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### NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE

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## Solar - Geophysical Data

## Part I (Prompt Reports)

NO. 463 MARCH 1983

DATA FOR  
FEBRUARY 1983  
JANUARY 1983

**Michael A. Chinnery, Director**  
**NATIONAL GEOPHYSICAL DATA CENTER**  
**BOULDER, COLORADO**

For sale through the National Geophysical Data Center, NOAA/NESDIS, E/GC2, 325 Broadway, Boulder, Colorado 80303. Subscription Price: \$64.00 annually for both Part I (Prompt Reports) and Part II (Comprehensive Reports) or \$32.00 annually for either part. Annual supplement containing explanation is included. For foreign mailing add \$42.00 for both parts or \$21.00 for either part. Make checks and money orders payable to: Department of Commerce, NOAA/NGDC.

For obtaining bulletins on a data exchange basis, send request to: World Data Center A for Solar-Terrestrial Physics, NOAA/NESDIS/NGDC, E/GC2, 325 Broadway, Boulder, Colorado 80303.

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Reel#	Coverage	Medium	Reel#	Coverage	Medium	Reel#	Coverage	Medium
1	Jan 56 - Dec 56	Microfilm	9	Jan 64 - Dec 64	Microfilm	17	Jul 69 - Dec 69	Microfilm
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3	Jan 58 - Dec 58	Microfilm	11	Jan 66 - Sep 66	Microfilm	19	Jul 70 - Dec 70	Microfilm
4	Jan 59 - Dec 59	Microfilm	12	Oct 66 - Dec 66	Microfilm	20	Jan 71 - Jun 71	Microfilm
5	Jan 60 - Dec 60	Microfilm	13	Jan 67 - Dec 67	Microfilm	21	Jul 71 - Dec 71	Microfilm
6	Jan 61 - Dec 61	Microfilm	14	Jan 68 - Jun 68	Microfilm	22	Jan 72 - Jun 72	Microfilm
7	Jan 62 - Dec 62	Microfilm	15	Jul 68 - Dec 68	Microfilm	23	Jul 72 - Dec 72	Microfilm
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To standardize referencing these reports in the open literature, the following format is recommended: Solar-Geophysical Data, 462 Part I (or Part II), pages, February 1983, U.S. Department of Commerce (Boulder, Colorado, USA 80303).

# SOLAR-GEOPHYSICAL DATA

No. 463

*Issued in two parts*

Helen E. Coffey, Editor

Joe H. Allen, Chief  
Solar-Terrestrial Physics Division

## CONTENTS

Part I (Prompt Reports)	PAGE
Index for 1982-1983	2
Data for February 1983	3-31
Data for January 1983	33-108
Late Data Hourly Equatorial Dst Values Dec 1982	109-111
Part II (Comprehensive Reports)	
Index for 1982-1983	2
Data for September 1982	3-44
Solar Flare Data September 1980	45-91
Miscellaneous Data Active Regions Meudon 18 May-14 June 1982	93-95

DETAILED COVERAGE FOR 1982-83 PUBLISHED IN "SOLAR-GEOPHYSICAL DATA"

Table with columns: CODE, KIND OF OBSERVATION, 1982 FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC, 1983 JAN, FEB. Rows include categories like SOLAR AND INTERPLANETARY PHENOMENA, IONOSPHERIC AND RADIO WAVE PROPAGATION PHENOMENA, and COSMIC RAYS.

Notes:

\*452A 50" listed under 1982 Feb means that the sunspot drawings for Feb 1982 were contained in Solar-Geophysical Data Number 452 - Part I, beginning on page 50.

A = Part I, B = Part II.

----- = no data available.
blank = data not yet received.

\*Solar radio noise bursts observed at Athens, Learmonth, Manila, Palehua and Sagamore Hill during Aug 1979 through Oct 1980 appear in Solar-Geophysical Data, Number 461, Part II, pages 103-2135.

SGD 463 Part I (Prompt)

## FEBRUARY 1983 DATA

## Contents

	Page
<u>Alert Periods</u>	
IUWDS Alert Periods (Advance and Worldwide)	4-7
<u>Daily Solar Indices</u>	
Relative Sunspot Numbers, $R_z$ or $R_i$ , and Daily Solar Flux at 2800 MHz (12 Month Tables)	8
Daily Solar Indices (Sunspot Numbers and Solar Fluxes)	9
Observed and Predicted Solar Activity Indices	10
Smoothed Observed and Predicted Sunspot Numbers	11
Graph of Observed and Predicted Sunspot Numbers	12
Graph and Table of Unsmoothed Monthly Mean Sunspot Numbers 1944 to present	13
<u>Solar Flares</u>	
H-alpha Solar Flares	14-18
Intervals of No Flare Patrol Observation	19
<u>Solar Radio Emission</u>	
169 MHz Solar Interferometric Chart - Nancay	20
3 cm East-West Solar Scans - Toyokawa	21
10.7 cm East-West Solar Scans - ARO, Ottawa	22
21 cm East-West Solar Scans - Fleurs	23
43 cm East-West Solar Scans - Fleurs	24
Selected Fixed Frequency Events	25-27
Selected Solar Noise Bursts ((None available.))	
<u>Solar Wind Measurements</u>	
Interplanetary Scintillations (Data not available -- brush fire destroyed antenna -- expected date to resume operation is late 1983.)	
<u>Inferred Interplanetary Magnetic Field Polarities</u>	28
<u>Mean Solar Magnetic Field</u>	
Stanford Mean Solar Magnetic Field (Chart)	29
Stanford Mean Solar Magnetic Field (Table)	30
<u>Geomagnetic</u>	
Boulder Geomagnetic Substorm Log	31
<u>Spacecraft Observations</u>	
Pioneer XII (Pioneer Venus) Solar Wind (Data no longer available due to NGDC budget reductions.)	

4  
Feb 83

ALERT PERIODS  
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE  
FEBRUARY 1983

PRESTO MESSAGES (THE RAPID REPORT OF MAJOR EVENTS)

-----  
03 FEBRUARY 1983 TOYOKAWA 03/0731Z TENFLARE 3700 FLUX UNITS 03/0540Z IN PROGRESS  
03 FEBRUARY 1983 BOULDER 03/1410Z XRAY EVENT X4/3B S19W08 03/0539Z DURATION 41 MINUTES  
03 FEBRUARY 1983 BOULDER 03/1410Z TENFLARE 2800 FLUX UNITS 03/0612Z DURATION 189 MINUTES  
04 FEBRUARY 1983 BOULDER 04/0330Z PROTON EVENT BEGAN AT 04/0040Z 25 PROTONS/CM2/SEC/STER  $\geq$ 10 MEV  
04 FEBRUARY 1983 BOULDER 04/1855Z A $\geq$ 50 EXPECTED 04-05 FEBRUARY  
05 FEBRUARY 1983 KAKIOKA 05/0100Z MAGSTORM 04/1615Z  
06 FEBRUARY 1983 TOYOKAWA 06/0020Z TENFLARE 100 FLUX UNITS 05/0658Z DURATION 7 MINUTES  
22 FEBRUARY 1983 BOULDER 22/2042Z TENFLARE 186 FLUX UNITS 22/1926Z DURATION 9 MINUTES  
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ALERT PERIODS  
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE  
FEBRUARY 1983

STRATWARM MESSAGES

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31 JANUARY STRATWARM ALERT /TUESDAY/ STRATWARM EXISTS. TEMPERATURE GRADIENT OVER POLAR REGION REVERSED ABOVE 30 KM. STRONG ALEUTIAN ANTICYCLONE SLOPING NORTHWEST WITH HEIGHT TEMPERATURES MODERATING AT STRATOSPHERIC LEVELS. LARGEST CHANGE IN LAST THREE DAYS INVOLVES MOVEMENT OF COLD POLAR LOW FROM EURASIAN ARCTIC TO OVER GREENLAND.  
01 FEBRUARY STRATWARM ALERT /WEDNESDAY/ STRATWARM EXISTS. WARMING CONTINUES WITH TEMPERATURES MODERATING AND ALEUTIAN ANTICYCLONE REMAINING STRONG.  
02 FEBRUARY STRATWARM ALERT /THURSDAY/ STRATWARM EXISTS. FURTHER DECREASE IN WARMING 25-60 KM. ALEUTIANS ANTICYCLONE ALSO DIMINISHED IN INTENSITY.  
03 FEBRUARY STRATWARM ALERT /FRIDAY/ STRATWARM EXISTS. WARMING INTENSIFYING OVER EUROPE AT 30 KM. SLOPING NORTHWEST TO ICELAND AT 50 KM.  
04 FEBRUARY STRATWARM ALERT /SATURDAY/ STRATWARM EXISTS. WARMING AND ANTICYCLONE OVER EUROPE MOVING NORTHEASTWARD EXPECTED TO AMPLIFY ALEUTIAN ANTICYCLONE IN NEXT FEW DAYS.  
07 FEBRUARY STRATWARM ALERT /TUESDAY/ STRATWARM EXISTS. STRONG WARMING 20-60 KM. OVER EUROPE AND SIBERIA TO ALASKA.  
08 FEBRUARY STRATWARM ALERT /WEDNESDAY/ STRATWARM EXISTS. STRONG WARMING CONTINUES 20-60 KM. OVER POLAR REGIONS EUROPE TO SIBERIA TO ALASKA.  
09 FEBRUARY STRATWARM ALERT /THURSDAY/ STRATWARM EXISTS. WARM REGION CONTINUES EURASIAN TO ALASKAN ARCTIC.  
10 FEBRUARY STRATWARM ALERT /FRIDAY/ STRATWARM EXISTS. WARMING CONTINUES. LITTLE CHANGE EURASIAN TO ALASKAN ARCTIC.  
25 FEBRUARY STRATWARM ALERT /SATURDAY/ STRATWARM EXISTS. THIRD EPISODE THIS WINTER OF STRONG WARMING. NEW MAXIMUM OVER CANADIAN TO ASIAN ARCTIC. WARM AIR DOMINANT OVER ARCTIC REGION ABOVE 25 KM.  
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ALERT PERIODS  
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE  
SUMMARY OF THE GEOALERT MESSAGES  
FEBRUARY 1983

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
032	01	31	182	162	017	S08W51	4	0	0		01	S08W51	Q	SOLQUIET
						N05W47	1	0	0	N05W47		E	MAGQUIET	
						N05W24	1	0	0	N05W24		Q	STRATWARM	
						S17W03	0	0	0	S17W03		Q		
						S14E11	3	0	0	S14E11		E		
						S18E23	11	0	0	S18E23		E		
						N21E54	0	0	0	N21E54		Q		
033	02	01	168	168	012	S08W66	0	0	0		02	S08W66	E	SOLQUIET
						N05W61	0	0	0	N05W61		Q	MAGQUIET	
						N06W37	0	0	0	N06W37		Q	STRATWARM	
						S16W14	0	0	0	S16W14		Q		
						S14E01	0	0	0	S14E01		Q		
						S18E10	8	0	0	S18E10		E		
						N21E41	1	0	0	N21E41		Q		
S15E57	1	0	0	S15E57	Q									
034	03	02	139	165	005	S08W82	1	0	0		03	S08W82	Q	SOLQUIET
						N05W78	0	0	0	N05W78		Q	MAGQUIET	
						N06W50	0	0	0	N06W50		Q	STRATWARM	
						S15W29	0	0	0	S15W29		Q		
						S14W15	1	0	0	S14W15		Q		
						S17W04	6	0	0	S17W04		E		
						S17E34	5	0	0	S17E34		Q		
035	04	03	149	150	008	N06W64	0	0	0	PRESTO XRAY EVENT X4/3B S19W08	04	N06W64	Q	SOLALERT
						S15W40	0	0	0	03/0539Z DURATION 41 MINUTES.		S15W40	Q	04/06
						S14W28	2	0	0	TENFLARE 2800 FLUX UNITS 03/		S14W28	Q	MAGALERT
						S17W17	5	0	1	0612Z DURATION 189 MINUTES.		S17W17	E	04/05
						S07E22	0	0	0			S07E22	Q	STRATWARM
						S17E30	2	0	0			S17E30	Q	
						S09E43	0	0	0			S09E43	Q	
036	05	04	156	161	050	N06W79	1	0	0	PRESTO MAGSTORM 04/1615Z.	05	N06E79	Q	SOLALERT
						S13W48	0	0	0	PROTON EVENT BEGAN 04/0040Z		S13W48	Q	05/06
						S13W38	2	0	0	25 PROTONS/CM2/SEC/STER >=10		S13W38	Q	MAGALERT
						S16W31	4	0	0	MEV. A >=50 EXPECTED 04-05		S16W31	E	05/06
						S07E08	1	0	0	FEBRUARY.		S07E08	Q	STRATWARM
						S17E16	5	0	0			S17E16	Q	
S10E26	1	0	0		S10E26	Q								
037	06	05	150	159	075	N07W91	0	0	0	PRESTO TENFLARE 100 FLUX UNITS	06	N07W91	Q	SOLALERT
						S14W60	0	0	0	05/0658Z DURATION 7 MINUTES.		S14W60	Q	06/07
						S13W49	2	0	0			S13W49	Q	MAGALERT
						S17W43	10	2	0			S17W43	A	06/07
						S07W07	1	0	0			S07W07	Q	
						S18E02	8	0	0			S18E02	E	
S10E12	1	0	0		S10E12	Q								
038	07	06	141	157	050	S14W73	0	0	0		07	S14W73	Q	SOLALERT
						S13W61	2	0	0			S13W61	Q	07/08
						S16W55	2	0	0			S16W55	A	MAGNIL
						N21W30	0	0	0			N21W30	Q	
						S07W18	0	0	0			S07W18	Q	
						S17W11	2	0	0			S17W11	A	
S09E01	0	0	0		S09E01	Q								
039	08	07	084	146	040	S17W70	3	0	0		08	S17W70	E	SOLALERT 08
						S07W31	1	0	0			S07W31	Q	MAGQUIET
						S18W25	0	0	0			S18W25	E	STRATWARM
						S10W13	1	0	0			S10W13	Q	
040	09	08	111	137	018	S17W81	3	0	0		09	S17W81	Q	SOLNIL
						S17E62	0	0	0			S17E62	Q	MAGQUIET
						S07W42	0	0	0			S07W42	Q	STRATWARM
						S18W37	0	0	0			S18W37	Q	

6  
Feb 83

ALERT PERIODS  
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE  
SUMMARY OF THE GEOALERT MESSAGES FEBRUARY 1983

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
						S13W30	0	0	0			S13W30	Q	
						S09W23	2	0	0			S09W23	Q	
						S12W07	0	0	0			S12W07	Q	
041	10	09	107	125	011	S18W94	4	0	0		10	S18W94	Q	SOLQUIET
						S18W50	0	0	0			S18W50	Q	MAGQUIET
						S12W42	0	0	0			S12W42	Q	STRATWARM
						S08W36	1	0	0			S08W36	Q	
						S04W15	0	0	0			S04W15	Q	
						S18E48	0	0	0			S18E48	Q	
						N03E66	0	0	0			N03E66	Q	
						S12E71	0	0	0			S12E71	Q	
042	11	10	034	160	019	S18W64	0	0	0		11	S18W64	Q	SOLQUIET
						N03E53	0	0	0			N03E53	Q	MAGQUIET STRATWARM
043	12	11	032	110	014	S18W77	0	0	0		12	S18W77	Q	SOLQUIET
						N03W40	0	0	0			N03W40	Q	MAGQUIET
044	13	12	025	103	030	S20W91	1	0	0		13	S20W91	Q	SOLQUIET
						N03E26	0	0	0			N03E26	Q	MAGQUIET
045	14	13	016	098	030	N03E14	0	0	0		14	N03E14	Q	SOLQUIET MAGALERT 15/16
046	15	14	015	094	024	N03E01	0	0	0		15	N03E01	Q	SOLQUIET MAGALERT 15/XX
047	16	15	034	091	021	N16W45	0	0	0		16	N16W45	Q	SOLQUIET
						N03W12	0	0	0			N03W12	Q	MAGALERT
						S17E51	0	0	0			S17E51	Q	16/XX
048	17	16	048	092	019	N14W58	0	0	0		17	N14W58	Q	SOLQUIET
						N03W25	0	0	0			N03W25	Q	MAGNIL
						S17E38	1	0	0			S17E38	Q	
						S11E75	0	0	0			S11E75	Q	
049	18	17	038	094	014	S17E28	0	0	0		18	S17E28	Q	SOLQUIET
						S12E62	0	0	0			S12E62	Q	MAGQUIET
						S09E80	0	0	0			S09E80	Q	
050	19	18	046	100	012	S17E14	7	0	0		19	S17E14	E	SOLQUIET
						S12E49	0	0	0			S12E49	Q	MAGQUIET
						S09E66	0	0	0			S09E66	Q	
051	20	19	054	097	012	S17W33	0	0	0		20	S17W33	Q	SOLQUIET
						S16E01	0	0	0			S16E01	Q	MAGQUIET
						S12E35	0	0	0			S12E35	Q	
						S09E53	0	0	0			S09E53	Q	
052	21	20	050	100	025	S15W15	2	0	0		21	S15W15	Q	SOLQUIET
						S12E22	0	0	0			S12E22	Q	MAGQUIET
						S09E40	0	0	0			S09E40	Q	
						N14E63	0	0	0			N14E63	Q	
053	22	21	062	104	026	S16W29	0	0	0		22	S16W29	Q	SOLQUIET
						S13E08	0	0	0			S13E08	Q	MAGQUIET
						S10E18	0	0	0			S10E18	Q	
						S09E27	0	0	0			S09E27	Q	
						N14E51	0	0	0			N14E51	Q	
054	23	22	061	109	017	S12W05	0	0	0	PRESTO TENFLARE 186 FLUX UNITS	23	S12W05	Q	SOLALERT
						S09E04	0	0	0	22/1926Z DURATION 9 MINUTES		S09E04	Q	23/XX
						S08E13	1	0	0			S08E13	Q	MAGQUIET
						N15E38	0	0	0			N15E38	Q	

ALERT PERIODS  
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE  
SUMMARY OF THE GEOALERT MESSAGES  
FEBRUARY 1983

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
						N22E42	0	0	0			N22E42	Q	
055	24	23	071	114	013	S13W17	0	0	0		24	S13W17	Q	SOLNIL
						S08E01	0	0	0			S08E01	Q	MAGQUIET
						N15E24	0	0	0			N15E24	Q	
						N17E68	0	0	0			N17E68	Q	
						S16E75	1	0	0			S16E75	E	
056	25	24	078	117	012	S08W12	0	0	0		25	S08W12	Q	SOLQUIET
						N14E10	0	0	0			N14E10	Q	MAGQUIET
						N17E57	0	0	0			N17E57	Q	
						S16E58	3	0	0			S16E58	E	
						S18E74	0	0	0			S18E74	Q	
057	26	25	098	123	006	S08W25	0	0	0		26	S08W25	Q	SOLQUIET
						S08W08	0	0	0			S08W08	Q	MAGQUIET
						N13W03	1	0	0			N13W03	Q	STRATWARM
						N16E04	0	0	0			N16E04	Q	
						N16E43	1	0	0			N16E43	Q	
						S16E47	2	0	0			S16E47	Q	
						S18E62	0	0	0			S18E62	Q	
058	27	26	110	129	004	S08W39	0	0	0		27	S08W39	Q	SOLQUIET
						S08W23	0	0	0			S08W23	Q	MAGQUIET
						N13W16	1	0	0			N13W16	Q	
						N16W09	0	0	0			N16W09	Q	
						N16E30	1	0	0			N16E30	Q	
						S16E34	0	0	0			S16E34	E	
						S18E48	0	0	0			S18E48	Q	
						S15E80	0	0	0			S15E80	Q	
059	28	27	148	141	007	S11W71	5	0	0		28	S11W71	Q	SOLQUIET
						S08W52	0	0	0			S08W52	Q	MAGQUIET
						S08W37	1	0	0			S08W37	Q	
						N12W30	0	0	0			N12W30	Q	
						N16W21	0	0	0			N16W21	Q	
						S15E13	0	0	0			S15E13	Q	
						N16E14	1	0	0			N16E14	Q	
						S15E21	4	0	0			S15E21	Q	
						S18E35	0	0	0			S18E35	E	
						S16E69	3	0	0			S16E69	Q	
060	01	28	148	140	007	S10W81	1	0	0		01	S10W81	Q	SOLQUIET
						S08W66	0	0	0			S08W66	Q	MAGQUIET
						S08W51	0	0	0			S08W51	Q	
						N12W45	4	0	0			N12W45	Q	
						S15W01	0	0	0			S15W01	Q	
						N15E02	0	0	0			N15E02	Q	
						S15E09	6	0	0			S15E09	Q	
						S19E23	0	0	0			S19E23	Q	
						S16E56	4	0	0			S16E56	Q	
						S20E61	3	0	0			S20E61	Q	

NO=MESSAGE SERIAL NUMBER, DI=DATE OF ISSUE, DO=DATE OF OBSERVATION, WOLF= WOLF NUMBER, 10CM= 10CM SOLAR FLUX, A=A INDEX, LOC=LOCATION LAT-LONG, TOTAL=TOTAL NUMBER OF FLARES, M= NUMBER OF M FLARES, X=NUMBER OF X FLARES, DA= DATE OF FORECAST, DE=DESCRIPTION, Q=QUIET, E=ERUPTIVE, A=ACTIVE, P=PROTON.



RELATIVE SUNSPOT NUMBERS

International\* (R<sub>I</sub>)

Day	1982 Final		May	Jun	Jul	Aug	Sep	1982 Prov			1983 Prov	
	Mar	Apr						Oct	Nov	Dec	Jan	Feb
01	168	145	63	70	50	55	115	132	80	88	68	94
02	174	115	57	83	41	68	124	164	88	135	77	85
03	175	151	46	94	33	68	146	143	75	124	55	88
04	177	137	58	104	42	81	176	120	100	137	63	94
05	163	112	63	111	39	97	160	109	100	137	82	82
06	165	117	64	108	32	128	141	55	76	174	110	71
07	146	130	69	115	33	144	117	54	106	175	109	72
08	140	131	89	127	42	150	115	55	82	184	126	63
09	116	132	47	142	61	161	94	54	124	152	100	39
10	122	138	53	147	110	155	81	88	109	166	83	23
11	119	152	58	138	146	157	86	87	112	171	90	21
12	135	142	75	144	187	138	78	92	83	194	77	18
13	155	133	78	139	219	113	81	98	98	172	94	11
14	153	136	58	137	222	100	104	88	116	160	92	10
15	140	127	52	125	246	100	129	71	116	166	92	26
16	156	122	69	128	163	86	133	65	100	130	89	17
17	180	108	76	136	272	93	127	54	108	112	102	22
18	168	91	89	134	270	105	107	39	117	102	86	32
19	167	87	110	134	234	97	117	56	122	79	95	35
20	160	93	112	139	192	77	104	70	118	63	81	32
21	153	91	98	143	138	79	102	91	131	98	74	39
22	146	109	121	146	99	90	95	100	141	88	73	29
23	144	138	107	116	74	71	97	128	120	96	64	40
24	122	145	110	112	27	79	109	145	96	100	58	44
25	152	149	88	92	25	101	118	134	75	112	75	61
26	147	150	117	94	29	98	138	135	73	116	77	70
27	182	126	130	49	22	115	133	131	71	126	70	88
28	179	90	119	36	19	132	132	103	74	108	89	98
29	169	85	112	32	23	134	144	94	71	98	99	
30	162	79	77	38	38	144	160	96	72	94	101	
31	132		82		60	120		73		62	110	
Mean	154	122	82	110	106	108	119	94	98	126	86	50

\*International sunspot numbers have replaced the Zurich values since January 1981. The yearly mean sunspot number equaled 140.4 in 1981.

DAILY SOLAR FLUX AT 2800 MHz (10.7 CM)

Algonquin Radio Observatory, Ottawa  
(Flux Adjusted to 1 AU)

Day	1982		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	1983	
	Mar	Apr									Jan	Feb
01	231.3	172.2*	151.7	134.2	106.5	123.4	184.3*	205.2	159.6	167.8	131.4	162.6
02	228.3	172.0*	147.4	135.1	106.9	138.2*	168.7*	209.4	154.5	166.3	131.4	156.5*
03	230.1	169.9	147.7	141.5	109.4	153.5*	171.0*	197.0	147.4	181.6	136.2	145.5
04	238.3*	158.2	144.7	158.2*	111.5	167.3	188.1*	182.3	143.4	194.5	138.2	156.8
05	245.4*	159.9*	148.7	156.6*	114.1	180.9	179.4	163.9	136.4	195.9*	154.6	154.3*
06	230.0*	165.2	153.0	149.6*	121.3	201.2	172.1	151.9	142.1	210.4	161.6*	152.3
07	228.3	164.0*	151.0	158.6*	128.2*	219.6	176.8	140.2	142.3	244.3	163.3	142.2
08	207.1*	162.1*	150.8	167.3	150.3*	217.5*	178.5	136.9	144.8	241.7*	155.9*	133.3
09	192.2	167.3*	139.8	177.4	176.6*	212.5	179.2	137.4	147.5	258.6	150.0	121.9
10	178.9*	177.1*	130.7	196.0*	203.5*	209.5	165.6	134.8	152.9	273.5*	144.2	113.4
11	178.2	178.7*	132.3	224.2	226.4*	205.0*	158.3	137.3	154.1	259.3*	139.3	106.9
12	181.2	177.5*	132.3	238.3*	239.7*	195.2*	152.5*	136.4	164.9	251.1	135.7	99.8
13	185.5	170.9	129.8	240.2	252.6*	182.9*	151.3	143.9	161.2	239.0	135.1	95.5
14	201.3	157.9	132.2	240.8	269.2*	176.8	147.4	140.4	159.5	235.6	137.2	91.7
15	207.6*	152.2	132.1	235.8	274.0	173.0	149.0*	134.1	157.0*	221.9	141.0	88.5
16	227.7	148.2	139.0	210.6*	269.4*	161.4	147.3	129.8	163.3	213.2*	140.2	89.7
17	230.4	145.9*	142.2*	206.0*	273.3	165.1	147.0*	130.1	158.0	200.5*	138.0	91.9
18	226.8	147.0	146.8	200.7*	247.2*	166.4*	145.2	132.8	170.2*	186.5	134.8	97.2
19	219.7*	145.1	155.9	207.5	234.7	159.2	142.6*	136.7	182.3	176.8*	127.4	94.6
20	217.0	144.2	155.6*	207.1	196.5	144.7	146.9	146.2	189.2	159.2	120.5	97.3
21	212.4	145.2	165.4*	210.7	173.7*	138.6	145.4	161.4	200.9	149.4	116.1	101.6
22	213.7	156.9*	158.8	197.2*	149.5*	138.8	146.2	168.2	231.1*	150.1*	113.5	106.2
23	202.4	175.2	155.7*	187.3	128.5	141.2	152.6*	177.3	196.1	157.0*	115.4	112.0
24	189.0	181.0	144.8*	168.2	117.8	142.9	165.4*	190.9	172.9	166.8	114.1	114.3
25	189.9	182.6*	145.7	159.1*	108.2	158.5	170.3	196.8	164.8	170.6	122.7	120.3
26	192.8*	178.3	158.0	142.3	102.1	166.4	187.3	193.5	168.8*	168.7	132.6	126.2
27	195.4*	167.3	171.5*	127.6	97.8	180.4	191.4	187.7	158.6	166.2	133.6	138.3
28	200.6	161.0*	171.3*	123.1	96.4	181.4	196.9	181.4	160.3*	157.0	140.6	137.6
29	198.0	155.6	170.9*	111.7	97.5	183.4	204.6	170.9	161.4	147.3	148.9	
30	194.5*	149.8*	142.8	108.5	112.4	174.5	202.4	166.7	164.8	142.5	154.8	
31	184.1		136.7		114.4	175.0*		165.1		134.4	161.9	
Mean	208.3	162.9	147.9	177.4	164.8	172.1	167.1	160.9	163.7	93.2	137.7	119.6

\*Adjusted for burst in progress at time of measurement.

DAILY SOLAR INDICES

February 1983

Day	Julian Day	Bartels Cycle Day	Sunspot Numbers		Obs Flux Ottawa (2800)	Solar Flux Adjusted to 1 Astronomical Unit†								
			R <sub>I</sub>	R <sub>A</sub> '		AFGL (15400)	AFGL (8800)	AFGL (4995)	Ottawa (2800)	AFGL (2695)	AFGL (1415)	AFGL (606)	AFGL (410)	AFGL (245)
01	32	12	94	109	167.5	---	---	---	162.6	---	---	---	---	---
02	33	13	85	99	161.2*	544	301	192	156.5*	161	141	137	55	30
03	34	14	88	92	149.8	542	295	181	145.5	141	129	87	37	7
04	35	15	94	96	161.3	557	321	191	156.8	159	139	153	60	28
05	36	16	82	90	158.7*	---	328	196	154.3*	148	140	---	---	---
06	37	17	71	71	156.7	---	300	187	152.3	154	124	---	---	---
07	38	18	72	63	146.1	---	---	---	142.2	---	---	---	---	---
08	39	19	63	52	137.0	492	274	153	133.3	128	117	141	67	48
09	40	20	39	41	125.3	582	271	151	121.9	128	112	131	53	30
10	41	21	23	28	116.4	571	264	138	113.4	106	100	102	39	---
11	42	22	21	23	109.8	527	263	140	106.9	111	117	111	40	22
12	43	23	18	19	102.5	---	---	---	99.8	---	---	---	---	---
13	44	24	11	8	97.9	563	255	127	95.5	101	93	85	31	4
14	45	25	10	9	94.1	553	247	123	91.7	87	82	78	29	12
15	46	26	26	11	90.8	553	242	120	88.5	80	80	80	30	10
16	47	27	17	14	91.9	547	245	121	89.7	84	80	83	30	10
17	48	1	22	28	94.2	552	248	125	91.9	87	85	83	29	11
18	49	2	32	35	99.5	558	253	130	97.2	100	86	88	30	11
19	50	3	33	35	96.8	552	247	127	94.6	87	85	87	32	11
20	51	4	32	37	99.5	558	252	129	97.3	96	90	90	32	12
21	52	5	39	40	103.9	556	249	132	101.6	99	88	90	30	10
22	53	6	29	34	108.6	569	258	136	106.2	95	94	86	32	11
23	54	7	40	42	114.4	555	261	139	112.0	102	96	92	32	11
24	55	8	44	55	116.8	552	263	141	114.3	109	100	88	31	12
25	56	9	61	72	122.8	571	261	145	120.3	111	108	97	35	13
26	57	10	70	79	128.8	567	273	149	126.2	115	112	82	34	13
27	58	11	88	93	141.0	578	274	162	138.3	128	132	89	41	82
28	59	12	98	106	140.3	572	262	159	137.6	128	121	93	38	15
Mean			50	53	122.6	555	268	147	119.6	114	106	98	37	23

\*Adjusted for burst in progress at time of measurement.

Equipment problems produced the gaps shown here in the AFGL Sagamore Hill observations. The International and American sunspot numbers represent provisional values. Numbers in parentheses in the column headings denote frequencies in MHz.

OBSERVED AND PREDICTED SOLAR ACTIVITY INDICES

Date	SUNSPOT NUMBERS						2800 MHz FLUX Adjusted to 1 AU Sa	
	Rz or R <sub>I</sub>		Ra		Rs		Monthly Mean	Smoothed
	Monthly Mean	Smoothed	Monthly Mean	Smoothed	Monthly Mean	Smoothed		
Mar 80	126.2	161	107.9	153	117.8	153	166.5	200
Apr	164.1	159	138.5	151	164.0	152	209.3	198
May	179.7	156	172.3	149	185.4	151	229.1	197
Jun	157.3	155	153.6	149	153.2	151	199.3	198
Jul	136.3	153	136.0	144	144.1	151	190.8	197
Aug	135.4	150	133.0	144	121.9	150	170.3	196
Sep	155.0	150	150.0	146	138.8	152	185.9	198
Oct	164.7	150	160.8	149	157.1	154	202.9	200
Nov	147.9	148	149.9	149	168.5	153	213.4	199
Dec	174.4	143	167.5	145	174.3	150	218.8	196
Jan 81	114.0	140	115.4	144	120.5	149	169.0	195
Feb	141.3	142	143.7	146	153.5	152	199.5	198
Mar	135.5	143	149.2	149	157.5	156	203.2	202
Apr	156.4	143	169.2	149	180.7	158	224.7	204
May	127.5	143	141.3	149	152.8	159	198.9	204
Jun	90.9	142	99.0	147	112.9	158	161.9	203
Jul	143.8	140	154.3	146	152.1	157	198.2	203
Aug	158.7	141	170.4	147	182.1	158	226.0	203
Sep	167.3	143	174.5	148	177.7	158	221.9	204
Oct	162.4	142	157.0	146	178.6	156	222.8	202
Nov	137.5	139	138.8	142	157.6	151	203.3	197
Dec	150.1	138	145.0	140	155.5	149	201.4	195
Jan 82	111.2	137	110.4	139	124.2	148	173.4	195
Feb	163.6	133	161.0	134	163.6	144	208.9	191
Mar	153.8	129	155.5	130	163.0	139	208.3	186
Apr	122.0	124*	121.9	124	113.9	134	162.9	182
May	82.2	119*	82.6	120	97.7	129	147.9	177
Jun	110.4	117*	113.5	118	129.6	127	177.4	175
Jul	106.1	115*	113.3	117	116.0	125	164.8	174
Aug	107.6	109*	110.5	111	123.9	120	172.1	168
Sep	118.8	104(+ 4)*	117.8	105	118.5	113	167.1	---
Oct	94.3 <sup>†</sup>	97(+ 4)*	90.1	98	111.8	105	160.9	---
Nov	98.5 <sup>†</sup>	92(+ 5)*	93.2	93	114.8	100	163.7	---
Dec	126.4 <sup>†</sup>	88(+ 7)*	145.0	89	146.7	96	193.2	---
Jan 83	85.8 <sup>†</sup>	84(+ 8)*	82.8	84	86.7	91	137.7	---
Feb	50.1 <sup>†</sup>	81(+10)*	---	81	67.2	87	119.6	---
Mar	---	79(+11)*	---	80	---	85	---	---
Apr	---	77(+13)*	---	78	---	83	---	---
May	---	74(+15)*	---	75	---	79	---	---
Jun	---	71(+18)*	---	71	---	76	---	---
Jul	---	69(+19)*	---	70	---	74	---	---
Aug	---	68(+21)*	---	69	---	73	---	---

\*An asterisk denotes either a value of the observed 12-month running mean or a predicted 12-month average that is based on preliminary observations of the international relative sunspot number (R<sub>I</sub>). Parentheses enclose the 90% confidence limits. Shaded boxes enclose the most recent smoothed values; boxes not shaded enclose predicted values. Ra is the new symbol for R<sub>A</sub><sup>1</sup>. All tabulated entries of Ra are final values.

<sup>†</sup>R<sub>I</sub> replaces R<sub>Z</sub> as of January 1981.

## SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS FOR CYCLE 21

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1976	15	13	12	13	13	12	13	14	14	13	14	15
1977	17	18	20	22	24	26	29	33	39	46	52	57
1978	61	65	70	77	83	89	97	104	108	111	113	118
1979	124	131	137	141	147	153	155	155	156	158	162	165*
1980	164	163	161	159	156	155	153	150	150	150	148	143
1981	140	142	143	143	143	142	140	141	143	142	139	138
1982	137	133	129	124	119	117	115	109	104 ( 4)	97 ( 4)	92 ( 5)	88 ( 7)
1983	84 ( 8)	81 (10)	79 (11)	77 (13)	74 (15)	71 (18)	69 (19)	68 (21)	67 (23)	67 (24)	67 (24)	66 (25)
1984	65 (25)	62 (26)	58 (26)	54 (27)	51 (28)	51 (30)	50 (30)	48 (30)	46 (30)	44 (29)	42 (28)	40 (27)
1985	38 (27)	38 (26)	37 (26)	37 (25)	36 (25)	34 (24)	32 (23)	31 (22)	31 (22)	30 (23)	29 (23)	29 (24)
1986	28 (24)	27 (24)	25 (24)	24 (23)	22 (22)	20 (22)	18 (21)	16 (20)	16 (18)	15 (17)	15 (16)	15 (14)

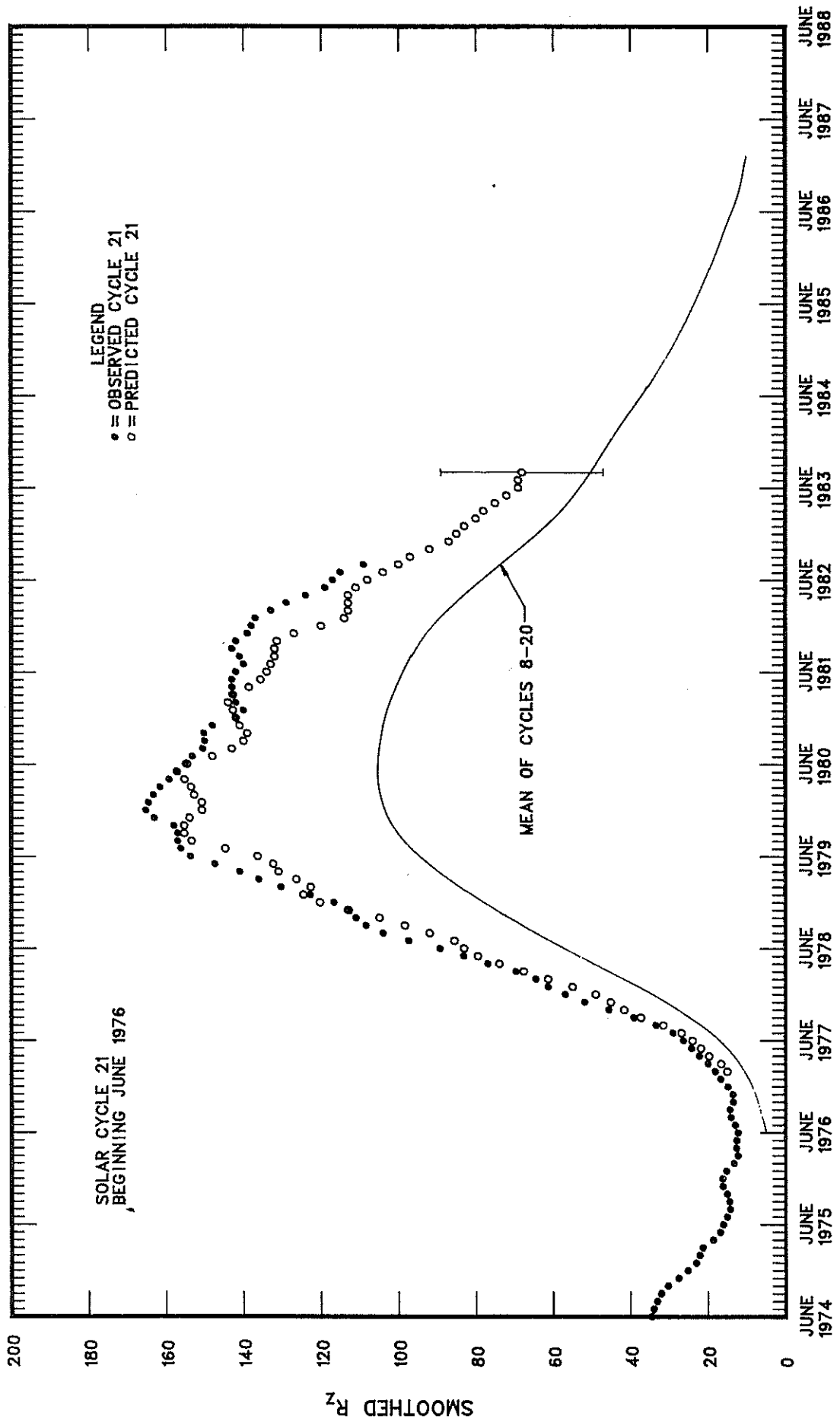
For the current solar cycle, this table gives observed smoothed sunspot numbers up to the one calculated from the most recently measured monthly mean. These smoothed observed values are based on final monthly mean Zurich numbers through 1980, on final international numbers through September 1982, and on provisional monthly mean international numbers thereafter. Some table entries after the June 1976 number will change slightly, when we incorporate final data for 1982.

The entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 10 in the February 1982 edition of the "Solar-Geophysical Data" supplement.) By adding to and subtracting from each prediction the number in parentheses, one generates the 90% confidence interval. Consider, for example, the July 1983 prediction tabulated above. There exists a 90% chance that in July 1983 the actual smoothed sunspot number will fall somewhere between 50 and 88.

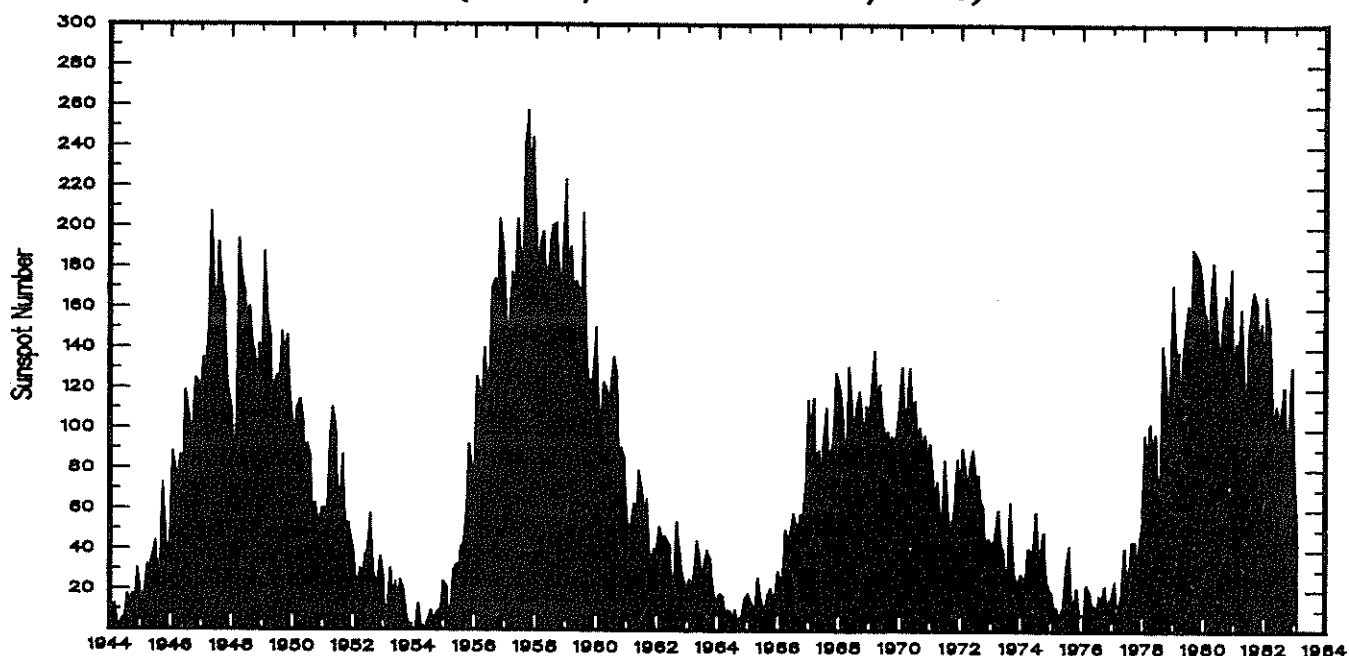
THE MCNISH-LINCOLN PREDICTION METHOD GENERATES MEANINGFUL ESTIMATES OF SMOOTHED SUNSPOT NUMBERS FOR NO MORE THAN 12 MONTHS AHEAD. Beyond a year the predictions regress rapidly toward the mean of all 13 cycles of data used in the computation. Furthermore, the method is very sensitive to the date defined as the beginning of the current sunspot cycle, that is, to the date of the most recent sunspot minimum. In "Solar-Geophysical Data," issues 390-401, we based the current cycle predictions on March 1976 as the end of cycle 20 and the onset of the new cycle 21. Later studies, including one published by M. Waldmeier, showed that June 1976 was more appropriately the minimum epoch. We therefore generated this table using the June 1976 date.

\*MAXIMUM OF SUNSPOT CYCLE 21. The maximum smoothed sunspot number occurred in December 1979.

# OBSERVED AND ONE-YEAR-AHEAD PREDICTED SMOOTHED SUNSPOT NUMBERS



MONTHLY MEAN SUNSPOT NUMBERS  
(January 1944 - February 1983)



MONTHLY MEAN SUNSPOT NUMBERS

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1944	3.7	0.5	11.0	0.3	2.5	5.0	5.0	16.7	14.3	16.9	10.8	28.4
1945	18.5	12.7	21.5	32.0	30.6	36.2	42.6	25.9	34.9	68.8	46.0	27.4
1946	47.6	86.2	76.6	75.7	84.9	73.5	116.2	107.2	94.4	102.3	123.8	121.7
1947	115.7	133.4	129.8	149.8	201.3	163.9	157.9	188.8	169.4	163.6	128.0	116.5
1948	108.5	86.1	94.8	189.7	174.0	167.8	142.2	157.9	143.3	136.3	95.8	138.0
1949	119.1	182.3	157.5	147.0	106.2	121.7	125.8	123.8	145.3	131.6	143.5	117.6
1950	101.6	94.8	109.7	113.4	106.2	83.6	91.0	85.2	51.3	61.4	54.8	54.1
1951	59.9	59.9	55.9	92.9	108.5	100.6	61.5	61.0	83.1	51.6	52.4	45.8
1952	40.7	22.7	22.0	29.1	23.4	36.4	39.3	54.9	28.2	23.8	22.1	34.3
1953	26.5	3.9	10.0	27.8	12.5	21.8	8.6	23.5	19.3	8.2	1.6	2.5
1954	0.2	0.5	10.9	1.8	0.8	0.2	4.8	8.4	1.5	7.0	9.2	7.6
1955	23.1	20.8	4.9	11.3	28.9	31.7	26.7	40.7	42.7	58.5	89.2	76.9
1956	73.6	124.0	118.4	110.7	136.6	116.6	129.1	169.6	173.2	155.3	201.3	192.1
1957	165.0	130.2	157.4	175.2	164.6	200.7	187.2	158.0	235.8	253.8	210.9	239.4
1958	202.5	164.9	190.7	196.0	175.3	171.5	191.4	200.2	201.2	181.5	152.3	187.6
1959	217.4	143.1	185.7	163.3	172.0	168.7	149.6	199.6	145.2	111.4	124.0	125.0
1960	146.3	106.0	102.2	122.0	119.6	110.2	121.7	134.1	127.2	82.8	89.6	85.6
1961	57.9	46.1	53.0	61.4	51.0	77.4	70.2	55.9	63.6	37.7	32.6	40.0
1962	38.7	50.3	45.6	46.4	43.7	42.0	21.8	21.8	51.3	39.5	26.9	23.2
1963	19.8	24.4	17.1	29.3	43.0	35.9	19.6	33.2	38.8	35.3	23.4	14.9
1964	15.3	17.7	16.5	8.6	9.5	9.1	3.1	9.3	4.7	6.1	7.4	15.1
1965	17.5	14.2	11.7	6.8	24.1	15.9	11.9	8.9	16.8	20.1	15.8	17.0
1966	28.2	24.4	25.3	48.7	45.3	47.7	56.7	51.2	50.2	57.2	57.2	70.4
1967	110.9	93.6	111.8	69.5	86.5	67.3	91.5	107.2	76.8	88.2	94.3	126.4
1968	121.8	111.9	92.2	81.2	127.2	110.3	96.1	109.3	117.2	107.7	86.0	109.8
1969	104.4	120.5	135.8	106.8	120.0	106.0	96.8	98.0	91.3	95.7	93.5	97.9
1970	111.5	127.8	102.9	109.5	127.5	106.8	112.5	93.0	99.5	86.6	95.2	83.5
1971	91.3	79.0	60.7	71.8	57.5	49.8	81.0	61.4	50.2	51.7	63.2	82.2
1972	61.5	88.4	80.1	63.2	80.5	88.0	76.5	76.8	64.0	61.3	41.6	45.3
1973	43.4	42.9	46.0	57.7	42.4	39.5	23.1	25.6	59.3	30.7	23.9	23.3
1974	27.6	26.0	21.3	40.3	39.5	36.0	55.8	33.6	40.2	47.1	25.0	20.5
1975	18.9	11.5	11.5	5.1	9.0	11.4	28.2	39.7	13.9	9.1	19.4	7.8
1976	8.1	4.3	21.9	18.8	12.4	12.2	1.9	16.4	13.5	20.6	5.2	15.3
1977	16.4	23.1	8.7	12.9	18.6	38.5	21.4	30.1	44.0	43.8	29.1	43.2
1978	51.9	93.6	76.5	99.7	82.7	95.1	70.4	58.1	138.2	125.1	97.9	122.7
1979	166.6	137.5	138.0	101.5	134.4	149.5	159.4	142.2	188.4	186.2	183.3	176.3
1980	159.6	155.0	126.2	164.1	179.9	157.3	136.3	135.4	155.0	164.7	147.9	174.4
1981	114.0	141.3	135.5	156.4	127.5	90.9	143.8	158.7	167.3	162.4	137.5	150.1
1982	111.2	163.6*	153.8	122.0	82.2	110.4	106.1	107.6	118.8	94.3*	98.5*	126.4*
1983	85.8*	50.1*										

\*Provisional

14  
Feb 83

H - ALPHA SOLAR FLARES

FEBRUARY 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks	
															Time (UT)	Apparent (10 <sup>-6</sup> Disk)	Corr (Sq Deg)		
[	LEAR	01	0150	0151	0159	S16 E24	4077	02	2.9	9	SF	C 1.2	3	C		28			
	PALE	01	0150	0151	0155	S17 E23	4077	02	2.8	5	SF	C 1.2	3	C		30			
[	LEAR	01	0203	0215	0226	S18 E23	4077	02	2.8	23	SN	C 2.0	3	C		26			F
	MANI	01	0203	0217	0226	S16 E24		02	2.9	23	SN		1	V		35	.4		
	PALE	01	0205	0217	0228	S19 E22	4077	02	2.8	23	SN	C 2.0	3	C		44			
	LEAR	01	0255	0255	0304	S09 E63	4079	02	5.9	9	SF		3	C		23			
[	LEAR	01	0648	0648	0816	S20 E17	4077	02	2.6	88	SN		3	C		31			K
	LEAR	01	0648	0737	0816	S20 E17	4077	02	2.6	88	1N	C 5.6	3	C		298			ZFK
	GOES	01	1056	1059	1101					5	C	2.1							
	RAMY	01	1220E	1220U	1304	S18 E19	4077	02	3.0	44D	SN	C 2.1	3	C		36			F
	GOES	01	1333	1336	1338		4077			5	C	2.1							
[	RAMY	01	1338	1339	1402	S18 E16	4077	02	2.8	24	SF		3	C		28			K
	RAMY	01	1338	1346	1402	S18 E16	4077	02	2.8	24	SF		3	C		24			K
[	HOLL	01	1633E	1640	1726	S19 E13	4077	02	2.7	53D	SF		3	C		39			K
	HOLL	01	1633E	1707U	1726	S19 E13	4077	02	2.7	53D	SN	C 1.0	3	C		100			F K
	GOES	01	1750	1825	1829					39	C	2.0							
	HOLL	01	1808E	1809U	1913	S17 E25		02	3.7	65D	SF	C 2.0	3	C		54			FS
[	HOLL	01	1833	1835	2032D	S19 E13	4077	02	2.8	119D	SN		3	C		31			K
	HOLL	01	1833	1903	2032D	S19 E13	4077	02	2.8	119D	SB	C 5.1	3	C		79			ZFK
[	MANI	02	0042	0043	0051	S10 W67		01	28.0	9	SF		1	V		25	.5		
	PALE	02	0042	0043	0050	S12 W66	4072	01	28.1	8	SF		3	C		28			
	LEAR	02	0044	0045	0051	S10 W68	4072	01	27.9	7	SF		3	C		23			
	LEAR	02	0151	0153	0159	S17 E11	4077	02	2.9	8	SF		3	C		39			
	LEAR	02	0310	0310	0315	S17 E11	4077	02	3.0	5	SF		3	C		24			
	GOES	02	0458	0501	0505					7	C	1.0							
	GOES	02	0657	0700	0708					11	C	1.0							
	GOES	02	0927	0931	0933					6	C	1.0							
	LEAR	02	0954	0954	0958	S17 E07	4077	02	2.9	4	SF	C 1.0	3	C		29			F
	MONT	02	1042	1044	1048	S17 E50		02	6.2	6	SF			C	1044	50			E
	GOES	02	1046	1055	1108					22	C	2.2							
	GOES	02	1227	1230	1232					5	C	1.9							
	GOES	02	1357	1400	1402					5	C	2.4							
	GOES	02	1459	1501	1505					6	C	1.0							
	GOES	02	1541	1548	1551					10	C	1.1							
	HOLL	02	1557	1612	1636	S14 W09	4075	02	2.0	39	SF		3	C		78			F
	HOLL	02	1655	1658	1700	S16 E46	4079	02	6.2	5	SF		3	C		20			
	HOLL	02	1733	1740	1800	S20 E46	4079	02	6.3	27	SF		3	C		35			
	HOLL	02	1808	1809	1815	S21 E46	4079	02	6.3	7	SF		3	C		18			
[	HOLL	02	1813	1814	1823	S18 W00	4077	02	2.8	10	SF		3	C		23			F
	PALE	02	1814	1826	1830	S19 W02	4077	02	2.6	16	SF		3	C		48			
[	HOLL	02	1823	1832U	1851	S20 E47	4079	02	6.4	28	SN		3	C		22			
	PALE	02	1824	1828	1831	S15 E45	4079	02	6.2	7	SF		3	C		20			
	PALE	02	1843	1844	1856	S19 W01	4077	02	2.7	13	SF		3	C		48			
	HOLL	02	2021	2022	2033	S16 E01	4077	02	2.9	12	SN	C 1.0	3	C		65			F
[	HOLL	02	2200E	2223	2236	S20 E44	4079	02	6.3	36D	SN	C .9	3	C		42			
	PALE	02	2221	2223	2227	S16 E42	4079	02	6.1	6	SF		3	C		25			
	LEAR	03	0126	0129	0141	S18 W06	4077	02	2.6	15	SN	C 1.1	3	C		55			F
	GOES	03	0202	0205	0208					6	C	1.1							
	PEKG	03	0235	0244	0330D	S19 W07		02	2.6	55D	SF			P	0244	42	.2		D
[	PALE	03	0257	0319	0330	S19 W07	4077	02	2.6	33	SF	C 1.3	3	C		49			F
	LEAR	03	0302	0304	0316	S20 W07	4077	02	2.6	14	SF		3	C		27			F
	LEAR	03	0350	0351	0358	S13 W14	4075	02	2.1	8	SF		3	C		29			
	LEAR	03	0540	0550	0659	S14 W15	4075	02	2.1	79	1N		3	C		220			UF
	LEAR	03	0543	0619	0842	S19 W08	4077	02	2.6	179	3B	X 4.1	3	C		1432			ZU
	PEKG	03	0545E	0548	0614	S13 W16		02	2.0	29D	SN			P	0548	168	1.8		EU
[	PEKG	03	0546	0612	0724	S17 W07		02	2.7	98	2B	X 4.1		C	0612	799	8.4		FU
	MANI	03	0609E	0613U	0618D	S17 W07		02	2.7	9D	SB		1	V		750	8.0		FZ
	LEAR	03	0834	0836	0844	S19 E37	4079	02	6.2	10	SF		3	C		38			
	LEAR	03	0846	0846	0851	S15 E37	4079	02	6.2	5	SF		3	C		47			F
	GOES	03	1302	1305	1307					5	C	1.8							
	GOES	03	1424	1427	1432					8	C	1.6							
	GOES	03	1826	1832	1843					17	C	5.7							
	RAMY	03	1839E	1839	1840D	S17 W09	4077	02	3.1	1D	1N	C 2.7	3	C		520			EF
	GOES	03	1942	1946	1948					6	C	2.2							
[	LEAR	04	0014	0016	0038	N08 W66	4071	01	30.1	24	SF		3	C		61			F
	MANI	04	0018E	0018U	0020D	N05 W63		01	30.3	2D	SF		1	V		40	.8		
	LEAR	04	0133	0136	0144	S16 W15	4077	02	2.9	11	SF	C 1.4	3	C		42			F
∇	PALE	04	0255	0309	0342D	S21 W20	4077	02	2.6	47D	SF	C 1.4	3	C		79			F

H - ALPHA SOLAR FLARES

FEBRUARY 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Area Measurement			Remarks
															Time (UT)	Apparent (10 <sup>-6</sup> Disk)	Corr (Sq Deg)	
LEAR	04	0305	0309	0335	S21	W20	4077	02	2.6	30	SF	C 1.4	3	C		90		F
PEKG	04	0318	0321	0355	S19	W21		02	2.5	37	SF			P	0321	84	.9	D
LEAR	04	0501	0506	0525	S14	E25		02	6.1	24	SF		3	C		35		F
LEAR	04	0558	0600	0607	S14	E25		02	6.1	9	SF		3	C		32		F
GOES	04	0701	0715	0718						17		C 1.3						
GOES	04	0841	0844	0850						9		C 1.3						
LEAR	04	0848	0853	0859	S10	E39	4081	02	7.3	11	SF		3	C		38		F
LEAR	04	0945	0949	1012D	S17	W21	4077	02	2.8	27D	SF	C 1.9	3	C		50		F
LEAR	04	0959	1002	1009	S19	E24	4079	02	6.2	10	SF		3	C		23		F
GOES	04	1102	1106	1112						10		C 1.9						
GOES	04	1358	1401	1444						46		C 2.0						
GOES	04	1644	1647	1701						17		C 1.7						
GOES	04	1852	1855	1857						5		C 1.6						
PALE	04	1939E	1947	2015	S19	E22	4079	02	6.5	36D	SN	C 2.1	3	C		141		F
PALE	04	1940E	1942U	1958	S15	W33	4075	02	2.3	18D	SF		3	C		21		
HOLL	04	1951	1954U	2010D	S18	E22	4079	02	6.5	19D	SN		3	C		80		F
PALE	04	2008	2019	2021	S18	W26	4077	02	2.9	13	SF		3	C		22		
HOLL	04	2104	2109	2148D	S07	E09	4082	02	5.6	44D	SN		3	C		87		U
PALE	04	2105	2109	2131D	S08	E13	4082	02	5.9	26D	SN		3	C		65		UF
PALE	04	2110	2112	2120	S19	W34	4075	02	2.3	10	SF	C 1.3	3	C		31		F
HOLL	04	2110	2112	2143	S15	W35	4075	02	2.2	33	SN	C 1.3	3	C		74		
GOES	04	2232	2237	2238						6		C 1.1						
GOES	04	2240	2244	2246						6		C 3.6						
LEAR	04	2350	2350	0004	S19	E17	4079	02	6.3	14	SF	C 1.2	3	C		55		F
LEAR	05	0032	0040	0057	S19	E16	4079	02	6.2	25	SN	C 2.1	3	C		130		F
LEAR	05	0145	0148	0203	S20	W30	4077	02	2.8	18	SN	C 1.4	3	C		48		F
LEAR	05	0309	0310	0317	S21	W33	4077	02	2.6	8	SF		3	C		22		F
LEAR	05	0338	0340	0346	S18	E16	4079	02	6.4	8	SN		3	C		30		F
PEKG	05	0435	0436U	0454	S19	W33		02	2.7	19	1B	C 3.1		C	0436	176	2.2	E
LEAR	05	0435	0437	0500	S21	W33	4077	02	2.7	25	1B	C 3.1	3	C		198		H
LEAR	05	0458	0501	0527	S19	E14	4079	02	6.3	29	SN		3	C		51		F
PEKG	05	0503E	0503	0512D	S19	E13		02	6.2	9D	SN			P	0503	46	.5	E
LEAR	05	0555	0557	0614	S08	E06	4082	02	5.7	19	SF		3	C		53		
LEAR	05	0649	0701	0815	S19	W36	4077	02	2.5	86	1B	C 6.4	3	C		402		FH
PEKG	05	0658	0700	0715	S20	W34		02	2.7	17	1B	C 6.4		C	0700	176	2.2	E
MANI	05	0702E	0702U	0704D	S12	W33		02	2.8	2D	SB		1	V		40	.5	
LEAR	05	0703	0704	0727	S14	W41	4075	02	2.2	24	SN		3	C		110		H
LEAR	05	0720	0735	0800	S18	E12	4079	02	6.2	40	SF		3	C		45		F
LEAR	05	0928E	0933	1017D	S19	W35	4077	02	2.7	49D	1B	M 1.7	3	C		451		FH
MONT	05	0930	0937	0952	S19	W37		02	2.6	22	1B			C	0937	300		H
GOES	05	1249	1252	1254						5		C 2.1						
RAMY	05	1303	1337	1358	S21	W38	4077	02	2.6	55	1B	M 1.2	3	C		201		FE
RAMY	05	1356	1356	1407	S14	E16	4081	02	6.8	11	SF		3	C		34		
GOES	05	1640	1644	1709			4077			29		C 1.7						
HOLL	05	1643	1647	1654	S16	E05	4079	02	6.1	11	SN		3	C		46		
HOLL	05	1654	1740	1824	S18	W40	4077	02	2.7	90	1B		3	C		198		K
HOLL	05	1654	1750	1824	S18	W40	4077	02	2.7	90	1B		3	C		346		FEK
RAMY	05	1656	1749	1841	S20	W40	4077	02	2.6	105	1B		3	C		370		FE
RAMY	05	1746	1752	1758	S18	E05	4079	02	6.1	12	SN	C 9.2	3	C		60		
HOLL	05	1909	1916	1916D	S15	W38	4077	02	2.9	7D	SB		3	C		49		
GOES	05	1911	1917	1919			4077			8		C 2.2						
RAMY	05	1946	1947	2026	S17	W39	4077	02	2.9	40	SF		3	C		24		
HOLL	05	1946	1947	2048	S16	W40	4077	02	2.8	62	SN		3	C		30		F
GOES	05	2000	2003	2005						5		C 2.1						
HOLL	05	2108	2136	2208	S19	E04	4079	02	6.2	60	SN		3	C		43		K
HOLL	05	2108	2143	2208	S19	E04	4079	02	6.2	60	SN		3	C		73		F K
PALE	05	2145E	2150U	2200D	S13	E03	4079	02	6.1	15D	SN		3	C		64		
LEAR	05	2329	2332	0001	S14	W53	4075	02	2.0	32	SF	C 1.0	3	C		28		F K
LEAR	05	2329	2353	0001	S14	W53	4075	02	2.0	32	SF		3	C		35		K
GOES	06	0026	0028	0033						7		C 1.0						
GOES	06	0307	0310	0313						6		C .7						
GOES	06	0327	0339	0352						25		C .9						
LEAR	06	0511	0515	0545	S21	W44	4077	02	2.8	34	SN	C 3.2	3	C		164		F
PEKG	06	0519E	0521	0532	S21	W43		02	2.9	13D	1N	C 3.2		P	0521	336	4.9	EF
PEKG	06	0528	0531	0533D	S14	W42		02	3.1	5D	SN			P	0531	126	1.8	E
LEAR	06	0751	0752	0758	S16	W45	4077	02	2.9	7	SF		3	C		27		F
MANI	06	0752	0752	0759	S15	W45		02	2.9	7	SF		1	V		30	.4	F
GOES	06	1014	1017	1019						5		M 2.7						
GOES	06	1128E	1128	1130						2D		C 2.0						



16  
Feb 83

H - ALPHA SOLAR FLARES

FEBRUARY 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Time (UT)	Area Measurement		Remarks		
																Apparent (10 <sup>-6</sup> Disk)	Corr (Sq Deg)			
HOLL	06	1807	1807	1820	S21	W08	4079	02	6.1	13	SF		3	C		39		F		
[	HOLL	06	1843	1855	1925	S18	W09	4079	02	6.1	42	SN	C .9	3	C		131		F	
[	PALE	06	1854	1855	1901	S17	W09	4079	02	6.1	7	SF	C .9	3	C		25		F	
[	RAMY	06	1855	1856	1916	S17	W10	4079	02	6.0	21	SF	C .9	3	C		76			
[	HOLL	06	2055E	2100	2120	S12	W59	4075	02	2.4	25D	SF		3	C		24			
[	PALE	06	2107	2109	2112	S15	W64	4075	02	2.0	5	SF		3	C		33			
	LEAR	07	0527	0531	0535	S08	W21	4082	02	5.7	8	SF	C .8	3	C		34			
	LEAR	07	0820	0820	0826	S19	W61	4077	02	2.7	6	SF		3	C		18			
	LEAR	07	0831	0831	0841	S16	W58	4077	02	3.0	10	SF		3	C		16			
	KAND	07	1227	1229	1229	S16	W15		02	6.4	2	SF			C		35	.4	D	
	HOLL	07	1547	1548	1552	S11	W06	4081	02	7.2	5	SF	C .6	3	C		46		F	
	HOLL	07	2043	2057	2108	S13	W63	4077	02	3.1	25	SF		3	C		16		F	
	GOES	07	2045E	2045	2046						1D	C	.7							
	GOES	08	0302	0307	0309						7	C	.7							
	LEAR	08	0508	0509	0511D	S09	W16	4081	02	7.0	30	SF	C .7	3	C		91		U	
	KAND	08	0751	0758	0808	S09	W13		02	7.4	17	SN			C		31	.3	E	
	[	ISTA	08	0754	0809	S08	W12		02	7.4	15	SB							E	
	LEAR	08	0755	0759	0812	S09	W13	4081	02	7.4	17	SF		3	C		43		F	
	LEAR	08	0948	0955	1005	S19	W75	4077	02	2.7	17	SF		3	C					
	GOES	08	1118	1121	1124						6	C	.7							
	GOES	08	1229	1232	1234						5	C	.7							
	PALE	08	2241	2241	2248	S18	W80	4077	02	2.8	7	SF		3	C				F	
	LEAR	08	2308E	2309U	2323	S16	W80	4077	02	2.9	15D	SF		3	C					
	GOES	09	0000	0000	0143			4077			103	C	6.7							
	LEAR	09	0557	0557	0601	S16	W77	4077	02	3.4	4	SF		3	C		11			
	LEAR	09	0603	0605	0612	S12	W30	4081	02	7.0	9	SF		3	C		77			
	ISTA	09	0730		0925	S17	W90		02	2.5	115	N							A	
	GOES	09	1143	1150	1154						11	C	1.0							
	HOLL	09	1851	1900	1910	S12	W89	4077	02	3.1	19	SF		3	C					
	HOLL	09	2046	2047	2049	S12	W91	4077	02	3.0	3	SF		3	C					
	HOLL	09	2105E	2114	2131	S15	W77	4077	02	4.0	26D	SF		3	C					
	GOES	09	2215	2226	2236						21	C	3.7							
	ISTA	10	0824		0833	S19	W90		02	3.5	9	SB							A	
	KAND	10	1020	1023	1031	S08	W63		02	5.7	11	SN			C		27	.6	D	
	GOES	10	1048	1051	1054						6	C	.5							
	RAMY	10	1751	1803	1817	S12	W45	4081	02	7.4	26	SN	C .6	3	C		60			
	HOLL	10	1804E	1806U	1818	S10	W45	4081	02	7.4	14D	SN	C .6	3	C		85		F	
	[	LEAR	11	0105	0107	0114	S06	W75	4082	02	5.4	9	SF	C 1.0	3	C				F
	[	PALE	11	0107	0108	0112	S07	W75	4082	02	5.4	5	SF	C 1.0	3	C				
	RAMY	11	1440	1441	1448	S11	W55	4081	02	7.5	8	SF		3	C		22			
	GOES	11	2252	2256	2259						7	C	.5							
	GOES	11	2325	2329	2335						10	C	.5							
	LEAR	12	0103	0103	0109	S20	W84	4079	02	5.6	6	SF	C .6	3	C				H	
	GOES	12	0712	0724	0727						15	C	.8							
	GOES	12	1009	1017	1019						10	C	.3							
	GOES	12	1129	1132	1134						5	C	.4							
	GOES	12	1435	1439	1443			4079			8	C	1.4							
	[	PALE	12	2050E	2212U	2225	S20	W50		02	9.0	95D	SF		3	C		58		US
	[	HOLL	12	2200E	2204U	2223	S15	W50		02	9.1	23D	SF		3	C		58		US
	GOES	12	2206	2235	2305						59	C	.8							
	[	MANI	12	2259E	2300	2320	S17	W51		02	9.1	21D	SF		1	V		50	.8	
	[	LEAR	12	2303E	2303U	2319	S17	W50		02	9.2	16D	SF		3	C		58		
	LEAR	16	0715	0715	0724	S18	E49	4090	02	20.0	9	SF	C .2	3	C		21		F	
	GOES	16	1214	1225	1237						23	C	1.3							
	PALE	18	0040	0041	0055	S15	E27	4090	02	20.1	15	SF		3	C		29			
	LEAR	18	0632	0635	0648D	S17	E23	4090	02	20.0	16D	SF	C .6	2	C		47		F	
	GOES	18	0740	0743	0745						5	C	.3							
	RAMY	18	1203	1231	1240	S16	E20	4090	02	20.0	37	SF		3	C		23			
	RAMY	18	1309	1311	1315	S17	E20	4090	02	20.1	6	SF	C .3	3	C		26			
	[	WEND	18	1338	1340	1352	S16	E20		02	20.1	14	SN	C .5	C	1340		28	.3	
	[	RAMY	18	1338	1342	1345	S17	E20	4090	02	20.1	7	SN	C .5	3	C		28		F
	[	HOLL	18	1551	1553	1618	S16	E18	4090	02	20.0	27	SN	C .6	3	C		63		F K
	[	HOLL	18	1551	1606	1618	S16	E18	4090	02	20.0	27	SF		3	C		38		K

H - ALPHA SOLAR FLARES

FEBRUARY 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo Day	Dur (Min)	Imp Opt Xray	Obs See Type	Area Measurement			Remarks		
												Time (UT)	Apparent (10 <sup>-6</sup> Disk)	Corr (Sq Deg)			
HOLL	18	1644E	1648	1654	S16	E17	4090	02 20.0	10D	SF C	.6	2	C	90	F		
GOES	18	1716	1723	1731					15	C	.5						
GOES	18	1735	1741	1748					13	C	.9						
GOES	19	1123	1126	1128					5	C	.2						
GOES	20	0704	0708	0710					6	C	.4						
PEKG	20	0706E	0706	0719	S16	W04		02 20.0	13D	SN			C	0706	67	.7	EK
PEKG	20	0706E	0716	0719	S16	W04		02 20.0	13D	SF			C	0716	34	.4	E
LEAR	20	0716E	0717	0723	S16	W04	4090	02 20.0	7D	SF		3	C		35		
LEAR	20	0750E	0750	0800	S17	W05	4090	02 19.9	10D	SF C	.3	3	C		30		F
HOLL	20	2228	2228	2239	N12	E65	4094	02 25.8	11	SF		3	C		15		
GOES	21	0718	0721	0723					5	C	.7						
GOES	21	1850	1945	2030					100	C	1.0						
GOES	22	1134	1142	1155					21	C	.9						
GOES	22	1920	1936	1955					35	M	4.2						
HOLL	22	2124E	2124U	2132	S10	E18	4092	02 24.2	8D	SN		3	C		70		F
PALE	23	2103	2110	2120	S12	E76	4098	03 1.6	17	SN C	2.7	3	C				F
PALE	24	0351	0352	0353	S15	E70	4098	03 1.5	2	SF		3	C		43		
GOES	24	1417	1423	1434					17	C	.6						
PALE	24	1845	1848	1922	S13	E63		03 1.5	37	1N C	3.0	3	C		144		F
PALE	24	2011	2014	2019	S12	E63	4098	03 1.6	8	SF		3	C		15		
GOES	24	2012	2030	2145			4098		93	C	2.0						
GOES	25	0235	0249	0306					31	C	1.2						
LEAR	25	0738	0740	0745	N10	E05	4094	02 25.7	7	SF		3	C		38		F
GOES	25	0741	0859	0932			4094		111	C	.5						
HOLL	25	1831	1836	1839	S22	E50	4098	03 1.6	8	SF		3	C		29		
PALE	25	2028	2032	2143	S21	E50	4098	03 1.7	75	1B C	4.5	3	C		307		U
HOLL	25	2029	2032	2041D	S21	E48	4098	03 1.5	12D	1B C	4.5	3	C		293		U
PALE	25	2221	2223	2235	N16	E45	4097	03 1.3	14	SF C	1.0	3	C		26		
LEAR	26	0245	0245	0253	N15	E41	4097	03 1.2	8	SF C	.7	3	C		44		F07
GOES	26	0619	0627	0637					18	C	1.3						
GOES	26	0833	0910	0930					57	C	.7						
GOES	26	1214	1225	1237					23	C	1.3						
GOES	26	1307	1315	1323					16	C	1.4						
GOES	26	1434	1442	1451					17	C	.8						
GOES	26	2005	2008	2012					7	C	.5						
HOLL	26	2240	2244	2330	N13	W15	4094	02 25.8	50	SN C	1.4	3	C		87		UF
PALE	26	2241	2244U	2249D	N12	W15	4094	02 25.8	8D	SF C	1.4	3	C		45		F
GOES	27	0224	0235	0242					18	C	1.4						
LEAR	27	0259	0259	0306	S09	W25	4100	02 25.2	7	SF		3	C		30		F
LEAR	27	0330	0331	0342	S17	E26	4098	03 1.1	12	SF		3	C		25		
PALE	27	0331	0331	0337	S15	E25	4098	03 1.0	6	SF		3	C		32		
GOES	27	0441	0445	0447			4092		6	C	.9						
LEAR	27	0548	0550	0557	S17	E25	4098	03 1.1	9	SF		3	C		30		F
LEAR	27	0636	0636	0653	S17	E24	4098	03 1.1	17	SF C	1.3	3	C		34		F
LEAR	27	0820	0820	0828	S14	E77	4102	03 5.2	8	SF C	.8	3	C				
KAND	27	0845E	0859	0912	S17	E23		03 1.1	27D	SF			C		66	.8	E
LEAR	27	0845	0851	0917	S17	E24	4098	03 1.2	32	SF C	1.0	3	C		51		F
LEAR	27	0923	0923	0929	S13	E76	4102	03 5.1	6	SF C	.9	3	C				
GOES	27	1049	1053	1056					7	C	.9						
GOES	27	1059	1102	1106					7	C	.9						
GOES	27	1159	1202	1207					8	C	.8						
GOES	27	1503	1514	1520					17	C	.8						
HOLL	27	1538	1538	1601	S09	W68	4095	02 22.5	23	SF		3	C		16		
GOES	27	1741	1748	1753					12	C	1.3						
PALE	27	1810	1831	1834	S13	W66	4095	02 22.8	24	SF		3	C		16		
PALE	27	1904	1909	1925	S11	W66	4095	02 22.8	21	SF		3	C		28		
HOLL	27	1909	1911	1918	S11	W65	4095	02 22.9	9	SF		3	C		27		
HOLL	27	1940	1949	2038	S11	W66	4095	02 22.9	58	SN		3	C		25		K
HOLL	27	1940	2008	2038	S11	W66	4095	02 22.9	58	SN		3	C		29		K
PALE	27	1948	1949	2009	S13	W64	4095	02 23.0	21	SF		3	C		24		
HOLL	27	2049	2103	2115	S10	W62	4095	02 23.2	26	SF		3	C		29		
GOES	27	2122	2125	2127					5	C	.8						

H - ALPHA SOLAR FLARES

FEBRUARY 1983

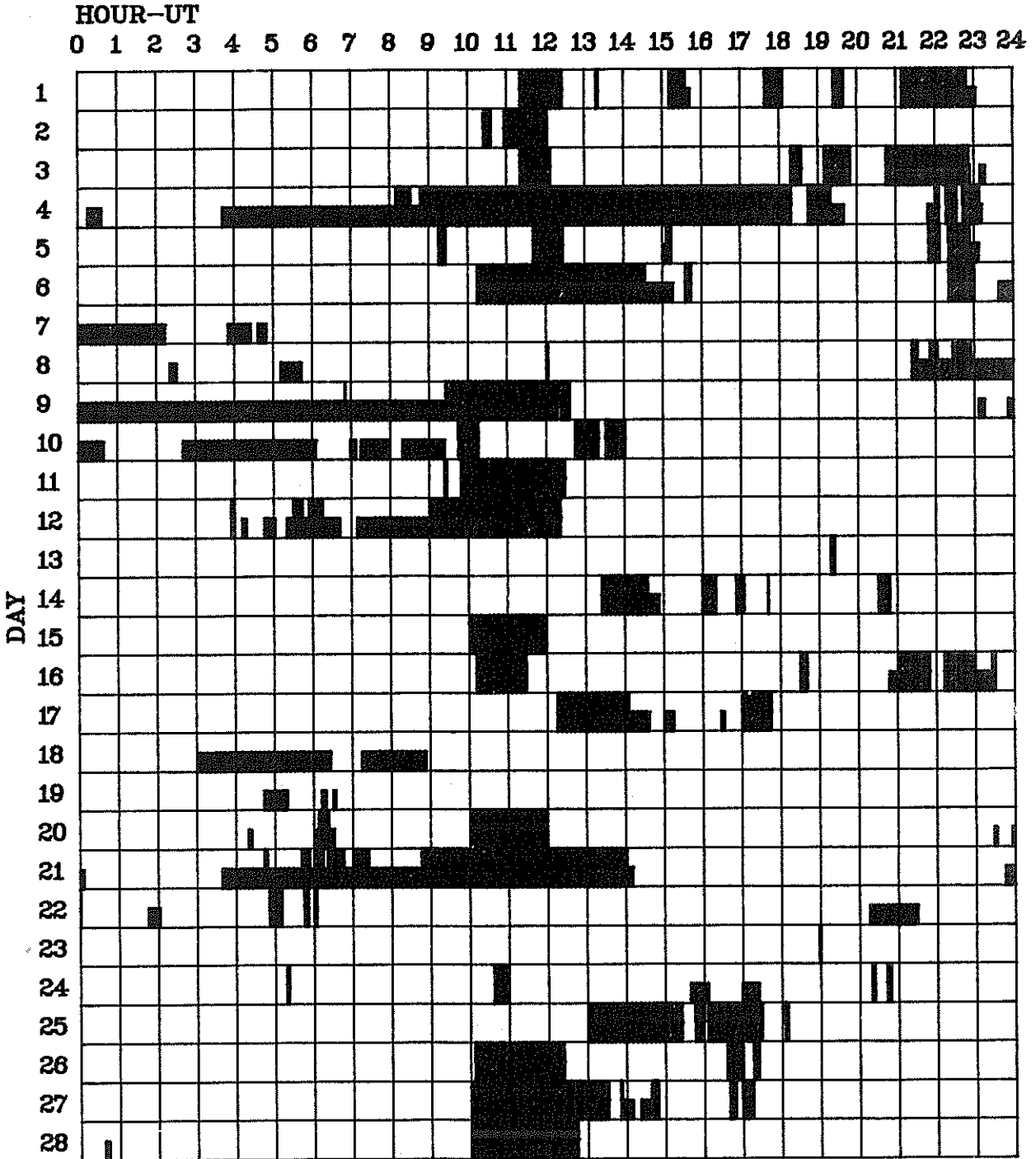
Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/USAF		Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks	
							Region	Mo Day						Time (UT)	Apparent (10 <sup>-6</sup> Disk)	Corr (Sq Deg)		
HOLL	27	2145	2157	2202	S11	W66	4095	02	22.9	17	SN	3	C		42			
[	HOLL	27	2152	2157	2244	S16	E67	4102	03	5.0	52	SN	C 3.7	3	C	95		F
[	PALE	27	2158E	2200U	2206D	S15	E69	4102	03	5.1	8D	1N	C 3.7	3	C	121		F
[	GOES	27	2336	2341	2348					12			C 1.4					
[	LEAR	27	2340	2342	2349	S11	W69	4095	02	22.8	9	SF		3	C	21		F
[	LEAR	27	2353	0013	0013	N15	E17	4097	03	1.3	20	SN	C 2.4	3	C	100		F
[	HOLL	27	2353	2359	0015	N15	E16	4097	03	1.2	22	SB	C 2.4	3	C	118		F
	GOES	28	0100	0110	0127			4098			27		C .9					
	LEAR	28	0122	0123	0128	S15	E21	4098	03	1.6	6	SF		3	C	35		
	LEAR	28	0439	0441	0444	N13	W31	4094	02	25.9	5	SF		3	C	31		
	LEAR	28	0606	0610	0618	S14	E64	4102	03	5.1	12	SF		3	C	33		F
[	GOES	28	0748	0843	1009						141		C .7					
[	LEAR	28	0809	0811	0823	S14	E63	4102	03	5.1	14	SF		3	C	29		F
[	LEAR	28	0841	0843	0854	S14	E18	4098	03	1.7	13	SN		3	C	37		
	GOES	28	1126	1130	1135						9		C 1.0					
	GOES	28	1215	1219	1221						6		C 1.6					
	RAMY	28	1234	1247	1251	S14	E16	4098	03	1.7	17	SF		3	C	34		
	RAMY	28	1318	1320	1331	S22	E72	4102	03	6.1	13	SF	C 1.0	3	C	20		
	GOES	28	1336	1338	1342						6		C 1.2					
	RAMY	28	1425	1427	1444	S15	E14	4098	03	1.7	19	SF	C 2.1	3	C	86		
	RAMY	28	1428	1431	1436	S22	E69		03	5.9	8	SF		3	C	16		
	HOLL	28	1428E	1431	1444	S15	E14	4098	03	1.7	16D	SF		3	C	67		F
[	RAMY	28	1525	1525	1545	S15	E14	4098	03	1.7	20	SF		3	C	53		
[	HOLL	28	1525	1525	1545	S15	E14	4098	03	1.7	20	SF		3	C	55		
[	HOLL	28	1602	1606	1618	N15	W37	4094	02	25.9	16	SF		3	C	18		
[	RAMY	28	1621	1621	1639	S15	E13	4098	03	1.7	18	SF		3	C	31		F
[	HOLL	28	1621	1621	1636	S15	E13	4098	03	1.7	15	SF		3	C	22		
[	HOLL	28	1757	1803	1816	N12	W42	4094	02	25.6	19	SF		3	C	27		
[	PALE	28	1806	1808	1808	N10	W43	4094	02	25.5	2	SF		2	C	23		
	PALE	28	1812	1818	1824	S19	E68	4104	03	6.0	12	SF		2	C	73		
[	RAMY	28	2013	2019	2030	S21	E68	4104	03	6.1	17	SF		3	C	34		
[	PALE	28	2014	2019	2031	S20	E67	4104	03	6.0	17	SF		3	C	39		
[	HOLL	28	2014	2015	2036	S22	E70	4104	03	6.2	22	SN		3	C	13		
	PALE	28	2233	2234	2241	S12	E54	4102	03	5.0	8	SF	C 1.3	3	C	40		F
	GOES	28	2246	2258	2306						20		C 2.9					
	LEAR	28	2323	2324	2329	S12	W81	4095	02	22.9	6	SF		3	C			

"Remarks":

- |  |  |
|--|--|
| <p>A = Eruptive prominence whose base is less than 90° from central meridian.<br/>         B = Probably the end of a more important flare.<br/>         C = Invisible 10 minutes before.<br/>         D = Brilliant point.<br/>         E = Two or more brilliant points.<br/>         F = Several eruptive centers.<br/>         G = No visible spots in the neighborhood.<br/>         H = Flare accompanied by high-speed dark filament.<br/>         I = Active region very extended.<br/>         J = Distinct variations of plage intensity before or after the flare.<br/>         K = Several intensity maxima.<br/>         L = Existing filaments show signs of sudden activity.<br/>         M = White-light flare.<br/>         N = Continuous spectrum shows effects of polarization.</p> | <p>O = Observations have been made in the H and K lines of Call.<br/>         P = Flare shows helium D3 in emission.<br/>         Q = Flare shows Balmer continuum in emission.<br/>         R = Marked asymmetry in H-alpha line suggests ejection of high-velocity material.<br/>         S = Brightness follows disappearance of filament in same position.<br/>         T = Region active all day.<br/>         U = Two bright branches, parallel or converging.<br/>         V = Occurrence of an explosive phase: important, expansion within roughly 1 minute that often includes a significant intensity increase.<br/>         W = Great increase in area after time of maximum intensity.<br/>         X = Unusually wide H-alpha line.<br/>         Y = System of loop-type prominences.<br/>         Z = Major sunspot umbra covered by flare.</p> |
|--|--|

The 4-digit number appearing under "Remarks" denotes the calcium plage region number assigned by the Space Environment Services Center in Boulder, Colorado.

# INTERVALS OF NO FLARE PATROL OBSERVATION FOR PRECEDING SOLAR FLARE TABLE FEBRUARY 1983



Observatories included in total patrol:

- |           |          |           |             |             |
|-----------|----------|-----------|-------------|-------------|
| Bucharest | Istanbul | Learmonth | Monte Mario | Peking      |
| Holloman  | Kandilli | Manila    | Palehua     | Ramey       |
|           |          |           |             | Wendelstein |

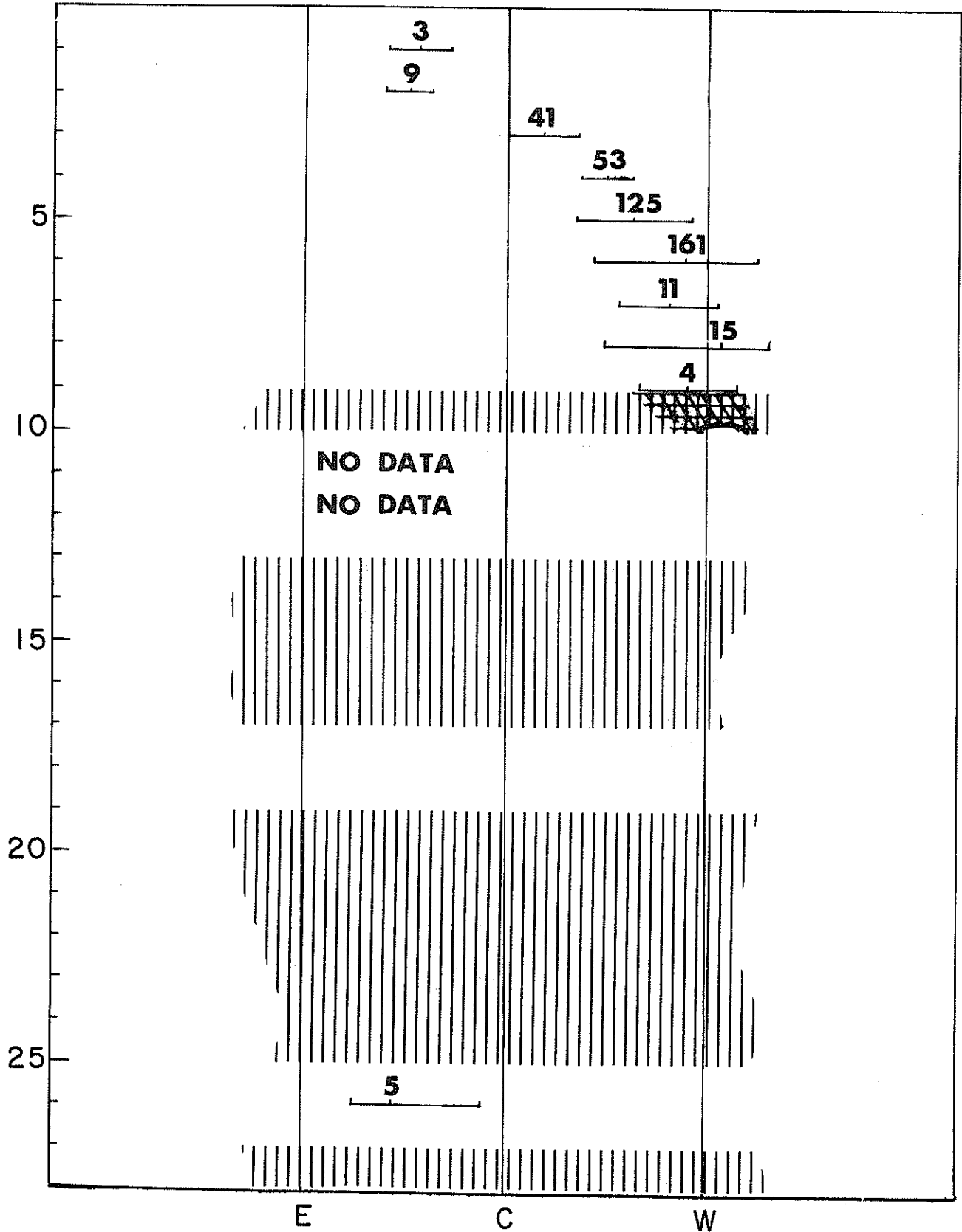
Times of no flare patrol are shown by the shaded area for each day divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

# SOLAR RADIO EMISSION INTERFEROMETRIC OBSERVATION

FEBRUARY 1983

Nançay

169 MHz

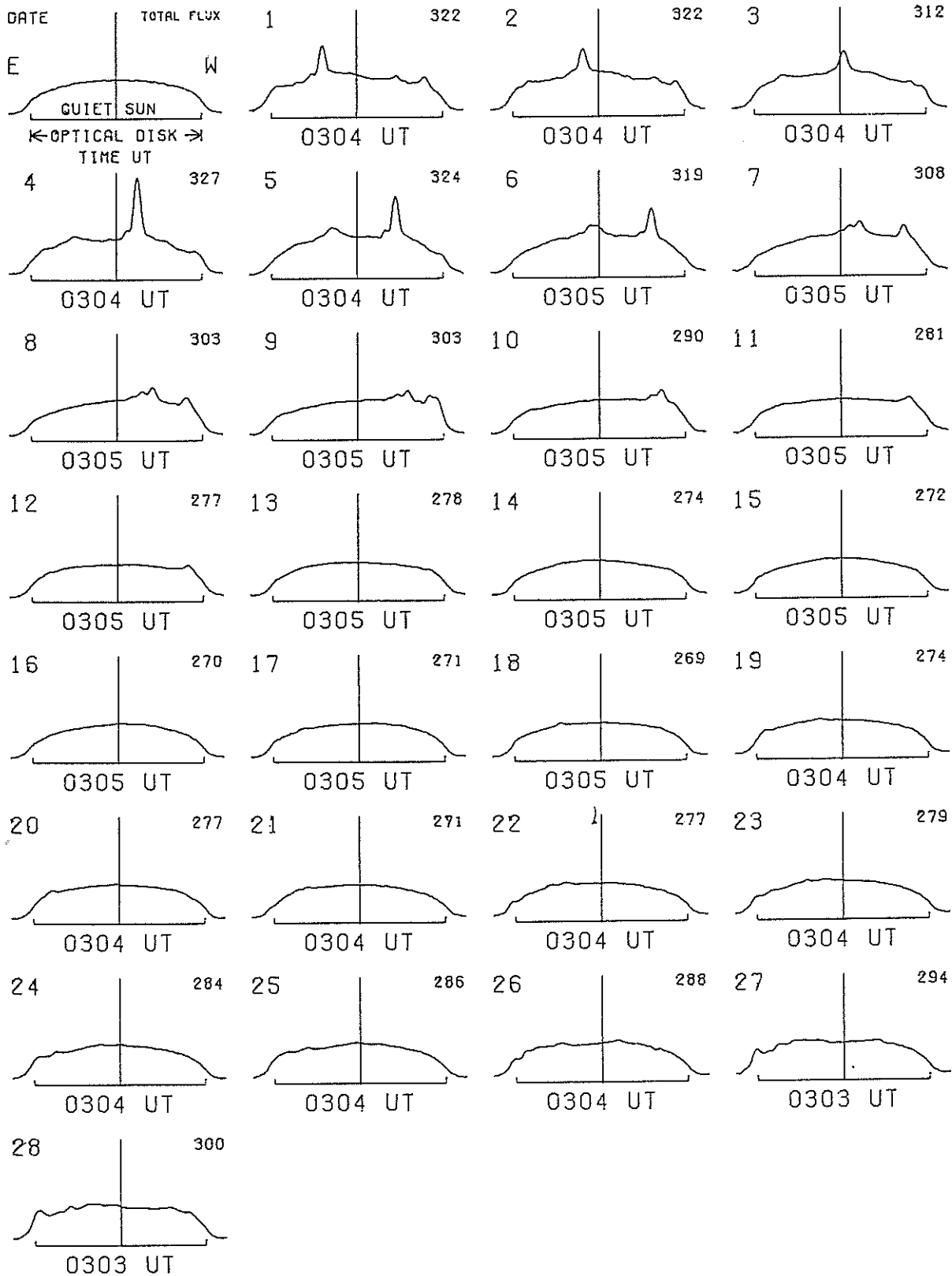


# EAST-WEST SOLAR SCANS

## FEBRUARY 1983

TOYOKAWA, JAPAN

3 CM  
FAN BEAM WITH 1.1 MINUTES OF ARC

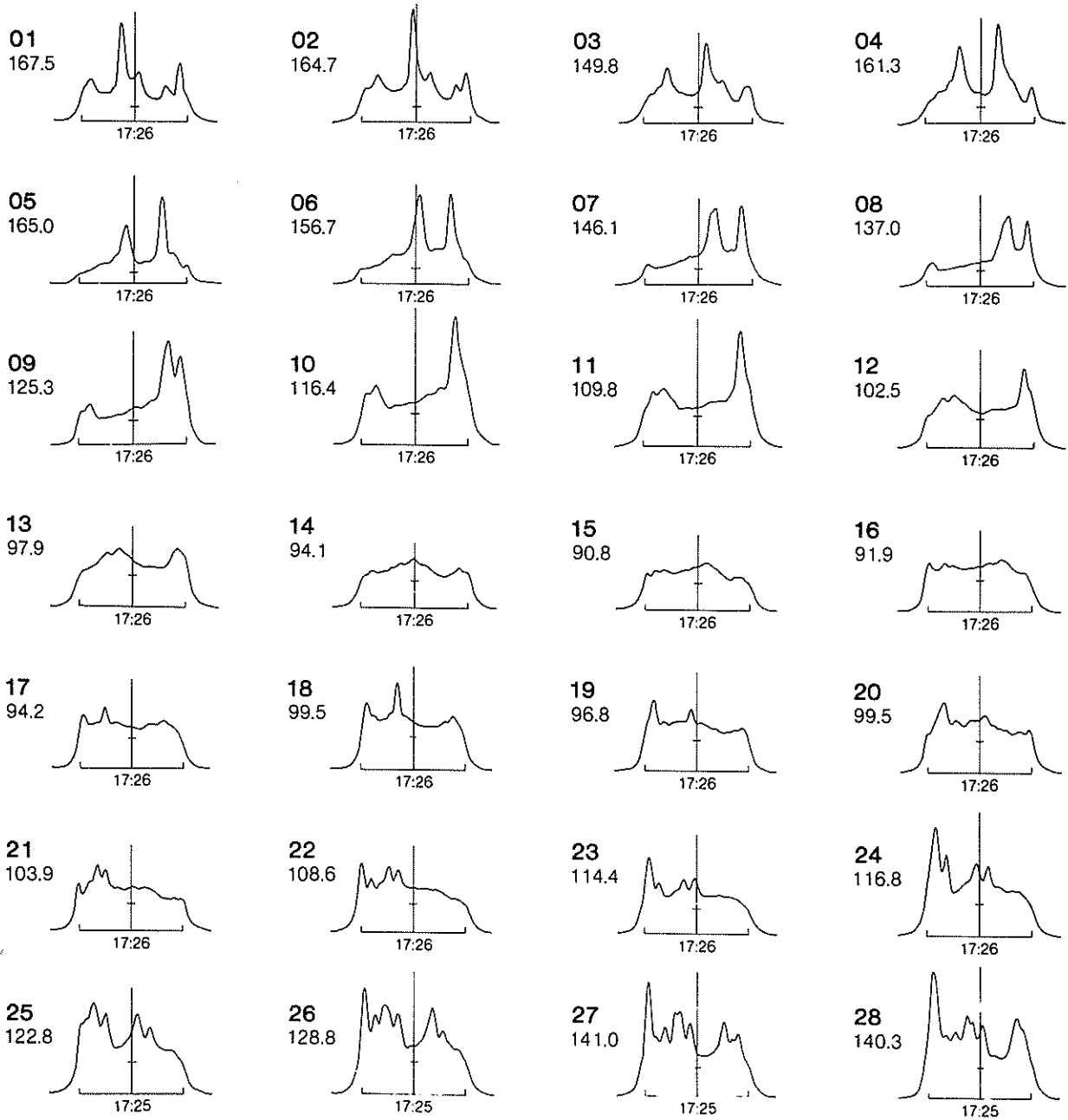


22  
Feb 83

# EAST-WEST SOLAR SCANS FEBRUARY 1983

ALGONQUIN RADIO OBSERVATORY  
CANADA

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



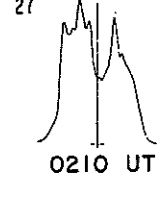
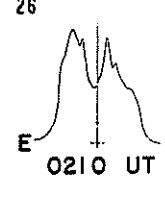
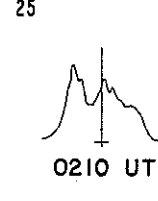
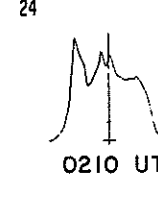
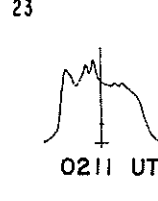
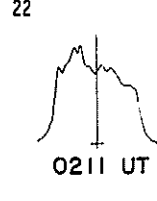
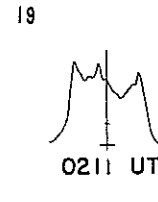
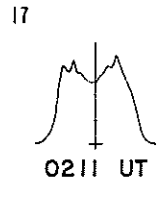
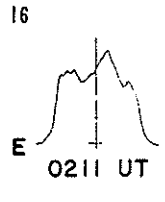
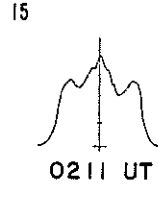
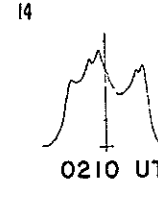
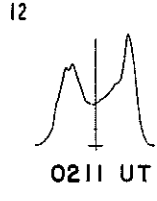
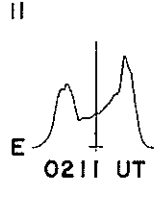
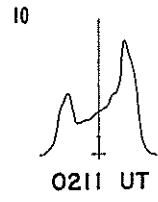
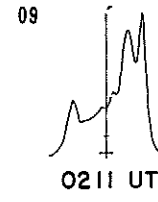
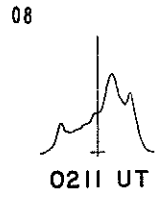
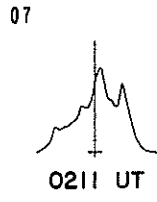
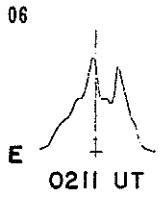
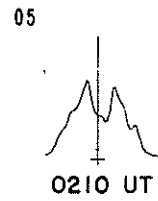
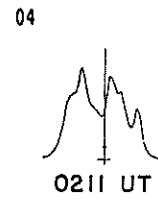
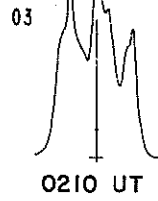
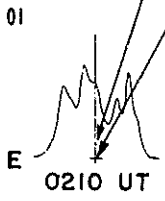
DATE  
TOTAL FLUX  
ESTIMATED QUIET SUN LEVEL  
E W  
PHOTOSPHERE  
TIME UT

### EAST-WEST SOLAR SCANS FEBRUARY 1983

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

Fleurs, Australia

Estimated Quiet Sun Level  
Cold Sky Level



28  
NO DATA

W  
W  
W  
W  
W  
W  
W  
W  
W



24  
Feb 83

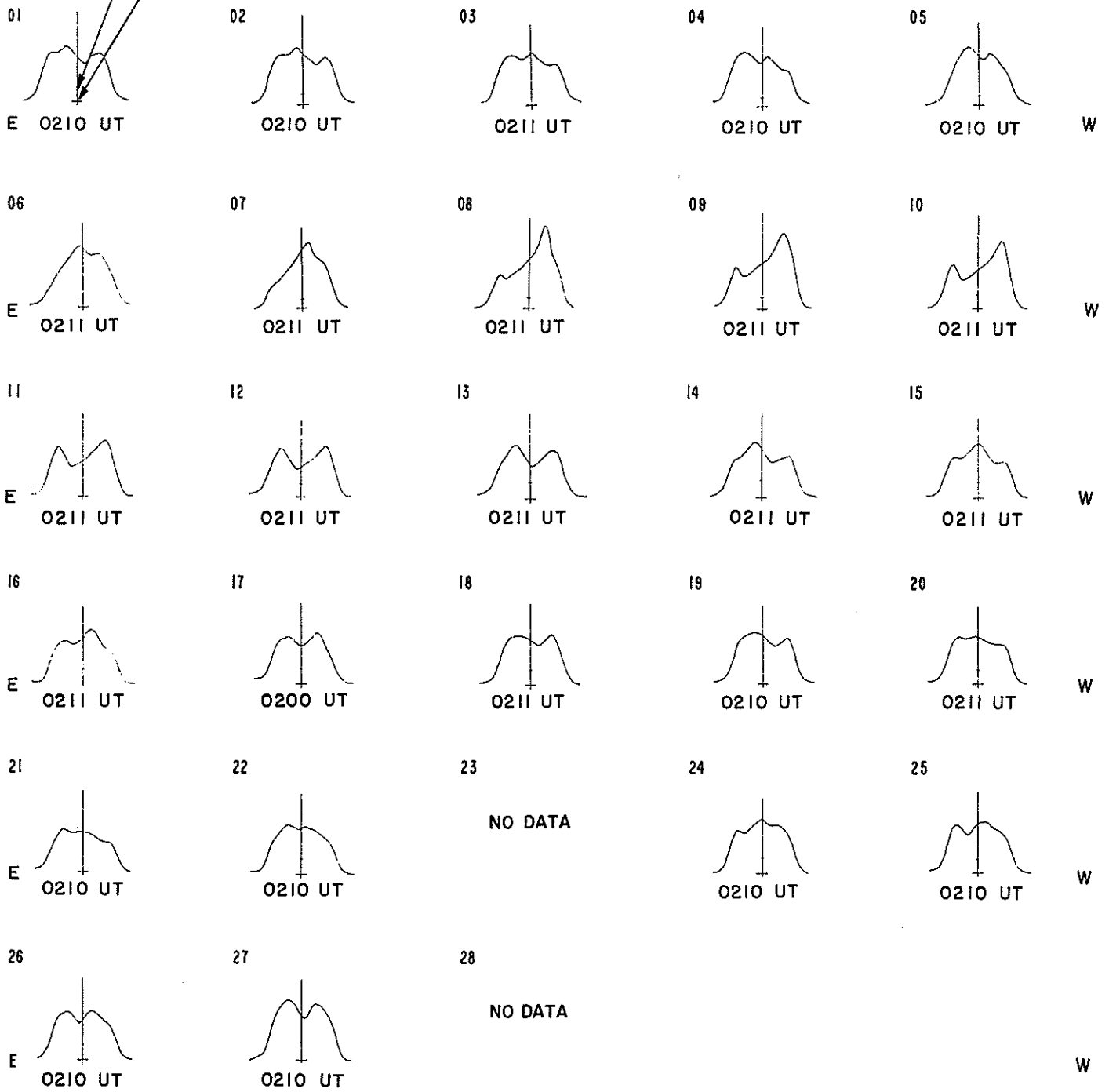
### EAST-WEST SOLAR SOLAR SCANS

FEBRUARY 1983

Fleurs, Australia

Estimated Quiet Sun Level  
Cold Sky Level

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



SOLAR RADIO EMISSION  
SELECTED FIXED FREQUENCY EVENTS

25  
Feb 83

FEBRUARY 1983

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Flux Density Mean (2 Hz)	Int	Remarks
01	8800	LEAR	20 GRF	0149.5	0150.8	9.5	9.0			QL=6 ST=2 TYP=2
	8800	LEAR	20 GRF	0214.1	0217.3	5.9	13.0			QL=6 ST=2 TYP=2
	2695	LEAR	20 GRF	0645.3	0648.6	16.7	10.0			QL=6 ST=2 TYP=2
	8800	LEAR	20 GRF	0646.6	0648.6	4.4	4.0			QL=6 ST=2 TYP=2
	8800	LEAR	8 S	0734.3	0735.3	1.8	49.0			QL=6 ST=2 TYP=3
	2695	LEAR	8 S	0734.6	0735.6	1.2	16.0			QL=6 ST=2 TYP=3
	2800	OTTA	21 GRF	1750.0	1903.0	185.0	18.2	6.0		
	2800	OTTA	1 S	1854.0	1856.0	5.0	6.4	2.8		
	2695	SGMR	4 S/F	1855.3	1855.8	11.0	20.0			QL=6 ST=2 TYP=3
	8800	SGMR	8 S	1906.1	1906.5	.5	20.0			QL=6 ST=2 TYP=3
	8800	PALE	8 S	1947.1E	1948.8	1.7D	15.0			QL=1 ST=2 TYP=3
02	8800	LEAR	4 S/F	0309.3	0310.0	5.7	8.0			QL=6 ST=2 TYP=3
	2695	LEAR	8 S	1041.6	1041.8	.9	19.0			QL=5 ST=2 TYP=3
	8800	LEAR	8 S	1041.8	1042.0	.7	40.0			QL=5 ST=3 TYP=3
	2800	OTTA	20 GRF	1445.0	1600.0	205.0	5.2	2.5		
03	2695	LEAR	49 GB	0541.0	0543.3	21.6	13.0			QL=6 ST=3 TYP=6
	8800	LEAR	49 GB	0541.3	0543.3	21.3	3500.0			QL=6 ST=3 TYP=6
	8800	ATHN	49 GB	0551.3	0600.3	20.5	3399.0			QL=5 ST=2 TYP=6
	2695	ATHN	49 GB	0551.3	0600.6	124.2	1000.0			QL=5 ST=2 TYP=6
	8800	ATHN	47 GB	0611.8	0659.5	104.7	200.0			QL=5 ST=2 TYP=5
	8800	LEAR	49 GB	0612.3	0612.8	16.2	4400.0			QL=6 ST=2 TYP=7
	2695	LEAR	49 GB	0612.3	0612.8	16.2	2699.0			QL=6 ST=2 TYP=7
	2695	LEAR	49 GB	0628.5	0628.6	11.3	2800.0			QL=6 ST=2 TYP=6
	8800	LEAR	49 GB	0628.5	0628.6	11.3	9000.0			QL=6 ST=2 TYP=6
	2695	LEAR	49 GB	0639.8	0640.0	13.8	2800.0			QL=6 ST=2 TYP=6
	8800	LEAR	49 GB	0639.8	0640.0	13.8	9000.0			QL=6 ST=2 TYP=6
	2695	LEAR	49 GB	0653.6	0653.8	11.0	2800.0			QL=6 ST=2 TYP=6
	8800	LEAR	49 GB	0653.6	0653.8	11.0	9000.0			QL=6 ST=2 TYP=6
	2695	LEAR	49 GB	0720.8	0720.8	120.5	2800.0			QL=6 ST=2 TYP=6
	8800	LEAR	49 GB	0720.8	0720.8	47.2	9000.0			QL=6 ST=2 TYP=6
	2800	OTTA	240 R	1746.0	1750.0	4.0	1.8	.9		
	8800	PALE	47 GB	1829.8	1832.0	7.0	58.0			QL=6 ST=2 TYP=5
	2800	OTTA	240AR	1830.0	1840.0	10.0	2.8	1.4		
8800	SGMR	47 GB	1831.5	1832.1	4.0	61.0			QL=6 ST=3 TYP=5	
2800	OTTA	40 F	1833.5	1834.6	1.5	3.6				
2800	OTTA	20 GRF	1850.0	1855.0	20.0	3.6	1.8			
04	8800	PALE	8 S	0053.1	0053.3	.5	24.0			QL=6 ST=2 TYP=3
	8800	LEAR	8 S	0053.1	0053.3	.7	42.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0146.3	0147.0	4.7	13.0			QL=6 ST=3 TYP=3
	8800	LEAR	4 S/F	0220.1	0220.5	4.7	20.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0252.6	0253.0	4.4	21.0			QL=6 ST=2 TYP=3
	2800	OTTA	23 GRF	1405.0	1445.0	170.0	5.6	3.2		
	2800	OTTA	2 S/F	1629.0	1632.2	8.0	7.4	3.4		
	2800	OTTA	21 GRF	1730.0	1830.0	105.0	6.2	3.1		
	2800	OTTA	1 S	1732.0	1733.0	8.0	2.6	1.3		
	2800	OTTA	1 S	1946.0	1946.7	2.0	3.0	1.5		
	2800	OTTA	260 FAL	2140.0	2200.0	20.0	-2.8	-1.8		
	8800	LEAR	8 S	2242.3	2242.8	1.2	32.0			QL=5 ST=2 TYP=3
	2695	LEAR	8 S	2242.3	2243.0	1.5	17.0			QL=5 ST=2 TYP=3
	2695	PENT	3 S	2242.5	2243.0	3.0	16.8	5.6		
	2695	PALE	8 S	2242.6	2242.8	.5	15.0			QL=6 ST=2 TYP=3
8800	PALE	8 S	2242.6	2242.8	.5	23.0			QL=6 ST=2 TYP=3	
05	8800	LEAR	8 S	0029.8	0030.6	1.8	20.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0144.5	0145.8	2.6	22.0			QL=6 ST=2 TYP=3
	2695	LEAR	4 S/F	0145.1	0146.3	3.9	15.0			QL=6 ST=2 TYP=3
	8800	LEAR	47 GB	0436.3	0437.1	2.7	54.0			QL=6 ST=2 TYP=5
	2695	LEAR	4 S/F	0436.3	0437.3	2.3	32.0			QL=6 ST=2 TYP=3
	8800	LEAR	47 GB	0659.1	0701.5	11.4	130.0			QL=6 ST=2 TYP=5
	2695	LEAR	47 GB	0700.1	0701.8	5.2	70.0			QL=6 ST=2 TYP=5
	8800	LEAR	47 GB	0929.8	0933.3	8.5	100.0			QL=6 ST=2 TYP=5
	2695	LEAR	47 GB	0932.6	0933.3	3.2	60.0			QL=6 ST=2 TYP=5
	2800	OTTA	21 GRF	1332.0		17.0	3.8			
	2800	OTTA	40 F	1336.0	1340.7	9.0	5.6			
	8800	SGMR	4 S/F	1340.1	1340.3	3.9	26.0			QL=6 ST=2 TYP=3
	2800	OTTA	23 GRF	1610.0	1749.0	305.0	13.0			
	2800	OTTA	3 S	1622.2	1622.7	2.5	13.0	4.8		
2800	OTTA	22 GRF	1733.0	1733.5	11.0	8.4	4.0			

26  
Feb 83

SOLAR RADIO EMISSION  
SELECTED FIXED FREQUENCY EVENTS

FEBRUARY 1983

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10-22 W/m <sup>2</sup> Hz)	Mean		
06	2695	LEAR	8 S	0508.3	0508.5	.3	20.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0515.8	0517.0	3.0	20.0			QL=6 ST=2 TYP=3
	2695	LEAR	8 S	0516.1	0516.3	.4	16.0			QL=6 ST=2 TYP=3
	2695	LEAR	4 S/F	0526.6	0527.1	2.7	11.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0526.6	0528.3	10.0	8.0			QL=6 ST=2 TYP=3
	8800	LEAR	8 S	0602.1	0602.6	2.0	20.0			QL=6 ST=2 TYP=3
	2695	LEAR	8 S	0602.6	0603.1	.5	13.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0610.3	0612.0	7.8	23.0			QL=6 ST=2 TYP=3
	2695	LEAR	4 S/F	0611.0	0612.5	8.1	16.0			QL=6 ST=2 TYP=3
	2800	OTTA	20 GRF	1852.0	1854.0	28.0	3.0	1.6		
07	2800	OTTA	20 GRF	1545.0	1635.0	105.0	2.6	1.0		
	2800	OTTA	21 GRF	2025.0	2045.0	90.0	3.0	1.6		
	2800	OTTA	3 S	2029.2	2029.5	1.0	10.4	2.8		
	2800	OTTA	1 S	2032.0	2032.6	1.5	3.2	1.1		
08	2695	PENT	46F C	2216.0	2312.0	73.0	54.0	24.2		
	8800	PALE	4 S/F	2301.3	2305.0	6.7	24.0			QL=5 ST=2 TYP=3
	2695	LEAR	4 S/F	2302.0	2304.6	14.6	28.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	2302.6	2304.8	12.2	33.0			QL=6 ST=2 TYP=3
	2695	PALE	4 S/F	2305.6	2307.1	2.4	25.0			QL=5 ST=2 TYP=3
	2695	LEAR	8 S	2316.6	2316.6	.2	33.0			QL=6 ST=2 TYP=3
	2695	PENT	29 PBI	2329.0	2329.0	30.00	15.4			
09	2695	PENT	21 GRF	2210.0	2225.0	30.0	2.4	1.2		
	2695	PENT	45 C	2217.8	2219.0	6.0	10.4	3.6		
	2695	PALE	8 S	2218.8	2219.0	.3	11.0			QL=6 ST=2 TYP=3
10	2800	OTTA	32 ABS	1800.0	1825.0	40.0	-2.4	-1.2		
11	2800	OTTA	46F C	1305.0	1310.0	32.0	26.0	9.4		
	2695	ATHN	20 GRF	1306.5	1310.5	25.1	26.0			QL=6 ST=2 TYP=2
	2695	SGMR	8 S	1309.5	1310.3	1.1	23.0			QL=6 ST=2 TYP=3
	2800	OTTA	20 GRF	1338.0	1445.0	180.0	26.0			
	2695	SGMR	20 GRF	1340.0	1449.1	99.6	33.0			QL=6 ST=2 TYP=2
12	2695	LEAR	8 S	0723.1	0723.1	.2	30.0			QL=1 ST=2 TYP=3
	2695	PENT	20 GRF	2230.0	2320.0	90.0	6.4			
18	2695	LEAR	8 S	0749.3	0749.3	.2	28.0			QL=1 ST=2 TYP=3
	2800	OTTA	20 GRF	1720.0	1800.0	80.0	1.8	.9		
	2800	OTTA	20 GRF	1945.0	2050.0	125.0	2.2	1.4		
22	2800	OTTA	21 GRF	1915.0	1955.0	240.0	7.0	3.5		
	2800	OTTA	4 S/F	1925.5	1933.0	27.0	180.0	25.6		
	2695	PALE	47 GB	1926.6	1930.3		73.0			QL=6 ST=3 TYP=5
	8800	PALE	47 GB	1928.1	1930.3		310.0			QL=6 ST=3 TYP=5
	8800	SGMR	47 GB	1928.3	1930.3	8.5	320.0			QL=6 ST=2 TYP=5
	2695	SGMR	47 GB	1928.3	1930.8	8.7	93.0			QL=6 ST=2 TYP=5
	2695	PENT	4 S/F	2005.5	2008.0	5.5	38.0	8.6		
23	2695	LEAR	8 S	0728.1	0728.1	.2	4.0			QL=2 ST=2 TYP=3
	8800	LEAR	8 S	0728.1	0728.1	.2	11.0			QL=6 ST=2 TYP=3
	2800	OTTA	1 S	2102.0	2103.0	3.0	3.2	1.1		
24	2800	OTTA	21 GRF	1835.0	2145.0	320.0	6.0	3.0		
	2800	OTTA	4 S/F	1844.5	1848.4	7.4	23.0	12.0		
	2800	OTTA	29 PBI	1852.0	1852.0	25.0	4.8	2.0		
25	2800	OTTA	21 GRF	2028.0	2120.0	170.0	9.6	4.8		
	2800	OTTA	4 S/F	2028.5	2033.0	13.0	41.0	13.0		
	2695	SGMR	4 S/F	2029.8	2033.1	7.0	48.0			QL=6 ST=2 TYP=3
	8800	SGMR	4 S/F	2030.8	2031.8	4.7	19.0			QL=6 ST=2 TYP=3
	2695	PALE	4 S/F	2030.8	2033.1	3.7	31.0			QL=6 ST=3 TYP=3
	8800	PALE	8 S	2031.8	2033.0	1.3	13.0			QL=6 ST=3 TYP=3
	2800	OTTA	1 S	2043.0	2046.0	6.0	2.2	1.1		
	2695	SGMR	8 S	2044.1	2044.3	.5	11.0			QL=6 ST=2 TYP=3
	2800	OTTA	1 S	2100.0	2101.0	5.0	2.2	1.0		
26	2695	PENT	22 GRF	2150.0	2330.0	150.00	6.8			
27	2800	OTTA	20 GRF	1740.0	1810.0	75.0	2.0	1.2		

SOLAR RADIO EMISSION  
SELECTED FIXED FREQUENCY EVENTS

27  
Feb 83

FEBRUARY 1983

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 -22 W/m <sup>2</sup> Hz)	Mean		
27	2695	PALE	8 S	1743.1	1744.5	1.5	13.0			QL=6 ST=2 TYP=3
		8800 PALE	4 S/F	1743.1	1744.5	2.2	26.0			
	2800	OTTA	21 GRF	1930.0	1950.0	60.0	1.8	1.0		
	2800	OTTA	2 S/F	2000.6	2001.0	1.0	4.8			
	2800	OTTA	8 S	2119.3	2119.4	.2	2.8			
	2800	OTTA	21 GRF	2140.0	2220.0	100.0	5.0	3.2		
	2800	OTTA	20 GRF	2158.0	2201.5	11.0	4.8	1.8		
	2695	PENT	3 S	2357.0	2358.8	5.0	13.2	3.6		
		LEAR	4 S/F	2357.8	2358.6	3.2	18.0			QL=6 ST=2 TYP=3
	28	2800	OTTA	21 GRF	1325.0	1435.0	135.0	4.4	2.4	
2800		OTTA	2 S/F	1425.0	1426.2	7.0	5.6	2.5		
2800		OTTA	2 S/F	1524.8	1525.3	3.0	6.2	3.1		
2695		PENT	22 GRF	2200.0	2300.0	110.0	3.2	2.2		

Observatories:

BERN = Berne      MANI = Manila      OTTA = Ottawa ARO      PENT = Penticton      SGMR = Sagamore Hill  
LEAR = Learmonth      ATHN = Athens      PALE = Palehua

Explanation of Type Code:

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

INFERRED IP MAGNETIC FIELD

BARTELS ROTATION	DATE	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
2024	AUG 26	-	-	-	TA	TA	-	TA	-	-	TA	-	-	-	-	TA	-	TA	-	-	-	TA	-	-	-	-	-	-
2025	SEP 22	-	-	-	-	-	-	AT	TA	-	-	-	-	TA	-	TA	TA	-	AT	-	-	TA	AT	TA	TA	TA	TA	-
2026	OCT 19	AT	TA	TA	-	-	-	TA	TA	TA	-	TA	-	-	-	TA	TA	-	-	-	-	AT	TA	TA	-	-	-	-
2027	NOV 15	-	-	-	AT	AT	-	-	-	-	AT	-	-	-	-	TA	TA	TA	TA	AT	-	-	-	-	-	AT	-	-
2028	DEC 12	TA	-	-	-	AT	AT	-	-	AT	TA	-	-	-	-	-	-	-	AT	TA	-	-	-	-	TA	-	-	-
2029	1982 JAN 8	-	-	-	-	-	TA	TA	-	-	-	-	-	TA	-	-	TA	-	-	-	-	AT	-	-	AT	-	-	-
2030	FEB 4	-	-	-	TA	TA	TA	TA	-	-	TA	-	-	-	-	TA	-	-	-	-	-	-	-	TA	-	-	TA	-
2031	MAR 3	-	-	-	-	-	TA	TA	-	-	TA	-	TA	-	-	-	-	-	TA	TA	-	-	-	-	-	-	AT	-
2032	MAR 30	-	TA	-	TA	-	-	-	-	-	-	TA	-	-	-	-	AT	TA	-	-	TA	-	-	-	-	-	-	-
2033	APR 26	-	AT	-	-	-	-	-	TA	TA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AT	AT	-	-
2034	MAY 23	-	-	-	AT	-	TA	-	-	-	-	-	AT	-	-	-	-	-	-	-	-	-	-	-	-	-	TA	-
2035	JUN 19	-	-	-	-	-	-	-	-	-	-	-	-	TA	-	-	-	-	-	-	-	-	TA	-	-	-	-	-
2036	JUL 16	-	-	-	-	-	TA	-	-	-	-	AT	-	-	-	AT	-	-	-	-	-	-	-	-	-	-	-	-
2037	AUG 12	-	-	-	-	-	-	-	TA	-	-	TA	TA	TA	TA	-	-	TA	TA	-	TA	-	-	-	-	-	-	-
2038	SEP 8	TA	AT	-	-	-	-	-	-	-	-	-	-	-	TA	AT	-	-	-	-	-	TA	-	-	-	-	-	-
2039	OCT 5	-	AT	-	AT	-	-	-	-	-	AT	TA	-	-	-	AT	-	-	-	-	-	-	-	TA	-	-	-	-
2040	NOV 1	AT	-	-	-	AT	-	-	-	-	AT	-	-	-	AT	-	-	TA	TA	-	-	-	-	TA	TA	AT	-	-
2041	NOV 28	TA	-	-	-	-	AT	-	-	-	-	-	-	TA	TA	-	-	-	-	-	-	AT	AT	-	-	-	-	-
2042	DEC 25	-	-	AT	AT	-	-	-	TA	-	-	-	-	-	-	-	-	-	TA	TA	-	-	AT	-	-	-	-	-
2043	1983 JAN 21	-	-	-	-	-	-	-	-	-	TA	-	-	-	-	-	-	-	-	TA	TA	-	-	AT	-	-	-	-
2044	FEB 17	-	-	-	-	-	-	-	-	-	-	TA	-	-	-	TA	AT	-	-	-	-	-	-	-	-	-	-	-

= definitely towards the sun      = definitely away from the sun  
 T = towards the sun     A = away from the sun     \* = effect doubtful or not discernible     - = missing data

The table shows daily inferences of the polarity of the interplanetary magnetic field. The first half of the day is based principally on magnetograms produced by the magnetometer at the Vostok Antarctic Station of the USSR. The magnetometer of the U.S. Air Weather Service now operated at Thule by the Danish Meteorological Institute is used for the second half of the day. The Thule magnetometer ceased operating in August 1981.

STANFORD MEAN SOLAR MAGNETIC FIELD

BARTELS ROTATION	DATE	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
2024	AUG 21	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2025	SEP 17	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2026	OCT 14	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2027	NOV 10	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2028	DEC 7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2029	1982 JAN 3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2030	JAN 30	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2031	FEB 26	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2032	MAR 25	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2033	APR 21	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2034	MAY 18	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2035	JUN 14	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2036	JUL 11	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2037	AUG 7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2038	SEP 3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2039	SEP 30	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2040	OCT 27	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2041	NOV 23	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2042	DEC 20 1983	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2043	JAN 16	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2044	FEB 12	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

POLARITY OF THE MEAN SOLAR MAGNETIC FIELD: ☐ = FIELD >2μT, ☐☐☐☐ = -2μT ≤FIELD ≤2μT, ■ = FIELD <-2μT  
No box visible indicates no data available for that day.

NOTE: Data are taken daily at 2000 UT. Dates given are not Bartels Rotation dates. These earlier dates correspond to the occurrence of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

1983

1982

day	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
01	-19	.	-5	.	.	49	89	22	-31	42	-9	-81
02	-9	.	-5	33	85	19	102	53	-15	.	.	.8
03	-20	.	23	38	75	19	84	37	-18	.	-89	15
04	-39	-17	43	54	71	52	66	18	-38	10	-81	45
05	-44	3	48	80	53	85	68	-6	.	-42	-73	.
06	-21	38	16	82	35	105	55	-41	-63	.	-22	.
07	.	60	41	77	29	81	30	-54	-61	-90	-2	54
08	-2	57	69	80	42	63	-27	-76	-68	-54	.	84
09	.	24	74	68	54	59	-55	-90	.	-29	53	93
10	16	.	70	54	63	33	-74	-93	-54	-20	46	.
11	34	61	65	50	87	-30	-93	-95	-21	26	37	69
12	35	46	79	58	79	-87	-124	-100	1	29	53	16
13	.	.	87	.	43	-118	-125	-70	19	43	84	-19
14	.	.	77	78	9	-121	-120	-35	34	28	84	-22
15	.	86	72	51	-39	-144	-112	-7	37	.	.	.
16	21	93	51	-13	-112	-149	.	-1	52	8	39	-104
17	4	71	38	-51	-164	-141	-49	4	.	57	10	-102
18	.	46	27	-93	-193	-124	-28	-43	.	64	.	-67
19	20	28	-15	-184	-201	-93	-14	55	.	32	-87	-37
20	31	-5	-57	-237	-189	-59	12	33	22	.	-119	-7
21	25	-38	-58	-225	.	-32	40	.	33	.	.	24
22	22	-78	-93	-170	-128	-16	44	.	.	.	.	27
23	14	-113	-132	-123	-71	-12	26	17	.	.	-25	.
24	-2	-107	-158	-69	-29	5	10	45	12	.	-3	-1
25	-26	-93	-151	-56	-5	32	8	.	-1	.	31	.
26	.	-104	-118	-40	12	39	18	54	-31	.	.	-49
27	-61	-117	-26	11	28	47	36	55	-58	-31	31	-56
28	-56	-122	-26	37	38	46	72	34	.	6	3	.
29	-53	-77	-10	46	48	25	57	20	.	42	-14	.
30	.	-26	19	59	61	39	52	.	.	59	-51	.
31	.	.	46	.	53	64	.	-11	.	35	-91	.

DOT SYMBOL INDICATES NO DATA AVAILABLE FOR THE DAY.

BOULDER GEOMAGNETIC  
SUBSTORM LOG

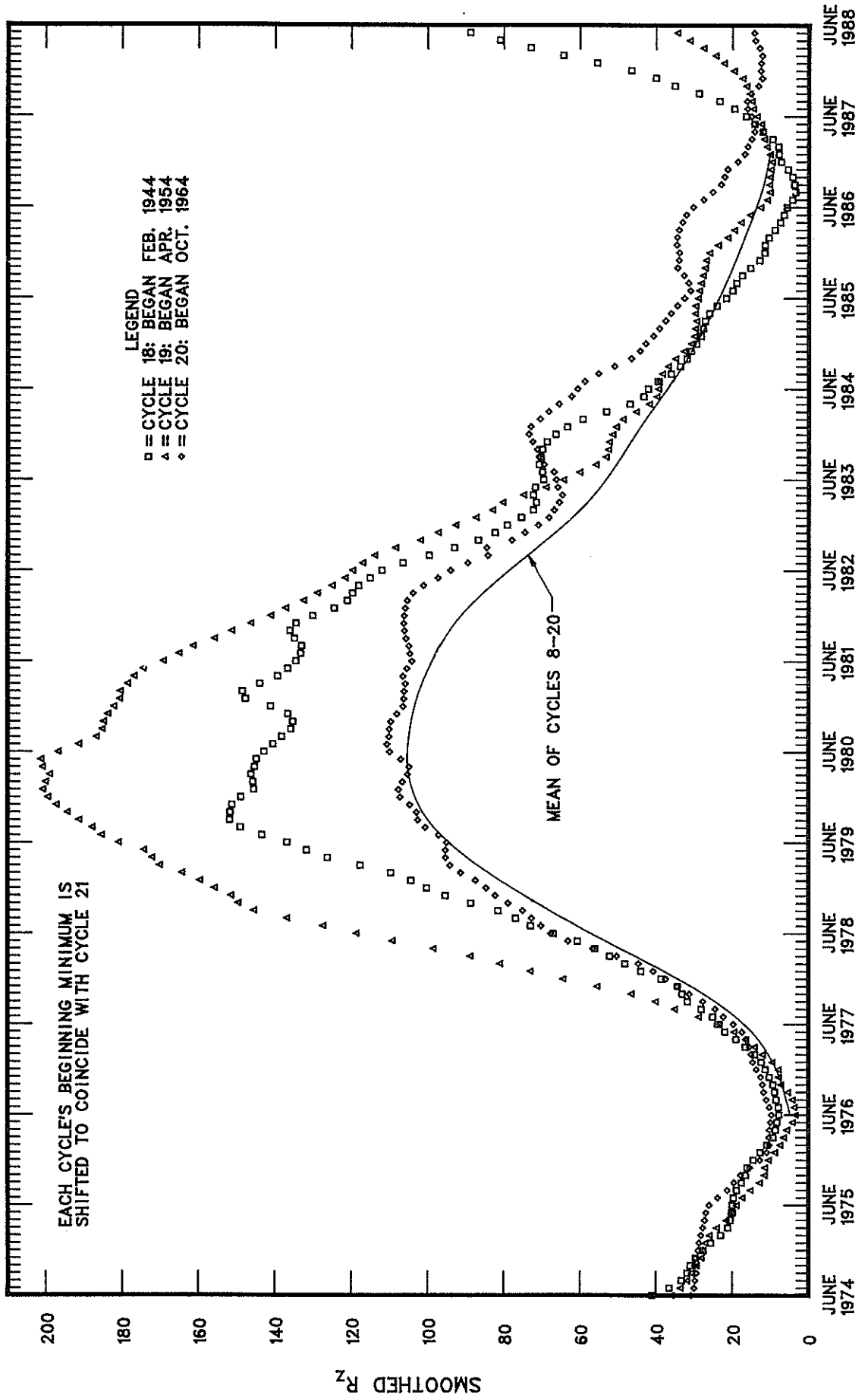
31  
Feb 83

February 1983

DATE	ONSET TIME	DIR	COMMENTS	DATE	ONSET TIME	DIR	COMMENTS
02/01			Field intermittently un-	02/16	0325	East	
	0520	East	settled.		0645	West	
	0930	West	Weak substorm.		0820	West	Multiple injections with recovery near 1100 UT.
02/02			Field slightly unsettled.		1120		Localized substorm Anchorage to Ft. Yukon; multiple injection with recovery near 1415 UT.
02/03			Field slightly unsettled.		1455	West	Several injections with recovery near 1730 UT.
02/04	1614	SSC	Magstorm followed.	02/17			Field intermittently un-
02/05			Magstorm continued.				settled.
02/06			Magstorm continued through 1800 UT.		0535		Weak substorm.
02/07			Magstorm conditions 0300-1730 UT. Unsettled balance of day.		1100	West	Several injections with recovery near 1300 UT.
02/08			Field unsettled through 1530 UT.		1425		Localized substorm vicinity College.
	0240	East		02/18			Field Intermittently un-
	0805	West			1125		settled.
02/09			Field intermittently un-				Localized substorm College to Ft. Yukon.
	0920	Center	settled.	02/19			Field intermittently un-
	1340		Localized substorm Anchorage to College.		0720	Center	settled.
	2105		Weak positive impulse H-component mid-latitude stations.	02/20			Field active after 1100 UT.
02/10			Field unsettled through 1630 UT.		0700	East	Weak substorm.
	0755	West	Weak substorm.		1105	West	Multiple injections with recovery near 1700 UT.
	0955		Localized substorm at College.	02/21			Field active all day.
	1055		Localized substorm Anchorage to College.		0440	East	Weak substorm.
02/11			Field unsettled after 0730 UT.		0940		Localized substorm Anchorage to Ft. Yukon; several injections.
	1010	West	Weak substorm.		1415	West	Moderate injection into existing substorm.
	1045	West			1510		
	1205	West			1800	West	
02/12			Magstorm conditions 1000-1600 UT. Unsettled balance of day.	02/22			Field intermittently un-
	0720	Center			0205	East	settled.
02/13			Field intermittently active.	02/23			Field intermittently un-
	0705	Center			0330		settled.
	1054	West	Several injections.		0820		Weak substorm.
	1330		Localized substorm at College.		1550		Weak substorm.
	1440		Localized substorm Anchorage to College.	02/24			Field Intermittently un-
02/14			Field unsettled all day.		1120		settled.
	0715	West	Moderate substorm.		1200	West	Localized at College.
	1125		Localized substorm Anchorage to College.	02/25			Field Intermittently un-
	1520	West			0850	East	settled.
02/15			Field active 1000-1600 UT and unsettled balance of day.		0930	West	Weak substorm.
	0820	West			1450		Slow onset.
	1040	West	Multiple injections with recovery near 1400 UT.	02/26			Field slightly unsettled.
	1410	West			0900	West	Weak substorm.
02/16			Field active 0800-1800 UT and unsettled balance of day.	02/27			Field intermittently un-
					0825		settled.
							Weak substorm; onset at Ft. Simpson, slow expansion eastward.
				02/28			Field intermittently un-
					2145	SSC	settled.



# SUPERPOSITION OF CYCLES 18, 19, AND 20



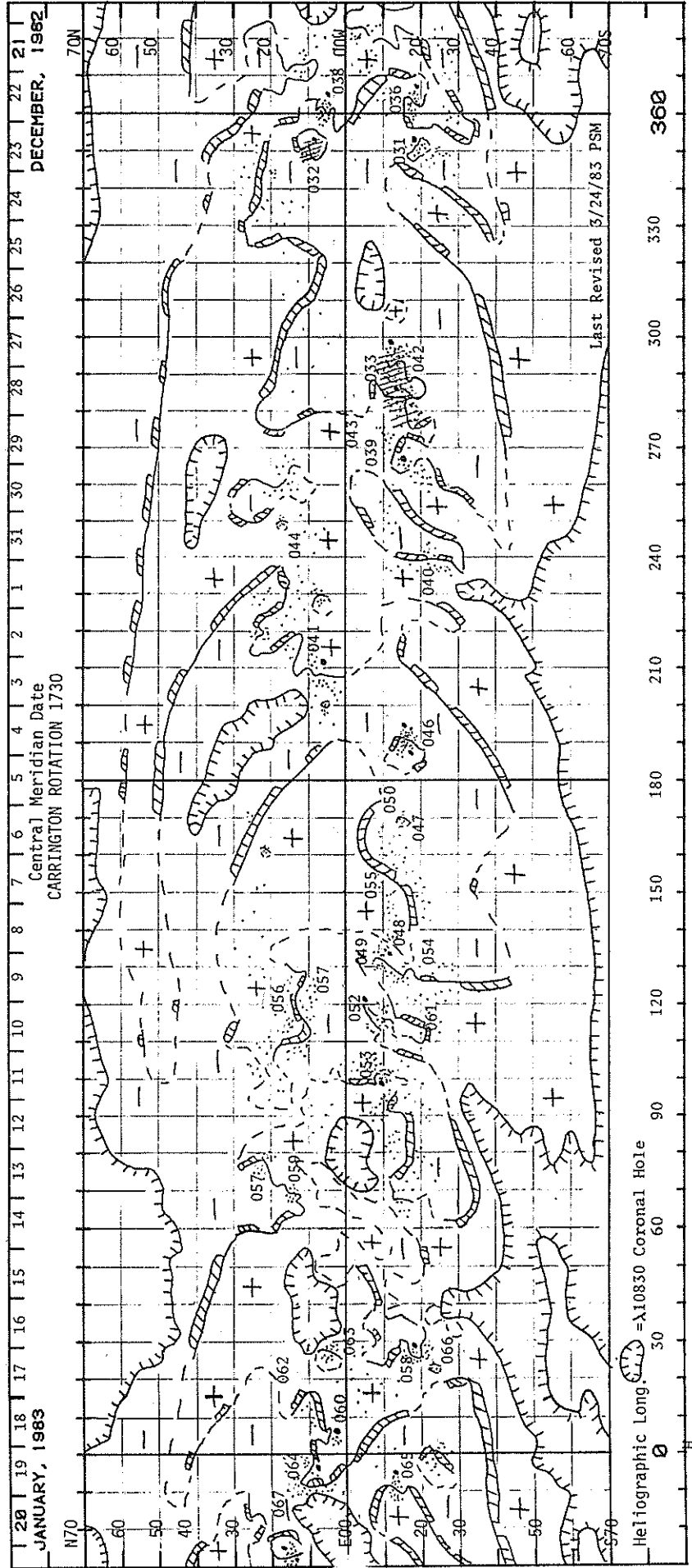
SGD 463 Part I (Prompt)

## JANUARY 1983 DATA

## Contents

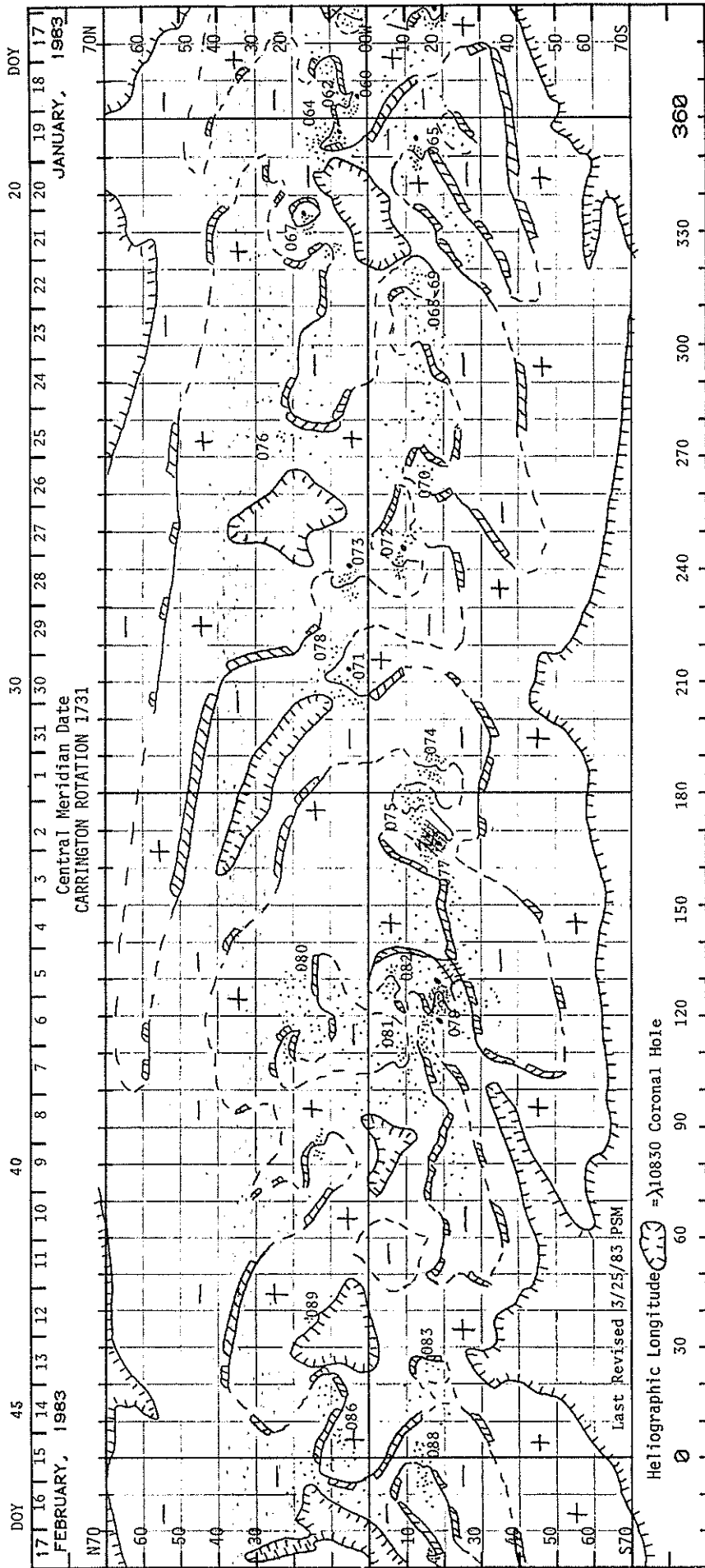
	Page
<u>Daily Solar Activity Centers</u>	
H-alpha, Solar Magnetic Field, and Helium 10830A Synoptic Charts	34-39
Magnetograms, H-alpha Filtergrams, Sunspots, and Corona Regions of Solar Activity (Data not available currently.)	40-70
Daily Calcium Plage Index (Data not available currently.) Regions of Sunspot Activity	71-88
<u>Sudden Ionospheric Disturbances</u>	89-91
<u>Spacecraft Observations</u>	
Pioneer XII Interplanetary Magnetic Field Magnitudes (Data not available at time of publication.)	
<u>Solar Radio Emission</u>	
Spectral Observations	92-97
<u>Cosmic Rays</u>	
Chart of Variations	98-100
Neutron Monitors Daily Values	101
<u>Geomagnetic Indices</u>	
Geomagnetic Activity Indices (Kp, Ap, Cp, Km, Am, aa, Kn, An, Ks, As)	102
Daily Average Indices Ap	103
Chart of Kp by Bartels 27-day Rotation	104
Chart of Dst by Bartels 27-day Rotation (See page 110)	
Hourly Equatorial Dst Values (Provisional) (Data not avail- able at time of publication.)	
Principal Magnetic Storms	105
Sudden Commencements and Solar Flare Effects (Data not available at time of publication.)	
<u>Radio Propagation Indices</u>	
Transmission Frequency Ranges - North Atlantic Path	106-107
Quality Indices on Paths to Germany	108

# H $\alpha$ SYNOPTIC CHART CARRINGTON ROTATION 1730 (PRELIMINARY)



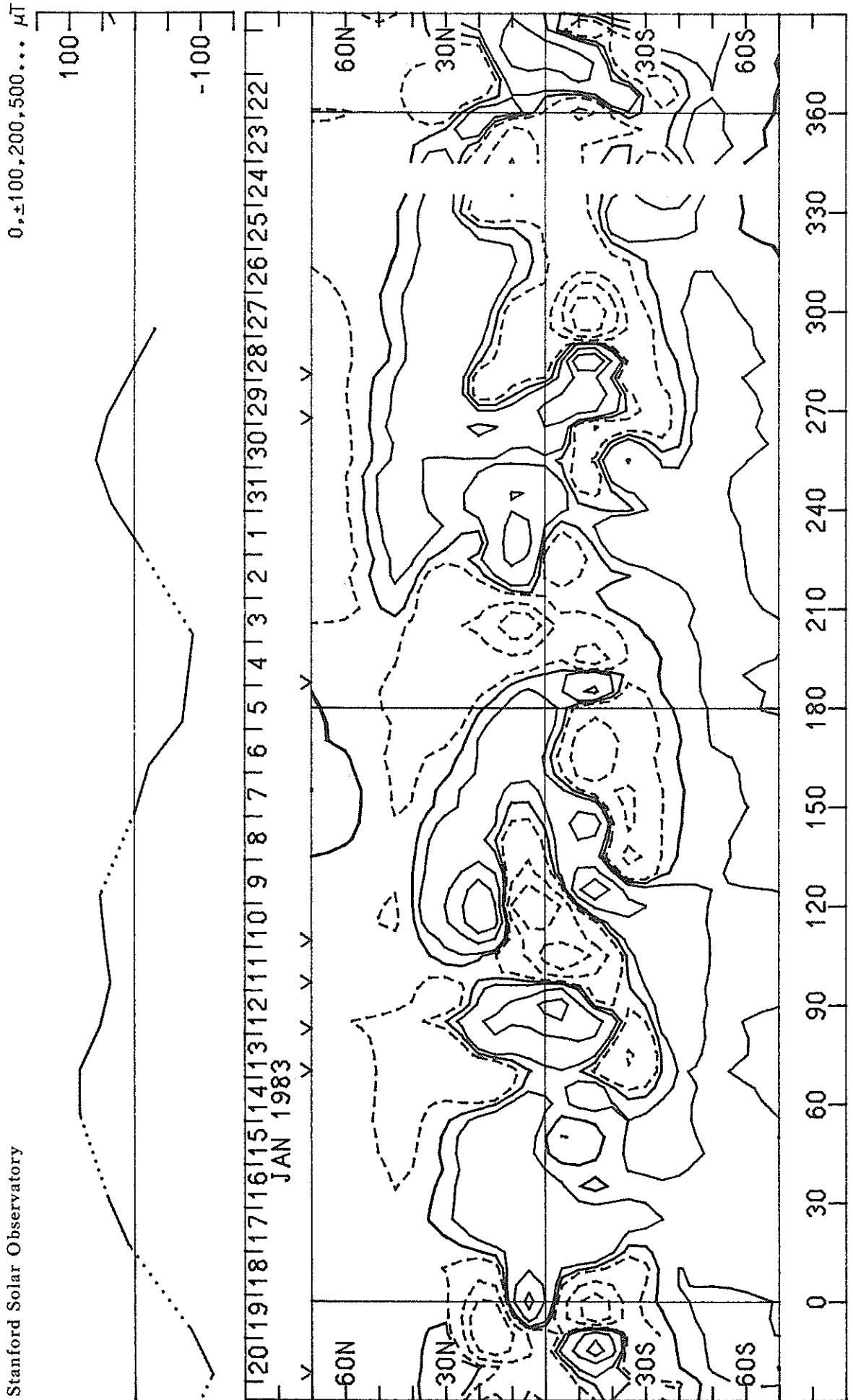
# H $\alpha$ SYNOPTIC CHART

CARRINGTON ROTATION 1731 (PRELIMINARY)



# SOLAR MAGNETIC FIELD SYNOPTIC CHART CARRINGTON ROTATION 1730

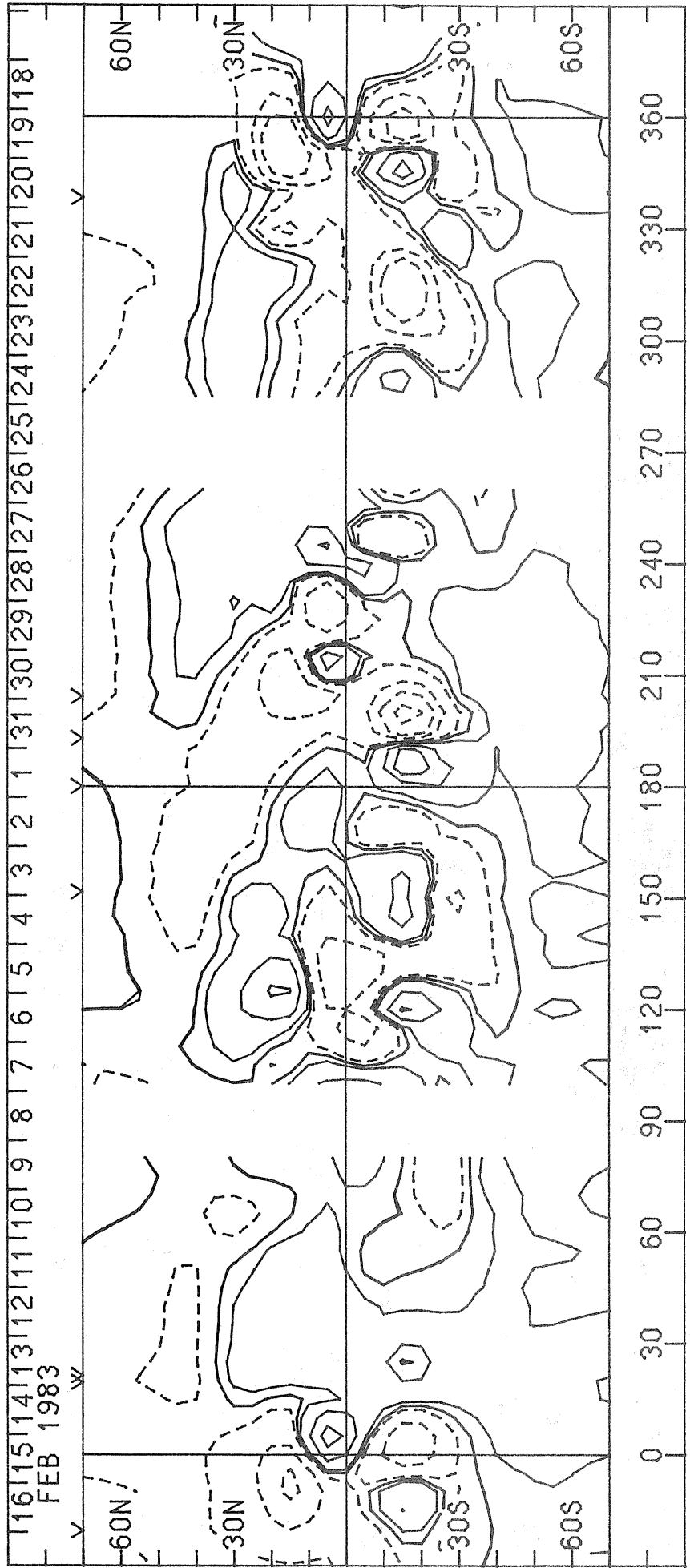
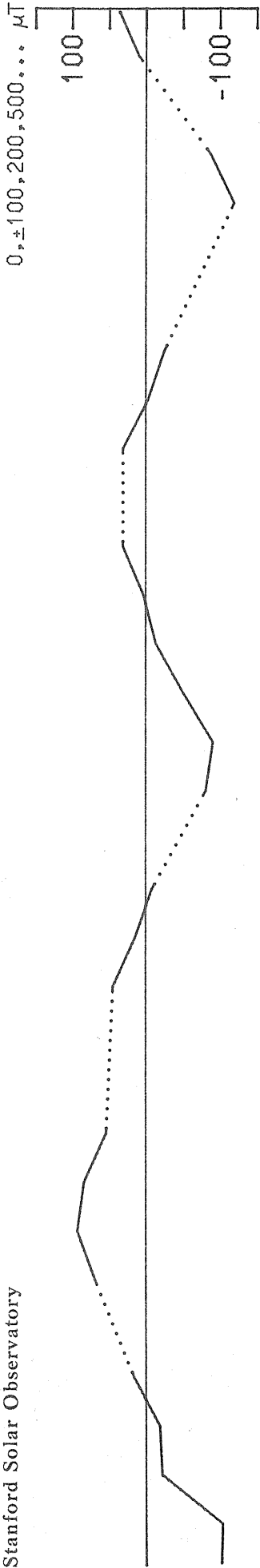
Stanford Solar Observatory



1730

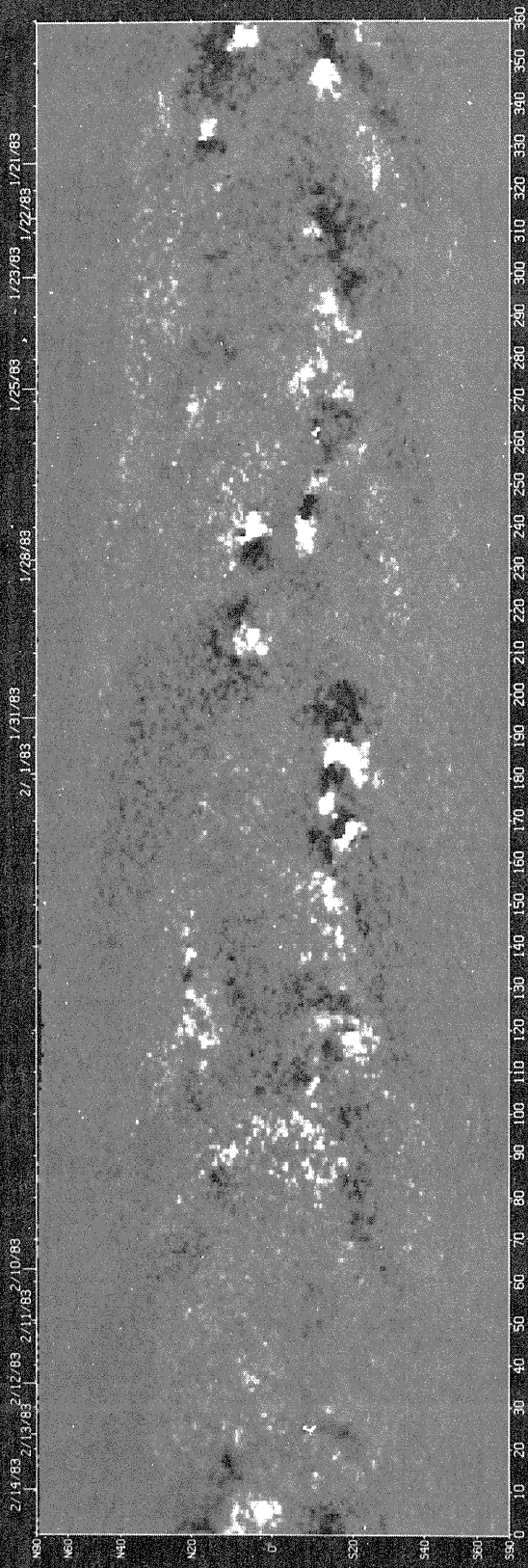
SOLAR MAGNETIC FIELD SYNOPTIC CHART  
 CARRINGTON ROTATION 1731

Stanford Solar Observatory



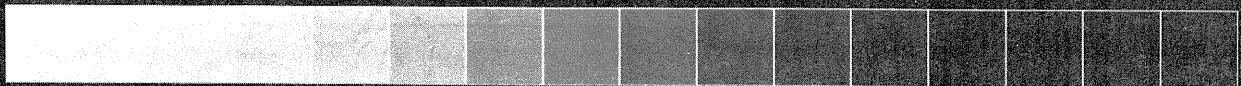
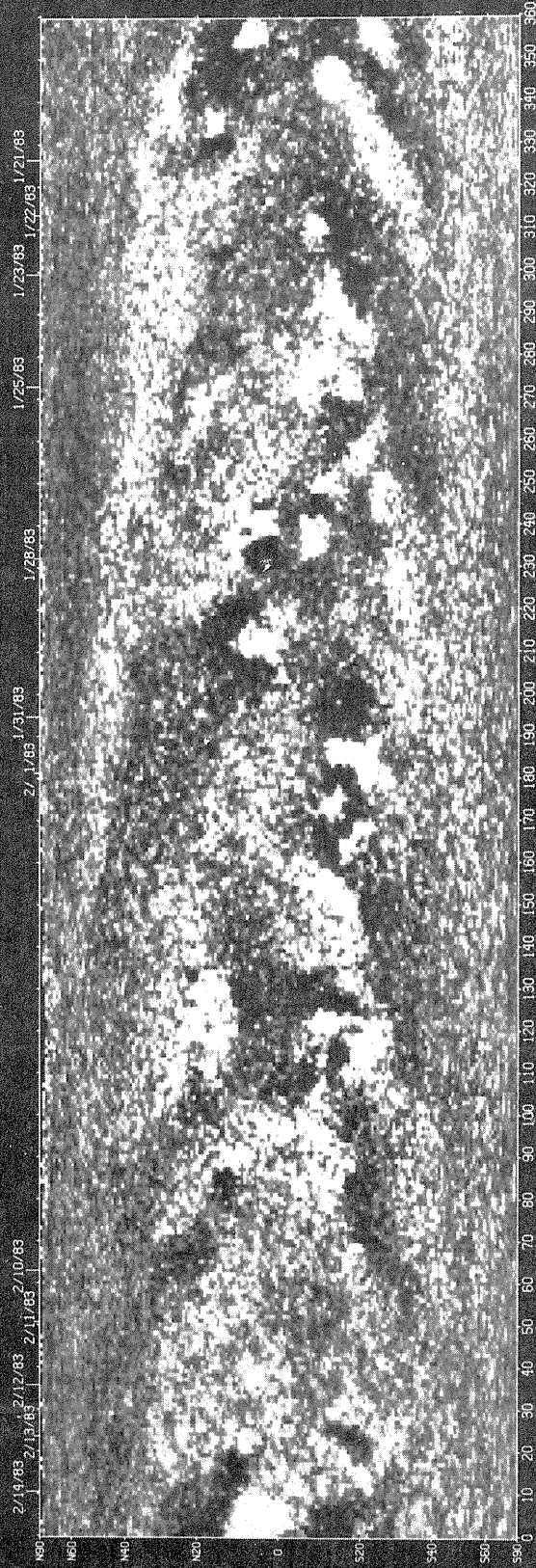
1731

CARRINGTON ROTATION 1731 FLUX



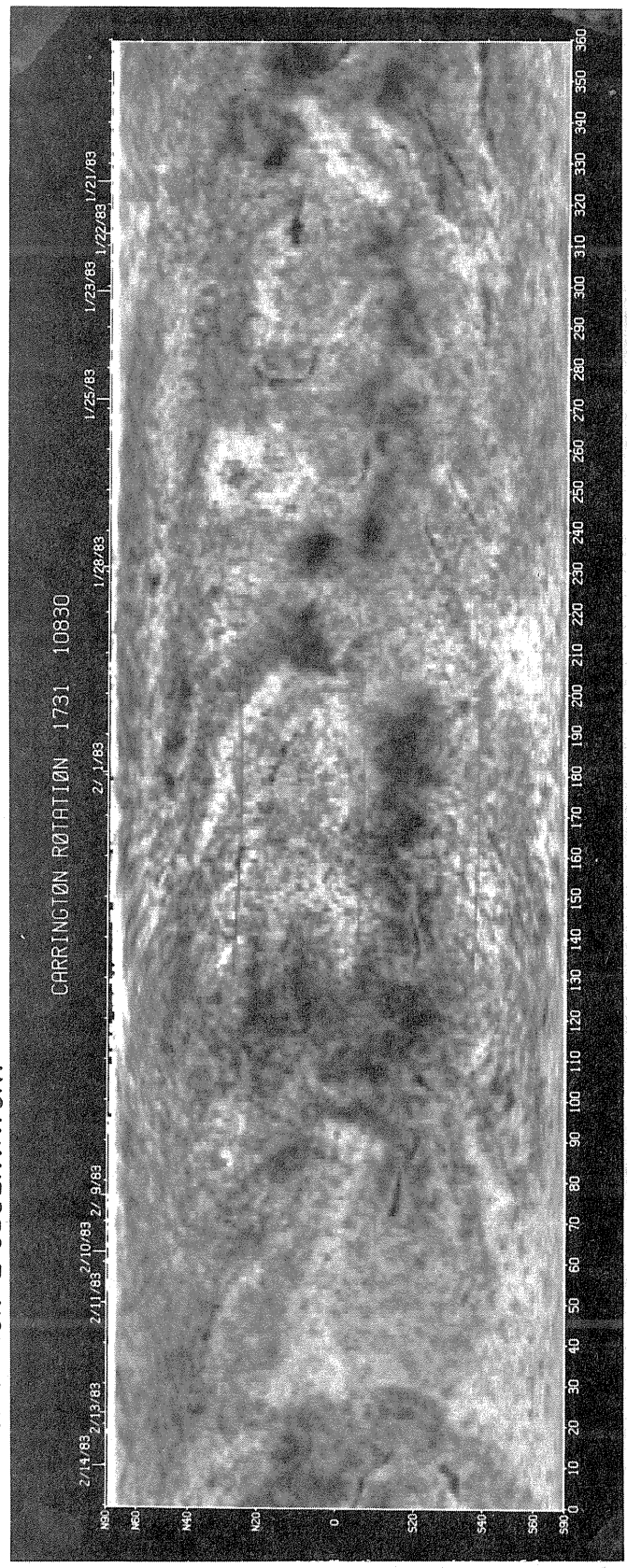
KPNO SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION 1731 POLARITY



HELIUM 10830Å SYNOPTIC MAPS  
CARRINGTON ROTATION 1731

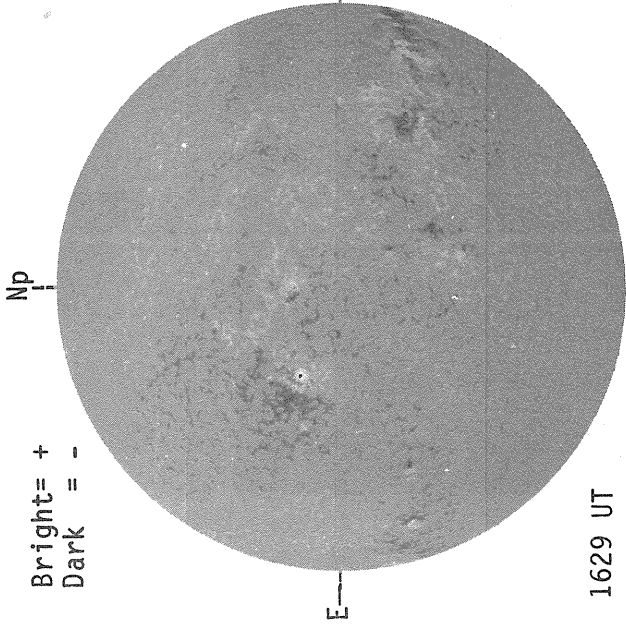
KITT PEAK NATIONAL OBSERVATORY





JANUARY 01, 1983 (P= 2.30, B<sub>0</sub>=-3.00, L<sub>0</sub>= 239.33)

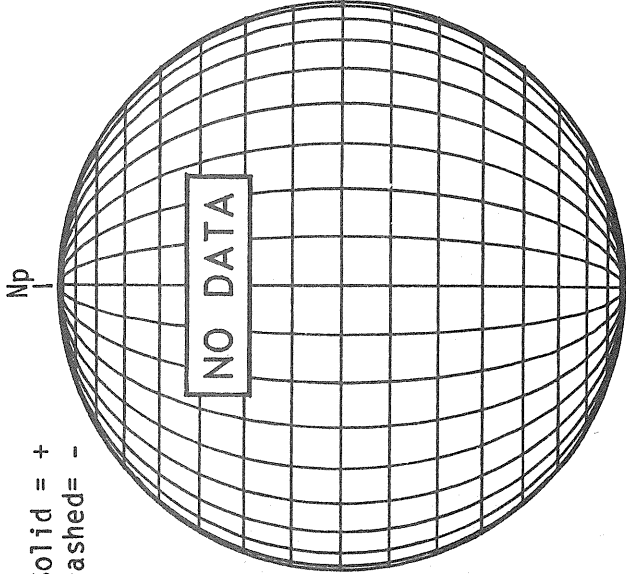
KITT PEAK MAGNETOGRAM



Bright = +  
Dark = -

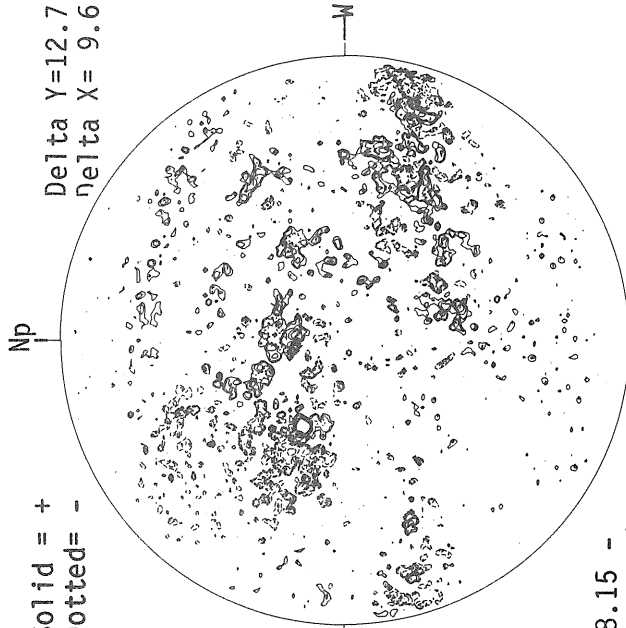
1629 UT

STANFORD MAGNETOGRAM



Solid = +  
Dashed = -

MT. WILSON MAGNETOGRAM

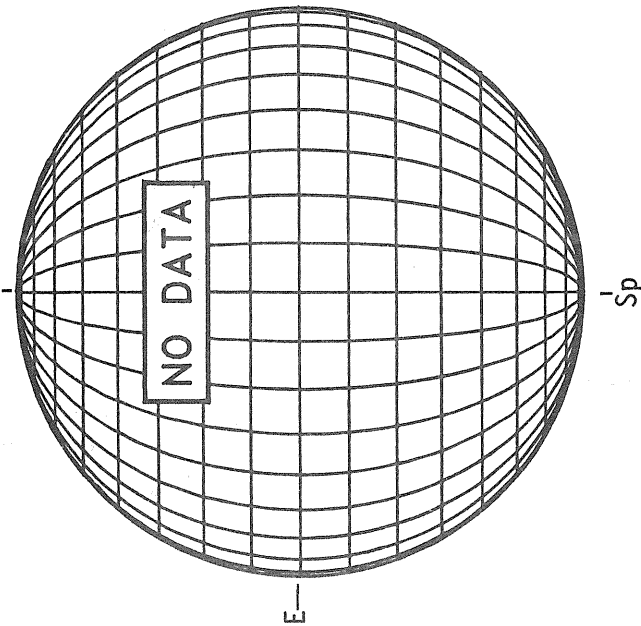


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Dotted = -

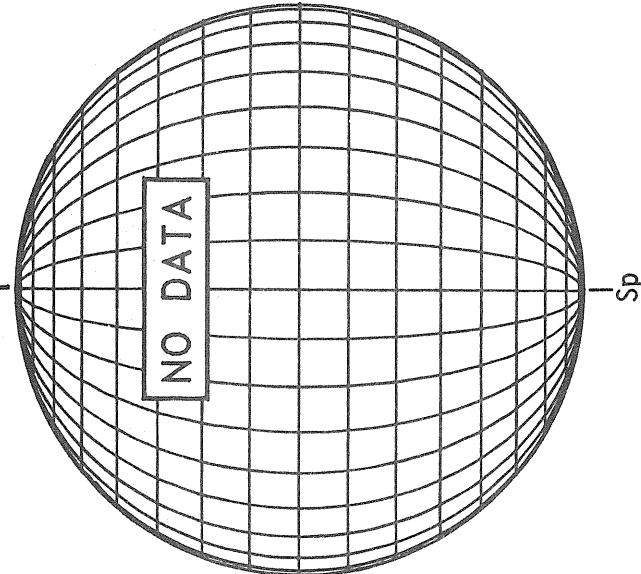
Delta Y = 12.7  
Delta X = 9.6

18.15 -  
19.56 UT

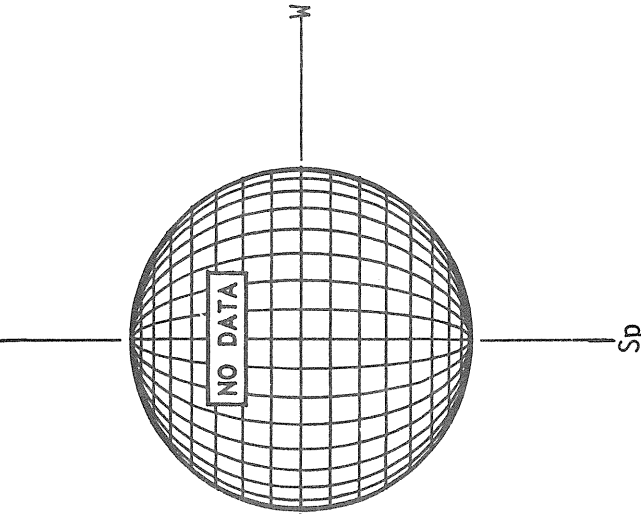
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)

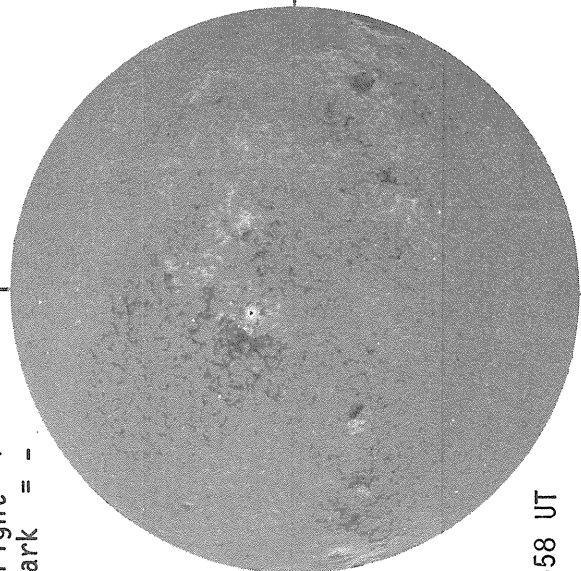


JANUARY 02, 1983 (P= 1.82, B<sub>0</sub>=-3.11, L<sub>0</sub>= 226.15)

KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -

Np

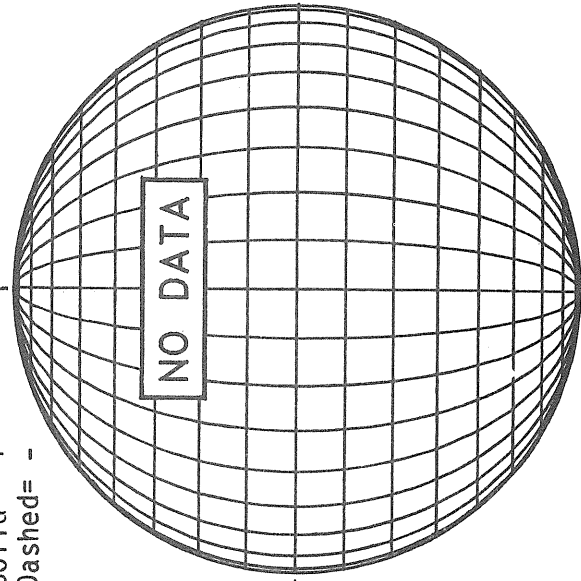


1558 UT

STANFORD MAGNETOGRAM

Solid = +  
Dashed = -

Np



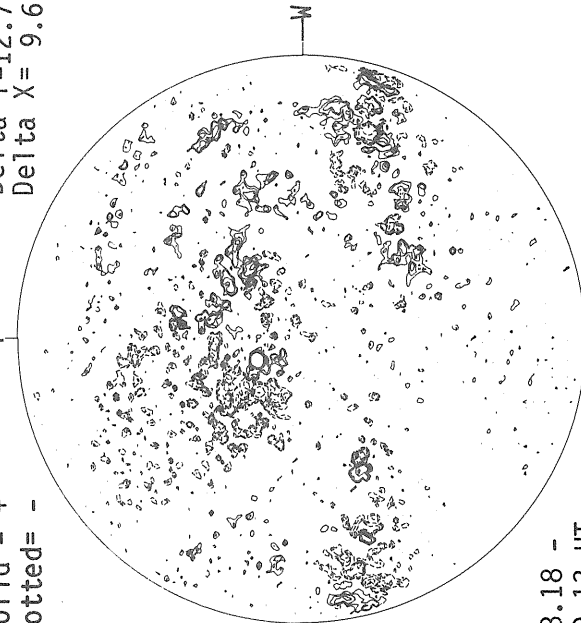
18.18 -  
19.13 UT

MT. WILSON MAGNETOGRAM

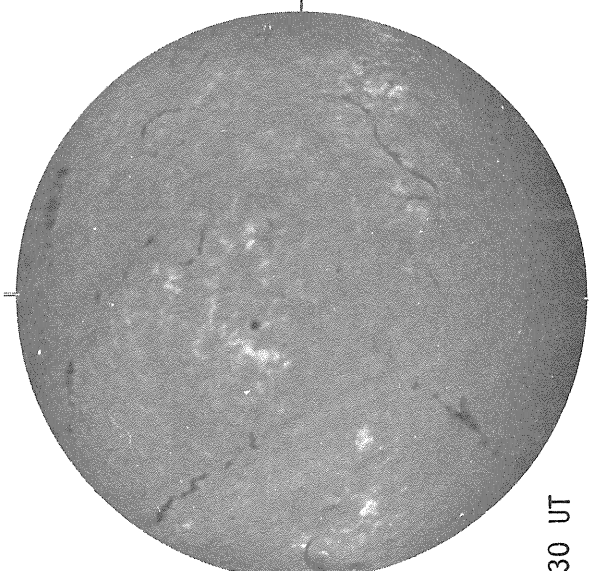
Solid = +  
Dotted = -

Np

Delta Y=12.7  
Delta X= 9.6

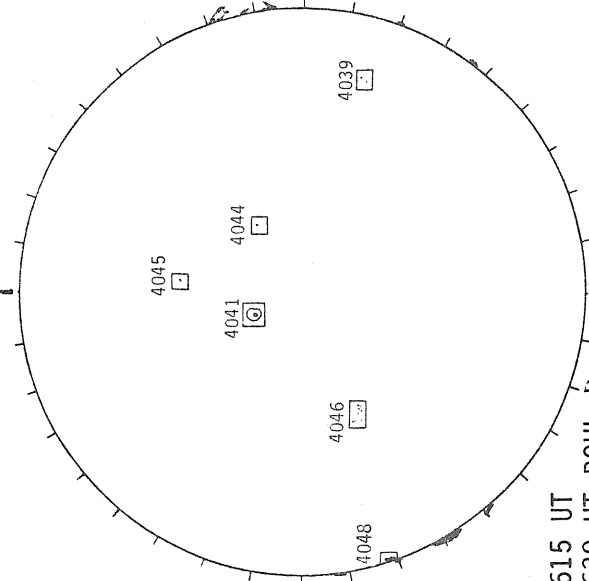


BOULDER H-ALPHA



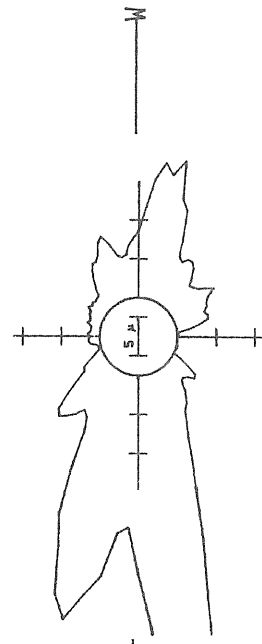
1630 UT

BOULDER SUNSPOTS



1615 UT  
1630 UT BOUL Profil

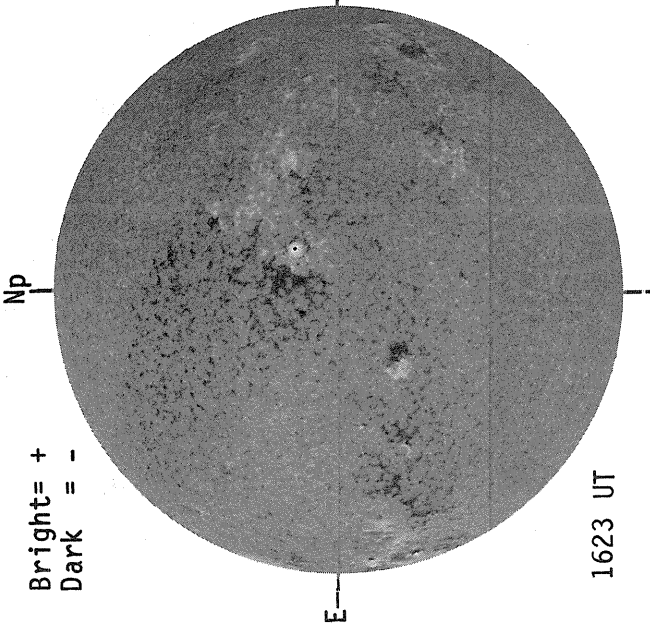
SACRAMENTO PEAK CORONA (5303 Angstrom)



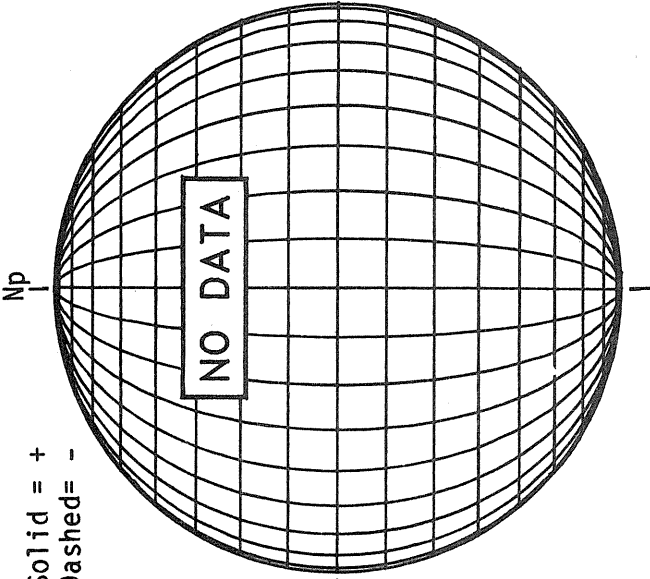
1.15 Ro 1617 UT

JANUARY 03, 1983 (P= 1.33, B<sub>0</sub>=-3.23, L<sub>0</sub>= 212.98)

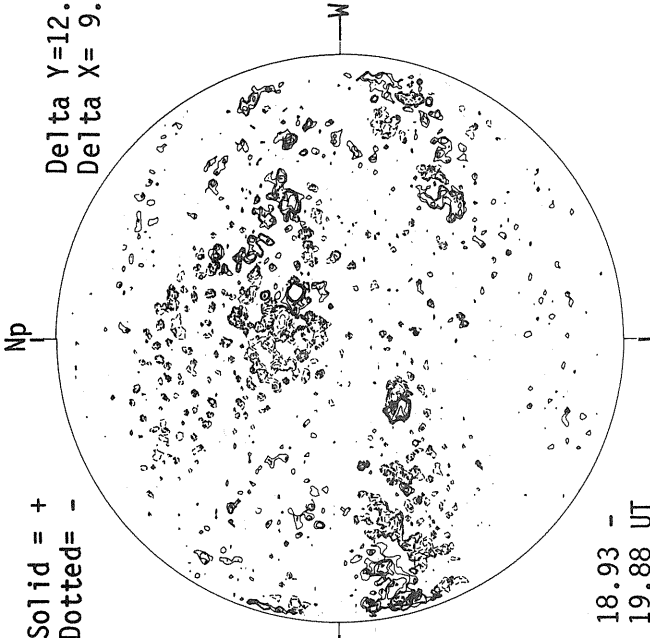
KITT PEAK MAGNETOGRAM



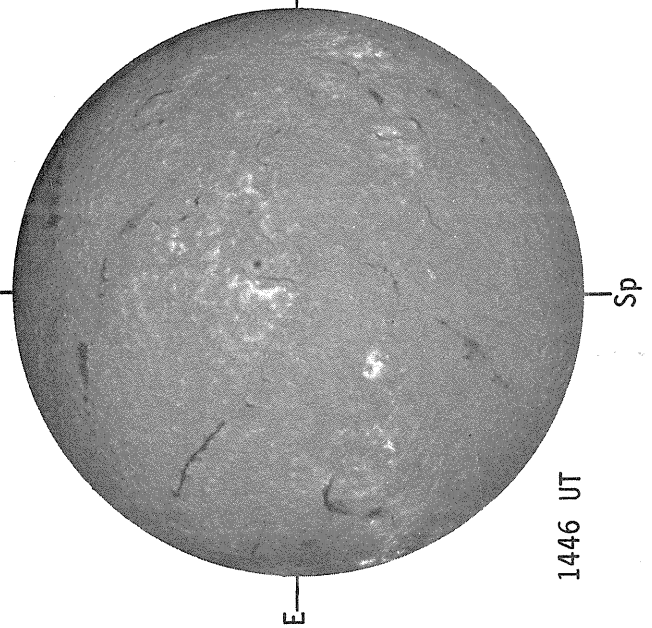
STANFORD MAGNETOGRAM



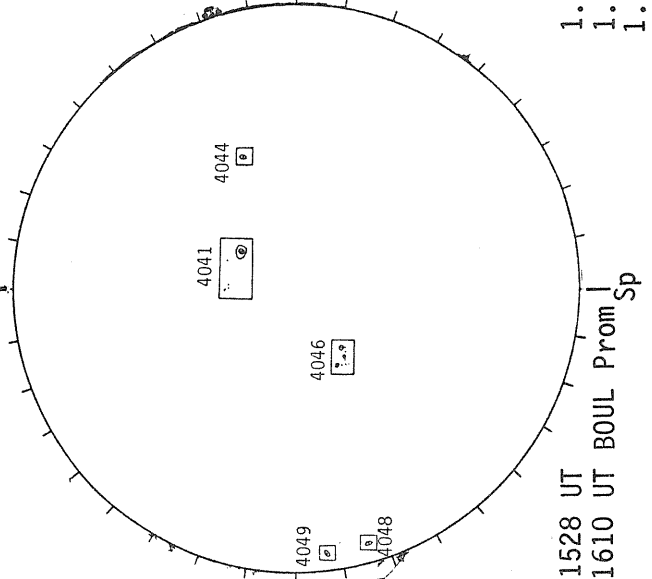
MT. WILSON MAGNETOGRAM



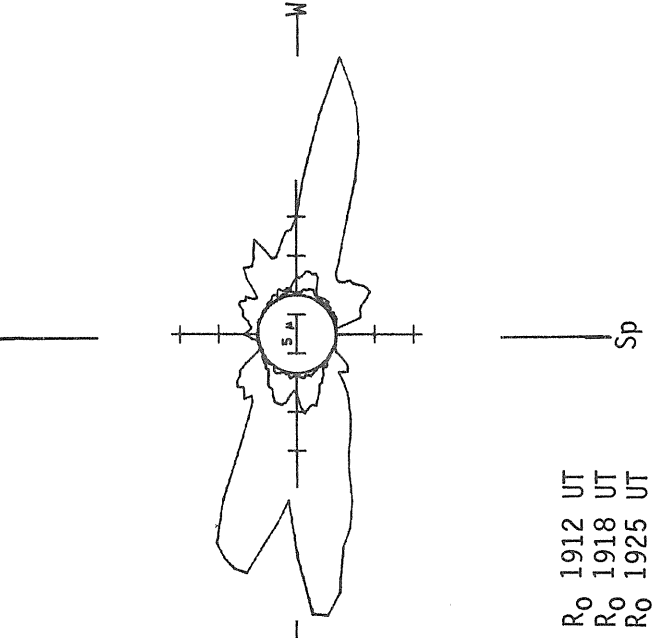
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)

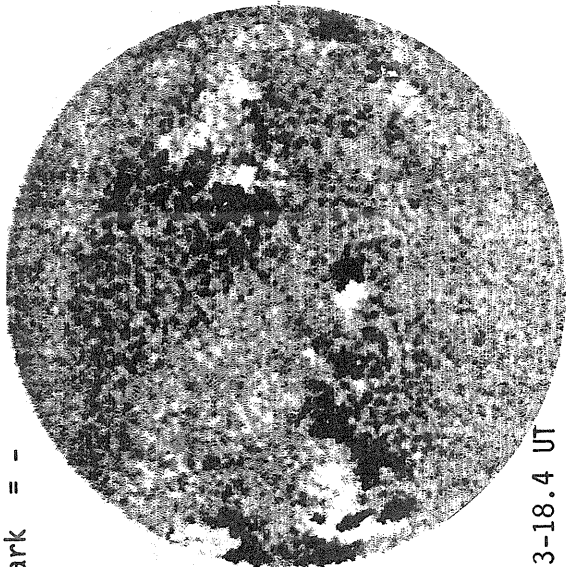


JANUARY 04, 1983 (P= 0.85, B<sub>0</sub>=-3.34, L<sub>0</sub>= 199.81)

MT. WILSON MAGNETOGRAM

Bright = +  
Dark = -

Np

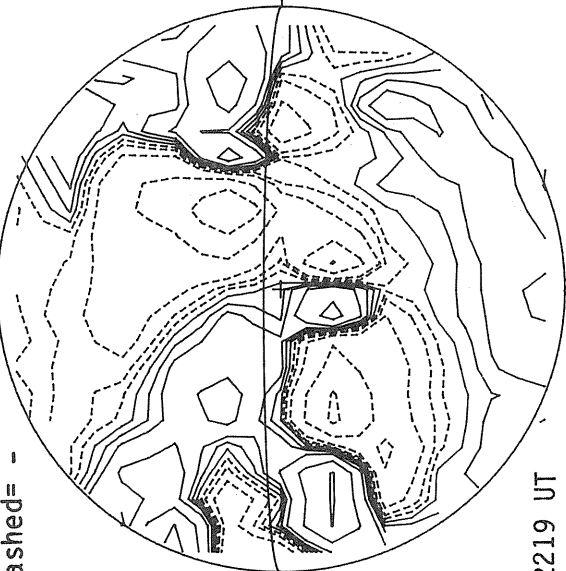


17.3-18.4 UT

STANFORD MAGNETOGRAM

Solid = +  
Dashed = -

Np

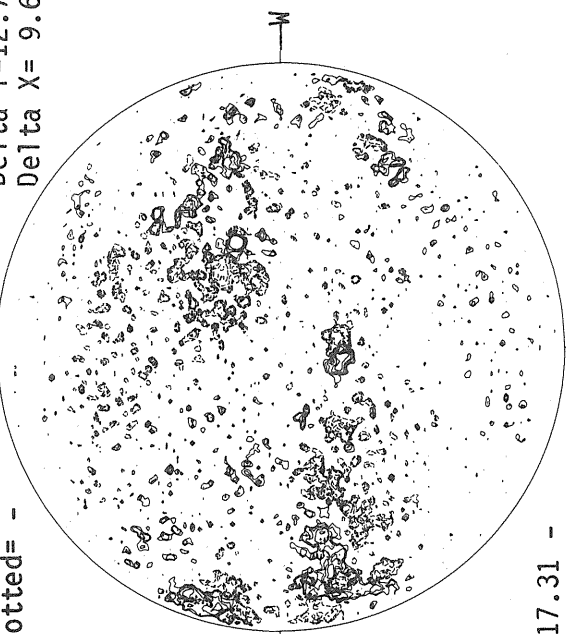


2219 UT

MT. WILSON MAGNETOGRAM

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Dotted = -

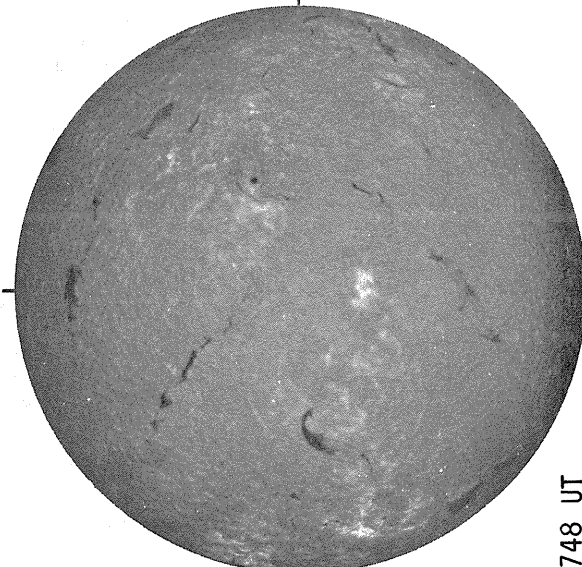
Np



Delta Y = 12.7  
Delta X = 9.6

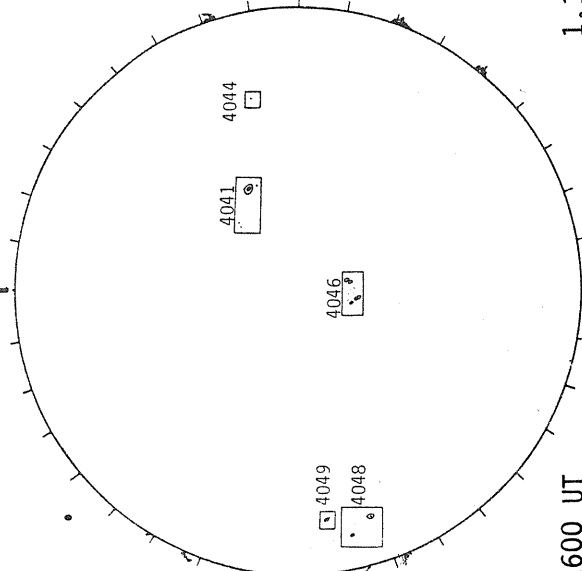
17.31 -  
18.37 UT

SACRAMENTO PEAK H-ALPHA



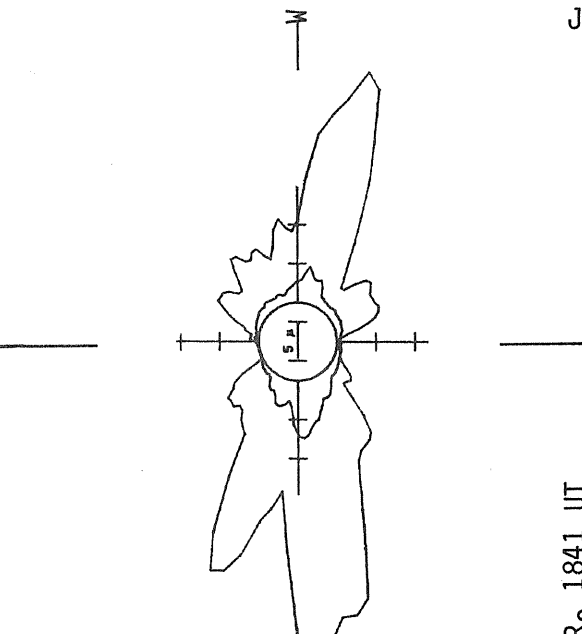
1748 UT

BOULDER SUNSPOTS



1600 UT  
2035 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)



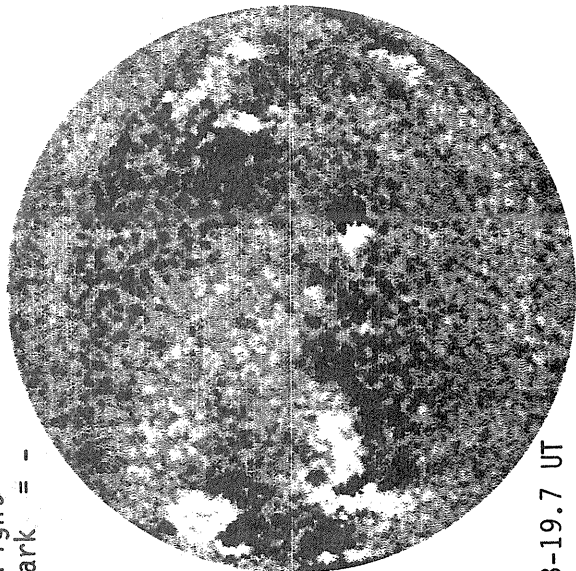
1.15 R<sub>0</sub> 1841 UT  
1.35 R<sub>0</sub> 1847 UT

JANUARY 05, 1983 (P= 0.36, B<sub>0</sub>=-3.46, L<sub>0</sub>= 186.64)

MT. WILSON MAGNETOGRAM

Bright = +  
Dark = -

Np

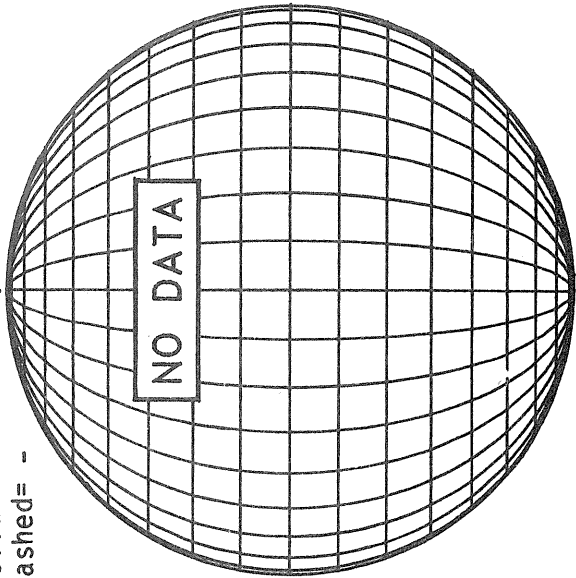


18.8-19.7 UT

STANFORD MAGNETOGRAM

Solid = +  
Dashed = -

Np

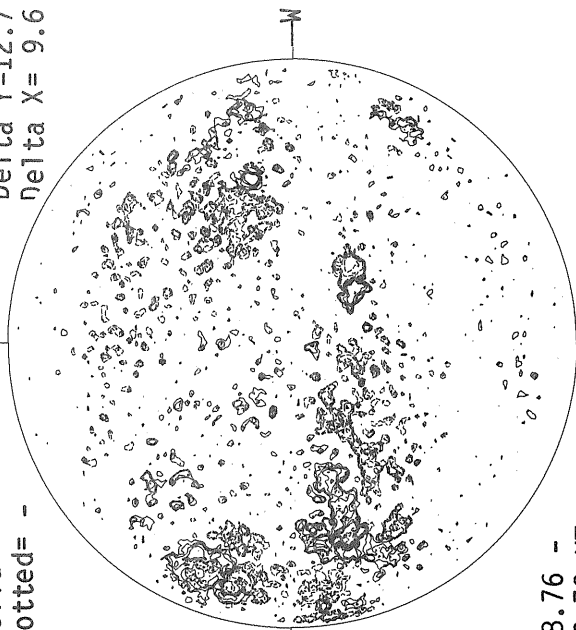


18.76 -  
19.73 UT

MT. WILSON MAGNETOGRAM

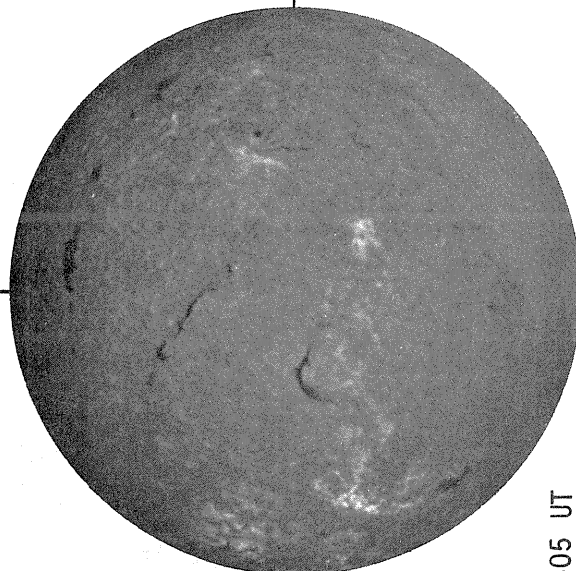
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Dotted = -

Np



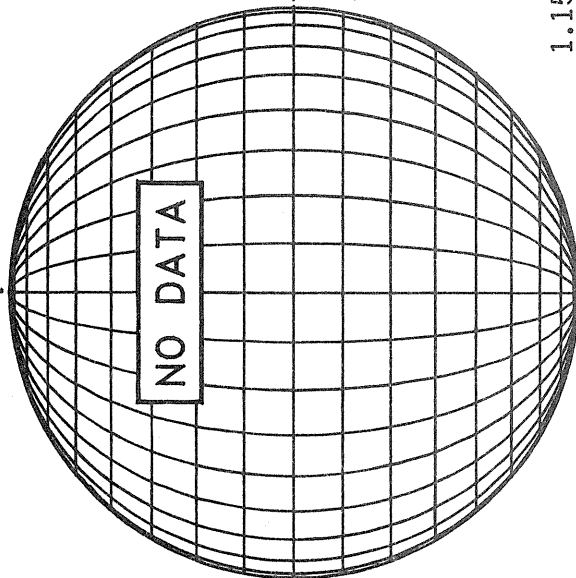
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Delta X= 9.6

SACRAMENTO PEAK H-ALPHA

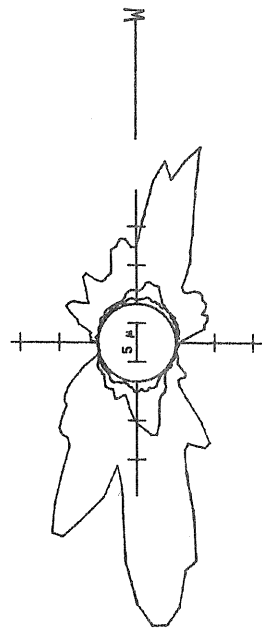


1505 UT

BOULDER SUNSPOTS



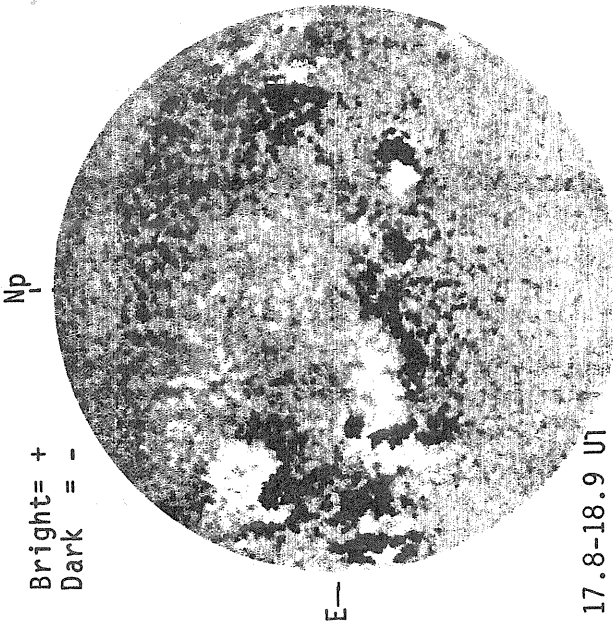
SACRAMENTO PEAK CORONA (5303 Angstrom)



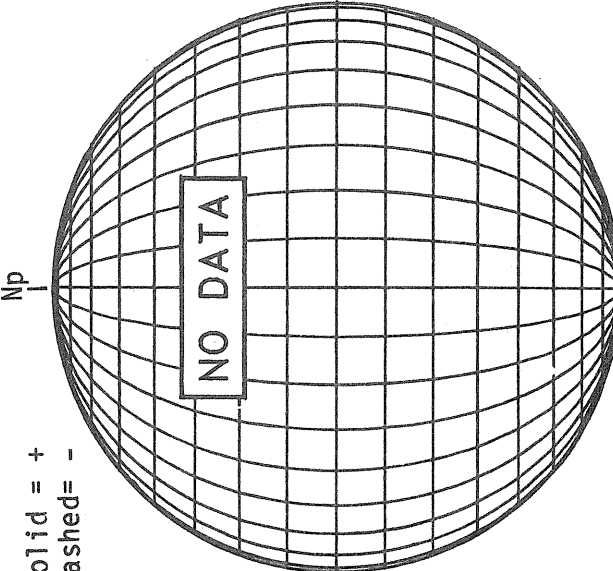
1.15 R<sub>0</sub> 1529 UT  
1.35 R<sub>0</sub> 1535 UT  
1.55 R<sub>0</sub> 1542 UT

JANUARY 06, 1983 (P=-0.12, B<sub>0</sub>=-3.57, L<sub>0</sub>=173.47)

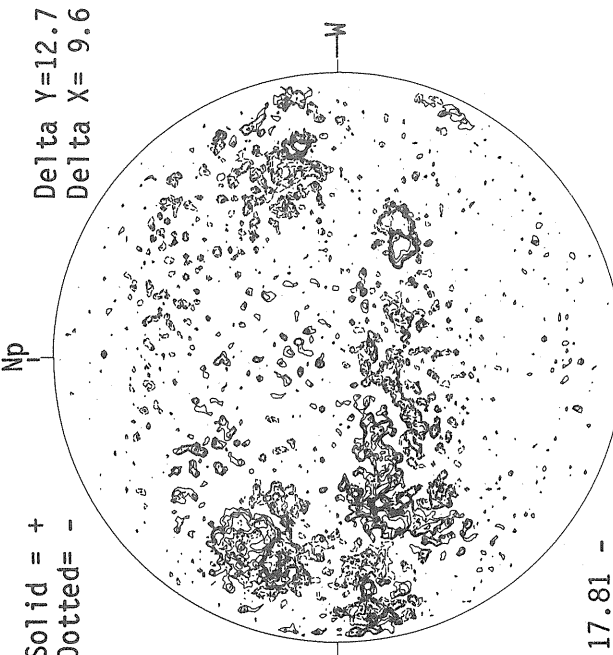
MT. WILSON MAGNETOGRAM



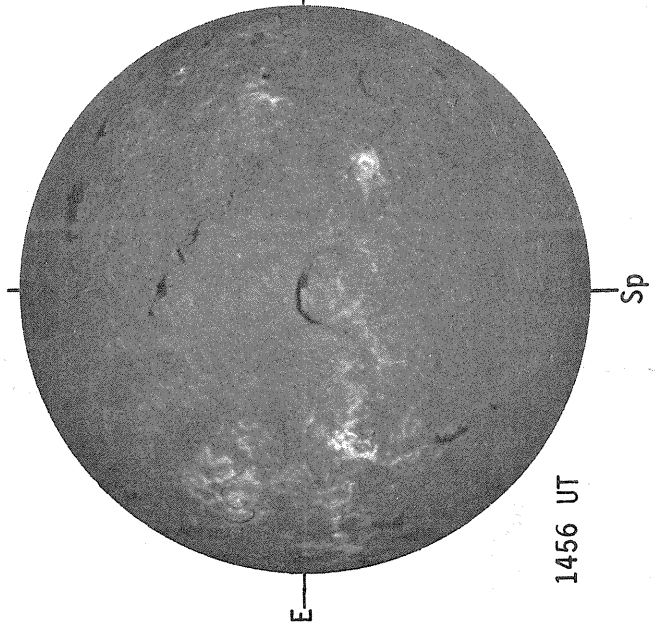
STANFORD MAGNETOGRAM



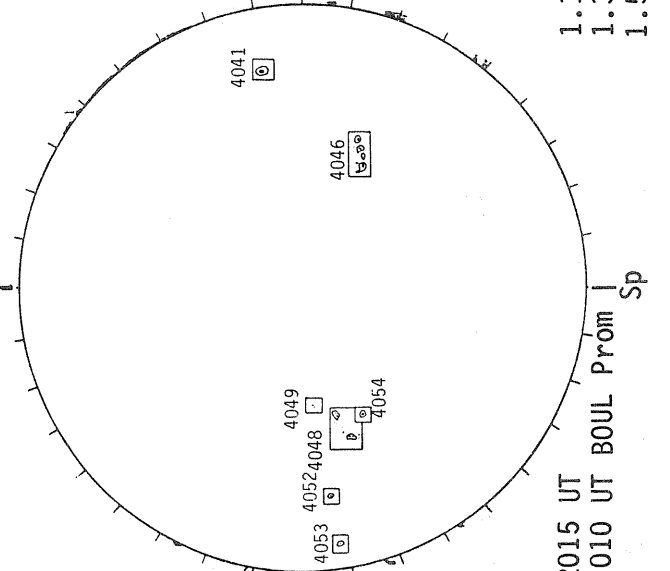
MT. WILSON MAGNETOGRAM



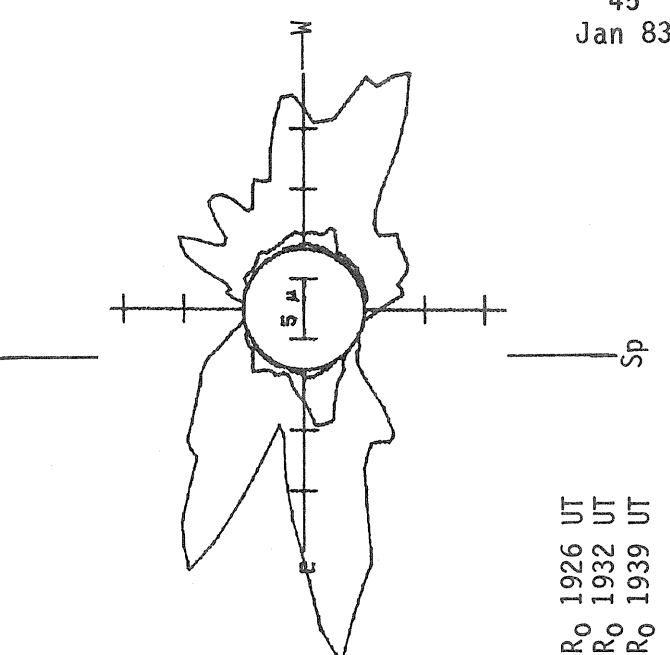
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS

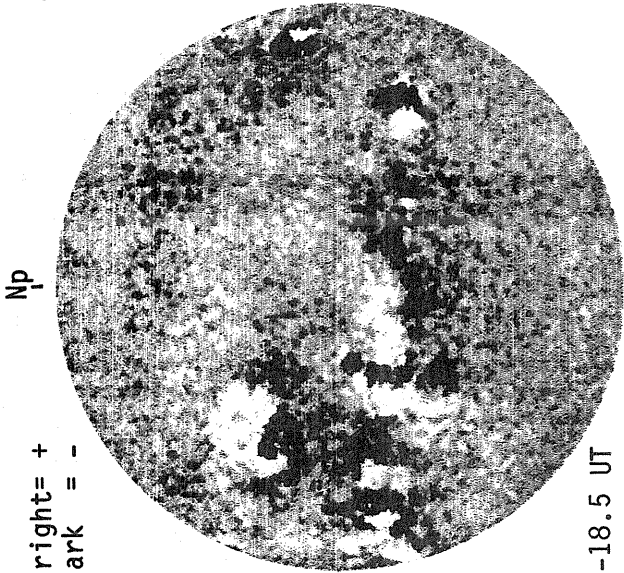


SACRAMENTO PEAK CORONA (5303 Angstrom)



JANUARY 07, 1983 (P=-0.61, B<sub>0</sub>=-3.68, L<sub>0</sub>=160.31)

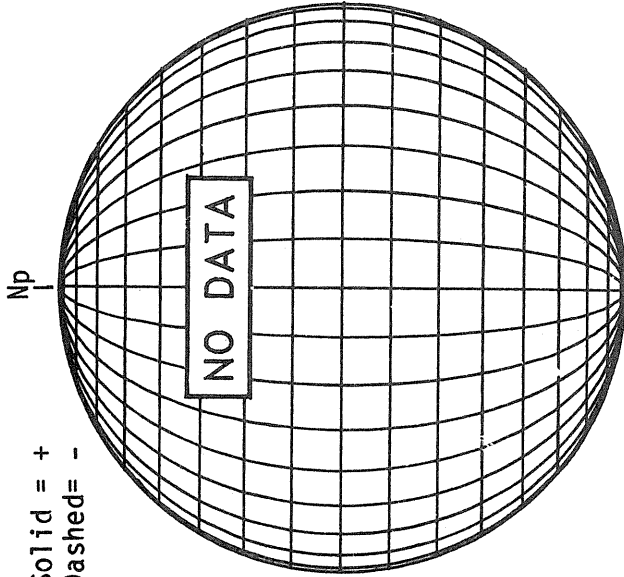
MT. WILSON MAGNETOGRAM



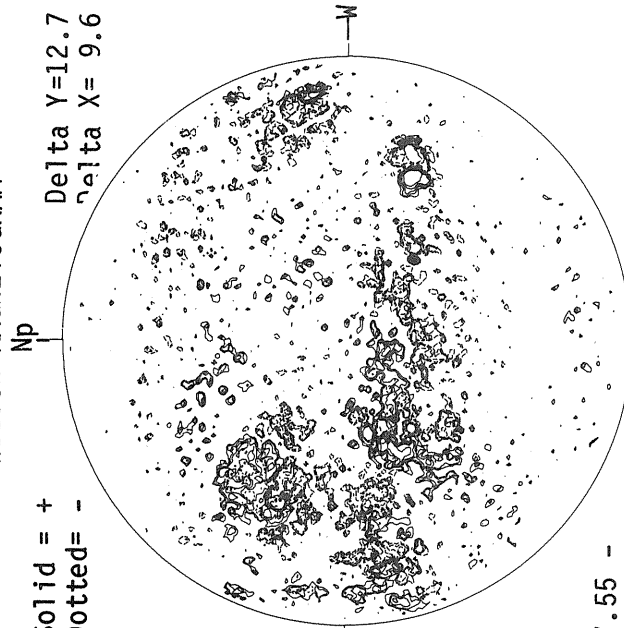
Bright = +  
Dark = -

Solid = +  
Dashed = -

STANFORD MAGNETOGRAM



MT. WILSON MAGNETOGRAM



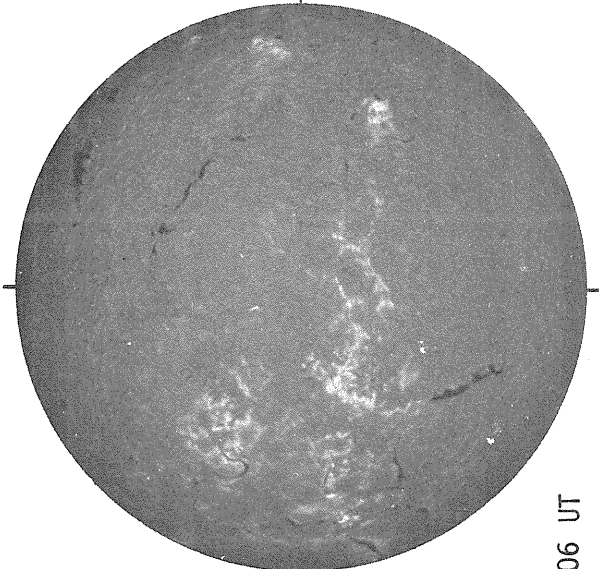
Solid = +  
Dotted = -

Delta Y = 12.7  
Delta X = 9.6

17.5-18.5 UT

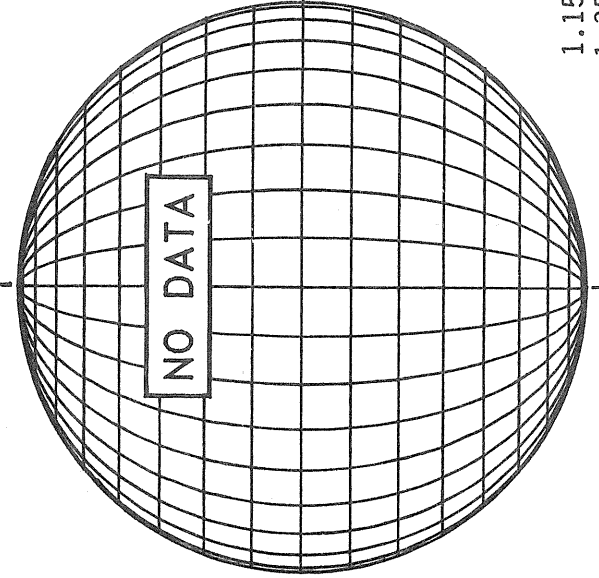
17.55 -  
18.50 UT

SACRAMENTO PEAK H-ALPHA

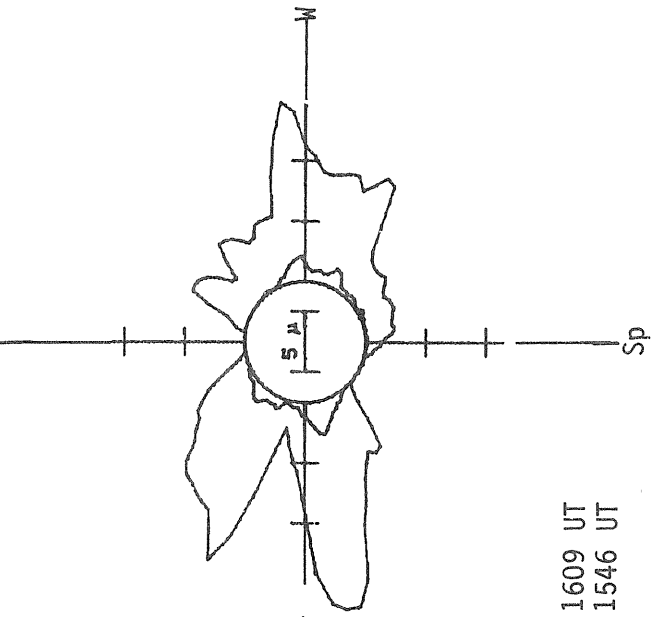


1506 UT

BOULDER SUNSPOTS



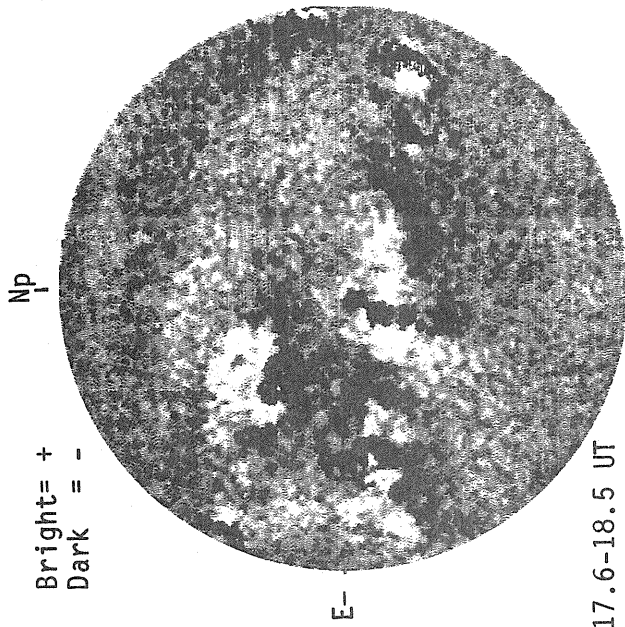
SACRAMENTO PEAK CORONA (5303 Angstrom)



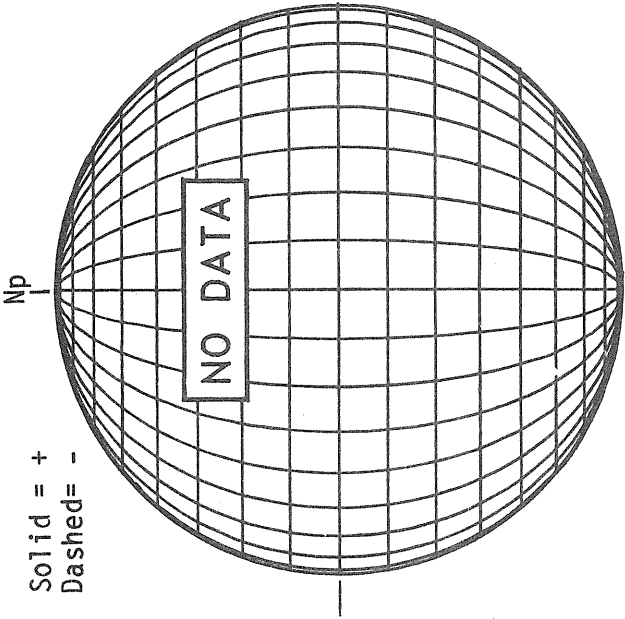
1.15 R<sub>0</sub> 1609 UT  
1.35 R<sub>0</sub> 1546 UT

JANUARY 08, 1983 (P=-1.09, B<sub>0</sub>=-3.79, L<sub>0</sub>=147.14)

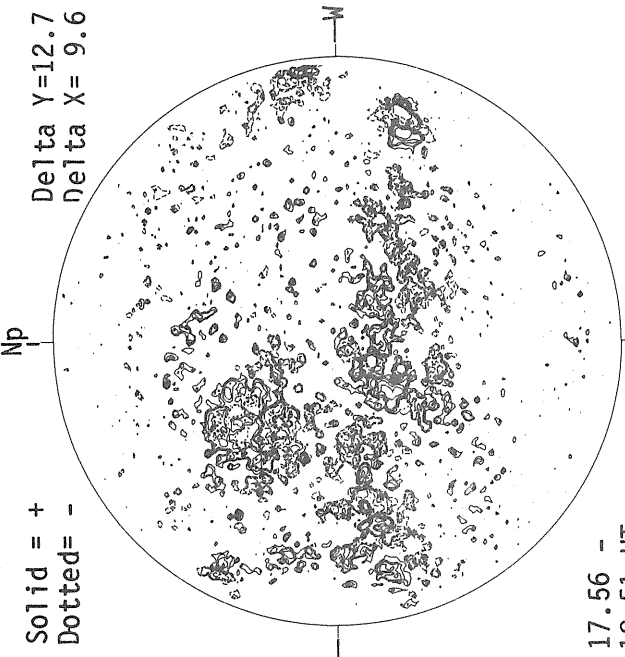
MT. WILSON MAGNETOGRAM



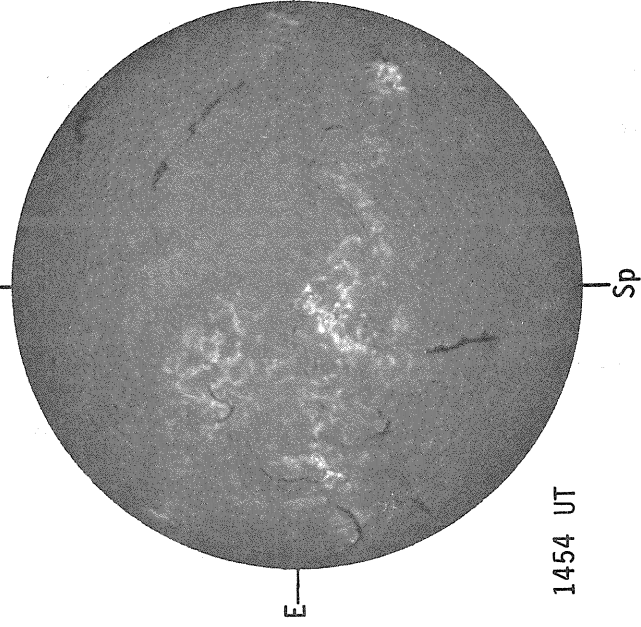
STANFORD MAGNETOGRAM



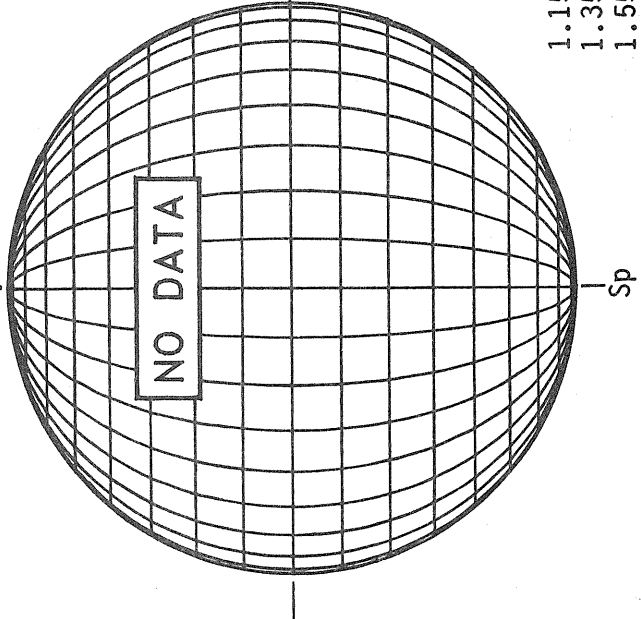
MT. WILSON MAGNETOGRAM



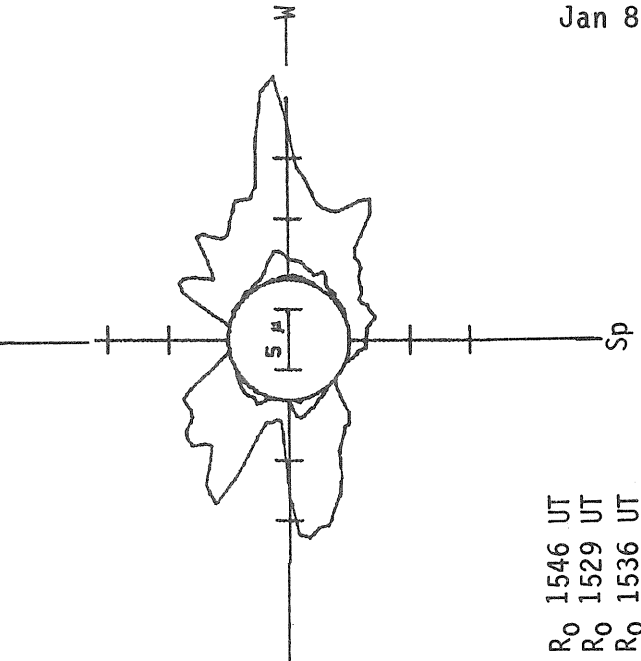
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



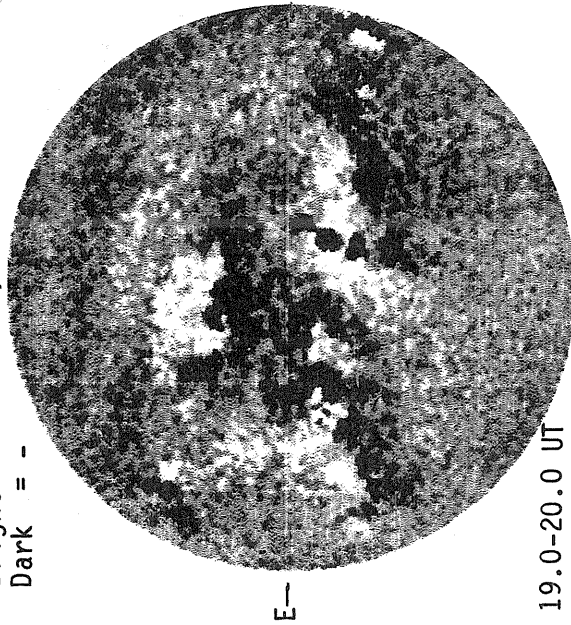
1.15 R<sub>0</sub> 1546 UT  
1.35 R<sub>0</sub> 1529 UT  
1.55 R<sub>0</sub> 1536 UT



JANUARY 09, 1983 (P=-1.57, B<sub>0</sub>=-3.90, L<sub>0</sub>=133.97)

MT. WILSON MAGNETOGRAM

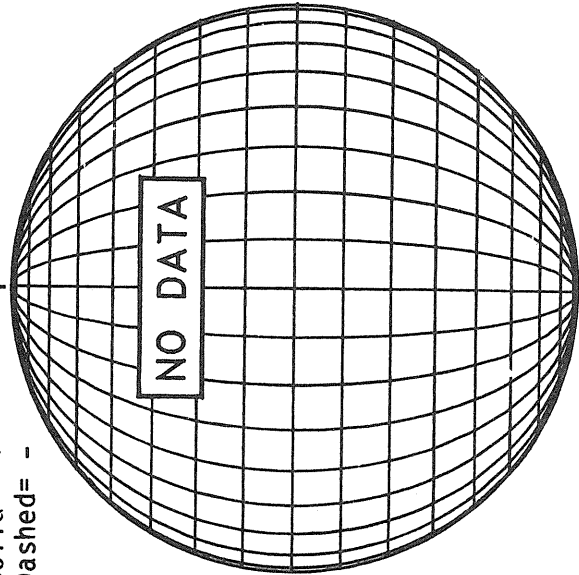
Bright= +  
Dark = -



19.0-20.0 UT

STANFORD MAGNETOGRAM

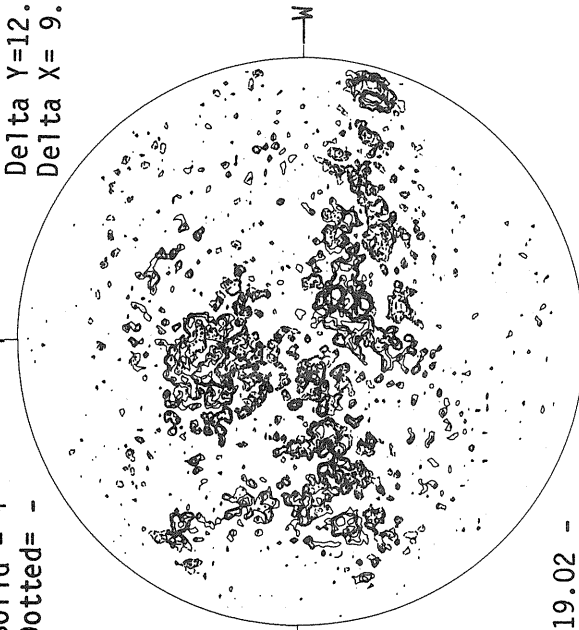
Solid = +  
Dashed = -



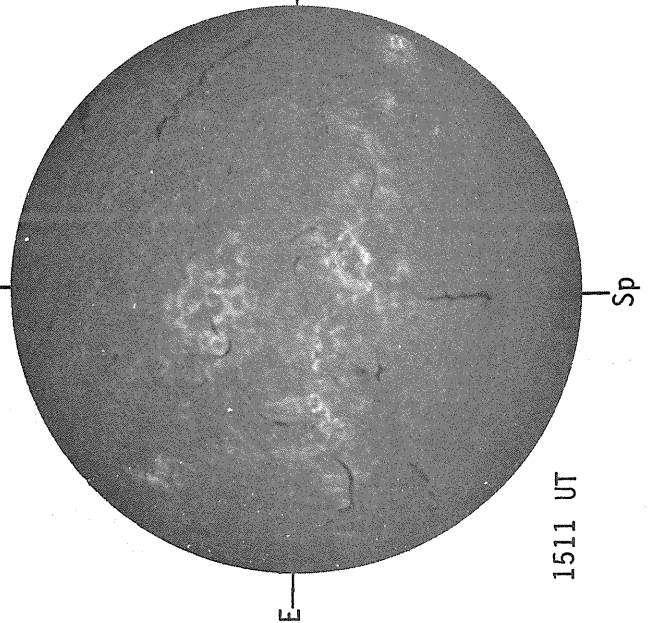
19.02 -  
19.97 UT

MT. WILSON MAGNETOGRAM

Solid = +  
Dotted = -

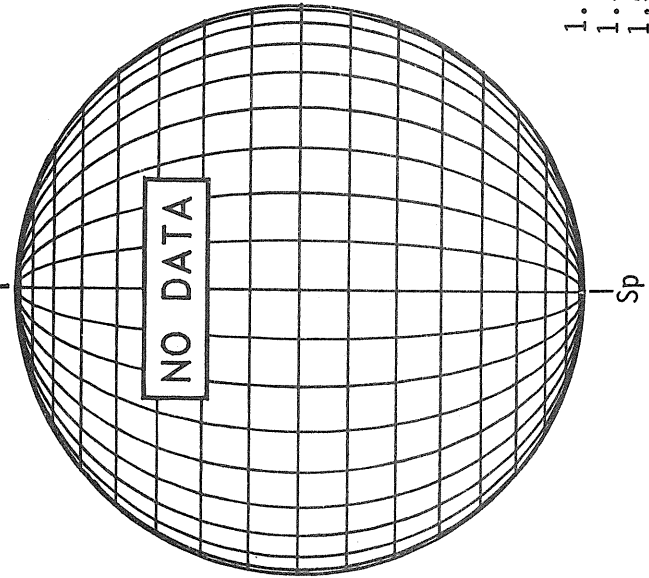


SACRAMENTO PEAK H-ALPHA

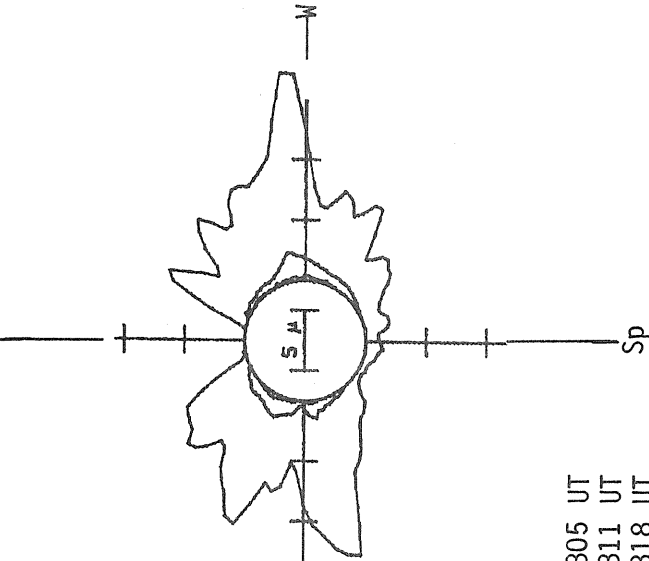


1511 UT

BOULDER SUNSPOTS



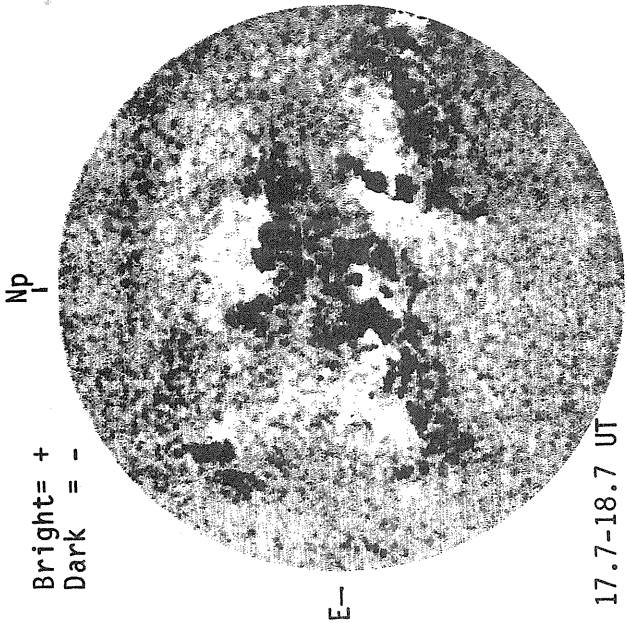
SACRAMENTO PEAK CORONA (5303 Angstrom)



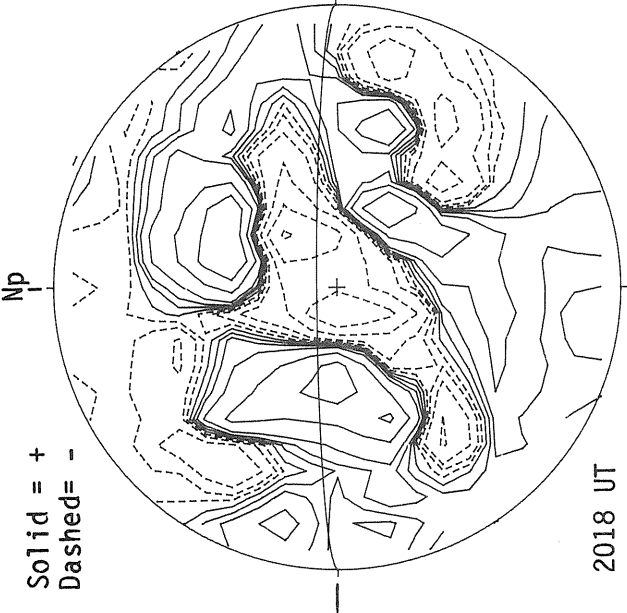
1.15 R<sub>0</sub> 1805 UT  
1.35 R<sub>0</sub> 1811 UT  
1.55 R<sub>0</sub> 1818 UT

JANUARY 10, 1983 (P<sub>0</sub> = 2.05, B<sub>0</sub> = -4.01, L<sub>0</sub> = 120.80)

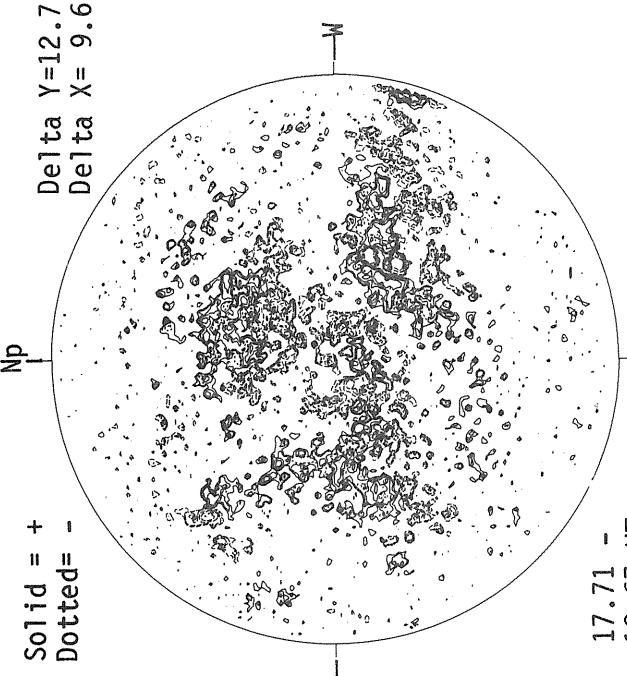
MT. WILSON MAGNETOGRAM



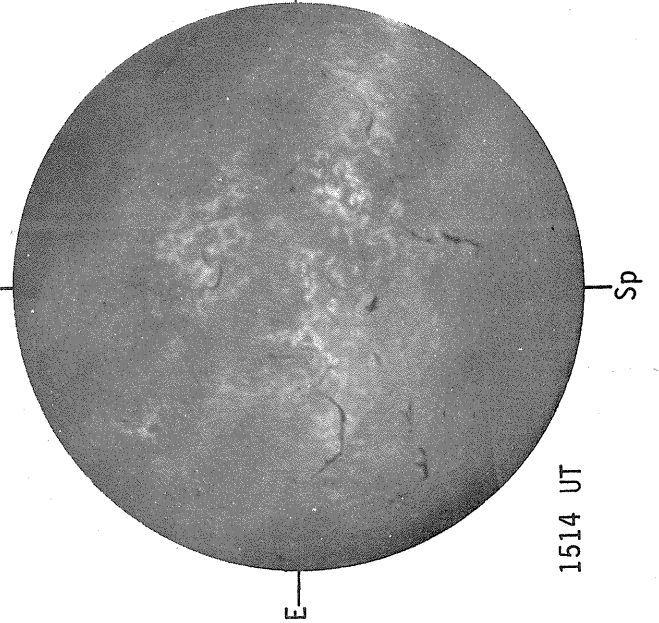
STANFORD MAGNETOGRAM



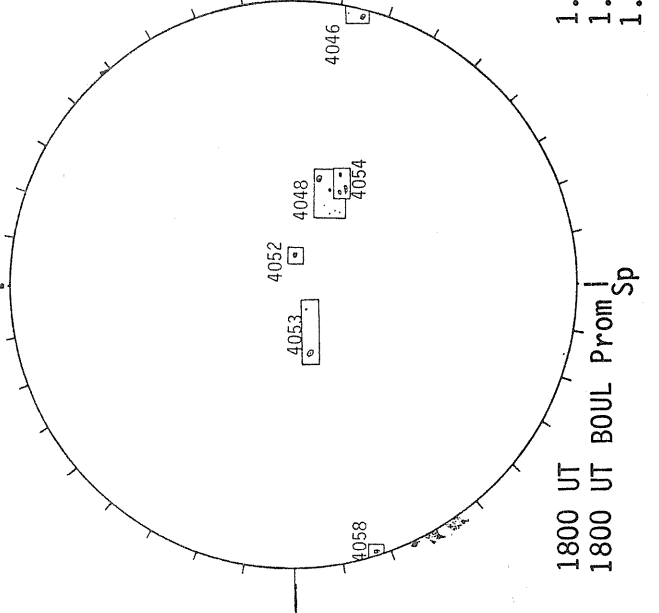
MT. WILSON MAGNETOGRAM



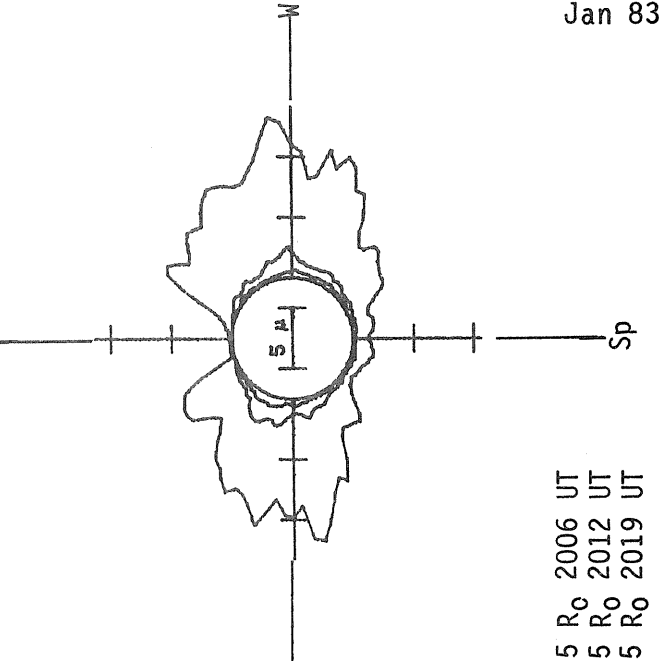
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)

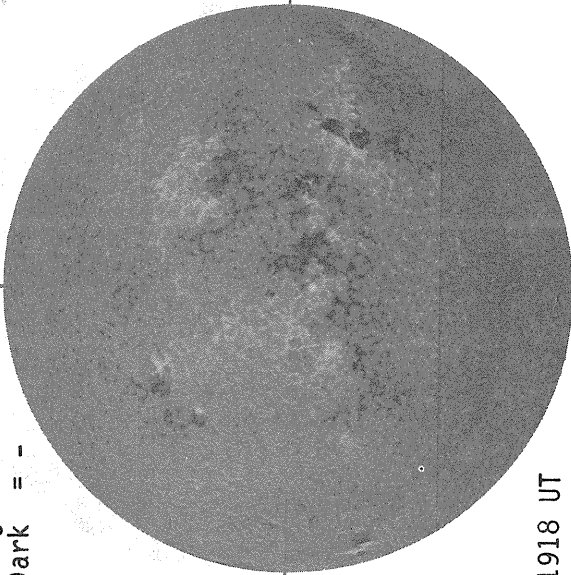


JANUARY 11, 1983 (P=-2.53, B<sub>0</sub>=-4.12, L<sub>0</sub>=107.63)

KITT PEAK MAGNETOGRAM

Np

Bright= +  
Dark = -

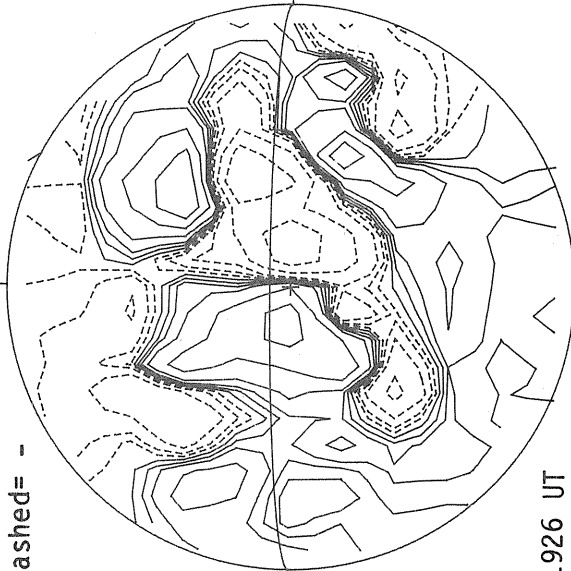


1918 UT

STANFORD MAGNETOGRAM

Np

Solid = +  
Dashed = -

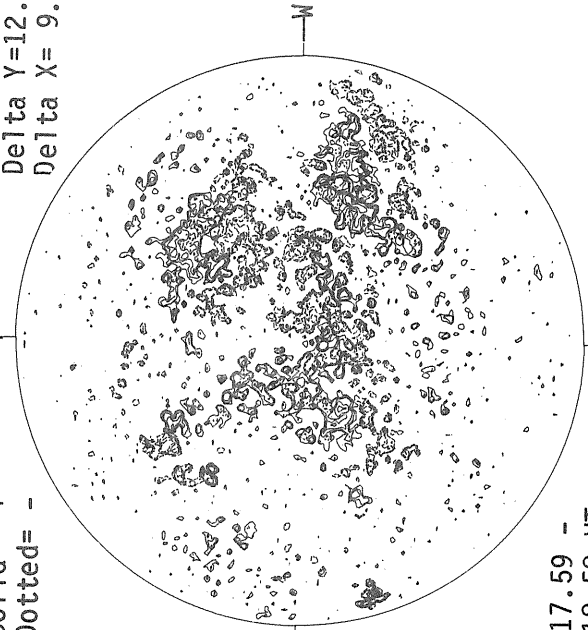


1926 UT

MT. WILSON MAGNETOGRAM

Np

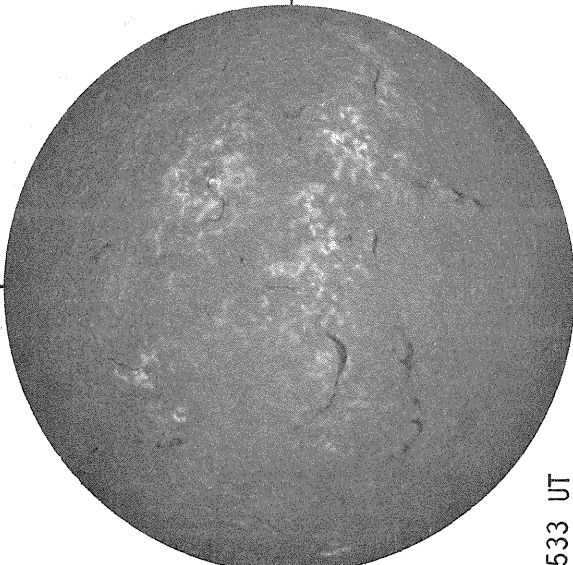
Solid = +  
Dotted = -



17.59 -  
18.58 UT

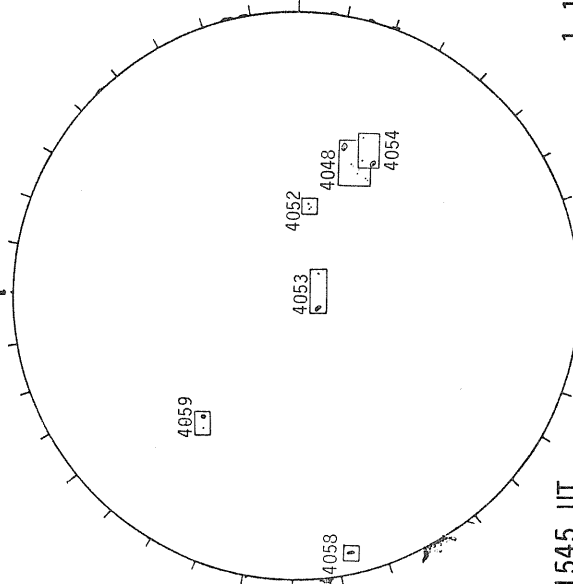
Delta Y=12.7  
Delta X= 9.6

SACRAMENTO PEAK H-ALPHA



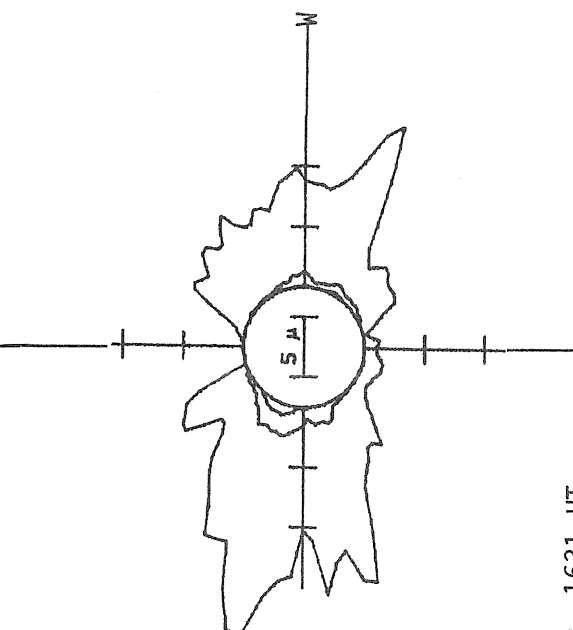
1533 UT

BOULDER SUNSPOTS



1545 UT  
1730 UT BOUL Prom Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)



1.15 R<sub>0</sub> 1631 UT  
1.35 R<sub>0</sub> 1600 UT  
1.55 R<sub>0</sub> 1607 UT

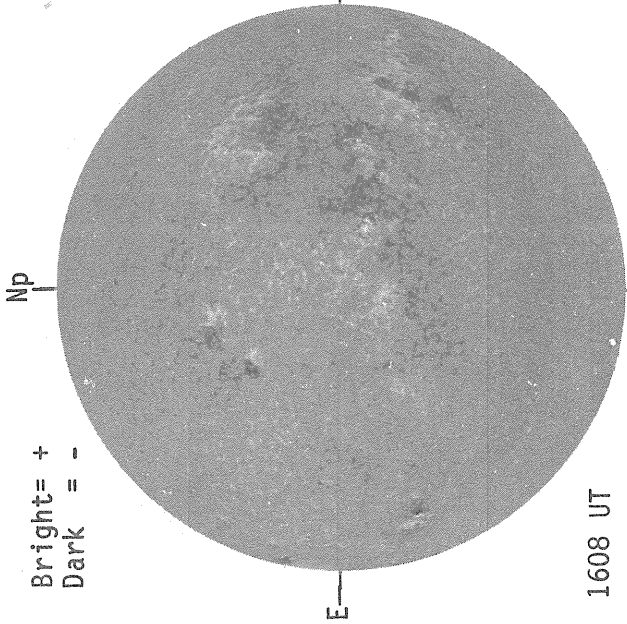
Sp

Sp

Sp

JANUARY 12, 1983 (P=-3.01, B<sub>0</sub>=-4.22, L<sub>0</sub>=94.46)

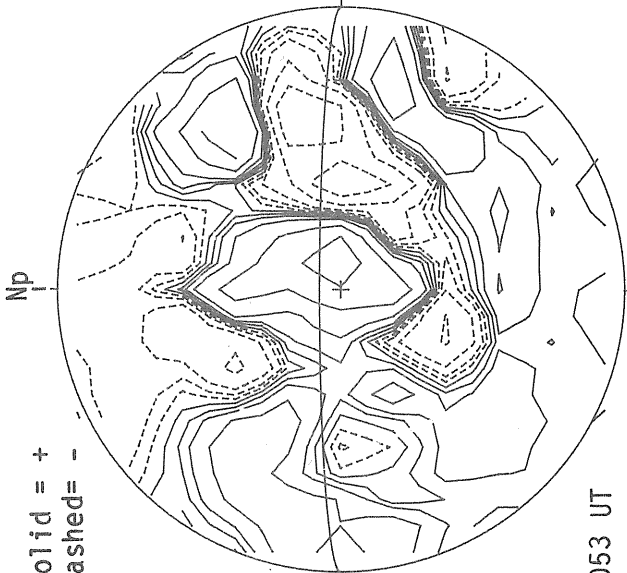
KITT PEAK MAGNETOGRAM



Bright= +  
Dark = -

1608 UT

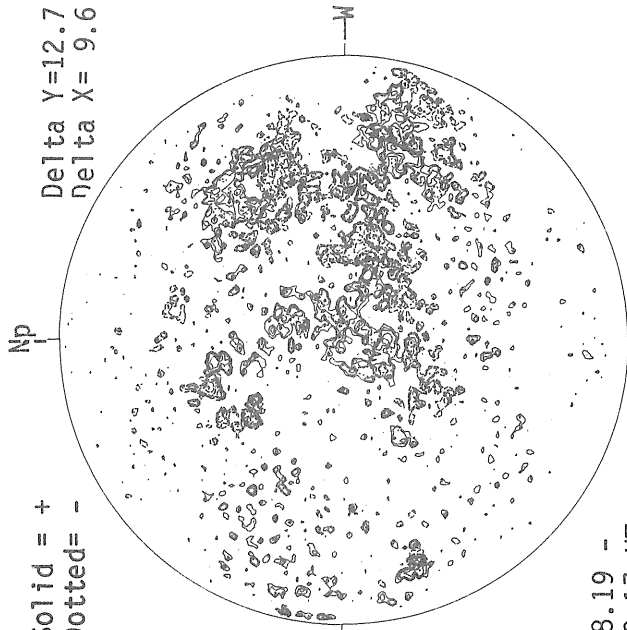
STANFORD MAGNETOGRAM



Solid = +  
Dashed = -

2053 UT

MT. WILSON MAGNETOGRAM

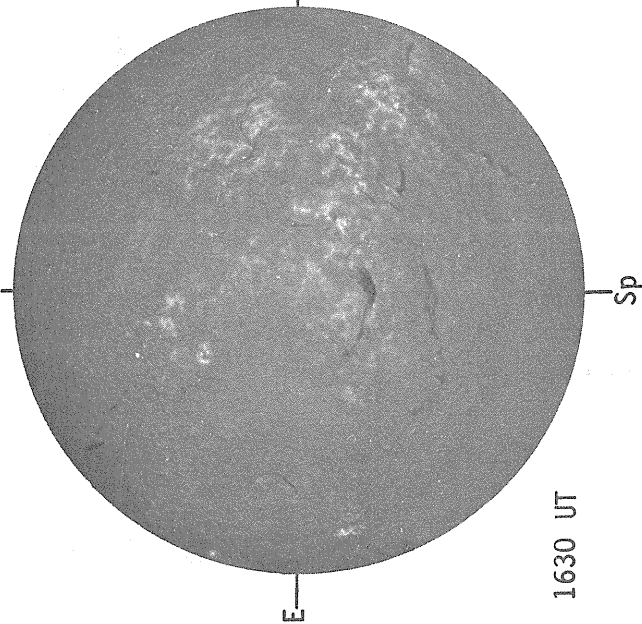


Solid = +  
Dotted = -

Delta Y=12.7  
Delta X=9.6

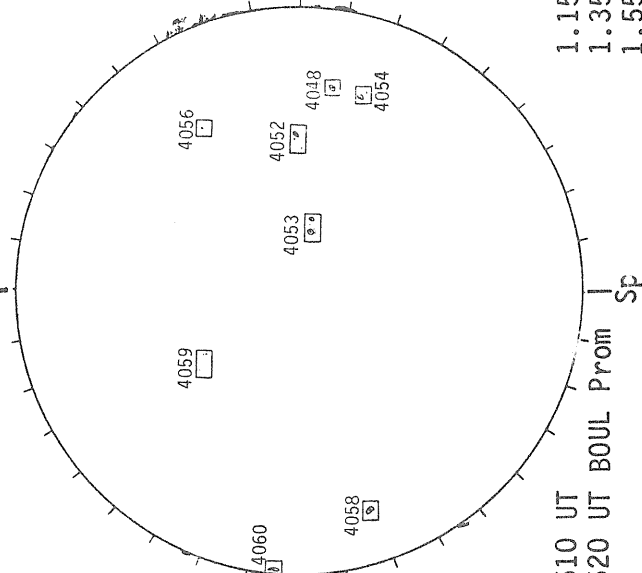
18.19 -  
19.17 UT

SACRAMENTO PEAK H-ALPHA



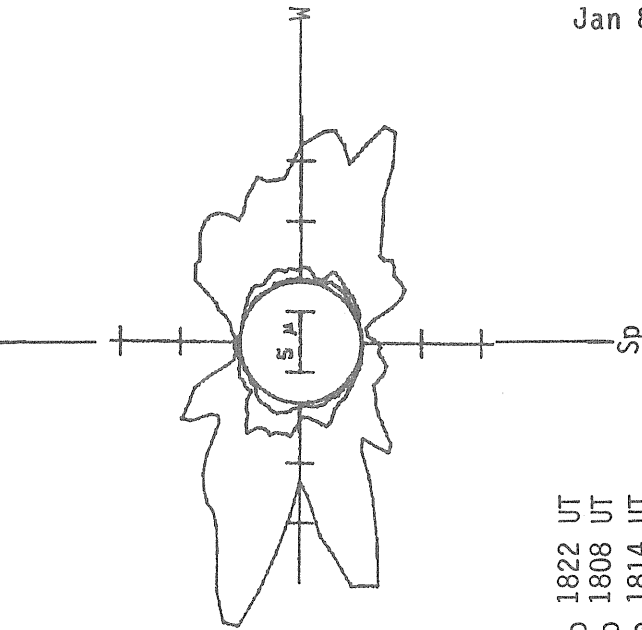
1630 UT

BOULDER SUNSPOTS



1610 UT  
1620 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)



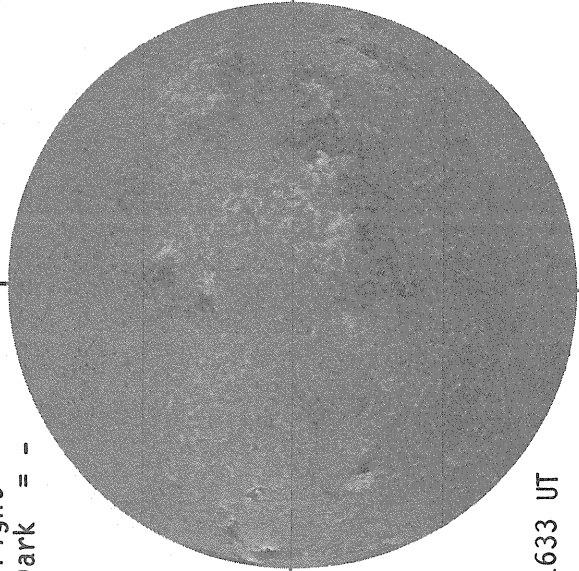
1.15 R<sub>0</sub> 1822 UT  
1.35 R<sub>0</sub> 1808 UT  
1.55 R<sub>0</sub> 1814 UT

JANUARY 13, 1983 (P=-3.49, B<sub>0</sub>=-4.33, L<sub>0</sub>=81.30)

KITT PEAK MAGNETOGRAM

Bright= +  
Dark = -

Np

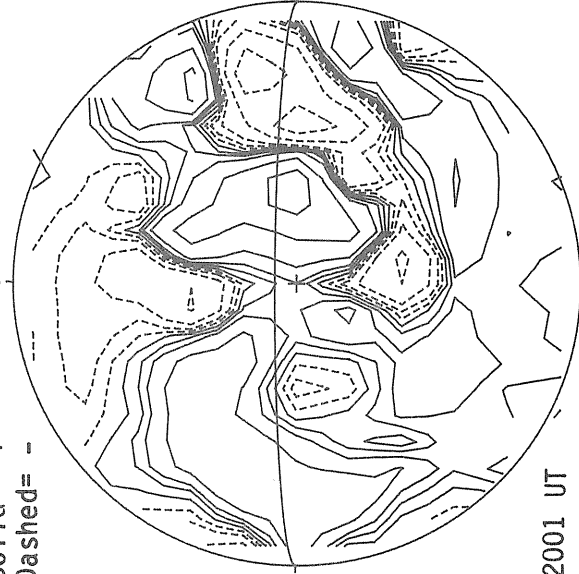


1633 UT

STANFORD MAGNETOGRAM

Solid = +  
Dashed = -

Np

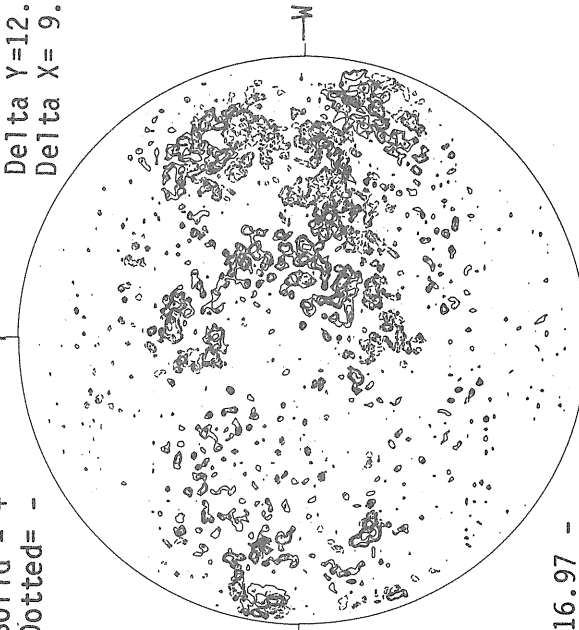


2001 UT

MT. WILSON MAGNETOGRAM

Solid = +  
Dotted = -

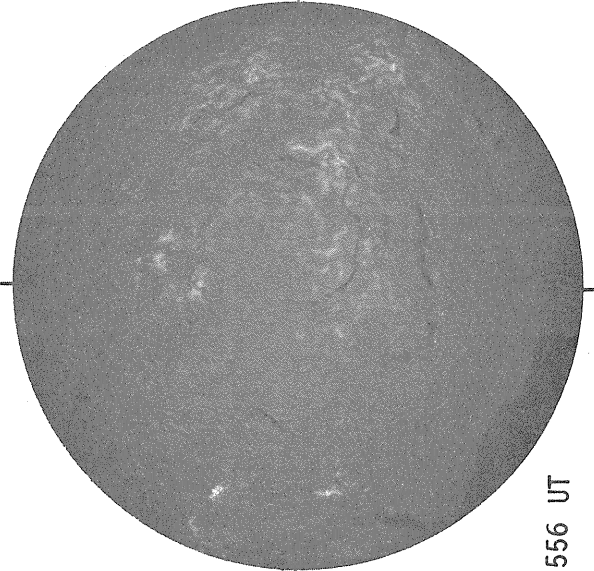
Np



16.97 -  
17.94 UT

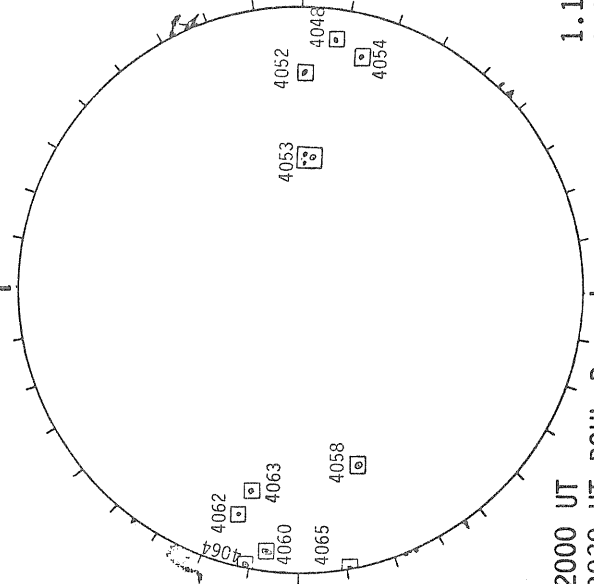
Delta Y = 12.7  
Delta X = 9.6

SACRAMENTO PEAK H-ALPHA



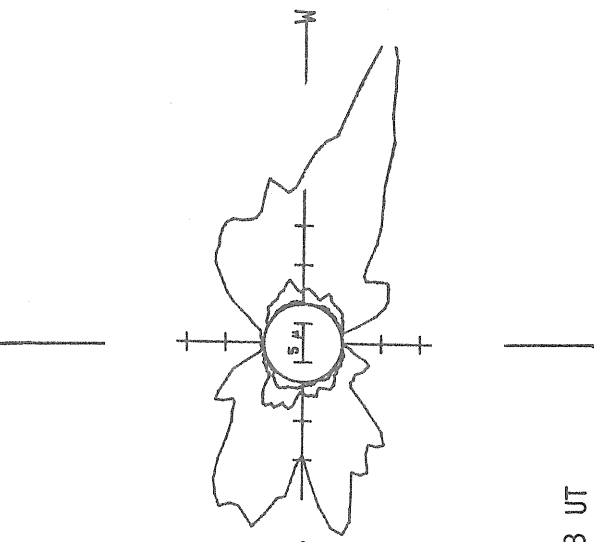
1556 UT

BOULDER SUNSPOTS



2000 UT  
2030 UT BOUL Prom Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

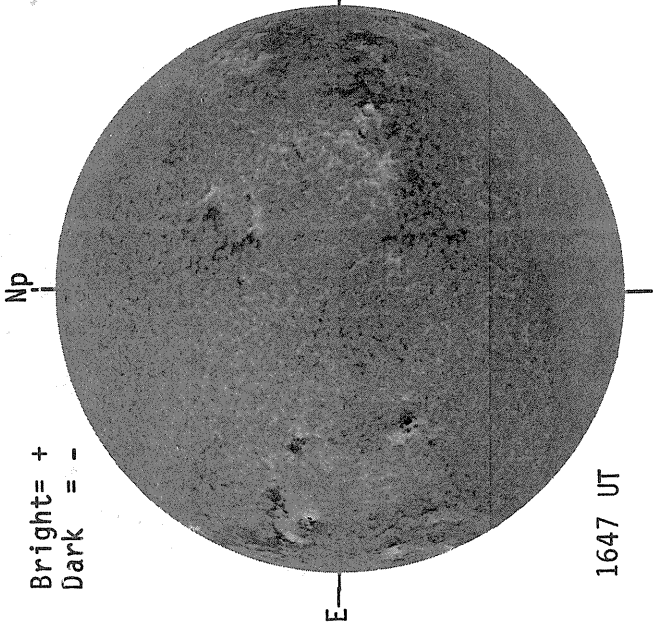


1.15 R<sub>0</sub> 1838 UT  
1.35 R<sub>0</sub> 1844 UT  
1.55 R<sub>0</sub> 1850 UT

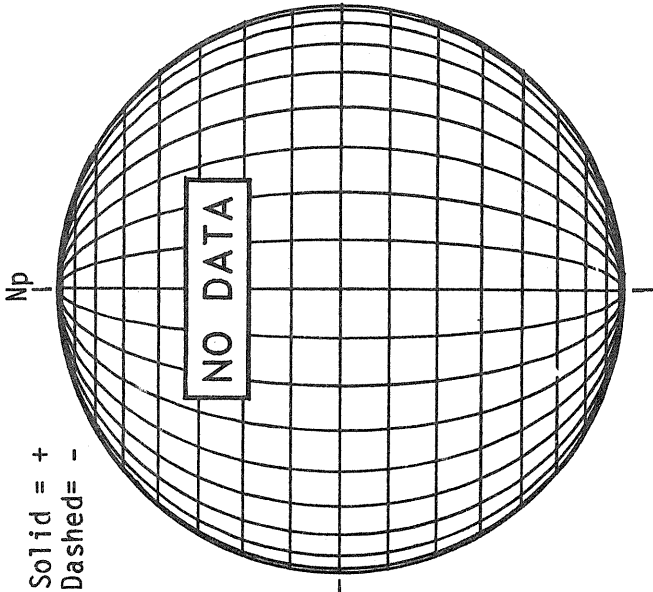
Sp

JANUARY 14, 1983 (P=- 3.96, B<sub>0</sub>=-4.43, L<sub>0</sub>= 68.13)

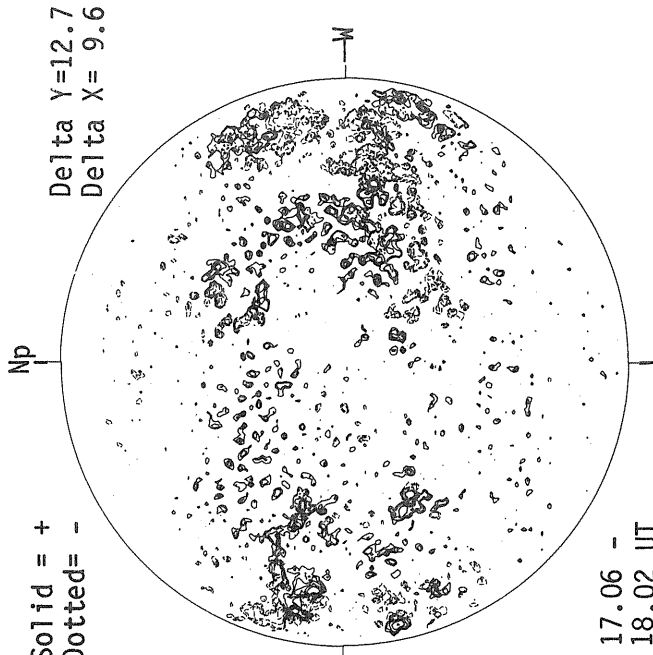
KITT PEAK MAGNETOGRAM



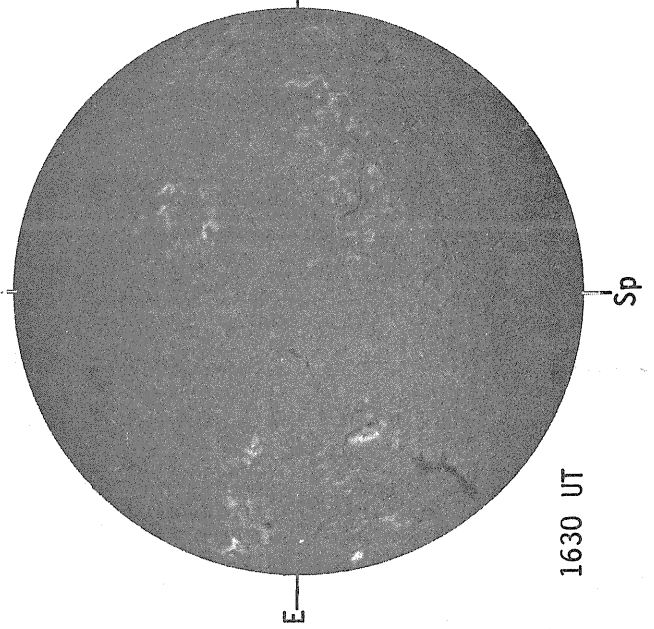
STANFORD MAGNETOGRAM



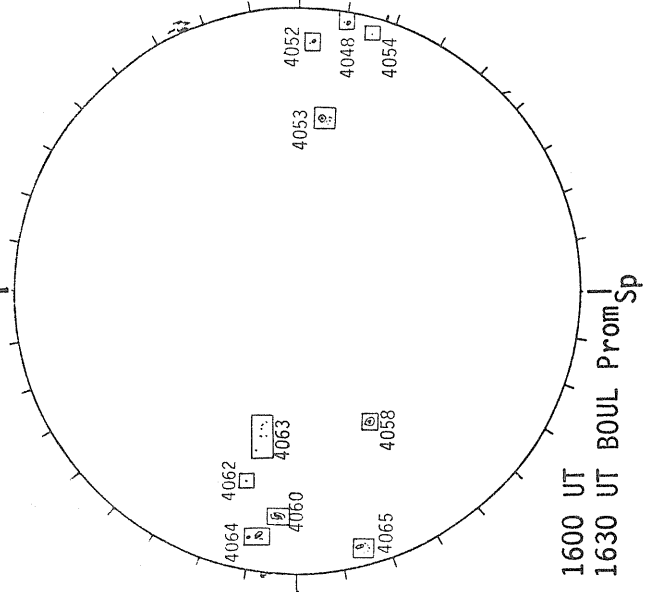
MT. WILSON MAGNETOGRAM



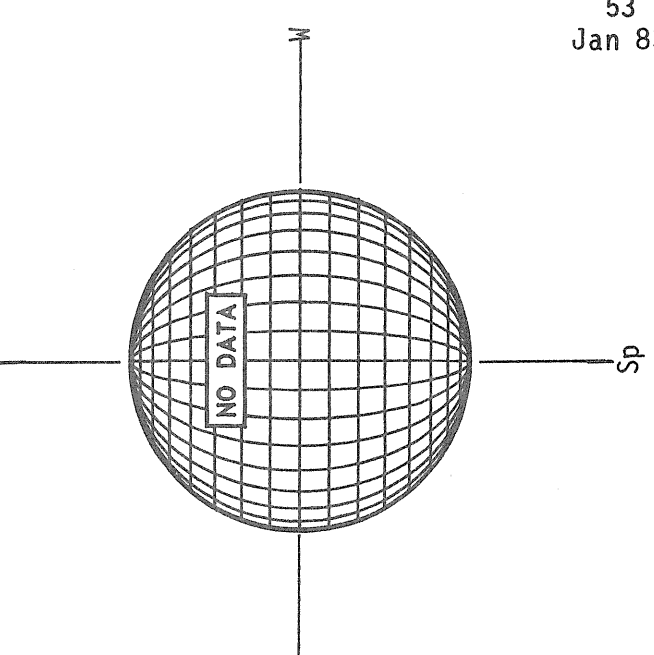
BOULDER H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)

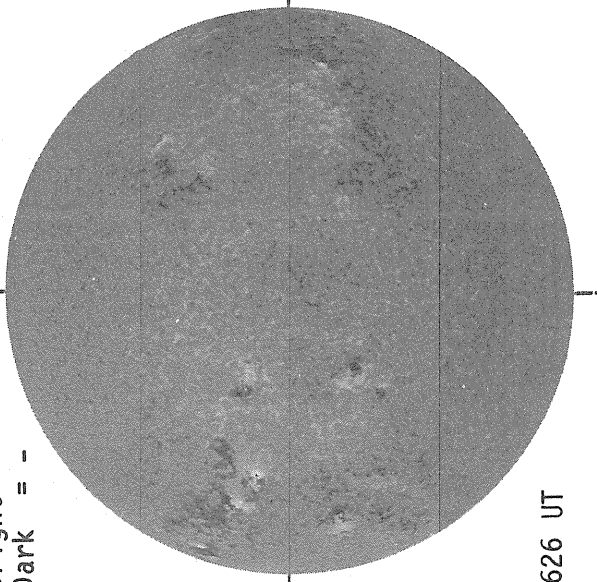


JANUARY 15, 1983 (P=-4.43, B<sub>0</sub>=-4.53, L<sub>0</sub>=54.96)

KITT PEAK MAGNETOGRAM

Np

Bright = +  
Dark = -

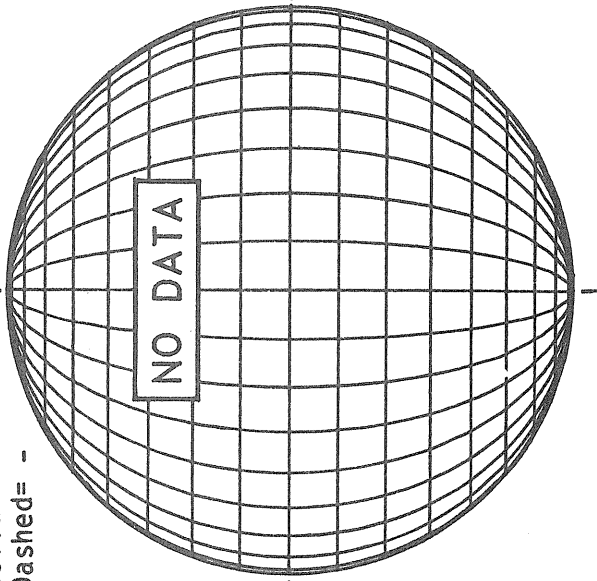


1626 UT

STANFORD MAGNETOGRAM

Np

Solid = +  
Dashed = -

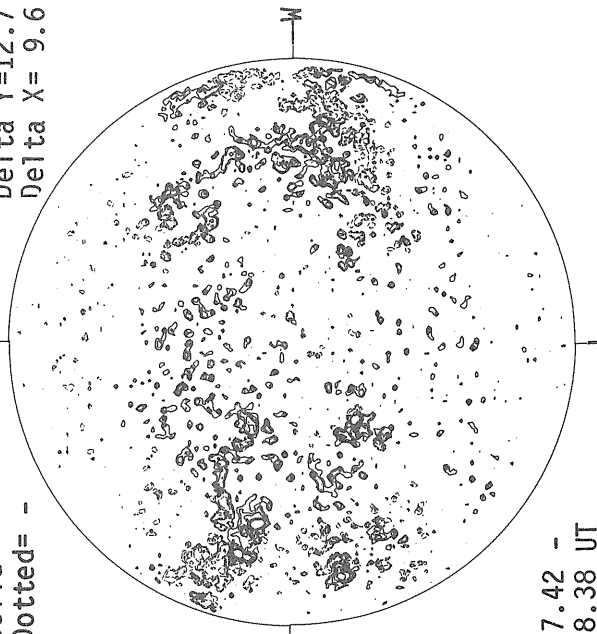


MT. WILSON MAGNETOGRAM

Np

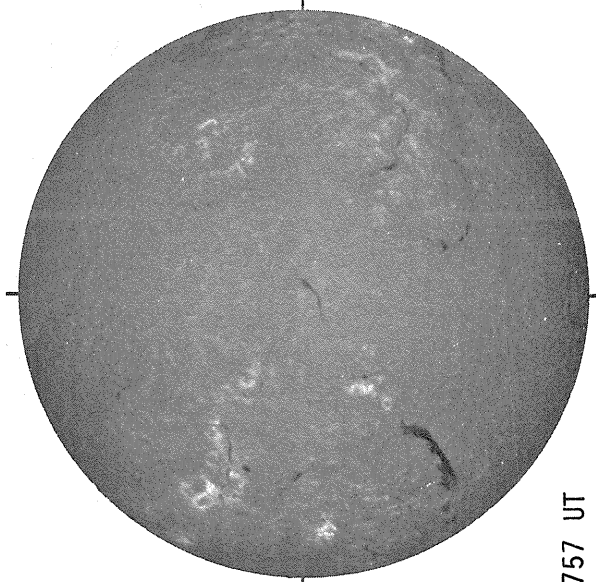
Solid = +  
Dotted = -

Delta Y = 12.7  
Delta X = 9.6



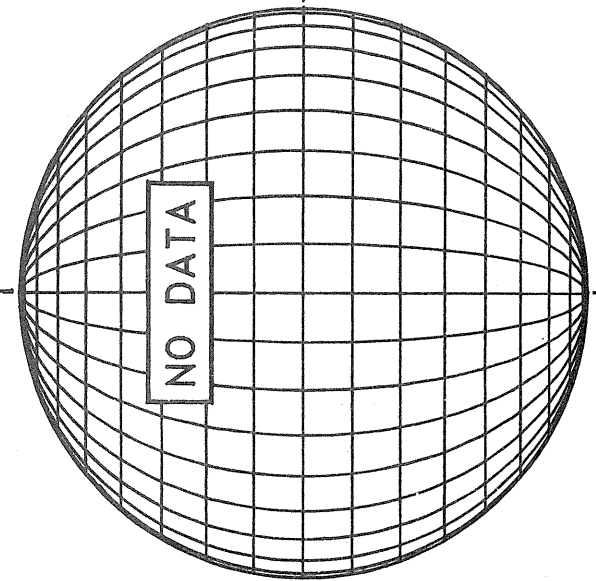
17.42 -  
18.38 UT

SACRAMENTO PEAK H-ALPHA

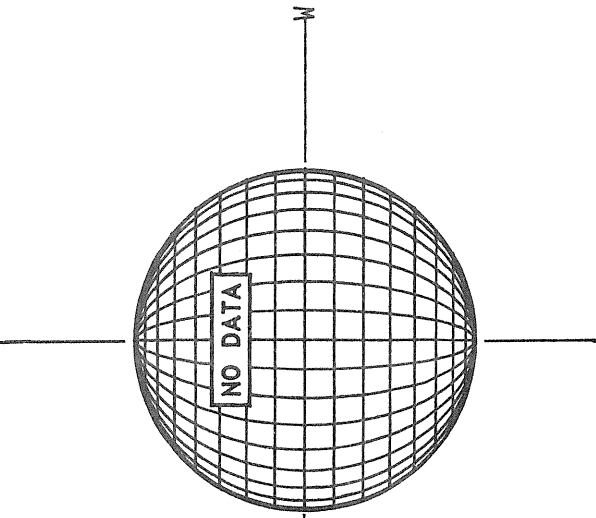


1757 UT

BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



Sp

Sp

Sp

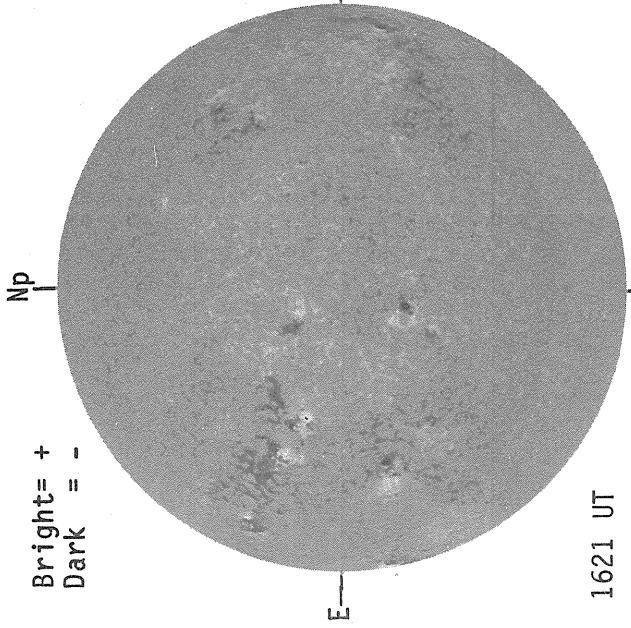
E

E

W

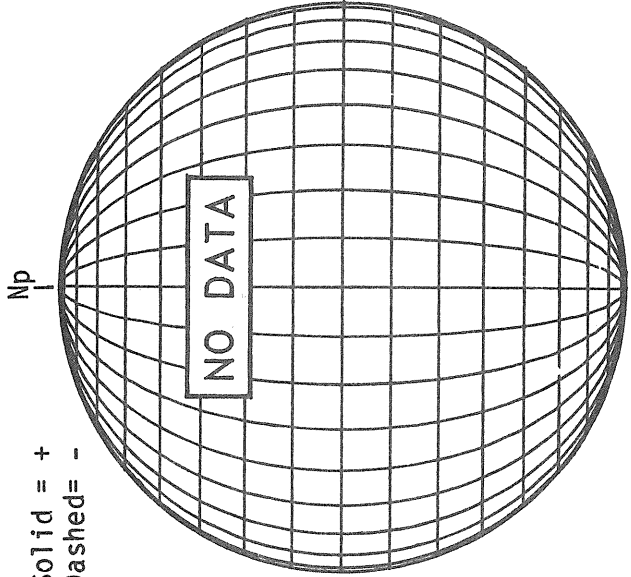
JANUARY 16, 1983 (P=- 4.90, B<sub>0</sub>=-4.63, L<sub>0</sub>= 41.79)

KITT PEAK MAGNETOGRAM



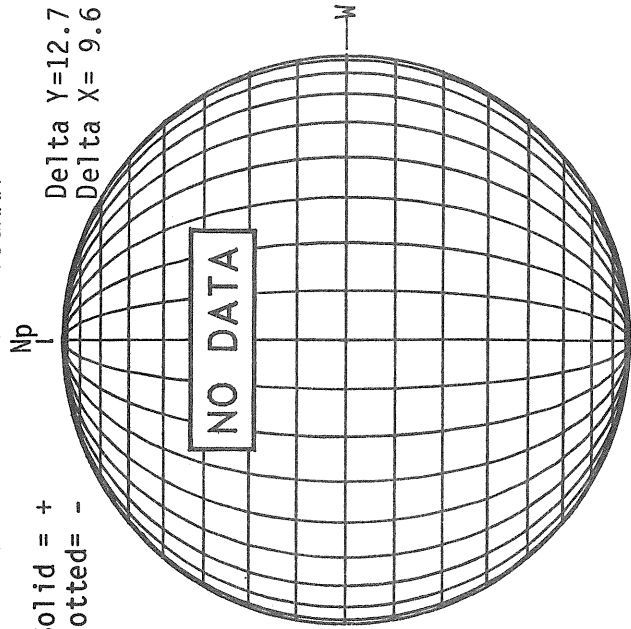
Bright = +  
Dark = -

STANFORD MAGNETOGRAM



Solid = +  
Dashed = -

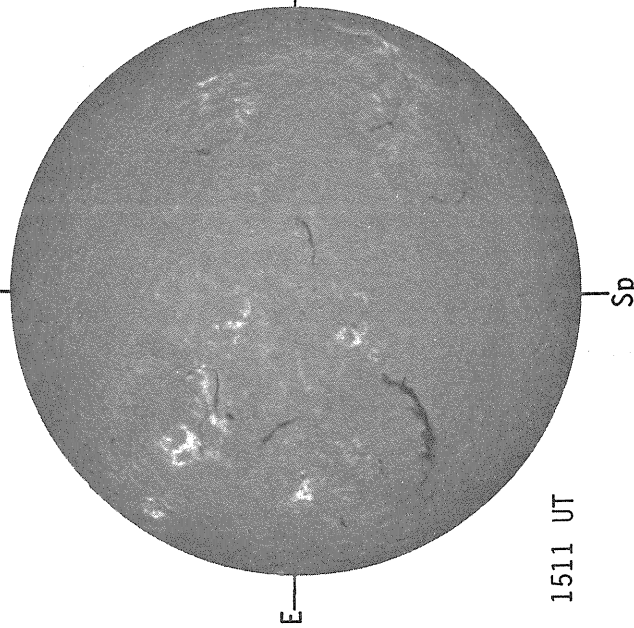
MT. WILSON MAGNETOGRAM



Solid = +  
Dotted = -

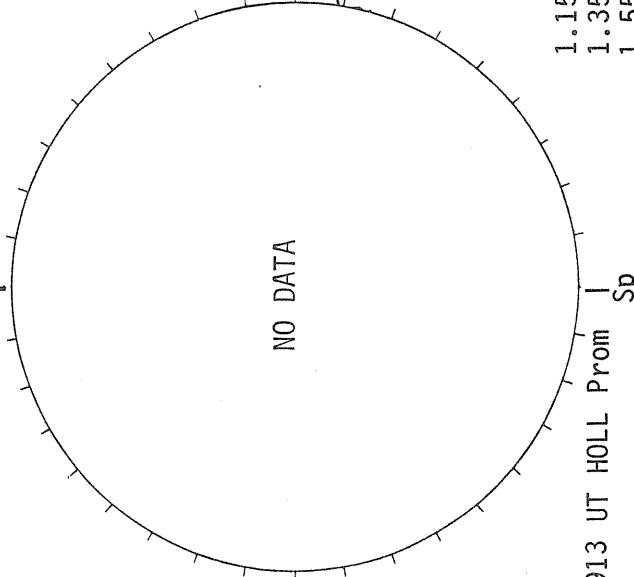
Delta Y = 12.7  
Delta X = 9.6

HOLLOMAN H-ALPHA



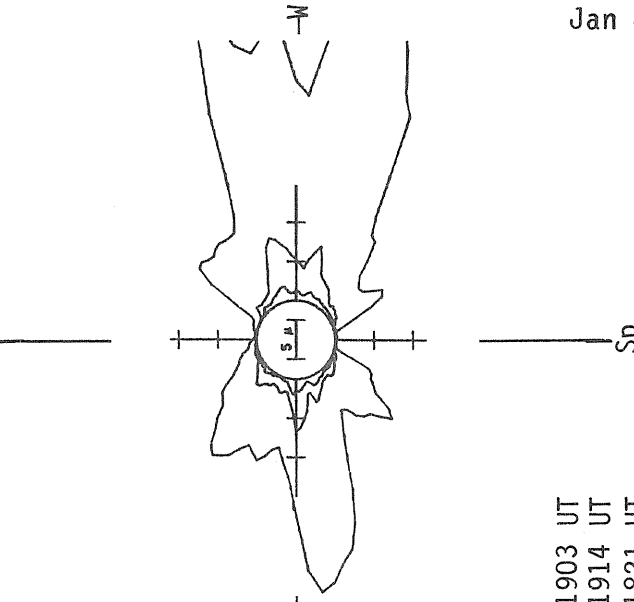
1511 UT

BOULDER SUNSPOTS



1913 UT HOLL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)



1.15 R<sub>0</sub> 1903 UT  
1.35 R<sub>0</sub> 1914 UT  
1.55 R<sub>0</sub> 1821 UT

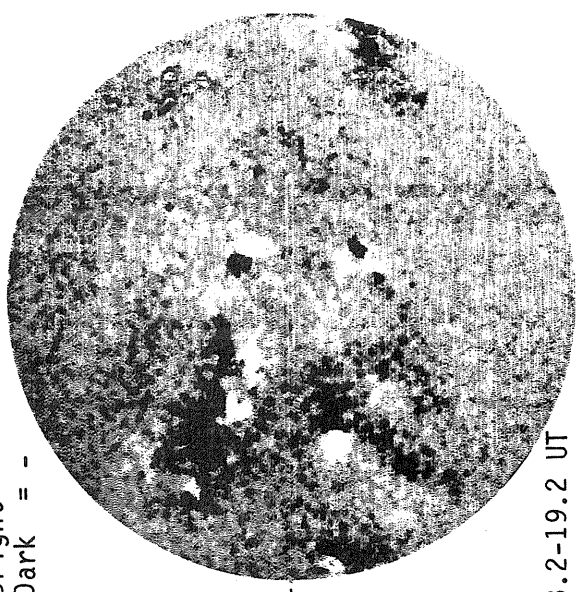


56  
Jan 83

JANUARY 17, 1983 (P=-5.37, B<sub>0</sub>=-4.73, L<sub>0</sub>=28.63)

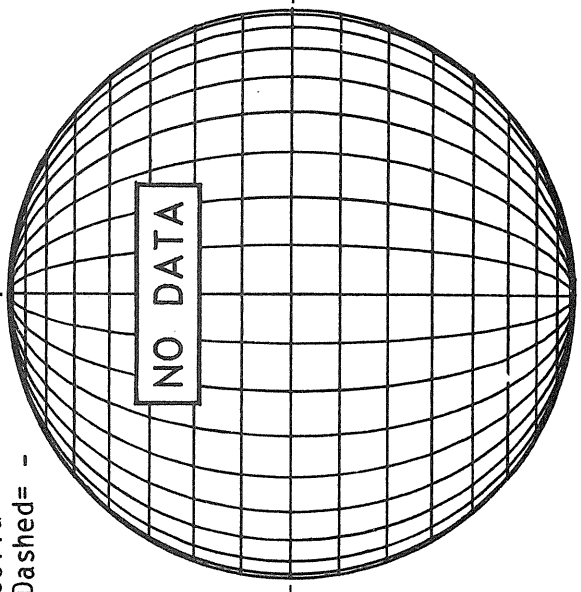
MT. WILSON MAGNETOGRAM

Bright = +  
Dark = -



STANFORD MAGNETOGRAM

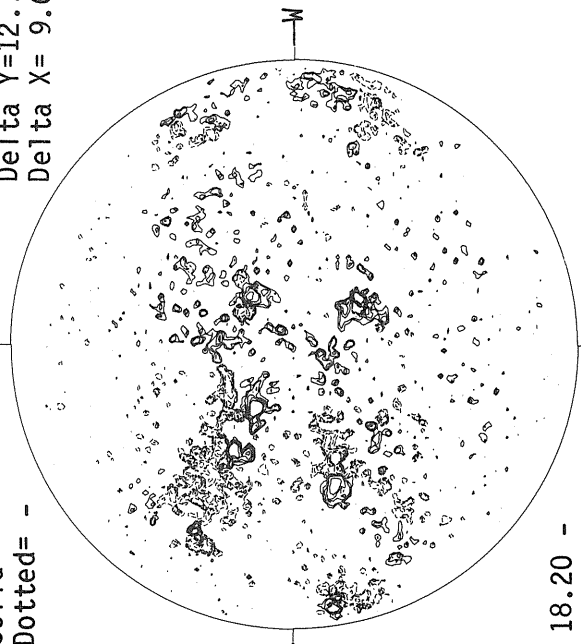
Solid = +  
Dashed = -



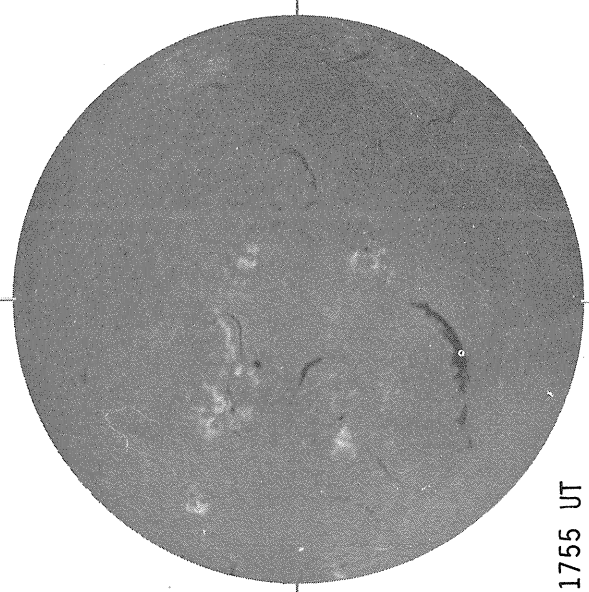
MT. WILSON MAGNETOGRAM

Solid = +  
Dotted = -

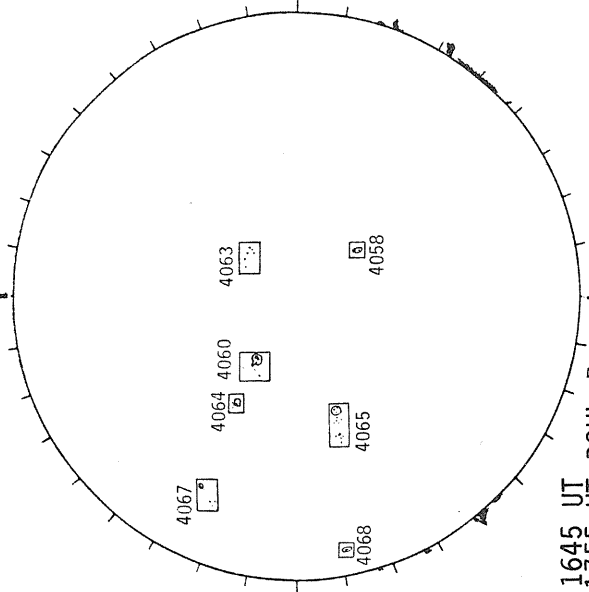
Delta Y = 12.7  
Delta X = 9.6



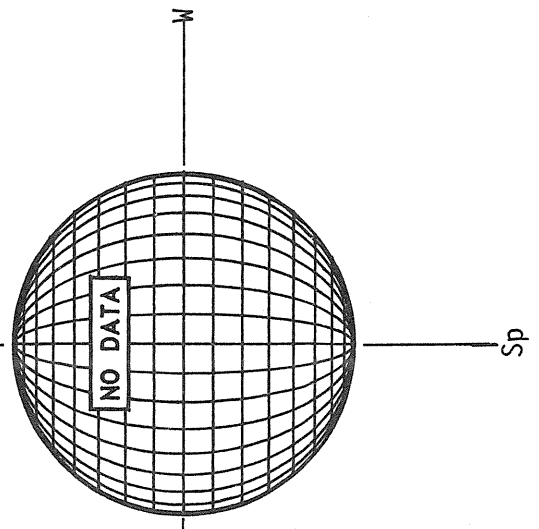
BOULDER H-ALPHA



BOULDER SUNSPOTS



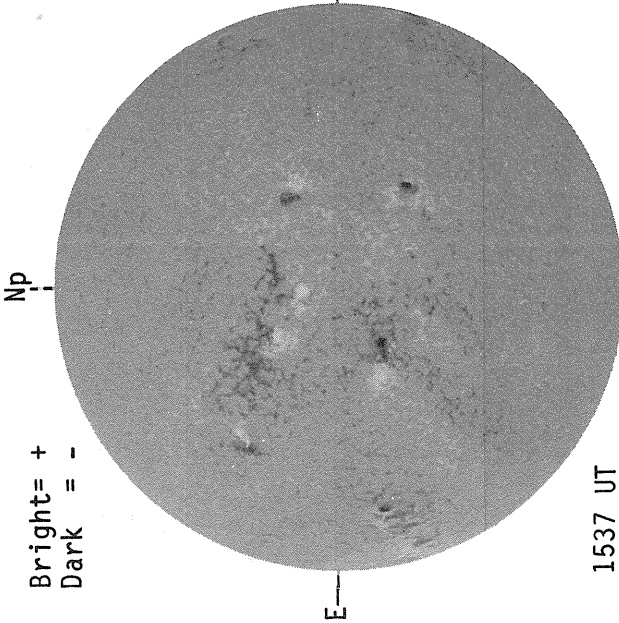
SACRAMENTO PEAK CORONA (5303 Angstrom)



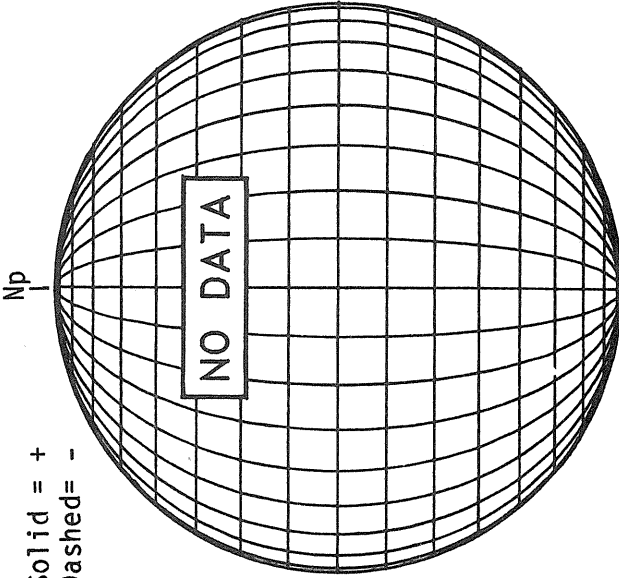
1755 UT

JANUARY 18, 1983 (P-- 5.84, B<sub>0</sub>=-4.82, L<sub>0</sub>= 15.46)

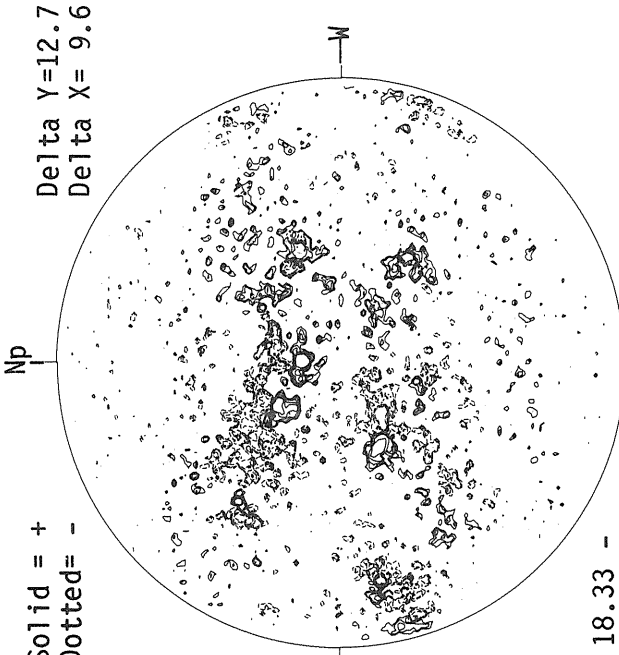
KITT PEAK MAGNETOGRAM



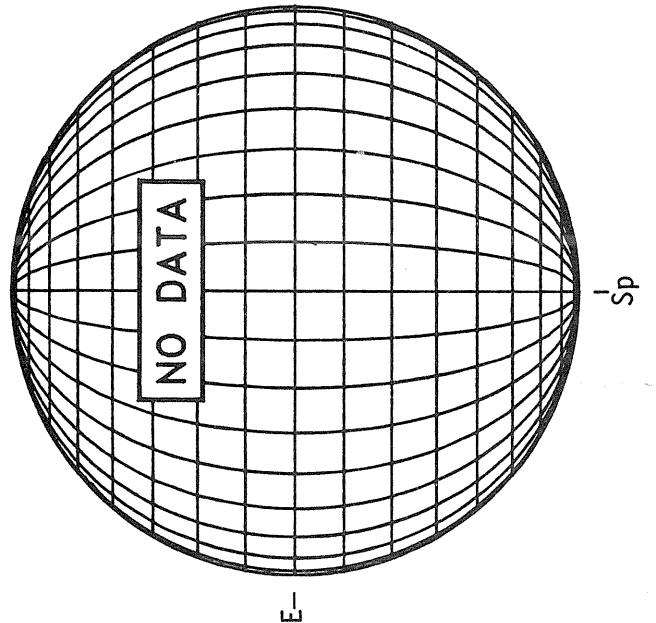
STANFORD MAGNETOGRAM



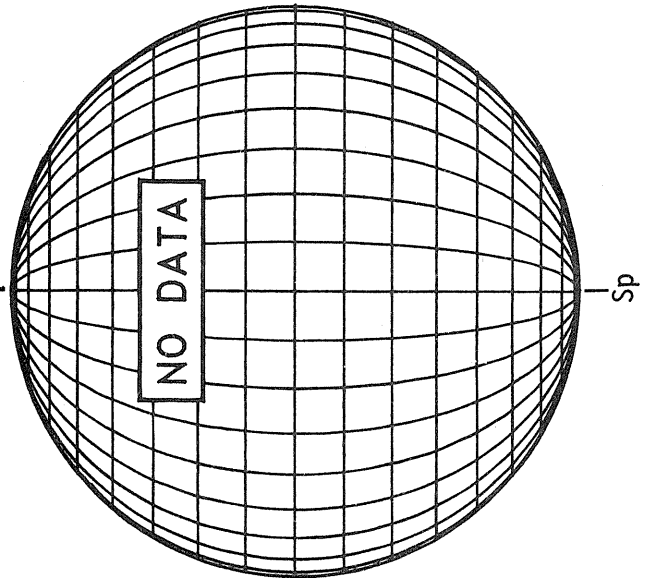
MT. WILSON MAGNETOGRAM



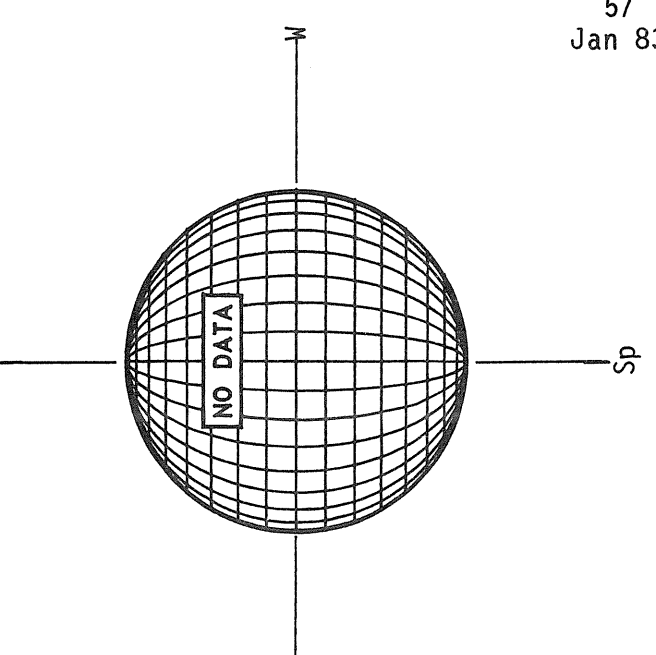
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)

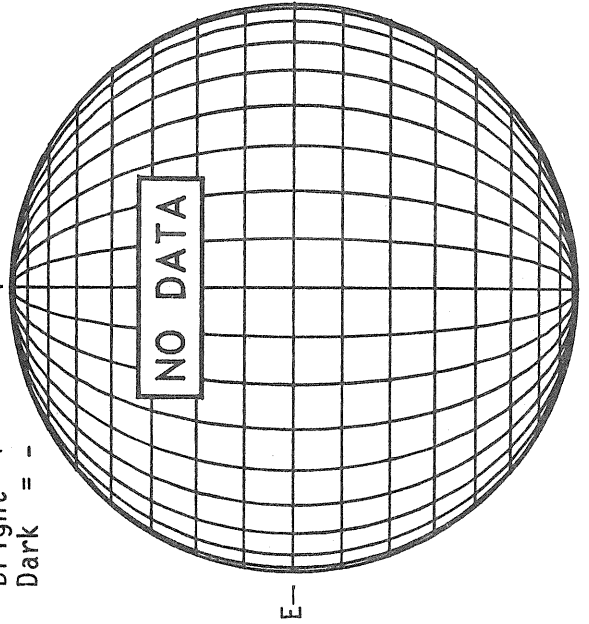


JANUARY 19, 1983 (P=-6.30, B<sub>0</sub>=-4.92, L<sub>0</sub>=2.29)

KITT PEAK MAGNETOGRAM

Bright= +  
Dark = -

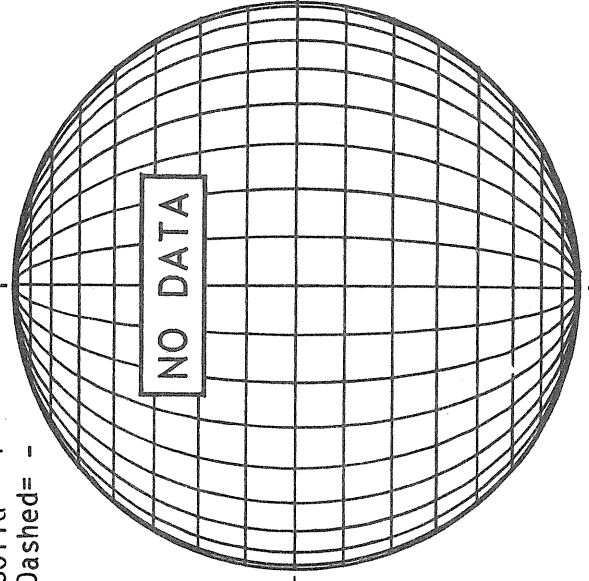
Np



STANFORD MAGNETOGRAM

Solid = +  
Dashed = -

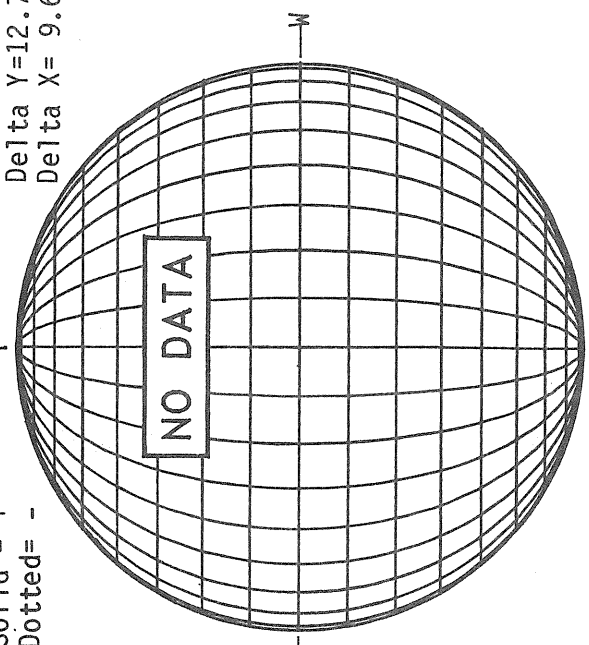
Np



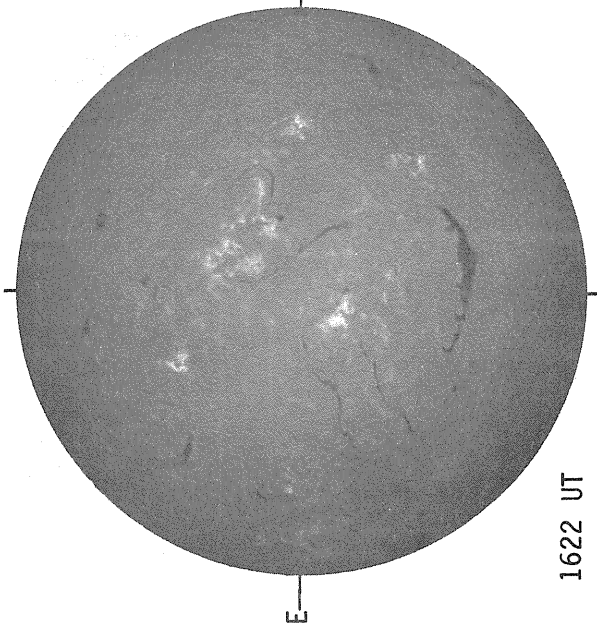
MT. WILSON MAGNETOGRAM

Solid = +  
Dotted = -

Np

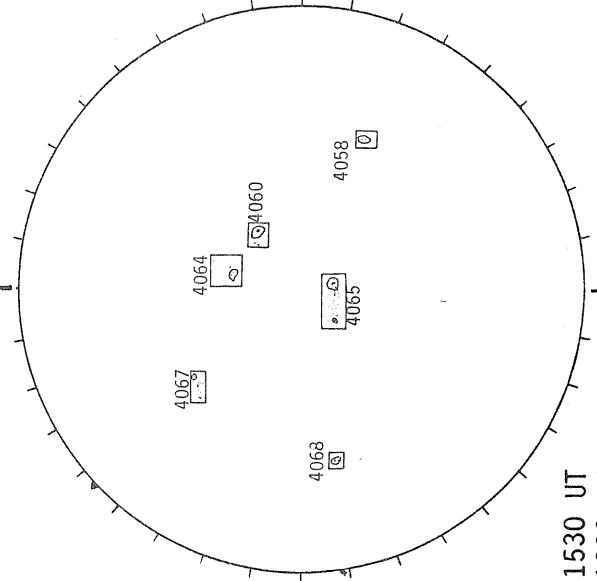


SACRAMENTO PEAK H-ALPHA



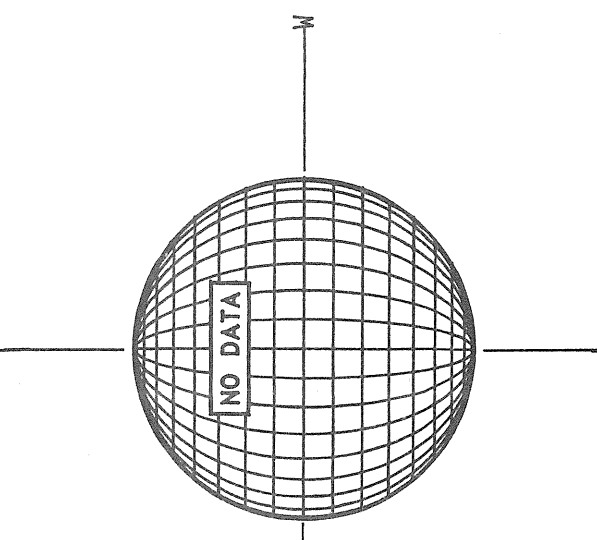
1622 UT

BOULDER SUNSPOTS



1530 UT  
1200 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)



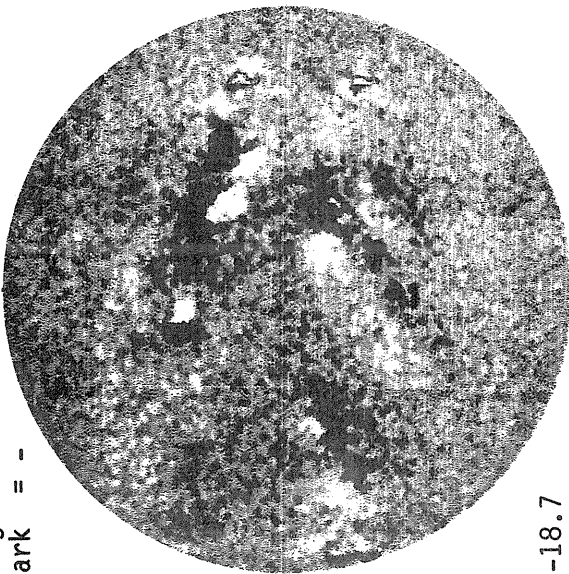
Sp

JANUARY 20, 1983 (P=-6.76, B<sub>0</sub>=-5.01, L<sub>0</sub>=349.13)

MT. WILSON MAGNETOGRAM

Np

Bright= +  
Dark = -

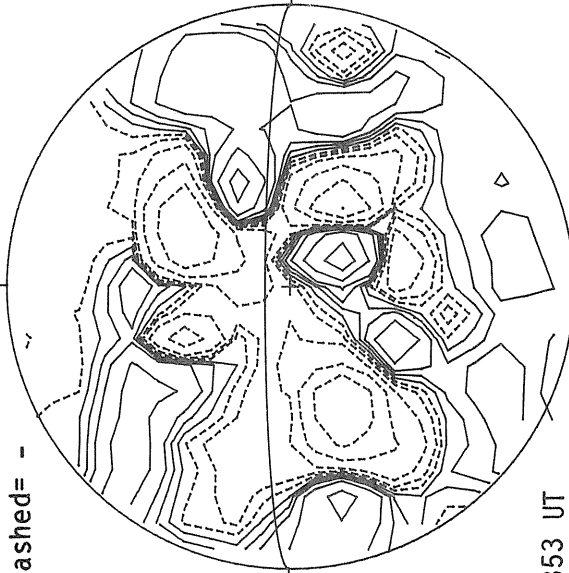


17.8-18.7

STANFORD MAGNETOGRAM

Np

Solid = +  
Dashed = -



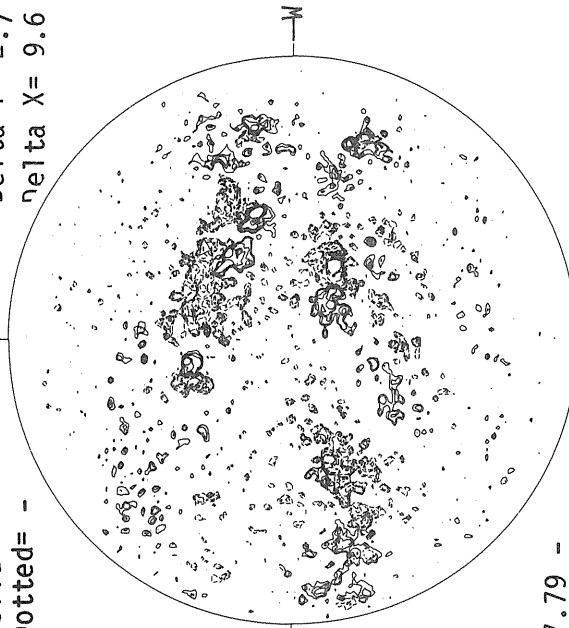
1853 UT

MT. WILSON MAGNETOGRAM

Np

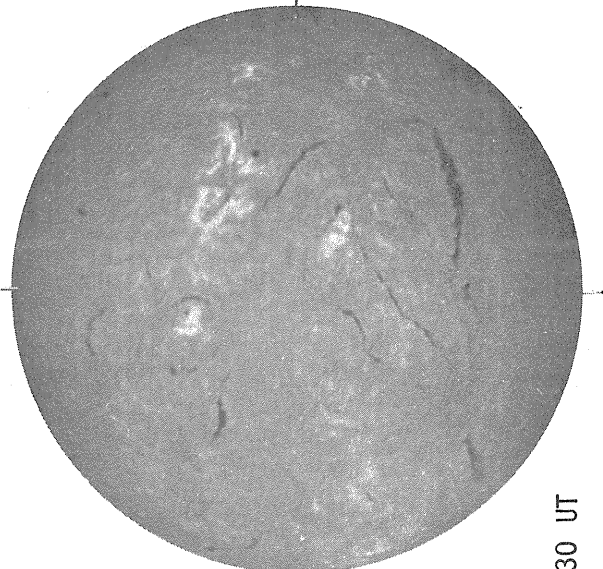
Solid = +  
Dotted = -

Delta Y = 12.7  
Delta X = 9.6



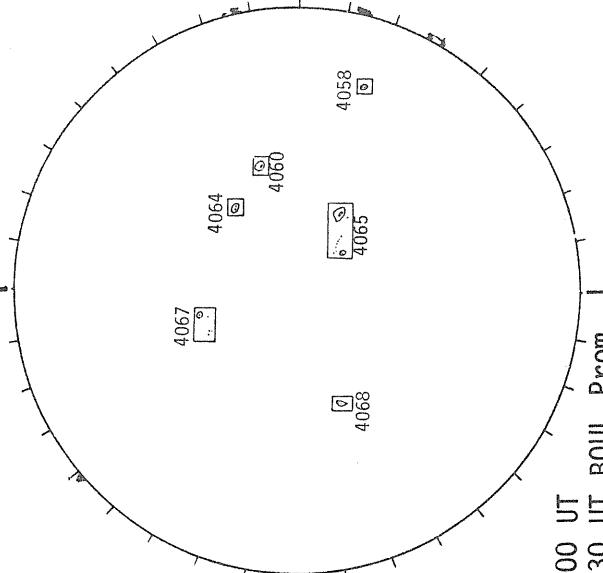
17.79 -  
18.74 UT

BOULDER H-ALPHA



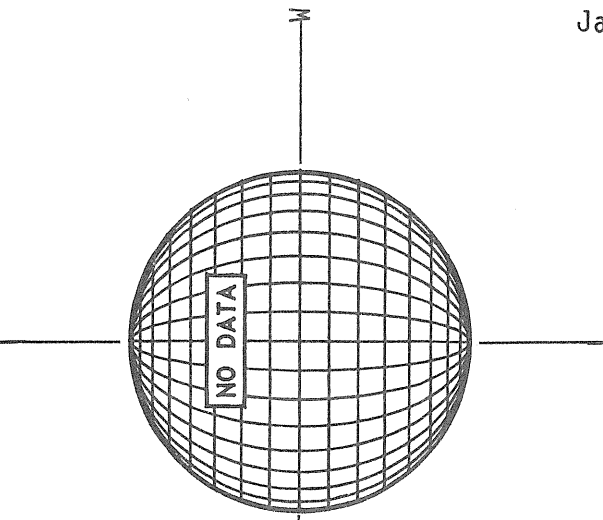
1830 UT

BOULDER SUNSPOTS



1600 UT  
1830 UT BOUL Prom  
Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)



NO DATA

Jan 60  
83

JANUARY 21, 1983 (P=-7.21, B<sub>0</sub>=-5.11, L<sub>0</sub>=335.96)

KITT PEAK MAGNETOGRAM

STANFORD MAGNETOGRAM

MT. WILSON MAGNETOGRAM

Np

Np

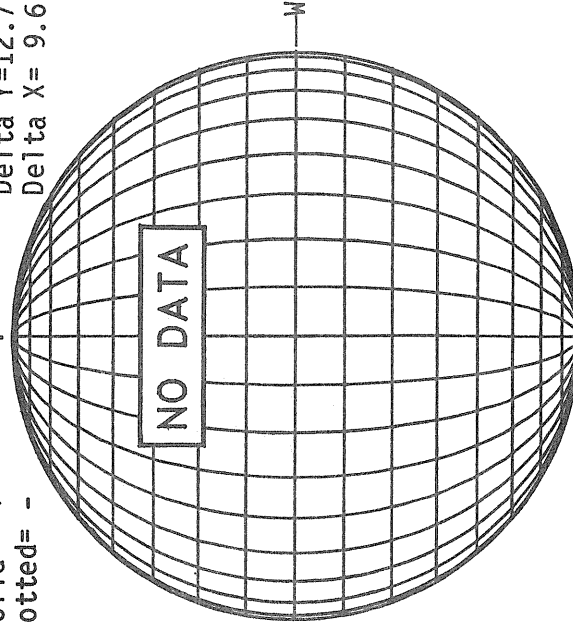
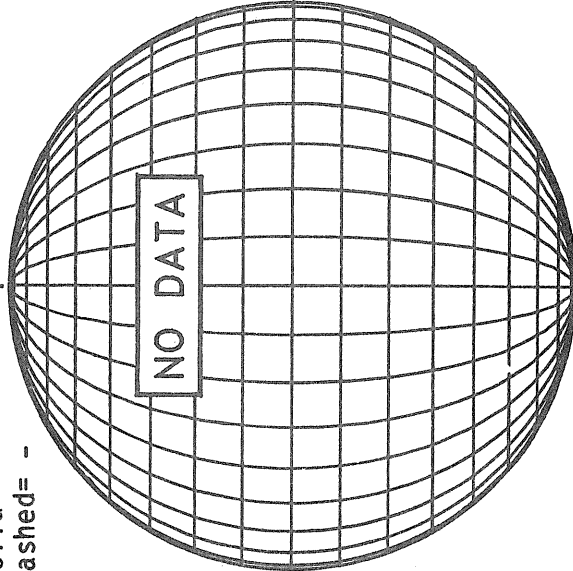
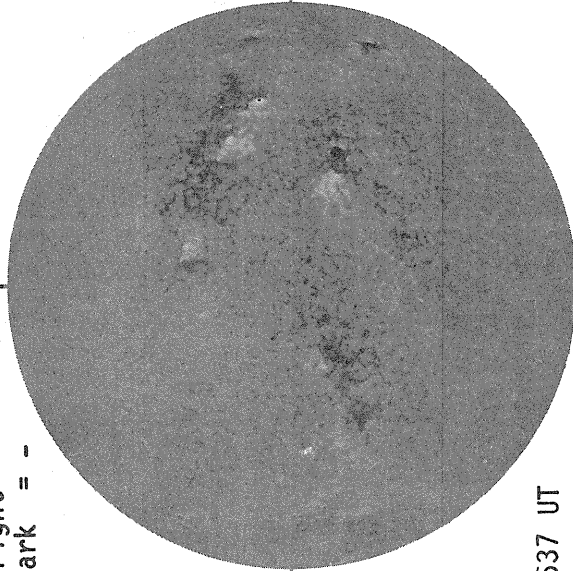
Np

Bright= +  
Dark = -

Solid = +  
Dashed = -

Solid = +  
Dotted = -

Delta Y=12.7  
Delta X=9.6



NO DATA

NO DATA

NO DATA

E

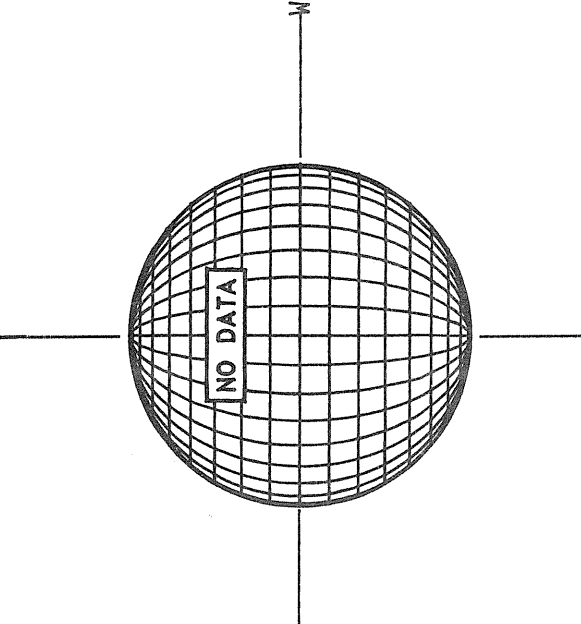
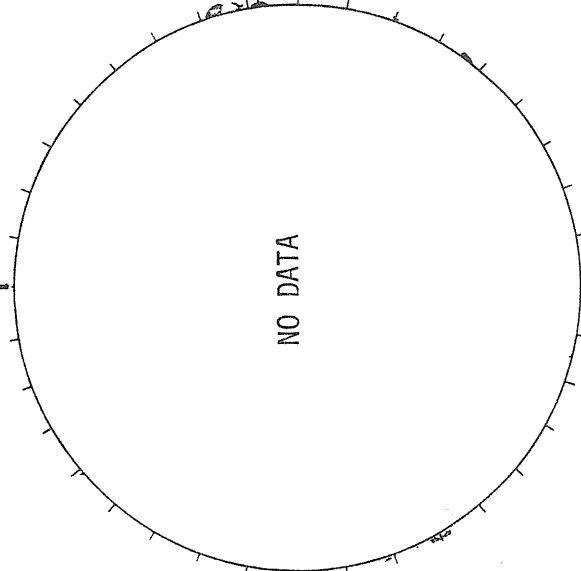
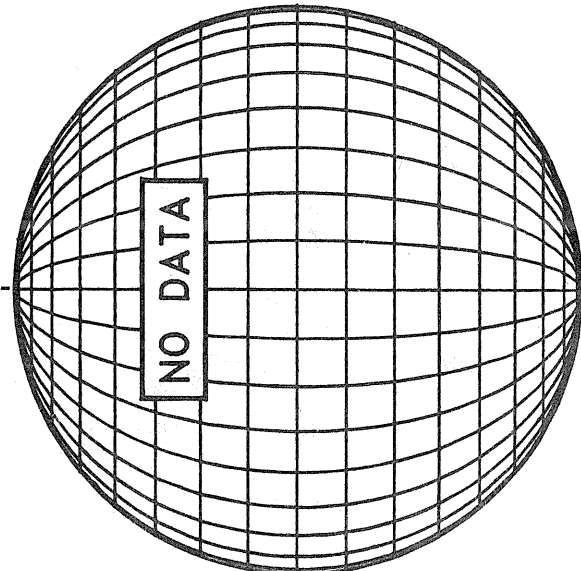
N

1637 UT

SACRAMENTO PEAK H-ALPHA

BOULDER SUNSPOTS

SACRAMENTO PEAK CORONA (5303 Angstrom)



NO DATA

NO DATA

NO DATA

Sp

Sp

Sp

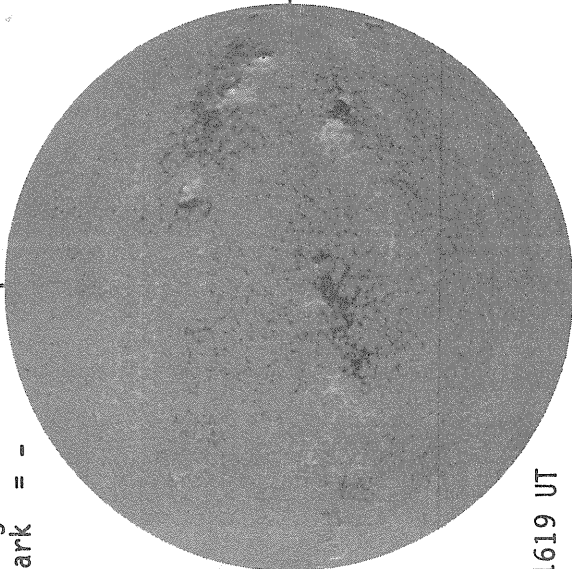
1630 UT BOUL Prom

JANUARY 22, 1983 (P=-7.66, B<sub>0</sub>=-5.20, L<sub>0</sub>=322.79)

KITT PEAK MAGNETOGRAM

Np

Bright= +  
Dark = -

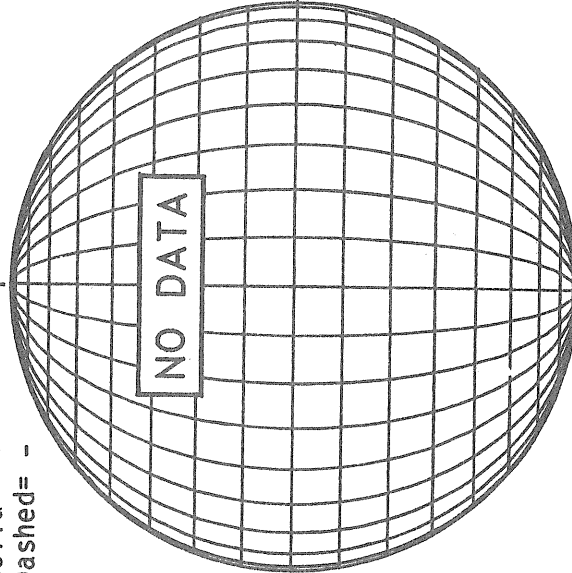


1619 UT

STANFORD MAGNETOGRAM

Np

Solid = +  
Dashed = -

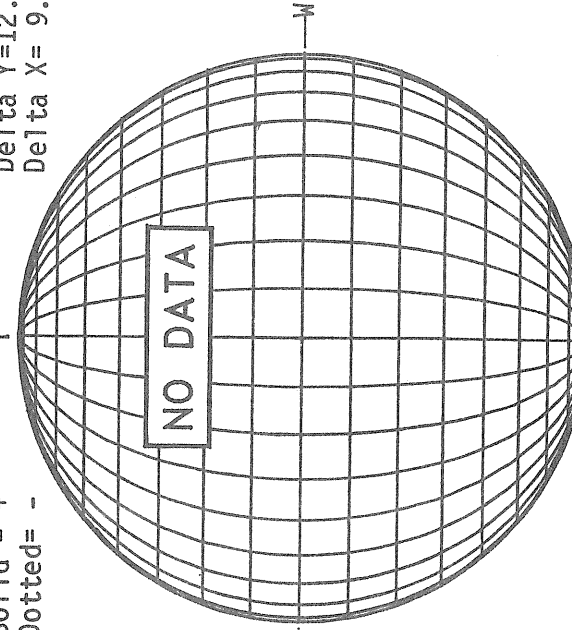


MT. WILSON MAGNETOGRAM

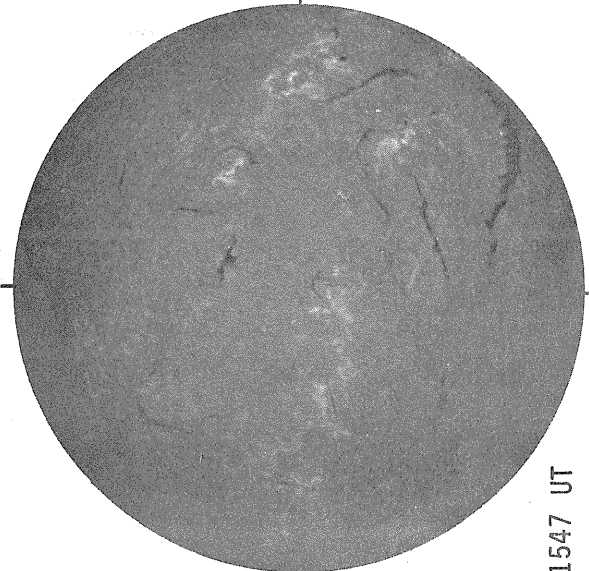
Np

Solid = +  
Dotted = -

Delta Y=12.7  
Delta X=9.6

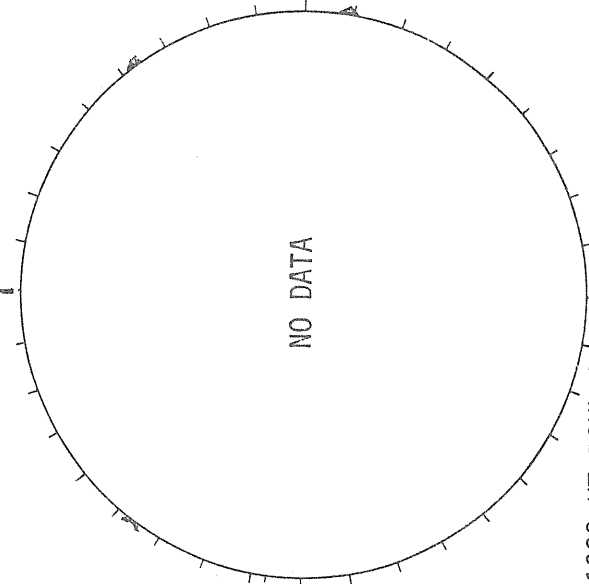


SACRAMENTO PEAK H-ALPHA



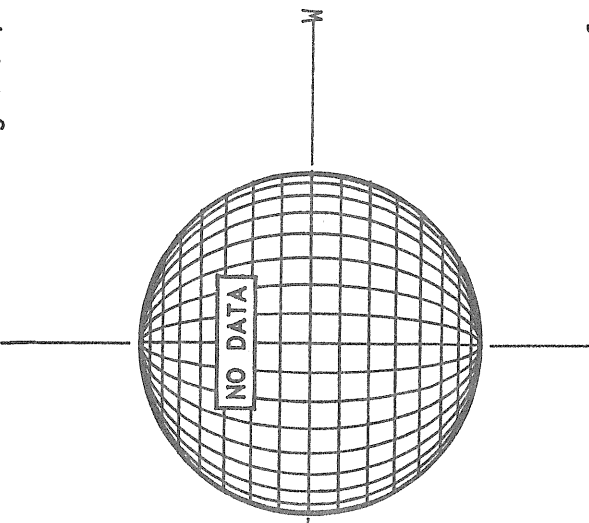
1547 UT

BOULDER SUNSPOTS



1830 UT BOUL Prom Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)



Sp

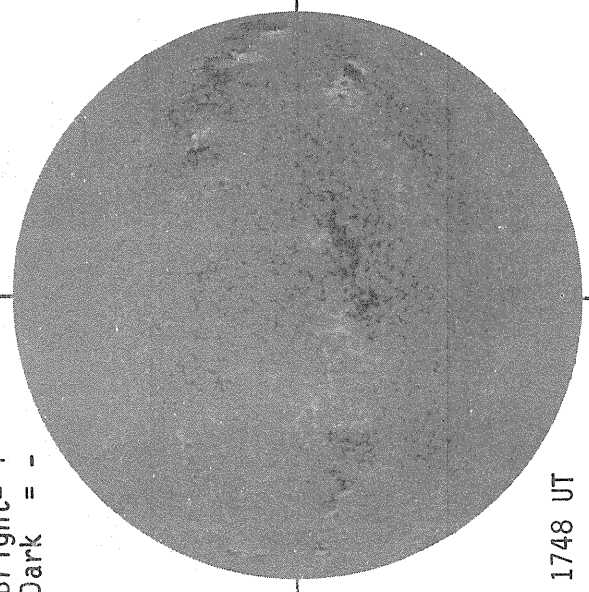
62  
Jan 83

JANUARY 23, 1983 (P=- 8.11, B<sub>0</sub>=-5.29, L<sub>0</sub>= 309.63)

KITT PEAK MAGNETOGRAM

Np

Bright = +  
Dark = -

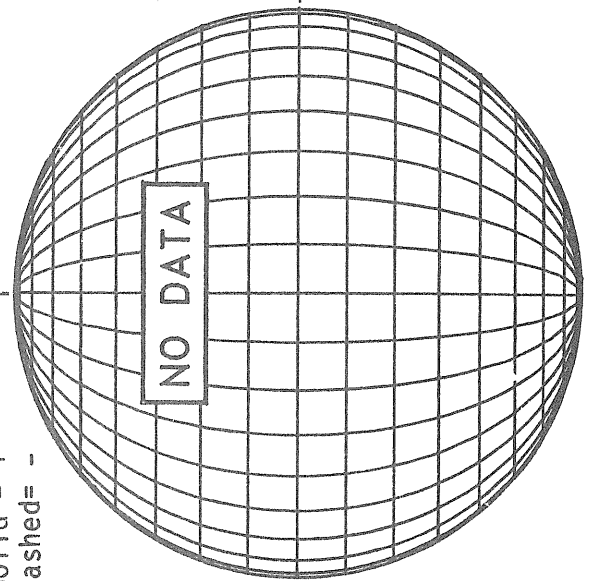


1748 UT

STANFORD MAGNETOGRAM

Np

Solid = +  
Dashed = -

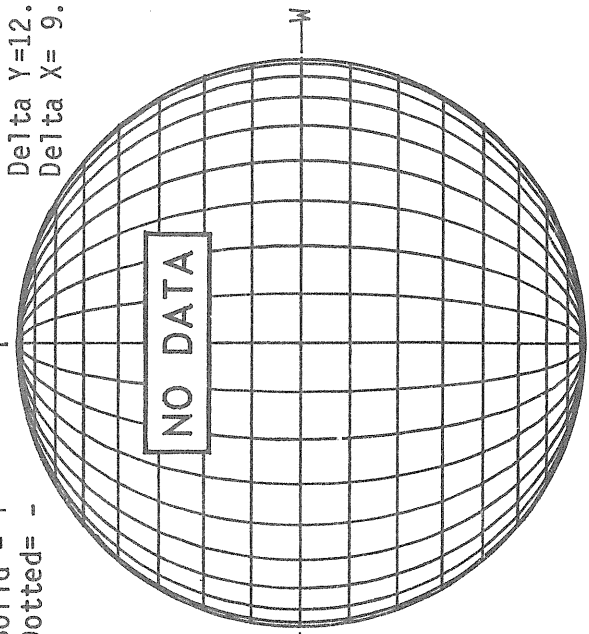


NO DATA

MT. WILSON MAGNETOGRAM

Np

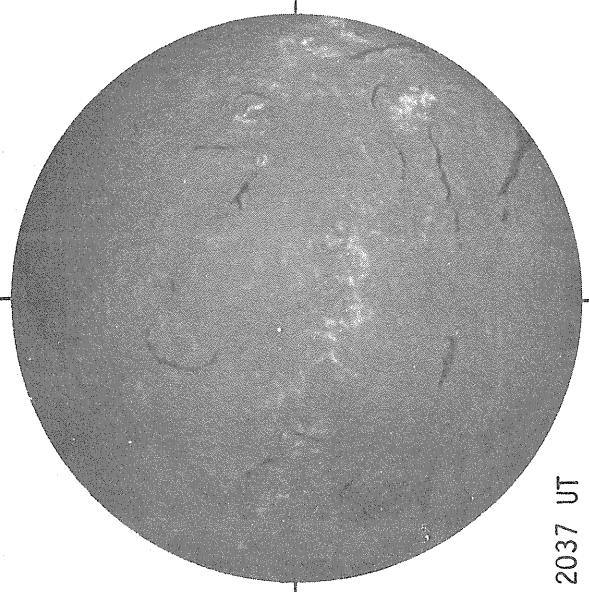
Solid = +  
Dotted = -



NO DATA

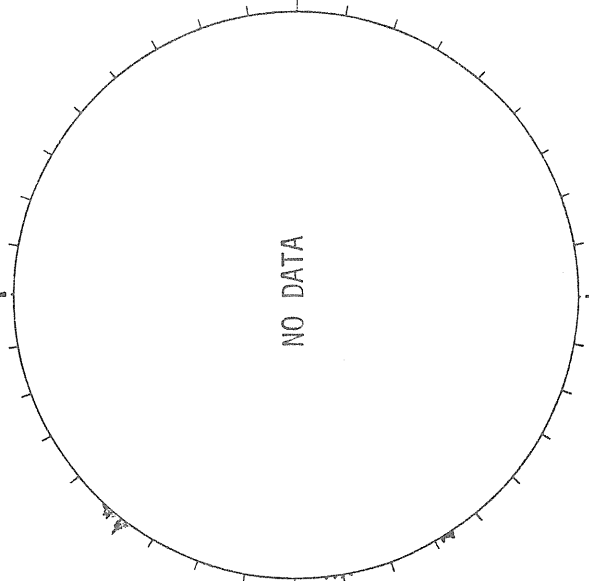
Delta Y = 12.7  
Delta X = 9.6

SACRAMENTO PEAK H-ALPHA



2037 UT

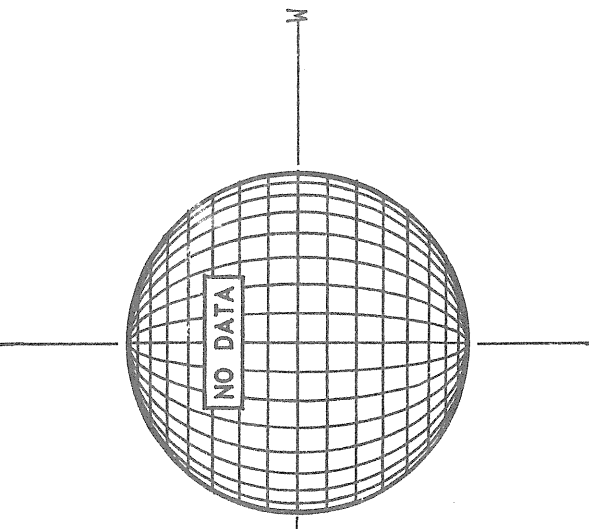
BOULDER SUNSPOTS



NO DATA

1830 UT BOUL Prom Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)



NO DATA

Sp

E

E

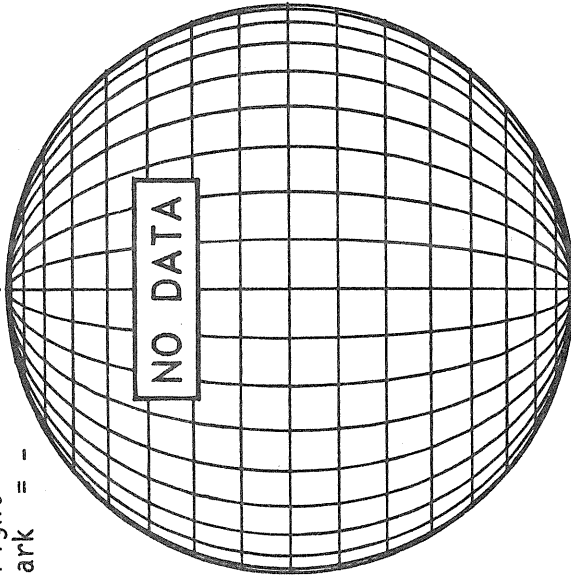
Sp

JANUARY 24, 1983 (P=- 8.56, B<sub>0</sub>=-5.37, L<sub>0</sub>= 296.46)

KITT PEAK MAGNETOGRAM

Np

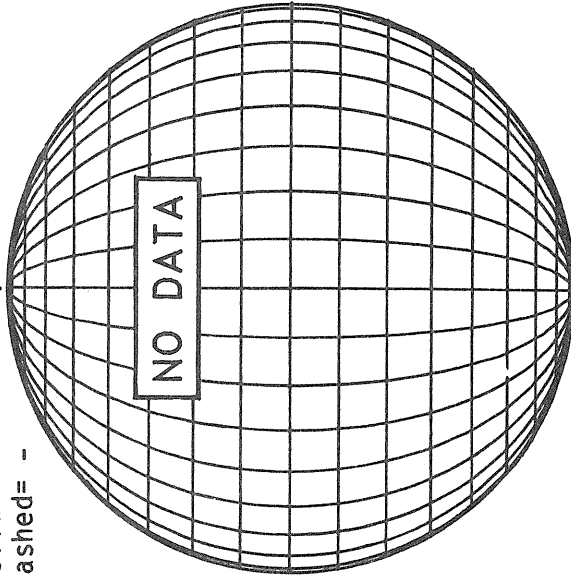
Bright= +  
Dark = -



STANFORD MAGNETOGRAM

Np

Solid = +  
Dashed = -

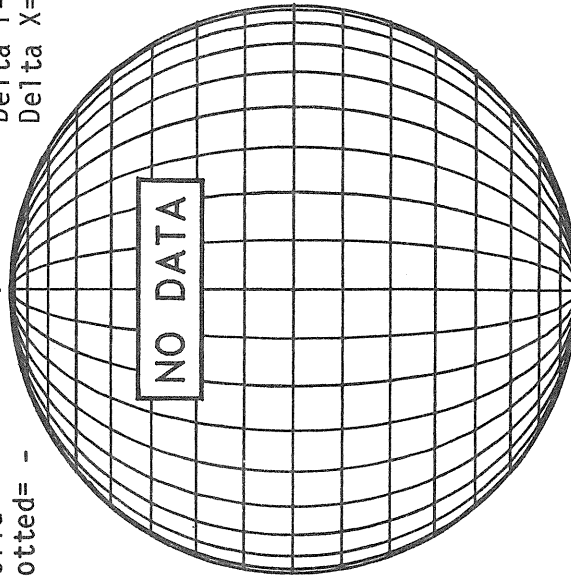


MT. WILSON MAGNETOGRAM

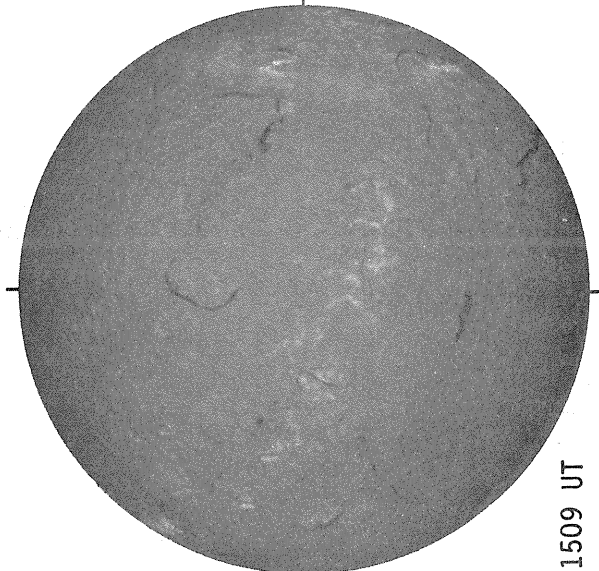
Np

Solid = +  
Dotted = -

Delta Y=12.7  
Delta X= 9.6



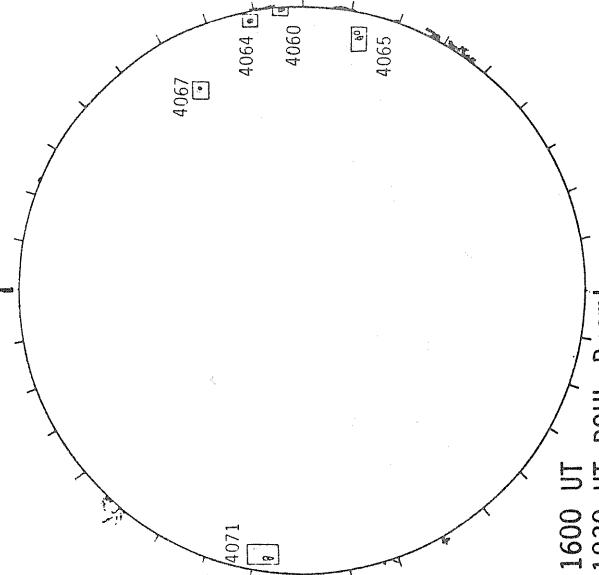
SACRAMENTO PEAK H-ALPHA



1509 UT

Sp

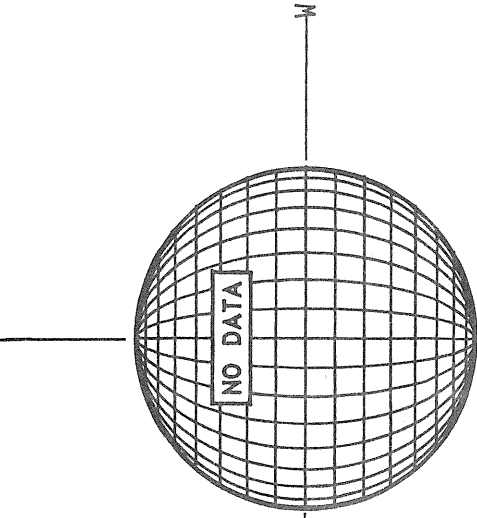
BOULDER SUNSPOTS



1600 UT  
1830 UT BOUL Prom!

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

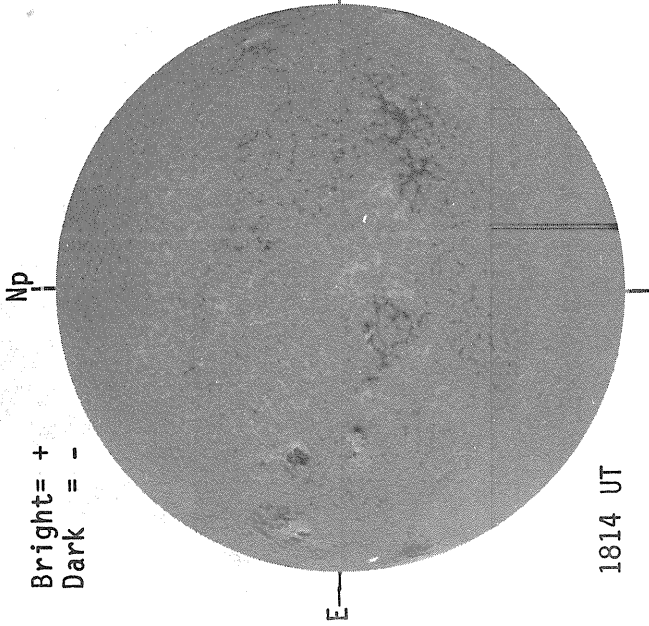


Sp



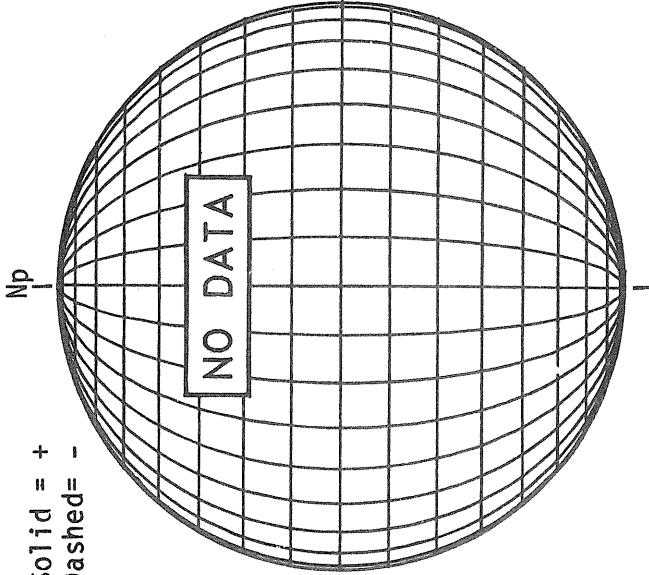
JANUARY 25, 1983 (P=- 9.00, B<sub>0</sub>=-5.46, L<sub>0</sub>= 283.29)

KITT PEAK MAGNETOGRAM



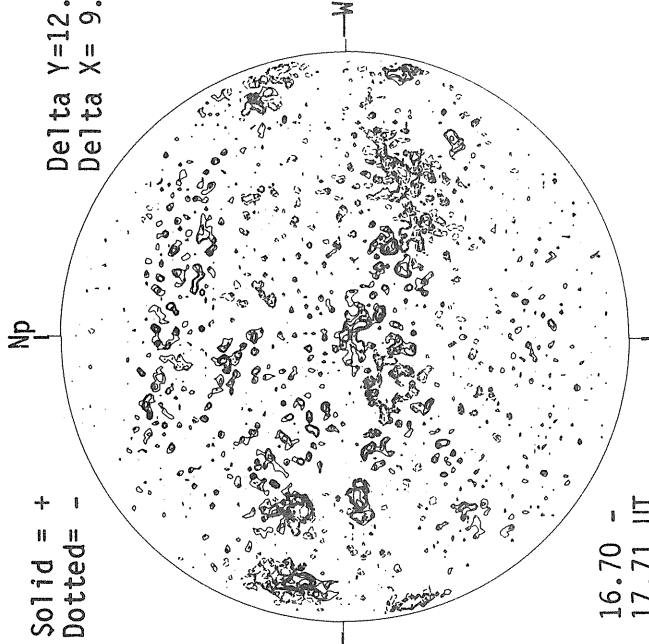
Bright= +  
Dark = -

STANFORD MAGNETOGRAM



Solid = +  
Dashed = -

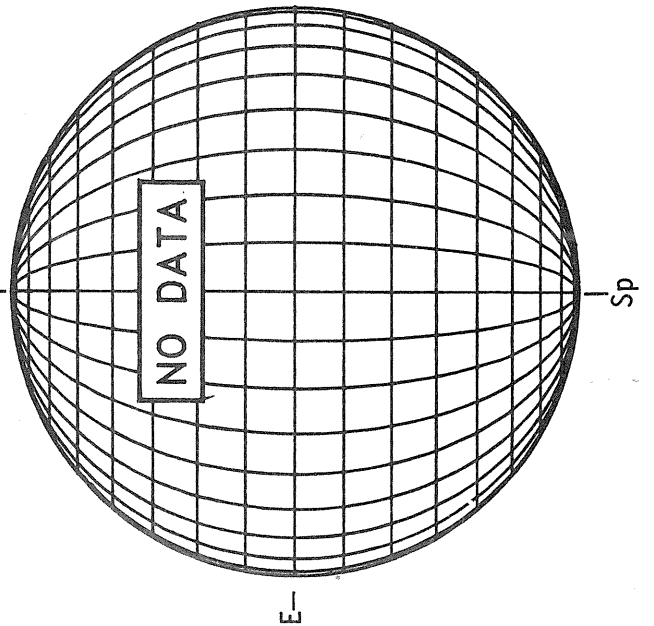
MT. WILSON MAGNETOGRAM



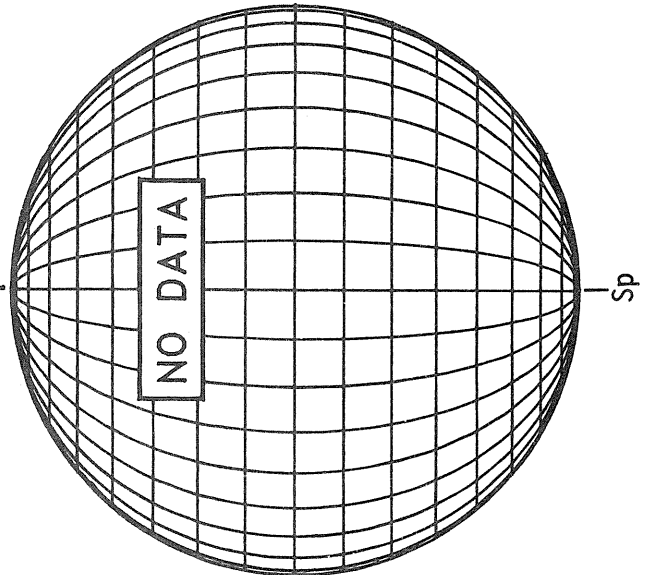
Solid = +  
Dotted = -

Delta Y=12.7  
Delta X= 9.6

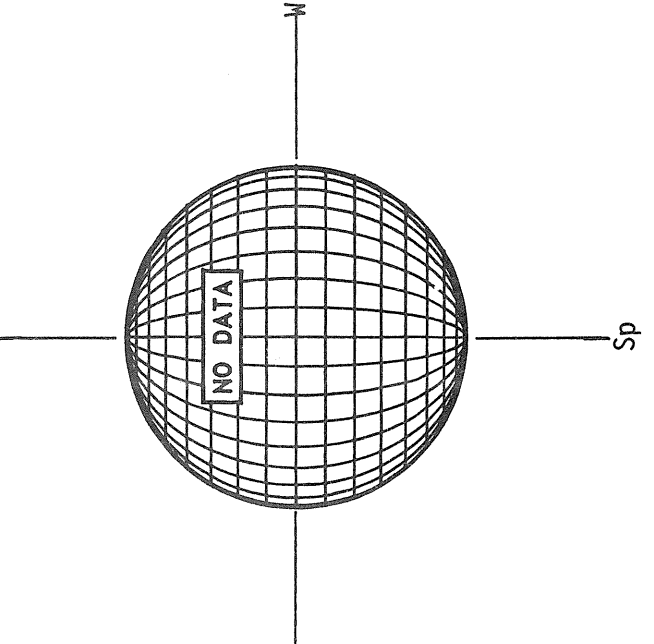
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS

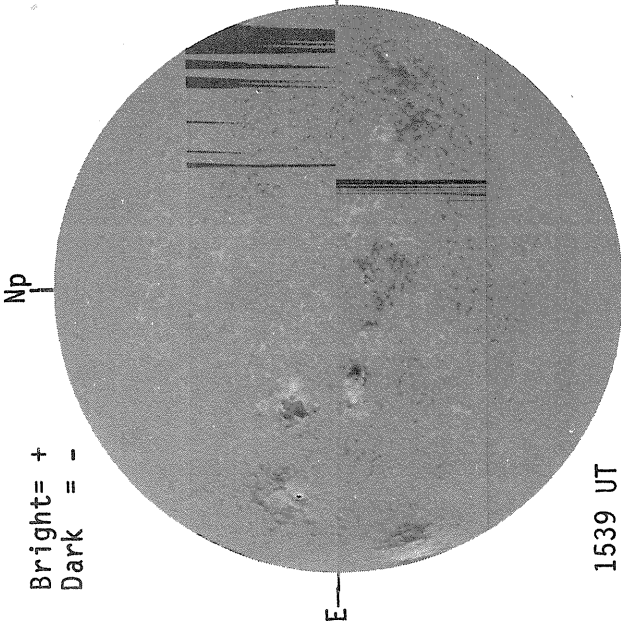


SACRAMENTO PEAK CORONA (5303 Angstrom)

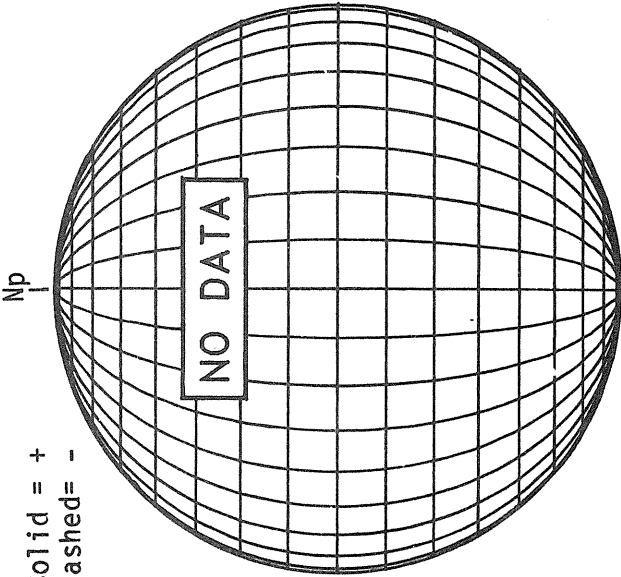


JANUARY 26, 1983 (P=-9.44, B<sub>0</sub>=-5.54, L<sub>0</sub>=270.13)

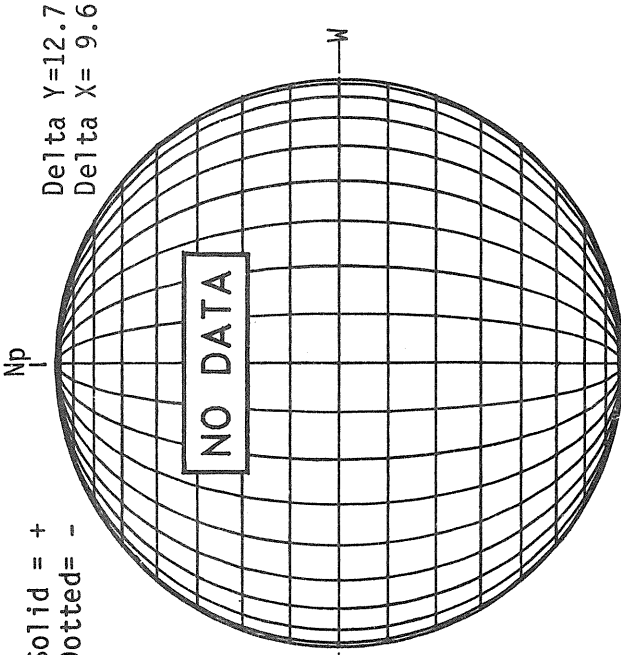
KITT PEAK MAGNETOGRAM



STANFORD MAGNETOGRAM



MT. WILSON MAGNETOGRAM



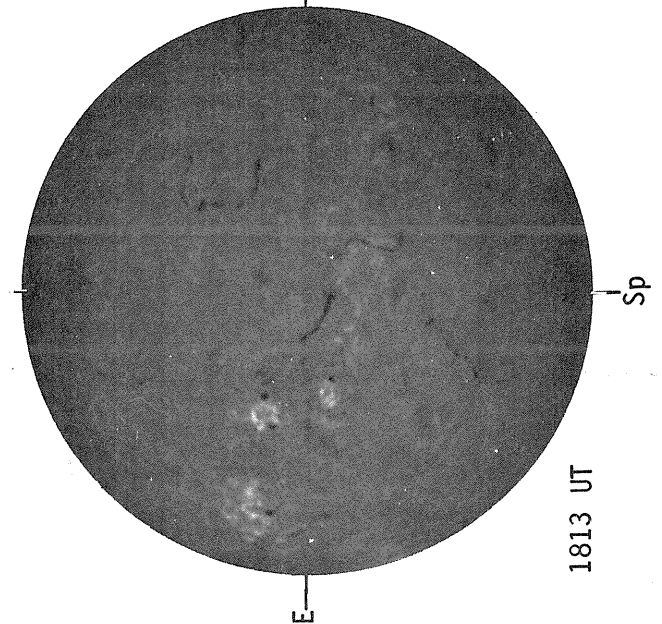
BRIGHTNESS

Bright= +  
Dark = -

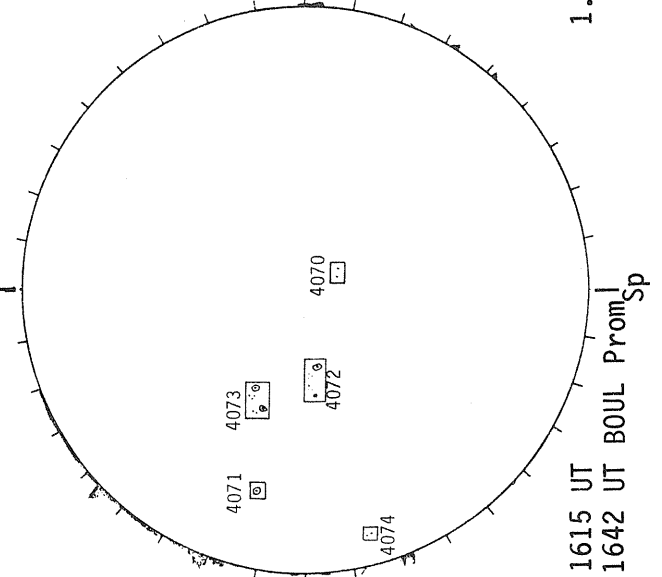
Solid = +  
Dotted = -

Delta Y = 12.7  
Delta X = 9.6

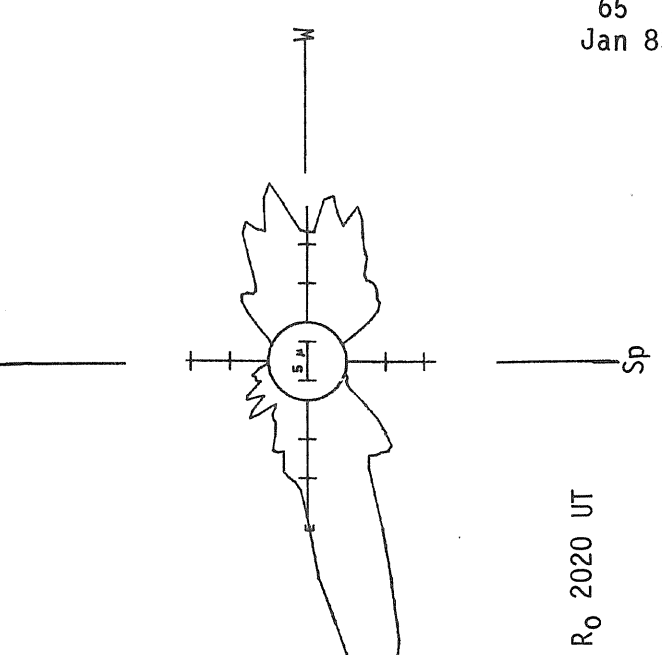
BOULDER H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



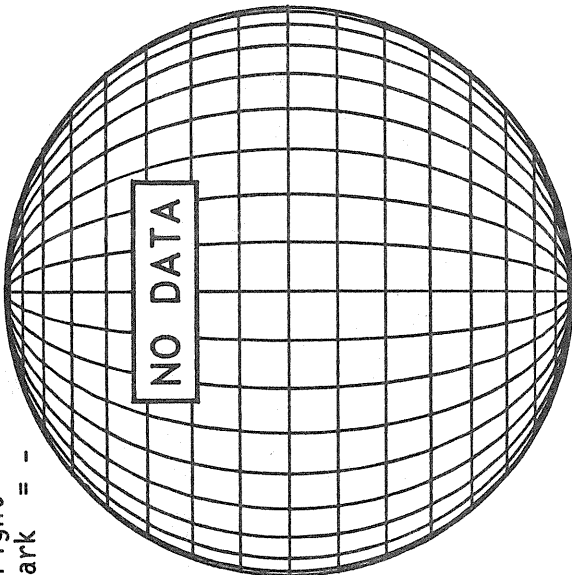
66  
Jan 83

JANUARY 27, 1983 (P=- 9.87, B<sub>0</sub>=-5.62, L<sub>0</sub>= 256.96)

KITT PEAK MAGNETOGRAM

Np

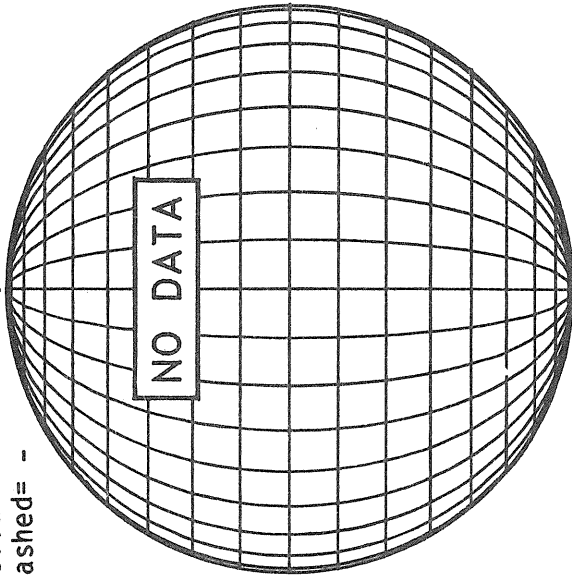
Bright = +  
Dark = -



STANFORD MAGNETOGRAM

Np

Solid = +  
Dashed = -

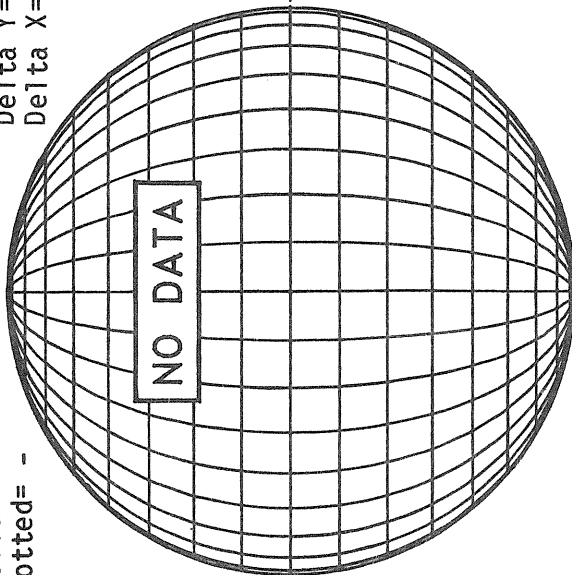


MT. WILSON MAGNETOGRAM

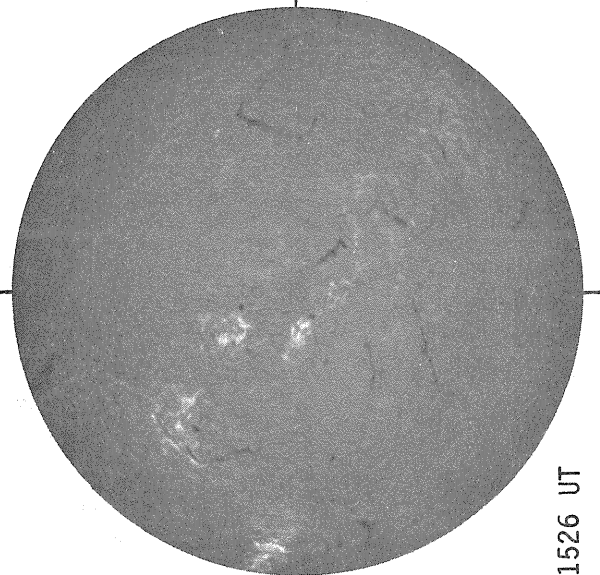
Np

Solid = +  
Dotted = -

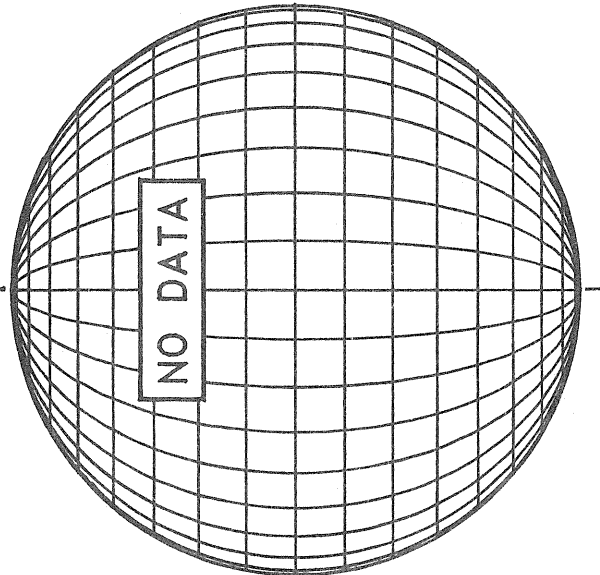
Delta Y = 12.7  
Delta X = 9.6



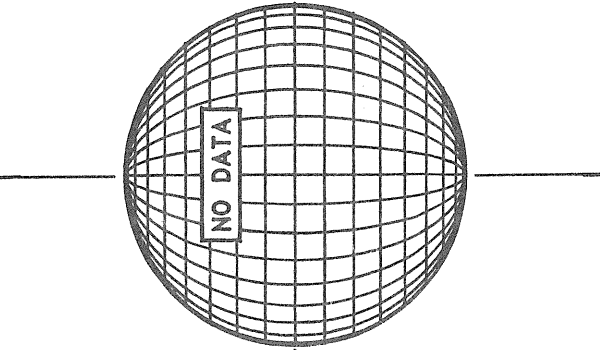
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



1526 UT

E-

E

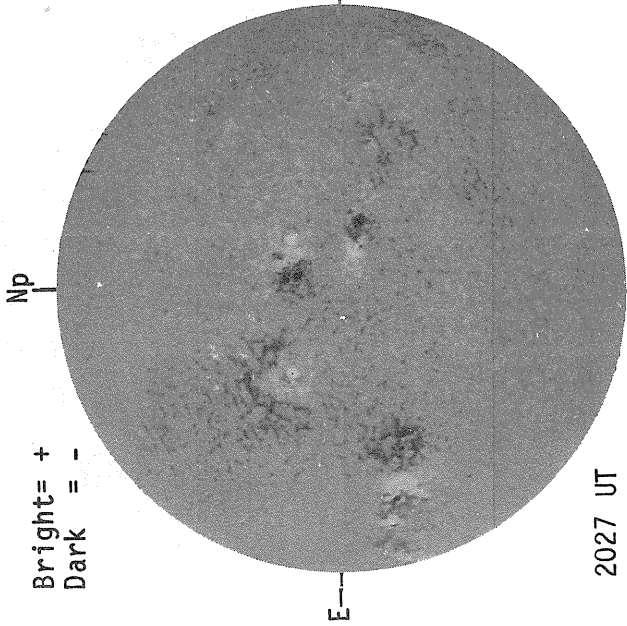
Sp

Sp

Sp

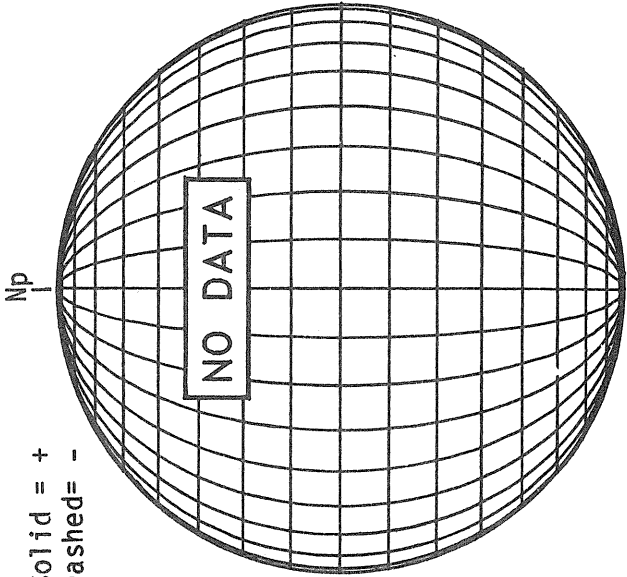
JANUARY 28, 1983 (P=-10.30, B<sub>0</sub>=-5.70, L<sub>0</sub>= 243.79)

KITT PEAK MAGNETOGRAM



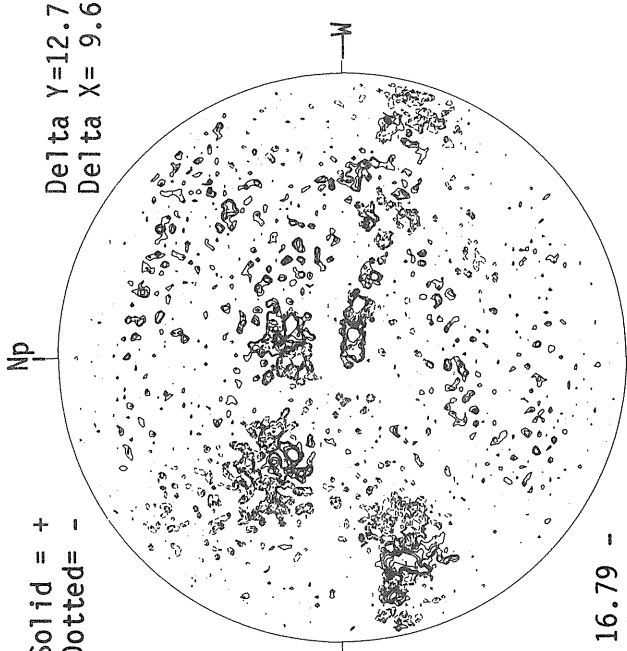
Bright = +  
Dark = -

STANFORD MAGNETOGRAM



Solid = +  
Dashed = -

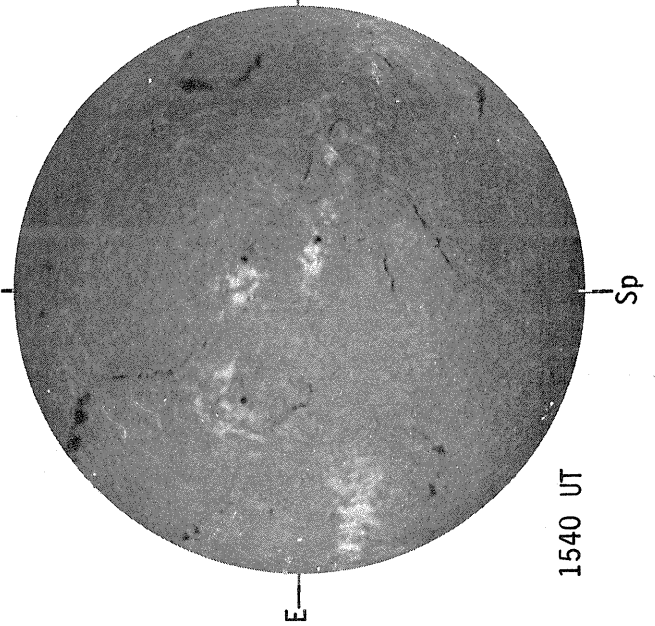
MT. WILSON MAGNETOGRAM



Solid = +  
Dotted = -

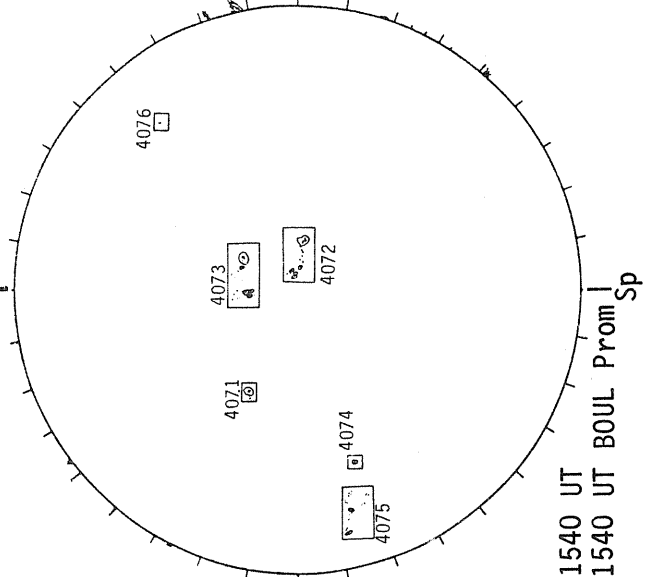
Delta Y = 12.7  
Delta X = 9.6

BOULDER H-ALPHA



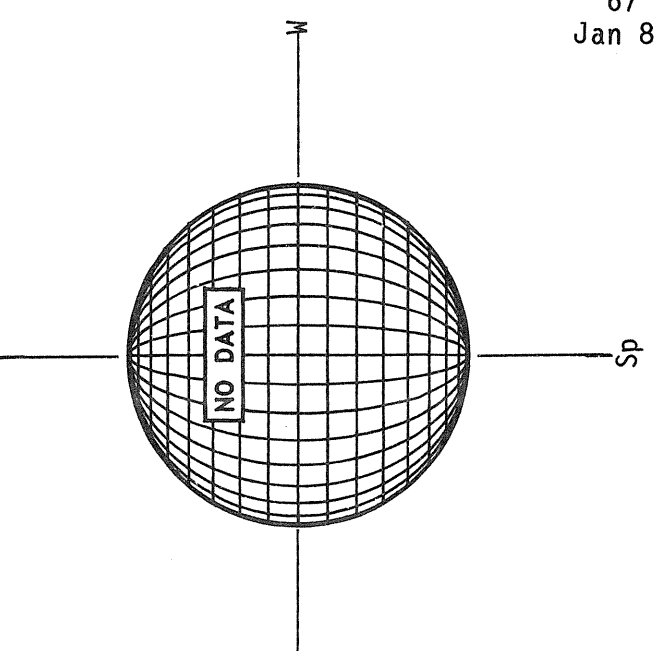
1540 UT

BOULDER SUNSPOTS



1540 UT BOUL Prom  
1540 UT

SACRAMENTO PEAK CORONA (5303 Angstrom)



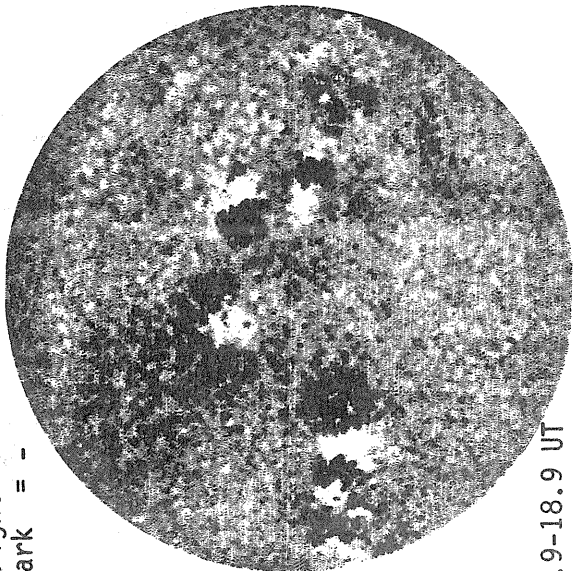
16.79 -  
17.74 UT

JANUARY 29, 1983 (P=-10.73, B<sub>0</sub>=-5.78, L<sub>0</sub>= 230.63)

MT. WILSON MAGNETOGRAM

Np

Bright= +  
Dark = -



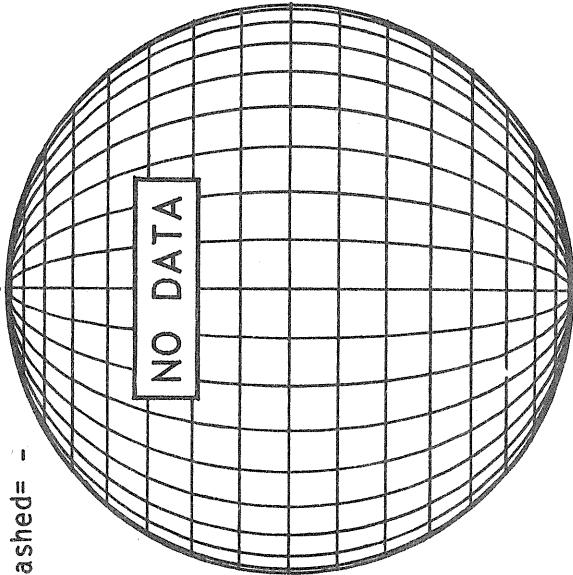
E

17.9-18.9 UT

STANFORD MAGNETOGRAM

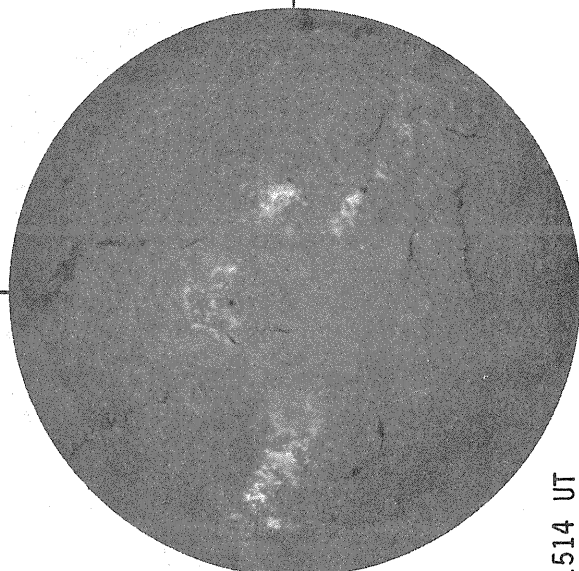
Np

Solid = +  
Dashed = -



NO DATA

SACRAMENTO PEAK H-ALPHA



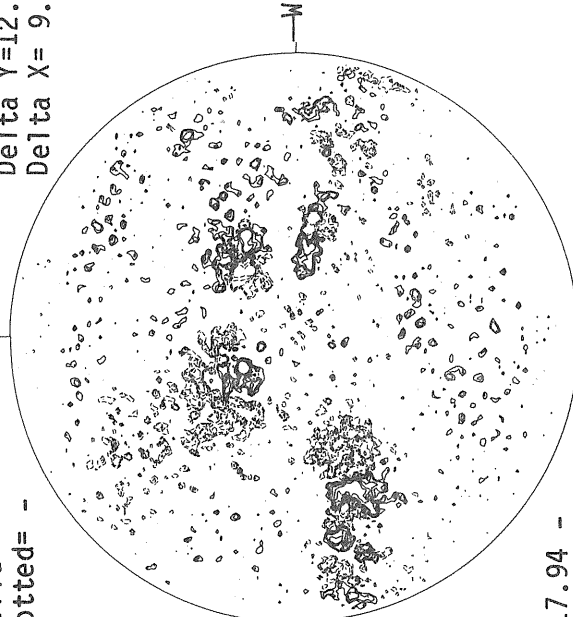
E

1514 UT

MT. WILSON MAGNETOGRAM

Np

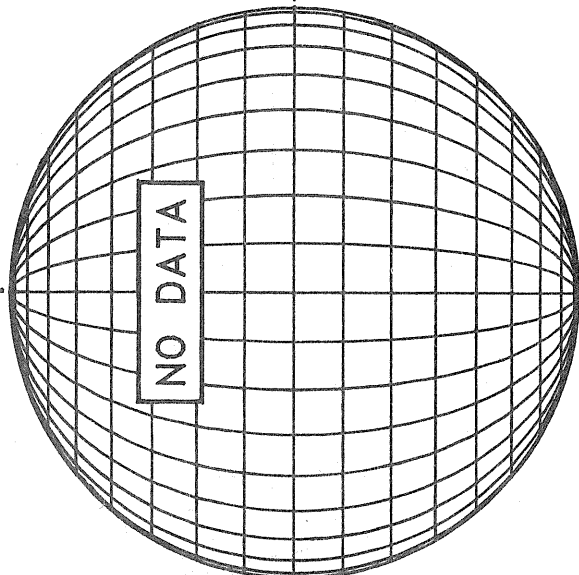
Solid = +  
Dotted = -



Delta Y=12.7  
Delta X= 9.6

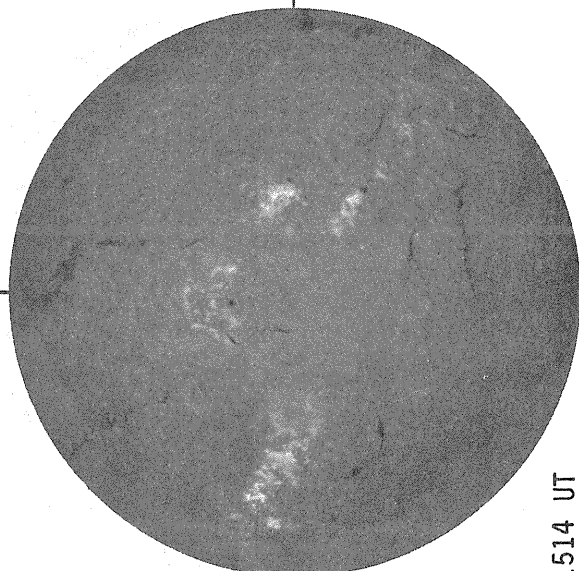
17.94 -  
18.94 UT

SACRAMENTO PEAK CORONA (5303 Angstrom)



NO DATA

BOULDER SUNSPOTS



NO DATA

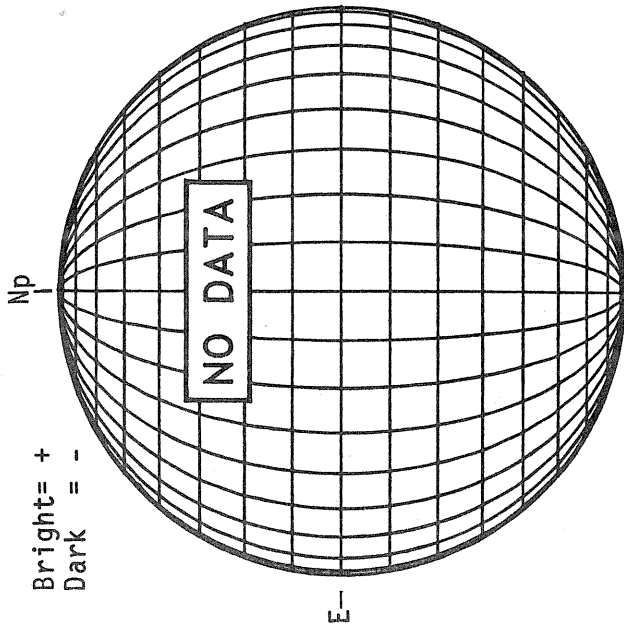
Sp

Sp

Sp

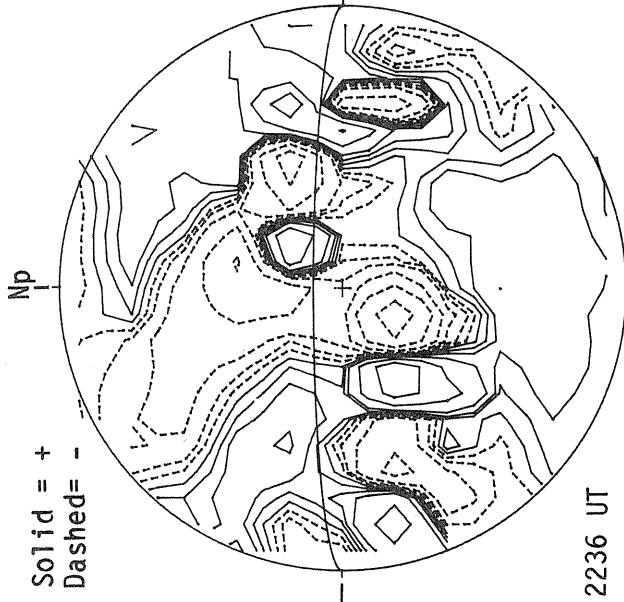
JANUARY 30, 1983 (P=-11.15, B<sub>0</sub>=-5.86, L<sub>0</sub>= 217.46)

KITT PEAK MAGNETOGRAM



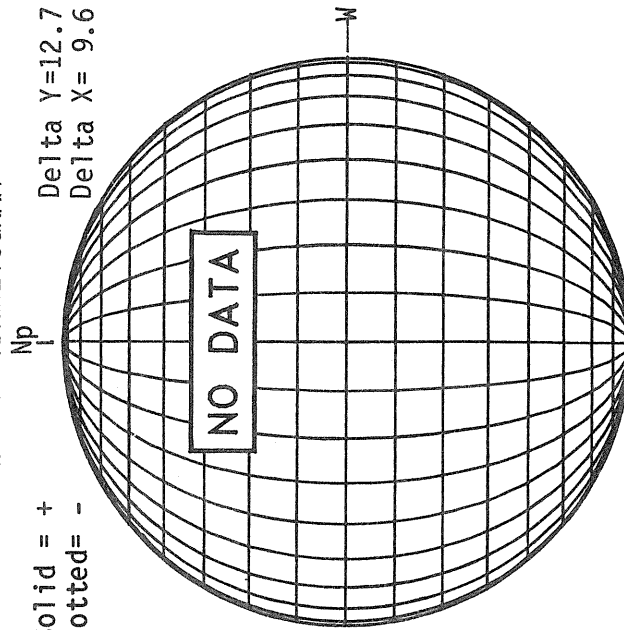
Bright = +  
Dark = -

STANFORD MAGNETOGRAM



Solid = +  
Dashed = -

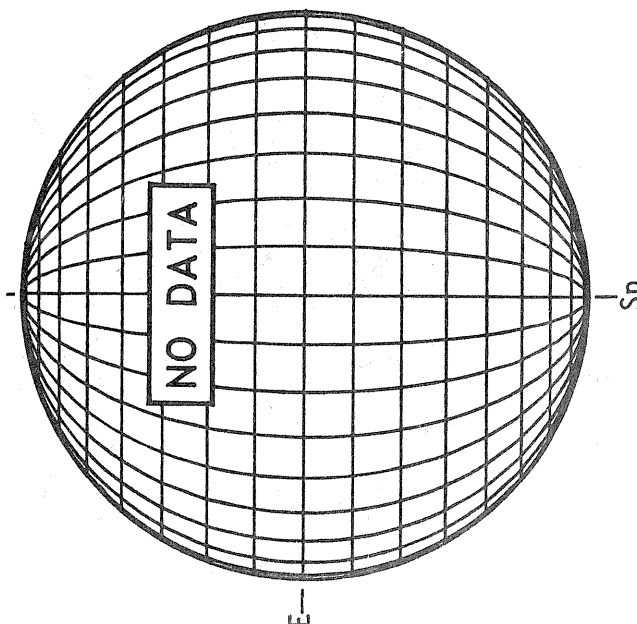
MT. WILSON MAGNETOGRAM



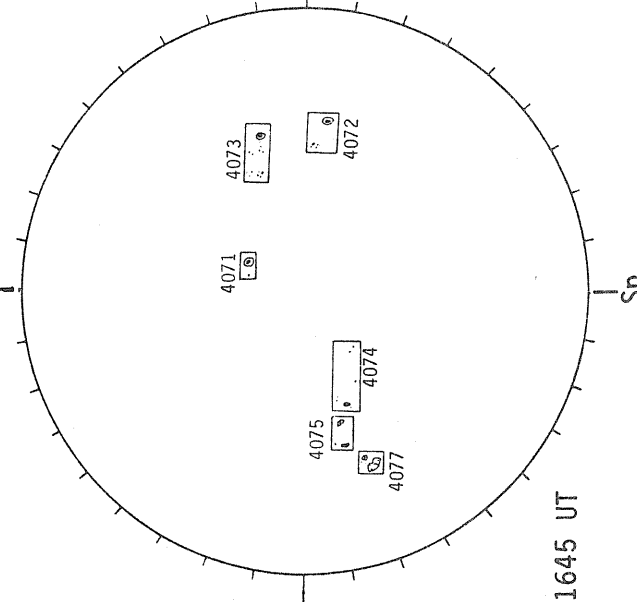
Solid = +  
Dotted = -

Delta Y = 12.7  
Delta X = 9.6

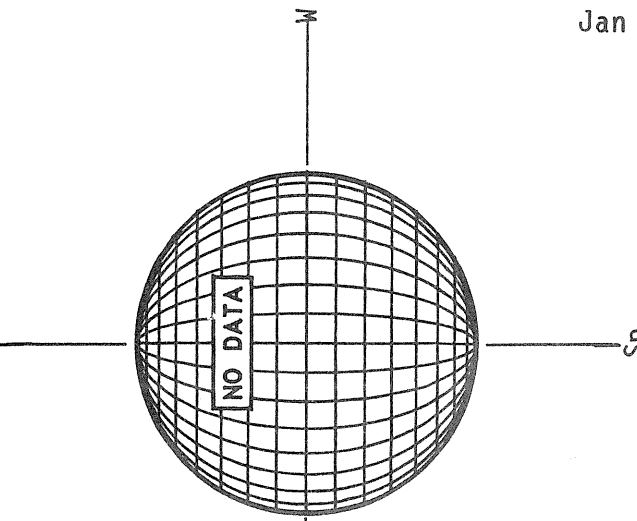
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS

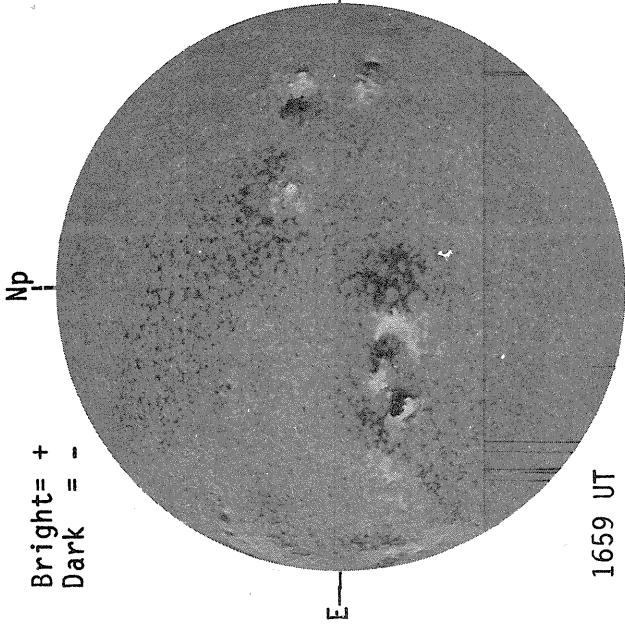


SACRAMENTO PEAK CORONA (5303 Angstrom)



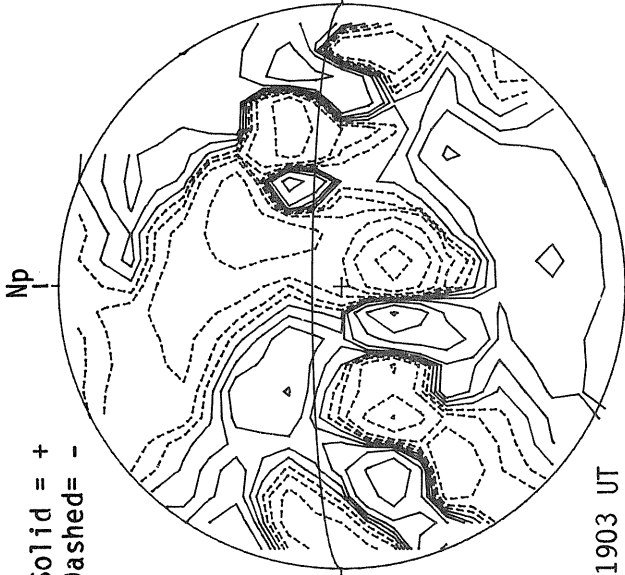
JANUARY 31, 1983 (P=-11.57, B<sub>0</sub>=-5.93, L<sub>0</sub>= 204.29)

KITT PEAK MAGNETOGRAM



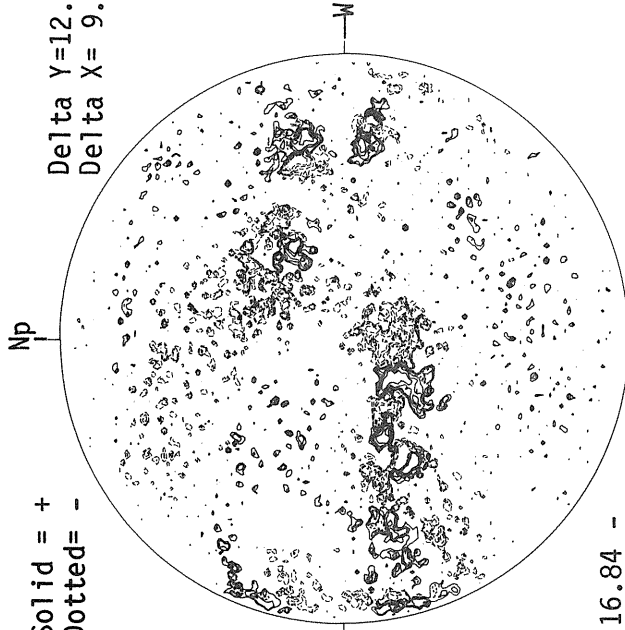
Bright = +  
Dark = -

STANFORD MAGNETOGRAM



Solid = +  
Dashed = -

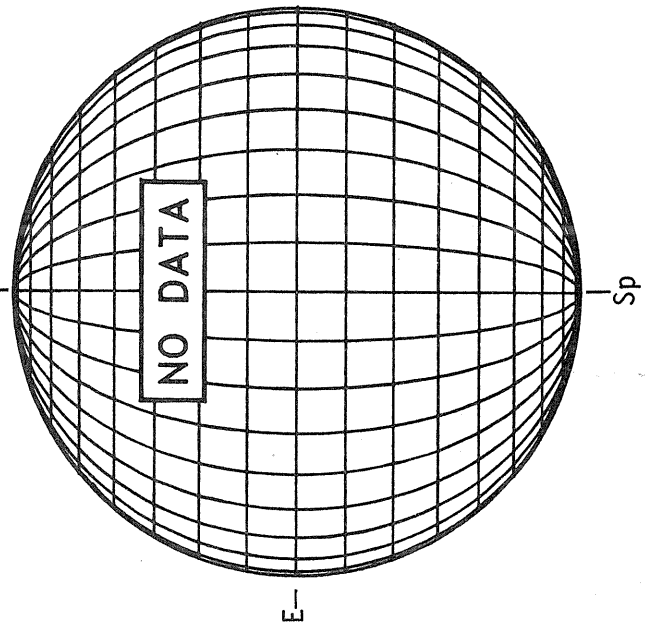
MT. WILSON MAGNETOGRAM



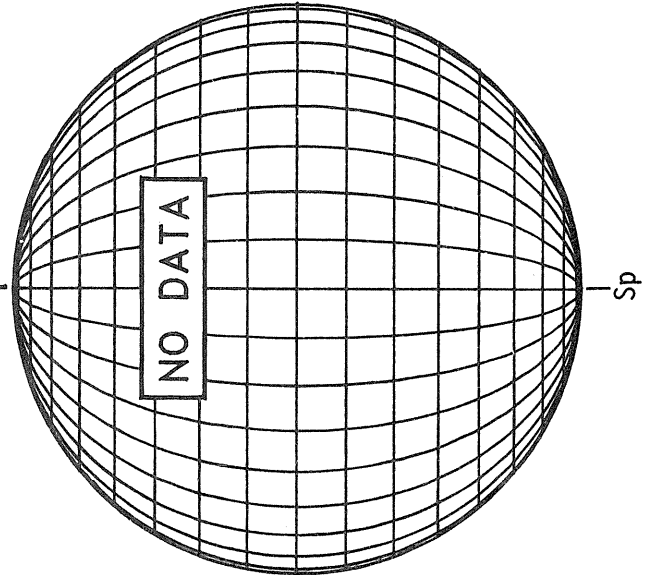
Solid = +  
Dotted = -

Delta Y = 12.7  
Delta X = 9.6

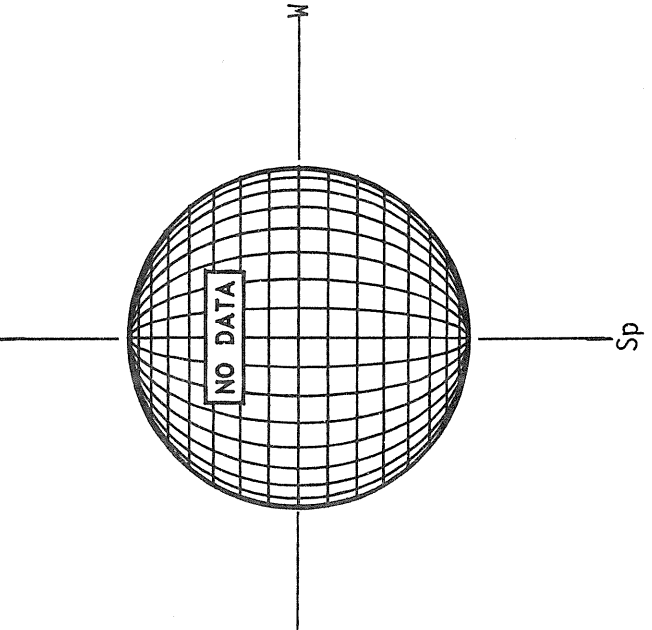
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



1659 UT

1903 UT

16.84 -  
17.79 UT

REGIONS OF SUNSPOT ACTIVITY  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

71  
Jan 83

JANUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time			Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day	UT											
		LEAR	01	01	0120	S12 E01	01	1.1			A	AXX	10	2	2	3
4044		BOUL	01	01	1414	N08 E04	01	1.9			B	DAO	30	7	4	3
4044	23499	MWIL	01	01	1630	N07 E01	01	1.8	4		( B)					
4044		HOLL	01	01	1712	N08 E02	01	1.9			B	CRO	30	9	4	2
4044		PALE	01	01	2000	N08 W01	01	1.8			B	CRO	30	5	4	3
4044		LEAR	01	02	0030	N08 W03	01	1.8			B	CRO	30	4	4	3
4044		BOUL	01	02	1615	N07 W13	01	1.7			A	AXX		1		3
4044	23499	MWIL	01	02	1630	N07 W14	01	1.6	4		(AP)					
4044		PALE	01	02	2056	N08 W17	01	1.6			A	HRX	10	1	1	4
4044		MANI	01	03	0041	N08 W19	01	1.6				HRX	10	1	1	3
4044		LEAR	01	03	0100	N08 W18	01	1.7			A	HRX	10	1	1	3
4044		RAMY	01	03	1300	N07 W26	01	1.6			A	HAX	20	1	1	3
4044		BOUL	01	03	1528	N08 W28	01	1.5			A	HSX	30	1	1	2
4044	23499	MWIL	01	03	1645	N07 W27	01	1.7	4		(AP)					
4044		HOLL	01	03	1716	N07 W28	01	1.6			A	AXX		1		4
4044		PALE	01	03	1840	N07 W29	01	1.6			A	AXX		1		4
	23514	MWIL	01	06	1630	N08 W63	01	2.0	2		(AP)					
	23504	MWIL	01	02	1630	S24 W07	01	2.1	2		(AP)					
4045		BOUL	01	01	1414	N24 E12	01	2.5			A	AXX	10	1	1	3
4045	23500	MWIL	01	01	1630	N22 E09	01	2.4	3		(AF)					
4045		HOLL	01	01	1712	N24 E09	01	2.4			A	AXX		1		2
4045		PALE	01	01	2000	N24 E08	01	2.5			A	AXX		1		3
4045		LEAR	01	02	0030	N23 E05	01	2.4			A	AXX	10	3	2	3
4045		BOUL	01	02	1615	N22 W02	01	2.5			A	AXX		1		3
4045	23500	MWIL	01	02	1630	N23 W03	01	2.5	3		(AF)					
4045		PALE	01	02	2056	N24 W05	01	2.5			A	AXX		1		4
4045		MANI	01	03	0041	N24 W06	01	2.6				AXX	10	1		3
4045		LEAR	01	03	0100	N23 W07	01	2.5			A	AXX		1		3
4045		RAMY	01	03	1300	N23 W14	01	2.5			B	BXO	10	3	3	3
4045	23500	MWIL	01	03	1645	N23 W16	01	2.5	3		( B)					
4045		HOLL	01	03	1716	N23 W17	01	2.4			B	BXO	10	2	3	4
4045		PALE	01	03	1840	N23 W18	01	2.4			B	BXO	10	2	2	4
4045	23515	MWIL	01	06	1630	N23 W57	01	2.3	2		( B)					
0001	23497	MWIL	12	28	1700	N10 E71	01	3.0	2		(AF)					
0001		MANI	12	29	0028	N09 E63	01	2.8				AXX	10	2		3
0001		MANI	12	29	2336	N09 E50	01	2.7				AXX	10	3		3
	23501	MWIL	01	01	1630	N12 E19	01	3.1	3		( B)					
4041		RAMY	12	27	1355	N04 E87	01	3.1			A	HAX	60	1	4	3
4041		HOLL	12	27	1624	N06 E86	01	3.1			A	HHX	220	1	3	3
4041	23495	MWIL	12	27	1830	N05 E78	01	2.6	2		AP					
4041		PALE	12	27	2305	N06 E80	01	3.0			A	HHX	180	1	3	2
4041		LEAR	12	28	0031	N06 E80	01	3.0			B	CHO	240	2	5	3
4041		BOUL	12	28	1545	N08 E73	01	3.1			B	CAO	220	4	5	2
4041	23495	MWIL	12	28	1700	N06 E71	01	3.0	4		(AP)					
4041		HOLL	12	28	1857	N08 E72	01	3.2			B	CHO	300	3	7	3
4041		MANI	12	29	0028	N08 E69	01	3.2				CAO	270	3	4	3
4041		LEAR	12	29	0035	N08 E67	01	3.1			B	CHO	360	5	4	2
4041		RAMY	12	29	1255	N06 E61	01	3.1			B	CKO	280	7	5	3
4041		BOUL	12	29	1440	N07 E58	01	3.0			B	CSO	130	5	4	2
4041		HOLL	12	29	1555	N07 E58	01	3.0			B	CKO	400	6	4	4
4041		PALE	12	29	1930	N07 E57	01	3.1			B	CKO	280	6	4	3
4041		MANI	12	29	2336	N08 E56	01	3.2				DKO	260	5	4	3
4041		LEAR	12	30	0022	N07 E55	01	3.1			B	DSO	470	12	5	2
4041		RAMY	12	30	1254	N06 E49	01	3.2			B	CKO	360	6	4	2
4041		BOUL	12	30	1725	N05 E45	01	3.1			B	CSO	250	5	6	2
4041		PALE	12	30	1930	N05 E44	01	3.1			B	CSO	270	9	12	4
4041	23495	MWIL	12	30	2145	N06 E42	01	3.1	5		(AP)					
4041		MANI	12	30	2334	N07 E41	01	3.1				CHO	440	8	5	3
4041		LEAR	12	31	0012	N07 E42	01	3.2			B	CSO	380	7	4	2
4041		RAMY	12	31	1517	N06 E32	01	3.0			B	CHO	320	3	4	2
4041	23495	MWIL	12	31	1630	N06 E32	01	3.1	5		(AP)					
4041		BOUL	12	31	1855	N05 E32	01	3.2			B	CSO	210	4	3	2
4041		PALE	12	31	2000	N06 E30	01	3.1			B	CHO	280	2	4	2
4041		LEAR	01	01	0120	N06 E28	01	3.2			B	CSO	280	2	3	3



72  
Jan 83

REGIONS OF SUNSPOT ACTIVITY  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JANUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time (UT)			Lat	CMD	CMP Mo	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4041		BOUL	01	01	1414	N08	E23	01	3.3	B	CHO	310	8	7	3
4041	23495	MWIL	01	01	1630	N06	E20	01	3.2	(BP)					
4041		HOLL	01	01	1712	N08	E22	01	3.4	B	CHO	290	7	5	2
4041		PALE	01	01	2000	N07	E19	01	3.3	B	CHO	220	5	6	3
4041		LEAR	01	02	0030	N08	E15	01	3.1	B	CSO	240	6	6	3
4041		BOUL	01	02	1615	N07	E05	01	3.1	A	HHX	300	1	3	3
4041	23495	MWIL	01	02	1630	N06	E05	01	3.1	(BP)					
4041		PALE	01	02	2056	N06	E03	01	3.1	A	HHX	260	1	3	4
4041		MANI	01	03	0041	N07	E01	01	3.1		HHX	320	1	3	3
4041		LEAR	01	03	0100	N07	E02	01	3.2	B	CSO	240	2	6	3
4041		RAMY	01	03	1300	N08	W03	01	3.3	B	CHO	300	12	10	3
4041		BOUL	01	03	1528	N09	W05	01	3.3	B	CSO	230	4	9	2
4041	23495	MWIL	01	03	1645	N07	W06	01	3.2	(BP)					
4041		HOLL	01	03	1716	N08	W06	01	3.3	B	CHO	300	7	10	4
4041		PALE	01	03	1840	N08	W06	01	3.3	B	CHO	310	5	9	4
4041		RAMY	01	04	1310	N06	W18	01	3.2	BG	CHO	230	4	6	3
4041	23495	MWIL	01	04	1600	N06	W22	01	3.0	(BP)					
4041		PALE	01	04	1945	N07	W22	01	3.2	A	HHX	230	1	3	2
4041		HOLL	01	04	2302	N07	W25	01	3.1	A	HHX	290	1	3	3
4041		LEAR	01	05	0102	N06	W26	01	3.1	A	HHX	250	1	4	3
4041		RAMY	01	05	1406	N05	W34	01	3.0	BG	CHO	200	4	3	2
4041	23495	MWIL	01	05	1630	N05	W36	01	3.0	(AP)					
4041		PALE	01	05	1805	N06	W36	01	3.1	A	HHX	260	1	3	3
4041		LEAR	01	06	0107	N05	W40	01	3.1	A	HHX	250	1	3	3
4041		RAMY	01	06	1415	N05	W46	01	3.2	A	CHO	260	4	5	3
4041	23495	MWIL	01	06	1630	N05	W48	01	3.1	(BP)					
4041		BOUL	01	06	2015	N06	W49	01	3.2	A	HSX	120	1	2	1
4041		HOLL	01	06	2154	N06	W51	01	3.1	B	CSO	300	4	3	2
4041		LEAR	01	07	0039	N07	W51	01	3.2	B	CHO	300	5	4	2
4041	23495	MWIL	01	07	1630	N05	W61	01	3.1	(BP)					
4041		LEAR	01	08	0100	N06	W66	01	3.1	B	CSO	250	2	5	4
4041		MANI	01	08	0129	N07	W67	01	3.0		CHO	270	3	4	3
4041		RAMY	01	08	1300	N06	W74	01	3.0	A	HAX	190	1	2	3
4041	23495	MWIL	01	08	1600	N05	W75	01	3.1	(AP)					
4041		HOLL	01	08	1615	N05	W75	01	3.1	A	HHX	220	1	3	3
4041		PALE	01	08	1945	N05	W78	01	3.0	A	HHX	220	1	3	3
4041		LEAR	01	09	0045	N06	W79	01	3.1	A	HSX	140	1	2	3
		HOLL	01	03	1716	S28	W03	01	3.5	A	AXX		1		4
	23505	MWIL	01	02	1630	N12	E12	01	3.6	(AF)					
4046		BOUL	01	01	1414	S16	E43	01	4.9	B	BXO	10	3	3	3
4046	23502	MWIL	01	01	1630	S15	E41	01	4.8	(BP)					
4046		HOLL	01	01	1712	S15	E41	01	4.8	B	BXO	10	5	3	2
4046		PALE	01	01	2000	S15	E40	01	4.9	B	BXO	20	6	3	3
4046		LEAR	01	02	0030	S16	E38	01	4.9	B	BXO	20	5	4	3
4046		BOUL	01	02	1615	S14	E27	01	4.7	B	BXO	20	7	4	3
4046	23502	MWIL	01	02	1630	S15	E28	01	4.8	(B)					
4046		PALE	01	02	2056	S15	E25	01	4.8	B	CRO	60	12	6	4
4046		MANI	01	03	0041	S15	E23	01	4.8		CRO	50	11	6	3
4046		LEAR	01	03	0100	S15	E24	01	4.9	B	DRO	70	19	7	3
4046		RAMY	01	03	1300	S15	E16	01	4.8	B	DAO	40	15	6	3
4046		BOUL	01	03	1528	S13	E13	01	4.6	B	DSO	70	10	5	2
4046	23502	MWIL	01	03	1645	S15	E14	01	4.8	(B)					
4046		HOLL	01	03	1716	S14	E13	01	4.7	B	BXO	100	23	7	4
4046		PALE	01	03	1840	S15	E13	01	4.8	B	CRO	110	24	7	4
4046		RAMY	01	04	1310	S15	E03	01	4.8	B	DAO	60	20	6	3
4046		BOUL	01	04	1600	S14	E01	01	4.7	B	DAO	80	13	7	2
4046	23502	MWIL	01	04	1600	S16	E01	01	4.7	(B)					
4046		PALE	01	04	1945	S15	W01	01	4.7	B	DRO	90	18	8	2
4046		HOLL	01	04	2302	S14	W03	01	4.7	B	DAI	150	18	8	3
4046		LEAR	01	05	0102	S15	W04	01	4.7	B	DAI	50	31	8	3
4046		RAMY	01	05	1406	S16	W13	01	4.6	B	DAO	210	36	10	2
4046	23502	MWIL	01	05	1630	S15	W13	01	4.7	(B)					
4046		PALE	01	05	1805	S16	W15	01	4.6	B	DAI	140	24	8	3
4046		LEAR	01	06	0107	S16	W18	01	4.7	B	EKI	310	34	11	3
4046		RAMY	01	06	1415	S17	W27	01	4.5	B	EAI	340	49	12	3
4046	23502	MWIL	01	06	1630	S17	W27	01	4.6	(B)					
4046		BOUL	01	06	2015	S15	W27	01	4.8	B	DAI	220	14	8	1
4046		HOLL	01	06	2154	S16	W30	01	4.6	B	EAO	400	43	11	2

REGIONS OF SUNSPOT ACTIVITY  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

73  
Jan 83

JANUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo Day (UT)		Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long- Extent (Deg)	Qual		
4046		LEAR	01	07	0039	S16 W31	01	4.7	B	DK1	520	44	10	2	
4046	23502	MWIL	01	07	1630	S17 W42	01	4.5	4	( B)					
4046		LEAR	01	08	0100	S16 W46	01	4.6		B	EAI	370	29	12	4
4046		MANI	01	08	0129	S16 W46	01	4.6			EAI	530	24	10	3
4046		RAMY	01	08	1300	S16 W52	01	4.6		B	DAO	380	23	9	3
4046	23502	MWIL	01	08	1600	S17 W53	01	4.6	5	( B)					
4046		HOLL	01	08	1615	S16 W53	01	4.7		B	EKO	570	24	12	3
4046		PALE	01	08	1945	S17 W56	01	4.6		B	EKO	520	26	12	3
4046		LEAR	01	09	0045	S16 W58	01	4.6		B	DAO	430	27	10	3
4046		HOLL	01	09	1557	S16 W67	01	4.6		B	EKO	380	15	13	3
4046	23502	MWIL	01	09	1630	S17 W67	01	4.6	3	( B)					
4046		PALE	01	09	1840	S16 W69	01	4.5		B	EKO	350	16	12	3
4046		LEAR	01	10	0024	S16 W71	01	4.6		B	DAO	460	17	9	3
4046		RAMY	01	10	1420	S16 W78	01	4.7		B	EKO	450	8	11	3
4046	23502	MWIL	01	10	1630	S17 W80	01	4.6	3	( B)					
4046		LEAR	01	11	0006	S16 W84	01	4.6		B	DSO	90	7	9	3
0002	23507	MWIL	01	03	1645	S08 E27	01	5.7	2	(AP)					
0002		HOLL	01	03	1716	S08 E28	01	5.8		A	AXX	1		4	
0002		PALE	01	03	1840	S08 E27	01	5.8		B	BXO	10	2	1	4
0002		RAMY	01	04	1310	S08 E15	01	5.7		A	AXX	10	1	1	3
0002	23507	MWIL	01	04	1600	S08 E14	01	5.7	4	(AP)					
0002		PALE	01	04	1945	S09 E12	01	5.7		A	AXX	1		2	
0002		HOLL	01	04	2302	S08 E09	01	5.6		A	AXX	1		3	
4050		LEAR	01	05	0102	S08 E08	01	5.6		A	AXX	1		3	
4050		LEAR	01	07	0039	S10 W17	01	5.7		A	AXX	2	1	2	
	23516	MWIL	01	06	1630	S21 W06	01	6.2	2	(AP)					
4047		LEAR	01	01	0120	S15 E68	01	6.2		A	AXX	1		3	
4047		BOUL	01	01	1414	S16 E60	01	6.1		B	BXO	20	3	3	3
4047	23503	MWIL	01	01	1630	S16 E57	01	6.0	4	(AP)					
4047		HOLL	01	01	1712	S15 E58	01	6.1		B	CSO	10	4	3	2
4047		PALE	01	01	2000	S15 E56	01	6.1		A	AXX	10	1	1	3
4047		LEAR	01	02	0030	S16 E53	01	6.0		A	AXX	1		3	
4047		RAMY	01	06	1415	S18 W03	01	6.4		B	BXO	20	3	3	3
4047	23517	MWIL	01	06	1630	S17 W04	01	6.4	2	( B)					
4047		HOLL	01	06	2154	S17 W09	01	6.2		A	AXX	2		2	2
4047	23517	MWIL	01	07	1630	S17 W18	01	6.3	2	( B)					
4047		LEAR	01	08	0100	S17 W23	01	6.3		B	BXO	10	3	5	4
4047		MANI	01	08	0129	S17 W23	01	6.3			BXO	10	3	6	3
4047	23517	MWIL	01	08	1600	S17 W34	01	6.1	3	(AP)					
4047		HOLL	01	08	1615	S17 W35	01	6.0		A	AXX	10	1		3
4047		PALE	01	08	1945	S17 W37	01	6.0		A	AXX	1		3	
4047		HOLL	01	09	1557	S17 W48	01	6.0		A	AXX	10	1		3
4047	23517	MWIL	01	09	1630	S17 W48	01	6.0	3	(AP)					
4055		RAMY	01	06	1415	S12 E18	01	8.0		A	AXX	20	2	1	3
4055	23518	MWIL	01	06	1630	S12 E17	01	8.0	2	(AF)					
4055		HOLL	01	06	2154	S12 E13	01	7.9		A	AXX	2		2	2
4055		LEAR	01	07	0039	S09 E08	01	7.6		A	AXX	2		2	
4055	23518	MWIL	01	07	1630	S12 E03	01	7.9	2	(AF)					
0003	23511	MWIL	01	05	1630	S12 E42	01	8.9	3	(AF)					
0003	23511	MWIL	01	06	1630	S13 E27	01	8.7	2	(AF)					
4049		RAMY	01	03	1300	S08 E73	01	9.0		A	HAX	30	1	1	3
4049		BOUL	01	03	1528	S08 E70	01	8.9		A	HSX	30	1	1	2
4049	23508	MWIL	01	03	1645	S09 E71	01	9.0	4	(BP)					
4049		HOLL	01	03	1716	S07 E69	01	8.9		B	CSO	50	2	2	4
4049		PALE	01	03	1840	S08 E68	01	8.9		A	HSX	50	1	1	4
4049	23508	MWIL	01	04	1600	S07 E57	01	8.9	5	( B)					
4049		BOUL	01	04	1600	S08 E55	01	8.8		A	HSX	30	1	1	2
4049		PALE	01	04	1945	S08 E55	01	8.9		A	HSX	30	1	1	2
4049		LEAR	01	05	0102	S07 E54	01	9.1		B	CSO	50	6	6	3
4049		RAMY	01	05	1406	S07 E43	01	8.8		B	CSO	220	2	2	2
4049	23508	MWIL	01	05	1630	S06 E43	01	8.9	5	(BP)					
4049		PALE	01	05	1805	S07 E41	01	8.8		A	HSX	30	1	2	3
4049		LEAR	01	06	0107	S08 E40	01	9.0		B	DSO	70	4	5	3
4049		RAMY	01	06	1415	S08 E31	01	8.9		A	HAX	30	2	2	3

REGIONS OF SUNSPOT ACTIVITY  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JANUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time (UT)		Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4049	23508	MWIL	01	06	1630	S07 E28	01	8.8	4	(AP)					
4049		BOUL	01	06	2015	S06 E15	01	8.0		A	AXX	10	2	2	1
4049		BOUL	01	06	2015	S06 E25	01	8.7		A	AXX	10	2	2	1
4049		HOLL	01	06	2154	S07 E27	01	8.9		A	AXX	10	3	2	2
4049		LEAR	01	07	0039	S08 E25	01	8.9		A	HSX	30	2	1	2
4049	23508	MWIL	01	07	1630	S06 E16	01	8.9	3	(AP)					
4049		LEAR	01	08	0100	S08 E12	01	8.9		B	BXO	10	5	5	4
4049		MANI	01	08	0129	S07 E10	01	8.8			BXO	10	3	4	3
4049		RAMY	01	08	1300	S06 E03	01	8.8		A	AXX	10	1	1	3
4049	23508	MWIL	01	08	1600	S06 E03	01	8.9	3	(AP)					
4049		HOLL	01	08	1615	S06 E02	01	8.8		A	AXX		1		3
4049		PALE	01	08	1945	S06 E00	01	8.8		A	AXX	10	2	2	3
4049		LEAR	01	09	0045	S07 W02	01	8.9		A	AXX	10	3	2	3
4049		HOLL	01	09	1557	S07 W12	01	8.8		A	AXX	10	3	2	3
4049	23508	MWIL	01	09	1630	S06 W12	01	8.8	3	(B)					
4049		PALE	01	09	1840	S08 W08	01	9.2		A	AXX		1		3
4049		LEAR	01	10	0024	S07 W16	01	8.8		B	BXO		3	3	3
		RAMY	01	10	1420	N05 W20	01	9.1		A	AXX	10	1	1	3
4054	23506	MWIL	01	02	1630	S16 E85	01	9.1	3	(AP)					
4054	23506	MWIL	01	03	1645	S18 E70	01	9.0	4	(AP)					
4054	23506	MWIL	01	04	1600	S17 E59	01	9.2	4	(BP)					
4054	23506	MWIL	01	05	1630	S16 E45	01	9.1	4	(AP)					
4054	23506	MWIL	01	06	1630	S17 E32	01	9.1	5	(AP)					
4054		BOUL	01	06	2015	S16 E28	01	9.0		A	HSX	50	1	2	1
4054		HOLL	01	06	2154	S17 E28	01	9.0		A	HSX	110	1	2	2
4054		LEAR	01	07	0039	S17 E28	01	9.2		A	HSX	110	1	1	2
4054	23506	MWIL	01	07	1630	S17 E19	01	9.1	4	(AP)					
4054		LEAR	01	08	0100	S17 E15	01	9.2		A	HSX	80	1	1	4
4054		MANI	01	08	0129	S17 E13	01	9.1			HSX	70	1	1	3
4054		RAMY	01	08	1300	S17 E08	01	9.2		A	HAX	80	2	2	3
4054	23506	MWIL	01	08	1600	S17 E07	01	9.2	5	(AP)					
4054		HOLL	01	08	1615	S17 E07	01	9.2		A	HSX	80	1	2	3
4054		PALE	01	08	1945	S17 E04	01	9.1		A	HSX	70	1	2	3
4054		LEAR	01	09	0045	S17 E02	01	9.2		B	CSO	80	4	3	3
4054		HOLL	01	09	1557	S17 W08	01	9.1		B	CAO	100	15	5	3
4054	23506	MWIL	01	09	1630	S17 W07	01	9.2	4	(BF)					
4054		PALE	01	09	1840	S17 W09	01	9.1		B	DAO	120	9	5	3
4054		LEAR	01	10	0024	S16 W13	01	9.0		B	DAI	120	16	6	3
4054		RAMY	01	10	1420	S17 W19	01	9.2		B	DAO	140	21	6	3
4054	23506	MWIL	01	10	1630	S17 W21	01	9.1	4	(BF)					
4054		LEAR	01	11	0006	S16 W26	01	9.0		B	DAI	100	11	6	3
4054		RAMY	01	11	1333	S16 W34	01	9.0		B	DKO	90	9	6	3
4054		BOUL	01	11	1545	S18 W32	01	9.2		B	CSO	70	3	8	2
4054	23506	MWIL	01	11	1600	S17 W34	01	9.1	3	(BF)					
4054		PALE	01	11	1910	S17 W37	01	9.0		B	DAO	60	4	6	2
4054		HOLL	01	11	1945	S15 W36	01	9.1		B	DAO	80	5	6	2
4054		LEAR	01	12	0032	S16 W40	01	9.0		B	CAO	90	8	7	3
4054		RAMY	01	12	1355	S16 W43	01	9.3		B	CAO	40	9	6	2
4054		BOUL	01	12	1610	S15 W45	01	9.3		A	HSX	60	2	1	2
4054	23506	MWIL	01	12	1645	S17 W45	01	9.3	4	(BP)					
4054		HOLL	01	12	1730	S15 W47	01	9.2		B	CAO	50	6	4	3
4054		MANI	01	12	2326	S16 W47	01	9.4			CRO	90	4	6	3
4054		LEAR	01	13	0045	S17 W50	01	9.2		A	HSX	50	2	2	3
4054		RAMY	01	13	1255	S18 W57	01	9.2		B	CRO	40	5	3	4
4054		HOLL	01	13	1622	S16 W58	01	9.3		A	HRX	20	3	1	4
4054	23506	MWIL	01	13	1635	S17 W58	01	9.3	4	(B)					
4054		BOUL	01	13	2030	S15 W59	01	9.4		A	HRX	20	1	1	2
4054		LEAR	01	14	0310	S17 W62	01	9.4		B	BXO	10	2	4	3
4054		RAMY	01	14	1340	S15 W71	01	9.2		A	AXX	30	2	1	3
4054		HOLL	01	14	1548	S17 W71	01	9.3		A	AXX		1		3
4054		BOUL	01	14	1600	S15 W71	01	9.3		A	AXX		1		3
4054	23506	MWIL	01	14	1634	S17 W70	01	9.4	3	(AP)					
4054		PALE	01	14	2020	S16 W73	01	9.3		A	AXX		1		3
4054		MANI	01	15	0028	S10 W81	01	8.9			AXX	120	1	2	3
	23523	MWIL	01	09	1630	N08 W05	01	9.3	2	(AF)					
4048		BOUL	01	02	1615	S19 E83	01	9.0		A	HHX	60	1	5	3
4048		PALE	01	02	2056	S17 E85	01	9.3		A	HHX	100	2	3	4

REGIONS OF SUNSPOT ACTIVITY  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

75  
Jan 83

JANUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4048		MANI	01	03	0041	S18	E83	01	9.4			HSX	440	1	2	3
4048		LEAR	01	03	0100	S16	E79	01	9.0		A	HSX	60	1	1	3
4048		RAMY	01	03	1300	S17	E74	01	9.2		A	HAX	130	1	2	3
4048		BOUL	01	03	1528	S17	E69	01	8.9		A	HSX	90	1	1	2
4048		HOLL	01	03	1716	S17	E69	01	9.0		A	HSX	120	1	2	4
4048		PALE	01	03	1840	S17	E69	01	9.0		A	HSX	110	1	2	4
4048	23509	MWIL	01	04	1600	S12	E63	01	9.4	4	(B)					
4048		BOUL	01	04	1600	S15	E60	01	9.2		B	DSO	110	3	8	2
4048		PALE	01	04	1945	S15	E60	01	9.4		B	DSO	90	4	8	2
4048		HOLL	01	04	2302	S13	E55	01	9.1		B	DAO	200	8	8	3
4048		HOLL	01	04	2302	S17	E55	01	9.1		B	CAO	50	4	6	3
4048		MANI	01	04	2347	S13	E57	01	9.3			DSO	70	8	6	2
4048		LEAR	01	05	0102	S14	E57	01	9.4		B	DSO	240	9	7	3
4048		RAMY	01	05	1406	S15	E49	01	9.3		B	DAO	30	18	8	2
4048	23509	MWIL	01	05	1630	S12	E48	01	9.3	4	(B)					
4048		PALE	01	05	1805	S13	E47	01	9.3		B	DAO	200	10	8	3
4048		LEAR	01	06	0107	S14	E44	01	9.4		B	DAO	210	12	7	3
4048		RAMY	01	06	1415	S16	E35	01	9.3		BG	DAO	230	35	9	3
4048	23509	MWIL	01	06	1630	S13	E35	01	9.3	4	(BY)					
4048		BOUL	01	06	2015	S12	E31	01	9.2		BG	DAI	160	12	8	1
4048		HOLL	01	06	2154	S13	E34	01	9.5		B	DAO	130	23	9	2
4048		LEAR	01	07	0039	S13	E31	01	9.4		B	DAO	230	16	8	2
4048	23509	MWIL	01	07	1630	S13	E22	01	9.3	4	(B)					
4048		LEAR	01	08	0100	S13	E17	01	9.3		BG	DAI	250	27	10	4
4048		MANI	01	08	0129	S13	E17	01	9.3			DKO	190	17	8	3
4048		RAMY	01	08	1300	S13	E10	01	9.3		B	CAO	100	23	9	3
4048	23509	MWIL	01	08	1600	S12	E08	01	9.3	5	(BY)					
4048		HOLL	01	08	1615	S13	E08	01	9.3		B	DSO	180	20	10	3
4048		PALE	01	08	1945	S13	E06	01	9.3		B	EAO	200	28	11	3
4048		LEAR	01	09	0045	S13	E04	01	9.3		B	DAO	180	25	10	3
4048		HOLL	01	09	1557	S12	W06	01	9.2		B	CSO	160	16	9	3
4048	23509	MWIL	01	09	1630	S13	W05	01	9.3	4	(B)					
4048		PALE	01	09	1840	S12	W08	01	9.2		B	DAO	170	19	9	3
4048		LEAR	01	10	0024	S13	W09	01	9.3		B	CAO	110	24	9	3
4048		RAMY	01	10	1420	S13	W16	01	9.4		B	DAO	170	28	10	3
4048	23509	MWIL	01	10	1630	S13	W18	01	9.3	4	(B)					
4048		LEAR	01	11	0006	S13	W23	01	9.3		B	CSO	110	24	9	3
4048		RAMY	01	11	1333	S13	W30	01	9.3		B	CKO	90	27	9	3
4048		BOUL	01	11	1545	S14	W27	01	9.6		B	CSI	70	9	8	2
4048	23509	MWIL	01	11	1600	S13	W34	01	9.1	4	(B)					
4048		PALE	01	11	1910	S14	W32	01	9.4		B	CSO	110	16	9	2
4048		HOLL	01	11	1945	S12	W34	01	9.3		B	CAO	150	15	8	2
4048		LEAR	01	12	0032	S13	W35	01	9.4		B	DSO	100	7	8	3
4048		RAMY	01	12	1355	S11	W48	01	9.0		B	CSC	60	3	2	2
4048		BOUL	01	12	1610	S09	W46	01	9.2		A	HSX	60	1	1	2
4048	23509	MWIL	01	12	1645	S12	W48	01	9.1	4	(AP)					
4048		HOLL	01	12	1730	S10	W46	01	9.3		B	CSO	90	4	6	3
4048		MANI	01	12	2326	S13	W49	01	9.3			CSO	90	2	4	3
4048		LEAR	01	13	0045	S12	W53	01	9.0		A	HSX	100	3	2	3
4048		RAMY	01	13	1255	S11	W59	01	9.1		B	CSO	80	2	2	4
4048		HOLL	01	13	1622	S11	W62	01	9.0		A	HSX	100	1	2	4
4048	23509	MWIL	01	13	1635	S12	W61	01	9.1	5	(AP)					
4048		BOUL	01	13	2030	S10	W63	01	9.1		A	HSX	40	1	1	2
4048		LEAR	01	14	0310	S12	W67	01	9.1		A	HSX	50	1	1	3
4048		RAMY	01	14	1340	S11	W75	01	8.9		A	HAX	60	1	1	3
4048		HOLL	01	14	1548	S12	W74	01	9.1		A	HSX	50	1	2	3
4048		BOUL	01	14	1600	S10	W77	01	8.9		A	HSX	30	2	1	3
4048	23509	MWIL	01	14	1634	S12	W73	01	9.2	4	(AP)					
4048		PALE	01	14	2020	S12	W77	01	9.0		A	HSX	40	1	2	3
4048		MANI	01	15	0028	S15	W75	01	9.3			HSX	10	1		3
4048		LEAR	01	15	0105	S12	W79	01	9.1		A	HSX	20	1	1	3
		LEAR	01	11	0006	S33	W20	01	9.4		B	BXO		3	3	3
0004		HOLL	01	09	1557	N16	W03	01	9.4		A	AXX		1		3
0004	23524	MWIL	01	09	1630	N15	W03	01	9.5	2	(AP)					
0005	23525	MWIL	01	09	1630	N08	W00	01	9.7	2	(AP)					
0005	23525	MWIL	01	10	1630	N08	W08	01	10.1	2	(AF)					
		BOUL	01	12	1610	N17	W36	01	9.9		A	AXX		1		2

76  
Jan 83

REGIONS OF SUNSPOT ACTIVITY  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JANUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo Day (UT)		Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4056		LEAR	01	07 0039	N20 E38	01 9.9		A	AXX	10	2	2	2
4056	23520	MWIL	01	08 1600	N23 E19	01 10.1	3	(AP)					
4056		HOLL	01	08 1615	N23 E19	01 10.1		A	AXX		1		3
4056		LEAR	01	09 0045	N22 E13	01 10.0		B	BXO	10	3	3	3
4051	23510	MWIL	01	04 1600	N12 E75	01 10.3	2	(AF)					
4051		HOLL	01	04 2302	N11 E71	01 10.3		A	AXX		1		3
4051		LEAR	01	05 0102	N12 E70	01 10.3		B	BXO	10	3	3	3
4051		RAMY	01	05 1406	N11 E62	01 10.3		A	AXX	10	1	1	2
4051	23510	MWIL	01	05 1630	N11 E61	01 10.3	3	(AF)					
4051		PALE	01	05 1805	N11 E60	01 10.3		A	AXX	10	2	1	3
4051		LEAR	01	06 0107	N11 E56	01 10.3		B	BXO		2	3	3
4051		RAMY	01	06 1415	N09 E49	01 10.3		A	AXX	10	2	2	3
4051	23510	MWIL	01	06 1630	N09 E43	01 9.9	3	(BP)					
4051	23510	MWIL	01	07 1630	N10 E34	01 10.2	2	(AP)					
4051		LEAR	01	08 0100	N09 E28	01 10.1		A	AXX	10	2	2	4
4051		MANI	01	08 0129	N10 E28	01 10.2			AXX		1		3
4051		RAMY	01	08 1300	N08 E23	01 10.3		A	AXX	10	1	1	3
4051	23510	MWIL	01	08 1600	N09 E22	01 10.3	4	(AP)					
4051		HOLL	01	08 1615	N09 E21	01 10.3		A	AXX		1		3
4051		PALE	01	08 1945	N10 E19	01 10.3		A	AXX	10	2	1	3
4051		RAMY	01	10 1420	N09 W07	01 10.1		A	AXX	10	2	1	3
4052	23512	RAMY	01	05 1406	S07 E68	01 10.7		A	AXX	10	1	1	2
4052		MWIL	01	05 1630	S07 E66	01 10.6	3	(AP)					
4052		PALE	01	05 1805	S07 E64	01 10.6		A	HRX	20	1	1	3
4052		LEAR	01	06 0107	S08 E62	01 10.7		B	CSO	30	5	4	3
4052		RAMY	01	06 1415	S08 E53	01 10.6		A	HSX	20	3	1	3
4052	23512	MWIL	01	06 1630	S08 E55	01 10.8	4	(B)					
4052		BOUL	01	06 2015	S08 E48	01 10.4		A	HSX	30	1	1	1
4052		HOLL	01	06 2154	S09 E50	01 10.7		B	CSO	20	3	4	2
4052		LEAR	01	07 0039	S08 E48	01 10.6		B	CSO	40	3	6	2
4052	23512	MWIL	01	07 1630	S07 E37	01 10.5	4	(AP)					
4052		LEAR	01	08 0100	S07 E31	01 10.4		B	CSO	30	2	3	4
4052		MANI	01	08 0129	S08 E32	01 10.5			CSO	20	3	2	3
4052		RAMY	01	08 1300	S07 E23	01 10.3		B	CAO	20	3	2	3
4052	23512	MWIL	01	08 1600	S07 E23	01 10.4	5	(AP)					
4052		HOLL	01	08 1615	S07 E22	01 10.3		B	BXO	20	3	3	3
4052		PALE	01	08 1945	S07 E20	01 10.3		B	CRO	20	3	2	3
4052		LEAR	01	09 0045	S08 E18	01 10.4		B	CRO	30	4	4	3
4052	23512	HOLL	01	09 1557	S07 E09	01 10.3		A	AXX	20	2	2	3
4052		MWIL	01	09 1630	S07 E08	01 10.3	5	(BP)					
4052		PALE	01	09 1840	S07 E07	01 10.3		B	CRO	20	3	3	3
4052		LEAR	01	10 0024	S07 E03	01 10.2		B	CXO	30	5	4	3
4052		RAMY	01	10 1420	S06 W04	01 10.3		B	CAO	20	3	3	3
4052	23512	MWIL	01	10 1630	S06 W06	01 10.2	4	(BP)					
4052		LEAR	01	11 0006	S06 W09	01 10.3		B	CRO	20	6	6	3
4052		RAMY	01	11 1333	S06 W18	01 10.2		B	DAO	40	9	4	3
4052		BOUL	01	11 1545	S07 W18	01 10.3		A	HSX	10	3	2	2
4052	23512	MWIL	01	11 1600	S05 W20	01 10.2	3	(AP)					
4052		PALE	01	11 1910	S06 W21	01 10.2		B	CAO	40	6	3	2
4052		HOLL	01	11 1945	S06 W20	01 10.3		B	CSO	50	8	6	2
4052		LEAR	01	12 0032	S06 W25	01 10.1		B	CSO	40	6	3	3
4052		RAMY	01	12 1355	S05 W32	01 10.2		B	BXO	20	10	4	2
4052		BOUL	01	12 1610	S04 W32	01 10.3		B	CRO	30	4	4	2
4052	23512	MWIL	01	12 1645	S06 W33	01 10.2	4	(B)					
4052		HOLL	01	12 1730	S05 W35	01 10.1		B	DSO	30	10	6	3
4052		MANI	01	12 2326	S06 W35	01 10.4			DRO	60	8	6	3
4052		LEAR	01	13 0045	S06 W38	01 10.2		B	DSO	70	7	5	3
4052		RAMY	01	13 1255	S05 W46	01 10.1		B	DAO	60	9	4	4
4052		HOLL	01	13 1622	S04 W48	01 10.1		A	HSX	60	2	3	4
4052	23512	MWIL	01	13 1635	S05 W48	01 10.1	4	(AP)					
4052		BOUL	01	13 2030	S04 W45	01 10.5		A	HSX	30	1	1	2
4052		LEAR	01	14 0310	S06 W54	01 10.1		A	AXX	20	3	2	3
4052		RAMY	01	14 1340	S04 W61	01 10.0		A	AXX	20	3	2	3
4052		HOLL	01	14 1548	S05 W62	01 10.0		A	AXX	20	4	2	3
4052		BOUL	01	14 1600	S04 W62	01 10.0		A	HSX	60	3	2	3
4052	23512	MWIL	01	14 1634	S05 W62	01 10.1	3	(AP)					
4052		PALE	01	14 2020	S05 W65	01 10.0		B	BXO	30	2	3	3
4052		MANI	01	15 0028	S05 W66	01 10.1			CRO	50	3	4	3
4052		LEAR	01	15 0105	S06 W67	01 10.0		A	AXX	10	2	1	3

REGIONS OF SUNSPOT ACTIVITY  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

77  
Jan 83

JANUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time		Lat	CMD	CMP		Max	Mag	Spot	Corrected	Spot	Long.	Qual	
			Mo	Day	(UT)			Mo	Day	H	Class	Class	(10-6 Hemi)	Count	(Deg)	
4052		RAMY	01	15	1640	S05	W79	01	9.8		B	CAO	20	2	3	2
4052		MANI	01	16	0305	S05	W82	01	10.0			AXX	20	1		2
	23527	MWIL	01	10	1630	N12	W02	01	10.5	2	(AF)					
	23519	MWIL	01	06	1630	N13	E53	01	10.7	3	(AP)					
	23526	MWIL	01	09	1630	S03	E14	01	10.7	3	(AP)					
0006		RAMY	01	10	1420	S13	E04	01	10.9		A	AXX	10	1	1	3
0006		LEAR	01	11	0006	S13	W02	01	10.9		B	BXO		5	4	3
0007		LEAR	01	12	0032	S08	W12	01	11.1		A	AXX	10	3	2	3
0007	23532	MWIL	01	12	1645	S06	W22	01	11.1	2	(AF)					
		MANI	01	08	0129	S10	E45	01	11.4			BXO	10	4	4	3
4053		RAMY	01	05	1406	S09	E84	01	11.9		A	HHX	60	1	8	2
4053	23513	MWIL	01	05	1630	S08	E82	01	11.8	2	(AF)					
4053		PALE	01	05	1805	S08	E79	01	11.7		A	HSX	40	1	2	3
4053		LEAR	01	06	0107	S08	E77	01	11.8		A	HSX	70	1	2	3
4053		RAMY	01	06	1415	S09	E72	01	12.0		A	HXX	100	1	3	3
4053	23513	MWIL	01	06	1630	S08	E69	01	11.9	4	(BF)					
4053		BOUL	01	06	2015	S09	E67	01	11.9		A	HSX	40	1	2	1
4053		HOLL	01	06	2154	S08	E67	01	11.9		A	HSX	50	1	2	2
4053		LEAR	01	07	0039	S08	E64	01	11.8		A	CSO	40	3	6	2
4053	23513	MWIL	01	07	1630	S08	E55	01	11.8	4	(BF)					
4053		LEAR	01	08	0100	S09	E47	01	11.6		B	CSO	100	7	9	4
4053		MANI	01	08	0129	S10	E50	01	11.8			HSX	80	1	2	3
4053		RAMY	01	08	1300	S09	E39	01	11.5		B	EAO	130	5	11	3
4053	23513	MWIL	01	08	1600	S08	E38	01	11.5	5	( B)					
4053		HOLL	01	08	1615	S08	E38	01	11.5		B	DSO	130	12	10	3
4053		PALE	01	08	1945	S09	E35	01	11.5		B	DSO	120	9	10	3
4053		LEAR	01	09	0045	S09	E32	01	11.4		B	DSO	130	10	10	3
4053		HOLL	01	09	1557	S08	E24	01	11.5		B	CSO	130	11	10	3
4053	23513	MWIL	01	09	1630	S08	E24	01	11.5	5	( B)					
4053		PALE	01	09	1840	S08	E26	01	11.7		B	DSO	90	10	10	3
4053		LEAR	01	10	0024	S09	E19	01	11.4		B	CSO	100	10	11	3
4053		RAMY	01	10	1420	S09	E12	01	11.5		B	DSO	100	7	10	3
4053	23513	MWIL	01	10	1630	S08	E11	01	11.5	5	(BF)					
4053		LEAR	01	11	0006	S08	E06	01	11.5		B	CSO	80	10	11	3
4053		RAMY	01	11	1333	S08	W01	01	11.5		B	DKO	90	6	9	3
4053		BOUL	01	11	1545	S09	W01	01	11.6		B	CSO	50	2	8	2
4053	23513	MWIL	01	11	1600	S09	W02	01	11.5	4	(BF)					
4053		PALE	01	11	1910	S09	W03	01	11.6		B	CSO	70	3	9	2
4053		HOLL	01	11	1945	S08	W05	01	11.4		B	CSO	90	5	9	2
4053		LEAR	01	12	0032	S08	W08	01	11.4		B	CSO	90	4	9	3
4053		RAMY	01	12	1355	S09	W12	01	11.7		B	CSO	70	9	4	2
4053		BOUL	01	12	1610	S07	W13	01	11.7		B	DSI	80	10	4	2
4053	23513	MWIL	01	12	1645	S09	W13	01	11.7	4	(BF)					
4053		HOLL	01	12	1730	S09	W12	01	11.8		B	DSO	120	10	7	3
4053		MANI	01	12	2326	S09	W18	01	11.6			DAO	100	9	5	3
4053		LEAR	01	13	0045	S09	W19	01	11.6		B	DSO	150	12	5	3
4053		RAMY	01	13	1255	S08	W25	01	11.7		B	DAO	90	22	5	4
4053		HOLL	01	13	1622	S08	W27	01	11.7		B	DSO	80	9	4	4
4053		HOLL	01	13	1622	S08	W27	01	11.7		B	DSO	760	9	4	4
4053	23513	MWIL	01	13	1635	S08	W26	01	11.7	5	(BY)					
4053		BOUL	01	13	2030	S07	W27	01	11.8		B	CSO	60	4	3	2
4053		LEAR	01	14	0310	S08	W31	01	11.8		B	CSO	60	7	7	3
4053		RAMY	01	14	1340	S07	W39	01	11.6		B	CSO	50	5	3	3
4053		HOLL	01	14	1548	S09	W39	01	11.7		B	CSO	60	7	3	3
4053		BOUL	01	14	1600	S08	W38	01	11.8		B	CSI	60	8	3	3
4053	23513	MWIL	01	14	1634	S08	W39	01	11.8	3	(BF)					
4053		PALE	01	14	2020	S09	W42	01	11.7		B	CSO	60	6	3	3
4053		MANI	01	15	0028	S08	W43	01	11.8			DAO	110	8	7	3
4053		LEAR	01	15	0105	S08	W43	01	11.8		B	CAO	70	9	5	3
4053		RAMY	01	15	1640	S09	W53	01	11.7		B	DAO	70	4	3	2
4053	23513	MWIL	01	15	1649	S08	W53	01	11.7	3	( B)					
4053		PALE	01	15	1930	S09	W55	01	11.7		B	CSO	60	5	3	3
4053		LEAR	01	16	0006	S09	W57	01	11.7		A	HSX	60	6	2	3
4053		MANI	01	16	0305	S08	W59	01	11.7			DSO	80	4	3	2

78  
Jan 83

REGIONS OF SUNSPOT ACTIVITY  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JANUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time		Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4053		RAMY	01	16	1345	S08 W65	01	11.7		B	CAO	100	3	4	3
4053		HOLL	01	16	1557	S09 W67	01	11.6		A	HSX	20	2	2	4
4053	23513	MWIL	01	16	1745	S09 W68	01	11.6	3	(AP)					
4053		PALE	01	16	1825	S09 W68	01	11.7		B	CSO	40	3	2	3
4053		LEAR	01	17	0010	S08 W71	01	11.7		A	HSX	30	3	2	3
4053		RAMY	01	17	1427	S08 W82	01	11.5		A	HKX	60	1	3	2
4053	23513	MWIL	01	17	1600	S09 W82	01	11.5	2	AP					
4053		PALE	01	17	1930	S09 W83	01	11.6		A	HSX	20	1	1	4
0008	23528	MWIL	01	10	1630	S13 E12	01	11.6	2	(AP)					
0008		LEAR	01	12	0032	S15 W06	01	11.6		A	AXX		1		3
	23521	MWIL	01	08	1600	S03 E48	01	12.3	3	(AF)					
	23529	MWIL	01	10	1630	S04 E24	01	12.5	2	(AF)					
0009		LEAR	01	08	0100	N22 E63	01	12.9		A	AXX		1		4
0009	23522	MWIL	01	08	1600	N23 E56	01	13.0	3	(AP)					
0009		HOLL	01	08	1615	N22 E56	01	13.0		A	AXX		1		3
0009	23522	MWIL	01	09	1630	N23 E41	01	12.8	3	(AF)					
4059		RAMY	01	11	1333	N15 E32	01	14.0		B	DAO	30	6	6	3
4059		BOUL	01	11	1545	N15 E27	01	13.7		B	CSO	20	3	4	2
4059	23531	MWIL	01	11	1600	N14 E30	01	13.9	2	(B)					
4059		HOLL	01	11	1945	N15 E27	01	13.9		B	CSO	30	5	4	2
4059		LEAR	01	12	0032	N14 E24	01	13.8		B	CSO	30	7	5	3
4059		RAMY	01	12	1355	N14 E17	01	13.9		B	BXO	30	13	4	2
4059		BOUL	01	12	1610	N16 E17	01	14.0		B	BXO	10	4	4	2
4059	23531	MWIL	01	12	1645	N15 E15	01	13.8	3	(BP)					
4059		HOLL	01	12	1730	N15 E15	01	13.9		B	DAO	40	4	5	3
4059		MANI	01	12	2326	N15 E13	01	14.0			CRO	30	7	4	3
4059		LEAR	01	13	0045	N14 E11	01	13.9		B	CAO	30	4	4	3
4059		RAMY	01	13	1255	N15 E02	01	13.7		B	BXO	10	3	2	4
4059		HOLL	01	13	1622	N14 W02	01	13.5		A	AXX	10	2	1	4
4059	23531	MWIL	01	13	1635	N15 W00	01	13.7	3	(AP)					
4059		LEAR	01	14	0310	N13 W07	01	13.6		A	AXX	10	2	2	3
4059	23531	MWIL	01	14	1634	N15 W10	01	13.9	2	X					
4059		LEAR	01	15	0105	N15 W15	01	13.9		A	AXX	10	3	2	3
4058		RAMY	01	10	1420	S18 E84	01	17.0		A	HSX	100	1	2	3
4058	23530	MWIL	01	10	1630	S17 E80	01	16.8	2	(AP)					
4058		LEAR	01	11	0006	S17 E77	01	16.9		B	DSO	160	4	5	3
4058		RAMY	01	11	1333	S18 E70	01	16.9		B	CHO	190	5	6	3
4058		BOUL	01	11	1545	S13 E69	01	16.9		A	HSX	90	1	2	2
4058	23530	MWIL	01	11	1600	S17 E70	01	17.0	3	(BP)					
4058		PALE	01	11	1910	S18 E68	01	17.0		A	HSX	100	1	2	2
4058		HOLL	01	11	1945	S15 E68	01	17.0		B	CSO	170	5	6	2
4058		LEAR	01	12	0032	S17 E66	01	17.0		B	CSO	130	4	5	3
4058		RAMY	01	12	1355	S18 E56	01	16.8		A	HSX	90	2	2	2
4058		BOUL	01	12	1610	S16 E52	01	16.6		A	HSX	100	1	2	2
4058	23530	MWIL	01	12	1645	S17 E56	01	17.0	5	(BP)					
4058		HOLL	01	12	1730	S15 E55	01	16.9		B	CAO	170	3	4	3
4058		MANI	01	12	2326	S18 E53	01	17.0			CSO	110	2	5	3
4058		LEAR	01	13	0045	S18 E52	01	17.0		A	HSX	120	1	2	3
4058		RAMY	01	13	1255	S18 E45	01	17.0		A	HSX	150	1	2	4
4058		HOLL	01	13	1622	S16 E42	01	16.9		A	HSX	120	1	2	4
4058	23530	MWIL	01	13	1635	S17 E42	01	16.9	5	(AP)					
4058		BOUL	01	13	2030	S16 E40	01	16.9		A	HSX	80	1	2	2
4058		LEAR	01	14	0310	S17 E37	01	16.9		A	HSX	110	1	2	3
4058		RAMY	01	14	1340	S17 E31	01	16.9		A	HSX	90	1	2	3
4058		HOLL	01	14	1548	S17 E29	01	16.9		A	HSX	120	1	2	3
4058		BOUL	01	14	1600	S18 E28	01	16.8		A	HSX	180	1	2	3
4058	23530	MWIL	01	14	1634	S17 E31	01	17.0	6	(AP)					
4058		PALE	01	14	2020	S18 E27	01	16.9		A	HSX	70	1	2	3
4058		MANI	01	15	0028	S18 E24	01	16.8			HSX	90	1	2	3
4058		LEAR	01	15	0105	S17 E25	01	16.9		A	HSX	100	1	2	3
4058		RAMY	01	15	1640	S18 E17	01	17.0		A	HSX	120	1	2	2
4058	23530	MWIL	01	15	1649	S17 E17	01	17.0	6	(AP)					
4058		PALE	01	15	1930	S17 E15	01	17.0		A	HSX	60	1	2	3
4058		LEAR	01	16	0006	S14 E14	01	17.1		B	CSO	130	3	6	3
4058		MANI	01	16	0305	S18 E10	01	16.9			HSX	120	1	2	2

REGIONS OF SUNSPOT ACTIVITY  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

79  
Jan 83

JANUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Mo	Day	Time (UT)	Lat	CMD	OMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4058		RAMY	01	16	1345	S17	E06	01	17.0		B	CAO	80	6	4	3
4058		HOLL	01	16	1557	S18	E05	01	17.0		B	CSO	140	2	4	4
4058	23530	MWIL	01	16	1745	S18	E03	01	17.0	5	(AP)					
4058		PALE	01	16	1825	S18	E04	01	17.1		B	CSO	110	5	3	3
4058		LEAR	01	17	0010	S16	E01	01	17.1		B	CSO	120	7	6	3
4058		RAMY	01	17	1427	S18	W09	01	16.9		A	HAX	120	2	2	2
4058	23530	MWIL	01	17	1600	S18	W09	01	17.0	4	(AP)					
4058		BOUL	01	17	1645	S18	W10	01	16.9		A	HSX	60	2	1	2
4058		PALE	01	17	1930	S18	W11	01	17.0		A	HSX	100	2	2	4
4058		MANI	01	18	0000	S18	W13	01	17.0		A	HSX	110	2	2	3
4058		LEAR	01	18	0048	S19	W13	01	17.0		A	HSX	120	2	2	2
4058		RAMY	01	18	1536	S17	W21	01	17.1		B	CSO	90	8	5	1
4058	23530	MWIL	01	18	1630	S18	W23	01	16.9	4	(AP)					
4058		PALE	01	18	1919	S18	W24	01	17.0		A	HAX	110	2	2	4
4058		HOLL	01	18	2024	S19	W24	01	17.0		A	HSX	100	4	2	3
4058		LEAR	01	19	0057	S20	W28	01	16.9		B	CSO	150	6	3	2
4058		MANI	01	19	0222	S19	W28	01	17.0		A	CSO	120	6	2	2
4058		BOUL	01	19	1530	S16	W33	01	17.1		A	HSX	100	2	2	2
4058	23530	MWIL	01	19	1615	S18	W35	01	17.0	4	(AP)					
4058		PALE	01	19	2015	S17	W38	01	17.0		A	HSX	70	2	2	2
4058		HOLL	01	19	2022	S18	W38	01	17.0		A	HSX	150	3	2	3
4058		MANI	01	20	0005	S18	W40	01	17.0		A	HSX	120	2	2	3
4058		LEAR	01	20	0053	S18	W39	01	17.1		A	HAX	80	3	2	3
4058		RAMY	01	20	1250	S17	W55	01	16.4		B	CAO	80	3	4	3
4058		BOUL	01	20	1600	S16	W49	01	16.9		A	HSX	60	2	2	2
4058	23530	MWIL	01	20	1630	S18	W48	01	17.0	4	(AP)					
4058		MANI	01	21	0001	S17	W53	01	17.0		A	HSX	140	2	2	3
4058		LEAR	01	21	0001	S18	W53	01	17.0		A	HAX	60	2	2	2
4058		RAMY	01	21	1310	S17	W61	01	16.9		A	HAX	130	2	2	3
4058	23530	MWIL	01	21	1600	S18	W62	01	16.9	4	AP					
4058		PALE	01	21	2000	S18	W64	01	17.0		A	HSX	90	2	2	3
4058		LEAR	01	22	0005	S17	W66	01	17.0		A	HSX	70	2	2	3
4058		RAMY	01	22	1305	S17	W75	01	16.8		A	HAX	130	3	2	3
4058		HOLL	01	22	1542	S18	W75	01	16.9		A	HSX	60	2	2	3
4058		PALE	01	22	1835	S18	W78	01	16.8		A	HSX	50	2	2	2
4058		LEAR	01	23	0014	S17	W79	01	17.0		A	HSX	40	2	2	2
0010		PALE	01	15	1930	S14	E18	01	17.2		A	AXX		1		3
0010		PALE	01	16	1825	S14	E06	01	17.2		A	AXX	10	2	1	3
0011	23535	MWIL	01	13	1635	N07	E48	01	17.3	4	(B)					
0011	23535	MWIL	01	14	1634	N07	E33	01	17.2	3	(B)					
0011	23535	MWIL	01	15	1649	N07	E20	01	17.2	3	(B)					
4063		RAMY	01	13	1255	N05	E50	01	17.3		B	CRO	70	6	4	4
4063		HOLL	01	13	1622	N06	E47	01	17.2		B	CRO	30	8	3	4
4063		BOUL	01	13	2030	N07	E46	01	17.3		A	HSX	20	1	1	2
4063		LEAR	01	14	0310	N06	E40	01	17.1		B	DRO	80	11	5	3
4063		RAMY	01	14	1340	N06	E35	01	17.2		B	BXO	10	2	4	3
4063		HOLL	01	14	1548	N07	E33	01	17.1		B	BXO	20	5	6	3
4063		BOUL	01	14	1600	N04	E31	01	17.0		B	BXO	20	6	7	3
4063		PALE	01	14	2020	N06	E30	01	17.1		B	BXO	30	5	7	3
4063		MANI	01	15	0028	N05	E27	01	17.0		B	BXO	20	9	9	3
4063		LEAR	01	15	0105	N06	E28	01	17.1		B	DRO	70	13	6	3
4063		RAMY	01	15	1640	N04	E19	01	17.1		B	BXO	200	8	7	2
4063		PALE	01	15	1930	N06	E17	01	17.1		B	BXO	20	4	7	3
4063		LEAR	01	16	0006	N06	E15	01	17.1		B	BXO	10	12	7	3
4063		MANI	01	16	0305	N05	E13	01	17.1		B	BXO	10	3	6	2
4063		RAMY	01	16	1345	N04	E08	01	17.2		B	CAO	20	4	3	3
4063		HOLL	01	16	1557	N04	E06	01	17.1		B	BXO	20	4	4	4
4063	23539	MWIL	01	16	1745	N04	E05	01	17.1	3	(AP)					
4063		PALE	01	16	1825	N04	E05	01	17.1		B	CRO	30	5	5	3
4063		LEAR	01	17	0010	N05	E02	01	17.2		B	BXO	10	15	6	3
4063		RAMY	01	17	1427	N06	W06	01	17.2		B	CAO	60	12	6	2
4063	23539	MWIL	01	17	1600	N04	W08	01	17.1	4	(AP)					
4063		BOUL	01	17	1645	N04	W08	01	17.1		B	BXO	10	7	6	2
4063		PALE	01	17	1930	N05	W10	01	17.1		B	CAO	60	9	6	4
4063		MANI	01	18	0000	N05	W12	01	17.1		B	CSO	40	10	5	3
4063		LEAR	01	18	0048	N04	W13	01	17.1		B	CRO	30	14	6	2
4063		RAMY	01	18	1536	N05	W21	01	17.1		B	CSO	40	7	5	1
4063	23539	MWIL	01	18	1630	N04	W24	01	16.9	3	(AP)					



REGIONS OF SUNSPOT ACTIVITY  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JANUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time (UT)		Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4063		PALE	01	18 1919	N04 W25	01 16.9		B	BXO	20	4	3	4
4063		LEAR	01	19 0057	N04 W28	01 16.9		A	AXX	10	1	1	2
4063		MANI	01	19 0222	N05 W26	01 17.2			BXO	20	6	60	2
4063		PALE	01	19 2015	N07 W35	01 17.2		A	AXX	10	1	2	2
4063		MANI	01	20 0005	N05 W40	01 17.0			AXX	10	1	1	3
4063		RAMY	01	20 1250	N06 W45	01 17.2		B	BXO	10	3	3	3
0012		MANI	01	15 0028	S23 E30	01 17.3			AXX	10	1		3
0012		LEAR	01	15 0105	S23 E30	01 17.4		A	AXX		1		3
4062	23533	MWIL	01	12 1645	N11 E72	01 18.1	3	( B)					
4062		HOLL	01	12 1730	N10 E72	01 18.1		B	BXO	10	3	2	3
4062		MANI	01	12 2326	N10 E71	01 18.3			BXO	20	3	5	3
4062		LEAR	01	13 0045	N11 E66	01 18.0		B	CSO	10	5	4	3
4062		RAMY	01	13 1255	N09 E59	01 18.0		A	HAX	20	1	1	4
4062		HOLL	01	13 1622	N11 E56	01 17.9		A	AXX		1		4
4062	23533	MWIL	01	13 1635	N10 E58	01 18.1	3	(AP)					
4062		BOUL	01	13 2030	N10 E54	01 17.9		A	AXX	10	1	1	2
4062		LEAR	01	14 0310	N10 E50	01 17.9		A	HRX	10	1	1	3
4062		RAMY	01	14 1340	N11 E45	01 18.0		A	AXX	20	1	1	3
4062		HOLL	01	14 1548	N11 E43	01 17.9		A	AXX	10	1		3
4062		BOUL	01	14 1600	N08 E42	01 17.8		A	AXX	10	1		3
4062	23533	MWIL	01	14 1634	N10 E42	01 17.8	2	AP					
0013		PALE	01	17 1930	N09 E08	01 18.4		A	AXX	10	2	2	4
0013		MANI	01	18 0000	N09 E06	01 18.5			AXX	40	2	2	3
4060		RAMY	01	12 1355	N04 E80	01 18.6		A	HSX	100	1	3	2
4060		BOUL	01	12 1610	N05 E81	01 18.7		A	HSX	240	1	2	2
4060	23534	MWIL	01	12 1645	N04 E80	01 18.7	3	(AP)					
4060		HOLL	01	12 1730	N05 E79	01 18.6		A	HSX	250	1	2	3
4060		MANI	01	12 2326	N05 E78	01 18.8			HHX	250	1	2	3
4060		LEAR	01	13 0045	N05 E78	01 18.9		B	EHO	370	2	11	3
4060		RAMY	01	13 1255	N03 E70	01 18.8		A	HKX	310	1	3	4
4060		HOLL	01	13 1622	N05 E67	01 18.7		A	HSX	250	1	2	4
4060	23534	MWIL	01	13 1635	N04 E68	01 18.8	5	(AP)					
4060		BOUL	01	13 2030	N06 E69	01 19.0		A	HSX	140	1	2	2
4060		LEAR	01	14 0310	N04 E62	01 18.8		A	HHX	250	1	3	3
4060		RAMY	01	14 1340	N04 E56	01 18.8		B	CAO	220	3	3	3
4060		HOLL	01	14 1548	N04 E55	01 18.8		A	HHX	270	2	3	3
4060		BOUL	01	14 1600	N03 E52	01 18.6		B	CHO	240	2	3	3
4060	23534	MWIL	01	14 1634	N04 E55	01 18.8	5	(BP)					
4060		PALE	01	14 2020	N04 E53	01 18.8		B	CSO	160	2	3	3
4060		MANI	01	15 0028	N03 E51	01 18.8			CHO	240	2	3	3
4060		LEAR	01	15 0105	N04 E50	01 18.8		B	CHO	220	4	5	3
4060		RAMY	01	15 1640	N04 E42	01 18.8		B	CHO	280	6	4	2
4060	23534	MWIL	01	15 1649	N04 E41	01 18.8	6	(BP)					
4060		PALE	01	15 1930	N04 E40	01 18.8		B	CHO	190	4	4	3
4060		LEAR	01	16 0006	N05 E37	01 18.8		B	CHO	250	7	6	3
4060		LEAR	01	16 0006	N05 E37	01 18.8		B	CSO	250	7	6	3
4060		MANI	01	16 0305	N03 E37	01 18.9			CHO	240	5	4	2
4060		RAMY	01	16 1345	N04 E30	01 18.8		B	DKO	260	6	4	3
4060		HOLL	01	16 1557	N05 E28	01 18.8		B	DHO	280	4	6	4
4060	23534	MWIL	01	16 1745	N04 E27	01 18.8	5	( B)					
4060		PALE	01	16 1825	N05 E27	01 18.8		B	CKO	240	6	4	3
4060		LEAR	01	17 0010	N05 E24	01 18.8		B	CHO	250	7	5	3
4060		RAMY	01	17 1427	N05 E16	01 18.8		B	CHO	270	6	4	2
4060	23534	MWIL	01	17 1600	N05 E14	01 18.7	5	(BP)					
4060		BOUL	01	17 1645	N03 E13	01 18.7		B	CAO	170	5	4	2
4060		PALE	01	17 1930	N05 E12	01 18.7		B	CHO	220	8	5	4
4060		MANI	01	18 0000	N04 E11	01 18.8			CHO	320	4	6	3
4060		LEAR	01	18 0048	N03 E08	01 18.6		B	CHO	270	4	8	2
4060		RAMY	01	18 1536	N03 E01	01 18.7		A	HHX	200	2	3	1
4060	23534	MWIL	01	18 1630	N04 E01	01 18.8	5	(AP)					
4060		PALE	01	18 1919	N03 E01	01 18.9		B	CKO	260	5	6	4
4060		HOLL	01	18 2024	N04 W01	01 18.8		B	CSO	260	6	6	3
4060		LEAR	01	19 0057	N02 W03	01 18.8		B	CSO	270	5	6	2
4060		MANI	01	19 0222	N04 W04	01 18.8			CHO	300	6	6	2
4060		BOUL	01	19 1530	N04 W10	01 18.9		B	CHO	210	4	4	2
4060	23534	MWIL	01	19 1615	N04 W13	01 18.7	5	(AP)					
4060		PALE	01	19 2015	N04 W14	01 18.8		B	CKO	230	3	5	2

REGIONS OF SUNSPOT ACTIVITY  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

81  
Jan 83

JANUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4060		HOLL	01	19	2022	N04	W14	01	18.8		B	CHO	320	3	5	3
4060		MANI	01	20	0005	N04	W16	01	18.8			CHO	310	5	5	3
4060		LEAR	01	20	0053	N03	W18	01	18.7		A	HKX	220	1	3	3
4060		RAMY	01	20	1250	N04	W24	01	18.7		B	CHO	250	4	5	3
4060		BOUL	01	20	1600	N04	W26	01	18.7		A	HHX	160	1	3	2
4060	23534	MWIL	01	20	1630	N03	W27	01	18.7	5	(AP)					
4060		LEAR	01	21	0001	N03	W30	01	18.8		A	HHX	220	1	3	2
4060		MANI	01	21	0001	N04	W30	01	18.8		A	HHX	300	2	3	3
4060		RAMY	01	21	1310	N04	W39	01	18.6		A	HAX	210	2	2	3
4060	23534	MWIL	01	21	1600	N03	W40	01	18.7	5	AP					
4060		PALE	01	21	2000	N04	W42	01	18.7		A	HSX	170	1	2	3
4060		LEAR	01	22	0005	N03	W44	01	18.7		A	HSX	210	2	2	3
4060		RAMY	01	22	1305	N03	W52	01	18.7		A	HAX	160	2	2	3
4060		HOLL	01	22	1542	N04	W54	01	18.6		A	HSX	260	1	2	3
4060		PALE	01	22	1835	N04	W55	01	18.7		A	HSX	170	1	2	2
4060		LEAR	01	23	0014	N03	W57	01	18.7		A	HSX	200	2	2	2
4060		RAMY	01	23	1414	N03	W68	01	18.5		A	HKX	140	2	3	2
4060		HOLL	01	23	1847	N03	W69	01	18.6		A	HSX	250	1	2	2
4060		PALE	01	23	1930	N03	W69	01	18.7		A	HSX	200	1	2	3
4060		LEAR	01	24	0045	N03	W70	01	18.8		A	HHX	250	1	4	3
4060		RAMY	01	24	1401	N03	W79	01	18.7		A	HAX	140	1	2	2
4060		HOLL	01	24	1600	N02	W80	01	18.7		A	HSX	150	1	2	4
4060		BOUL	01	24	1600	N04	W81	01	18.6		A	HSX	60	1	1	2
4060		PALE	01	24	2348	N02	W85	01	18.6		A	HSX	180	1	2	3
4060		LEAR	01	25	0028	N03	W85	01	18.7		A	HHX	250	1	4	3
4064		RAMY	01	13	1255	N08	E79	01	19.5		B	CAO	90	5	2	4
4064		HOLL	01	13	1622	N09	E75	01	19.3		A	HSX	140	2	3	4
4064	23536	MWIL	01	13	1635	N08	E79	01	19.6	3	(AP)					
4064		BOUL	01	13	2030	N09	E78	01	19.7		A	HSX	120	1	2	2
4064		LEAR	01	14	0310	N09	E70	01	19.4		A	HKX	150	4	3	3
4064		LEAR	01	14	0310	N09	E70	01	19.4		B	CKO	150	4	3	3
4064		RAMY	01	14	1340	N08	E65	01	19.4		B	DAO	200	8	4	3
4064		HOLL	01	14	1548	N08	E62	01	19.3		B	CAO	100	7	5	3
4064		BOUL	01	14	1600	N07	E60	01	19.2		B	CSO	170	6	3	3
4064	23536	MWIL	01	14	1634	N08	E65	01	19.6	4	(BF)					
4064		PALE	01	14	2020	N08	E61	01	19.4		B	CAO	180	5	4	3
4064		MANI	01	15	0028	N08	E60	01	19.5			DAO	190	5	4	3
4064		LEAR	01	15	0105	N09	E58	01	19.4		B	DKO	170	6	4	3
4064		RAMY	01	15	1640	N09	E49	01	19.4		B	CAO	160	9	3	2
4064	23536	MWIL	01	15	1649	N08	E50	01	19.5	5	(BF)					
4064		PALE	01	15	1930	N08	E47	01	19.3		B	CAO	160	7	3	3
4064		LEAR	01	16	0006	N08	E44	01	19.3		BD	DKI	200	11	5	3
4064		MANI	01	16	0305	N08	E44	01	19.4			DKI	180	10	3	2
4064		RAMY	01	16	1345	N07	E37	01	19.3		B	DAO	230	16	4	3
4064		HOLL	01	16	1557	N07	E37	01	19.4		B	DAI	210	17	5	4
4064	23536	MWIL	01	16	1745	N08	E35	01	19.4	4	(BF)					
4064		PALE	01	16	1825	N08	E35	01	19.4		B	DAO	240	14	4	3
4064		LEAR	01	17	0010	N08	E31	01	19.3		BD	DKI	230	9	4	3
4064		RAMY	01	17	1427	N09	E25	01	19.5		B	DKO	210	9	6	2
4064	23536	MWIL	01	17	1600	N09	E23	01	19.4	5	(BF)					
4064		BOUL	01	17	1645	N08	E22	01	19.3		BD	DAI	80	10	4	2
4064		PALE	01	17	1930	N08	E21	01	19.4		BD	DAI	220	14	4	4
4064		MANI	01	18	0000	N08	E18	01	19.4			DAO	220	11	5	3
4064		LEAR	01	18	0048	N08	E17	01	19.3		B	CKO	280	17	7	2
4064		RAMY	01	18	1536	N08	E09	01	19.3		BD	DKI	140	15	3	1
4064	23536	MWIL	01	18	1630	N08	E09	01	19.4	4	(BF)					
4064		PALE	01	18	1919	N07	E10	01	19.6		BD	DAO	120	12	7	4
4064		HOLL	01	18	2024	N08	E07	01	19.4		BD	DAI	120	14	5	3
4064		LEAR	01	19	0057	N08	E06	01	19.5		B	CAO	190	18	5	2
4064		MANI	01	19	0222	N08	E04	01	19.4			DAO	190	14	5	2
4064		BOUL	01	19	1530	N11	W03	01	19.4		B	CAO	110	5	5	2
4064	23536	MWIL	01	19	1615	N08	W05	01	19.3	4	(AP)					
4064		PALE	01	19	2015	N09	W06	01	19.4		A	HAX	110	3	2	2
4064		HOLL	01	19	2022	N10	W05	01	19.5		B	CAO	130	13	9	3
4064		MANI	01	20	0005	N09	W08	01	19.4			CSO	160	9	4	3
4064		LEAR	01	20	0053	N08	W08	01	19.4		B	CAO	100	4	3	3
4064		RAMY	01	20	1250	N08	W14	01	19.5		B	CAO	140	9	4	3
4064		BOUL	01	20	1600	N09	W18	01	19.3		A	HSX	110	2	2	2
4064	23536	MWIL	01	20	1630	N08	W18	01	19.3	4	(AP)					
4064		LEAR	01	21	0001	N07	W22	01	19.4		A	HSX	100	2	2	2

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NOAA/ USAF Region	Mt Wilson Region	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4064		MANI	01	21	0001	N09	W21	01	19.4		A	HSX	150	2	2	3
4064		RAMY	01	21	1310	N09	W29	01	19.4		A	HAX	90	3	2	3
4064	23536	MWIL	01	21	1600	N08	W31	01	19.3	4	AP					
4064		PALE	01	21	2000	N08	W32	01	19.4		A	HAX	100	3	2	3
4064		LEAR	01	22	0005	N08	W34	01	19.5		B	CAO	100	5	7	3
4064		RAMY	01	22	1305	N09	W43	01	19.3		A	HAX	60	2	2	3
4064		HOLL	01	22	1542	N10	W40	01	19.6		B	CSO	80	6	11	3
4064		PALE	01	22	1835	N10	W41	01	19.7		B	CSO	100	3	9	2
4064		LEAR	01	23	0014	N08	W49	01	19.3		A	HAX	80	3	2	2
4064		RAMY	01	23	1414	N08	W57	01	19.3		A	HSX	40	1	2	2
4064		HOLL	01	23	1847	N09	W58	01	19.4		A	HSX	60	2	2	2
4064		PALE	01	23	1930	N09	W59	01	19.4		A	HSX	80	2	2	3
4064		LEAR	01	24	0045	N08	W61	01	19.5		A	HSX	60	2	2	3
4064		RAMY	01	24	1401	N09	W69	01	19.4		A	HSX	60	1	2	2
4064		HOLL	01	24	1600	N09	W71	01	19.3		A	HSX	30	1	2	4
4064		BOUL	01	24	1600	N09	W72	01	19.3		A	HSX	110	1	1	2
4064		PALE	01	24	2348	N09	W76	01	19.3		A	HSX	50	1	2	3
4064		LEAR	01	25	0028	N08	W77	01	19.2		A	HSX	60	1	2	3
4064		RAMY	01	25	1350	N09	W86	01	19.1		A	HAX	30	1	2	3
4064	23536	MWIL	01	25	1545	N08	W85	01	19.3	2	(AF)					
4065		RAMY	01	13	1255	S12	E84	01	19.9		B	BXO	30	3	2	4
4065	23537	HOLL	01	13	1622	S11	E79	01	19.6		A	HSX	30	1	1	4
4065		MWIL	01	13	1635	S12	E86	01	20.2	3	(AP)					
4065		BOUL	01	13	2030	S12	E81	01	20.0		A	HSX	60	1	1	2
4065		LEAR	01	14	0310	S12	E76	01	19.9		B	CSO	70	3	5	3
4065		RAMY	01	14	1340	S13	E71	01	19.9		B	CAO	60	4	6	3
4065		HOLL	01	14	1548	S12	E68	01	19.8		B	DSO	90	6	5	3
4065		BOUL	01	14	1600	S15	E70	01	20.0		B	CSO	100	6	3	3
4065	23537	MWIL	01	14	1634	S12	E69	01	19.9	4	(B)					
4065		PALE	01	14	2020	S12	E67	01	19.9		B	DSO	90	5	5	3
4065		MANI	01	15	0028	S14	E65	01	19.9			DAI	120	7	7	3
4065		LEAR	01	15	0105	S12	E65	01	19.9		B	DSO	130	6	6	3
4065		RAMY	01	15	1640	S13	E56	01	19.9		B	DAO	170	14	7	2
4065	23537	MWIL	01	15	1649	S12	E55	01	19.8	3	(B)					
4065		PALE	01	15	1930	S13	E55	01	20.0		B	DSO	190	12	8	3
4065		LEAR	01	16	0006	S12	E52	01	19.9		B	DSO	200	16	8	3
4065		MANI	01	16	0305	S14	E50	01	19.9			DAI	130	12	7	2
4065		RAMY	01	16	1345	S14	E44	01	19.9		B	DAO	140	19	9	3
4065		HOLL	01	16	1557	S13	E42	01	19.8		B	DAO	230	21	10	4
4065	23537	MWIL	01	16	1745	S13	E42	01	19.9	4	(B)					
4065		PALE	01	16	1825	S13	E41	01	19.9		B	DAO	190	19	10	3
4065		LEAR	01	17	0010	S13	E37	01	19.8		B	CKO	200	24	9	3
4065		RAMY	01	17	1427	S13	E29	01	19.8		B	DKO	270	18	10	2
4065	23537	MWIL	01	17	1600	S12	E27	01	19.7	4	(B)					
4065		BOUL	01	17	1645	S12	E28	01	19.8		BG	DSI	210	19	9	2
4065		PALE	01	17	1930	S13	E27	01	19.9		BG	DSI	330	26	10	4
4065		MANI	01	18	0000	S14	E25	01	19.9			DAO	390	23	10	3
4065		LEAR	01	18	0048	S12	E23	01	19.8		B	EHO	320	32	11	2
4065		RAMY	01	18	1536	S13	E15	01	19.8		B	DKO	270	25	10	1
4065	23537	MWIL	01	18	1630	S13	E15	01	19.8	4	(B)					
4065		PALE	01	18	1919	S14	E14	01	19.9		B	DSI	320	37	10	4
4065		HOLL	01	18	2024	S13	E14	01	19.9		B	ESO	340	25	11	3
4065		LEAR	01	19	0057	S13	E11	01	19.9		B	ESO	330	24	11	2
4065		MANI	01	19	0222	S13	E10	01	19.9			EKI	350	31	11	2
4065		BOUL	01	19	1530	S11	E04	01	19.9		B	DKI	250	31	10	2
4065	23537	MWIL	01	19	1615	S13	E02	01	19.8	5	(B)					
4065		PALE	01	19	2015	S13	E01	01	19.9		B	DKO	270	18	10	2
4065		HOLL	01	19	2022	S12	W01	01	19.8		B	DSO	360	22	9	3
4065		MANI	01	20	0005	S13	W02	01	19.9			EKI	360	30	11	3
4065		LEAR	01	20	0053	S13	W02	01	19.9		B	DHO	270	17	10	3
4065		RAMY	01	20	1250	S13	W09	01	19.9		BG	EKO	300	28	12	3
4065		BOUL	01	20	1600	S13	W12	01	19.8		B	DKI	380	11	10	2
4065	23537	MWIL	01	20	1630	S13	W11	01	19.9	5	(B)					
4065		MANI	01	21	0001	S13	W15	01	19.9		B	DKI	340	9	10	3
4065		LEAR	01	21	0001	S15	W15	01	19.9		B	EHO	280	9	11	2
4065		RAMY	01	21	1310	S13	W23	01	19.8		B	EKO	210	15	11	3
4065	23537	MWIL	01	21	1600	S13	W26	01	19.7	5	BP					
4065		PALE	01	21	2000	S13	W26	01	19.9		B	EKO	210	5	11	3
4065		LEAR	01	22	0005	S13	W27	01	20.0		B	EKO	320	10	11	3
4065		RAMY	01	22	1305	S13	W36	01	19.8		B	DKO	270	6	10	3

REGIONS OF SUNSPOT ACTIVITY  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

83  
Jan 83

JANUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	Mo	Day	CMP	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4065		HOLL	01	22	1542	S12	W37	01	19.9			B	CHO	260	9	10	3
4065		PALE	01	22	1835	S12	W39	01	19.8			B	CKO	260	4	10	2
4065		LEAR	01	23	0014	S14	W40	01	20.0			B	CKO	160	12	10	2
4065		RAMY	01	23	1414	S14	W50	01	19.8			B	CKO	220	16	12	2
4065		HOLL	01	23	1847	S13	W52	01	19.9			B	CSO	150	13	11	2
4065		PALE	01	23	1930	S13	W52	01	19.9			B	CSO	200	12	11	3
4065		LEAR	01	24	0045	S13	W55	01	19.9			B	CSO	200	10	11	3
4065		RAMY	01	24	1401	S14	W64	01	19.7			B	DAO	270	13	9	2
4065		BOUL	01	24	1600	S12	W66	01	19.7			B	CSO	190	6	5	2
4065		HOLL	01	24	1600	S14	W64	01	19.8			B	CSO	150	5	10	4
4065		PALE	01	24	2348	S13	W71	01	19.6			B	DAO	140	2	4	3
4065		LEAR	01	25	0028	S13	W73	01	19.5			B	DSO	60	2	6	3
4065		RAMY	01	25	1350	S13	W79	01	19.6			B	DAO	60	3	3	3
4065	23537	MWIL	01	25	1545	S14	W79	01	19.7		3	(AP)					
4067		MANI	01	15	0028	N15	E81	01	21.2				HRX	60	2	1	3
4067		LEAR	01	15	0105	N16	E80	01	21.1			A	AXX	10	2	2	3
4067		RAMY	01	15	1640	N15	E73	01	21.2			B	DAO	30	4	6	2
4067	23538	MWIL	01	15	1649	N17	E72	01	21.2		3	B					
4067		PALE	01	15	1930	N16	E73	01	21.4			B	DSO	40	4	6	3
4067		LEAR	01	16	0006	N16	E67	01	21.1			B	DSO	140	5	7	3
4067		MANI	01	16	0305	N15	E66	01	21.1				HSX	40	2	1	2
4067		RAMY	01	16	1345	N15	E62	01	21.3			B	CAO	40	4	6	3
4067		HOLL	01	16	1557	N17	E59	01	21.2			B	CAO	40	4	5	4
4067	23538	MWIL	01	16	1745	N16	E60	01	21.3		4	(B)					
4067		PALE	01	16	1825	N16	E59	01	21.2			B	DSO	60	4	7	3
4067		LEAR	01	17	0010	N16	E55	01	21.2			B	DSO	110	5	5	3
4067		RAMY	01	17	1427	N15	E49	01	21.3			B	DSO	80	4	5	2
4067	23538	MWIL	01	17	1600	N17	E45	01	21.1		4	(B)					
4067		BOUL	01	17	1645	N15	E47	01	21.3			B	CSO	30	5	7	2
4067		PALE	01	17	1930	N16	E45	01	21.2			B	CSO	80	6	7	4
4067		MANI	01	18	0000	N16	E43	01	21.3				CSO	90	6	7	3
4067		LEAR	01	18	0048	N14	E41	01	21.1			B	DSO	90	10	8	2
4067		RAMY	01	18	1536	N15	E33	01	21.2			B	DSO	160	12	6	1
4067	23538	MWIL	01	18	1630	N16	E33	01	21.2		4	(B)					
4067		PALE	01	18	1919	N16	E32	01	21.2			B	DSO	70	12	5	4
4067		HOLL	01	18	2024	N16	E30	01	21.1			B	CSO	70	10	5	3
4067		LEAR	01	19	0057	N14	E29	01	21.2			B	DSO	110	13	4	2
4067		MANI	01	19	0222	N16	E28	01	21.2				CSO	90	16	6	2
4067		BOUL	01	19	1530	N18	E22	01	21.3			B	CSO	60	9	6	2
4067	23538	MWIL	01	19	1615	N16	E21	01	21.3		4	(B)					
4067		PALE	01	19	2015	N16	E18	01	21.2			B	DSO	70	10	5	2
4067		HOLL	01	19	2022	N16	E18	01	21.2			B	CSO	70	14	5	3
4067		MANI	01	20	0005	N16	E16	01	21.2				DSO	100	11	6	3
4067		LEAR	01	20	0053	N15	E16	01	21.2			B	CSO	70	8	5	3
4067		RAMY	01	20	1250	N17	E10	01	21.3			B	DAO	80	13	6	3
4067		BOUL	01	20	1600	N16	E07	01	21.2			B	CSO	60	5	5	2
4067	23538	MWIL	01	20	1630	N17	E07	01	21.2		4	(B)					
4067		LEAR	01	21	0001	N16	E02	01	21.2			B	CSO	50	3	5	2
4067		MANI	01	21	0001	N16	E03	01	21.2			B	CSO	60	6	5	3
4067		RAMY	01	21	1310	N17	W04	01	21.2			B	CAO	20	5	5	3
4067	23538	MWIL	01	21	1600	N17	W08	01	21.1		5	AP					
4067		PALE	01	21	2000	N16	W07	01	21.3			B	CSO	50	3	5	3
4067		LEAR	01	22	0005	N17	W12	01	21.1			A	HAX	30	1	1	3
4067		RAMY	01	22	1305	N17	W19	01	21.1			A	HAX	50	1	1	3
4067		HOLL	01	22	1542	N17	W22	01	21.0			A	HSX	50	1	1	3
4067		PALE	01	22	1835	N17	W22	01	21.1			A	HSX	50	1	1	2
4067		LEAR	01	23	0014	N17	W26	01	21.0			A	HSX	40	1	1	2
4067		RAMY	01	23	1414	N17	W32	01	21.2			B	CSO	70	3	6	2
4067		HOLL	01	23	1847	N17	W37	01	21.0			A	HSX	30	1	1	2
4067		PALE	01	23	1930	N18	W38	01	20.9			A	HSX	20	1	1	3
4067		LEAR	01	24	0045	N17	W39	01	21.1			B	CSO	40	2	6	3
4067		RAMY	01	24	1401	N18	W47	01	21.0			A	HSX	20	1	2	2
4067		HOLL	01	24	1600	N17	W48	01	21.0			A	HSX	50	1	1	4
4067		BOUL	01	24	1600	N18	W48	01	21.0			B	CSO	40	3	2	2
4067		PALE	01	24	2348	N17	W53	01	21.0			A	HSX	30	1	1	3
4067		LEAR	01	25	0028	N17	W53	01	21.0			A	HSX	60	1	2	3
4067		RAMY	01	25	1350	N18	W61	01	20.9			A	HAX	30	1	1	3
4067	23538	MWIL	01	25	1545	N16	W61	01	21.0		4	(AP)					
4067		LEAR	01	26	0206	N18	W68	01	20.9			A	AXX		1		3
4067		RAMY	01	26	1330	N18	W73	01	21.0			A	HAX	30	1	1	3

84  
Jan 83

REGIONS OF SUNSPOT ACTIVITY  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JANUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time (UT)			Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4067		HOLL	01	26	1609	N17	W74	01	21.0	A	AXX		1		3	
4067	23538	MWIL	01	26	1700	N17	W75	01	21.0	3	(AP)					
4067		PALE	01	26	1840	N18	W77	01	20.9	A	AXX		1		4	
		MANI	01	16	0305	N13	E70	01	21.4		HRX	30	1	1	2	
4068		RAMY	01	16	1345	S12	E80	01	22.6	A	HAX	60	1	2	3	
4068		HOLL	01	16	1557	S10	E78	01	22.5	A	HSX	170	2	2	4	
4068	23540	MWIL	01	16	1745	S11	E80	01	22.8	3	(AP)					
4068		PALE	01	16	1825	S11	E78	01	22.6	A	HSX	150	2	2	3	
4068		LEAR	01	17	0010	S11	E74	01	22.6	A	HSX	140	2	2	3	
4068		RAMY	01	17	1427	S12	E67	01	22.7	A	HAX	140	2	2	2	
4068	23540	MWIL	01	17	1600	S10	E66	01	22.6	4	(AP)					
4068		BOUL	01	17	1645	S12	E66	01	22.7	A	HSX	70	1	1	2	
4068		PALE	01	17	1930	S12	E64	01	22.6	A	HSX	170	2	2	4	
4068		MANI	01	18	0000	S11	E62	01	22.7		HSX	140	2	2	3	
4068		LEAR	01	18	0048	S11	E61	01	22.6	A	HSX	200	3	2	2	
4068		RAMY	01	18	1536	S12	E53	01	22.6	A	HAX	200	2	2	1	
4068	23540	MWIL	01	18	1630	S12	E53	01	22.7	4	(AP)					
4068		PALE	01	18	1919	S11	E51	01	22.6	A	HSX	140	3	2	4	
4068		HOLL	01	18	2024	S10	E49	01	22.5	A	HSX	90	2	2	3	
4068		LEAR	01	19	0057	S12	E48	01	22.7	A	HSX	120	2	2	2	
4068		MANI	01	19	0222	S11	E48	01	22.7		CSO	120	4	3	2	
4068		BOUL	01	19	1530	S11	E38	01	22.5	A	HSX	120	3	2	2	
4068	23540	MWIL	01	19	1615	S11	E39	01	22.6	4	(AP)					
4068		PALE	01	19	2015	S11	E38	01	22.7	A	HAX	80	2	2	2	
4068		HOLL	01	19	2022	S11	E37	01	22.6	A	HSX	120	2	2	3	
4068		MANI	01	20	0005	S11	E35	01	22.6		HSX	130	4	2	3	
4068		LEAR	01	20	0053	S12	E35	01	22.7	A	HSX	70	2	2	3	
4068		RAMY	01	20	1250	S14	E29	01	22.7	B	CAO	130	7	6	3	
4068		BOUL	01	20	1600	S12	E23	01	22.4	A	HSX	70	3	2	2	
4068	23540	MWIL	01	20	1630	S12	E26	01	22.6	4	(AP)					
4068		MANI	01	21	0001	S12	E22	01	22.7	A	HSX	40	3	2	3	
4068		LEAR	01	21	0001	S12	E23	01	22.7	A	HAO	60	3	1	2	
4068		RAMY	01	21	1310	S12	E15	01	22.7	A	HAX	20	4	2	3	
4068	23540	MWIL	01	21	1600	S12	E14	01	22.7	3	AP					
4068		PALE	01	21	2000	S12	E11	01	22.7	B	CSO	20	3	3	3	
4068		LEAR	01	22	0005	S12	E11	01	22.8	B	CRO	20	7	5	3	
4068		RAMY	01	22	1305	S13	E02	01	22.7	A	AXX	10	3	1	3	
4068		HOLL	01	22	1542	S10	W05	01	22.3	A	AXX		1		3	
4068		HOLL	01	22	1542	S11	W00	01	22.7	A	AXX		1		3	
4068		PALE	01	22	1835	S11	W02	01	22.6	A	AXX		1		2	
4068		PALE	01	22	1835	S11	W08	01	22.2	A	AXX	10	2	1	2	
4068		RAMY	01	24	1401	S17	W23	01	22.8	B	BXO	40	5	3	2	
4068		HOLL	01	24	1600	S16	W23	01	22.9	A	AXX	20	4	2	4	
4068		PALE	01	24	2348	S15	W28	01	22.9	A	AXX		1		3	
		PALE	01	23	1930	N21	W01	01	23.7	A	AXX		1		3	
0014		HOLL	01	19	2022	S16	E55	01	24.0	B	BXO	10	2	3	3	
0014		LEAR	01	24	0045	S20	W03	01	23.8	A	AXX	10	1		3	
		RAMY	01	26	1330	S13	W16	01	25.4	A	AXX	10	1	1	3	
4076		PALE	01	27	2030	N24	W30	01	25.5	B	BXO	10	2	3	2	
4076		HOLL	01	27	2200	N22	W31	01	25.5	B	BXO	10	2	3	2	
4076		LEAR	01	28	0113	N24	W34	01	25.4	A	AXX		1		3	
4076		BOUL	01	28	1540	N24	W41	01	25.5	A	AXX		1		3	
4076		HOLL	01	28	1550	N24	W43	01	25.3	B	BXO	10	2	3	2	
4076		PALE	01	28	2030	N23	W45	01	25.4	A	AXX		1		3	
	23550	MWIL	01	28	1930	N20	W42	01	25.6	2	X					
4070		HOLL	01	22	1542	S12	E59	01	27.1	B	BXO	10	2	3	3	
4070		PALE	01	22	1835	S12	E57	01	27.1	A	AXX	10	1	1	2	
4070		LEAR	01	23	0014	S13	E53	01	27.0	A	AXX		1		2	
4070		RAMY	01	23	1414	S13	E46	01	27.1	A	AXX	10	1	1	2	
4070		HOLL	01	23	1847	S13	E42	01	27.0	B	BXO	10	2	3	2	
4070		PALE	01	23	1930	S13	E41	01	26.9	B	BXO	10	2	3	3	
4070		HOLL	01	24	1600	S11	E26	01	26.6	A	AXX		1		4	
4070		PALE	01	24	2348	S10	E21	01	26.6	B	BXO	20	3	3	3	

REGIONS OF SUNSPOT ACTIVITY  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

85  
Jan 83

JANUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo Day (UT)		Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4070		LEAR	01	25	0028	S11 E21	01 26.6		B BXO	10	6	5	3
4070		RAMY	01	25	1350	S12 E12	01 26.5		B CAO	10	6	3	3
4070	23541	MWIL	01	25	1545	S10 E11	01 26.5	3	(BP)				
4070		LEAR	01	26	0206	S09 E05	01 26.5		B BXO	30	6	3	3
4070		RAMY	01	26	1330	S11 W03	01 26.3		B BXO	10	3	3	3
4070		HOLL	01	26	1609	S11 W03	01 26.4		B BXO	10	3	3	3
4070		BOUL	01	26	1615	S12 W03	01 26.5		B BXO	10	2	2	2
4070	23541	MWIL	01	26	1700	S10 W04	01 26.4	2	(AP)				
4070		PALE	01	26	1840	S11 W05	01 26.4		B BXO	20	3	3	4
4070		LEAR	01	28	0113	S12 W19	01 26.6		A AXX		1		3
4070		LEAR	01	29	0011	S11 W32	01 26.6		A AXX		1		3
4070		HOLL	01	29	1558	S11 W41	01 26.6		A AXX	10	1		4
4070	23541	MWIL	01	29	1600	S11 W40	01 26.7	2	(AF)				
4070		PALE	01	29	2000	S11 W43	01 26.6		A AXX	10	1		3
4070		LEAR	01	30	0014	S11 W46	01 26.5		A AXX		1		3
4072		LEAR	01	24	0045	S07 E59	01 28.5		A AXX		1		3
4072		RAMY	01	24	1401	S07 E53	01 28.6		A AXX	30	1	1	2
4072		HOLL	01	24	1600	S06 E52	01 28.6		B BXO	20	3	3	4
4072		PALE	01	24	2348	S06 E46	01 28.4		B BXO	20	3	3	3
4072		LEAR	01	25	0028	S07 E43	01 28.2		B BXO	20	4	7	3
4072		RAMY	01	25	1350	S08 E36	01 28.3		BG DAO	90	14	5	3
4072	23543	MWIL	01	25	1545	S07 E34	01 28.2	5	( B)				
4072		LEAR	01	26	0206	S07 E27	01 28.1		B DAO	120	9	6	3
4072		RAMY	01	26	1330	S08 E22	01 28.2		B DAO	150	20	7	3
4072		HOLL	01	26	1609	S07 E20	01 28.2		B DSO	210	12	8	3
4072		BOUL	01	26	1615	S08 E19	01 28.1		B BXO	120	8	8	2
4072	23543	MWIL	01	26	1700	S07 E20	01 28.2	5	( B)				
4072		PALE	01	26	1840	S07 E19	01 28.2		B DAO	240	16	8	4
4072		LEAR	01	27	0204	S07 E15	01 28.2		B DA1	290	17	10	3
4072		RAMY	01	27	1315	S08 E08	01 28.2		B DKO	180	15	9	3
4072		PALE	01	27	2030	S08 E04	01 28.2		B DSO	150	11	9	2
4072		HOLL	01	27	2200	S07 E04	01 28.2		B DSO	280	19	9	2
4072		LEAR	01	28	0113	S07 E02	01 28.2		B DAO	200	24	9	3
4072		RAMY	01	28	1310	S08 W06	01 28.1		BG CKO	180	20	9	3
4072		BOUL	01	28	1540	S07 W07	01 28.1		B DA1	230	27	9	3
4072		HOLL	01	28	1550	S08 W07	01 28.1		B DAO	330	21	10	2
4072	23543	MWIL	01	28	1930	S08 W10	01 28.1	5	B				
4072		PALE	01	28	2030	S09 W10	01 28.1		B DSO	300	29	9	3
4072		LEAR	01	29	0011	S08 W13	01 28.0		B DAO	260	26	9	3
4072		RAMY	01	29	1241	S08 W18	01 28.2		B DK1	280	25	9	2
4072		HOLL	01	29	1558	S09 W22	01 28.0		B CHO	260	16	9	4
4072	23543	MWIL	01	29	1600	S09 W21	01 28.1	5	( B)				
4072		PALE	01	29	2000	S09 W24	01 28.0		B DKO	300	17	9	3
4072		LEAR	01	30	0014	S08 W25	01 28.1		B DHO	250	13	9	3
4072	23543	MWIL	01	30	1630	S09 W35	01 28.1	5	( B)				
4072		BOUL	01	30	1645	S08 W33	01 28.2		B DSO	190	8	8	2
4072		PALE	01	30	1906	S09 W36	01 28.1		B CSO	190	9	10	3
4072		LEAR	01	31	0030	S08 W38	01 28.2		B DSO	260	15	10	2
4072		RAMY	01	31	1245	S08 W44	01 28.2		B EHO	250	12	12	4
4072	23543	MWIL	01	31	1545	S09 W48	01 28.1	5	(BP)				
4072		HOLL	01	31	1638	S08 W48	01 28.1		B EHO	210	7	11	3
4072		PALE	01	31	1917	S09 W48	01 28.2		B ESO	180	9	11	3
4072		LEAR	02	01	0040	S08 W53	01 28.1		B CSO	260	10	12	3
4072		MANI	02	01	0207	S08 W54	01 28.0		ESO	230	12	11	3
4072	23543	MWIL	02	01	1600	S09 W63	01 27.9	5	(BP)				
4072		HOLL	02	01	1720	S09 W63	01 28.0		B CSO	200	5	9	3
4072		PALE	02	01	1850	S09 W63	01 28.1		B CSO	170	3	9	1
4072		MANI	02	01	2326	S08 W67	01 27.9		B CSO	220	4	10	3
4072		LEAR	02	02	0030	S08 W65	01 28.1		B CSO	140	3	8	3
4072		RAMY	02	02	1330	S08 W75	01 27.9		A HAX	190	2	2	3
4072		HOLL	02	02	1546	S09 W79	01 27.7		A HSX	170	3	2	3
4072		BOUL	02	02	1700	S07 W80	01 27.7		A HSX	60	2	2	2
4072		PALE	02	02	1815	S09 W81	01 27.7		A HSX	160	2	2	3
4072		MANI	02	03	0007	S10 W84	01 27.7		A HSX	440	1	2	3
4072		LEAR	02	03	0008	S09 W86	01 27.5		A HSX	170	3	2	3
4073		RAMY	01	25	1350	N04 E39	01 28.5		B DAO	70	11	5	3
4073	23542	MWIL	01	25	1545	N05 E37	01 28.4	5	( B)				
4073		LEAR	01	26	0206	N05 E32	01 28.5		B DAO	280	11	7	3
4073		RAMY	01	26	1330	N04 E27	01 28.6		B DKO	420	21	8	3

86  
Jan 83

REGIONS OF SUNSPOT ACTIVITY  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JANUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time (UT)			Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Heml)	Spot Count	Long. Extent (Deg)	Qual
4073		HOLL	01	26	1609	N05 E25	01 28.5		B	DSO	410	19	8	3
4073		BOUL	01	26	1615	N05 E24	01 28.5		B	DSO	180	8	6	2
4073	23542	MWIL	01	26	1700	N05 E24	01 28.5	5	( B)					
4073		PALE	01	26	1840	N05 E23	01 28.5		B	DSO	390	19	9	4
4073		LEAR	01	27	0204	N05 E18	01 28.4		B	DAO	400	14	8	3
4073		RAMY	01	27	1315	N05 E12	01 28.5		B	DKO	290	16	10	3
4073		PALE	01	27	2030	N05 E09	01 28.5		B	DKO	240	11	10	2
4073		HOLL	01	27	2200	N05 E07	01 28.4		B	DAO	300	20	10	2
4073		LEAR	01	28	0113	N05 E05	01 28.4		B	DAO	340	26	10	3
4073		RAMY	01	28	1310	N05 W01	01 28.5		BG	DKO	200	14	10	3
4073		BOUL	01	28	1540	N05 W04	01 28.4		B	DSO	210	21	10	3
4073		HOLL	01	28	1550	N05 W04	01 28.4		BG	DSO	300	16	9	2
4073	23542	MWIL	01	28	1930	N04 W05	01 28.4	5	B					
4073		PALE	01	28	2030	N06 W06	01 28.4		B	DAO	270	26	10	3
4073		LEAR	01	29	0011	N05 W07	01 28.5		B	DAO	240	22	9	3
4073		RAMY	01	29	1241	N05 W15	01 28.4		B	DKI	280	35	10	2
4073		HOLL	01	29	1558	N05 W16	01 28.5		B	EAI	240	25	11	4
4073	23542	MWIL	01	29	1600	N04 W16	01 28.5	4	( B)					
4073		PALE	01	29	2000	N06 W19	01 28.4		B	DAI	330	28	10	3
4073		LEAR	01	30	0014	N04 W19	01 28.6		B	EHI	330	29	11	3
4073	23542	MWIL	01	30	1630	N05 W30	01 28.4	5	( B)					
4073		BOUL	01	30	1645	N05 W28	01 28.6		B	DSI	130	16	10	2
4073		PALE	01	30	1906	N05 W32	01 28.4		B	DSI	230	26	10	3
4073		LEAR	01	31	0030	N05 W34	01 28.5		B	ESO	300	38	11	2
4073		RAMY	01	31	1245	N06 W40	01 28.5		BG	ESO	220	34	11	4
4073	23542	MWIL	01	31	1545	N05 W44	01 28.4	5	( B)					
4073		HOLL	01	31	1638	N05 W43	01 28.5		B	DAO	200	21	10	3
4073		PALE	01	31	1917	N05 W45	01 28.4		B	EAO	160	17	11	3
4073		LEAR	02	01	0040	N04 W47	01 28.5		B	ESO	220	12	11	3
4073		MANI	02	01	0207	N05 W48	01 28.5		B	EAO	200	21	11	3
4073	23542	MWIL	02	01	1600	N04 W57	01 28.4	5	(BP)					
4073		HOLL	02	01	1720	N05 W58	01 28.4		B	DSO	150	7	9	3
4073		PALE	02	01	1850	N05 W59	01 28.4		B	DSO	160	4	9	1
4073		MANI	02	01	2326	N05 W61	01 28.4		B	CSO	160	7	9	3
4073		LEAR	02	02	0030	N05 W62	01 28.4		B	CSO	70	5	9	3
4073		RAMY	02	02	1330	N05 W70	01 28.3		B	CAO	190	3	5	3
4073		HOLL	02	02	1546	N05 W75	01 28.0		B	CSO	70	3	3	3
4073		BOUL	02	02	1700	N06 W78	01 27.9		A	HRX	40	1	2	2
4073		PALE	02	02	1815	N05 W78	01 27.9		B	CSO	110	2	3	3
4073		MANI	02	03	0007	N03 W80	01 28.0			HSX	170	1	2	3
4073		LEAR	02	03	0008	N04 W80	01 28.0		A	HSX	50	2	2	3
	23547	MWIL	01	26	1700	N02 E25	01 28.6	2	( B)					
0015	23544	MWIL	01	25	1545	N08 E58	01 30.0	3	( B)					
0015	23544	MWIL	01	26	1700	N10 E45	01 30.1	3	(BP)					
0015		HOLL	01	29	1558	N09 E02	01 29.8		B	BXO	10	2	3	4
0015		PALE	01	29	2000	N09 W01	01 29.8		B	BXO	10	2	2	3
4071		HOLL	01	23	1847	N05 E86	01 30.2		A	HSX	120	1	2	2
4071		PALE	01	23	1930	N05 E86	01 30.2		A	HSX	140	1	2	3
4071		LEAR	01	24	0045	N09 E81	01 30.1		B	CSO	140	3	7	3
4071		RAMY	01	24	1401	N05 E79	01 30.5		B	CAO	250	5	7	2
4071		BOUL	01	24	1600	N05 E71	01 30.0		B	CSO	210	5	5	2
4071		HOLL	01	24	1600	N07 E73	01 30.1		B	CSO	220	5	8	4
4071		PALE	01	24	2348	N07 E68	01 30.1		B	DSO	190	4	7	3
4071		LEAR	01	25	0028	N08 E70	01 30.3		B	CSO	140	4	5	3
4071		RAMY	01	25	1350	N05 E62	01 30.2		BG	CSO	250	11	8	3
4071	23545	MWIL	01	25	1545	N06 E61	01 30.2	5	(BP)					
4071		LEAR	01	26	0206	N06 E55	01 30.2		B	CSO	250	3	4	3
4071		RAMY	01	26	1330	N06 E48	01 30.2		BG	CSO	200	7	7	3
4071		HOLL	01	26	1609	N07 E48	01 30.3		B	CSO	210	5	4	3
4071		BOUL	01	26	1615	N07 E48	01 30.3		A	HSX	60	1	2	2
4071	23545	MWIL	01	26	1700	N06 E48	01 30.3	5	(AP)					
4071		PALE	01	26	1840	N07 E46	01 30.3		B	CSO	170	7	5	4
4071		LEAR	01	27	0204	N05 E42	01 30.2		A	HSX	200	1	2	3
4071		RAMY	01	27	1315	N07 E35	01 30.2		A	HKX	170	1	3	3
4071		PALE	01	27	2030	N06 E32	01 30.3		A	HSX	80	1	2	2
4071		HOLL	01	27	2200	N05 E30	01 30.2		A	HSX	210	1	2	2
4071		LEAR	01	28	0113	N05 E28	01 30.1		B	CSO	190	3	3	3
4071		RAMY	01	28	1310	N04 E23	01 30.3		A	HKX	150	1	3	3

REGIONS OF SUNSPOT ACTIVITY  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

87  
Jan 83

JANUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Heml)	Spot Count	Long. Extent (Deg)	Qual
4071		BOUL	01	28	1540	N05	E21	01	30.2		A	HSX	160	2	2	3
4071		HOLL	01	28	1550	N06	E21	01	30.2		A	HSX	180	1	2	2
4071	23545	MWIL	01	28	1930	N05	E19	01	30.2	5	AP					
4071		PALE	01	28	2030	N05	E19	01	30.3		A	HSX	210	2	3	3
4071		LEAR	01	29	0011	N05	E16	01	30.2		B	CSO	180	3	3	3
4071		RAMY	01	29	1241	N04	E10	01	30.3		A	HKX	180	1	3	2
4071		HOLL	01	29	1558	N05	E07	01	30.2		A	HSX	160	1	2	4
4071	23545	MWIL	01	29	1600	N05	E07	01	30.2	5	(AP)					
4071	23551	MWIL	01	29	1600	N08	E03	01	29.9	2	(AF)					
4071		PALE	01	29	2000	N05	E06	01	30.3		A	HSX	180	2	4	3
4071		LEAR	01	30	0014	N04	E03	01	30.2		A	HHX	230	1	3	3
4071	23545	MWIL	01	30	1630	N05	W06	01	30.2	5	(AP)					
4071	23551	MWIL	01	30	1630	N07	W13	01	29.7	2	(AF)					
4071		BOUL	01	30	1645	N06	W05	01	30.3		A	HHX	150	2	4	2
4071		PALE	01	30	1906	N05	W08	01	30.2		A	HSX	160	1	2	3
4071		LEAR	01	31	0030	N04	W11	01	30.2		A	HSX	190	1	2	2
4071		RAMY	01	31	1245	N06	W18	01	30.2		A	HSX	190	1	2	4
4071	23545	MWIL	01	31	1545	N04	W29	01	29.5	5	(AP)					
4071	23551	MWIL	01	31	1545	N08	W22	01	30.0	2	(AF)					
4071		HOLL	01	31	1638	N05	W20	01	30.2		A	HSX	180	1	2	3
4071		PALE	01	31	1917	N05	W21	01	30.2		A	HSX	160	1	2	3
4071		LEAR	02	01	0040	N06	W24	01	30.2		A	HSX	150	1	2	3
4071		MANI	02	01	0207	N06	W25	01	30.2		A	HSX	180	1	2	3
4071	23545	MWIL	02	01	1600	N04	W33	01	30.2	5	(AP)					
4071		HOLL	02	01	1720	N05	W34	01	30.2		A	HSX	240	1	2	3
4071		PALE	02	01	1850	N05	W34	01	30.2		A	HSX	180	1	2	1
4071		MANI	02	01	2326	N05	W38	01	30.1		A	HSX	220	1	2	3
4071		LEAR	02	02	0030	N05	W37	01	30.3		A	HSX	140	1	2	3
4071		RAMY	02	02	1330	N06	W44	01	30.3		A	HAX	170	1	2	3
4071		HOLL	02	02	1546	N05	W46	01	30.2		A	HSX	180	1	2	3
4071		BOUL	02	02	1700	N08	W46	01	30.3		A	HSX	90	1	2	2
4071		PALE	02	02	1815	N06	W48	01	30.2		A	HSX	200	1	2	3
4071		MANI	02	03	0007	N05	W50	01	30.3		A	HSX	190	1	2	3
4071		LEAR	02	03	0008	N06	W51	01	30.2		A	HSX	200	2	2	3
4071		RAMY	02	03	1250	N06	W59	01	30.1		A	HAX	160	2	2	3
4071		BOUL	02	03	1610	N07	W59	01	30.3		A	HSX	50	1	1	3
4071		LEAR	02	04	0020	N06	W64	01	30.2		A	HSX	190	2	2	3
4071	23545	MWIL	02	04	1600	N05	W72	01	30.3	4	(AP)					
4071		BOUL	02	04	1630	N07	W77	01	29.9		A	HSX	130	2	2	3
4071		PALE	02	04	2005	N06	W77	01	30.1		A	HSX	140	2	2	3
4071		MANI	02	04	2341	N05	W78	01	30.1		A	HSX	230	2	2	3
4071		LEAR	02	05	0017	N07	W78	01	30.2		A	HSX	190	2	2	3
4071		RAMY	02	05	1320	N06	W84	01	30.3		A	HAX	30	1	2	3
	23548	MWIL	01	26	1700	N14	E50	01	30.5	3	(AF)					
4074		RAMY	01	25	1350	S18	E81	01	31.7		A	HAX	30	1	2	3
4074	23546	MWIL	01	25	1545	S15	E78	01	31.6	3	(AP)					
4074		LEAR	01	26	0206	S16	E75	01	31.8		A	HRX	20	2	2	3
4074		RAMY	01	26	1330	S17	E70	01	31.9		B	CAO	80	6	9	3
4074		HOLL	01	26	1609	S15	E69	01	31.9		B	DSO	80	5	10	3
4074		BOUL	01	26	1615	S15	E64	01	31.5		B	DSO	20	2	1	2
4074	23546	MWIL	01	26	1700	S16	E66	01	31.7	4	(BP)					
4074		PALE	01	26	1840	S15	E68	01	31.9		B	CSO	60	5	9	4
4074		LEAR	01	27	0204	S17	E63	01	31.9		B	CSO	30	5	10	3
4074		RAMY	01	27	1315	S13	E59	02	1.0		B	CAO	40	6	9	3
4074		PALE	01	27	2030	S16	E54	02	1.0		B	CSO	50	3	8	2
4074		HOLL	01	27	2200	S15	E54	02	1.0		B	BXO	30	9	12	2
4074		LEAR	01	28	0113	S16	E53	02	1.1		B	CRO	30	11	9	3
4074		RAMY	01	28	1310	S17	E44	01	31.9		B	CAO	30	6	10	3
4074		BOUL	01	28	1540	S15	E40	01	31.7		A	HRX	20	1	1	3
4074		HOLL	01	28	1550	S15	E45	02	1.1		B	BXO	20	6	12	2
4074	23546	MWIL	01	28	1930	S16	E45	02	1.2	4	B					
4074		PALE	01	28	2030	S17	E38	01	31.7		A	HSX	20	1	1	3
4074		LEAR	01	29	0011	S16	E39	02	1.0		B	CRO	20	10	9	3
4074		RAMY	01	29	1241	S18	E33	02	1.0		B	CSO	60	8	10	2
4074		HOLL	01	29	1558	S17	E29	01	31.9		B	BXO	60	14	15	4
4074	23546	MWIL	01	29	1600	S17	E32	02	1.1	4	(B)					
4074		PALE	01	29	2000	S18	E28	02	1.0		B	CRO	60	13	12	3
4074		LEAR	01	30	0014	S18	E27	02	1.1		B	CSO	50	11	11	3
4074	23546	MWIL	01	30	1630	S16	E18	02	1.1	3	(B)					



88  
Jan 83

REGIONS OF SUNSPOT ACTIVITY  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JANUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time		Lat	CMD	CMP		Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day			Mo	Day							
4074		BOUL	01	30	1645	S15 E20	02	1.2		B	ESO	10	11	14	2
4074		PALE	01	30	1906	S16 E16	02	1.0		B	CSO	20	4	9	3
4074		LEAR	01	31	0030	S17 E13	02	1.0		B	CSO	50	12	12	2
4074		RAMY	01	31	1245	S17 E01	01	31.6		B	CAO	20	12	10	4
4074		HOLL	01	31	1638	S18 E02	01	31.8		B	BXO	40	10	14	3
4074		PALE	01	31	1917	S17 W05	01	31.4		B	BXO	20	4	6	3
4074		LEAR	02	01	0040	S16 W02	01	31.9		B	BXO	80	17	20	3
4074		MANI	02	01	0207	S16 W02	01	31.9			ERO	40	16	14	3
4074	23546	MWIL	02	01	1600	S16 W07	02	1.1	3	( B)					
4074		HOLL	02	01	1720	S15 W10	02	1.0		B	BXO	60	20	11	3
4074		PALE	02	01	1850	S18 W17	01	31.5		B	BXO	20	4	3	1
4074		MANI	02	01	2326	S16 W14	01	31.9			BXO	40	10	12	3
4074		LEAR	02	02	0030	S16 W15	01	31.9		B	BXO	40	9	12	3
4074		HOLL	02	02	1546	S15 W22	02	1.0		B	CRO	40	18	15	3
4074		BOUL	02	02	1700	S13 W20	02	1.2		B	BXO	20	10	15	2
4074		PALE	02	02	1815	S14 W28	01	31.6		B	BXO	10	3	2	3
4074		MANI	02	03	0007	S17 W32	01	31.6			BXO	20	6	8	3
4074		LEAR	02	03	0008	S15 W26	02	1.0		B	BXO	10	14	15	3
4074		RAMY	02	03	1250	S15 W38	01	31.7		A	AXX	10	4	1	3
4074		BOUL	02	03	1610	S12 W31	02	1.3		B	BXO	10	3	13	3
4074		LEAR	02	04	0020	S14 W35	02	1.4		B	BXO	2	2	6	3
4074		BOUL	02	04	1630	S13 W45	02	1.3		A	AXX	10	2	1	3
4074		PALE	02	04	2005	S13 W45	02	1.4		A	AXX	10	2	1	3
4074		LEAR	02	05	0017	S13 W46	02	1.5		A	AXX	10	1		3
4074		RAMY	02	05	1320	S13 W54	02	1.5		A	AXX	20	2	2	3
4074		HOLL	02	05	1522	S15 W55	02	1.5		B	BXO	10	2	3	3

S U D D E N I O N O S P H E R I C D I S T U R B A N C E S

January 1983

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide-spread Index	Number of Station Reports by Type					Known Flare	NOAA/SESC Region
						SWF	SEA	SPA	LF-SPA	SES		
01	0041	0048	0210	1	3	1		1	1	2	0044	4033
01	0944	0951	1124	1	3		2	1	1	2	0942	4033
01	2256	2300	2336	1-	3			1		2	2257	4033
01	2300	2307	2320	1-	1					1	2300E	4033
02	0157	0208	0342	2+	5	1		1	1	3	0202E	4033
02	2333	2346	0027	1-	1			1			2346	X-ray
04	1400	1406	1430	1	1					1	1349	X-ray
05	0055	0057	0105	1-	1					1	0053	X-ray
05	0330	0358	0447	1-	3			1	1	1	0329	4048
05	0515	0525	0545	1-	1			1			0518	No data
05	0548	0554	0642	1-	3			1		2	0545	X-ray
06	1212	1223	1240	1	1		1				1220	No data
06	2118	2130	2255	1-	1			1			*	
07	0206	0210	0235	1-	3	1		1	1	2	0206	4051
07	0300	0310	0340	1-	1				1		NF	
07	0400	0415	0600	1-	1				1		NF	
07	0507	0518	0556	1-	1			1			0508	4051
07	1203	1227U	1257	1	1		1				1208	4048
07	1333	1343	1406U	1	1		1			1	1330	4041
07	2043	2045	2100	1-	1						NF	
08	0256	0300	0328	1-	1			1			0254	4053
08	0424	0427	0450	1-	2			1	1		0422	4053
08	0826	0836	0858	1-	1			1			0823	X-ray
08	1610	1615	1645	1+	3					2	1608	X-ray
09	0046	0052	0122	1-	3			1		1	0046	4046
09	0146	0146U	0150	1-	1				1		0144	4046
09	0216	0223	0304	1-	3			1	1	1	0215	4053
09	1636	1646	1720	1-	1					1	1646	4054
09	1838	1840	1930	1-	3					4	1836E	4046
10	0855	0900	0908	2	1	1					NF	
11	1045	1053	1115	1-	1					1	1053	X-ray
12	1045	1052	1141	1-	3		1	1			1044E	No data
12	1854	1917	1940	1-	3			1		1	1906	No data
12	2115	2134	2212	1-	3			1		4	2117	No data
13	1545	1552	1615	1-	3					2	1549	No data
13	1823	1827	1900	2	1					1	1811	No data
14	1337	1357	1445	1-	3					2	NF	
14	2217	2223	2256	1-	1			1			*	
15	0052	0057	0124	1-	1			1			0046	4061
15	1547	1614	1730	1+	3					4	NF	
15	1911	1930	2000	1-	3					4	NF	
15	2206	2215	2241	1-	1			1			NF	
16	0603	0625	0753	1-	3			1		1	0601	X-ray
16	1826	1845	2030	1	3	1				5	*	
16	2257	2259	2303	1-	3			1		1	2257	4064
16	2325E	2330	0030	1-	3			1		3	2323	4064
17	0304	0308	0324	1-	3			1	1		0258	4064
17	0343	0350	0403U	1-	1				1		0345	4064
17	0401	0409	0433	1-	1			1			0345	4064
17	1330	1335	1358	1	3		2				*	

90  
Jan 83

S U D D E N I O N O S P H E R I C D I S T U R B A N C E S

January 1983

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide- spread Index	Number of Station Reports by Type					Known Flare	NOAA/SESC Region
						SWF	SEA	SPA	LF- SPA	SES		
17	1838	1858	1915	1	3					8	NF	
18	1029	1040U	1059	1	1		1				NF	
18	1352U	1359	1417	1	1		1				1349	No data
20	0144	0200	0230	1-	3					2	NF	
20	0515	0543	0610	1	1					1	NF	
21	0640	0655	0746	1-	3			1		2	0640	No data
22	2040	2046	2120	1	1					1	NF	
22	2224	2244	2318	1-	1			1			2222E	4060
23	0536	0543	0622	1-	1			1			0534	X-ray
23	1622	1623	1645	1	1					1	*	
23	1821	1825	1840	1	1					1	*	
23	1940	1943	2000	1	1					1	NF	
23	2012	2015	2040	1	1					1	NF	
24	1804	1807	1830	1+	1					1	1802	No data
24	2012	2018	2030	1-	3					3	*	
24	2123	2126	2140	1-	3					3	2120	X-ray
25	0646	0652	0730	1-	1			1			0642	X-ray
25	2058	2101	2129	1	1	1					NF	
26	0427	0434	0450	1-	1				1		NF	
26	1518		1541	2	1	1					NF	
27	0047	0051	0122	1-	1			1			NF	
27	0236	0244	0312	1-	3			1	1	1	0237	4075
27	0330	0347	0524	1	3	1		1	1	1	0330	4075
27	0652	0702	0724	1-	1			1			NF	
27	2100	2105	2132	1	1	1					*	
27	2301	2307	2333	1-	1			1			*	
28	0309	0314	0324U	1-	1				1		NF	
28	0830	0834U	0855	1	1			1			NF	
28	0854	0905	0938	1	1			1			NF	
29	0507	0510	0550	1-	3			1		2	0509E	4075
29	0813	0820	0849	1-	1			1			0816	X-ray
29	1622	1624	1640	1-	1					1	1629	4070
29	1933	1936	1953	1	3					6	1937E	4075
29	2101	2103	2115U	1-	1	1					NF	
30	2300	2304	2326	1-	1			1			2301	No data
31	1140	1152	1200	1	1			1			1144E	4072

\* = No Flare Patrol  
 NF = No Flare Reported  
 X-ray = Event observed only at X-ray wavelengths

OBSERVATORIES REPORTING FOR JANUARY 1983\*

Ayrshire, Scotland (AY)	SES	Lintong, China (LT)	SPA
Darmstadt, GFR (DA)	SWF	Maui, Hawaii, USA (MI)	SWF
Edenvale, South Africa (A52)	SES	Missoula, Montana, USA (A31)	SES, SWF
Glenorchy, Tasmania, Australia (GN)	SES	Panska Ves, Czechoslovakia (PU)	SEA, SWF
Hiraiso, Japan (HI)	SWF	Portage, Michigan, USA (A51)	SES
Hobart, Tasmania, Australia (TA)	SEA	San Antonio, Texas, USA (SA)	SES
Houston, Texas, USA (A50)	SES	St. Cloud, Minnesota, USA (SC)	SES
Huancayo, Peru (HU)	SWF	Tavares, Florida, USA (A49)	SES
Inubo, Japan (IN)	SPA	Trenton, New Jersey, USA (NJ)	SES
Jullusruh, GDR (JU)	SWF	Uplce, Czechoslovakia (UI)	SEA
Kuhlungsborn, GDR (KU)	SPA, SEA	Valley Cottage, New York, USA (A01)	SES
Lake Hiawatha, New Jersey, USA (A32)	SES	Vsetin, Czechoslovakia (VS)	SEA
Latrobe, Pennsylvania, USA (A19)	SES	Walla Walla, Washington, (USA) (A55)	SES

\*Observations are not necessarily continuous for each reporting station.

SIDs by NOAA/SESC REGION

Day	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
Region Number																															
4033	4	1																													
4041							1																								
4046									3																						
4048				1			1																								
4051							2																								
4053								2	1																						
4054									1																						
4060																						1									
4061															1																
4064																2	3														
4070																														1	
4072																															1
4075																											2		2		
X-Ray	1		1	2				2			1					1							1	1	1				1		
No Flare							3			1			1	3		1	1		2			2		1	2	2	3	1			
No Flare Patrol					1								1		1	1						2	1			2					
No Data					1	1						3	2					1			1	1		1						1	
Event Totals	4	2	0	1	4	2	7	4	5	1	1	3	2	2	4	4	5	2	0	2	1	2	5	3	2	2	6	3	5	1	1

SOLAR RADIO EMISSION  
SPECTRAL OBSERVATIONS

JANUARY 1983

Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)		
01	0000	0735	CULG				0002.5	0638.5	1				IIIN	
			LEAR				0028.6	0030.3	1				III	
				CULG				0131.0		2			IIIB,U	
				LEAR				0131.1	0131.3	1			III	
				LEAR				0148.6	0149.1	2			III	
				CULG				0149.0		3			IIIG	
				CULG	0210.0	0213.0	1						IS	
				CULG				0321.5	0323.0	3			IIIG,V	
				LEAR				0321.6	0326.1	2			III	
				LEAR				0402.3	0403.0	1			III	
				CULG				0402.5	0403.0	3			IIIG,U	
				LEAR				0442.6	0443.1	1			III	
				LEAR				0524.3	0524.8	1			III	
				CULG				0529.5	0330.0	3			IIIG	
				LEAR				0529.8	0524.8	1			III	
				LEAR				0529.8	0530.8	2			V	
				LEAR				0625.5	0630.0	1			III	
				CULG				0629.5		2			IIIB	
				LEAR				0827.5	0827.6	1			III	
		0757	1455	WEIS				0828.6	0828.8	2			IIIB	
				WEIS				0912.8	0918.8	3			IIIGG	
		0830	1455	BLEN				0913.5	1455.0D	2			IN	
				LEAR				0913.5	0918.1	2			III	
				WEIS				1144.3	1146.0	3			IIIGG	
				WEIS				1151.4	1155.3	3			IIIGG	
				WEIS				1217.2	1217.3	1			IIIB	
				WEIS				1220.9	1221.3	1			IIIB	
				WEIS				1222.7	1222.9	2			IIIG	
				WEIS				1246.8	1247.1	2			IIIG	
				WEIS				1344.0	1344.2	1			IIIB	
				WEIS				1358.9	1359.2	1			IIIB	
				WEIS				1406.5	1406.6	2			IIIB	
				SGMR				1444.6	1445.1	1			V	
				WEIS				1444.8	1445.3	3			IIIB	
				PALF				1958.1	1959.0	2			III	
			SGMR				1958.6	1958.8	1			III		
	2036	2400	CULG				2118.0	2146.0	1			IIIN		
			CULG				2257.5	2258.5	1			IIIG		
			CULG				2311.5	2327.5	1			II		
			LEAR				2320.6	2323.8	1			UNCLF		
02			LEAR				0042.8	0047.1	1			III		
			LEAR				0112.8	0117.1	1			III		
		0000	0717	CULG				0113.0		2		IIIB		
				CULG				0116.5		1		IIIB		
				LEAR				0142.8	0147.1	1			III	
				CULG	0158.0	0200.0	1	0158.5	0200.0	1			IS	
				CULG				0207.5	0210.5	1			II	
				LEAR				0207.6	0211.6	1			II	
				LEAR				0417.3	0418.6	1			III	
				CULG				0417.5	0416.5	2			IIIG,U	
				CULG				0610.5	0630.0	2			IIIN	
				LEAR				0611.5	0614.3	1			III	
		0757	1456	WEIS										
		0830	1450	BLEN										
				SGMR				1542.1	1542.6	1			V	
		2036	2400	CULG										
	03	0000	0736	CULG				0038.0		2			IIIB,U	
				LEAR				0347.3	0347.8	1			III	
				CULG				0347.5		1			IIIB	
				CULG				0458.5	0459.5	1			IIIG	
				LEAR				0650.8	0651.8	1			III	
				CULG	0651.0		1	0651.0	0651.5	3			IIIG	
			0757	1322	WEIS									
			0850	1450	BLEN									
			1326	1457	WEIS									
				LEAR				2317.6	2317.8	1			III	
				CULG				2324.5		1			IIIB	
				CULG				2338.5		1			IIIB	
04		0000	0736	CULG				0002.0	0450.5	1			IIIN	

SOLAR RADIO EMISSION  
SPECTRAL OBSERVATIONS

93  
Jan 83

JANUARY 1983

Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)		
04			LEAR				0004.0	0004.1	1				III	
			LEAR				0137.3	0137.6	1				III	
			LEAR				0156.8	0200.3	2				III	
			CULG				0158.5	0200.0	3	0159.0	0201.0	2	IIIG	
			LEAR				0324.8	0325.3	1				III	
			CULG				0325.0	0353.0	2				IIIN	
			LEAR				0329.8	0330.6	2				III	
			LEAR				0339.1	0339.3	1				III	
			LEAR				0353.3	0356.6	2				III	
			CULG				0353.5	0355.5	3	0354.5	0356.0	2	IIIG,V	
			CULG				0657.0	0657.5	1				IIIG	
			LEAR				0657.1	0657.5	1				III	
			LEAR				0749.3	0749.5	1				III	
		0850 1020		BLEN										
				LEAR				0924.8	0925.1	1				III
	0757 1458		WEIS				1146.8	1146.9	2				IIIB	
			WEIS				1416.2	1416.7	2				IIIG	
			WEIS				1424.9	1425.1	1				IIIB	
			SGMR				1430.6	1431.0	1				V	
			WEIS				1430.8	1431.5	3				IIIG	
			WEIS				1437.7	1438.6	1				IIIG	
	2037 2400		CULG				2147.0		1				IIIG,U	
			CULG				2310.5	2311.0	1				IIIB,Z	
			LEAR				2310.6	2310.8	1				III	
05	0000 0737		CULG				0046.0	0544.0	1				IIIN	
			LEAR				0046.0	0046.3	1				III	
			LEAR				0116.6	0117.1	1				III	
			LEAR				0157.3	0159.3	1				III	
			LEAR				0256.1	0258.3	1				III	
			CULG				0324.5	0325.5	3				IIIG	
			LEAR				0324.6	0326.1	2				III	
			LEAR				0404.1	0404.8	1				III	
			LEAR				0422.8	0423.5	1				III	
			CULG				0555.0	0557.0	3	0555.5	0557.0	2	IIIG,V	
			CULG				0558.5		3				IIIB	
		0756 1449		WEIS				0803.7	0803.9	1				IIIB
				WEIS				1149.9	1150.3	2				IIIG
				WEIS				1231.7	1231.9	1				IIIB
				SGMR				1321.5	1322.8	1				V
				WEIS				1321.6	1323.6	3				IIIG
		1228 1500		BLEN				1331.5	1332.4	3				I
				PALE				1851.0	1851.6	2				III
			SGMR				1851.0	1851.6	2				V	
			PALE				2036.1	2037.6	2				V	
			SGMR				2036.1	2037.1	1				V	
	2037 2400		CULG				2037.0	2038.0	2				IIIG,V	
			CULG				2249.5	2250.0	1				IIIG	
06	0000 0737		CULG											
			LEAR				0208.5	0208.6	1				III	
	0830 1036		BLEN				0847.0	1036.0	1				IN	
	1120 1235		BLEN											
	0756 1218		WEIS				1120.5	1120.7	2				IIIB	
	1251 1459		WEIS				1403.2	1403.3	1				IIIB	
			WEIS				1442.8	1450.0	2				I	
			PALE				1851.8	1855.8	2				III	
			PALE				1858.6	1904.3	2				III	
			PALE				2031.5	2036.3	2				III	
		2039 2400		CULG				2037.0	2057.5	2				IIIG
				PALE				2047.3	2050.3	3				III
				PALE				2052.8	2056.8	3				III
				CULG				2213.0		2				IIIB
	07	0000 0738		CULG										
			LEAR				0652.8	0653.3	1				III	
			LEAR				0833.8	1055.0	1				CONT	
0756 1501			WEIS				1130.1	1130.2	1				IIIB	
			WEIS				1142.3	1150.6	2				IIIGG	
			WEIS				1154.9	1155.2	2				IIIG	
		WEIS				1157.3	1205.3	1				IIIG		

94  
Jan 83

SOLAR RADIO EMISSION  
SPECTRAL OBSERVATIONS

JANUARY 1983

Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type		
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)			
07	1228	1500	BLEN				1232.1	1232.3	2				III B		
			WEIS				1237.1	1237.3	1				III G		
	2038	2400	WEIS				1248.3	1248.8	1				III G		
			CULG				2038.5	2142.0					IS, W		
			CULG				2220.0	2237.0	1				III N		
08	0000	0738	CULG				0231.5	0301.0	2				III N		
			LEAR				0254.3	0301.3	1				G		
			LEAR				0254.3	0301.3	1				III		
			CULG				0421.0	0422.0	2				III G		
			LEAR				0421.1	0429.0	1				III		
			CULG				0508.5		2				III B		
			CULG				0527.5	0528.5	2				III G		
			CULG				0615.5	0624.0	2				III N		
	0830	1350	0755	LEAR				0714.5	0715.8	1				III	
				LEAR				0825.5	0827.1	1				III	
				BLEN											
				WEIS				0905.6	0907.0	2				III GU	
				LEAR				0906.8	0907.0	1				III	
				WEIS				0930.9	0931.2	2				III G	
				LEAR				0931.0	0931.3	1				III	
				CULG				2055.0		1				III B	
2040	2400		LEAR				2156.6	2201.3	1				III		
			CULG				2206.0	2210.5	1				III S		
			CULG				2344.5	2345.0	1	2344.5	2345.0	1	III G		
			LEAR				2344.6	2344.8	1				III		
09	0000	0659	LEAR				0417.3	0418.3	1				III		
			CULG				0418.0		1				III B		
			LEAR				0748.8	0750.1	1				III		
			LEAR				0902.3	0903.3	1				III		
	0754	1129		WEIS				0902.3	0903.2	2				III G	
				LEAR				1005.1	1006.1	1				III	
				WEIS				1005.3	1006.2	3				III GU	
	2039	2400		CULG			2351.0		1			III B			
	10	0000	0439	CULG											
		0754	1506	WEIS											
2040		2400	CULG												
11	0000	0733	CULG												
	0753	1506	WEIS												
	2041	2400	CULG												
12	0000	0740	CULG				0304.0	0304.5	2				III G		
	0753	1032	WEIS												
	1036	1204	WEIS												
	1221	1300	WEIS												
	1310	1508	WEIS				1320.0	1320.8	1				III G		
				WEIS				1322.7	1323.0	1				III G	
				WEIS				1455.4	1455.7	1				III G	
2040	2400	CULG													
13	0000	0730	CULG				0202.5		2				III G		
			LEAR				0202.5	0207.8	1				III		
			CULG				0206.5	0207.6	1				III G		
			LEAR				0414.3	0418.8	1				III		
			CULG				0414.5	0415.0	3				III B, U		
			CULG				0418.5		1				III B, U		
			LEAR				0504.8	0507.3	1				III		
			CULG				0505.0	0507.0	2				III G		
	0756	1508	2040	CULG				0608.0	0609.0	1				III G	
				LEAR				0608.6	0608.8	1				III	
				LEAR				0636.3	0636.8	1				III	
				CULG				0636.5		1				III G	
				CULG				0723.5	0724.0	1				III G	
				LEAR				0723.5	0723.6	1				III	
				WEIS				1307.9	1309.1	1				III G	
				CULG				2053.5	2155.0	1				III N	
14			LEAR				0210.8	0211.0	1				III		

SOLAR RADIO EMISSION  
SPECTRAL OBSERVATIONS

95  
Jan 83

JANUARY 1983

Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)		
14	0000	0741	CULG				0211.0	0532.0	1				IIIN	
			LEAR				0213.0	0213.8	1				V	
				LEAR				0250.0	0254.3	1			III	
				CULG				0258.5		2			IIIB	
				LEAR				0352.1	0352.5	1			III	
				CULG				0352.5		2			IIIG	
	0755	1513	WEIS											
	2041	2400	CULG				2055.0	2055.5	1				IIIB	
			PALE				2101.0	2109.1	2				III	
	15	0000	0741	CULG				0052.0	0055.0	1				II H
LEAR							0052.6	0053.3	1				III	
LEAR							0148.3	0150.5	1				III	
CULG							0148.5	0215.0	1				IIIN	
CULG							0509.0	0519.0	1				IIIN	
LEAR							0518.6	0518.8	1				III	
0811		0837	WEIS											
0905		1545	WEIS											
			PALE				1948.5	1948.6	1				III	
2041		2400	CULG				2046.0		1				IIIB	
16	0000	0742	CULG				0121.5	0122.0	3				IIIG,U	
			LEAR				0121.5	0122.0	2				III	
			LEAR				0200.8	0201.3	1				III	
			CULG				0201.0	0201.5	1				IIIG	
			CULG				0409.5		1				IIIB	
			LEAR				0435.3	0436.1	2				III	
			CULG				0435.5	0436.0	3				IIIG	
			CULG				0532.5	0533.5	2				IIIG	
			LEAR				0532.6	0533.3	1				III	
			LEAR				0605.3	0606.0	1				III	
			CULG				0605.5	0606.0	1				IIIG	
			LEAR				0627.6	0630.1	1				III	
			CULG				0628.0	0629.5	1				IIIG	
			LEAR				0830.8	0831.1	2				III	
	1000	1515	WEIS											
	2047	2400	CULG				2159.5		2				IIIB,U	
			CULG				2300.5	2301.0	3				IIIG,U	
			CULG	2301.0	2302.0	2							DCIM	
		CULG				2301.5	2302.0	1				IIIG		
17	0000	0742	CULG				0103.0	0233.0	1				IIIN	
			WEIS				1134.2	1137.9	2				IIIGG	
	0802	1520	CULG				2110.0		1				IIIB	
			CULG				2118.5	2119.5	3				IIIG,V	
	2042	2400	CULG				2137.0	2343.0	1				IIIS	
			CULG				2150.0	2400.0	1				IS	
			CULG				2156.0		2				IIIB	
			LEAR				2326.1	2327.1	1				III	
	18	0000	0742	CULG				0000.0	0148.5	1				IS,DC
				CULG				0101.0	0403.0	1				IIIN
LEAR							0122.3	0122.8	1				III	
CULG							0139.5	0140.5	2				IIIG,U	
LEAR							0139.5	0140.6	1				III	
LEAR							0300.3	0301.6	1				III	
CULG							0342.0	0430.0	1				IS,DC	
LEAR							0351.3	0434.0	1				CONT	
CULG							0408.0	0418.5	1				IIIS	
LEAR							0754.8	0755.1	1				III	
LEAR							0847.0	0847.1	1				III	
0756				1517	WEIS				1332.7	1333.7	3			
2042	2400	CULG												
19	0000	0742	CULG				0240.0	0241.0	1	0240.0	0240.5	1	IIIG	
			CULG				0319.5		1				IIIB	
			LEAR				0319.5	0320.1	1				III	
			LEAR				0530.6	0531.3	1				III	
			CULG				0531.0		1				IIIB	
			CULG				0619.0	0619.5	1				IIIG	
			LEAR				0715.8	0716.1	1				III	



SOLAR RADIO EMISSION  
SPECTRAL OBSERVATIONS

JANUARY 1983

Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
19			LEAR				0743.0	0743.3	1				III
			LEAR				0828.6	0846.0	1				II
	0747	1519	WEIS				0831.3	0835.8	2				II
	2042	2400	CULG										
20			LEAR				0243.0	0244.5	1				UNCLF
	0000	0743	CULG				0649.0		1				IIIB
	0746	1256	WEIS										
	0830	1530	BLEN										
	1300	1520	WEIS										
	2043	2400	CULG				2101.5	2219.0	1				IIIN
21	0000	0703	CULG				0041.0		1				IIIB
			CULG	0058.5	0142.0								IS,W
			LEAR				0135.0	0300.0	1				CONT
			CULG				0305.0		1				IIIB
			CULG				0606.0		1				IIIB
	0744	1520	WEIS										
	0830	1530	BLEN										
	2045	2400	CULG				2058.0		1				IIIB
			CULG	2122.5	2234.0	1							IN
			CULG	2339.0	2400.0	1	2327.5	2332.5	1				IIIN
22	0000	0743	CULG	0000.0	0141.5	1	0002.0	0133.5	1				IS
			CULG				0335.0		2				IIIB
			LEAR				0335.1	0341.6	1				III
			CULG				0340.5	0341.5	2				IIIG
			CULG				0732.5		1				IIIB,U
			LEAR				0732.6	0737.1	1				III
			CULG				0737.0		1				IIIB,U
	0825	1535	BLEN				0838.0	1535.0	1				IN
			LEAR				0846.8	0847.5	1				III
	0743	1523	WEIS				0847.0	0847.3	1				IIIB
			LEAR				0923.6	0924.0	1				III
			WEIS				1038.4	1041.0	3				IIIGGU
			BLEN				1039.2	1040.1	3				IIIG
			WEIS				1118.8	1119.0	1				IIIB
			WEIS				1158.8	1159.1	2				IIIG
			WEIS				1204.8	1205.1	2				IIIB,U
			WEIS				1332.8	1333.1	3				IIIB
			WEIS				1358.7	1359.1	2				U
			WEIS				1407.3	1408.6	2				IIIG
	2044	2400	BLEN				1408.3	1408.6	2				IIIG
		CULG				2249.5	2250.0	3	2250.0		1	IIIB,U	
		LEAR				2348.3	2350.1	1				III	
		CULG				2348.5	2350.5	3	2349.0	2350.5	1	IIIG,U	
		CULG	2348.5	2349.5	1							IS	
23	0000	0743	LEAR				0210.3	0210.6	1				III
			CULG				0210.5		1				IIIB,U
			LEAR				0336.3	0336.6	1				III
			CULG				0336.5		2	0336.5		1	IIIB
			CULG				0451.5		1				IIIB,U
			CULG				0556.5		2				IIIB
			CULG				0642.0		1				IIIB,U
	0743	0935	WEIS										
	0825	1535	BLEN				0949.5	0949.8	2				I
	1009	1525	WEIS				1051.6	1051.7	1				IIIB
			BLEN	1114.3	1114.5	2							DCIM
			WEIS				1122.2	1123.0	1				IIIG
			WEIS				1126.9	1128.1	3				IIIGG
			BLEN	1158.5	1158.6	1							DCIM
			BLEN				1414.5	1423.4	3				IIIG
	2044	2400	CULG	2114.5	2115.0	3	2114.5	2115.5	3				IIIG,V
			PALE				2114.6	2115.1	1				III
		CULG				2144.5	2346.0	1				IIIN	
		LEAR				2226.6	2228.3	1				III	
		CULG	2228.0	2228.5	2	2225.5	2230.0	3				IIIG,N	
		CULG	2237.0		2	2237.0		2				IIIB,U	
		LEAR				2320.3	2320.8	1				III	

SOLAR RADIO EMISSION  
SPECTRAL OBSERVATIONS

97  
Jan 83

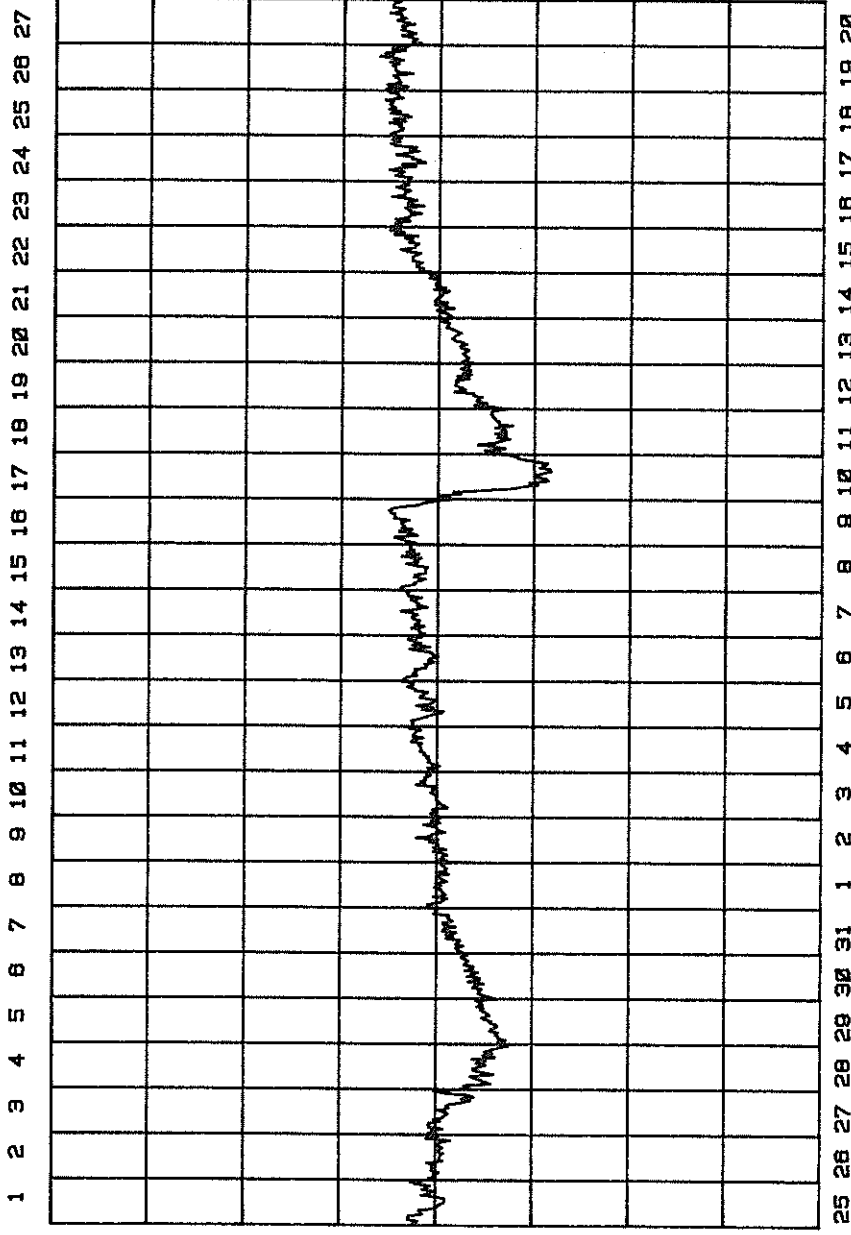
JANUARY 1983

Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
23			CULG				2320.5	2321.0	2				IIIG
			LEAR				2345.3	2346.3	1				III
			LEAR				2348.3	2350.1	1				III
24			LEAR				0029.8	0030.6	1				III
			LEAR				0149.1	0152.3	1				III
	0000	0744	CULG	0151.0	0151.5	1	0149.5	0151.5	1				IIIG,U
			LEAR				0239.8	0240.5	1				III
	0000	0744	CULG				0240.5		1				IIIB
			CULG				0445.5		1				IIIB
			CULG				0511.5		2				IIIB
	0742	1526	WEIS				1033.6	1033.8	1				IIIB
	0820	1540	BLEN				1122.2	1122.5	3				IIIB
	2044	2400	CULG										
		LEAR				2345.3	2346.3	1				III	
25	0000	0744	CULG										
	0820	1540	BLEN										
	0740	1428	WEIS				1002.8	1003.1	2				IIIB
	1435	1528	WEIS										
	2105	2400	CULG										
26	0000	0744	CULG										
	0738	1516	WEIS										
	0820	1206	BLEN										
	2111	2400	CULG										
27	0000	0744	CULG										
	0737	1539	WEIS										
	1313	1540	BLEN				1337.0	1430.0	2				IN
	2045	2400	CULG										
28	0000	0745	CULG										
	0735	1038	WEIS										
	0820	1540	BLEN				0825.0	1540.0	3				IN
	1043	1249	WEIS										
	1310	1536	WEIS										
	2045	2400	CULG	2045.0	2143.5	1							IN
29	0000	0745	CULG	0012.0		2	0012.0		2				IIIG
			CULG	0533.5		1	0533.5		3				IIIG,U
	0733	1538	WEIS										
	0820	1540	BLEN				0920.0	1412.0	1				IN
	2045	2400	CULG	2200.0	2400.0	1	2113.0	2400.0	1				IS
30	0000	0745	CULG	0000.0	0735.0	1	0000.0	0745.0	1				IS
	0732	1538	WEIS										
	0820	1540	BLEN				0820.0	1540.0	2				IN
	2045	2400	CULG				2059.0	2116.0	1				IIIN
	2036	2400	CULG				2317.5		2				IIIB
31			LEAR				0411.8	0414.3	2				III
	0000	0745	CULG				0412.0	0414.5	3	0412.5	0414.0	2	IIIG,V
	0752	1541	WEIS										
	0810	1540	BLEN				0945.0	1450.0	1				IN
	2047	2400	CULG	2047.0	2229.0								IS,W
			CULG				2152.5	2155.0	1				IIIN
			CULG	2229.0	2315.0	1							IS
			CULG	2315.0	2336.0								IS,W
		CULG				2336.0		1				IIIB	

The symbols used under the column heading SPECTRAL TYPE have the following definitions:

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

# THULE NEUTRON MONITOR



105%  
100%  
95%

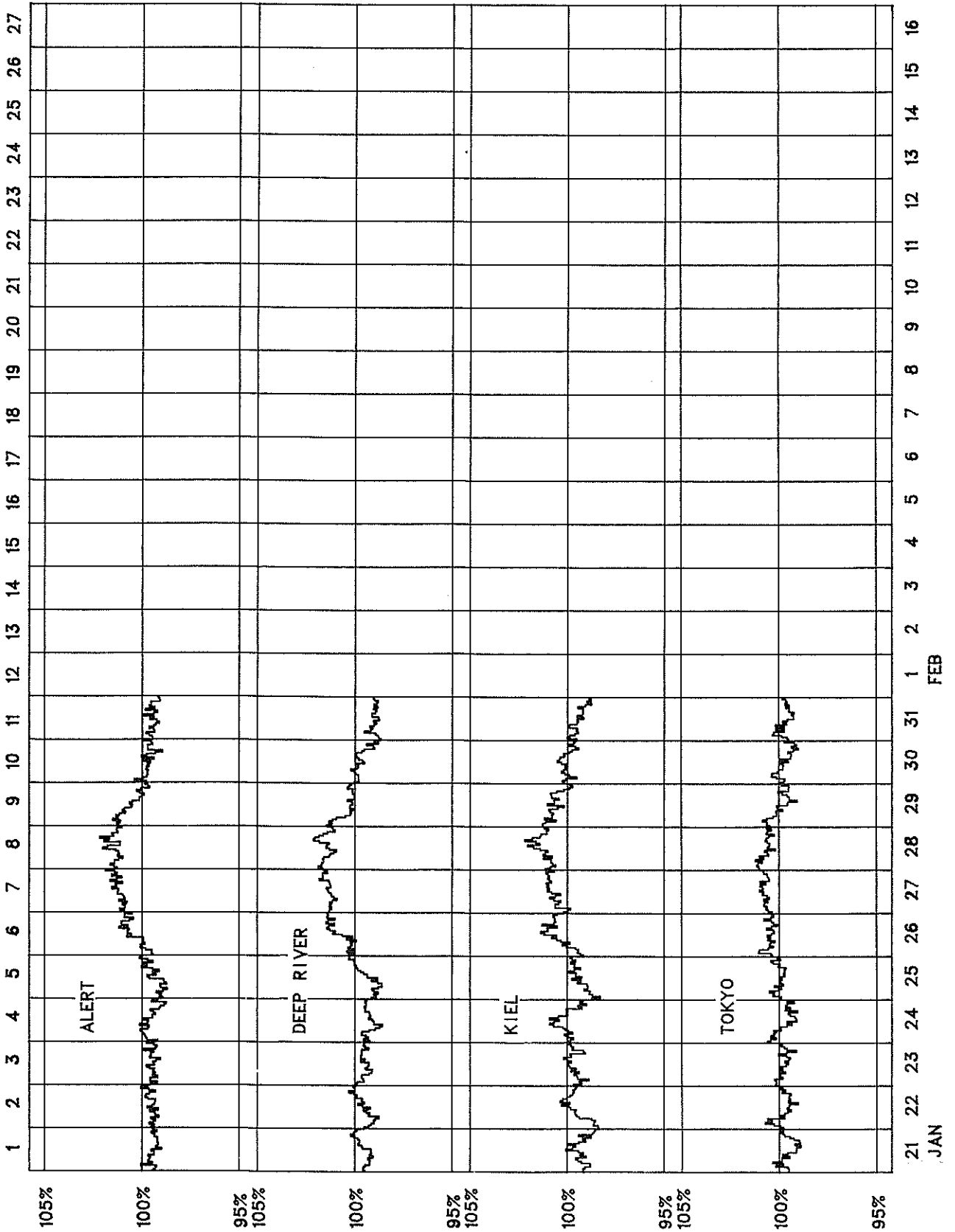
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BARTELS ROTATION 2042



### COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2043 (January 8301-February 8302)



COSMIC RAY INDICES  
(Neutron Monitor)  
January 1983

Day	THULE		ALERT		DEEP RIVER		KIEL		CLIMAX		TOKYO		HUANCAYO	
	Average (cts/h)/100	Average (cts/h)/100	Average (cts/h)/100	Average (cts/h)/300	Average (cts/h)/100	Average (cts/h)/100	Average (cts/h)/100	Average (cts/h)/100	Average (cts/h)/100	Average (cts/h)/100	Average (cts/h)/100	Average (cts/h)/100	Average (cts/h)/100	Average (cts/h)/100
1	3895	6284.4	5982.2	5405.1	5405.1	5405.1	5405.1	5405.1	5405.1	5405.1	5405.1	5405.1	5405.1	5405.1
2	3904	6296.6	5995.9	5406.7	5406.7	5406.7	5406.7	5406.7	5406.7	5406.7	5406.7	5406.7	5406.7	5406.7
3	3913	6318.6	6014.5	5420.0	5420.0	5420.0	5420.0	5420.0	5420.0	5420.0	5420.0	5420.0	5420.0	5420.0
4	3934	6367.1	6040.4	5433.8	5433.8	5433.8	5433.8	5433.8	5433.8	5433.8	5433.8	5433.8	5433.8	5433.8
5	3935	6362.3	6031.3	5433.6	5433.6	5433.6	5433.6	5433.6	5433.6	5433.6	5433.6	5433.6	5433.6	5433.6
6	3938	6382.2	6047.4	5439.3	5439.3	5439.3	5439.3	5439.3	5439.3	5439.3	5439.3	5439.3	5439.3	5439.3
7	3950	6384.4	6025.7	5453.5	5453.5	5453.5	5453.5	5453.5	5453.5	5453.5	5453.5	5453.5	5453.5	5453.5
8	3950	6381.1	6055.5	5462.7	5462.7	5462.7	5462.7	5462.7	5462.7	5462.7	5462.7	5462.7	5462.7	5462.7
9	3968	6399.0	6108.0	5472.3	5472.3	5472.3	5472.3	5472.3	5472.3	5472.3	5472.3	5472.3	5472.3	5472.3
10	3742	6043.5	5745.0	5218.8	5218.8	5218.8	5218.8	5218.8	5218.8	5218.8	5218.8	5218.8	5218.8	5218.8
11	3784	6120.0	5785.5	5275.9	5275.9	5275.9	5275.9	5275.9	5275.9	5275.9	5275.9	5275.9	5275.9	5275.9
12	3844	6212.8	5907.6	5353.6	5353.6	5353.6	5353.6	5353.6	5353.6	5353.6	5353.6	5353.6	5353.6	5353.6
13	3866	6261.8	5960.9	5395.2	5395.2	5395.2	5395.2	5395.2	5395.2	5395.2	5395.2	5395.2	5395.2	5395.2
14	3902	6298.2	5987.3	5447.6	5447.6	5447.6	5447.6	5447.6	5447.6	5447.6	5447.6	5447.6	5447.6	5447.6
15	3963	6409.4	6042.8	5502.9	5502.9	5502.9	5502.9	5502.9	5502.9	5502.9	5502.9	5502.9	5502.9	5502.9
16	3971	6387.6	6059.0	5469.4	5469.4	5469.4	5469.4	5469.4	5469.4	5469.4	5469.4	5469.4	5469.4	5469.4
17	3976	6404.0	6072.0	5469.0	5469.0	5469.0	5469.0	5469.0	5469.0	5469.0	5469.0	5469.0	5469.0	5469.0
18	3993	6407.0	6100.9	5499.4	5499.4	5499.4	5499.4	5499.4	5499.4	5499.4	5499.4	5499.4	5499.4	5499.4
19	3993	6411.8	6133.5	5530.4	5530.4	5530.4	5530.4	5530.4	5530.4	5530.4	5530.4	5530.4	5530.4	5530.4
20	3980	6436.9	6116.1	5539.6	5539.6	5539.6	5539.6	5539.6	5539.6	5539.6	5539.6	5539.6	5539.6	5539.6
21	3979	6452.5	6129.4	5526.7	5526.7	5526.7	5526.7	5526.7	5526.7	5526.7	5526.7	5526.7	5526.7	5526.7
22	3978	6459.5	6127.3	5541.0	5541.0	5541.0	5541.0	5541.0	5541.0	5541.0	5541.0	5541.0	5541.0	5541.0
23	3989	6456.0	6125.9	5550.1	5550.1	5550.1	5550.1	5550.1	5550.1	5550.1	5550.1	5550.1	5550.1	5550.1
24	3998	6462.0	6111.2	5569.6	5569.6	5569.6	5569.6	5569.6	5569.6	5569.6	5569.6	5569.6	5569.6	5569.6
25	3983	6448.7	6118.2	5532.1	5532.1	5532.1	5532.1	5532.1	5532.1	5532.1	5532.1	5532.1	5532.1	5532.1
26	4039	6516.1	6202.4	5592.2	5592.2	5592.2	5592.2	5592.2	5592.2	5592.2	5592.2	5592.2	5592.2	5592.2
27	4061	6569.2	6238.1	5609.0	5609.0	5609.0	5609.0	5609.0	5609.0	5609.0	5609.0	5609.0	5609.0	5609.0
28	4074	6584.0	6248.0	5638.5	5638.5	5638.5	5638.5	5638.5	5638.5	5638.5	5638.5	5638.5	5638.5	5638.5
29	4047	6528.5	6180.5	5606.2	5606.2	5606.2	5606.2	5606.2	5606.2	5606.2	5606.2	5606.2	5606.2	5606.2
30	4003	6472.8	6136.2	5571.1	5571.1	5571.1	5571.1	5571.1	5571.1	5571.1	5571.1	5571.1	5571.1	5571.1
31	3988	6455.1	6093.1	5535.6	5535.6	5535.6	5535.6	5535.6	5535.6	5535.6	5535.6	5535.6	5535.6	5535.6
MEAN	3953	3586.3	6062.0	5480.7	5480.7	5480.7	5480.7	5480.7	5480.7	5480.7	5480.7	5480.7	5480.7	5480.7

Data not available at time of publication.

Data not available at time of publication.

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax and Huancayo, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours.

GEOMAGNETIC ACTIVITY INDICES

JANUARY 1983

Day	K <sub>p</sub> Three-Hourly Indices									Sum	A <sub>p</sub>	C <sub>p</sub>	K <sub>m</sub> Three-Hourly Indices								A <sub>m</sub>	N	aa		M
	1	2	3	4	5	6	7	8					1	2	3	4	5	6	7	8			S		
1	2+	4-	3-	2-	2-	3-	3-	3-	20	11	0.7	2	3-	2	1+	2-	3-	3	3-	19	19	16	17	19	
2	Q4A	2-	2+	2-	3-	2-	2-	2-	15	7	0.4	2-	2+	2+	2-	3	2+	2	2+	18	11	20	14	18	
3		2-	1+	3-	3+	4	2+	2	1+	19	11	0.6	2-	1+	3	3-	4	3-	2	23	16	22	16	22	
4		2-	1+	2-	2+	3+	2	3-	3-	18	9	0.5	1+	1	2	3-	3	2	3-	18	17	18	13	23	
5	Q3K	1	0+	2-	2+	3	2	1-	1-	12	6	0.3	1-	0+	2-	2	3	2+	1	12	11	13	10	15	KK
6	Q1	1-	0+	1	0+	1-	1+	1	1	6+	3	0.1	1-	0+	1+	1	1	1+	1+	7	5	7	5	8	CC
7	Q2	2-	1	1-	1	1+	1	1-	1-	8	4	0.1	1+	1+	1-	1+	2-	1+	1-	8	7	8	7	8	CC
8	Q8A	2-	2+	1	1+	3	2	3-	3-	17-	9	0.5	1+	2	1+	2	3	3	3-	18	17	17	12	23	
9		3+	2+	2+	3-	2	5+	3	4+	25+	20	1.0	3-	2	2+	3	2	5	3+	37	36	39	23	51	
10	D1	7+	8+	7	5	3+	3	2+	3	39	78	1.8	6+	7	6+	5-	4	3+	3-	111	93	89	156	27	
11		1	2	3	1+	2+	3-	2	4+	19-	11	0.7	1	2+	3	2	2+	2	2+	25	17	25	16	27	
12		4	4	4	3+	3+	2+	3-	2+	26-	18	1.0	4+	4	3	3	3	3-	2+	31	30	34	41	23	
13	Q6A	3-	3-	2	0+	1+	3	2+	2+	16+	8	0.5	2+	2	2	0+	2-	3-	2+	17	12	15	12	15	C
14	Q7A	2-	2+	2	1+	2+	1+	2	3+	16+	8	0.4	1+	2-	2	1+	3-	2	2+	17	17	16	11	23	
15	D5	4+	3+	3+	2+	3+	5-	4	3+	28+	22	1.1	3+	3-	3	3-	3+	5-	4	40	46	40	35	51	
16	D4	3+	4+	4	4+	4	4	4	2	30	25	1.2	3-	4	3	4	4	4	4+	43	45	36	43	38	
17	D3	4+	3-	3-	4	5-	3+	4	4+	30	25	1.2	3	2+	3	4-	5-	3	4	43	57	35	31	60	
18	D2	5-	4	4	5+	4+	4	4	4	34	32	1.3	4	3	3	5-	4	3+	4	47	64	41	55	50	
19		2+	4	4	3+	4+	3	2	2+	25-	17	0.9	2	3-	3-	3	4	3	3-	28	29	28	26	32	
20		3+	3+	3	3+	1	1+	3+	3-	21+	14	0.8	3	2+	2+	3-	2-	2-	3	20	27	14	24	18	
21		3	4	2+	1+	3-	2	3+	2	20+	12	0.7	2+	3-	2	2-	3	2+	3	19	24	17	20	22	
22	Q5A	2	2-	3	2	2+	1+	2	1+	16-	8	0.4	1+	1+	3-	2+	3-	2-	2	14	14	11	13	12	C
23	Q9A	1	3-	1+	1+	1	1	3	4	15+	10	0.5	1-	2-	1	1+	1+	1+	3	15	17	11	8	21	
24		3	4	3-	2+	3+	3+	4	5	28-	22	1.1	2+	3	2+	3-	3	3+	4	33	43	26	18	52	
25		3+	3+	3	3+	3	3	4	3-	25	16	0.9	3-	3-	2+	3	3	3	4	26	30	26	24	33	
26		3-	3-	3-	3+	3	3	3-	1	21	12	0.7	2+	2	2	3	3+	3	3-	23	22	26	20	29	
27		2+	3	3	2	2-	2-	3+	1	18	10	0.6	2-	2+	2+	2	2-	3	3	18	20	14	18	17	
28	Q0A	1-	0	2-	1	2+	3	3-	4	15+	10	0.5	1-	0	2-	1	3-	3	3	19	17	24	9	32	
29		3-	3-	1+	1+	3+	5	3+	3-	22+	16	0.9	3-	3-	2+	1	2-	3+	5-	30	30	30	15	45	
30		2+	3+	3+	5-	4	3	2+	3	26	19	1.0	2	3-	3+	4	4	3-	2	30	27	30	34	23	
31		3+	4	2+	2	3	2+	3	2+	22	13	0.7	3-	3-	2-	2-	3	3-	3	22	27	19	19	28	
Mean											16	0.75								26.8	27.4	24.8	26.2		

Day	K <sub>n</sub> Three-Hourly Indices								A <sub>n</sub>	K <sub>s</sub> Three-Hourly Indices								A <sub>s</sub>						
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8							
1	2	3	3-	1+	2-	2+	3-	2+	18	2+	2	2-	2-	2	3	3+	3	20						
2	1+	2	2	1+	3	2+	2-	1+	15	2	3-	3-	2+	3	2	3-	3	21						
3	1+	1	3	2+	4	3-	2-	1+	21	2	2	3	3	4	3-	2	3-	24						
4	1	1	2+	3-	3+	2	3-	2	19	1+	1	2	2+	3	2	3-	3-	17						
5	0+	0	2-	2+	3+	2+	1	0+	13	1	0+	2-	2	3-	2	1	1	11						
6	0	0	1	0+	1+	1+	1+	1-	6	1+	1-	2-	1+	1	1	1+	1+	9						
7	1	1-	1	2-	2-	1+	1	1	8	1+	2-	1-	1+	2	2-	1-	1+	9						
8	1+	2	1-	2-	5	2	3-	3-	16	1+	2	2-	2+	3+	2	3+	3-	20						
9	3	2-	2-	3-	2	5+	3	4-	34	3	2+	3-	3	2	5-	4	5-	41						
10	6	7+	6	5-	3+	3+	3-	3	103	7-	7	7-	5-	4-	4-	3-	3-	119						
11	1-	2	3	2-	2+	2	2+	4-	20	1+	3-	3+	2+	2+	2+	3-	5	30						
12	4	3+	3	3	3	3-	2+	2+	30	5-	4	3+	3-	3	2+	2+	2	32						
13	2+	2	2	0	1+	3-	3-	3-	16	3-	2	2	1	2	3	2+	3-	18						
14	2-	2-	3-	1	3-	3-	2+	3	18	1+	2	2-	2-	3-	1+	3-	3	16						
15	3+	2+	3-	3-	3+	5-	4	3	37	3+	3	3+	3-	4-	5-	4+	3+	42						
16	3	4	3	4+	4-	4	4	2	43	2+	4	3	4	4	3+	4+	3-	42						
17	3+	3-	3-	3+	5-	3+	4+	4	44	3-	2	3-	4-	5	3	4	4	42						
18	4	3	3	5	4	3+	4	4-	48	3+	3+	3	4	4	3+	4	4	45						
19	2	3-	3-	3	4+	3	3-	2+	29	2	2+	3-	3	4	3	3-	3	27						
20	3	3	2+	3	2-	2	3	2	21	3+	2	2	3-	2	2	3	2	20						
21	2+	3	2	1+	3	2+	3	2-	21	3-	2	2-	2	3-	2	3+	2-	18						
22	1+	1+	3-	3-	3-	2-	1+	1+	15	2-	1+	2	2	2	2-	2-	2-	13						
23	1-	2+	1	1+	1+	1+	3-	3+	14	1-	1+	1+	1+	1+	1	3	4	16						
24	2+	3	2	2+	3	3+	4	4+	33	2+	3-	2+	3-	3+	3+	4	4+	34						
25	3-	3	2+	3	3-	3	3+	2+	26	3-	3-	2	3-	3-	3	4	2+	26						
26	2+	2+	2	3+	4	3	3-	1	25	2+	2	2+	3	3	3	3-	2-	22						
27	2-	2	2+	2-	1+	3+	3	1	18	2-	2+	3-	2+	2-	2	3+	1+	18						
28	1	0	2-	1	2+	3	3-	3+	17	1	0	2-	1	3	3	3	4	22						
29	2	2+	1	2	3+	5	4	2+	30	3	2+	1+	2-	4	5-	3+	3-	30						
30	2-	3-	3	4	4	3-	2+	3	30	2	3	4	4	4	3-	2	3	31						
31	3-	3-	2-	2-	3+	3-	3+	3-	24	3-	3-	2-	2-	3	2+	3-	2+	20						
Mean									26.2									27.6						

The Geophysikalisches Institut, University of Goettingen, prepares the quiet (Q) and disturbed (D) days, geomagnetic planetary 3-hour-range indices (K<sub>p</sub>), magnetic character figures (C<sub>p</sub>) and average amplitude (A<sub>p</sub>). The 10 most quiet days [Q1-Q0(10)] and the five most disturbed days (D1-D5) are ordered from most quiet and from most disturbed, respectively. A or K means "not really quiet" (A implies A<sub>p</sub>>6 and K implies A<sub>p</sub><6 with either one K<sub>p</sub>>30 or two K<sub>p</sub> values >3-). An asterisk means "not really disturbed" (A<sub>p</sub><20).

Geomagnetic 3-hour indices K<sub>m</sub>, K<sub>n</sub>, K<sub>s</sub> and daily mean values A<sub>m</sub>, A<sub>n</sub>, A<sub>s</sub> and indices aa are prepared by M. Menvielle of the Institut de Physique du Globe, Paris, France. For aa indices, daily north (N) and south (S) values and half-daily antipodal mean (M) values are given. C indicates really quiet 24- and 48-hour intervals centered on 1200 UT; K indicates similar periods with some slightly disturbed 3-hour intervals.

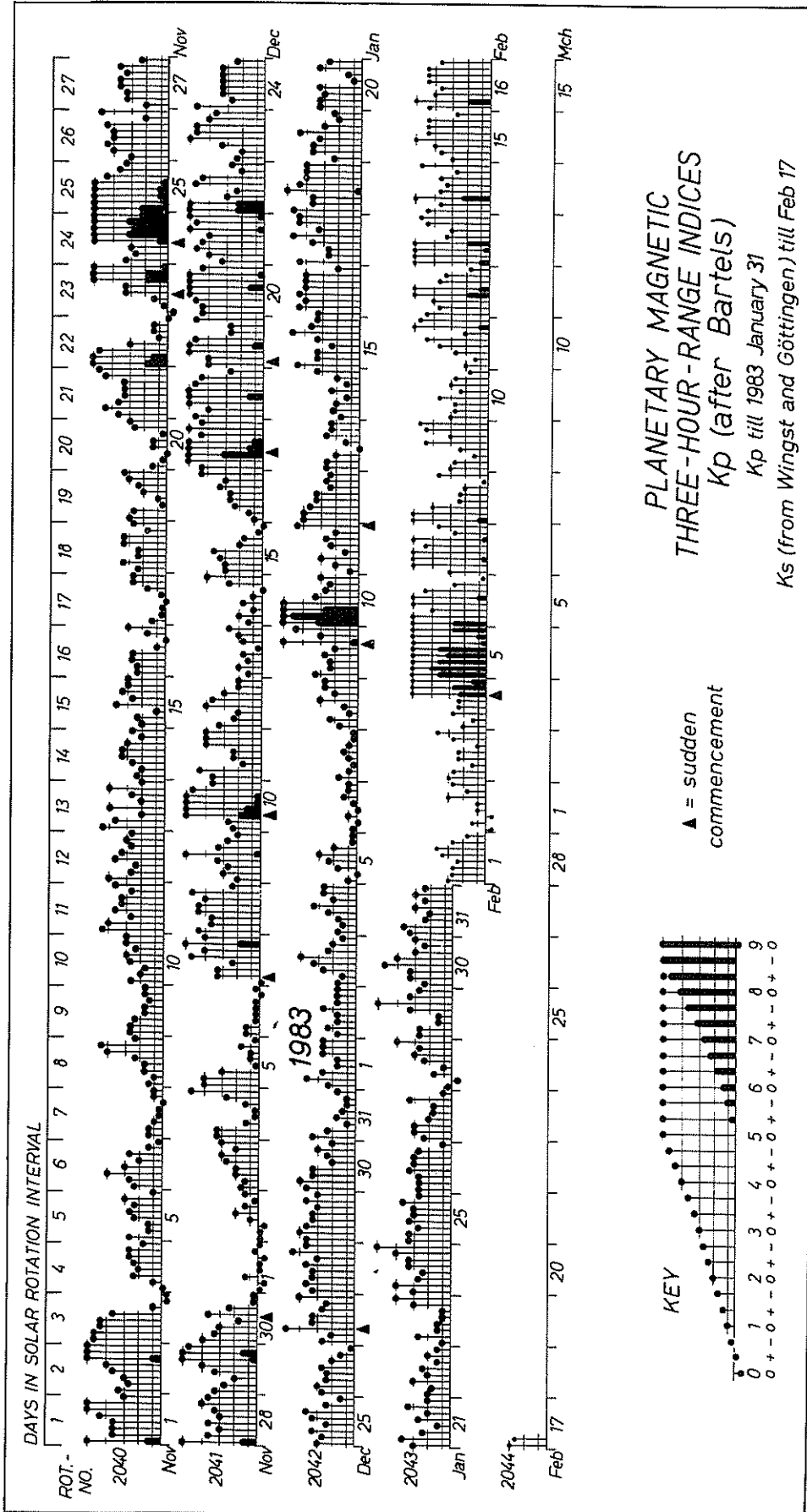
NOTE: All aa indices are provisional from 1 January 1981 until further notice, because of the change in the Southern Hemisphere observatory.

DAILY AVERAGE INDICES Ap

DAY	1982 FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	1983 JAN
1	41	68	20	22	20	18	12	9	28	36	2	11
2	60	107	42	30	18	10	55	12	24	32	4	7
3	35	13	48	45	9	6	26	21	10	21	9	11
4	49	12	22	19	7	2	15	32	10	8	13	9
5	37	16	21	14	6	4	18	39	9	9	11	6
6	39	3	18	6	14	15	25	199	19	11	3	3
7	26	3	5	4	14	21	107	88	35	4	29	4
8	18	11	12	5	9	15	6	12	21	12	27	9
9	15	20	10	8	16	10	23	50	6	8	18	20
10	35	16	61	5	51	10	27	10	15	11	46	78
11	45	10	47	9	32	36	28	13	14	20	20	11
12	41	8	15	6	59	48	22	14	15	16	14	18
13	54	13	11	6	62	144	10	15	34	18	6	8
14	42	11	6	8	24	153	7	14	30	12	8	8
15	18	7	10	20	26	36	3	12	8	13	11	22
16	6	4	11	10	10	50	6	12	14	9	13	25
17	30	14	19	12	6	24	16	11	21	6	62	25
18	34	20	12	20	7	24	16	30	23	12	41	32
19	36	10	8	12	24	28	10	28	17	10	34	17
20	26	12	20	8	18	24	12	24	14	6	46	14
21	21	23	32	8	9	11	15	76	11	25	37	12
22	51	38	18	4	20	16	24	135	8	30	42	8
23	29	8	9	2	20	12	17	26	5	36	26	10
24	24	12	15	4	21	50	18	22	5	83	19	22
25	42	20	52	8	17	22	20	13	15	54	14	16
26	43	11	7	24	16	27	20	84	30	26	9	12
27	12	9	24	54	32	27	11	42	16	17	18	10
28	10	6	21	56	27	21	12	14	10	28	21	10
29		13	31	35	19	22	38	9	35	32	20	16
30		15	30	35	39	23	28	12	27	13	15	19
31		20		31		25	16		34		7	13
MEAN	33	18	22	17	22	30	21	36	18	21	21	16



## GEOMAGNETIC ACTIVITY INDICES



PRINCIPAL MAGNETIC STORMS

JANUARY 1983

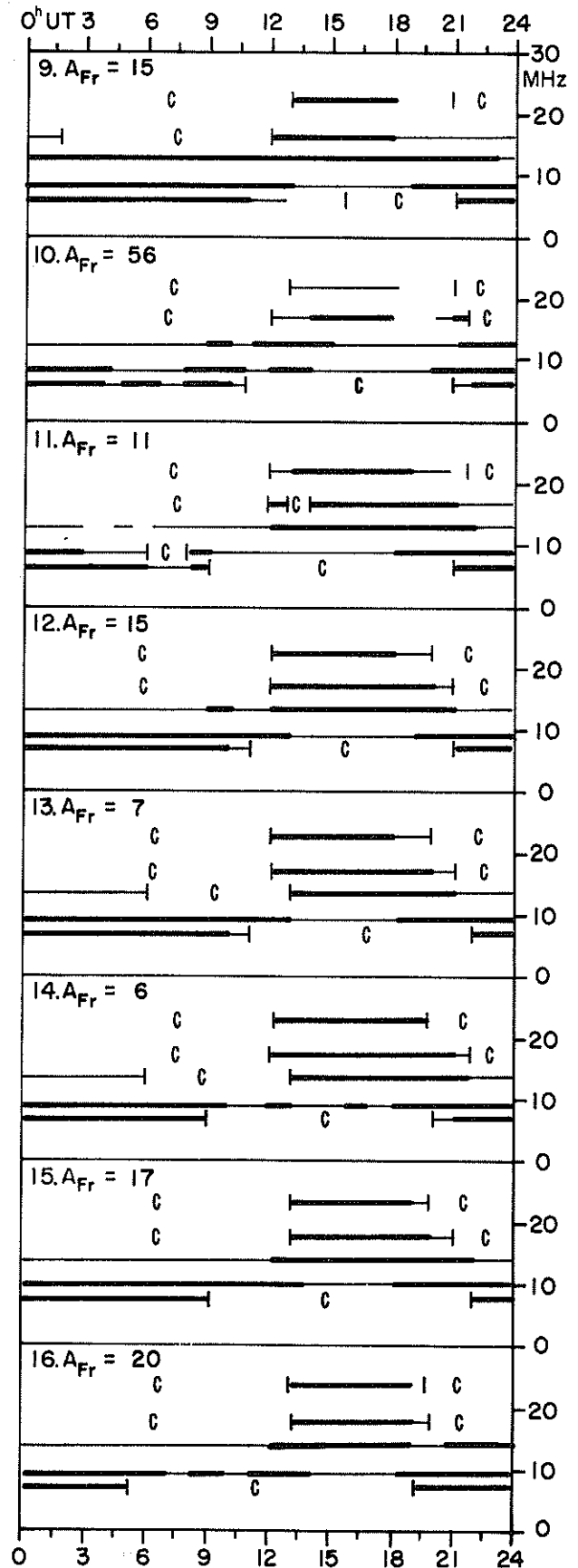
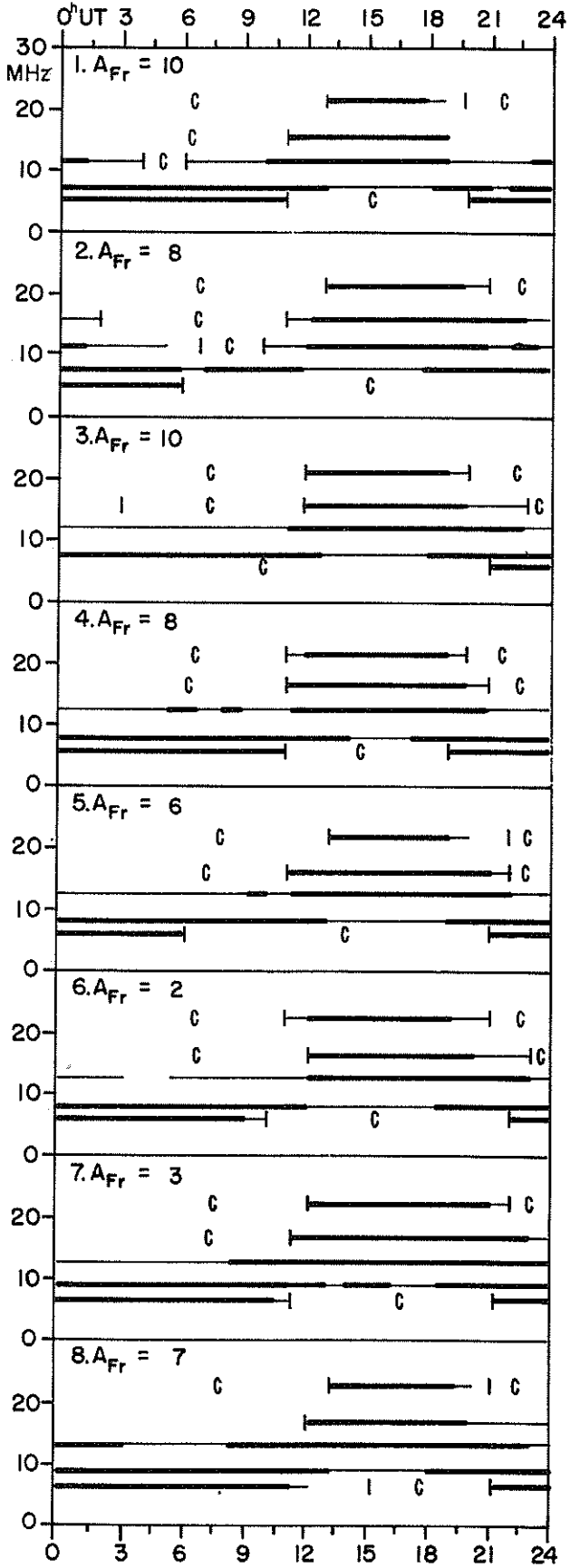
Sta	Geomag Lat	Commencement			SC Amplitudes			Maximum 3-Hour K Index Day(3-Hour Periods)	D K (Min)	Ranges		Z (Gamma)	End Day (UT)	Hour
		Day	Time (UT)	Type	D (Min)	H (Gamma)	Z (Gamma)			H (Gamma)	Z (Gamma)			
HYB 07.6N	01	1300	..	..	..	..	02(5) 03(5)	4	4	121	19	03	23	
COL 64.6N	09	1544	SC*	- 20	-455	-130	09(6) 10(2,4)	7	406	1510	1400	10	20	
SIT 60.0N	09	1546	SC*	- 24 *	80 *	17 *	10(2)	8	--	890	710	10	20	
WIT 54.2N	09	1545	SC*	7	65	0	10(1,2)	7	60	345	205	10	12	
FRD 49.6N	09	1545	SC	3	42	12	10(2)	8	65	385	235	13	00	
HON 21.1N	09	1545	SC	1	25	13	10(1)	7	9	310	55	10	19	
JAI 17.3N	09	1545	SC	- 1.4	52	- 12		-	8	219	38	10	21	
SHL 14.7N	09	1545	SC	- .4	53	9		-	8	226	23	10	21	
UJJ 13.5N	09	1545	SC	- .9	59	- 13		-	7	224	47	10	21	
ABG 09.5N	09	1545	SC	- 1.3	44	- 11	09(6) 10(1)	6	7	214	63	10	21	
HYB 07.6N	09	1544	SC	- .7	49	- 4	10(2)	7	8	231	26	10	21	
GUA 04.0N	09	1544	SC		38	- 12	10(1)	6	--	280	30	10	20	
ANN 01.5N	09	1545	SC	- 2.4	58	31		-	9	329	62	10	21	
HUA 00.6S	09	1544	SC	5	219	9	09(6)	7	14	638	51	10	20	
TRD 01.1S	09	1545	SC	- .3	49	80		-	6	--	--	10	21	
HER 33.7S	09	1545	SC*	4	40	24	10(1,2)	6	40	156	129	10	12	
GNA 43.2S	09	1545	SC*	3.2	61 *	26	10(1)	7	32	250	180	10	21	
KGL 56.5S	09	1544	SC	7		36	10(1,2)	9	205	981	552	10	18	
HON 21.1N	11	23--	SC	1	45	18	11(8) 12(1)	5	3	93	34	12	11	
JAI 17.3N	11	0300	..	..	..	..		-	6	65	36	13	01	
SHL 14.7N	11	0300	..	..	..	..		-	6	91	29	13	01	
UJJ 13.5N	11	0300	..	..	..	..		-	5	74	37	13	01	
ABG 09.5N	11	0300	..	..	..	..	11(3,8) 12(1)	5	5	82	43	13	01	
HYB 07.6N	11	0300	..	..	..	..	11(3,8)	5	5	85	33	12	21	
GUA 04.0N	11	2309	SC		73	- 16	11(8)	6	--	120	40	12	18	
ANN 01.5N	11	0300	..	..	..	..		-	5	125	77	13	01	
HUA 00.6S	11	0303	SC		11	2	11(6,7,8)	5	10	209	38	12	22	
TRD 01.1S	11	0300	..	..	..	..		-	2	164	124	13	01	
HER *33.7S	11	2309	SC	6	41	31	11(8)	5	20	76	57	12	11	
HYB 07.6N	14	1100	..	..	..	..	15(6) 16(4,7)	5	4	137	34	16	20	
COL 64.6N	15	06--	..	..	..	..	15(6) 17(5) 18(4)	7	336	1540	950	19	19	
JAI 17.3N	15	0600	..	..	..	..		-	5	111	22	16	20	
UJJ 13.5N	15	0600	..	..	..	..		-	4	116	22	16	20	
ABG 09.5N	15	0600	..	..	..	..	15(6) 16(4,7)	5	5	127	33	16	20	
HUA 00.6S	15	1119	SC		14	3	15(5,6,7)	6	12	291	42	15	22	
TRD 01.1S	15	0600	..	..	..	..		-	--	--	--	16	20	
GUA 04.0N	16	0958	..	..	..	..	16(4)	5	--	60	10	16	20	
HER 33.7S	16	09--	..	..	..	..	16(4)	5	20	74	83	16	21	
JAI 17.3N	17	1000	..	..	..	..		-	6	108	24	18	23	
UJJ 13.5N	17	1000	..	..	..	..		-	5	104	21	18	23	
ABG 09.5N	17	1000	..	..	..	..	17(5,7,8) 18(4)	5	5	96	34	18	23	
HYB 07.6N	17	0100	..	..	..	..	17(5,7) 18(4)	5	5	127	24	18	23	
TRD 01.1S	17	1000	..	..	..	..		-	5	188	123	18	23	
KGL 56.5S	17	0530	..	..	..	..	17(5)	6	47	430	224	18	06	
HER 33.7S	18	08--	..	..	..	..	18(4)	5	6	60	49	18	22	
HYB 07.6N	23	1400	..	..	..	..	24(8)	5	2	79	20	25	22	
JAI 17.3N	28	0700	..	..	..	..		-	4	136	25	29	23	
UJJ 13.5N	28	0700	..	..	..	..		-	3	138	22	29	23	
ABG 09.5N	28	0700	..	..	..	..	29(6)	6	4	143	25	29	23	
HYB 07.6N	28	1200	..	..	..	..	29(6)	6	3	151	26	30	20	
TRD 01.1S	28	0700	..	..	..	..		-	3	158	107	29	23	
COL 64.6N	29	0917	SC*		37		29(6) 30(4)	7	212	1230	760	30	19	
HUA 00.6S	29	0526	SC		14	2	29(6)	7	11	467	50	29	23	

Reports were received from the following observatories:

ALIBAG	GUAM	HYDERABAD	SITKA
ANNAMALAINAGAR	HERMANUS	JAIPUR	TRIVANDRUM
COLLEGE	HONOLULU	KERGUELEN	UJJAIN
FREDERICKSBURG	HUANCAYO	SHILLONG	WITTEVEEN
GNANGARA			

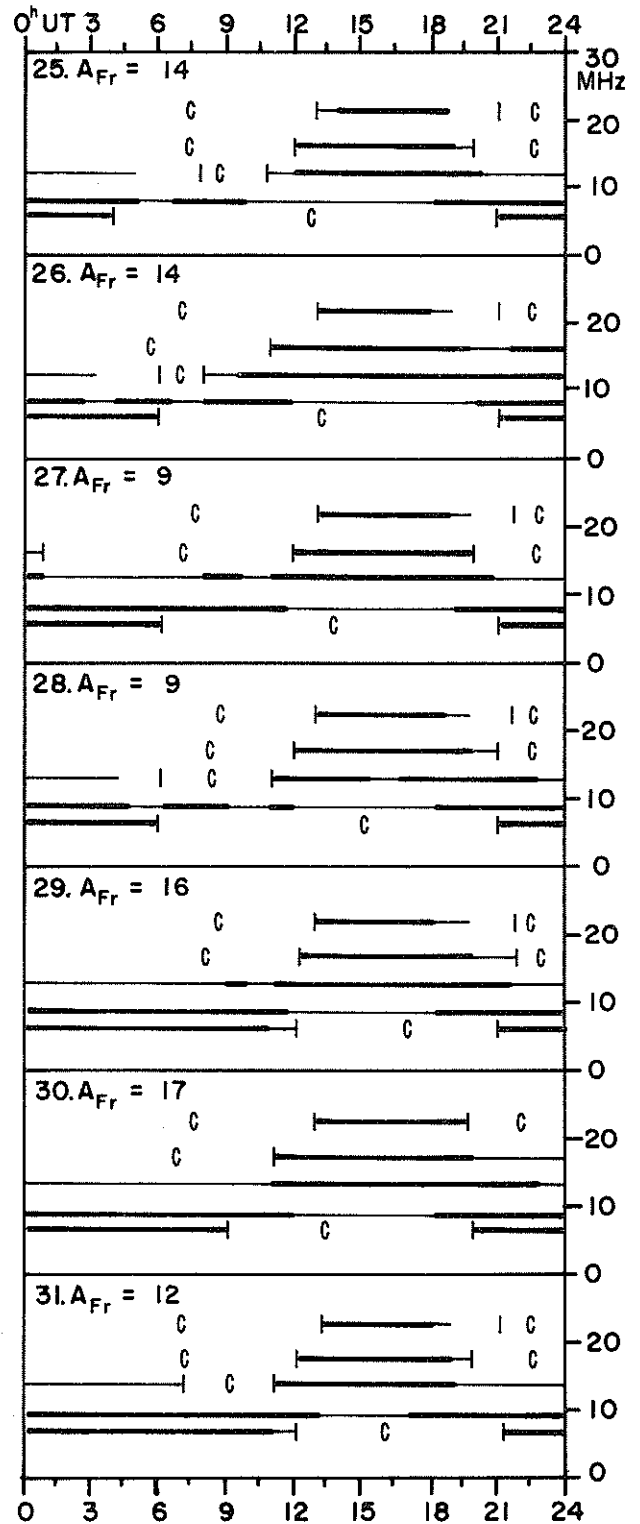
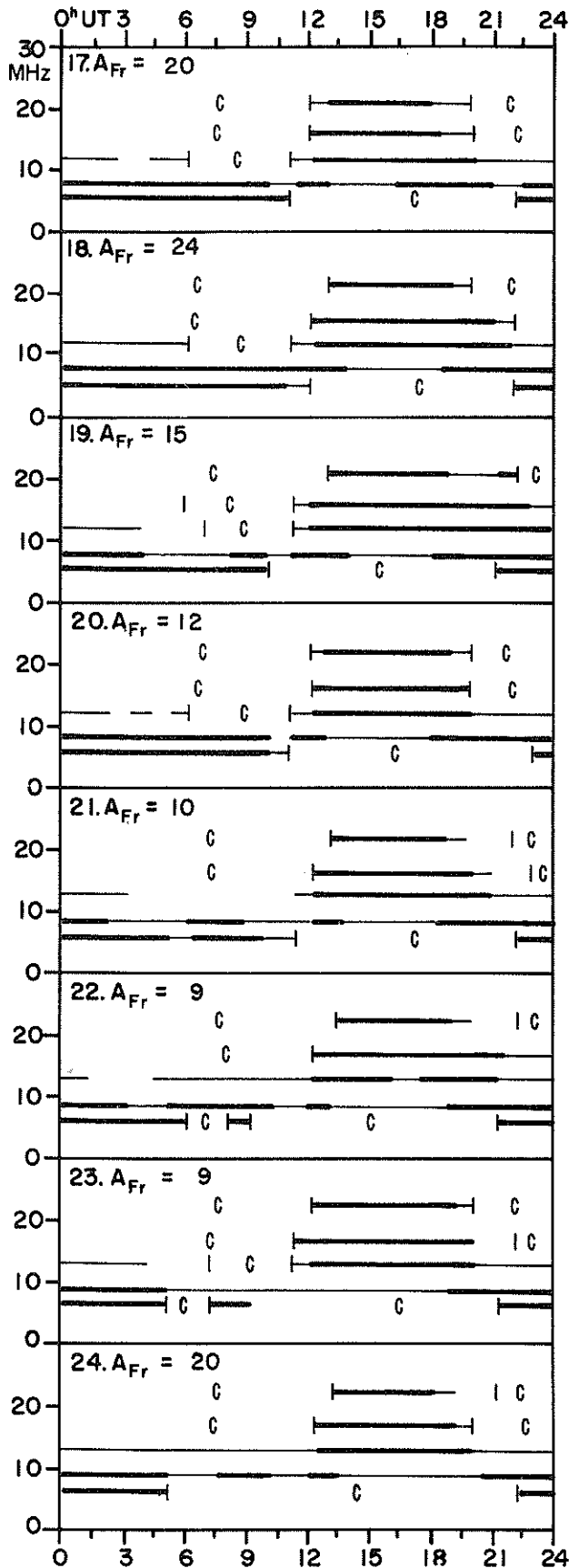
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

JANUARY 1983



TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

JANUARY 1983



Field strengths from five frequencies, 6.4, 8.6, 13.0, 17.0 and 22.5 MHz, observed on a Lüchow New York circuit are represented above. Heavy solid lines represent field strengths  $\geq -12$  dB above  $1 \mu\text{v/m}$  (transmitter power reduced to 1 kW). Observed field strengths between  $-12$  dB above  $1 \mu\text{v/m}$  and  $-40$  dB above  $1 \mu\text{v/m}$  are represented by the fine line.

RADIO PROPAGATION QUALITY INDICES

January 1983

DAY	TOKYO	NEW YORK	TEHERAN	OSLO	BRACKNELL
1	5.0	5.3	5.7	5.2	6.0
2	5.3	6.0	6.3	6.9	5.6
3	4.5	6.1	2.7	6.5	5.3
4	4.5	7.2	2.8	6.2	5.0
5	4.2	7.0	1.1	5.2	5.1
6	2.7	6.5	1.4	4.9	4.2
7	3.6	8.6	2.3	6.6	6.3
8	5.8	7.4	8.0	4.3	6.2
9	6.0	4.6	3.6	4.3	7.1
10	3.4	0.9	0.4	0.4	0.0
11	6.5	4.1	5.1	4.5	3.6
12	5.3	5.2	2.6	3.8	4.7
13	5.3	5.5	4.6	4.6	5.4
14	4.5	5.1	7.7	4.3	5.5
15	4.9	6.2	4.5	5.7	5.7
16	4.9	4.1	4.8	4.7	5.5
17	4.6	4.5	0.7	4.8	5.6
18	4.0	5.1	2.4	5.9	6.6
19	4.4	5.7	4.3	5.9	5.9
20	4.8	3.7	1.5	5.2	3.9
21	5.4	3.5	1.5	5.6	5.3
22	5.1	3.6	3.1	5.9	5.1
23	6.4	3.2	2.6	5.9	4.9
24	5.4	4.6	3.8	5.9	5.3
25	5.0	5.0	0.7	5.2	5.2
26	5.0	5.6	2.0	5.4	5.4
27	5.8	4.6	7.9	5.4	5.1
28	5.8	6.0	9.3	6.1	5.8
29	7.2	6.0	9.7	5.8	4.8
30	6.2	6.7	6.3	5.2	5.2
31	7.5	6.3	6.5	6.3	5.3
MEAN	5.1	5.3	4.1	5.2	5.2

CALCULATION OF QUALITY INDICES (Q)

From all 24 hourly field strength values and from all frequencies of the same circuit a median field strength value is calculated (FD). This daily value is compared with the average value (FA) of the preceding 27 days (1 sun rotation).

$$Q = 6.0 + 20 \log(FD/FA)/3.0$$

The quality indices vary from 0.0 to 9.9 where 6.0 is normal. Conditions are "normal" (index = 6.0), if they correspond to the average of the preceding 27 days.

Scale for Quality Indices

- 0.0 - 1.0 = very poor
- 1.1 - 3.0 = poor
- 3.1 - 5.0 = fair
- 5.1 - 7.0 = normal
- 7.1 - 9.0 = good
- 9.1 - 9.9 = very good

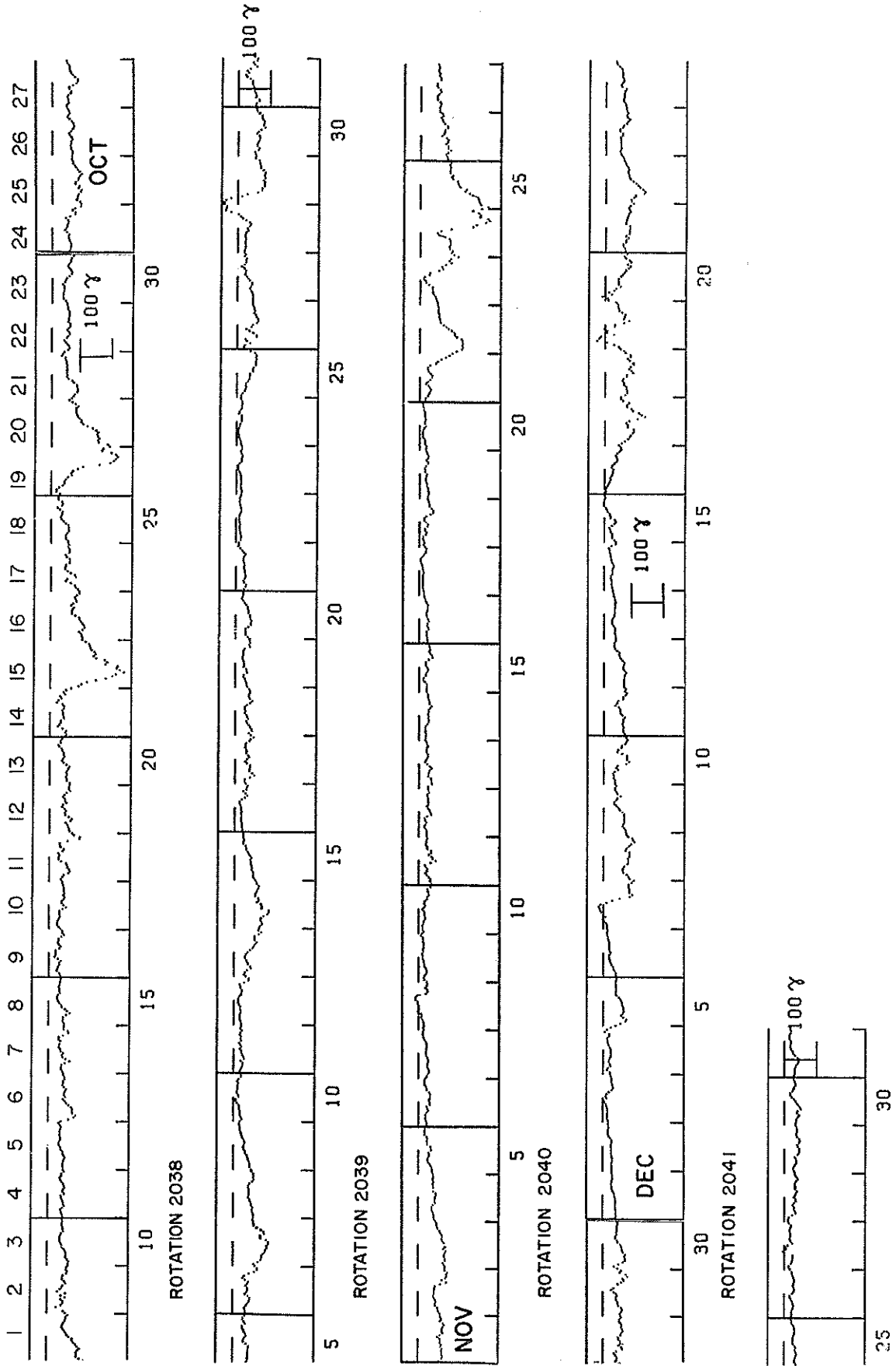
SGD 463 Part I (Prompt)

LATE DATA

Contents

	Page
<u>Geomagnetic Indices</u>	
Chart of Dst by Bartels Rotation	110
Hourly Equatorial Dst Values (Provisional) December 1982	111

### GEOMAGNETIC ACTIVITY INDICES Hourly Equatorial Dst by Bartels Rotation



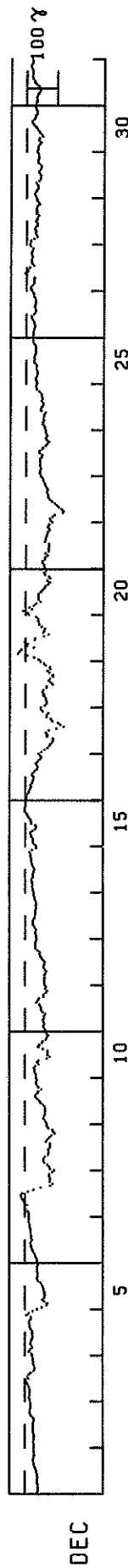
Note: Both the sensitivity indicator placed on the last day of the month and the zero reference level change from month to month.

HOURLY EQUATORIAL Dst VALUES (PROVISIONAL)

NASA/GODDARD SPACE FLIGHT CENTER

DECEMBER 1982

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	(Time-UT)																							
	(Units-Gammas)																							
1	-41	-42	-41	-41	-40	-39	-39	-40	-40	-39	-37	-36	-34	-30	-28	-27	-26	-27	-27	-30	-29	-29	-27	-27
2	-28	-27	-26	-28	-29	-28	-27	-25	-26	-26	-26	-24	-25	-28	-28	-23	-17	-15	-15	-16	-18	-17	-16	-16
3	-15	-12	-14	-14	-15	-14	-13	-10	-8	-3	-2	-11	-8	-12	-19	-27	-32	-29	-27	-25	-26	-26	-23	-21
4	-20	-11	-16	-23	-21	-17	-15	-21	-24	-24	-23	-24	-21	-17	-15	-13	-13	-13	-19	-19	-5	-12	-24	-39
5	-54	-69	-72	-62	-55	-61	-65	-62	-63	-59	-58	-56	-53	-48	-41	-39	-41	-41	-40	-40	-39	-40	-42	-40
6	-39	-39	-35	-32	-30	-25	-23	-20	-18	-18	-19	-23	-19	-19	-18	-18	-18	-17	-15	-14	-12	-11	-13	-12
7	-11	-11	-8	-1	2	7	0	5	9	11	15	8	-10	-27	-51	-82	-90	-80	-81	-80	-78	-79	-89	-95
8	-81	-78	-72	-62	-59	-60	-65	-75	-78	-77	-77	-82	-82	-81	-69	-73	-80	-87	-97	-92	-89	-76	-70	-70
9	-68	-64	-59	-62	-65	-64	-65	-65	-64	-58	-50	-46	-40	-33	-40	-40	-44	-53	-43	-40	-35	-36	-40	-35
10	-35	-36	-31	-32	-23	-34	-45	-39	-44	-71	-80	-72	-73	-74	-57	-42	-46	-55	-57	-67	-71	-75	-69	-67
11	-64	-60	-59	-62	-59	-57	-61	-61	-66	-57	-52	-51	-50	-46	-35	-42	-46	-60	-60	-68	-72	-65	-69	-63
12	-61	-63	-62	-64	-63	-65	-65	-64	-60	-60	-62	-64	-58	-52	-49	-47	-48	-40	-40	-33	-33	-32	-37	-38
13	-36	-35	-33	-35	-35	-30	-26	-24	-25	-28	-30	-34	-33	-34	-36	-36	-34	-36	-33	-33	-30	-29	-27	-27
14	-24	-23	-22	-24	-22	-20	-21	-25	-26	-26	-28	-31	-27	-23	-21	-20	-19	-18	-16	-17	-13	-23	-36	37
15	-31	-24	-24	-25	-19	-18	-15	-23	-32	-37	-32	-19	-17	-16	-10	-7	-4	2	2	2	-1	-3	0	-4
16	-5	-5	-7	-11	-14	-16	-19	-17	-22	-25	-26	-27	-20	-24	-31	-38	-40	-37	-33	-40	-47	-52	-48	-43
17	-52	-62	-72	-78	-81	-87	-90	-89	-70	-71	-66	-76	-101	-125	-114	-105	-87	-82	-68	-69	-75	-56	-49	50
18	-62	-69	-69	-66	-65	-58	-55	-54	-57	-67	-68	-88	-81	-74	-80	-90	-88	-77	-70	-80	-79	-63	-58	-47
19	-42	-27	0	25	19	13	-27	-6	-7	3	-30	-31	-59	-75	-57	-61	-63	-52	-44	-43	-40	-41	-35	-10
20	-7	8	-20	-11	-27	-34	-48	-41	-43	-41	-42	-50	-55	-61	-65	-73	-79	-69	-80	-75	-63	-58	-66	63
21	-60	-58	-54	-55	-63	-64	-71	-63	-74	-75	-74	-77	-75	-62	-64	-65	-68	-71	-72	-78	-74	-72	-77	-87
22	-80	-79	-88	-94	-120	-123	-115	-107	-100	-93	-84	-77	-73	-73	-69	-68	-72	-68	-63	-61	-57	-56	-53	-46
23	-46	-44	-47	-48	-47	-46	-47	-46	-45	-52	-53	-44	-44	-53	-56	-65	-70	-75	-67	-64	-69	-66	-63	-64
24	-61	-59	-53	-55	-57	-57	-58	-59	-63	-48	-47	-52	-56	-54	-50	-52	-52	-50	-48	-41	-34	-32	-34	-36
25	-35	-31	-32	-34	-37	-38	-35	-32	-36	-32	-26	-25	-27	-26	-29	-32	-32	-31	-31	-28	-23	-21	-21	-20
26	-22	-23	-22	-25	-27	-29	-26	-24	-20	-17	-16	-25	-30	-31	-29	-26	-29	-32	-30	-28	-25	-23	-22	-17
27	-13	-14	-21	-24	-25	-26	-26	0	5	-6	-4	-11	-25	-19	-16	-18	-19	-19	-16	-16	-20	-22	-13	-10
28	-13	-15	-25	-35	-32	-29	-31	-25	-30	-37	-35	-29	-34	-37	-41	-33	-34	-33	-33	-37	-43	-39	-33	-39
29	-30	-26	-29	-33	-38	-38	-36	-31	-41	-46	-47	-47	-41	-40	-46	-48	-46	-40	-36	-38	-41	-39	-36	-34
30	-36	-37	-38	-43	-47	-38	-42	-52	-48	-42	-38	-34	-29	-22	-17	-17	-25	-29	-30	-35	-34	-31	-28	-27
31	-30	-33	-32	-32	-34	-37	-42	-45	-44	-40	-32	-26	-25	-20	-18	-19	-21	-20	-16	-15	-15	-19	-20	-18





## SOME OTHER SOURCES OF DATA

Data Available: Some data available in publication form are cited here. A list is given, along with addresses of the responsible institutions. The WDC-A for Solar-Terrestrial Physics publishes the Toyokawa, Ottawa and Penticton radio data in its monthly publication, *Solar-Geophysical Data*. The WDC-A for Solar-Terrestrial Physics also receives most of the periodicals when they become available.

- |          |  |              |  |
|----------|--|--------------|--|
| Belgium: | <i>Bulletin d'Observations: Activite Solaire - Observations Radio-electriques Solaires - 600 MHz (Humain, Belgium) Observatoire Royal de Belgique, Ave. Circulaire 3, Brussels, Belgium (monthly since 1962)</i> | Japan:       | <i>Monthly Report of Solar Radio Emission Radio Astronomy Section, Research Institute of Atmospheric, Nagoya University, Toyokawa, Japan (since 1956) Solar Activity Chart WDC-C2, Toyokawa Observatory, Nagoya University, Toyokawa, Japan (annually since 1968) IAU Quarterly Bulletin on Solar Activity Tokyo Astronomical Observatory, Mitaka, Tokyo, Japan (since 1978)</i> |
| Canada:  | <i>Solar Noise Observations at 2800 Mc/s (Ottawa - ARO) and 2700 Mc/s (Penticton - DRAO) Series C Monthly Report, National Research Council, Radio Astronomy Section Ottawa 7, Ontario, Canada (since 1947)</i>  | Netherlands: | <i>Geomagnetic Data IAGA Bulletin No. 12 (1932-69), No. 32 (since 1970) IUGG Publications Office, 39 ter, Rue Gay-Lussac, Paris V, France (annually)</i>   |
| France:  | <i>Carte Synoptiques de La Chromosphere Solaire Observatoire de Paris, 92 Meudon, France (monthly since 1931)</i>  | Taiwan:      | <i>Report on Sunspot Observations Taiwan Provincial Weather Bureau Observatory, Taipei, Taiwan (quarterly since 1957)</i>  |
| Germany: | <i>Daily Mean Value of Solar Flux Density Heinrich-Hertz Institut, 1199 Berlin-Adlershof, Rudower Chaussee 5, G.D.D. (monthly since Jul 1957)</i>  | USSR:        | <i>СОЛНЕЧНЫЕ ДАННЫЕ (Solar Data) USSR Academy of Science (monthly since 1958) КОСМИЧЕСКИЕ ДАННЫЕ (Cosmic Data) (monthly since 1962) Magnetic Fields of Sunspots (bimonthly since 1964)</i>   |
| Italy:   | <i>Solar Phenomena - Monthly Bulletin and Photographic Supplement Osservatorio Astronomica di Roma, Monte Mario, Rome, Italy (monthly since 1958) Osservazione Solari, Solar Flux and Distinctive Events</i>     | USA:         | <i>Preliminary Report and Forecast of Solar-Geophysical Activity Space Environment Services Center, NOAA, Boulder, Colorado 80303 USA (weekly) Solar-Geophysical Data NOAA, Boulder, Colorado 80303 USA (monthly since November 1956)</i>  |



**WORLD DATA CENTER A**  
**FOR**  
**SOLAR-TERRESTRIAL PHYSICS**



The ICSU Panel on WDCs has recommended that it would be appropriate courtesy to acknowledge in publications that data were obtained from the originating station or investigator through the intermediary of the WDCs. The following statement is suggested:

"Data used in this study were provided by WDC-A for Solar-Terrestrial Physics, NOAA E/GC2, 325 Broadway, Boulder Colorado 80303, USA."