. Times of ssc and si are mean values. If given by ten or more stations they are underlined.

Sudden commencements follwed by a magnetic storm or a period of storminess (ssc)

03 2139 A: MA FU AQ LG IK FR* AE SF KS LM TE MB HU TN; B: WN WI OT* TL SZ PM HR; C: NI KA (si: A: AM)

09 0428 A: NU MA SF KS LM TE HU; B: SO* WN* WI VI FU AQ IK LG CI TL FR KA MB PM* TN HR AM; C: LE ES NI SZ

14 1243 A: SO* NU WN* NI* MA* FU* JO* OT AQ* TL* FR* AE KA SF* KS MB* HU* LM; B: LE* ES WI* VI LG IK* SZ TE PM HR AM; C: TN

21 1333 A: SF*; B: WN* MA FU* IK CI FR* MB*; C: NI LM HR* (si: A: JO; B: WI AQ HU; bs:B: SO)

21 1628 A: SF; B: WI JO; C: SI TL SZ (si: A: MA*; B: WN; bps: C: KA)

28 1306 A: JO AQ AE SF KS SZ MB HU TN; B: LE WI NI MA* VI IK* HR; C: ES TL (si: A: NU FU KA TE LM AM; B: OT LG PM; bps: A: SO)

Sudden impulses found in the magnetograms (si)

20 1814 A: SO FR; B: LE ES* WN* WI FU LG MB HU; C: TL SZ LM (ssc: A: SF; B: AQ KS; C: NI IK AE; bp: B: MA)

23 0931 B: WN* AQ IK LM; C: LG TL KA (ssc: B: MA* VI; C: WI; bp: A: SO; bps: B: HR; sfe: TN)

28 1544 A: WN* FU SF SZ HU AM; B: LE ES* WI NI TL KA MB LM (bps: B: HR)

29 0818 A: FU TE; B: WI LG SZ MB TN LM HR; C: WN KA (ssc: A: KS; B: IK; C: NI*)

Solar-flare effects (sfe)

Effects confirmed by ionospheric or solar observations are underlined.

01 0754 - 0812 SZ
02 1404 - 1419 SZ
04 2115 - ---- TE
06 1018 - 1033 SZ
06 1422 - 1431 MA HU (si: B: AE SZ;C: TL)
20 0101 - 0200 KA
20 0516 - 0555 KA (si: B: LM)
20 1121 - 1130 SZ
22 0940 - 1015 WN
23 1115 - 1129 MA
23 1213 - 1223 SZ TN (si: C: LG)
26 1419 - 1444 SZ
30 1542 - 1558 HU

These stations have reported an ssc (with reversed initial impulse).

RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

APRIL 1971

North Atlantic

APR 1971	WHOLE DAY INDICES NORTH ATLANTIC	ADVANCE FORECASTS (JC-REPORTS) FOR WHOLE DAY	NORTH ATLANTIC 6-HOURLY QUALITY FIGURES 00 TO 06	06 TO 12	12 TO 18	18 TO 24	SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF 02	08	14	20	GEOMAGNETIC INDICES K_{FR} HALF DAY (1)	(2)	A_{FR} OBSERVED
01	6−	6	5o	6−	6o	6o	6	5	6	6	3	1	12
02	6o	6	6+	5+	7−	6o	6	6	6	6	1	2	7
03	6+	6	6−	6+	7o	6o	6	6	6	6	(4)	3	19
04	6−	6	6−	5+	6+	6o	6	5	6	6	(4)	(4)	27
05	6o	6	6−	5o	7−	6+	5	6	6	6	1	3	11
06	6−	6	6−	4−	7−	6o	6	6	6	6	3	2	12
07	6+	6	6−	5o	7o	7o	6	6	6	6	2	1	6
08	7−	5	7−	7−	7o	6o	6	7	7	7	1	2	6
09	5o	5	6o	5−	6−	4o	6	5	5	5	(5)	(4)	43
10	5−	5	3o	4+	6o	6−	4	4	4	5	(4)	3	23
11	6o	6	6o	5o	6+	6+	6	6	5	6	(4)	3	24
12	6o	6	7−	5−	7−	7−	5	6	6	5	3	2	10
13	6−	6	6o	5+	6−	6o	5	6	7	6	2	2	8
14	6−	6	6+	5+	7−	5−	6	7	7	6	2	(4)	22
15	5o	7	4+	5−	5o	5+	6	4	4	4	(4)	3	33
16	6−	7	5+	5+	6−	6+	5	5	5	5	3	2	13
17	6+	7	7−	5+	6+	7o	5	6	6	6	2	1	6
18	7−	7	7−	6+	6+	7o	7	7	7	7	2	2	8
19	6+	7	6+	6o	6+	7o	7	7	7	6	2	2	8
20	7−	7	6+	6o	7−	7o	6	6	7	6	2	2	6
21	6o	7	7−	6−	6o	6o	6	7	7	6	1	3	11
22	5+	6	6−	5−	6o	6−	5	6	7	6	3	2	13
23	6o	6	6+	5o	6+	6+	6	6	6	6	2	2	8
24	7−	6	7−	6o	7−	7−	6	7	7	7	1	0	2
25	7−	6	7−	6+	7−	7−	7	7	7	7	1	0	1
26	7−	6	7o	6o	7o	7−	7	7	7	7	0	2	4
27	6o	6	7o	5o	6o	6+	6	7	7	6	3	2	8
28	6+	6	7−	6o	6+	6o	6	6	6	6	3	3	16
29	6+	5	7−	5+	7o	7o	5	5	6	6	3	3	12
30	7−	5	7−	6−	7o	7o	6	6	6	6	3	1	10

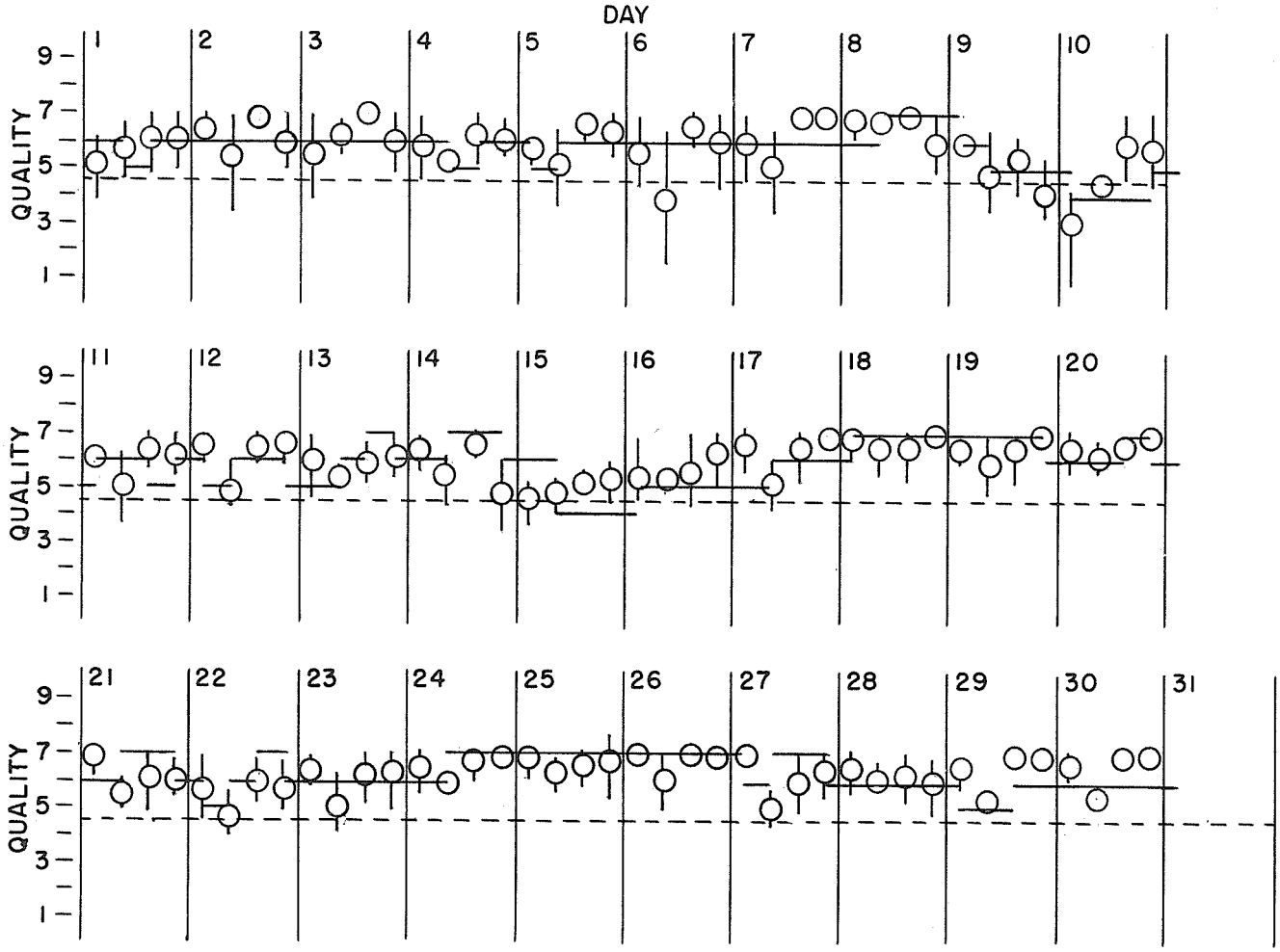
RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

APRIL 1971

North Atlantic

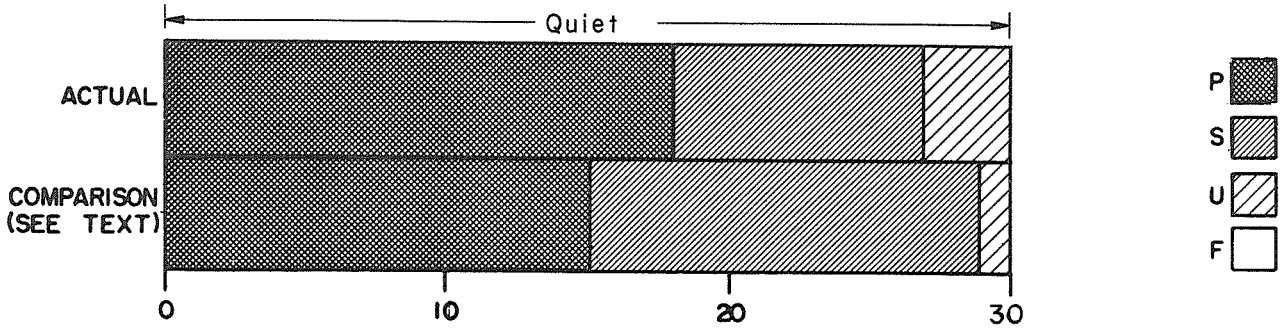
— Short term forecast
o Quality figure

I range of reports



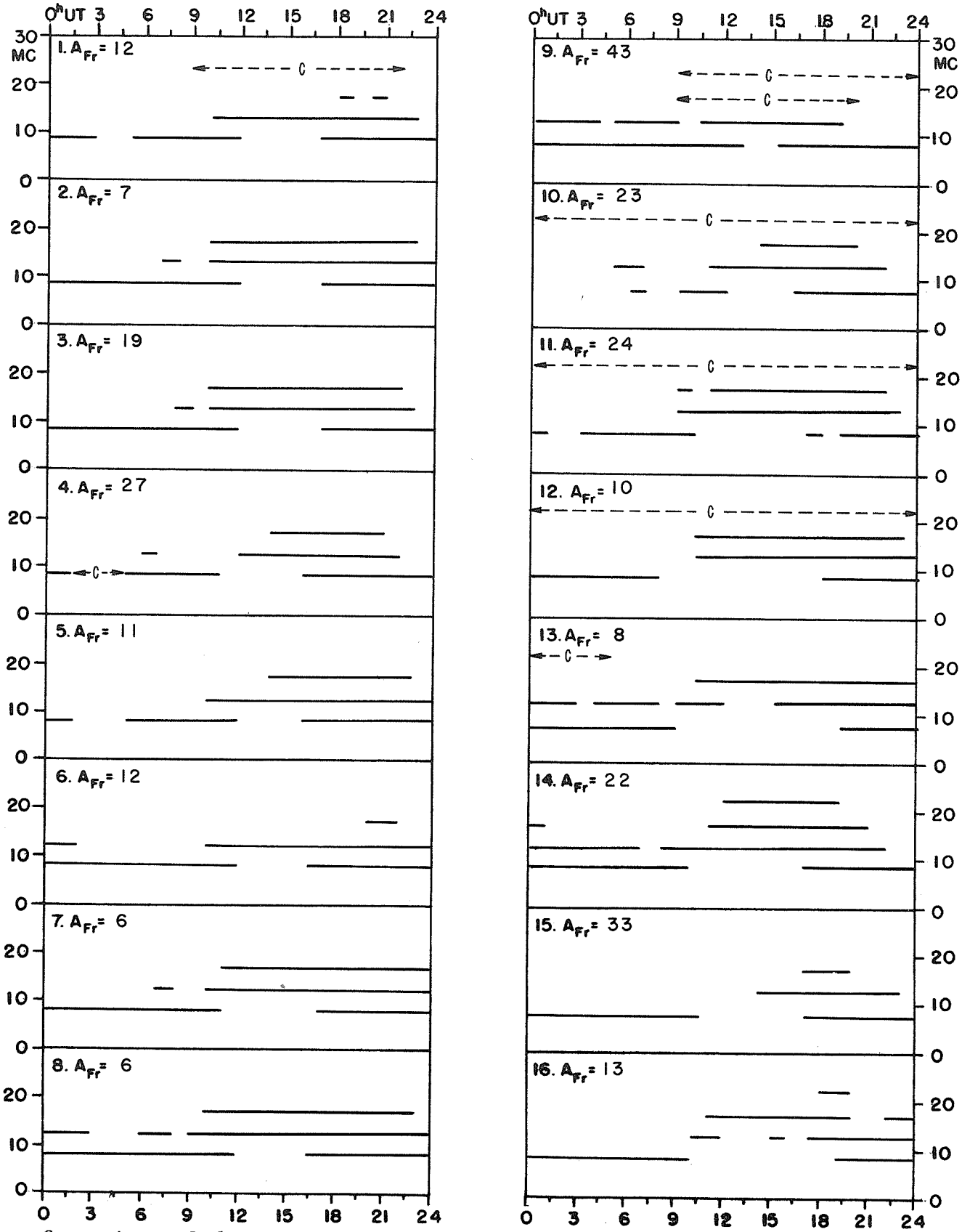
Outcome of advance forecasts of High Latitude radio propagation conditions
(Scored against observed North Atlantic radio propagation conditions)

HIGH LATITUDE



TRANSMISSION FREQUENCY RANGES--NORTH ATLANTIC PATH

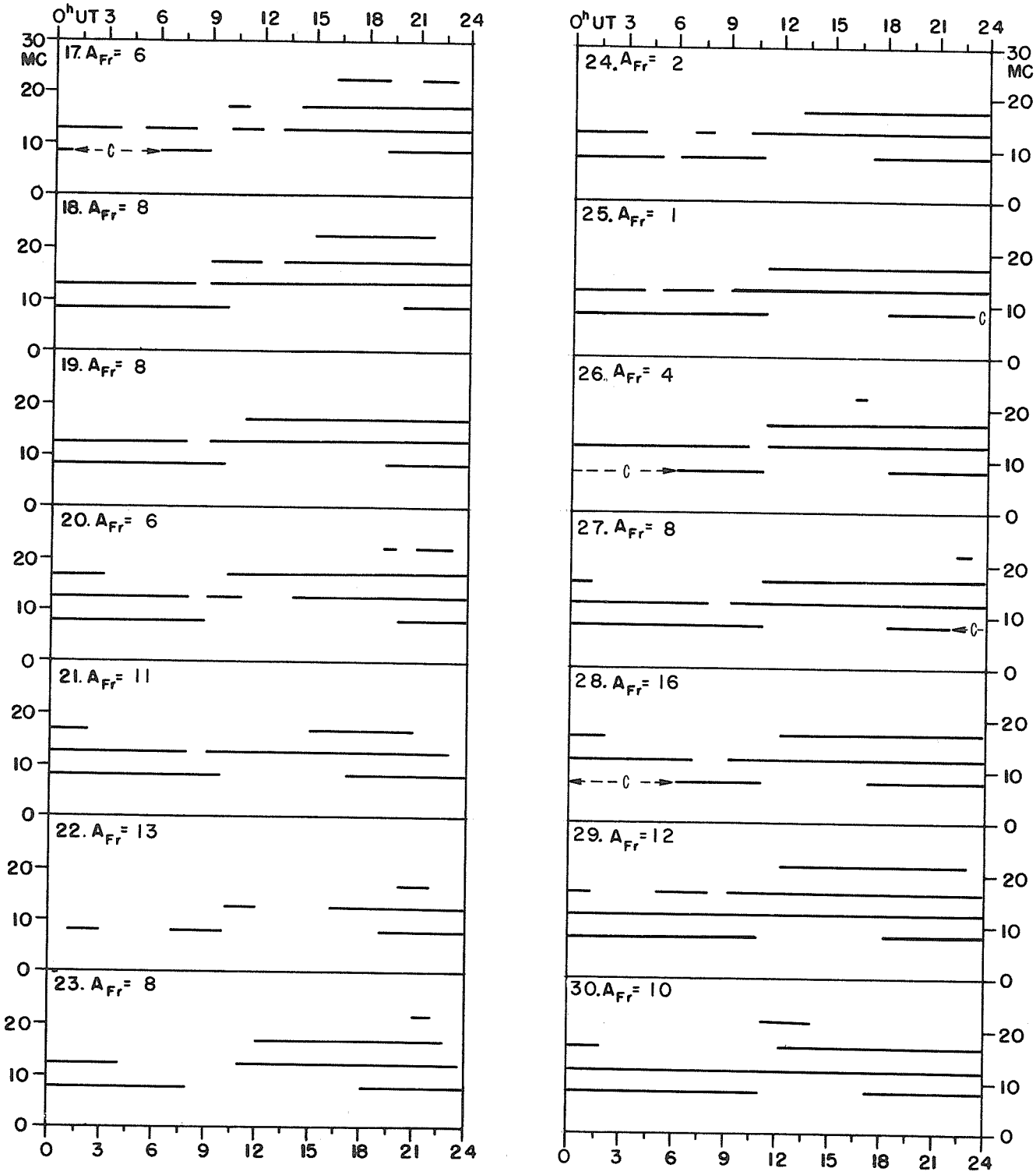
APRIL 1971



C = equipment failure

TRANSMISSION FREQUENCY RANGES--NORTH ATLANTIC PATH

APRIL 1971



Adapted from Observations by Deutsche Bundespost

The S-meter readings on the North Atlantic path are no longer available. However, field strengths are observed at four frequencies on a Luchow-Halifax circuit. These are 8.542, 12.813, 17.084 and 22.378 MHz. Lines are drawn when the field strength is ≥ -12 db above 1 μV/m. This value corresponds roughly to the shaded area used in the past.

USCOMM-NOAA-ASHEVILLE-6-30-71--1125