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ENVIRONMENTAL RESEARCH LABORATORIES

Solar-Geophysical Data

(Prompt Reports)

NUMBER 319-PART I
DATA FOR
FEBRUARY 1971
JANUARY 1971

DATA COMPILED BY AERONOMY AND SPACE DATA CENTER
BOULDER, COLORADO

WASHINGTON, D.C.
MARCH 1971

SOLAR-GEOPHYSICAL DATA

Table of Contents

	Page
Part I	
Index for 1970 and 1971	2
Data for February 1971	3-27
Data for January 1971	29-108
Part II	
Index for 1970 and 1971	2
Data for September 1970	3-75
Data for August 1970	77-85

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

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

Table of Contents
for February 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
Zürich Smoothed Observed and Predicted Sunspot Numbers	9
Solar Flares	
Flares of Numerical Importance 1 or Greater	10
Subflares	11-12
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	19-21
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

FEBRUARY 1971

FEB. 1971	TIME OF ISSUE UT	ADVANCE GEOPHYSICAL ALERT	WORLDWIDE GEOPHYSICAL ALERT	
			NO.	TYPE INCLUDING FLARE ACTIVITY EXPECTED
01	0400			S11W21, N07E12 ERUPTIVE; FOUR QUIET; SOLNIL
02	0400			N08E01 ERUPTIVE; FOUR QUIET; SOLNIL
03	0400			N08W13, S11W49 ERUPTIVE; FOUR QUIET; SOLNIL
04	0400			N08W26, S11W62, S07E27 ERUPTIVE; FOUR QUIET; SOLNIL
05	0400		05212	SOLALERT; N08W41, S07E12 ERUPTIVE; FOUR QUIET
	2235	BOULDER TENFLARE 675 UNITS TOTAL 05/2222Z DURATION ABOUT 7 MINUTES		
06	0400		06213	SOLALERT; S06E01, N07W53 ERUPTIVE; THREE QUIET
07	0400			N08W67 ERUPTIVE; FOUR QUIET; SOLNIL
08	0400			FIVE QUIET; SOLNIL
09	0400			FIVE QUIET; SOLNIL
10	0400			FIVE QUIET; SOLNIL
11	0400			FIVE QUIET; SOLNIL
12	0400			SEVEN QUIET; SOLNIL
13	0400			FIVE QUIET; SOLNIL
14	0400			SIX QUIET; SOLNIL
15	0400			SEVEN QUIET; SOLNIL
16	0400			FIVE QUIET; SOLNIL
17	0400			S17E90 ERUPTIVE; SIX QUIET; SOLNIL
18	0400			S16E76 ERUPTIVE; SIX QUIET; SOLNIL
19	0400			S16E60 ERUPTIVE; SIX QUIET; SOLNIL
20	0400			S17E49 ERUPTIVE; NINE QUIET; SOLNIL
21	0400			S16E36 ERUPTIVE; SEVEN QUIET: SOLNIL
	0800	WENDELSTEIN SOFLARE CLASS 1N 22N55W DURATION 16 MINUTES		
22	0400			NINE QUIET; SOLNIL
23	0400			N07E81, S17E09 ERUPTIVE; EIGHT QUIET; SOLNIL
24	0400			S17W05 ERUPTIVE; EIGHT QUIET; SOLNIL
25	0400			N08E52 ERUPTIVE; SEVEN QUIET; SOLNIL
26	0400		26214	MINOR MAGSTORM BEGINS 25/0100Z; NINE QUIET; SOLNIL
27	0400		27215	MAGSTORM EXISTS MINOR; SIX QUIET; SOLNIL
28	0400		28216	MAGSTORM ENDS 27/1800Z; SIX QUIET; SOLNIL

RELATIVE SUNSPOT NUMBERS

ZURICH, R_z

	1970 FINAL												1971 PROVISIONAL	
DAY	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.
1	115	121	137	112	118	102	137	77	98	63	86	91	58	77
2	83	96	129	105	118	92	153	68	104	57	82	78	62	78
3	78	82	113	121	122	64	155	64	110	43	80	78	62	68
4	69	68	107	116	119	63	159	59	115	55	78	76	69	80
5	66	72	107	120	113	59	165	65	120	75	67	88	52	65
6	57	93	103	115	115	57	161	68	133	53	89	90	52	73
7	30	104	111	123	98	58	125	72	136	72	86	91	56	75
8	37	102	118	147	87	61	115	82	125	76	69	100	66	60
9	59	123	120	172	90	60	104	76	116	78	77	96	74	37
10	84	133	125	188	111	92	90	71	103	79	78	110	70	37
11	106	175	103	183	132	122	81	75	82	75	97	120	68	62
12	138	153	88	163	134	138	74	73	76	80	89	110	75	50
13	145	145	104	141	142	153	79	92	73	84	105	90	70	63
14	160	124	84	124	145	165	68	94	76	87	117	85	67	60
15	155	115	65	106	159	168	61	108	75	87	125	84	61	69
16	145	139	48	92	161	153	61	100	68	94	133	68	65	66
17	160	142	29	82	169	148	59	99	65	84	135	63	68	62
18	168	143	41	68	173	134	56	108	75	76	135	79	86	68
19	165	120	48	67	176	105	92	113	98	83	132	95	98	87
20	133	125	93	65	146	99	92	117	114	70	128	104	104	91
21	118	128	115	64	143	96	120	117	129	69	119	101	106	91
22	104	132	122	57	125	96	122	108	109	73	105	97	105	100
23	79	164	135	67	106	87	106	101	104	89	96	85	96	87
24	73	166	140	90	122	102	110	116	129	100	77	66	99	98
25	98	173	142	93	110	126	122	114	114	111	62	75	82	93
26	123	143	122	81	125	127	138	109	107	117	65	64	88	69
27	130	150	115	88	126	114	153	91	87	142	74	53	111	66
28	156	146	110	106	106	113	146	101	85	131	89	50	99	71
29	154		103	112	118	124	153	114	81	139	78	59	95	
30	138		111	116	116	127	122	120	77	126	103	74	74	
31	131		101		127		108	111		117		68	76	
MEAN	111.5	127.8	102.9	109.5	127.5	106.8	112.5	93.0	99.5	86.6	95.2	83.5	77.9	71.5

1970 yearly mean = 104.5

DAILY SOLAR FLUX AT 2800 MHz
OTTAWA ARO

FLUX ADJUSTED TO 1 A.U., S_a

	1970										1971	
DAY	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.
1	175.7*	160.8*	159.5	145.6	179.9	134.0*	154.1	128.7	163.3	146.4	130.5	165.6
2	173.0	167.1	160.7*	141.8	189.0*	128.5	156.7	125.4	159.1	148.4*	134.8	160.5
3	167.3	163.5	163.5	133.4	194.6*	127.9	163.2*	126.0	153.2*	148.1	134.7	154.7
4	165.3	170.4	162.3	131.7	195.0	127.4	163.4*	137.3	148.3	154.0	140.2	148.6*
5	169.8	179.4*	167.9	132.9*	191.0	128.4	162.3*	134.5	147.5	161.9*	146.1	144.7
6	167.8	192.9	163.3	130.0	186.4	128.0	161.5	128.0*	149.8	167.5	146.9	143.7
7	168.4*	193.4*	162.4	134.5*	166.3	128.2	164.4	133.3	150.6	166.5*	150.2	133.4
8	172.8*	203.1*	156.7	134.2	160.4	131.8	156.9	142.0	141.1	167.3	149.1	123.2
9	164.4	218.5	154.9*	138.2	148.4	138.3	157.2	144.9*	141.9	171.5	152.8*	110.4
10	158.3	224.7*	162.8	145.9	143.8	137.3	143.9	147.6	147.8	170.9	152.1	109.5
11	156.3*	206.4	176.2	169.5	137.7	127.2	134.4	142.8	155.6	172.6*	149.0	109.7
12	164.4	198.5*	180.3	171.7	135.4	136.9*	126.1	135.4	165.1*	178.4*	150.5	110.5
13	152.4*	185.3	193.1	200.3*	130.7	149.7	120.1	131.8*	179.1	164.3	148.1	113.2
14	147.3	173.8*	196.8	207.4*	126.3	167.0*	121.9	134.9*	186.4*	154.6	153.9	114.8
15	144.9	163.6	206.3	209.2	121.9	169.1	118.0	140.2*	200.0	154.1	153.7	117.1*
16	139.0	152.2	206.0	198.6	121.4	162.5	118.4	134.0	193.5	146.7	156.4*	129.8
17	133.7	148.0	197.0	190.6	125.9	151.6*	116.9	131.5	184.1*	146.8	155.3	132.6
18	133.5	141.9	194.6	181.8	131.0	149.0	120.7	138.5	193.1*	151.6*	160.3	130.4
19	130.2	135.7	197.4	175.1*	135.8	145.4	134.7*	139.0	185.5*	152.4*	165.8	138.5*
20	141.1	131.2	183.9	163.3	136.4	148.6	146.9	137.2	173.7	155.6	169.2*	136.2*
21	149.7	126.3	174.9	160.6	150.6*	142.8	149.4	136.5	163.3*	146.3*	178.7	136.1
22	150.9*	128.6	170.3	150.1*	163.8	141.7	155.2	135.0	154.2	136.8*	180.6	143.6
23	164.9*	130.1	163.7	143.7	158.7*	146.2	161.6	149.0	142.4	132.1	182.9	143.2
24	169.8*	130.1	162.6*	142.3	164.0	140.2	156.0*	161.2*	133.9	124.4	177.0	147.5
25	167.2	134.8	160.6	149.3	169.0	136.5	155.8	168.6*	127.9	124.0	168.6*	146.4
26	166.4*	135.3	162.8	151.4	176.3	135.7	155.9	187.1	129.3	122.3	164.9	143.2
27	159.2	138.0	155.2	160.0	185.9	137.2*	145.0	191.8	135.1	119.8	166.7	140.0
28	153.8	148.6	153.8	160.5	182.1	141.6	144.5*	190.3	148.9	117.3	166.2	136.6
29	153.1	156.1	158.5	168.0*	161.0	148.7	138.7	189.0	148.4	123.4	160.7	
30	149.4	153.3	163.7	174.8	156.1	149.0	134.7	175.2	152.5	129.0*	163.0	
31	149.3		165.2		141.5	154.5		168.6		133.3	170.1	
MEAN	156.8	163.1	172.2	159.9	157.0	141.6	144.6	147.3	158.5	148.0	157.4	134.4

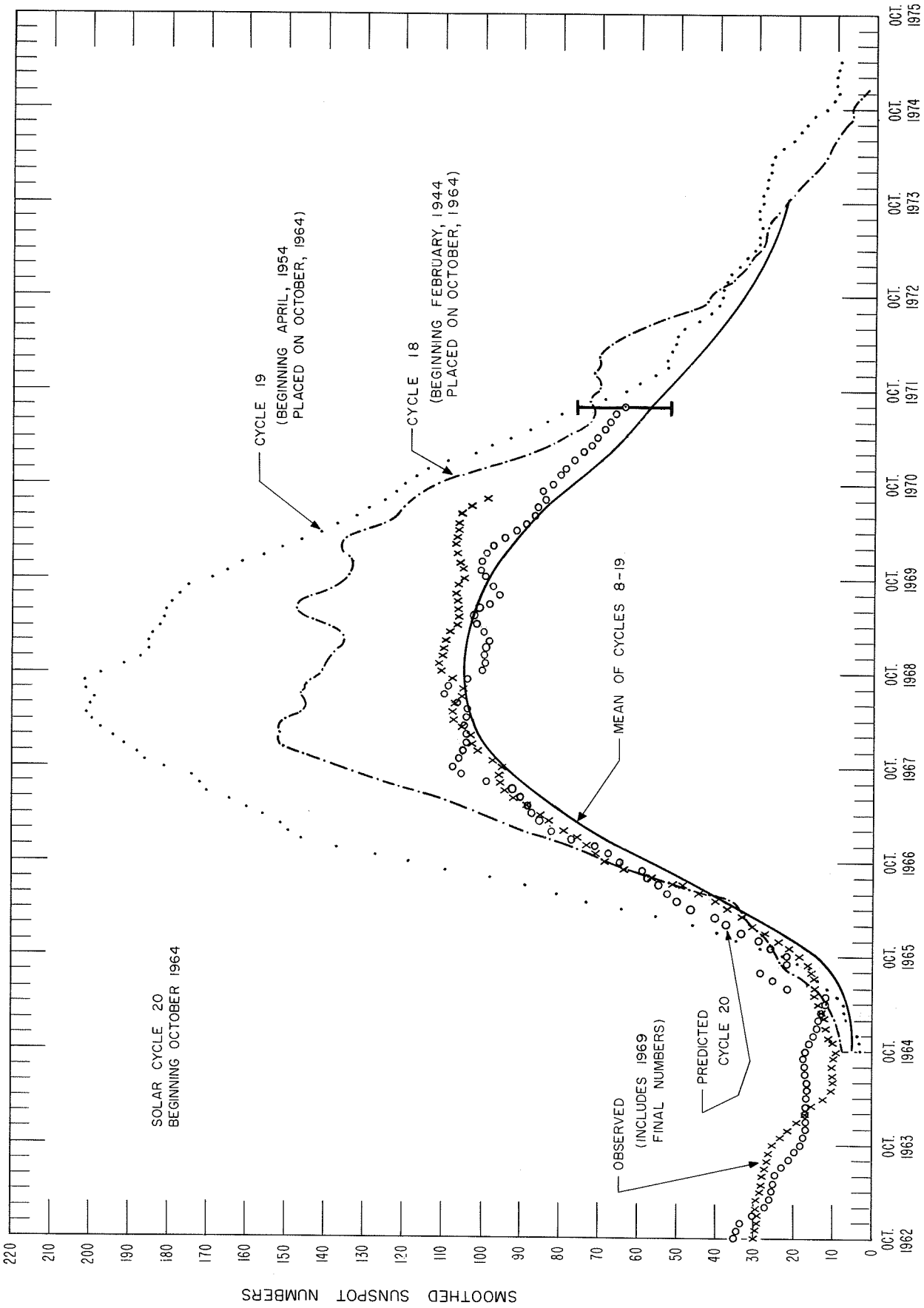
* adjusted for burst

DAILY SOLAR INDICES

FEBRUARY 1971

FEB. 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	32	3	77	88	170.5	538	259	236	165.6	158.4	114.3	69.9	23.3
02	33	4	78	89	165.3	540	268	239	160.5	154.1	115.4	68.0	13.6
03	34	5	68	85	159.3	544	262	234	154.7	142.4	109.6	66.8	17.8
04	35	6	80	80	152.9*	536	256	226	148.6*	143.7	104.1	66.2	14.8
05	36	7	65	72	148.9	536	257	228	144.7	141.3	105.2	64.5	13.3
06	37	8	73	75	147.8	542	263	222	143.7	136.6	100.2	64.7	17.0
07	38	9	75	67	137.1	537	251	210	133.4	128.6	90.4	61.8	22.5
08	39	10	60	51	126.6	531	243	196	123.2	118.2	81.4	60.2	17.5
09	40	11	37	41	113.5	525	233	179	110.4	108.7	79.5	57.2	12.5
10	41	12	37	42	112.4	529	233	172	109.5	105.9	73.9	55.9	11.9
11	42	13	62	51	112.6	523	233	173	109.7	107.6	72.9	54.7	11.8
12	43	14	50	48	113.5	529	234	177	110.5	108.9	74.1	55.0	11.7
13	44	15	63	60	116.1	527	236	184	113.2	112.4	74.6	55.2	11.9
14	45	16	60	62	117.7	522	235	177	114.8	111.9	78.5	56.1	12.8
15	46	17	69	57	120.1*	530	237	183	117.1*	114.1	79.2	56.7	11.2
16	47	18	66	64	133.0	537	245	195	129.8	126.0	84.4	59.9	12.2
17	48	19	62	76	135.9	546	251	200	132.6	129.7	89.9	63.4	13.4
18	49	20	68	84	133.5	533	254	199	130.4	124.5	87.9	62.5	11.9
19	50	21	87	104	141.8*	551	253	209	138.5*	136.7	88.8	65.0	13.1
20	51	22	91	101	139.3*	546	238	201	136.2*	129.0	94.1	62.8	12.0
21	52	23	91	109	139.2	536		200	136.1	131.0	93.4	61.2	11.1
22	53	24	100	99	146.8	543	254	212	143.6	139.2	96.1	62.8	10.2
23	54	25	87	110	146.3	524	247	212	143.2	137.5	94.3	60.8	10.9
24	55	26	98	103	150.7	536	252	208	147.5	138.5	95.7	61.1	10.9
25	56	27	93	97	149.4	538	255	209	146.4	135.7	91.8	61.9	10.8
26	57	1	69	87	146.1	529	247	207	143.2	126.6	90.0	59.3	10.9
27	58	2	66	87	142.7	548	237	202	140.0	123.4	96.1	59.3	10.9
28	59	3	71	90	139.2	524	254	209	136.6	122.4	89.0	59.2	9.4
MEAN			71.5	77.8	137.8	535	248	204	134.4	128.3	90.9	61.1	13.3

* 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	106.0	106.9	105.8	104.5	105.1	105.6
1970	106.2	106.7	106.8	106.6	106.1	105.1	102.7	98.7	96.2	93.5	90.0	86.2
									(4)	(7)	(8)	(9)
1971	82.3	78.6	75.8	72.7	69.2	66.7	65.2	63.6	61.2	58.9	57.4	55.8
	(9)	(9)	(9)	(10)	(10)	(11)	(11)	(12)	(13)	(14)	(15)	(16)
1972	54.2	53.1	52.0	50.9	49.7	48.0	45.4	42.5	40.6	39.8	38.8	37.5
	(17)	(18)	(17)	(17)	(18)	(18)	(19)	(21)	(23)	(24)	(25)	(26)
1973	36.2	35.2	34.0	32.4	31.3	30.2	29.3	28.9	28.1	26.8	25.6	24.5
	(26)	(26)	(25)	(25)	(25)	(24)	(23)	(23)	(23)	(22)	(21)	(20)
1974	23.4	22.2	21.1	20.4	20.0	19.2	18.1	16.9	15.6	14.4	13.3	12.5
	(20)	(20)	(21)	(21)	(21)	(21)	(20)	(19)	(18)	(18)	(17)	(17)
1975	12.2	11.9										
	(16)	(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 1969.

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.

FEBRUARY 1971

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS					REMARKS
	DATE 1971 FEB	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
HTPR	03	1526	1605D	1536	S09	E33	.542	11145	6.1	39D	1B		C	1536	2.58	3.10			
RAMY	04	2005E	2108D	2107U	N07	W37	.632		2.1	63D	SN		C		.93				DE
LOCK	04	2100	2135	2114	N 4	W38	.633	11137	2.0	35	1N		C						
PALE	04	2128E	2139D	2128	N05	W38	.637		2.0	11D	SF		C		.72				F
HTPR	05	1032	1115	1037	S08	E08	.141		6.0	43	SN		C	1037	1.13	1.20			
WEND	05	1032E	1103		S10	E11	.199	11145	6.3	31D	1N		V		4.13				
CAPF	05	1032	1050D		S10	E09	.168		6.1	18D	SN		P	1042	1.65	1.68			
HURB	05	1034E	1053	1035	S09	E12	.211	11145	6.3	19D	1F						1.95		
LOCK	05	2220	2320	2225	S 9	E 1	.050		6.0	60	2N		C						V
PALE	05	2221	2316	2230	S10	E03	.083	11145	6.2	55	1B		C		2.71				FDE
WEND	06	0849E	0938D		S04	E05	.096	11145	6.7	49D	1F		V		3.09				
HTPR	06	0849	0917D	0852	S02	E01	.078		6.4	28D	SF		C	0852	.31	.30			D
ARCE	06	0853E	0935		S02	E00	.076		6.4	42D	SF		C	0853	.46	.50			
RAMY	08	1119E	1219	1129U	N23	W67	.950	11153	3.4	60D	1B		C		1.13				DE
RAMY	08			1141							SB				.83				
CATA	08	1120E	1130	1120	N21	W65	.936	11153	3.6	10D	1N		P	1120	1.16			162	
CATA	08	1140	1205D	1140	N17	W66	.935		3.5	25D	SN		P	1140	.46			174	
TEHR	08	1204E	1224	1206U	N20	W69	.955		3.3	20D	SN		C		.83				FDE
TEHR	08			1214															
RAMY	11	1818	1859	1822	N15	E78	.986		17.6	41	SN		C						F
RAMY	11			1839				11162			1N								
PALE	11	1818	1852	1822	N14	E76	.979		17.5	34	SN		C		.45				F
LOCK	11	1818	1840	1823	N08	E80	.988		17.8	22	SF		C						
LOCK	14	2316	2400	2326	S11	E73	.952		20.4	44	SN		C						
BOUL	14	2318	2326D	2321	S11	E75	.961		20.6	8D	SN	1	C	2320	.32	-0.00			
PALE	14	2318E	2400D	2333	S12	E74	.956	11163	20.5	42D	1N		C		2.35				FS
RAMY	15	1534	1619	1542	N18	E09	.444	11162	16.3	45	1N		C		1.24				F
HERS	16	0828	0845	0834	N14	W29	.581	11156	14.2	17	1N		C	0834	1.78	2.20			E
TEHR	16	0829	0907	0830	N13	W32	.609		14.0	38	SN		C		.73				F
PALE	18	0327	0350	0330	S16	E76	.964	11165	23.8	23	1B		C		1.63				F
TEHR	18	0340E	0352	0340U	S17	E77	.969		23.9	12D	SN		C		.55				F
CATA	18	1400	1415D	1405	N13	W10	.379		17.8	15D	SB		P	1405	1.22	1.33		224	
RAMY	18	1400	1438	1405	N13	W11	.387	11162	17.8	38	1N		C		2.06				UF
PALE	19	0004E	0107D	0004	S22	E23	.451	11163	20.7	63D	1N		C		1.99				F
PALE	19			0032							1N				2.62				
MANI	19	0004E	0011D	0006	S23	E27	.508	11163	21.0	7D	1F	2		0006	2.48	2.90			
PALE	19	0405	0415D	0415	S18	E66	.907	11165	24.1	10D	1F		C		1.18				F
TEHR	19	0413	0424	0415	S17	E62	.877		23.8	11	SN		C		.28				DE
BOUL	19	1606E	1745U	1621U	S20	E56	.826	11165	23.9	99U	1N	1	C	1621	1.29	2.29			
MANI	20	0815	0911	0820	N23	W45	.801	11162	17.0	56	1N	2		0820	1.65	2.70			
CATA	20	0825E	0850D	0830	N20	W45	.786	11162	17.0	25D	1B		P	0830	1.62	2.70		237	Z
ARCE	20	0916E	0925		N22	W48	.822	11162	16.8	9D	1F		C	0917	1.74	2.60			HIT
WEND	21	0800E	0816D		N22	W55	.876	11162	17.2	16D	1N		V		3.09				
TEHR	21	0803	0815	0805	N21	W57	.888		17.1	12	SN		C		.19				DE
TEHR	22	1001	1031	1020U	N08	E88	1.000		1.0	30	SN		V		.14				DE
HTPR	22	1004	1025	1007	N10	E85	.998	11173	28.8	21	1B		C	1007	1.03				BE
MEUD	22	1006E	1007D		N08	E85	.998	11173	28.8	1D	1B		C	1007	1.03				CE
MEUD	22	1015E	1028		N08	E85	.998	11173	28.8	13D	1N		C	1015	.83				
BOUL	22	1423U	1522	1431U	S16	W40	.644		19.6	59U	SF	1	C	1431	1.29	1.70			
RAMY	22	1437E	1519	1438U	S15	W36	.590		19.9	42D	1F		C		2.58				F
CATA	22	1445E	1505D	1453	S11	W36	.584	11165	19.9	20D	1N		P	1453	2.08	2.58		158	
RAMY	23	1707	1905	1732	N17	W42	.743	11164	20.6	118	1F		C		1.86				F
MANI	27	0454	0530	0505	S22	W87	.995	11163	20.7	36	1B	2		0505	.93	2.80			
ARCE	27	0815	1011	0825	S20	W90	.999	11163	20.6	116	1N		C	0825	1.35				
LOCA	27	1450	1510	1453	N08	E17	.387	11173	28.9	20	1B		V	1453	2.21	2.40			
RAMY	27	1450	1504	1452	N09	E16	.386		28.8	14	SN		C		.83				DE
HTPR	27	1451	1500	1452	N08	E18	.399		1.0	9	SB		C	1452	1.03	1.10			E
BOUL	27	1452	1507	1454	N 8	E15	.364		28.7	15	SN	1	C	1454	.75	.81			
CATA	27	1453	1540D	1453	N08	E17	.387		28.9	47D	SB		P	1453	.75	.81		209	
PALE	28	0047	0102	0053	N08	E53	.819		4.0	15	SN		C		.55				F
MANI	28	0049	0109	0055	N08	E54	.828	11176	4.1	20	1N	2		0055	1.75	2.98			

SOLAR FLARES

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

FEBRUARY 1971

01	0429	N04	E09	01	0854	N03	W43	01	1045E	N05	W44	01	1056	N07	W26	01	1243	S11	W26	01	1258	N08	E07
01	1403	N04	E46	01	1432E	N09	E08	01	1515	N04	W44	01	1919	N11	E14	01	1920	N12	E14	01	2016	S10	W30
02	0025E	N12	E11	02	0410	N10	E09	02	0500	N07	E00	02	0510	S15	W36	02	0542	S10	W32	02	0754	S13	W39
02	0755E	S15	W37	02	0757	S13	W38	02	0857	N07	W02	02	0940	N07	W02	02	0947E	N05	W03	02	1208	S22	E38
02	1211E	S20	E38	02	1303E	N07	W05	02	1304	N08	W05	02	1310	N07	W05	02	1322	S13	W42	02	1323	S13	W40
02	1325	S14	W40	02	1329	N08	W06	02	1339E	N09	W06	02	1350E	N09	W05	02	1430	N07	W03	02	1436E	N09	W06
02	1547E	S06	E51	02	1655	N03	W11	02	1657	N07	W13	02	1724	S03	E47	02	1725	N01	E47	02	1734	N09	W12
02	1736	N06	W14	02	1831	S08	E44	02	1834	S10	W42	02	1836	S12	W43	02	1838U	S12	W44	02	1846	S10	E43
02	1848E	S12	E45	02	1848	S08	E45	02	1851U	S10	E44	02	1853E	S10	E43	02	1854E	N10	E01	02	1907	N10	W06
02	1909E	N09	W10	02	1920	N09	W03	02	2102	N07	W16	02	2127	N06	W15	02	2232	S14	W46	03	0526	S15	W49
03	0604	N09	W17	03	0617	S05	E53	03	0937	N07	W15	03	0940	N07	W15	03	1202	S21	E24	03	1205	S21	E24
03	1210	S20	E24	03	1232	N07	W25	03	1236	S22	E24	03	1245E	S22	E22	03	1259	S14	W52	03	1401	S14	W52
03	1402E	S13	W53	03	1640E	N24	W05	03	1640E	S11	E31	03	1656	N24	W 7	03	1906	N 8	W20	03	2040E	S08	E30
03	2122	N 8	W24	03	2318	S20	E18	03	2331E	S21	E20	04	0445	N07	W25	04	0540E	N03	W31	04	0807E	S09	W71
04	0820E	S12	W67	04	0825	N05	W31	04	0830	N04	W32	04	0835E	N03	W36	04	0902	N10	W31	04	0905	N10	W30
04	0914	N08	W32	04	0916	N08	W32	04	0953	S08	E23	04	1232	N24	W16	04	1253	N27	W12	04	1259E	N06	W32
04	1312	N08	W32	04	1312	N24	W17	04	1355	S01	E23	04	1451	N24	W16	04	1454	N24	W19	04	1635	N05	W35
04	1735	N24	W18	04	1823	S 9	E17	04	1824	S 8	E17	04	1824E	S10	E19	04	1852	N 7	W35	04	1924	N 7	W40
04	1926	N 8	W40	04	1926	N08	W38	04	1950	S10	E17	04	1950	S 9	E18	04	1951E	S09	E17	04	1954E	S10	E17
04	2056	S 8	E18	04	2058	S 8	E19	04	2259	S08	E16	05	0361	N08	W40	05	0524	S09	E13	05	0531	N05	W44
05	0732	N08	W42	05	0740	N25	W25	05	0800	S08	E12	05	0802	S08	E12	05	1213	S08	E11	05	1424	N10	W80
05	1507	S09	W04	05	1507	S09	E05	05	1512E	S09	E05	05	1543	N25	W27	05	1544	N25	W28	05	1545	S08	E10
05	1546	S07	E08	05	1546E	S08	E08	05	1708	S08	E08	05	2103	S09	E01	05	2103	S09	E02	05	2121	N08	W49
05	2122	N09	W50	05	2139	N05	W52	05	2142	N24	W35	05	2142	N24	W35	05	2209	N22	W37	06	0108	S08	E04
06	0810E	N23	W42	06	0946	N24	W41	06	1010	S23	W13	06	1010	S23	W18	06	1232	N24	W40	06	1332	N25	W45
06	1336	N24	W41	06	1435	S09	W04	06	1549	S 9	W10	06	1610	S 8	W 5	06	1629	N22	W45	06	1630	N22	W46
06	1710	S08	W06	06	1716E	S07	W06	06	1721E	S07	W03	06	1757E	N09	E10	06	1915	S 8	W 7	06	2019	S08	W07
06	2056	S 2	W 9	06	2148	S 8	W 8	06	2157	S01	W07	06	2242	S08	W08	06	2250	S09	W08	07	0420	N01	W70
07	0421	N07	W66	07	0728	N24	W57	07	0920E	N22	W58	07	1000	N23	W60	07	1213	N15	E25	07	1240	S04	W21
07	1241	S03	W22	07	1537	N25	W62	07	1759	S03	W19	07	1817	N23	W61	07	1817	N24	W58	07	1818	N25	W61
07	1850	N23	W63	08	0045E	S07	W22	08	0053E	N22	W58	08	0707E	S06	W24	08	0846	N20	W77	08	0847	N23	W76
08	1045	N14	E12	08	1310E	S11	W34	08	1315	S12	W34	08	1332	N11	W80	08	1433	N26	W72	08	1610	S20	W45
08	1613	S20	W45	08	1614	S26	W44	08	1646	N14	E08	08	1647	N14	E08	08	1805	N14	E07	08	2235	N22	W78
09	0126	N15	E06	09	0128	N15	E06	09	0600	N29	W85	09	0959	N14	E01	09	0959	N15	E01	09	1000E	N14	E02
09	1304	N15	W02	09	1305E	N14	W01	09	1305	N15	E01	09	1335	N24	W85	09	1335	N14	W05	09	1336	N15	E01
09	1337	N14	W05	09	1347	N08	W22	09	1347	N08	W22	09	1417	N14	W05	09	1417	N15	E01	09	1417	N13	W04
09	1509	S22	W46	09	1616	N13	W06	09	1626	N32	W50	09	1635	S22	W48	09	1647	S20	W43	09	1728	S22	W48
09	1852E	S10	W52	09	1854E	S11	W51	09	2001	N08	E54	09	2007	S08	E53	09	2044	S08	W41	09	2045	S08	W44
10	0316	S12	E25	10	0338E	S10	W44	10	0340	S10	W46	10	0826	S05	W55	11	0020	S26	W38	11	0122	S22	W76
11	0240	S07	E69	11	1254	S10	W72	11	2114E	N21	E82	11	2115	N22	E85	12	1157	S22	W60	12	1223	N15	W40
12	1223E	N13	W43	12	1405	N15	W40	12	1410E	N14	W44	12	1549	N14	W47	12	1720	N19	W49	12	1815	S20	E88
12	1912	N13	W47	12	1928	N14	E20	12	2018	N14	E63	12	2220E	N15	E62	13	0008E	S14	W70	13	0010	S15	W69
13	0140	S21	W70	13	0927E	N14	E11	13	1205	N15	E08	13	1315	N15	W57	13	2255	N 9	E81	13	2256E	N06	E79
13	2258	N09	E70	13	2301	N15	E 3	13	2302	N15	E04	14	0336E	N26	W64	14	0621	N22	E53	14	1137	N18	E42
14	1138	N17	E44	14	1204	N13	W72	14	1204	N13	W72	14	1205	N15	W70	14	1205	N12	W70	14	1233	N20	E42
14	1429	N22	E49	14	1816	N14	W 9	14	1820	N14	W 9	14	1825	N14	W08	14	1828	N15	W 7	14	1901	N12	W09
14	1919	N14	W10	14	2000	N11	W74	14	2005E	N13	W10	14	2018U	N14	W11	14	2319E	N10	E65	15	0713	S14	E70
15	0732E	S17	E68	15	0824	S10	E12	15	0825	S10	E12	15	0828	S10	E12	15	0916	N09	E58	15	1020	N24	E39
15	1608	N12	W20	15	2104	N13	W23	15	2212	S19	E62	15	2234	N15	W23	15	2236	N15	W23	15	2236	N15	W23
15	2307E	N13	W22	15	2330	S12	E51	16	0132E	N14	W25	16	0142	S18	E90	16	0402	N16	W74	16	0509	N13	W30
16	0529	N23	E24	16	0552	N13	W30	16	0552	N13	W30	16	0628E	N13	W28	16	0643	N16	W75	16	0713	N13	W31
16	0922	N13	W30	16	1342	S19	E90	16	1518	S18	E90	16	1519	S19	E90	16	1642	S19	E52	16	1812	N21	E56
16	2226	S15	E88	17	0458	N21	E51	17	0800E	N14	W47	17	0835	S15	E85	17	0837	S17	E82	17	0900E	S13	E90
17	1003	N14	W47	17	1100	N16	W03	17	1206	N20	E47	17	1207	N18	E48	17	1225E	N21	E46	17	1355E	S17	E86
17	1355	S17	E80	17	1407	S15	E83	17	1514	S17	E78	17	1540E	N13	W48	17	1541	N14	W48	17	1546E	N14	W48
17	1553	S17	E83	17	1554	S19	E38	17	1555	S16	E82	17	1557	S17	E76	17	1601	S20	E25	17	1718U	S17	E80
17	1718	S17	E84	17	1731	S16	E82	17	1733	S16	E83	17	1736	S15	E80	17	1757	N14	E49	17	1813	N19	E44
17	1824	N13	W50	17	1826	N14	E49	17	1835	N12	W50	17	1837	S17	E85	17	1838	S16	E81	17	1839	S15	E82
17	2018	S17	E80	17	2038E	N18	W30	17	2039E	N18	W35	17	2042	S17	E83	17	2046	S16	E80	17	2046	S18	E85
17	2104	S16	E82	17	2104U	S17	E80	17	2106E	S15	E80	17	2118	S15	E80	17	2120	S03	E85	17	2120	S17	E85
17	2226	S16	E79	18	0020	N14	W54	18	0035	S15	E79	18	0045	N13	W56	18	0209E	N15	W04	18	0259	S16	E77
18	0404	S15	E77	18	0405	S16	E77	18	0406E	S18	E76	18	0657	S16	E72	18	0700	S14	E70	18	0758	N13	W58
18	0844	S17	E79	18	0918	N14	W58	18	0921	S18	E74	18	0922E	S15	E74	18	0923	S18	E75	18	0929	N16	W58
18	0946	S16	E71	18	0948	S16	E70	18	1055	S16	E70	18	1151	S18	E75	18	1200	S15	E73	18	1229	S15	E73
18	1255	S15	E69	18	1255	S17	E75	18	1344	S15	E72	18	1345E	S17	E73	18	1431	S15	E72	18	1627	S03	E87
18	1830	S14	E66	18	1842E	S03	E85	18	1908	N13	W13	18	2004	N13	W13	18	2004	N16	W13	19	0257	N21	W31
19	0518	N20	W32	19	0800	S14	E16	19	0853	N21	W34	19	0854	N20	W34	19	1245	N21	W37	19	1247	N20	W36
19	1255E	S18	E08	19	1346	S17	E60	19	1347	S18	E58	19	1348	N20	W36	19	1457	N20	W38	19	1459U	N20	W38
19	1500	N19	W37	19	1518	S17	E54	19	1519	S20	E57	19	1519	S19	E54	19	1520	S18	E60	19	1551	S11	E12
19	1555E	S18	E56	19	1718	S17	E52	19	1718	S19	E57	19	1719	S18	E58	19	1856	N10	W07	19	1902E	N10	W05

SOLAR FLARES

FEBRUARY 1971

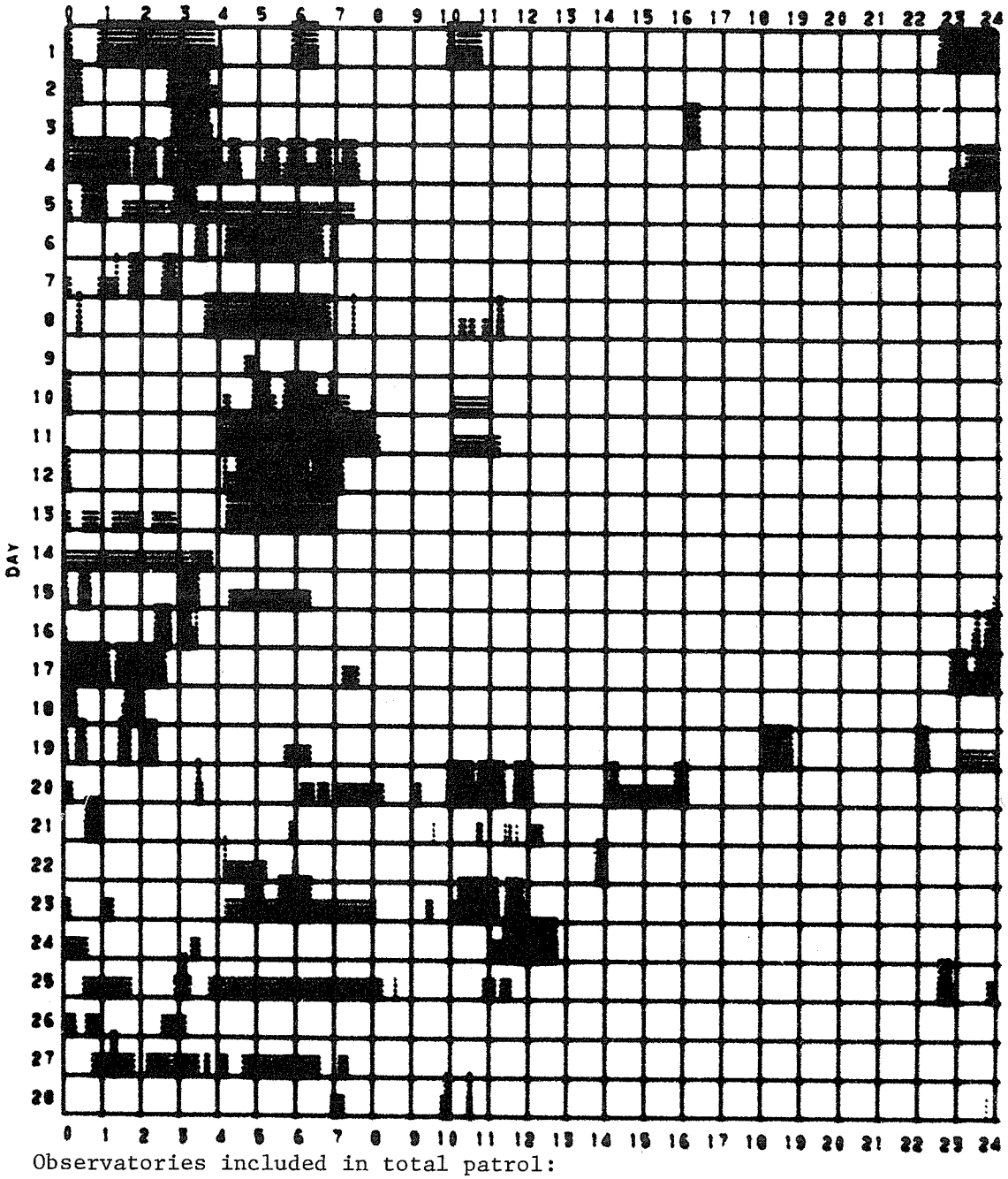
19 1906 S18 E55	19 1907E S17 E63	19 1914 N21 W37	19 2009E S18 E52	19 2219E N20 W20	20 0128 S18 E52
20 0155 S17 E53	20 0950 S17 E47	20 1256 N21 W48	20 1328 S18 E48	20 1349 N22 W48	20 1817 N18 W54
20 1819 N22 W51	20 1828E N22 W50	20 1942 S 6 E58	20 2142 S16 E30	21 0301 S17 E37	21 0333E N19 W54
21 0510 S22 E48	21 0543 N21 W57	21 0945 N22 W61	21 0957 S18 E32	21 1652 N21 W60	21 1655 N21 W64
21 1929 S20 E28	21 1933 N23 W64	21 1939E N22 W66	21 2105 N23 W61	21 2131 S19 E26	21 2140E S20 E26
21 2142E S19 E26	22 0106 S17 E31	22 0815 S18 E20	22 0921E S16 E27	22 0921 S16 E26	22 0930 N22 W72
22 0945 S17 E21	22 1022E S18 E18	22 1212E S16 W30	22 1555 S18 E20	22 1635 N07 E80	22 1635 N 8 E81
22 1637 N07 E82	22 1649 S18 E19	22 1815 S14 W36	22 1819 S13 W32	22 1857 N20 W79	22 1857 N22 W77
22 1902U N21 W75	22 1905E N22 W76	22 1909 S08 E30	22 1910 S 8 E30	22 1912 S07 E29	22 2000 N06 E80
22 2002E N06 E81	22 2043E S22 W44	22 2052 S08 E29	22 2234 N22 W85	22 2308 N20 W79	22 2308U N21 W78
22 2310 N23 W77	23 0010E N07 E78	23 0012 N08 E80	23 0016 N22 W82	23 0018 N23 W85	23 0940E N22 W70
23 1307 N08 E68	23 1801 N 8 E75	23 1842 S15 W50	23 1946 N21 W70	23 2005E S13 W45	23 2201U N 4 W 6
24 0004E S17 E02	24 0006 S19 E03	24 0225 N09 E59	24 0420 S09 E11	24 0530 S04 E08	24 0724 S16 W06
24 0725E S17 W03	24 0820E S08 E08	24 0820 S14 W11	24 0832E N09 E69	24 0909 S04 E05	24 0910E S03 E06
24 0928E S05 W70	24 0930E S04 E06	24 1234E S05 E04	24 1239 S16 W64	24 1246 S14 W65	24 1519 S03 W00
24 1526 S06 E03	24 1532 S03 W72	24 1537 S18 W12	24 1538 N 6 E56	24 1540 N05 E56	24 1540E N06 E57
24 1712 S03 W73	24 1807 N 6 E56	24 1807 N06 E54	24 1807 S08 E03	24 1808 N06 E55	24 1809E N06 E55
24 1913 S03 W75	24 1914 S12 W73	24 1922 S 5 E 0	24 1924 S05 E04	24 2059 S 5 E 0	24 2302 N09 E90
24 2307E N08 E90	25 0143E N05 E52	25 0215E N11 E90	25 1048E S04 W90	25 1453 N09 E85	25 1453 N10 E88
25 1515E S03 W89	25 1610 S 6 W83	25 1805 S 6 W83	25 1833 S15 W20	25 1900 S 6 W83	25 2005 S14 W24
25 2029 N11 E78	25 2051 N11 E79	25 2140E N10 E78	26 0018E N07 E44	26 0035 N08 E36	26 0035 N08 E44
26 0054E N07 E36	26 0608 N06 E34	26 0608 N06 E34	26 0705 N07 E41	26 0705 N06 E41	26 0757 N10 E40
26 0805 N13 E38	26 0818 N09 E38	26 0820E N09 E39	26 0855 N08 E33	26 1225E S19 W28	26 1438 N05 E28
26 1644 S14 W86	26 1659 N26 E66	26 1659 N26 E66	26 1707E N27 E57	26 1709 N26 E58	26 1732 N12 E69
26 1732 N13 E70	26 1732 N14 E71	26 1902E S17 W41	26 1921 S23 W41	26 1922E S17 W41	26 2040 S14 W80
26 2042 S22 W83	26 2042 S22 W83	26 2100 S24 W84	26 2101E S15 W85	26 2325 S12 W80	27 0331 N09 E22
27 0555 S18 W47	27 0621 S20 W85	27 0755 N09 E20	27 0755E N09 E20	27 0800E S18 W50	27 0845 S18 W51
27 0857 N08 E28	27 0909 N08 E28	27 0910E N07 E28	27 0918E N09 E29	27 1216 N08 E18	27 1220 N08 E18
27 1316 N09 E58	27 1318 N09 E27	27 1346 S08 W33	27 1348 S07 W33	27 1420 S08 W33	27 1428 S07 W33
27 1451 S19 W53	27 1458E S20 W53	27 1526 S07 W34	27 1527 S08 W33	27 1542 S07 W31	27 1632 S 9 W35
27 1738 N 8 E23	27 1743 N13 E52	27 1804 S08 W34	27 1806 S08 W37	27 1810 N08 E23	27 1815E S08 W37
27 1818 S17 W53	27 1840 S 9 W35	27 1929 S06 W44	27 1930 S 9 W35	27 1935E S08 W37	27 1940 S09 W34
27 2021 S09 W34	27 2256 N13 E49	27 2327 N 8 E20	27 2334 N09 E21	27 2334 N10 E20	28 0149 N09 E19
28 0150 N09 E19	28 0231 N09 E09	28 0312 N08 E52	28 0313 N08 E52	28 0424 S18 W56	28 0457 N09 E52
28 0503 N08 E51	28 0519 S17 W62	28 0530 S17 W59	28 0558E S13 W27	28 0558E N10 E16	28 0628 S17 W63
28 0744 N10 E15	28 0744 N09 E16	28 0745E N09 E15	28 0800E N09 E15	28 0805 N08 E50	28 0810 N07 E51
28 0815 N08 E50	28 0900 N09 E15	28 0900 N10 W67	28 0935 N10 E13	28 1341 N02 W37	28 1352 S17 W60
28 1352E S16 W60	28 1353 S16 W59	28 1453 S17 W60	28 1457 N07 E02	28 1620 S16 E84	28 1629 S18 W61
28 1630 S17 W62	28 1635E S16 W62	28 1742 S14 E83	28 2223 S14 E83		

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

FEBRUARY 1971

HOUR - UT



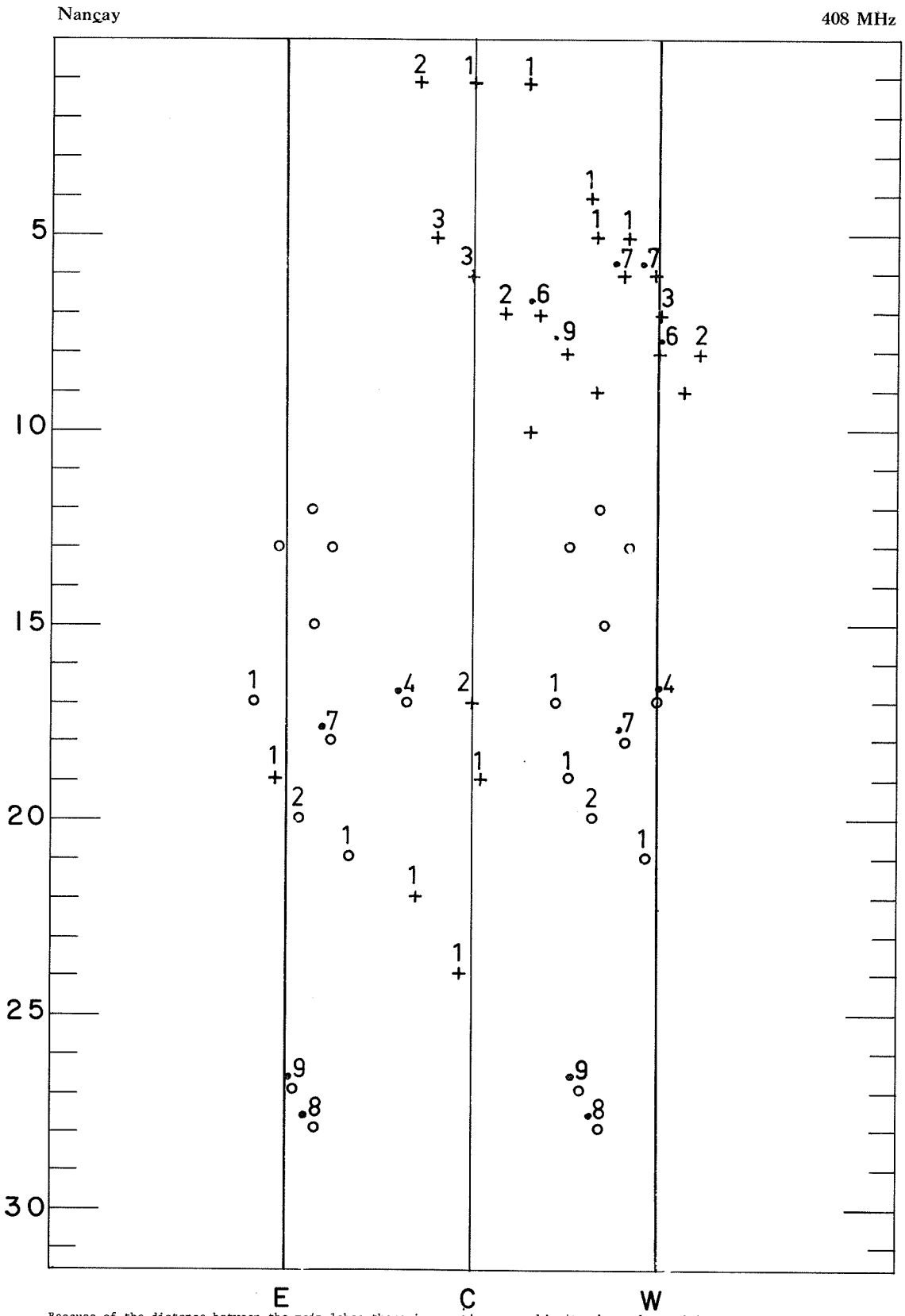
Observatories included in total patrol:

Arcetri	Catania	Hurbanovo	McMath-Hulbert	Palehua
Boulder	Haute Provence	Locarno	Meudon	Tehran
Bucharest	Herstmonceux	Lockheed	Ondrejov	Wendelstein
Capri-F (German)	Huancayo	Manila		

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

FEBRUARY 1971



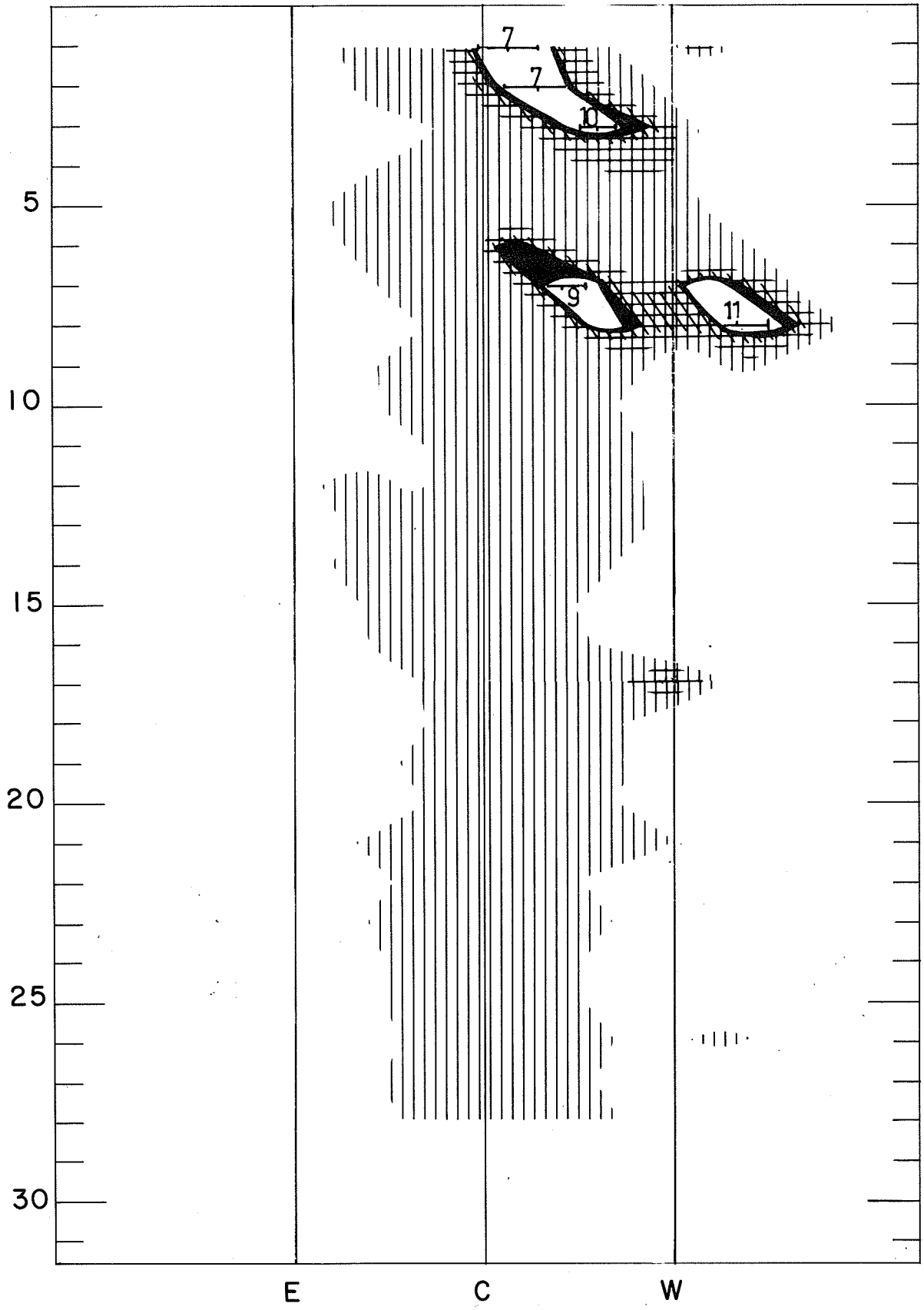
Because of the distance between the main lobes there is sometimes an ambiguity about the position East or West of the Center of Activity. The two possible positions are indicated by circles on the chart.

The flux could not be evaluated for February 9-15.

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATION

FEBRUARY, 1971

Nançay 169 MHz



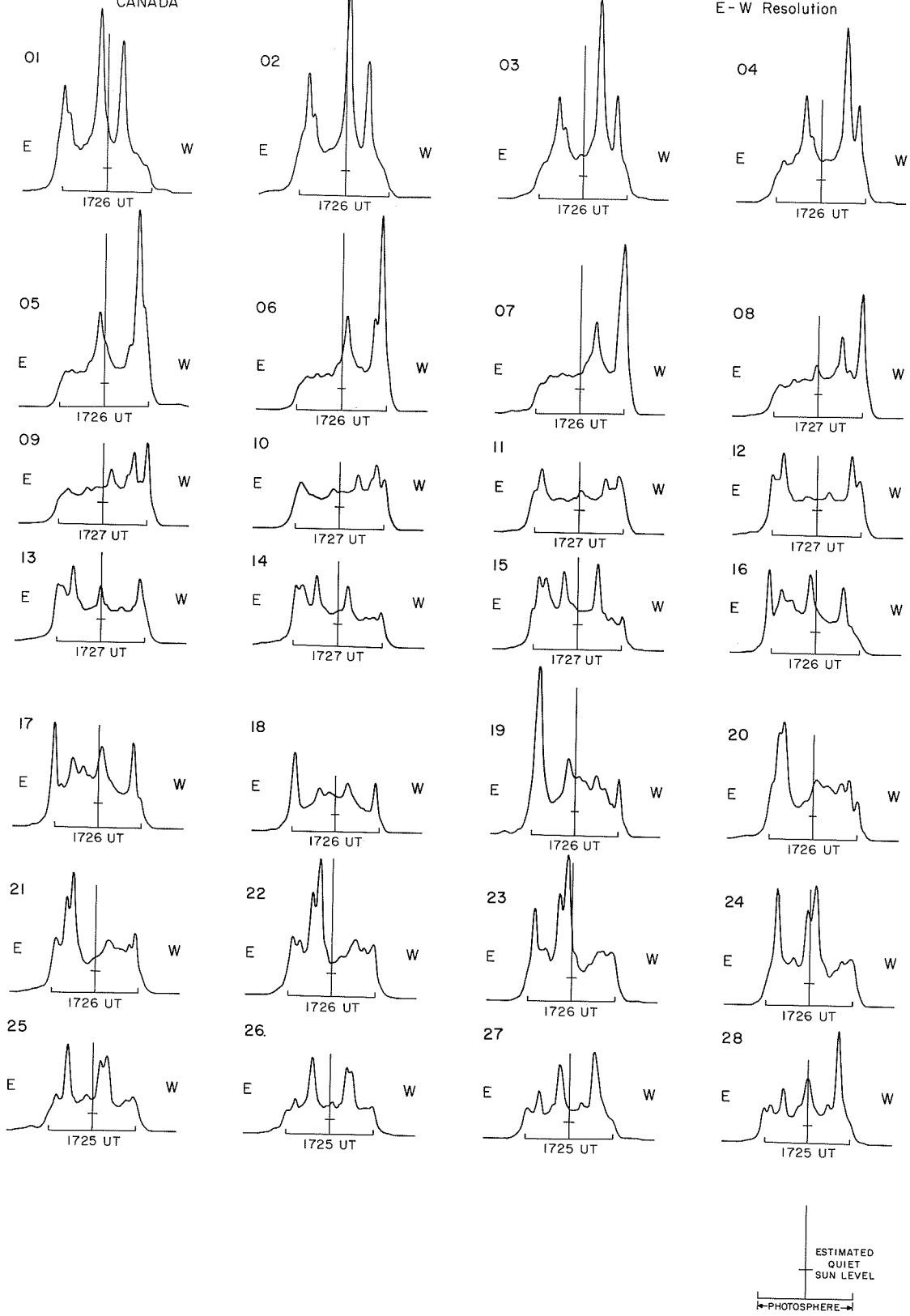
16
Feb 71

EAST - WEST SOLAR SCANS

February 1971

ALGONQUIN RADIO OBSERVATORY
CANADA

10.7 cm.
Fan - Beam with 1.5 minutes of arc
E - W Resolution

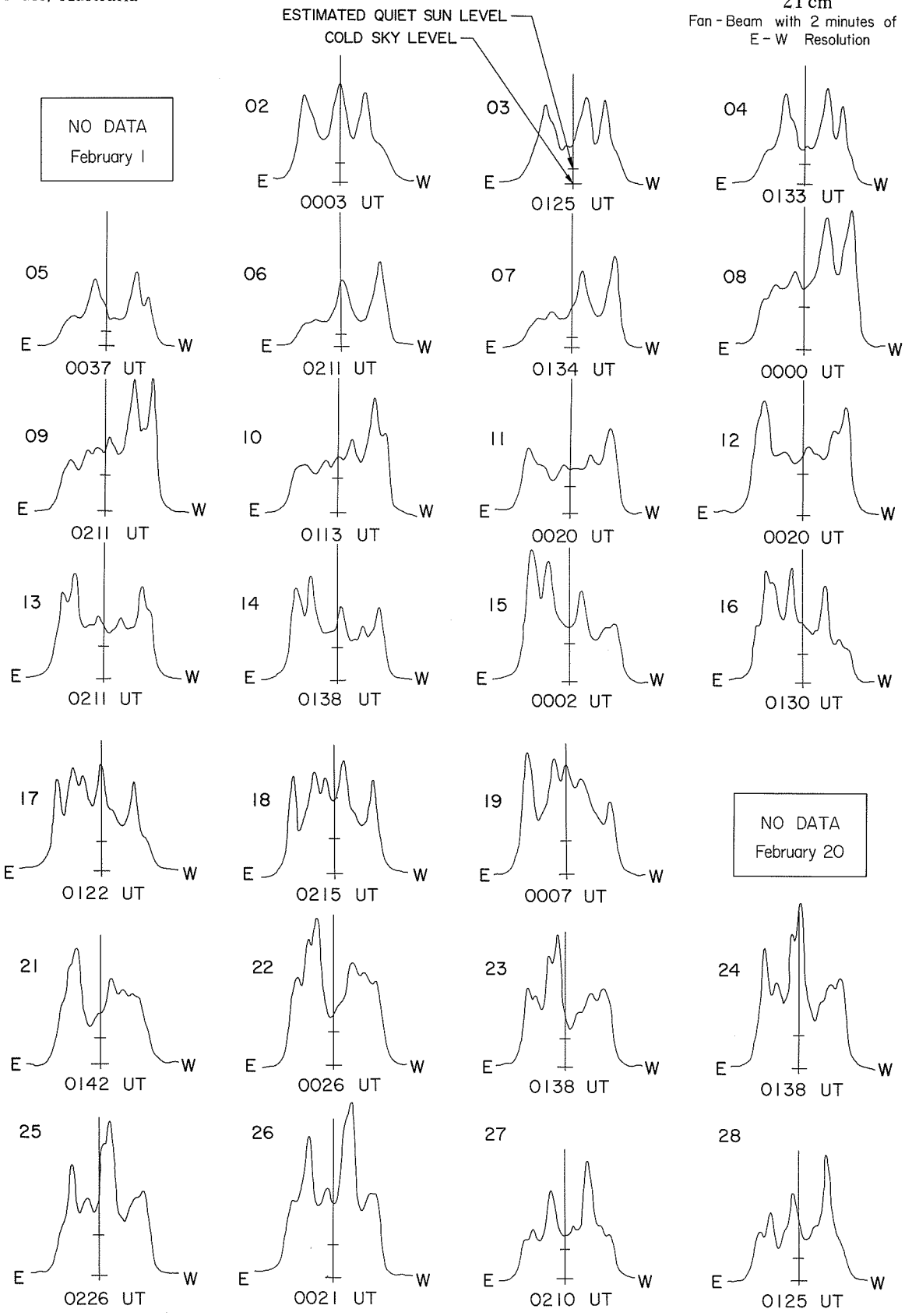


EAST-WEST SOLAR SCANS

FEBRUARY 1971

Fleurs, Australia

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



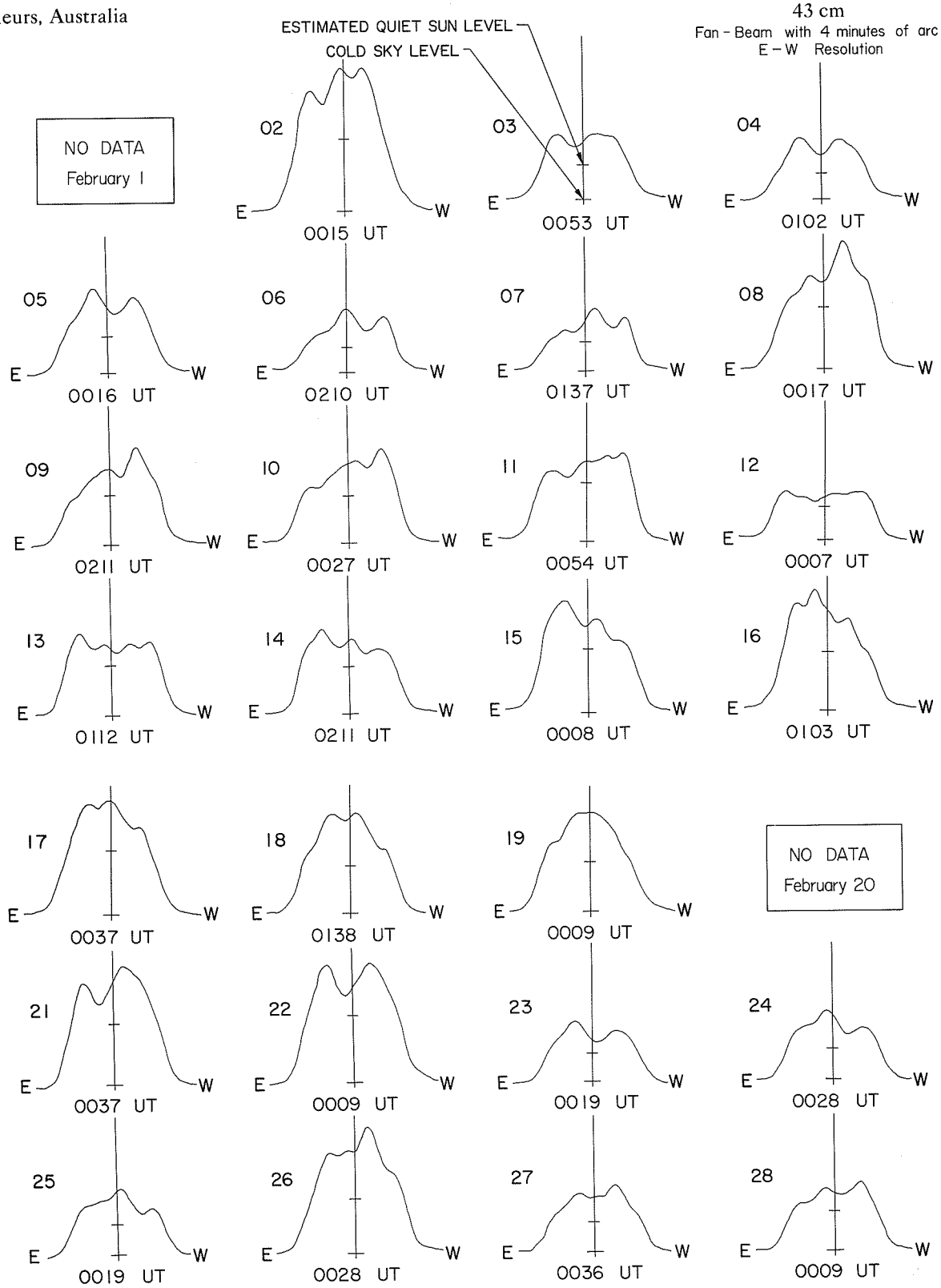
18
Feb 71

EAST-WEST SOLAR SCANS

FEBRUARY 1971

Fleurs, Australia

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



SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

FEBRUARY 1971

FEB. 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
1	8800 MANI	3	0118.3	0119	2.9	33.6	13.4		
	2695 MANI	3	0118.2	0119	2.3	33.2	13.9		
	2695 CRON	3	0138	0139.5	2.5			1	
	8800 MANI	3	0813.1	0813.9	2	10.4	3.5		
	8800 SGMR	1	1427	1427.5	1.7	6.3	1.7		
	2800 OTTA	1	1903	1905	7	2.2	1.1		
	2800 OTTA	20	2000	2020	60	2.4	1.2		
2	2695 SGMR	1	1736.8	1737.2	4.3	5.8	2.0		
	8800 SGMR	1	1737.1	1737.2	2.2	3.8	1.0		
	2800 OTTA	1	1737	1737.1	1	3.4	1.7		
	2800 OTTA	1	1935.5	1936	7	2.8	1.4		
	2695 SGMR	40	2038.4	2040.6	8.2	5.8	.5		
	8800 SGMR	40	2040	2040.5	5.7	7.1	.5		
	2695 PENT	20	2210	2235	55	3.4	1.7		
3	8800 MANI	4	0526.5	0526.9	1.6	63.0	31.6		
	2695 MANI	1	0527.2	0527.8	1.4	5.6	2.8		
	8800 SGMR	22	1524.5	1541.2	46.4	25.4	10.2		
	2800 OTTA	4	1524	1528	8	29.0	14.0		
	2695 SGMR	46	1524.4	1528	7.8	21.6	8.6		
	2695 CANR	40	1526	1528.5	7.5			1	
	2800 OTTA	30	1532		70	12.0	7.0		
	2695 SGMR	30	1532.2	1532.2	48.8	8.6	4.0		
	2695 SGMR	4	1605.8	1607.8	3.2	12.0	4.0		
	2800 OTTA	1	1606	1607.7	3	8.6	4.0		
	2695 CANR	3	1606.5	1608.5	1.5			1	
	2695 BOUL	1	1607	1609	2			1	
	2800 OTTA	20	1820	1835	55	2.6	1.3		
4	2800 OTTA	20	1350	1440	140	4.4	3.0		
	8800 SGMR	3	1401.8	1402	3.2	12.2	2.0		
	2800 OTTA	20	1620		70	4.4			
	2800 OTTA	22	1800	1825	75	5.8	3.2		
	2800 OTTA	20	1930	1953	40	5.6	2.8		
	8800 SGMR	1	2101.6	2101.8	.5	4.3	1.0		
	2695 SGMR	22	2105.9	2110.7	18.4	18.1	3.3		
	2800 OTTA	45	2106	2110.5	8	12.8	8.0		
	2800 OTTA	29	2114		40	5.8	2.0		
5	8800 MANI	3	0734	0734.2	8	21.7	10.8		
	2695 CANR	28	1033	1036.5	5			1	
	2800 OTTA	21	1425	1510	120	5.2	2.8		
	8800 SGMR	1	1545.7	1546.2	3.8	9.8	4.0		
	2800 OTTA	3	1545.8	1546	3	42.0	10.0		
	2695 SGMR	3	1545.7	1546.2	3.8	40.4	8.1		
	2695 CANR	3	1546.5	1547	4.5			1	
	2695 BOUL	3	1547	1547.5	5.5			2	
	2695 BOUL	40	2221.5	2222	6.5			2	
	2695 PENT	4	2221	2223.5	6	158.0	64.0		SPIKES 530 FU
	2695 PENT	29	2227		60	15.0	5.0		
7	2800 OTTA	4	1851.5	1851.9	2	3.0	1.5		
8	2695 BOUL	41	2011	2014	4.5			1	
	2695 BOUL	8	2024	2024	.5			1	
9	2695 BOUL	41	2211	2212	4.5			2	
	2695 BOUL	45	2219	2219.5	1.5			1	
10	2695 BOUL	40	2113.5	2122	32			2	
	2695 BOUL	41	2143	2144.5	3.5			1	
11	2695 BOUL	40	1758.5	1801	11.5			1	
	2800 OTTA	20	1816	1818	45	2.0	1.0		
	2695 BOUL	41	1834.5	1839.5	9.5			2	
	2695 BOUL	1	2018.5	2019	1			1	
	2800 OTTA	20	2035	2200	120 D	5.2			
	2695 BOUL	40	2311.5	2314.5	16.5			2	
12	2695 BOUL	41	1917	1919.5	5			1	
	2695 BOUL	41	2044	2044.5	35			1	
	2695 BOUL			2044.6					
14	2800 OTTA	20	1650		45	2.0	0.8		
	2800 OTTA	24	1735		15	2.0			
	2800 OTTA	20	1925	2040	105	2.4	1.2		
	2695 PENT	20	2110	2210	105	2.2	1.1		
	2695 PENT	24	2310		15	7.0			
15	2800 OTTA	21	1650	1735	160	3.0	1.5		
	2800 OTTA	1	1657	1658	2	2.8	1.4		
	2695 SGMR	3	2006.9	2007.5	3.2	13.0	2.6		
	2800 OTTA	3	2007	2007.5	3	11.6	3.8		
	2695 BOUL	3	2008	2008.5	4			1	
	2800 OTTA	21	2215	2250	65	4.0	2.0		
	2695 PENT	1	2217.9	2218	2	2.0	1.0		
16	2695 PENT	1	0006	0007	2	5.0	2.5		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

FEBRUARY 1971

FEB. 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
	2800 OTTA	2	1338	1339.5	4	9.4	2.6		
	2695 CANR	1	1339.5	1344.5	8.5			1	
	2800 OTTA	3	1343	1343.9	3	27.0	13.5		
	2800 OTTA	29	1346		12	6.8	2.0		
	2800 OTTA	22	1520	1530	50	3.6	2.0		
	2800 OTTA	3	1639.8	1640	1	10.0	3.4		
	2695 SGMR	1	1639.7	1639.9	.4	6.2	3.1		
	2695 SGMR	40	1844.9	1845.6	11.7	9.9	2.0		
	2800 OTTA	41	1845	1845.5	11	11.6			
	2800 OTTA	3	1845	1845.5	3	11.6	2.9		
	2800 OTTA	1	1848.5	1848.9	1	6.0	3.0		
	2800 OTTA	1	1850.5	1851.2	7	7.6	2.5		
	2695 BOUL	41	1946.5	1947	8			1	
	2695 BOUL	41	2027.5	2031	4			1	
	2800 OTTA	4	2128	2128.5	10	14.2	3.6		
	2695 BOUL	3	2129.5	2132.5	7.5			1	
	2695 SGMR	2	2129.9	2131.6	4.2	8.7	2.0		
	2695 PENT	41	2224	2231.8	19	69.0			
	2695 PENT	46	2224	2225.5	4	22.0	10.0		
	2695 BOUL	40	2225.5	2226.5	5.5			1	
	2695 PENT	3	2230	2231.8	5	69.0	25.0		
	2695 BOUL	3	2232	2233	4			2	
	2695 PENT	29	2235		8	4.8	2.2		
	2695 BOUL	41	2311	2314.5	5			2	
17	8800 MANI	3	0833.8	0834.2	1.6	46.4	17.9		
	2695 MANI	1	0833.8	0834.5	1.6	6.9	2.3		
	8800 SGMR	20	1559.2	1559.9	18.2	5.0	1.2		
	2800 OTTA	20	1559	1600	70	5.2	1.8		
	2695 SGMR	22	1559.1	1600.5	22	4.1	1.0		
	2695 BOUL	41	1742	1745	4			1	
	2695 BOUL	45	1749	1750.5	2.5			1	
	2800 OTTA	1	2047	2047.1	1	5.8	2.4		
	2695 SGMR	1	2047.1	2047.1	1	4.8	1.2		
	2800 OTTA	1	2051.8	2052.5	3	5.8	2.8		
	2695 SGMR	2	2051.6	2052.5	4.1	7.9	2.0		
	2695 SGMR	2	2059.2	2101.8	7.7	4.8	1.2		
	2695 PENT	2	2208.5	2209	1.5	5.2	2.6		
	2695 PENT	1	2223	2223.5	1	2.8	1.4		
	2695 PENT	2	2315.3	2316	2	7.4	4.0		
	2800 OTTA	40	2319.5	2321.5	4.5	3.8			
18	8800 MANI	4	0326.7	0328.8	14.3	45.8	10.1		
	8800 MANI	4	0405	0406	3.7	35.2	10.6		
	2695 CANR	3	0827.5	0828	2			1	
	2695 MANI	1	0922.2	0922.5	.8	7.0	2.3		
	2695 CANR	3	0923	0923.5	2.5			1	
	8800 SGMR	1	1253.8	1254	.8	1.3	.7		
	2800 OTTA	1	1253.8	1254	1	9.0	4.5		
	2695 SGMR	3	1253.7	1254.1	.8	10.8	5.4		
	2695 BOUL	41	1940.5	1944	6			1	
	2695 BOUL	41	2159	2201	2.5			1	
	2695 BOUL	8	2228	2228	.5			1	
19	2695 SGMR	2	1247.3	1247.9	3.6	4.4	1.0		
	8800 SGMR	1	1346.7	1347.7	6.9	5.4	2.0		
	2695 SGMR	22	1500.7	1501.2	11.9	3.1	.8		
	2695 SGMR	1	1519.8	1520	3.6	4.4	1.5		
	2800 OTTA	24	1530		25	2.9			
	2800 OTTA	21	1605	1705	130	5.8	2.9		
	8800 SGMR	1	1718.5	1718.7	2.8	3.0	1.5		
	2800 OTTA	3	1718	1718.5	2	11.2	5.6		
	2695 SGMR	3	1718.2	1718.6	4	10.4	4.2		
	2800 OTTA	29	1720		6	2.0	1.0		
	2695 BOUL	41	1728	1730	3.5			2	
	2695 BOUL	3	1729.5	1729.5	1			1	
	2695 BOUL	41	1829	1834	4			1	
	2695 BOUL	4	1842.5	1845.5	3			1	
	2800 OTTA	21	2005	2020	90	4.6	2.3		
	2800 OTTA	3	2017	2017.5	3	14.8	4.9		
	2695 BOUL	3	2018.5	2019	2			1	
	2695 PENT	20	2210	2305	160 D	7.6			
20	2695 CRON	20	0813.5	0815	10			1	
	2695 MANI	22	0813.4	0814.8	7.6	13.2	5.5		
	2695 SGMR	1	1302.1	1304.4	5	2.5	1.7		
	2695 SGMR	1	1329.7	1329.9	.5	2.9	1.9		
	2800 OTTA	21	1620	1755	150	3.0	1.8		
	8800 SGMR	3	1819.4	1819.6	1.4	20.6	4.1		
	2800 OTTA	1	1819	1819.5	1	6.4	2.2		
	2695 SGMR	1	1819.4	1819.6	2.6	6.4	1.8		
21	2800 OTTA	1	2130	2132	4	6.6	3.3		
	2800 OTTA	29	2134		25	2.6	1.3		
22	2695 CANR	3	1015	1017.5	4.5			1	
	2800 OTTA	24	1420		10	4.4			
	2800 OTTA	20	1545	1555	30	2.0	1.0		
	2800 OTTA	20	1620	1635	30	2.4	1.2		
	2695 BOUL	3	2203	2203.5	25			1	

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

FEBRUARY 1971

FEB. 1971	FREQUENCY STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY $10^{-22}Wm^{-2}Hz^{-1}$		INT	REMARKS
			UT	UT	MINUTES	PEAK	MEAN		
23	2800 OTTA	20	1635	1805	290	8.8	4.8		
	2695 BOUL	41	2256.5	2257	2.5			2	
	2695 BOUL	41	2303	2303	1.5			1	
24	8800 MANI	1	0909.5	0910.1	1.5U	5.2	2.6		
	2695 MANI	1	0909.5	0910.1	1.5U	4.8	2.4		
	2800 OTTA	20	1625	1705	95	2.4	1.2		
	2695 BOUL	41	1754.5	1755	2.5			1	
	2695 BOUL	41	2032.5	2034	3			2	
	2695 SGMR	1	2038.5	2038.7	.7	2.1	1.0		3
25	2695 MANI	1	0719.6	0720	.9	4.9	2.4		
	8800 MANI	4	2239.2	2240.6	2.9	33.5	14.0		
	2695 MANI	4	2239.2	2240.6	2.9	22.9	10.2		
	2695 BOUL	40	2320.5	2326	5.5			1	
	2695 BOUL	41	2341	2345	4.5			1	
	2695 BOUL	8	2347.5	2348	1.5			1	
26	2695 BOUL	8	1942	1942.5	.5			1	
27	8800 SGMR	4	1451.2	1452	7.5	32.0	12.2		
	2800 OTTA	4	1451	1452	3	60.0	7.6		SPIKES 150D
	2695 SGMR	4	1451.2	1452.3	11.8	130.0	52.0		
	2695 BOUL	8	1452.5	1453	1.5			2	
	2695 PENT	1	2328	2331	5	2.8	1.4		
28	2800 OTTA	20	1740	1825	75	2.4	1.2		
	2800 OTTA	20	1910	2045	160	2.4	1.2		

Observatories:

BOUL = Boulder CRON = Carnarvon OTTA = Ottawa ARO PENT = Penticton SGMR = Sagamore Hill
CANR = Canary Islands 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.

COSMIC RAY PROTONS

FEBRUARY 1971

Counting Rates (particles/sec)

Univ. of Chicago

PIONEER VI

Date Feb.	Time (UT)	0.6-13 Mev*	13-175 Mev**	>175 Mev	Date Feb.	Time (UT)	0.6-13 Mev*	13-175 Mev**	>175 Mev
1	1000	17.2	.0828	Q	14	0100	2.49	.114	Q
	1800	21.7	.263	Q		1000	1.41	.0700	Q
2	0200	18.9	.241	Q	16	1600	3.33	.0792	Q
	1000	21.7	.256	Q	17	0100	60.0	Q	Q
	1800	22.5	.228	Q		1200	142.	Q	Q
3	0300	36.6	.234	Q		1800	151.	Q	Q
	1500	47.4	.232	Q	18	1000	171.	Q	Q
4	0200	40.4	.180	Q		1800	∿585.	Q	Q
	1000	56.6	.214	Q	19	0200	∿585.	Q	Q
	1800	78.0	.208	Q		1000	>585.	Q	Q
5	0300	50.2	.169	Q	20	1000	282.	Q	Q
	1100	39.0	.146	Q	21	1000	170.	Q	Q
6	0300	53.2	.145	Q	23	0200	22.1	Q	Q
	1700	156.0	.175	Q		1600	10.4	Q	Q
8	0200	126.5	.166	Q	24	0200	7.17	Q	Q
	1000	114.5	.128	Q		1600	4.30	Q	Q
9	0200	57.4	.122	Q	25	1000	1.92	Q	Q
	1600	38.2	.0877	Q		0200	2.61	Q	Q
10	0200	33.4	.108	Q		1800	2.11	Q	Q
	1000	34.4	.0948	Q	26	0200	1.74	Q	Q
	1800	37.8	.107	Q		1000	1.46	Q	Q
11	0200	42.8	.118	Q		1800	1.56	Q	Q
	1000	33.4	.0913	Q	27	1000	1.16	Q	Q
	1800	31.9	.0757	Q		1700	.762	Q	Q
12	1000	13.6	.0913	Q	28	1000	.451	Q	Q
13	0200	5.66	.0750	Q		1700	.500	Q	Q

PIONEER VII

Date Feb.	Time (UT)	0.6-13 Mev*	13-175 Mev**	>175 Mev	Date Feb.	Time (UT)	0.6-13 Mev*	13-175 Mev**	>175 Mev
11	2200	4.06	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).

SOLAR WIND
VELA 3 & 5
FEBRUARY 1971

Date	UT	Spacecraft	Velocity V_{H+} (km/sec)	Density N_{H+} (cm^{-3})	Date	UT	Spacecraft	Velocity V_{H+} (km/sec)	Density N_{H+} (cm^{-3})
01	0400	VELA-5A	637	--	13	0500	5B	446	2.1
	0300	5A	547	4.1		0700	5B	424	--
	0831	5B	576	--		0900	5B	446	--
	1000	5B	606	--		1000	5B	384	2.0
	1200	5B	637	--		1600	5B	315	--
	1300	5B	576	--		1800	5B	315	--
	1400	5A	637	--		2000	5B	315	--
	1600	5A	606	1.1		2200	5B	286	--
	1700	5B	576	--	14	0000	5B	300	--
	1900	5B	637	--		0100	5B	315	--
02	1200	5A	520	--		0200	5B	286	--
	1400	5A	520	--		0300	5B	286	--
	1600	5A	470	--	15	0600	5A	470	--
	1800	5A	470	1.9		0700	5A	470	--
	2000	5B	446	--		0800	5A	495	2.7
	2100	5B	470	1.3		1100	5A	520	--
	2300	5B	470	--		1300	5A	470	4.7
03	0000	5B	424	--		1621	5A	576	1.9
	0200	5B	470	--		1700	5A	606	--
	1900	5B	384	--	16	0900	5B	576	--
	2000	5B	384	--		1100	5B	520	--
	2100	5B	384	--		1300	5B	576	--
	2200	5B	365	1.8		1400	5B	606	1.7
04	0025	5B	365	--		1909	5A	637	2.4
05	0500	5B	348	--		2213	5B	606	2.1
	0600	5B	315	--		2300	5A	637	--
	0657	5B	331	3.8	17	0000	5A	576	--
	0700	5B	3[illegible]	--		1900	5B	470	--
	0900	5B	348	--		2200	5B	547	.9
	1100	5B	315	--		2300	5B	520	--
06	0000	5A	348	--	18	0100	5B	520	--
	0100	5A	365	--		0300	5B	470	--
	1003	5B	300	3.1		0400	5B	404	--
07	0915	5B	365	--	20	0500	5A	384	--
	1000	5B	365	6.3		0600	5A	424	--
	1200	5B	365	8.2		0800	5A	384	--
	1300	5B	365	--		0900	5A	424	--
	1700	5B	384	--	21	0700	5A	384	--
08	1400	5B	424	--		0800	5A	404	.8
	1800	5B	424	--		0900	5A	365	--
	2100	5B	470	--		1000	5B	384	--
	2200	5B	446	4.2		1200	5B	384	--
10	1100	5A	520	--		1400	5B	384	--
	1500	5A	424	--		1500	5B	384	.8
11	1400	5B	286	--		1600	5B	365	--
	1500	5B	286	--	22	1500	5B	272	--
	1700	5B	315	--	24	1000	5A	348	--
	1800	5B	424	--		1300	5A	384	--
	1900	5B	384	--		1600	5A	424	--
	2000	5B	348	--		1800	5A	404	4.4
	2100	5B	348	2.0	27	0800	5B	470	--
12	0451	5A	404	2.8		0900	5B	495	--
						1000	5B	520	.1
						1100	5B	520	--
						1200	5B	576	--

SOLAR WIND VELOCITY
and
CO-ROTATION DELAY TIMES

FEBRUARY 1971

NASA Ames Research Center

DATE February 1971	PIONEER VI				PIONEER VII			
	Time (Z)	Pass	U_H^+	TAU	Time (Z)	Pass	U_H^+	TAU
1	0800	1874	383	3.2				
2	0800	1875	383	3.2				
3	1600	1876	339	3.3				
4	0800	1877	339	3.3				
5	0800	1878	383	3.3				
6	1520	1879	383	3.3				
7								
8	0109	1880	383	3.3				
9	0000	1881	448	3.2				
10	0000	1882	448	3.3				
11	0000	1883	383	3.3				
	0800	1884	383	3.3				
12	0800	1885	506	3.3	2359	1641	500	11.2
13	2305	1886	566	3.3				
14	0710	1887	566	3.3				
15								
16	2332	1889	448	3.3				
17	1200	1890	448	3.3				
18	0800	1891	383	3.3				
19	0800	1892	302	3.4				
20	0652	1893	302	3.4				
21	0651	1894	448	3.3				
22								
23	0100	1895	506	3.3				
24	0031	1896	647	3.3				
25	0116	1897	647	3.3				
26	0116	1898	448	3.4				
	0800	1899	383	3.4				
27	0650	1900	339	3.4				
28	0700	1901	448	3.4				

COSMIC RAY PROTONS

FEBRUARY 1971

Counting Rates (particles/sec)

University of New Hampshire

Pioneer VIII							
Date Feb.	Time (UT)	>13.9 Mev	>64 Mev	Date Feb.	Time (UT)	>13.9 Mev	>64 Mev
1	0400	∿7.	-	16	0001	4.61	.82
	1200	4.5	-		1200	4.61	.82
2	0247	4.5	-		2100	4.65	.86
	1200	6.0	-	18	0000	4.93	.56
3	1200	5.0	-		0400	4.78	.55
	2000	4.5	-		1200	4.69	.72
4	0300	5.0	-	19	0400	4.57	.54
	1228	5.54	.62	20	0400	4.28	.59
	1900	5.64	.79	21	0400	4.31	.74
5	0248	5.88	.71	23	1200	4.48	.69
	2000	5.63	.80	24	1200	4.35	.75
6	1100	5.73	.74	25	0030	4.57	.64
8	0500	4.93	.81		0430	4.58	.68
9	1200	4.27	.81		1200	4.58	.78
10	0400	4.70	.74	26	0030	4.54	.67
	1200	4.56	.82		1303	3.45	.83
11	0400	4.62	.77	27	0400	4.53	.67
	1200	4.45	.74		1058	4.46	.78
	0230	4.53	.66	28	0500	3.57	.78
12	2100	4.33	.87		1051	4.56	.69
14	0400	4.51	.77				

Pioneer IX							
Date Feb.	Time (UT)	>13.9 Mev	>40 Mev	Date Feb.	Time (UT)	>13.9 Mev	>40 Mev
2	1600	8.0	-	13	1928	3.64	.77
7	2330	3.78	.82	18	1930	3.74	.77
11	2100	3.73	.86	26	2030	3.63	.63

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

FEBRUARY 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	4.01	2.58	2.42	2.21	2.74	3.00	--	--	--	--	2.74	2.37	1.58	1.79	2.79	1.68	1.37	0.89	--	1.05	0.95	0.81	0.89	0.68
02	1.05	1.95	1.26	0.79	0.52	0.58	--	--	--	--	0.84	0.89	1.16	0.79	0.79	0.95	0.52	--	0.68	0.68	0.58	0.58	0.52	0.68
03	0.79	0.47	0.95	--	0.84	0.68	0.81	--	--	0.73	0.95	1.16	0.89	0.68	0.79	0.47	0.63	0.58	--	--	--	--	0.36	0.52
04	0.63	0.84	1.00	0.95	0.73	0.84	--	--	--	1.21	1.00	0.73	1.10	1.16	1.42	1.47	1.63	1.53	0.52	1.21	1.16	--	--	--
05	1.00	1.00	1.47	1.10	1.08	1.74	--	--	1.84	1.37	2.21	1.68	1.90	0.89	0.47	0.84	1.00	--	--	--	--	--	--	--
06	--	--	--	--	--	--	--	--	--	--	1.75	1.35	--	--	--	--	--	--	--	--	--	--	--	--
07	0.68	0.95	2.00	1.79	1.76	2.26	--	--	--	3.27	2.53	2.85	2.16	2.42	--	1.76	1.53	1.53	2.16	1.62	1.00	1.62	1.53	1.89
08	2.16	1.90	2.05	2.05	2.26	2.00	1.95	1.84	2.16	1.37	1.90	1.90	1.74	1.90	2.16	1.31	1.95	1.00	1.68	1.11	1.35	--	--	--
09	1.58	1.90	1.58	1.31	1.84	1.63	1.31	--	--	--	1.00	0.95	0.58	0.95	0.79	--	--	--	0.68	--	--	--	--	--
10	--	0.58	0.63	0.52	0.84	0.63	0.36	0.58	1.00	0.26	0.79	0.58	0.63	0.89	0.79	2.58	0.73	0.63	0.21	0.47	0.47	--	0.73	0.73
11	0.68	0.73	--	--	--	--	--	--	0.52	0.31	0.79	0.89	--	--	--	0.84	1.00	1.47	1.10	1.31	1.00	1.11	0.68	0.36
12	0.36	0.79	0.73	1.21	1.10	0.63	1.05	0.73	0.73	0.95	0.63	0.89	1.00	0.68	0.73	0.89	--	0.52	--	0.79	0.42	0.40	0.26	0.36
13	0.52	0.42	0.58	0.63	0.52	0.52	0.47	0.31	0.42	0.26	0.31	0.42	0.63	0.47	0.26	0.31	0.47	0.42	0.52	0.10	0.42	0.27	0.26	0.63
14	0.47	0.47	0.68	0.47	0.36	0.52	0.31	0.58	0.52	0.52	0.36	0.42	0.42	0.52	0.58	0.68	1.00	0.63	0.58	0.58	0.58	0.54	0.58	0.26
15	0.36	0.47	--	--	--	--	--	--	0.42	0.42	0.79	0.68	0.47	0.47	--	0.36	0.26	0.26	0.26	0.31	0.21	0.14	0.05	0.05
16	0.21	0.26	0.10	0.27	0.52	0.31	0.10	0.47	0.36	0.15	0.42	0.31	0.15	0.10	0.26	0.21	0.26	0.10	0.10	0.21	0.21	--	--	0.05
17	--	--	--	--	--	0.21	0.26	0.42	0.21	0.36	0.68	0.52	0.52	0.26	0.36	0.52	0.15	0.31	0.14	0.14	0.05	--	0.10	0.42
18	0.41	0.36	0.79	0.42	0.42	0.10	0.58	0.73	0.58	0.42	0.36	0.31	0.47	0.36	0.36	0.26	0.58	0.47	0.21	0.10	0.26	0.54	0.21	0.26
19	0.26	0.58	0.58	0.52	0.21	0.21	0.31	0.21	0.31	--	--	0.63	0.26	0.42	0.52	0.21	0.21	0.15	0.10	0.21	0.05	--	--	--
20	--	0.05	0.26	0.31	0.36	0.26	0.05	0.26	0.15	--	--	0.36	0.52	0.42	0.31	0.52	0.58	0.47	0.47	0.52	1.21	0.27	0.47	0.21
															1.42	0.47	0.58	0.42	0.27	0.21	0.36	--	0.15	0.36
21	0.31	0.15	0.15	0.42	0.26	0.26	0.42	0.26	0.58	--	--	0.58	0.42	0.21	0.52	0.47	--	--	0.27	--	--	--	--	--
22	0.42	0.31	0.10	0.47	0.31	0.26	0.10	0.31	0.36	--	--	1.00	1.10	0.52	0.47	0.47	0.26	0.31	0.26	0.21	--	--	0.54	0.63
23	--	0.40	0.47	0.47	0.36	0.47	0.05	0.31	0.26	--	--	--	0.36	0.26	0.42	0.58	0.47	0.36	0.79	0.26	--	0.36	0.26	0.42
24	0.47	0.42	0.42	0.42	0.21	0.52	0.21	0.26	0.42	--	--	0.40	0.42	0.68	0.31	0.36	0.63	0.31	0.10	0.31	0.27	0.15	0.52	--
25	0.15	0.05	0.36	0.63	0.10	0.21	0.10	0.15	0.21	--	--	--	--	0.89	--	--	--	--	--	--	--	--	--	--
26	0.15	0.31	0.21	0.21	0.21	0.15	0.10	0.10	0.10	--	--	--	--	0.26	--	--	--	--	--	--	--	0.14	--	--
27	--	--	--	0.14	--	--	--	--	--	--	--	--	--	--	--	--	0.21	0.15	0.10	0.05	--	0.27	0.05	0.15
28	0.36	0.26	0.10	0.10	0.15	0.21	0.05	0.10	0.15	--	--	--	--	--										

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

FEBRUARY 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	2.37	0.98	0.83	0.80	0.93	0.89	--	--	--	--	0.77	0.72	0.60	0.76	0.67	0.78	0.63	0.77	0.71	0.70	0.65	0.63	2.10	0.61
02	0.61	0.66	0.65	0.55	0.65	0.60	--	--	--	--	0.53	0.65	0.57	0.65	0.54	0.56	0.50	0.45	0.62	0.43	0.60	0.61	0.60	0.53
03	0.67	0.52	0.67	--	0.65	0.50	--	--	--	0.60	0.65	0.50	0.60	0.53	0.52	0.56	0.48	0.58	--	--	--	0.47	0.56	0.41
04	0.62	0.57	0.75	0.56	0.42	0.52	--	--	--	0.60	0.59	0.54	0.53	0.55	0.54	0.46	0.51	0.55	0.56	0.46	0.47	--	--	--
05	0.51	0.59	0.56	0.49	0.57	0.52	--	--	0.46	0.55	0.47	0.56	0.47	0.45	0.52	0.51	0.52	--	--	--	--	--	--	--
06	--	0.44	0.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.93	--	--	--
07	0.51	0.52	0.56	0.52	0.41	0.59	--	--	--	0.56	0.52	0.38	0.47	1.87	0.44	0.51	0.58	0.51	0.40	0.44	0.54	0.41	0.45	0.45
08	0.55	0.46	0.47	0.45	0.45	0.40	0.43	0.48	0.45	0.56	0.46	0.58	0.50	0.46	0.48	0.49	0.50	0.42	0.41	0.41	0.41	--	--	--
09	0.42	0.47	0.46	0.48	0.44	0.41	0.37	--	--	--	0.44	0.48	0.46	0.37	0.42	--	--	--	0.43	--	--	--	--	--
10	--	0.41	0.40	0.50	0.40	0.50	0.41	0.42	0.35	0.42	0.43	0.44	0.35	0.42	0.34	0.49	0.45	0.38	0.33	0.41	0.45	0.36	0.37	0.44
11	0.40	0.45	--	--	--	--	--	--	0.41	0.42	0.39	0.48	--	--	--	0.38	0.47	0.47	0.48	0.43	0.43	0.41	0.45	0.45
12	0.39	0.51	0.40	0.40	0.44	0.42	0.43	0.35	0.48	0.38	0.42	0.46	0.43	0.36	0.43	0.38	--	0.37	0.35	0.41	0.40	0.38	0.41	0.38
13	0.41	0.43	0.45	0.39	0.40	0.41	0.42	0.46	0.41	0.34	0.48	0.44	0.34	0.31	0.38	0.36	0.40	0.40	0.40	0.32	0.42	0.38	0.36	0.44
14	0.45	0.48	0.48	0.38	0.38	0.49	0.41	0.36	0.50	0.35	0.41	0.42	0.43	0.38	0.43	0.45	0.40	0.41	0.46	0.46	0.45	0.31	0.33	0.40
15	0.38	0.35	--	--	--	--	--	--	0.41	0.36	0.43	0.46	0.38	0.41	0.31	0.36	0.41	0.43	0.40	0.42	0.30	--	0.31	0.31
16	0.43	0.38	0.38	0.38	0.38	0.33	0.36	0.38	0.48	0.37	0.28	0.37	0.42	0.44	0.33	0.32	0.35	0.32	0.43	0.31	0.45	--	--	0.36
17	--	--	--	--	--	0.37	0.42	0.43	0.39	0.36	0.44	0.43	0.40	0.36	0.41	0.32	0.46	0.41	0.36	0.42	0.40	--	0.47	0.36
18	0.37	0.44	0.32	0.37	0.41	0.43	0.40	0.47	0.37	0.38	0.34	0.45	0.54	0.33	0.37	0.35	0.43	0.45	0.38	0.40	0.43	0.40	0.43	0.48
19	0.40	0.31	0.41	0.40	0.34	0.46	0.41	0.37	0.37	--	--	0.36	0.39	0.52	0.38	0.37	0.43	0.38	0.36	0.33	0.47	0.28	0.41	0.37
20	0.38	0.45	1.85	0.36	0.39	0.34	0.37	0.37	0.32	--	--	0.41	0.41	0.42	0.38	0.31	0.44	0.46	0.33	0.43	0.38	0.36	0.33	0.50
21	0.35	0.50	0.44	0.38	0.43	0.46	0.41	0.36	0.37	--	--	0.30	0.40	0.43	0.38	0.41	0.38	0.40	0.36	0.40	0.35	0.36	0.36	0.37
22	0.40	0.42	0.39	0.37	0.36	0.42	0.41	1.78	0.34	--	--	1.82	0.47	0.45	0.36	0.39	--	0.38	0.34	0.41	--	--	--	--
23	--	0.38	0.47	0.42	0.38	1.82	0.37	1.83	0.41	--	--	--	0.34	0.40	0.38	0.33	1.77	0.36	0.41	0.39	0.36	0.41	0.31	0.46
24	0.35	0.42	0.41	0.40	0.37	0.46	0.41	0.43	0.45	--	--	0.33	3.16	0.32	1.85	0.36	0.40	0.30	0.41	0.40	--	0.36	0.48	0.44
25	0.31	0.38	0.43	0.36	0.37	0.37	0.43	0.36	0.40	--	--	--	--	0.41	0.33	0.36	0.43	0.36	0.35	0.32	0.31	0.41	0.39	0.37
26	0.37	0.38	0.32	0.30	0.33	0.38	0.50	0.43	0.33	--	--	--	--	0.47	--	--	--	0.37	0.38	0.27	0.31	--	--	--
27	0.36	0.40	0.30	0.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.31
28	0.38	0.33	0.37	0.44	0.35	0.44	0.37	0.25	0.37	--	--	--	--	--	--	--	0.38	0.32	0.42	0.38	--	0.36	0.35	0.37

Table of Contents
for January 1971 Data

	Page
Daily Solar Activity Centers	
X-ray, 8.6 mm, 9.1 cm and 21 cm Spectroheliograms Magnetograms and Calcium Plages	31-61
Hα Spectroheliograms, Sunspots and Corona	62-72
Individual Regions of Solar Activity	73-80
Daily Calcium Plage Indices	80
Solar X-ray Radiation	
Naval Research Laboratory - Explorer 37	81-83
Sudden Ionospheric Disturbances	
Table of Events	84-85
Number of Events in each Plage Region	86
Selected Event	87
Solar Radio Waves	
Spectral Observations	88-95
Cosmic Rays	
Neutron Monitors Daily Values - Churchill, Deep River, Calgary, Sulphur Mt., Climax, Dallas	96
Chart of Variations - January 24-25	97
- Deep River, Alert	98
- Calgary, Sulphur Mt.	99
Geomagnetic Indices	
Table of Indices Kp, Ci, Cp, Ap	100
Chart of Kp by Solar Rotations and 12-Month Table of Daily Average Ap	101
Principal Magnetic Storms	102
Sudden Commencements and Solar Flare Effects	103
Radio Propagation Indices	
North Atlantic Quality Figures and Forecasts	104
Charts of North Atlantic Short-term Forecasts and Quality and High Latitude Advance Forecasts	105
Transmission Frequency Ranges - North Atlantic Path	106-107
Quality Indices on Transmission from U.S.A., South America and Asia to Germany	108

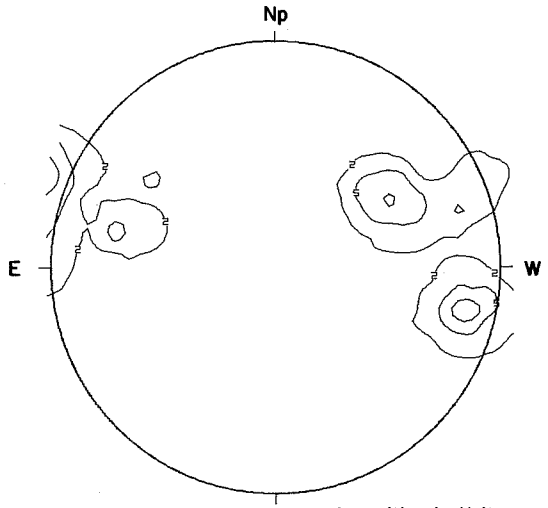
Errata: See pages 62 & 80.

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

JANUARY 1, 1971 (P = 2.33, B_o = -3.01, L_o = 129.62)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

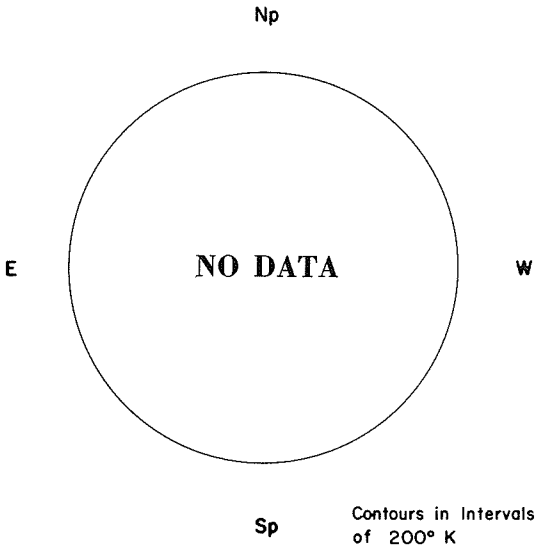


0830-1010 UT

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

PROSPECT HILL
AFCRL

8.6 mm

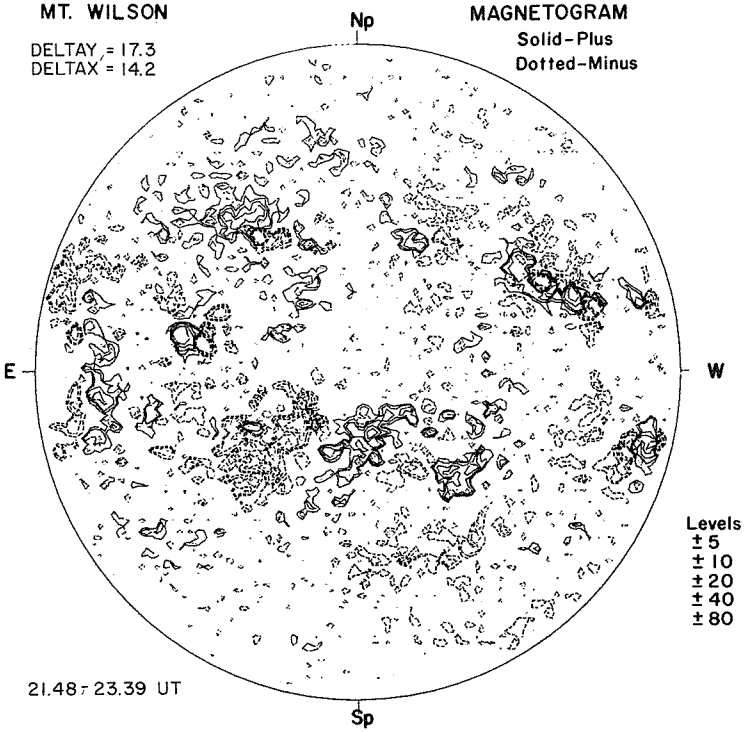


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.3
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

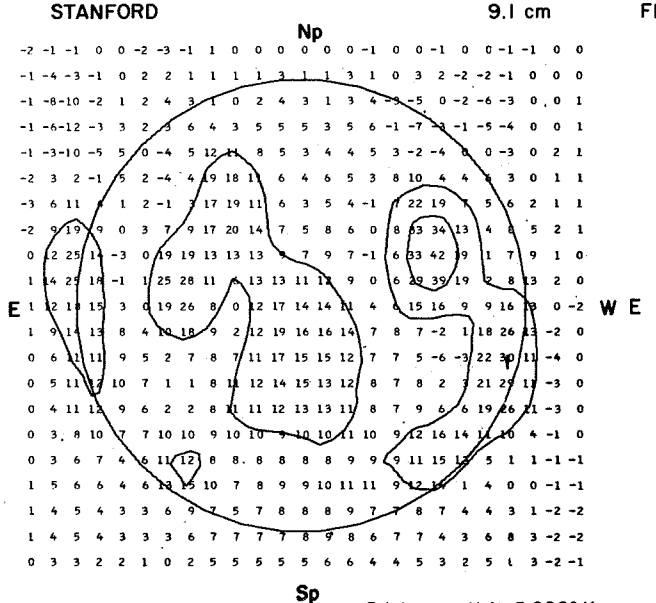


Levels
±5
±10
±20
±40
±80

21.48-23.39 UT

STANFORD

9.1 cm

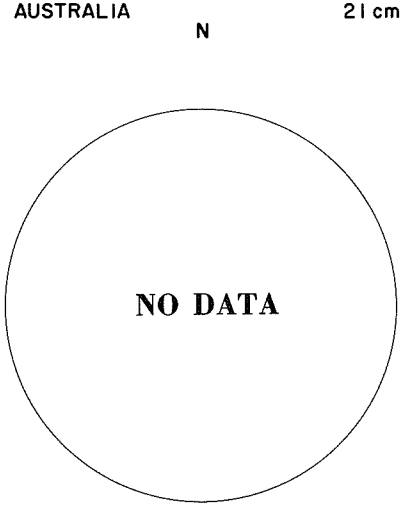


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

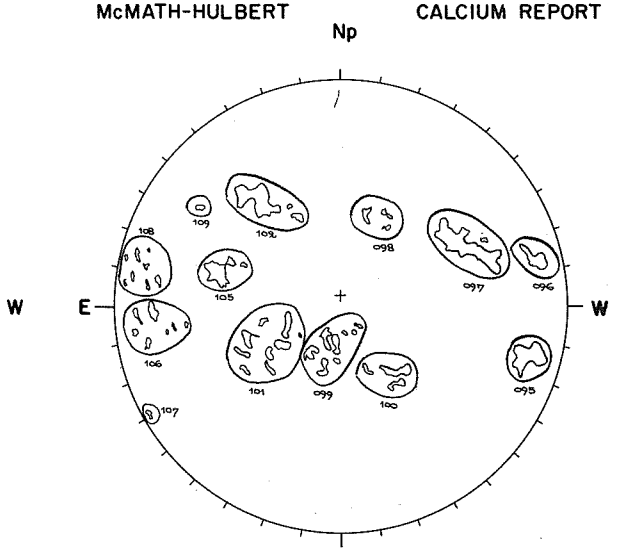


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



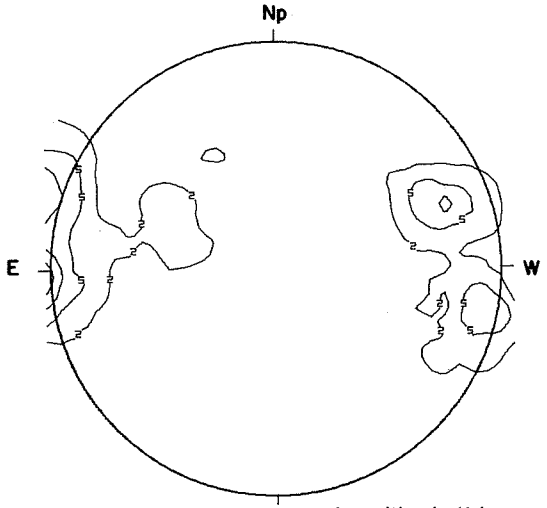
POOR	B
95-25	-3.0
96-13	-3.0
97-27	-3.5
99-11	-2.5
01-20	-2.5
02-24	-2.5
05-13	-3.0

1415 UT

JANUARY 2, 1971 (P = 1.84, B_o = -3.12, L_o = 116.45)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

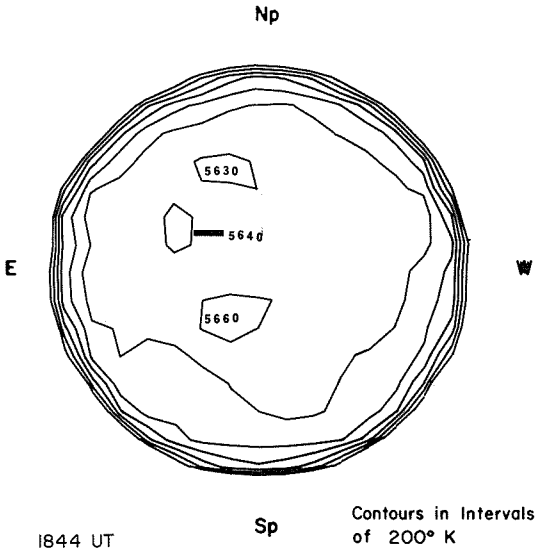


0822-0958 UT

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

PROSPECT HILL
AFCRL

8.6 mm

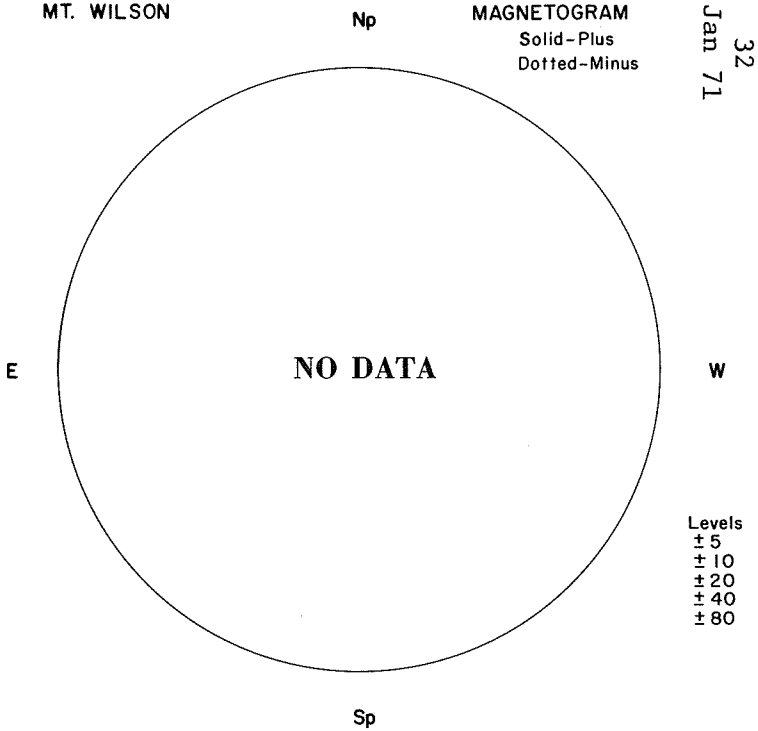


1844 UT

Contours in Intervals of 200° K

MT. WILSON

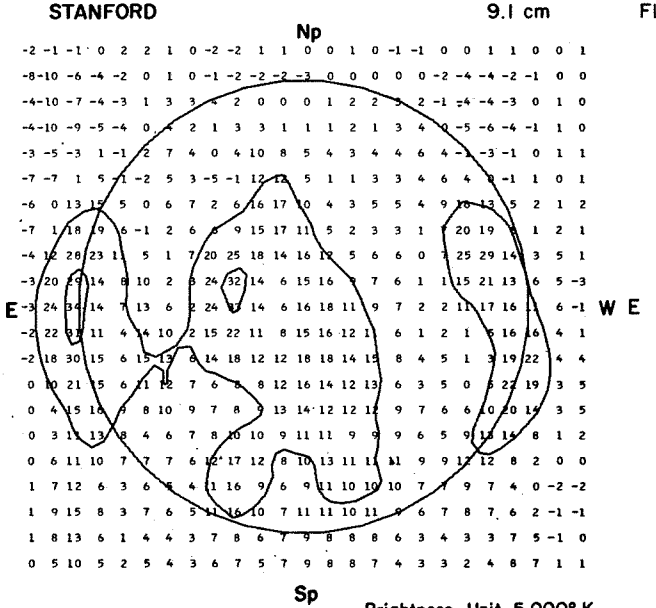
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

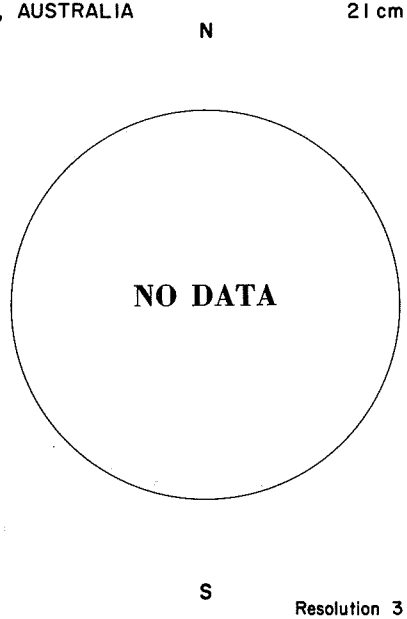


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

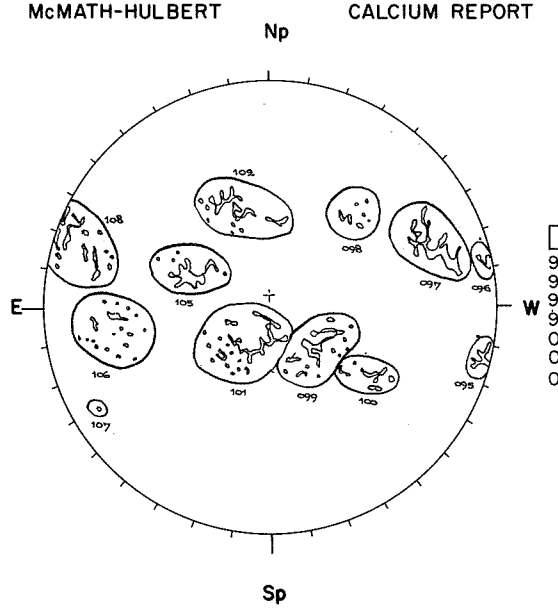


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



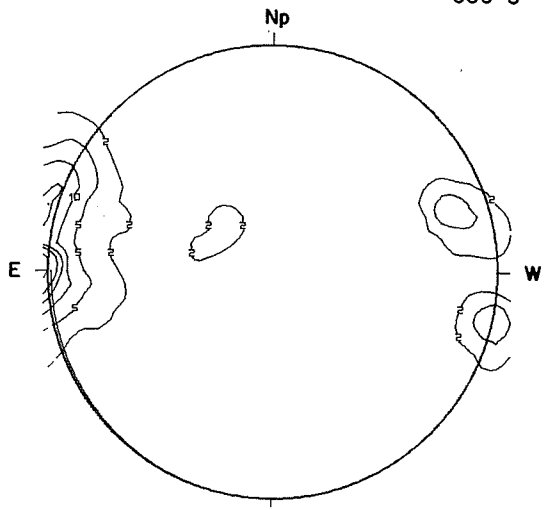
POOR	0
95-25-3.5	
96-13-3.0	
97-27-3.5	
99-14-2.5	
01-20-2.5	
02-21-2.5	
05-17-3.0	

1455 UT

JANUARY 3, 1971 (P = 1.36, B_o = -3.24, L_o = 103.28)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

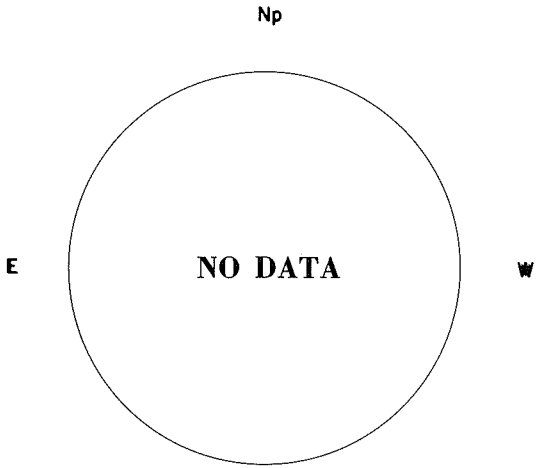


0639-0818 UT

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

PROSPECT HILL
AFCRL

8.6 mm

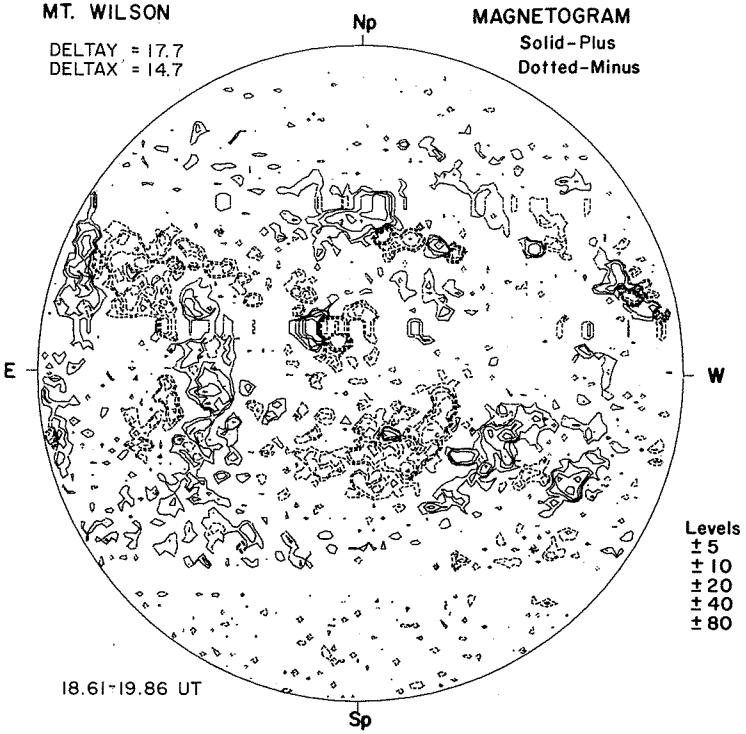


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.7
DELTAX = 14.7

MAGNETOGRAM
Solid-Plus
Dotted-Minus

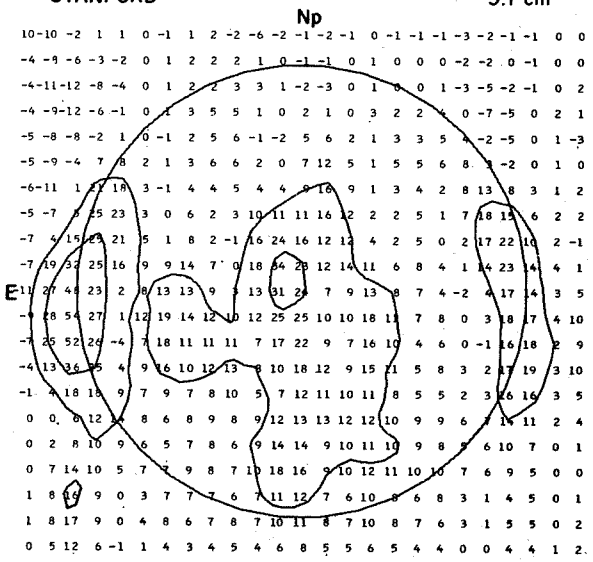


Levels
±5
±10
±20
±40
±80

18.61-19.86 UT

STANFORD

9.1 cm

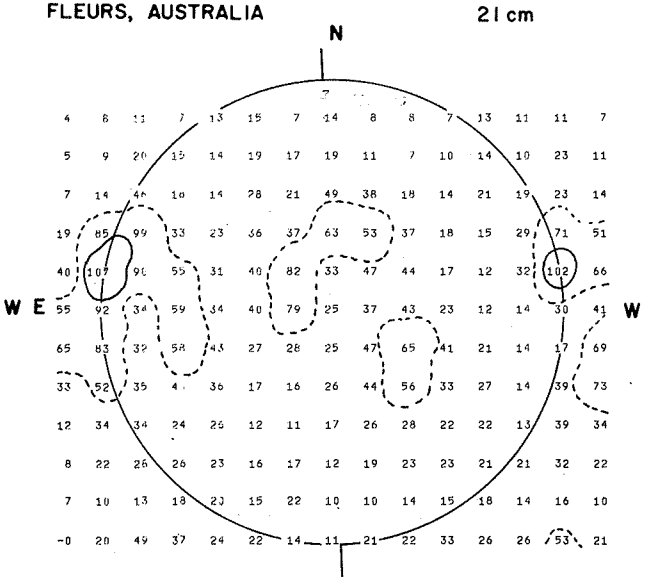


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

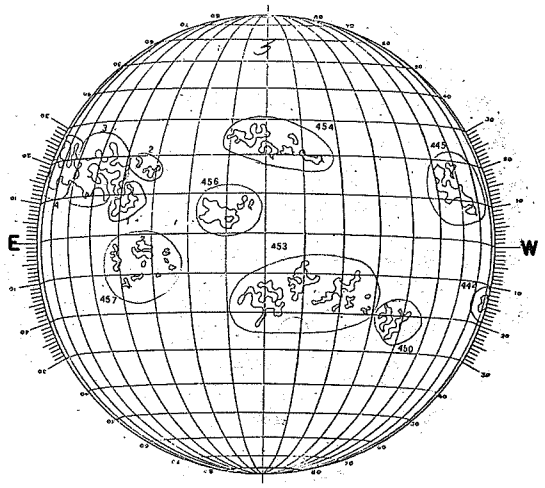


02-03 UT

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

CALCIUM REPORT

CATANIA



45-33-5.8
53-44-3.5
54-22-2.8
56-17-6.5
57-15-3.9
3-53-2.9
4-64-3.8

0845 UT

33
Jan 71

JANUARY 4, 1971 (P = 0.87, B_o = -3.35, L_o = 90.11)

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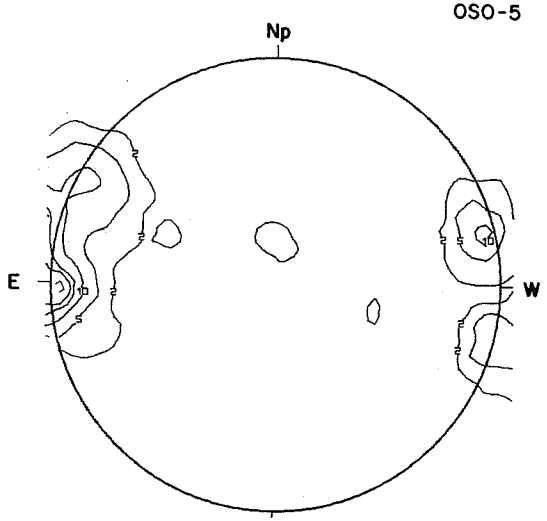
LEICESTER UNIV.

X-RAY
OSO-5

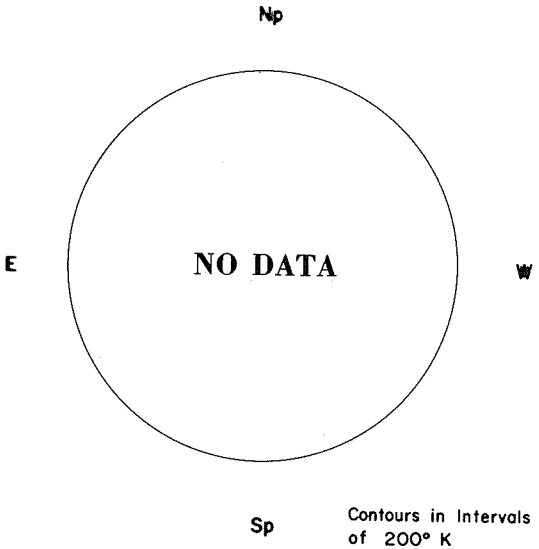


0804-0943 UT

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

PROSPECT HILL
AFCRL

8.6 mm

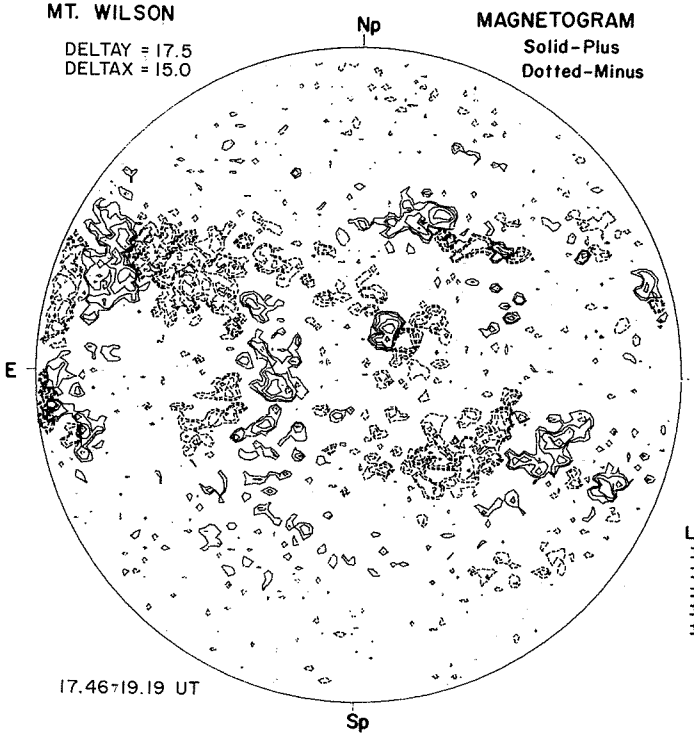


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.5
DELTAX = 15.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

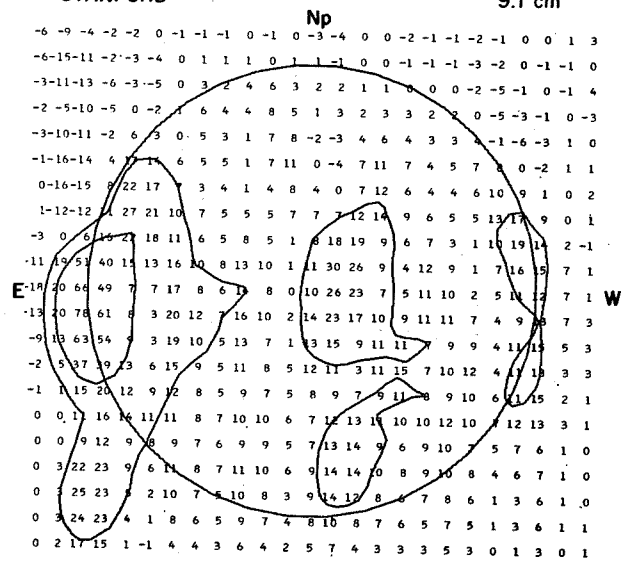


Levels
±5
±10
±20
±40
±80

17.46-19.19 UT

STANFORD

9.1 cm

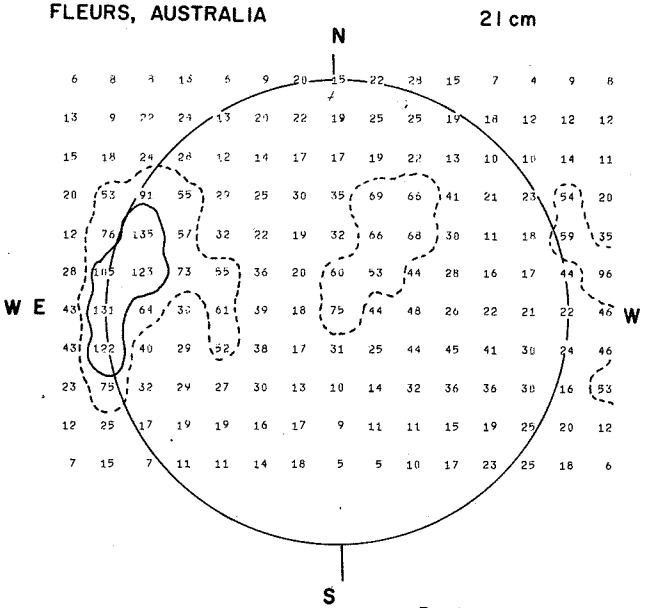


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

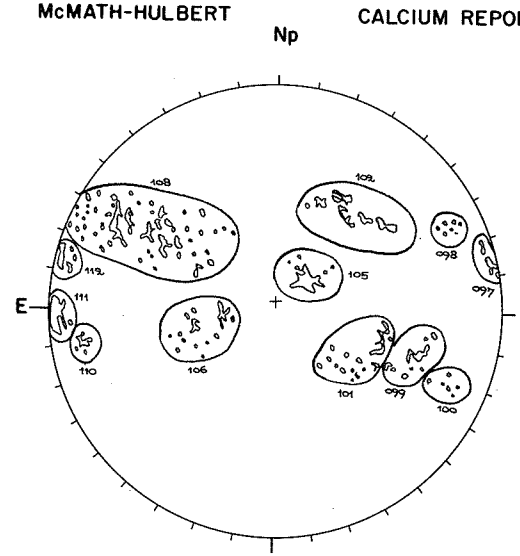


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



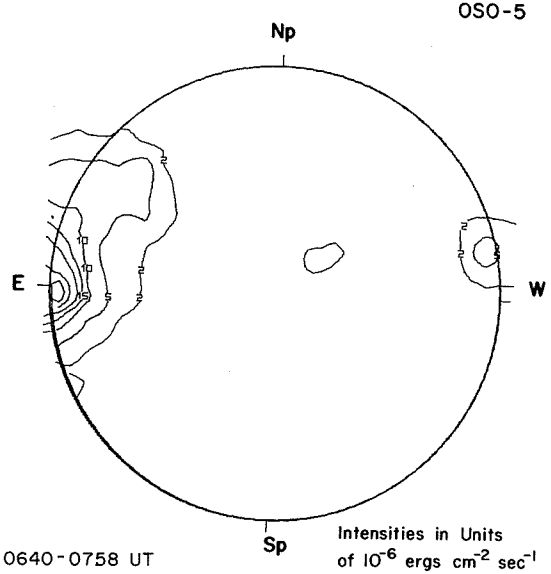
POOR	M
97 - 12 - 2.5	
02 - 18 - 2.5	
05 - 12 - 3.5	
08 - 45 - 2.5	
11 - 32 - 3.5	
12 - 14 - 3.0	

1950 UT

JANUARY 5, 1971 (P = 0.39, B_o = -3.47, L_o = 76.94)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

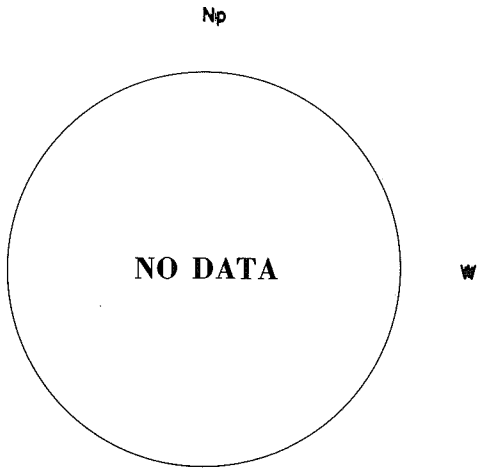


0640-0758 UT

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

PROSPECT HILL
AFCRL

8.6 mm

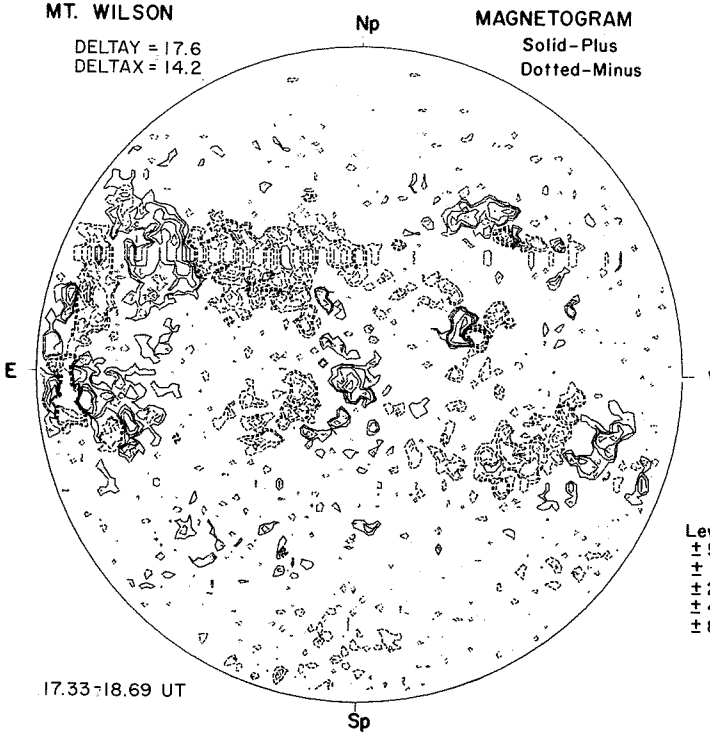


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

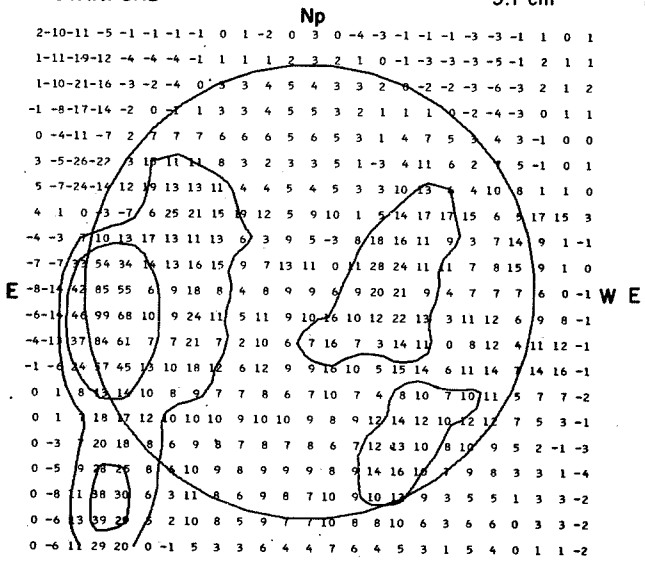


Levels
±5
±10
±20
±40
±80

17.33-18.69 UT

STANFORD

9.1 cm

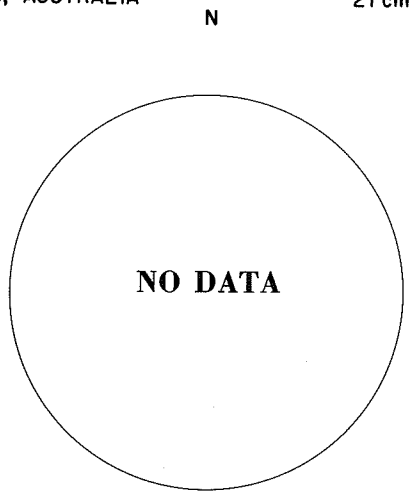


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

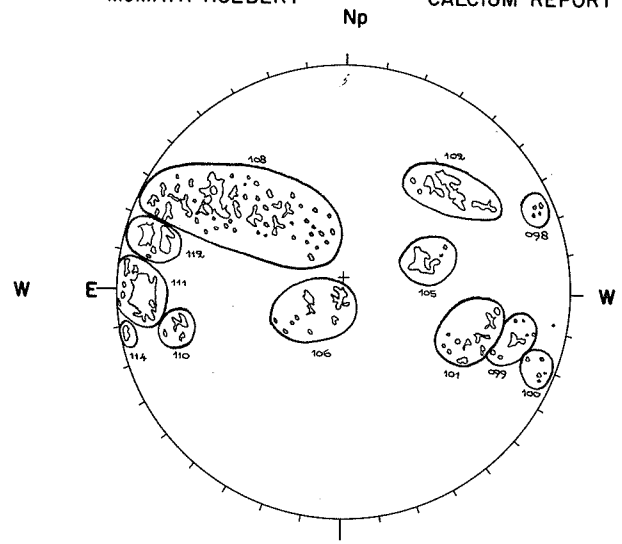


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



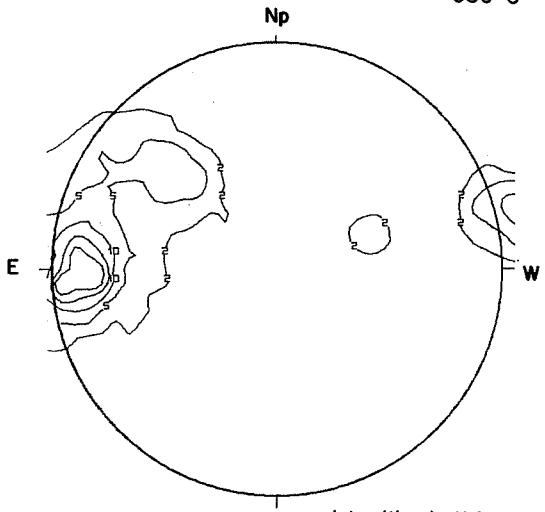
POOR	M
02-18-2.5	
05-12-3.5	
08-51-2.5	
10-07-2.5	
11-47-3.5	
12-18-3.0	
14-06-3.5	

1835 UT

JANUARY 6, 1971 (P=-0.10, B_o=-3.58, L_o = 63.77)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

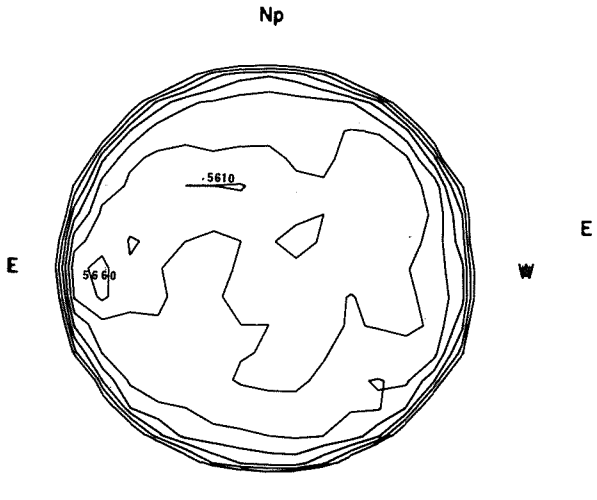


0504-0615 UT

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

PROSPECT HILL
AFCRL

8.6 mm

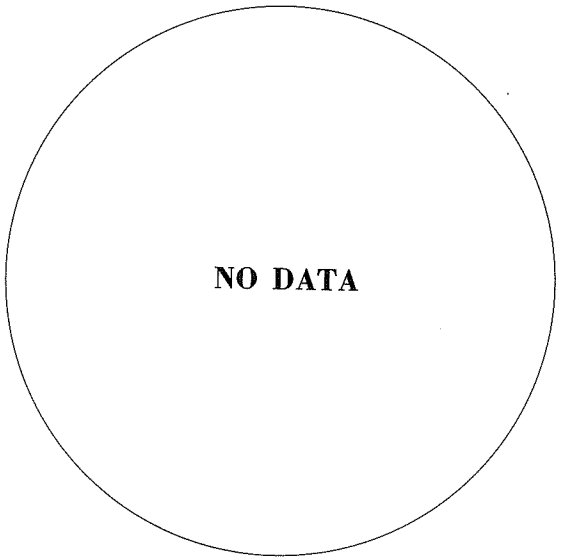


1604 UT

Contours in Intervals of 200° K

MT. WILSON

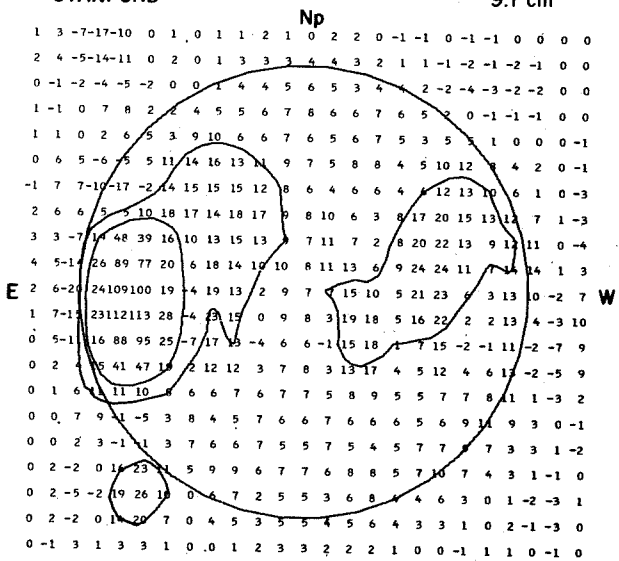
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

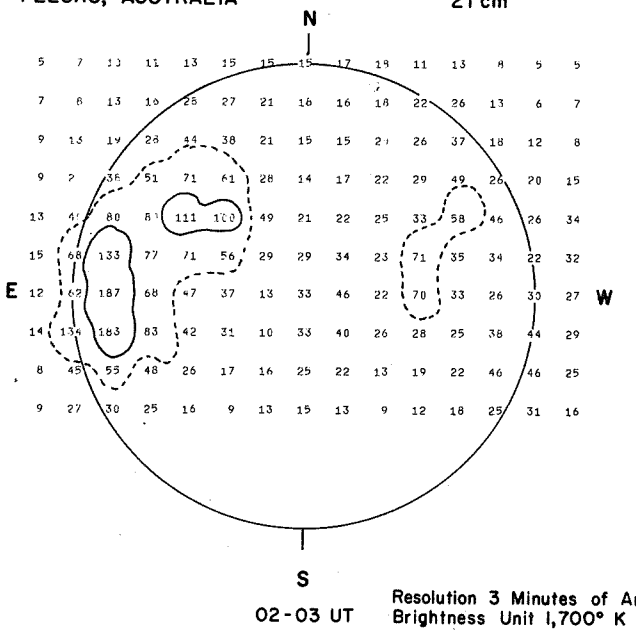


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

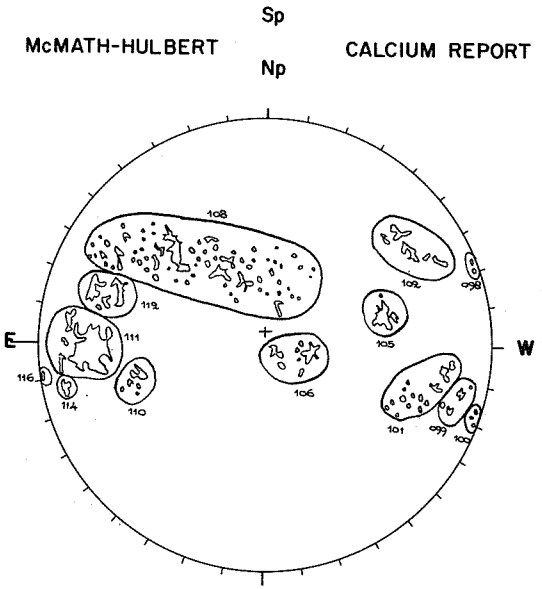


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



POOR	M
05-12	-3.5
06-10	-2.5
08-50	-2.5
10-07	-2.5
11-48	-3.5
12-16	-3.0
14-08	-2.5

1525 UT

JANUARY 7, 1971 (P=-0.58, B_o=-3.69, L_o=50.61)

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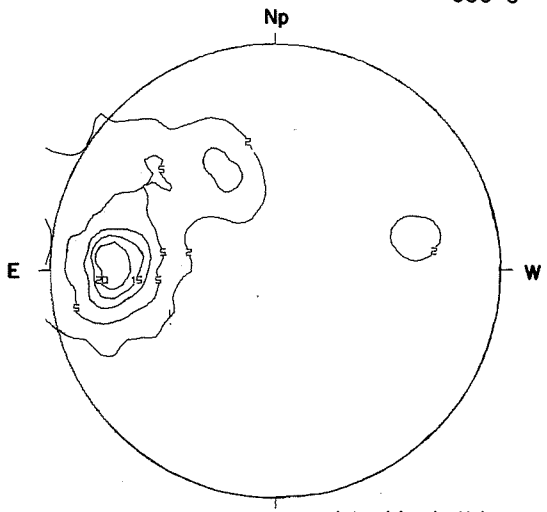
X-RAY
OSO-5

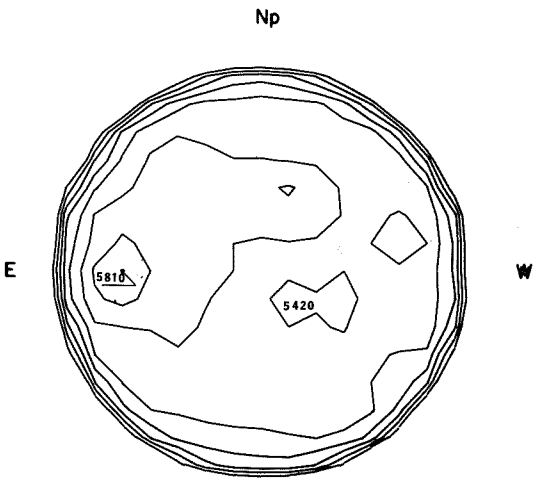


0643-0741 UT

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

PROSPECT HILL
AFCRL

8.6 mm

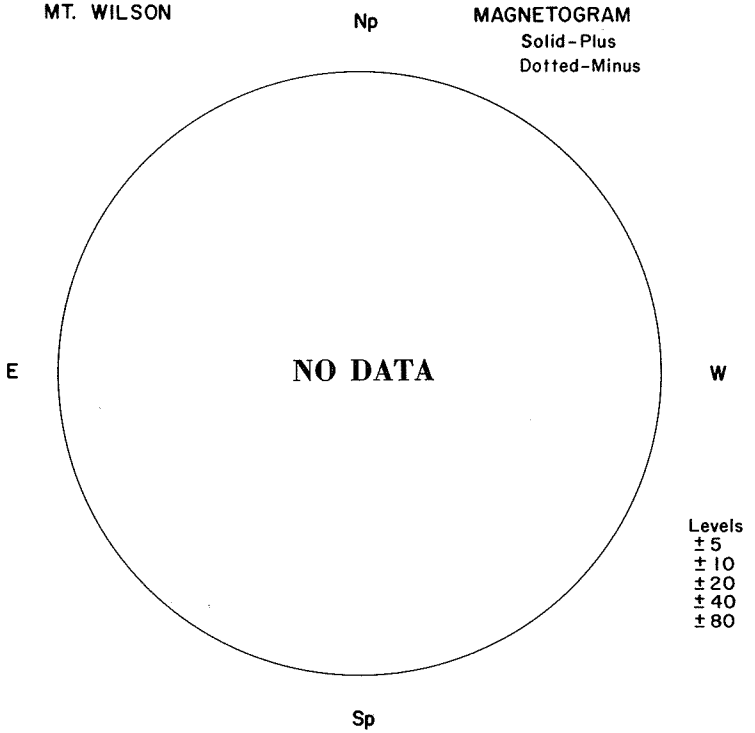


1549 UT

Contours in Intervals of 200° K

MT. WILSON

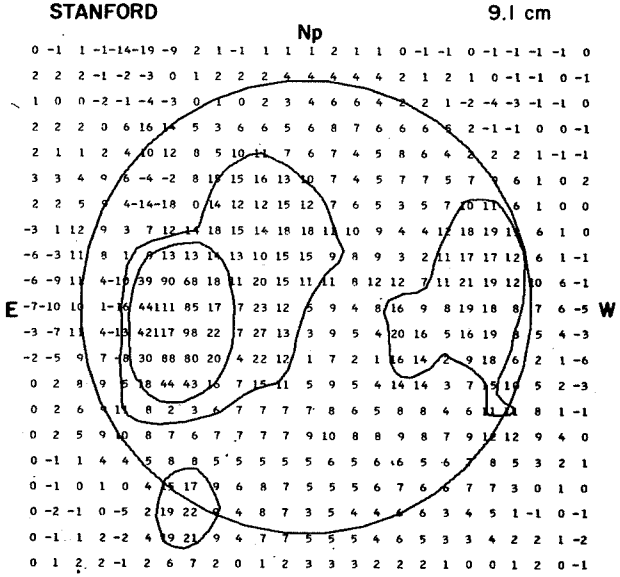
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

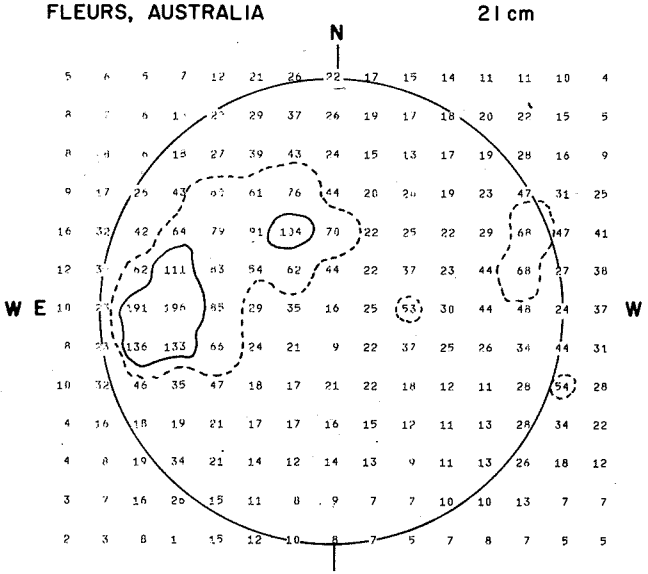


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

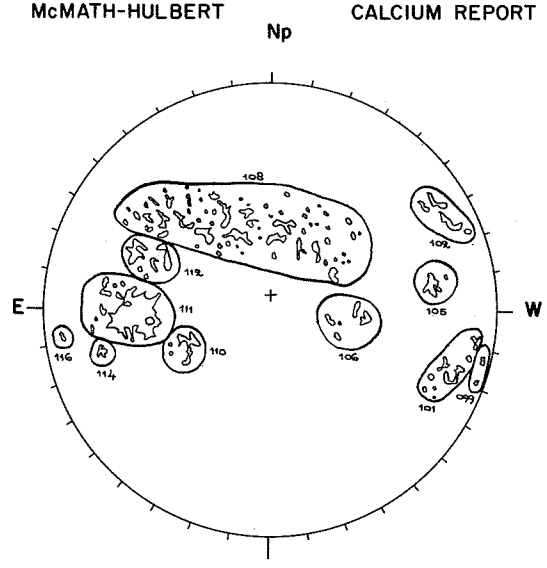


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



FAIR	M
05-10	-3.5
06-07	-2.5
08-47	-2.5
10-07	-2.5
11-50	-3.5
12-13	-2.5

1530 UT

37
Jan 71

JANUARY 8, 1971 (P=-1.07, B_o=-3.80, L_o=37.44)

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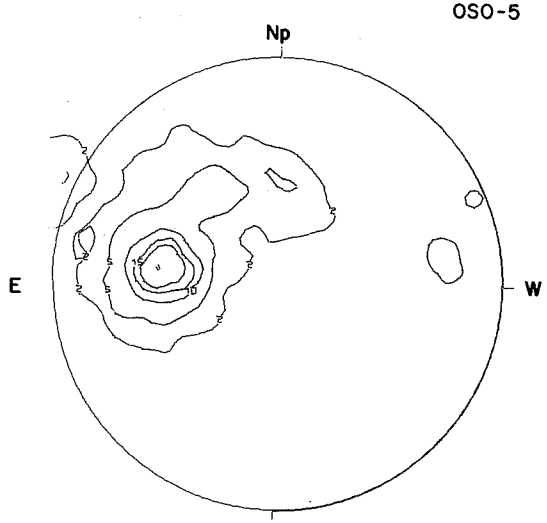
X-RAY
OSO-5

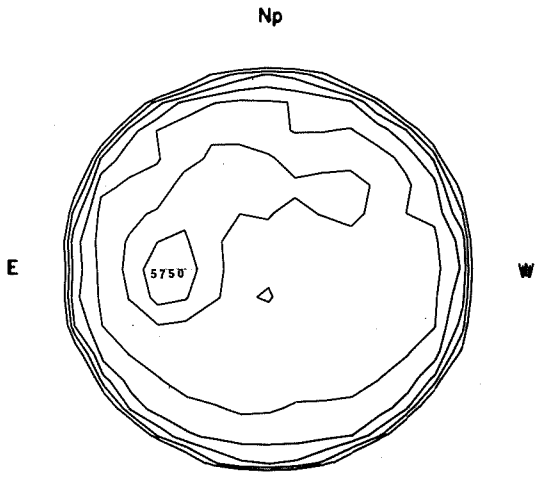


0555-0748 UT

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

PROSPECT HILL
AFCRL

8.6 mm

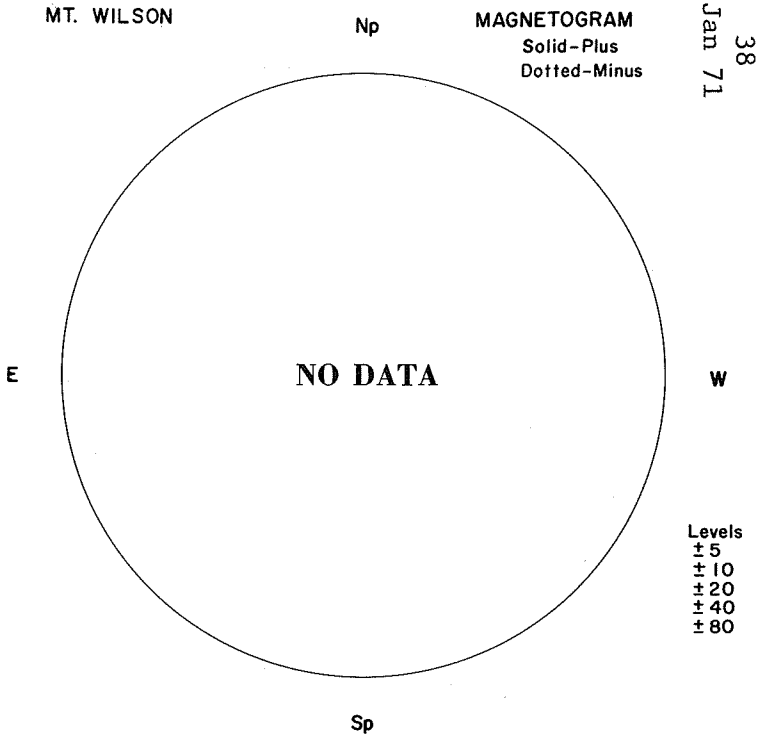


1559 UT

Contours in Intervals of 200° K

MT. WILSON

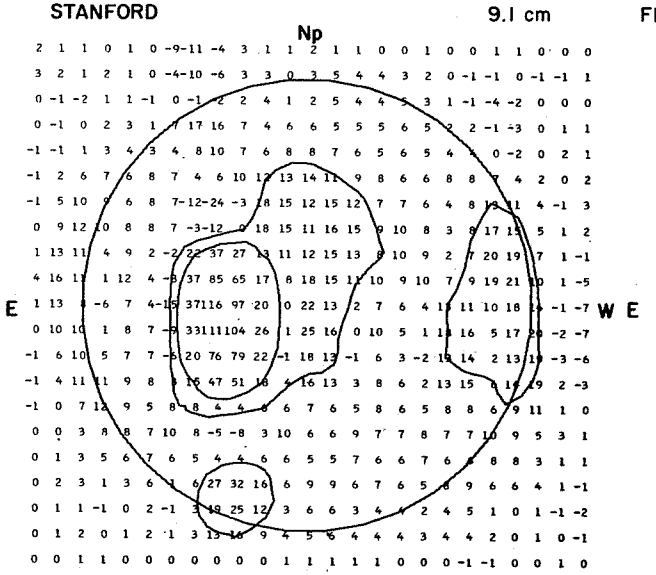
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

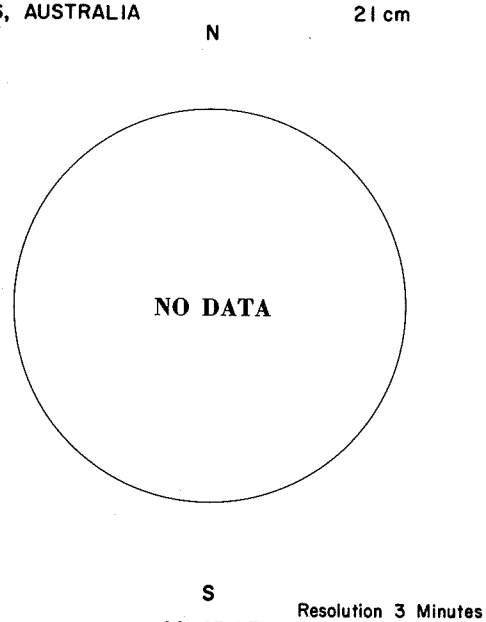


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

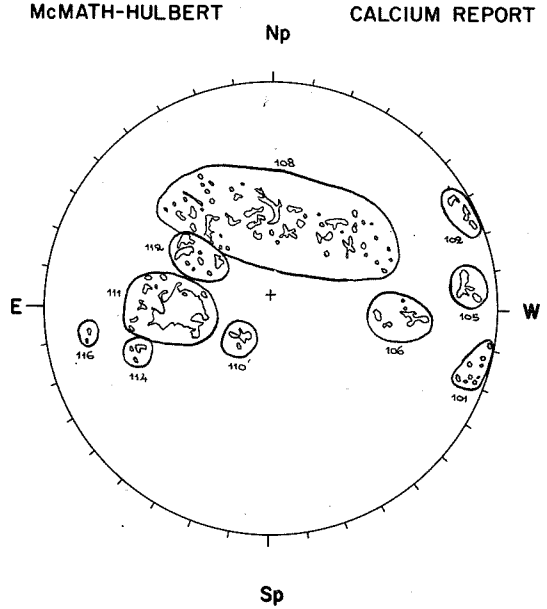


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



POOR	M
05-10	-3.5
06-08	-2.5
08-45	-2.5
10-07	-2.5
11-51	-3.5
12-13	-2.5

1445 UT

JANUARY 9, 1971 (P=-1.55, B_o=-3.91, L_o=24.27)

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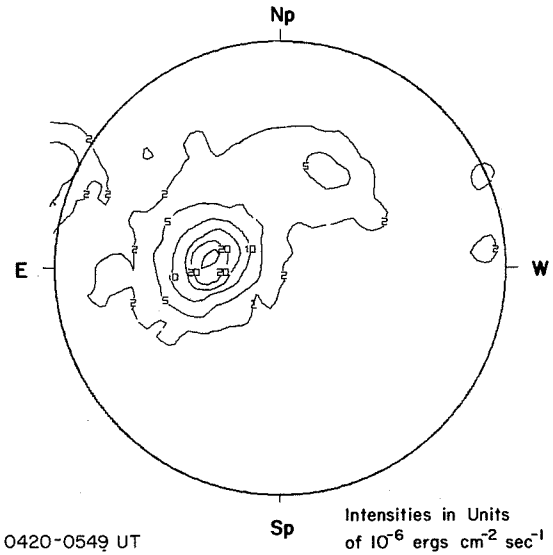
X-RAY
OSO-5

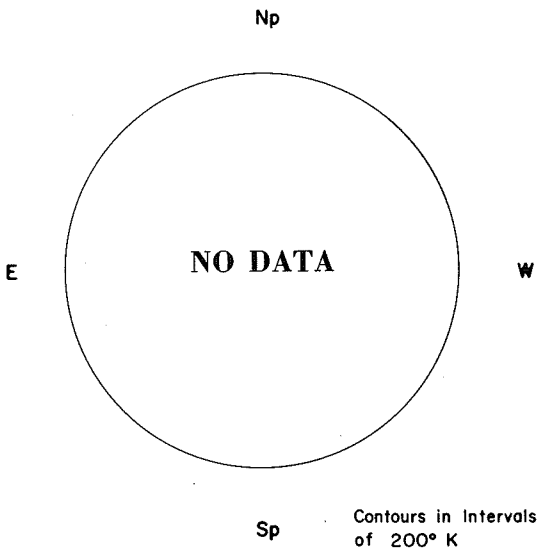


0420-0549 UT

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

PROSPECT HILL
AFCRL

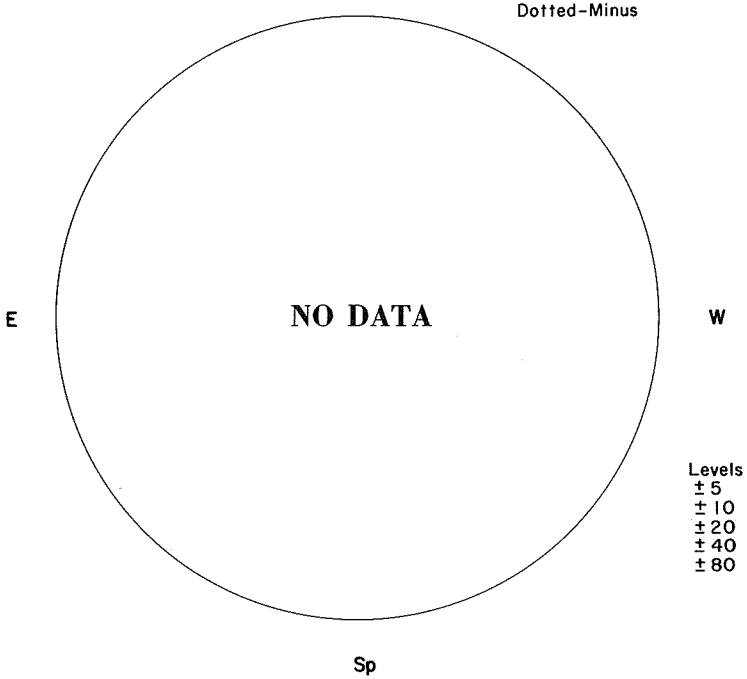
8.6 mm



Contours in Intervals of 200° K

MT. WILSON

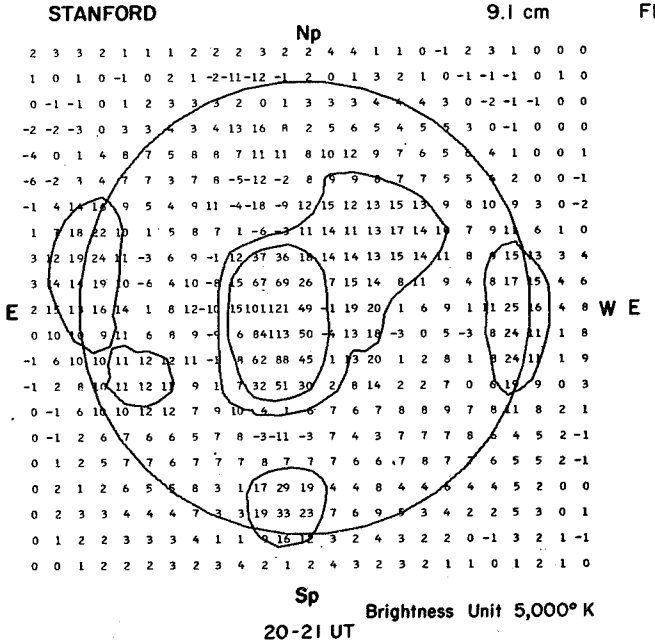
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

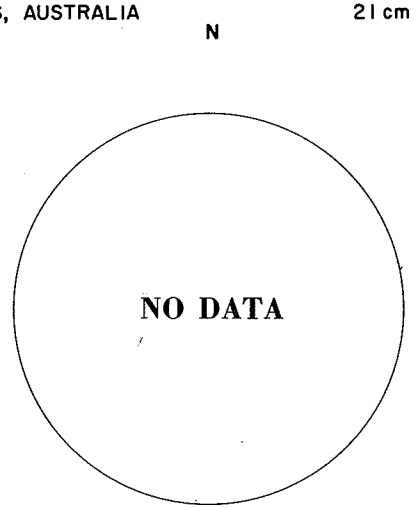


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

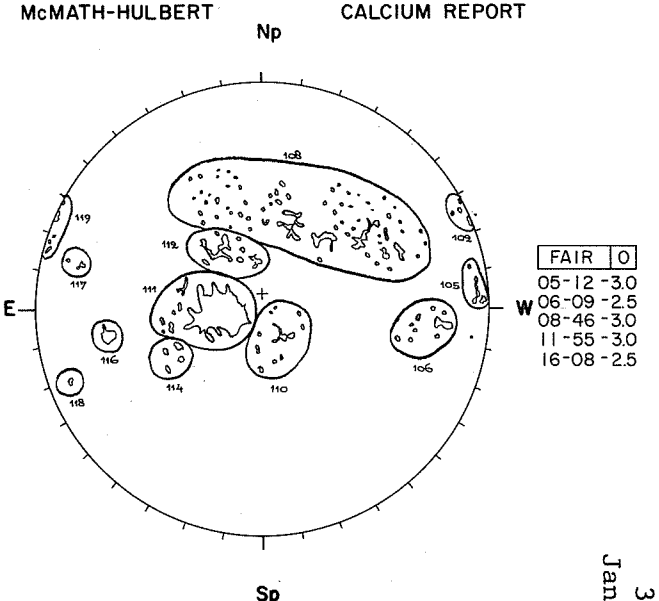


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



1525 UT

39
Jan 71

JANUARY 10, 1971 (P=-2.03, B_o=-4.02, L_o=11.10)

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

E

W

Sp

20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

N

E

NO DATA

W

S

02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT

Np

E

NO DATA

W

Sp

JANUARY 11, 1971 (P=-2.51, B_o=-4.12, L_o=357.93)

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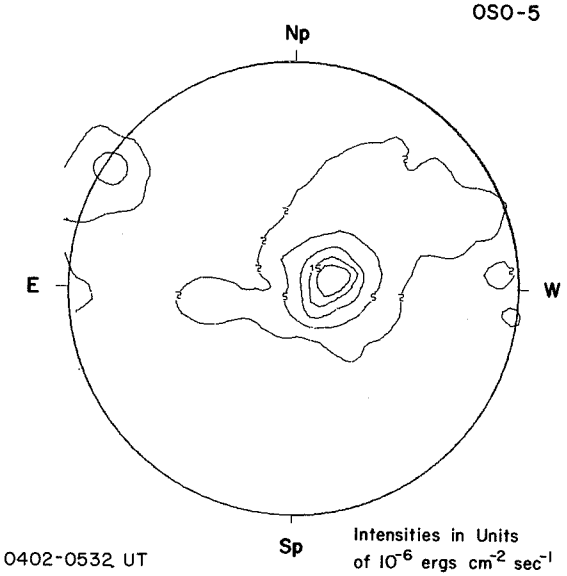
X-RAY
OSO-5

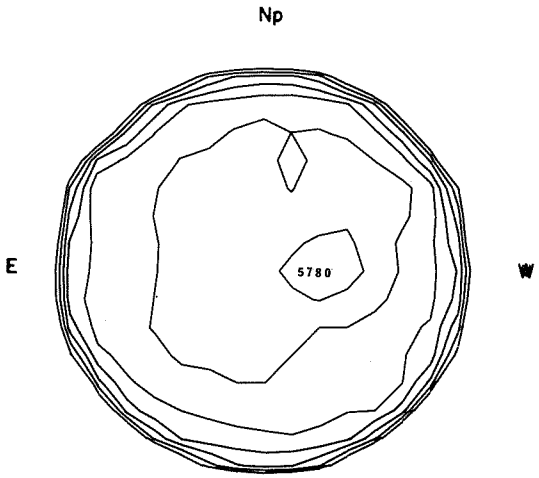


0402-0532 UT

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

PROSPECT HILL
AFCRL

8.6 mm

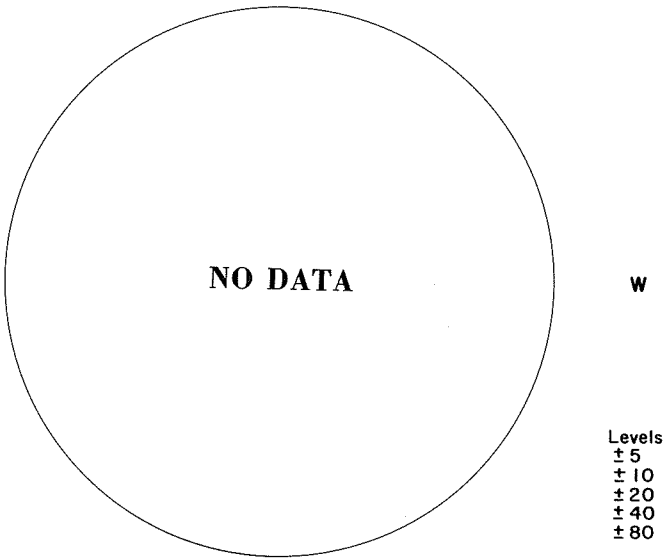


1555 UT

Contours in Intervals of 200° K

MT. WILSON

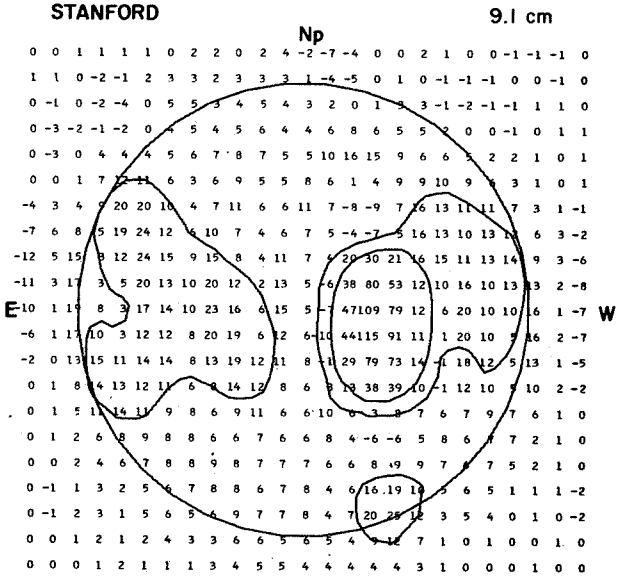
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

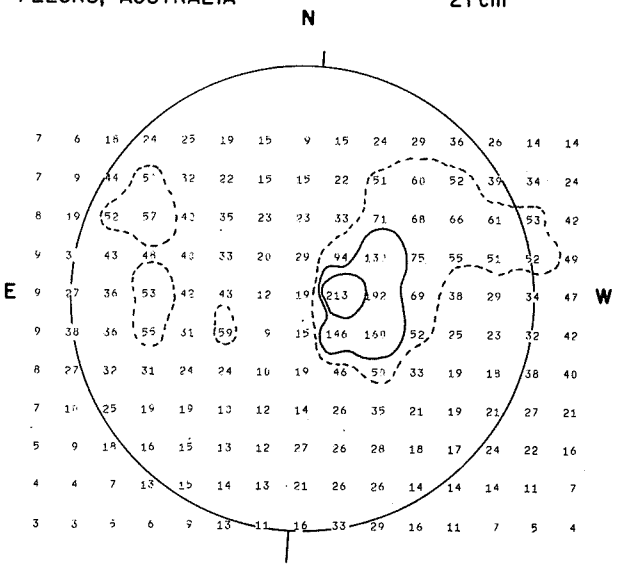


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

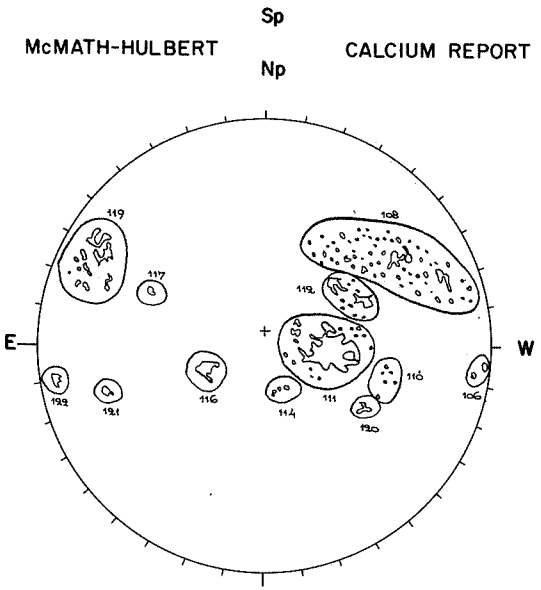


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



POOR	M
08-42	2.5
11-51	3.5
12-12	2.5
16-08	3.0
19-22	2.5
21-03	2.5
22-07	2.5

1830 UT

JANUARY 12, 1971 (P=-2.99, B_o=-4.23, L_o=344.76)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E NO DATA W

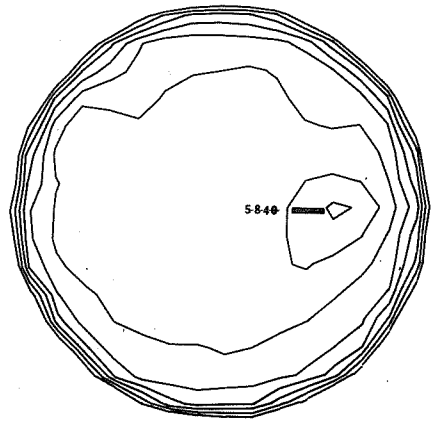
Sp

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

PROSPECT HILL
AFCRL

8.6 mm

Np

E 

W

2018 UT

Sp

Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

Np

E NO DATA W

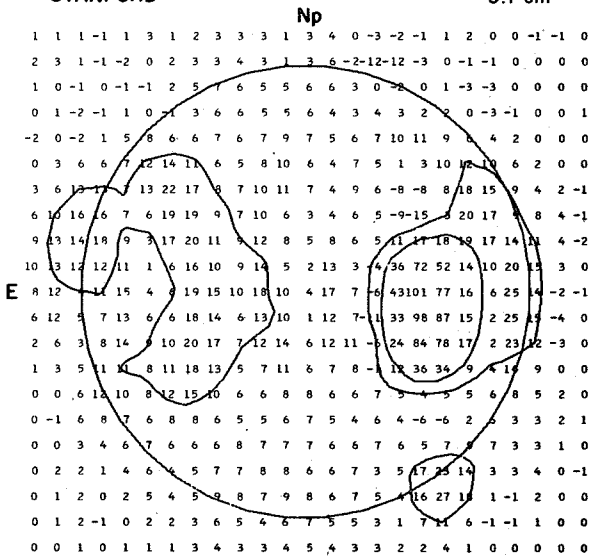
Sp

Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

Np

E 

W

Sp

20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

N

W NO DATA E

S

02-03 UT

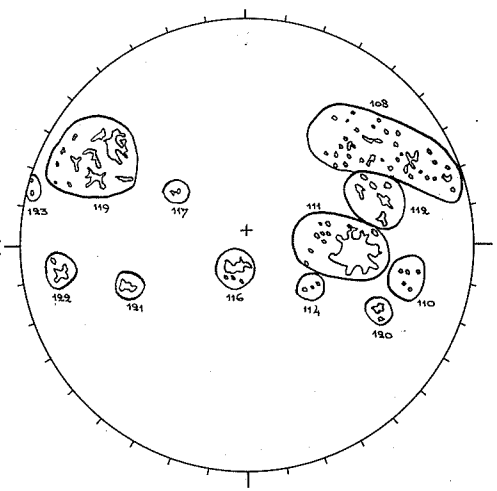
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT

Sp

Np

E 

W

Sp

1545 UT

POOR	M
08-37-2.0	
11-50-3.5	
12-10-2.5	
16-07-3.0	
19-30-2.5	
21-05-3.0	
22-07-2.5	

JANUARY 13, 1971 (P=-3.47, B_o=-4.33, L_o=331.59)

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

Levels
±5
±10
±20
±40
±80

Sp

STANFORD

9.1 cm

Np

E

W

Sp

Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

N

E

W

S

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

02-03 UT

McMATH-HULBERT

CALCIUM REPORT

Np

E

NO DATA

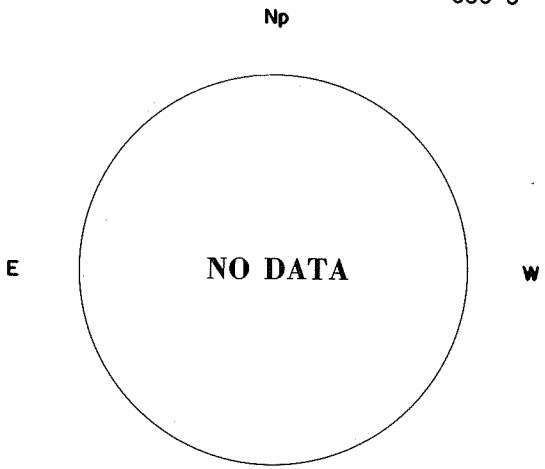
W

Sp

JANUARY 14, 1971 (P=-3.94, B_o=-4.44, L_o=318.42)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

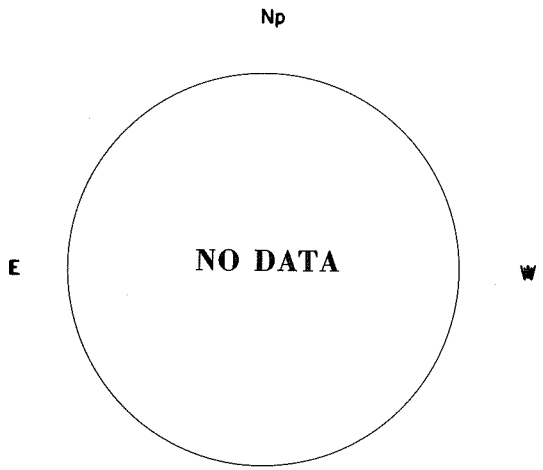
X-RAY
OSO-5



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

PROSPECT HILL
AFCRL

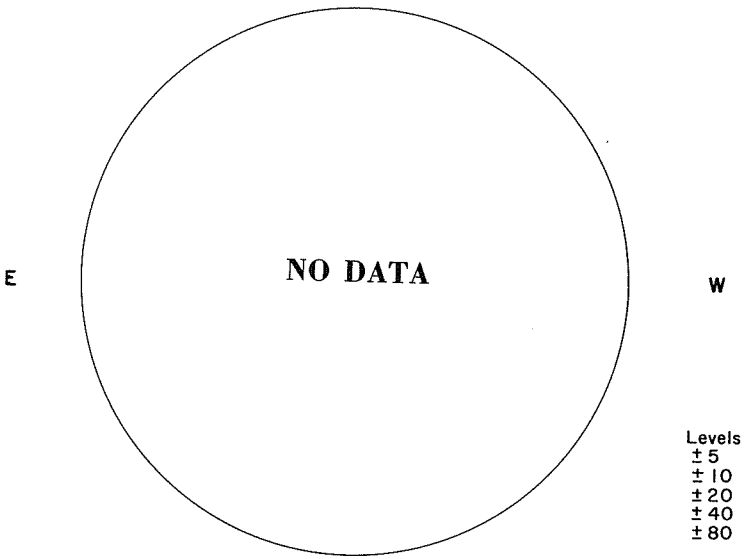
8.6 mm



Contours in Intervals of 200° K

MT. WILSON

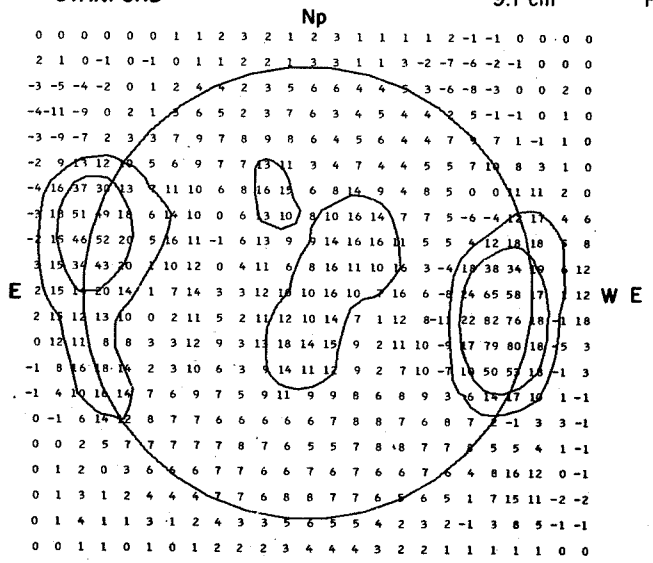
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

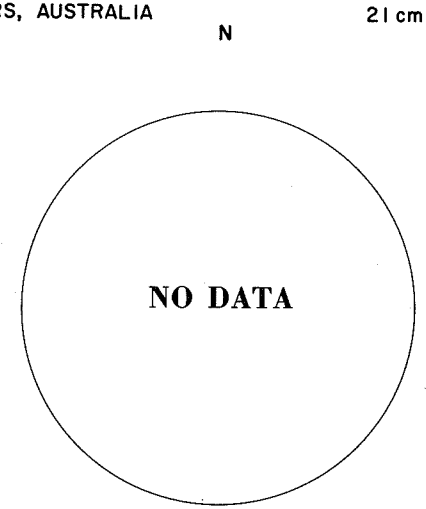


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

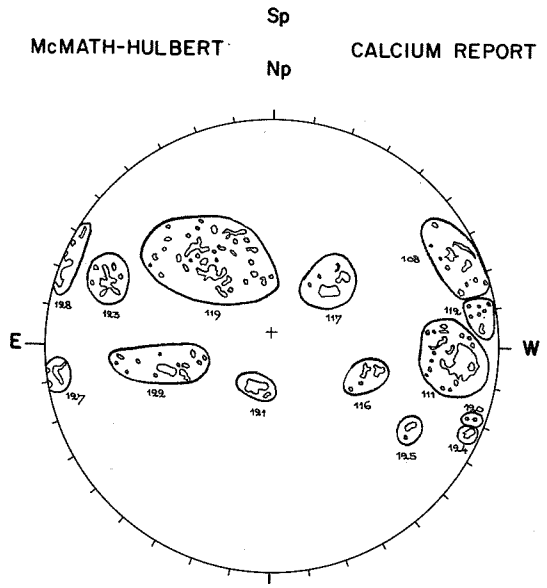


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



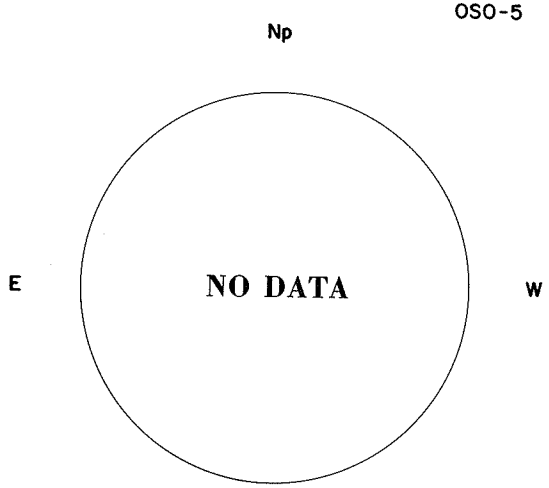
FAIR	S
08-34	-2.0
11-50	-3.5
12-06	-2.5
17-07	-2.5
19-32	-2.5
21-08	-2.5
23-12	-3.0
24-08	-4.0
28-30	-3.0

2042 UT

JANUARY 15, 1971 (P=-4.41, B_o=-4.54, L_o=305.26)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

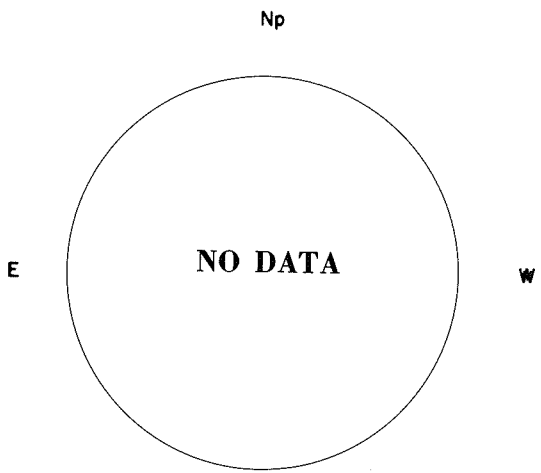
X-RAY
OSO-5



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

PROSPECT HILL
AFCRL

8.6 mm

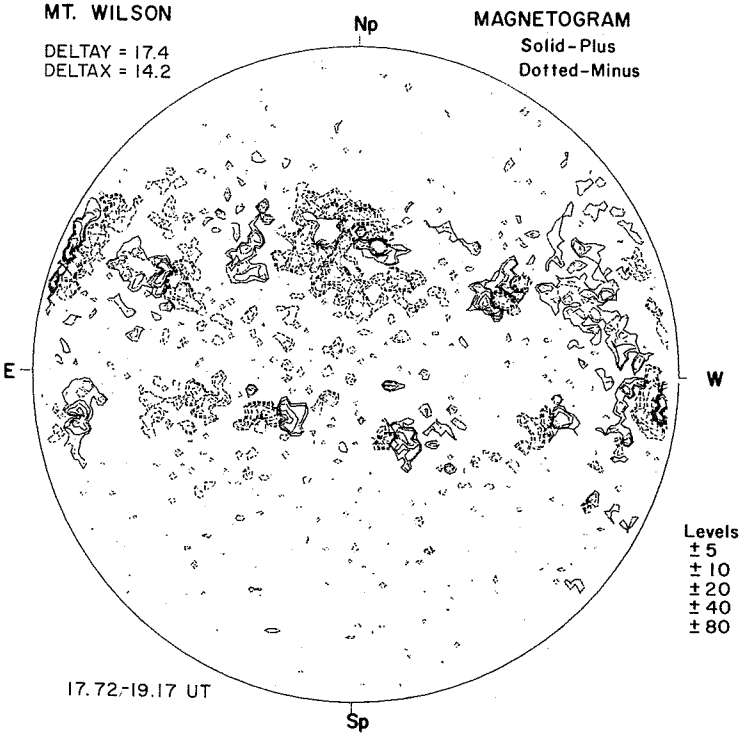


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.4
DELTAX = 14.2

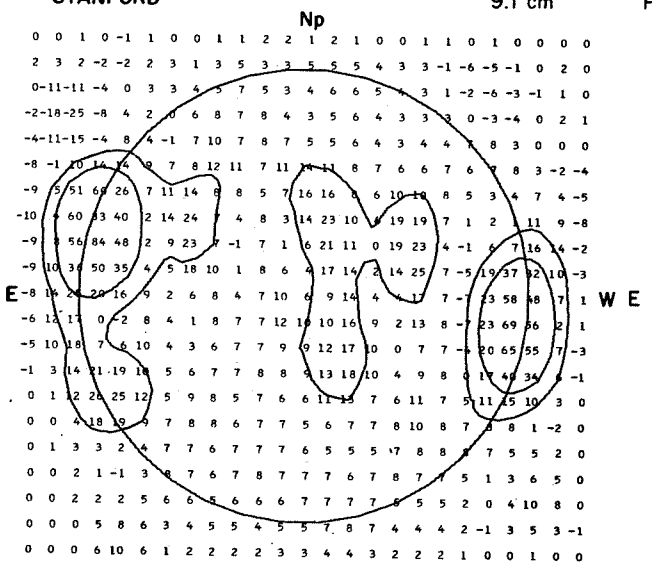
MAGNETOGRAM
Solid-Plus
Dotted-Minus



17.72-19.17 UT

STANFORD

9.1 cm

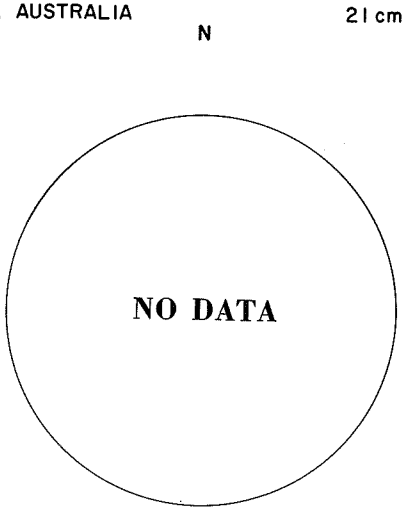


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

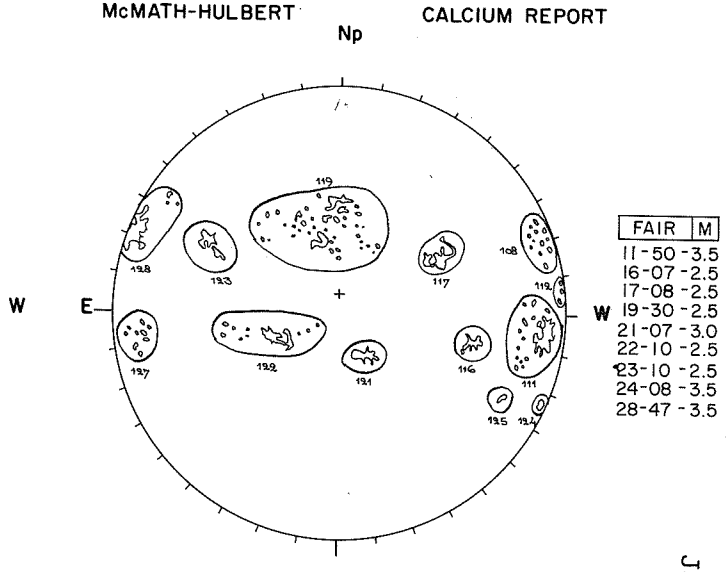


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



FAIR	M
11-50	-3.5
16-07	-2.5
17-08	-2.5
19-30	-2.5
21-07	-3.0
22-10	-2.5
23-10	-2.5
24-08	-3.5
28-47	-3.5

1550 UT

JANUARY 16, 1971 (P=-4.88, B_o=-4.64, L_o=292.09)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E

NO DATA

W

Sp

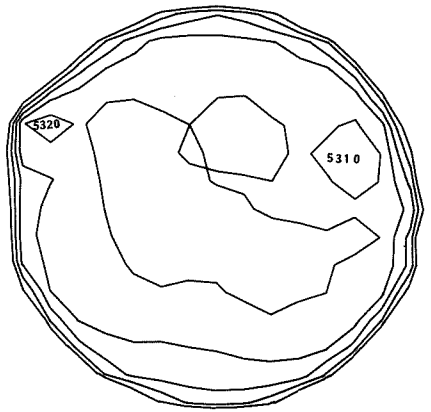
Intensities in Units
of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np

E



W

1642 UT

Sp

Contours in Intervals
of 200° K

MT. WILSON

Np

MAGNETOGRAM
Solid-Plus
Dotted-Minus

E

NO DATA

W

Levels
±5
±10
±20
±40
±80

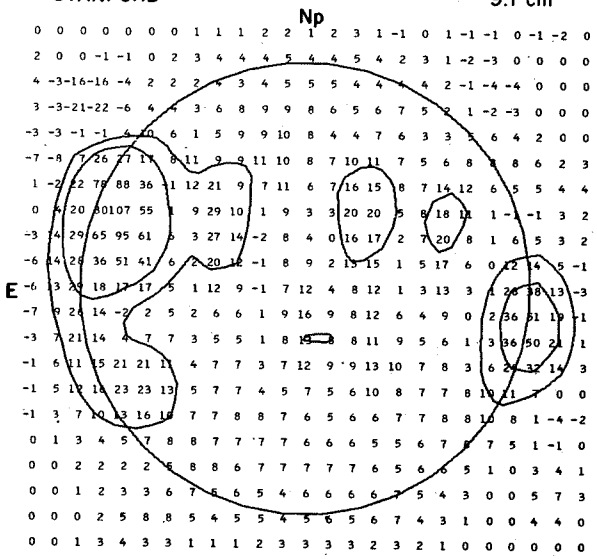
Sp

STANFORD

9.1 cm

Np

E



W E

Sp

20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

N

NO DATA

W E

S

02-03 UT

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

McMATH-HULBERT

Np

CALCIUM REPORT

NO DATA

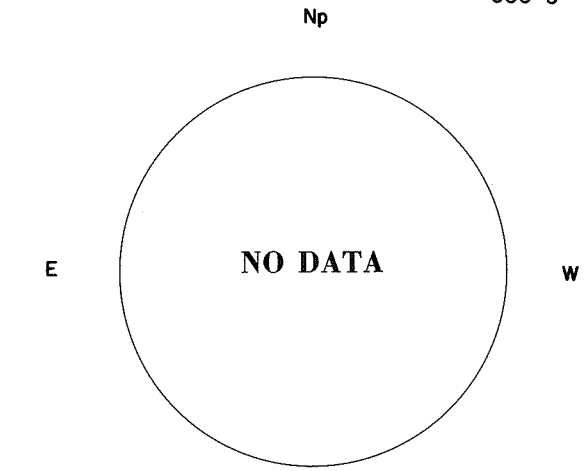
W

Sp

JANUARY 17, 1971 (P=-5.35, B_o=-4.74, L_o=278.92)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

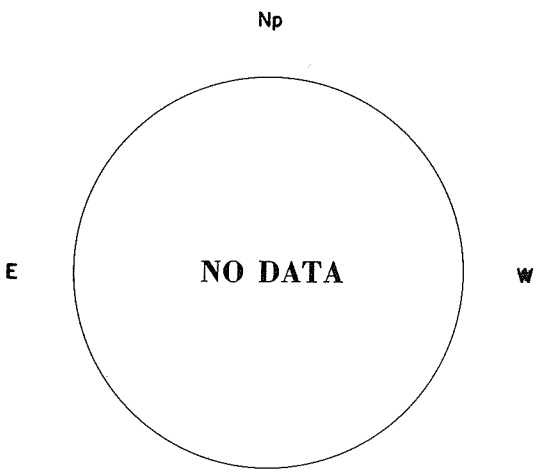
X-RAY
OSO-5



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

PROSPECT HILL
AFCRL

8.6 mm

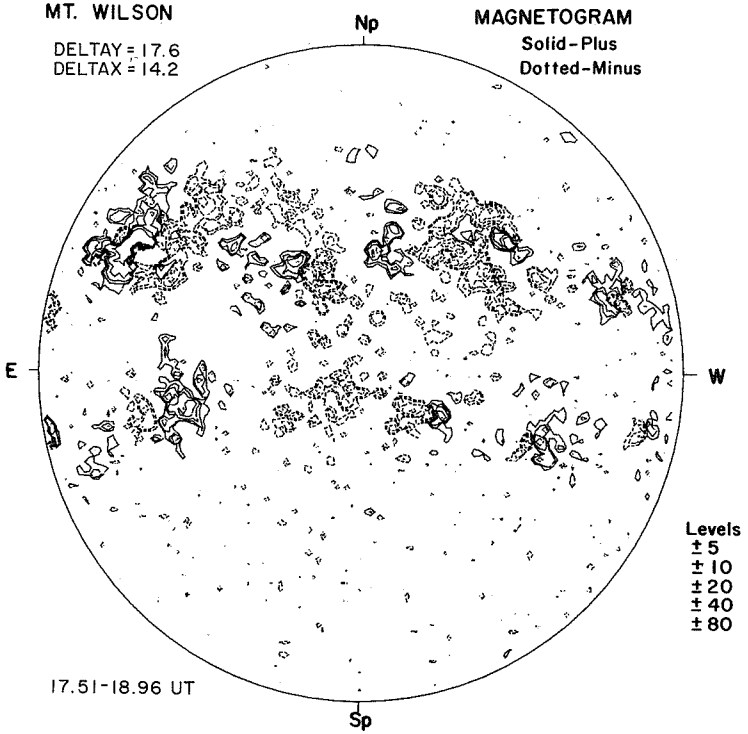


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

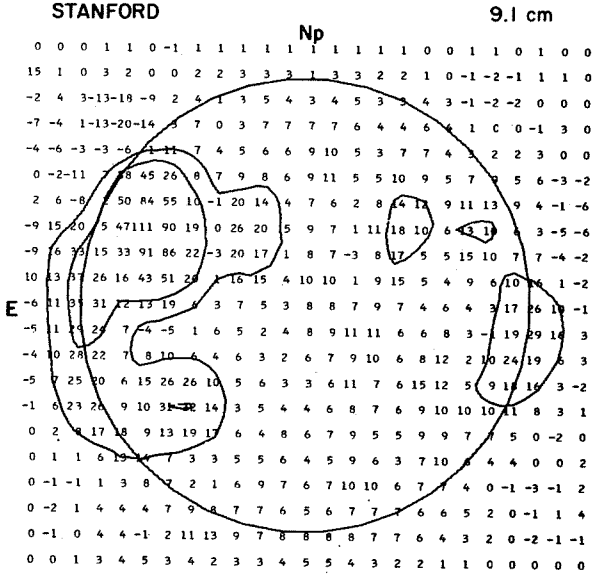


Levels
±5
±10
±20
±40
±80

17.51-18.96 UT

STANFORD

9.1 cm

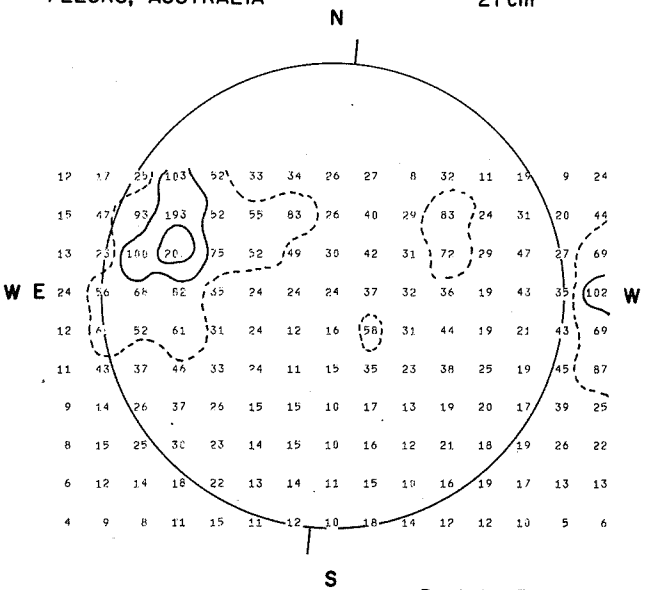


Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

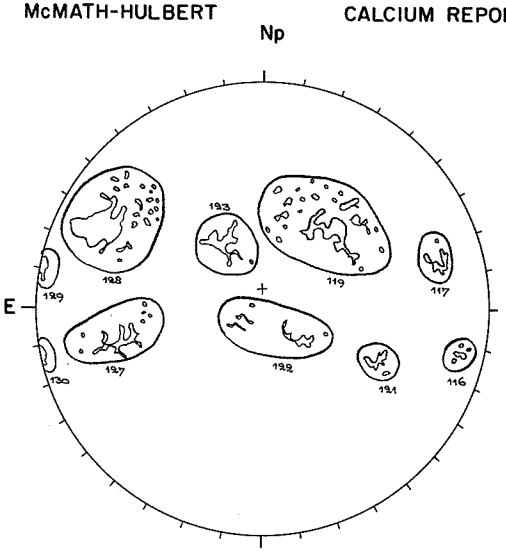


Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

02-03 UT

McMATH-HULBERT

CALCIUM REPORT



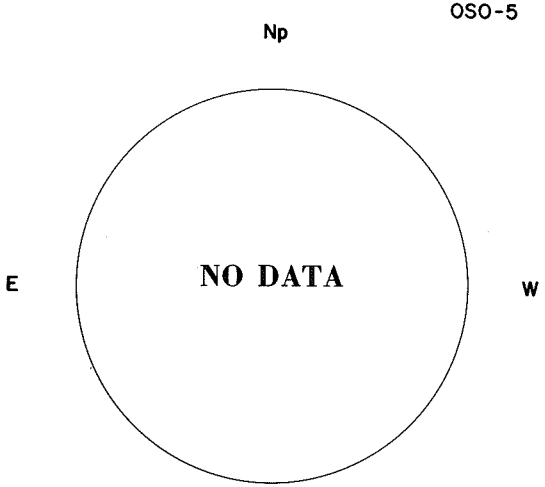
FAIR	O
17-09	-3.0
19-34	-2.5
21-07	-3.0
22-11	-2.5
23-12	-3.0
28-53	-3.5
29-16	-3.5
30-15	-3.5

1500 UT

JANUARY 18, 1971 (P=-5.81, B_o=-4.83, L_o=265.75)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

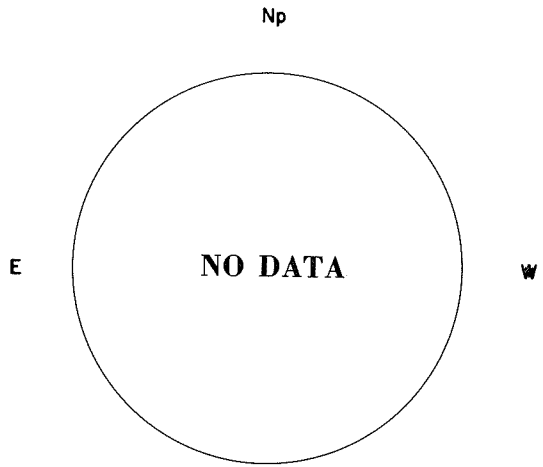
X-RAY
OSO-5



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

PROSPECT HILL
AFCRL

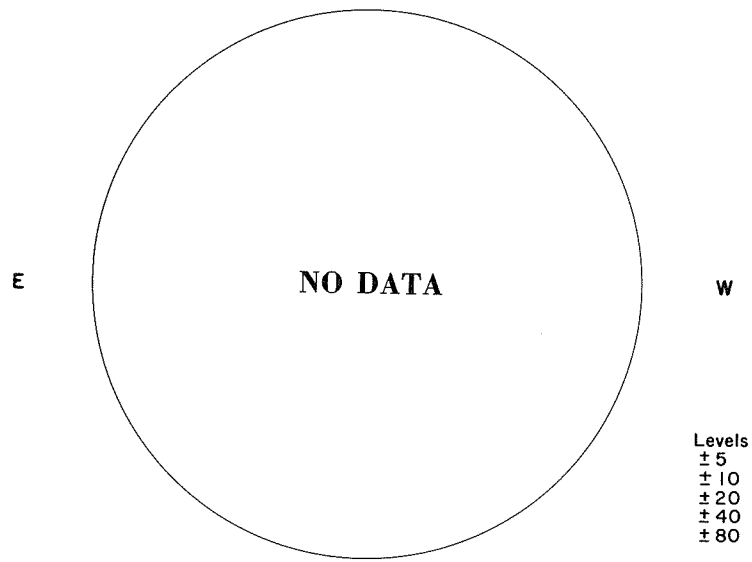
8.6 mm



Contours in Intervals of 200° K

MT. WILSON

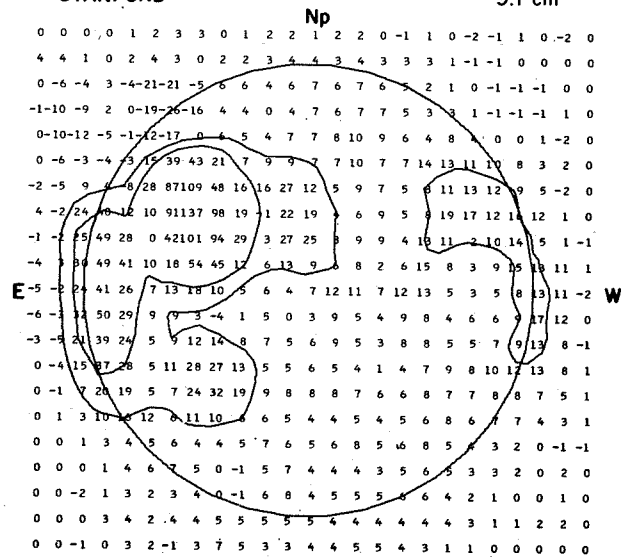
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

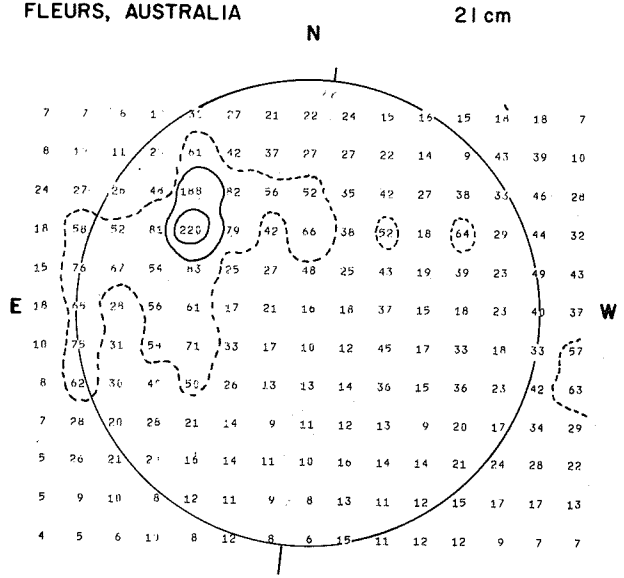


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

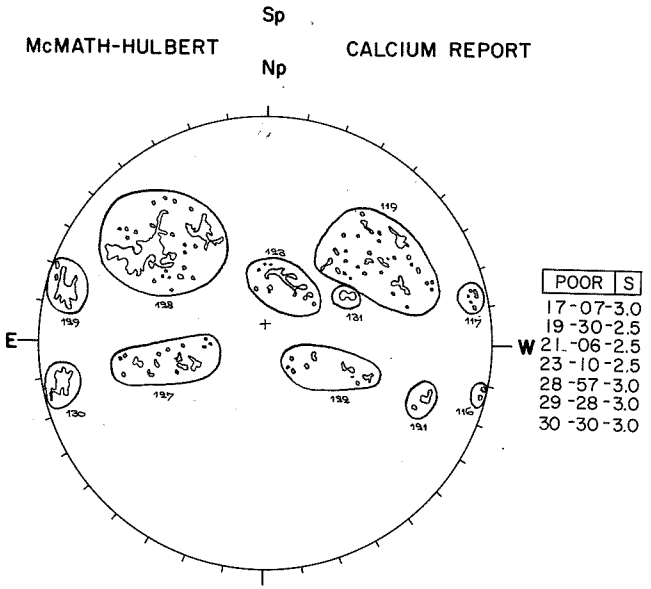


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT

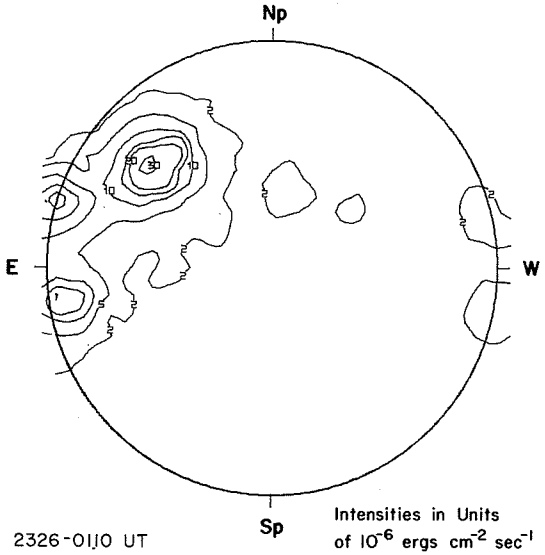


1708 UT

JANUARY 19, 1971 (P=-6.28, B_o=-4.93, L_o=252.59)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

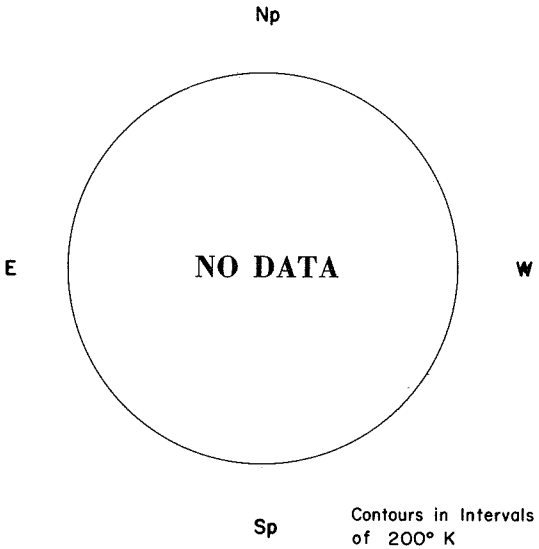


2326-0110 UT

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

PROSPECT HILL
AFCRL

8.6 mm

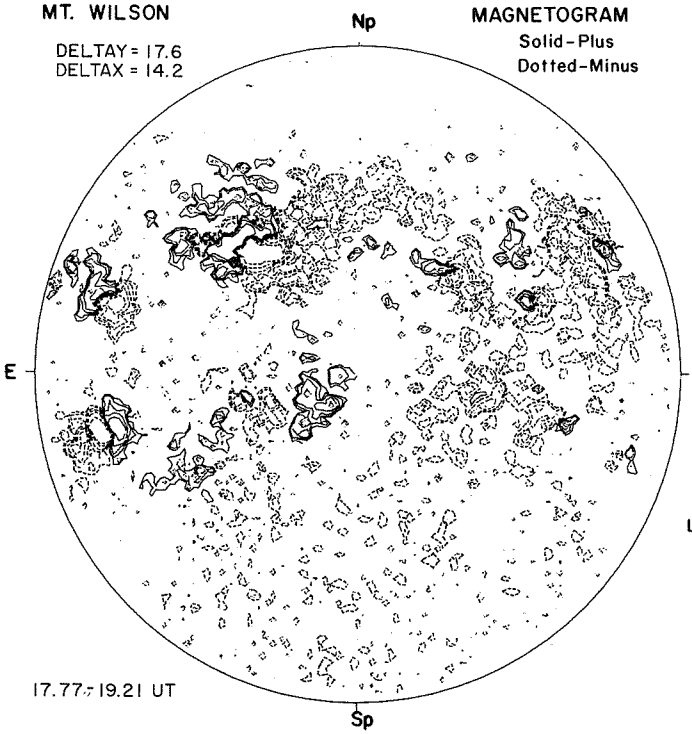


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

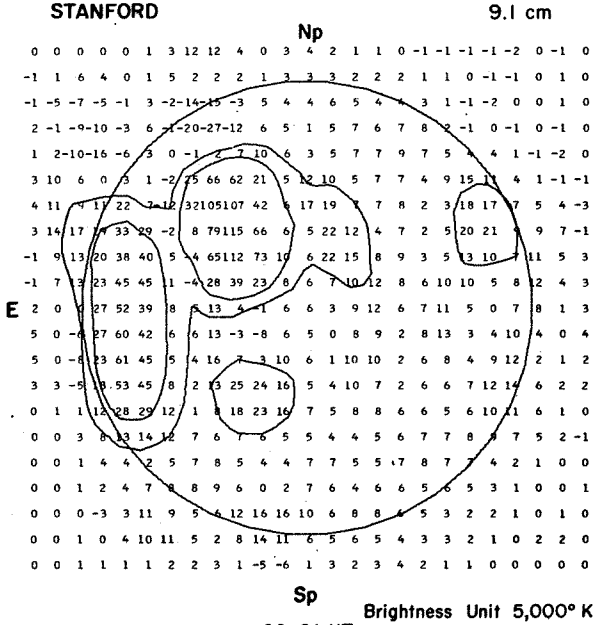


Levels
±5
±10
±20
±40
±80

1777-1921 UT

STANFORD

9.1 cm

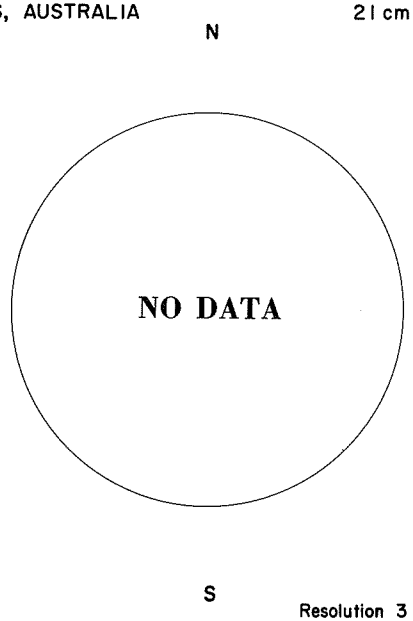


Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

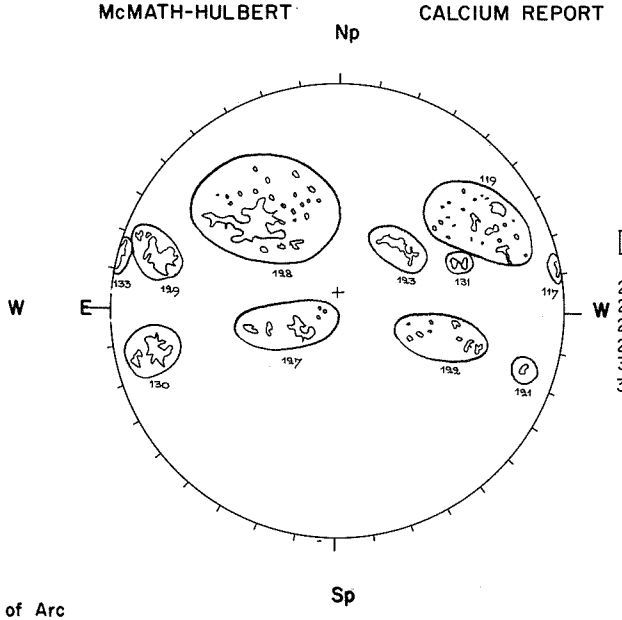


Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

02-03 UT

McMATH-HULBERT

CALCIUM REPORT



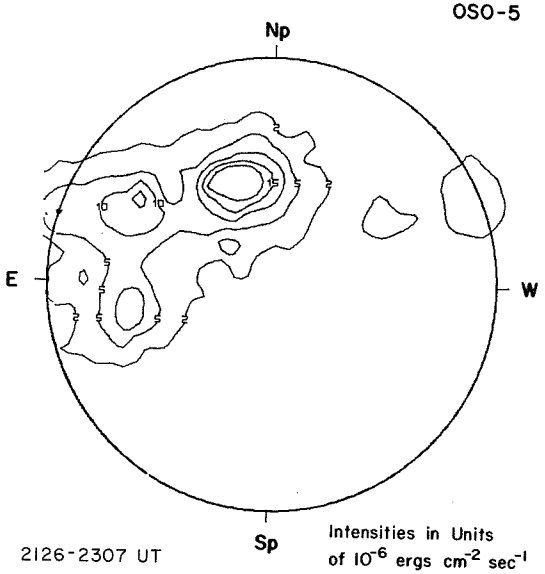
POOR	M
19-28	-2.5
22-08	-2.5
23-10	-3.0
28-56	-3.5
29-33	-3.5
30-27	-3.0
33-18	-3.0

1530 UT

JANUARY 20, 1971 (P=-6.73, B_o=-5.02, L_o=239.42)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

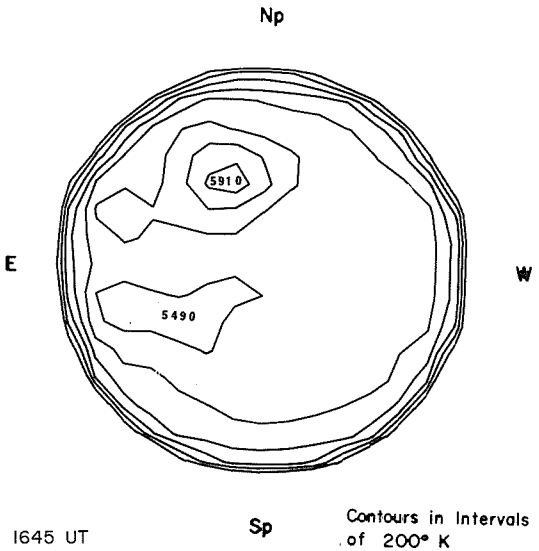


2126-2307 UT

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

PROSPECT HILL
AFCRL

8.6 mm



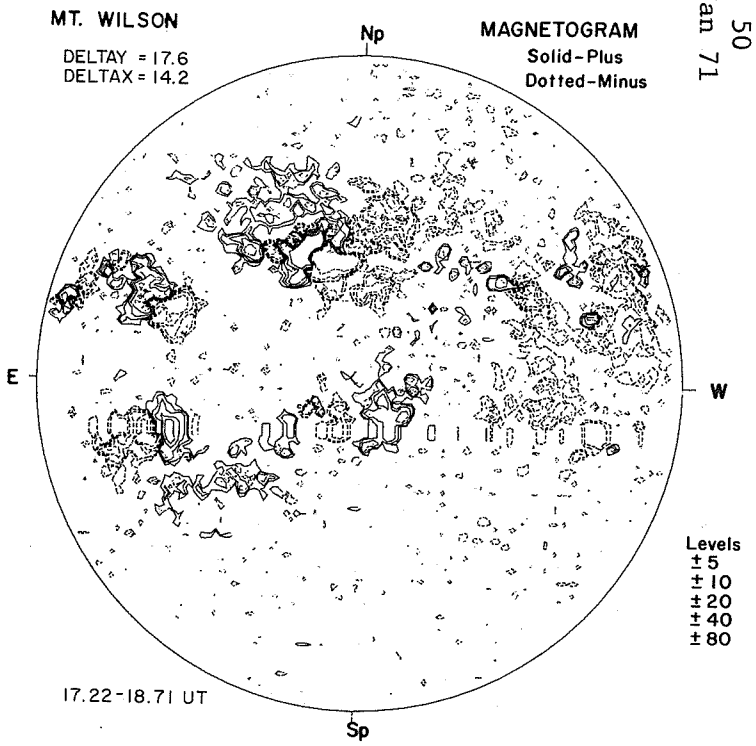
1645 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

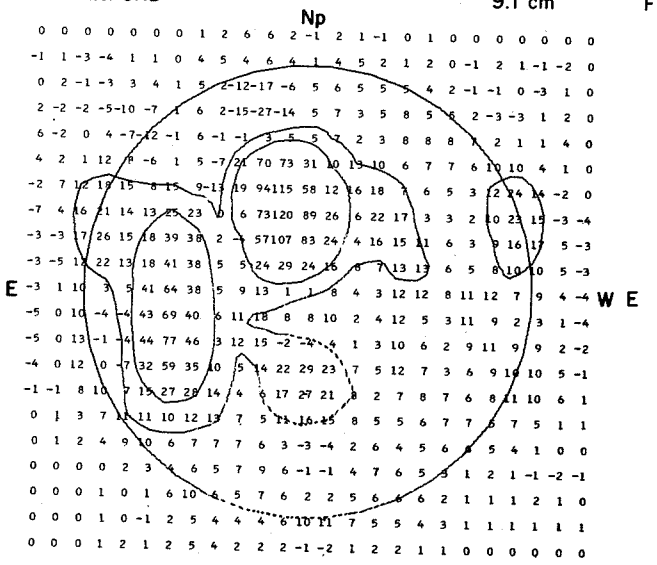


Levels
±5
±10
±20
±40
±80

17.22-18.71 UT

STANFORD

9.1 cm



20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

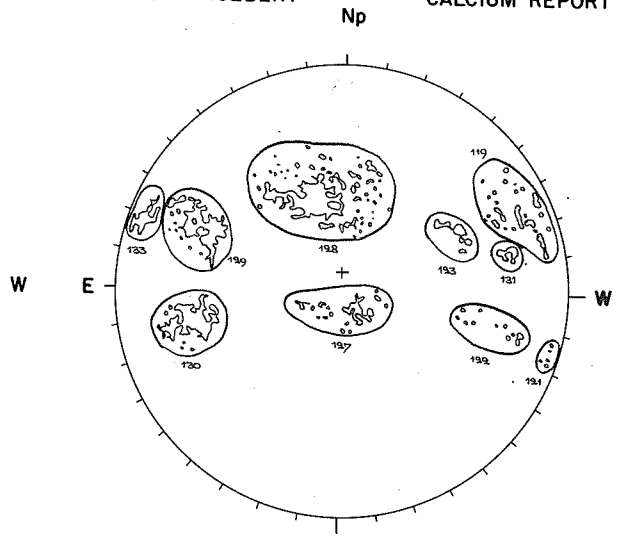
21 cm

02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



FAIR	M
23-09	-3.0
28-60	-3.5
29-37	-3.5
30-33	-3.5
33-23	-3.0

1545 UT

JANUARY 21, 1971 (P=-7.19, B_o=-5.11, L_o=226.25)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E NO DATA W

Sp

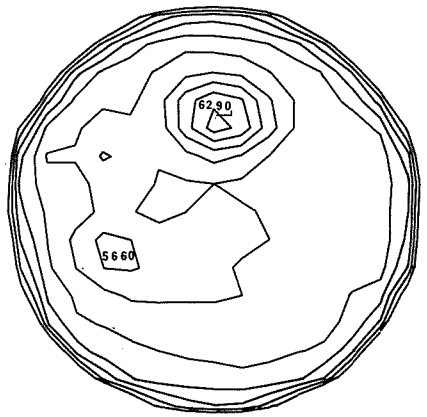
Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np

E



W

1540 UT

Sp

Contours in Intervals of 200° K

MT. WILSON

Np

MAGNETOGRAM
Solid-Plus
Dotted-Minus

E NO DATA W

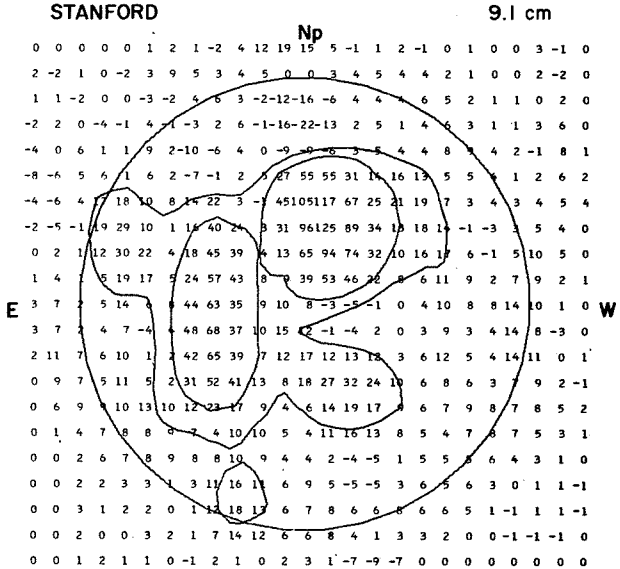
Levels
±5
±10
±20
±40
±80

Sp

STANFORD

9.1 cm

Np



E W

Sp

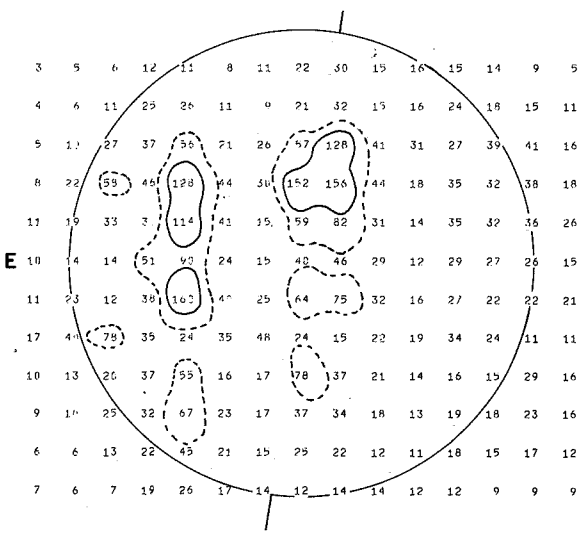
20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

N



E W

S

02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT

Np

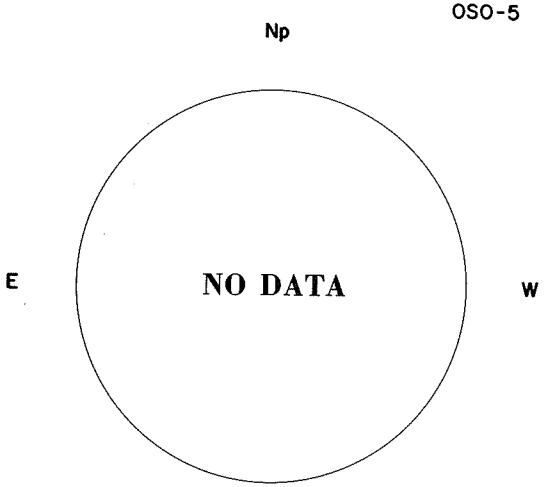
E NO DATA W

Sp

JANUARY 22, 1971 (P=-7.64, B_o=-5.20, L_o=213.09)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

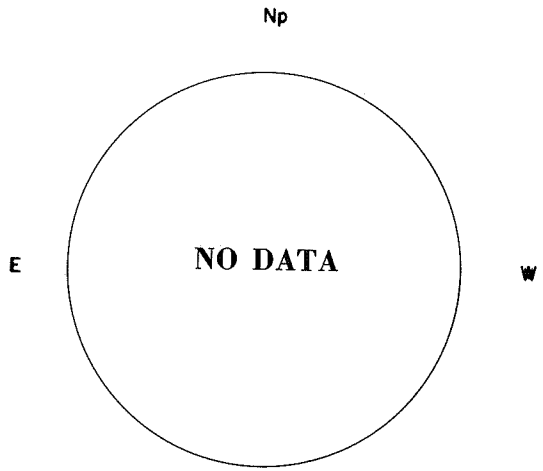
X-RAY
OSO-5



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

PROSPECT HILL
AFCRL

8.6 mm

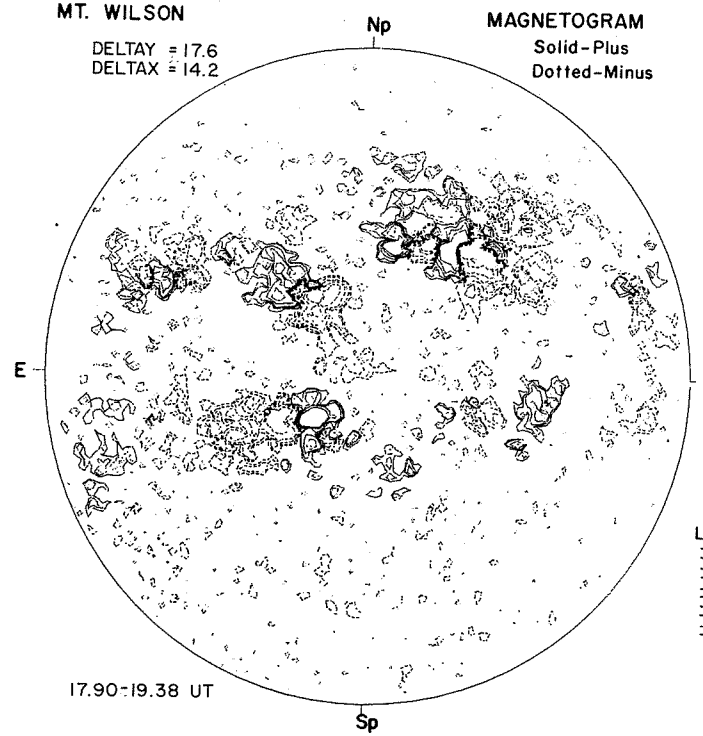


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

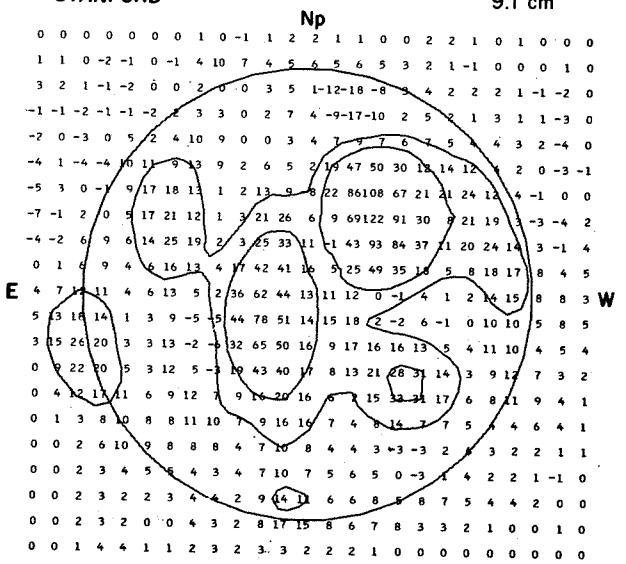


Levels
±5
±10
±20
±40
±80

17.90-19.38 UT

STANFORD

9.1 cm

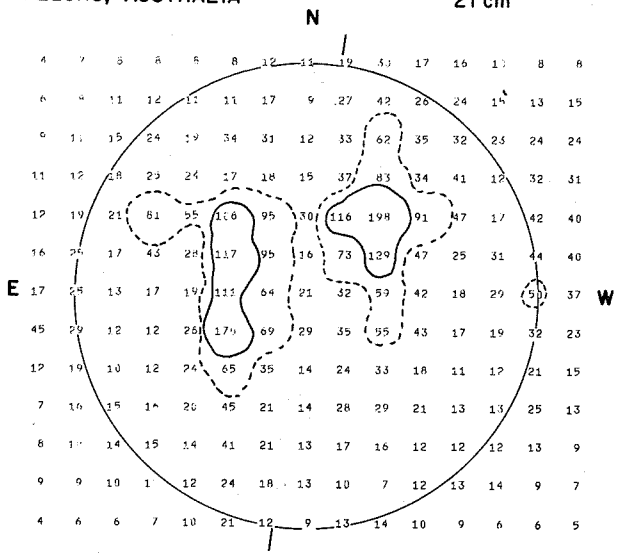


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

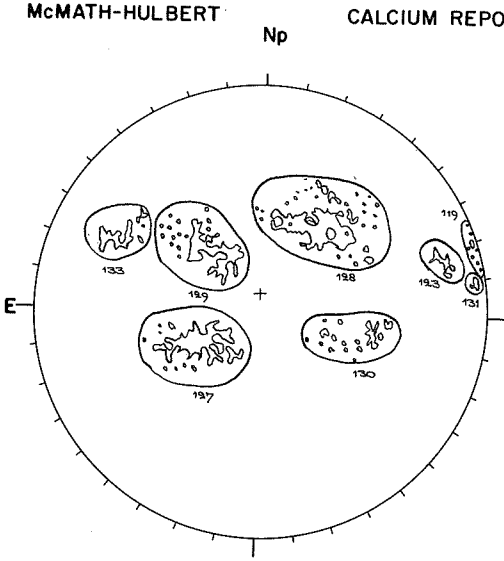


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



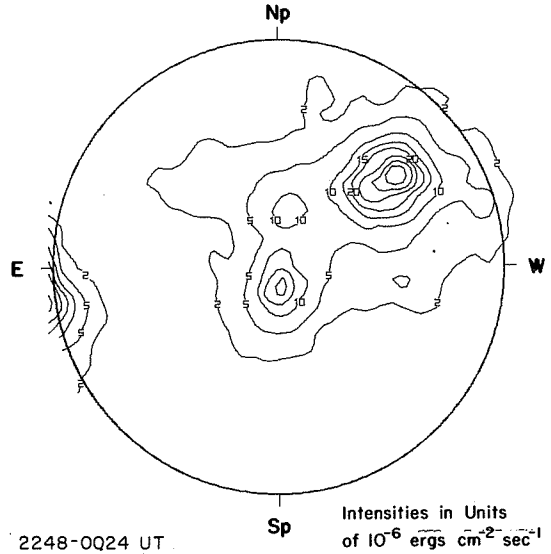
FAIR	M
28-62	-3.5
29-38	-3.5
30-36	-3.5
33-21	-3.0

1415 UT

JANUARY 23, 1971 (P=-8.09, B_o=-5.29, L_o=199.92)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

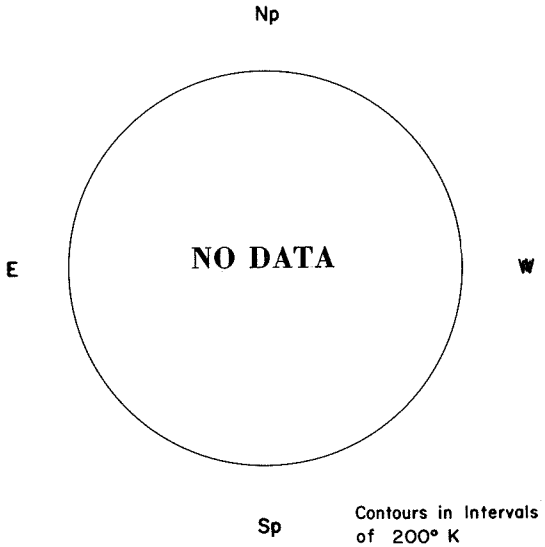


2248-0024 UT

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

PROSPECT HILL
AFCRL

8.6 mm

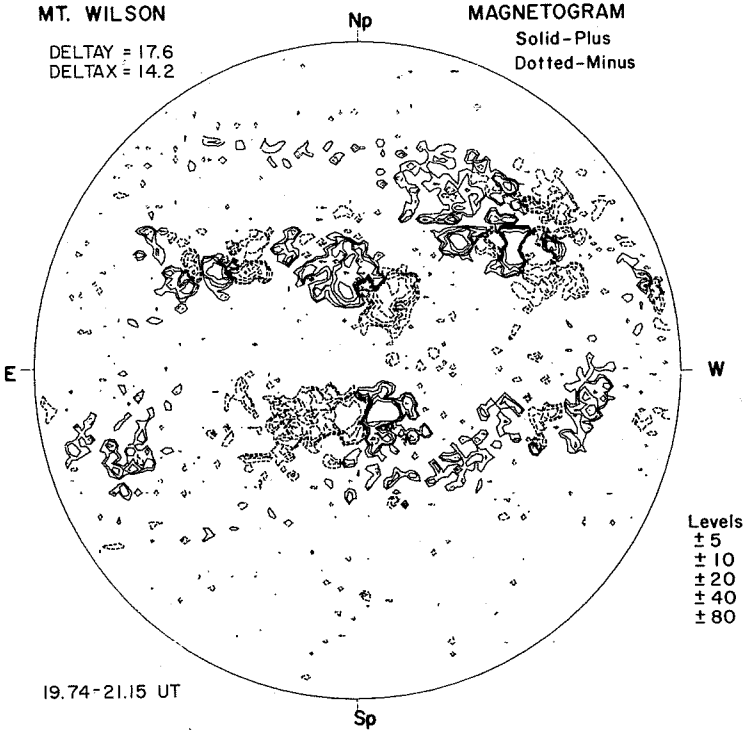


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

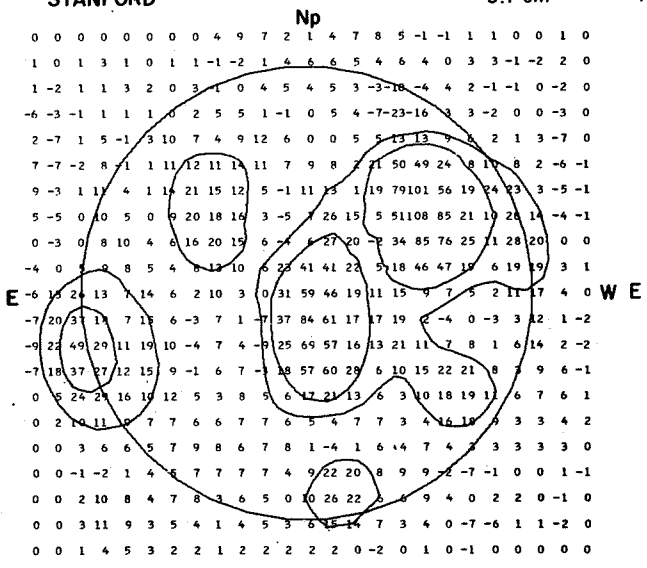


Levels
±5
±10
±20
±40
±80

19.74-21.15 UT

STANFORD

9.1 cm

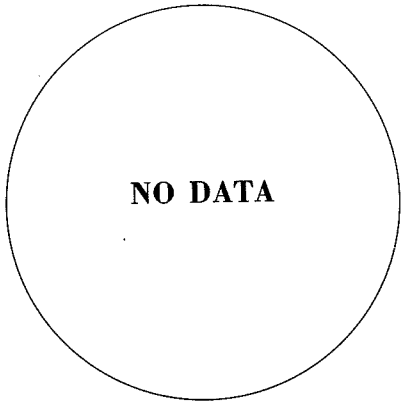


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

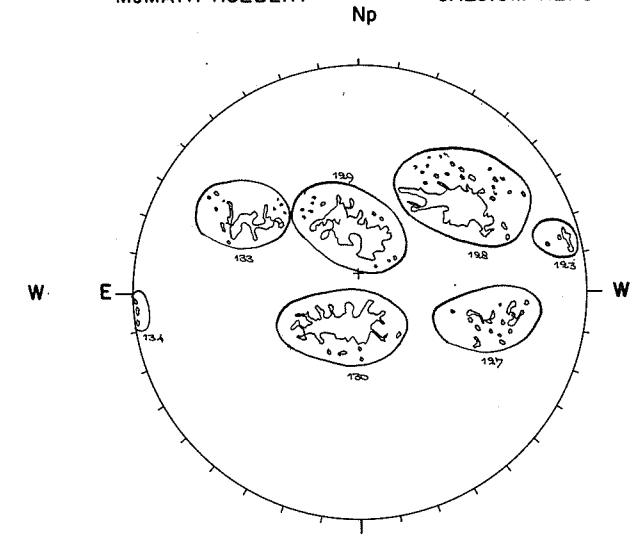


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



FAIR	O
23-08-2.5	
28-60-3.5	
29-39-3.0	
30-37-3.0	
33-25-3.5	

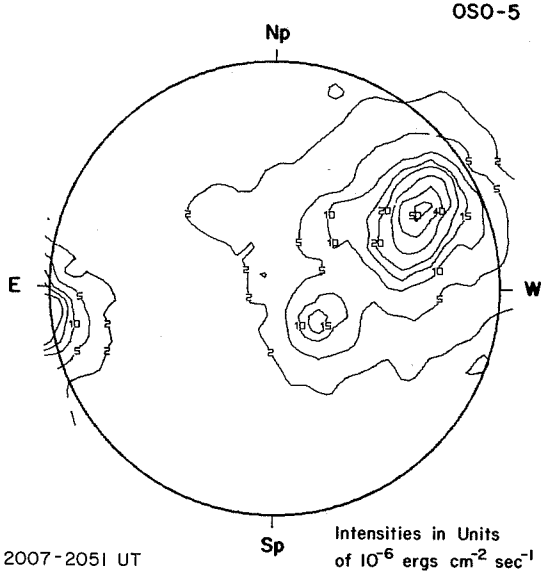
1425 UT

53
Jan 71

JANUARY 24, 1971 (P=-8.54, B_o=-5.38, L_o=186.75)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

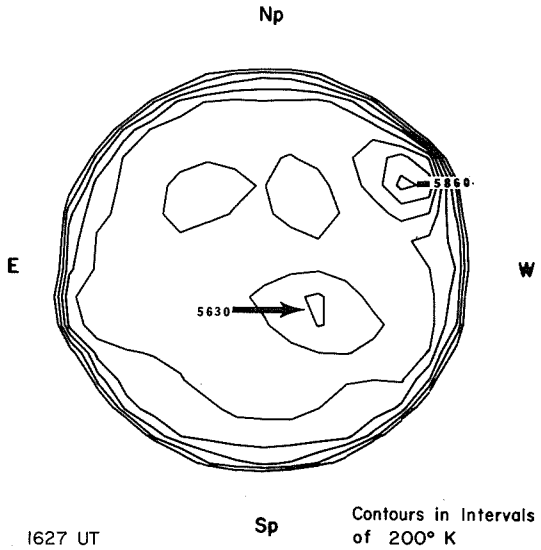


2007-2051 UT

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

PROSPECT HILL
AFCRL

8.6 mm



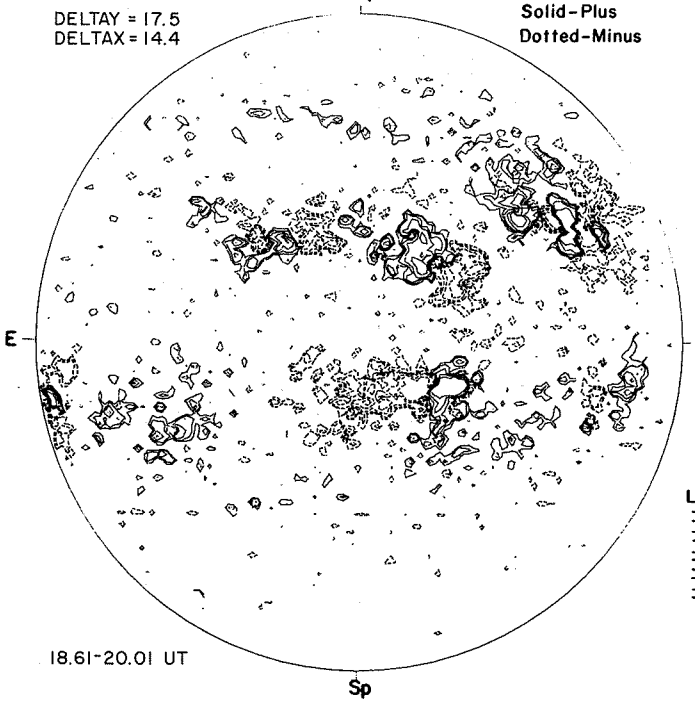
1627 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.5
DELTAX = 14.4

MAGNETOGRAM
Solid-Plus
Dotted-Minus

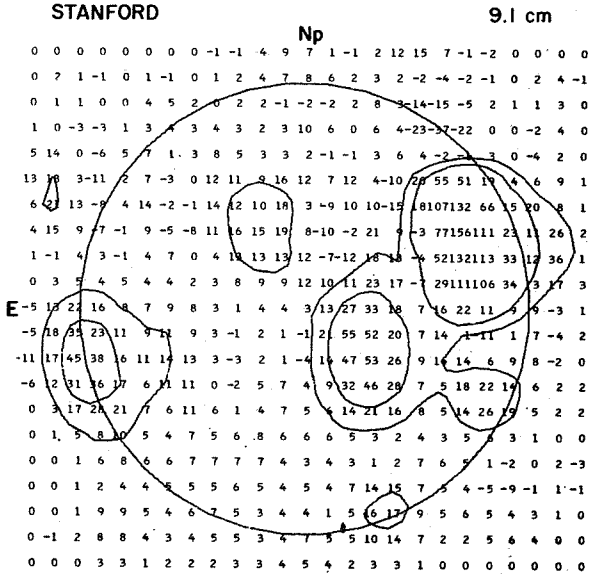


Levels
±5
±10
±20
±40
±80

18.61-20.01 UT

STANFORD

9.1 cm

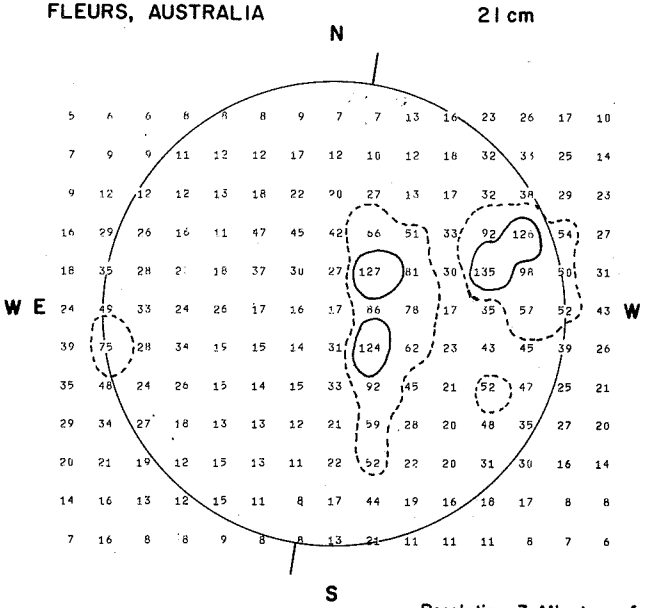


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

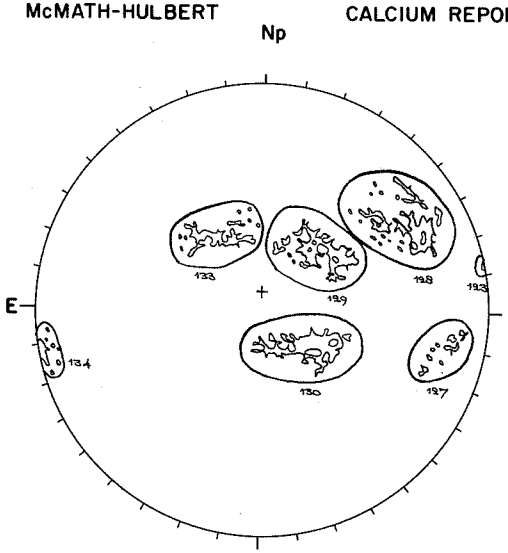


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



FAIR	0
28-58	-3.5
29-35	-3.0
30-32	-3.0
33-22	-3.0
34-18	-3.0

2050 UT

JANUARY 25, 1971 (P=-8.98, B_o=-5.47, L_o=173.59)

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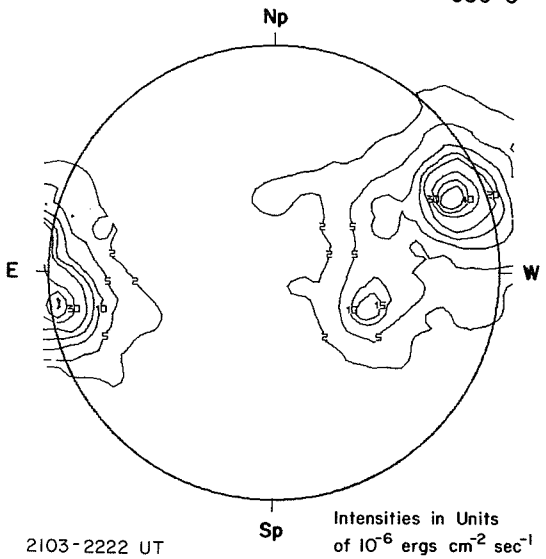
LEICESTER UNIV.

X-RAY
OSO-5

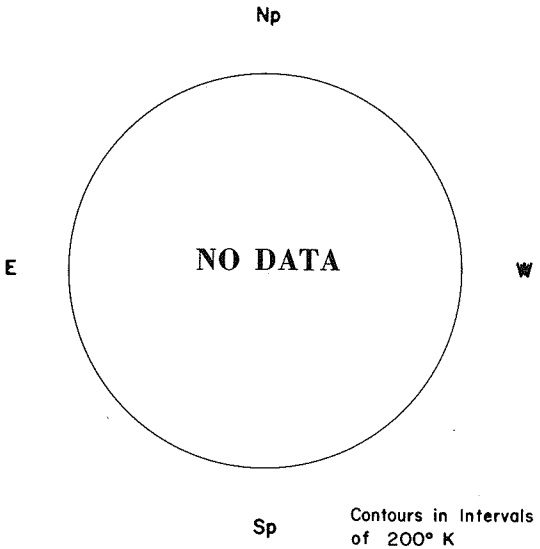


2103-2222 UT

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

PROSPECT HILL
AFCRL

8.6 mm

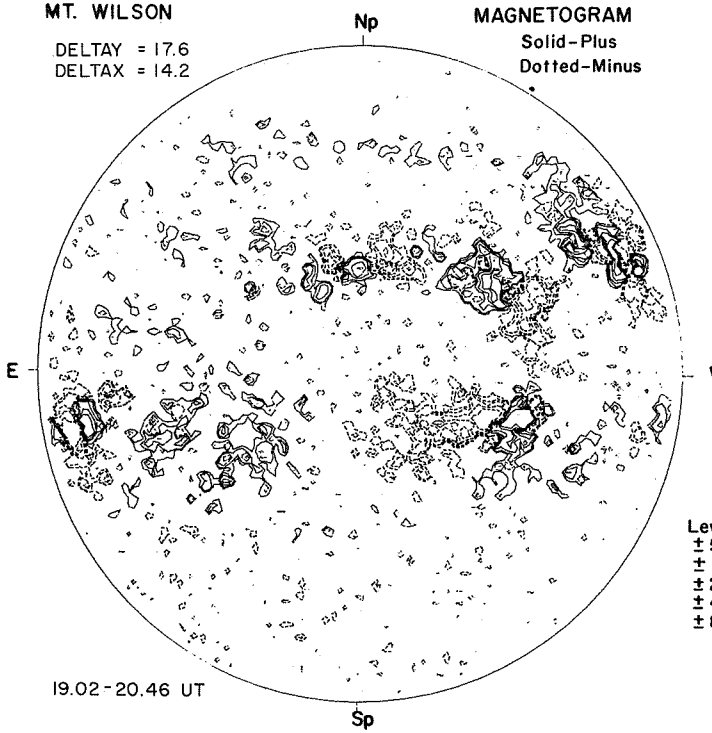


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

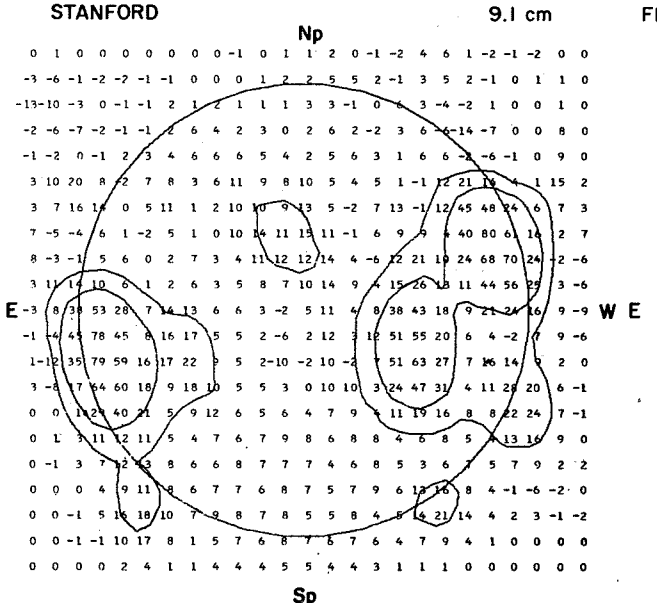


Levels
±5
±10
±20
±40
±80

19.02-20.46 UT

STANFORD

9.1 cm

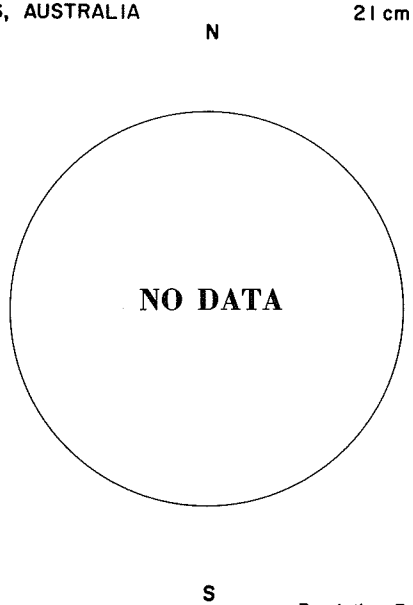


Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

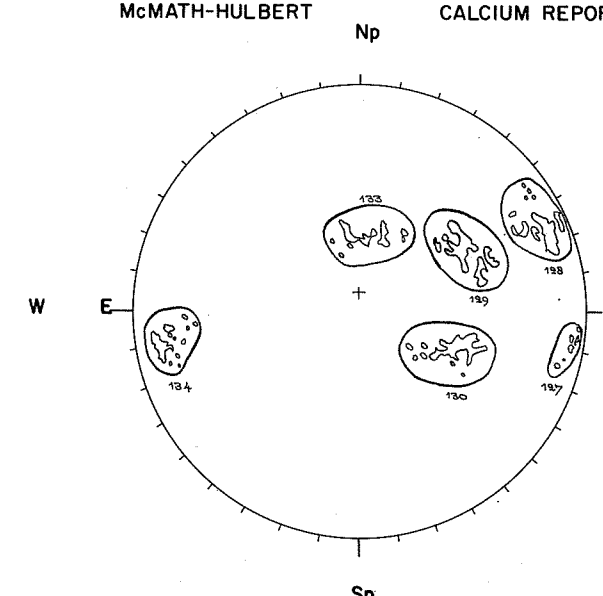


Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

02-03 UT

McMATH-HULBERT

CALCIUM REPORT



V POOR	M
28-57-	3.5
29-36-	3.5
30-34-	3.5
33-23-	3.0
34-28-	3.5

2020 UT

55
Jan 71

JANUARY 26, 1971 (P=-9.42, B_o=-5.55, L_o=160.42)

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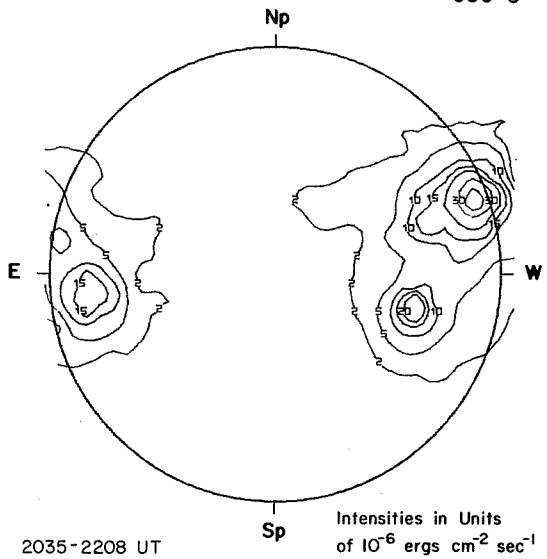
LEICESTER UNIV.

X-RAY
OSO-5

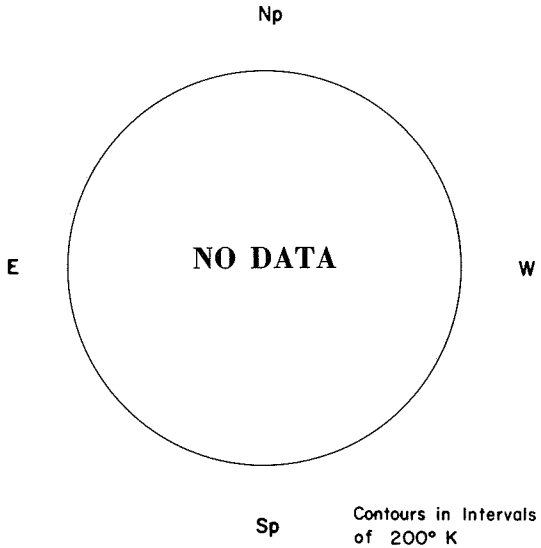


2035-2208 UT

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

PROSPECT HILL
AFCRL

8.6 mm

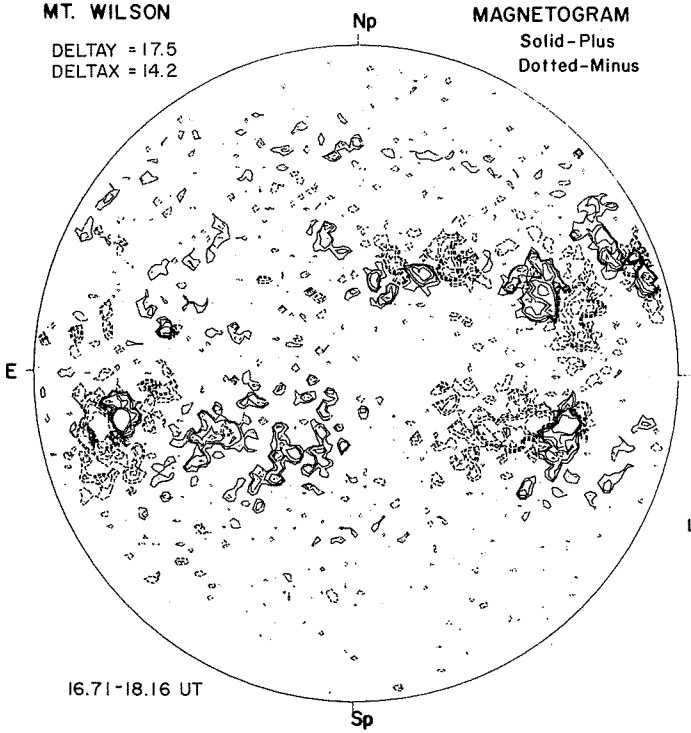


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.5
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

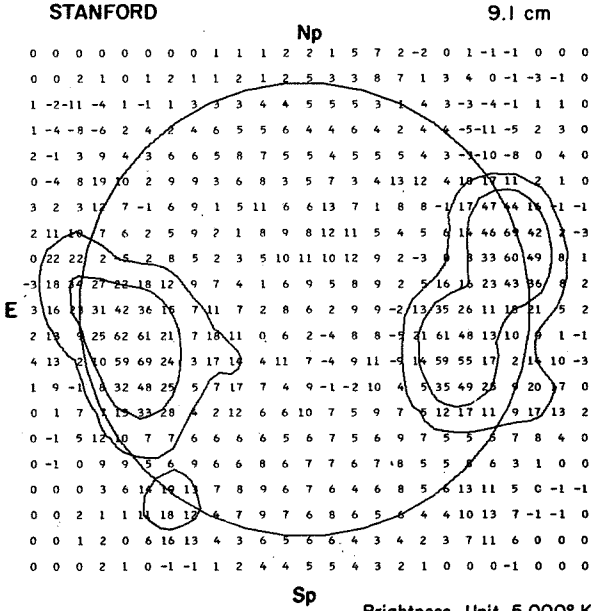


Levels
±5
±10
±20
±40
±80

16.71-18.16 UT

STANFORD

9.1 cm

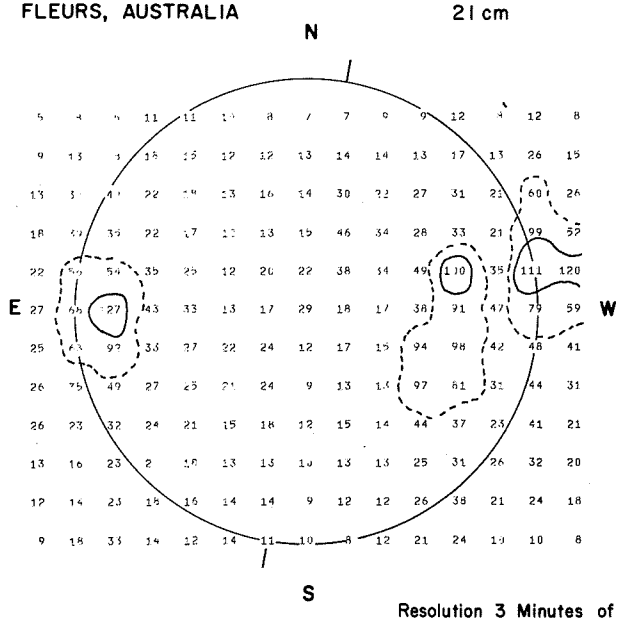


Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

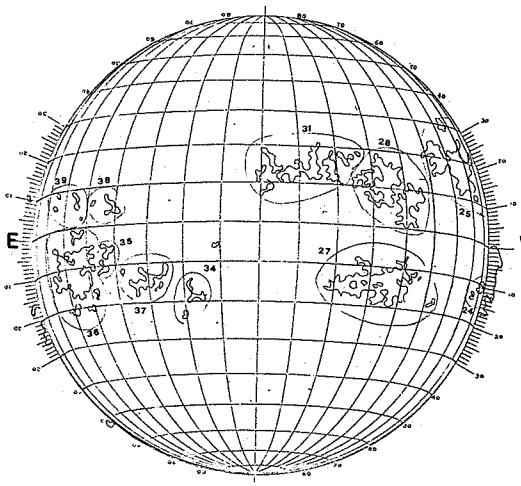


Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

02-03 UT

CALCIUM REPORT

CATANIA



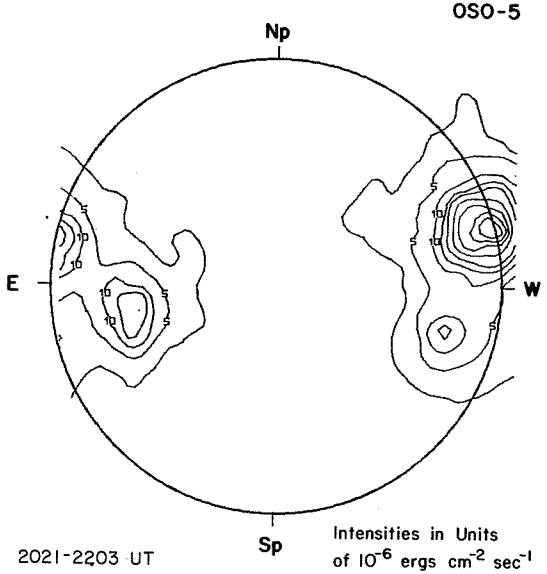
25-80-6.3
28-18-4.6
27-52-3.9
31-30-3.2
36-77-6.6

0825 UT

JANUARY 27, 1971 (P=-9.86, B_o=-5.63, L_o=147.26)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

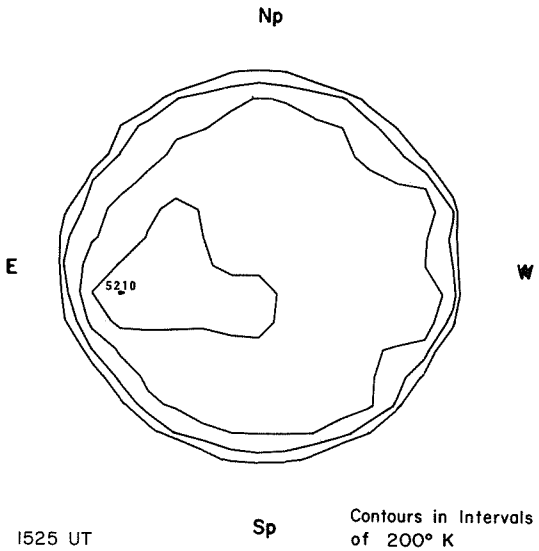


2021-2203 UT

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

PROSPECT HILL
AFCRL

8.6 mm



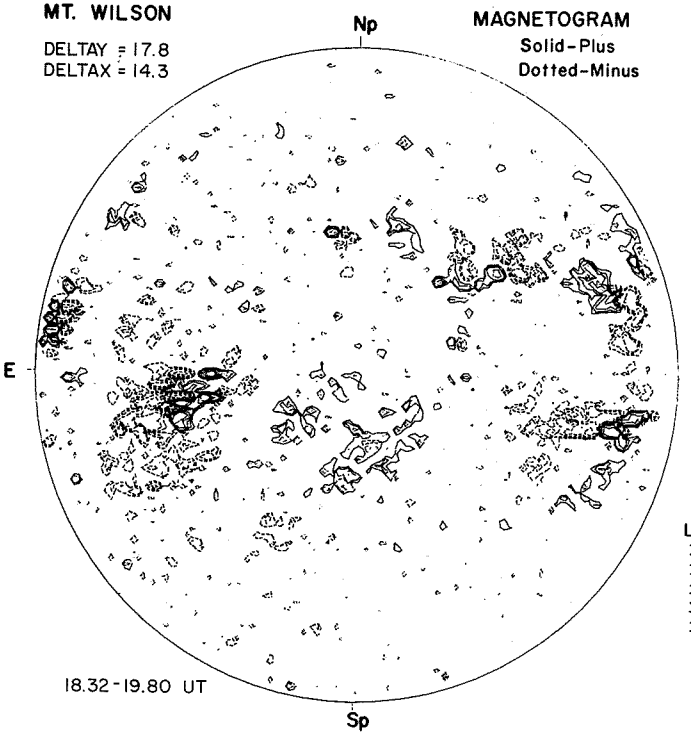
1525 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.8
DELTAX = 14.3

MAGNETOGRAM
Solid-Plus
Dotted-Minus

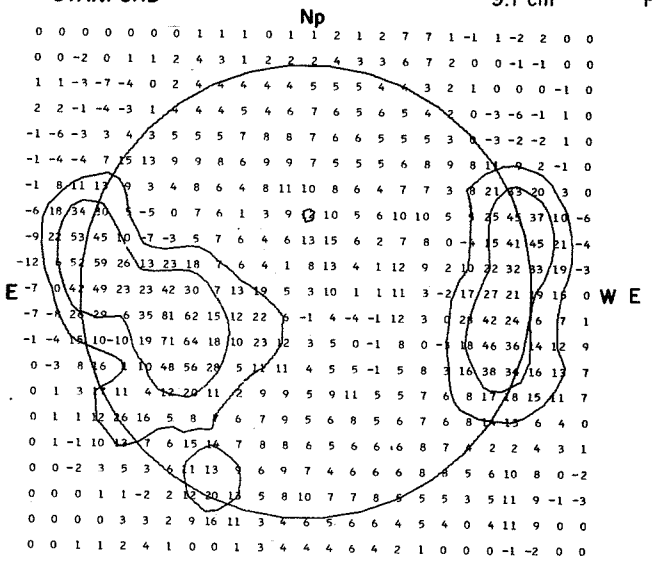


Levels
±5
±10
±20
±40
±80

18.32-19.80 UT

STANFORD

9.1 cm

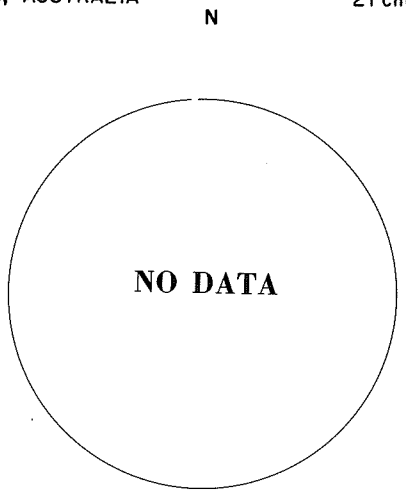


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

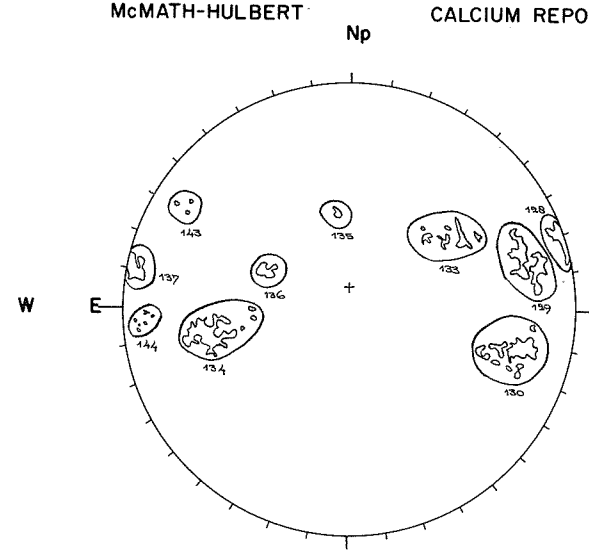


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



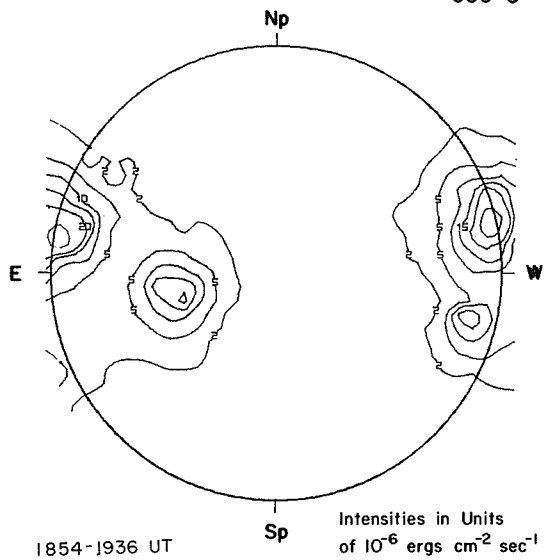
POOR	M
28-40-3.5	
29-37-3.0	
30-34-3.0	
33-20-2.5	
34-29-3.5	
37-37-3.5	

1630 UT

JANUARY 28, 1971 (P=-10.29, B_o=-5.71, L_o=134.09)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

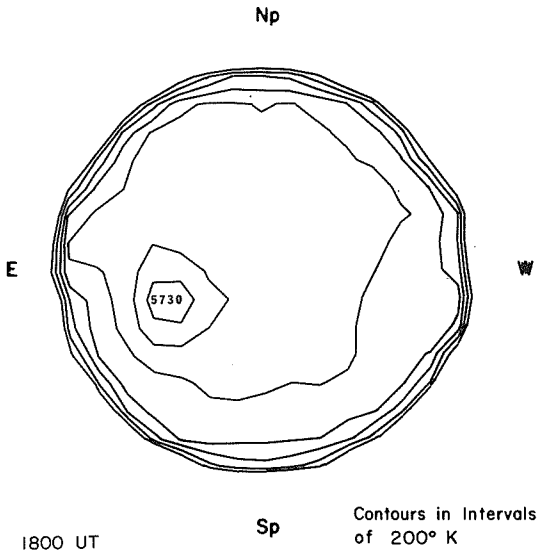


1854-1936 UT

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

PROSPECT HILL
AFCRL

8.6 mm

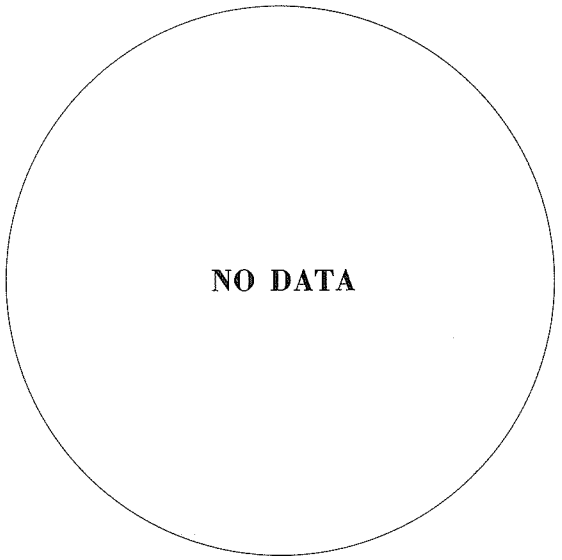


1800 UT

Contours in Intervals of 200° K

MT. WILSON

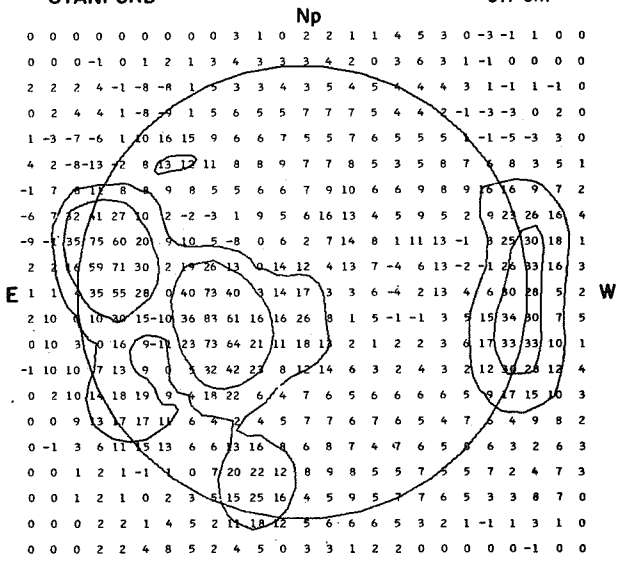
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

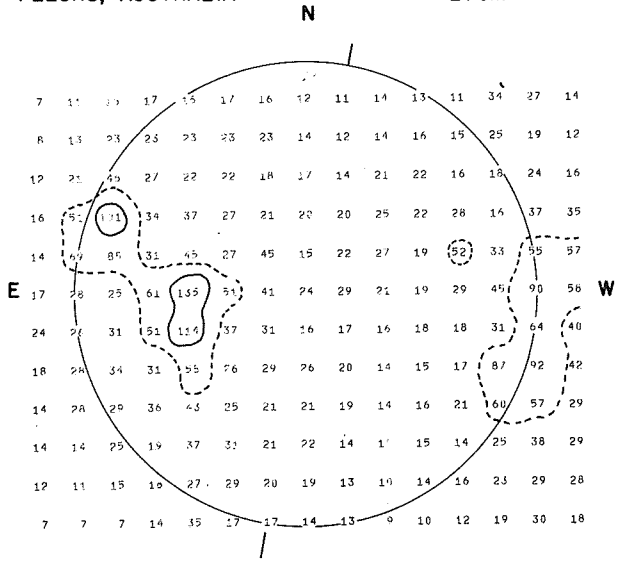


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

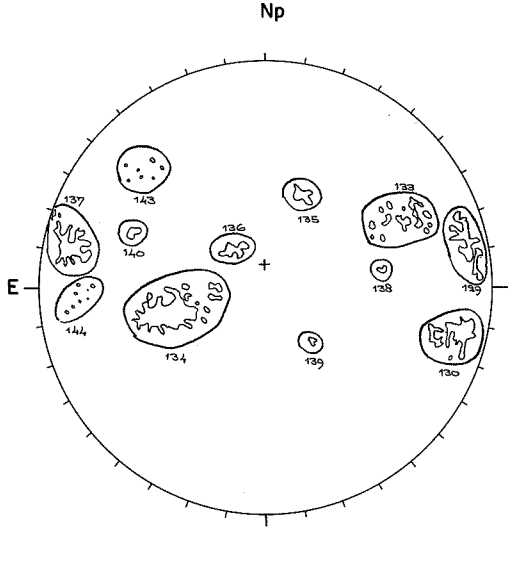


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



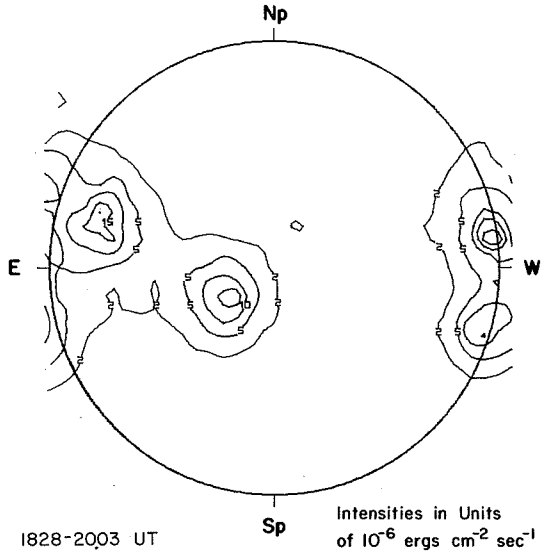
FAIR	M
29-38	2.5
30-35	3.0
34-36	3.5
35-06	2.5
37-42	3.0

1440 UT

JANUARY 29, 1971 (P=-10.71, B_o=-5.79, L_o=120.92)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

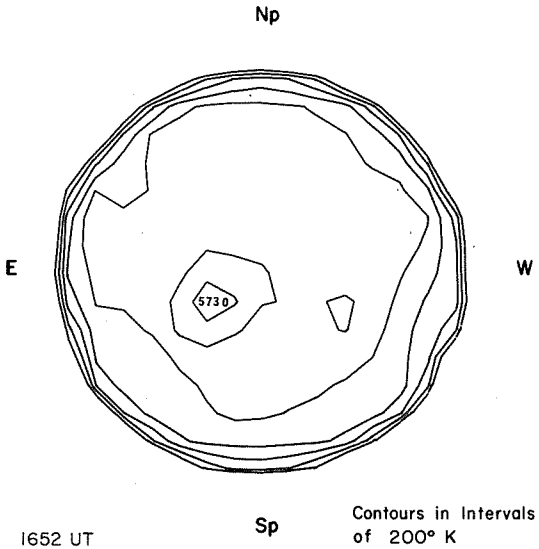


1828-2003 UT

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

PROSPECT HILL
AFCRL

8.6 mm



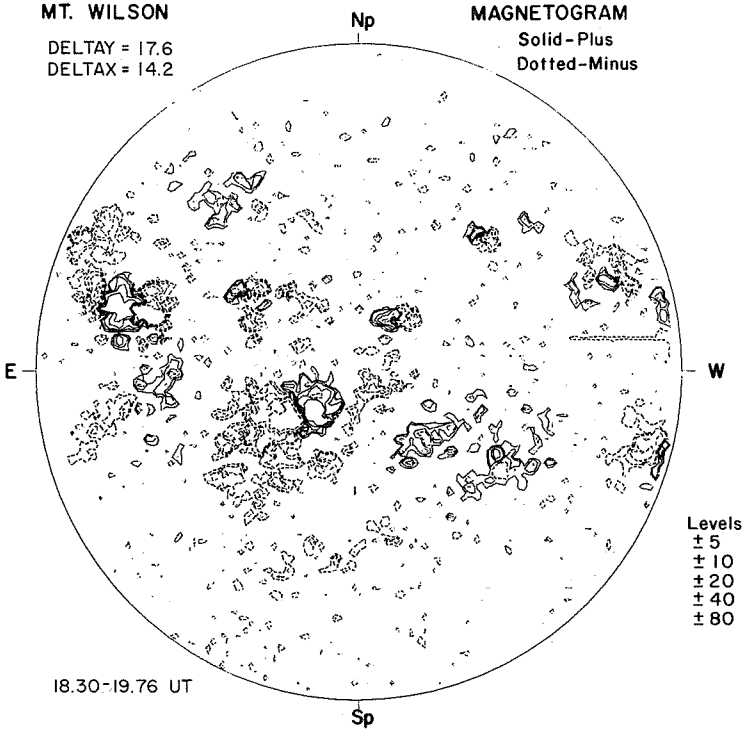
1652 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

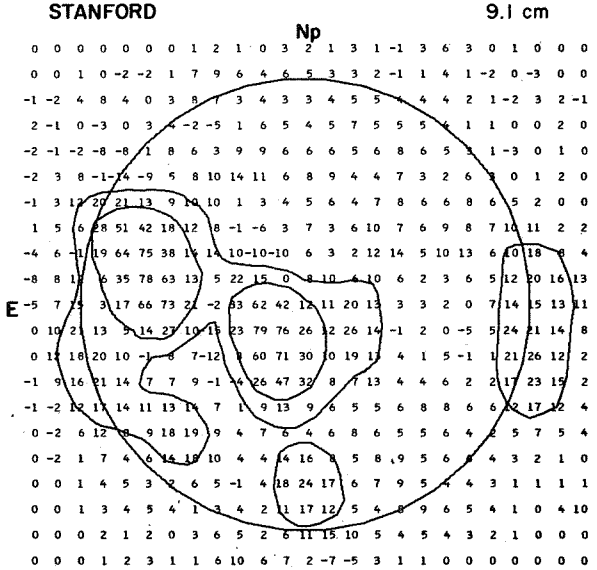


Levels
±5
±10
±20
±40
±80

18.30-19.76 UT

STANFORD

9.1 cm

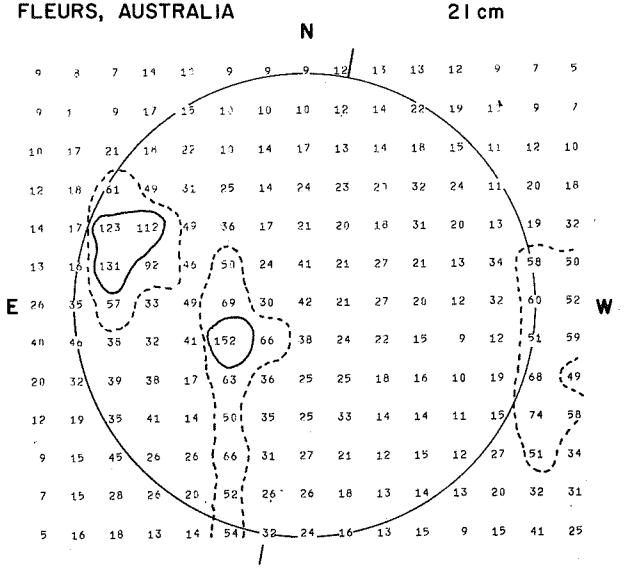


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

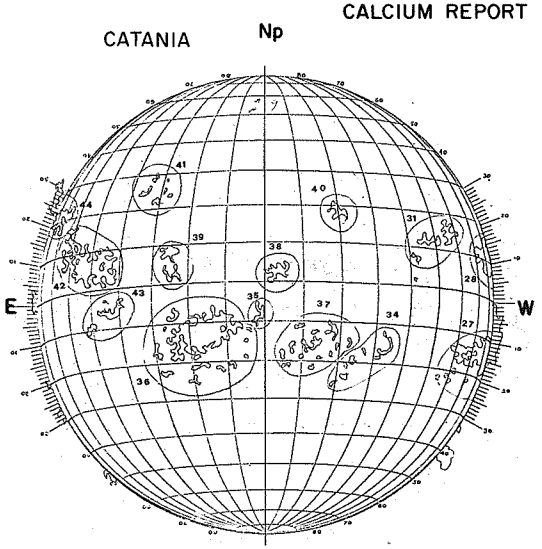


02-03 UT

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

CALCIUM REPORT

CATANIA



28-58-4.6
27-21-9.3
31-16-2.8
40-04-2.7
38-06-3.1
36-65-6.9
39-09-2.6
42-66-5.5
44-31-3.2

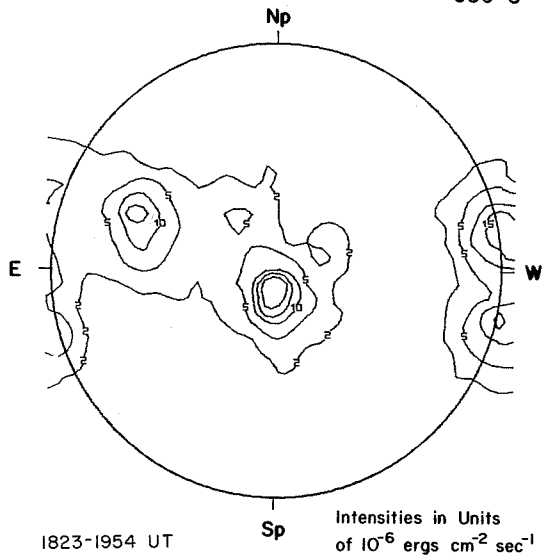
J035 UT

59
Jan 71

JANUARY 30, 1971 (P=-11.14, B_o=-5.87, L_o=107.76)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

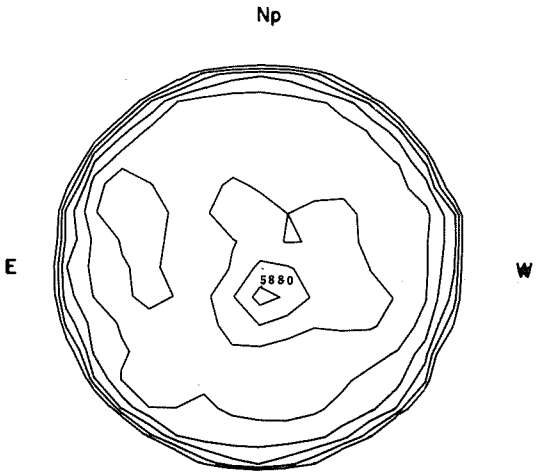


1823-1954 UT

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

PROSPECT HILL
AFCRL

8.6 mm

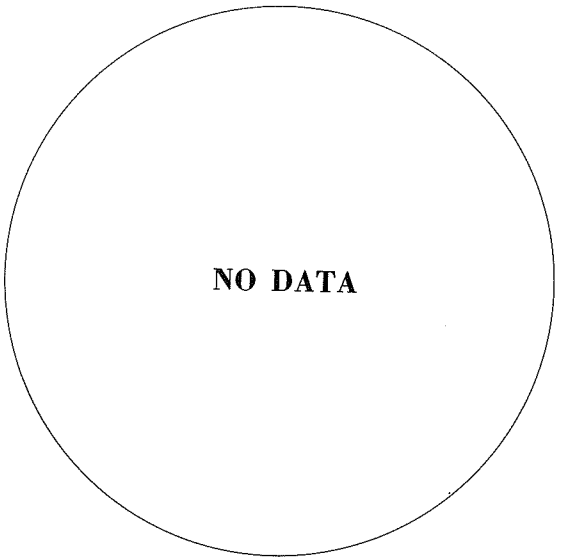


1938 UT

Contours in Intervals of 200° K

MT. WILSON

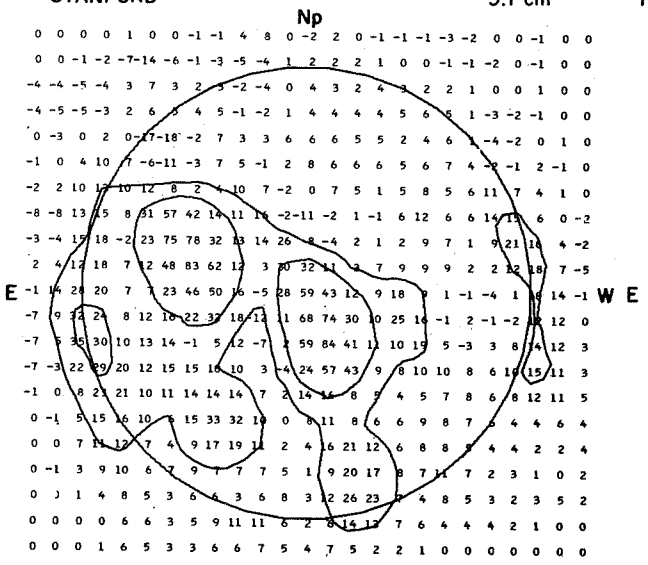
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

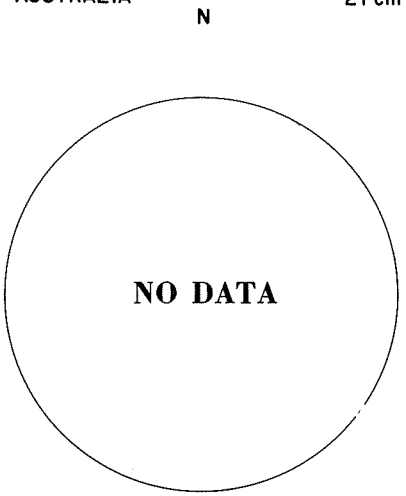


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

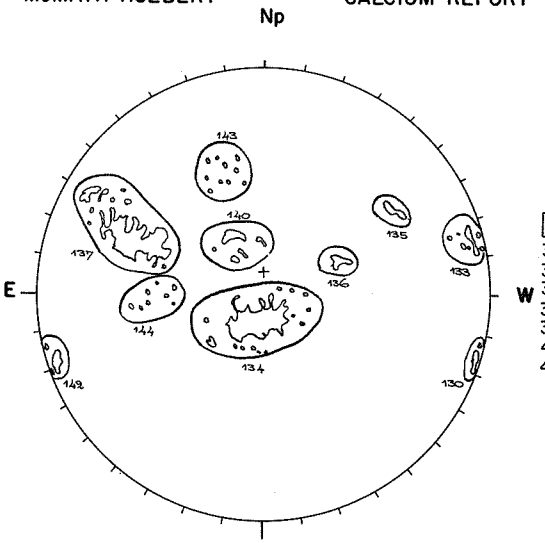


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



FAIR	0
33-13-2.5	
34-38-3.5	
35-06-2.5	
36-06-2.5	
37-45-3.0	
40-09-2.5	
42-11-3.0	

1550 UT

JANUARY 31, 1971 (P=-11.55, B_o=-5.94, L_o=94.59)

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

E W E

Sp

Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

N

W

NO DATA

S

02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT

Np

E

W

Sp

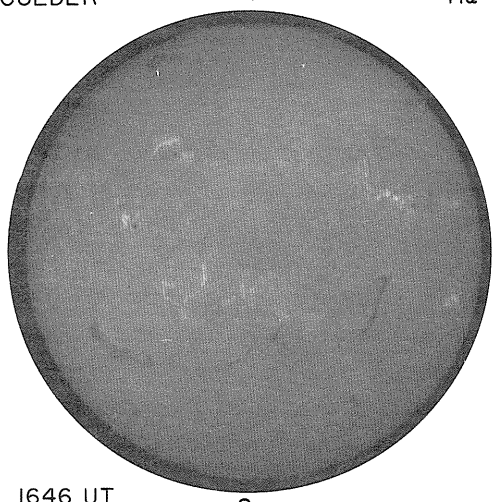
1535 UT

FAIR	O
34-39-3.5	
36-06-2.5	
37-48-3.5	
40-14-3.0	
42-20-3.0	
45-22-3.5	

Hα SPECTROHELIOGRAMS SUNSPOTS AND CORONA

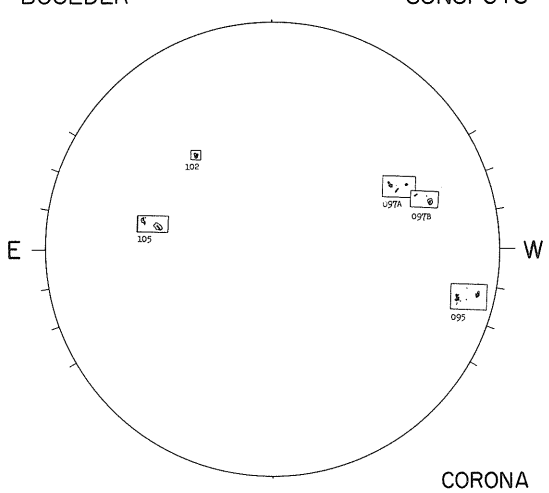
JANUARY, 1971

BOULDER
1



1646 UT

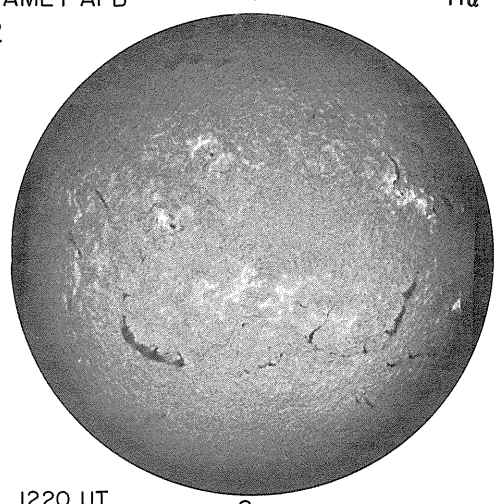
BOULDER



1645 UT

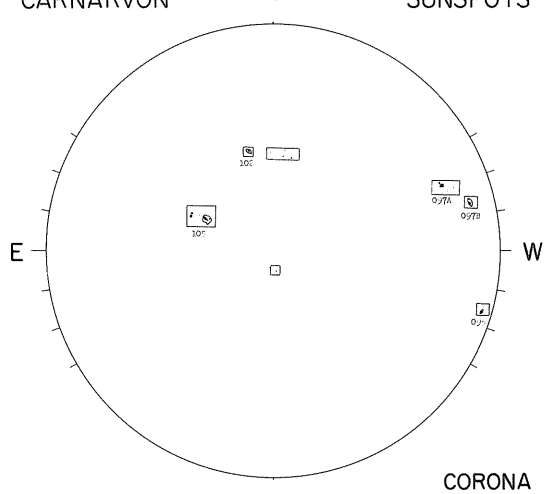
CORONA
NO DATA

RAMEY AFB
2



1220 UT

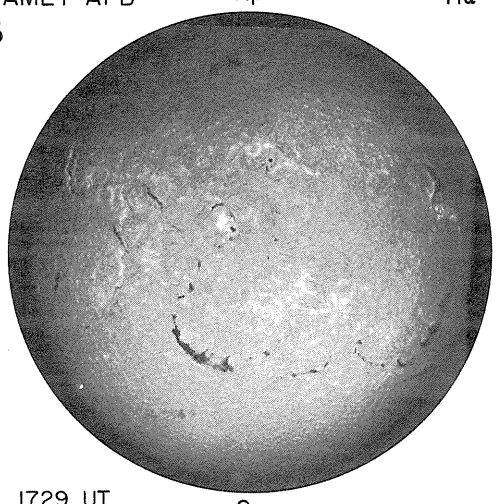
CARNARVON



2200 UT

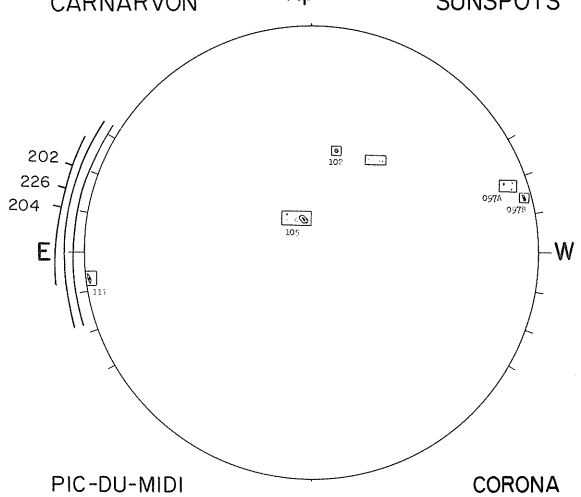
CORONA
NO DATA

RAMEY AFB
3



1729 UT

CARNARVON



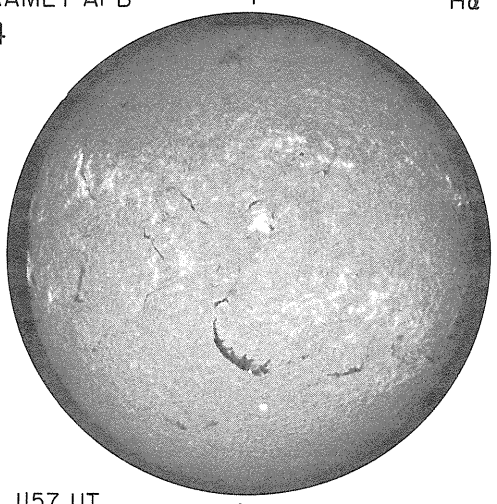
PIC-DU-MIDI
2350 UT

CORONA
NO DATA W/LIMB

Errata: The sunspot drawing from Culgoora on page 62 of SGD-317-Part I was observed on November 14 at 0010 UT.

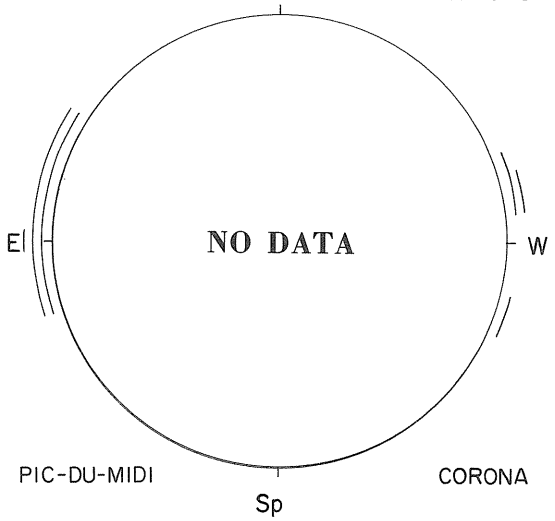
JANUARY, 1971

RAMEY AFB
4



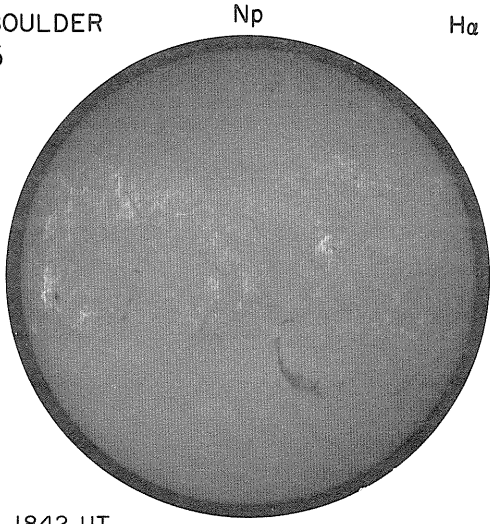
1157 UT

BOULDER
Np
SUNSPOTS



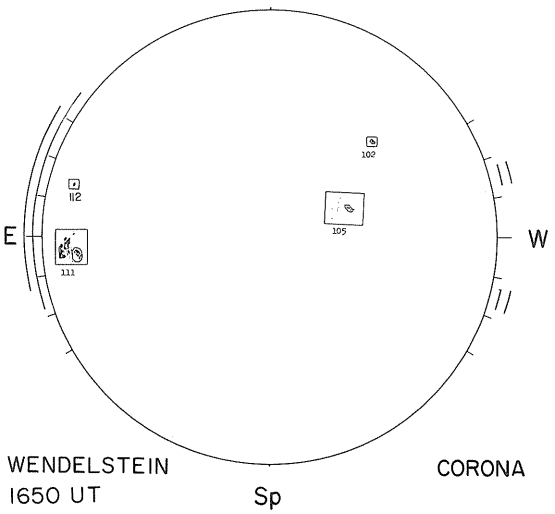
PIC-DU-MIDI
CORONA

BOULDER
5



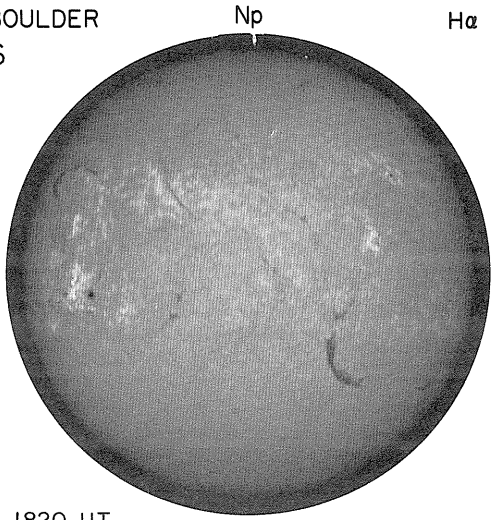
1842 UT

BOULDER
Np
SUNSPOTS



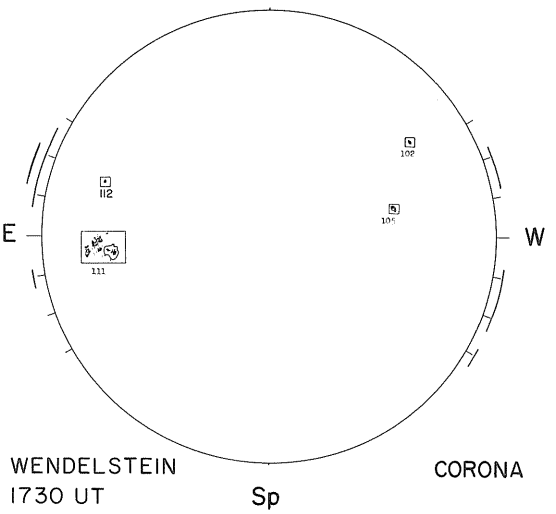
WENDELSTEIN
1650 UT
CORONA

BOULDER
6



1820 UT

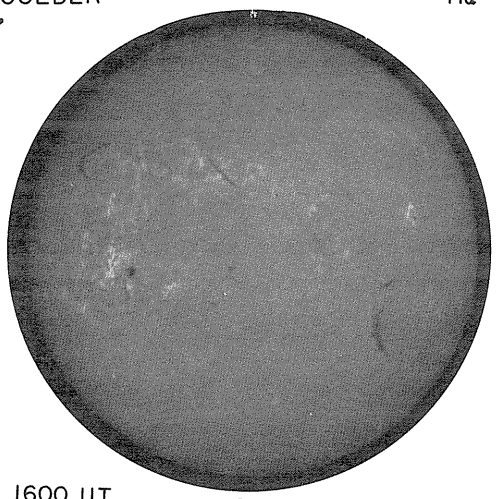
BOULDER
Np
SUNSPOTS



WENDELSTEIN
1730 UT
CORONA

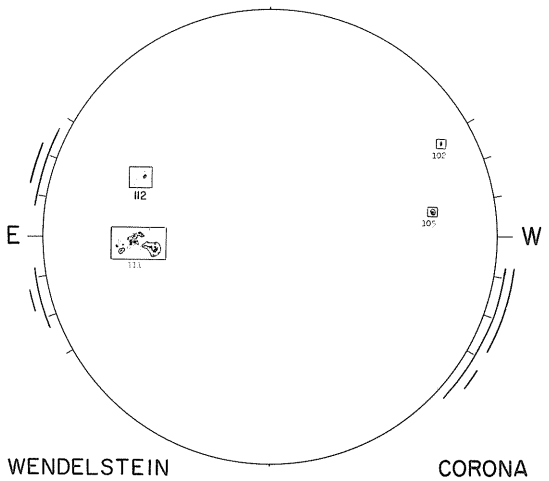
JANUARY, 1971

BOULDER
7



1600 UT

BOULDER

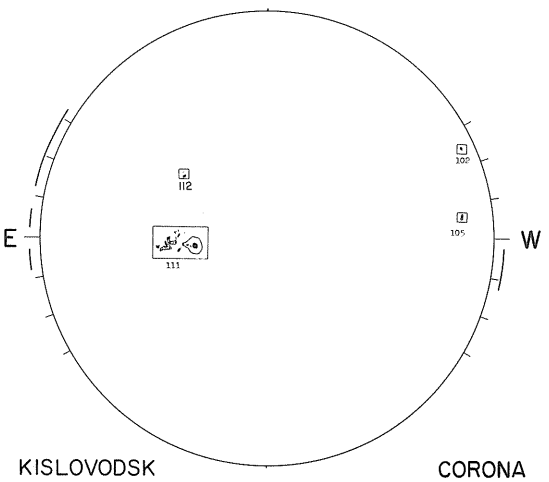


WENDELSTEIN
1700 UT
CORONA

BOULDER
8

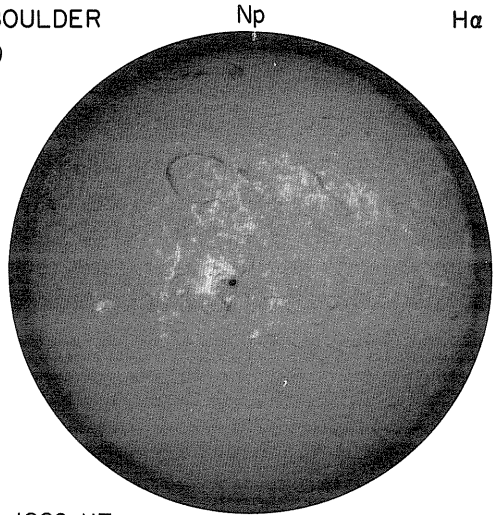
1531 UT

BOULDER



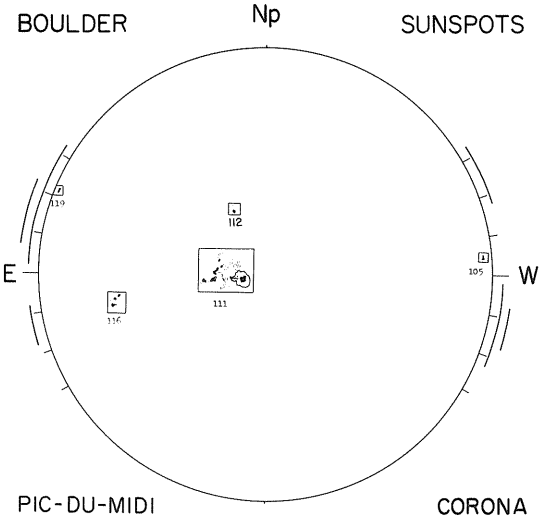
KISLOVODSK
1535 UT
CORONA

BOULDER
9



1829 UT

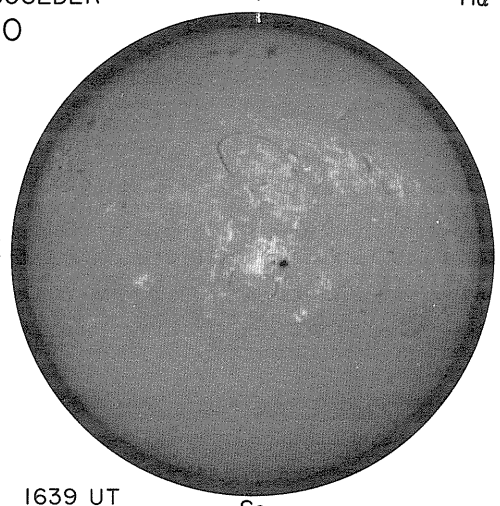
BOULDER



PIC-DU-MIDI
1555 UT
CORONA

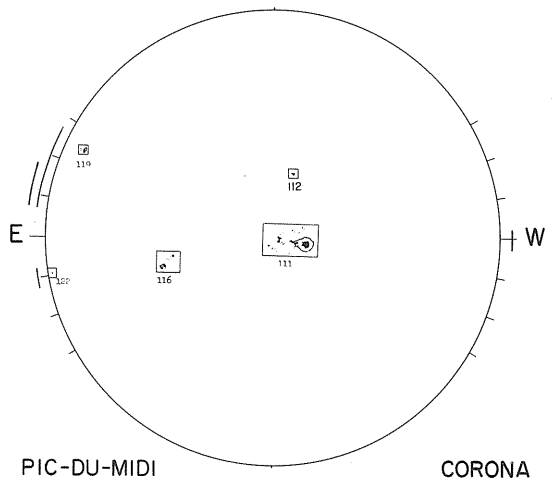
JANUARY, 1971

BOULDER
10



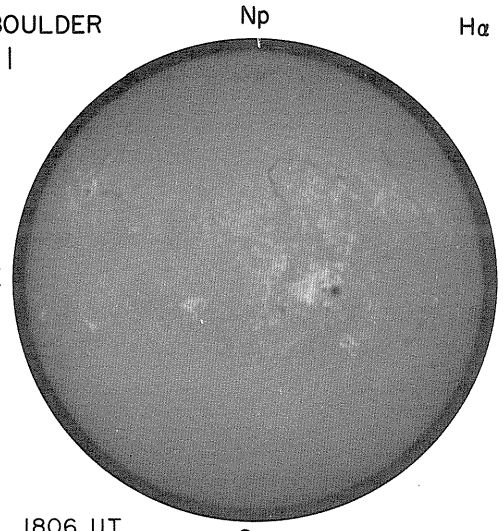
1639 UT

BOULDER
Np
SUNSPOTS



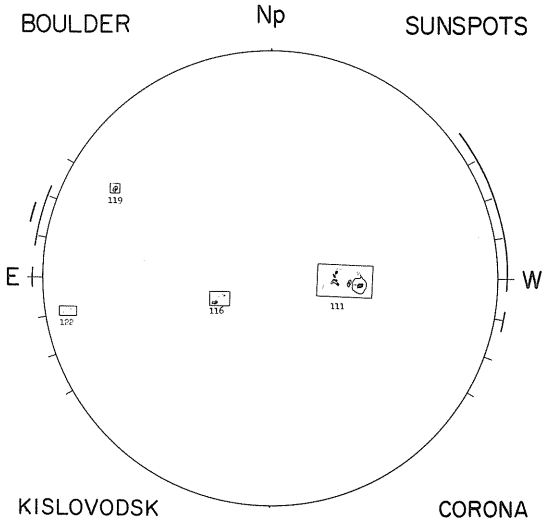
PIC-DU-MIDI
1805 UT
Sp
CORONA

BOULDER
11



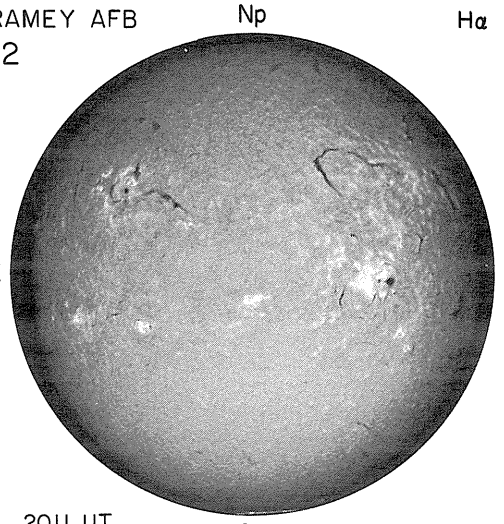
1806 UT

BOULDER
Np
SUNSPOTS



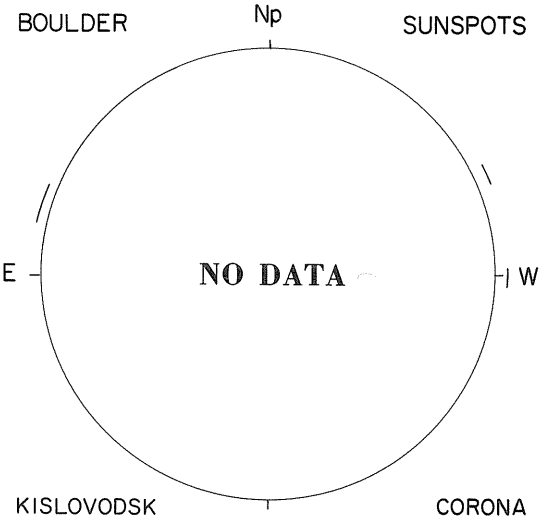
KISLOVODSK
2210 UT
Sp
CORONA

RAMEY AFB
12



2011 UT

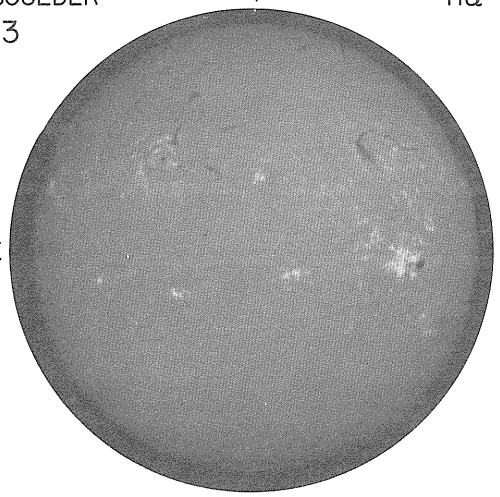
BOULDER
Np
SUNSPOTS



KISLOVODSK
Sp
CORONA

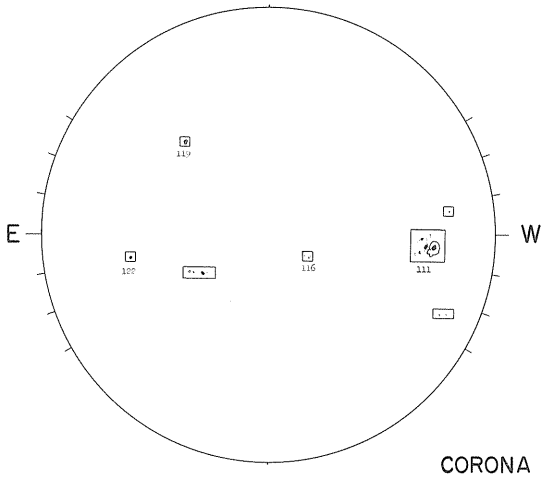
JANUARY, 1971

BOULDER
13



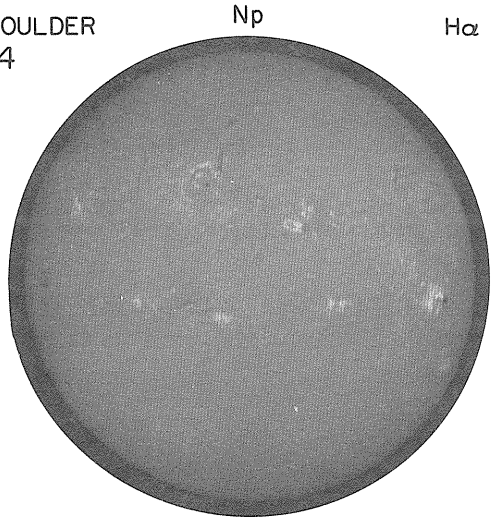
1543 UT Sp

BOULDER Np SUNSPOTS



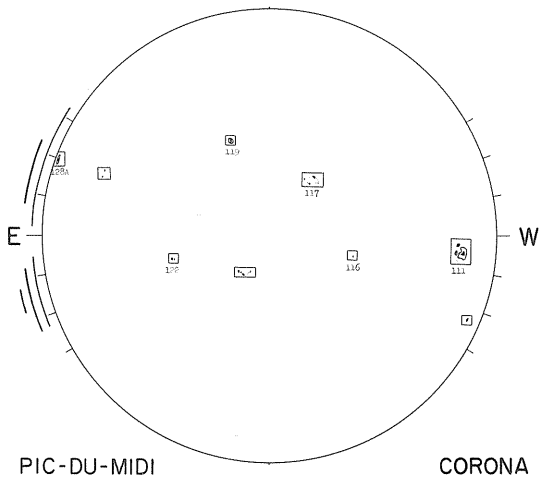
1645 UT Sp CORONA NO DATA

BOULDER
14



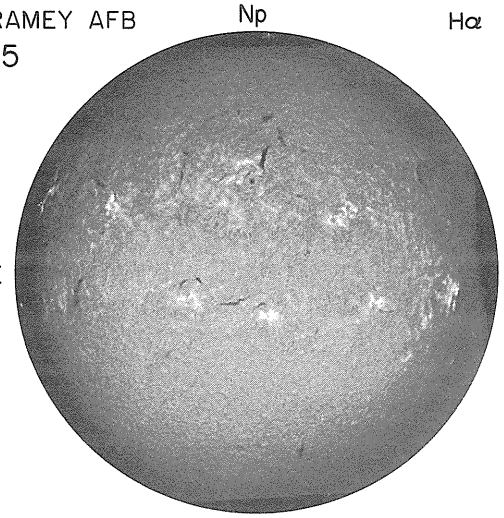
1459 UT Sp

BOULDER Np SUNSPOTS



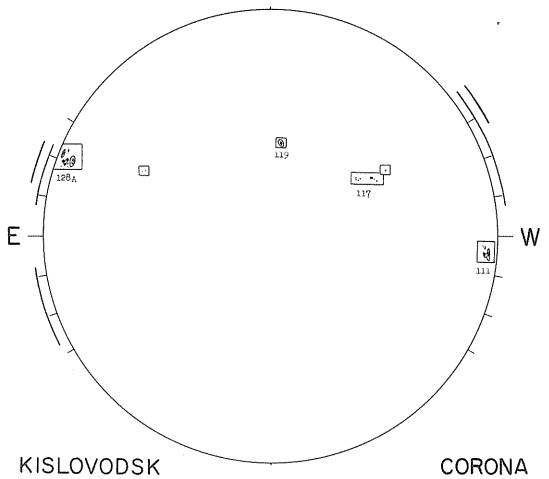
PIC-DU-MIDI
1500 UT Sp CORONA NO DATA W/LIMB

RAMEY AFB
15



1203 UT Sp

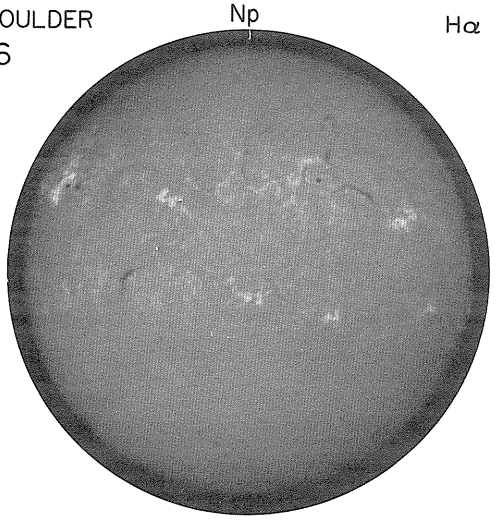
BOULDER Np SUNSPOTS



KISLOVODSK
1700 UT Sp CORONA

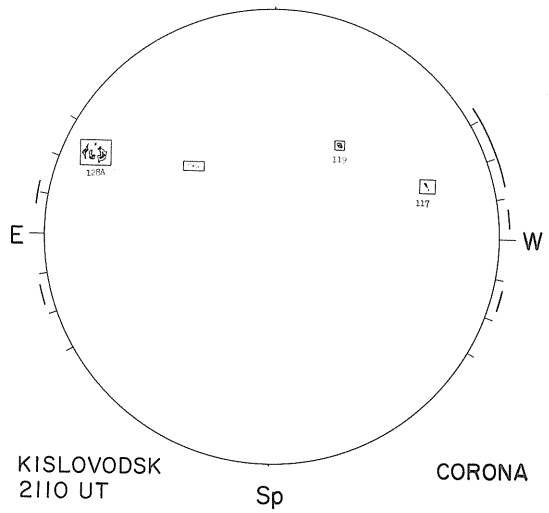
JANUARY, 1971

BOULDER
16



2018 UT

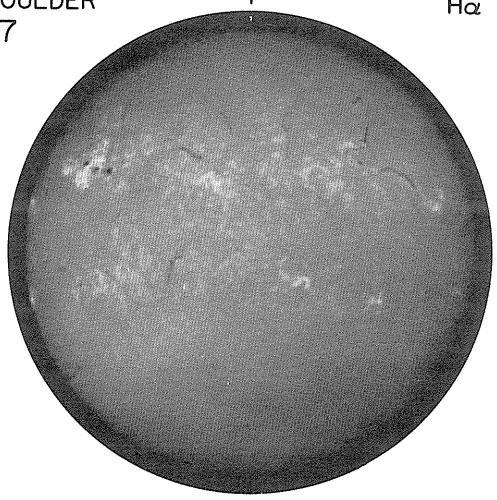
BOULDER



KISLOVODSK
2110 UT

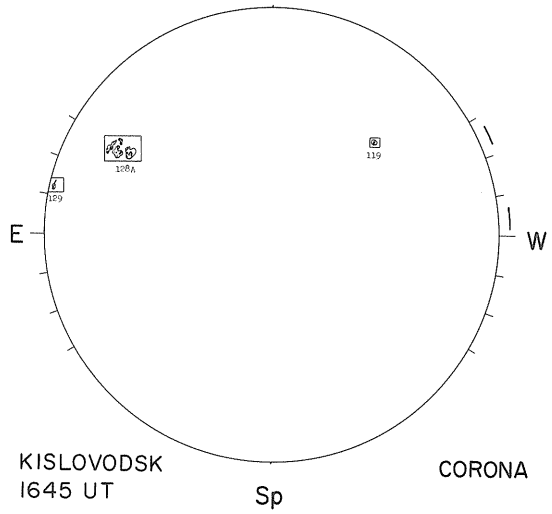
CORONA

BOULDER
17



1645 UT

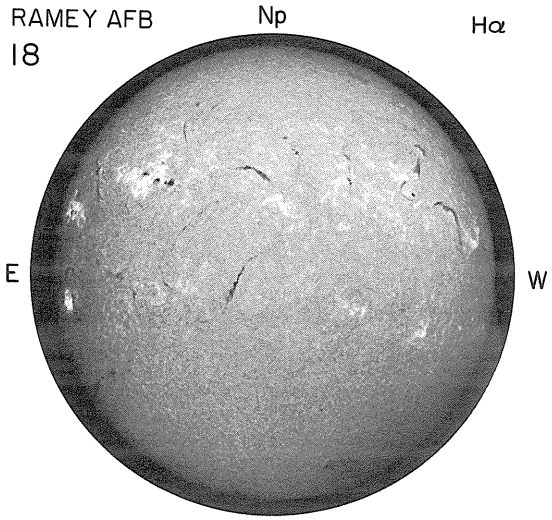
BOULDER



KISLOVODSK
1645 UT

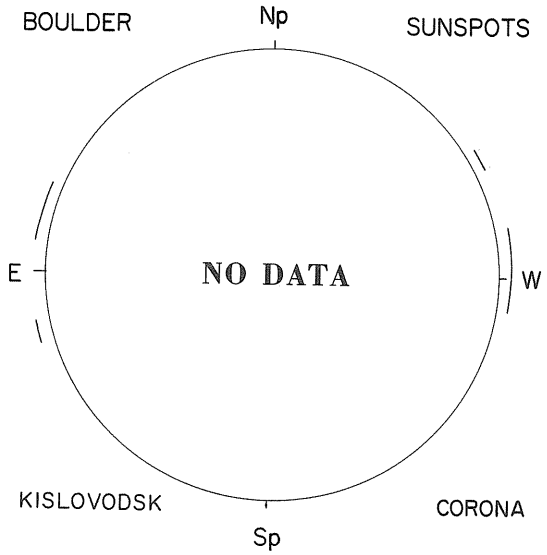
CORONA

RAMEY AFB
18



1234 UT

BOULDER

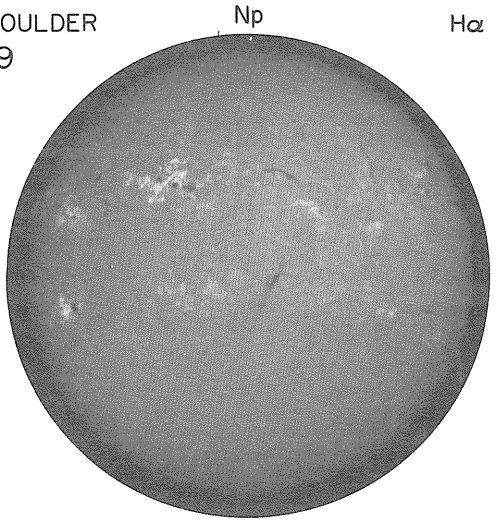


KISLOVODSK

CORONA

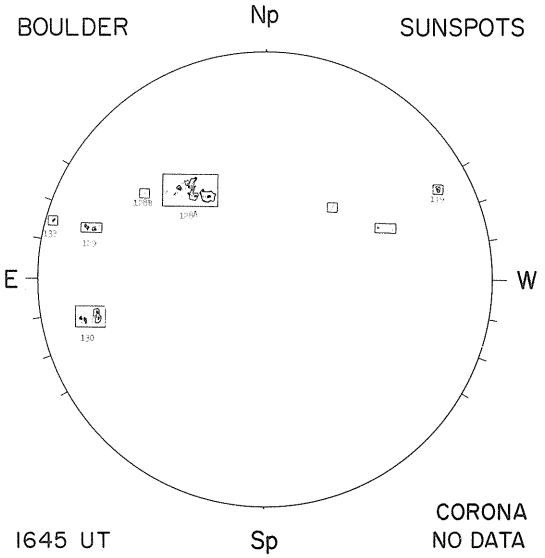
JANUARY, 1971

BOULDER
19



1615 UT

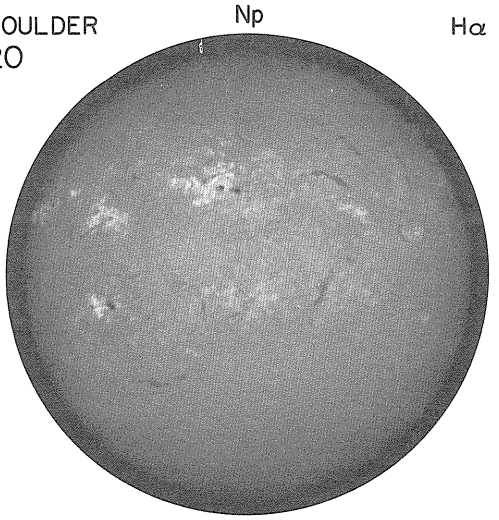
BOULDER



1645 UT

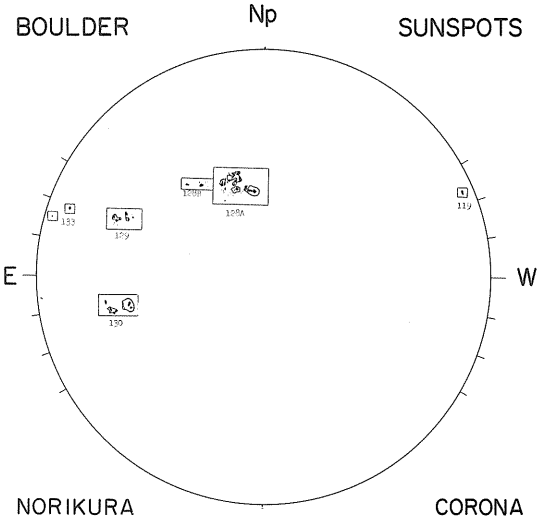
CORONA
NO DATA

BOULDER
20



1625 UT

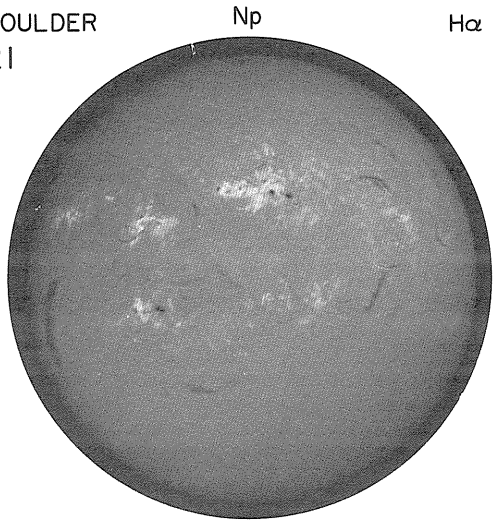
BOULDER



NORIKURA
1620 UT

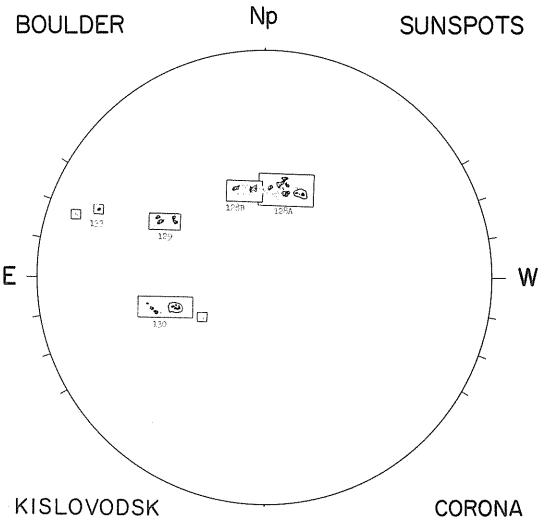
CORONA

BOULDER
21



1617 UT

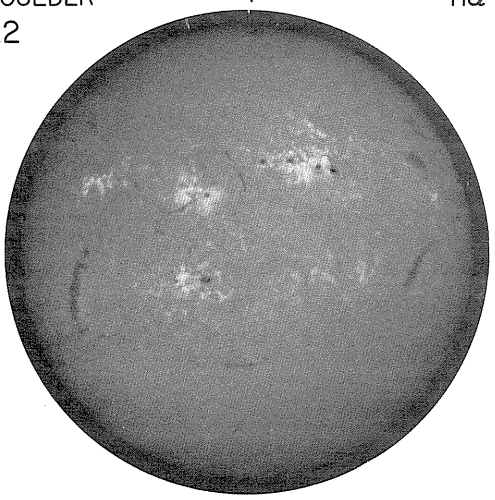
BOULDER



KISLOVODSK
1600 UT

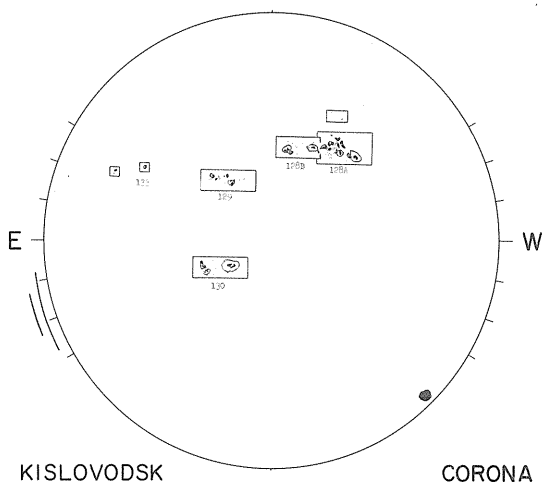
CORONA

BOULDER
22



1605 UT

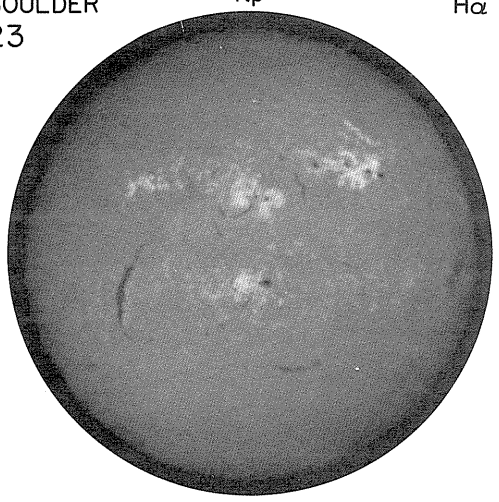
BOULDER



KISLOVODSK
1625 UT

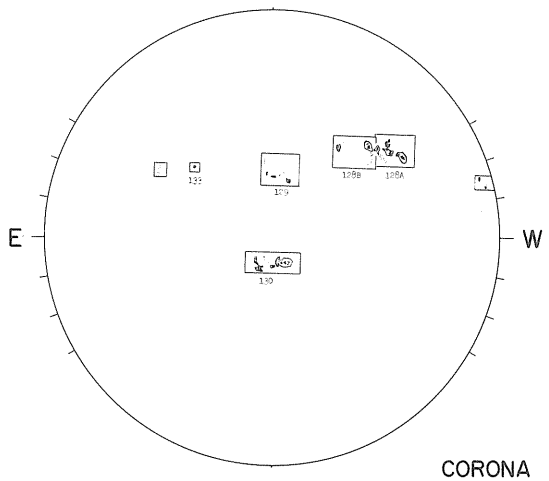
CORONA

BOULDER
23



1712 UT

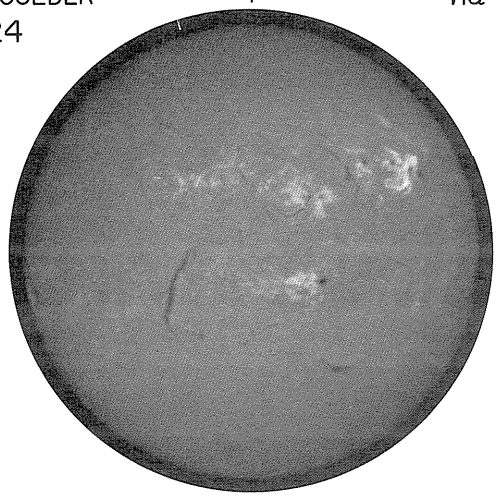
BOULDER



1735 UT

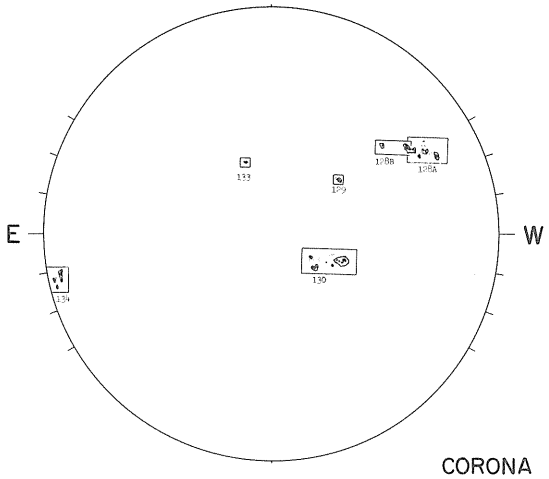
CORONA
NO DATA

BOULDER
24



1840 UT

BOULDER

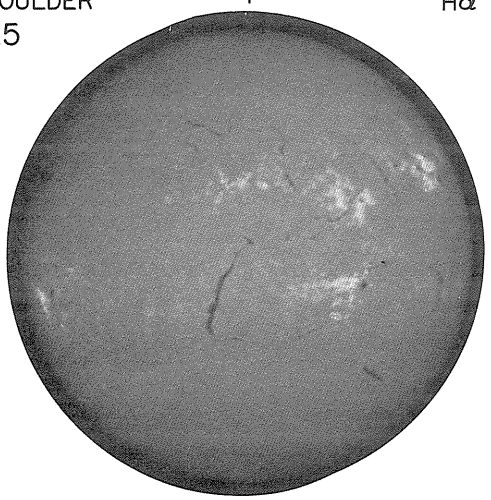


1900 UT

CORONA
NO DATA

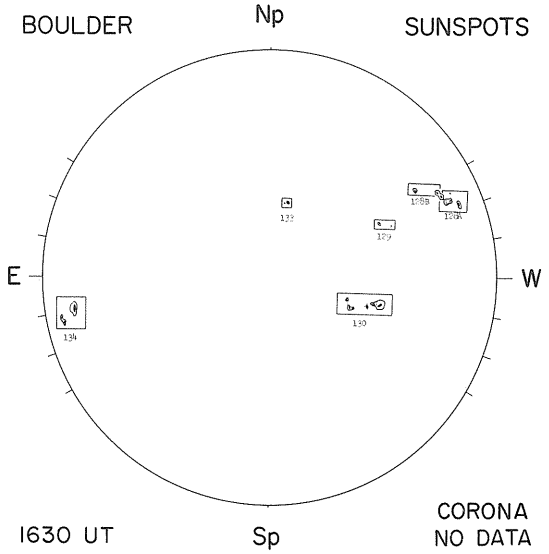
JANUARY, 1971

BOULDER
25



1842 UT

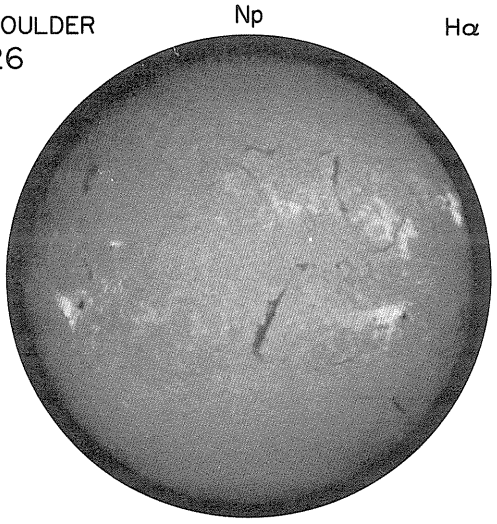
BOULDER



1630 UT

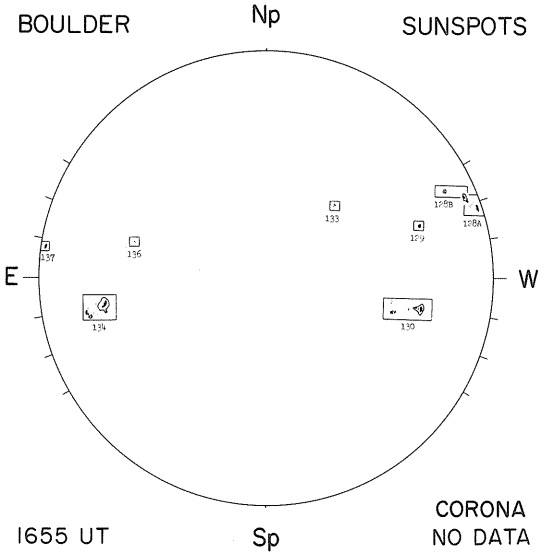
CORONA
NO DATA

BOULDER
26



1840 UT

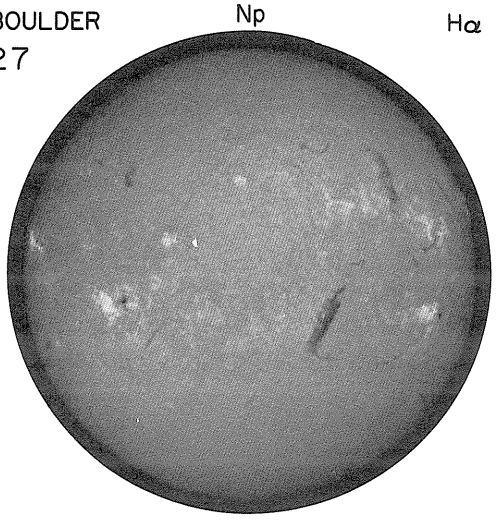
BOULDER



1655 UT

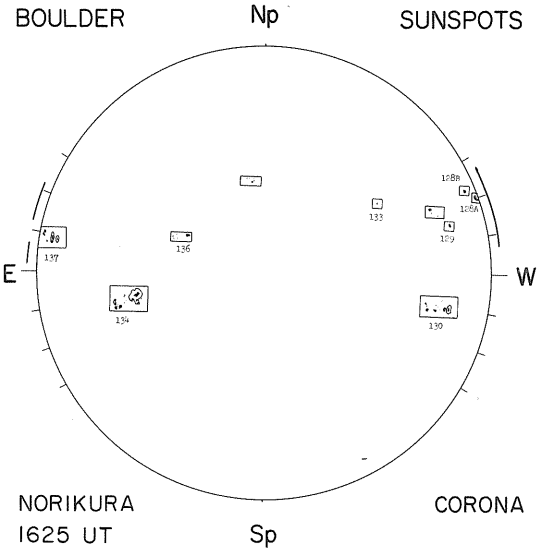
CORONA
NO DATA

BOULDER
27



1748 UT

BOULDER

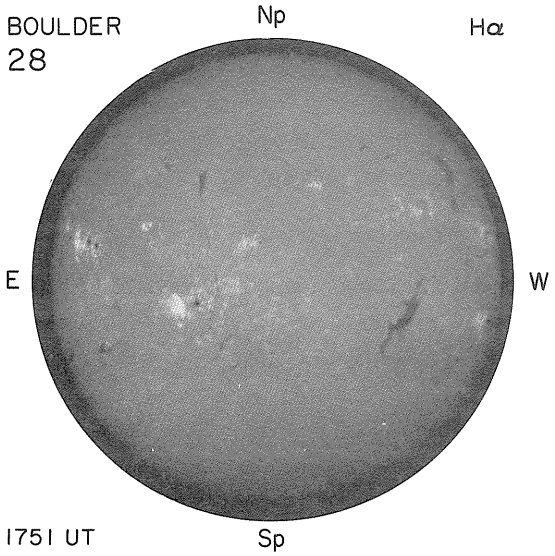


NORIKURA
1625 UT

CORONA

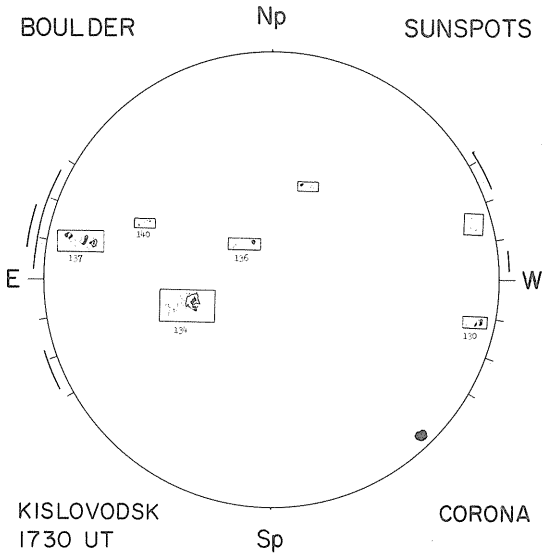
JANUARY, 1971

BOULDER
28



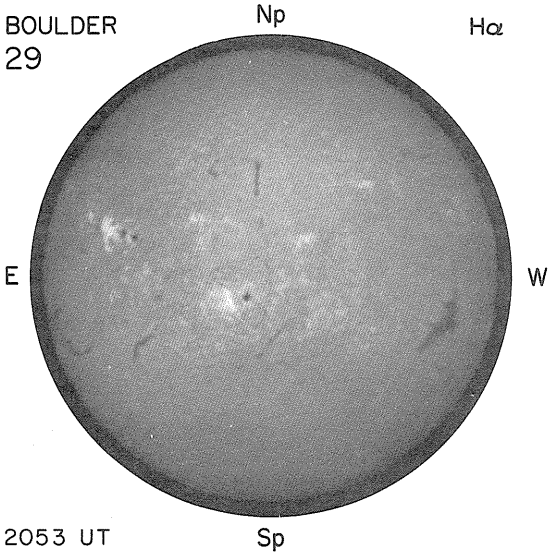
1751 UT

BOULDER



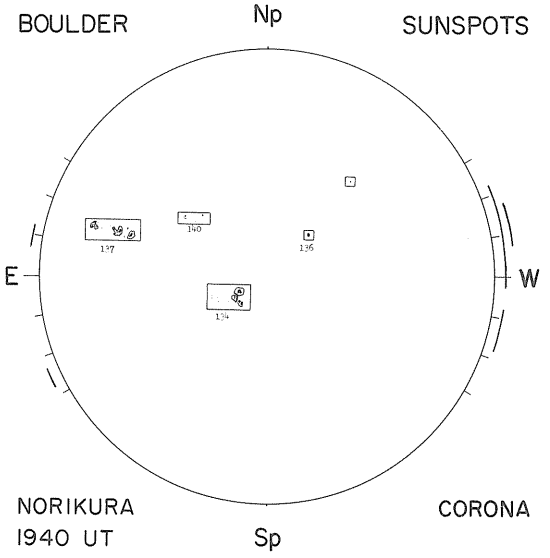
KISLOVODSK
1730 UT
CORONA

BOULDER
29



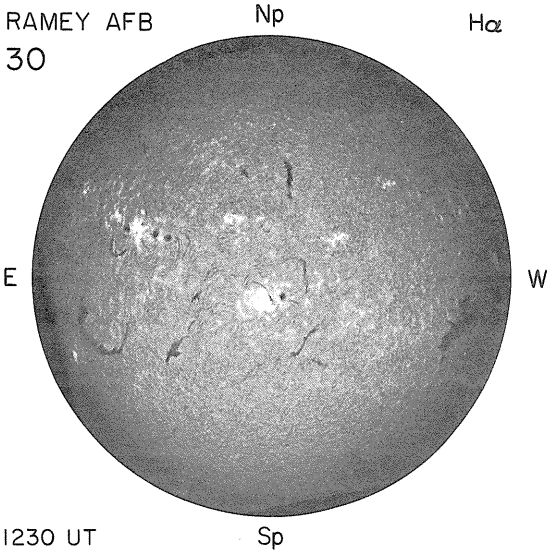
2053 UT

BOULDER



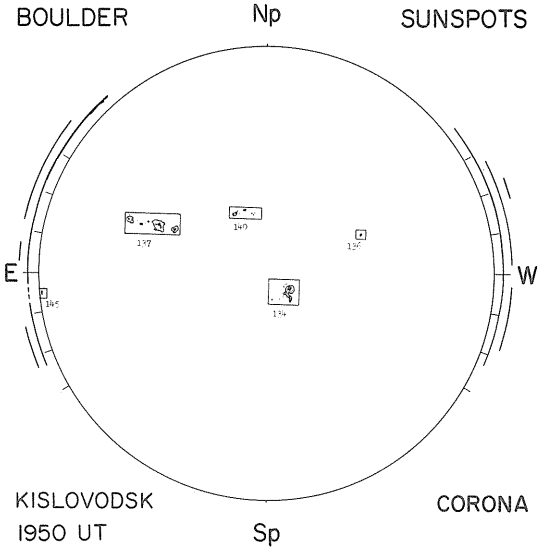
NORIKURA
1940 UT
CORONA

RAMEY AFB
30



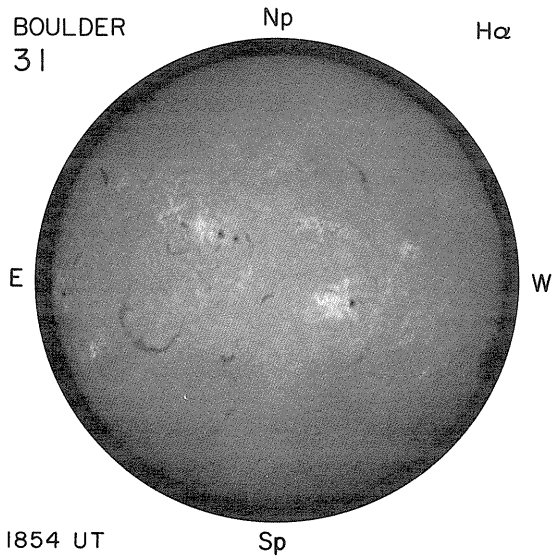
1230 UT

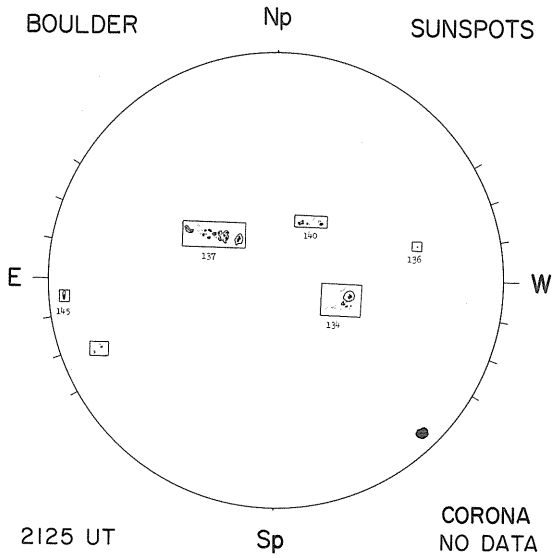
BOULDER



KISLOVODSK
1950 UT
CORONA

JANUARY, 1971





REGIONS OF SOLAR ACTIVITY

JANUARY 1971

MCMATH REGION 11099 CMP DATE 1.7 RETURN OF REGION 11066* 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
70	12	26	11099	S13 E84		700	1.0										
70	12	27	11099	S13 E70	116	800	1.5									5	3
70	12	28	11099	S14 E55		1500	2.0										
70	12	29	11099	S14 E40	120	1300	2.0										
70	12	30	11099	S14 E29	119	1300	2.0									3	2
70	12	31	11099	S14 E13	118	1200	2.0									3	2
71	1	1	11099	S14 E02	120	1100	2.5									4	2
71	1	2	11099	S16 W12	119	1400	2.5									3	2
71	1	4	11099	S14 W39	118	900	2.0										
71	1	5	11099	S14 W52	118	900	2.0										
71	1	6	11099	S14 W63	118	600	2.0										
71	1	7	11099	S15 W76	117	600	1.5										

MCMATH REGION 11101 CMP DATE 3.2 RETURN OF REGION 11066* 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
70	12	27	11101	S12 E85		1500	2.5										
70	12	28	11101	S11 E72		2700	2.0										
70	12	29	11101	S12 E60	100	2900	2.5									4	2
70	12	30	11101	S13 E47	101	2800	2.5										
70	12	31	11101	S13 E30	101	2500	2.5										
71	1	1	11101	S13 E20	102	2000	2.5										
71	1	2	11101	S13 E07	100	2000	2.5										
71	1	4	11101	S13 W21	100	1600	2.0										
71	1	5	11101	S13 W35	101	1300	2.0										
71	1	6	11101	S13 W47	102	1000	2.0										
71	1	7	11101	S13 W59	100	1200	1.5										
71	1	8	11101	S13 W71	99	1000	1.0									5	3

MCMATH REGION 11102 CMP DATE 3.3

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
70	12	28	11102	N25 E77		1500	2.5	18262	N21 E73	99	AP		110	1	H		
70	12	29	11102	N25 E65	95	1100	3.0	18262	N20 E60	98	AP		90	1	H	5	3
70	12	30	11102	N25 E52	96	2000	3.0	18262	N21 E49	97	AP		80	1	H	3	2
70	12	31	11102	N25 E34	97	1800	2.0	18262	N21 E29	99	AP		90	1	H	3	2
71	1	1	11102	N24 E22	100	2400	2.5	18262	N21 E21	99	AP		50	1	H	4	2
71	1	2	11102	N23 E09	98	2100	2.5	18262	N22 E07	99	AP					3	2
71	1	3						18262	N22 W09	99	AP						
71	1	4	11102	N25 W21	100	1800	2.5	18262	N22 W17	97	AP						
71	1	5	11102	N25 W33	99	1800	2.5	18262	N22 W33	99	AP		50	2	H		
71	1	6	11102	N25 W46	101	1800	2.0	18262	N22 W47	98	AP		50	1	H		
71	1	7	11102	N25 W58	99	1500	2.0	18262	N22 W60	97	AP		50	1	H	5	3
71	1	8	11102	N25 W70	98	1200	2.0	18262	N23 W71	98	AP		20	1	H		
71	1	9	11102	N25 W83	98	700	1.5	18262	N23 W88	101	AP						

MCMATH REGION 11105 CMP DATE 4.2

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
70	12	28	11105	N10 E88		300	1.5										
70	12	29	11105	N09 E72		200	1.0										
70	12	30	11105	N07 E63	85	1200	3.0	18264	N03 E60	86	BP		60	3	D		
70	12	31	11105	N06 E45	86	1200	3.0	18264	N03 E40	88	BP		220	12	D	6	4
71	1	1	11105	N06 E32	90	1300	3.0	18264	N03 E33	87	BP		170	4	D	7	4
71	1	2	11105	N05 E20	87	1700	3.0	18264	N03 E20	86	BP					9	5
71	1	3						18264	N03 E03	87	BP					8	5
71	1	4	11105	N05 W08	87	1200	3.5	18264	N03 W07	87	BP					7	4
71	1	5	11105	N05 W22	88	1200	3.5	18264	N03 W23	89	BP		200	11	C	6	3
71	1	6	11105	N05 W33	88	1200	3.5	18264	N03 W38	89	AP		100	2	H	8	5
71	1	7	11105	N05 W45	86	1000	3.5	18264	N03 W51	88	AP		100	3	H	6	3
71	1	8	11105	N05 W60	88	1000	3.5	18264	N04 W62	89	AP		100	1	H	6	3
71	1	9	11105	N05 W73	88	1200	3.0	18264	N03 W77	90	AP		40	1	H	8	4
71	1	10						18264	N03 W89	89	AP						

MCMATH REGION 11109 CMP DATE 4.8

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
70	12	31	11109	N23 E57		100	1.5										
71	1	1	11109	N23 E43	79	200	1.5										

* 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

JANUARY 1971

MCMATH REGION 11106 CMP DATE 6.1 RETURN OF REGION 11070 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
70	12	31	11106	S06 E70	61	900	1.5										
71	1	1	11106	S06 E57	65	1000	1.5										
71	1	2	11106	S07 E44	63	1000	1.5										
71	1	4	11106	S06 E18	61	900	2.0										
71	1	5	11106	S06 E05	61	1000	2.0										
71	1	6	11106	S05 W07	62	1000	2.5										
71	1	7	11106	S06 W20	61	700	2.5									5	3
71	1	8	11106	S06 W35	63	800	2.5									3	2
71	1	9	11106	S06 W48	63	900	2.5	18269	S07 W57	70	BP						
71	1	10						18269	S06 W69	69	AP						
71	1	11	11106	S06 W75	62	400	1.0										

MCMATH REGION 11107 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
70	12	31	11107	S30 E85	46	300	1.0										
71	1	1	11107	S30 E76	46	300	1.0										
71	1	2	11107	S30 E62	45	100	1.0									5	3

MCMATH REGION 11108 CMP DATE 8.3 RETURN OF REGION 11073 ROTATION 3 & 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
70	12	31	11108	N13 E77	54	800	1.0										
71	1	1	11108	N12 E62	60	1400	1.0									6	4
71	1	2	11108	N15 E65	42	3200	1.5									9	5
71	1	3														15	9
71	1	4	11108	N18 E45	34	4500	2.5									6	3
71	1	5	11108	N18 E30	36	5100	2.5										
71	1	6	11108	N18 E20	35	5000	2.5									5	3
71	1	7	11108	N18 E08	33	4700	2.5									5	3
71	1	8	11108	N18 W05	33	4500	2.5										
71	1	9	11108	N19 W18	33	4600	3.0									4	2
71	1	11	11108	N18 W42	29	4200	2.5										
71	1	12	11108	N19 W51	27	3700	2.0									5	3
71	1	13														7	4
71	1	14	11108	N20 W72	19	3400	2.0										
71	1	15	11108	N20 W80	17	2600	1.5										

MCMATH REGION 11124 CMP DATE 9.0

				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	1	14	11124	S23 W77	24	800	4.0										
71	1	15	11124	S23 W83	20	800	3.5										

MCMATH REGION 11110 CMP DATE 9.1 RETURN OF REGION 11078 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	1	4	11110	S11 E60	19	500	2.0										
71	1	5	11110	S12 E48	18	700	2.5										
71	1	6	11110	S13 E36	19	700	2.5										
71	1	7	11110	S13 E23	18	700	2.5										
71	1	8	11110	S13 E07	21	700	2.5										
71	1	9	11110	S13 W05	20	800	2.0	18270	S20 W02	15	BP						
71	1	10						18270	S19 W15	15	BP						
71	1	11	11110	S13 W33	20	400	1.5	18270	S19 W28	16	(B)	1					
71	1	12	11110	S13 W45	21	300	1.0										

MCMATH REGION 11120 CMP DATE 9.6

				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	1	11	11120	S19 W28	15	300	2.0										
71	1	12	11120	S20 W39	15	300	2.0										
71	1	13							S23 W57				0	2	B		
71	1	14	11120	S20 W73	20	200	1.5	18277	S24 W73	20	BP		20	1	H		

REGIONS OF SOLAR ACTIVITY

JANUARY 1971

MCMATH REGION 11112 CMP DATE 10.2 RETURN OF REGION 11077* 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	1	4	11112	N11 E75	4	1400	3.0	18268	N11 E76	4	AP						
71	1	5	11112	N10 E60	6	1800	3.0	18268	N12 E60	6	AP		20	1	H		
71	1	6	11112	N11 E47	8	1600	3.0	18268	N11 E45	6	AP		20	1	H		
71	1	7	11112	N10 E34	7	1300	2.5	18268	N12 E31	6	BP						
71	1	8	11112	N10 E20	8	1300	2.5	18268	N12 E21		AP					4	2
71	1	9	11112	N10 E08	7	1300	2.0	18268	N12 E07	6	BP		10	2	H		
71	1	10						18268	N12 W06	6	AP						
71	1	11	11112	N10 W22	9	1200	2.5	18275	N09 W28	16							
71	1	12	11112	N09 W35	11	1000	2.5										
71	1	13							N03 W53				0	1	A		
71	1	14	11112	N07 W58	15	600	2.5										
71	1	15	11112	N07 W80	17	500	1.5										

MCMATH REGION 11111 CMP DATE 10.6

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	1	3						18267	S05 E80	10	AP						
71	1	4	11111	S03 E78	1	3200	3.5	18267	S06 E78	2	BP					23	13
71	1	5	11111	S04 E66	0	4700	3.5	18267	S06 E61	5	BP		830	48	E	29	17
71	1	6	11111	S04 E52	3	4800	3.5	18267	S06 E46	5	BP		810	47	E	48	28
71	1	7	11111	S04 E40	1	5000	3.5	18267	S06 E32	5	BP					46	26
71	1	8	11111	S04 E26	2	5100	3.5	18267	S06 E21	6	BP		910	27	E	45	26
71	1	9	11111	S04 E13	2	5500	3.0	18267	S06 E07	6	BP		770	72	E	50	28
71	1	10						18267	S06 W05	5	BP						
71	1	11	11111	S04 W15	2	5100	3.5	18267	S06 W19	7	(BP)	6	780	18	E	51	29
71	1	12	11111	S05 W27	3	5000	3.5									41	23
71	1	13							S06 W45				550	18	D	42	23
71	1	14	11111	S05 W57	4	5000	3.5	18267	S06 W62	9	BP		450	7	D	40	22
71	1	15	11111	S05 W67	4	5000	3.5	18267	S07 W75	12	(AP)	5	410	5	D	28	15
71	1	16						18267	S07 W89	12	AP					21	11

MCMATH REGION 11114 CMP DATE 11.5

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	1	5	11114	S12 E77	350	600	3.5										
71	1	6	11114	S13 E65	351	800	2.5										
71	1	7	11114	S13 E51	351	500	2.0										
71	1	8	11114	S13 E38	351	500	2.0										
71	1	9	11114	S14 E25	351	500	2.0										
71	1	11	11114	S14 W04	351	300	1.5										
71	1	12	11114	S14 W17	353	200	1.0										

MCMATH REGION 11125 CMP DATE 11.6

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	1	14	11125	S24 W43	350	400	2.0	18278	S15 W46	353	AP						
71	1	15	11125	S24 W53	350	400	1.5										

MCMATH REGION 11116 CMP DATE 13.0

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	1	6	11116	S10 E81	335	300	1.0										
71	1	7	11116	S09 E70	332	200	1.0										
71	1	8	11116	S09 E56	333	200	1.5										
71	1	9	11116	S09 E45	331	800	2.5	18271	S11 E42	332	BF		30	11	D		
71	1	10						18271	S11 E28	333	B						
71	1	11	11116	S10 E16	331	800	3.0	18271	S10 E15	333	(BF)	3	60	5	D	7	4
71	1	12	11116	S10 E04	332	700	3.0										
71	1	13							S10 W10				0	3	A		
71	1	14	11116	S10 W27	334	800	2.0	18271	S11 W27	334	BP		0	1	A		
71	1	15	11116	S10 W37	334	700	2.5										
71	1	17	11116	S12 W66	336	600	2.0									10	6
71	1	18	11116	S12 W80	336	300	2.0										

REGIONS OF SOLAR ACTIVITY

JANUARY 1971

MCMATH REGION 11117 CMP DATE 13.7

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	9	11117	N10 E59	317	300	1.0
71	1	11	11117	N10 E31	316	200	1.0
71	1	12	11117	N10 E18	318	200	1.5
71	1	14	11117	N12 W16	323	700	2.5
71	1	15	11117	N12 W27	324	800	2.5
71	1						
71	1	16					
71	1	17	11117	N12 W54	324	900	3.0
71	1	18	11117	N10 W70	326	700	3.0
71	1	19	11117	N11 W82	326	500	2.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18279	N09 W15	322	B		30	10	D	5	3
18279	N11 W29	326	(BP)	3	20	8	C	9	5
	N13 W32				0	1	A		
18279	N09 W41	324	(Y)	3	20	4	H	6	3
18279	N10 W55	325	(BP)	2				4	2

MCMATH REGION 11118 CMP DATE 14.9

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	9	11118	S20 E69	307	100	1.0

SUNSPOT DATA 9.1 CM

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

MCMATH REGION 11121 CMP DATE 15.2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	11	11121	S15 E46	301	300	2.5
71	1	12	11121	S14 E34	302	500	3.0
71	1	13					
71	1	14	11121	S14 E04	303	800	2.5
71	1	15	11121	S15 W06	303	700	3.0
71	1	16					
71	1	17	11121	S15 W32	302	700	3.0
71	1	18	11121	S16 W48	304	600	2.5
71	1	19	11121	S16 W60	304	600	2.0
71	1	20	11121	S17 W73	304	500	1.5

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18276	S16 E44	304	(BP)	2					
	S13 E18				30	7	C	7	4
18276	S16 E04	303	BF		40	7	D	6	3
								5	3
								3	2
								4	2

MCMATH REGION 11119 CMP DATE 15.8

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	9	11119	N20 E85	291	1200	2.0
71	1	10					
71	1						
71	1	11	11119	N19 E54	293	2200	2.5
71	1						
71	1	12	11119	N20 E45	291	3000	2.5
71	1	13					
71	1	14	11119	N19 E13	294	3200	2.5
71	1						
71	1	15	11119	N19 E04	293	3000	2.5
71	1						
71	1	16					
71	1						
71	1						
71	1	17	11119	N19 W19	289	3400	2.5
71	1	18	11119	N19 W33	289	3000	2.5
71	1						
71	1	19	11119	N20 W45	289	2800	2.5
71	1	20	11119	N20 W58	289	2700	2.0
71	1	21					
71	1	22	11119	N18 W83	288	700	1.0

RETURN OF REGION 11084 ROTATION 2

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18272	N20 E79	295	AP		50	1	H	7	4
18272	N20 E65	296	AP						
18273	N17 E71	290	AP						
18272	N20 E50	298	(A)	4	80	1	H	8	8
18273	N17 E58	290	(AP)	2					
								7	4
	N20 E23				50	1	H	5	3
18272	N20 E08	299	A		100	1	H	5	3
18273	N16 E16	291							
18272	N19 W02	299	(A)	6	100	1	H	7	4
18273	N17 E05	292	(AP)	2					
18272	N19 W15	298	(A)	5	60	1	H	7	4
18283	N24 W14	297	(BP	1					
18273	N14 W09	292	AP						
18272	N20 W29	299	(A)	5	90	1	H	6	3
18272	N20 W43	300	(A)	5					
18287	N28 W36	293	(BP)	2					
18272	N20 W56	299	(A)	5	80	1	H	7	4
18272	N20 W64	295	(A)	5	50	1	H	7	4
18272	N21 W89	305	(A)	2					

MCMATH REGION 11122 CMP DATE 17.1

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	10					
71	1	11	11122	S11 E70	277	700	2.5
71	1	12	11122	S10 E58	278	700	2.5
71	1	13					
71	1	14	11122	S10 E27	280	1200	2.0
71	1	15	11122	S10 E17	280	1000	2.5
71	1	16					
71	1	17	11122	S10 W07	277	1100	2.5
71	1	18	11122	S12 W20	276	800	2.0
71	1	19	11122	S12 W31	275	800	2.5
71	1	20	11122	S12 W44	275	600	2.0

RETURN OF REGION 11087 ROTATION 2

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18274	S12 E80	281	AP						
18274	S11 E68	280	(BP)	2	0	2	B		
	S09 E38				20	1	H	3	2
18274	S11 E24	283			20	2	H		
								5	2
18274	S11 W08	278	(B)	1					

REGIONS OF SOLAR ACTIVITY

JANUARY 1971

MCMATH REGION 11131 CMP DATE 17.2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	18	11131	N08 W20	276	400	2.0
71	1	19	11131	N08 W34	278	500	2.0
71	1	20	11131	N08 W47	278	700	2.0
71	1	22	11131	N08 W73	278	600	2.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18288	N09 W19	276	(BF)	4					
18288	N09 W34	277	(BF)	3	10	4	C		
18288	N09 W45	276	(BF)	3					

MCMATH REGION 11123 CMP DATE 18.2 RETURN OF REGION 11088 ROTATION 3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	12	11123	N13 E80	256	300	1.0
71	1	13					
71	1	14	11123	N14 E48	259	1200	3.0
71	1	15	11123	N14 E36	261	1000	2.5
71	1	16					
71	1	17	11123	N13 E08	262	1200	3.0
71	1	18	11123	N12 W06	262	1000	2.5
71	1	19	11123	N13 W16	260	1000	3.0
71	1	20	11123	N13 W30	261	900	3.0
71	1	22	11123	N13 W55	260	900	2.0
71	1	23	11123	N10 W68	260	800	2.5
71	1	24	11123	N10 W85	260	400	2.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
								5	3
								16	9
18280	N12 E47	260	BP		10	2	C		
18280	N12 E37	260	(BP)	2	0	2	A		
18280	N14 E25	258	(BF)	2	0	5	A		
18280	N14 E12	258	(A)	2					
18280	N13 W06	263	AP						
18280	N11 W19	262	(AP)	3	0	3	A		
18280	N13 W31	262	(AP)	2					
18280	N12 W61	261	(BF)	2					
18280	N12 W72	262	(BF)	2	20	2	D		
18280	N13 W84	258	AF						

MCMATH REGION 11127 CMP DATE 20.8 RETURN OF REGION 11090 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	14	11127	S09 E73	234	1600	1.5
71	1	15	11127	S08 E65	232	1300	1.5
71	1	16					
71	1	17	11127	S09 E42	228	1400	2.0
71	1	18	11127	S10 E29	227	1200	2.0
71	1	19	11127	S10 E17	227	1300	2.0
71	1	20	11127	S11 E02	229	1000	2.0
71	1						
71	1						
71	1	22	11127	S11 W24	229	1000	2.0
71	1	23	11127	S12 W36	228	1200	2.0
71	1	24	11127	S12 W55	230	900	2.0
71	1	25	11127	S12 W69	231	800	2.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
								5	3
18282	S12 E63	234	BF					9	5
								9	5
18289	S09 E37	220	(BP)	2					
18292	S07 W08	239	(AP)	1					
18293	S11 W07	238	(AP)	1					
18294	S09 W02	233	(AP)	1					

MCMATH REGION 11128 CMP DATE 21.3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	14	11128	N20 E80	227	3000	3.0
71	1	15	11128	N20 E75	222	4700	3.5
71	1	16					
71	1						
71	1	17	11128	N20 E46	224	5300	3.5
71	1						
71	1	18	11128	N20 E32	224	5700	3.0
71	1						
71	1	19	11128	N20 E21	223	5600	3.5
71	1						
71	1	20	11128	N20 E08	223	6000	3.5
71	1						
71	1	21					
71	1						
71	1	22	11128	N20 W15	220	6200	3.5
71	1						
71	1						
71	1	23	11128	N20 W30	222	6000	3.5
71	1						
71	1						
71	1	24	11128	N20 W45	220	5800	3.5
71	1						
71	1						
71	1	25	11128	N20 W60	222	5700	3.5
71	1						
71	1						
71	1	26					
71	1						
71	1						
71	1	27	11128	N18 W80	217	4000	3.5
71	1						

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18281	N17 E80	227	BP		250	1	H	24	13
18281	N18 E75	222	(BP)	5	630	21	E	35	19
18281	N18 E58	225	(BP)	6	560	8	E	48	26
18284	N19 E76	207	(B	2					
18281	N19 E48	222	(BP)	5	640	21	E	51	27
18284	N18 E63	207	BF)	1					
18281	N19 E35	222	(D)	6					
18284	N19 E46	211	(B)	3					
18281	N19 E21	222	(BP)	6	930	46	E	54	29
18284	N19 E32	211	(B)	3	10	1	A		
18281	N18 E09	222	(BY)	6	990	36	E	47	25
18284	N18 E20	211	(B)	4	30	8	D		
18281	N19 W06	222	(BP)	6	640	45	E	39	20
18284	N19 E06	210	(BP)	5	160	25	D		
18298	N28 W28	228	(BP)	1	0	3	B	38	20
18281	N19 W28	228	(BP)	5	850	52	E		
18284	N19 W12	212	(BP)	5	490	21	D		
18298	N28 W34	224	(B)	1				34	18
18281	N19 W34	224	(BP)	5	660	31	D		
18284	N20 W23	213	(BP)	5	350	20	D		
18298	N24 W59	233	(BP	1				62	32
18281	N19 W49	223	(BP)	5	410	22	D		
18284	N20 W38	212	(B)	4	300	5	D		
18298	N22 W70	234	(B)	1				23	12
18281	N18 W59	223	(BP)	5	480	8	E		
18284	N19 W49	213	(B)	4	60	1	H		
18298	N22 W83	232	BF					24	12
18281	N18 W75	224	(BP)	4	230	7	E		
18284	N20 W64	213	(BP)	4	50	1	H		
18281	N19 W90	224	AF		90	1	H	13	7
18284	N20 W83	217	BP		10	1	H		

REGIONS OF SOLAR ACTIVITY

JANUARY 1971

MCMATH REGION 11129 CMP DATE 23.8 RETURN OF REGION 11096 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	17	11129	N10 E78	192	1600	3.5
71	1	18	11129	N10 E70	186	2800	3.0
71	1	19	11129	N11 E54	190	3300	3.5
71	1	20	11129	N12 E42	189	3700	3.5
71	1	21					
71	1	22	11129	N12 E14	191	3800	3.5
71	1	23	11129	N12 E02	190	3900	3.0
71	1	24	11129	N12 W14	189	3500	3.0
71	1	25	11129	N12 W28	190	3600	3.5
71	1						
71	1	26					
71	1	27	11129	N11 W52	189	3700	3.0
71	1						
71	1						
71	1	28	11129	N10 W65	190	3800	2.5
71	1						
71	1	29					

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18286	N10 E86	184			120	4	H	15	8
18286	N10 E68	189	(BP)	4					
18286	N10 E54	189	(BY)	5	110	10	D	19	10
18286	N10 E41	190	(BY)	4	170	11	D	15	8
18286	N10 E25	191	(Y)	5	150	19	D	13	7
18286	N10 E09	191	(BP)	4	190	23	D	13	7
18286	N10 W02	192	(Y)	4	80	14	D		
18286	N10 W17	191	(BP)	4	80	7	C		
18300	N03 W32	196	(AP)	2					
18286	N09 W31	195	(BP)	3	30	2	C		
18286	N10 W43	192	(BP	4	20	2	H		
18286	N10 W61	195	AP		10	1	H		
18305	N12 W57	191	BP		10	3	C		
18306	N14 W55	189	A						
18305	N11 W69	190	(B)	2				8	4
18306	N13 W68	189	A		0	3	B		
18305	N12 W79	190	B					4	2

MCMATH REGION 11130 CMP DATE 24.0 RETURN OF REGION 11095 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	17	11130	S12 E80	190	1500	3.5
71	1	18	11130	S12 E70	186	3000	3.0
71	1	19	11130	S13 E58	186	2700	3.0
71	1	20	11130	S13 E45	186	3300	3.5
71	1	21					
71	1						
71	1	22	11130	S13 E17	188	3600	3.5
71	1	23	11130	S14 E05	187	3700	3.0
71	1	24	11130	S14 W11	186	3200	3.0
71	1	25	11130	S14 W24	186	3400	3.5
71	1	26					
71	1	27	11130	S14 W47	184	3400	3.0
71	1						
71	1	28	11130	S15 W60	185	3500	3.0
71	1	29					
71	1	30	11130	S15 W86	185	1300	2.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18285	S12 E80	190	(BP	2					
18285	S13 E68	189	(B)	5					
18285	S13 E55	188	(BP)	5	370	16	D	25	14
18285	S13 E42	189	(BP)	5	590	11	D	31	16
18296	S17 E18	198	(BP)	3	0	1	A	20	10
18285	S13 E28	188	(BP)	5	420	18	D		
18285	S13 E11	189	(BP)	4	950	22	E	25	13
18285	S13 W01	191	(BP)	5	640	25	D	28	14
18285	S12 W16	190	(BP)	5	440	25	D	22	11
18285	S13 W27	191	(BP)	5	350	10	E	17	9
18285	S12 W42	191	(BP)	5	410	13	D	25	13
18285	S13 W56	190	BP		220	13	E	12	6
18307	S15 W38	172	AP						
18285	S13 W73	194	(AP)	4	130	5	C	11	5
18285	S12 W87	198	(AP)	3				8	4

MCMATH REGION 11133 CMP DATE 25.8 RETURN OF REGION 11097 ROTATION 4

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	19	11133	N14 E80	164	1800	3.0
71	1						
71	1	20	11133	N17 E70	161	2300	3.0
71	1						
71	1	21					
71	1						
71	1						
71	1	22	11133	N15 E42	163	2100	3.0
71	1						
71	1	23	11133	N16 E30	162	2500	3.5
71	1						
71	1	24	11133	N15 E12	163	2200	3.0
71	1						
71	1	25	11133	N15 W02	164	2300	3.0
71	1						
71	1						
71	1	26					
71	1	27	11133	N15 W26	163	2000	2.5
71	1	28	11133	N15 W39	164	1900	2.0
71	1	30	11133	N14 W65	164	1300	2.5
71	1	31	11133	N14 W78	163	600	1.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18290	N18 E69	174	(A)	2					
18291	N14 E80	163	(AP)	4	40	1	H		
18291	N13 E69	162	(AP)	3	10	1	H		
18295	N13 E75	156	(AP)	2	0	1	A		
18297	N16 E42	174	(AP)	1					
18291	N14 E49	167	(AP)	4	20	1	H		
18295	N13 E59	157	(AP)	3	10	3	A		
18291	N13 E32	168	(AP)	4	30	1	H		
18295	N12 E42	158	(AP)	2	20	2	H		
18291	N13 E22	168	(AP)	3	10	1	H	5	2
18295	N12 E32	158	(AP)	2	0	9	A		
18291	N13 E06	168	(AP)	2	20	2	H	5	3
18295	N12 E17	157	AP						
18291	N13 W03	167	(BP	3	20	2	H		
18295	N17 E08	156	BF						
18301	N10 E21	143	A						
18291	N13 W20	169	(AP)	2	10	3	A		
18291	N15 W36	170	AP		0	1	H		
								3	2
								3	2

MCMATH REGION 11138 CMP DATE 26.3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	28	11138	S01 W31	156	100	1.5

SUNSPOT DATA 9.1 CM

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

MCMATH REGION 11139 CMP DATE 27.7

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	28	11139	S19 W12	137	100	1.5

SUNSPOT DATA 9.1 CM

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

REGIONS OF SOLAR ACTIVITY

JANUARY 1971

MCMATH REGION 11135 CMP DATE 28.0

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	27	11135	N19 E04	133	500	2.0
71	1	28	11135	N19 W10	135	600	2.5
71	1	29					
71	1	30	11135	N19 W36	135	600	2.5
71	1	31	11135	N19 W49	134	600	2.0
71	2	1	11135	N19 W64	135	500	2.0
71	2	2	11135	N19 W79	137	500	1.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18308	N20 W01	135	(BF)	2	10	5	B		
18308	N20 W14	135	(BF)	4	20	4	C		
18308	N20 W23	134	(AF)	2					

MCMATH REGION 11136 CMP DATE 29.2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	26					
71	1	27	11136	N04 E22	115	600	2.0
71	1	28	11136	N04 E08	117	600	2.0
71	1	29					
71	1	30	11136	N04 W20	119	600	2.5
71	1	31	11136	N04 W32	117	600	2.5
71	2	1	11136	N04 W46	117	800	3.0
71	2	2	11136	N04 W60	118	600	2.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18303	N04 E34	115	(BF)	2	10	2	A		
18303	N04 E16	118	(BP)	3	20	7	C		
18303	N03 E03	118	(BP)	3	40	6	C		
18303	N04 W08	119	(BP)	4					
18303	N03 W24	119	(BP	2	10	1	H		
	N05 W38				0	1	H		

MCMATH REGION 11134 CMP DATE 30.7

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	23	11134	S06 E80	112	500	1.0
71	1	24	11134	S12 E80	95	1800	3.0
71	1	25	11134	S11 E65	97	2800	3.5
71	1						
71	1	26					
71	1						
71	1	27	11134	S11 E40	97	2900	3.5
71	1						
71	1	28	11134	S12 E27	98	3600	3.5
71	1	29					
71	1	30	11134	S12 E01	98	3800	3.5
71	1	31	11134	S12 W13	98	3900	3.5
71	2	1	11134	S12 W26	97	4000	3.5
71	2	2	11134	S12 W40	98	3900	3.5
71	2	3	11134				
71	2	4	11134				
71	2	5	11134				

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18299	S13 E90	100	AP					15	8
18299	S13 E78	96	(BP)	5	310	9	D	19	10
18302	S06 E52	112	(AP)	1				24	12
18299	S13 E62	102	(BP)	4	610	4	E		
18302	S06 E38	111	(AP					24	12
18299	S13 E50	99	(BP)	5	510	14	D		
18302	S07 E25	109	AP					25	13
18299	S12 E35	99	(BP	4	500	15	E		
18299	S13 E22	99	(BP)	5	480	50	D	27	14
18299	S12 E11	100	(BP)	6				27	14
18299	S12 W05	100	(BP)	6	290	20	D	22	11
	S11 W18				310	21	C	35	17
18299	S11 W29	100	(BP)	6	310	9	C	28	14
18299	S11 W43	100	(BP)	5	200	12	C	20	10
18299	S10 W59	102	(AP)	5				7	4
18299	S10 W70	102	(AP)	4	200	1	H	9	4
18299	S10 W90	105							

MCMATH REGION 11140 CMP DATE 31.3 RETURN OF REGION 11105 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	28	11140	N09 E36	89	300	2.0
71	1	29					
71	1						
71	1	30	11140	N08 E08	91	900	2.5
71	1						
71	1	31	11140	N07 W06	91	1400	3.0
71	2	1	11140	N08 W20	91	1300	3.5
71	2	2	11140	N08 W34	92	1400	3.0
71	2	3	11140				
71	2	4	11140				

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18309	N09 E32	89	(B)	2	10	6	B		
18311	N09 E13	98	(BP)	2					
18309	N10 E21	90	(BF)	3					
18311	N08 W05	100	(AP)	1					
18309	N09 E04	91	(BF)	3	30	15	D		
	N09 W08				90	14	D		
18309	N10 W22	93	(BF)	4	100	6	D		
18309	N09 W36	93	(BF)	2	30	10	C		
18309	N09 W51	94	(B)	3					
18309	N09 W64	96	(BP)	2	0	1	A		

MCMATH REGION 11143 CMP DATE 31.8 RETURN OF REGION 11102* ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	27	11143	N25 E55	82	300	1.0
71	1	28	11143	N25 E40	85	300	1.0
71	1	30	11143	N25 E15	84	300	1.0
71	1	31	11143	N25 E02	83	300	1.5
71	2	1	11143	N26 W12	83	300	1.5
71	2	2	11143	N26 W25	83	300	1.0

SUNSPOT DATA 9.1 CM

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

REGIONS OF SOLAR ACTIVITY

JANUARY 1971

Note: Region 11105 has developed near the location of old plage 11068.
Region 11108 also contains remnants of region 11071, but is primarily a return of 11073.
Region 11111 has formed near the location of region 11080.
Region 11128 also contains some remnants of regions 11089 and 11091.
Old plage 11095 experienced a resurgence on the disk during the previous rotation, when west of the central meridian.
No spectroheliograms were secured at the McMath-Hulbert Observatory on January 3, 10, 13, 16, 21, 26, 29, 1971.
No sunspot observations were made at Mt. Wilson Observatory on January 12, 13 and 31.

DAILY CALCIUM PLAGE INDEX

YR	MO	DAY	INDEX	YR	MO	DAY	INDEX	YR	MO	DAY	INDEX
71	1	1	13.2	71	1	11	18.2	71	1	21	*
71	1	2	17.1	71	1	12	16.5	71	1	22	21.9
71	1	3	*	71	1	13	*	71	1	23	11.2
71	1	4	26.6	71	1	14	23.9	71	1	24	25.7
71	1	5	26.5	71	1	15	16.3	71	1	25	19.2
71	1	6	29.6	71	1	16	*	71	1	26	*
71	1	7	27.0	71	1	17	33.6	71	1	27	20.4
71	1	8	25.4	71	1	18	25.3	71	1	28	35.1
71	1	9	28.5	71	1	19	19.2	71	1	29	*
71	1	10	*	71	1	20	23.8	71	1	30	15.0
								71	1	31	21.6

* NO OBSERVATIONS

Errata: The following table replaces that given for December 1970, on page 77 of Solar Geophysical Data, Number 318-Part I.

DAILY CALCIUM PLAGE INDEX

YR	MO	DAY	INDEX	YR	MO	DAY	INDEX	YR	MO	DAY	INDEX
70	12	1	21.6	70	12	11	*	70	12	21	*
70	12	2	15.9	70	12	12	*	70	12	22	*
70	12	3	*	70	12	13	*	70	12	23	*
70	12	4	12.1	70	12	14	26.8	70	12	24	*
70	12	5	22.3	70	12	15	31.0	70	12	25	*
70	12	6	23.8	70	12	16	*	70	12	26	15.8
70	12	7	21.9	70	12	17	*	70	12	27	18.1
70	12	8	12.1	70	12	18	*	70	12	28	17.5
70	12	9	33.8	70	12	19	*	70	12	29	21.3
70	12	10	34.2	70	12	20	*	70	12	30	18.8
								70	12	31	15.7

* NO OBSERVATIONS

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

JANUARY 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	0.28	0.26	0.39	0.34	0.39	0.29	0.30	0.42	0.42	0.34	0.30	0.31	0.40	0.41	0.41	0.42	0.36	0.42	0.47	0.52	0.81	0.69	0.50	0.36
2	0.31	0.32	0.54	0.56	0.56	0.54	0.62	0.81	0.53	0.76	0.55	0.73	0.54	0.47	0.64	0.72	0.74	0.54	0.76	0.61	1.01	0.87	0.56	0.95
3	0.78	0.62	0.67	0.61	0.54	0.55	0.58	0.58	0.51	0.50	0.50	0.47	0.45	0.52	0.54	0.55	1.03	1.05	0.73	0.71	0.60	0.53	1.04	0.76
4	0.80	0.71	0.85	1.27	1.17	0.97	0.76	0.89	0.74	0.68	0.64	0.55	0.52	0.43	0.52	0.51	0.45	0.56	0.57	0.43	0.46	0.57	0.56	0.52
5	0.47	0.48	0.53	0.55	0.47	0.52	0.60	0.78	0.88	1.14	0.61	0.56	0.57	0.50	0.75	0.47	0.59	0.48	0.57	0.56	0.43	0.52	0.76	0.80
6	0.70	0.48	0.46	1.36	0.76	0.57	0.43	0.47	0.67	0.83	0.48	0.46	0.47	0.57	0.41	0.51	0.50	0.50	0.52	0.38	1.28	1.99	0.53	0.80
7	0.64	0.62	0.47	2.06	0.66	0.38	0.43	0.39	0.43	0.43	0.41	0.44	0.39	0.44	0.43	0.43	0.40	0.40	0.44	0.49	0.40	0.50	0.42	0.39
8	0.45	0.48	0.40	0.43	0.49	0.52	0.76	0.88	0.47	0.34	0.41	0.35	0.39	0.36	0.41	0.40	0.38	0.48	0.39	0.56	0.38	0.42	0.37	0.41
9	0.44	0.49	0.57	0.53	0.60	0.47	0.48	0.47	0.49	0.54	0.63	0.61	0.51	0.57	0.71	2.91	1.10	2.14	0.63	0.84	0.66	0.56	0.96	3.52
10	1.10	0.92	0.64	0.51	0.61	0.55	0.68	0.64	0.40	0.42	0.43	0.58	0.64	0.45	0.46	0.49	0.46	4.60	0.73	0.51	0.59	0.77	0.69	0.68
11	1.22	0.48	0.46	0.42	0.55	0.66	0.41	0.62	0.52	0.46	0.46	0.62	0.47	0.46	0.53	0.48								
12							0.72	0.52	0.65	0.44	0.54	0.55	0.60	0.62	0.50	0.61	0.76	0.76	0.66	0.52	0.56	1.24	0.51	0.54
13	0.50	0.53	0.54	0.70	0.60	0.55	0.63	1.10	0.69	0.64	0.62	0.74	0.72	0.74	0.69	0.59	0.83	0.72	1.27	1.60	0.77	2.61	0.77	1.26
14	0.80	0.69	1.08	0.77	0.70	1.07	0.65	0.61	0.71	0.74	1.20	7.19	0.89	0.83	0.76	0.75	0.89	1.10	0.77	0.70	19.0	1.90	0.81	0.68
15	0.81	1.07	1.39	1.25	5.68	0.88	0.68	0.68	0.67	0.75	0.88	0.66	0.71	0.76	0.84	2.41	1.17	1.34	1.25	1.50	0.90	1.60	1.20	1.70
16	1.35	1.49	1.28	1.65	0.98	1.41	1.01	1.98	64.4	68.1	37.3	27.0	27.2	14.0	15.5	6.26	4.42	3.77	4.16	3.89	2.11	1.78	1.77	1.45
17	1.71	1.25	1.74	1.61	2.42	1.35	1.49	1.28	1.48	1.64	1.14	1.27	2.75	1.92	2.39	2.10	1.36	1.20	1.33	1.07	0.92	0.92	0.89	0.94
18	0.87	1.19	1.04	1.00	1.03	1.06	0.92	1.65	1.00	0.96	0.91	1.10	0.73	1.00	1.10	0.79	1.28	1.87	2.95	1.65	0.95	0.81	0.99	0.78
19	0.73	0.95	0.74	1.00	0.93	1.59	1.80	1.02	1.09	1.01	0.69	0.81	0.87	0.96	2.08	5.79	2.98	1.25	0.84	0.91	0.59	0.59	0.61	0.68
20	0.75	1.29	1.17	1.11	0.89	1.14	1.17	0.91	0.85	0.85	0.83	1.01	0.61	0.65	0.73	0.73	0.79	0.68	0.70	1.36	0.90	0.69	0.80	1.13
21	2.01	0.85	0.69	0.75	1.10	3.10	0.88	0.75	0.79	0.76	0.94	0.77	0.80	13.7	3.15	1.46	0.99	1.01	2.12	1.12	1.13	1.86	4.89	1.02
22	1.02	1.27	1.06	1.13	0.93	0.76	1.12	1.22	0.97	1.03	1.56	7.22	2.11	1.51	0.85	0.93	0.89	1.23	0.89	6.06	1.69	1.20	1.34	2.40
23	3.94	1.21	1.25	1.29	2.07	2.01	2.73	2.94	2.09	1.44	1.97	1.69	2.66	2.67	1.25	1.34	1.11	1.26	1.24	1.01	1.19	1.31	1.36	1.88
24	1.56	1.76	1.24	1.08	1.16	1.79	1.23	1.14	0.94	0.98	1.00	2.80	3.31	1.66	2.50	1.50	1.71	8.82	8.75	3.59	3.90	7.12	7.65	348.
25	147.	47.7	18.7	16.3	11.5	6.63	6.00	5.00	4.70	4.16	2.59	3.01	2.61	2.47	1.95	2.20	1.96	1.73	1.82	1.58	1.52	1.89	1.59	1.52
26	1.37	1.20	1.21	1.20	1.54	1.60	1.30	1.23	1.20	1.28	1.40	1.22	1.22	1.30	1.16	1.16	1.23	1.22	1.06	1.19	1.13	1.16	1.61	1.33
27	1.16	1.52	1.88	1.40	2.28	6.12	2.60	2.52	2.31	3.31	1.89	1.82	2.01	1.83	1.85	1.18	1.13	1.34	1.81	1.80	2.01	1.72	1.88	1.45
28	1.84	1.44	1.71	1.82	1.67	1.47	1.68	5.07	5.14	7.23	14.8	5.39	1.38	6.54	1.32	1.22	1.08	1.27	1.14	1.10	1.43	1.62	1.37	1.14
29	1.35	1.49	1.16	0.92	1.92	21.5	12.6	4.26	5.43	2.98	1.75	1.15	1.03	0.88	0.62	0.58	0.62	0.75	0.88	0.74	0.76	0.71	2.87	1.39
30	0.68	0.69	0.68	0.65	0.67	0.64	0.73	0.71	0.70	0.59	0.58	0.54	0.54	1.64	1.86	1.18	1.04	0.84	0.83	0.79	1.30	1.37	0.67	0.63
31	0.68	5.43	1.12	0.86	1.09	1.15	1.28	1.72	0.67	1.62	1.18	9.02	0.81	0.78	1.19	0.79	0.79	1.02	2.91	2.59	0.83	0.74	0.49	0.79

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

JANUARY 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	0.72	0.70	0.79	0.75	0.78	0.72	0.70	0.77	0.80	0.78	0.74	0.72	0.79	0.84	0.82	0.85	0.80	0.80	0.89	0.85	1.14	1.04	0.94	0.80
2	0.74	0.73	0.96	1.00	1.02	1.00	1.04	1.23	1.04	1.14	1.03	1.08	1.00	0.97	1.11	1.16	1.22	1.07	1.20	1.14	1.43	1.21	1.14	1.35
3	1.35	1.20	1.17	1.17	1.10	1.09	1.13	1.16	1.10	1.05	1.08	1.05	1.08	1.14	1.18	1.15	1.41	1.44	1.12	1.25	1.07	1.15	1.43	1.34
4	1.39	1.26	1.43	1.60	1.70	1.57	1.38	1.45	1.37	1.30	1.22	1.11	1.13	1.09	1.07	1.11	1.04	1.07	1.14	1.03	1.02	1.07	1.13	1.10
5	1.05	1.07	1.14	1.09	1.07	1.07	1.08	1.23	1.31	1.40	1.12	1.12	1.13	1.07	1.21	1.07	1.08	0.99	0.99	1.07	1.00	1.05	1.23	1.24
6	1.20	0.98	0.98	1.60	1.26	1.09	0.99	0.94	1.13	1.26	1.04	0.93	0.87	1.02	0.90	0.91	0.92	0.93	0.94	0.91	1.25	1.69	0.90	1.02
7	1.08	1.05	0.99	1.83	1.04	0.87	0.88	0.89	0.91	0.91	0.87	0.85	0.87	0.88	0.87	0.92	0.82	0.85	0.86	0.83	0.86	0.95	0.92	0.86
8	0.89	0.91	0.86	0.89	0.91	0.94	1.07	1.14	0.91	0.82	0.83	0.84	0.84	0.82	0.87	0.88	0.83	0.86	0.88	1.00	0.92	0.89	0.89	0.88
9	0.93	0.97	1.05	1.01	1.02	1.01	0.94	0.91	1.04	1.03	1.11	1.07	1.02	1.05	1.20	2.30	1.44	1.83	1.22	1.24	1.16	1.13	1.31	2.51
10	1.54	1.43	1.18	0.98	1.07	1.07	1.16	1.12	0.93	0.89	0.91	0.96	1.09	0.97	0.95	0.97	0.92	1.98	1.25	0.97	1.03	1.19	1.16	1.17
11	1.31	0.98	0.94	0.89	0.98	0.94	0.89	0.99	0.99	0.92	0.93	1.01	0.94	0.90	0.93	0.91								
12							1.03	0.99	1.06	0.90	0.99	1.04	1.07	1.13	1.03	1.13	1.21	1.24	1.23	1.08	1.05	1.40	1.04	1.01
13	1.08	1.05	1.11	1.18	1.17	1.11	1.14	1.45	1.30	1.21	1.21	1.23	1.26	1.30	1.26	1.17	1.29	1.25	1.50	1.83	1.37	1.71	1.39	1.76
14	1.40	1.33	1.52	1.40	1.35	1.40	1.28	1.23	1.28	1.33	1.55	3.31	1.47	1.37	1.37	1.33	1.44	1.47	1.32	1.30	5.26	1.99	1.41	1.35
15	1.34	1.56	1.61	1.62	3.29	1.44	1.34	1.29	1.30	1.20	1.38	1.24	1.29	1.36	1.33	2.01	1.61	1.74	1.70	1.86	1.54	1.91	1.68	1.94
16	1.91	1.88	1.76	1.96	1.64	1.93	1.74	2.06	17.1	19.6	15.1	11.9	13.0	7.72	8.37	5.43	3.87	3.60	3.42	3.03	2.57	2.30	2.28	2.04
17	2.16	1.86	2.15	2.04	2.23	1.87	1.92	1.85	1.92	2.03	1.78	1.83	2.73	2.43	2.57	2.46	2.05	1.91	1.99	1.82	1.63	1.63	1.59	1.60
18	1.52	1.69	1.62	1.58	1.55	1.58	1.52	1.83	1.64	1.53	1.50	1.58	1.39	1.45	1.52	1.36	1.62	1.93	2.32	1.70	1.51	1.39	1.48	1.41
19	1.40	1.41	1.31	1.46	1.44	1.76	1.91	1.53	1.52	1.53	1.35	1.32	1.38	1.34	1.92	2.86	2.31	1.75	1.36	1.31	1.17	1.13	1.17	1.21
20	1.29	1.53	1.55	1.55	1.47	1.51	1.49	1.45	1.44	1.35	1.33	1.42	1.16	1.24	1.24	1.22	1.27	1.24	1.19	1.64	1.33	1.28	1.29	1.52
21	2.02	1.37	1.30	1.32	1.33	2.49	1.39	1.35	1.32	1.25	1.39	1.35	1.33	5.79	2.52	1.92	1.59	1.53	1.98	1.65	1.61	1.83	3.00	1.48
22	1.46	1.68	1.66	1.64	1.53	1.43	1.62	1.74	1.63	1.58	1.86	3.79	2.28	1.85	1.58	1.54	1.43	1.76	1.60	3.71	2.11	1.70	1.79	2.20
23	2.66	1.86	1.82	1.82	2.46	2.43	2.58	2.71	2.61	2.22	2.37	2.38	2.41	2.88	2.08	2.01	1.86	1.86	1.89	1.76	1.78	1.90	1.91	2.14
24	2.06	2.33	2.02	1.78	1.82	2.20	1.84	1.73	1.66	1.63	1.70	2.50	3.10	2.21	2.48	2.17	2.17	3.49	4.86	2.70	2.81	5.18	4.90	79.4
25	46.4	21.0	9.89	8.34	6.33	5.04	4.06	3.88	3.53	3.59	2.59	2.48	2.57	2.66	2.45	2.59	2.46	2.33	2.32	2.29	2.23	2.27	2.23	2.09
26	2.01	2.01	1.93	2.15	2.27	2.64	2.28	2.01	2.06	2.03	2.30	1.96	1.99	2.24	2.04	1.97	2.08	1.97	1.86	1.92	1.93	1.90	2.26	2.04
27	1.89	2.09	2.19	2.15	2.33	3.56	2.85	2.91	2.63	3.08	2.41	2.23	2.43	2.42	2.42	1.97	1.86	2.00	2.34	2.25	2.42	2.26	2.33	2.11
28	2.24	2.07	2.37	2.39	2.27	2.11	2.25	3.41	3.61	3.63	7.17	4.57	2.18	3.71	2.16	1.91	1.84	1.99	1.88	1.82	2.07	2.07	1.94	1.85
29	1.91	1.91	1.75	1.61	2.06	7.10	6.91	3.76	3.63	2.83	2.24	1.87	1.64	1.56	1.36	1.31	1.32	1.34	1.48	1.43	1.39	1.42	2.07	1.86
30	1.37	1.37	1.38	1.27	1.31	1.35	1.39	1.38	1.33	1.29	1.26	1.22	1.23	1.64	1.82	1.69	1.62	1.50	1.56	1.46	1.67	1.70	1.34	1.34
31	1.34	2.73	1.58	1.39	1.58	1.58	1.65	1.61	1.27	1.54	1.69	2.36	1.43	1.30	1.65	1.38	1.35	1.42	2.15	2.38	1.38	1.22	1.12	1.13

SOLAR X-RAYS BY SATELLITE

EXPLORER 37

JANUARY 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
6	2110	26,00	2112	85,00	2112	40,00	2114	2122	
7	0337E	10,00	0339	45,00	0340	27,00	0340	0344	
9	1508	11,00	1509	36,00	1515	26,00	1526	1529	
9	2303	10,00	2311	50,00	2313	40,00	2327	2333	
10	1736	40,00	1740	130,00	1747	40,00	1748	1749D	
13	1855	12,00	1858	47,00	1858	29,00	1859	1904	
14	1122	120,00	1126	510,00	1124	130,00	1126	1137	
14	2041E	120,00D	2045E	770,00D	2041E	170,00	2042	2056D	
15	0402	86,00D	0402E	300,00	0403	110,00	0403	0410	
15	1518	14,00	1523	53,00	1521	28,00	1528	1531	
16	0753E	130,00D	0944E	900,00	0848	230,00	0854	1755D	
16	1200E	120,00	1210	640,00	1208	200,00	1213	1300D	
16	1833E	29,00	1834	91,00	1835	53,00	1836	1847	
16	1925	26,00	1930	130,00	1931	53,00	1932	1933D	
17	0439	19,00	0442	61,00	0443	28,00	0448	0448	
17	1234	16,00	1236	56,00	1236	40,00	1238	1239	
18	1848	50,00	1852	130,00	1854	67,00	1854	1903D	
19	1535	60,00	1541	170,00	1541	53,00	1546	1611	
21	0008	7,80	0014	42,00	0013	27,00	0015	0018	
21	0459E	16,00D	0500E	70,00D	0500E	40,00D	0503E	0520	
21	1327E	120,00D	1329E	820,00D	1327E	230,00D	1327E	1411	
21	1808	16,00	1809	44,00	1810	25,00	1814	1818	
21	2155	23,00	2156	86,00D	2222D	40,00D	2222D	2222	COMPLEX EVENT
22	1105	100,00	1107	210,00	1108	80,00	1109	1130D	
22	1911	37,00	1926	130,00	1930	53,00	1939	1941D	
23	0010	42,00	0015	130,00	0016	40,00	0021	0025	
23	0642	8,90	0647	42,00	0653	40,00	0700	0709D	
23	1255	6,70D	1255E	50,00	1307	40,00	1311	1311	
24	1154	18,00	1157	60,00	1158	40,00	1205	1206	
24	1215	7,80	1216	41,00	1218	40,00	1221	1225	
24	1708	120,00	1732	260,00D	1733D	67,00	1732	1733D	
24	1809E	69,00	1821	170,00	1828	67,00	1832	1911	
24	1949	8,90	1952	42,00	1952	28,00	1949	1958	
24	2036	56,00	2048	130,00	2050	53,00	2042	2050D	
24	2126E	48,00	2227	130,00	2224	67,00	2224	2228D	
24	2304E	130,00D	2312E	4900,00	2347	1200,00	2346	0953	
26	0721	46,00	0723	130,00	0725	53,00	0727	0824D	TWO EVENTS
26	0934	69,00	0957	210,00D	1002D	80,00D	1002D	1140	
26	1310	56,00	1315	210,00	1317	80,00	1318	1319D	
29	0458	130,00D	0517E	300,00	0528	110,00	0530	0720	
29	0755	13,00	0836	73,00	0844	53,00	0842	0859D	
29	0933E	4,50	0935	39,00	0937	40,00	0941	0941	
29	2250	26,00	2256	83,00	2256	53,00	2300	2304	
31	0131	120,00	0134	300,00	0135	80,00	0136	0145	
31	1115	69,00D	1116D	170,00D	1118D	53,00D	1120D	1120D	
31	1812	5,60	1819	38,00	1818	27,00	1819	1820	
31	1906	18,00	1916	79,00	1916	40,00	1919	1921	

SUDDEN IONOSPHERIC DISTURBANCES

JANUARY 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
02	1602	1604	1604	1+	3					3	3		1602	11110
02	2009	2055	2016	1-	3			1	5	2	4		NF	
04	1518	1524	1530	1-	1				1				*	
05	0858	0950	0914	1-	1						1		0859	11111
05	0910	0925	0915	1-	1				1				0910E	11111
06	2113	2131	2116	1-	3				2	1	1		2116E	11112
06	2343	0003	2349	1-	1				1				2344	11111
07	0323	0408	0351	1	3	1			2	2	2		0323E	11111
10	1738	1822	1748	2	3			5	3	3	3		1733	11119
11	1810	1845	1840	1-	1					1	1		*	
11	2150	2235	2200	1-	1				5				*	
12	2357	0025	0002	1-	3				4			1	2355	11111
13	1855	1930	1859	1-	5			1	4		2	1	1853	11111
13	2105	2200	2106	1-	3				4		1	1	2104E	11120
14	0222	0310	0236	1-	3				2				0218	11111
14	1047	1110	1052	1+	5	1			2	1	2		1045E	11111
14	1121	1220	1126	1+	5	4		3	4		3		1122	11111
14	2033	2248	2039	2	5	4	2	8	6		4		2032	11120
15	0326	0355	0330	1-	3				2				0323	11111
15	0400	0438	0404	1	3			1	2	2	2		0401	11124
15	1515	1532D	1532	1-	1				3				1515	11128
15	1550	1640	1556	1-	3			4	1	1	3		1547	X-RAY
15	2330	0006	2346	1-	1				2				2327	11128
16	0807	0835	0817	2+	5	1		1	2		1		0809	11128
16	1202	1240	1210	2+	3	3		3	4		2		1203	11111
16	1825	1918	1840	1-	3				5		1		1828	X-RAY
16	1927	2022	1937	1-	5				4	1	1		1920	X-RAY
16	2303	2322	2308	1-	3				5			1	NF	
17	0939	0950	0941	1-	3				1	1	2		NF	
17	1204	1216	1205	1-	1						1		1203	11116
17	1235	1250	1237	1-	3				1		1		1232	11128
17	1243	1400		1-	1					1	1		1249	11129
18	1652	1708	1704	1-	1	1							1657	11128
18	1849	1938	1855	1+	5	2		4	5	4	4	1	1848	11128
19	1311	1325	1315	1	3			1	2		2		1309	11129
19	1536	1655	1549	1+	3			5	4		3		1533	11128
19	2248	2354	2300	1	1				1				2253E	11130
20	0050	0117	0100	1-	1				1				0050E	11128
20	1052	1130	1057	1-	1				1				1051	11133
20	1452	1500	1454	1-	1					1	1		1447	11128
21	0003	0034	0018	1-	1				1				0004	11130
21	0442	0525	0451	2-	5	2			4	1	2		0440	11128
21	1319	1425	1327	3	5	5	1	6	6		5		1313	X-RAY
21	1729	1743	1735	1	1					1	1		1732	11128
21	1810	1840	1814	1-	3			2	3	1	2		1803	11128
21	2146	2208	2154	1	3				2	2	1		2152E	11128
21	2208	2254	2210	1-	1				2	1			2203E	11128
22	0647	0710	0650	1-	1				1				0649E	11128
22	1103	1205	1110	1	5	4		2	4		4		1106	11128
22	1925	2025	1929	1-	5			2	3		5		1925E	11128
23	0014	0039	0018	1-	3				6	2	2		0011	11128
23	0212	0221	0216	1-	1				1				0211	11128
23	0408	0439	0417	1+	5	3		1	4	2	3		0402	11128
23	0614	0642	0621	1-	1				1				0608	11130
23	0730	0753	0734	1-	1				1				0730E	11129
23	1536	1625	1542	1-	1				3				1538E	11129
24	0312	0333	0316	1-	1				1				0317	11130
24	1138	1154	1144	1-	1				1				1138E	11134
24	1159	1210	1203	1+	3	1		1	1		2		1153	11128
24	1709	1726D	1718	1+	3	2		3	4	3	4		1705	11128
24	1726	1808	1737	2	3	3	2	6	3	1	4		1720	11128
24	1815	1824D	1824	1	5	4	2	5	4	1	3		1811	11128
24	1950	2037	2000	1-	3			1	2		3		NF	
24	2038	2146	2104	2-	5	1		3	5	1	3		2035	11128
24	2310	2358	2327	2+	5	5	1		7	4	4		2309	11128

SUDDEN IONOSPHERIC DISTURBANCES

JANUARY 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
25	0927	0942	0934	1-	1				1				0930	11134
26	0056	0130	0119	1	1	1							0056E	11129
26	0148	0210	0150	1-	1				1				0142E	11134
26	1039	1050	1042	1-	1				1				1037	11130
26	1327	1350	1332	1	3				1		1		1328	11130
27	0549	0628	0553	1+	5	3		1	3		1		0543	11129
28	0051	0120	0100	1-	1				1				0048	11128
28	0720	0730	0725	1-	3			1	3		1		0720	X-RAY
28	0937	1110	0955	1	3	1		1	1		1		0920	X-RAY
28	1310	1340	1319	1	5	3		4	5		5		1308	11129
28	1702	1714	1708	1	1	1							1704	11129
29	0450	0658	0515	2-	3	2		2	2	3	3		0450	X-RAY
29	0934	0950	0938	1-	1						1		0934	11137
29	1345	1355	1348	1-	1						1		1345E	11137
29	2250	2330	2300	1-	5				7	1		1	2250	11134
30	0243	0330	0247	1-	1				1				0245	11137
30	0726	0740	0731	1-	1	1							0724	11130
30	0905	1145		1	1					1	1		0907	11130
30	1802	1823	1805	1	3				2	2	1		1759	11134
31	0103	0131D	0113	1-	1				1				0103	11134
31	0130	0254	0138	2-	3	2			5	5	5	1	0203	11134
31	0637	0658	0640	1-	1				1				*	
31	0713	0800	0721	2-	5	2		1	3		1		0712	11134
31	1114	1150	1120	2+	3	3		3	3		2		1106	11134
31	1122	1135	1128	1-	3	1					1		1130E	11134

STATIONS REPORTING FOR JANUARY 1971

AAVSO (A1, A4, A6, A8, A9, A17, A19, A22, A26 A27, A29) (SEA) (A1, A4, A19, A28) (SES)
ANCHORAGE (AN) (SWF, SCNA, SPA)
ATHENS (AT) (SWF)
BOULDER (BO) (SCNA, SEA)
CAPE RACE (LORAN-C) (CP) (LF-SPA, SES)
DARMSTADT (DA) (SWF)
FORESTPORT (FP) (SPA)
GESASHI (LORAN-C) (GE) (LF-SPA, SES)
HAWAII (HA) (SPA, SFD)
HERSTMONCEUX (HC) (SEA)
HIRAISO (HI) (SWF)
HOBART (TA) (SEA)
HOKKAIDO (LORAN-C) (HO) (LF-SPA, SES)
HUANCAYO (HU) (SWF)
INUBO (IN) (SPA)
JUPITER (LORAN-C) (JP) (LP-SPA, SES)
KUHLUNGSBORN (KU) (SPA, SEA)
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) (SWF, SCNA)
OKINAWA (OK) (SWF)
PANSKA VES (PU) (SWF, SEA, SES)
POITIERS (PO) (SEA)
PORT CLARENCE (LORAN-C) (PC) (LF-SPA, SES)
PYRAMID ROCK (PR) (SPA)
ROME (RO) (SCNA)
SAN DIEGO (SD) (SPA)
SANDUR (LORAN-C) (SA) (LF-SPA, SES)
SAO PAULO (UM) (SPA, SES)
SITKINAK (LORAN-C) (SK) (LF-SPA, SES)
SLOUGH (SL) (SPA)
SOFIA (SF) (SES)
SYLT (LORAN-C) (ST) (LF-SPA, SES)
TABLE MOUNTAIN (TM) (SWF, SPA, LF-SPA)
TRINIDAD (TR) (SWF, SPA)
UCCLE (UC) (SEA)
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
01-03	0000-1800 A22
01-04	0000-0600 A17, 0000-2400 A9
01-10	0000-2230 A28
01-24	0000-0300 A26
01	1358-1415 SL
02	2220-2355 UM
04	0000-0300 UM, 0620-0900 SL
05	1000-1350 SL
06-12	0300-0300 A17
06	0245-1045 UM, 1910-1932 TM
07	0104-0300 TM, 1715-2015 UM
11	0000-0300 UM, 0631-1624 TM, 1630-1650 TM
12	1015-1400 SL
13	0440-2100 TM, 0820-0840 UM, 1033-1059 SL, 1300-1335 UM
14	0245-0246 TM, 1400-1406 SL, 1929-1943 TM, 2116-2300 TM, 2145-2355 UM
15-23	2230-1930 A28
15	1648-1654 TM
16	0316-0324 TM, 1435-1515 UM, 2200-2400 TM
17	0000-0153 TM, 0226-0243 TM
18	0000-0300 UM, 0454-1443 TM, 0725-0745 TM, 1613-1620 TM, 2155-2355 UM
19	1013-1102 SL, 1717-2000 TM
20	1654-1719 TM, 2030-2110 UM
21	0905-0914 SL, 1704-2345 UM
22	0100-0205 TM, 1255-1307 SL, 1353-1408 SL
25	0035-0255 UM, 1740-1937 TM
26-31	0000-2400 RO, 0330-2400 A26
26	1000-1346 SL, 2120-2210 UM
27	1352-1410 SL
29	0339-0348 TM, 1414-1419 SL
31	0500-2400 A8

SID's BY McMATH REGION

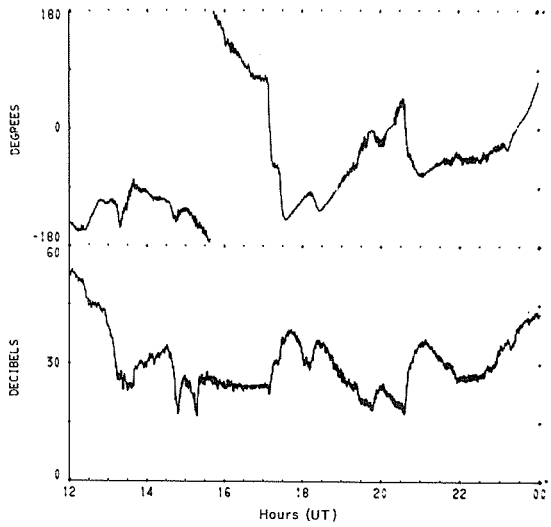
JANUARY 1971

DAY	10	11	12	16	19	20	24	28	29	30	66	34	37	X-RAY	UN-KNOWN	NO FP
01																
02	1														1	
03																
04																1
05		2														
06		1	1													
07		1														
08																
09																
10					1											
11																2
12		1														
13		1				1										
14		3				1										
15		1					1	2						1		
16								1						2	1	
17				1				1	1						1	
18								2								
19								1	1	1						
20								2			1					
21								5		1				1		
22								3								
23								3	2	1						
24								6		1		1			1	
25												1				
26									1	2		1				
27									1							
28								1	2					2		
29												1	2	1		
30										2		1	1			
31												5				1

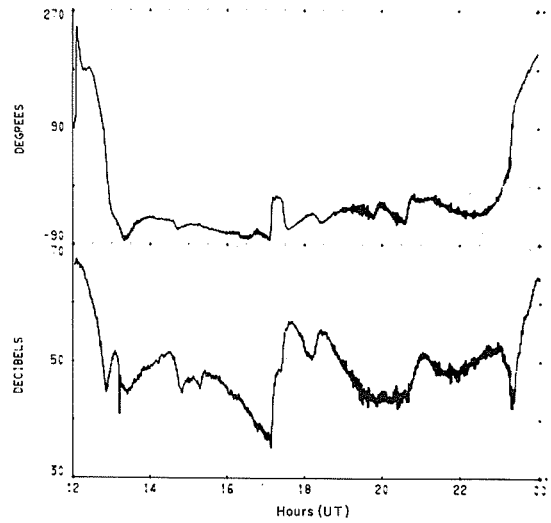
SELECTED SID EVENTS

24 JANUARY 1971

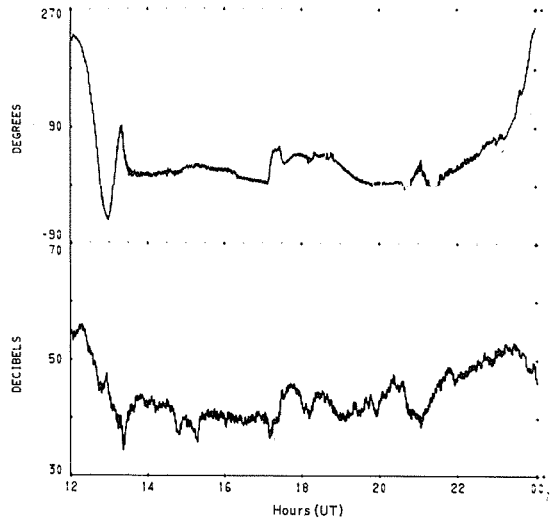
SDL Table Mountain Geophysical Monitoring Station



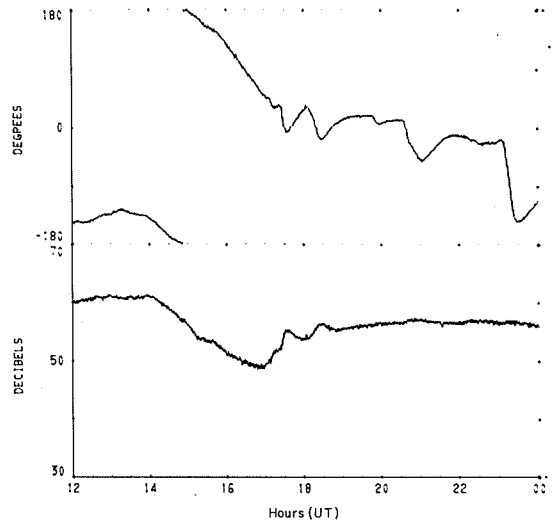
100 kHz Loran-C Jupiter, FLA.



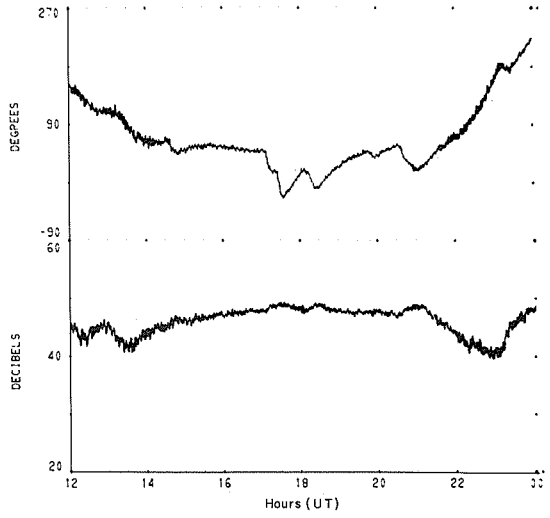
100 kHz Loran-C Cape Fear, N.C.



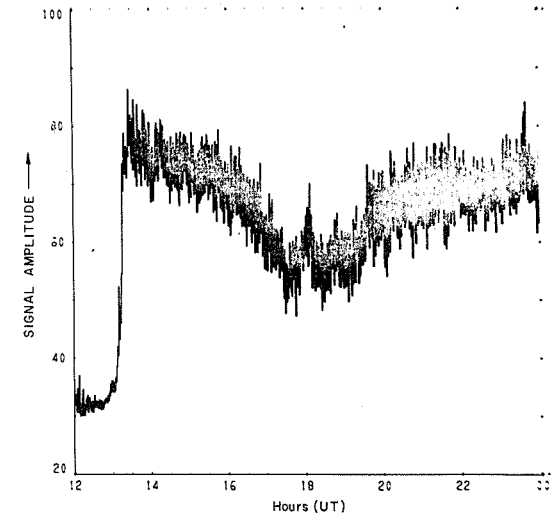
100 kHz Loran-C Nantucket, MASS.



13.6 kHz Omega Haiku, HAWAII



13.6 kHz Omega Trinidad, W.I.



14.67 MHz Ottawa, CANADA

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

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JANUARY 1971

JAN. 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	0203	CULG														
	0204	0218	CULG														
	0257	0615	CULG														
	0627	0646	CULG														
	0706	0723	CULG														
	1128	2117	SGMR														
	1330	1507	WEIS														
	1416	2346	HARV														
			HARV							1420	1439	1					IN
	2022	2048	CULG							1726	2339	1					IN
			HARV							2025	2033	2				II	
			CULG							2026	2031	2				II	
	2116	2400	CULG							2035	2047.5	1					IW
										2116	2400	1					IW
02	0000	0730	CULG														
			CULG							0007	0015	1					IW
			CULG							0239	0730	1					IW
			CULG							0307.5		1					IIIB,W
	0802	1502	WEIS							0315.5		1					IIIB,W
	1138	2116	SGMR														
	1415	2346	HARV														
	2022	2400	CULG														
										2337.5	2338	1					IIIG
03	0000	0730	CULG														
			CULG							0044.5	0047	2	0045	0045.5	1		IIIG,V
			CULG							0301.5	0302.5	2					IIIG
	0800	1045	WEIS							0640.5	0641	1					IIIG,U
	1143	2117	SGMR														
	1416	2347	HARV														
	2022	2400	CULG														
										2053	2355	1					IW
04	0000	0730	CULG														
	0840	1505	WEIS							0845	1125	1					IS
	1157	2118	SGMR														
	1416	2347	HARV														
	1725	2230	BOUL														
	2022	2400	CULG														
			CULG							2249		1					IIIB
										2255.5		1					IIIB
05	0000	0729	CULG														
			CULG							0110.5	0112	1					IIIG
			CULG							0205	0205.5	1					IIIG,U
			CULG							0218.5	0219.5	1					IIIG,U
			CULG							0255.5		1					IIIB,W
			CULG							0316		1					IIIB,W
			CULG							0319		1					IIIB,W
	0800	1040	WEIS							0636		1					IIIB,W
	1050	1505	WEIS														
	1125	2120	SGMR							1100	1248	1					IN
			WEIS														
			WEIS							1248.1	1248.6	1					IIIG
	1615	2230	BOUL							1333.1	1334.0	2					IIIGG
			BOUL							1810.9	1811.5	1	1810.9	1811.5	1		III
			BOUL							1909.2	1910.0	1	1909.2	1910.0	1		III
	2021	2400	CULG							2000.0	2000.7	1	2000.0	2000.7	1		III
			CULG							2029		1					IIIB
			BOUL							2111	2359	1					IIIN,W
			CULG							2120.5	2129.0	1	2120.5	2129.0	1		IIIG
	1416	2348	HARV							2137.5	2358.5	1					IW
			BOUL							2138	2348	1					I
										2205.7	2206.2	1	2205.7	2206.2	1		III
06	0000	0730	CULG														
			CULG				0726		1	0005.5	0720	1					IIIN,W
	0758	0850	WEIS														IIIB
	1024	1110	WEIS							0820	1451	1					IN
	1134	2120	SGMR														
	1247	1500	WEIS														
	1416	2349	HARV														
	1638	2230	BOUL							1416	1504	1					IN
			HARV														
										1716	2347	1					IN
	2022	2400	CULG							2040	2400	1					IIIN
			CULG							2040	2359	1					IW
07	0000	0730	CULG														
			CULG							0000.5	0726	1					IIIN,W
			CULG							0307.5	0308.5	1					IIIG
			CULG				0655.5	0656	1	0508	0730	1					IW
	0808	1000	WEIS														IIIG
	1030	1215	WEIS							0826	1454	2					IS
	1200	2122	SGMR							1046.3	1046.9	1					III
	1415	2350	HARV														
			HARV				1436	1600	1	1415	1705	1					I
	1230	1500	WEIS														IN
			HARV				1600	1716	1	1436.0	1436.5	3					IIIG
	1647	0015	BOUL														I
			HARV							1630 E	1950	2	1630 E	1950	2		IC
			HARV				1716	1951	1	1705	2050	2					IC
	2022	2400	CULG														IN
			CULG							2022	2210	2					IS,CONT
			BOUL							2024	2359	1					IIIN
										2047.9	2048.2	1	2047.9	2048.2	1		III

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS
JANUARY 1971

JAN. 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			HARV							2050	2220	1				I
			BOUL							2053.7	2053.9	1	2053.7	2053.9	1	III
			CULG							2103		2				IIIB
			BOUL							2103.0	2103.2	1	2103.0	2103.2	1	III
			BOUL							2104	2330	1	2104	2330	1	CONT
			CULG							2207	2233	1				
			CULG							2210	2400	1				IS
			HARV							2220	2350	1				IN
			BOUL							2304.5	2305.0	2	2304.5	2305.0	2	III
			BOUL							2325	2325.5	1	2325	2325.5	1	III
			CULG							2325	2325.5	2				IIIG,U
			CULG							2343		2				IIIB
			CULG							2359.5	2400	1				IIIG
08	0000	0730	CULG							0000	0719	1				I
			CULG							0000.5	0729	1				IIIS
			CULG							0124	0127	2				IIIG,V,U
			CULG							0211	0214.5	2				IIIG
			CULG							0259.5	0303.5	1				IIIG,U
			CULG							0342		2				IIIB
			CULG							0628		2				IIIB,U
	0906	1145	WEIS							0802	1502	2				IS
	1150	2122	SGMR													
	1457	1509	WEIS							1332	1334	1				IIIG
	1415	2352	HARV				1418	1920	1	1415	1920	1				IN
	1651	0015	BOUL							1705 E	2320	1	1705 E	2320	1	CONT
			BOUL							1841	1841.4	1	1841	1841.4	1	III
			HARV				1920	2121	1	1920	2352	1	1902	2215	1	I
			CULG							2022	2400	1				IS
			CULG							2022	2400	1				IIIS,U
	2022	2400	CULG				2022	2400	1							I
			HARV				2202	2352	1							IIIN
			HARV				2202	2352	2							I
			CULG				2242.5	2243	1							IIIG
09			CULG							0000	0300	1				IIIN
	0000	0714	CULG				0000	0300	1	0000	0320	1				I
			CULG				0238.5	0240	1							IIIG
			CULG							0300	0500	2				IIIN
			CULG				0300	0652	1	0320	0714	1				I
	0757	1502	WEIS													
	1203	2123	SGMR										1310.0	2045.0		IV
	1415	2352	HARV							1415	1600	1				I
			HARV				1416	1519	2							IIIS
			HARV				1459	1521	1	1600	1640	1				IN
			HARV				1643	1915	1	1640	1915	1	1712	1902	1	I
			HARV				1743	1748	2	1743	1748	2				IIIGG
			HARV				1748	1834	1							IIIN
			HARV				1841	1855	2							IIIGG
			HARV				1915	2240	2	1921	2150	2	1921	2150	2	IIIS
			HARV				1915	2346	2	1915	2240	2				IC,DC
	2022	2400	CULG				2022	2400	1	2022	2400	1				IS
			CULG							2022	2300	1				IIIN
			HARV							2240	2350	2				I,DC
			CULG							2300	2400	1				IS
10			CULG							0000	0313	1				I
	0000	0729	CULG							0000	0317	1				IIIN
			CULG							0032	0032.5	1				IIIG,U
			CULG							0206.5		1				IIIB
			CULG							0313	0730	2				I
			CULG							0317	0459	2				IS
			CULG							0503	0729	1				I
			CULG							0524.5	0530	1				IIIGG
	0757	1502	WEIS							0801	1502	2				IS
			WEIS							0845	0854	1				IIIGG,DP
	1128	2125	SGMR													
	1415	2352	HARV				1416	1710	1	1417	1710	2				I
			HARV				1710	1911	2	1710	1913	2				IC
			HARV				1911	2349	1	1913	2352	1				I
			CULG							2023	2400	1				IIIN,RS,DP
	2023	2400	CULG							2023	2400	1				IS,CONT
			CULG							2144	2220	1				
11	0000	0731	CULG							0000	0731	1				IIIN,W
			CULG							0000	0600	1				IW
			CULG							0219	0219.5	1				IIIG
			CULG							0232.5	0239.5	1				IIIG
			CULG							0245	0245.5	1				IIIG
			CULG							0349	0351	1				IIIG
			CULG							0359.5	0400	1				IIIG
			CULG							0415	0417	1				IIIG
			CULG							0600	0731	1				I
			CULG							0621	0635	1				
	0746	1400	WEIS							0748	1451	2				IS
			WEIS							0902.2	0902.6	1				IIIG,DP,RS
	1200	2125	SGMR										1218.0	2125.0		IV
	1416	2353	HARV							1416	1628	1				I
	1440	1515	WEIS													
			HARV				1549	1632	1							IN

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JANUARY 1971

JAN. 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.		
11			HARV				1632	1728	2	1628	1728	2					IC
	1830	2200	BOUL							1637	2005	3	1637	2005	3		CONT
			HARV				1728	1747	1	1728	2000	2	1717	1854	1		I
			HARV				1747	2349	1	2000	2351	1					I
	2028	2400	CULG							2035	2400	1					IW
			CULG							2109.5	2400	1					IIIN,W
			CULG							2214	2223	1					
			CULG							2346.5	2347.5	1					IIIG
12	0000	0720	CULG				0000	0720	1	0000	0245	1					IW
			CULG							0010	0551	1					IIIN,W
			CULG							0031	0032	1					IIIG
			CULG							0033.5	0034.5	1					IIIG
			CULG							0205	0218	1					
			CULG							0229	0245	1					IIIN
			CULG							0245	0610	1					IS
			CULG							0443		1					IIIB,V
			CULG							0451		1					IIIB
			CULG							0538.5	0541	1					IIIG
			CULG							0551	0720	2					IIIS
			CULG							0610	0720	2					IS
	0808	1245	WEIS							0809	1532	2					IS
	1305	1422	WEIS														
	1415	2353	HARV				1417	2141	1	1415	2145	1	1602	1643	1		I
	1442	1539	WEIS														
			BOUL							1557.5	1606.1	2	1557.5	1606.1	2		IIIGG
	1547	2400	BOUL							1558 E	2005	1	1558 E	2005	1		CONT
	1200	2126	SGMR										1707.9	1709.2			III
			HARV							1708	1709	3	1708	1709	3		IIIG,V
			BOUL							1708.5	1709.2	2	1708.5	1709.2	2		IIIG
			HARV							1841	1942	1	1841	1942	1		IIIN
			SGMR										1844.4	2030.0		IV	
	2018	2400	CULG				2018	2350	1	2018	2400	1					I
			CULG							2025.5	2400	1					IIIN,W
			HARV				2111	2116	1	2114	2116	1					IIIGG
			CULG							2112	2115.5	1					IIIG
			BOUL							2114.1	2116.4	1	2114.1	2116.4	1		IIIG
			CULG							2133	2134	1					IIIG,U
			HARV							2145	2248	1					IN
			CULG							2202.5	2204	2					IIIG,U
			HARV							2203	2204	2	2204		2		IIIGG
			BOUL							2203.0	2204.2	2	2203.0	2204.2	2		IIIG
			CULG							2234		1					IIIB
			HARV							2248	2349	1					I
			CULG							2304	2313.5	2					IIIG,V
			HARV							2305	2313	2	2307		1		IIIGG
			BOUL							2305.6	2313.3	2	2305.6	2313.3	2		IIIGG
			HARV				2324	2340	1								I
			CULG							2347		1					IIIB
			CULG				2353.5	2355	1	2353.5	2355	1					IIIG
13	0000	0730	CULG							0000	0455	1					I
			CULG							0201	0646.5	1					IIIN,W
			CULG							0223.5	0245	1					IIIN
			CULG							0320.5	0325	1					IIIG,U
			CULG							0323.5	0325	2					IIIG,V,U
			CULG							0345.5	0346	1					IIIG,U
			CULG							0356.5	0357	1					IIIG
			CULG							0455	0727	1					IW
			CULG							0700	0705	1					IIIG,U
	0756	1516	WEIS							0802	1500	2					IS
	1135	2125	SGMR										1243.5	1500.0		IV	
	1416	2353	HARV				1416	1902	1	1416	1920	1					I
	1620	0008	BOUL							1854.2	1855.3	1	1854.2	1855.3	1		IIIGG
			HARV				1915	2315	1	1920	2315	1					IN
	2049	2400	CULG							2055	2400	1					IW
			CULG							2103	2104	1					IIIG
			CULG							2105		1					IIIB
			CULG							2147	2400	1					IIIN,W
			CULG							2300	2301	1					IIIG,U
			HARV							2301	2302	2					IIIG
			HARV							2305	2306	2					IIIG
			CULG							2305	2305.5	1					IIIG,V,U
			BOUL							2305.4	2305.6	1	2305.4	2305.6	1		III
			HARV				2315	2325	1	2315	2353	1					I
			CULG				2317	2324	1	2314.5	2317	1					I
14	0000	0728	CULG							0000	0135	1					IW
			CULG							0047	0048	1					IIIG
			CULG							0219	0707	1					IIIN,W
			CULG							0236.5	0237.5	1					IIIG,U
			CULG							0312	0313	1					IIIG,U
			CULG							0346.5	0347.5	2					IIIG,V,U
			CULG							0430.5	0622.5	1					IW
			CULG							0719.5	0721.5	1					IIIG
	0753	1512	WEIS							0755	1411	1					IN
			WEIS							0804.1	0804.3	2					IIIG
			WEIS							0816.3	0817.0	1					IIIB
			WEIS							0820.1	0820.3	2					IIIB
			WEIS							0919.4	0920.0	1					IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JANUARY 1971

JAN. 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.		
14			WEIS							1120.8	1126.5	2					IIIGG,RS
			WEIS							1125.6	1132.4	2				II	
	1132	2117	SGMR														
			WEIS							1316	1318	1					IIIG,RS
	1415	2354	HARV							1415	1600	1					I
			HARV				1600	2138	1	1600	2354	1					IN
			HARV							1724	1728	2	1725	1727	2		IIIGG
	1703	2242	BOUL							1729.7	1733.1	2	1729.7	1733.1	2		IIIGG
			BOUL							1730	1843	1					CONT
	2021	2400	CULG							2021	2400	1					I
			BOUL							2033.4	2034.4	1	2033.4	2034.4	1		IIIG
			CULG							2033.5	2035.5	1					IIIG
			HARV				2035	2042	2	2036	2041	2					III,GG,V
			CULG							2103	2359.5	1					IIIN,W
15	0000	0730	CULG							0000	0730	1					IW
			CULG							0012.5	0701.5	1					IIIN,W
			CULG							0016.5	0017	1					IIIG
			CULG							0316	0317	1					IIIG
			CULG							0401.5	0405.5	1					IIIG
			CULG							0401.5		2					IIIB
			CULG				0423		1	0423		1					IIIB
			CULG				0443.5		1	0443.5		1					IIIB
			CULG							0501.5	0503	1					IIIG
			CULG				0506	0506.5	1								IIIG
	0828	1522	WEIS							0848.5	0848.7	2					IIIG,DP
			WEIS							1117.5	1117.8	1					IIIB
	1147	2130	SGMR														
			WEIS							1350.1	1350.6	2					IIIG
	1415	2355	HARV							1419	2354	1					IN
			WEIS							1503.4	1503.5	1					IIIB
	1557	2228	BOUL							1551.3	1551.5	2					III
			BOUL							1649.7	1649.9	2					III
			BOUL							1737.5	1737.8	1	1737.5	1737.8	1		III
	2027	2400	CULG							2027	2354.5	1					I
			CULG							2027	2355.5	1					IIIN,W
			CULG				2243	2244	1	2243	2244	1					IIIG,U
			HARV				2243	2244	2	2243	2244	2					IIIGG
			HARV				2303	2307	1	2303	2307	1					IIIGG
			CULG				2303	2303.5	1	2303	2306.5	1					IIIG
16	0000	0549	CULG							0000	0549	1					IIIN,W
			CULG							0226	0226.5	1					IIIG
			CULG							0230.5	0549	1					IW
			CULG							0235.5	0236.5	1					IIIG
	0659	0731	CULG							0659	0724.5	1					IIIN,W
			CULG							0659	0730	1					IW
			CULG							0713.5	0714	1					IIIG
	0753	1523	WEIS							0755	1430	1					IS,CONT
			WEIS							1200.8	1202.0	1					IIIG
	1416	2355	HARV				1417	1500	1	1416	1520	1					IN
	1147	2131	SGMR										1429.5	1535.0		IV	
			HARV				1803		2								IIIG
	2020	2400	CULG							2023	2041.5	1					IW
			CULG							2026.5		1					IIIB,W
			CULG							2150		1					IIIB,W
			CULG							2236.5		1					IIIB,W
			CULG							2323	2324	1					IIIG,W
			CULG				2328	2328.5	1	2328	2328.5	1					IIIG,W
17	0000	0730	CULG							0121		1					IIIB,W
			CULG							0126.5		1					IIIB,W
			CULG							0223.5	0225.5	1					IIIG,W
			CULG							0305.5		1					IIIB,U
			CULG							0517	0518.5	1					IIIG,W,U
	0753	1523	WEIS							1127.8	1128.0	1					IIIB
	1147	2134	SGMR														
			WEIS							1218	1431	2					IS
			WEIS							1222.5	1222.7	1					IIIG
			WEIS				1236.1	1236.6	2								IIIG,DP,RS
	1416	2356	HARV				1644	1729	1	1644	1752	1					IN
			HARV							1915	1916	1	1915	1916	1		IIIG
			HARV				1947	1950	1	1947	1950	2					IIIGG
	2021	2400	CULG							2035	2037	1					I
			CULG							2204		1					IIIB,W
			CULG							2241		1					IIIB,W
18	0000	0730	CULG							0109.5		1					IIIB
			CULG							0112.5		2					IIIB
			CULG							0117		1					IIIB,W
			CULG							0418.5		1					IIIB,W
			CULG							0440	0441	1					IIIG,W
			CULG							0447	0448	1					IIIG,W
	0753	0955	WEIS							0826	1510	1					IN
	1128	2135	SGMR														
	1410	2356	HARV				1446	1447	2	1445	1447	1					IIIG
	1000	1520	WEIS							1446.1	1446.7	2					IIIG
	1627	0030	BOUL							1608 E	2335 D	1					CONT
			HARV				1657	1659	2								IIIGG
			HARV							1730	1733	1					IIIGG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS
JANUARY 1971

JAN. 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.		
18			BOUL							1730.6	1732.0	2					IIIG
			HARV							1955	1956	1					IIIG
	2020	2400	CULG							2036	2347.5	1					IW
			HARV				2040	2043	3								IIIGG
			CULG				2040.5	2042	1	2041.5		1					IIIG
			CULG							2115.5	2116.5	1					IIIG,U
			CULG							2149	2150.5	1					IIIG,W
			CULG							2151	2153	1					DP
			CULG							2221.5	2222.5	1					IIIG,W
			CULG							2230	2230.5	1					IIIG,W
			CULG							2253.5		1					IIIB,W
19	0000	0727	CULG							0000	0725	1					IW
			CULG							0004.5		1					IIIB,W
			CULG							0034		1					IIIB
			CULG							0104.5		1					IIIB
			CULG							0157.5		1					IIIB,W
			CULG							0247.5	0248	1					IIIG
			CULG							0328	0328.5	1					IIIG
			CULG							0338.5	0344	1					IIIG
			CULG							0417		1					IIIB,W
			CULG							0434		1					IIIB,W
			CULG							0510		1					IIIB,W
			CULG							0535	0535.5	1					IIIG,W
			CULG							0623.5	0624	1					IIIG
			CULG							0639	0641	2					IIIG,U
			CULG				0645.5		1	0645	0645.5	1					IIIG
			CULG				0715	0716	1	0715.5		1					IIIG
			WEIS							0926	1500	1					IN
	0750	1526	WEIS							1027.1	1029.7	2					IIIG
			WEIS							1037.6	1037.8	1					IIIB
			WEIS							1259.5	1305.1	2					IIIG,DP
			WEIS							1312.2	1312.6	3					IIIGG,RS
	1416	2357	HARV				1416	1536	1	1416	1534	1					IN
			WEIS							1433.3	1435	1					IIIG
			WEIS							1436.9	1445.0	3					IIIGG,DP
	1159	2136	SGMR										1437.0	1446.0			IIIG
			HARV				1439	1444	2	1437	1445	2	1441	1444	1		IIIGG
			HARV				1534	1538	3								UNCLF
	1631	0001	BOUL							1612 E	2400 D	2					IC
			HARV							1620	1700	1					IN
			HARV				1620		1	1616	1620	1	1616	1617	1		IIIGG
			HARV							1700	1830	1					I
			BOUL							1708.3	1714.2	3	1708.3	1714.2	3		IIIG
			HARV				1712	1714	2	1712	1714	2	1712	1714	2		IIIGG
			HARV							1830	2357	1					IN
			BOUL							1841.9	1845.9	2	1841.9	1845.9	2		IIIGG
			HARV				1845	1846	1	1842	1846	1	1842	1846	1		IIIG
			SGMR										1845.6	1846.1			III
	2021	2400	CULG							2021	2400	1					I
			CULG							2030	2033	1					
			CULG							2048.5	2337.5	1					IIIN,W
			CULG							2050	2055	1					
			CULG							2108	2111.5	1					
			CULG				2137		1	2137		1					IIIB
20	0000	0608	CULG							0000	0608	1					I
			CULG							0006.5	0551	1					IIIN,W
			CULG							0227	0232.5	1					IIIGG
			CULG							0310.5		1					IIIB,U
			CULG							0416.5	0417	1					IIIG
	0748	1526	WEIS							0753	1526	2					IS,CONT
	1145	2136	SGMR														
			WEIS							1239.0	1239.3	3					IIIG
			WEIS							1413.8	1414.3	2					IIIG
	1417	2358	HARV				1440	1600	1	1417	2358	2					IC
	1619	2358	BOUL							1602 E	2340 D	3	1602 E	2340 D	3		IC
			HARV				1915	1918	1								IIIGG
	2020	2400	CULG							2020	2400	2					IS,CONT
			CULG							2020	2400	1					IIIN,RS,DP
			HARV							2301	2304	2					IIIGG
			CULG							2301.5	2303.5	2					IIIG,U
			BOUL							2301.5	2303.4	2					IIIG
			CULG							2310	2333	2					RS,DP
21	0000	0730	CULG							0000	0730	1					IS
			CULG							0000	0730	1					IIIN,DP
			CULG							0347.5	0348.5	1					IIIG,U
	1125	1240	WEIS							1125	1525	1					IN,CONT
	1140	2137	SGMR										1349.0	1414.0			CONT
			SGMR										1414.0	1420.0		II	
	1418	2359	HARV							1418	2359	1					I
			HARV							1423	1425	2					IIIGG
	1313	1530	WEIS							1423.2	1424.7	1					IIIG
			SGMR										1423.7	1425.0			IIIG
	1627	2237	BOUL							1622.6E	2132	2	1622.6E	2132	2		IC
			HARV				1703	2354	1								IN
			BOUL							1858.0	1858.8	2	1858.0	1858.8	2		IIIG
			BOUL							2047.2	2051.5	1	2047.2	2051.5	1		IIIG
			BOUL							2059.2	2059.5	2	2059.2	2059.5	2		III

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JANUARY 1971

JAN. 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.	
21	2111	2400	CULG							2111	2400	1				IS
			CULG							2112	2400	1				IIIN
			HARV				2328	2331	1							IIIGG
22			CULG							0000	0442	1				IIIN
	0000	0442	CULG							0000	0442	1				IS
			CULG							0025	0027.5	2				IIIG,V,U
			CULG							0225.5	0441	2				IIIN
			CULG							0449	0604	1				IIIN
	0449	0604	CULG							0449	0604	1				IS
			CULG							0534.5	0536	1				IIIG
	0746	1420	WEIS							0840	1500	1				IS,CONT
			WEIS				1105.0	1105.9	1							IIIG
	1140	2138	SGMR													
	1445	1535	WEIS													
	1418	2359	HARV				1457	1459	2							IIIG
			HARV							1534	1935	1				I
	1637	2230	BOUL							1706.7	1707.0	1	1706.7	1706.0	1	III
			HARV							1935	2359	1				IN
	2120	2400	CULG							2120	2400	1				I
			CULG							2134	2354.5	1				IIIN,W
			CULG							2254.5	2255	2				IIIG
23	0000	0715	CULG							0000	0410	1				I
			CULG							0006.5	0715	1				IIIN
			CULG							0151		1				IIIB
	0744	1536	WEIS							0747	1525	1				IN
	1146	2140	SGMR													
			WEIS							1347.1	1347.3	1				IIIB
	1418	2359	HARV							1419	1600	1				IN
			HARV							1538	1539	2				IIIG
			HARV							1600	1923	1				I
			HARV							1923	2352	1				IN
	2105	2400	CULG							2105	2400	1				IW
			CULG							2107	2356	1				IIIN
			CULG							2207	2212	2				IIIG,V
			CULG							2257	2257.5	1				IIIG
			HARV							2257	2258	1				IIIG
			CULG				2304	2305	1	2304	2305	1				IIIG
			CULG							2313	2314	1				IIIG,U
			HARV							2313	2314	1				IIIG
			CULG							2322.5	2323.5	1				IIIG,U
			HARV							2323	2324	1				IIIG
			CULG							2324		1				IIIB
24	0000	0720	CULG							0002	0349.5	1				IIIN,W
			CULG							0002	0256.5	1				IW
			CULG				0100.5	0101	1	0100.5	0101	1				IIIG
			CULG				0118.5	0120.5	2	0118.5	0120.5	2				IIIG,V,U
			CULG							0129	0130	1				IIIG
			CULG							0149	0150.5	2				IIIG,U
			CULG							0151.5	0153	1				IIIG
			CULG							0156	0156.5	1				IIIG,U
			CULG							0224.5	0225.5	2				IIIG,U
			CULG							0313.5	0314	2				IIIG,U
			CULG							0317	0319	1				IIIG,U
			CULG							0319	0321	2	0319.5	0320	1	IIIG,V,U
			CULG							0332		1				IIIB
			CULG				0444.5	0445	1							IIIG
			CULG							0549	0550	1				IIIG
			CULG							0643	0646	1				IIIG
	0744	0825	WEIS													
	1153	2141	SGMR													
	0838	1536	WEIS							1201.4	1203.6	2				IIIG,DP
			WEIS							1315.5	1316.0	1				IIIG
	1418	2359	HARV				1439	1444	2	1439	1443	1				IIIGG
			HARV							1524	1525	1				IIIG
			HARV				1550	1847	1	1748	1944	1				IN
			HARV				1848	1849	1	1847	1848	1				IIIG
			HARV				2037	2145	2							IN
	2022	2400	CULG				2037.5	2038	1							IIIG
			HARV				2044	2052	2							IIIGG
			CULG				2045	2052	1	2048	2050	1				I
			CULG							2113		1				IIIB,W
			CULG							2134.5		1				IIIB,W
			CULG							2136	2136.5	1				IIIG,U
			HARV							2136		2				IIIG
			HARV							2140	2141	1				IIIG
			CULG							2140	2141	1				IIIG,W
			HARV							2146	2240	1				IN
			HARV				2220	2355	1	2240	2359	1				I
			CULG				2225.5		1							IIIB,W
			CULG							2231		1				IIIB,W
			CULG							2234.5	2235	2				IIIG,U
			HARV							2235		3				IIIG
			HARV				2306	2318	3	2307	2324	3				IIIGG
			CULG				2307	2325	1	2307	2325	1				IIIG,U
			CULG										2310		1	SWF
			CULG	2310	2345	1	2310	0050	1							IV
			HARV				2310	2359 D	3	2314	2359 D	3				IV

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS
JANUARY 1971

JAN. 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.		
24			CULG				2310.5	2312	1								UNCLF
			CULG				2315.5	2353	3	2320.5	2353	2					IIIH
			HARV							2315.6	2342	3	2320	2335		II	
			CULG							2320	0250	1				IV	
			HARV				2327	2329	3	2327	2329	3					IIIGG
			CULG							2340	0300	1					I
			HARV							2343	2345	2	2343	2345	2		IIIGG,RD
			CULG				2347.5	2350.5	1								IIIG
25	0000	0725	CULG							0009	0725	1					IIIN,RS,DP
			CULG							0048	0050.5	1					IIIG
			CULG							0116.5	0118.5	1					IIIG
			CULG							0120.5		2					IIIB,U
			CULG							0129.5	0130	1					IIIG
			CULG							0134	0136	1					IIIG
			CULG							0134.5	0135	2					IIIG,U
			CULG							0135.5	0136	2					IIIG,U
			CULG							0246		2					IIIB
			CULG							0329		2	0329		2		IIIB
			CULG				0517.5	0518	1								IIIG
			CULG							0554	0555	1					IIIG
			CULG							0633	0634	2					IIIG
			WEIS							0835.0	1025.0	1					IS
	0835	1533	WEIS							0835.7	0838.4	1					IIIG
	1150	2143	SGMR														
	1631	2230	BOUL							1903.0	1903.3	2	1903.0	1903.3	2		III
	1403	2400	HARV							1952	1953	1					IIIG
	2015	2400	CULG							2045	2047	1					IIIG
			CULG							2053.5		1					IIIB,W
			CULG							2057.5	2058.5	1					IIIG,W
			CULG							2247.5	2250	1					IIIG,U
26	0000	0730	CULG							0615.5	0621	1					IIIGG,U
			CULG				0616.5	0617.5	1	0615.5	0617.5	2					IIIG,U
			CULG							0651.5		1					IIIB,W
	0730	1536	WEIS							0943.7	0944.2	1					IIIG
			WEIS							1037.7	1039.6	2					IIIGG,DPRS
	1140	2144	SGMR														
			WEIS							1327.2	1329.9	1					IIIG
			WEIS				1513.9	1514.0	1								IIIG
	1405	2400	HARV							1706	1710	1					IN
			HARV							1707	1708	1					IIIG
	2015	2400	CULG							2033	2033.5	1					IIIB,V,U
			CULG							2039	2040	1					IIIG,W
			CULG							2114	2115	1					IIIG,V,U
	1630	2122	BOUL							2114.4	2118.4	2	2114.4	2118.4	2		IIIG
			CULG							2117	2118.5	2					IIIG,V,U
			CULG							2231	2231.5	1					IIIG,W
27	0000	0658	CULG							0057	0058.5	1					IIIG,W
	0730	0920	WEIS														
	0928	1538	WEIS														
	1210	2145	SGMR														
	1401	2400	HARV														
	1636	2247	BOUL														
	2021	2328	CULG				2028.5	2029.5	1	2028.5		1					IIIG,W
			CULG							2212		1					IIIB,W
			CULG							2218		1					IIIB,W
28	1145	2146	SGMR														
	0743	1540	WEIS							1228.1	1228.3	1					IIIB
			WEIS							1313.6	1314.0	1					IIIG
	1400	2400	HARV				1602	1725	1	1416	1900	1					IN
			HARV							1719		1					U
	1607	0010	BOUL							1719.3	1719.8	1	1719.3	1719.8	1		III
			BOUL							1925.5	1925.9	1	1925.5	1925.9	1		III
	2002	2249	CULG							2003	2005	1					IIIG
			BOUL							2003.7	2004	1	2003.7	2004	1		III
			CULG							2014.5	2015	1					IIIG
			BOUL							2015.3	2015.5	1	2015.3	2015.5	1		III
			BOUL							2020.3	2020.5	1	2020.3	2020.5	1		III
			CULG							2021	2021.5	1					IIIG
			CULG							2030.5	2219.5	1					IIIN,W,RS
			CULG							2107		1					IIIB
			CULG							2109	2113	1					IIIG
			BOUL							2158.5	2158.7	1	2158.5	2158.7	1		III
			BOUL							2218.9	2219.2	1					III
			BOUL							2235.1	2235.5	2	2235.1	2235.5	2		III
			CULG							2235.5	2236	1					IIIG
	2304	2400	CULG							2315		1					IIIB,W
			BOUL							2334.8	2335.0	1	2334.8	2335.0	1		III
			CULG							2351.5		1					IIIB
29	0000	0008	CULG														
	0023	0112	CULG							0041.5		1					IIIB,W
			CULG							0106.5		1					IIIB
	0114	0119	CULG							0114	0114.5	1					IIIG
	0122	0227	CULG							0129	0227	2					IIIG,N
	0242	0334	CULG							0242	0334	2					IIIG,N
	0340	0702	CULG							0340	0436	2					IIIG,N

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS
JANUARY 1971

JAN. 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.	
29			CULG							0437.5	0701	2				IIIS
			CULG							0437.5	0702	2				IS
			CULG							0619.5	0620.5	3				IIIG,U
	0755	1420	WEIS							0757.0	1420	2				I
	1424	1548	WEIS							1350.6	1351.0	1				IIIB
	1140	2151	SGMR										1350.7	1351.1		III
	1401	2400	HARV							1408	1524	1				I
			HARV							1524	1730	1				IN
			HARV				1738	1758	2	1730	1758	1				I
	1619	2400	BOUL							1742.5	1742.6	1	1742.5	1742.6	1	III
			HARV							1758	2232	1				IN
			HARV				2232	2250	2	2232	2320	1				I
	2049	2400	CULG							2310.5		1				IIIB,W
			CULG							2313		1				IIIB,U
			CULG							2320	2322	1				IIIG
			CULG							2323	2358	1				IIIN,W,DP
30	0000	0737	CULG							0003.5		1				IIIB
			CULG							0011	0012	1				IIIG
			CULG							0038		1				IIIB,W
			CULG							0104.5	0107.5	1				IIIG,W
			CULG							0201.5	0202.5	1				IIIG
			CULG							0206.5		1				IIIB
			CULG							0250	0730.5	1				IIIN,W
			CULG							0319.5	0730	1				I
	0740	1550	WEIS							0741.0	1538	2				IN
	1143	2151	SGMR													
	1401	2400	HARV				1527	1758	1	1407	1840	2				I
	1400	0015	BOUL							1634	1900	2				CONT
			HARV				1831	2400	1	1840	2400	1				I
			CULG							2118	2400	1				IIIN
	2118	2400	CULG							2118	2353	1				I
			CULG							2259		2				IIIB
			CULG							2301		2				IIIB
			CULG							2304.5		2				IIIB
31	0000	0726	CULG							0000	0703.5	1				I
			CULG							0000	0702.5	1				IIIN
	0740	1549	WEIS							0745.0	1549	2				IS
	1143	2150	SGMR										1258.8	1445.0		CONT
			WEIS							1259.7	1438.0	1				IIIG
	1401	2400	HARV							1403	1800	2				I
	1320	0017	BOUL							1411.2	1615	3				I
			BOUL							1615	1955	2				I
			HARV				1621	1925	1	1800	2400	1				I
			BOUL							1955	2300	1				I
	2005	2400	CULG							2010	2353	1				I
			CULG							2029	2327.5	1				IIIN
			BOUL							2245.9	2246.9	2				IIIG
			CULG							2246	2246.5	2				IIIG,V
			HARV				2246		1	2246		2	2246		2	IIIG

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)

JANUARY 1971

Jan. 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	5978.8	6516.6	10834.5	8044.2	3871.7	5976.2
2	5955.8	6492.5	10821.2	8016.2	3877.9	5952.4
3	5971.5	6496.1	10882.9	8047.5	3914.7	5965.2
4	5966.8	6501.2	10876.0	8024.4	3898.2	5992.8
5	5979.7	6503.6	10885.1	8049.0	3917.4	6005.5
6	5998.3	6535.8	10867.0	8042.9	3916.5	6015.4
7	6036.4	6582.0	10843.6	8079.4	3934.7	6031.3
8	6071.8	6612.2	10813.0	8117.3	3938.0	6037.0
9	6107.8	6641.6	10919.1	8174.0	3954.4	6061.4
10	6141.8	6647.0	10958.5	8222.5	3967.6	6091.4
11	6169.3	6679.3	11065.7	8268.1	3994.7	6108.8
12	6203.2	6713.2	11104.5	8355.3	4041.9	6151.5
13	6176.1	6695.7	11047.5	8303.5	4027.8	6091.8
14	6119.2	6619.0	10956.2	8219.6	3977.4	6066.4
15	6099.2	6599.7	10876.8	8181.2	3943.1	6073.4
16	6070.9	6606.3	10804.0	8139.6	3931.0	6050.9
17	6036.6	6573.5	10774.6	8093.9	3891.3	6032.9
18	6043.3	6581.4	10765.0	8079.6	3888.1	6018.2
19	5981.1	6513.8	10657.0	8009.2	3883.1	5963.0
20	5893.5	6403.8	10550.3	7849.3	3801.9	5872.5
21	5908.7	6389.7	10545.6	7865.1	3795.1	5866.3
22	5940.0	6411.5	10586.1	7870.0	3806.9	5883.1
23	5943.1	6434.2	10582.3	7882.5	3820.5	5896.1
24	5981.4	6478.1	10711.7	7959.7	3856.0	5944.9
25	6058.5	6569.9	10882.7	8174.5	3890.1	5993.8
26	6010.3	6513.3	10713.2	7986.1	3852.3	5973.1
27	5875.7	6440.3	10503.8	7833.7	3814.5	5939.9
28	5809.3	6357.1	10406.8	7760.1	3804.1	5903.6
29	5847.1	6340.2	10332.0	7663.1	3729.9	5822.4
30	6036.6	6519.2	10744.7	8007.8	3885.8	5994.5
31	6087.3	6577.3	10836.5	8077.6	3920.0	6026.4

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

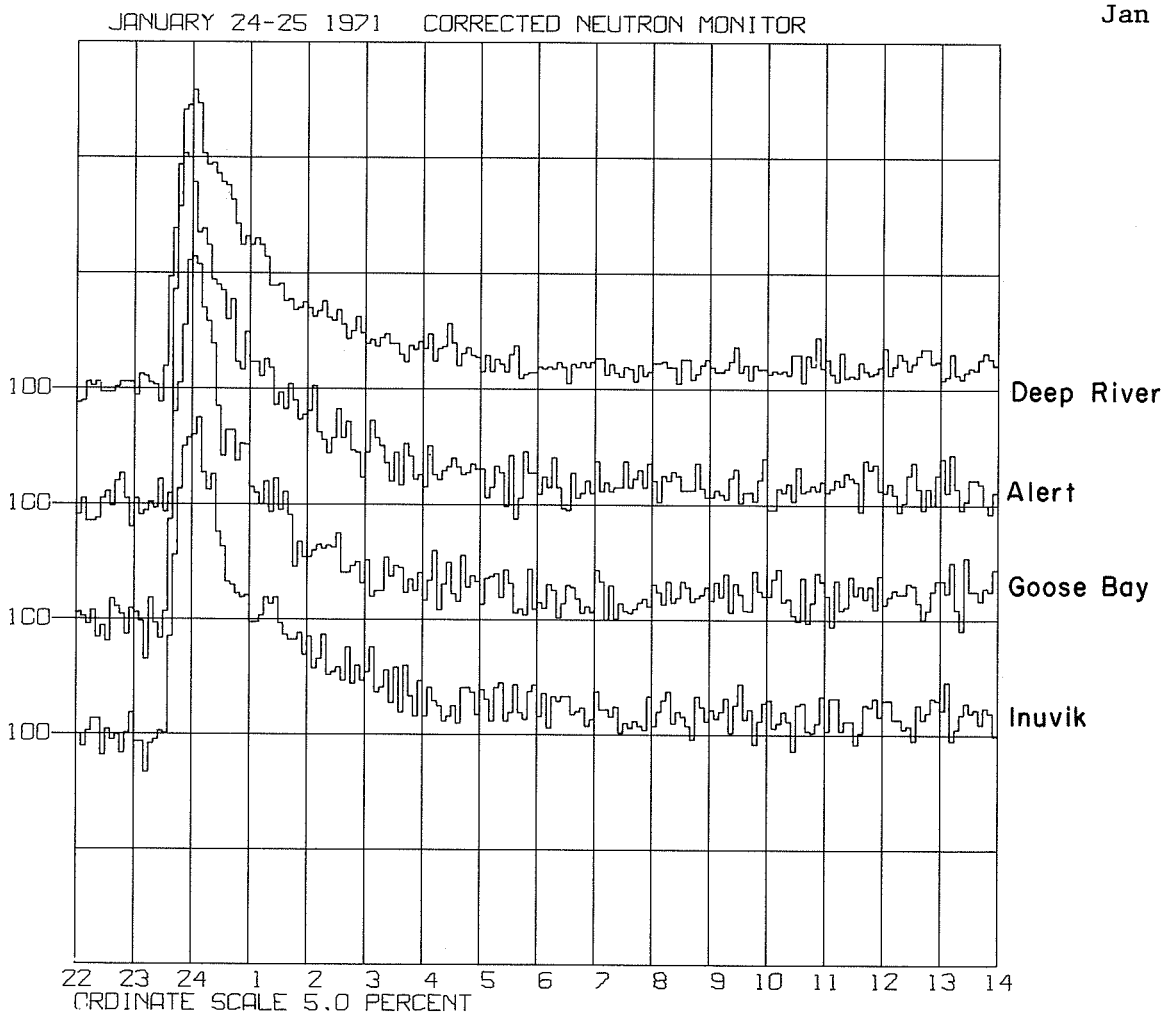
Churchill Super Neutron Monitor, Scaling Factor 120.

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.

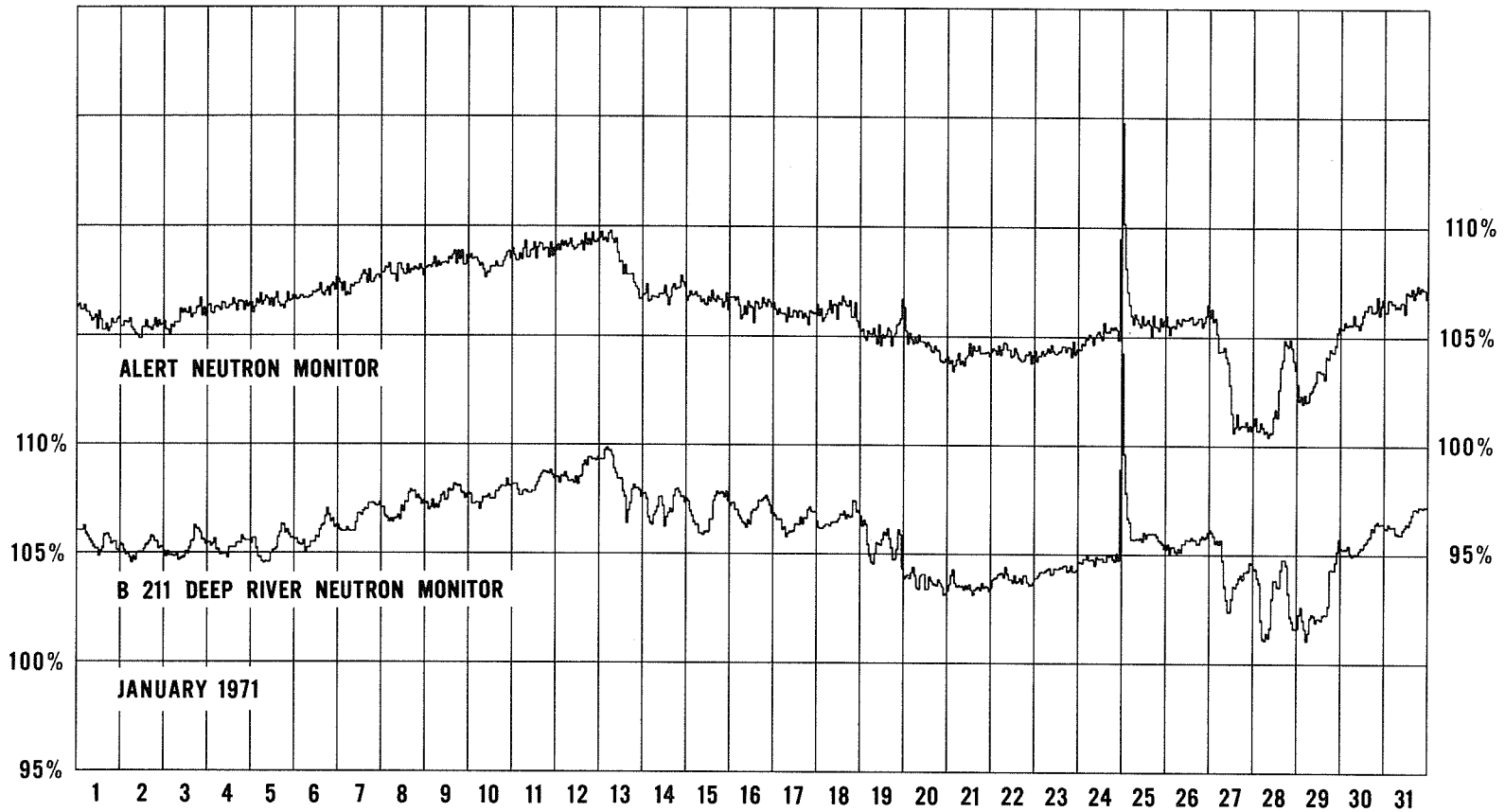
Dallas Super Neutron Monitor, Scaling Factor 120.

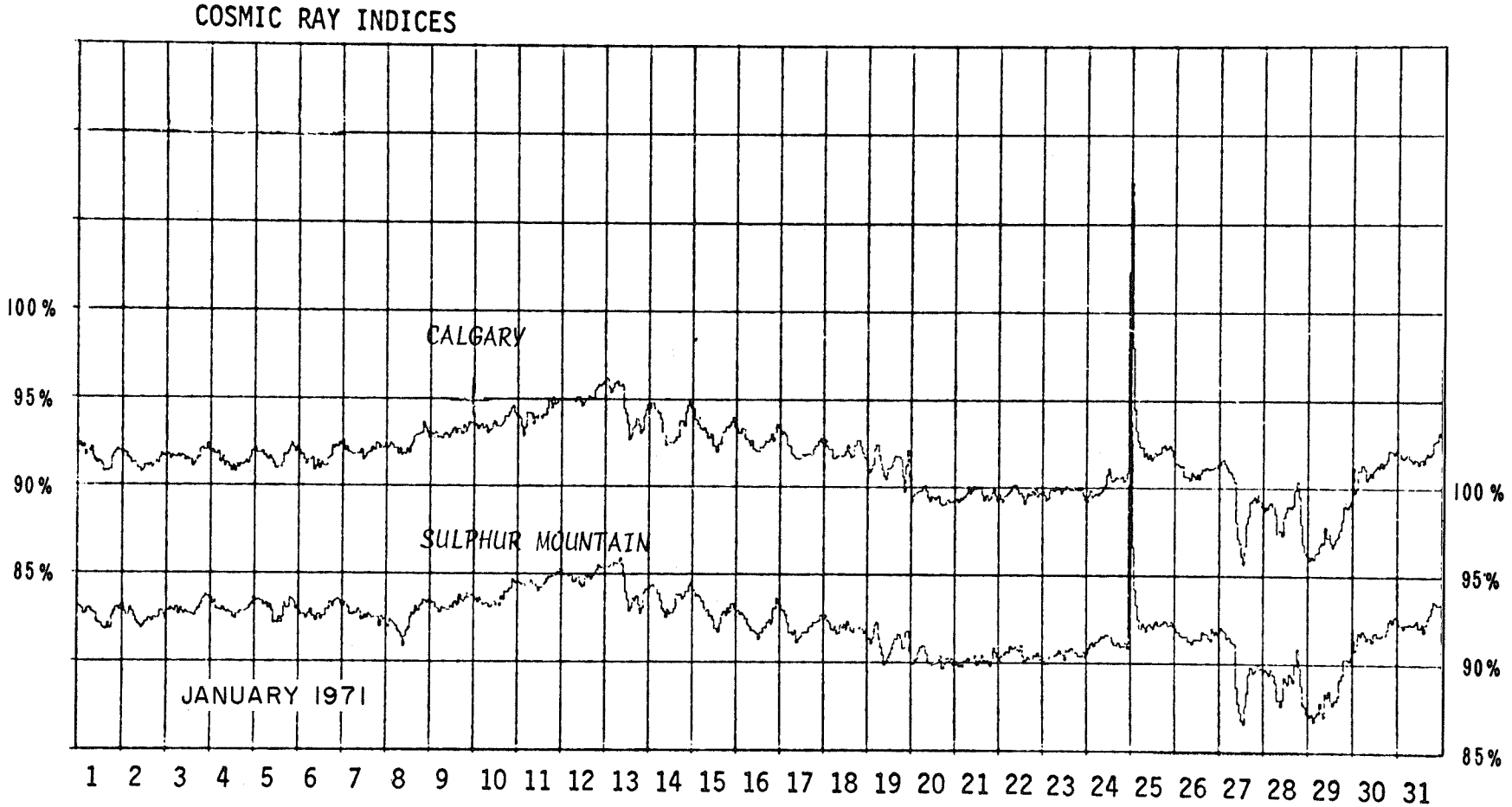

JANUARY 24-25 1971 CORRECTED NEUTRON MONITOR
100
100
100
100
Deep River
Alert
Goose Bay
Inuvik
22 23 24 1 2 3 4 5 6 7 8 9 10 11 12 13 14
ORDINATE SCALE 5.0 PERCENT

COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)

JANUARY 1971



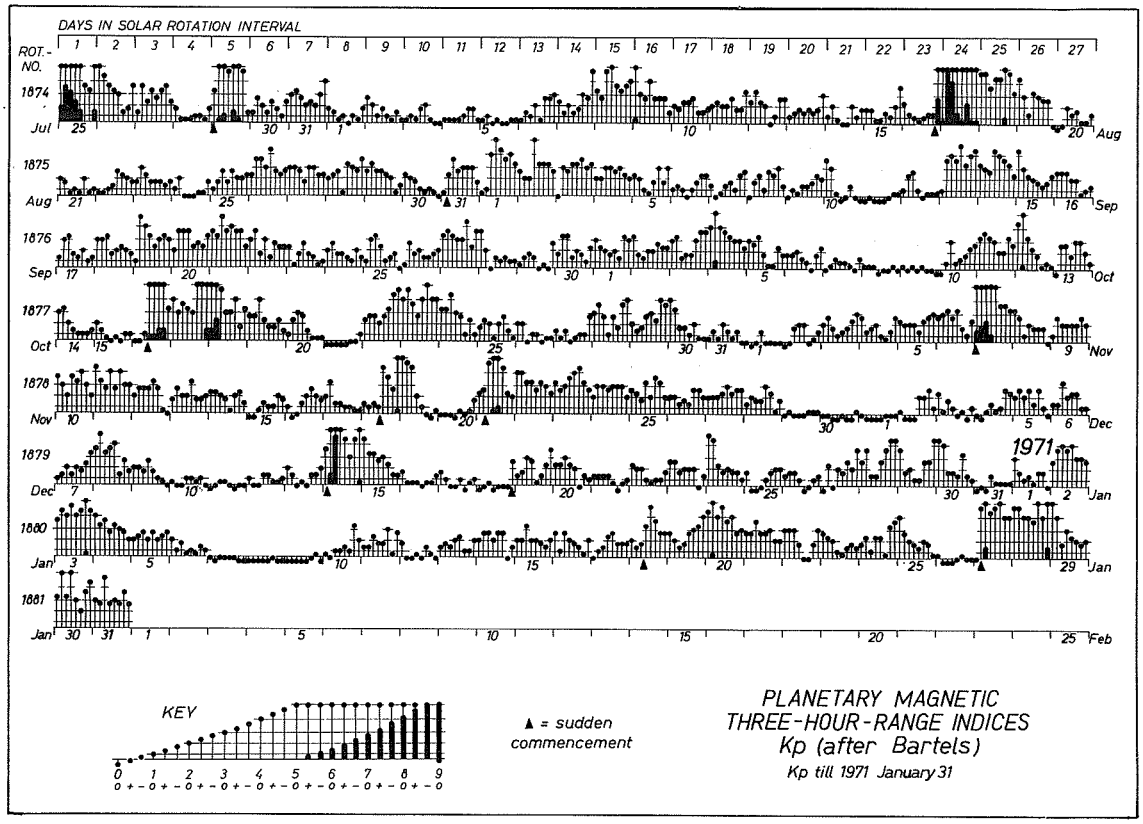

COSMIC RAY INDICES
100 %
95 %
90 %
85 %
CALGARY
SULPHUR MOUNTAIN
JANUARY 1971
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
100 %
95 %
90 %
85 %

GEOMAGNETIC ACTIVITY INDICES

JANUARY 1971

DAY		K_p THREE-HOUR RANGE INDICES 1	2	3	4	5	6	7	8	SUM	C_i	C_p	A_p
1	Q	3	2-	1	2+	1-	2-	2-	0+	11+	0.3	0.3	6
2		3-	4-	4	4-	4	3	3	3-	27-	1.2	1.0	19
3	D	4-	4+	4	5-	4	4+	5+	4+	35-	1.6	1.3	33
4		4	3+	4-	3-	3+	3	3-	2	25-	0.9	0.9	16
5		2	2+	3-	2	3-	2	2+	3-	19-	0.7	0.5	9
6	Q	2	1	2-	1-	1	1-	1+	1	9+	0.1	0.2	4
7	QQ	0+	0	0+	0+	0+	0+	0	0	2-	0.0	0.0	1
8	QQ	0	0	0	0	0	0+	0	0	0+	0.0	0.0	0
9	QQ	0	0	0	0	0	0+	1-	0	1	0.0	0.0	1
10	Q	1-	0+	1	1	1+	1	3+	2	11-	0.4	0.3	6
11		1+	1+	2+	2-	2-	3	1-	3-	15-	0.4	0.4	8
12	QQ	2-	0+	0+	1-	0+	1+	1-	0+	6-	0.1	0.1	3
13		1+	2-	1+	2	2+	1	1	2	13-	0.4	0.3	6
14		2	3-	3-	2	3-	3-	0+	1+	16+	0.3	0.5	9
15		2	2	3+	2	2	2-	1+	2	16+	0.5	0.4	8
16		3-	1	3-	2	2-	1+	1-	2	14	0.4	0.4	7
17	Q	0+	1	1+	2+	3-	2-	2-	2-	13-	0.3	0.3	6
18		2	1+	2-	3+	5-	4-	3-	3-	22	1.2	0.9	15
19		3-	2	1+	2-	3-	3	3+	4	21-	1.1	0.7	13
20	D	4+	5+	4	5-	4-	4	3-	3	32-	1.4	1.3	29
21		3-	3-	4-	3-	3-	3	2	2	21+	0.7	0.7	12
22		3	3	3	2-	0+	0+	2-	3	16	0.6	0.5	10
23	Q	3-	2+	2	1	1-	1+	2-	1+	13	0.2	0.3	6
24		2-	2+	1	2+	2+	1-	3+	4-	17+	0.7	0.6	10
25		4	3-	2	2-	1+	2	2-	1-	16	0.5	0.5	9
26	QQ	1-	0	0	0	0+	1-	0+	0+	2+	0.1	0.0	2
27	D	0+	5-	6	4+	5-	5	4	4	33	1.5	1.4	37
28	D	5-	5-	4	4	4-	5	4	6	36	1.6	1.4	39
29		5	4	2-	3	2+	2	2-	2	22-	1.1	0.9	16
30	D	3+	5	3+	5	3	2	4-	4+	30-	1.3	1.2	26
31		3	3-	5-	3-	3	3-	4-	3-	25	1.1	0.9	17
										MEAN	0.67	0.59	12

GEOMAGNETIC ACTIVITY INDICES



DAILY AVERAGE INDICES Ap

DAY	1970 FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	1971 JAN.
1	9	22	6	11	28	10	4	23	10	2	1	6
2	20	16	6	9	9	11	6	18	9	4	4	19
3	7	15	11	10	11	24	4	15	14	8	4	33
4	12	16	10	6	8	26	4	11	25	7	5	16
5	10	12	9	12	6	16	3	8	9	9	8	9
6	4	25	23	6	3	15	8	5	6	12	8	4
7	2	42	10	6	9	5	12	6	4	58	8	1
8	2	149	12	4	13	10	26	8	2	8	19	0
9	3	47	18	4	5	87	19	5	2	8	6	1
10	5	7	3	2	6	34	7	6	7	17	3	6
11	3	3	8	3	4	10	9	1	15	20	2	8
12	3	6	6	15	5	14	9	5	16	10	4	3
13	5	8	4	6	10	10	6	24	9	9	4	6
14	11	3	3	13	8	9	4	19	8	7	65	9
15	8	7	5	10	13	5	7	11	4	4	14	8
16	5	3	14	6	9	6	21	8	37	5	4	7
17	10	5	29	10	13	8	115	8	34	6	3	6
18	9	6	18	5	27	5	36	10	39	18	3	15
19	4	5	21	6	8	5	14	18	11	18	10	13
20	3	4	21	13	18	6	4	15	7	3	8	29
21	2	3	90	8	17	30	5	23	1	30	4	12
22	2	2	41	6	4	12	6	12	18	18	6	10
23	4	5	14	7	4	9	7	6	29	21	7	6
24	11	2	16	6	6	26	4	6	14	12	14	10
25	4	3	17	7	6	92	8	8	6	13	4	9
26	10	5	13	2	13	21	17	6	4	8	4	2
27	8	16	10	15	35	14	12	19	5	10	8	37
28	14	21	5	45	7	4	12	7	15	8	18	39
29		17	7	13	6	45	10	5	13	2	12	16
30		16	18	11	5	7	5	9	9	1	13	26
31		51		6		14	12		4		2	17
MEAN	7	17	16	9	10	19	13	11	12	12	9	12

PRINCIPAL MAGNETIC STORMS

JANUARY 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
01 01	2355	01 04 00	HYDE	7.6N	••	••	••	••	M	01 03	6,7	5	3	90	24	1
01 02	00--	01 04 21	COLL	64.6N	••	••	••	••	MS	01 03	3,4	7	132	1430	820	1
	00--	01 04 19	NEWP	55.1N	••	••	••	••	M	01 02	3	5				1
										01 03	3,5	5	33	131	115	1
	00--	01 04 20	WITT	54.1N	••	••	••	••	MS	01 03	6,7	6	30	170	40	1
	23--	01 04 21	IRKU	40.8N	••	••	••	••	M	01 03	4,8	5	16	88	30	1
	23--	01 04 15	HONO	21.1N	••	••	••	••	M	01 03	4	4	3	40	10	1
	00--	01 04 19	HRMN	33.3S	••	••	••	••	M	01 03	7	5	24	87	84	1
	2350	01 04 03	KGLN	57.3S	••	••	••	••	M	01 03	6,7	5	--	--	--	1
01 18	0900	01 22 12	COLL	64.6N	SC *	--	+27	--	MS	01 20	4	7	180	1320	740	2
	0900	01 21 18	WITT	54.1N	SC	- 1	+ 9	0	M	01 18	5	5	30	130	30	2
										01 20	2,6					2
	0900	01 18 24	ALIB	9.5N	SC	0	+17	-01	MS	01 18	5	6	2	145	33	2
	0900	01 19 00	HYDE	7.6N	SC	+ 0.1*	+19	- 1	M	01 18	5	6	3	141	22	2
	0900	01 18 24	ANNA	1.5N	SC	- 0.5	+29	+08	MS	-- --	-			133		2
	0900	01 18 24	TVAN	1.1S	SC	- 0.1	+27	+35	MS	-- --	-		3	129	90	2
	0900	01 20 19	HRMN	33.3S	SC *	- 1	+ 7	+ 4	M	01 18	5	5	29	124	77	2
										01 20	5	5				2
	0859	01 20 20	TOOL	46.7S	SC	+ 0.8	+32	+ 5	M	01 18	5	5	17	140	40	2
										01 20	2,3					
01 19	07--	01 20 19	IRKU	40.8N	••	••	••	••	MS	01 20	6	6	20	77	22	2
	1640	01 20 19	HYDE	7.6N	••	••	••	••	M	01 19	8	4	6	74	46	2
										01 20	1,2,5,6					2
01 27	0431	01 29 18	COLL	64.6N	SC *	+22	+109	+32	MS	01 27	3,5	7	337	1800	910	3
										01 28	4	7				3
	0429	01 29 05	SITK	60. N	SC *	+ *	+ *	+ *	S	01 27	6	8	90	880	650	3
	0430	01 29 06	NEWP	55.1N	SC *	3	27	6	MS	01 27	3	6	40	190	236	3
	0431	01 29 06	WITT	54.1N	SC *	-10 *	+42	+ 1	MS	01 28	8	7	30	230	90	3
	0430	01 29 06	FRED	49.6N	SC *	1	49	- 6	M	01 28	8	5	21	164	80	3
	0430	01 29 06	FRED	49.6N						01 29	1					3
	0431	01 29 17	BOUL	49.0N	SC *	- .1	+27	- 1	MS	01 27	3	6	26	150	70	3
	0430	01 29 03	IRKU	40.8N	SC	6.9	39	6	MS	01 27	3	6	26	153	48	3
										01 28	6,8	6				3
	0430	01 31 09	TUCS	40.4N	SC *	+ 1	+30	+ 2	MS	01 29	1	6	14	150	10	3
	0430	01 28 06	SJUA	29.9N	SC	+ 1.0	+20	+ 7	M	01 27	7	5	5	142	26	3
	0431	01 29 08	MBOR	21.3N	SC	- 2 *	+30	- 5	M	01 28	8	5	4	75	12	3
	0430	01 29 12	HONO	21.1N	SC	0.5	20	7	MS	01 27	3	6	5	95	10	3
	0430	01 28 00	ALIB	9.5N	SC	- 1.1	+25	-11	MS	01 27	3,5	6	6	217	49	3
	0429	01 28 01	HYDE	7.6N	SC	+ 0.8	+27	- 3	MS	01 27	5,6	6	7	225	22	3
	0430	01 28 05	GUAM	4.0N	SC *	1	26	- 8	MS	01 27	3	6	0	70	10	3
	0430	01 28 00	ANNA	1.5N	SC	- 1.9	+44	+18	MS	-- --	-		7	251	51	3
	0430	01 28 00	TVAN	1.1S	SC	- 0.1	+41	+44	MS	-- --	-		5	290	176	3
	0430	01 29 12	APIA	16.1S	SC	+ 1	+23	- 8	M	01 27	3	5	10	114	33	3
	0431	01 31 00	PMOR	18.6S	SC *	+ 0.8*	+30	+32	MS	01 27	3	6	10	170	100	3
	0430	01 29 17	HRMN	33.3S	SC *	+ 5	+17	+16	MS	01 28	8	6	34	139	131	3
	0430	01 29 12	GNAN	43.2S	SC *	- 4	+18	- 9	MS	01 27	5	6	26	110	200	3
										01 28	6	6				3
	0430	01 29 21	TOOL	46.7S	SC	+ 1.6	+46	+ 7	MS	01 27	3	6	28	230	80	3
	0430	01 29 03	KGLN	57.3S	SC	--	--	--	MS	01 27	5,6	7	--	--	--	3
01 28	1009	01 31 15	GUAM	4.0N	••	••	••	••	M	01 30	1	5	0	50	10	4
01 29	23--	01 31 21	IRKU	40.8N	••	••	••	••	M	01 30	7,8	5	18	126	33	4
										01 31	3,5	5				4
	22--	01 31 10	HONO	21.1N	••	••	••	••	M	01 30	2	4	3	50	15	4
01 30	0050	02 01 19	COLL	64.6N	SC *	+ 8	-30	+10	MS	02 01	3,4,6	6	108	950	570	4
	00--	01 30 24	WITT	54.1N	••	••	••	••	M	01 30	2,4,7,8	5	30	160	40	4

SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

January 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 followed by a magnetic storm or a period of storminess (ssc)

18 0900 A: VI SF KS TE LM; B: SO WN WI MA FU LG EB SZ PM TN GN; C: KA

24 1930 A: FR SF LM; B: MA VI EB; C: WN NI SZ TN (si: A: SI TE; B: FU LG AQ; C: KA MB; bs: A: KS)

27 0430 A: SO NU SI WN WI NI MA VI FU LG AQ EB CI TL FR SF KS SZ TE MB TN LM; B: KA PM GN

Sudden impulses found in the magnetogram (si)

none

Solar-flare effects (sfe)

Effects confirmed by ionospheric or solar observations are underlined.

03	0906 - 0934	SZ	15	0402 - 0411	PM
03	1121 - 1126	SZ	18	1710 -	TE
04	1209 - 1214	SZ	24	1930 - 1944	TL
05	1311 - 1319	SZ	24	(2309)- 2630	KA

RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

JANUARY 1971

North Atlantic

JAN. 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	6o	6	6+	6o	6+	6−	6	6	6	6	2	1	5
02	6o	6	6+	5+	6+	6+	6	6	5	6	(4)	3	18
03	6o	6	7−	5+	7−	6−	5	5	6	5	(4)	(4)	28
04	6−	6	6−	5+	6−	6−	5	5	6	6	3	2	10
05	6−	6	6−	5+	6−	6o	5	5	6	6	3	2	10
06	6o	6	6o	6o	6+	6+	5	6	6	6	2	1	3
07	6+	6	6o	6+	7o	7−	6	6	6	6	0	0	0
08	6o	6	6o	5+	7o	6+	6	6	6	7	0	0	0
09	6o	6	6−	5+	7o	6+	6	6	6	6	0	0	0
10	6+	6	6+	6+	6+	6o	6	6	6	6	1	2	5
11	6+	6	6o	6o	7o	6o	6	6	6	6	2	2	6
12	6+	6	6o	6+	7−	6−	6	6	6	6	1	1	2
13	6o	6	6−	6−	6+	6o	6	6	6	6	2	2	6
14	6o	6	6+	6−	6+	6o	6	6	6	6	2	2	8
15	6+	6	6o	6+	7−	6−	6	6	6	6	2	1	7
16	6o	6	6o	6o	6+	6o	6	6	6	6	3	2	9
17	7−	6	7−	6o	7o	7−	6	6	6	6	1	1	4
18	6o	6	6o	5+	7−	6o	6	6	6	6	2	3	13
19	6+	6	6+	5+	7o	6+	6	5	6	6	2	3	9
20	6+	6	6+	6o	7o	6+	6	6	6	6	(4)	3	19
21	6−	6	5+	5+	6o	6−	5	5	6	6	3	2	13
22	6o	6	6o	5+	6+	6o	5	6	6	6	3	1	8
23	6o	6	6+	6o	6+	6o	6	6	7	6	2	1	4
24	6+	6	7−	6+	6+	6o	7	7	7	7	2	2	8
25	6+	7	6+	7−	6−	6o	7	7	7	6	3	2	9
26	6o	7	6−	6o	6o	6+	5	6	6	6	0	0	1
27	6−	7	7−	6o	6−	5−	6	5	6	5	3	(4)	19
28	5+	5	5+	5+	5+	5+	5	4	5	5	(4)	3	23
29	6o	5	5+	6−	6+	6+	5	5	6	6	3	2	13
30	6−	6	5o	5+	6o	6o	6	6	6	5	(4)	3	20
31	6o	6	6−	5−	7−	6+	6	6	6	6	3	3	15

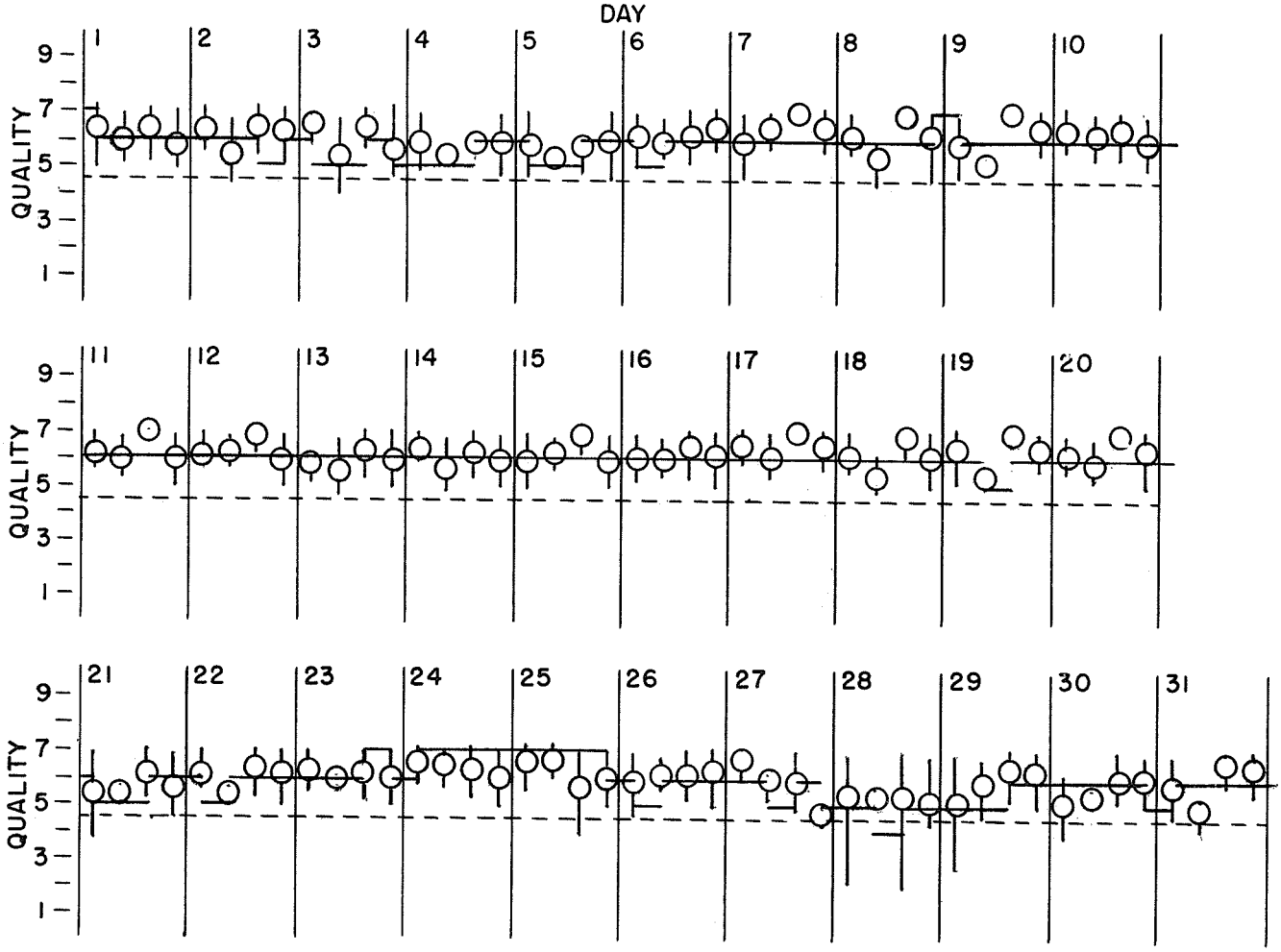
RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

JANUARY 1971

North Atlantic

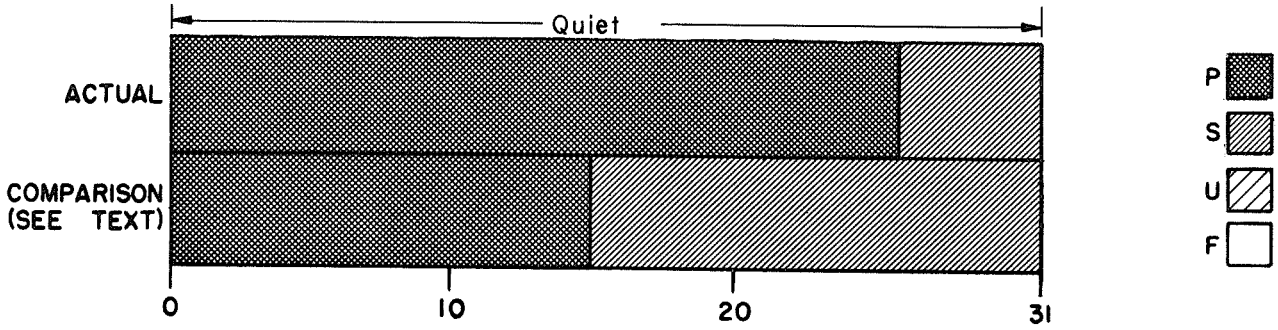
– Short term forecast
o Quality figure

I range of reports



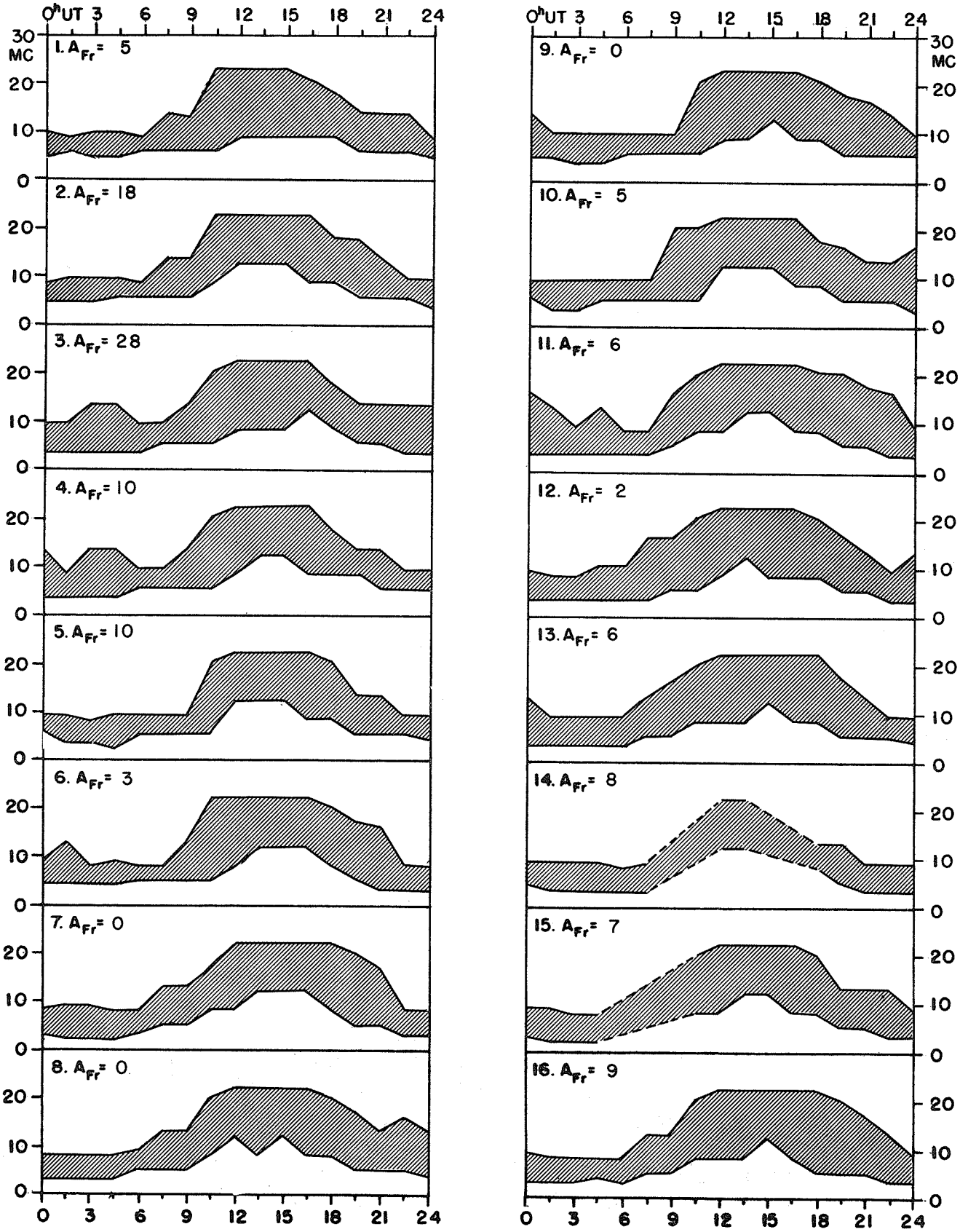
Outcome of advance forecasts of High Latitude radio propagation conditions
(Scored against observed North Atlantic radio propagation conditions)

HIGH LATITUDE



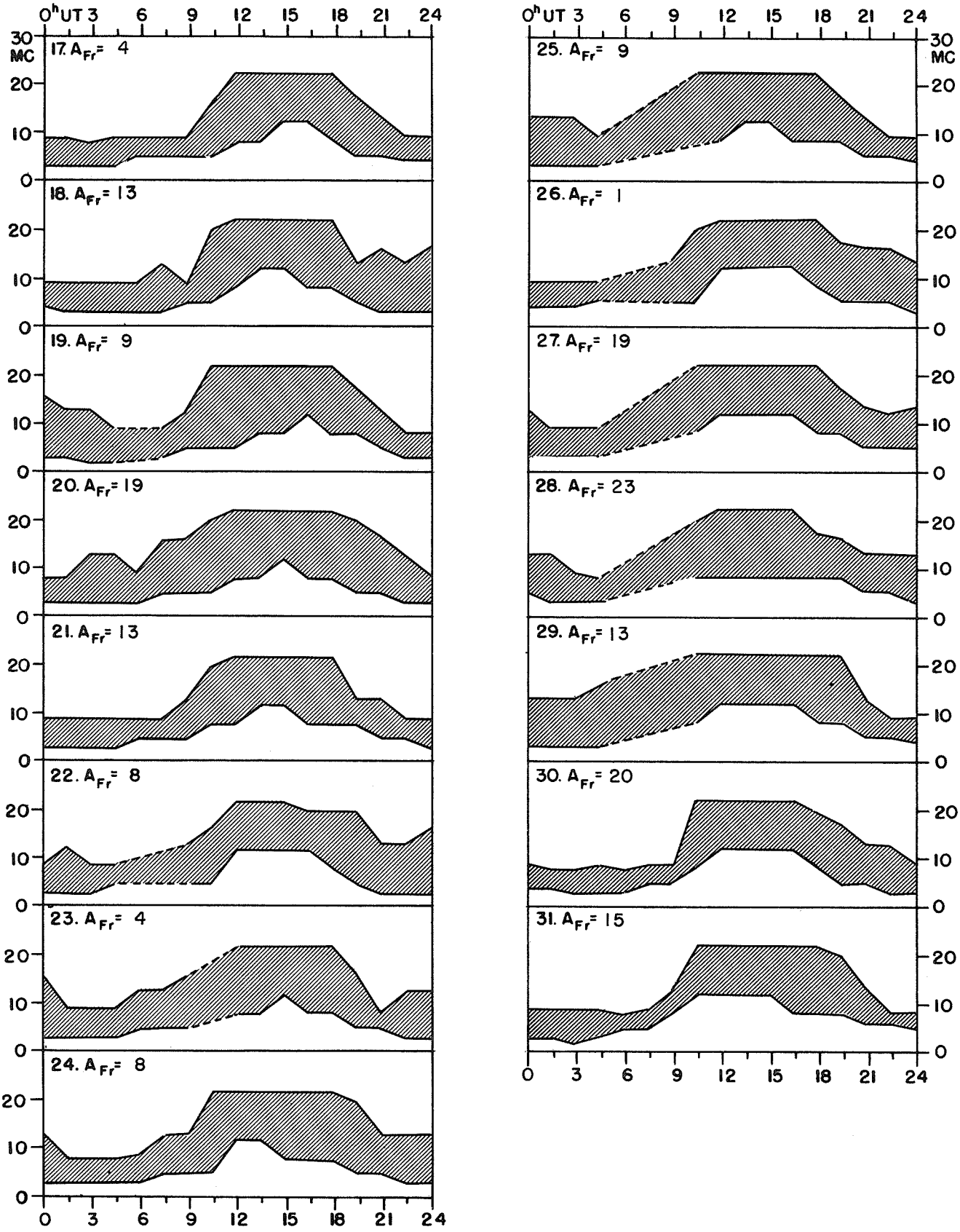
TRANSMISSION FREQUENCY RANGES--NORTH ATLANTIC PATH

JANUARY 1971



TRANSMISSION FREQUENCY RANGES--NORTH ATLANTIC PATH

JANUARY 1971



Adapted from Observations by Deutsche Bundespost

RADIO PROPAGATION QUALITY INDICES

Derived from observations of the transmission frequency range

January 1971

Date	USA - Germany		South America - Germany		East Asia - Germany	
	Day	Night	Day	Night	Day	Night
1	5.4	5.0	4.8	5.6	5.2	5.6
2	6.0	6.2	6.4	6.2	6.0	7.2
3	5.0	6.2	5.4	6.2	6.6	6.0
4	5.4	5.0	5.4	5.0	6.0	5.8
5	4.8	4.0	6.0	5.4	6.0	4.8
6	5.6	5.2	5.4	6.0	6.2	5.8
7	6.2	6.6	5.6	6.4	6.4	6.6
8	6.0	6.0	6.2	7.2	5.6	4.2
9	5.4	6.8	6.2	5.8	5.6	3.8
10	5.2	7.2	6.0	5.4	5.4	5.8
11	6.2	7.4	5.6	6.6	4.8	5.4
12	6.0	7.0	6.4	6.6	6.2	4.2
13	6.8	6.2	6.6	6.0	6.6	6.2
14	5.0	5.2	5.6	5.0	5.2	5.6
15	6.0	6.0	5.4	5.8	4.4	6.2
16	7.6	7.4	6.8	6.8	6.4	3.8
17	6.0	6.6	7.2	6.6	5.8	5.4
18	6.2	7.2	5.6	7.4	4.8	4.8
19	6.2	6.2	6.6	5.8	5.6	7.4
20	6.6	6.2	5.6	6.4	5.8	5.6
21	5.4	5.8	7.2	6.4	5.6	5.6
22	6.0	7.4	5.6	6.6	4.4	6.0
23	6.2	6.2	6.2	6.2	6.0	6.2
24	6.8	7.2	7.6	7.2	5.6	6.8
25	5.6	5.0	6.6	6.2	5.6	7.4
26	5.4	6.4	5.8	5.8	5.0	5.6
27	5.2	6.2	7.0	6.8	3.4	6.8
28	4.8	6.2	5.6	6.2	4.6	7.2
29	5.0	5.0	5.8	5.6	5.4	5.8
30	4.6	5.0	5.4	5.0	5.0	5.8
31	5.6	4.8	5.4	5.0	5.6	5.8

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