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Solar - Geophysical Data

Part I (Prompt Reports)

NO. 500 APRIL 1986

DATA FOR
MARCH 1986
FEBRUARY 1986

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

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ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

SUMMARY OF THE GEOALERT MESSAGES MARCH 1986

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
060	01	28	023	079	015	N02W33 S00E85	0 1	0 0	0 0		01	N02W33 S00E85	Q E	SOLQUIET MAGALERT 01/02 DISAPPEARING FILAMENT
061	02	01	015	086	018	N01E69	1	0	0		02	N01E69	E	SOLQUIET MAGNIL
062	03	02	037	089	012	N01E54 N04W13	5 0	0 0	0 0		03	N01E54 N04W13	E Q	SOLQUIET MAGQUIET
063	04	03	036	092	008	N01E41 N03W26	5 0	0 0	0 0		04	N01E41 N03W26	A Q	SOLALERT 04/06 MAGQUIET
064	05	04	042	093	010	N01E29 N03W41	4 0	0 0	0 0		05	N01E29 N03W41	A Q	SOLALERT 05/06 MAGQUIET
065	06	05	028	092	008	N02E15	3	1	0	PRESTO TENFLARE 260 FLUX UNITS 05/0708 UT DURATION 5 MINUTES	06	N02E15	A	SOLALERT 06/07 MAGQUIET
066	07	06	019	092	021	N01E00	4	0	0	PRESTO PROTON EVENT BEGAN AT 06/1835 UT WITH MAXIMUM OF 17 P/CM2/SEC/STER>10 MEV AT 06/1905 UT	07	N01E00	A	SOLALERT 07/08 MAGALERT MINOR 07/09 RECURRENCE
067	08	07	028	089	023	S00W14	6	0	0		08	S00W14	E	SOLALERT 08/09 MAGALERT MINOR 08/09
068	09	08	024	086	020	S00W26	0	0	0		09	S00W26	Q	SOLNIL MAGNIL
069	10	09	021	086	008	S00W39	1	0	0		10	S00W39	Q	SOLQUIET MAGQUIET
070	11	10	019	083	003	S01W52	1	0	0		11	S01W52	Q	SOLQUIET MAGQUIET
071	12	11	014	080	005	N00W64	0	0	0		12	N00W64	Q	SOLQUIET MAGQUIET
072	13	12	013	078	008	S01W77	1	0	0		13	S01W77	Q	SOLQUIET MAGQUIET
073	14	13	000	075	018	SPOTNIL					14	SPOTNIL		SOLQUIET MAGQUIET
074	15	14	000	074	009	SPOTNIL					15	SPOTNIL		SOLQUIET MAGQUIET
075	16	15	000	071	006	SPOTNIL					16	SPOTNIL		SOLQUIET MAGQUIET
076	17	16	000	070	010	SPOTNIL					17	SPOTNIL		SOLQUIET MAGQUIET
077	18	17	000	070	008	SPOTNIL					18	SPOTNIL		SOLQUIET MAGQUIET
078	19	18	000	070	012	SPOTNIL					19	SPOTNIL		SOLQUIET MAGQUIET

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

SUMMARY OF THE GEOALERT MESSAGES MARCH 1986

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
079	20	19	000	069	010	SPOTNIL					20	SPOTNIL		SOLQUIET MAGALERT MINOR 20/22 RECURRENCE
080	21	20	014	069	008	S12W28	0	0	0		21	S12W28	Q	SOLQUIET MAGALERT MINOR 21/23 RECURRENCE
081	22	21	000	069	012	SPOTNIL					22	SPOTNIL		SOLQUIET MAGALERT MINOR 22/22 RECURRENCE
082	23	22	013	070	018	S12W58	0	0	0		23	S12W58	Q	SOLQUIET MAGNIL
083	24	23	023	070	010	S12W72 N03E68	0 0	0 0	0 0		24	S12W72 N03E68	Q Q	SOLQUIET MAGALERT 24/25 RECURRENCE
084	25	24	022	070	015	S12W84 N03E54	0 0	0 0	0 0		25	S12W84 N03E54	Q Q	SOLQUIET MAGALERT 25/XX RECURRENCE
085	26	25	011	070	018	N03E42	0	0	0		26	N03E42	Q	SOLQUIET MAGNIL
086	27	26	011	071	009	N04E28	0	0	0		27	N04E28	Q	SOLQUIET MAGALERT 27/27
087	28	27	000	070	022	SPOTNIL					28	SPOTNIL		SOLQUIET MAGNIL
088	29	28	012	071	015	N05E05	0	0	0		29	N05E05	Q	SOLQUIET MAGQUIET
089	30	29	011	071	012	N05W13	1	0	0		30	N05W13	Q	SOLQUIET MAGQUIET
090	31	30	011	072	004	N03W29	0	0	0		31	N03W29	Q	SOLQUIET MAGQUIET
091	01	31	000	0071	008	SPOTNIL					01	SPOTNIL		SOLQUIET MAGQUIET

NO=MESSAGE SERIAL NUMBER, DI=DATE OF ISSUE, DO=DATE OF OBSERVATION, WOLF=WOLF NUMBER, 10CM=10CM SOLAR FLUX, A=A INDEX, LOC=LOCATION LATITUDE AND LONGITUDE, TOT=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.

PRESTO MESSAGES (THE RAPID REPORT OF MAJOR EVENTS) MARCH 1986

PRESTO BOULDER 05/0749 UT TENFLARE 260 FLUX UNITS 05/0708 UT DURATION 5 MINUTES
PRESTO TOYOKAWA 05/0833 UT TENFLARE 300 FLUX UNITS 05/0707 UT DURATION 3 MINUTES
PRESTO BOULDER 06/2003 UT PROTON EVENT BEGAN AT 06/1835 UT MAX 17 P/CM2/SEC/STER>10 MEV AT 06/1905 UT

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

STRATWARM MESSAGES MARCH 1986

---

5 MARCH STRATWARM ALERT /WEDNESDAY/ INTENSIFYING MINOR WARMING OVER SIBERIA. POLAR TEMPERATURE SLIGHTLY INCREASING.

6 MARCH STRATWARM ALERT /THURSDAY/ INTENSE WARMING OVER SIBERIA EXTENDS POLEWARDS. TEMPERATURE GRADIENT REVERSED BETWEEN THE POLE AND 60 NORTH IN THE UPPER STRATOSPHERE DOWNWARDS TO 10 MB.

7 MARCH STRATWARM ALERT /FRIDAY/ STRONG MINOR WARMING OVER SIBERIAN ARCTIC OCEAN CONTINUES. MEAN TEMPERATURE GRADIENT BETWEEN 60 NORTH AND THE POLE REVERSED. STILL MEAN ZONAL FLOW FROM WEST IN THE MIDDLE AND LOW STRATOSPHERE.

8 MARCH STRATWARM ALERT /SATURDAY/ STRONG MINOR WARMING OVER THE SIBERIAN AND CANADIAN ARCTIC CONTINUES. TEMPERATURE GRADIENT REVERSED BETWEEN THE POLE AND 60 NORTH FROM THE STRATOPAUSE DOWN TO 10 MB. STILL MEAN ZONAL FLOW AT 60 NORTH FROM WEST IN THE MIDDLE AND LOW STRATOSPHERE.

9 MARCH STRATWARM ALERT /SUNDAY/ STRONG MINOR WARMING OVER THE POLAR REGION, SIBERIA, ALASKA, AND CANADA CONTINUES. TEMPERATURE GRADIENT REVERSED BETWEEN THE POLE AND 60 NORTH IN THE UPPER AND MIDDLE STRATOSPHERE. STILL MEAN ZONAL FLOW AT 60 NORTH FROM WEST IN THE MIDDLE AND LOW STRATOSPHERE.

10 MARCH STRATWARM ALERT /MONDAY/ STRONG MINOR WARMING OVER THE SIBERIAN AND CANADIAN ARCTIC, THE POLE, GREENLAND, AND CANADA CONTINUES. TEMPERATURE GRADIENT REVERSED BETWEEN THE POLE AND 60 NORTH IN THE UPPER AND MIDDLE STRATOSPHERE. MEAN ZONAL FLOW AT 60 NORTH FROM WEST IN THE MIDDLE AND LOW STRATOSPHERE.

11 MARCH STRATWARM ALERT /TUESDAY/ MINOR WARMING OVER CENTRAL AND EASTERN SIBERIA, THE POLAR REGION, CANADA, AND GREENLAND SLOWLY WEAKENING. TEMPERATURE GRADIENT REVERSED BETWEEN THE POLE AND 60 NORTH FROM THE STRATOPAUSE DOWN TO 30 MB. BUT MEAN ZONAL FLOW AT 60 NORTH FROM WEST IN THE WHOLE STRATOSPHERE.

12 MARCH STRATWARM ALERT /WEDNESDAY/ MINOR WARMING OVER CENTRAL AND EASTERN SIBERIA, THE POLAR REGION, CANADA, AND GREENLAND CONTINUES. TEMPERATURE GRADIENT REVERSED BETWEEN THE POLE AND 60 NORTH IN THE UPPER AND MIDDLE STRATOSPHERE. MEAN ZONAL FLOW AT 60 NORTH FROM WEST IN THE WHOLE STRATOSPHERE.

13 MARCH STRATWARM ALERT /THURSDAY/ MINOR WARMING IN THE UPPER AND MIDDLE STRATOPSHERE OVER SIBERIA, THE POLAR REGION, CANADA, AND GREENLAND CONTINUES. TEMPERATURE GRADIENT REVERSED BETWEEN THE POLE AND 60 NORTH FROM THE STRATOPAUSE DOWN TO 10 MB. BUT MEAN ZONAL FLOW AT 60 NORTH FROM THE WEST IN THE WHOLE STRATOSPHERE.

14 MARCH STRATWARM ALERT /FRIDAY/ WARM AREA OVER EASTERN ASIA AND THE POLAR REGION INTENSIFIES. DEVELOPMENT INTO FINAL WARMING POSSIBLE.

15 MARCH STRATWARM ALERT /SATURDAY/ WARMING OVER EAST ASIA, POLAR REGION, AND GREENLAND CONTINUES. DEVELOPMENT INTO FINAL WARMING CONTINUES.

16 MARCH STRATWARM ALERT /SUNDAY/ WARMING OVER NORTH SIBERIA, POLAR REGION, CANADIAN ARCTIC, AND GREENLAND CONTINUES AND DEVELOPS INTO FINAL WARMING.

17 MARCH STRATWARM ALERT /MONDAY/ WARMING OVER HIGH LATITUDES CONTINUES WITH FINAL WARMING IN PROGRESS.

18 MARCH STRATWARM ALERT /TUESDAY/ INTENSE WARM REGION OVER EASTERN ASIA. FINAL WARMING IN PROGRESS.

19 MARCH STRATWARM ALERT /WEDNESDAY/ WARM REGION OVER ASIA INTENSIFIES. FINAL WARMING CONTINUES.

20 MARCH STRATWARM ALERT /THURSDAY/ INTENSE WARM AREA OVER SIBERIA COVERS THE WHOLE POLAR REGION. FINAL WARMING CONTINUES.

21 MARCH STRATWARM ALERT /FRIDAY/ WARMING OVER THE SIBERIAN ARCTIC STILL INTENSIFIES. CIRCULATION REVERSAL DOWN TO 10 HPA. FINAL WARMING CONTINUES.

22 MARCH STRATWARM ALERT /SATURDAY/ STRONG WARMING COVERS THE WHOLE POLAR REGION. CIRCULATION REVERSAL DOWN TO 10 HPA. FINAL WARMING CONTINUES.

23 MARCH STRATWARM ALERT /SUNDAY/ LARGE WARM AREA COVERS THE WHOLE POLAR REGION. CIRCULATION REVERSAL DOWN TO 10 HPA.

24 MARCH STRATWARM ALERT /MONDAY/ LARGE WARM AREA COVERS THE WHOLE POLAR REGION. CIRCULATION REVERSAL DOWN TO 20 HPA. FINAL WARMING CONTINUES.

25 MARCH STRATWARM ALERT /TUESDAY/ FINAL WARMING CONTINUES. WITH BREAKDOWN OF THE POLAR VORTEX AND ESTABLISHMENT OF ANTYCYCLONE OVER POLAR REGION.

INTERNATIONAL (R_I) RELATIVE SUNSPOT NUMBERS

Day	1985 Final Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	1986 Prov Jan	Feb	Mar
01	25	19	10	21	35	7	0	0	0	0	18	16
02	21	15	0	27	25	0	0	0	16	0	31	33
03	23	14	11	30	27	0	0	0	13	0	57	34
04	17	18	26	32	27	0	0	0	0	0	58	32
05	23	16	35	38	20	0	0	16	18	0	53	37
06	19	14	37	43	14	0	0	19	26	0	47	33
07	11	32	38	71	12	0	0	19	15	0	52	38
08	9	44	42	67	12	0	0	18	12	0	54	32
09	9	56	42	82	17	0	0	25	16	0	47	23
10	0	49	58	82	12	0	0	15	15	0	37	20
11	0	49	66	61	12	7	0	17	18	0	37	18
12	0	33	54	45	12	0	0	19	19	0	25	13
13	0	32	45	25	0	9	11	30	18	13	22	8
14	10	32	36	9	0	9	13	44	30	14	16	0
15	0	32	37	8	0	9	15	48	47	12	11	10
16	0	31	27	9	14	9	25	39	66	8	0	0
17	0	38	23	11	12	8	19	43	63	0	0	0
18	10	41	18	11	11	10	20	37	52	0	0	0
19	9	40	10	11	12	10	31	30	40	0	0	0
20	11	37	9	11	10	9	44	28	24	0	10	12
21	17	36	9	10	9	8	50	18	17	0	10	13
22	31	34	9	10	0	7	72	12	11	0	10	10
23	28	32	12	18	0	0	67	10	0	0	11	19
24	30	25	13	12	0	0	63	0	0	0	8	18
25	37	19	12	10	0	0	55	0	0	0	11	10
26	37	13	10	13	8	0	40	0	0	7	11	10
27	31	12	8	12	8	0	27	0	0	0	15	11
28	27	12	8	36	10	0	14	0	0	0	10	13
29	26	10	9	51	9	7	11	0	0	0		11
30	26	8	11	46	8	7	0	0	0	8		12
31		8		40	9		0		0	8		0
Mean	16	28	24	31	11	4	19	16	17	2	24	16

The yearly mean sunspot number equaled 17.9 in 1985.

DAILY SOLAR FLUX AT 2800 MHz (10.7 CM) ADJUSTED TO 1 AU

ALGONQUIN RADIO OBSERVATORY, OTTAWA

Day	Apr 85	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 86	Feb	Mar
01	72.2	80.6*	69.5	76.9	80.5	73.0	68.3	69.0	67.8	67.0	81.8	84.1
02	72.6	76.5	72.4	79.1*	80.4	72.8	67.5	68.8	68.4	67.6	86.4*	89.2
03	72.5A	72.6	74.6	81.3	79.2	73.1	68.7	68.0	68.5	68.4	96.0	91.1*
04	71.9	70.8	77.5	80.4	79.3	73.5	68.3	67.6	68.3	69.5	97.8*	91.4
05	71.2	71.4	84.3	83.3	78.5	72.2	67.0	68.5	69.7	70.7	99.8	90.5
06	70.5	75.0	87.4	87.5	77.9	72.5	66.0	70.0	71.1	72.2	99.0	89.7*
07	70.3	79.1	88.4	97.7	79.5	70.8	65.9	71.8	71.9	71.6	96.7	87.6
08	69.9	83.7	88.9	96.7*	78.5	70.3	65.8	73.7	73.0	71.2	94.3*	85.1
09	69.4	89.6	89.8	100.9*	74.9	70.6	66.0	72.9	75.2	72.7	92.5	84.3
10	69.7	91.7	91.7	104.6*	72.8	70.3	66.7	72.5	75.6	72.2	93.4*	81.6
11	69.0	89.9	91.2	97.3	68.4	69.2	67.7	74.7	76.6	71.9	95.1	79.3
12	69.6	92.1	89.8	92.9	69.7	68.5	66.9	74.7	77.3	71.2	88.4	76.9
13	69.8	91.9	89.2	85.5	68.9	70.7	66.7	74.3	75.6	74.3	86.4	74.3
14	70.6	90.7*	85.3	76.4	69.3	70.4	69.8	76.9	76.4	76.4	86.2*	71.9
15	70.0	92.0*	83.8	73.0	69.0	71.1	71.7	82.2*	80.2	75.1	79.6	69.7
16	69.4	95.5	80.9	71.9	68.2	70.3	73.2	78.8	83.7	75.5*	71.2	68.9
17	70.2	92.3	77.3	71.9	67.9	70.0	75.5	77.4	80.2	74.4	68.3	68.9
18	71.7	92.7	73.8	71.8	68.6	70.4	75.5	77.3	78.4	73.1	68.7	68.9
19	71.7	89.6	72.2	71.7	69.1	70.7	77.7	75.6	77.5	70.2	68.1	68.8
20	72.3	86.7	71.9	71.7	70.6	69.8	79.4	75.7	75.4*	69.2	68.1	68.4
21	77.9	84.4*	71.5	71.2	70.4	69.6	84.7	73.7	75.1	67.9	66.0	68.5
22	89.8	82.7*	71.6	71.0	72.7	69.8	94.3	73.1	73.5	67.3	67.7	69.1
23	93.3*	80.0	71.8	71.1	72.9	69.2	93.2*	72.8	71.2	67.0	67.7	69.8
24	89.0*	78.3	70.8	71.0	72.1	69.0	92.5	71.9	69.9	66.9	68.6	69.5
25	95.2	77.2	71.0	75.6	72.5	68.7	88.5*	70.3	67.3	68.0	70.1	69.6
26	88.3*	75.5	70.0	77.4	72.3	68.4	83.0	69.5	66.3	67.7	72.0	70.8
27	80.6	74.6	70.2	79.2	73.1	67.7	78.5*	69.8	66.2	67.2	75.2	70.2
28	78.1	72.7	71.0	81.2	73.1	67.8	76.7	69.0	66.2	70.0	77.0	70.4
29	83.2	72.5	72.3	83.5	73.1	68.3	73.6	69.1	66.0	71.2		71.5
30	80.8	71.4	74.8	83.8	73.9	68.3	70.5	68.8	66.3	73.7		71.5
31		69.6		82.4	74.1		69.5		66.6	76.6		71.5
Mean	75.7	82.0	78.5	81.3	73.3	70.2	74.2	72.6	72.4	70.9	81.5	76.2

A = interpolated value; --- = no observation.
*Adjusted for burst in progress at time of measurement; †corrected for antenna drift.
The yearly mean 2800 MHz flux adjusted to 1 astronomical unit equaled 74.7 in 1985.

D A I L Y S O L A R I N D I C E S

March 1986

Day	Julian Day	Bartels Cycle Day	Sunspot Numbers Int	Sunspot Numbers Amer	Obs Flux Ottawa (2800)	Solar Flux Adjusted to 1 Astronomical Unit SGMR (15400)	SGMR (8800)	SGMR (4995)	Ottawa (2800)	SGMR (2695)	SGMR (1415)	SGMR (610)	SGMR (410)	SGMR (245)
01	60	2	16	14	85.6	568	320	99	84.1	78	65	44	22	10
02	61	3	33	30	90.7	566	310	104	89.2	85	68	58	25	17
03	62	4	34	26	92.7*	569	314	126	91.1*	91	70	62	25	16
04	63	5	32	29	92.9	561	308	108	91.4	86	71	57	24	13
05	64	6	37	28	92.0	568	317	119	90.5	88	72	58	22	14
06	65	7	33	30	91.1*	565	327	115	89.7*	95	77	57	29	15
07	66	8	38	28	88.9	---	---	---	87.6	--	--	--	--	--
08	67	9	32	24	86.3	---	---	---	85.1	--	--	--	--	--
09	68	10	23	19	85.5	---	---	---	84.3	--	--	--	--	--
10	69	11	20	14	82.7	555	307	114	81.6	79	65	51	21	11
11	70	12	18	11	80.3	493	283	111	79.3	81	61	52	21	12
12	71	13	13	11	77.8	569	292	100	76.9	73	61	55	21	10
13	72	14	8	7	75.2	374	260	97	74.3	73	58	52	21	11
14	73	15	0	0	72.7	539	295	103	71.9	68	56	48	21	14
15	74	16	10	0	70.5	554	295	99	69.7	67	55	53	20	10
16	75	17	0	0	69.6	556	301	104	68.9	67	54	48	19	11
17	76	18	0	0	69.6	558	293	103	68.9	66	52	48	20	11
18	77	19	0	0	69.5	550	300	101	68.9	68	53	50	20	9
19	78	20	0	0	69.4	---	---	---	68.8	--	--	--	--	--
20	79	21	12	9	69.0	568	304	99	68.4	67	54	48	20	10
21	80	22	13	10	69.0	563	300	101	68.5	64	54	49	20	12
22	81	23	10	9	69.6	558	301	92	69.1	66	52	48	18	10
23	82	24	19	19	70.2	---	---	---	69.8	--	--	--	--	11
24	83	25	18	17	69.9	---	---	---	69.5	--	--	--	--	--
25	84	26	10	8	69.9	545	287	88	69.6	66	54	47	20	10
26	85	27	10	8	71.1	554	292	105	70.8	68	55	49	20	10
27	86	1	11	8	70.5	546	298	106	70.2	68	56	48	20	11
28	87	2	13	11	70.6	558	301	105	70.4	68	55	49	20	11
29	88	3	11	10	71.7	554	---	103	71.5	68	58	52	20	10
30	89	4	12	8	71.6	549	---	99	71.5	68	57	49	21	9
31	90	5	0	0	71.6	548	---	99	71.5	68	57	55	21	10
Mean			16	12	77.0	548	300	104	76.2	73	60	51	21	11

*Adjusted for burst in progress at time of measurement.

The observed and the adjusted Ottawa fluxes tabulated above are the "Series C" daily values reported by the Algonquin Radio Observatory, Ottawa, Ontario, Canada. The letter "A" following an entry designates an interpolated flux. Numbers in parentheses in the column headings denote frequencies in MHz.

Equipment problems produced the gaps shown here in the Air Weather Service's Sagamore Hill (SGMR) observations.

The International and American sunspot numbers shown above are preliminary values.

OBSERVED AND PREDICTED SOLAR ACTIVITY INDICES

MARCH 1986

Date	RELATIVE SUNSPOT NUMBERS International (Ri) Monthly Mean	International (Ri) Smoothed	American (Ra) Monthly Mean	American (Ra) Smoothed	Derived (Rs) Monthly Mean	Derived (Rs) Smoothed	2800 MHz RADIO FLUX Adjusted to 1 AU (Sa) Monthly Mean	Sa Smoothed
May 82	82.2	120	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	101	117.8	103	118.5	112	167.1	161
Oct	94.7	96	90.1	97	111.8	106	160.9	155
Nov	98.1	95	93.2	95	114.8	103	163.7	153
Dec	127.0	95	145.0	95	146.7	101	193.2	151
Jan 83	84.3	93	82.8	93	86.7	98	137.7	148
Feb	51.0	90	53.4	90	67.2	94	119.6	145
Mar	66.5	86	60.5	85	64.7	90	117.3	141
Apr	80.7	82	74.5	81	67.5	85	119.9	136
May	99.2	77	97.7	77	86.1	80	137.1	131
Jun	91.1	70	93.1	69	92.4	72	143.0	124
Jul	82.2	66	82.2	63	77.4	66	129.1	118
Aug	71.8	66	69.2	63	75.7	66	127.5	118
Sep	50.3	68	47.4	66	57.0	67	110.2	119
Oct	55.8	68	52.3	66	58.6	67	111.7	120
Nov	33.3	59	30.2	65	35.6	67	90.4	120
Dec	33.4	64	32.3	62	35.7	65	90.5	118
Jan 84	57.0	60	54.4	58	59.4	61	112.4	115
Feb	85.4	56	81.5	54	86.2	58	137.2	101
Mar	83.5	53	83.0	51	68.5	55	120.8	108
Apr	69.7	50	66.5	48	78.1	52	129.7	105
May	76.4	48	72.1	45	79.6	49	131.1	103
Jun	46.1	46	45.2	44	49.8	48	103.5	102
Jul	37.4	44	36.2	42	37.6	39	92.2	99
Aug	25.5	40	24.5	38	30.7	41	85.8	95
Sep	15.7	34	13.6	32*	23.2	35	78.9	90
Oct	12.0	29	9.8	27*	16.9	31	73.1	86
Nov	22.8	25	19.4	23*	18.6	26	74.6	72
Dec	18.7	22	17.0	20*	17.4	23	73.5	79
Jan 85	16.5	20	14.5	19*	15.9	21	72.1	77
Feb	15.9	20	16.3	18*	15.7	20	71.9	76
Mar	17.2	19	11.8*	16*	16.3	19	72.5	75
Apr	16.2	18	17.1*	17*	19.8	19	75.7	75
May	27.5	18	24.0*	17*	26.6	19	82.0	75
Jun	24.2	18	22.2*	16*	22.8	19	78.5	75
Jul	30.7	17*	30.8*	16*	25.8	19	81.3	75
Aug	11.1	17*	10.7*	15*	17.2	19	73.3	75
Sep	3.9	17*	3.4*	16*	13.8	20	70.2	76
Oct	18.6	16(2)*	16.5*	15	18.1	19	74.2	--
Nov	16.2	15(3)*	16.4*	14	16.4	18	72.6	--
Dec	17.3	14(4)*	10.1*	13	16.2	17	72.4	--
Jan 86	2.3†	14(4)*	2.3*	13	14.6	17	70.9	--
Feb	23.6†	14(5)*	23.8*	12	26.0	16	81.5	--
Mar	15.7†	13(6)*	12.5*	12	20.3	16	76.2	--
Apr	----	12(7)*	----	11	----	15	----	--
May	----	11(8)*	----	10	----	14	----	--
Jun	----	11(8)*	----	10	----	13	----	--
Jul	----	10(8)*	----	9	----	12	----	--
Aug	----	9(9)*	----	8	----	11	----	--
Sep	----	9(8)*	----	8	----	11	----	--

*An asterisk marks either a value of the observed 12-month running mean or of a predicted 12-month average that is based in part on preliminary observations.

Underlined entries indicate predicted values and parentheses enclose the absolute value of the 90% confidence limits. The two columns headed "Derived" represent a sunspot number computed from a linear regression equation between the 2800 MHz solar flux (adjusted to 1 astronomical unit) and the Zurich sunspot number.

SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS FOR CYCLE 21

MARCH 1986

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	120	117	115	109	101	96	95	95
1983	93	90	86	82	71	71	66	66	68	68	67	64
1984	60	56	53	50	48	47	44	40	34	29	25	22
1985	21	20	19	18	18	18	17	17	17	16	15	14
										(2)	(3)	(4)
1986	14	14	13	12	11	11	10	9	9	9	9	9
	(4)	(5)	(6)	(7)	(8)	(8)	(8)	(9)	(8)	(8)	(8)	(8)

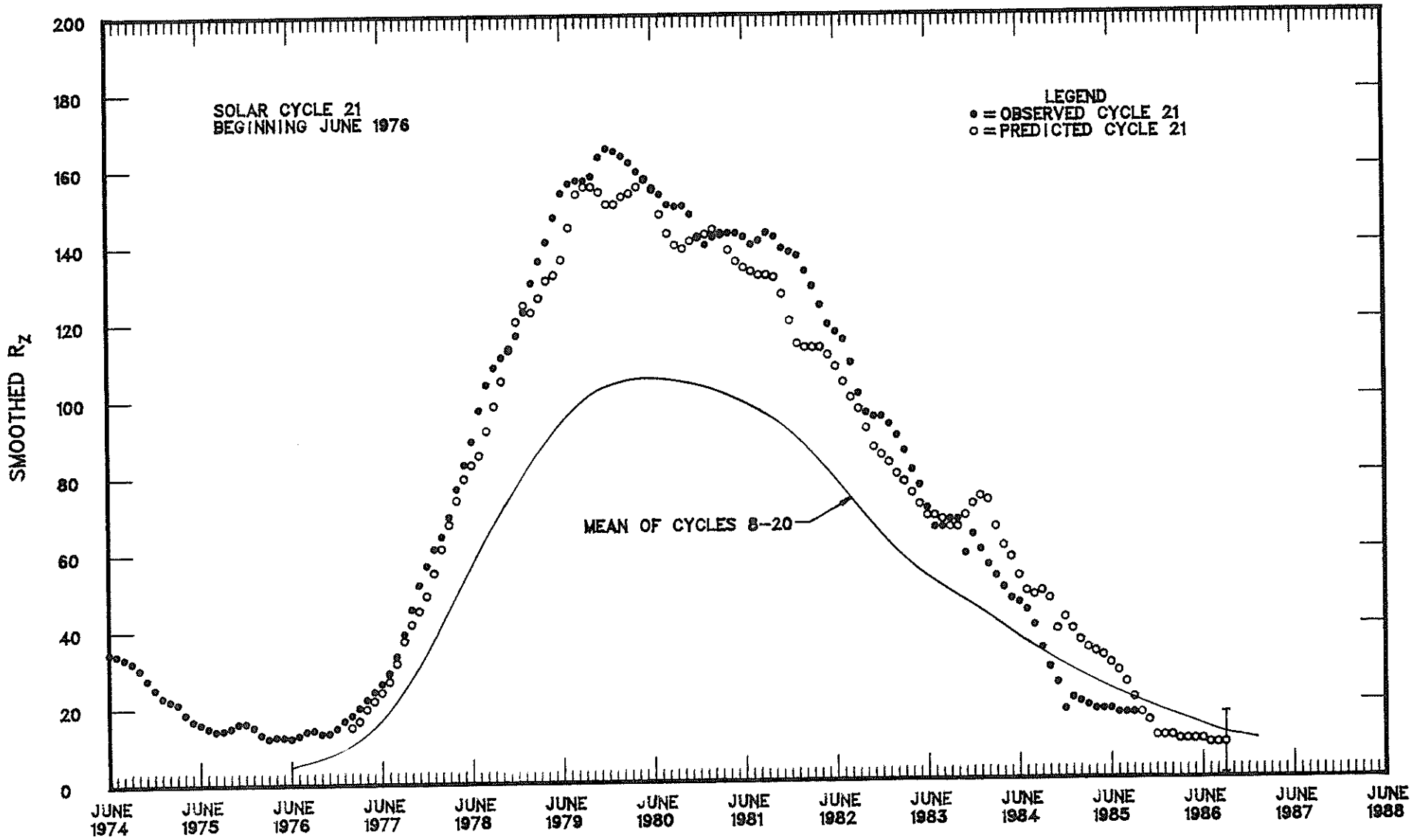
An asterisk marks the minimum and the maximum of Sunspot Cycle 21.

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 1985, and on provisional international numbers thereafter.

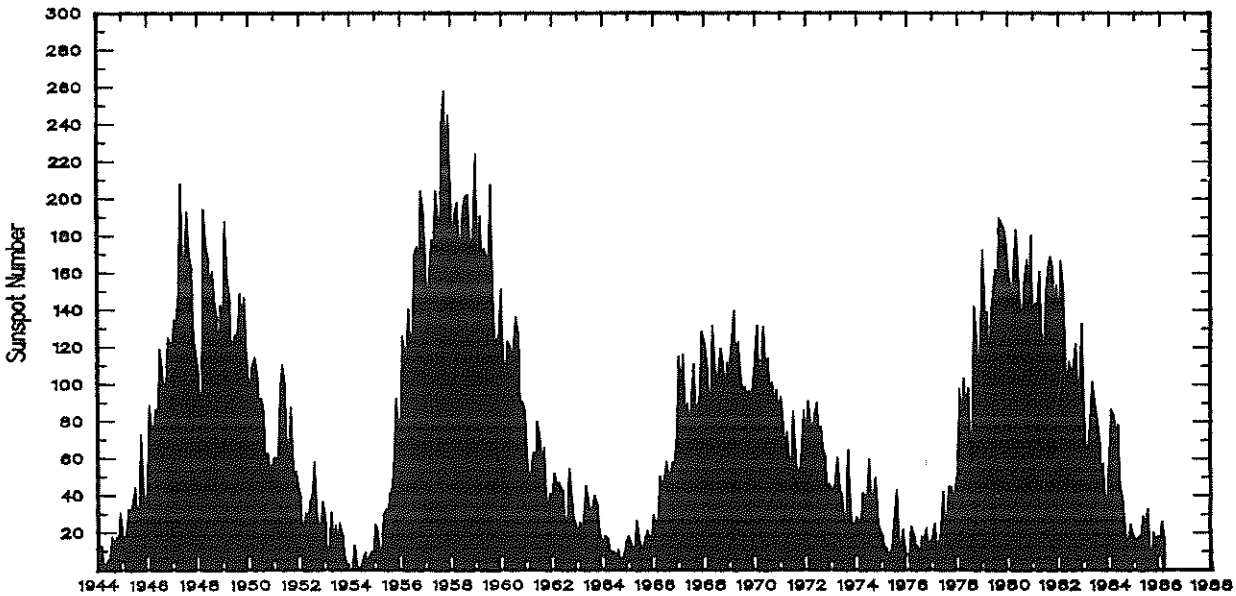
The entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 9 in the March 1986 edition of the "Solar-Geophysical Data" supplement.) Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval; subtracting the number in parentheses from the predicted value generates the lower limit. Consider, for example, the September 1986 prediction tabulated above. There exists a 90% chance that in September 1986 the actual smoothed sunspot number will fall somewhere between 1 and 17.

THE MCNISH-LINCOLN PREDICTION METHOD GENERATES USEFUL 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.

OBSERVED AND ONE-YEAR-AHEAD PREDICTED SMOOTHED SUNSPOT NUMBERS



MONTHLY MEAN SUNSPOT NUMBERS
January 1944 — March 1986



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	55.8	63.6	37.7	32.6	39.9
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	94.7	98.1	127.0
1983	84.3	51.0	66.5	80.7	99.2	91.1	82.2	71.8	50.3	55.8	33.3	33.4
1984	57.0	85.4	83.5	69.7	76.4	46.1	37.4	25.5	15.7	12.0	22.8	18.7
1985	16.5	15.9	17.2	16.2	27.5	24.2	30.7	11.1	3.9	18.6	16.2	17.3
1986	2.3*	23.6*	15.7*									

*Provisional

H - ALPHA SOLAR FLARES

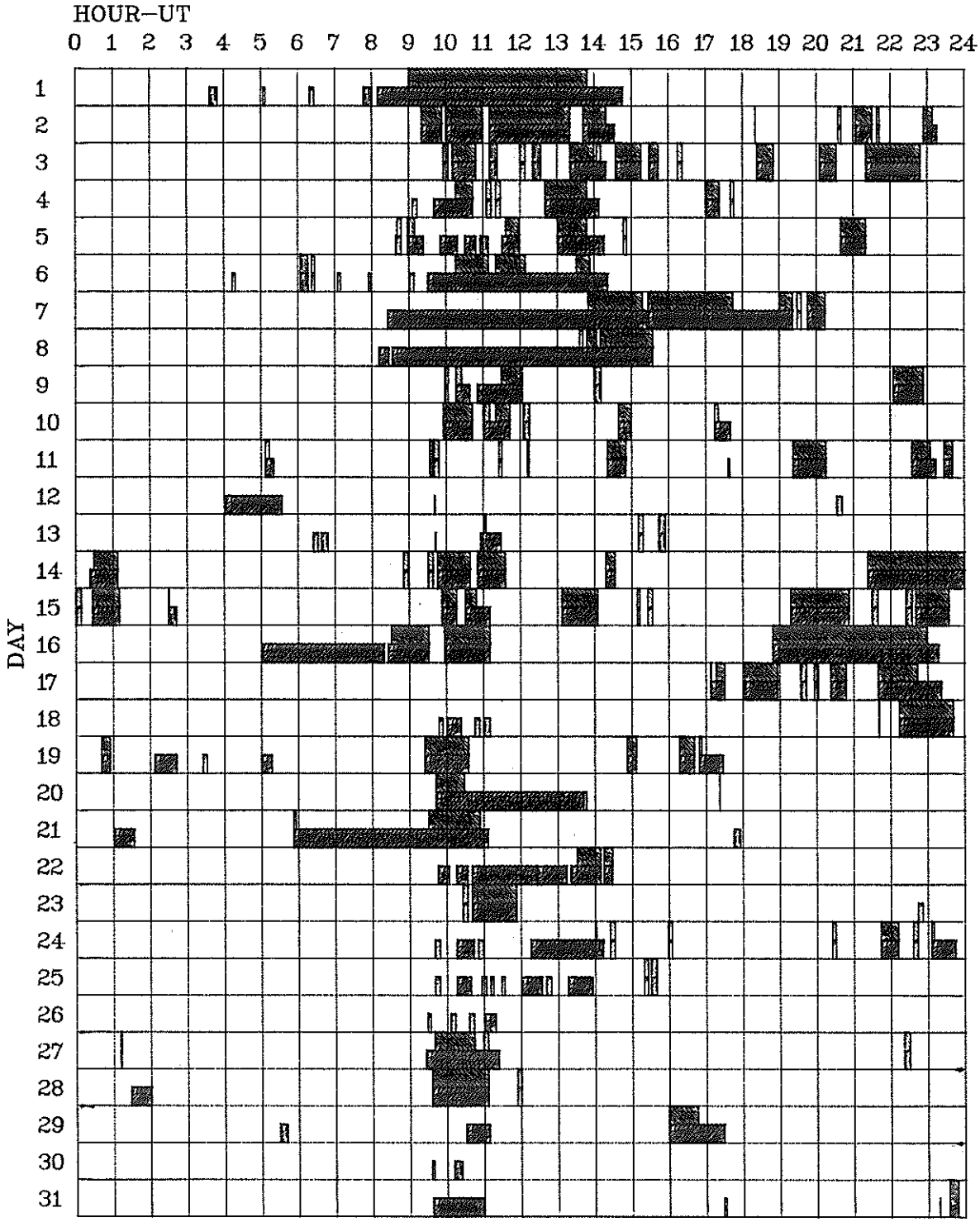
MARCH 1986

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Corr (Sq Deg)	Remarks
PALE	01	0142	0144	0145	S01	E80	4717	03	07.0	3	SF		3	C		12		
LEAR	01	0450	0451	0456	N05	E80	4717	03	07.2	6	SF		3	C		24		
LEAR	01	0640	0642	0650	N03	E78	4717	03	07.1	10	SN		3	C		29		
LEAR	01	0703	0704	0709	N02	E79	4717	03	07.2	6	SF		3	C		24		
LEAR	01	0756	0757	0800	N03	E76	4717	03	07.0	4	SF		3	C		16		
HOLL	01	1531	1532	1536	S01	E70	4717	03	06.9	5	SF		3	C		17		
HOLL	01	1549	1553	1640	N02	E71	4717	03	07.0	51	SN	C 1.7	4	C		50		F
PALE	01	1857E		1915	S00	E69	4717	03	06.9	18D	SF		2	C		15		F
PALE	01	2004		2011	S01	E70	4717	03	07.1	7	SF		2	C		26		
HOLL	01	2157	2158	2220	N01	E67	4717	03	06.9	23	SF		4	C		16		F
HOLL	01	2222	2235	2306	N01	E68	4717	03	07.0	44	SF		4	C		29		F
LEAR	02	0542		0559	N01	E64	4717	03	07.0	17	SF	C 3.1	2	C		101		
HOLL	02	1509	1509	1518	N02	E57	4717	03	06.9	9	SF		3	C		16		
HOLL	02	1743	1743	1749	S01	E59	4717	03	07.1	6	SF		3	C		36		F
PALE	02	1950	1953	2014	S01	E57	4717	03	07.1	24	SF		3	C		65		E
HOLL	02	2043	2051	2103	S01	E58	4717	03	07.2	20	SN	C 4.3	3	C		63		F
PALE	02	2052	2053	2057	N00	E54	4717	03	06.9	5	SN	C 4.3	3	C		84		FH
LEAR	03	0500	0501U	0512	N01	E52	4717	03	07.1	12	1B	C 7.5	3	C		185		F
PURP	03	0501	0502	0508	S02	E52		03	07.1	7	1F	C 7.5		C	0502	234	4.0	
GOES	03	1242	1254	1257						15		M 1.3						
CATA	03	1255	1255	1310	S03	E45		03	06.9	15	1B		2	C	1255	225	3.3	
GOES	03	1331	1335	1337						6		C 1.9						
GOES	03	1351	1419	1435						44		C 4.7						
HOLL	03	1422	1425	1434D	N02	E48	4717	03	07.2	12D	1N		3	C		194		F
PALE	03	2035	2035	2050	S02	E42	4717	03	07.0	15	SF		3	C		23		H
LEAR	03	2338	2338	2348	N00	E41	4717	03	07.0	10	SF		3	C		29		
LEAR	04	0447	0448	0451	N01	E38	4717	03	07.0	4	SF		3	C		53		F
LEAR	04	0720	0723	0726	N01	E36	4717	03	07.0	6	SF		3	C		31		F
HOLL	04	1930	1936	2007	N01	E28	4717	03	06.9	37	SF		3	C		28		UF
PALE	04	2251	2307	2321	N01	E30	4717	03	07.2	30	SF		3	C		31		H
LEAR	05	0427	0429	0500	N04	E24	4717	03	07.0	33	SN	C 1.2	3	C		113		F
LEAR	05	0703	0708	0759	N04	E26	4717	03	07.2	56	1B		3	C		375		F
GOES	05	0706	0709	0820						74		M 1.6						
PEKG	05	0710	0726	0810	N01	E23		03	07.0	60	1N			C		294	3.4	E
HOLL	05	1948	1952	1958	S00	E14	4717	03	06.9	10	SF		3	C		48		F
PURP	06	0051	0053	0057	S00	E15		03	07.1	6	SF			C	0053	68	.7	E
PURP	06	0246	0247	0305	N01	E15		03	07.2	19	SF			C	0247	44	.5	E
GOES	06	0412	0417	0428						16		C 5.6						
PEKG	06	0415	0423	0430	N01	E09		03	06.8	15	2N			C		505	5.4	E
PURP	06	0420E	0420	0430	S01	E09		03	06.8	10D	1N			C	0420	318	3.3	
MITK	06	0420E	0421	0432	N01	E08		03	06.8	12D	1N			C	0421	200	2.1	E
PEKG	06	0432	0437	0445	N01	E12		03	07.1	13	1N			C		368	4.1	E
ATHN	06	0900	0903	0912	N02	E11		03	07.2	12	SB		3	V	0903	95	1.0	
CATA	06	0910	0910	0915	N02	E11		03	07.2	5	SB		2	C	0910	56	.6	
HOLL	06	1637	1702	1757	N02	E01	4717	03	06.8	80	1F	C 4.6	4	C		287		UF
HOLL	07	0004	0006	0014	S00	W03	4717	03	06.8	10	SN	C 2.0	3	C		27		F
PALE	07	0129	0130	0132	S04	W01	4717	03	07.0	3	SN		2	C		36		F
PALE	07	0200	0203	0217D	S01	W04	4717	03	06.8	17D	SB	C 4.1	3	C		183		FHK
PEKG	07	0200	0205	0212	S01	W03		03	06.8	12	1N			C		252	2.6	D
PALE	07	0200	0206	0217D	S01	W04	4717	03	06.8	17D	SB		3	C		109		K
MITK	07	0202	0203	0212	S01	W04		03	06.8	10	SN			C	0203			DH
ATHN	07	0943	0945	0948	S02	W09		03	06.7	5	SF		3	C	0945	19	.2	
ATHN	07	1253E	1255U	1303	S03	W12		03	06.6	10D	SN		3	C	1255	48	.5	
HOLL	07	2355	2355	2358	S01	W10	4717	03	07.2	3	SF		3	C		26		
PALE	09	0112	0112	0121	N02	W25	4717	03	07.2	9	SF		3	C		21		F
LEAR	09	0112	0112	0123	N03	W24	4717	03	07.2	11	SF		3	C		24		FH
RAMY	10	1412	1413	1431	N00	W44	4717	03	07.3	19	SN		3	C		29		F
ATHN	12	0835	0840	0850	N03	W65		03	07.5	15	SN		3	C	0840	19	.4	
RAMY	29	1203	1204	1217	N02	W07	4720	03	29.0	14	SN		3	C		94		

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

MARCH 1986

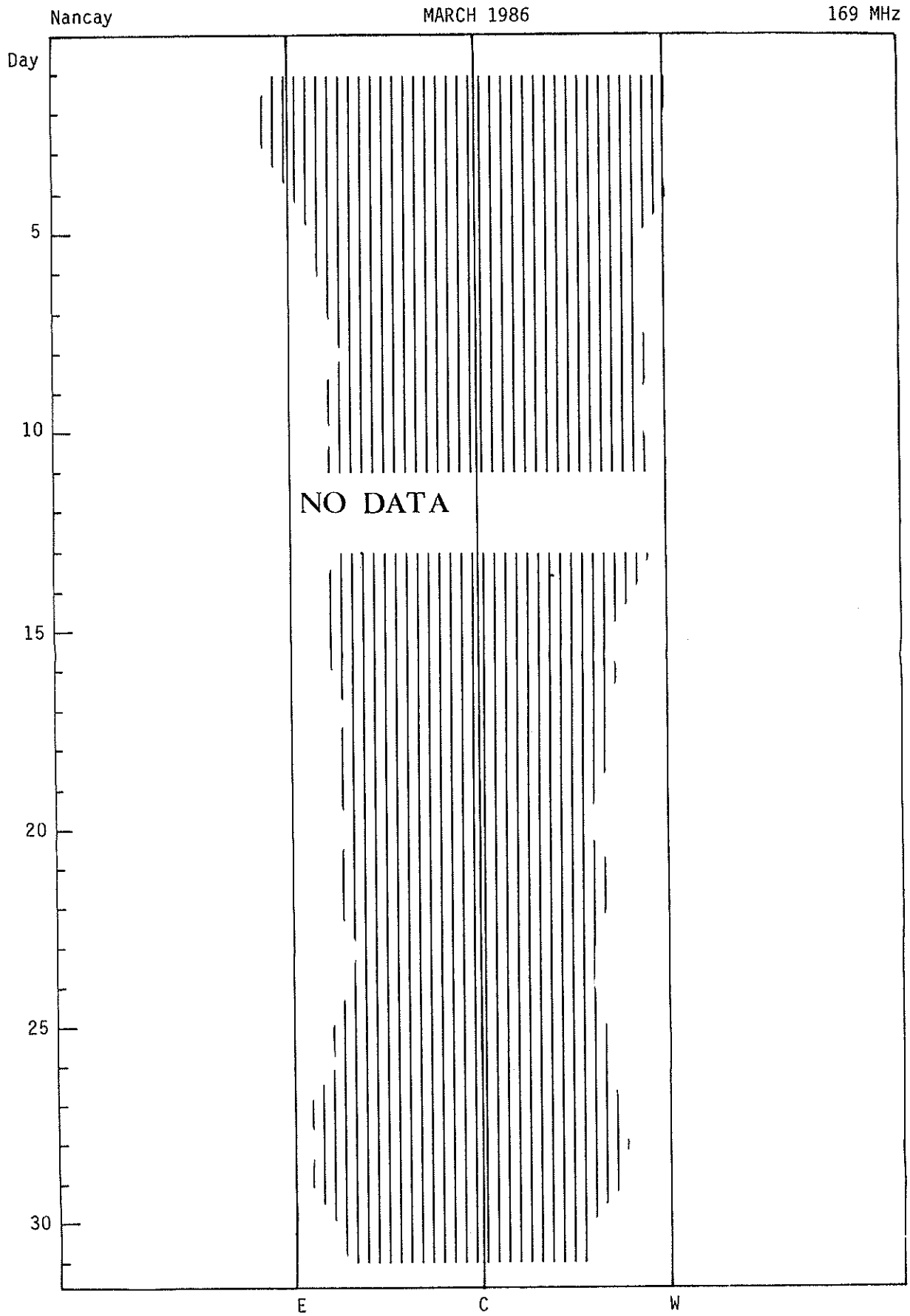


Times of no flare patrol, shown here as shaded areas, combine reports from the observatories listed below. Portions of a panel completely shaded mark dates and times of no patrol of any kind, that is, of neither visual nor cinematographic; portions of a panel with only the bottom half shaded mark times of strictly visual patrol.

Athens	Catania	Learmonth	Palehua	Ramey
Bucharest	Holloman	Manila	Peking	Wendelstein
	Istanbul	Mitaka	Purple Mt.	Yunnan

16
Mar 86

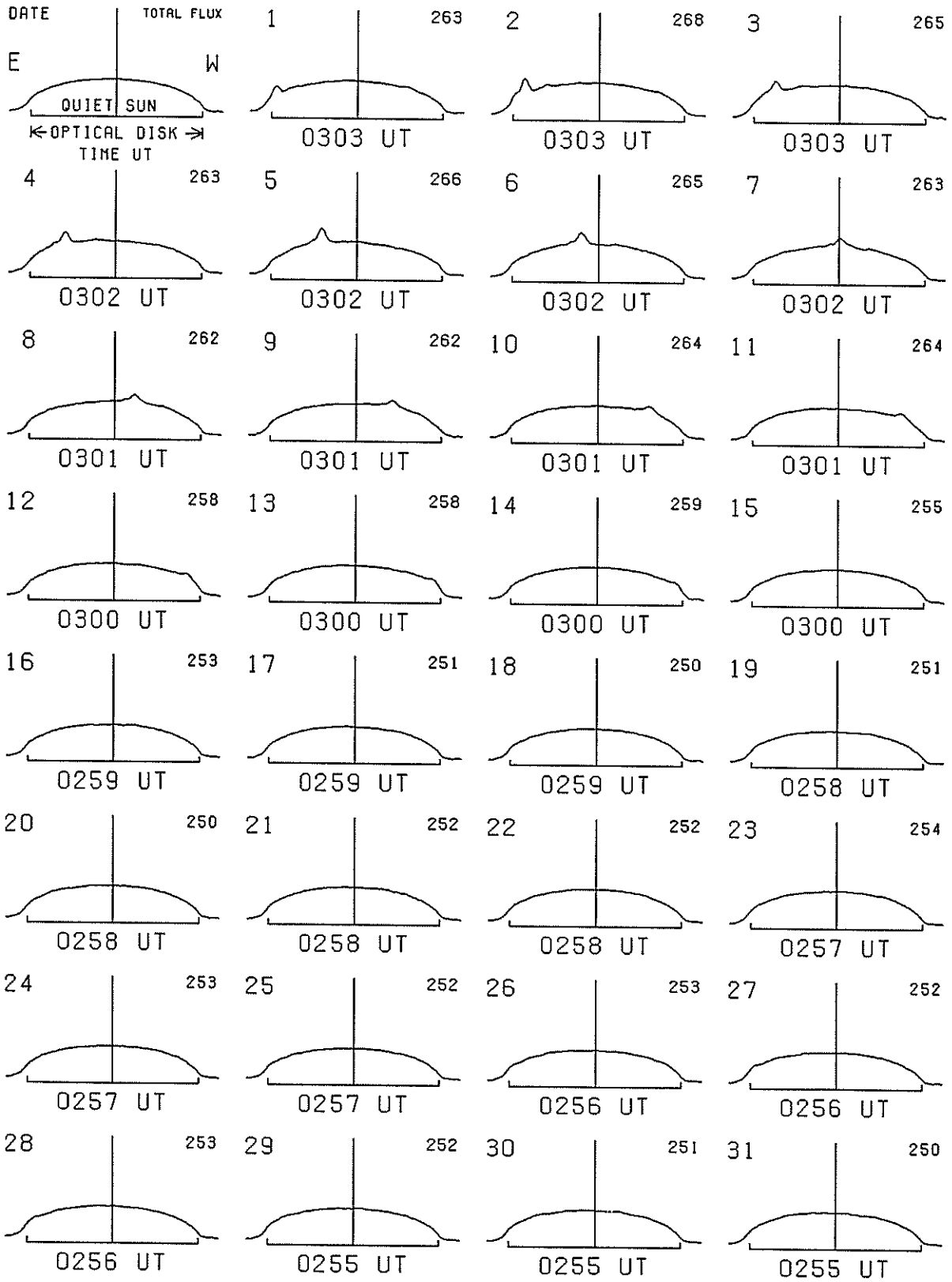
SOLAR INTERFEROMETRIC OBSERVATIONS



EAST-WEST SOLAR SCANS
MARCH 1986

TOYOKAWA, JAPAN

3 CM
FAN BEAM WITH 1.1 MINUTES OF ARC



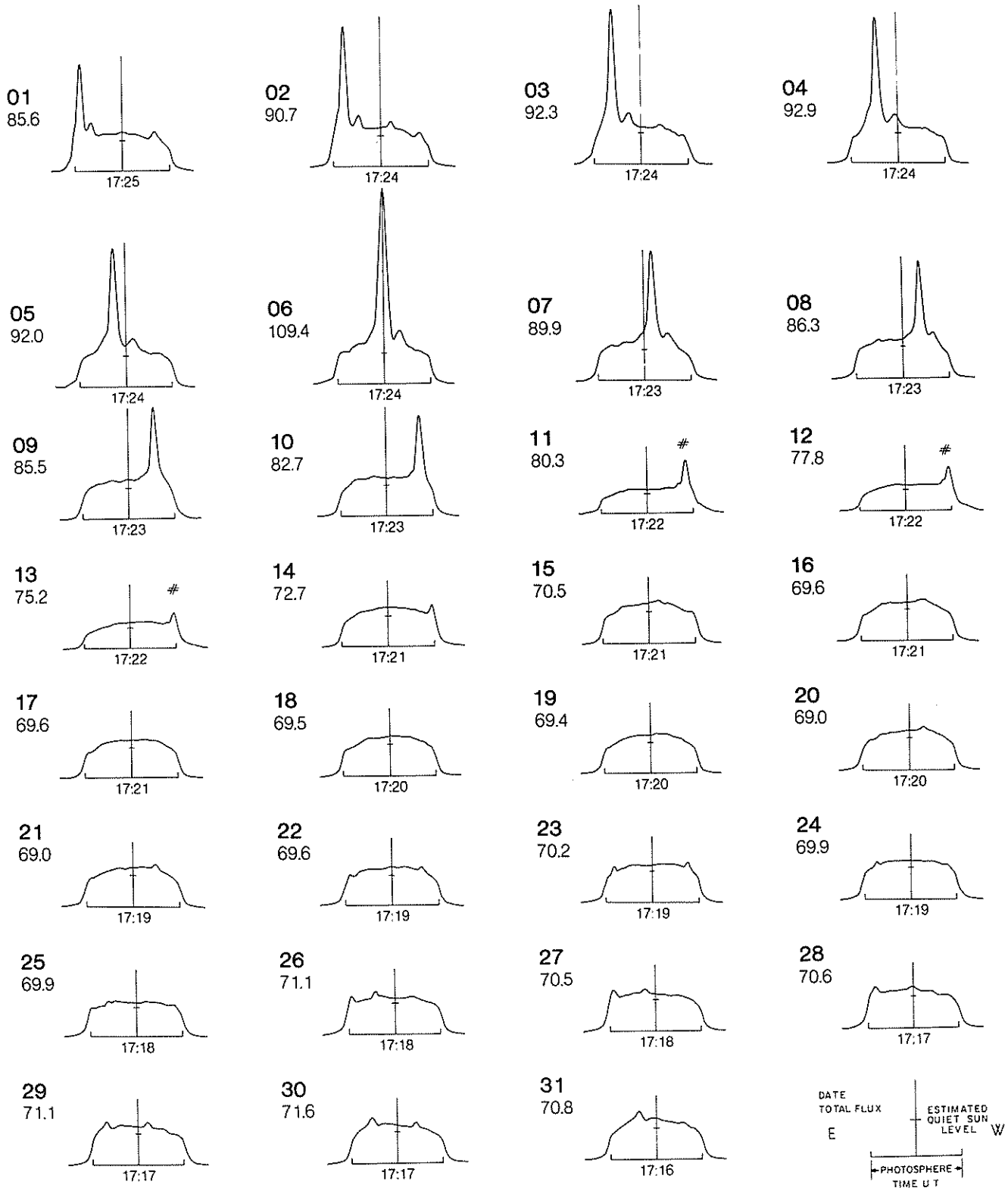
18
Mar 86

EAST-WEST SOLAR SCANS

MARCH 1986

ALGONQUIN RADIO OBSERVATORY
CANADA

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



Antennas were ice covered

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

MARCH 1986

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean (10^{-22} W/m^2 Hz)	Int	Remarks
01	2800	OTTA	20	GRF	1549.0	1551.0	25.0	2.4	0.9		
02	8800	LEAR	8	S	1005.1	1005.1	.5	26.0			QL=6 ST=2 TYP=3
	2800	OTTA	21	GRF	1948.0	2000.0	30.0	2.0	1.0		
	2800	OTTA	40	F	1948.7	1949.3	5.0	22.4			
	2800	OTTA	21	GRF	2035.0	2115.0	90.0	3.2	1.6		
	2800	OTTA	24	OAR	2035.0	2210.0	95.0	2.8			
	2800	OTTA	4	S/F	2038.0	2043.0	18.0	44.0	11.4		
03	2800	OTTA	4	S/F	1251.8	1252.9	6.0	63.0	11.0		
	2695	ATHN	47	GB	1252.0	1253.0	5.0	65.0			QL=6 ST=2 TYP=5
	8800	ATHN	47	GB	1252.0	1253.0	5.0	83.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1253.0	1253.1	.5	92.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1253.0	1253.1	.5	83.0			QL=6 ST=2 TYP=5
	2800	OTTA	21	GRF	1330.0	1415.0	280.0	8.6	3.8		
	2800	OTTA	1	S	1334.0	1334.5	1.0	5.6	2.4		
	2800	OTTA	3	S	1353.3	1354.2	5.0	14.4	3.6		
04	2800	OTTA	1	S	1751.0	1751.2	1.0	1.2	0.6		
	2800	OTTA	20	GRF	1900.0	1955.0	140.0	3.2	1.4		
	2695	PENT	21	GRF	2230.0	2236.0	40.0	2.0	1.0		
	2695	PENT	1	S	2238.0	2240.0	3.0	1.4	0.7		
05	2695	ATHN	47	GB	0707.0	0708.0	5.0	230.0			QL=6 ST=2 TYP=5
	8800	ATHN	49	GB	0707.0	0708.0	2.0	610.0			QL=6 ST=2 TYP=6
	8400	BERN	46	C	0707.4	0708.0	30.0U	442.0			
	8800	LEAR	47	GB	0707.5	0708.0	2.3	370.0			QL=6 ST=2 TYP=5
	2695	LEAR	47	GB	0707.5	0708.3	5.1	260.0			QL=6 ST=2 TYP=5
	2800	OTTA	22	GRF	1945.0	2032.0	120.0	2.0	1.4		
	2800	OTTA	20	GRF	2305.0	2320.0	55.0D	2.0			
06	2695	LEAR	4	S/F	0414.5	0415.8	2.8	40.0			QL=6 ST=2 TYP=3
	8800	LEAR	47	GB	0414.8	0415.8	2.5	74.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	0415.5	0415.8	.6	72.0			QL=6 ST=2 TYP=5
	2695	LEAR	47	GB	0955.3	0955.8	1.0	68.0			QL=3 ST=2 TYP=5
	2800	OTTA	21	GRF	1550.0	1705.0	350.0	21.4	5.0		
	2800	OTTA	8	S	1652.6	1652.6	.1	5.6			
	2800	OTTA	40	F	1659.0	1703.0	4.5	10.0			
10	2800	OTTA	20	GRF	1950.0	2027.0	80.0	2.0	0.8		

Reports are received routinely from the following observatories:

ATHN = Athens	HUAN = Huancayo	NAGO = Nagoya	POTS = Potsdam
BERN = Berne	IRKU = Irkutsk	NOBE = Nobeyama	SAOP = Sao Paulo
BORD = Bordeaux	IZMI = IZMIRAN	ONDR = Ondrejov	SGMR = Sagamore Hill
CRIM = Crimea	KISV = Kislovodsk	OTTA = Ottawa	TORN = Torun
DWIN = Dwingeloo	KRAK = Krakow	PALE = Palehua	TYKW = Toyokawa
GORK = Gorky	LEAR = Learmonth	PEKG = Peking	TRST = Trieste
HIRA = Hiraiso	MANI = Manila	PENT = Penticton	UPIC = Upice

Explanation of Type Code:

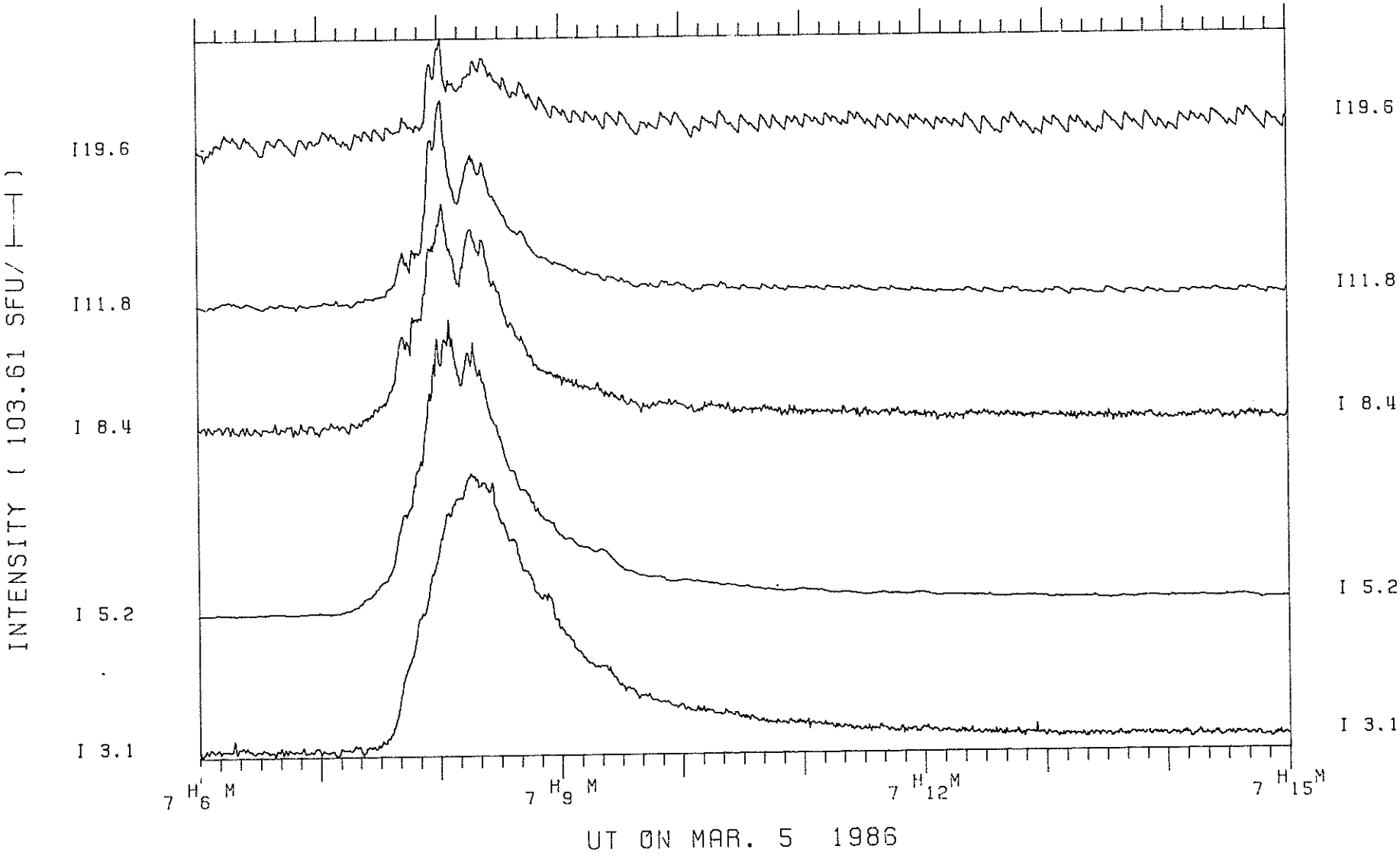
1 Simple 1	7 Minor +	24 Rise	30 Post Burst Increase A	43 Onset of Noise Storm
2 Simple 1F	8 Spike	25 Rise A	31 Post Burst Decrease	44 Noise Storm in Progress
3 Simple 2	20 Simple 3	26 Fall	33 Absorption	45 Complex
4 Simple 2F	21 Simple 3A	27 Rise and Fall	40 Fluctuation	46 Complex F
5 Simple	22 Simple 3F	28 Precursor	41 Group of Bursts	47 Great Burst
6 Minor	23 Simple 3AF	29 Post Burst Increase	42 Series of Bursts	48 Major

1A Simple 1A	4A Simple 2AF	24PF Post Rise F	27F Rise and Fall F	
3A Simple 2A	240 Rise only	16A Fall A	27AF Rise and Fall AF	
21A Simple 3A GRF	240F Rise only F	260 Fall Only	31A Post Burst Decrease A	
2A Simple 1AF	24P Post Rise	26F Fall F	32A Absorption A	

Remarks:
QL = Quality (1=poor to 6=excellent)
ST = Status (1=real time; 2=final; 3=correction; 4=deletion)
TYP= Type (1=noise storm;2=rise in base level;3=minor;4=group;5=major;6=major plus;7=Castelli U-type burst)

INSTITUTE OF APPLIED PHYSICS, UNIVERSITY OF BERN, SWITZERLAND

INTEGRATION TIME= 500 MS

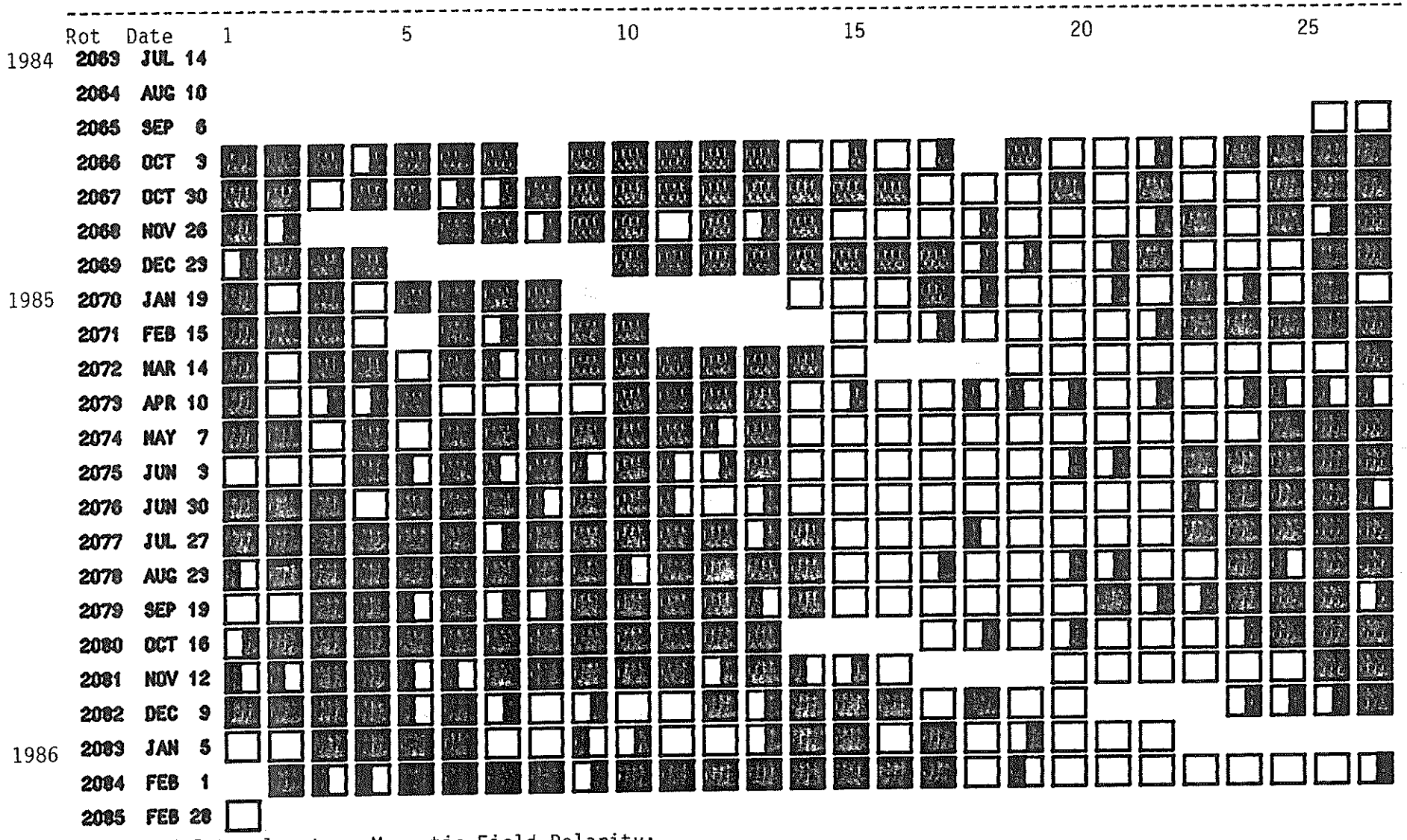


VOSTOK INFERRED INTERPLANETARY MAGNETIC FIELD
PRELIMINARY DATA

April 1985 - March 1986

Day	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar 86
1	A	AT	T	T	T	TA	TA	A	A	AT	-	A
2	A	A	T	T	AT	T	T	AT	A	AT	T	AT
3	A	AT	A	A	T	T	A	A	A	AT	TA	A
4	A	TA	A	T	T	T	A	AT	A	T	TA	T
5	A	TA	A	T	T	T	A	A	A	A	T	AT
6	A	TA	T	T	T	A	A	A	A	A	T	T
7	A	T	TA	TA	T	A	A	A	T	T	T	A
8	A	T	T	T	AT	AT	A	AT	T	T	T	TA
9	T	A	TA	T	T	A	T	T	T	T	AT	TA
10	T	T	T	TA	A	A	AT	T	T	T	T	TA
11	A	A	TA	A	A	AT	AT	T	T	A	T	TA
12	AT	T	T	AT	A	AT	T	TA	T	A	T	A
13	AT	T	TA	A	TA	A	T	TA	TA	TA	T	AT
14	T	T	AT	A	A	A	T	T	T	AT	T	A
15	A	T	T	A	A	T	AT	T	AT	A	T	A
16	A	T	A	A	A	TA	AT	TA	A	A	T	A
17	A	T	A	A	A	T	T	TA	AT	AT	T	AT
18	A	TA	A	A	T	T	T	T	A	T	A	TA
19	T	T	A	A	T	A	T	T	A	T	TA	AT
20	T	A	A	A	T	A	T	T	T	A	A	TA
21	T	A	A	A	T	T	T	T	AT	T	A	A
22	T	A	AT	TA	T	T	T	T	T	A	A	AT
23	A	A	AT	T	TA	TA	T	AT	T	AT	A	AT
24	AT	A	A	T	T	T	T	T	T	A	A	A
25	A	A	T	T	T	AT	T	TA	A	A	A	TA
26	A	A	T	TA	T	AT	T	AT	T	A	A	T
27	TA	A	T	T	T	T	T	A	A	-	AT	A
28	TA	A	T	T	T	T	-	-	A	-	A	AT
29	AT	A	T	T	T	T	-	-	-	-		T
30	A	A	T	T	T	T	-	-	-	-		T
31		T		T	T		-		-	-		AT

VOSTOK INFERRED INTERPLANETARY MAGNETIC FIELD

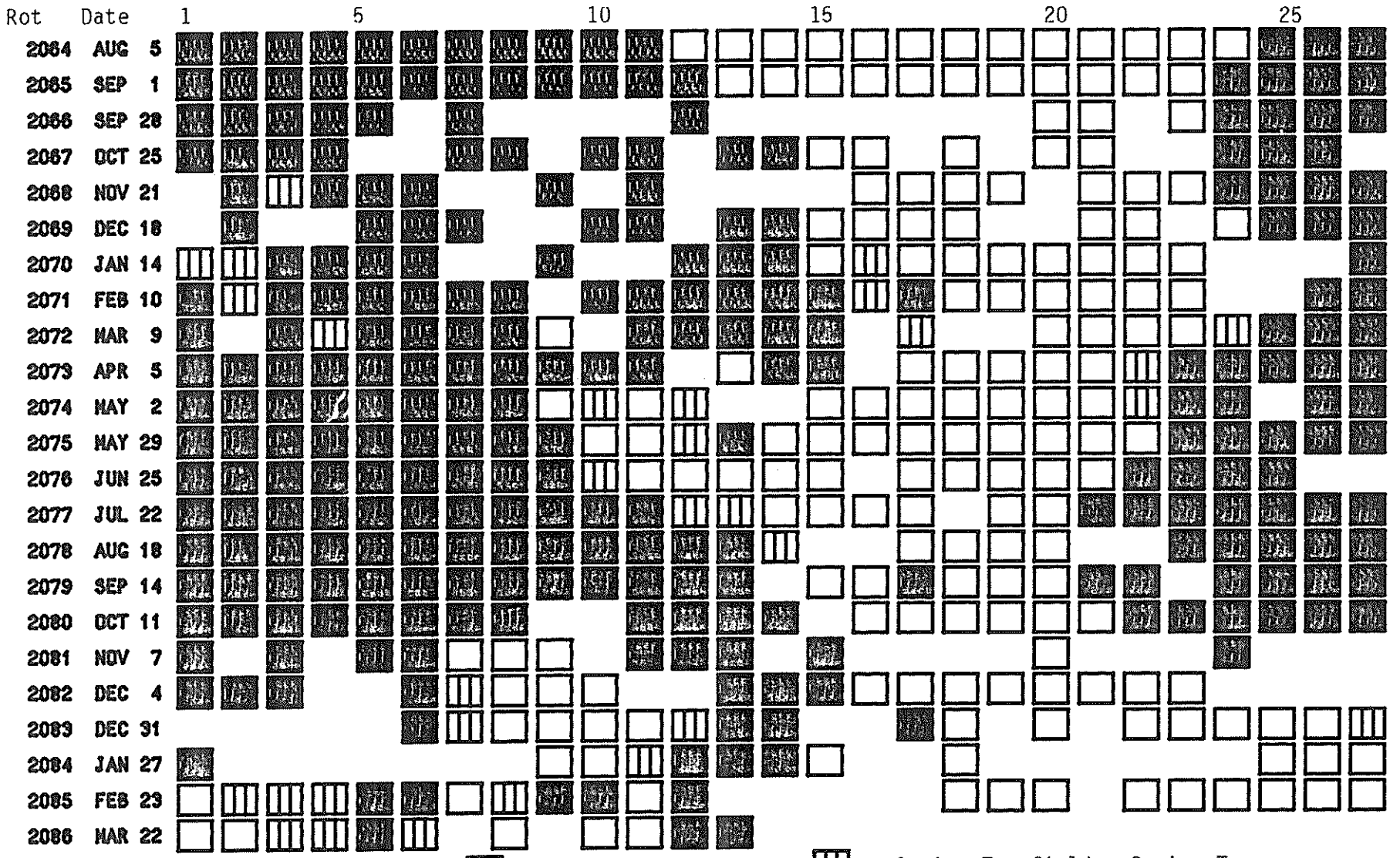


Inferred Interplanetary Magnetic Field Polarity:

No box = no data available ■ = definitely towards the Sun □ = definitely away from the Sun

The chart shows the daily inferences of the polarity of the interplanetary magnetic field based principally on the magnetograms produced by the magnetometer at the Vostok Antarctic Station of the USSR.

STANFORD MEAN SOLAR MAGNETIC FIELD



Mean Solar Magnetic Field Polarity: = field > 2 microT; = -2 microT ≤ field ≤ 2 microT

= field <-2 microT; No box = no data available

Observations are taken at 2000 UT. Rotation numbers given are the Bartels series, but the dates are not; these dates mark times of occurrence of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

23 Mar 86

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

April 1985 - March 1986

Day	1985 Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	1986 Jan	Feb	Mar
1	2	-5	-10	-16	-5	•	13	-7	•	•	•	3
2	-10	-8	-7	-14	1	•	15	-10	•	•	•	0
3	-14	-9	-11	-5	2	7	6	-8	•	•	•	-7
4	-13	-5	-12	2	8	3	-6	-15	-16	•	15	-7
5	-17	-5	-11	5	11	5	-13	-16	-20	-3	15	3
6	-20	-5	-3	17	6	3	•	-25	-25	1	2	-11
7	-7	-8	4	31	10	•	-20	-26	•	14	-8	•
8	-13	-8	6	24	•	•	-23	•	•	3	-27	•
9	-6	-5	-1	22	8	-26	-26	-17	-14	11	-14	•
10	-13	4	-4	•	8	-24	-27	•	1	12	4	•
11	-29	2	3	12	-9	-24	-21	-6	13	0	•	•
12	-19	8	12	7	-16	-22	-23	-5	8	-19	•	5
13	-21	1	22	5	-24	-25	-16	5	3	-14	9	11
14	-13	•	21	8	-28	-24	-26	11	•	•	•	8
15	-12	•	19	6	-22	-21	-20	6	•	•	•	•
16	•	11	17	-10	-23	-21	-27	•	-18	-12	•	14
17	3	22	13	-27	-22	-25	-21	-3	-20	21	•	11
18	-7	33	15	-27	-20	-29	-25	-2	-21	•	•	12
19	-10	48	7	-24	-20	-28	•	-11	3	24	•	12
20	•	39	-10	•	-17	-22	•	•	11	•	9	12
21	5	27	-21	•	-19	-21	-17	-5	15	16	18	10
22	6	25	-16	-19	-22	-23	-17	•	22	11	10	8
23	18	0	-13	-19	-18	-16	-12	•	28	12	9	5
24	23	-9	-13	-10	-22	-10	-8	•	15	15	1	2
25	18	-21	-16	-14	-28	-6	•	•	21	10	1	-1
26	1	•	-12	-19	-25	-5	4	15	8	2	0	-3
27	-12	-18	-12	-27	-15	•	19	•	•	-3	-4	0
28	-27	-8	-9	-26	-9	11	17	•	•	•	-4	•
29	-32	-8	-13	-27	-4	12	14	•	•	•		14
30	-47	-9	-9	-25	-2	-6	16	-8	•	•		•
31		-5		-22	1		5		•	•		15

Dot symbol indicates no data available for the day.

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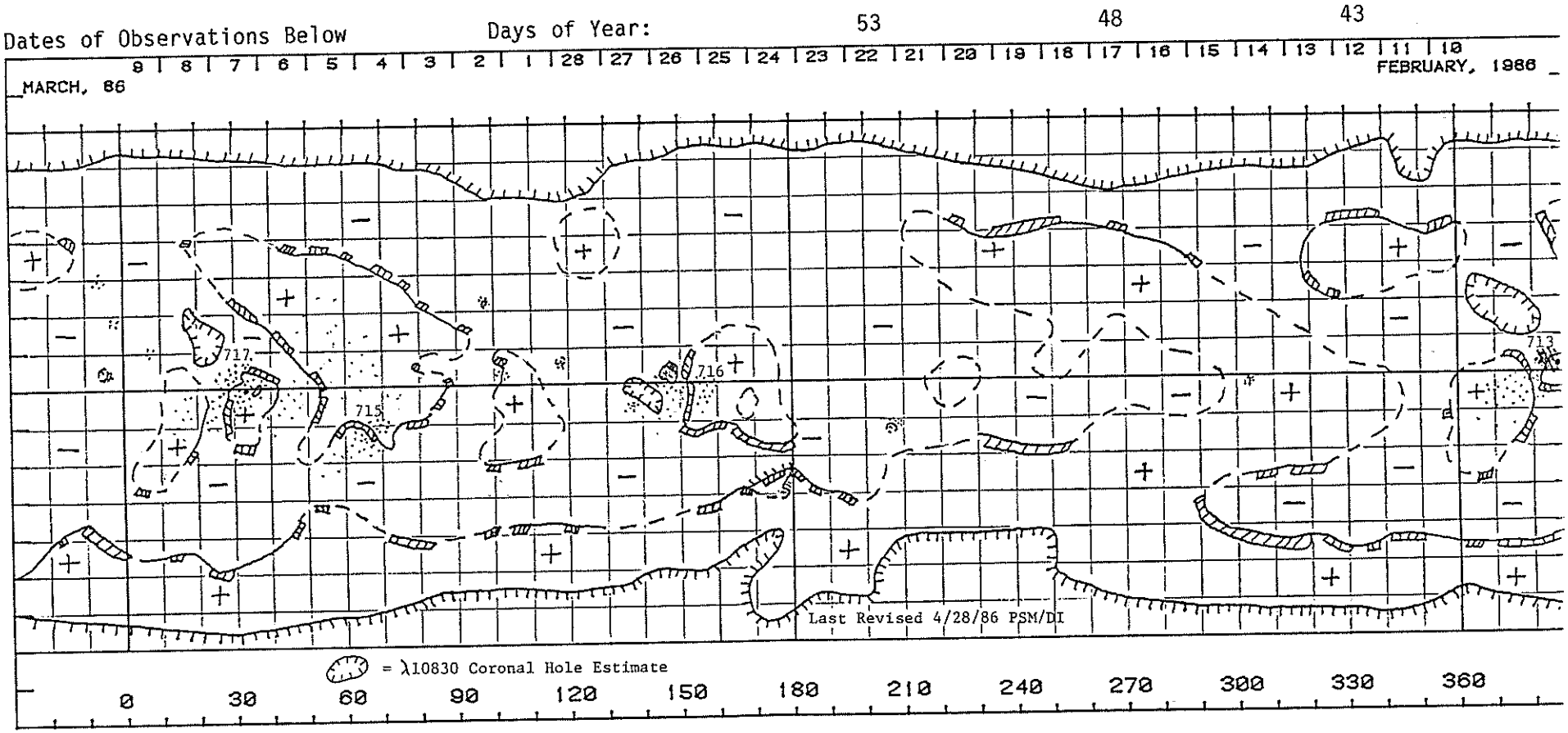
PRELIMINARY H-ALPHA SOLAR SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1772
(February 10 to March 9, 1986)



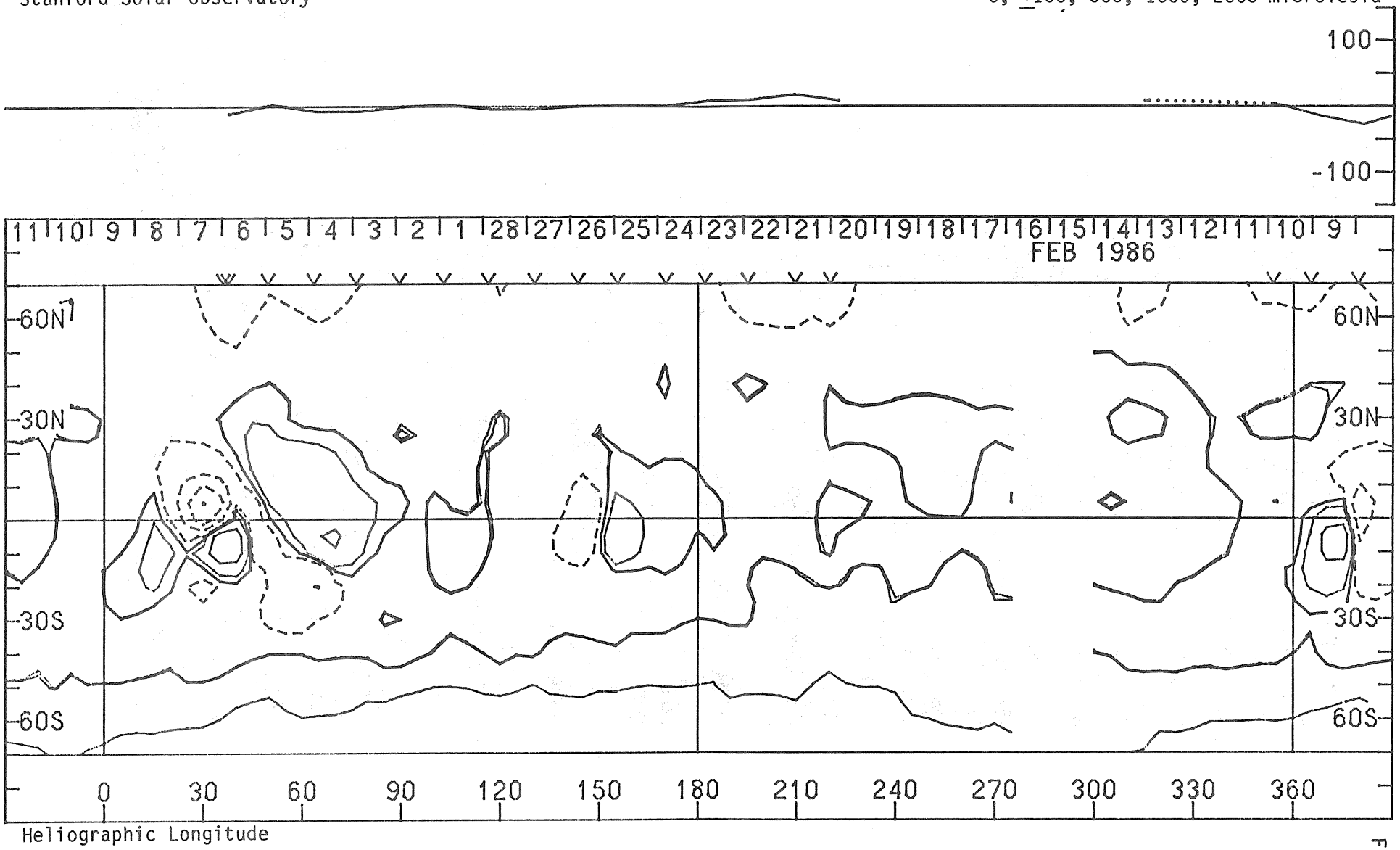
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1772

(February 10 to March 9, 1986)

Stanford Solar Observatory

0, ±100, 500, 1000, 2000 microTesla



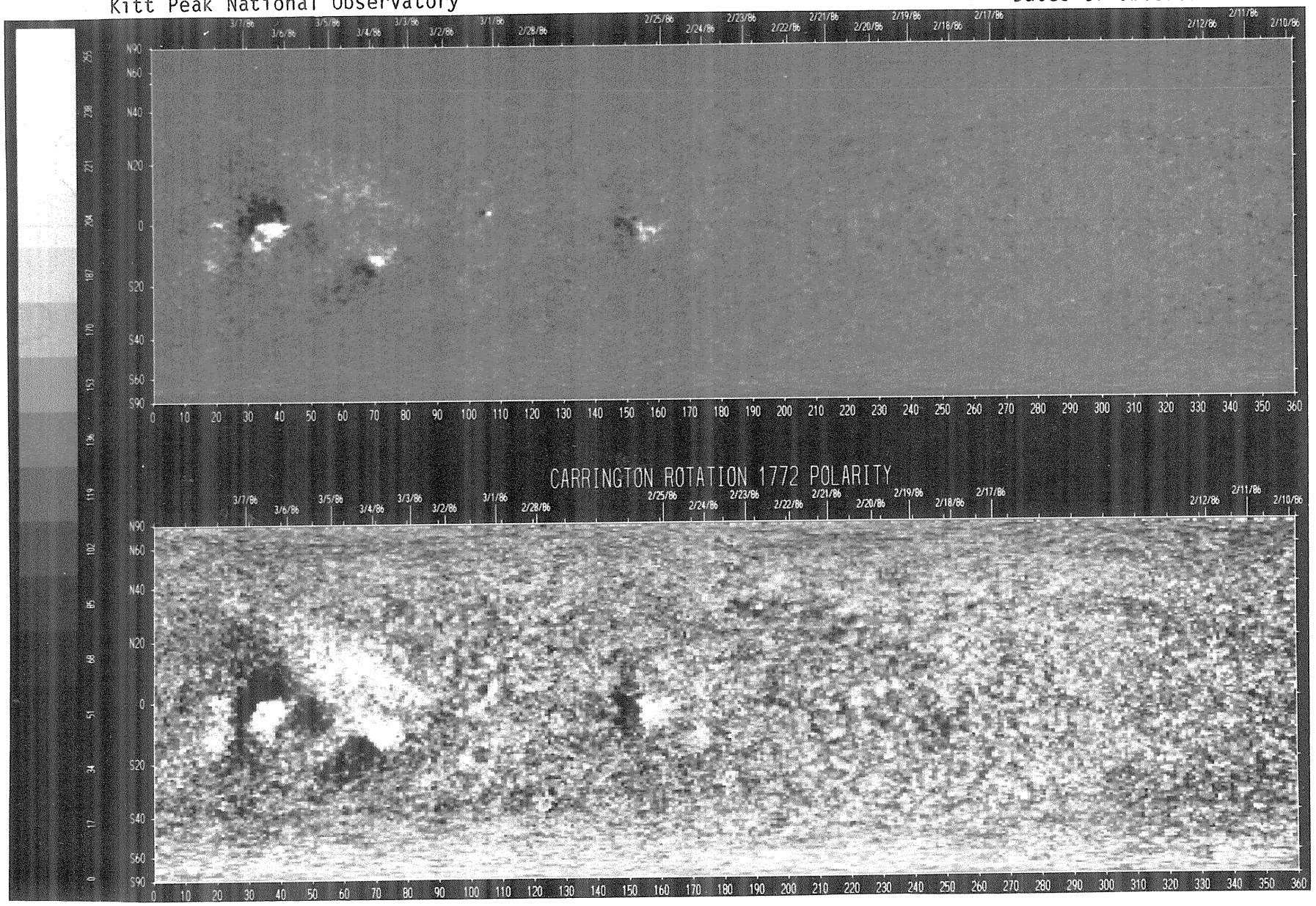
27 Feb 86

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1772
(February 10 to March 9, 1986)

Kitt Peak National Observatory

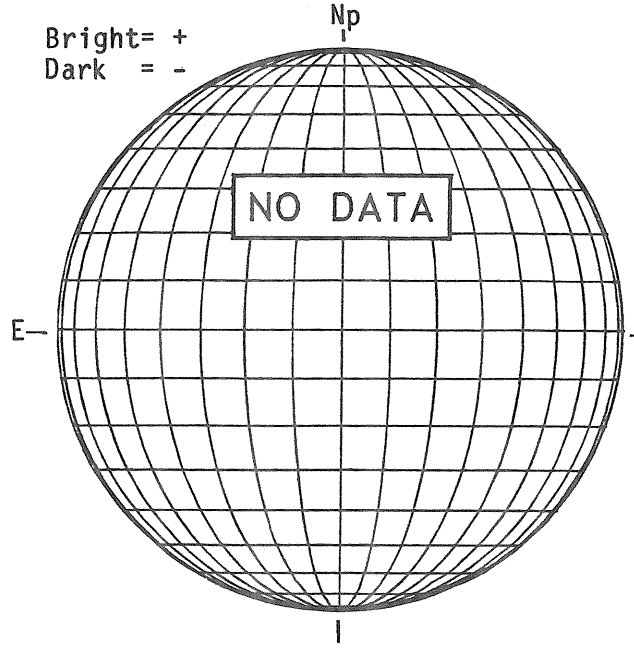
Dates of Observations



F E B R U A R Y 01, 1 9 8 6 (P=-12.11, B_0=-5.91, L_0= 125.40)

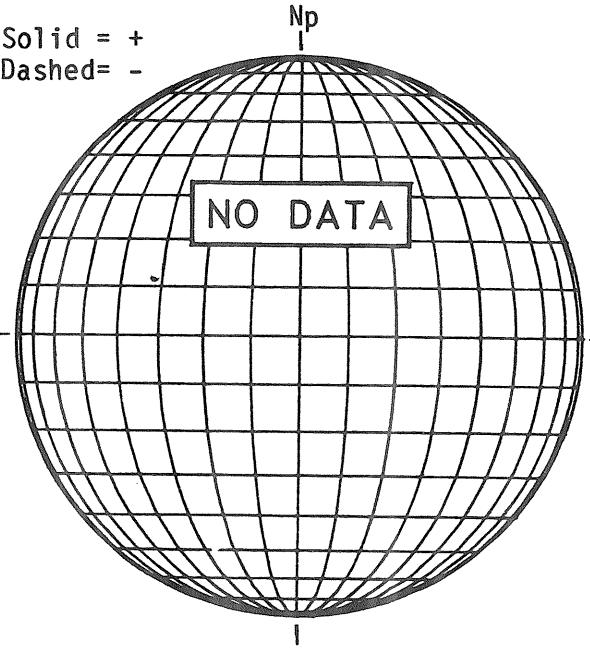
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

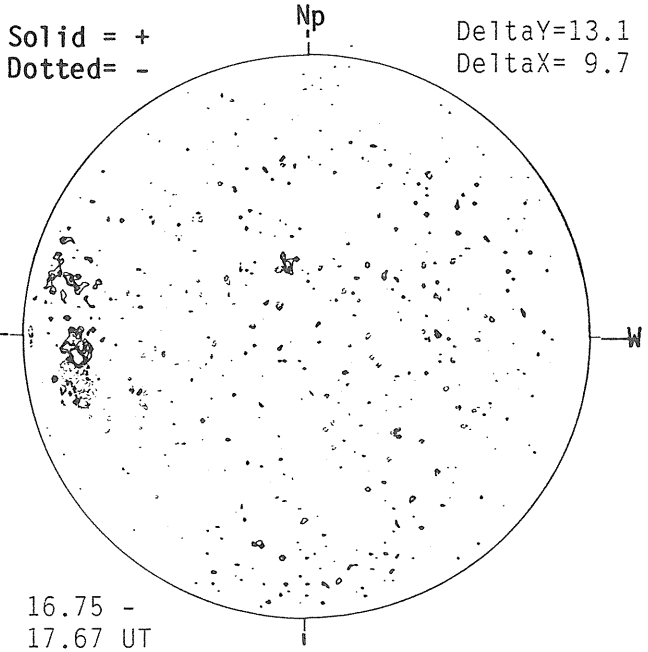
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

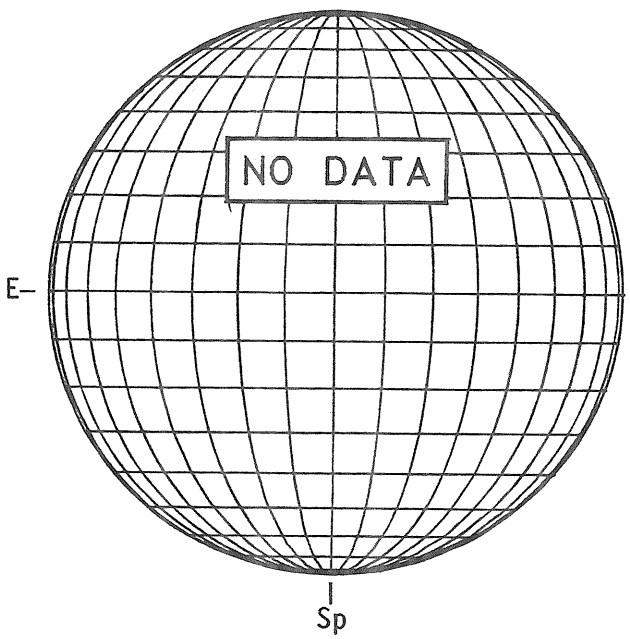
Solid = +
Dotted= -

DeltaY=13.1
DeltaX= 9.7

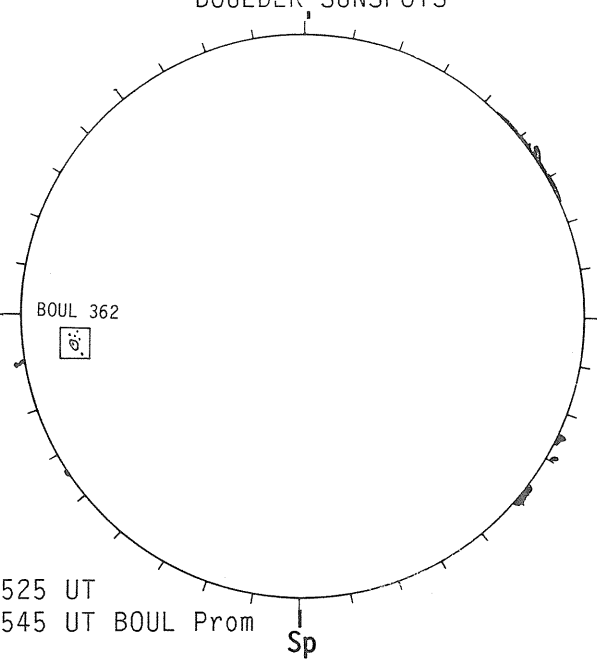


16.75 -
17.67 UT

SACRAMENTO PEAK H-ALPHA

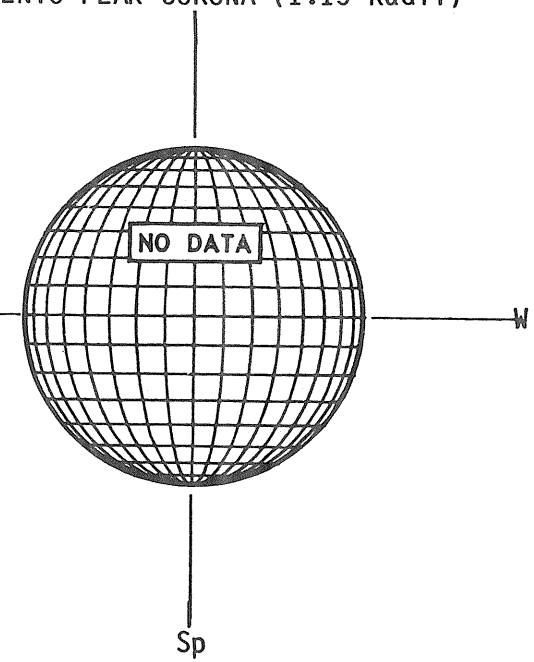


BOULDER SUNSPOTS



1525 UT
1545 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

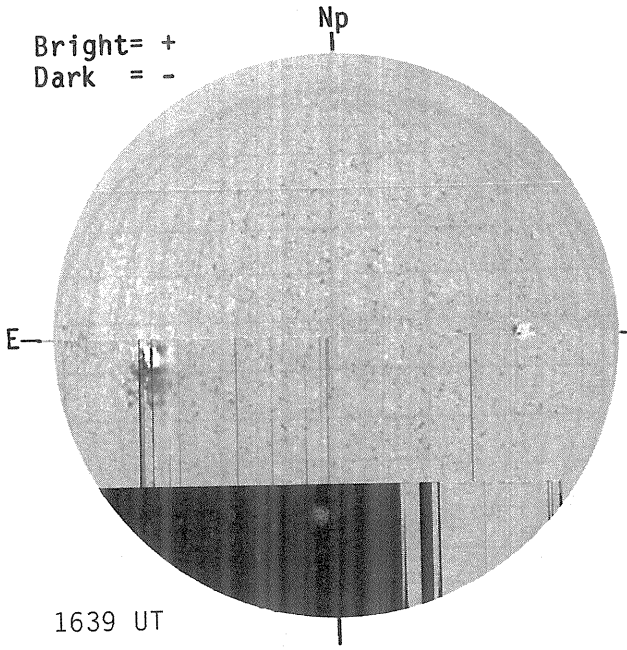


29
Feb 86

F E B R U A R Y 02, 1 9 8 6 (P=-12.52, B_0=-5.98, L_0= 112.23)

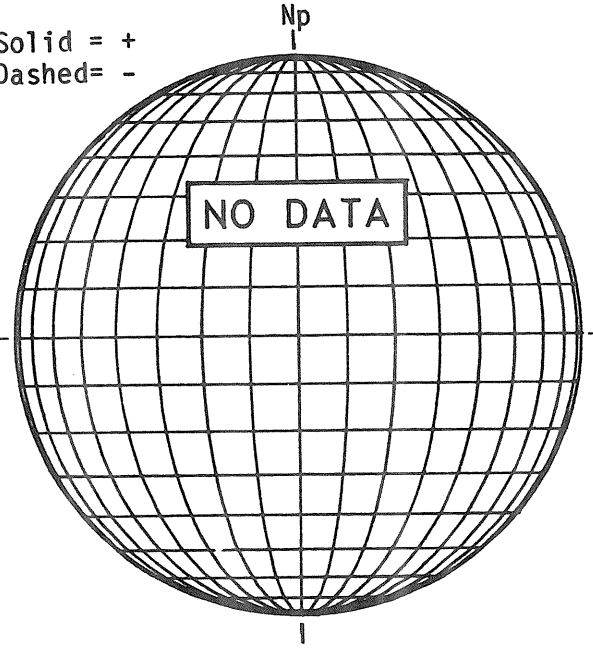
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



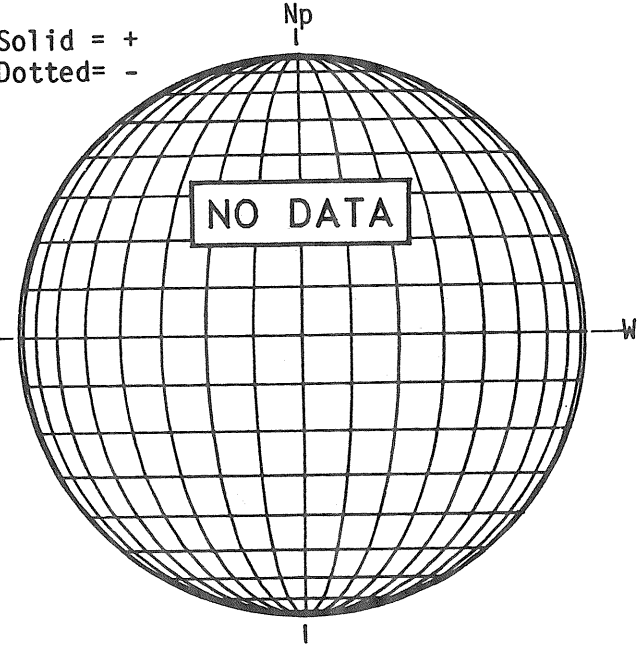
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

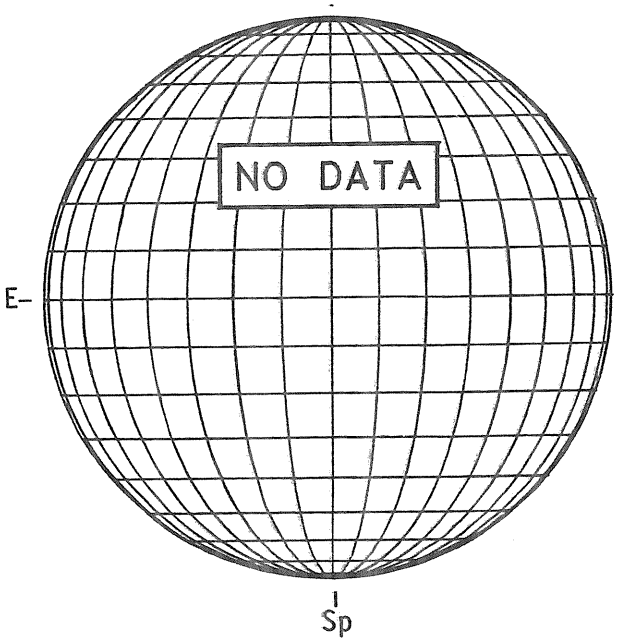


MT. WILSON MAGNETOGRAM

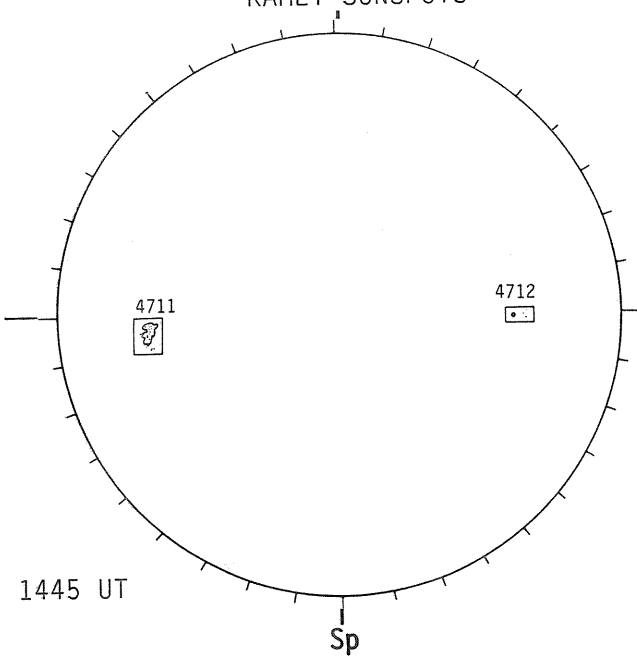
Solid = +
Dotted= -



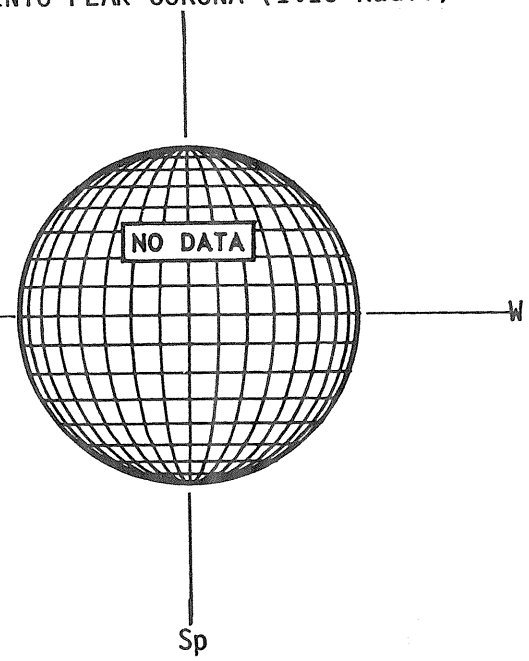
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOTS



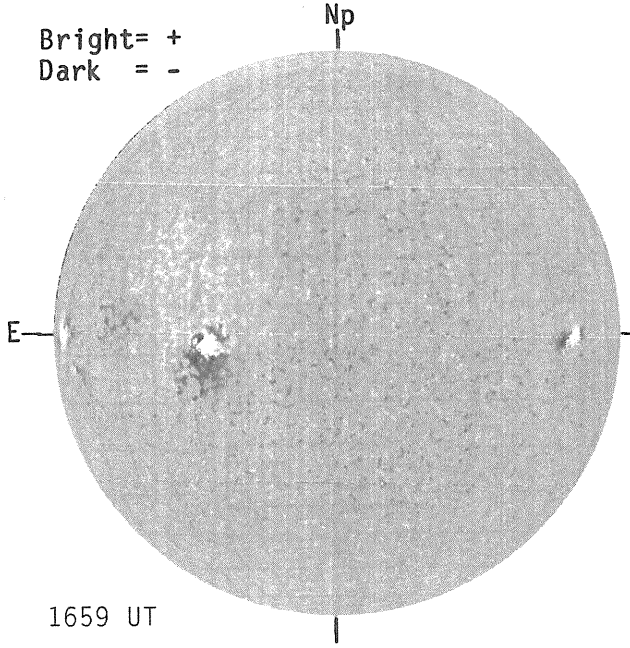
SACRAMENTO PEAK CORONA (1.15 Radii)



F E B R U A R Y 03, 1 9 8 6 (P=-11.92, B_0=-6.05, L_0= 99.07)

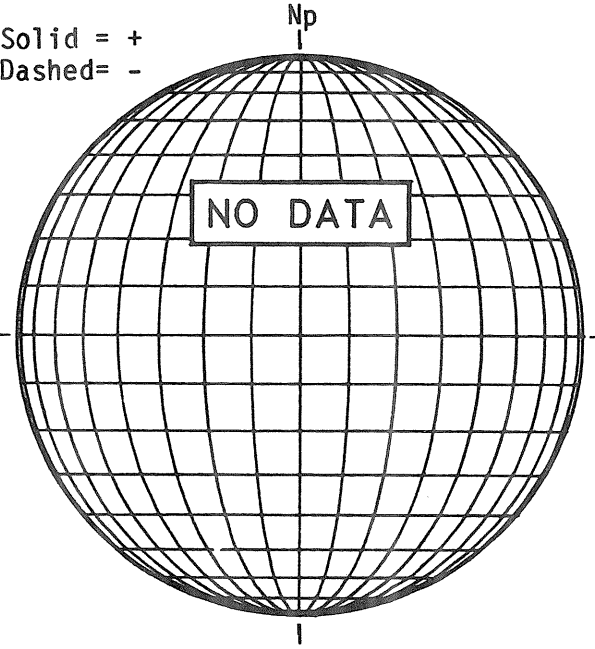
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

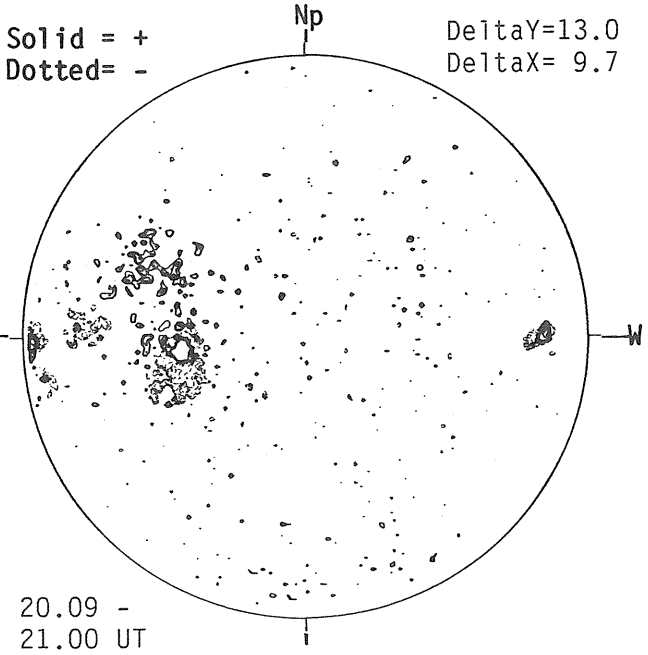
Solid = +
Dashed= -



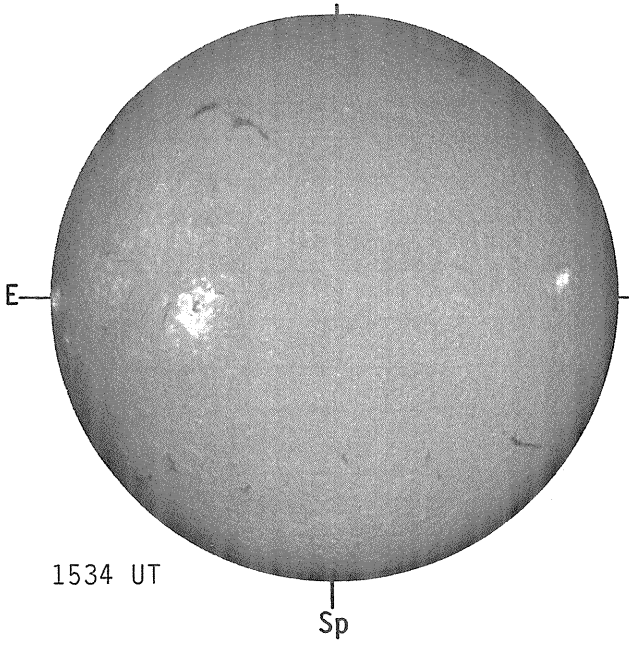
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

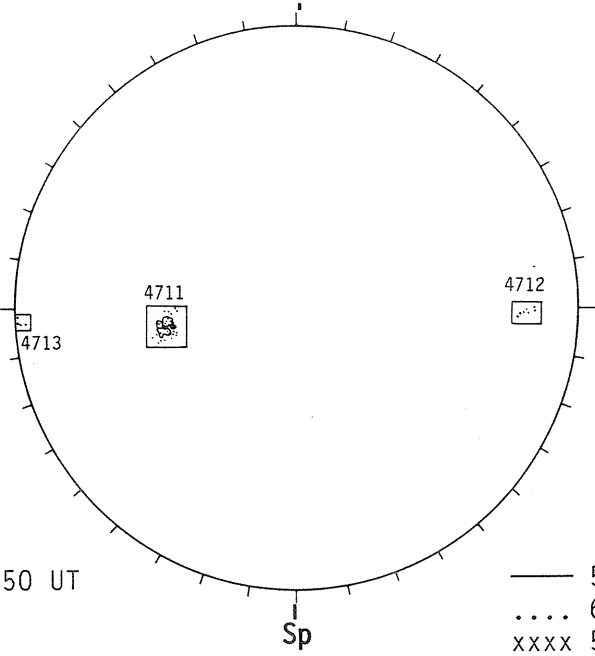
DeltaY=13.0
DeltaX= 9.7



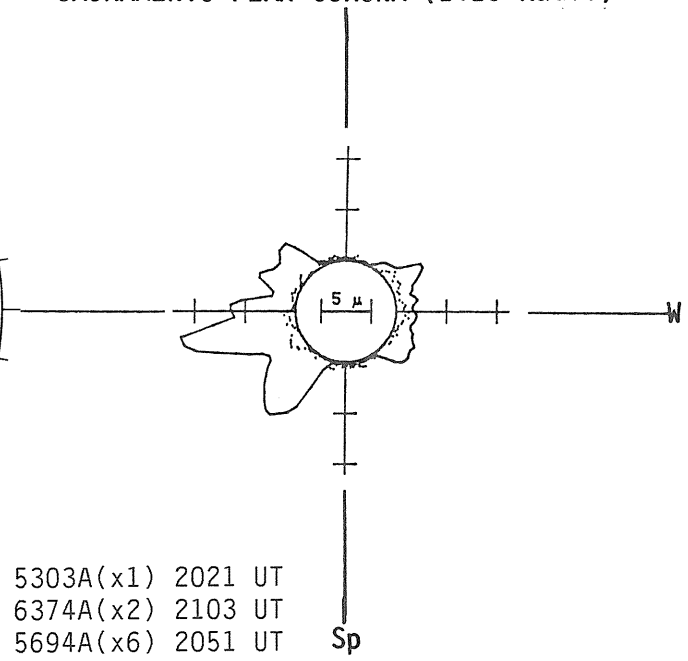
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

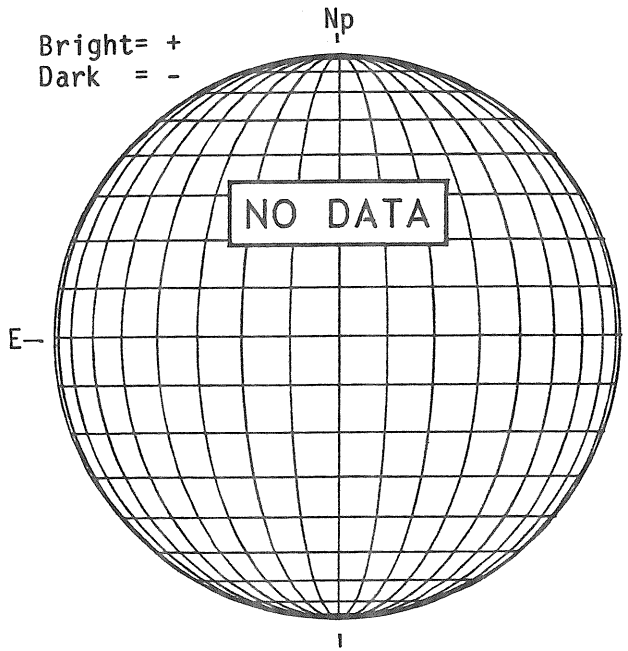


—— 5303A(x1) 2021 UT
.... 6374A(x2) 2103 UT
xxxx 5694A(x6) 2051 UT
NO 5694A ACTIVITY TODAY

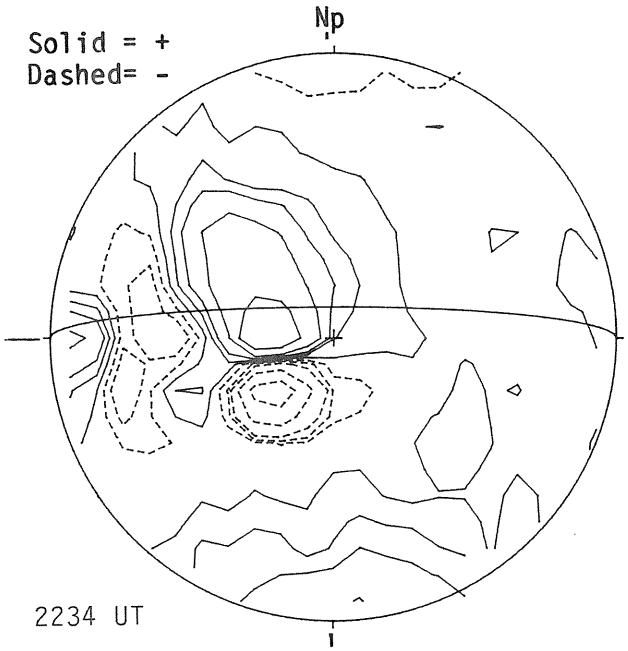
31
Feb 86

F E B R U A R Y 04, 1 9 8 6 (P=-13.31, B_0=-6.12, L_0= 85.90)

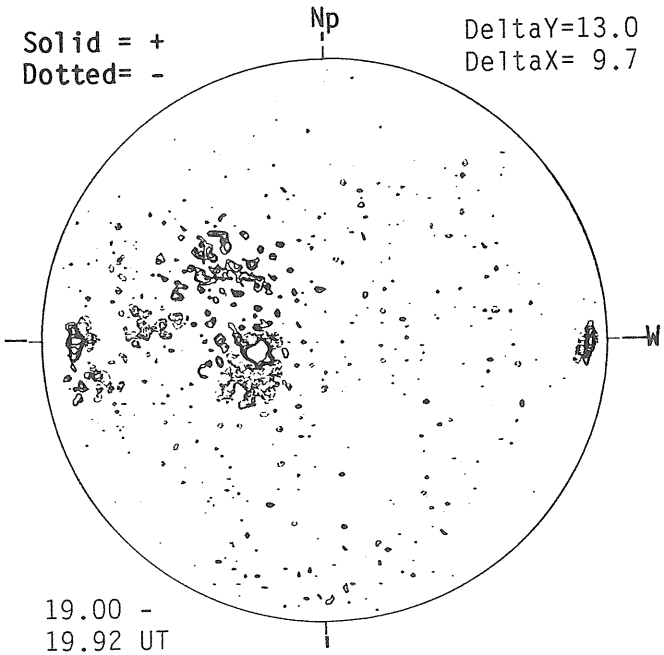
KITT PEAK MAGNETOGRAM



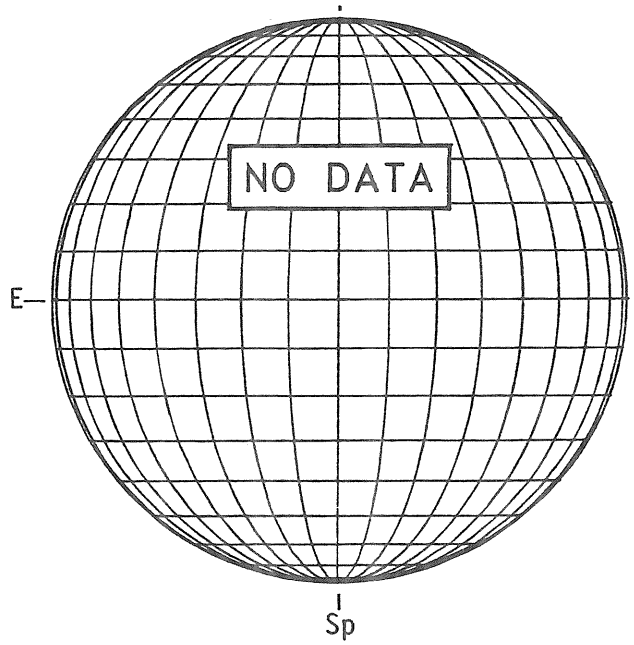
STANFORD MAGNETOGRAM



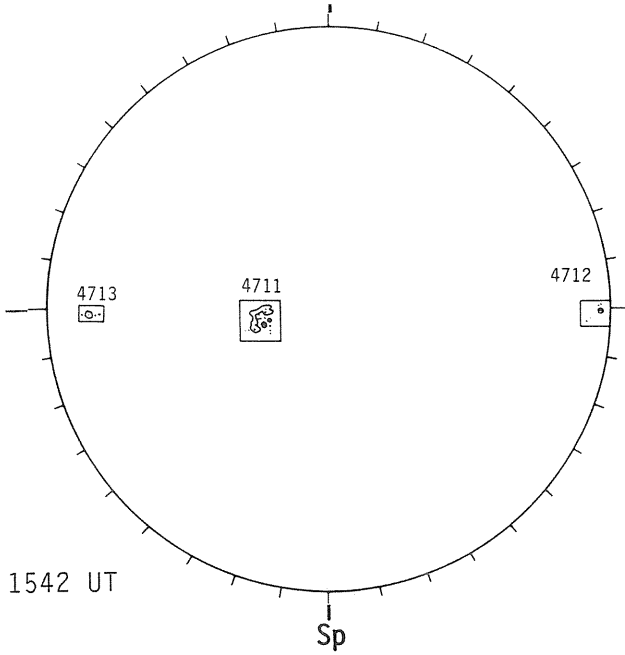
MT. WILSON MAGNETOGRAM



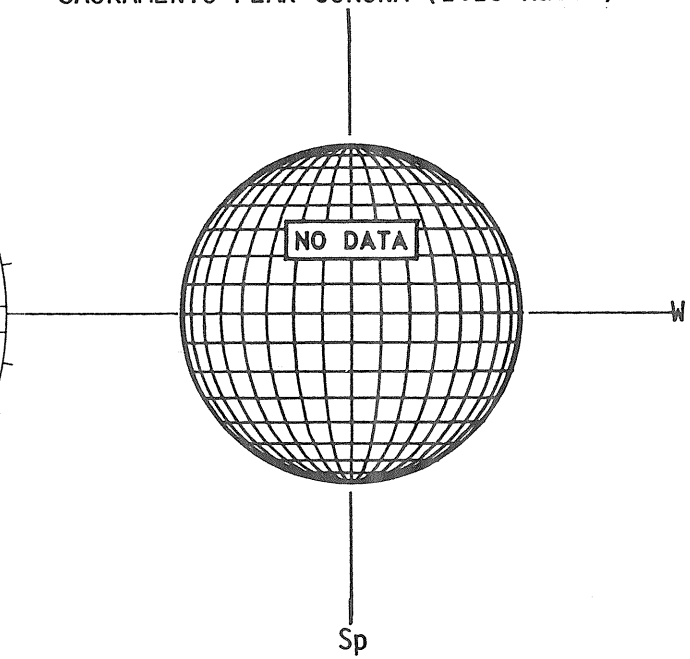
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



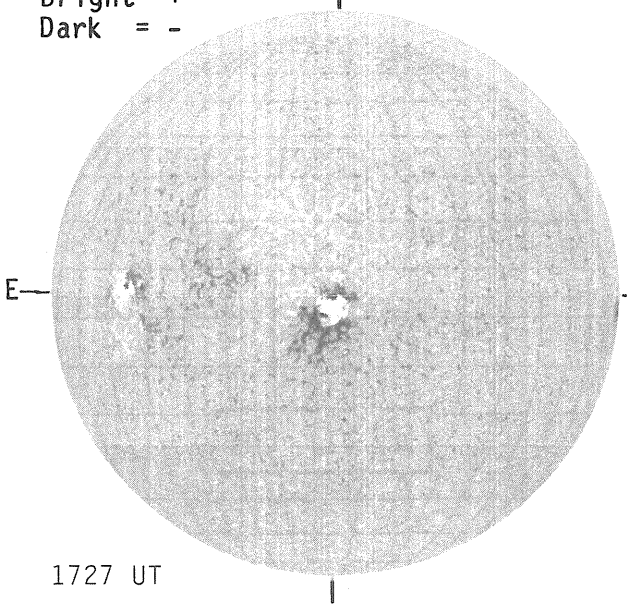
SACRAMENTO PEAK CORONA (1.15 Radii)



F E B R U A R Y 05, 1 9 8 6 (P=-13.70, B_0=-6.18, L_0= 72.73)

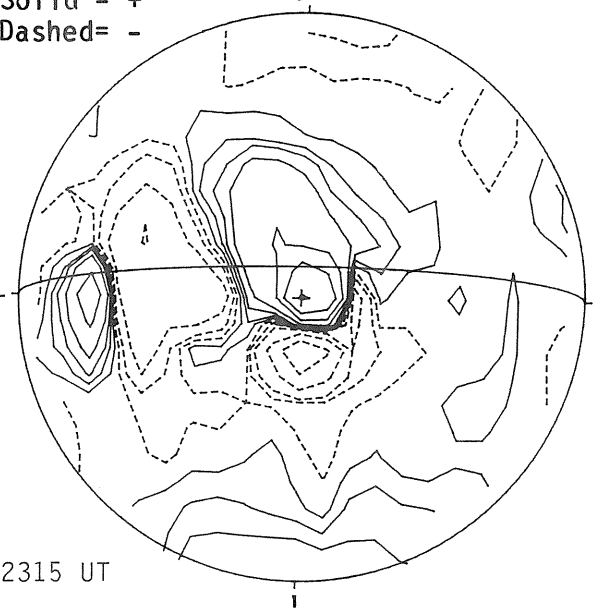
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

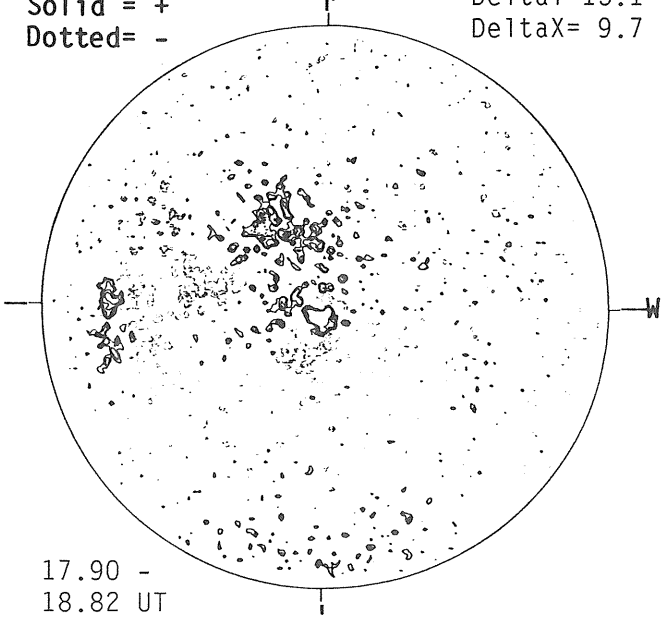
Solid = +
Dashed= -



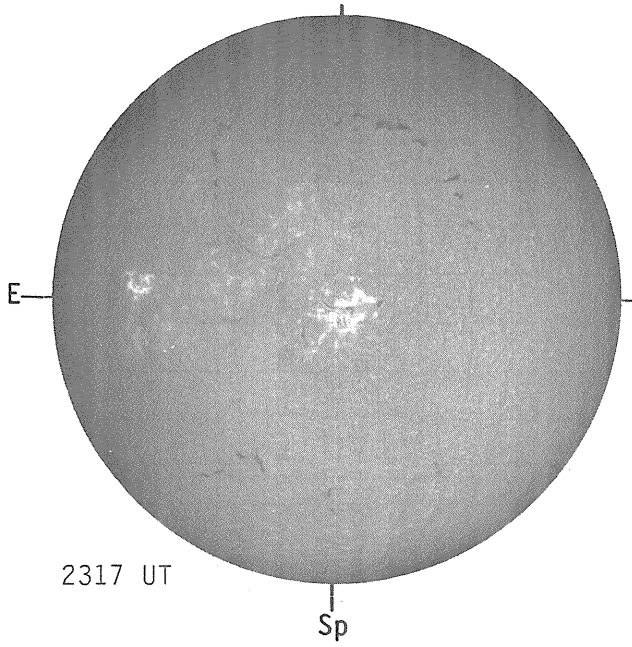
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

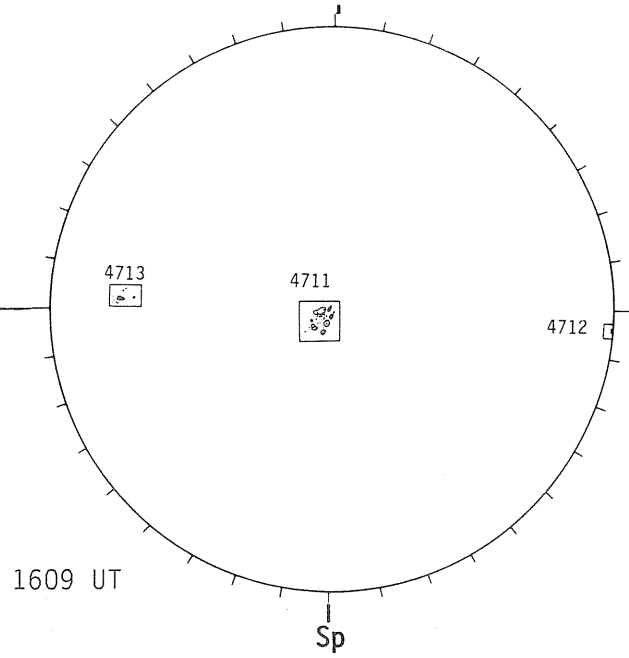
DeltaY=13.1
DeltaX= 9.7



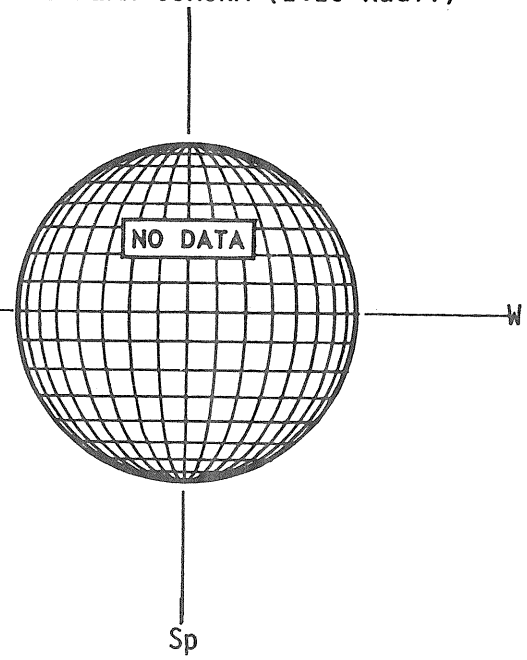
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOTS



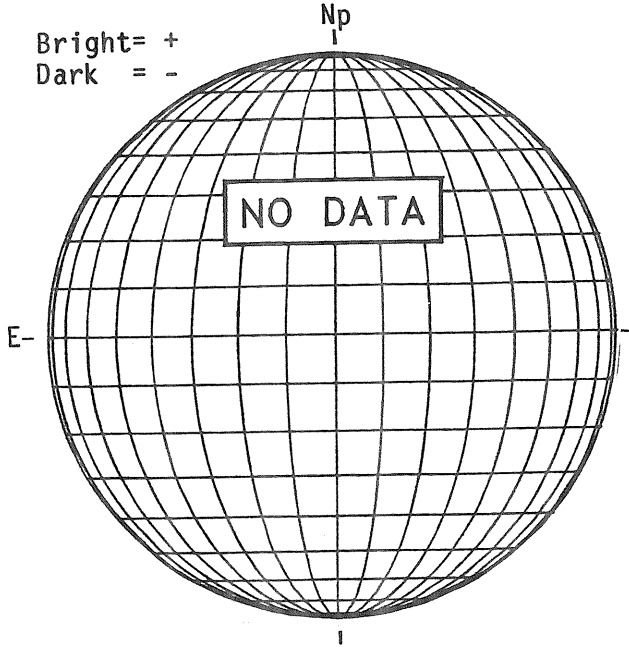
SACRAMENTO PEAK CORONA (1.15 Radii)



F E B R U A R Y 06, 1 9 8 6 (P=-14.09, B_0=-6.25, L_0= 59.57)

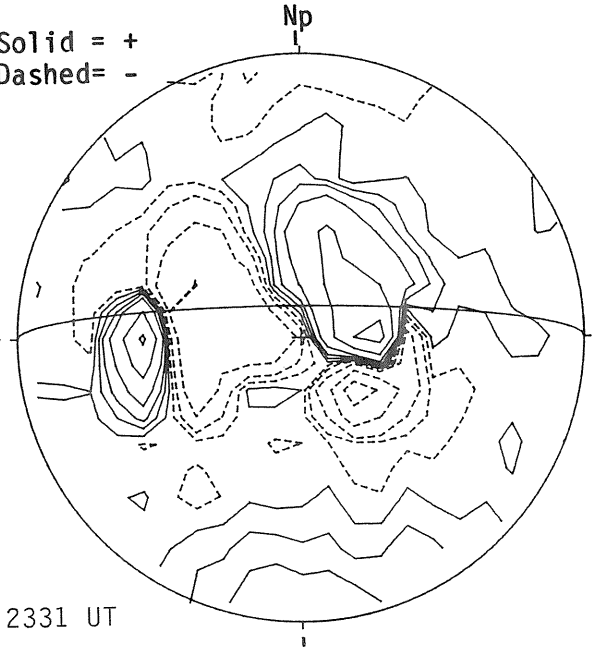
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

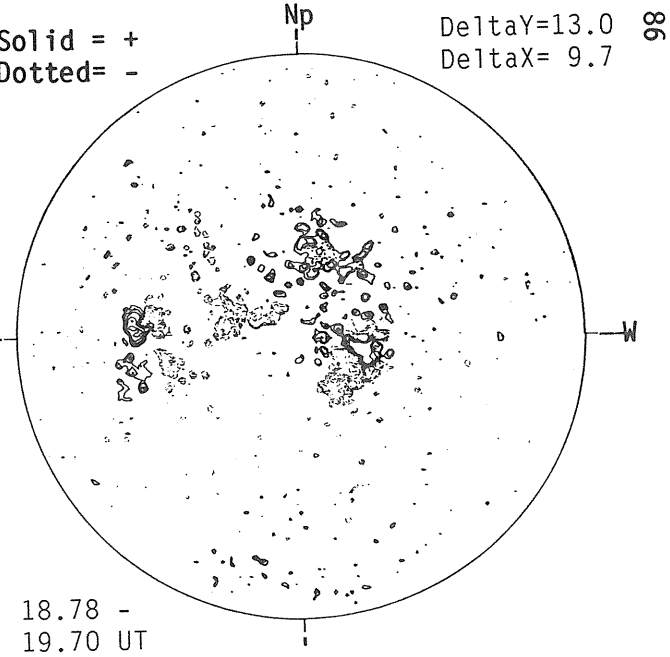
Solid = +
Dashed= -



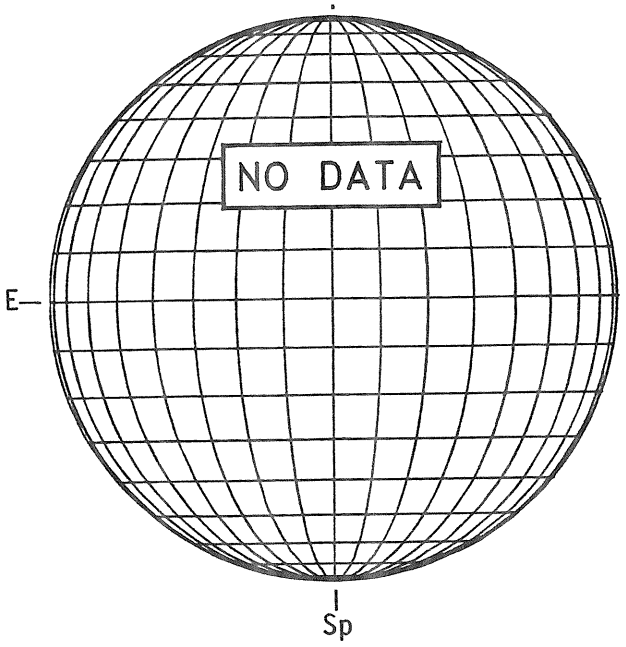
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

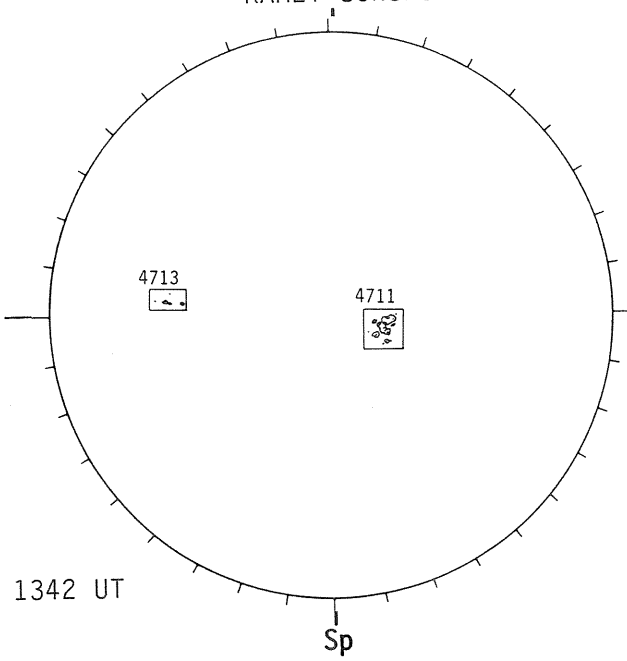
DeltaY=13.0
DeltaX= 9.7



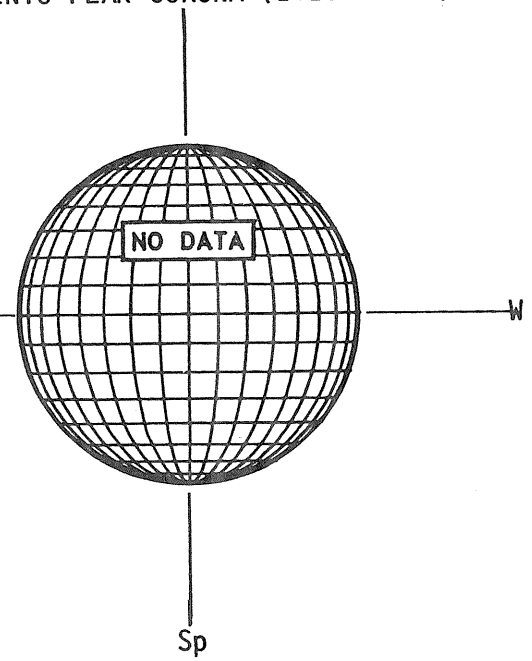
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOTS



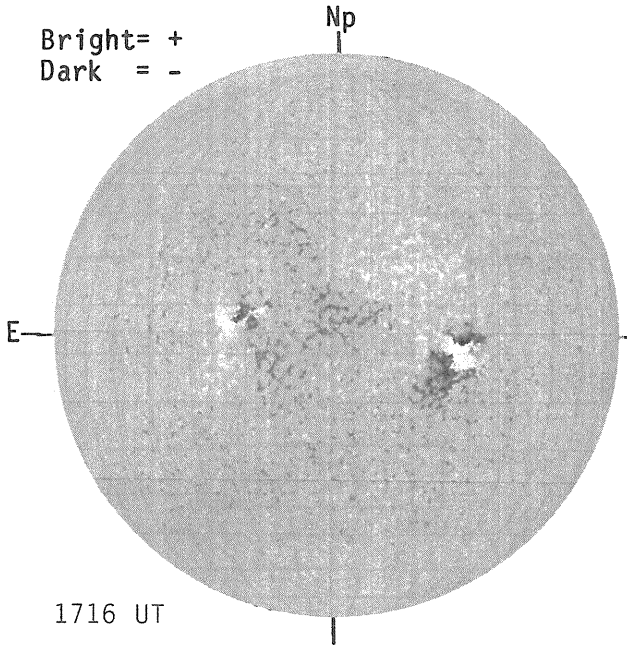
SACRAMENTO PEAK CORONA (1.15 Radii)



FEBRUARY 07, 1986 (P=-14.47, B_0=-6.31, L_0= 46.40)

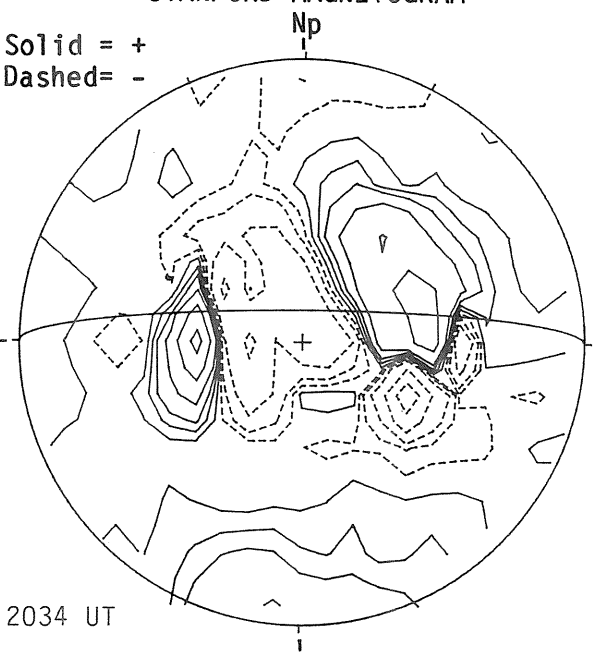
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



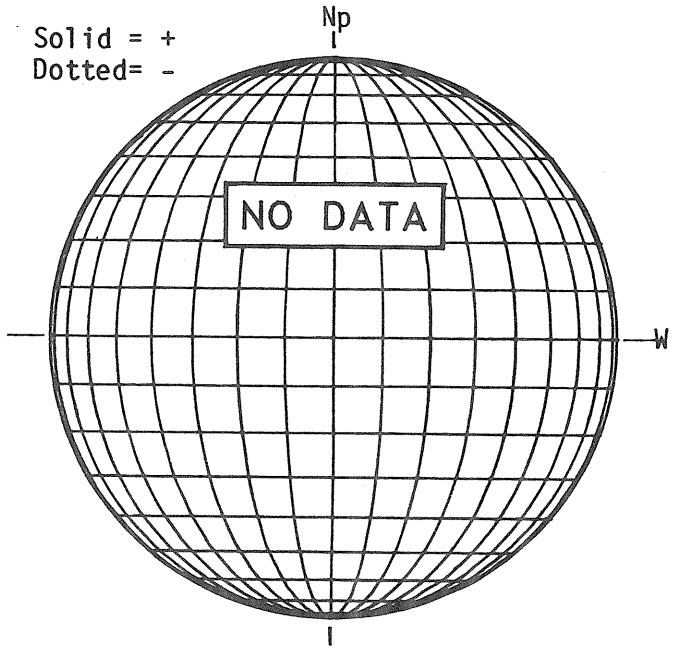
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

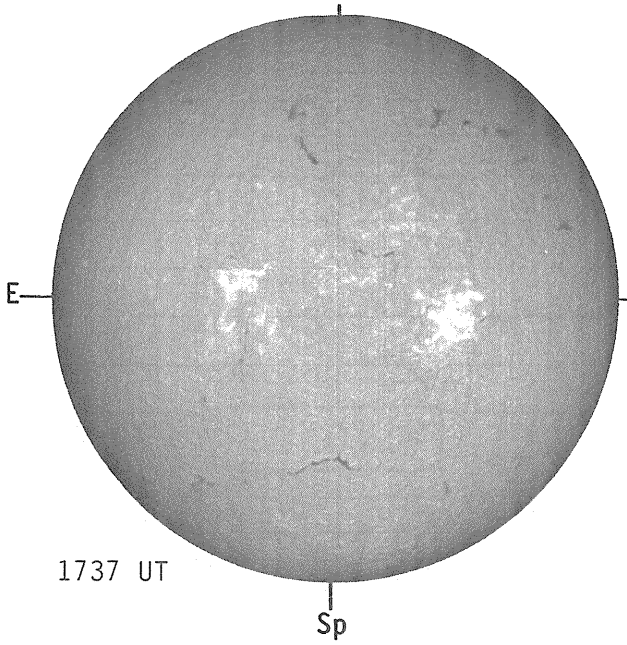


MT. WILSON MAGNETOGRAM

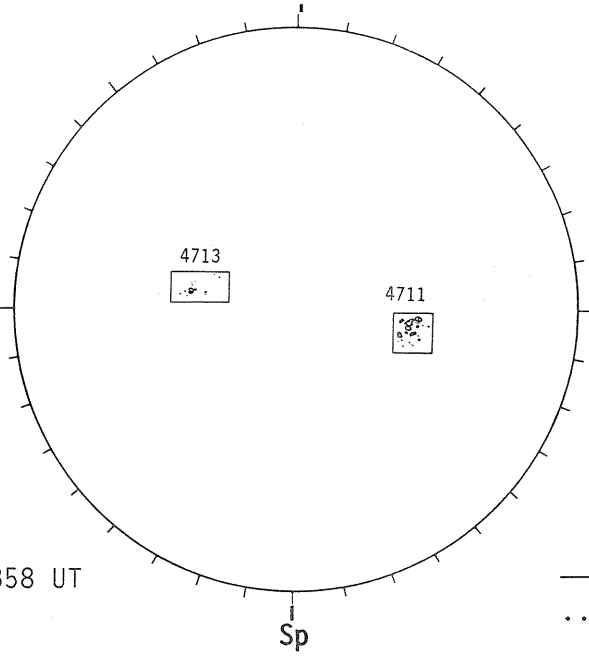
Solid = +
Dotted= -



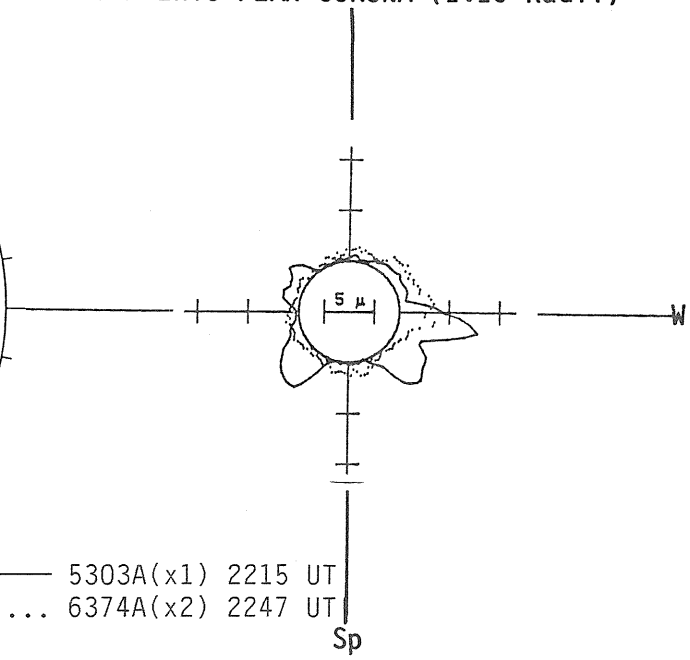
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOTS

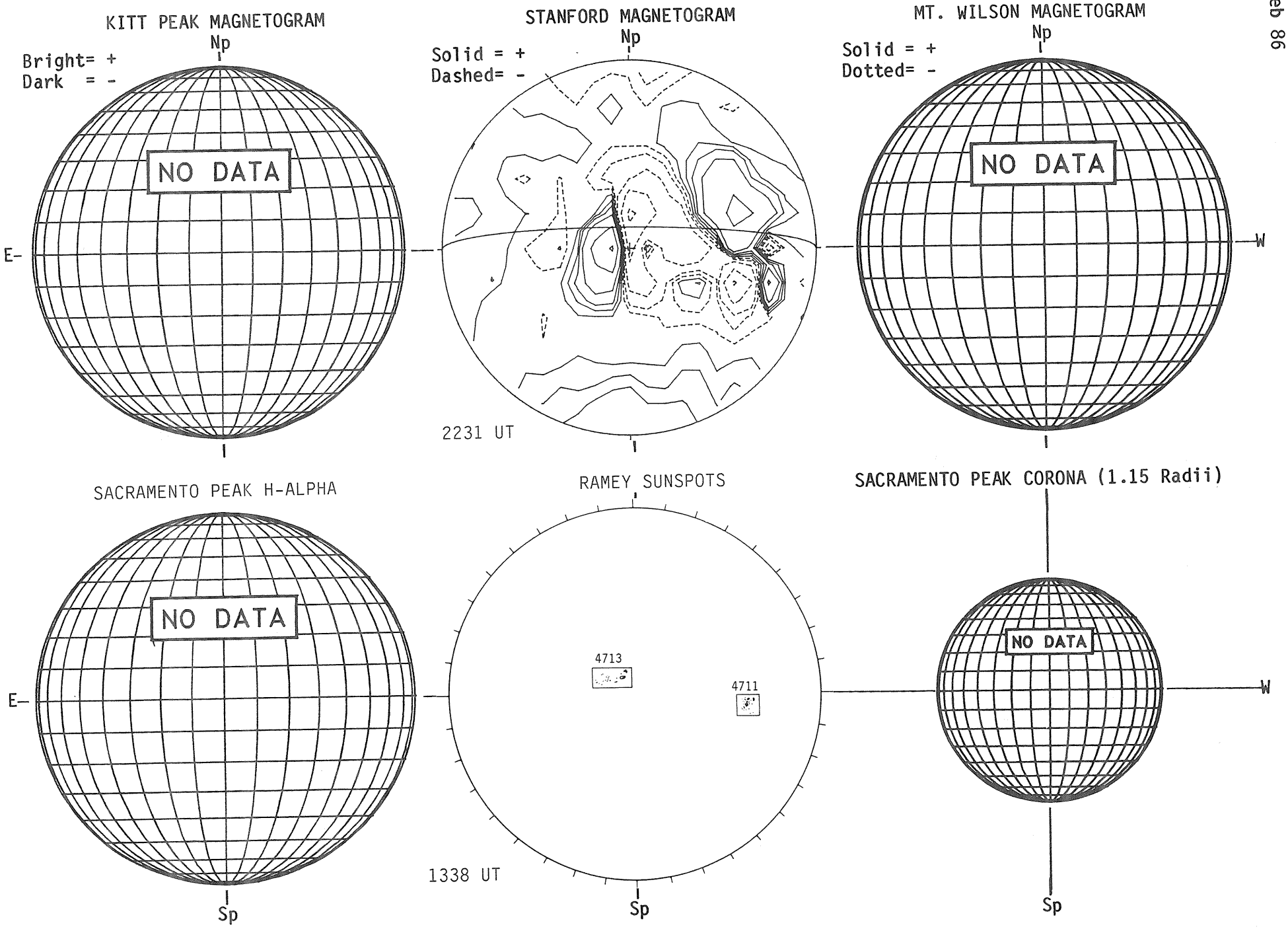


SACRAMENTO PEAK CORONA (1.15 Radii)



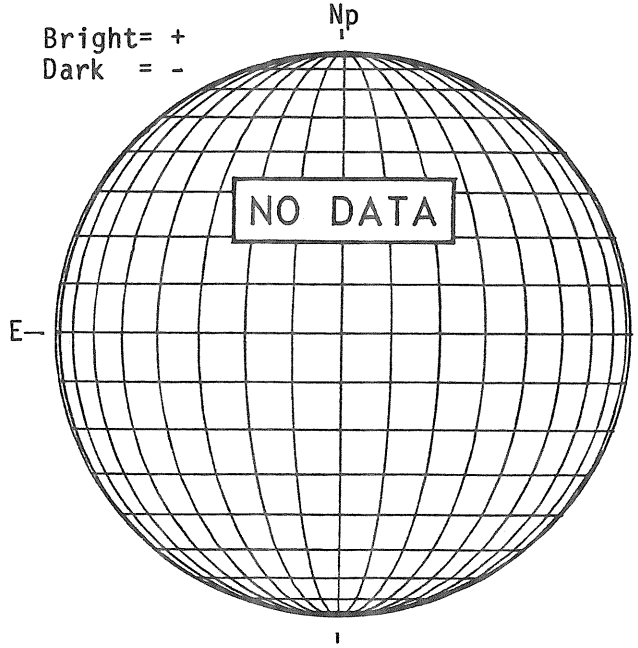
—— 5303A(x1) 2215 UT
.... 6374A(x2) 2247 UT

F E B R U A R Y 08, 1 9 8 6 (P=-14.85, B_0=-6.36, L_0= 33.23)

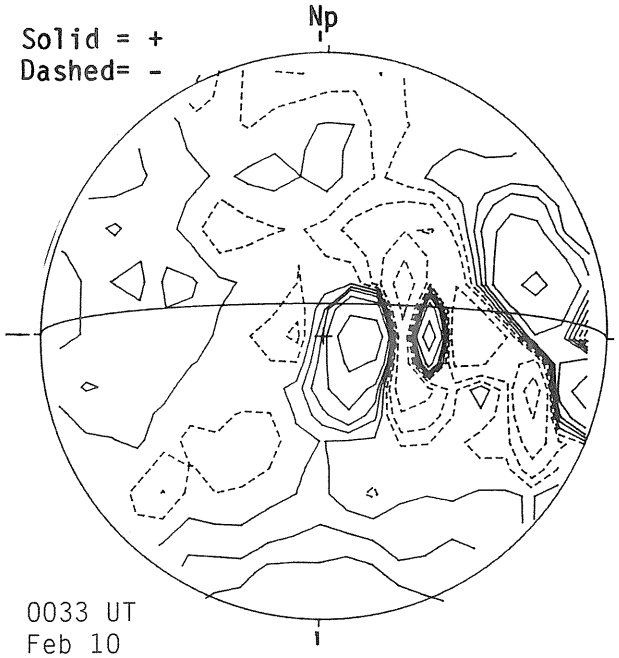


F E B R U A R Y 09, 1 9 8 6 (P=-15.22, B_0=-6.42, L_0= 20.07)

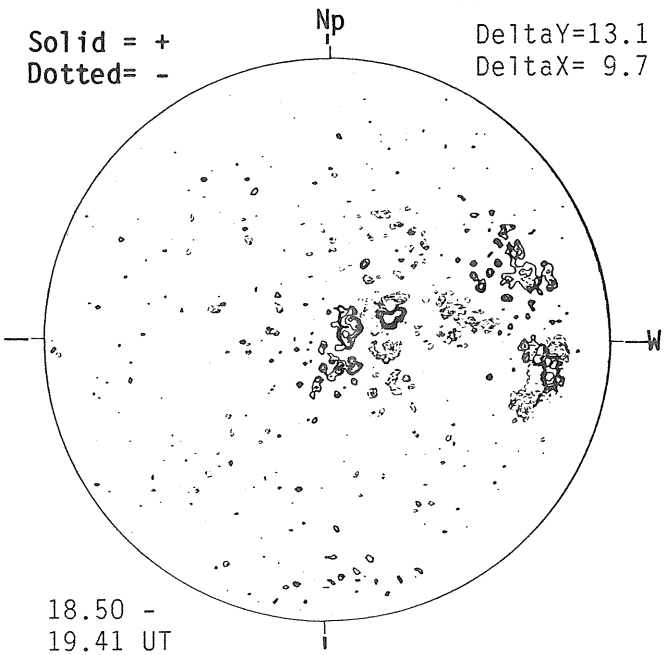
KITT PEAK MAGNETOGRAM



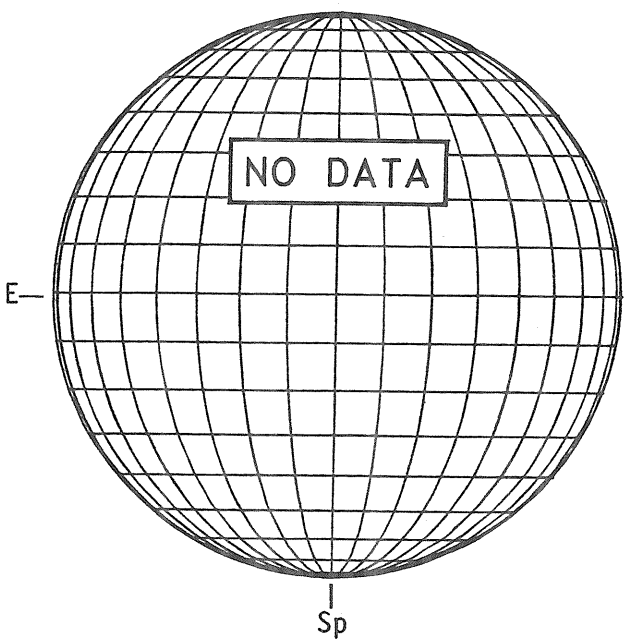
STANFORD MAGNETOGRAM



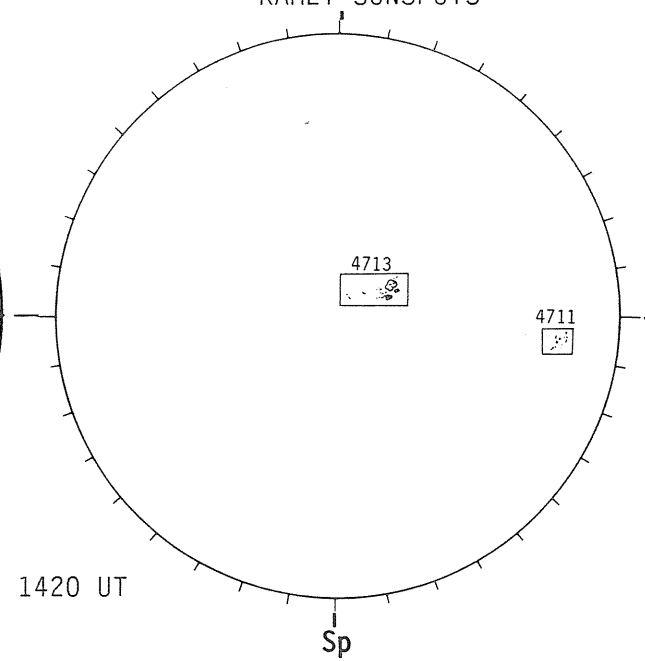
MT. WILSON MAGNETOGRAM



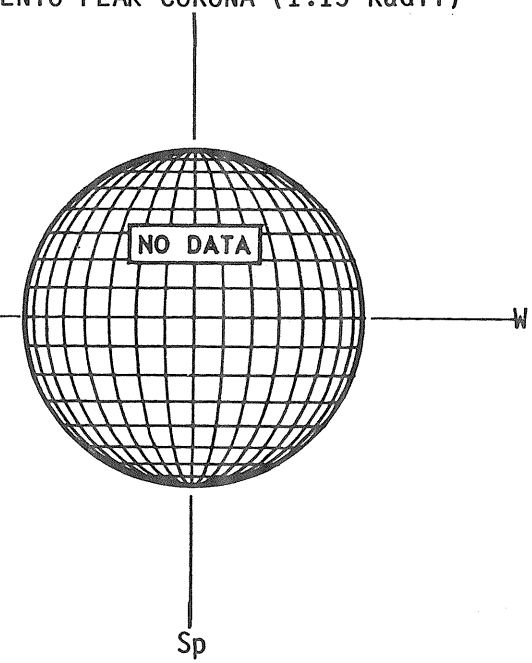
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOTS



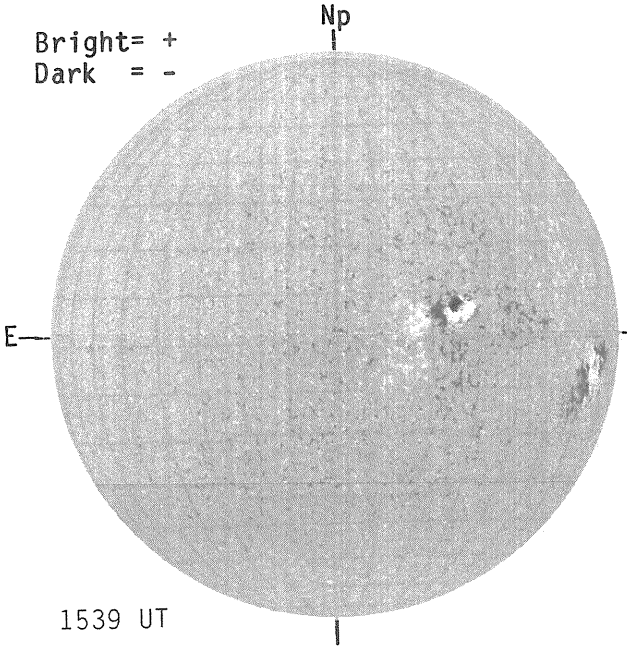
SACRAMENTO PEAK CORONA (1.15 Radii)



F E B R U A R Y 10, 1 9 8 6 (P=-15.58, B_0=-6.48, L_0= 6.90)

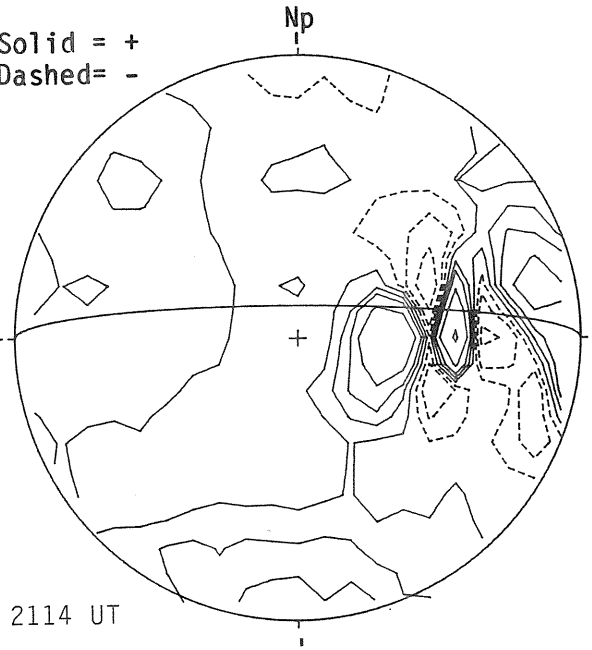
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

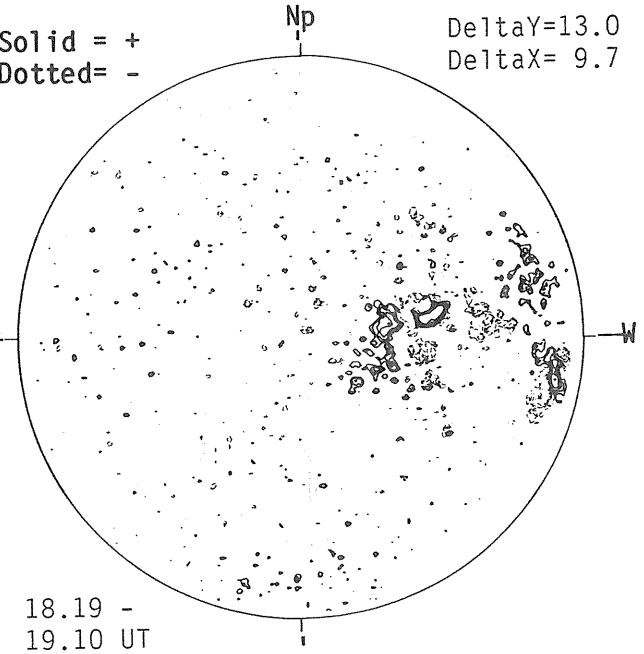
Solid = +
Dashed= -



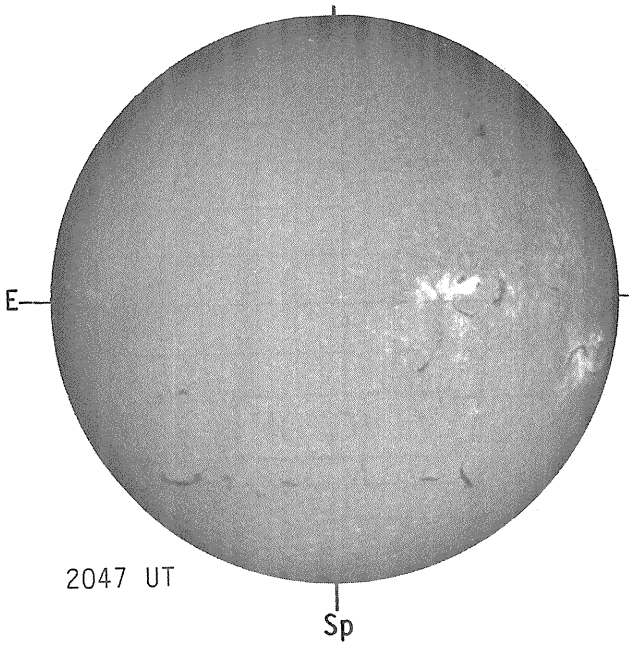
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

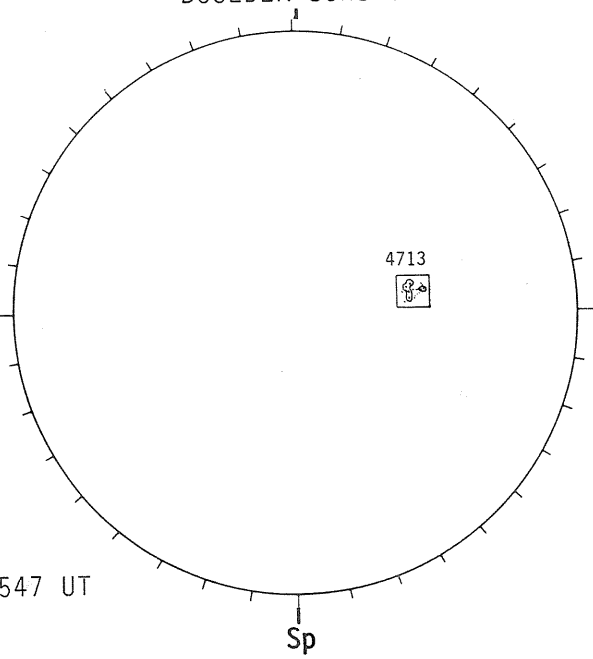
DeltaY=13.0
DeltaX= 9.7



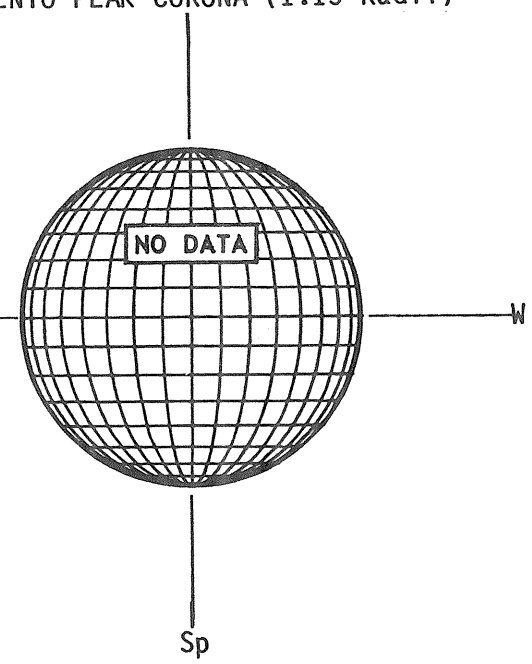
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



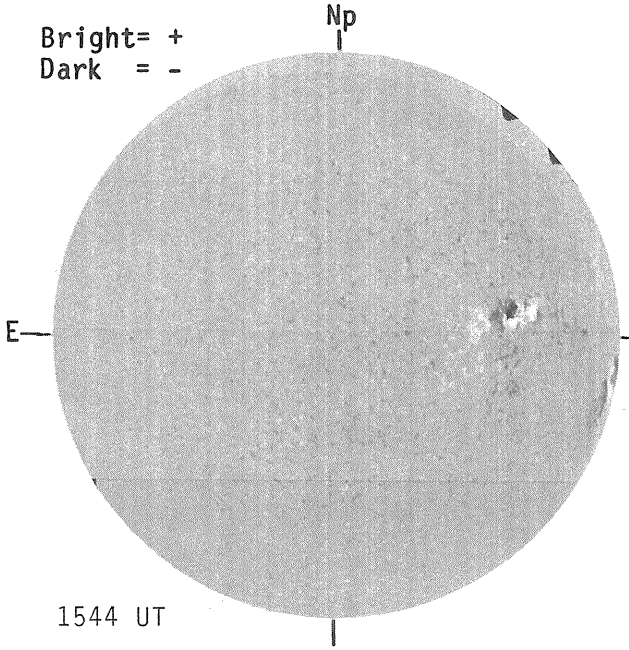
SACRAMENTO PEAK CORONA (1.15 Radii)



F E B R U A R Y 11, 1 9 8 6 (P=-15.95, B_0=-6.53, L_0= 353.73)

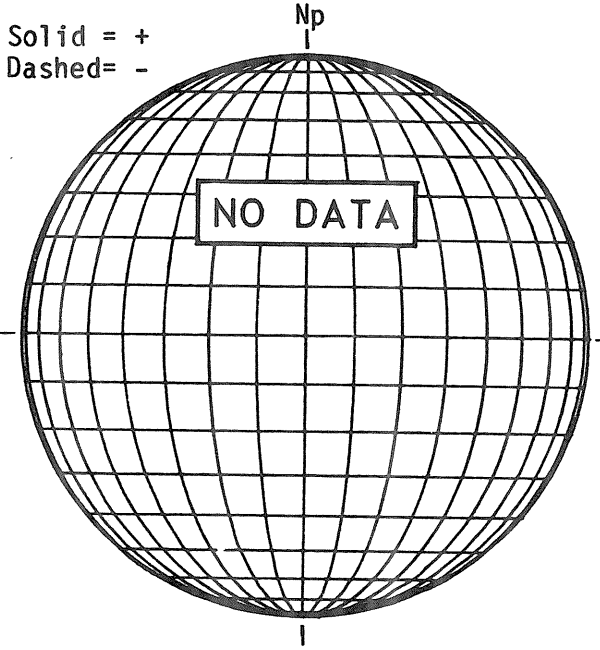
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



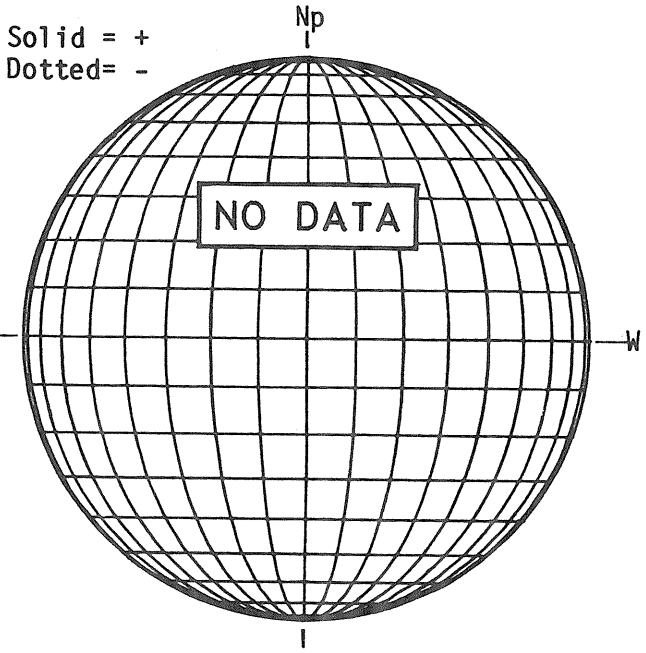
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

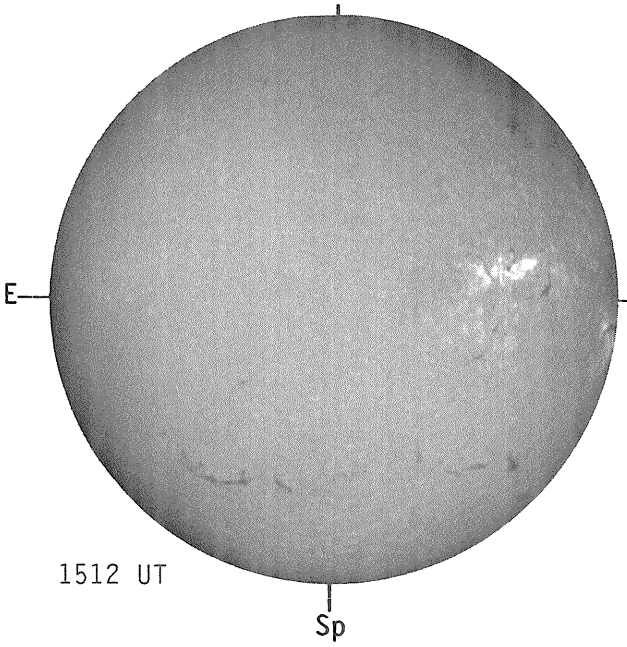


MT. WILSON MAGNETOGRAM

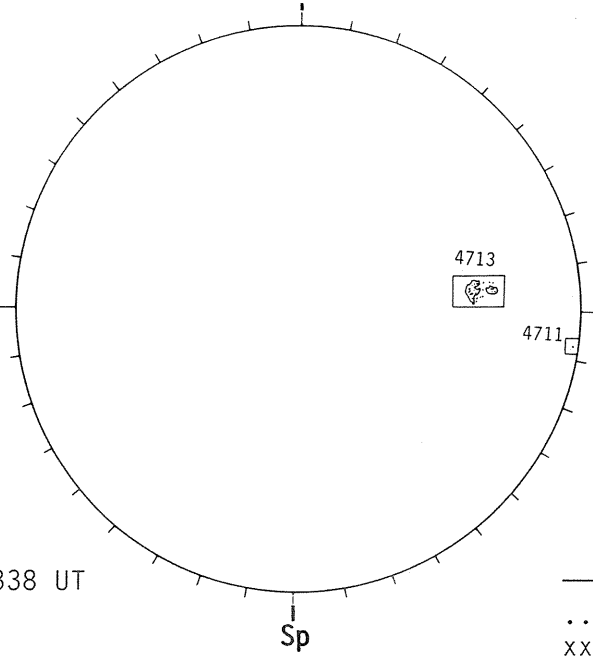
Solid = +
Dotted= -



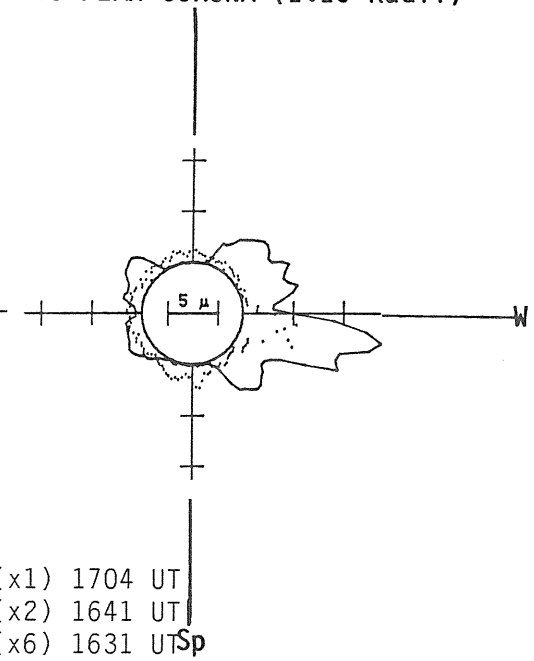
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

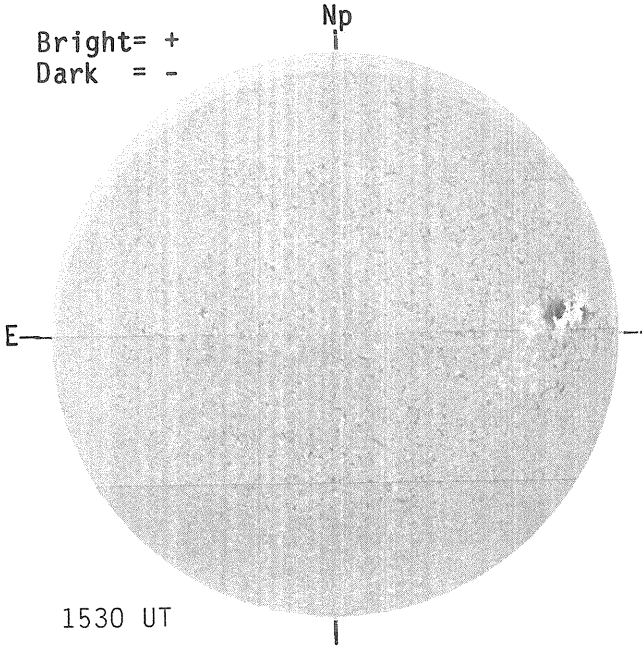


—— 5303A(x1) 1704 UT
.... 6374A(x2) 1641 UT
xxxx 5694A(x6) 1631 UT
NO 5694A ACTIVITY TODAY

F E B R U A R Y 12, 1 9 8 6 (P=-16.30, B_0=-6.58, L_0= 340.57)

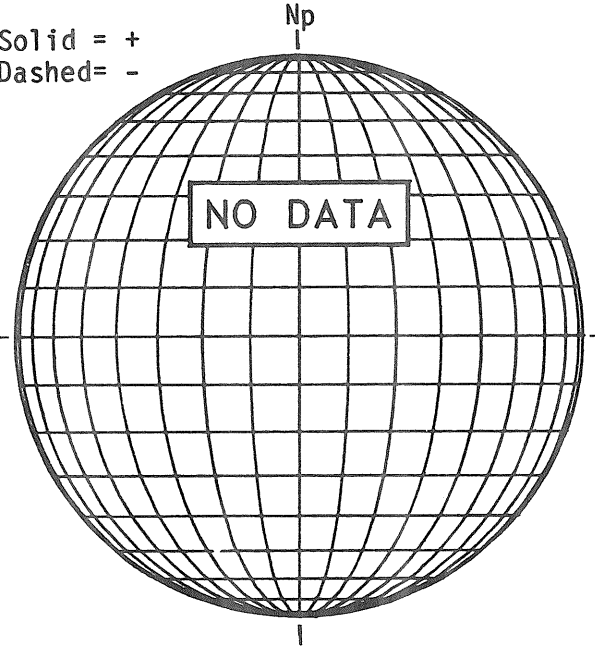
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



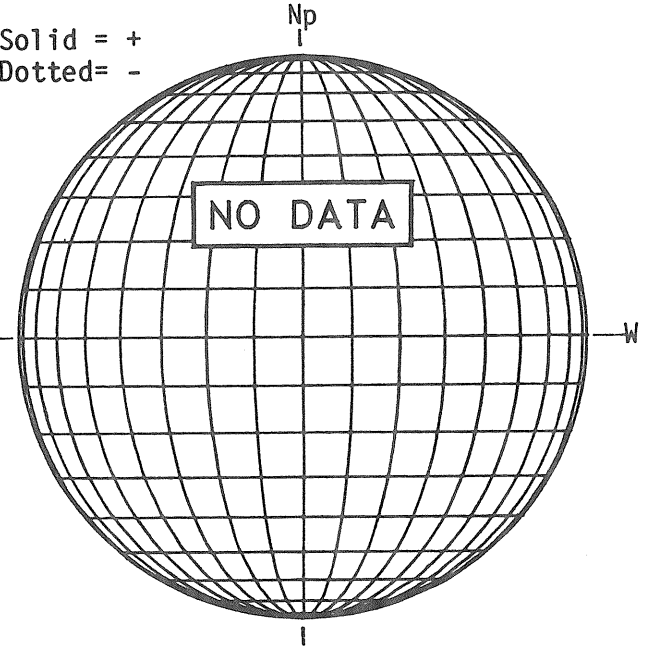
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

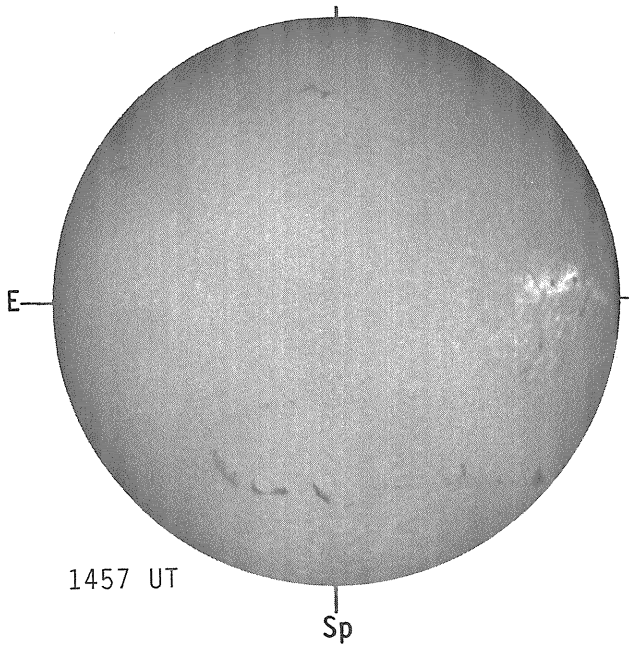


MT. WILSON MAGNETOGRAM

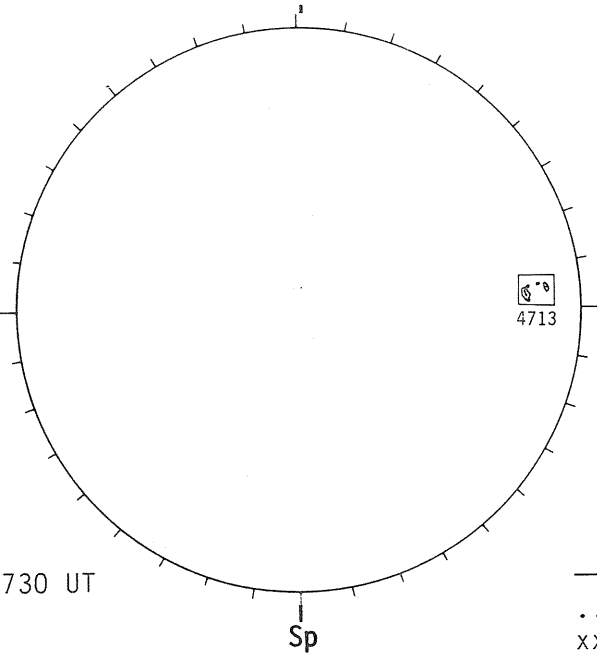
Solid = +
Dotted= -



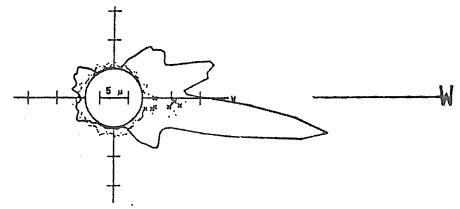
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



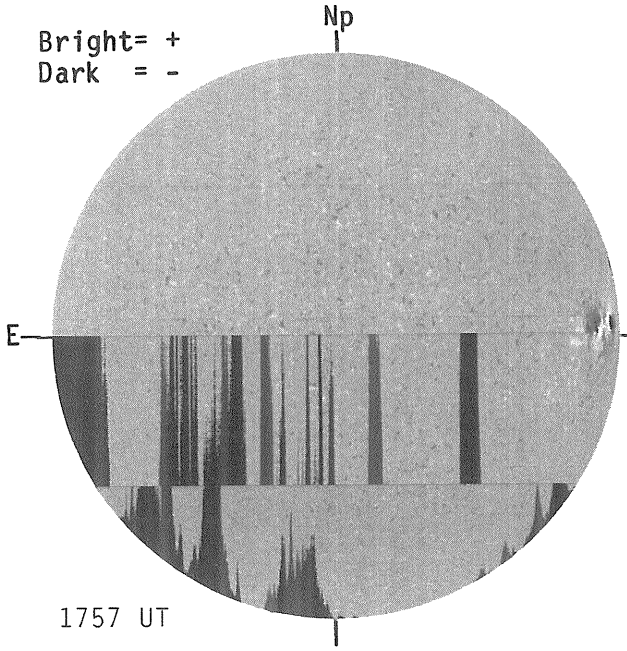
—— 5303A(x1) 1759 UT
.... 6374A(x2) 1859 UT
xxxx 5694A(x6) 1846 UT

NO 5694A ACTIVITY TODAY

F E B R U A R Y 13, 1 9 8 6 (P=-16.65, B_0=-6.63, L_0= 327.40)

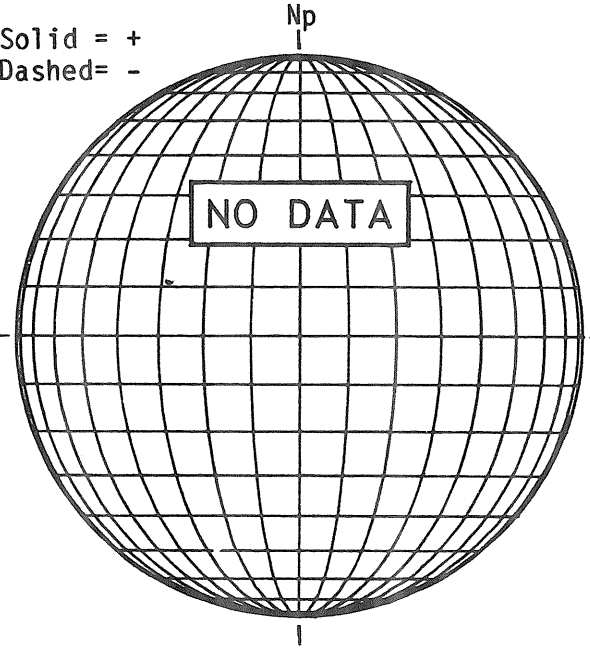
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



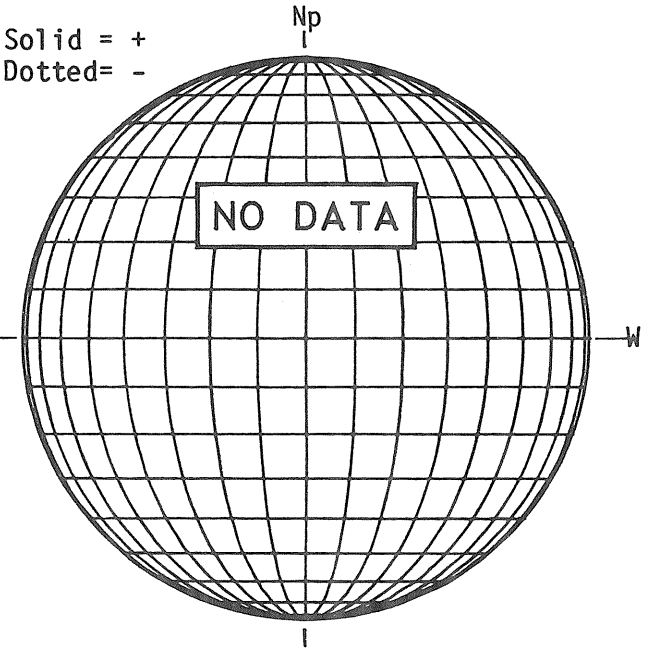
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

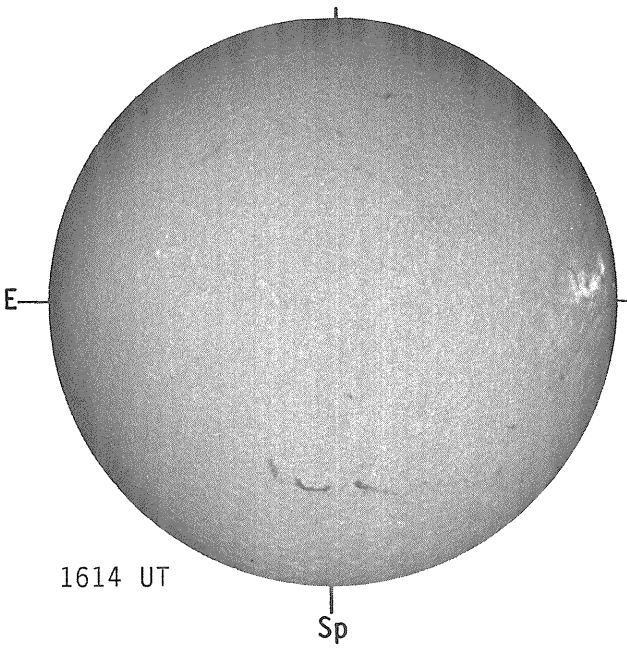


MT. WILSON MAGNETOGRAM

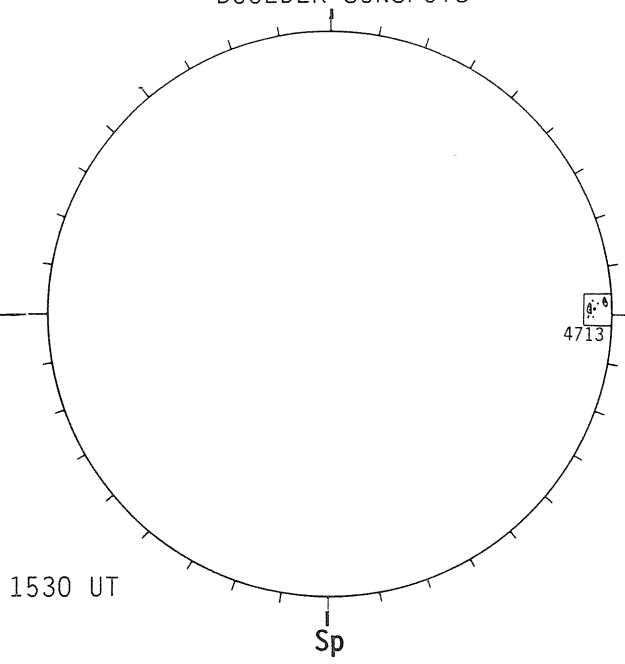
Solid = +
Dotted= -



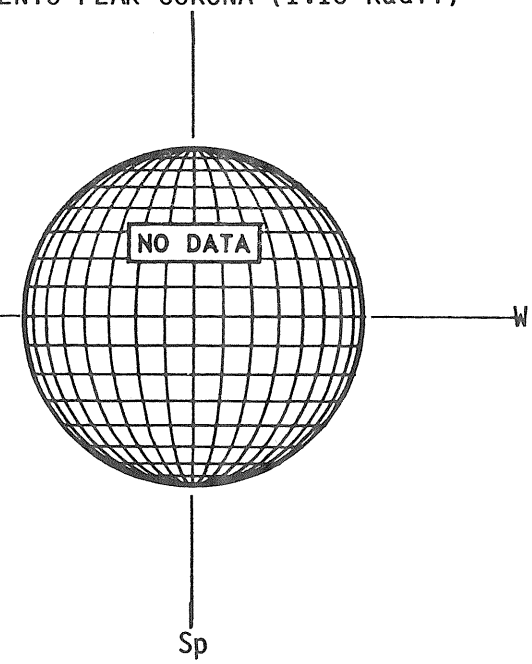
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



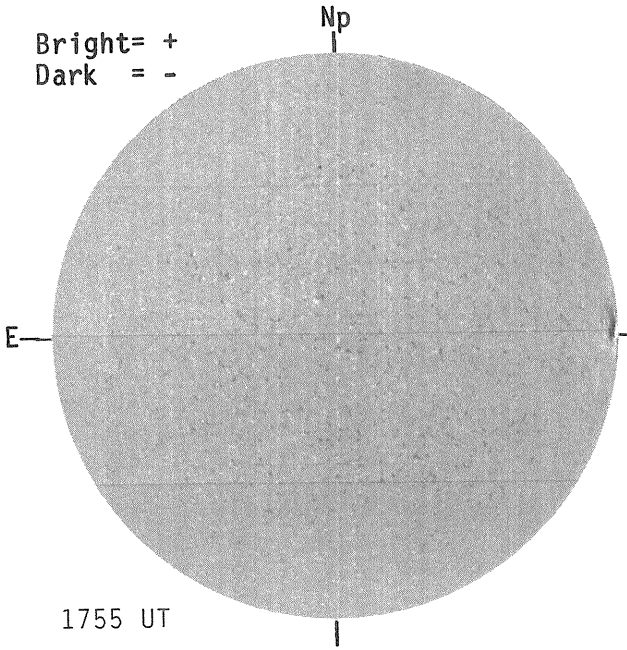
SACRAMENTO PEAK CORONA (1.15 Radii)



F E B R U A R Y 14, 1 9 8 6 (P=-16.99, B_0=-6.67, L_0= 314.23)

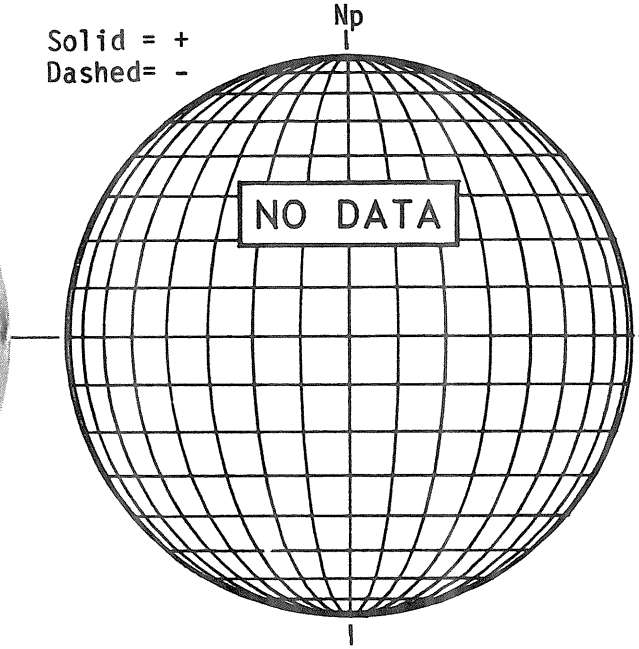
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



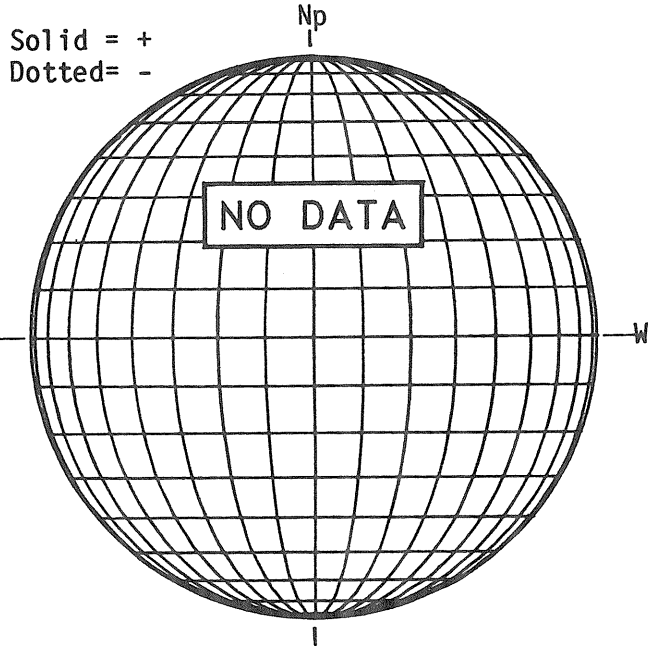
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

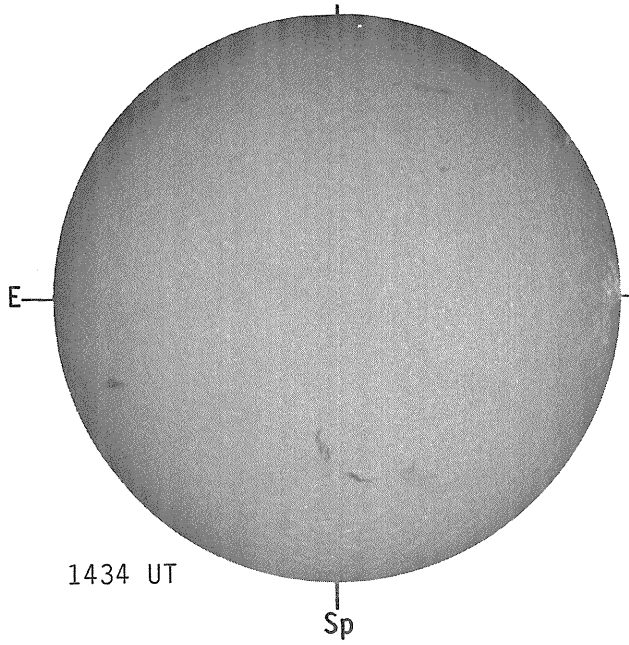


MT. WILSON MAGNETOGRAM

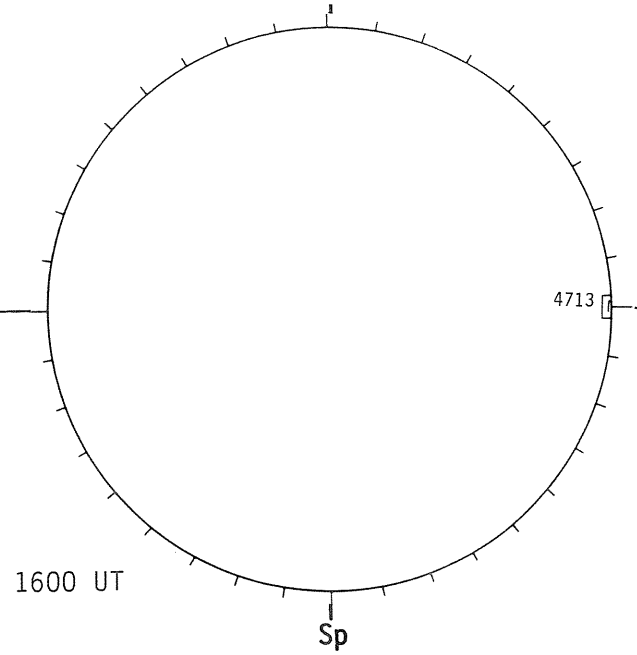
Solid = +
Dotted= -



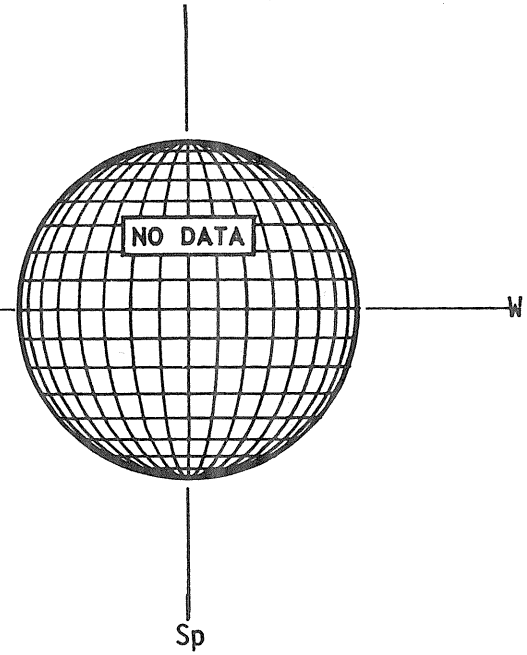
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



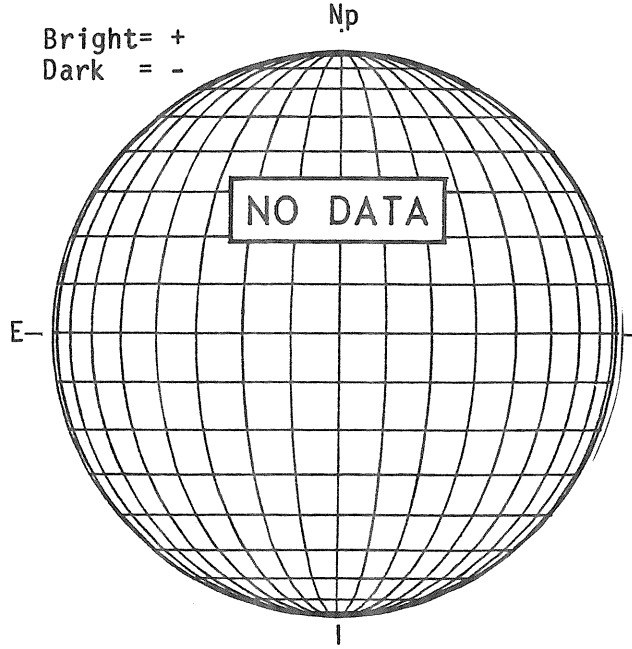
SACRAMENTO PEAK CORONA (1.15 Radii)



F E B R U A R Y 15, 1 9 8 6 (P=-17.33, B_0=-6.72, L_0= 301.06)

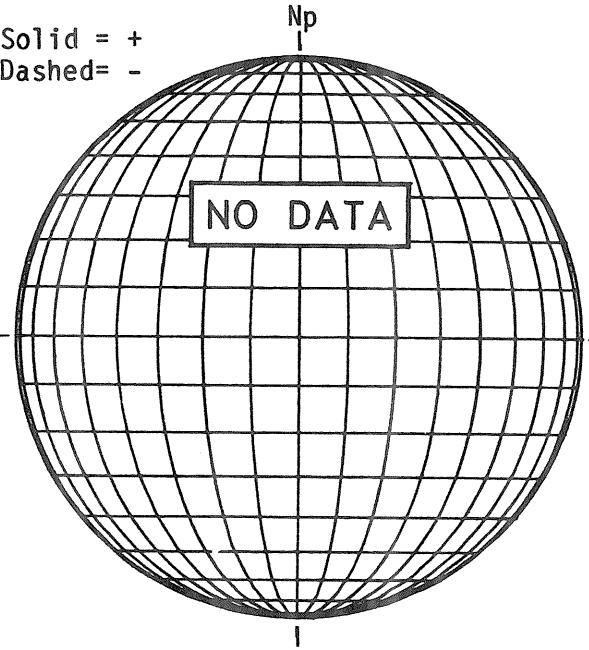
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



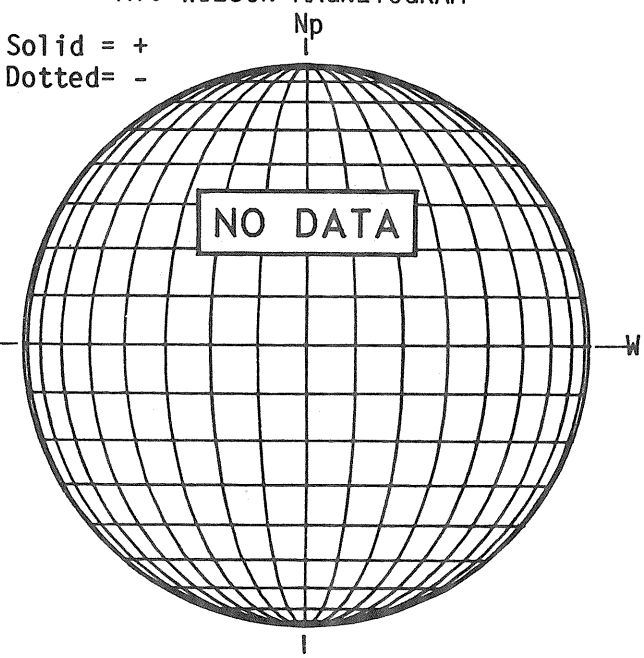
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

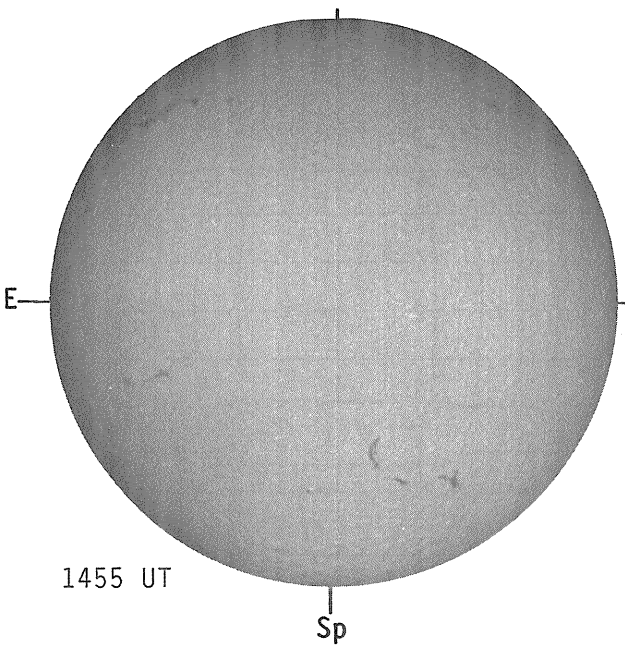


MT. WILSON MAGNETOGRAM

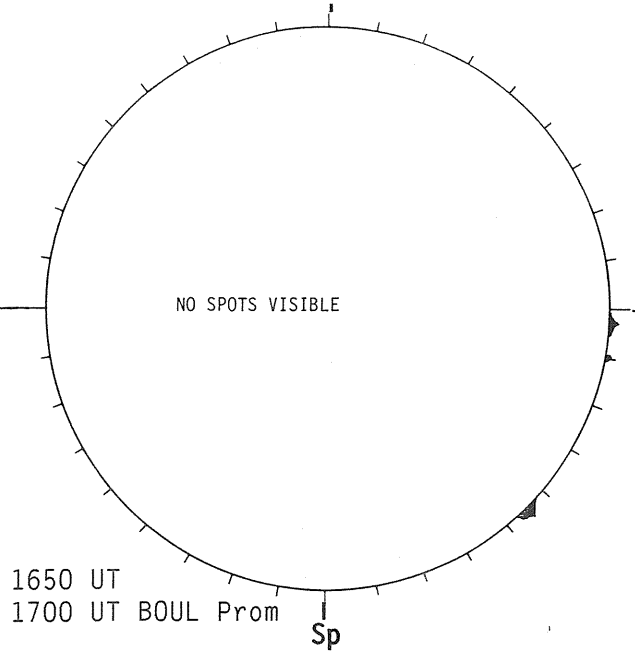
Solid = +
Dotted= -



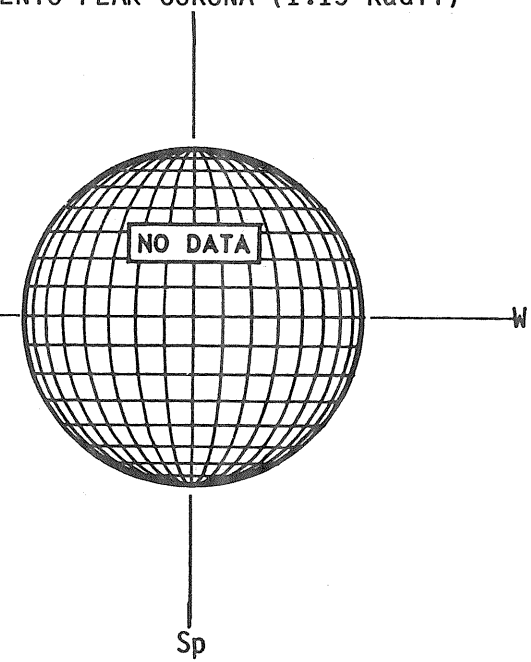
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



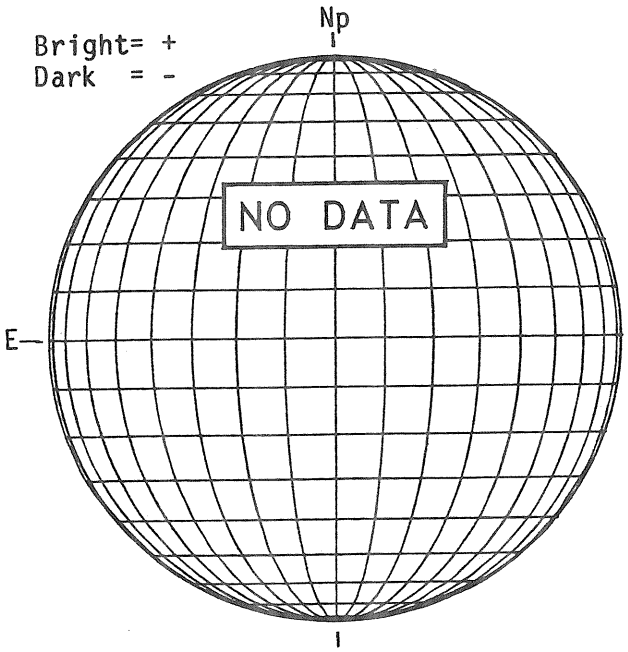
SACRAMENTO PEAK CORONA (1.15 Radii)



F E B R U A R Y 16, 1 9 8 6 (P=-17.67, B_0=-6.76, L_0= 287.89)

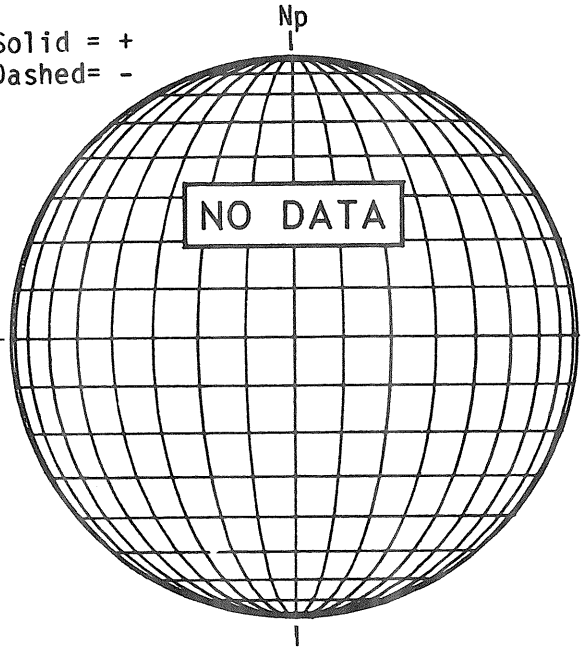
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



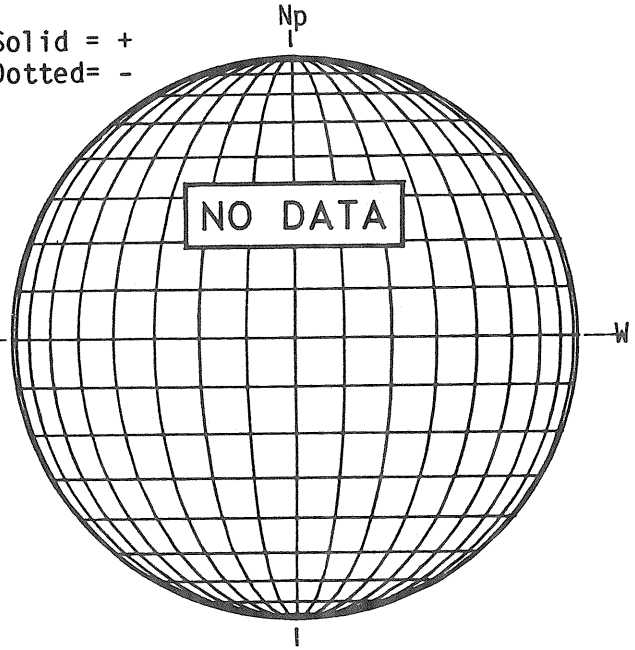
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

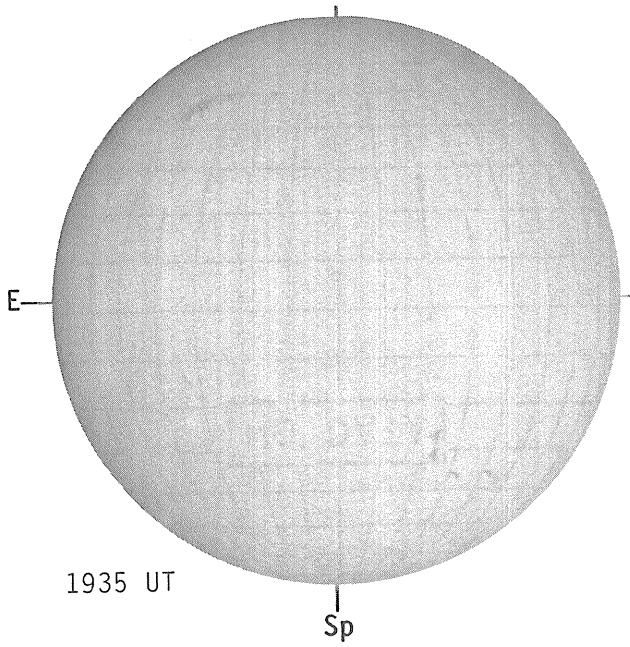


MT. WILSON MAGNETOGRAM

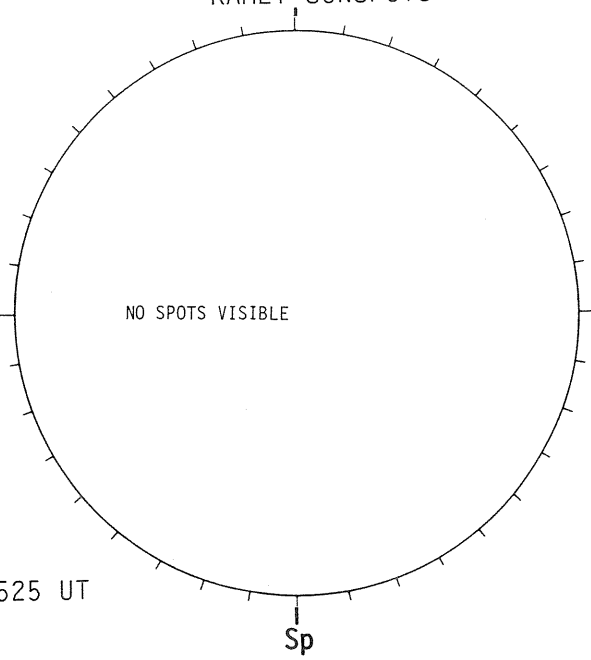
Solid = +
Dotted= -



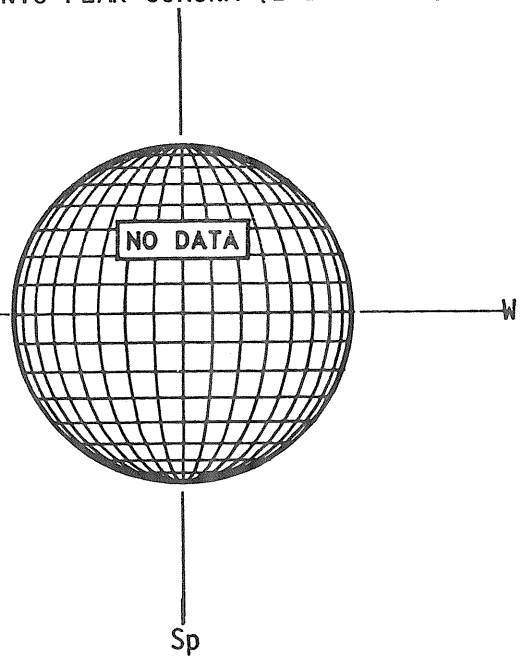
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOTS



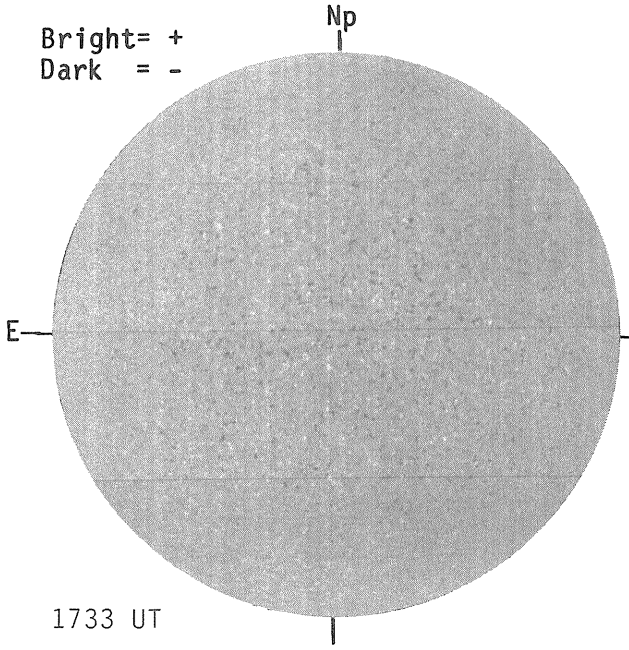
SACRAMENTO PEAK CORONA (1.15 Radii)



F E B R U A R Y 17, 1 9 8 6 (P=-17.99, B_0=-6.80, L_0= 274.73)

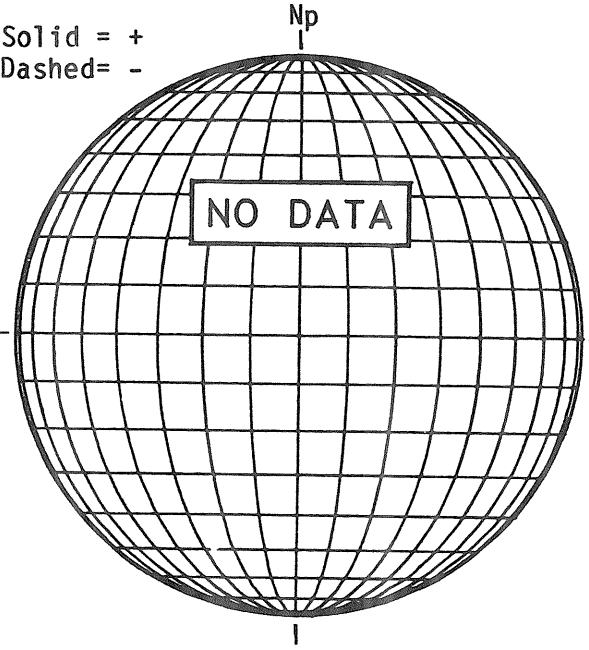
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



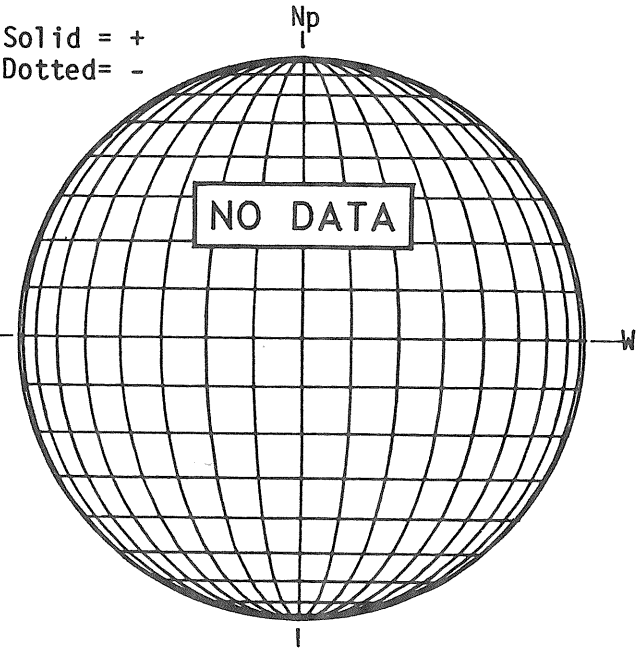
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

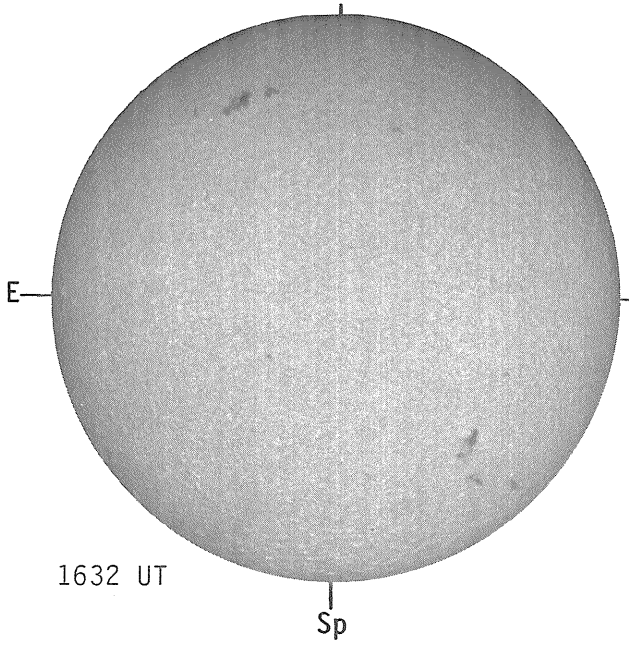


MT. WILSON MAGNETOGRAM

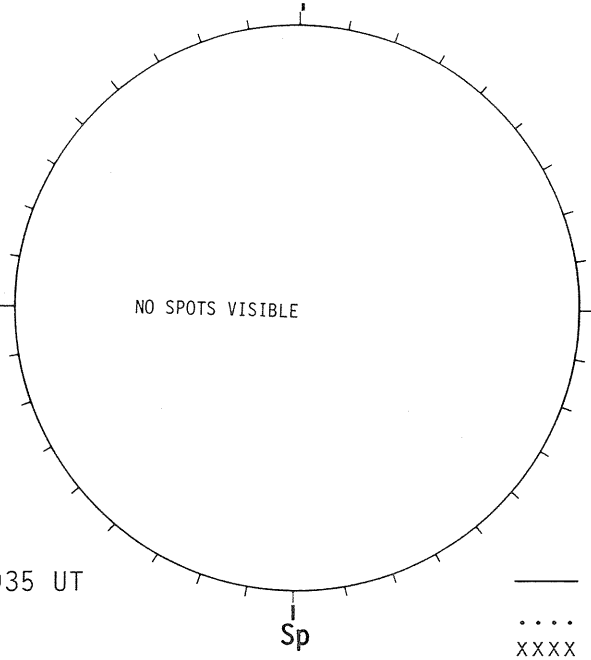
Solid = +
Dotted= -



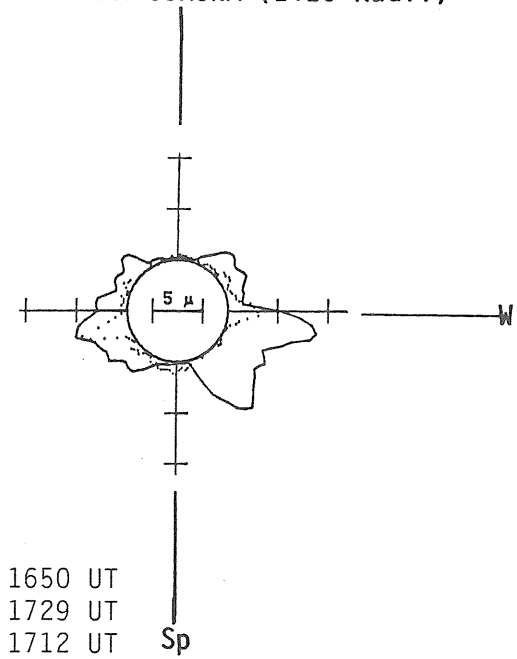
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

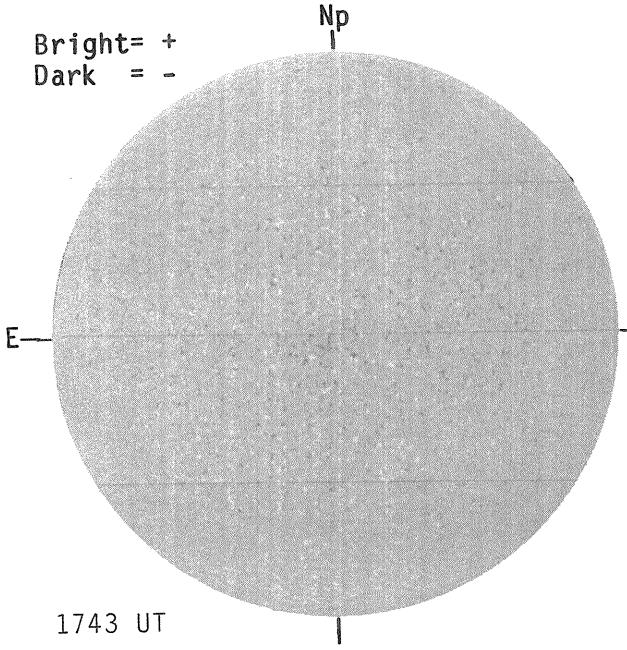


—— 5303A(x1) 1650 UT
.... 6374A(x2) 1729 UT
xxxx 5694A(x6) 1712 UT
NO 5694A ACTIVITY TODAY

F E B R U A R Y 18, 1 9 8 6 (P=-18.31, B_0=-6.84, L_0= 261.56)

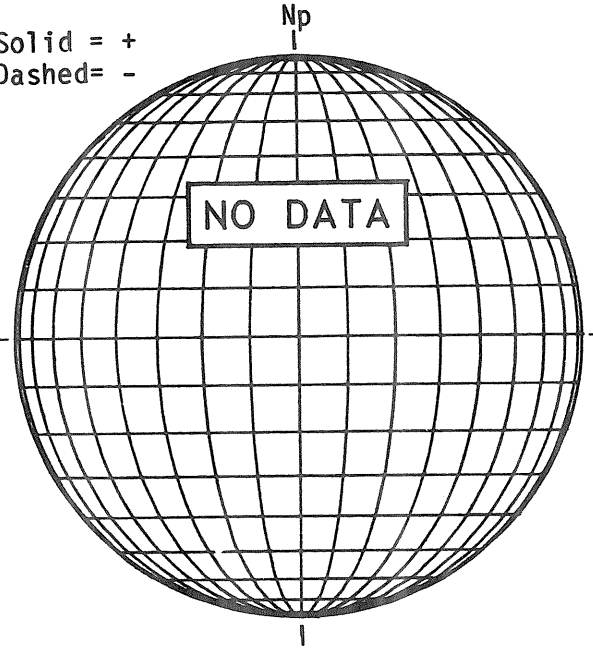
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



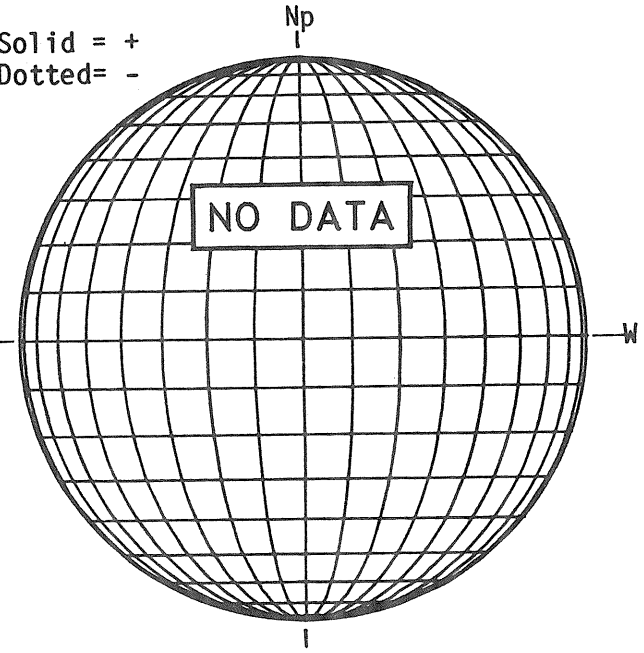
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

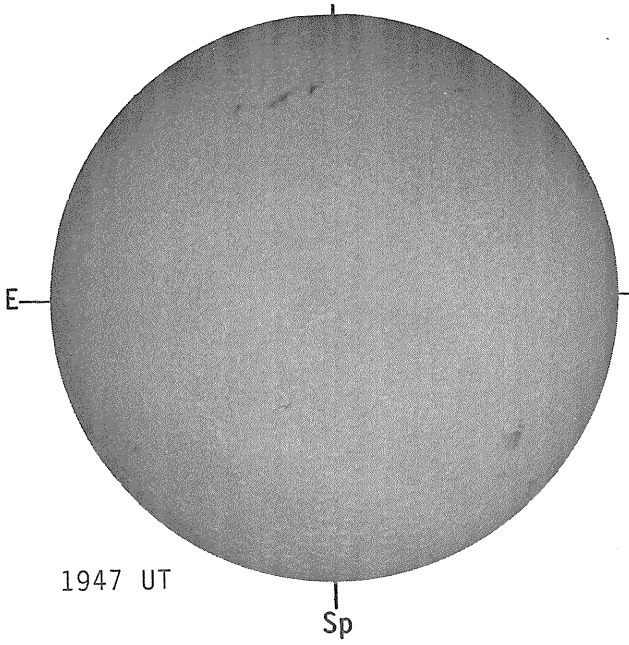


MT. WILSON MAGNETOGRAM

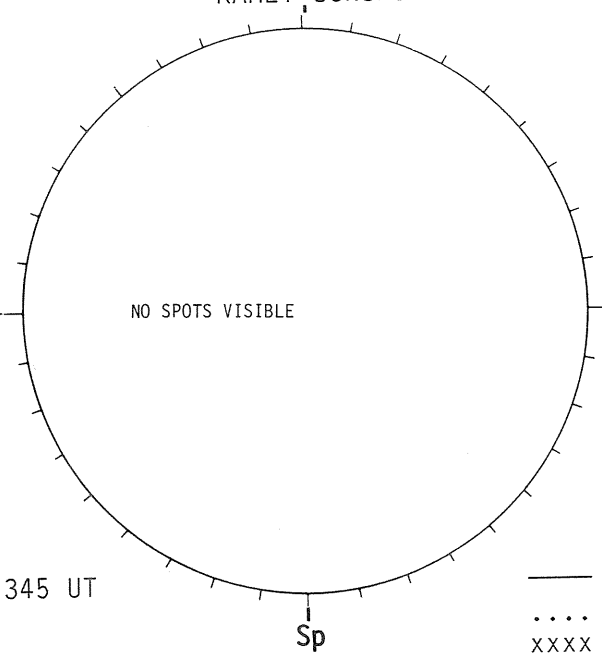
Solid = +
Dotted= -



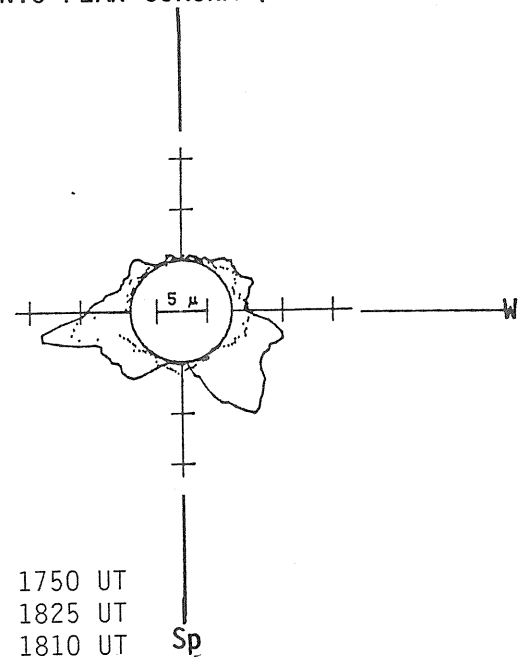
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

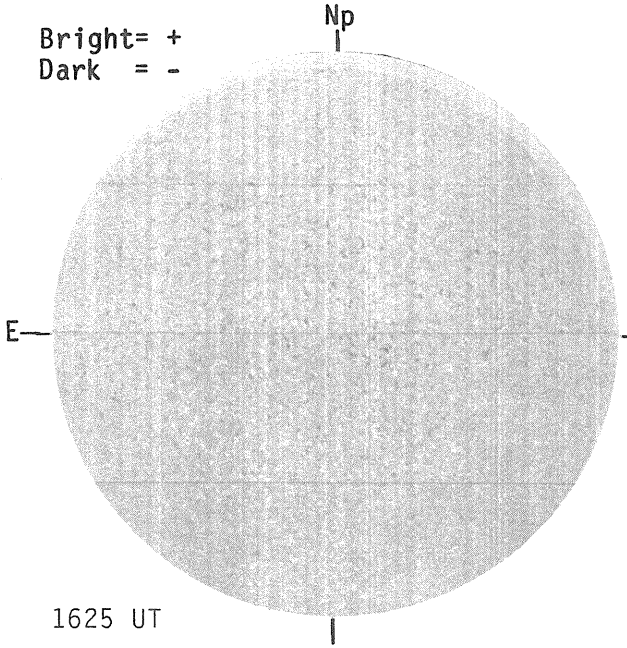


—— 5303A(x1) 1750 UT
.... 6374A(x2) 1825 UT
xxxx 5694A(x6) 1810 UT
NO 5694A ACTIVITY TODAY

F E B R U A R Y 19, 1 9 8 6 (P=-18.63, B_0=-6.87, L_0= 248.39)

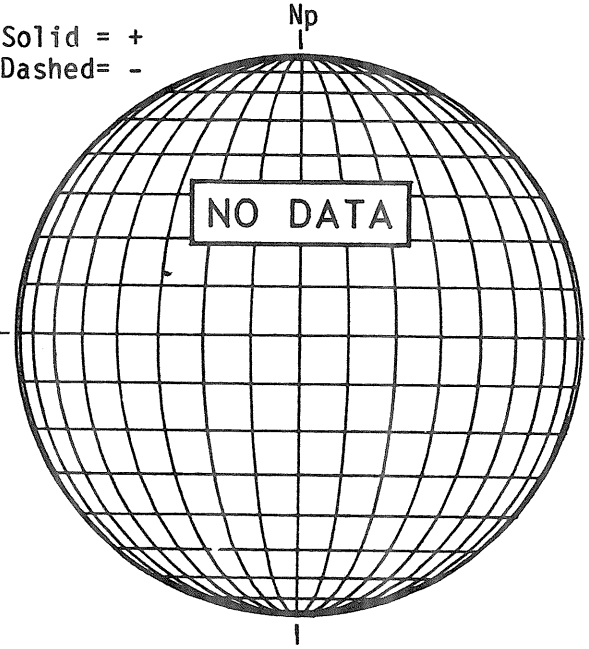
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



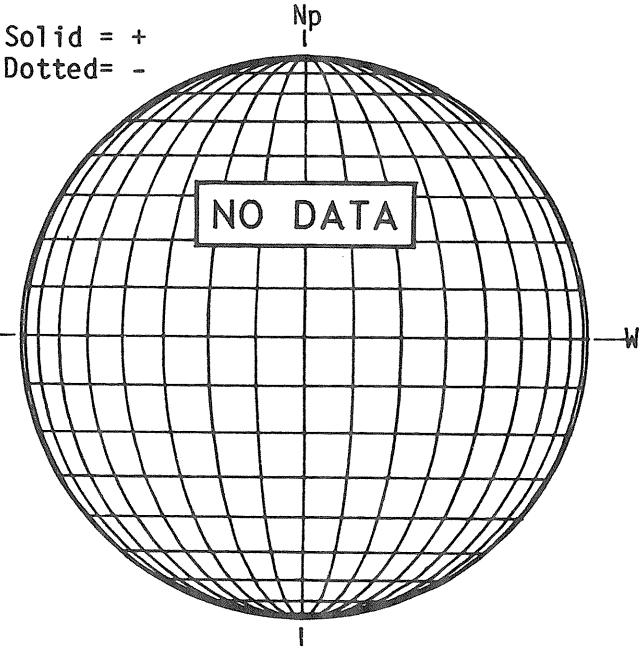
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

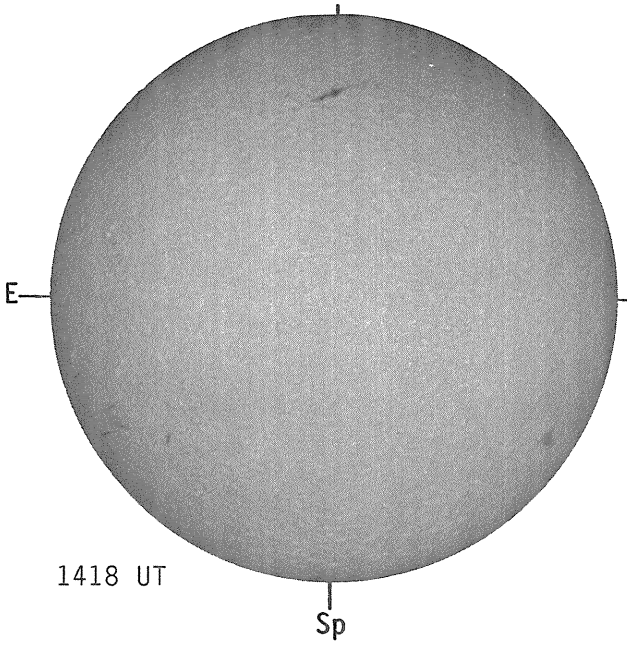


MT. WILSON MAGNETOGRAM

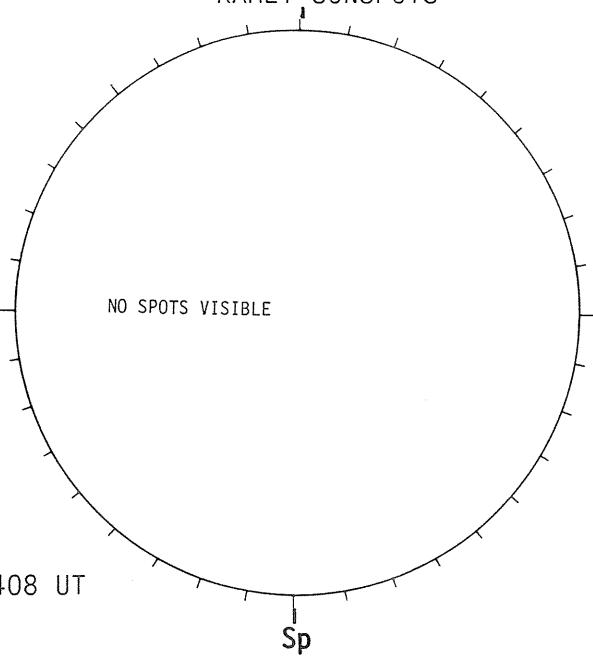
Solid = +
Dotted= -



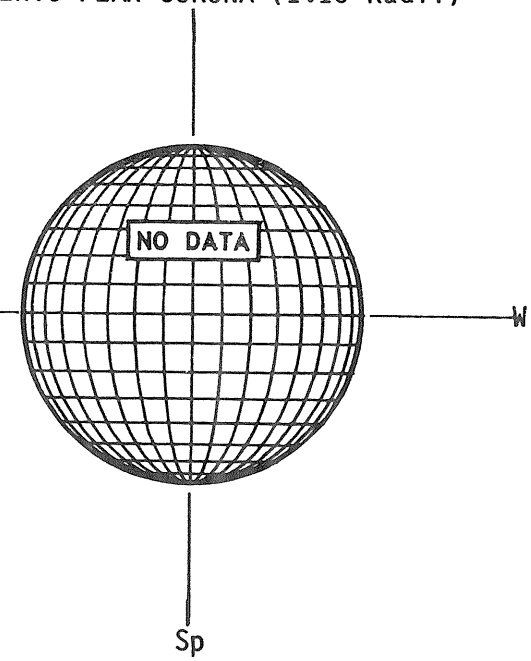
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOTS



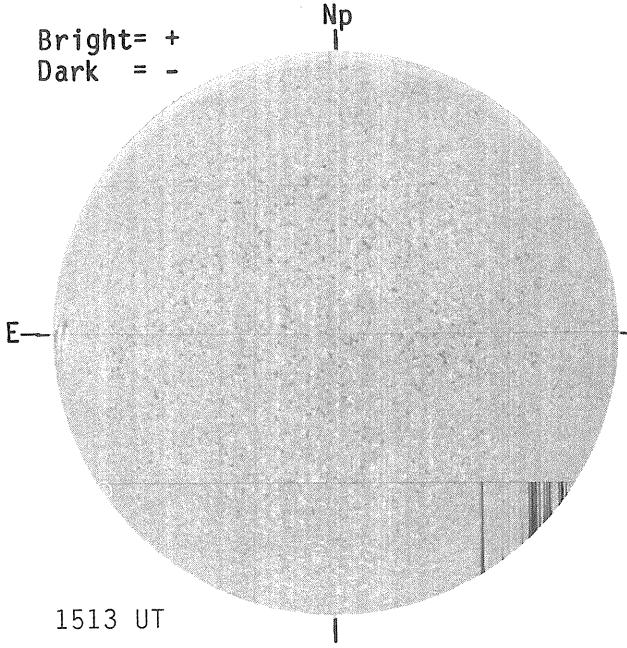
SACRAMENTO PEAK CORONA (1.15 Radii)



F E B R U A R Y 20, 1 9 8 6 (P=-18.94, B_0=-6.91, L_0= 235.22)

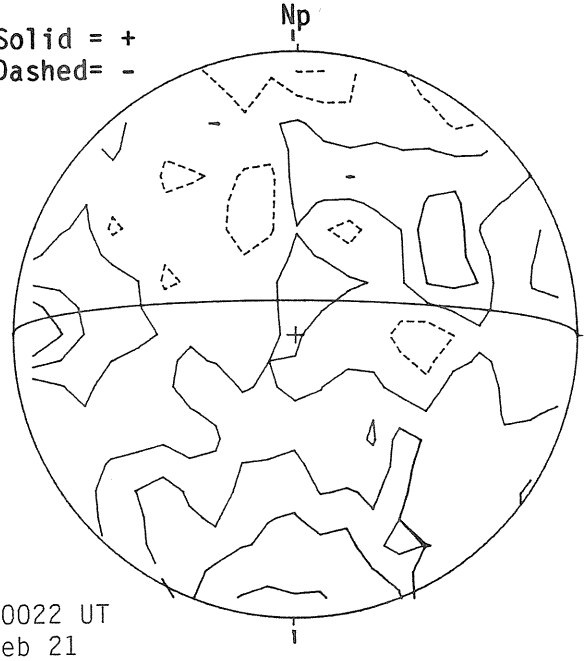
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

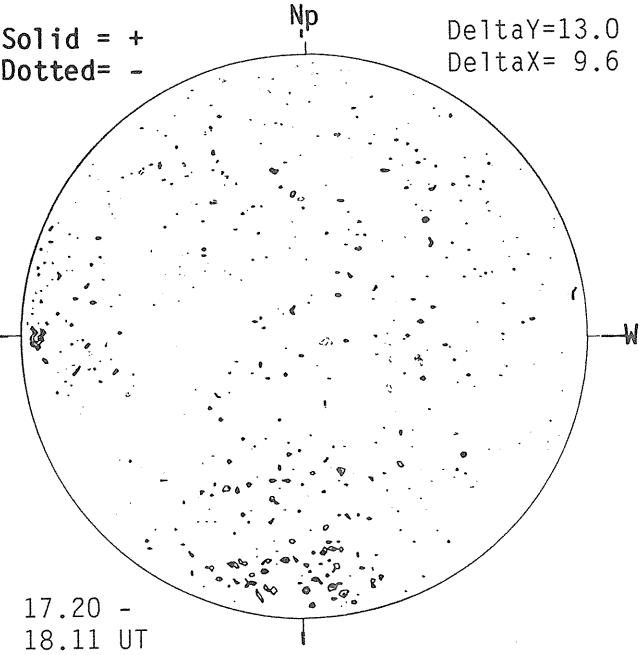
Solid = +
Dashed= -



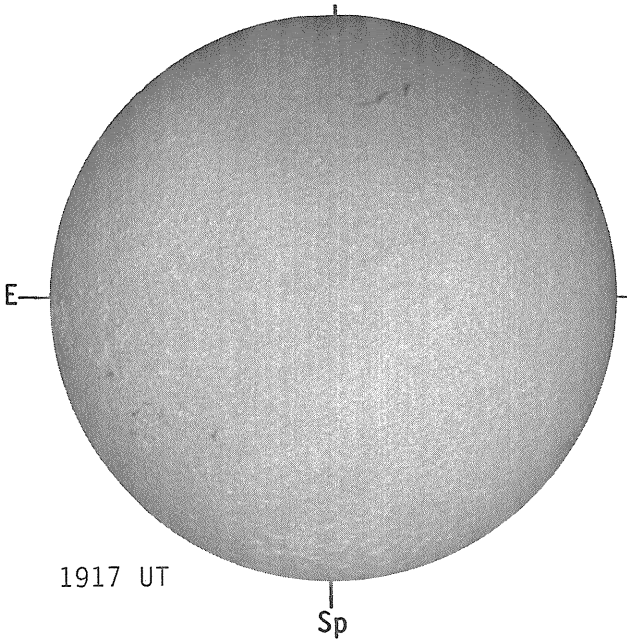
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

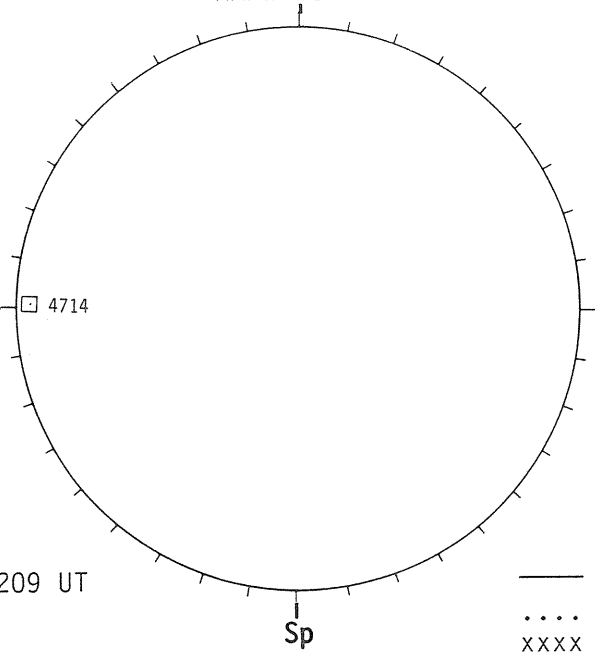
DeltaY=13.0
DeltaX= 9.6



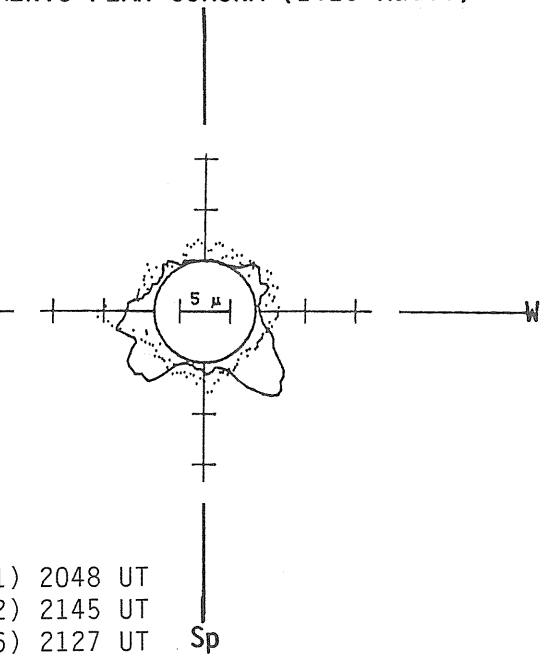
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

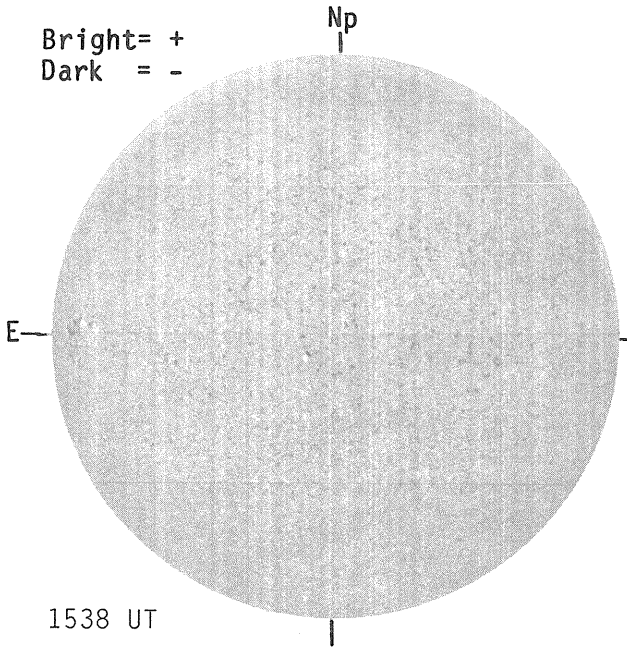


—— 5303A(x1) 2048 UT
.... 6374A(x2) 2145 UT
xxxx 5694A(x6) 2127 UT
NO 5694A ACTIVITY TODAY

F E B R U A R Y 21, 1 9 8 6 (P=-19.24) B_0=-6.94, L_0= 222.05)

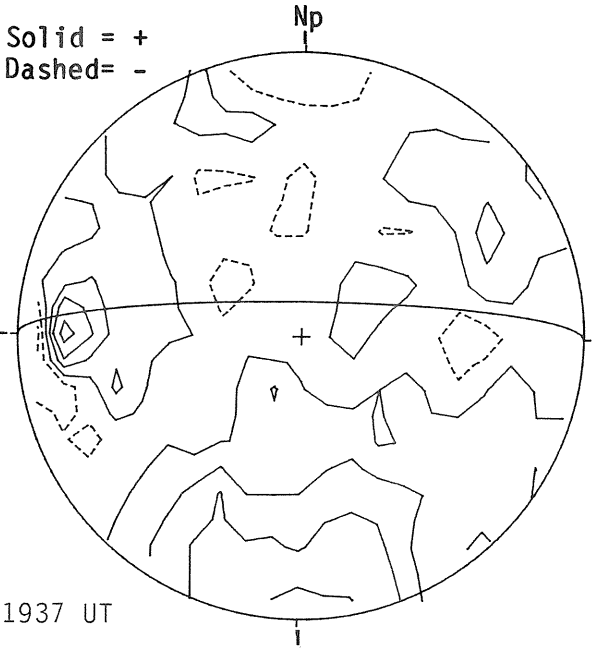
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

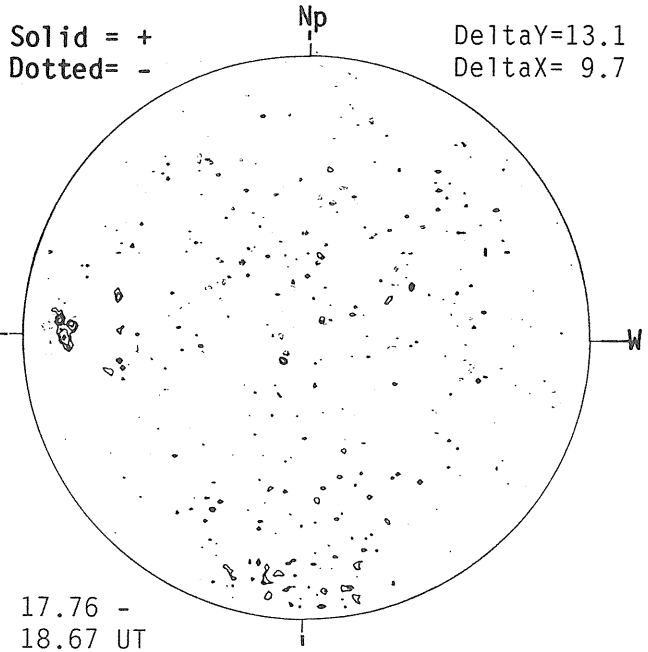
Solid = +
Dashed= -



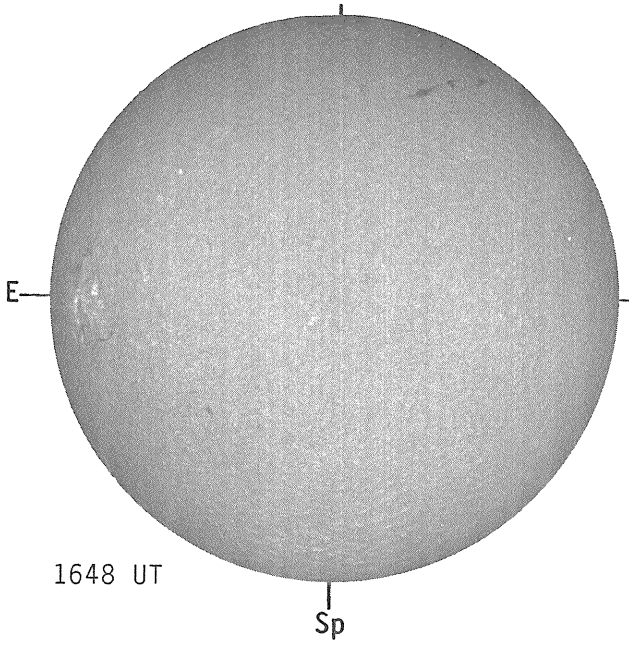
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

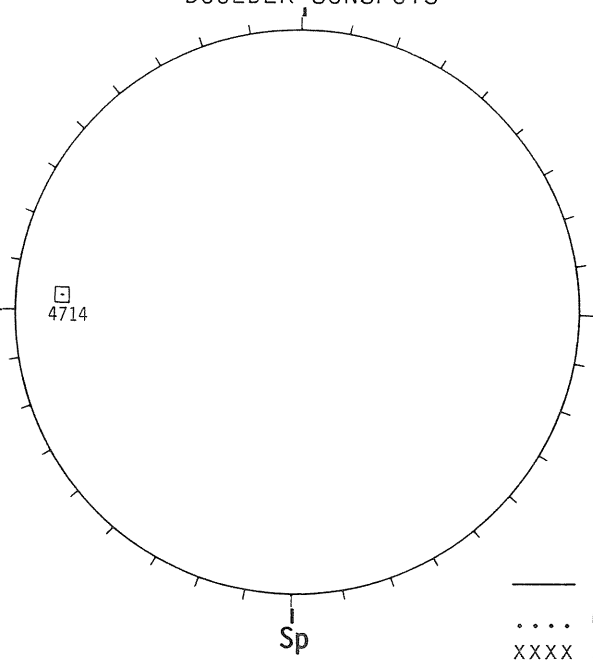
DeltaY=13.1
DeltaX= 9.7



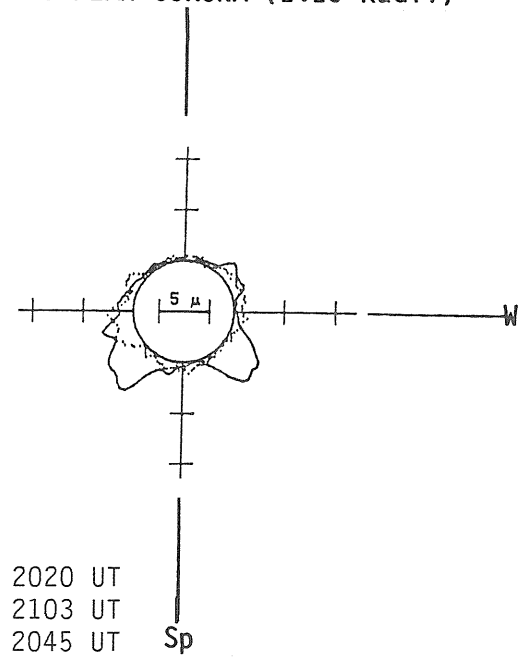
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

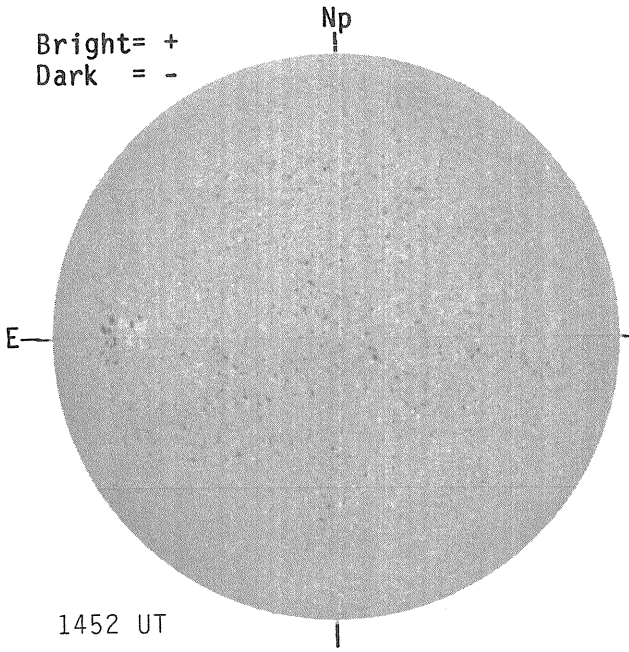


—— 5303A(x1) 2020 UT
.... 6374A(x2) 2103 UT
xxxx 5694A(x6) 2045 UT
NO 5694A ACTIVITY TODAY

F E B R U A R Y 22, 1 9 8 6 (P=-19.54, B_0=-6.97, L_0= 208.88)

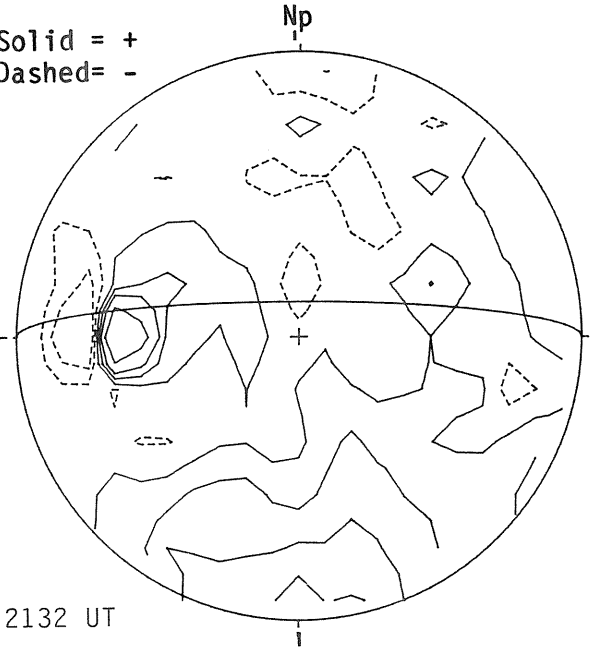
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

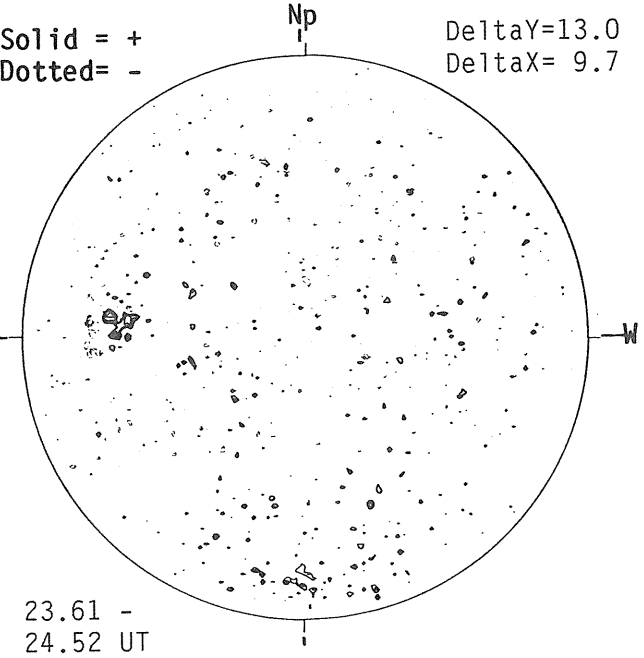
Solid = +
Dashed= -



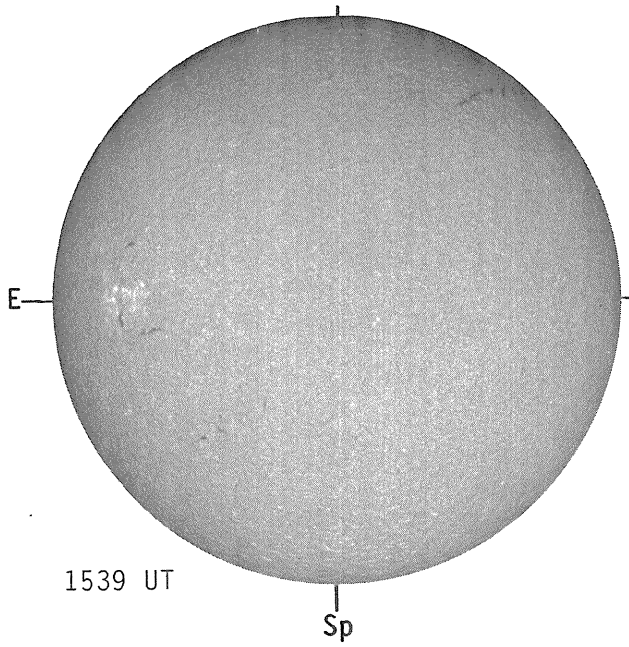
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

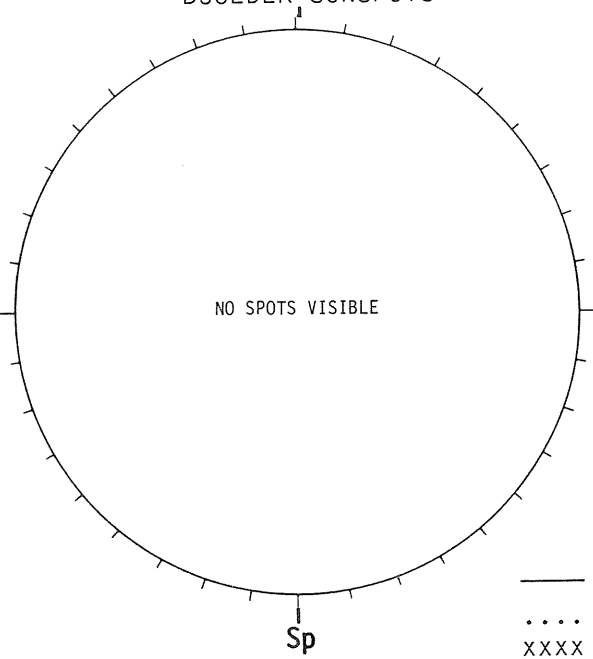
DeltaY=13.0
DeltaX= 9.7



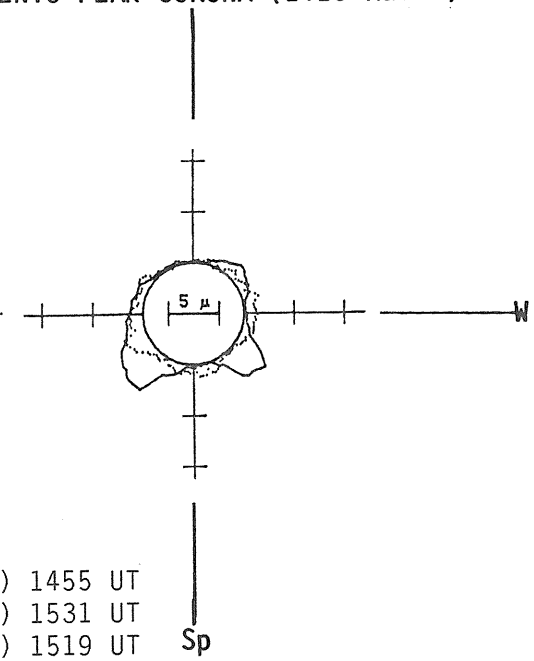
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

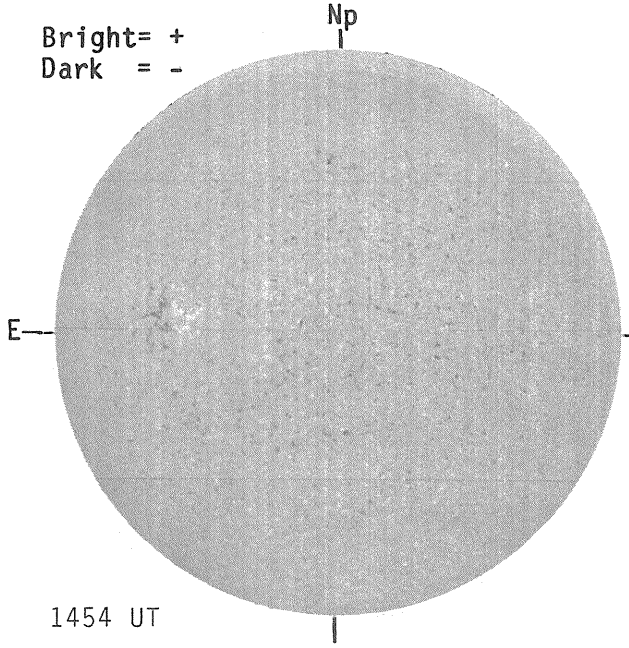


—— 5303A(x1) 1455 UT
.... 6374A(x2) 1531 UT
xxxx 5694A(x6) 1519 UT
NO 5694A ACTIVITY TODAY

F E B R U A R Y 23, 1 9 8 6 (P=-19.83, B_0=-6.99, L_0= 195.71)

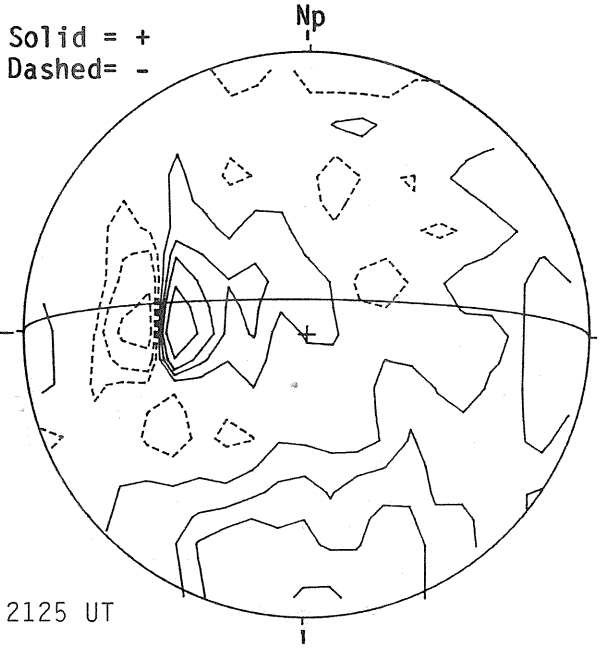
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

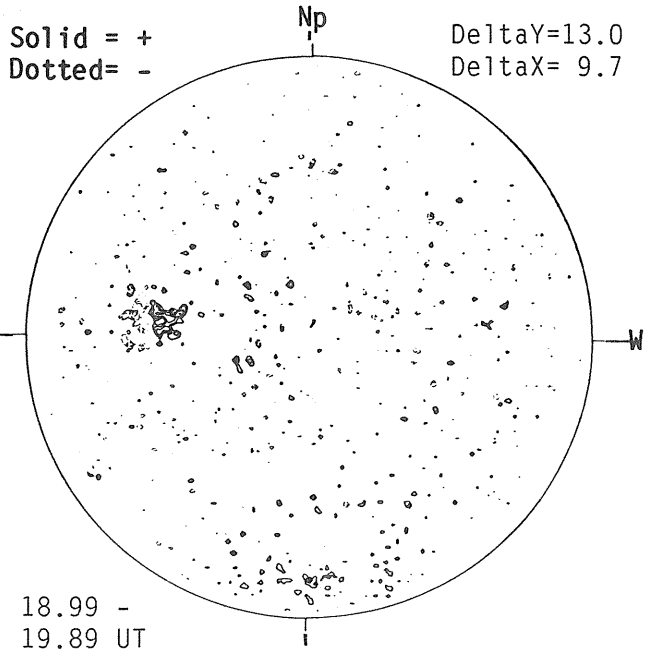
Solid = +
Dashed= -



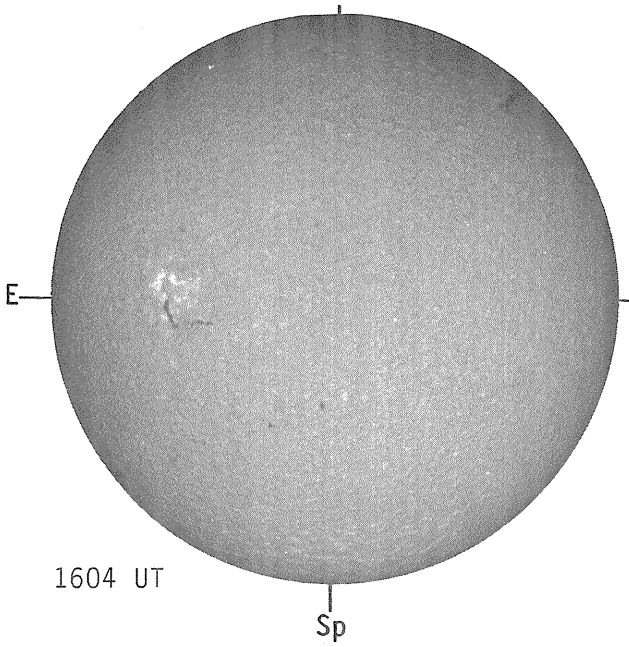
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

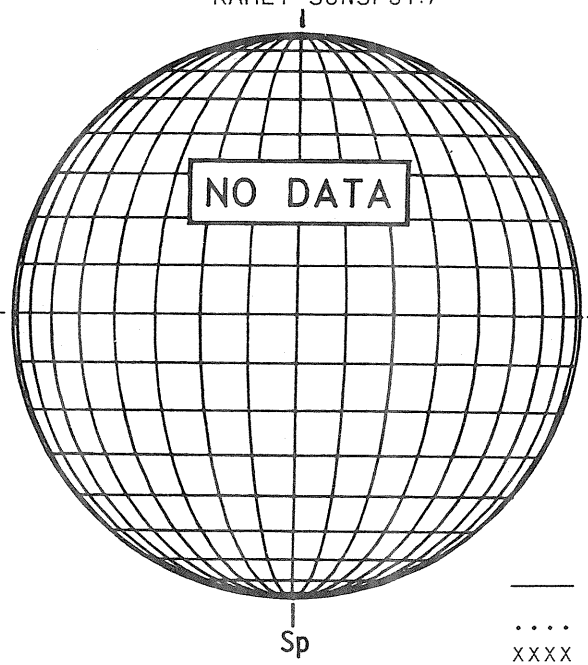
DeltaY=13.0
DeltaX= 9.7



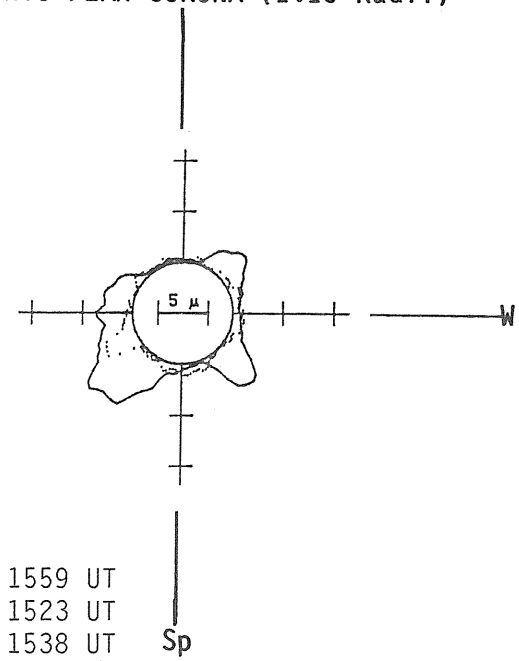
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

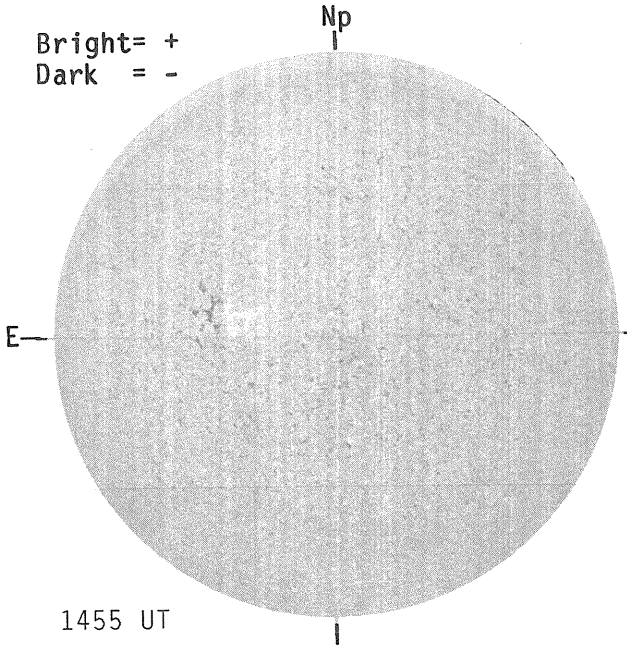


—— 5303A(x1) 1559 UT
.... 6374A(x2) 1523 UT
xxxx 5694A(x6) 1538 UT
NO 5694A ACTIVITY TODAY

F E B R U A R Y 24, 1 9 8 6 (P=-20.12, B_0=-7.02, L_0= 182.54)

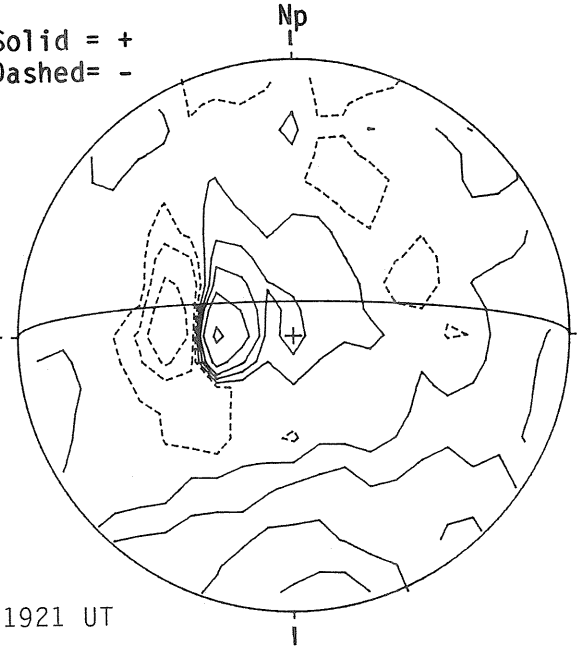
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

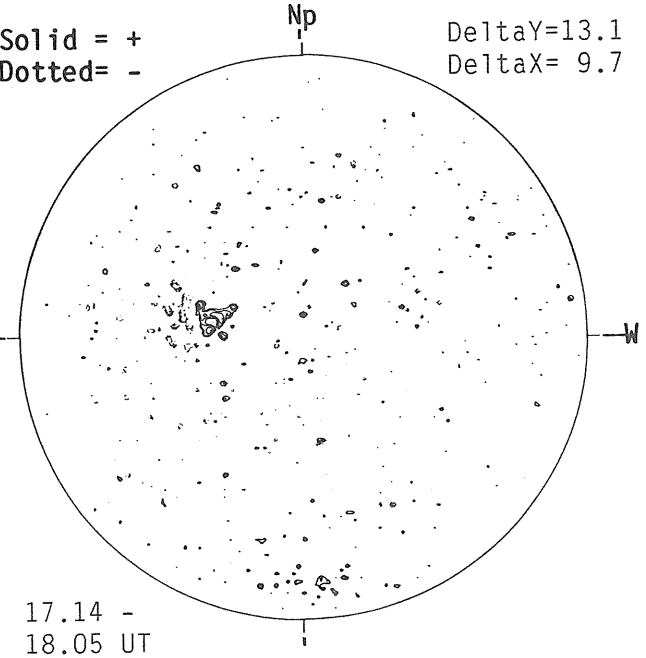
Solid = +
Dashed= -



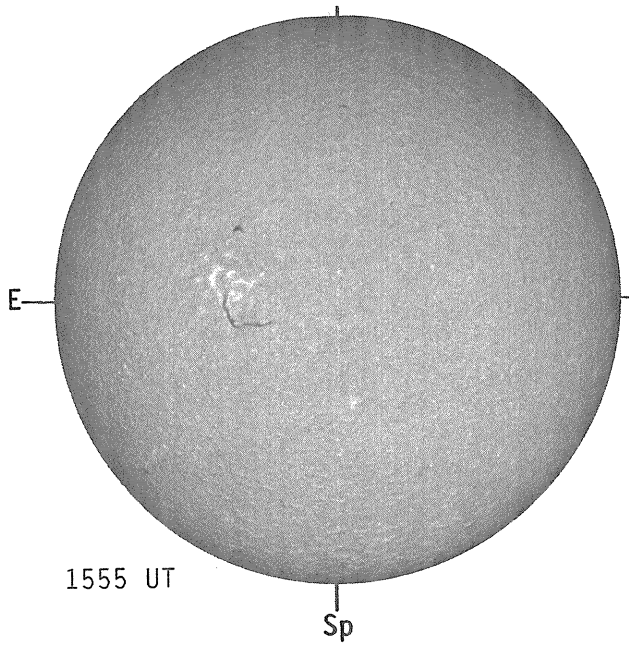
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

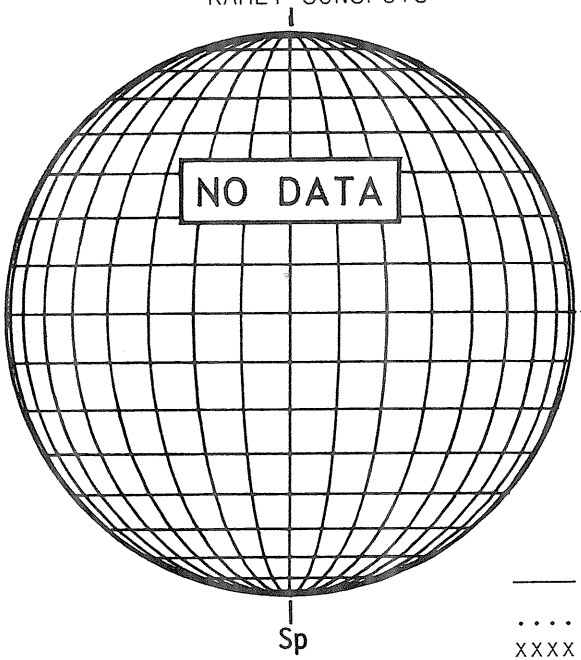
DeltaY=13.1
DeltaX= 9.7



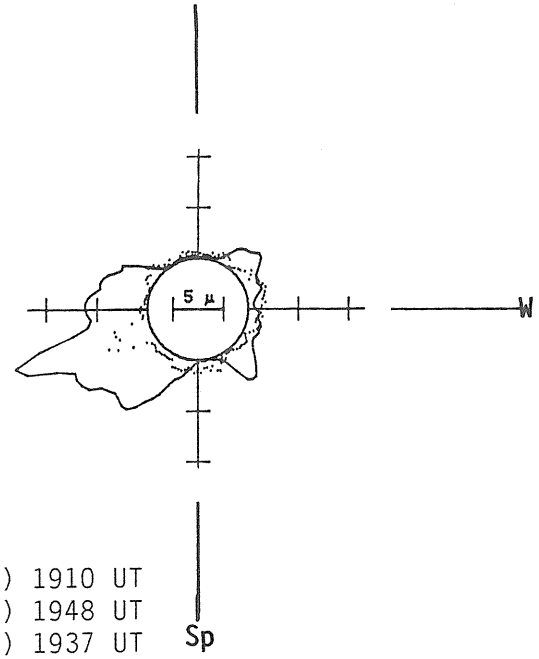
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

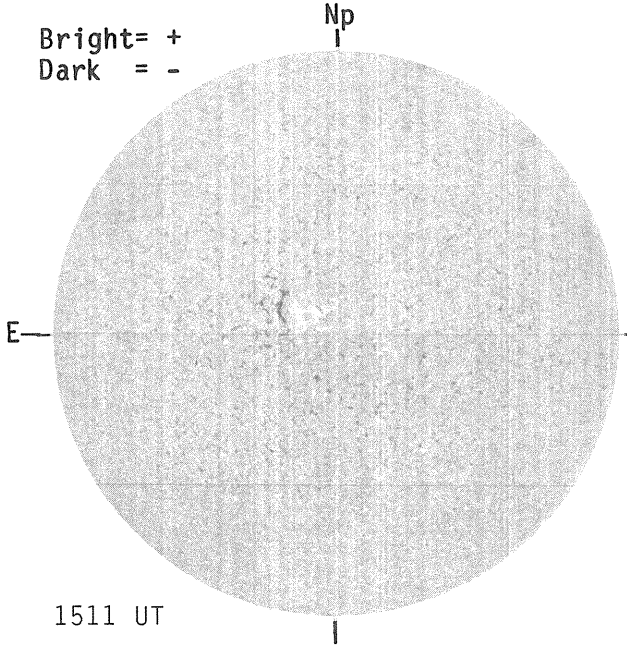


—— 5303A(x1) 1910 UT
.... 6374A(x2) 1948 UT
xxxx 5694A(x6) 1937 UT
NO 5694A ACTIVITY TODAY

F E B R U A R Y 25, 1 9 8 6 (P=-20.40, B_0=-7.04, L_0= 169.37)

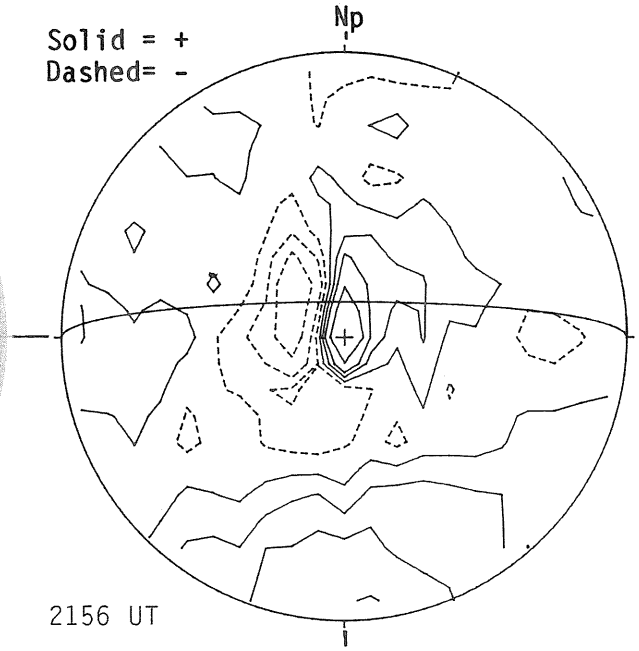
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

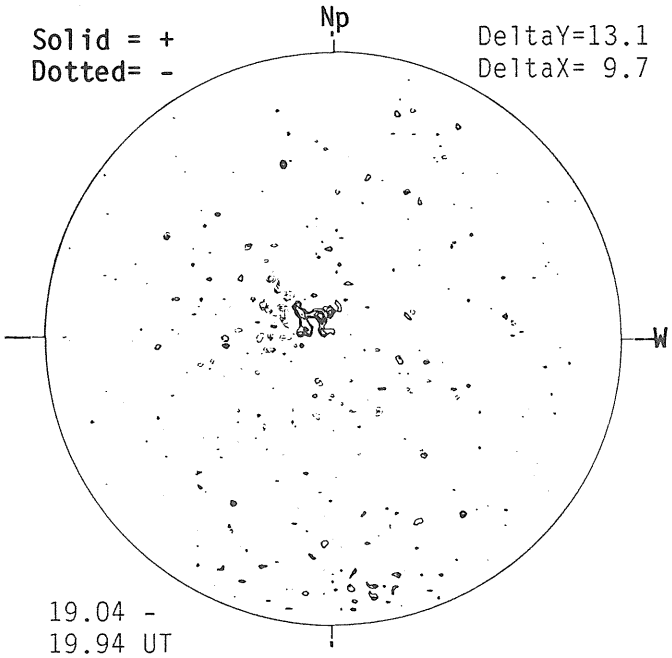
Solid = +
Dashed= -



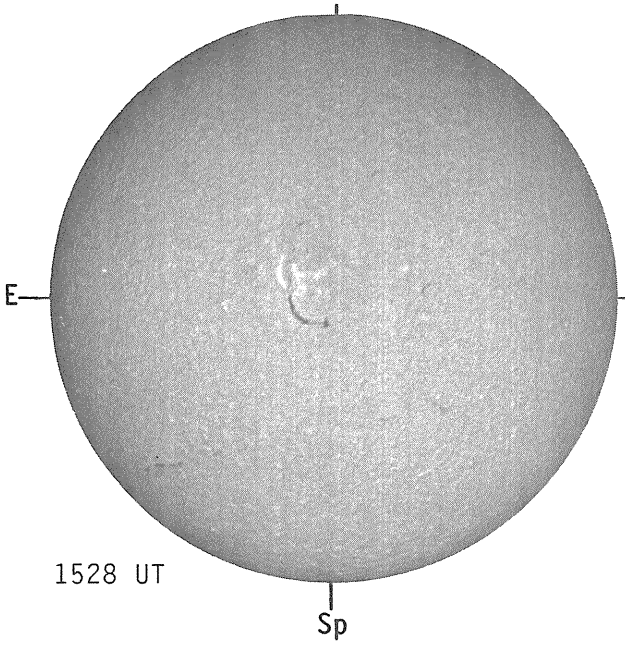
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

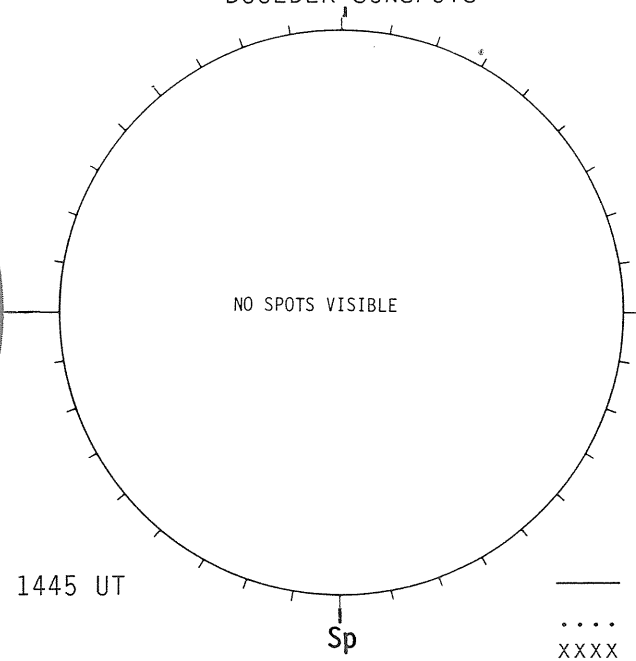
DeltaY=13.1
DeltaX= 9.7



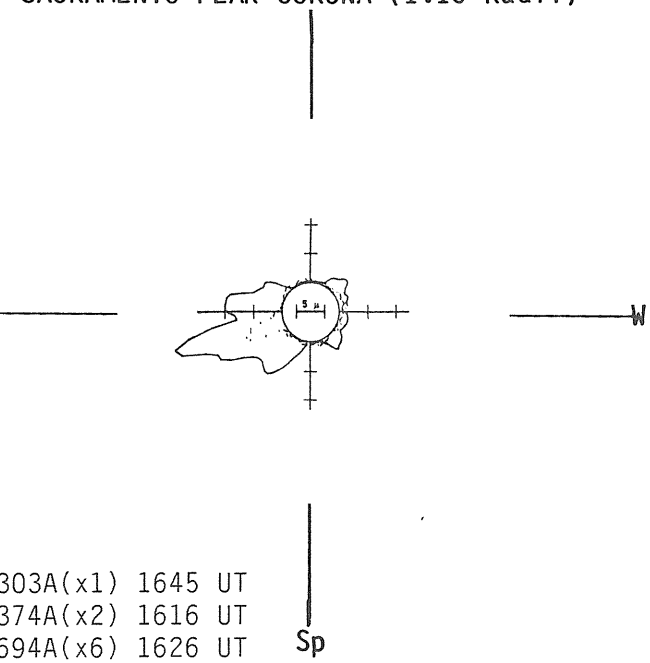
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

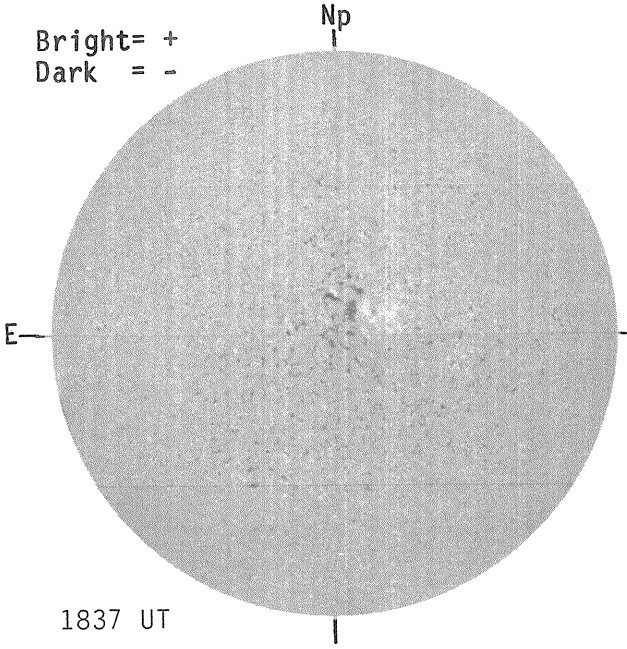


—— 5303A(x1) 1645 UT
.... 6374A(x2) 1616 UT
xxxx 5694A(x6) 1626 UT
NO 5694A ACTIVITY TODAY

F E B R U A R Y 26, 1 9 8 6 (P=-20.67, B_0=-7.06, L_0= 156.19)

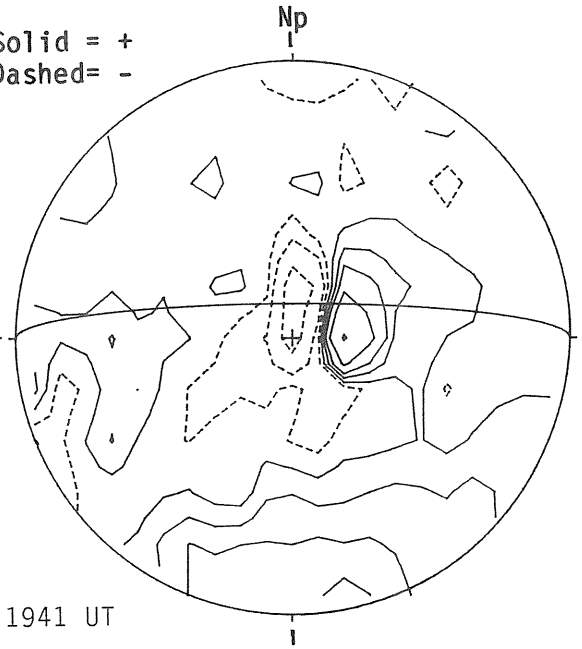
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

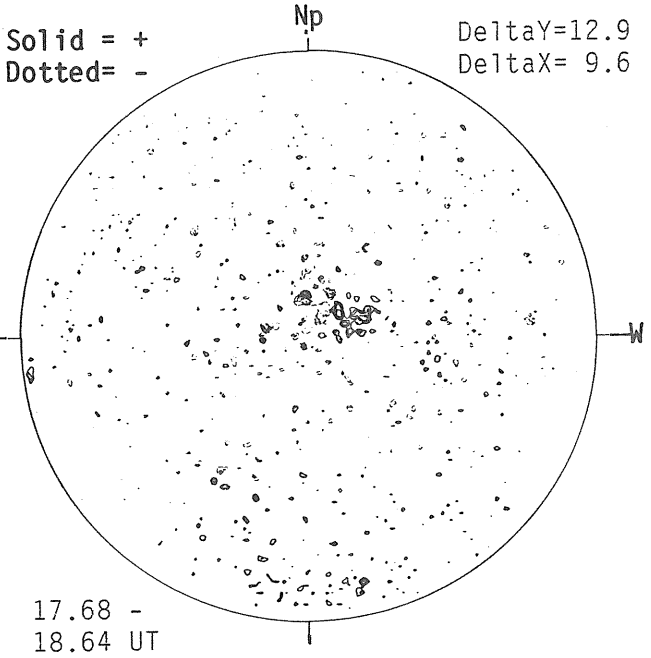
Solid = +
Dashed= -



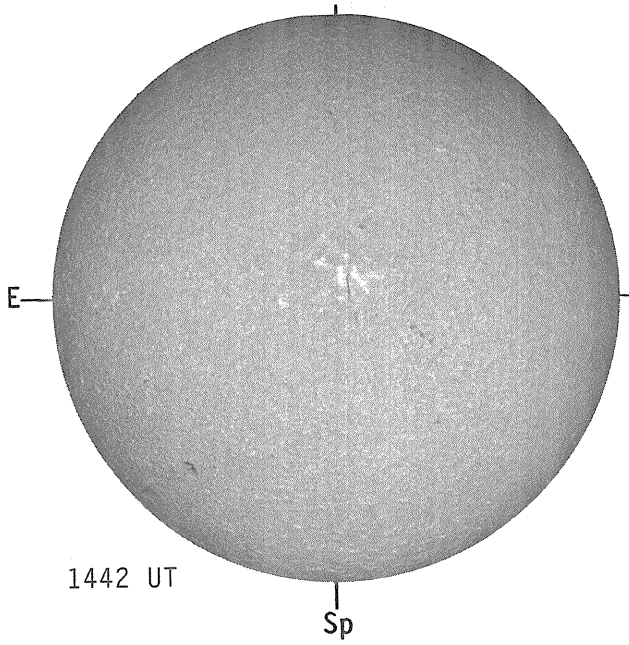
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

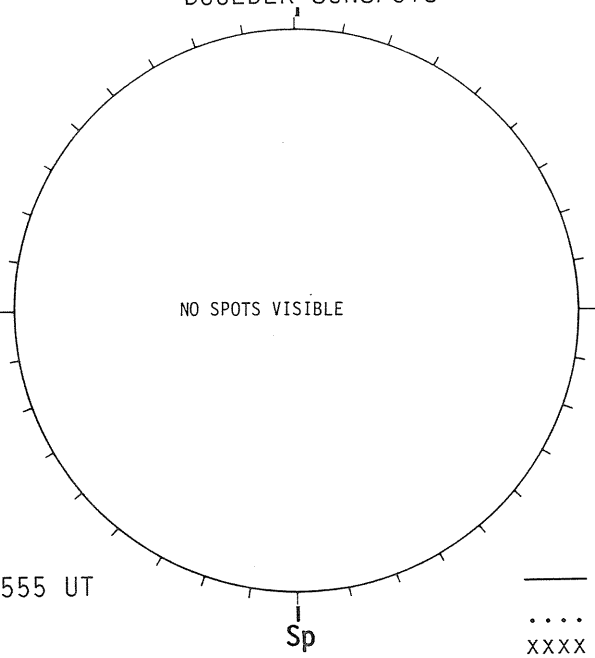
DeltaY=12.9
DeltaX= 9.6



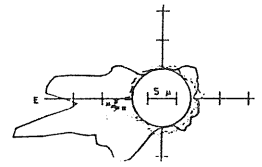
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

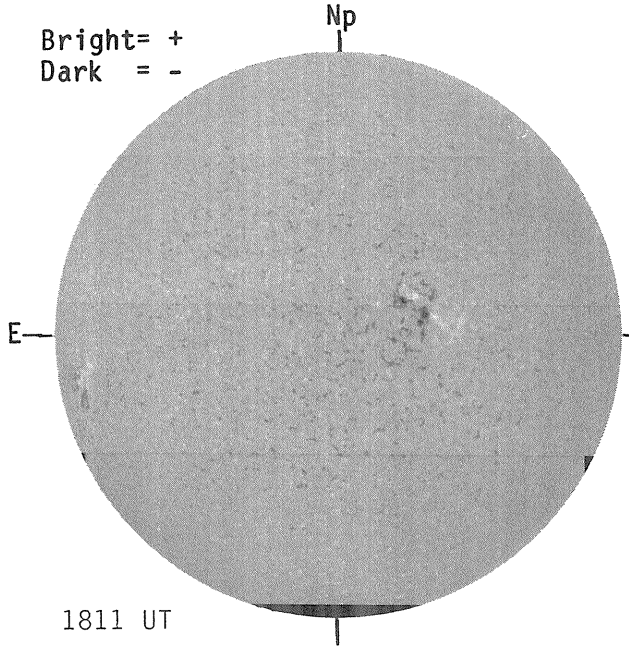


—— 5303A(x1) 1515 UT
.... 6374A(x2) 1436 UT
xxxx 5694A(x6) 1453 UT

F E B R U A R Y 27, 1 9 8 6 (P=-20.94, B_0=-7.08, L_0= 143.02)

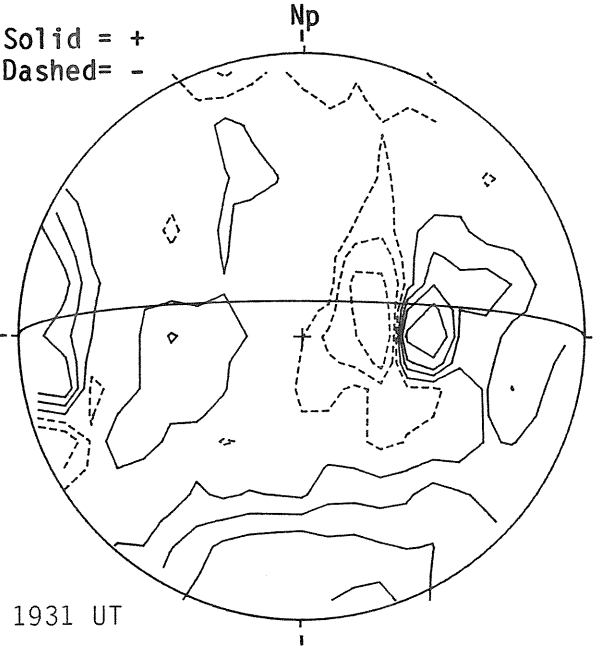
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

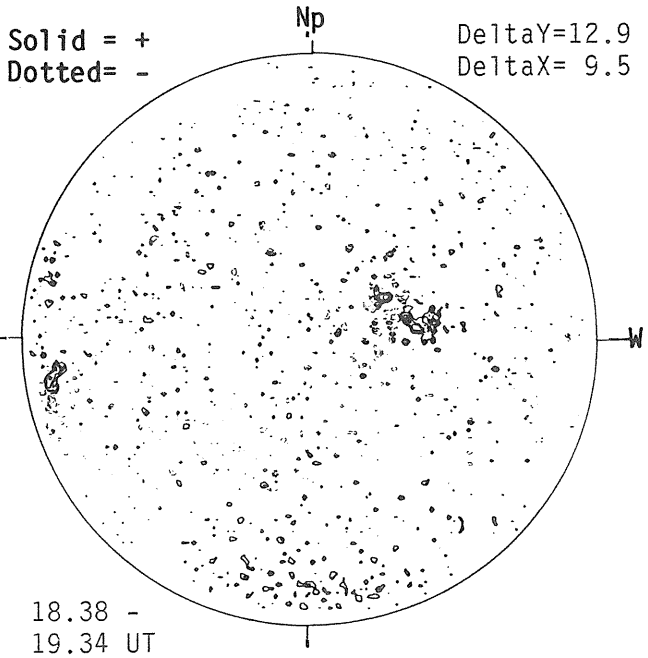
Solid = +
Dashed= -



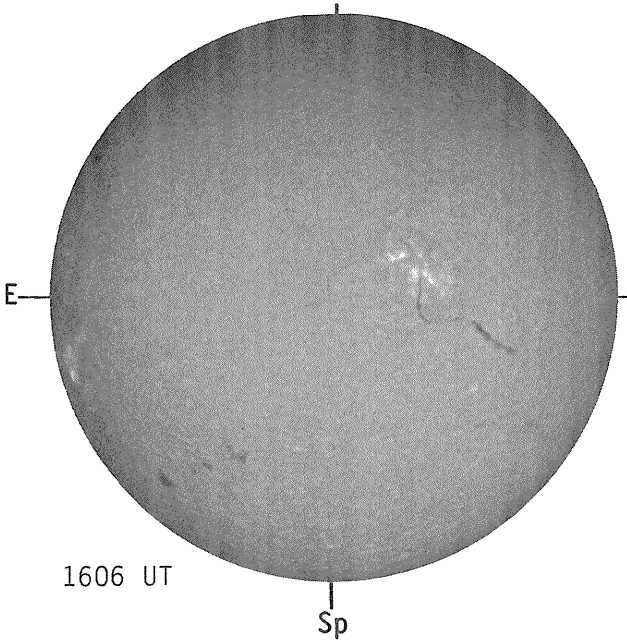
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

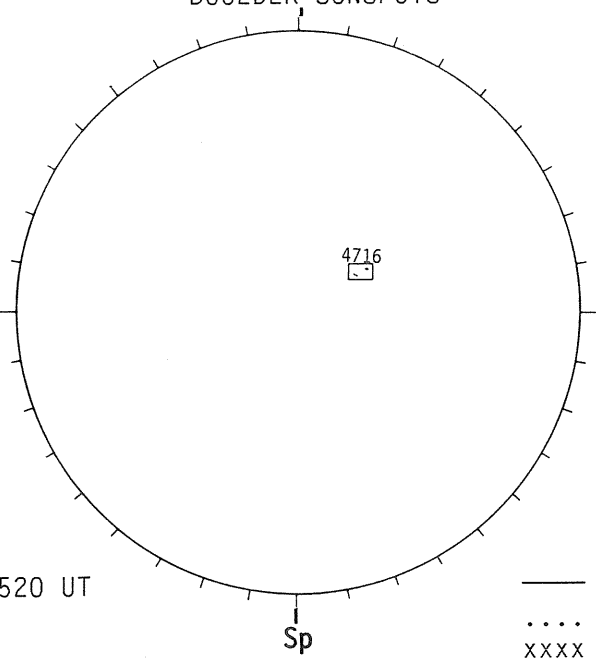
DeltaY=12.9
DeltaX= 9.5



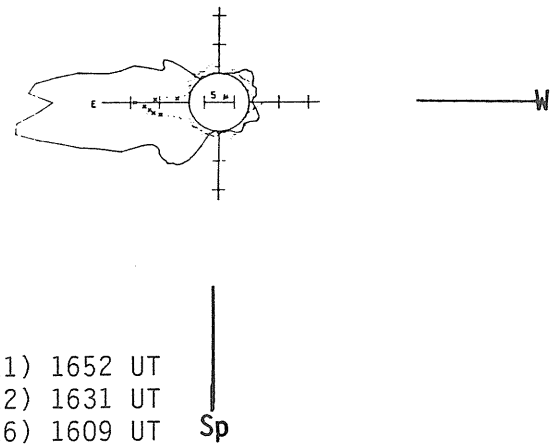
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



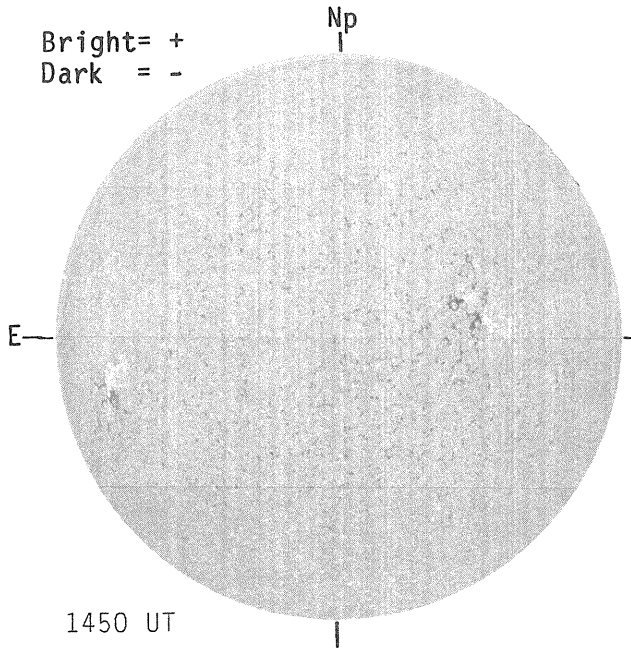
—— 5303A(x1) 1652 UT
.... 6374A(x2) 1631 UT
xxxx 5694A(x6) 1609 UT

55
Feb 86

F E B R U A R Y 28, 1 9 8 6 (P=-21.20, B_0=-7.10, L_0= 129.85)

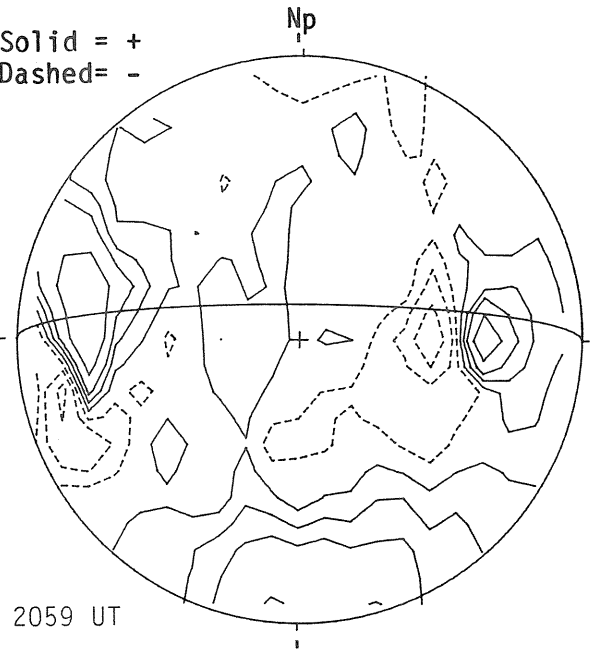
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

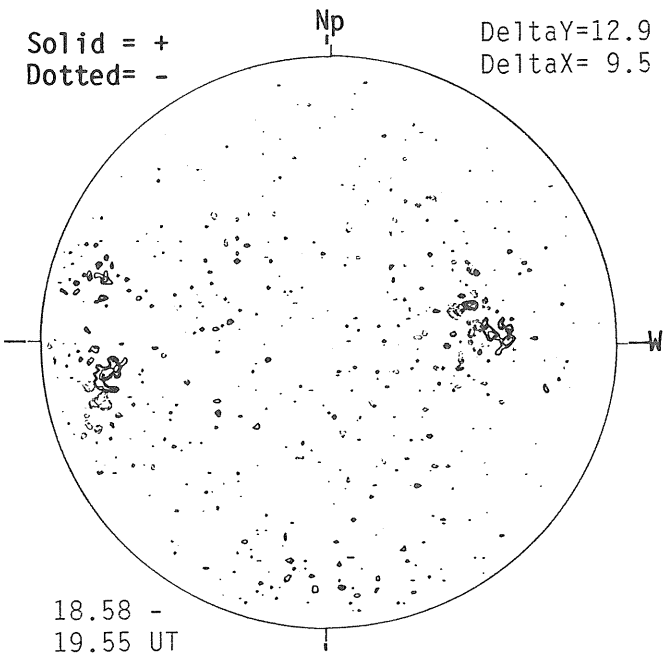
Solid = +
Dashed= -



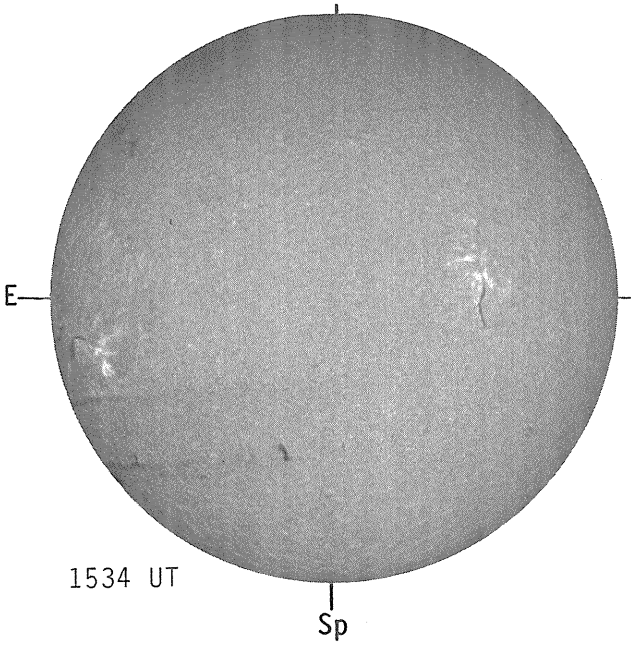
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

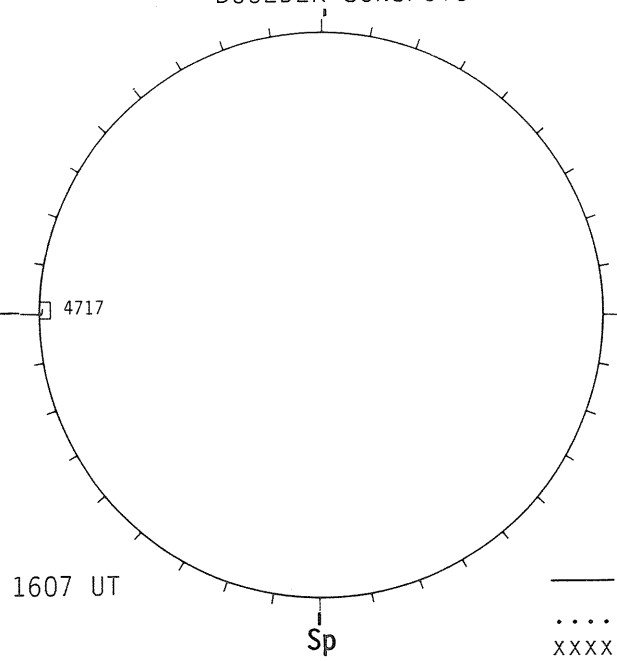
DeltaY=12.9
DeltaX= 9.5



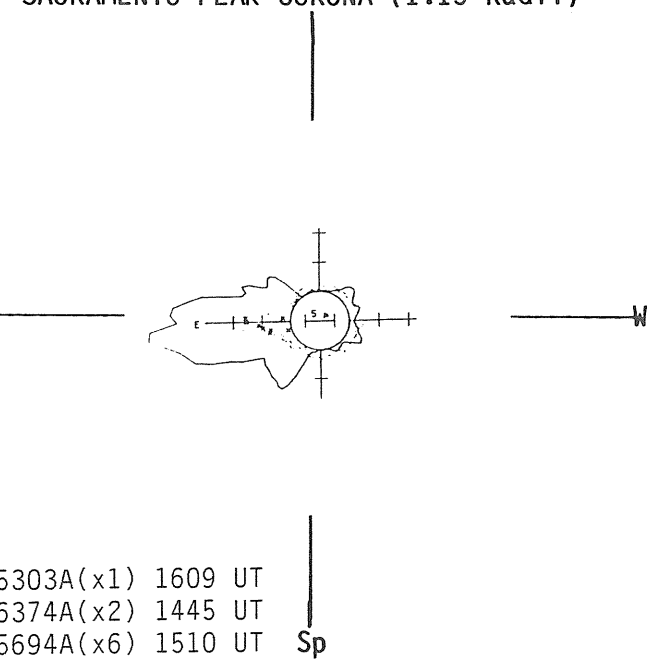
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



—— 5303A(x1) 1609 UT
.... 6374A(x2) 1445 UT
xxxx 5694A(x6) 1510 UT

S U N S P O T G R O U P S
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

FEBRUARY 1986

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4710C		HOLL	01	31	2030	N08	E17	02	2.1		B	BXO	10	2	3	2
4710C		PALE	01	31	2201	N08	E15	02	2.1		B	BXO	10	2	3	3
4711		RAMY	01	30	1300	S07	E83	02	5.8		A	HAX	20	1	2	3
4711		HOLL	01	30	1748	S08	E80	02	5.7		A	HHX	120	1	3	3
4711		PALE	01	30	1940	S08	E81	02	5.9		A	HHX	250	2	4	3
4711		LEAR	01	31	0022	S08	E78	02	5.9		A	HHX	120	2	4	3
4711		ATHN	01	31	0700	S08	E74	02	5.8			HHX	200	2	3	1
4711		RAMY	01	31	1444	S07	E71	02	5.9		B	CHO	270	5	5	3
4711		BOUL	01	31	1705	S07	E69	02	5.9		A	HHX	240	1	3	3
4711		HOLL	01	31	2030	S08	E68	02	6.0		B	CHO	290	3	5	2
4711		PALE	01	31	2201	S07	E65	02	5.8		BG	CHO	330	4	6	3
4711		LEAR	02	01	0130	S08	E64	02	5.9		B	DHI	340	9	6	3
4711		ATHN	02	01	0937	S07	E61	02	6.0			DKO	260	9	5	2
4711		BOUL	02	01	1525	S08	E54	02	5.7		B	CKI	340	6	4	4
4711		RAMY	02	01	1530	S07	E56	02	5.8		B	DKI	470	16	5	3
4711	24290	MWIL	02	01	1600	S08	E54	02	5.7	5	(D)					
4711		HOLL	02	01	1635	S08	E57	02	6.0		B	DKO	580	7	7	2
4711		PALE	02	01	1838	S07	E54	02	5.8		B	DKI	460	15	5	4
4711		LEAR	02	02	0140	S07	E50	02	5.8		BD	DHI	600	27	5	2
4711		RAMY	02	02	1445	S08	E43	02	5.8		B	CKO	580	25	7	3
4711	24290	MWIL	02	02	1600	S08	E42	02	5.8	5	(D)					
4711		PALE	02	02	1907	S07	E41	02	5.9		BD	DKC	570	25	6	4
4711		HOLL	02	02	2350	S08	E38	02	5.8		BD	DKC	660	23	7	2
4711		LEAR	02	03	0033	S07	E36	02	5.7		BD	DKC	720	38	6	3
4711		ATHN	02	03	0638	S07	E34	02	5.8			DKC	670	17	6	4
4711		RAMY	02	03	1425	S07	E30	02	5.8		BGD	DKI	700	28	7	3
4711		BOUL	02	03	1550	S09	E28	02	5.8		B	DKC	660	28	7	3
4711		BOUL	02	03	1550	S09	E28	02	5.8		B	DKX	660	28	7	3
4711	24290	MWIL	02	03	1600	S08	E29	02	5.8	5	(D)					
4711		HOLL	02	03	1800	S08	E27	02	5.8		BGD	DKC	780	17	6	3
4711		PALE	02	03	1940	S08	E27	02	5.8		BD	DKC	680	34	7	4
4711		LEAR	02	04	0012	S07	E24	02	5.8		BD	DKC	640	47	7	3
4711		ATHN	02	04	0940	S07	E18	02	5.8			DKI	830	20	8	1
4711		RAMY	02	04	1339	S07	E17	02	5.8		BGD	CKI	730	28	6	3
4711		BOUL	02	04	1542	S08	E12	02	5.6		B	DKC	680	22	7	3
4711	24290	MWIL	02	04	1630	S08	E15	02	5.8	5	(D)					
4711		LEAR	02	05	0013	S08	E11	02	5.8		BD	DKC	620	28	6	2
4711	24290	MWIL	02	05	1545	S08	E02	02	5.8	5	(D)					
4711		HOLL	02	05	1550	S06	E02	02	5.8		BG	DKI	540	20	5	4
4711		RAMY	02	05	1609	S07	E04	02	6.0		BG	DKI	500	36	6	3
4711		PALE	02	05	1809	S08	E01	02	5.8		BG	DKC	600	29	8	2
4711		LEAR	02	06	0008	S08	W03	02	5.8		BG	DKI	370	32	6	3
4711		MANI	02	06	0228	S08	W04	02	5.8			DKC	390	31	7	3
4711		RAMY	02	06	1342	S07	W10	02	5.8		BG	DKI	560	22	7	3
4711	24290	MWIL	02	06	1700	S08	W13	02	5.7	5	(D)					
4711		PALE	02	06	1832	S09	W12	02	5.9		BGD	EKC	500	32	11	3
4711		HOLL	02	06	2030	S10	W14	02	5.8		BGD	EKC	500	22	12	3
4711		LEAR	02	07	0126	S03	W15	02	5.9		BGD	DKI	310	33	6	2
4711		ATHN	02	07	0647	S07	W18	02	5.9			DKI	390	23	7	3
4711		RAMY	02	07	1358	S08	W24	02	5.8		B	DAI	300	32	7	3
4711		HOLL	02	07	1840	S08	W28	02	5.7		BG	DKI	370	15	5	3
4711		PALE	02	07	2150	S08	W28	02	5.8		BG	DKI	100	34	7	3
4711		LEAR	02	08	0059	S08	W29	02	5.9		BG	DSI	110	34	6	4
4711		RAMY	02	08	1338	S08	W38	02	5.7		B	DAO	170	28	6	4
4711		PALE	02	08	1950	S08	W40	02	5.8		BG	DAI	100	21	8	3
4711		HOLL	02	08	2140	S06	W44	02	5.6		BG	DSO	200	17	7	1
4711		ATHN	02	09	0645	S08	W49	02	5.6			DAI	100	12	7	4
4711		RAMY	02	09	1420	S08	W52	02	5.7		B	DAO	80	13	5	4
4711	24290	MWIL	02	09	1700	S07	W54	02	5.7	4	(BF)					
4711		PALE	02	09	2221	S08	W57	02	5.7		B	DAO	90	9	5	2
4711		LEAR	02	10	0310	S08	W59	02	5.7		B	CRO	40	4	4	2
4711		ATHN	02	10	0642	S07	W59	02	5.9			BXO	40	2	1	1
4711		RAMY	02	10	1417	S08	W66	02	5.6		B	CAO		2	1	3
4711		LEAR	02	11	0009	S08	W71	02	5.7		A	AXX	10	1	1	3
4711		ATHN	02	11	0700	S08	W79	02	5.4		A	AXX	10	1		2
4711		RAMY	02	11	1338	S08	W78	02	5.7		A	AXX	40	1	1	3
4711		HOLL	02	11	1613	S11	W78	02	5.8		A	AXX		1		3
4711		HOLL	02	11	1613	S11	W78	02	5.8		A	AXX	40	1		3
4713		LEAR	02	03	0033	S01	E80	02	9.0		B	BXO	20	2	3	3

S U N S P O T G R O U P S
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

FEBRUARY 1986

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4713		ATHN	02	03	0638	S02	E79	02	9.2			AXX	10	1	1	4
4713		RAMY	02	03	1425	S02	E76	02	9.3		B	DAO	60	7	8	3
4713		BOUL	02	03	1550	S04	E73	02	9.1		B	BXI	60	4	9	3
4713	24292	MWIL	02	03	1600	S02	E75	02	9.3	3	(B)					
4713		HOLL	02	03	1800	S03	E73	02	9.2		B	DSO	10	4	7	3
4713		PALE	02	03	1940	S02	E75	02	9.4		B	DSO	170	6	10	4
4713		LEAR	02	04	0012	S02	E69	02	9.2		B	CSO	60	5	7	3
4713		ATHN	02	04	0940	S02	E68	02	9.5			CSO	60	3	3	1
4713		BOUL	02	04	1542	S04	E56	02	8.8		B	CKI	210	5	7	3
4713	24292	MWIL	02	04	1630	S03	E60	02	9.2	4	(BF)					
4713		LEAR	02	05	0013	S03	E58	02	9.3		B	DSO	140	13	8	2
4713	24292	MWIL	02	05	1545	S03	E47	02	9.2	4	(D)					
4713		HOLL	02	05	1550	S03	E46	02	9.1		B	DSO	160	9	8	4
4713		RAMY	02	05	1609	S00	E48	02	9.3		B	DAO	110	14	7	3
4713		PALE	02	05	1809	S02	E46	02	9.2		B	DAO	160	10	8	2
4713		LEAR	02	06	0008	S03	E43	02	9.2		B	DAO	170	9	7	3
4713		MANI	02	06	0228	S02	E40	02	9.1			DSO	180	10	7	3
4713		RAMY	02	06	1342	S01	E34	02	9.1		B	DAO	90	5	7	3
4713	24292	MWIL	02	06	1700	S03	E33	02	9.2	4	(B)					
4713		PALE	02	06	1832	S02	E34	02	9.3		B	DAO	120	15	9	3
4713		HOLL	02	06	2030	S02	E31	02	9.2		B	CSO	160	9	4	3
4713		LEAR	02	07	0126	S03	E29	02	9.2		B	DAO	70	12	8	2
4713		ATHN	02	07	0647	S02	E23	02	9.0			DAO	100	8	7	3
4713		RAMY	02	07	1358	S01	E20	02	9.1		B	DAO	90	16	9	3
4713		HOLL	02	07	1840	S01	E17	02	9.0		B	DSO	120	14	9	3
4713		PALE	02	07	2150	S02	E17	02	9.2		B	CSO	350	19	8	3
4713		LEAR	02	08	0059	S03	E15	02	9.2		B	DRO	60	28	10	4
4713		RAMY	02	08	1338	S01	E07	02	9.1		B	DAO	150	24	10	4
4713		PALE	02	08	1950	S02	E04	02	9.1		B	ESO	200	16	10	3
4713		PALE	02	08	1950	S02	W04	02	8.5		B	ESO	200	16	10	3
4713		HOLL	02	08	2140	N01	E01	02	9.0		B	DKI	310	22	7	1
4713		ATHN	02	09	0645	S01	W05	02	8.9			EKO	280	24	11	4
4713		RAMY	02	09	1420	S01	W06	02	9.1		B	EAO	250	32	11	4
4713	24292	MWIL	02	09	1700	S01	W09	02	9.0	5	(D)					
4713		PALE	02	09	2221	S02	W15	02	8.8		B	EKO	310	22	10	2
4713		LEAR	02	10	0310	S01	W15	02	9.0		BG	DKO	400	22	9	2
4713		ATHN	02	10	0642	S02	W17	02	9.0			DAO	380	16	10	1
4713		RAMY	02	10	1417	S01	W23	02	8.9		B	DAO	380	24	9	3
4713		BOUL	02	10	1547	S03	W25	02	8.8		B	DKI	490	17	5	3
4713	24292	MWIL	02	10	1700	S01	W26	02	8.8	5	(D)					
4713		HOLL	02	10	1745	N01	W13	02	9.8		BD	DKI	460	19	7	3
4713		LEAR	02	11	0009	S02	W31	02	8.7		BD	DKI	560	33	8	3
4713		ATHN	02	11	0700	S03	W34	02	8.8			DKI	600	26	8	2
4713		RAMY	02	11	1338	S01	W40	02	8.6		BD	DKI	750	30	8	3
4713	24292	MWIL	02	11	1600	S01	W40	02	8.7	5	(B)					
4713		HOLL	02	11	1613	N02	W42	02	8.5		BD	DKI	760	23	9	3
4713		LEAR	02	12	0011	S02	W47	02	8.5		B	DKO	540	22	8	3
4713		LEAR	02	12	0011	S02	W47	02	8.5		BD	DKO	540	22	8	3
4713		ATHN	02	12	0925	S01	W48	02	8.8			DKO	620	12	10	1
4713		RAMY	02	12	1352	S01	W55	02	8.5		BD	EKO	750	17	11	3
4713		HOLL	02	12	1548	N00	W55	02	8.6		BD	DKI	760	16	10	3
4713		BOUL	02	12	1730	S01	W56	02	8.5		B	DKO	700	3	10	1
4713		PALE	02	12	1931	S00	W58	02	8.5		B	DKO	700	10	10	2
4713		RAMY	02	13	1234	S02	W68	02	8.4		BD	EKO	790	20	11	4
4713		HOLL	02	13	1455	S03	W65	02	8.8		BD	EKO	630	11	15	2
4713		BOUL	02	13	1530	S01	W70	02	8.4		B	EKI	370	7	13	3
4713		PALE	02	13	1822	S01	W69	02	8.6		BD	FKO	600	10	16	2
4713		LEAR	02	14	0030	S03	W74	02	8.5		BD	DAI	360	11	13	2
4713		ATHN	02	14	0830	N02	W77	02	8.6			EKO	390	6	12	1
4713		RAMY	02	14	1256	S01	W79	02	8.6		BD	EKO	490	7	13	4
4713		BOUL	02	14	1600	S00	W87	02	8.2		A	HAX	120	1	3	3
4713		HOLL	02	14	1730	N01	W86	02	8.3		BD	EKO	170	9	12	3
4713		PALE	02	14	2013	S01	W87	02	8.3		BD	EKO	120	5	10	2
4713		LEAR	02	15	0003	N01	W84	02	8.7		BD	DKI	250	8	6	4
4714		ATHN	02	20	0915	S03	E80	02	26.4			AXX	10	1	1	3
4714		RAMY	02	20	1209	S01	E72	02	25.9		A	HRX		1		3
4714	24293	MWIL	02	20	1545	S01	E71	02	26.0	4	(AF)					
4714		HOLL	02	20	2000	S01	E68	02	25.9		A	HSX	20	1	1	3
4714		PALE	02	20	2011	S01	E68	02	25.9		A	AXX	10	1		3
4714		LEAR	02	21	0124	S02	E65	02	25.9		A	AXX	10	1	1	3

S U N S P O T G R O U P S
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

FEBRUARY 1986

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4714		ATHN	02	21	0735	S03	E65	02	26.2		A	AXX	10	1		3
4714	24293	MWIL	02	21	1530	S01	E57	02	25.9	3	(AF)					
4714		BOUL	02	21	1540	S02	E56	02	25.8		A	AXX	10	1	1	3
4714		HOLL	02	21	1809	S01	E56	02	25.9		A	AXX		1		3
4714		PALE	02	21	2006	S01	E55	02	25.9		A	AXX		1		3
4714		LEAR	02	22	0301	S01	E50	02	25.9		A	AXX	10	1	1	3
4714	24293	MWIL	02	22	1530	S02	E42	02	25.8	4	(B)					
4714		HOLL	02	22	1535	S01	E43	02	25.9		A	AXX		1		3
4714		ATHN	02	23	0635	S03	E34	02	25.8		A	AXX	10	1		2
4714		HOLL	02	23	1510	S01	E30	02	25.9		A	AXX		1		3
4714	24293	MWIL	02	23	1515	S02	E30	02	25.9	3	(AF)					
4714		PALE	02	23	1821	S01	E28.	02	25.9		A	AXX	10	1		4
4714		LEAR	02	24	0007	S02	E24	02	25.8		A	AXX	10	1	1	3
4714		LEAR	02	26	0408	S02	W05	02	25.8		A	AXX	10	1	1	3
4714		LEAR	02	27	0109	N01	W15	02	25.9		B	DRO	40	9	3	3
4716		PALE	02	26	2119	N00	W02	02	26.7		B	BXO	10	4	3	4
4716		ATHN	02	27	0905	N02	W09	02	26.7		B	CSO	50	6	3	2
4716	24294	MWIL	02	27	1500	N01	W12	02	26.7	4	(B)					
4716		BOUL	02	27	1535	N02	W13	02	26.7		B	BXO	10	3	3	4
4716		HOLL	02	27	1545	N01	W12	02	26.8		B	CRO	30	6	4	3
4716		PALE	02	27	1842	N03	W15	02	26.7		B	CSO	40	6	4	2
4716		LEAR	02	28	0211	N02	W20	02	26.6		B	BXO	20	2	2	3
4716	24294	MWIL	02	28	1530	N02	W26	02	26.7	4	(B)					
4716		LEAR	03	01	0011	N03	W33	02	26.5		B	BXO	10	2	1	3

SUDDEN IONOSPHERIC DISTURBANCES

FEBRUARY 1986

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide-spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Known Flare	X-ray Class	NOAA/SESC Region
01	2352	2356	0040	1-	1			1				C1.3	
02	1122	1127	1143	1-	3			1			1120 UT		No data
03	1311	1324	1334	1	3		3				*		
03	1458	1500U	1512	1	1		1				No flare		
03	2040	2108	2110	1+	5	1				7	2039 UT		4711
04	0445	0449	0510	1-	1			1			No flare		
04	0522	0536	0613	1-	1			1			0520 UT		No data
04	0649	0700	0728	1-	1				1		0649 UT	C1.9	4711
04	0735	0744	0945	3+	5	3	6	1	1	3	0735 UT	X3.0	
04	0922	0927	1000	1-	1		1					C1.8	
04	1019	1033	1148	2+	5	2	5	1	1	3		C1.0	
05	0044	0102	0230	1+	3			1	1		0047 UT		No data
05	0939	0944	1000	1-	1		1				0939 UT	C1.9	4711
05	1008	1013	1108	1-	3		1	1				C1.1	
05	1237	1245	1350	2+	5	2	5	1	1	2	No flare		
05	1522	1524	1606	2	1	1					No flare		
05	2330	2336	0005	1-	1			1			2330 UT		4711
06	0213	0226	0325	1-	3			1	1		0212 UT	C1.8	4711
06	0357	0410	0450	1-	3			1	1		0335 UT	C1.9	4711
06	0532	0537	0602	1-	3			1	1		0531 UT	C1.7	4711
06	0618	0630	0854	3	5	2	4	2	1	1	0618 UT	X1.7	No data
06	1040	1100U	1122	1-	3		3				No flare		
07	0327	0334	0419	1-	3			1	1		0326 UT	C2.2	4711
07	0700	0705	0730	1-	1					1	No Flare		
07	0726	0738	0815D	1-	1			1			0729 UT		4711
07	0815E	0827	0853	1-	1			1			0820 UT		No data
07	1015	1034	1325	2+	5	3	3	1	1	2	1014 UT	M5.2	4711
07	2208	2211	2226	1-	1			1				C1.7	
07	2327	2330	2345	1-	1			1			2326 UT	C1.1	4711
08	0320	0327	0335U	1-	1				1		No flare		
08	0415	0426	0504	1-	1			1			0417 UT		4711
08	0613	0618	0716	1-	1			1			0609 UT	C1.7	4713
08	1355	1359	1415	1	1	1					1356 UT		No data
09	0733	0744	0802	1-	1			1			No flare		
09	2318	2324	2347	1-	1			1				C1.0	
10	0710	0723	0842	2	3			1	1		0708 UT		4713
10	1148	1158	1228	1-	3		1	1			1147 UT	C3.4	4711
11	0057	0110	0211	1-	3			1	1		0102 UT		4711
11	0331	0351	0432D	3	3	1		1	1	1	0332 UT	M1.1	4713
11	0432	0443	0516	2	1					1		C5.2	
11	0615	0652	0745	1-	1			1			0615 UT	C2.1	
11	2300	2325	0128	2	3	1		1		1	2303 UT	M1.0	4713
12	0256	0314	0354	1-	1			1			0249 UT		No data
12	0507	0514	0554	1-	3			1	1	1	0507 UT		No data
12	1028	1036	1137U	1-	1		1				1034 UT		No data
12	1101	1105	1120	1-	1			1			1059 UT		No data
12	2203	2210	2246	1-	3		1			1		C2.7	
13	0100	0252	0453D	2	1			1			No flare		
13	0126	0129	0140	1-	1				1		No flare		
13	0245	0248	0256	1-	1				1		0246 UT	M1.0	4713
13	0453E	0459	0849	2	3			1	1	1	0454 UT	C6.9	
13	0922	0943	1004	1-	1		1				No flare		
13	1110	1112	1130	1-	1		1				No flare		
13	2316	2318	2356	1-	3	1		1			2316 UT	C5.1	4713

* No flare patrol

SUDDEN IONOSPHERIC DISTURBANCES

FEBRUARY 1986

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide-spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Known Flare	X-ray Class	NOAA/SESC Region
14	0837		0905	1-	1		1				No flare		
14	0908	0915	0930	3+	5	2	5	1	1	2	0909 UT	M6.4	4713
14	1331	1337	1405	1-	1		2				No flare		
14	1348	1350	1406	1-	1					1	No flare		
14	1434	1446	1530	1	3	1	1		1		No flare		
14	1544	1546	1605	1	3		1			2	1545 UT	C5.8	4713
14	1632	1639	1700	1	3					1	*		
14	2039	2041	2115	2	1					1	2038 UT	C3.5	4713
15	0140	0146	0228	1-				1			No flare		
15	0409	0414	0423	1-	3			1	1			C1.0	
15	0503	0509	0636	2+	3	1		1	1	1	No flare		
15	0645	0722	0942	2	3			1		1		C4.4	
15	0843	0845	0920	1-	3		1			1	0842 UT	C5.7	4713
15	0950	0953	1030	2	3	1	3		1	1	0950 UT	C7.4	4713
15	1040	1147	1406	2+	1			1			No flare		
15	1114	1145	1300	2	3		2			1	No flare		
15	1308	1313	1340	1	3		3		1	1		M1.6	
15	1750	1751	1810	1	1					1		C2.3	
16	0210	0218	0257	1-	1			1			No flare		
16	0913		1020	3+	1	1					*		
16	2130	2200	2301	3	1					1	No flare		
16	2226	2332	0430	2+	1			1			No flare		
16	2242	2332	0146	1	3			1		1		C7.0	
18	0920	0935	0951	1+	1					1	No flare		
20	1640	1715	1815	2+	3					4	*		
21	0803	0810	0820	2	1	1					No flare		
21	0822	0828	0850	1	1		1		1		No flare		
22	1239	1247	1340	2	3					4	No flare		
22	1635	1715	1915	2+	3					6	No flare		
24	1103	1130	1230	2+	1					1	No flare		
26	1517	1545	1630	2+	1					1	No flare		
28	1419	1420	1432	1	3		3				No flare		

* No flare patrol

OBSERVATORIES REPORTING FOR FEBRUARY 1986*

Ayrshire, Scotland	SES	Louisville, Kentucky, USA	SES
Darmstadt, GFR	SWF	Maui, Hawaii, USA	SPA
Edenvale, Rep. of South Africa	SES	Losov, Czechoslovakia	SEA
Farsta, Sweden	SES	Panska Ves, Czechoslovakia	SEA, SWF, SES
Hiraiso, Japan	SWF	Paterson, New Jersey, USA	SES
Houston, Texas, USA	SES	Sofia, Bulgaria (SF)	SES
Inubo, Japan	SPA	St. Cloud, Minnesota, USA	SES
Juliusruh, GDR	SWF	Tucson, Arizona, USA	SES
Kuhlungsborn, GDR	SPA, SEA	Upice, Czechoslovakia	SEA
Lianherne, Australia	SPA	Valley Cottage, New York, USA	SES
Latrobe, Pennsylvania, USA	SES	Vsetin, Czechoslovakia	SEA
Lintong, People's Rep. of China	SPA		

*Observations are not necessarily continuous for each reporting station.

S I D s by N O A A/S E S C R E G I O N

FEBRUARY 1986

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
Events In Region #																												
4711			1	1	2	3	4	1		1	1																	
4713								1		1	2		2	3	2													
Events with X-Rays	1			4	2	4	4	1	1	1	4	1	3	3	6	1												
Events with No Flare Reported			1	1	2	1	1	1	1				4	4	4	3		1			2	2		1		1		1
Events with No Flare Patrol			1											1		1				1								
Events with No Region Numbers		1		1	1	1	1	1				4																
Daily Event Totals	1	1	3	6	6	5	7	4	2	2	5	5	7	8	10	5		1		1	2	2		1		1		1

SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

FEBRUARY 1986

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
01	0700	1600	BLEN										
	0732	1559	WEIS										
	0750	1600	BLEN	0858.6	0858.8	2	0858.6	0858.8	1				III,U
			BLEN	1000.6	1002.3	1							III
			BLEN				1205.0	1205.7	1				III,G
02	0658	1605	BLEN										
	0730	1600	WEIS				0853.6	0854.1	2				DCIM
	0750	1605	BLEN	0853.8	0855.2	1	0853.8	0855.2	2				III,GG,RS
			BLEN	0952.8	0956.3	2	0952.8	0956.3	1				III,G
			WEIS				0955.6	0956.4	1				IIIG
			BLEN	1009.4	1009.6	2							III
			BLEN	1028.6	1028.7	2	1028.6	1028.7	1				III,B
			WEIS				1028.6	1028.7	2				IIIB
			BLEN	1258.6	1312.2	2	1258.6	1312.2	2				III,GG
			WEIS				1258.6	1259.2	2				IIIGG
			WEIS				1304.5	1304.6	2				IIIB
			WEIS				1342.8	1343.0	2				IIIG
			WEIS				1405.4	1408.2	3				IIIGG
			BLEN	1405.5	1427.6	2	1405.5	1427.6	2				III,GG
			WEIS				1422.6	1422.7	2				IIIG
			SGMR				1652.3	1654.3	1				V
			SGMR				2020.0	0000.0	1				CONT
			LEAR				2326.0	2326.3	1				III
03			LEAR				0100.8	0101.0	2				III
			PALE				0100.8	0101.0	1				III
			LEAR				0101.8	1052.0	1				CONT
			LEAR				0507.8	0508.6	2				III
	0558	1256	BLEN										
			LEAR				0625.5	0626.1	2				III
			LEAR				0823.8	0824.8	2				III
	0750	1256	BLEN	0824.1	0824.3	1	0824.1	0824.3	2				III
	0731	1244	WEIS				0824.1	0824.3	3				IIIG
	1348	1602	WEIS				0840.0	1602.0	2				IN,DC
			WEIS				0845.0	1602.0	2				IIIN
			BLEN	0900.3	0900.4	1	0900.3	0900.4	3				III
			LEAR				0902.3	0903.3	3				III
			BLEN	0937.2	1226.0D	1	0937.2	1226.0D	1				I,DC
			WEIS				0940.7	0941.7	3				IIIGG
			LEAR				0941.3	0941.8	2				III
			BLEN	0941.4	0954.0	1	0941.4	0954.0	2				III,GG
			WEIS				0952.7	0953.7	3				IIIG
			WEIS				1000.9	1003.3	3				IIIGG
			SGMR				1335.8	0000.0	1				CONT
			SGMR				1335.8	2135.8	3				CONT
			WEIS				1538.7	1540.9	3				IIIGG
			PALE				1927.1	1927.3	1				III
			PALE				1953.1	1959.6	1				III
			SGMR				2036.8	2043.3	3				V
			LEAR				2224.0	1051.0	3				IV
04	0728	1231	WEIS				0734.0	1604.0	2				IIIN
			WEIS				0736.2	0737.7	3				DCIM
	0750	1256	BLEN										
			WEIS				0754.0	1027.0	3				DCIM,RS
	1250	1604	WEIS				0818.0	1604.0	2				INDC
			WEIS				1026.1	1032.3	2				II
			SGMR				1217.0	0000.0	1				CONT
			SGMR				1217.0	2136.8	1				CONT
			PALE				1739.0	0407.0	1				CONT
			LEAR				2224.0	1051.0	3				CONT
05			WEIS				0729.0	1605.0	2				CONT
	0726	1605	WEIS				0729.0	1604.0	2				IN
			WEIS				0747.0	1558.0	2				IIIN
	0750	1540	BLEN	0750.0E	1540.0D	1	0750.0E	1540.0D	2				CONT
			SGMR				1215.8	2138.8	1				CONT
			WEIS	1232.0	1319.0	3							DCIM
			BLEN	1234.7	1318.9	2	1234.7	1318.9	2				IV ,P
			PALE				1751.8	0407.0	1				CONT

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

FEBRUARY 1986

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
05			LEAR				2230.0	0619.1	2				CONT
06			LEAR				0619.1	0630.0	3				II
			LEAR				0630.0	1051.0	2				IV
	0750	1540	BLEN				0750.0E	1540.0D	1				CONT
	0726	1512	WEIS				1011.0	1607.0	2				IIIB
	1519	1607	WEIS				1052.5	1052.8	1				IIIB
			BLEN				1101.1	1101.3	2				III
			WEIS				1101.1	1101.4	2				IIIG
			WEIS				1140.4	1142.6	2				IIIG
			SGMR				1215.0	2140.0	1				CONT
07	0807	1602	WEIS				0807.0	1601.0	2				IN
	0750	1540	BLEN	1011.5	1027.7	3	1011.5	1027.7	3				II ,H
			WEIS				1012.0	1013.6	2				DCIM
			WEIS				1012.4	1013.6	2				IIIG
			WEIS				1012.8	1032.0	3				IV
			LEAR				1013.1	1050.0	3				IV
			BLEN	1015.6	1105.5	2	1015.6	1105.5	2				IV
			WEIS				1024.6	1027.4	2				DCIM,RS
			WEIS				1031.4	1032.7	2				IIIG
			WEIS				1039.8	1040.9	1				IIIG
			WEIS				1048.6	1048.8	1				IIIB
			WEIS				1051.6	1051.8	1				IIIB
			WEIS				1054.7	1055.0	2				IIIB
			WEIS				1148.1	1148.7	2				RS
			WEIS				1151.5	1151.6	2				RS
			WEIS				1229.2	1229.3	1				IIIB
			WEIS				1236.7	1236.0	1				IIIB
			WEIS				1416.7	1418.2	1				IIIG
			SGMR				1641.0	2141.0	1				CONT
			LEAR				2226.0	1049.0	1				CONT
08	0721	0610	WEIS										
	0750	1540	BLEN										
			SGMR				1634.6	1635.1	1				V
09			LEAR				0245.5	0225.6	1				III
			LEAR				0316.3	0317.1	1				V
	0722	1612	WEIS										
	0750	1540	BLEN										
			PALE				2032.3	2035.8	1				III
			LEAR				2227.0	1049.0	1				CONT
10	0750	1540	BLEN										
	0718	1614	WEIS				0920.0	1539.0	1				IIIN
			WEIS				0944.0	1535.0	1				IIIN
			SGMR				1323.3	2145.8	1				CONT
			PALE				1723.0	0000.0	1				CONT
			PALE				2021.3	0411.0	2				IV
			PALE				2024.3	2043.3	2				II
			SGMR				2024.6	2035.6	1				II
11	0936	1615	WEIS										
	0716	0746	WEIS				0944.0	1535.0	2				IIIN
	0752	0928	WEIS				1034.0	1556.0	2				IN
			SGMR				1208.0	2048.8	1				CONT
			PALE				1838.6	1839.1	1				V
			PALE				2124.3	2124.6	1				III
			LEAR				2228.0	0000.0	2				CONT
			PALE				2311.1	2315.1	2				II
			PALE				2313.3	2323.8	1				II
			PALE				2333.6	0411.0	1				CONT
12	0717	1246	WEIS				0809.0	1436.0	1				IN
	1310	1617	WEIS				1217.3	1217.5	1				IIIB
			WEIS				1230.8	1231.5	1				IIIG
			PALE				1945.5	0406.0	2				CONT
13	1010	1047	WEIS										
	1147	1254	WEIS										

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

FEBRUARY 1986

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
13	0713	1003	WEIS				1147.0	1541.0	1				IN
	1320	1616	WEIS										
			LEAR				2229.0	0912.0	1				CONT
14	0711	0947	WEIS				0904.3	0904.4	2				III G
	1147	1420	WEIS				0909.0	0928.9	1				III GG
			LEAR				0912.0	1047.0	3				IV
			LEAR				0914.3	0917.1	3				II
			WEIS				1434.0	1541.0	2				IS
	1433	1616	WEIS				1544.6	1545.2	2				III G
			SGMR				1544.8	1545.8	1				V
			WEIS				1547.7	1547.8	1				III B
			WEIS				1548.9	1550.7	1				III G
			WEIS				1554.1	1554.2	1				III B
			PALE				1721.0	0411.0	1				CONT
			LEAR				2230.0	0957.6	1				CONT
15			LEAR				0307.0	0309.8	1				III
			LEAR				0502.0	0502.3	3				III
			LEAR				0528.1	0529.1	2				III
			LEAR				0536.8	0546.3	2				III
			LEAR				0620.3	0624.1	2				III
			LEAR				0700.3	0700.6	1				III
	0711	1340	WEIS				0724.3	0724.7	3				III G,RS
			LEAR				0801.1	0802.1	2				III
	1415	1622	WEIS				0825.8	0825.9	3				III B,U
			LEAR				0834.6	0835.1	1				III
			WEIS				0840.1	0841.0	2				III GG
			LEAR				0840.3	0841.8	3				III
			LEAR				0844.5	0847.6	3				III
			WEIS				0844.9	0846.9	2				III GG
			LEAR				0849.8	0851.3	3				III
			WEIS				0849.8	0851.3	2				III G
			WEIS				0908.0	1113.0	2				IS,DC
			WEIS				0944.2	0944.4	3				III G,U
			WEIS				0946.6	0946.7	1				III B
			WEIS				0949.4	0951.0	3				III GG
			LEAR				0950.5	0951.1	1				III
			WEIS				0952.8	0953.6	2				III G
			LEAR				0954.1	0954.8	1				III
			WEIS				0956.3	0958.3	1				II
			LEAR				0959.1	1046.0	1				IV
			WEIS				1115.0	1148.0	2				III N
			WEIS				1155.7	1204.7	2				III GG
			WEIS				1257.2	1257.4	2				III B
			WEIS				1301.8	1314.8	3				III GG/V
			SGMR				1303.8	1312.1	1				V
			SGMR				1404.3	1406.8	2				V
			WEIS				1517.5	1517.7	1				III G
			WEIS				1527.1	1527.3	2				III B
			PALE				2005.1	2005.3	1				III
			PALE				2027.1	2027.8	1				V
			PALE				2221.8	2223.1	2				V
16			PALE				0051.3	0058.8	1				III
			PALE				0302.6	0304.1	1				V
			LEAR				0302.8	0304.3	2				V
			PALE				0321.1	0321.8	1				V
			LEAR				0321.3	0321.6	2				III
			LEAR				0343.8	0344.8	2				V
			LEAR				0544.3	0546.3	2				V
			LEAR				0641.5	0641.8	1				III
			LEAR				0807.0	0810.0	2				III
			LEAR				0823.8	0824.3	1				III
	0707	1624	WEIS				0913.2	0913.4	2				III B
			LEAR				0913.3	0913.6	1				III
			WEIS				1044.7	1046.1	1				III G
			WEIS				1135.6	1135.7	1				III B
			WEIS				1213.3	1213.5	1				III B
			WEIS				1300.2	1302.2	2				III GG
			SGMR				1336.6	1338.3	1				V

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

FEBRUARY 1986

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
16			WEIS				1336.7	1338.3	2				IIIG
			WEIS				1442.9	1444.3	2				IIIG
			SGMR				1443.0	1444.3	1				V
			WEIS				1448.3	1451.2	2				IIIG
			SGMR				1452.8	1453.3	1				V
			SGMR				1605.1	1608.3	1				V
			WEIS				1606.0	1607.8	2				IIIG
			PALE				2153.3	2153.5	2				III
17			PALE				0049.1	0049.3	1				III
			LEAR				0150.1	0150.8	2				III
			LEAR				0334.3	0334.5	1				III
	0705	1001	WEIS										
	1010	1032	WEIS										
			SGMR				1346.3	1348.8	2				V
	1614	1626	WEIS										
18	0706	1627	WEIS				0838.9	0840.4	2				IIIG
			LEAR				0839.0	0840.5	3				III
19	0702	1206	WEIS										
	1246	1619	WEIS										
20	0700	1320	WEIS										
	1412	1630	WEIS										
21	0700	1632	WEIS										
22	0656	0822	WEIS										
	0847	1634	WEIS										
23	0654	1636	WEIS										
24	0655	0937	WEIS										
	0944	1023	WEIS										
	1307	1637	WEIS										
25	0650	1639	WEIS										
26	0648	1253	WEIS										
			LEAR				0702.8	1038.0	1				CONT
	1304	1641	WEIS										
27	0648	1642	WEIS										
			LEAR				0731.0	1037.0	1				CONT
28	0645	1316	WEIS										
	1336	1643	WEIS										

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

B = Single burst
G = Small group (< 10) of bursts
GG = Large group (> 10) of burst
C = Underlying continuum (particularly with Type I)
S = Storm in the sense of intermittent but apparently connected activity
N = Intermittent activity in this period
U = U-shaped burst of Type III

RS = Reverse slope burst
DP = Drifting pairs
DC = Drifting Chains
H = Herringbone
W = Weak
P = Pulsations
CONT = Continuum
UNCLF = Unclassified activity
DCIM = Fast drift

Stations Reporting:

BLEN = Bielen LEAR = Learmonth PALE = Palehua SGMR = Sagamore Hill WEIS = Weissenau

COSMIC RAY INDICES

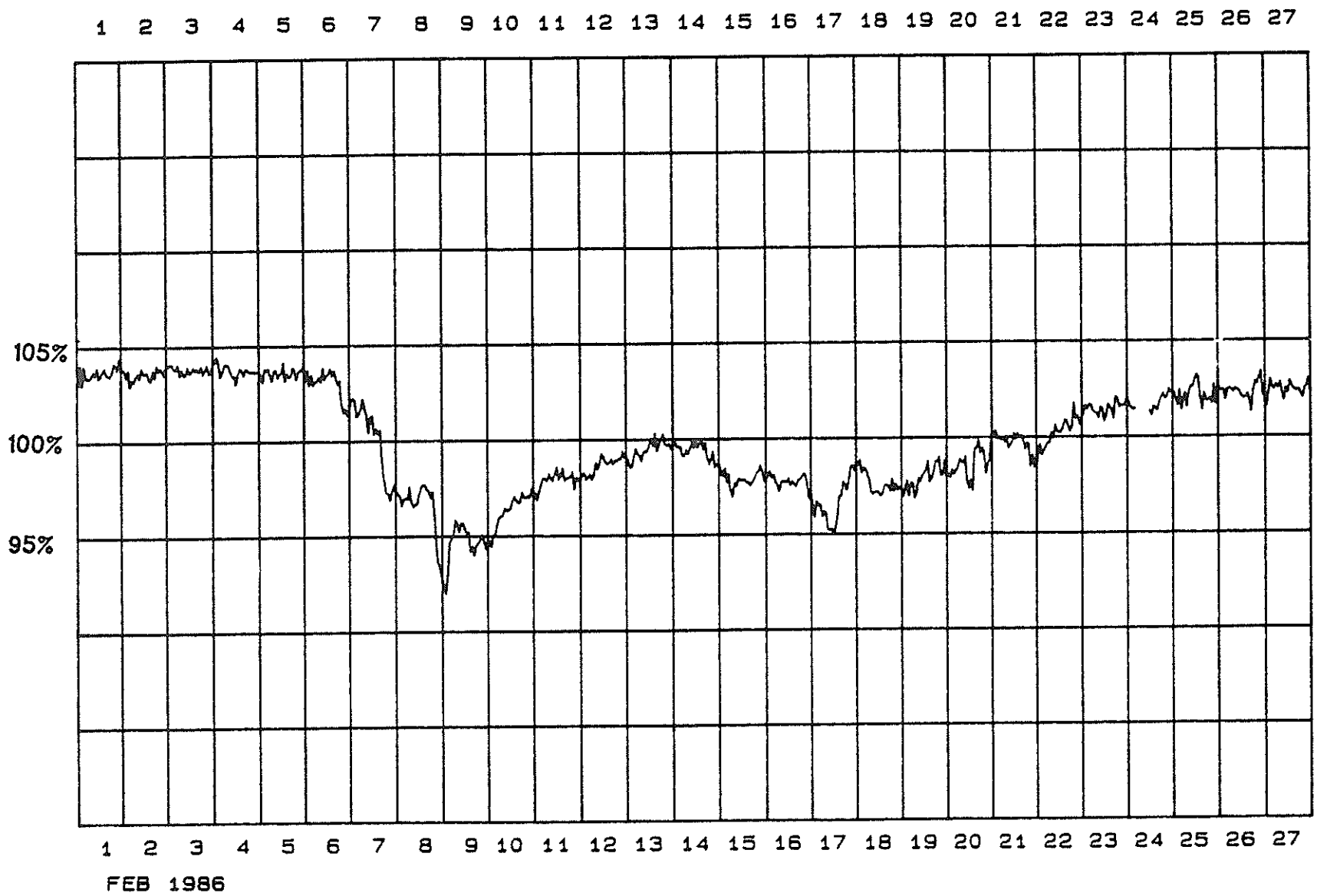
(Neutron Monitor)

FEBRUARY 1986

Day	THULE Average (cts/h)/100	ALERT Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	PREDIGTSTUHL Average (cts/h)/100	TOKYO Average (cts/h)/256	HUANCAYO Average (cts/h)/100
1	4515	7331.8	6963.5	6251.4		1194		
2	4512	7330.5	6974.4	6256.7		1202		
3	4522	7365.4	6984.0	6273.1		1210		
4	4519	7343.3	6989.7	6281.4		1214		
5	4513	7361.4	6998.5	6297.2		1220		
6	4487	7335.5	6965.9	6297.2		1222		
7	4360	7118.1	6805.7	6124.2		1193		
8	4205	6854.7	6563.0	5950.6		1174		
9	4123	6729.1	6394.5	5776.2		1141		
10	4199	6859.2	6522.5	5883.0		1155		
11	4267	6973.2	6623.1	5962.6		1160		
12	4300	7020.0	6684.7	6003.5		1163		
13	4334	7057.9	6739.6	6054.5		1175		
14	4330	7038.5	6731.2	6049.2		1175		
15	4266	6963.2	6667.3	5984.6		1167		
16	4259	6949.0	6640.4	5999.4		1171		
17	4214	6861.4	6543.7	5905.9		1145		
18	4253	6946.2	6549.3	5930.7		1158		
19	4268	6931.8	6590.0	5968.7		1166		
20	4298	7043.3	6648.7	5999.6		1171		
21	4343	7143.3	6699.3	6069.2		1185		
22	4370	7163.2	6772.4	6106.0		1192		
23	4422	7236.9	6851.3	6176.5		1204		
24	4434	7266.2	6868.6	6185.7		1203		
25	4452	7294.5	6923.7	6200.9		1207		
26	4458	7303.1	6939.5	6202.3		1210		
27	4463	7308.6	6942.8	6202.5		1210		
28	4445	7262.7	6908.8	6202.8		1210		
Mean	4362	7121.1	6767.4	6092.7		1147		

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.

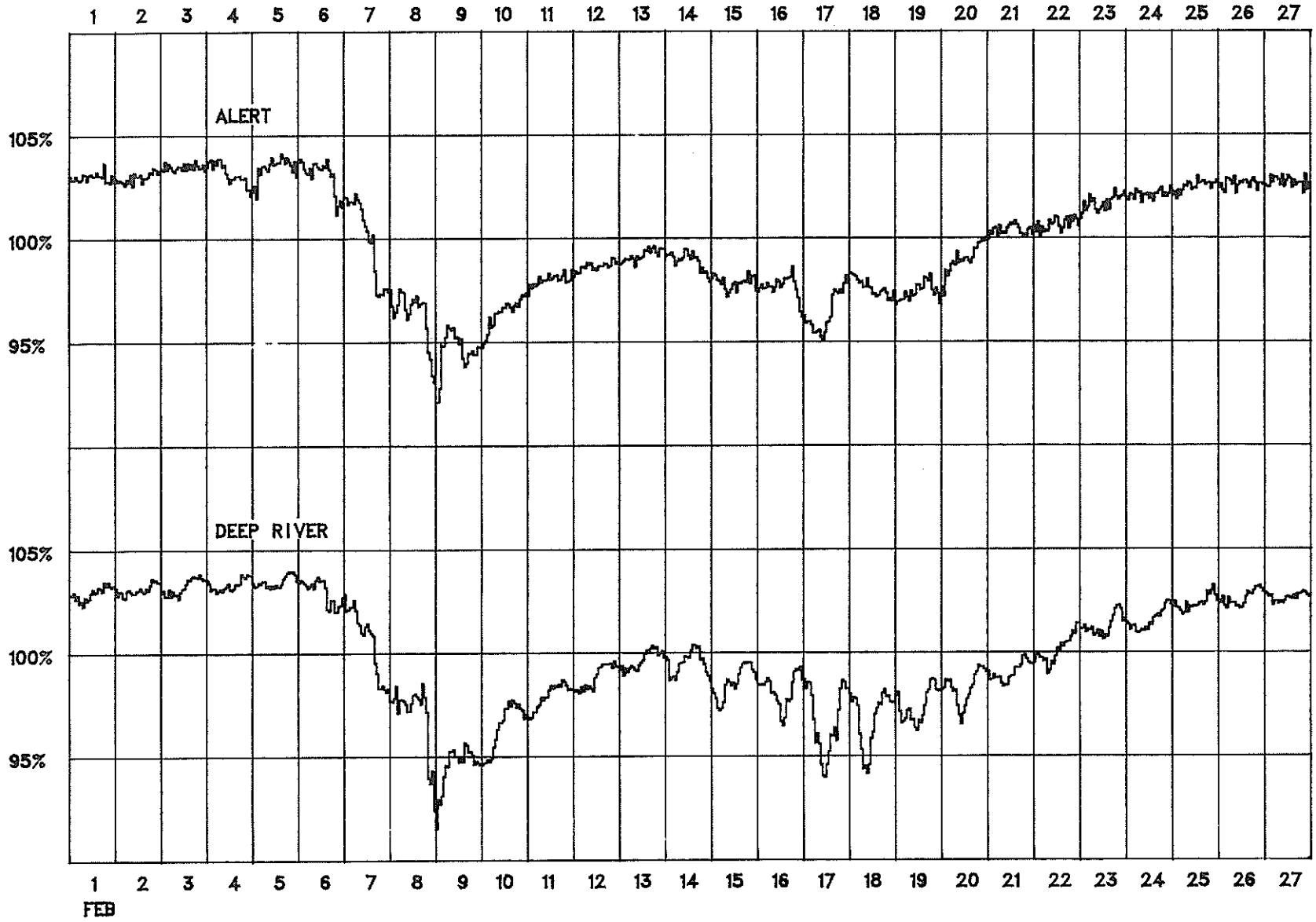
THULE NEUTRON MONITOR



BARTELS ROTATION 2084

COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2084 (February 1986)



GEOMAGNETIC ACTIVITY INDICES

February 1986

Day		Kp Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	Ap	Cp	Km Three-Hourly Indices 1	2	3	4	5	6	7	8	aa Provisional Am	N	S	M	
1	Q4	1+	1-	0+	1	1+	3-	2-	2-	11-	5	0.2	2-	0+	0+	1+	2-	2+	1+	2	10	8	11	5	15 CC
2	Q6	1+	2+	2	2-	2	1+	2+	1-	14-	6	0.3	2-	2-	1+	2-	2	1+	2+	1	11	12	13	12	14 CC
3	Q5	2-	2	1+	1+	1-	2	2	2+	13+	6	0.3	1+	2-	1+	1+	1	2-	2	2	11	13	12	10	15 CC
4	Q1	2-	1+	1	1	1+	2-	1+	0+	10-	5	0.2	2-	2-	2	1+	1+	2-	1+	1	11	10	9	10	10 CC
5	Q7A	1-	1-	1-	2-	2	3	2-	3	13+	7	0.4	1+	1	1	2-	2	2+	2	3-	13	15	20	9	26 K
6		0+	0+	1	1	3+	3+	3-	4	16	11	0.6	0+	0+	2+	1+	3+	4-	3-	3+	21	20	20	6	34
7	D3	3	4-	3+	6-	6-	8-	7-	8-	43+	82	1.8	3-	4-	3	5-	5	7-	6	7+	118	126	89	46	170
8	D1	7	7	7+	7-	8	8-	9	9-	61+	202	2.1	5+	5+	6+	6	7	7+	8+	9-	273	253	223	115	362
9	D2	9-	8-	5+	5-	5	6+	5+	4	47	100	1.9	8+	6	5-	4-	4	6+	5	3+	141	144	129	176	98
10	Q10A	3+	2	1	2	1	2-	3	3+	17+	10	0.6	3-	2-	1+	1	1	1+	3	3+	17	17	15	13	20
11		2+	3-	2-	3-	4	5-	4-	4+	26	20	1.0	2+	2+	1+	3-	3+	5-	4-	4-	35	49	34	21	62
12		4	3+	4-	3-	3-	4-	4-	3-	26+	18	1.0	3+	3-	3	3-	3-	3+	4-	3-	30	36	27	27	36
13		4-	3+	2+	2+	3-	2-	3-	4+	23	15	0.8	3	3	2+	2+	2+	1+	3	4	26	34	23	24	33
14		5-	4-	2-	3-	3	3+	3	4-	26-	19	1.0	4-	3	2-	2+	3-	3+	3+	4-	31	39	20	27	33
15	Q2	2+	2	1-	1	1+	1	1	1-	10	5	0.2	3-	3-	1+	1	1	1	1+	1	11	9	10	11	8 C
16	Q3K	0	1-	1-	1	1-	1	2+	3	9+	5	0.2	0+	1	1-	1-	1	1+	3-	3	11	10	10	6	14 KK
17	Q9A	2+	1	1-	1+	1+	2	3	4	16-	9	0.5	3-	1+	1	2	1	2+	2+	3+	16	20	14	13	21
18		4	3	2	2+	2-	2+	1+	4+	21	14	0.8	3	2	2-	1+	2-	2+	1+	4-	19	33	15	27	22
19	Q8A	4-	2	1+	2	2	2-	2+	2-	17-	9	0.5	3-	2-	2-	2+	2	1+	2+	2-	15	21	13	19	15
20		3	3	3-	2+	3+	4	4-	3	25	17	0.9	2+	2+	3-	2+	3	4	4-	3-	29	32	24	17	40
21	D5	4-	3+	4-	5-	3+	3	4-	5+	31-	26	1.2	3	3-	3+	4	3	2+	3	5-	38	50	26	38	40
22		5-	4	4+	4	4	5-	4-	4	33+	30	1.3	4-	3	4-	3+	4-	5-	3+	3+	45	50	34	33	51
23	D4	5+	5-	4-	3+	5-	5	5-	4-	35	35	1.4	4+	4-	3+	3+	4-	4	4+	3+	49	64	32	43	54
24		3	4-	3+	3+	4-	2+	4-	4	27	19	1.0	2	3	3-	3	3+	3-	3	3+	28	40	25	30	36
25		4-	4-	3-	3+	3	3	4-	4-	27-	18	1.0	3	3-	2+	3	3	3-	3-	3+	27	36	27	26	38
26		3	3+	3+	4-	4-	6-	3+	4	30	26	1.2	2+	3-	3	3+	3+	5	3-	3+	38	44	38	30	52
27		4	4+	3	4+	3-	2+	3+	3+	27+	20	1.0	3+	3+	3-	4-	2	2	3-	3	29	36	22	37	20
28		4-	3+	3-	4-	3	5	5	3+	30-	25	1.2	3+	3	2	3+	3	4	4+	3+	37	52	25	28	48
Mean											27	0.88									40.7	45.5	34.3	40.0	

Day	Kn Three-Hourly Indices 1	2	3	4	5	6	7	8	An	Ks Three-Hourly Indices 1	2	3	4	5	6	7	8	As	S_a	Prov R_I	R_a	R_s	IMF	
1	1+	0+	0+	1+	2-	2+	2-	2-	10	2	0+	1-	1	2-	2	1+	2+	10	81.8	18	18	26	-	-
2	1+	2-	1+	2-	2-	2-	2+	1-	11	2-	2-	1+	2-	2	1+	2	1+	11	86.4*	31	33	31	T	-
3	1+	2-	1	1	1+	2	2	2+	11	1+	2-	2-	1+	1	1+	2	2	11	96.0	57	56	42	TA	-
4	1+	1+	1+	1-	1+	2	1+	1-	9	2	2-	3-	2	1+	1+	1+	1	13	97.8*	58	59	44	TA	-
5	1-	1-	1+	2-	2+	3-	2-	2+	12	2-	1+	1-	2-	1+	2	2	3	13	99.8	53	52	46	T	-
6	0+	0+	1	1+	3+	4-	3-	3+	20	1-	0	3	1+	4-	4-	3-	3+	23	99.0	47	48	45	T	-
7	3-	4-	3	5-	5	7-	6	7+	124	3-	4-	3+	5-	5	6+	6-	7+	113	96.7	52	50	42	T	-
8	6-	6-	6	6	7	7+	9-	9-	282	5+	5	6+	6	7	7+	8+	9-	266	94.3*	54	53	40	T	-
9	8+	7-	5-	4	4	6+	5+	3+	150	8	6-	5-	4-	4	6+	5	4-	132	92.5	47	49	38	AT	-
10	3	2-	2-	1+	1+	2-	3-	3	18	3-	2-	1+	1	1-	1	3	4-	17	93.4*	37	38	39	T	-
11	2+	2+	2-	3-	3+	5	4-	4-	36	2	3-	1+	3-	4-	4+	4-	4-	33	95.1	37	36	41	T	-
12	4-	3	3	3	3	3+	4-	3-	33	3+	3-	3	3-	2+	3+	4-	3-	28	88.4	25	26	33	T	-
13	3	3	3-	3-	3-	1+	3	4	27	3	3	2-	2+	2	1+	3	4	25	86.4	22	22	31	T	-
14	4-	3-	2	2+	3-	3+	3	3+	29	4	3+	1+	3-	3	3	3+	4	34	86.2*	16	17	31	T	-
15	3-	2+	1	1	1+	1+	1+	1-	10	3-	3-	1+	1+	1-	1-	1+	1+	12	79.6	11	10	24	T	-
16	0	1-	1-	1-	1	1+	2+	3-	10	0+	1	1-	1	1-	1-	3-	3+	12	71.2	0	1	15	T	-
17	2	1+	1	2-	1+	3-	3-	3+	16	3	1+	1-	2	1-	2-	2	3	16	68.3	0	0	12	T	-
18	3	2+	2	2-	2-	2+	2-	4	22	3-	2-	2-	1	1+	2-	1+	3	15	68.7	0	0	12	A	-
19	3-	2	2-	2	2	2-	2+	2	16	3-	2-	2-	2+	2-	1+	2+	1+	14	68.1	0	0	12	TA	-
20	3-	2+	3-	2+	3+	4	4-	3-	30	2+	2+	2+	2	3	4-	4-	3-	27	68.1	10	10	12	A	-
21	3	3-	3+	4+	3+	3-	3+	5	42	3+	3-	3	4-	3-	2	3-	5-	35	66.0	10	11	9	A	-
22	4	4-	4+	4-	4-	5-	4-	4-	53	3	3-	3+	3	4-	4+	3	3	37	67.7	10	10	11	A	-
23	4+	4	4-	4-	4+	5-	4+	3+	57	4	3+	3	3+	3+	3+	4+	3	41	67.7	11	11	11	A	-
24	2+	3+	2+	3+	4-	3-	3+	4-	32	2	3	3-	3-	3	2+	3-	3	24	68.6	8	9	12	A	-
25	3	3-	2+	3	3	3	3	3+	29	3+	3-	3-	3-	3	2+	3-	3+	26	70.1	11	10	14	A	-
26	3-	3	3	4-	4-	5	3	3+	42	2+	2+	3	3+	3+	5-	3-	3+	34	72.0	11	12	16	A	-
27	3+	3+	3-	4-	2	2+	3	3	30	3+	3+	2+	4-	2-	2-	3-	3	27	75.2	15	15	19	AT	-
28	3+	3	2	3+	3+	5-	5-	3	40	3	3-	2	3+	3	4-	4	3+	35	77.0	10	11	21	A	-
Mean									42.9									38.7	81.5	23.6	23.8	26.0		

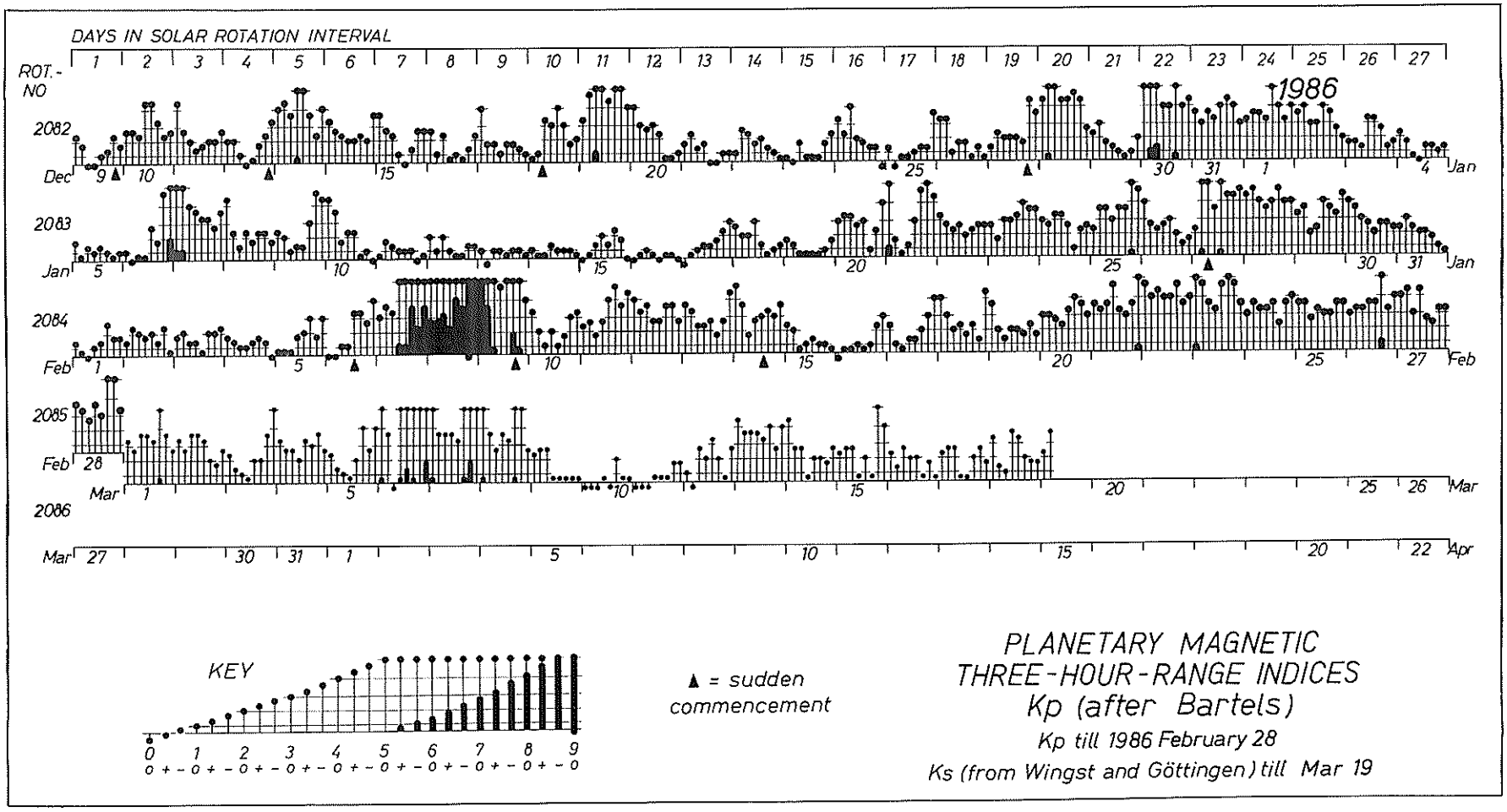
D A I L Y A V E R A G E I N D I C E S Ap

DAY	1985 MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	1986 JAN	FEB
1	16	23	10	18	14	18	6	3	15	15	25	5
2	22	16	38	6	3	11	4	5	32	14	18	6
3	14	20	6	4	6	6	4	11	28	9	10	6
4	10	17	10	5	33	6	2	12	16	12	5	5
5	42	7	7	5	16	4	3	66	10	8	4	7
6	24	5	10	25	21	3	9	41	13	7	20	11
7	22	7	8	30	19	4	9	27	7	5	32	82
8	27	15	8	16	16	6	10	16	6	3	11	202
9	4	38	8	22	8	5	12	6	14	5	14	100
10	10	11	4	30	8	7	12	6	19	17	11	10
11	6	11	5	11	10	5	9	16	10	11	4	20
12	7	5	12	10	48	27	5	12	4	7	5	18
13	4	6	11	4	20	41	5	20	24	30	3	15
14	7	10	8	4	16	11	29	8	17	11	4	19
15	14	4	15	5	7	12	18	18	16	10	5	5
16	11	8	11	3	5	9	33	17	10	6	3	5
17	8	5	8	7	20	9	13	15	14	8	6	9
18	11	4	9	4	13	12	5	22	15	12	7	14
19	9	21	9	3	8	12	35	14	14	41	4	9
20	5	53	5	13	8	12	29	6	3	11	15	17
21	5	103	8	7	5	10	23	16	5	5	27	26
22	4	11	5	6	4	28	13	17	8	6	11	30
23	5	12	4	7	13	17	9	13	4	4	17	35
24	6	17	5	5	12	7	17	8	4	10	12	19
25	5	21	8	12	12	18	18	9	6	6	26	18
26	8	30	9	21	16	14	19	4	6	8	12	26
27	10	33	5	13	15	15	17	4	20	12	37	20
28	14	61	5	18	13	13	6	4	8	35	30	25
29	6	17	4	13	5	17	4	11	37	7	19	
30	7	42	3	10	11	10	5	3	52	46	14	
31	10		7		36	32		6		22	8	
MEAN	11	21	9	11	14	13	13	14	15	13	14	27

PLANETARY 3-HOUR-RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

University of Gottingen

Kp through February 28, 1986



P R I N C I P A L M A G N E T I C S T O R M S

FEBRUARY 1986

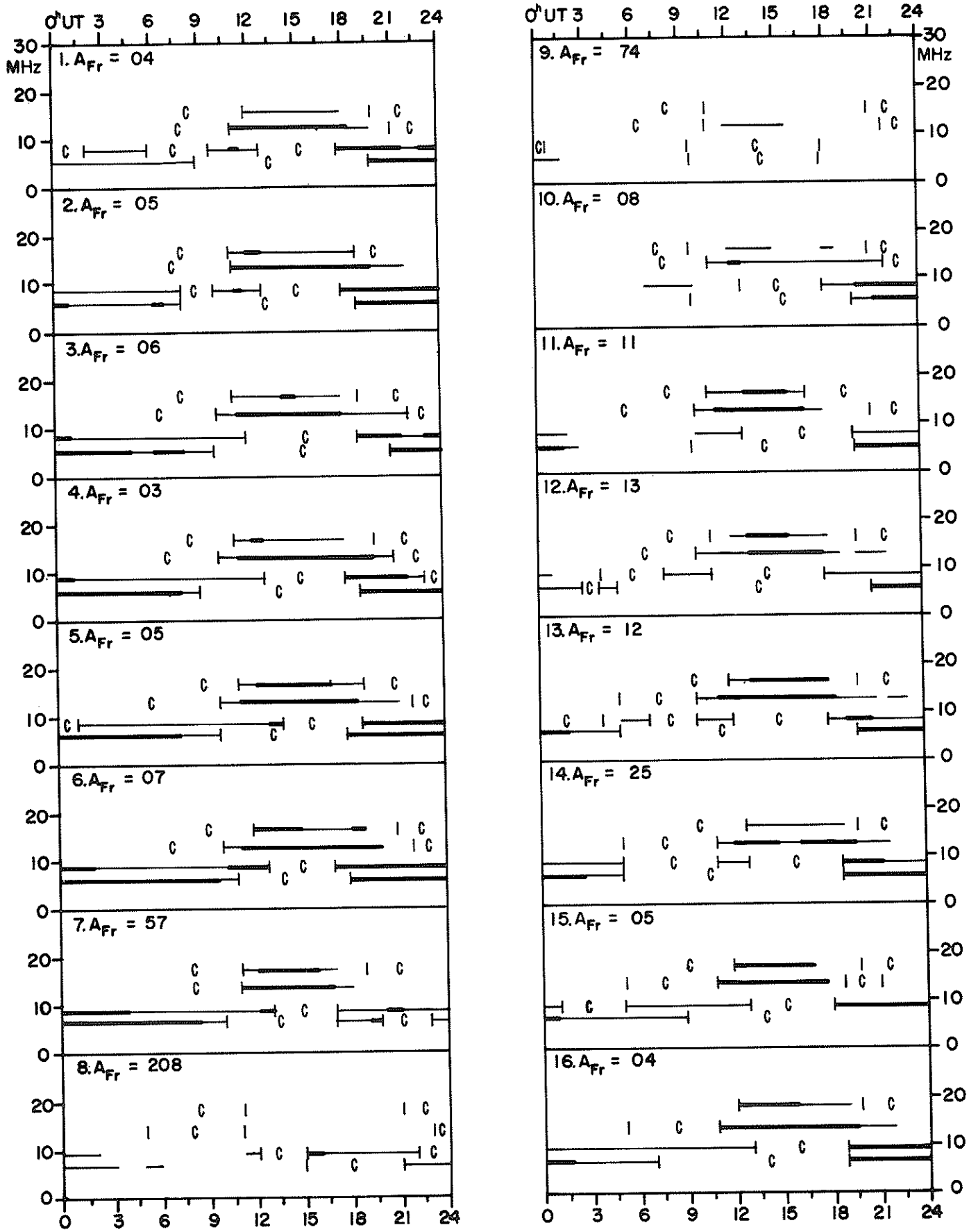
Sta	Geomag Lat	Commencement Day	Commencement Time (UT)	Type	SC Amplitudes D (Min)	SC Amplitudes H (Gamma)	SC Amplitudes Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	Ranges D (Min)	Ranges H (Gamma)	Ranges Z (Gamma)	End Day	End Hour (UT)
SIT	60.0N	06	12--	..	..	..	..	08(5)	8	--	--	--	10	02
WIT	54.2N	06	1312	SC*	- 3	26	0	08(7,8) 09(1)	9	166	1138	674	10	03
FRD	49.6N	06	1313	SC	- 2	9	- 1	08(7,8)	9	100	550	725	10	03
BJI	28.5N	06	1312	SC	1.3	22	..	08(8)	9	33	370	56	10	03
HON	21.1N	06	1312	SC	..	16	5	06(5)	4	5	71	23	10	03
JAI	17.3N	06	0618	SC	1.0	18	3			22	323	36	09	20
KRC	16.4N	06	1312	..	..	..	..	08(7,8)	9	25	420	230	14	04
UJJ	13.5N	06	0618	SC	..	13	..			--	349	45	09	20
ABG	09.5N	06	0618	SC	0.8	12	13	08(7)	8	16	342	104	09	20
HYB	07.6N	06	1313	SC	- 0.1	18	- 1	08(8)	9	13	367	29	09	23
ETT	00.6S	06	1311	SC	- 0.2	17	15			12	356	225	10	03
TRD	01.1S	06	0618	SC	0.7	24	23			12	356	280	09	20
HER	33.7S	06	13--	..	..	..	..	08(7,8)	8	69	307	435	09	21
GNA	43.2S	06	1312	SC*	0.7*	21	3 *	08(5)	8	62	390	410	10	00
CNB	43.9S	06	1311	SC	- 0.9	36	9	08(7,8) 09(1)	8	79	582	213	09	24
KGL	56.5S	06	1312	SC*	2	15	5	07(5,6,8) 08(5,6,7,8) 09(1)	9	500	20000	1870	10	00
COL	64.6N	07	09--	..	..	..	..	08(5,6)	9	1056	6110	3000	10	03
HON	21.1N	07	1521	SC	..	33	9	08(7)	8	15	5262	62	10	03
GUA	04.0N	07	0250	..	..	..	..	07(4)	6	--	160	20	07	12
GUA	04.0N	07	1521	..	..	..	..	08(5)	7	10	210	30	08	19
GUA	04.0N	08	2013	SC	..	9	..	08(8)	8	10	180	40	09	12
GUA	04.0N	09	1748	SC	..	64	- 21	09(6)	6	--	100	40	09	20
KGL	56.5S	09	1748	SC*	16	180	75	09(1)	9	25	195	75	10	00
HER	33.7S	11	12--	..	..	..	..	11(6)	5	9	68	83	12	01
COL	64.6N	21	23--	..	..	..	..	23(5,6)	7	183	1350	890	23	23
WIT	54.2N	21	1800	..	..	..	..	23(7)	6	32	226	84	23	24
FRD	49.6N	21	23--	..	..	..	..	21(8) 23(1,2)	5	22	91	38	24	--
JAI	17.3N	21	0600	..	..	..	..			7	73	24	23	22
UJJ	13.5N	21	0600	..	..	..	..			5	78	29	23	22
ABG	09.5N	21	0600	..	..	..	..	21(4) 23(7)	5	5	87	28	23	22
HYB	07.6N	21	0300	..	..	..	..	21(4)	5	4	98	18	23	22
GUA	04.0N	21	0814	SC	..	- 4	2	21(4)	5	--	50	10	21	14
TRD	01.1S	21	0600	..	..	..	..			3	150	75	23	22
HER	33.7S	21	22--	..	..	..	..	21(8)	5	13	50	55	22	01
HER	33.7S	22	15--	..	..	..	..	22(6)	5	12	58	62	22	18
HER	33.7S	23	19--	..	..	..	..	23(7)	5	10	49	39	23	22
WIT	54.2N	26	0700	..	..	..	..	26(6)	6	24	127	63	27	06
JAI	17.3N	26	0700	..	..	..	..			4	43	29	28	00
UJJ	13.5N	26	0700	..	..	..	..			3	77	13	28	00
ABG	09.5N	26	0700	..	..	..	..	28(6,7)	5	3	73	22	28	00
TRD	01.1S	26	0700	..	..	..	..			2	101	53	28	00
HER	33.7S	28	16--	..	..	..	..	28(7)	5	10	47	58	28	23

Stations Reporting:

ABG = ALIBAG
BJI = BEIJING
CNB = CANBERRA
COL = COLLEGE
ETT = ETAIYAPURAM
FRD = FREDERICKSBURG
GNA = GNANGARA
GUA = GUAM
HER = HERMANUS
HON = HONOLULU
HYB = HYDERABAD
JAI = JAIPUR
KRC = KARACHI
KGL = KERGUELEN
SIT = SITKA
TRD = TRIVANDRUM
UJJ = UJJAIN
WIT = WITTEVEEN

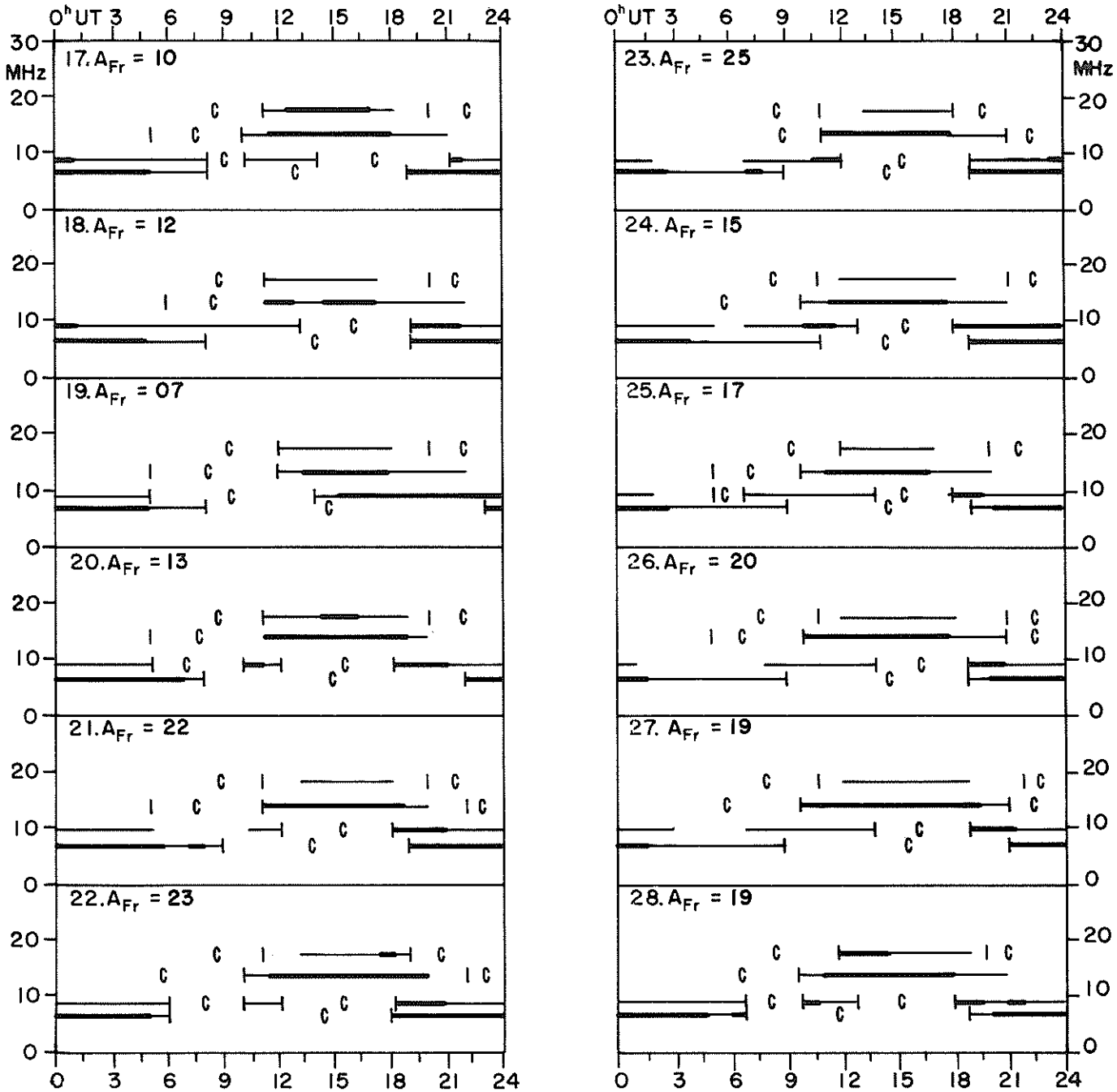
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

FEBRUARY 1986



TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

FEBRUARY 1986



Field strengths from four frequencies, 6.4, 8.6, 13.0, and 17.0 MHz, observed on a Norddeich-New York circuit are represented above. Heavy solid lines represent field strengths ≥ -12 dB above 1 μV/m (transmitter power reduced to 1 kW). Observed field strengths between -12 dB and -40 dB above 1 μV/m are represented by the fine line.

RADIO PROPAGATION QUALITY INDICES

FEBRUARY 1986

Day	Bracknell	Teheran	New York	Tokyo	Johannesburg	Canberra
1	4.8	4.3	4.9	3.5	5.9	5.6
2	4.5	1.8	5.2	3.9	5.1	5.3
3	4.8	4.3	5.2	4.3	5.0	5.6
4	4.8	2.3	5.1	3.7	4.4	5.6
5	5.3	6.1	5.9	4.1	4.5	6.9
6	5.4	6.2	7.0	3.1	7.0	7.4
7	5.2	0.3	2.9	4.3	1.7	5.9
8	2.7	0.7	0.1	4.2	0.7	0.4
9	0.6	0.1	0.1	2.6	0.1	0.1
10	2.6	0.9	1.8	2.0	0.1	4.0
11	3.3	3.7	2.9	4.1	3.3	3.5
12	4.1	6.7	3.6	1.2	5.1	1.7
13	5.1	4.9	4.4	4.0	5.9	5.5
14	3.8	5.3	4.5	3.6	6.3	3.8
15	4.6	5.4	5.3	5.1	3.9	4.5
16	4.3	6.3	6.3	4.4	5.6	3.5
17	3.3	5.1	5.5	4.4	5.5	4.2
18	3.2	8.8	3.9	4.9	7.8	4.9
19	4.7	8.5	5.7	6.3	6.6	5.5
20	4.7	9.5	6.0	4.3	6.9	6.3
21	6.2	9.7	5.5	6.9	7.7	6.7
22	6.7	6.7	5.3	4.9	9.4	5.7
23	5.6	6.1	5.6	5.5	6.3	7.1
24	5.3	4.8	6.0	4.5	5.4	5.6
25	3.4	5.8	3.9	1.4	5.2	4.6
26	4.5	2.8	5.0	2.0	5.2	5.1
27	5.2	3.4	5.7	5.1	5.9	5.8
28	5.9	4.1	5.4	5.1	6.6	5.9
Mean	4.4	4.8	4.6	4.0	5.1	4.9

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 preceeding 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 preceeding 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

C O N T E N T S

Prompt Reports LATE DATA Number 500 Part I

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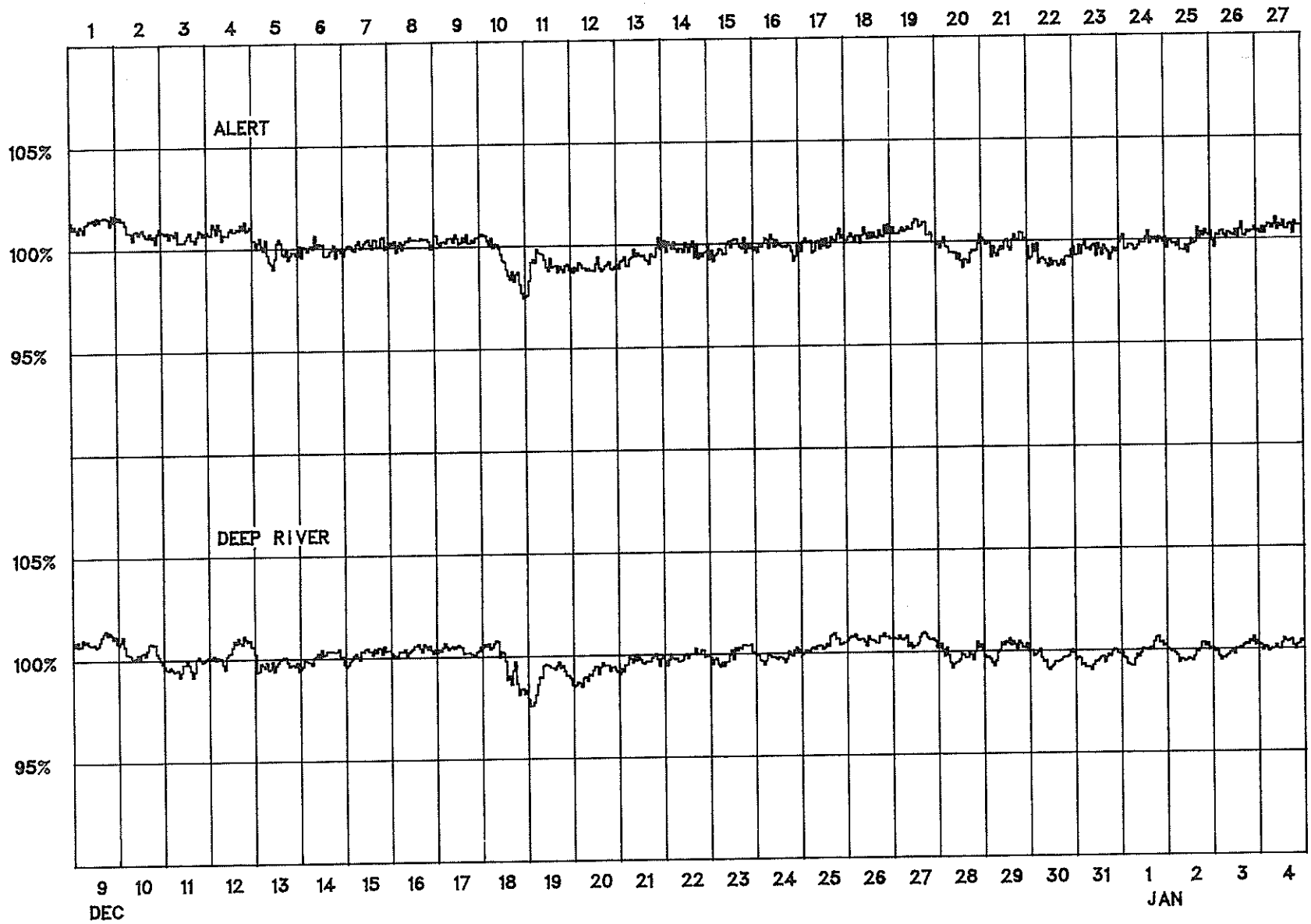
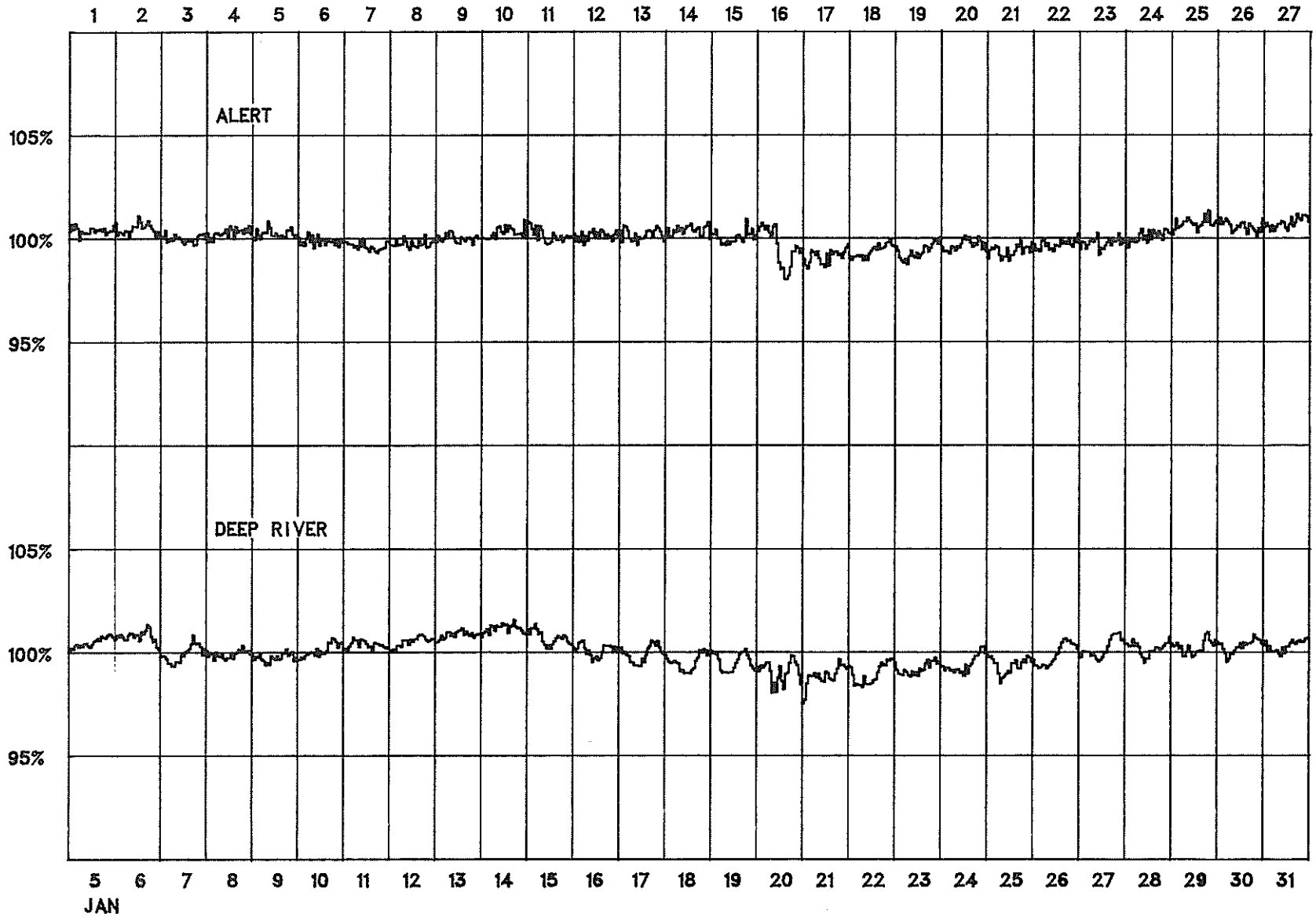
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2082 (December 1985–January 1986)



COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2083 (January 1986)



79
Late
Jan 86

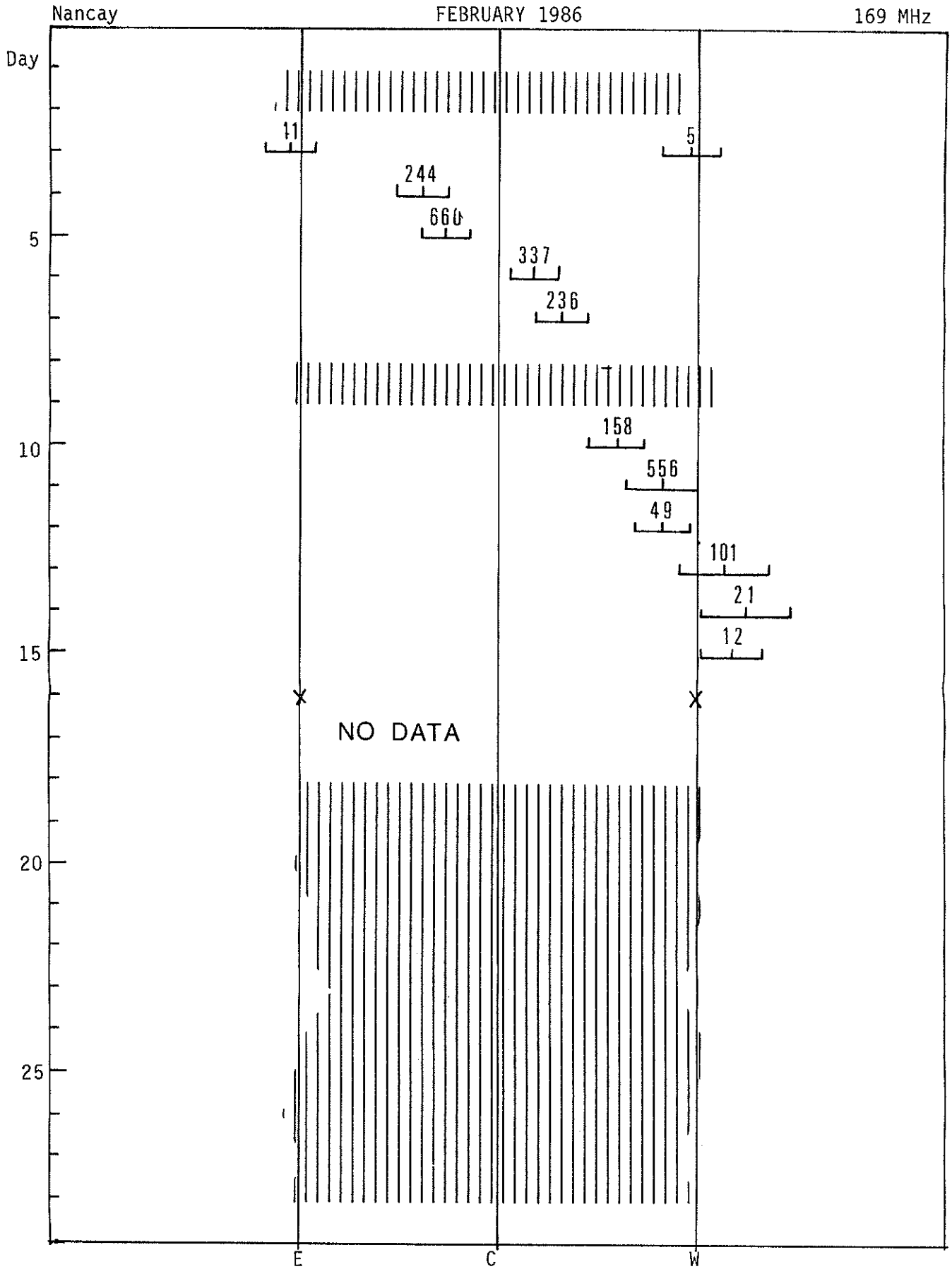
COSMIC RAY INDICES
(Neutron Monitor)

JANUARY 1986

Day	THULE Average (cts/h)/100	ALERT Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	PREDIGTSTUHL Average (cts/h)/100	TOKYO Average (cts/h)/256	HUANCAYO Average (cts/h)/100
1	4455	7242.1	6921.5	6227.5		1181	3640.8	
2	4458	7242.6	6914.7	6237.4		1187	3657.2	
3	4473	7269.0	6926.3	6226.4		1188	3654.7	
4	4482	7291.5	6938.2	6232.7		1190	3648.9	
5	4492	7285.7	6972.2	6242.6		1186	3661.7	
6	4494	7290.7	6991.9	6230.3		1195	3652.6	
7	4471	7256.4	6933.0	6193.1		1186	3644.7	
8	4482	7276.6	6932.7	6196.4		1185	3650.9	
9	4479	7273.5	6921.4	6188.8		1185	3654.3	
10	4484	7246.9	6944.8	6191.3		1184	3657.7	
11	4485	7229.2	6963.2	6243.9		1175	3662.0	
12	4494	7238.5	6973.0	6266.7		1165	3666.4	
13	4506	7256.2	6996.0	6266.3		1160	3667.2	
14	4506	7275.8	7017.6	6295.2		1144	3662.0	
15	4482	7267.0	6986.9	6285.3		1144	3658.5	
16	4479	7265.7	6944.8	6264.9		1144	3660.3	
17	4479	7269.8	6932.5	6245.7		1136	3644.4	
18	4477	7284.6	6905.7	6216.7		1137	3652.2	
19	4469	7259.3	6905.1	6224.6		1129	3657.9	
20	4428	7226.4	6872.7	6191.4		1132	3639.9	
21	4424	7191.9	6857.4	6195.2		1144	3653.5	
22	4436	7210.7	6864.9	6197.9		1147	3662.7	
23	4453	7209.4	6882.7	6216.8		1144	3653.8	
24	4464	7231.4	6896.6	6230.7		1149	3661.2	
25	4461	7211.7	6894.7	6180.3		1135	3648.5	
26	4481	7235.2	6929.2	6215.0		1135	3656.7	
27	4485	7239.9	6951.0	6225.8		1142	3662.0	
28	4477	7262.7	6950.4	6234.2		1144	3653.4	
29	4488	7308.4	6955.5	6246.8		1144	3658.1	
30	4487	7298.1	6958.7	6243.3		1150	3655.4	
31	4496	7310.2	6959.1	6237.0		1169	3659.8	
Mean	4475	7256.7	6935.4	6228.7		1159	3655.5	

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.

SOLAR INTERFEROMETRIC OBSERVATIONS



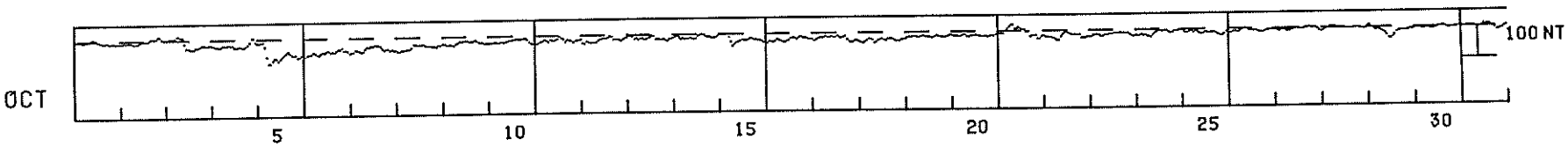
WDC-C2 FOR GEOMAGNETISM, KYOTO UNIVERSITY

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

OCTOBER 1985

UNIT=NT U.T.

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
1	-3	-3	-3	-5	-5	-4	-2	-1	3	5	1	-2	-4	-7	-9	-8	-7	-9	-10	-8	-8	-10	-11	-11
2	-10	-8	-8	-8	-7	-9	-11	-12	-10	-8	-6	-3	-4	-3	-1	4	5	3	5	12	10	4	0	1
3	2	5	4	4	5	11	11	9	6	-12	-28	-28	-30	-30	-31	-26	-25	-22	-19	-18	-19	-20	-19	-18
4	-21	-23	-24	-26	-25	-21	-21	-20	-19	-21	-21	-25	-25	-25	-24	-26	-28	-24	-18	-10	3	4	-11	-13
5	-13	-12	-11	-25	-58	-80	-80	-70	-63	-64	-71	-64	-58	-53	-47	-42	-48	-53	-54	-52	-61	-61	-55	-52
6	-59	-55	-53	-51	-46	-47	-52	-54	-49	-45	-47	-42	-41	-46	-44	-45	-40	-35	-37	-33	-40	-41	-42	-49
7	-48	-45	-39	-40	-42	-45	-44	-36	-30	-31	-28	-27	-24	-25	-25	-29	-35	-40	-37	-38	-42	-39	-43	-40
8	-46	-46	-42	-42	-41	-39	-39	-34	-24	-23	-26	-25	-25	-24	-27	-29	-29	-29	-30	-31	-33	-28	-27	-24
9	-24	-25	-27	-25	-28	-29	-24	-21	-16	-17	-15	-14	-14	-17	-17	-15	-12	-15	-19	-21	-21	-23	-22	-22
10	-22	-22	-20	-21	-22	-21	-19	-20	-18	-17	-14	-13	-12	-10	-10	-10	-10	-8	-9	-12	-20	-23	-25	-27
11	-27	-24	-21	-19	-14	-15	-20	-14	-16	-15	-13	-11	-4	-9	-12	-21	-14	-15	-17	-22	-17	-16	-16	-14
12	-25	-27	-20	-22	-23	-23	-23	-22	-17	-13	-12	-11	-10	-8	-4	-6	-13	-14	-13	-16	-18	-14	-11	-9
13	-4	-5	-5	-13	-10	-15	-12	-11	-16	-14	-11	-8	-4	-5	-14	-13	-15	-15	-14	-17	-20	-13	-14	-10
14	-7	-5	-9	-15	-12	-15	-13	-14	-12	-14	-15	-13	-5	-2	0	-2	-7	-8	-8	-12	-12	-10	-7	-1
15	-1	0	-1	0	-11	-26	-39	-33	-27	-25	-22	-19	-20	-20	-18	-16	-16	-19	-19	-20	-21	-23	-28	-32
16	-31	-24	-26	-28	-24	-18	-22	-24	-28	-27	-24	-22	-15	-14	-16	-18	-13	-11	-14	-15	-15	-18	-19	-19
17	-23	-20	-17	-13	-15	-14	-11	-14	-13	-10	-14	-13	-8	-15	-15	-13	-10	-20	-27	-31	-29	-23	-24	-28
18	-30	-34	-30	-25	-20	-20	-24	-32	-30	-26	-22	-21	-24	-26	-21	-20	-21	-24	-28	-28	-28	-23	-22	-21
19	-17	-16	-16	-14	-14	-16	-17	-14	-12	-13	-15	-16	-17	-18	-15	-12	-13	-15	-17	-17	-17	-14	-10	-10
20	-13	-13	-14	-15	-13	-10	-11	-16	-17	-13	-14	-12	-12	-13	-15	-16	-16	-16	-17	-15	-14	-15	-11	-9
21	-8	-8	-8	0	7	13	21	20	8	9	11	6	5	3	-3	-2	-19	-16	-15	-16	-26	-26	-19	-16
22	-18	-21	-20	-21	-24	-28	-30	-31	-20	-12	-8	-6	-8	-12	-13	-13	-14	-14	-14	-24	-23	-23	-20	-20
23	-21	-15	-15	-14	-15	-20	-19	-16	-15	-14	-12	-12	-11	-10	-11	-8	-11	-11	-11	-10	-15	-18	-20	-17
24	-19	-18	-15	-18	-17	-20	-22	-23	-17	-11	-8	-5	-5	-5	-4	-4	-9	-10	-11	-6	-6	-3	-1	-2
25	-8	-11	-11	-7	-6	-10	-7	-8	-12	-16	-13	-10	-11	-12	-10	-10	-11	-13	-17	-20	-21	-16	-9	-11
26	-13	-12	-9	-8	-10	-9	-3	0	2	-1	-6	-6	-7	-5	-7	-10	-11	-12	-8	-6	-5	-3	-2	-4
27	-6	-8	-7	-5	-6	-8	-9	-9	-6	-1	1	-1	-1	-1	-1	1	1	3	2	1	1	-2	-8	-10
28	-9	-5	-1	1	5	5	3	1	0	0	-2	-2	-1	-2	-2	-1	0	0	0	-1	-2	-3	-1	5
29	8	1	-4	-8	-7	-8	-11	-14	-19	-26	-34	-35	-31	-23	-16	-12	-10	-10	-10	-10	-9	-6	-7	-5
30	-2	-1	-4	-6	-6	-3	-4	-6	-7	-7	-3	-1	2	2	3	2	-1	-3	-1	-1	0	0	2	4
31	3	0	1	3	3	4	3	0	-1	-1	1	8	5	6	6	3	-2	-6	-12	-10	-8	-6	0	4



Note: The baselines for the observatories were adjusted for secular change. Therefore there is a small discontinuity in the Provisional Dst values between the last hour of September and the first hour of October.

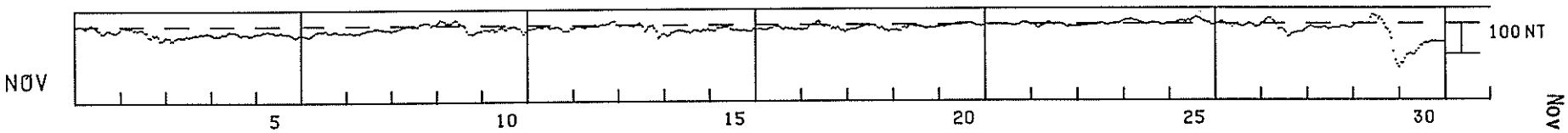
WDC-C2 FOR GEOMAGNETISM, KYOTO UNIVERSITY

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

NOVEMBER 1985

UNIT=NT

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 (U.T.)
1	-2	2	1	-2	-5	-7	-2	3	5	2	-5	-10	-14	-22	-23	-19	-14	-13	-15	-19	-20	-20	-16	-10
2	-4	-3	-5	-5	-7	-6	-12	-11	-13	-11	-10	-12	-18	-18	-34	-36	-28	-30	-27	-33	-46	-46	-41	-35
3	-37	-37	-46	-46	-39	-36	-34	-36	-36	-35	-30	-34	-33	-30	-29	-27	-29	-25	-23	-25	-24	-22	-23	-26
4	-29	-32	-31	-32	-31	-26	-25	-25	-21	-17	-18	-19	-21	-22	-27	-30	-28	-28	-27	-31	-31	-31	-27	-24
5	-24	-24	-22	-18	-18	-17	-19	-18	-20	-24	-24	-24	-21	-23	-25	-25	-25	-28	-30	-34	-37	-34	-31	-29
6	-30	-32	-34	-36	-34	-30	-25	-21	-18	-19	-19	-19	-16	-20	-24	-23	-20	-19	-21	-24	-23	-23	-22	-24
7	-24	-22	-23	-26	-25	-24	-25	-22	-19	-19	-16	-16	-13	-13	-11	-11	-11	-12	-13	-14	-16	-16	-16	-19
8	-13	-14	-13	-11	-8	-6	-6	-4	-2	-3	-5	-4	-3	-4	3	5	6	8	9	6	-1	1	4	7
9	12	18	15	14	7	9	6	8	14	17	15	8	4	2	-3	-19	-27	-28	-29	-27	-22	-20	-19	-19
10	-14	-15	-14	-17	-12	-12	-18	-17	-10	-9	-9	-14	-14	-7	-6	-6	-3	-7	-10	-11	-19	-29	-21	-15
11	-14	-14	-11	-10	-7	-6	-8	-9	-3	-2	-6	-10	-8	-8	-7	-7	-9	-12	-18	-19	-19	-18	-11	-10
12	-8	-6	-5	-6	-7	-8	-8	-6	-6	-6	-5	-5	-4	-1	1	2	2	3	5	9	11	12	2	1
13	-4	0	0	2	0	-1	-2	-5	2	3	6	2	-5	-21	-14	-6	-4	-2	-11	-21	-42	-38	-31	-29
14	-34	-36	-32	-26	-24	-20	-18	-17	-18	-19	-21	-23	-22	-25	-20	-17	-18	-19	-22	-21	-16	-18	-13	-18
15	-17	-20	-19	-11	-11	-11	-9	-8	-8	-6	-13	-16	-18	-16	-19	-18	-18	-17	-18	-20	-21	-20	-14	-13
16	-14	-13	-13	-16	-15	-16	-14	-11	-10	-5	-5	-6	-8	-13	-15	-11	-12	-13	-12	-16	-15	-15	-13	-15
17	-15	-14	-13	-7	-1	2	2	8	12	9	-3	-7	-1	-3	-5	-14	-11	-14	-9	-14	-18	-19	-23	-19
18	-17	-15	-13	-15	-14	-10	-9	-9	-5	-2	-4	-4	-1	-2	-3	-11	-13	-9	-13	-19	-18	-22	-19	-19
19	-18	-17	-21	-20	-10	-8	-12	-9	-3	-1	-6	-7	-6	-7	-7	-10	-12	-12	-11	-11	-10	-10	-9	-9
20	-7	-6	-8	-5	-4	-3	-2	-1	3	4	5	4	4	4	4	5	4	2	-1	-4	-4	-5	-3	0
21	2	0	1	0	1	1	2	1	-1	0	0	0	-2	-4	-3	-3	-2	-1	3	6	5	5	2	-1
22	0	-3	-11	-12	-8	-6	-3	3	6	5	1	-1	1	2	1	0	-2	-7	-10	-6	-7	-7	-7	-8
23	-8	-7	-5	-6	-5	-4	-4	-3	-2	-1	1	2	3	0	-2	-3	0	0	1	1	3	2	7	10
24	11	13	13	15	13	10	10	9	5	3	0	-1	0	2	3	3	2	1	0	-3	-4	-1	2	2
25	2	1	3	6	9	10	10	9	9	12	9	14	17	22	18	16	11	8	6	4	3	-3	-4	-2
26	0	4	6	6	1	-3	-2	-6	-11	-5	-4	-5	-7	-9	-8	-6	-2	1	-1	-6	-10	-11	-8	-3
27	3	7	13	18	16	10	7	-6	-18	-17	-17	-22	-29	-42	-40	-34	-32	-30	-29	-27	-28	-26	-21	-15
28	-12	-8	-11	-13	-14	-15	-15	-14	-11	-14	-18	-17	-16	-14	-13	-13	-13	-8	-9	-10	-12	-14	-13	-11
29	-6	-2	3	2	1	0	-1	1	19	28	27	23	13	21	10	-1	-15	-21	-30	-50	-91	-120	-134	-143
30	-128	-128	-116	-104	-100	-99	-101	-100	-92	-83	-73	-72	-65	-63	-64	-61	-58	-60	-58	-60	-60	-60	-59	-56



83
Late
Nov 85

MAGNETIC STORM SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS
(PRELIMINARY REPORT ON RAPID MAGNETIC VARIATIONS)

DECEMBER 1985

Storm Sudden Commencements (ssc)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
09	2032	A: COI QUE; B: WNG HRB GNA; C: WIT NGK BDV CLF SPT (si: A: MPO)	20	0806-0812	MPO
			28	0619-0633	MPO
12	2119	A: HRB COI LNP MPO; B: WNG CLF FRD QUE; C: WIT NGK SPT HTY			
18	0647	A: COI SPT LNP MPO; B: WNG HRB GCK AQU HTY KNY QUE GNA CAO AMS KGL; C: WIT NGK HAD BDV CLF MMB EBR FRD			

Reporting Observatories:

SOD DOB NUR WNG WIT NGK HAD BDV CLF HRB GCK MMB AQU EBR
COI SPT FRD KAK HTY KNY QUE LNP MPO GNA CAO AMS CZT KGL
DUM

*Three-letter codes identify each observatory.

MAGNETIC STORM SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS
(PRELIMINARY REPORT ON RAPID MAGNETIC VARIATIONS)

JANUARY 1986

Storm Sudden Commencements (ssc)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
06	1432	A: COI LNP; B: QUE; C: BDV SPT KAK HTY KNY	31	1424-1445	MPO
06	1931	A: DUM; B: WIT NGK CLF SPT AMS (si: B: MPO)			
25	0235	A: COI LNP; B: MPO; C:WNG KNY			

Reporting Observatories:

SOD DOB NUR WNG WIT NGK HAD BDV CLF GCK MMB EBR COI
SPT KAK HTY KNY QUE LNP MPO GNA CAO AMS CZT KGL DUM

*Three-letter codes identify each observatory.

C A L C I U M P L A G E R E G I O N S
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

OCTOBER 1983

Calcium Plage Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Intensity	Corrected Area (10-6 Hemi)	NOAA/USAF Sunspot Groups #1	#2	#3
19085	BIGB	09	27	1804	S20	E56	10	2.0	2.5	0150			
19085	BIGB	09	28	2041	S18	E42	10	2.0	1.5	0300			
19087	BIGB	10	02	1751	N11	E18	10	4.1	1.2	0412	4330		
19087	BIGB	10	03	1924	N11	E04	10	4.1	1.7	0398	4330		
19087	BIGB	10	05	1710	N11	W21	10	4.1	1.5	0350	4330		
19087	BIGB	10	08	2328	N10	W68	10	3.9	1.3	0480	4330		
19087	BIGB	10	09	1548	N10	W78	10	3.8	1.2	0565	4330		
19086	BIGB	09	28	2041	S10	E78	10	4.7	2.0	1300	4336		
19086	BIGB	10	02	1751	S11	E25	10	4.6	1.5	0730	4336		
19086	BIGB	10	03	1924	S11	E11	10	4.6	2.1	0979	4336		
19086	BIGB	10	05	1710	S10	W15	10	4.6	1.8	0789	4336		
19086	BIGB	10	08	2328	S12	W61	10	4.4	1.5	0754	4336		
19086	BIGB	10	09	1548	S13	W75	10	4.0	1.3	0724	4336		
19088	BIGB	10	02	1751	S10	E69	10	7.9	1.3	0612	4332		
19088	BIGB	10	03	1924	S10	E54	10	7.9	1.1	0498	4332		
19088	BIGB	10	05	1710	S10	E28	10	7.8	1.0	0598	4332		
19088	BIGB	10	08	2328	S15	W17	10	7.7	1.4	0668	4332		
19088	BIGB	10	09	1548	S15	W26	10	7.7	1.5	0699	4332		
19088	BIGB	10	10	1604	S15	W40	10	7.6	2.0	0744	4332		
19088	BIGB	10	11	2355	S16	W58	10	7.6	2.4	1012	4332		
19088	BIGB	10	12	1544	S16	W66	10	7.6	3.0	2000	4332		
19088	BIGB	10	13	1548	S16	W79	10	7.7	2.0	2000	4332		
19089	BIGB	10	02	1751	N19	E72	10	8.2	1.7	1202	4329		
19089	BIGB	10	03	1924	N19	E59	10	8.3	2.1	1271	4329		
19089	BIGB	10	05	1710	N19	E34	10	8.3	1.8	1324	4329		
19089	BIGB	10	08	2328	N19	W09	10	8.3	1.7	1126	4329		
19089	BIGB	10	09	1548	N19	W18	10	8.3	1.7	1149	4329		
19089	BIGB	10	10	1604	N19	W31	10	8.3	1.6	1088	4329		
19089	BIGB	10	11	2355	N19	W49	10	8.2	1.4	0838	4329		
19089	BIGB	10	12	1544	N20	W58	10	8.2	1.5	0850	4329		
19089	BIGB	10	13	1548	N18	W72	10	8.2	1.5	0500	4329		
19089	BIGB	10	14	1602	N18	W81	10	8.5	1.0	0400	4329		
19090	BIGB	10	02	1751	N07	E75	10	8.4	2.9	3229	4328		
19090	BIGB	10	03	1924	N07	E68	10	8.9	4.1	5227	4328		
19090	BIGB	10	05	1710	N07	E38	10	8.6	3.5	5247	4328		
19090	BIGB	10	08	2328	N07	W05	10	8.6	4.2	5805	4328		
19090	BIGB	10	09	1548	N07	W14	10	8.6	4.1	6274	4328		
19090	BIGB	10	10	1604	N07	W27	10	8.6	3.6	5788	4328		
19090	BIGB	10	11	2355	N07	W45	10	8.6	3.4	6551	4328		
19090	BIGB	10	12	1544	N07	W52	10	8.8	3.5	7000	4328		
19090	BIGB	10	13	1548	N08	W64	10	8.8	3.5	6550	4328		
19090	BIGB	10	14	1602	N08	W73	10	9.2	3.5	6300	4328		
19090	BIGB	10	15	1644	N09	W80	10	9.7	2.0	2000	4328		
19091	BIGB	10	02	1751	S03	E76	10	8.4	.9	0788			
19091	BIGB	10	03	1924	S05	E69	10	9.0	1.7	1036			
19091	BIGB	10	05	1710	S05	E42	10	8.8	2.0	1019			
19091	BIGB	10	08	2328	S05	W04	10	8.7	1.5	0802			
19091	BIGB	10	09	1548	S05	W13	10	8.7	1.2	0607			
19091	BIGB	10	10	1604	S05	W26	10	8.7	1.9	0659			
19091	BIGB	10	11	2355	S05	W44	10	8.7	1.0	0594			
19091	BIGB	10	12	1544	S04	W53	10	8.7	1.0	0600			
19091	BIGB	10	13	1548	S04	W69	10	8.5	1.0	0625			
19097	BIGB	10	08	2328	S18	E09	10	9.7	1.9	0307	4338		
19097	BIGB	10	09	1548	S18	E06	10	10.1	2.4	0325	4338		
19097	BIGB	10	10	1604	S18	W13	10	9.7	3.2	0597	4338		
19097	BIGB	10	11	2355	S18	W34	10	9.4	2.9	1328	4338		
19097	BIGB	10	12	1544	S16	W41	10	9.5	3.0	1550	4338		
19097	BIGB	10	13	1548	S15	W54	10	9.6	2.5	1550	4338		
19097	BIGB	10	14	1602	S15	W67	10	9.6	2.0	1300	4338		
19097	BIGB	10	15	1644	S15	W76	10	9.9	2.0	0700	4338		
19092	BIGB	10	03	1924	N14	E82	10	10.0	2.0	1670	4331		
19092	BIGB	10	05	1710	N14	E61	10	10.3	2.5	1756	4331		
19092	BIGB	10	08	2328	N14	E18	10	10.3	2.4	1832	4331		

C A L C I U M P L A G E R E G I O N S
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

OCTOBER 1983

Calcium Plage Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Intensity	Corrected Area (10-6 Hemi)	NOAA/USAF Sunspot Groups #1	#2	#3
19092	BIGB	10	09	1548	N14	E09	10	10.3	2.4	1847	4331		
19092	BIGB	10	10	1604	N14	W04	10	10.4	2.6	2061	4331		
19092	BIGB	10	11	2355	N14	W22	10	10.3	2.3	2102	4331		
19092	BIGB	10	12	1544	N14	W30	10	10.4	2.5	2100	4331		
19092	BIGB	10	13	1548	N14	W44	10	10.3	2.5	2600	4331		
19092	BIGB	10	14	1602	N14	W57	10	10.4	2.5	3000	4331		
19092	BIGB	10	15	1644	N14	W70	10	10.4	2.5	3000	4331		
19092	BIGB	10	16	1632	N14	W81	10	10.6	2.5	2800	4331		
19098	BIGB	10	08	2328	N05	E19	10	10.4	2.4	0316	4337		
19098	BIGB	10	09	1548	N05	E09	10	10.3	3.3	0433	4337		
19098	BIGB	10	10	1604	N05	W04	10	10.4	2.9	0769	4337		
19098	BIGB	10	11	2355	N05	W23	10	10.3	2.9	0911	4337		
19098	BIGB	10	12	1544	N05	W32	10	10.3	2.5	0900	4337		
19098	BIGB	10	13	1548	N05	W46	10	10.2	3.0	0600	4337		
19098	BIGB	10	14	1602	N04	W57	10	10.4	2.5	0700	4337		
19098	BIGB	10	15	1644	N05	W71	10	10.4	2.5	0600	4337		
19098	BIGB	10	16	1632	N05	W81	10	10.6	1.5	0500	4337		
19094	BIGB	10	05	1710	S07	E72	10	11.1	2.8	1396	4333		
19094	BIGB	10	08	2328	S08	E38	10	11.8	3.2	2574	4333		
19094	BIGB	10	09	1548	S07	E29	10	11.8	3.1	2714	4333		
19094	BIGB	10	10	1604	S08	E16	10	11.9	1.9	1897	4333		
19094	BIGB	10	11	2355	S08	W02	10	11.8	3.1	2347	4333		
19094	BIGB	10	12	1544	S08	W10	10	11.9	3.0	2350	4333		
19094	BIGB	10	13	1548	S09	W23	10	11.9	3.0	2300	4333		
19094	BIGB	10	14	1602	S09	W39	10	11.7	2.5	2000	4333		
19094	BIGB	10	15	1644	S10	W51	10	11.9	2.5	1000	4333		
19094	BIGB	10	16	1632	S09	W64	10	11.9	2.5	1200	4333		
19093	BIGB	10	05	1710	N20	E74	10	11.4	.8	0498			
19093	BIGB	10	08	2328	N19	E48	10	12.6	1.8	0981			
19093	BIGB	10	09	1548	N19	E38	10	12.5	1.9	0632			
19093	BIGB	10	10	1604	N19	E25	10	12.6	1.2	0643			
19093	BIGB	10	11	2355	N18	E08	10	12.6	1.2	0643			
19093	BIGB	10	12	1544	N18	W02	10	12.5	1.0	0700			
19093	BIGB	10	13	1548	N17	W14	10	12.6	1.0	0700			
19093	BIGB	10	14	1602	N17	W29	10	12.5	1.0	0700			
19093	BIGB	10	15	1644	N16	W42	10	12.5	1.0	0600			
19093	BIGB	10	16	1632	N21	W60	10	12.1	1.5	0300			
19095	BIGB	10	05	1710	N21	E81	10	11.9	1.3	0624	4335		
19095	BIGB	10	08	2328	N22	E56	10	13.3	3.3	1797	4335		
19095	BIGB	10	09	1548	N22	E47	10	13.3	3.2	1686	4335		
19095	BIGB	10	10	1604	N22	E33	10	13.2	3.2	1971	4335		
19095	BIGB	10	11	2355	N21	E17	10	13.3	2.9	1830	4335		
19095	BIGB	10	12	1544	N21	E07	10	13.2	3.5	2400	4335		
19095	BIGB	10	13	1548	N20	W08	10	13.0	4.0	2800	4335		
19095	BIGB	10	14	1602	N21	W21	10	13.0	4.5	4000	4335		
19095	BIGB	10	15	1644	N20	W34	10	13.1	4.5	4000	4335		
19095	BIGB	10	16	1632	N20	W47	10	13.1	4.0	4000	4335		
19095	BIGB	10	18	1614	N21	W72	10	13.1	4.0	4000	4335		
19095	BIGB	10	19	1635	N22	W84	10	13.2	3.5	3600	4335		
19096	BIGB	10	08	2328	S15	E68	10	14.1	1.5	0674			
19096	BIGB	10	09	1548	S15	E59	10	14.1	2.0	0841			
19096	BIGB	10	10	1604	S14	E42	10	13.8	1.5	0889			
19096	BIGB	10	11	2355	S14	E24	10	13.8	1.7	0838			
19096	BIGB	10	12	1544	S14	E15	10	13.8	1.5	0840			
19096	BIGB	10	13	1548	S14	W00	10	13.6	1.5	0500			
19096	BIGB	10	14	1602	S14	W12	10	13.8	1.5	0600			
19096	BIGB	10	15	1644	S14	W27	10	13.6	1.5	0700			
19096	BIGB	10	16	1632	S14	W39	10	13.7	1.5	0500			
19096	BIGB	10	18	1614	S13	W66	10	13.7	1.0	0300			
19096	BIGB	10	19	1635	S11	W76	10	14.0	1.0	0450			
19105	BIGB	10	15	1644	N15	W14	10	14.6	1.5	0600			
19099	BIGB	10	08	2328	N11	E81	10	15.1	.8	0378			
19099	BIGB	10	09	1548	N12	E70	10	14.9	1.2	0481			
19099	BIGB	10	10	1604	N12	E57	10	15.0	1.0	0431			

C A L C I U M P L A G E R E G I O N S
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

OCTOBER 1983

Calcium Plage Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Intensity	Corrected Area (10-6 Hemi)	NOAA/USAF Sunspot Groups #1	#2	#3
19099	BIGB	10	11	2355	N12	E39	10	14.9	1.2	0308			
19099	BIGB	10	12	1544	N12	E30	10	14.9	1.0	0320			
19099	BIGB	10	13	1548	N13	E14	10	14.7	1.0	0300			
19103	BIGB	10	13	1548	N15	E27	10	15.7	1.0	0300			
19103	BIGB	10	14	1602	N14	E15	10	15.8	1.0	0200			
19103	BIGB	10	15	1644	N15	E03	10	15.9	1.0	0150			
19102	BIGB	10	11	2355	S13	E70	10	17.3	1.3	0586	4339		
19102	BIGB	10	12	1544	S13	E58	10	17.0	2.0	0725	4339		
19102	BIGB	10	13	1548	S13	E44	10	17.0	2.0	1000	4339		
19102	BIGB	10	14	1602	S13	E31	10	17.0	2.0	1300	4339		
19102	BIGB	10	15	1644	S13	E16	10	16.9	2.5	0700	4339		
19102	BIGB	10	16	1632	S13	E03	10	16.9	3.0	1200	4339		
19102	BIGB	10	18	1614	S14	W21	10	17.1	2.0	0600	4339		
19102	BIGB	10	19	1635	S14	W37	10	16.9	2.0	0500	4339		
19102	BIGB	10	20	1559	S14	W49	10	17.0	2.0	0750	4339		
19102	BIGB	10	21	1530	S15	W63	10	16.9	2.0	0400	4339		
19102	BIGB	10	22	1508	S16	W71	10	17.2	2.0	0400	4339		
19100	BIGB	10	11	2355	N16	E71	10	17.4	.5	0426			
19100	BIGB	10	12	1544	N18	E60	10	17.2	1.0	0850			
19100	BIGB	10	13	1548	N17	E47	10	17.2	1.0	1000			
19100	BIGB	10	14	1602	N15	E34	10	17.2	1.0	1200			
19100	BIGB	10	15	1644	N13	E19	10	17.1	1.0	0800			
19100	BIGB	10	16	1632	N13	E06	10	17.1	1.0	0900			
19100	BIGB	10	18	1614	N15	W23	10	16.9	1.0	0900			
19100	BIGB	10	19	1635	N16	W36	10	17.0	1.0	0400			
19100	BIGB	10	20	1559	N16	W48	10	17.0	1.0	0900			
19100	BIGB	10	21	1530	N15	W56	10	17.4	1.0	0800			
19100	BIGB	10	22	1508	N14	W72	10	17.2	1.0	0350			
19101	BIGB	10	11	2355	S06	E75	10	17.6	2.0	1523	4340		
19101	BIGB	10	12	1544	S06	E64	10	17.4	2.5	1550	4340		
19101	BIGB	10	13	1548	S06	E51	10	17.5	3.0	2200	4340		
19101	BIGB	10	14	1602	S06	E37	10	17.4	3.5	2000	4340		
19101	BIGB	10	15	1644	S06	E24	10	17.5	3.5	1600	4340		
19101	BIGB	10	16	1632	S06	E11	10	17.5	3.5	1900	4340		
19101	BIGB	10	18	1614	S06	W15	10	17.5	3.5	2200	4340		
19101	BIGB	10	19	1635	S05	W30	10	17.4	3.0	2200	4340		
19101	BIGB	10	20	1559	S05	W43	10	17.4	3.0	2200	4340		
19101	BIGB	10	21	1530	S05	W55	10	17.5	3.0	2200	4340		
19101	BIGB	10	22	1508	S06	W68	10	17.5	2.5	2200	4340		
19101	BIGB	10	23	1542	S05	W78	10	17.8	2.0	1000	4340		
19108	BIGB	10	16	1632	N02	E30	10	18.9	2.0	0125			
19108	BIGB	10	18	1614	N02	E03	10	18.9	2.0	0125			
19104	BIGB	10	13	1548	S12	E75	10	19.3	1.5	3000	4341		
19104	BIGB	10	14	1602	S13	E60	10	19.2	1.0	1500	4341		
19104	BIGB	10	15	1644	S12	E50	10	19.5	2.0	1200	4341		
19104	BIGB	10	16	1632	S12	E37	10	19.5	2.5	1600	4341		
19104	BIGB	10	18	1614	S13	E11	10	19.5	3.0	2350	4341		
19104	BIGB	10	19	1635	S13	W02	10	19.5	2.0	2000	4341		
19104	BIGB	10	20	1559	S13	W15	10	19.5	3.0	2000	4341		
19104	BIGB	10	21	1530	S11	W30	10	19.4	3.5	1400	4341		
19104	BIGB	10	22	1508	S11	W38	10	19.8	2.5	1400	4341		
19104	BIGB	10	23	1542	S12	W52	10	19.7	2.5	1350	4341		
19104	BIGB	10	24	1700	S12	W65	10	19.8	2.0	1000	4341		
19104	BIGB	10	25	1916	S12	W71	10	20.4	2.0	0700	4341		
19111	BIGB	10	20	1559	N04	W10	10	19.9	1.0	0150			
19111	BIGB	10	21	1530	N04	W22	10	20.0	1.5	0150			
19111	BIGB	10	22	1508	N04	W33	10	20.2	1.0	0200			
19111	BIGB	10	23	1542	N04	W48	10	20.1	1.0	0250			
19111	BIGB	10	24	1700	N04	W65	10	19.8	1.0	0100			
19117	BIGB	10	23	1542	S23	W37	10	20.8	2.5	0125	4348		
19117	BIGB	10	24	1700	S23	W50	10	20.8	3.0	0800	4348		
19117	BIGB	10	25	1916	S23	W65	10	20.8	3.0	0875	4348		
19117	BIGB	10	26	1544	S22	W73	10	21.0	3.0	0875	4348		

C A L C I U M P L A G E R E G I O N S
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

OCTOBER 1983

Calcium Plage Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Intensity	Corrected Area (10-6 Hemi)	NOAA/USAF Sunspot Groups #1	#2	#3
19106	BIGB	10	15	1644	S16	E68	10	20.8	1.5	0700	4341		
19106	BIGB	10	16	1632	S18	E58	10	21.1	2.0	1000	4341		
19106	BIGB	10	18	1614	S17	E32	10	21.1	2.0	0800	4341		
19106	BIGB	10	19	1635	S17	E19	10	21.1	2.5	1150	4341		
19106	BIGB	10	20	1559	S17	E07	10	21.2	2.5	0700	4341		
19106	BIGB	10	21	1530	S17	W07	10	21.1	2.5	0800	4341		
19106	BIGB	10	22	1508	S17	W18	10	21.3	2.5	0500	4341		
19106	BIGB	10	23	1542	S16	W32	10	21.2	2.0	0500	4341		
19106	BIGB	10	24	1700	S16	W46	10	21.2	2.0	0400	4341		
19106	BIGB	10	25	1916	S17	W65	10	20.9	2.0	0400	4341		
19106	BIGB	10	26	1544	S17	W73	10	21.1	2.0	0350	4341		
19115	BIGB	10	22	1508	N01	W18	10	21.3	2.0	0150	4346		
19109	BIGB	10	18	1614	N02	E39	10	21.6	1.0	0150	4346A		
19107	BIGB	10	16	1632	S10	E69	10	21.9	1.5	0900			
19107	BIGB	10	18	1614	S10	E43	10	21.9	1.5	1200			
19107	BIGB	10	19	1635	S11	E30	10	21.9	1.5	1000			
19107	BIGB	10	20	1559	S11	E18	10	22.0	1.5	1100			
19107	BIGB	10	21	1530	S09	E03	10	21.9	1.5	1000			
19107	BIGB	10	22	1508	S09	W10	10	21.9	1.5	0900			
19107	BIGB	10	23	1542	S08	W24	10	21.8	2.0	0900			
19107	BIGB	10	24	1700	S09	W37	10	21.9	2.0	0700			
19107	BIGB	10	25	1916	S10	W51	10	22.0	2.0	0650			
19107	BIGB	10	26	1544	S09	W66	10	21.7	2.0	0600			
19110	BIGB	10	18	1614	S18	E67	10	23.8	1.0	2000			
19110	BIGB	10	19	1635	S17	E56	10	23.9	1.0	3000			
19110	BIGB	10	20	1559	S17	E46	10	24.2	2.0	3200			
19110	BIGB	10	21	1530	S18	E31	10	24.0	2.0	3000			
19110	BIGB	10	22	1508	S18	E18	10	24.0	2.0	3000			
19110	BIGB	10	23	1542	S19	E07	10	24.2	2.0	3300			
19110	BIGB	10	24	1700	S20	W06	10	24.2	2.0	3000			
19110	BIGB	10	25	1916	S19	W18	10	24.4	2.0	3000			
19110	BIGB	10	26	1544	S18	W29	10	24.4	2.0	3000			
19110	BIGB	10	27	1602	S19	W44	10	24.3	2.0	3000			
19110	BIGB	10	28	1810	S19	W59	10	24.2	2.0	3000			
19110	BIGB	10	30	1524	S19	W75	10	24.9	1.0	1000			
19119	BIGB	10	24	1700	N02	E08	10	25.3	1.5	0100			
19112	BIGB	10	20	1559	S22	E70	10	26.0	2.0	3800	4344		
19112	BIGB	10	21	1530	S22	E59	10	26.2	2.5	3000	4344		
19112	BIGB	10	22	1508	S23	E46	10	26.2	2.5	3000	4344		
19112	BIGB	10	23	1542	S23	E33	10	26.2	3.0	4200	4344		
19112	BIGB	10	24	1700	S25	E21	10	26.3	3.0	3700	4344		
19112	BIGB	10	25	1916	S24	E08	10	26.4	3.0	3650	4344		
19112	BIGB	10	26	1544	S23	W05	10	26.3	3.0	3600	4344		
19112	BIGB	10	27	1602	S22	W17	10	26.4	2.5	3600	4344		
19112	BIGB	10	28	1810	S23	W30	10	26.4	2.5	3600	4344		
19112	BIGB	10	30	1524	S22	W51	10	26.7	2.5	3500	4344		
19112	BIGB	10	31	2029	S23	W67	10	26.7	2.0	3300	4344		
19118	BIGB	10	22	1508	S11	E50	10	26.4	1.5	0125			
19118	BIGB	10	23	1542	S11	E35	10	26.3	2.0	0200			
19118	BIGB	10	24	1700	S13	E21	10	26.3	2.0	0300			
19118	BIGB	10	25	1916	S12	E08	10	26.4	2.0	0450			
19118	BIGB	10	26	1544	S13	E02	10	26.8	2.5	0375			
19118	BIGB	10	27	1602	S10	W14	10	26.6	3.0	0650			
19118	BIGB	10	28	1810	S11	W30	10	26.5	3.0	0650			
19118	BIGB	10	30	1524	S11	W56	10	26.4	2.0	0500			
19118	BIGB	10	31	2029	S10	W71	10	26.5	2.0	0450			
19113	BIGB	10	21	1530	S09	E67	10	26.7	2.5	0600			
19113	BIGB	10	22	1508	S10	E59	10	27.1	2.5	0800			
19113	BIGB	10	23	1542	S10	E43	10	26.9	2.5	1150			
19113	BIGB	10	24	1700	S12	E31	10	27.0	2.0	0900			
19113	BIGB	10	25	1916	S11	E17	10	27.1	2.0	0900			
19113	BIGB	10	26	1544	S11	E09	10	27.3	2.0	0650			
19113	BIGB	10	27	1602	S10	W07	10	27.1	2.0	0300			

C A L C I U M P L A G E R E G I O N S
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

OCTOBER 1983

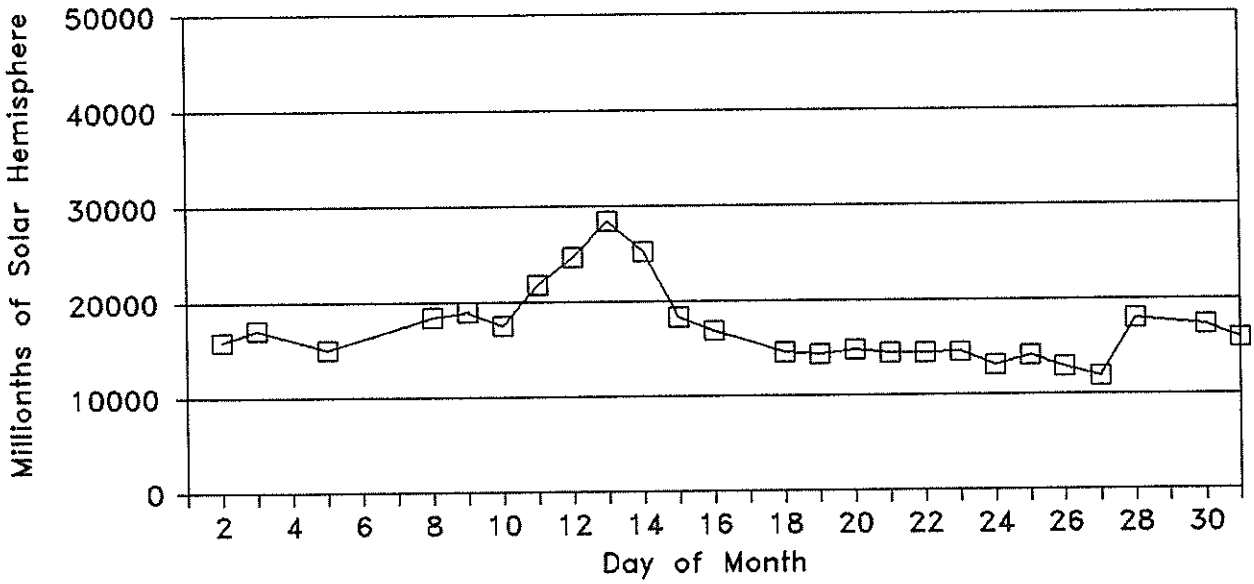
Calcium Plage Region	Sta	Observation Time Mo	Day	(UT)	Lat CMD	CMP Mo	Day	Intensity	Corrected Area (10-6 Hemi)	NOAA/USAF Sunspot Groups #1	#2	#3
19113	BIGB	10	28	1810	S11 W22	10	27.1	2.0	0300			
19113	BIGB	10	30	1524	S09 W48	10	27.0	2.0	0500			
19113	BIGB	10	31	2029	S08 W65	10	27.0	2.0	0500			
19114	BIGB	10	21	1530	N12 E77	10	27.4	1.0	1100			
19114	BIGB	10	22	1508	N11 E70	10	27.9	1.0	1000			
19114	BIGB	10	23	1542	N10 E57	10	27.9	1.0	1000			
19114	BIGB	10	24	1700	N10 E47	10	28.2	1.0	0900			
19114	BIGB	10	25	1916	N11 E30	10	28.0	1.0	0900			
19114	BIGB	10	26	1544	N12 E18	10	28.0	1.0	0900			
19114	BIGB	10	27	1602	N11 E05	10	28.0	2.0	1000			
19114	BIGB	10	28	1810	N12 W09	10	28.1	2.0	1000			
19114	BIGB	10	30	1524	N13 W32	10	28.2	1.5	1000			
19114	BIGB	10	31	2029	N12 W51	10	28.0	1.5	1000			
19116	BIGB	10	22	1508	S18 E69	10	27.9	1.0	0400			
19116	BIGB	10	23	1542	S18 E58	10	28.1	1.0	0550			
19116	BIGB	10	24	1700	S19 E44	10	28.1	1.5	0500			
19116	BIGB	10	25	1916	S20 E32	10	28.3	1.5	0650			
19116	BIGB	10	26	1544	S19 E20	10	28.2	1.5	0650			
19116	BIGB	10	27	1602	S18 E04	10	28.0	1.5	0700			
19116	BIGB	10	28	1810	S18 W10	10	28.0	1.5	0700			
19116	BIGB	10	30	1524	S17 W31	10	28.3	1.0	0700			
19116	BIGB	10	31	2029	S17 W47	10	28.3	1.0	0700			
19121	BIGB	10	28	1810	S20 E09	10	29.4	3.5	0525	4350		
19121	BIGB	10	30	1524	S20 W16	10	29.4	3.5	0500	4350		
19121	BIGB	10	31	2029	S20 W33	10	29.3	3.5	0500	4350		
19120	BIGB	10	24	1700	S06 E72	10	30.1	3.0	0700	4349		
19120	BIGB	10	25	1916	S05 E59	10	30.2	3.0	0700	4349		
19120	BIGB	10	26	1544	S05 E48	10	30.2	3.0	0700	4349		
19120	BIGB	10	27	1602	S06 E33	10	30.1	3.5	0675	4349		
19120	BIGB	10	28	1810	S06 E18	10	30.1	3.5	0675	4349		
19120	BIGB	10	30	1524	S08 W06	10	30.2	2.5	0750	4349		
19120	BIGB	10	31	2029	S09 W22	10	30.2	2.5	0700	4349		
19122	BIGB	10	25	1916	S11 E71	10	31.1	2.5	1200			
19122	BIGB	10	26	1544	S12 E61	10	31.2	2.5	1200			
19122	BIGB	10	27	1602	S10 E46	10	31.1	2.5	1200			
19122	BIGB	10	28	1810	S09 E32	10	31.1	2.5	1200			
19122	BIGB	10	30	1524	S11 E07	10	31.2	2.5	1200			
19122	BIGB	10	31	2029	S10 W11	10	31.0	2.5	1200			

D A I L Y P L A G E S U M M A R I E S

OCTOBER 1983

Day	Sta	Plage Index	Plage Count	Smallest Plage (Millionths	Largest Plage of Solar	Total Area Hemisphere)	Smallest Intensity	Largest Intensity
01	No Observations This DAY							
02	BIGB	14.1	10	412	4500	15886	.7	3.2
03	BIGB	18.1	10	398	5227	17184	1.0	4.1
04	No Observations This DAY							
05	BIGB	23.7	12	350	5247	14998	.8	3.5
06	No Observations This DAY							
07	No Observations This DAY							
08	BIGB	44.8	14	307	5805	18494	.8	4.2
09	BIGB	47.3	14	325	6274	18977	1.2	4.1
10	BIGB	41.2	12	431	5788	17537	1.0	3.6
11	BIGB	42.6	15	308	6551	21837	.5	3.4
12	BIGB	46.7	15	320	7000	24735	1.0	3.5
13	BIGB	43.8	17	300	6550	28525	1.0	4.0
14	BIGB	41.7	14	200	6300	25200	1.0	4.5
15	BIGB	30.5	15	150	4000	18350	1.0	4.5
16	BIGB	28.5	13	125	4000	16925	1.0	4.0
17	No Observations This DAY							
18	BIGB	23.9	11	125	4000	14625	1.0	4.0
19	BIGB	16.9	9	400	3600	14300	1.0	3.5
20	BIGB	21.6	9	150	3800	14800	1.0	3.0
21	BIGB	21.1	11	150	3000	14450	1.0	3.5
22	BIGB	19.4	14	125	3000	14425	1.0	2.5
23	BIGB	24.1	12	125	4200	14525	1.0	3.0
24	BIGB	22.6	13	100	3700	13100	1.0	3.0
25	BIGB	23.7	12	400	3650	14075	1.0	3.0
26	BIGB	22.7	11	350	3600	12900	1.0	3.0
27	BIGB	21.5	9	300	3600	11925	1.5	3.5
28	BIGB	25.9	12	300	3600	18050	1.5	4.0
29	No Observations This DAY							
30	BIGB	26.4	12	500	4000	17350	1.0	4.0
31	BIGB	26.3	11	450	4000	15950	1.0	4.0

DAILY PLAGE AREAS FOR OCTOBER 1983



BIG BEAR SOLAR OBSERVATORY
ACTIVE REGION SUMMARY

OCTOBER 1983

REGION	IDENTIFICATION	AGE	FIRST SEEN	DURATION
19081	19050	2	830924	14 days
19082	New	1	830924	13
19085	New	1	830927	>03
19087	New	1	831002	>08
19086	19047	2	830928	13
19088	New (loc. of 19056)	1	831002	>12
19089	New	1	831002	13
19090	New (loc. of 19056)	1	831002	14
19091	19057	4	831002	>12
19097	New	1	831008	08
19092	New	1	831003	14
19098	New	1	831008	09
19094	New (vic. of 19063)	1	831005	13
19093	19059	3	831005	13
19095	New (trailing portion of 19059)	1	831005	15
19096	19065	2	831008	>12
19099	New	1	831008	06
19105	New	1	831015	01
19103	New	1	831013	03
19100	19067	3	831011	13
19102	New (leading portion of 19068)	1	831011	12
19101	New	1	831011	13
19108	New	1	831016	03
19104	19084	3	831013	13
19111	New	1	831020	05
19106	New	1	831015	12
19115	New	1	831022	01
19117	New	1	831023	04
19109	New	1	831018	01
19107	19075	4	831016	11
19110	19077	6	831018	13
19119	New	1	831024	01
19112	19079	2	831020	13
19113	New	1	831021	12
19118	New	1	831022	10
19114	19081	3	831021	13
19116	19082	2	831022	12
19121	New	1	831028	07
19120	New	1	831024	11
19122	19086	3	831025	12

1. No CaK Observations at BBSO on Oct. 1, 4, 6, 7, 17, 29.

2. No CaK Plots on Oct. 1, 4, 6, 7, 22, 29.

3. No KPNO Magnetograms on Oct. 1-4, 8, 17, 25-27.

4. Contiguous Plages: 19093/19095, 19092/19098, 19113/19118.

C A L C I U M P L A G E R E G I O N S
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

NOVEMBER 1983

Calcium Plage Region	Sta	Observation Time Mo	Day	(UT)	Lat CMD	CMP Mo	Day	Intensity	Corrected Area (10-6 Hemi)	NOAA/USAF Sunspot Groups #1	#2	#3
19123	BIGB	10	27	1602	N18 E80	11	2.7	1.5	0800			
19123	BIGB	10	28	1810	N18 E65	11	2.7	1.5	0800			
19123	BIGB	10	30	1524	N17 E40	11	2.7	1.5	0700			
19123	BIGB	10	31	2029	N18 E24	11	2.7	1.5	0600			
19125	BIGB	10	28	1810	S16 E74	11	3.4	4.0	3000	4351		
19125	BIGB	10	30	1524	S17 E52	11	3.6	4.0	3000	4351		
19125	BIGB	10	31	2029	S17 E35	11	3.5	4.0	3000	4351		
19124	BIGB	10	28	1810	N05 E79	11	3.7	3.0	2600	4351A		
19124	BIGB	10	30	1524	N07 E63	11	4.4	2.5	4000	4351A		
19124	BIGB	10	31	2029	N08 E50	11	4.6	2.5	4000	4351A		
19126	BIGB	11	11	1750	S12 W69	11	6.5	3.0	0900	4357		
19128	BIGB	11	11	1750	S19 W49	11	8.0	3.0	1250	4354		
19128	BIGB	11	14	1604	S17 W80	11	8.6	2.0	0700	4354		
19129	BIGB	11	11	1750	S17 W38	11	8.8	3.0	1300	4353		
19129	BIGB	11	14	1604	S15 W71	11	9.3	2.5	1100	4353		
19127	BIGB	11	11	1750	N21 W32	11	9.3	2.5	3700			
19127	BIGB	11	14	1604	N23 W63	11	9.8	2.5	3800			
19127	BIGB	11	15	1716	N25 W75	11	9.9	1.5	3800			
19130	BIGB	11	11	1750	S09 W22	11	10.1	2.5	2200	4355		
19130	BIGB	11	14	1604	S10 W58	11	10.3	3.0	2200	4355		
19130	BIGB	11	15	1716	S10 W74	11	10.1	2.5	2200	4355		
19130	BIGB	11	16	1559	S10 W80	11	10.6	1.0	0500	4355		
19131	BIGB	11	11	1750	S20 E18	11	13.1	1.5	0550	4359		
19131	BIGB	11	14	1604	S19 W20	11	13.1	1.0	0300	4359		
19131	BIGB	11	15	1716	S20 W35	11	13.0	1.0	0600	4359		
19131	BIGB	11	16	1559	S19 W48	11	13.0	1.5	0500	4359		
19131	BIGB	11	17	1610	S17 W61	11	13.0	1.0	0300	4359		
19132	BIGB	11	11	1750	S07 E22	11	13.4	1.5	0700			
19132	BIGB	11	14	1604	S08 W14	11	13.6	1.0	0700			
19132	BIGB	11	15	1716	S08 W29	11	13.5	1.0	0700			
19132	BIGB	11	16	1559	S09 W42	11	13.5	1.0	0700			
19132	BIGB	11	17	1610	S07 W62	11	13.0	1.0	0325			
19133	BIGB	11	14	1604	S20 W13	11	13.7	1.0	0150			
19133	BIGB	11	15	1716	S19 W25	11	13.8	1.0	0150			
19135	BIGB	11	14	1604	S14 W03	11	14.4	2.5	0700	4360		
19135	BIGB	11	15	1716	S13 W16	11	14.5	3.0	0800	4360		
19135	BIGB	11	16	1559	S13 W27	11	14.6	3.5	1850	4360		
19135	BIGB	11	17	1610	S13 W42	11	14.5	3.5	2000	4360		
19135	BIGB	11	19	1560	S13 W70	11	14.4	3.5	2350	4360		
19135	BIGB	11	20	1622	S14 W79	11	14.7	3.0	2000	4360		
19134	BIGB	11	14	1604	S07 E03	11	14.9	1.5	0200	4362		
19134	BIGB	11	15	1716	S06 W13	11	14.7	1.5	0300	4362		
19134	BIGB	11	16	1559	S06 W24	11	14.9	1.0	0125	4362		
19136	BIGB	11	11	1750	S15 E54	11	15.8	1.0	0700			
19136	BIGB	11	14	1604	S14 E09	11	15.3	1.0	0750			
19136	BIGB	11	15	1716	S13 W05	11	15.3	1.0	0700			
19136	BIGB	11	16	1559	S13 W17	11	15.4	1.0	0600			
19136	BIGB	11	17	1610	S14 W30	11	15.4	1.0	0700			
19136	BIGB	11	19	1560	S14 W59	11	15.2	1.0	0700			
19137	BIGB	11	14	1604	S13 E31	11	17.0	1.0	0175	4363		
19137	BIGB	11	15	1716	S12 E17	11	17.0	1.5	0450	4363		
19137	BIGB	11	16	1559	S12 E03	11	16.9	2.0	0500	4363		
19137	BIGB	11	17	1610	S11 W11	11	16.8	1.5	0350	4363		
19137	BIGB	11	19	1560	S11 W38	11	16.8	1.0	0150	4363		
19138	BIGB	11	14	1604	S16 E37	11	17.5	3.0	0800	4361		
19138	BIGB	11	15	1716	S15 E24	11	17.5	3.0	1100	4361		

C A L C I U M P L A G E R E G I O N S
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

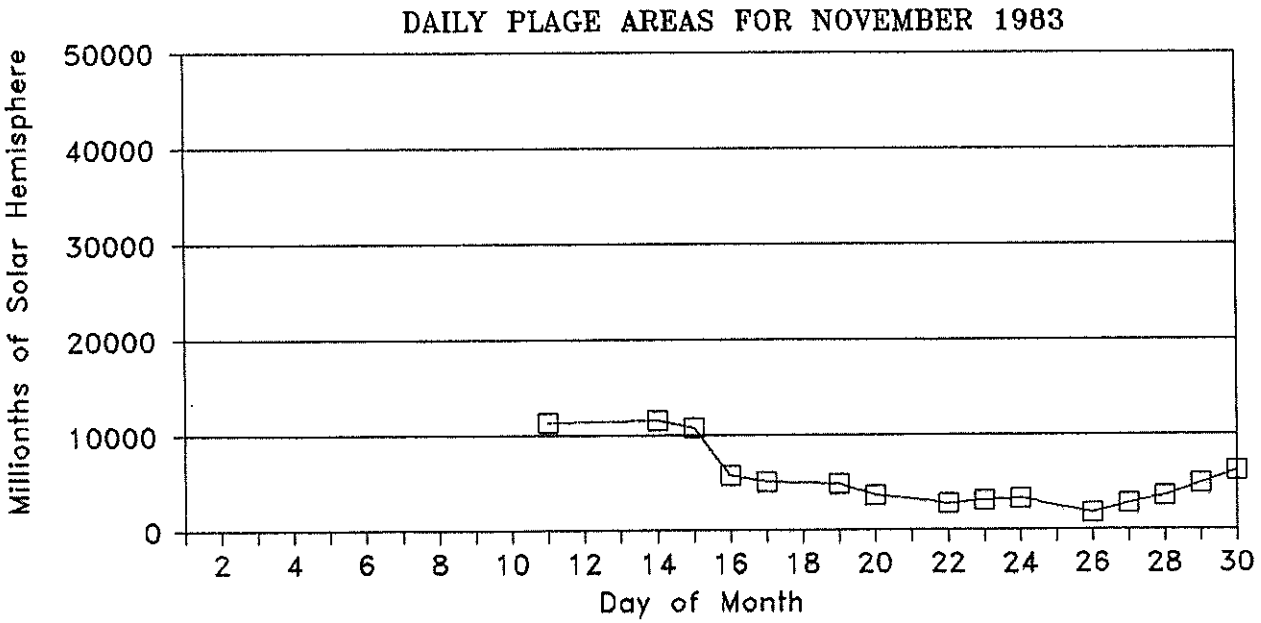
NOVEMBER 1983

Calcium Plage Region	Sta	Observation Time Mo Day (UT)		Lat CMD	CMP Mo Day	Intensity	Corrected Area (10-6 Hemi)	NOAA/USAF Sunspot Groups #1	#2	#3
19138	BIGB	11 16	1559	S15 E10	11 17.4	3.0	1000	4361		
19138	BIGB	11 17	1610	S15 W03	11 17.4	3.0	1400	4361		
19138	BIGB	11 19	1560	S15 W30	11 17.4	3.0	1700	4361		
19138	BIGB	11 20	1622	S15 W43	11 17.4	2.5	1700	4361		
19138	BIGB	11 22	1635	S15 W70	11 17.4	1.5	1700	4361		
19138	BIGB	11 23	1517	S15 W80	11 17.6	1.0	1100	4361		
19141	BIGB	11 23	1517	S01 W34	11 21.1	1.0	0150			
19141	BIGB	11 24	1546	S02 W48	11 21.1	1.0	0300			
19144	BIGB	11 24	1546	N09 W19	11 23.2	1.5	0150			
19142	BIGB	11 23	1517	S18 E15	11 24.8	1.0	0150			
19142	BIGB	11 24	1546	S18 E02	11 24.8	1.0	0300			
19143	BIGB	11 23	1517	S17 E27	11 25.7	1.5	0100			
19143	BIGB	11 24	1546	S16 E14	11 25.7	1.0	0100			
19145	BIGB	11 24	1546	S07 E31	11 27.0	1.5	0325			
19145	BIGB	11 26	1748	S07 E03	11 27.0	1.5	0300			
19139	BIGB	11 22	1635	N12 E66	11 27.7	2.5	0350			
19139	BIGB	11 23	1517	N12 E53	11 27.6	2.0	0575			
19139	BIGB	11 24	1546	N13 E39	11 27.6	1.0	0150			
19148	BIGB	11 29	1616	S21 W23	11 27.9	1.0	0375			
19148	BIGB	11 30	1554	S20 W35	11 28.0	1.0	0175			
19140	BIGB	11 22	1635	N06 E85	11 29.0	1.0	0700	4365A		
19140	BIGB	11 23	1517	N04 E72	11 29.0	1.5	1000	4365A		
19140	BIGB	11 24	1546	N05 E60	11 29.1	2.0	2000	4365A		
19140	BIGB	11 26	1748	N05 E34	11 29.3	2.5	1500	4365A		
19140	BIGB	11 27	1658	N05 E21	11 29.3	2.0	1300	4365A		
19140	BIGB	11 28	1625	N05 E05	11 29.0	2.0	1350	4365A		
19140	BIGB	11 29	1616	N05 W08	11 29.1	2.0	1350	4365A		
19140	BIGB	11 30	1554	N05 W20	11 29.2	2.0	1250	4365A		
19140	BIGB	12 03	1708	N05 W60	11 29.3	1.5	1000	4365A		

D A I L Y P L A G E S U M M A R I E S

NOVEMBER 1983

Day	Sta	Plage Index	Plage Count	Smallest Plage (Millionths	Largest Plage of Solar	Total Area Hemisphere)	Smallest Intensity	Largest Intensity
01	No Observations This Day							
02	No Observations This Day							
03	No Observations This Day							
04	No Observations This Day							
05	No Observations This Day							
06	No Observations This Day							
07	No Observations This Day							
08	No Observations This Day							
09	No Observations This Day							
10	No Observations This Day							
11	BIGB	20.4	8	550	3700	11300	1.0	3.0
12	No Observations This Day							
13	No Observations This Day							
14	BIGB	13.8	12	150	3800	11575	1.0	3.0
15	BIGB	10.6	10	150	3800	10800	1.0	3.0
16	BIGB	11.1	8	125	1850	5775	1.0	3.5
17	BIGB	10.4	6	300	2000	5075	1.0	3.5
18	No Observations This Day							
19	BIGB	7.2	4	150	2350	4900	1.0	3.5
20	BIGB	3.9	2	1700	2000	3700	2.5	3.0
21	No Observations This Day							
22	BIGB	1.1	3	350	1700	2750	1.0	2.5
23	BIGB	1.6	6	100	1100	3075	1.0	2.0
24	BIGB	3.2	7	100	2000	3325	1.0	2.0
25	No Observations This Day							
26	BIGB	3.5	2	300	1500	1800	1.5	2.5
27	BIGB	3.0	2	1300	1500	2800	2.0	2.5
28	BIGB	4.8	3	550	1700	3600	2.0	3.0
29	BIGB	7.5	5	175	2000	4900	1.0	3.0
30	BIGB	9.3	6	150	2000	6275	1.0	3.0



BIG BEAR SOLAR OBSERVATORY
ACTIVE REGION SUMMARY

NOVEMBER 1983

REGION	IDENTIFICATION	AGE	FIRST SEEN	DURATION
19123	New	1	831027	12 days
19125	19088	2	831028	11
19124	19090	2	831028	13
19126	New	1	831105	>07
19128	New	1	831105	≥08
19129	New	1	831105	>09
19127	19095	2	831105	≥11
19130	New	1	831105	≥10
19131	19102	2	831108	≥10
19132	19101	2	831108	≥10
19133	New	1	831113	03
19135	New	1	831112	10
19134	New	1	831114	03
19136	19104	4	831110	11
19137	New	1	831113	06
19138	New	1	831112	12
19141	New	1	831123	02
19144	New	1	831124	>05
19142	New	1	831123	≥02
19143	New	1	831123	≥02
19145	19122	1	831124	02
19139	New	1	831122	>03
19148	New	1	831129	≥02
19140	New	1	831122	13

1. No CaK Observations at BBSO on Nov. 1-10, 12, 13, 18, 21, 25.

2. No CaK Plots on Nov. 1-10, 13, 18, 21, 25.

3. No KPNO Magnetograms on Nov. 1-4, 18, 21, 25.

4. Contiguous Plages: 19135/19136.

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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."