

U.S. DEPARTMENT OF COMMERCE

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

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NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE

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APRIL 1989 NUMBER 536 - Part I

Solar-Geophysical Data prompt reports

Data for March, February 1989, and Late Data

International Standard Serial Number: 0038-0911

Library of Congress Catalog Number: 79-640375 //r81

NATIONAL GEOPHYSICAL DATA CENTER

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Boulder, Colorado

Subscription information is on the inside back cover.

S O L A R - G E O P H Y S I C A L D A T A

NUMBER 536

(Issued in Two Parts)

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ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages

MARCH 1989

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location		Flares			Date of Forecast	Location		Region Forecast ¹	Geoalerts
						°Lat	°Long	Total	M	X		°Lat	°Long		
01	01	28	154	167	010	N16 W86	1	0	0	01	N16 W86	E	Solquiet, Magquiet.		
						S09 W53	0	0	0		S09 W53	Q			
						S24 W16	0	0	0		S24 W16	Q			
						N12 W03	0	0	0		N12 W03	Q			
						N15 W65	10	1	0		N15 W65	E			
						S20 E05	3	0	0		S20 E05	E			
						N39 E08	0	0	0		N39 E08	Q			
						S16 W56	1	0	0		S16 W56	Q			
						N16 E08	1	0	0		N16 E08	Q			
02	02	01	187	170	013	S09 W69	0	0	0	02	S09 W69	Q	Solquiet, Magquiet.		
						S24 W28	0	0	0		S24 W28	Q			
						N12 W17	1	0	0		N12 W17	Q			
						N15 W78	6	1	0		N15 W78	E			
						S19 W08	0	0	0		S19 W08	Q			
						N40 W04	0	0	0		N40 W04	Q			
						N18 W04	2	0	0		N18 W04	Q			
						S19 W56	0	0	0		S19 W56	Q			
						N24 E43	1	0	0		N24 E43	Q			
						N21 E61	0	0	0		N21 E61	Q			
						S19 E47	0	0	0		S19 E47	Q			
03	03	02	174	177	021	S09 W78	0	0	0	03	S09 W78	Q	Solquiet, Magquiet.		
						N12 W30	1	0	0		N12 W30	E			
						N15 W91	5	1	0		N15 W91	E			
						S20 W21	0	0	0		S20 W21	E			
						N18 W18	6	1	0		N18 W18	E			
						N24 E30	4	0	0		N24 E30	E			
						S19 E33	0	0	0		S19 E33	Q			
						S23 E64	0	0	0		S23 E64	Q			
						N13 E40	0	0	0		N13 E40	Q			
04	04	03	155	173	026	N12 W44	2	0	0	04	N12 W44	Q	Solquiet, Magalert 04/04.		
						S21 W33	4	0	0		S21 W33	Q			
						N19 W32	0	0	0		N19 W32	E			
						N23 E17	3	0	0		N23 E17	E			
						N17 E29	0	0	0		N17 E29	Q			
						S19 E20	0	0	0		S19 E20	Q			
						S23 E49	0	0	0		S23 E49	Q			
						N13 E27	0	0	0		N13 E27	Q			
						S09 E75	0	0	0		S09 E75	Q			
05	05	04	125	166	010	N12 W58	0	0	0	05	N12 W58	Q	Solquiet, Magnil.		
						S21 W46	0	0	0		S21 W46	Q			
						N19 W45	0	0	0		N19 W45	E			
						N24 E04	1	0	0		N24 E04	E			
						S20 E08	0	0	0		S20 E08	Q			
						S22 E37	1	0	0		S22 E37	Q			
						N13 E12	0	0	0		N13 E12	Q			
						S09 E62	0	0	0		S09 E62	Q			
						S19 E46	0	0	0		S19 E46	Q			
06	06	05	116	185	023	N12 W71	0	0	0	06	N12 W71	Q	Solquiet, Magquiet.		
						S17 W62	2	0	0		S17 W62	E			
						N19 W58	1	0	0		N19 W58	E			
						N24 W09	1	0	0		N24 W09	E			
						S10 E50	0	0	0		S10 E50	Q			
						S18 E32	0	0	0		S18 E32	Q			
						N25 E55	0	0	0		N25 E55	Q			
						N13 E29	0	0	0		N13 E29	Q			

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geolert Messages MARCH 1989

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location		Flares			Date of Forecast	Location		Region Forecast ¹	Geoalerts
						°Lat	°Long	Total	M	X		°Lat	°Long		
12	12	11	203	246	014	N25 W21		0	0	0	12	N25 W21	Q	Major Flare Alert 12/XX N34 E09, Magalert 12/13 Flare.	
						S33 E12		0	0	0		S33 E12	E		
						N34 E09	21	7	2	N34 E09		P			
						N33 E21	0	0	0	N33 E21		Q			
						S16 E26	4	0	0	S16 E26		E			
						N14 E51	0	0	0	N14 E51		Q			
						S18 E02	0	0	0	S18 E02		Q			
						N33 W13	0	0	0	N33 W13		Q			
Presto: ²		Toyokawa	Tenflare 170 flux units began 11/0513 UT duration 40 minutes.												
		Boulder	Tenflare 220 flux units began 11/0901 UT duration 1 minute.												
			X-ray event X1/2B N28 E13 11/1533 UT duration 18 minutes.												
			X-ray event X1/2B N27 E10 11/1933 UT duration 45 minutes.												
13	13	12	197	249	016	N27 W34		0	0	0	13	N27 W34	Q	Major Flare Alert 13/XX N34 W04, Magalert Major 13 Flare.	
						S35 E02		0	0	0		S35 E02	E		
						N34 W04	16	4	0	N34 W04		P			
						N34 E10	2	0	0	N34 E10		Q			
						S16 E14	0	0	0	S16 E14		E			
						N14 E38	0	0	0	N14 E38		Q			
						S21 W10	0	0	0	S21 W10		Q			
						N32 W32	0	0	0	N32 W32		Q			
S13 E75	1	0	0	S13 E75	Q										
Presto: ²		Toyokawa	Tenflare 150 flux units began 12/0030 UT duration 12 minutes.												
		Boulder	Tenflare 300 flux units began 12/0804 UT duration 63 minutes.												
			Tenflare 550 flux units began 12/1456 UT duration 19 minutes.												
			Tenflare 440 flux units began 12/2036 UT duration 13 minutes.												
14	14	13	241	256	222	N26 W48		0	0	0	14	N26 W48	Q	Major Flare Alert 14/XX N34 W17, Magalert Major 14 Flare.	
						S35 W14		3	0	0		S35 W14	Q		
						N34 W17	18	5	1	N34 W17		P			
						N34 W03	1	0	0	N34 W03		E			
						S14 E01	1	0	0	S14 E01		E			
						N14 E25	0	0	0	N14 E25		Q			
						S20 W19	0	0	0	S29 W19		Q			
						S14 E64	4	0	0	S14 E64		Q			
N32 E62	0	0	0	N32 E62	E										
Presto: ²		Kakioka	Strong magstorm in progress 13/0128 UT.												
		Boulder	X-ray event X1/3N N28 W02 13/0257 UT duration 86 minutes.												
			Tenflare 380 flux units began 13/0258 UT duration 26 minutes.												
15	15	14	222	270	127	S35 W26		1	0	0	15	S35 W26	Q	Major Flare Alert 15/XX N34 W28, Magalert Minor 15/16.	
						N34 W28	14	3	1	N34 W28		P			
						N33 W14	5	0	0	N33 W14		Q			
						S17 W12	1	0	0	S17 W12		Q			
						N14 E11	0	0	0	N14 E11		Q			
						S14 E53	5	0	0	S14 E53		Q			
						N32 E51	1	0	0	N32 E51		Q			
						N16 W54	0	0	0	N16 W54		Q			
S18 E08	1	0	0	S18 E08	Q										
Presto: ²		Toyokawa	Tenflare 120 flux units began 13/2303 UT duration 2 minutes.												
			Tenflare 130 flux units began 14/0247 UT duration 30 minutes.												
		Boulder	Strong magstorm in progress 14/0300 UT.												
			X-ray event X1/2B N33 W21 14/1650 UT duration 86 minutes.												
			Tenflare 640 flux units began 14/1651 UT duration 13 minutes.												
			Tenflare 730 flux units began 14/1715 UT duration 21 minutes.												

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

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MAR 89

Summary of the Geolert Messages

MARCH 1989

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location			Flares			Date of Forecast	Location			Region Forecast ¹	Geoalerts
						°Lat	°Long		Total	M	X		°Lat	°Long			
16	16	15	262	252	038	N34	W42		10	4	0	16	N34	W42	P	Major Flare Alert	
						N33	W28		2	0	0		N33	W28	Q	16/20 N34 W42,	
						S17	W26		1	0	0		S17	W26	Q	Magalert 16/16.	
						N13	W05		0	0	0		N13	W05	Q		
						S18	W40		0	0	0		S18	W40	Q		
						S14	E38		6	0	0		S14	E38	Q		
						N32	E36		1	0	0		N32	E36	Q		
						S17	W06		0	0	0		S17	W06	Q		
						N18	E03		0	0	0		N18	E03	Q		
						S15	W15		0	0	0		S15	W15	Q		
						N21	E74		1	0	0		N21	E74	Q		
						Presto: ² Toyokawa Tenflare 1000 flux units began 15/0642 UT duration in progress.											
						Boulder Strong magstorm in progress 15/1500 UT.											
						Tenflare 2400 flux units began 15/1651 UT duration 20 minutes.											
17	17	16	253	///	034	N33	W54		9	3	2	17	N33	W54	P	Major Flare Alert	
						N34	W42		0	0	0		N34	W42	Q	17/20 N33 W54,	
						S17	W40		2	0	0		S17	W40	Q	Magalert 17/XX.	
						S14	E23		1	0	0		S14	E23	Q		
						N32	E25		0	0	0		N32	E25	Q		
						S17	W20		0	0	0		S17	W20	Q		
						N18	W07		3	1	0		N18	W07	Q		
						S16	W25		0	0	0		S16	W25	Q		
						N18	E60		0	0	0		N18	E60	Q		
						S16	E52		0	0	0		S16	E52	Q		
						N15	E73		0	0	0		N15	E73	Q		
						Presto: ² Boulder Tenflare 430 flux units began 16/0155 UT duration 22 minutes.											
						X-ray event X3/2B N36 W47 16/1522 UT duration 115 minutes.											
						Tenflare 9300 flux units began 16/1523 UT duration 31 minutes.											
						X-ray event X1/1B N29 W60 16/2037 UT duration 85 minutes.											
						Sydney Culgoora Type II, importance 2, began 16/2214 UT duration 5 minutes.											
						Kakioka Magstorm in progress 16/0534 UT.											
18	18	17	253	242	029	N34	W69		14	5	1	18	N34	W69	P	Major Flare Alert	
						N33	W56		1	0	0		N33	W56	E	18/20,	
						S16	W57		1	0	0		S16	W57	E	Magalert 18/20 Flare.	
						N13	W27		0	0	0		N13	W27	Q		
						S14	E10		4	0	0		S14	E10	E		
						N32	E12		0	0	0		N32	E12	Q		
						S17	W35		0	0	0		S17	W35	Q		
						N17	W21		1	0	0		N17	W21	E		
						N18	E46		0	0	0		N18	E46	E		
						S16	E40		0	0	0		S16	E40	Q		
						N13	E60		0	0	0		N13	E60	E		
						S12	E61		0	0	0		S12	E61	Q		
						Presto: ² Toyokawa Tenflare 220 flux units began 17/0245 UT duration 2 minutes.											
						Tenflare 110 flux units began 17/0331 UT duration 4 minutes.											
						Boulder Tenflare 630 flux units began 17/0715 UT duration 10 minutes.											
						X-ray event X6/2B N33 W60 17/1720 UT duration 96 minutes.											
						Tenflare 3100 flux units began 17/1734 UT duration 18 minutes.											
						Proton event of 370 particles/cm ² -s-ster at greater than 10 MeV in progress 17/1855 UT.											
						Sydney Culgoora Type II, importance 2, began 17/2210 UT.											
						Toyokawa Tenflare 140 flux unites began 17/2310 UT duration 8 minutes.											

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages MARCH 1989

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location		Flares			Date of Forecast	Location		Region Forecast ¹	Geoalerts	
						°Lat	°Long	Total	M	X		°Lat	°Long			
19	19	18	242	237	013	N34	W78	3	2	0	19	N34	W78	P	Major Flare Alert 19/20 N34 W78, Magalert 19/20.	
						N33	W69	0	0	0		N33	W69	E		
						S15	W71	0	0	0		S15	W71	E		
						N15	W42	0	0	0		N14	W42	Q		
						S13	W03	8	0	0		S13	W03	E		
						N33	E01	0	0	0		N33	E01	Q		
						S17	W48	0	0	0		S17	W48	Q		
						N18	W33	0	0	0		N18	W33	Q		
						N18	E34	1	0	0		N18	E34	E		
						S20	E35	0	0	0		S20	E35	Q		
						N13	E48	0	0	0		N13	E48	Q		
						S11	E49	0	0	0		S11	E49	Q		
						N23	W28	0	0	0		N23	W28	Q		
						Presto: ² Boulder Tenflare 380 flux units began 18/2029 UT duration 5 minutes.										
20	20	19	230	230	033	N34	W87	2	1	0	20	N34	W87	P	Solalert 20/XX, Magalert 20/XX.	
						N33	W82	0	0	0		N33	W82	Q		
						S15	W85	0	0	0		S15	W85	Q		
						S13	W15	2	0	0		S13	W15	E		
						N32	W14	0	0	0		N32	W14	Q		
						S17	W63	0	0	0		S17	W63	Q		
						N17	W46	1	0	0		N17	W46	E		
						N18	E21	2	2	0		N18	E21	E		
						N14	E35	0	0	0		N14	E35	Q		
						N24	W40	0	0	0		N24	W40	Q		
						S18	W02	0	0	0		S18	W02	Q		
						S18	E09	0	0	0		S18	E09	Q		
						N20	E18	0	0	0		N20	E18	Q		
						Presto: ² Boulder Tenflare 230 flux units began 19/1843 UT duration 23 minutes. Toyokawa Tenflare 120 flux units began 19/2329 duration 20 minutes.										
21	21	20	211	210	011	S13	W30	2	0	0	21	S13	W30	E	Solalert 21/XX, Magalert 21/XX.	
						N32	W26	0	0	0		N32	W26	Q		
						S17	W77	1	0	0		S17	W77	Q		
						N18	W60	1	0	0		N18	W60	Q		
						N18	E08	5	0	0		N18	E08	E		
						N13	E22	0	0	0		N13	E22	Q		
						N25	W56	1	0	0		N25	W56	Q		
						S18	W15	1	0	0		S18	W15	E		
						S19	W03	1	0	0		S19	W03	Q		
						S26	E74	5	4	0		S26	E74	A		
						S13	W05	3	0	0		S13	W05	E		
						Presto: ² Toyokawa Tenflare 110 flux units began 20/0400 UT duration 10 minutes. Boulder Tenflare 290 flux units began 20/1349 UT duration 7 minutes. Sydney Culgoora Soflare 2N S24 E70 20/2100 UT in progress, Culgoora Type II began 20/2044 UT in progress.										
22	22	21	191	220	018	S14	W44	2	0	0	22	S14	W44	E		Solalert 22/XX, Magnil.
						S16	W91	0	0	0		S16	W91	Q		
						N19	W74	1	0	0		N19	W74	Q		
						N18	W06	10	1	0		N18	W06	A		
						N14	E09	1	0	0		N14	E09	Q		
						N25	W70	2	0	0		N25	W70	E		
						S18	W28	3	0	0		S18	W28	Q		
						S20	W17	0	0	0		S20	W17	Q		
						S25	E63	6	0	0		S25	E63	A		
						N15	E78	0	0	0		N15	E78	Q		
						Presto: ² Toyokawa Tenflare 110 flux units began 21/0632 UT duration 4 minutes.										

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geolert Messages MARCH 1989

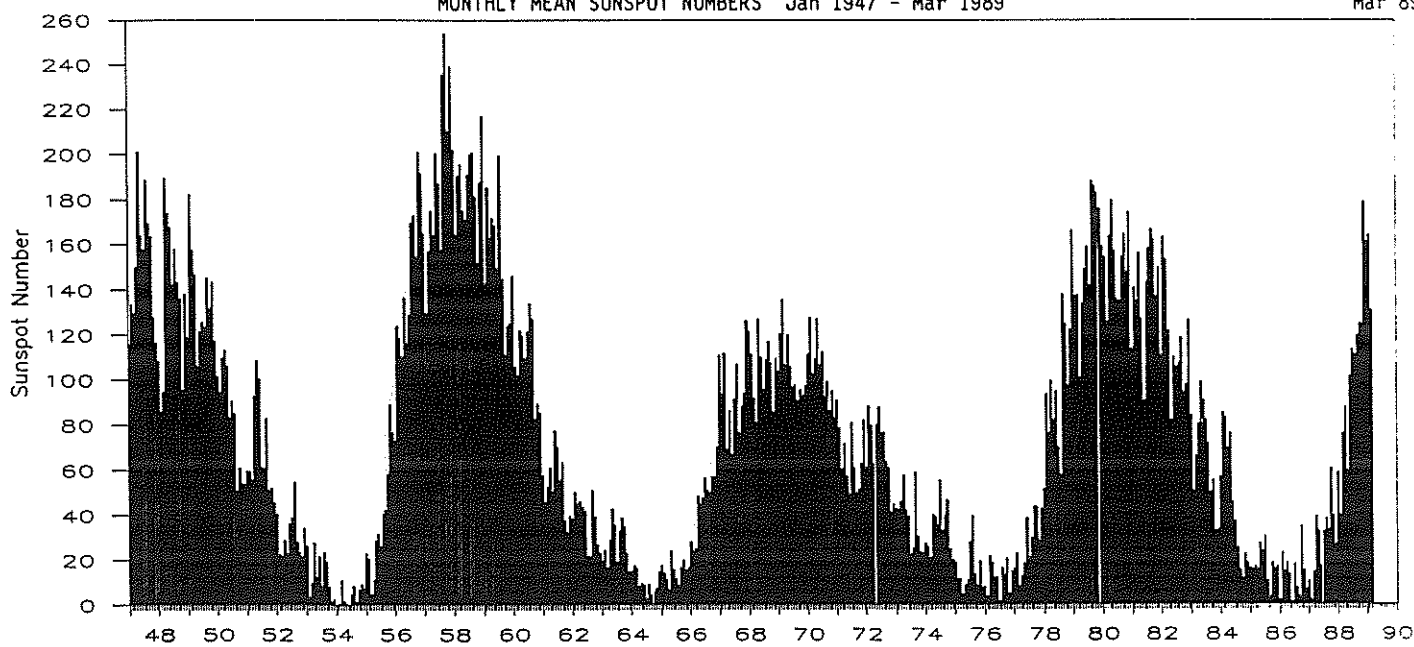
Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location		Flares			Date of Forecast	Location		Region Forecast ¹	Geoalerts
						°Lat	°Long	Total	M	X		°Lat	°Long		
28	28	27	140	164	040	N17	W85	8	0	0	28	N17	W85	E	Solquiet, Magalert 28/28 Flare.
						N11	W75	0	0	0		N11	W75	Q	
						S26	W13	9	1	0		S26	W13	E	
						N14	W03	0	0	0		N14	W03	Q	
						S18	E01	1	0	0		S18	E01	Q	
						N20	E23	0	0	0		N20	E23	Q	
						S29	W29	0	0	0		S29	W29	Q	
						N15	E52	0	0	0		N15	E52	Q	
						Presto: ² Kakioka Magstorm in progress 26/2250 UT.									
29	29	28	121	158	030	N12	W88	0	0	0	29	N12	W88	Q	Solquiet, Magalert 29/29.
						S26	W27	7	0	0		S26	W27	E	
						N14	W17	0	0	0		N14	W17	Q	
						S18	W13	2	0	0		S18	W13	Q	
						N20	E10	0	0	0		N20	E10	Q	
						S10	W59	1	0	0		S10	W59	Q	
						N16	E38	0	0	0		N16	E38	Q	
						N21	E64	0	0	0		N21	E64	Q	
						Presto: ² Boulder Strong magstorm in progress 28/1200 UT.									
30	30	29	129	158	041	S25	W38	3	0	0	30	S25	W38	E	Solquiet, Magalert 30/30.
						N14	W30	0	0	0		N14	W30	Q	
						S18	W26	0	0	0		S18	W26	Q	
						N20	W03	0	0	0		N20	W03	Q	
						S09	W72	0	0	0		S09	W72	Q	
						N15	E25	0	0	0		N15	E25	Q	
						N20	E51	0	0	0		N20	E51	Q	
						S18	E76	3	0	0		S18	E76	E	
						N17	W64	0	0	0		N17	W64	Q	
31	31	01	082	160	030	S25	W51	0	0	0	31	S25	W51	E	Solquiet, Magalert 31/XX.
						N14	W45	0	0	0		N14	W45	Q	
						N20	W15	0	0	0		N20	W15	Q	
						N18	E40	0	0	0		N18	E40	Q	
						S19	E67	10	0	0		S19	E67	E	
01	01	31	127	170	033	S26	W64	0	0	0	01	S26	W64	Q	Solquiet, Magalert 01/XX.
						N13	W55	0	0	0		N13	W55	Q	
						N22	W28	0	0	0		N22	W28	Q	
						N18	E24	3	0	0		N18	E24	Q	
						S19	E54	9	0	0		S19	E54	E	
						S28	E11	0	0	0		S28	E11	Q	
						N37	E56	0	0	0		N37	E56	Q	
						S27	E60	0	0	0		S27	E60	Q	

¹Q = quiet, E = eruptive, A = active, P = proton.
²Presto message is a rapid report of a major event.

STRATWARM ALERTS

- 01 March Stratwarm exists. Major warming continues, but further weakening. Temperature gradient continuously reversed between 60° North and the pole in the lower and middle stratosphere. Cooling continues in the upper stratosphere. Circulation reversal exists in the middle stratosphere.
- 02 March Stratwarm exists. Major warming continuously weakening. Temperature gradient still reversed between 60° North and the pole upwards from about 50 HPA to about 5 HPA. Circulation no longer reversed since today.
- 03 March Stratwarm exists. Major warming fades away. Temperature gradient over high latitudes still reversed in the middle stratosphere, but polar vortex re-established at all levels.

MONTHLY MEAN SUNSPOT NUMBERS Jan 1947 - Mar 1989



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
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	151.6 M
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	136.3
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	134.7
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	83.9
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	69.4
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	31.5
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	13.9
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	4.4 m
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	38.0
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	141.7
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	190.2 M
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	184.8
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	159.0
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	112.3
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	53.9
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	37.6
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	27.9
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	10.2 m
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	15.1
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	47.0
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	93.8
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	105.9 M
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	105.5
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	104.5
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	66.6
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	68.9
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	38.0
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	34.5
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	15.5
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	12.6 m
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	27.5
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	92.5
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	155.4 M
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	154.6
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	140.4
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	115.9
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	66.6
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	45.9
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	17.9
1986	2.5	23.2	15.1	18.5	13.7	1.1	18.1	7.4	3.8	35.4	15.2	6.8	13.4 m
1987	10.4	2.4	14.7	39.6	33.0	17.4	33.0	38.7	33.9	60.6	39.9	27.1	29.4
1988	59.0	40.0	76.2	88.0	60.1	101.8	113.8	111.6	120.1	125.1	125.1	179.2	100.2
1989	161.6*	164.5*	131.0*										152.4*

*Preliminary

For the yearly means, each "M" marks a sunspot cycle maximum and each "m" a minimum.

INTERNATIONAL RELATIVE SUNSPOT NUMBERS

Day	Apr 88	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan [†] 89	Feb [†]	Mar [†]
01	110	69	95	139	142	137	109	126	128	148	141	127
02	96	84	96	145	143	144	117	114	114	173	144	107
03	94	76	100	142	146	129	129	121	139	146	164	103
04	74	101	105	129	135	148	128	104	122	120	133	98
05	66	103	125	119	120	128	130	129	149	155	127	90
06	62	77	145	108	123	93	123	124	149	142	127	103
07	84	50	141	103	144	97	128	114	144	157	132	98
08	92	63	151	106	160	88	131	95	111	135	161	109
09	115	74	173	82	171	74	125	110	122	165	172	133
10	107	87	144	78	152	76	146	131	133	190	192	163
11	115	65	108	102	135	81	148	155	152	200	190	155
12	118	56	77	109	133	88	169	159	175	229	216	140
13	120	44	47	103	122	91	150	147	187	233	210	154
14	138	37	53	121	128	94	131	139	213	201	208	181
15	145	44	65	121	121	89	109	156	225	177	185	165
16	157	53	81	111	91	89	108	181	226	164	195	187
17	144	57	76	124	67	79	125	196	232	155	201	177
18	137	44	67	136	47	97	134	175	222	160	163	164
19	108	20	70	105	57	113	133	147	223	140	157	148
20	88	20	77	106	57	153	119	112	218	126	169	158
21	79	25	95	103	40	168	117	145	210	114	149	155
22	72	30	92	106	21	168	109	131	255	165	142	155
23	43	40	91	116	26	190	104	117	235	159	134	145
24	30	48	93	81	43	172	121	116	199	142	153	150
25	40	54	111	76	76	149	124	89	183	144	189	131
26	44	63	107	76	93	151	119	73	174	152	176	117
27	36	66	111	101	142	157	120	69	175	167	147	102
28	41	70	116	117	146	143	119	86	196	172	128	89
29	39	74	121	157	164	111	128	86	194	169		95
30	47	83	121	161	163	106	115	107	178	157		70
31		86		146	151		111		172	154		91
Mean	88.0	60.1	101.8	113.8	111.6	120.1	125.1	125.1	179.2	161.6	164.5	131.0

[†] = preliminary. The yearly mean sunspot number equals 100.2 for 1988.

Algonquin Radio Observatory OTTAWA 2800 MHz (10.7 cm) SOLAR FLUX Adjusted to 1 AU

Day	Apr 88	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 89	Feb	Mar
01	127.2	108.8	149.3*	194.4*	180.9	191.3	179.4	157.2*	150.5	179.5*	184.8	168.8*
02	126.5	113.1*	147.6	198.9	187.6	178.9	197.0	156.5*	149.4	193.7	171.2	173.7
03	127.6	116.4*	149.5	190.2	172.2*	177.3	200.4	164.0	147.3	189.2	185.8*	169.0
04	122.6	127.4	150.9	181.0	163.6	165.9	189.2	159.7	142.7	195.7*	183.4	163.6
05	114.6	121.1	151.2	171.2	159.2	166.3	191.0	163.8	154.6*	201.6	195.1	183.5
06	116.8	116.5	159.0	156.7	163.4	152.4	193.4	161.2	157.7	198.7	205.3*	201.1J
07	120.0	112.9	164.6	152.4	170.4	145.4	182.4	151.6	152.9*	239.5	210.5	190.3*
08	121.8*	116.7	168.3	142.4	186.9	138.9	172.6	143.5	164.1	260.2	243.9	202.6
09	121.8*	121.9	165.9*	137.7	182.4	128.0	176.5	152.4	165.2	251.3	259.3	204.2*
10	127.2	116.4	149.8	138.3	181.8	117.6	177.8	147.7	161.2*	250.0	269.8	212.4*
11	128.0*	114.6	137.8	137.7*	178.2	121.9	168.2	153.8	176.4	254.7*	257.0	232.4*
12	130.6*	111.6	125.9	137.9	161.2	127.0	148.4	150.6*	173.9	263.2	257.3	237.6*
13	134.6	105.9	115.0	141.3*	159.7	124.8	157.5	157.8*	181.1	291.7*	258.4	253.0
14	146.3	105.2	111.7	150.1	151.6	130.2	150.4	173.2*	204.4*	274.9	260.7	263.8J
15	143.5	103.4	113.5	150.7	144.0	126.1	149.1	161.1*	212.0	280.1	241.3	255.8J
16	147.6	103.3	121.7	153.3*	137.8	128.5	152.3	186.1*	232.1	292.1	241.1	261.6J
17	145.5	103.7	124.8	152.8*	145.6	135.3	175.0	175.6	241.7	266.7*	233.9*	240.7
18	145.3	106.7	125.7	152.3	128.5	139.5	162.3	161.8	243.5	271.2	213.8	234.2
19	138.5	104.8	119.4	142.1	123.9	138.6	164.0	151.2	240.2	241.6	214.0	221.1
20	134.9	106.1	118.5	141.3	118.1	151.4	166.0	146.6	238.8	222.0*	202.2*	218.2*
21	127.6	112.6	122.8*	145.8	116.1	157.8	165.9	152.9	245.2	198.2*	217.8	213.5*
22	120.1	114.0	124.4*	141.2	114.9	178.6	166.2	153.1	246.6	203.6	213.9	222.5
23	111.5	122.2	129.3	144.6	121.7A	177.8*	171.1	135.7	234.8	205.6	214.7*	216.1*
24	105.6	119.8	135.7*	138.6	133.7	178.6	168.4	138.0	221.6	211.0	213.4	193.2*
25	106.7	123.8*	153.7	140.9	144.3	177.4	162.1	137.5	210.5	227.3	203.8*	186.2*
26	103.8	127.8	157.6*	149.7	157.1	172.0	155.4	137.4	193.0	206.3	190.3*	171.6*
27	101.9	130.0	160.5	161.5	166.8	179.6*	161.8	140.9	201.9	211.1	168.6*	162.6
28	101.6	130.1	183.2	175.4	174.0	171.0	156.0	138.8	201.6	207.1	163.5	157.3
29	102.1	140.2	189.5	185.9	189.0	172.0	155.9	137.6	196.7	200.5		155.8
30	104.8	142.8	187.4*	188.3	190.0	173.1	154.2*	135.8	179.5	187.3		159.8
31		153.6*		192.5	194.5		160.4		177.6	187.5		167.5
Mean	123.6	117.9	143.8	157.6	158.0	154.1	168.7	152.8	193.5	227.8	217.0	203.0

* = corrected for burst in progress; A = interpolation - interference during calibration; J = no calibration due to burst. The yearly mean flux equaled 141.1 in 1988.

DAILY SOLAR INDICES

March 1989

Day	Julian Day	Bartels Cycle Day	Sunspot Numbers		Obs Flux Ottawa (2800)	Solar Flux Adjusted to 1 Astronomical Unit								
			Int	Amer		SGMR (15400)	SGMR (8800)	SGMR (4995)	Ottawa (2800)	SGMR (2695)	SGMR (1415)	SGMR (610)	SGMR (410)	SGMR (245)
01	60	18	127	135	171.9*	544	295	206	168.8*	152	128	67	35	15
02	61	19	107	125	176.8	537	298	209	173.7	156	132	72	39	27
03	62	20	103	113	171.9	537	289	200	169.0	152	133	76	42	29
04	63	21	98	99	166.3	531	291	198	163.6	149	133	77	43	25
05	64	22	90	92	186.5	539	337	235	183.5	167	140	76	50	28
06	65	23	103	112	204.2J	582	---	---	201.1J	---	---	--	--	--
07	66	24	98	99	193.2*	558	360	249	190.3*	179	153	87	54	63
08	67	25	109	118	205.5	553	378	265	202.6	184	155	98	64	40
09	68	26	133	143	207.0*	603	433	312	204.2*	212	157	91	61	50
10	69	27	163	160	215.2*	583	438	323	212.4*	209	174	101	70	--
11	70	1	155	161	235.4*	---	458	328	232.4*	215	184	--	--	--
12	71	2	140	158	240.5*	579	436	313	237.6*	215	181	91	89	--
13	72	3	154	179	256.0	611	499	361	253.0	231	180	85	59	--
14	73	4	181	185	266.7J	740	392	331	263.8J	246	189	--	--	--
15	74	5	165	201	258.5J	588	476	395	255.8J	277	202	--	--	--
16	75	6	187	191	264.3J	616	459	373	261.6J	286	226	119	96	91
17	76	7	177	193	243.0	587	377	292	240.7	219	183	96	48	36
18	77	8	164	183	236.3	552	364	278	234.2	212	176	95	46	24
19	78	9	148	162	222.9	556	344	265	221.1	205	196	91	45	20
20	79	10	158	164	219.9*	563	334	259	218.2*	198	168	82	42	21
21	80	11	155	150	215.0*	544	345	279	213.5*	211	175	87	51	45
22	81	12	155	152	224.0	540	329	267	222.5	200	164	82	53	69
23	82	13	145	171	217.4*	539	312	252	216.1*	196	160	76	84	--
24	83	14	150	146	194.3*	---	313	248	193.2*	194	155	--	--	--
25	84	15	131	136	187.1*	491	289	219	186.2*	175	139	68	42	35
26	85	16	117	127	172.4*	527	281	201	171.6*	154	126	74	35	19
27	86	17	102	107	163.2	529	282	201	162.6	147	125	67	34	22
28	87	18	89	94	157.8	517	279	187	157.3	139	122	66	35	18
29	88	19	95	96	156.2	520	286	192	155.8	142	124	73	38	24
30	89	20	70	79	160.1	481	279	---	159.8	150	123	70	47	53
31	90	21	91	102	167.8	506	302	210	167.5	152	130	77	54	73
Mean			131.0	139.8	205.1	557	364	264	203.0	191	158	82	52	38

The International numbers shown above are preliminary values; the American numbers are final.

The observed and the adjusted Ottawa fluxes tabulated here are the "Series C" daily values reported by the Algonquin Radio Observatory, Ottawa, Ontario, Canada. Numbers in parentheses in the column headings denote frequencies in MHz. Qualifiers after an entry have the following meaning:

- * = corrected for burst in progress
- J = no calibration due to burst

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

SMOOTHED (OBSERVED AND PREDICTED) SUNSPOT NUMBERS: CYCLES 21 AND 22

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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	77	70	66	66	68	68	67	64
1984	60	56	53	50	48	46	44	40	34	29	25	22
1985	20	20	19	18	18	18	17	17	17	17	17	15
1986	14	13	13	14	14	14	14	13	12*	13	15	16
1987	18	20	22	24	26	28	31	35	39	44	47	51
1988	58	65	71	78	84	94	104	114	121	129 (5)	136 (9)	141 (12)
1989	144 (13)	148 (13)	155 (13)	162 (14)	168 (17)	173 (22)	175 (28)	178 (32)	185 (36)	189 (39)	191 (41)	193 (42)
1990	194 (44)	194 (46)	192 (46)	187 (45)	181 (43)	176 (38)	174 (36)	173 (36)	165 (36)	156 (35)	148 (32)	144 (29)

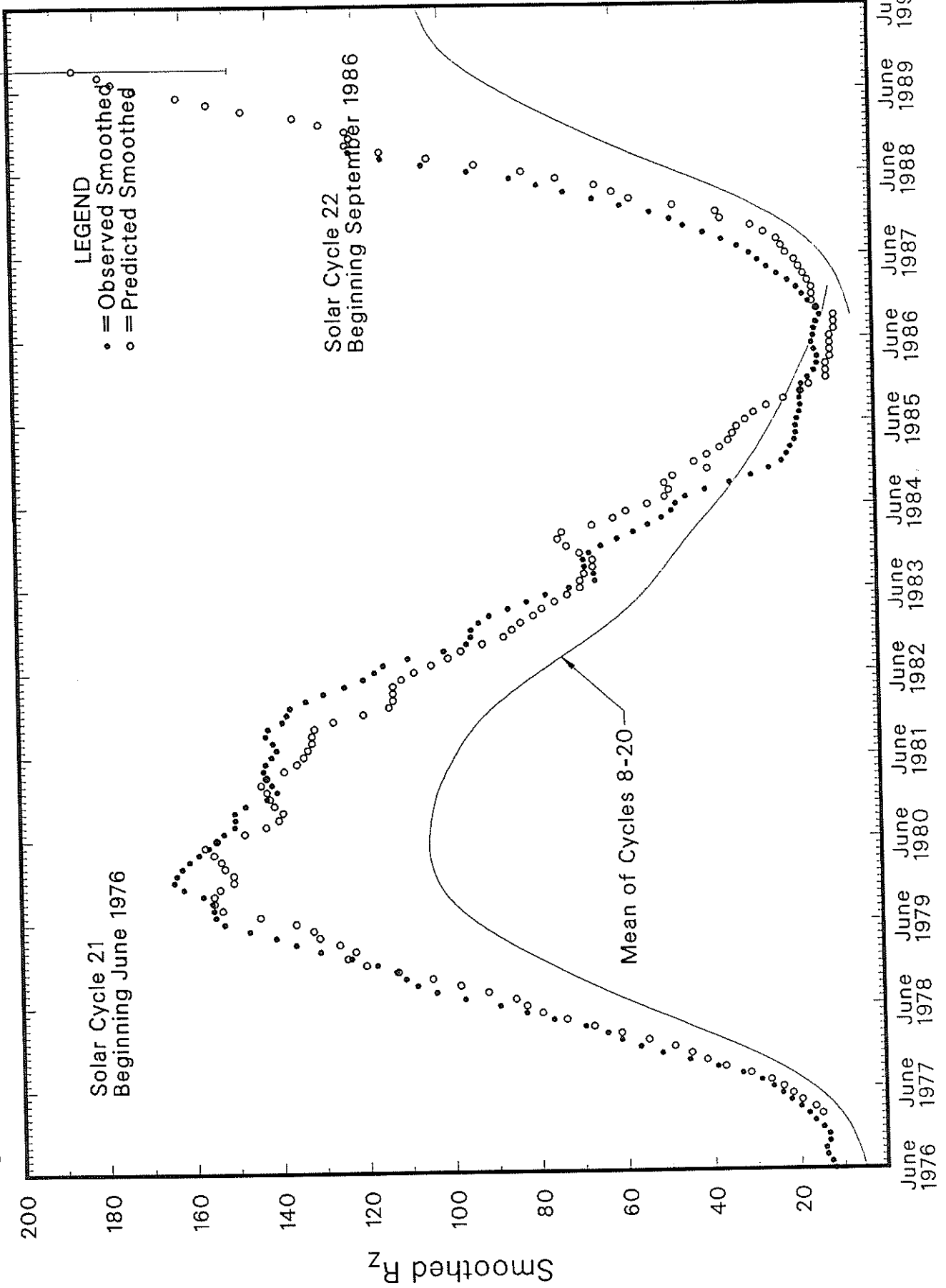
*September 1986 marks the onset of Sunspot Cycle 22.

For the end of Solar Cycle 21, and the beginning of 22, the table gives observed smoothed sunspot numbers up to the one calculated from the most recently available monthly mean. These smoothed observed values are based on final, monthly means through December 1988 and on provisional numbers thereafter.

Table entries, with numbers in parentheses below them, denote predictions by the McNish-Lincoln method. (See page 9 in the July 1987 supplement to *Solar-Geophysical Data*.) Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval; subtracting the number from the predicted value generates the lower limit. Consider, for example, the September 1989 prediction. There exists a 90% chance that in September 1989 the actual smoothed sunspot number will fall somewhere between 149 and 221.

THE MCNISH-LINCOLN PREDICTION METHOD GENERATES USEFUL ESTIMATES OF SMOOTHED, MONTHLY MEAN SUNSPOT NUMBERS FOR NO MORE THAN 12 MONTHS AHEAD. Beyond a year the predictions regress rapidly toward the mean of all 13 cycles used in the computation. Moreover, the method is very sensitive to the data defined as the beginning of the current sunspot cycle, that is, to the date of the most recent sunspot minimum. The new cycle predictions tabulated above are based on the minimum value of 12.3 that occurred in September 1986.

OBSERVED AND ONE-YEAR-AHEAD PREDICTED SUNSPOT NUMBERS



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Mar 89

H α SOLAR FLARES

MARCH 1989

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo Day	Dur (Min)	Imp Opt Xray	Obs See	Type	Area Measurement			Remarks
													Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
LEAR	01	0005	0006	0010	N16	W67	5378	02 24.0	5	SF		3	E		54	
LEAR		0111	0112	0120	N12	W70	5378	02 23.9	9	SF		3	E		37	
SVTO		0607	0614	0624	N12	W70	5378	02 24.1	17	SF C	5.2	2	E		13	
GOES		1012	1023	1038					26		M 1.0					
[	RAMY	1205	1218	1248	N12	W78	5378		43	SF M	2.3		E		17	K
	RAMY	1205	1236	1248	N12	W78	5378	02 23.7	43	SF M	2.3	3	E		10	H
	RAMY	1518	1522	1530	N17	E01	5383	03 1.7	12	SF		3	E		17	
[	HOLL	1651	1652	1807	N16	W01	5383	03 1.6	76	SF		3	E		71	F
	HOLL	1651	1734	1807	N16	W01	5383		76	SF			E		48	K
	HOLL	1741E	1745U	1841	N11	W09	5377	03 1.0	60D	SF C	3.8	3	E		66	F
	HOLL	1756	1802	1806	N13	W74	5378	02 24.3	10	SF		3	E		18	F
	HOLL	1935	1939	1947	N22	E44	5385	03 5.2	12	SF		3	E		28	
	HOLL	2114	2117	2128D	N12	W83	5378	02 23.7	14D	SF C	4.9	3	E		96	
	GOES	2224	2228	2232					8		C 3.7					
	HOLL	2352	2404	2414	N12	W88	5378	02 23.5	22	SN C	5.8	3	E		78	FE
LEAR	02	0211	0212	0219	N15	W81	5378	02 24.0	8	SF C	2.7	3	E		28	
LEAR		0312	0314	0320	N14	W73	5378	02 24.7	8	SF		3	E		32	
[	LEAR	0325	0336	0405	N15	W82	5378	02 24.0	40	SF		3	E		69	
	LEAR	0325	0349	0405	N15	W82	5378		40	SF			E		126	K
	GOES	0331	0348	0411					40		M 2.4					
	LEAR	0356	0358	0426	N11	W18	5377	02 28.8	30	SF		3	E		50	
	LEAR	0411	0413U	0523	N19	W79	5378	02 24.2	72	1N		3	E		125	
	GOES	0612	0619	0628					16		M 1.2					
[	SVTO	0900	0911	0935	N18	W07	5383	03 1.8	35	1N M	2.4	3	E		143	
	LEAR	0908	0910	0925	N19	W05	5383	03 2.0	17	SF M	2.4	3	E		85	
	SVTO	1059	1107U	1142	N15	W13	5383	03 1.5	43	SF		3	E		64	
	SVTO	1104	1120U	1140	N25	E36	5385	03 5.2	36	SF		3	E		42	
[	RAMY	1147	1148	1154	N14	W87	5378	02 24.0	7	SF M	1.7	3	E		63	
	SVTO	1147	1148	1155	N10	W89	5378	02 23.9	8	SF M	1.7	3	E		47	
	SVTO	1440	1440	1449	N10	W89	5378	02 24.0	9	SF		3	E		17	
[	RAMY	1559	1559	1604	N23	E35	5385	03 5.4	5	SF		3	E		20	
	HOLL	1559	1601	1607	N22	E33	5385	03 5.2	8	SF		3	E		26	
	RAMY	1650	1650	1655	N17	W12	5383	03 1.8	5	SF		3	E		15	F
	RAMY	1711	1712	1727	N38	W21	5380	03 1.0	16	SF		3	E		14	F
	RAMY	1807	1808	1813	N23	E33	5385	03 5.3	6	SF		3	E		12	
	GOES	1830	1847	1904					34		C 8.5					
	GOES	2153E	2157	2219D					26D		C 3.3					
LEAR	03	0011	0031	0041	N21	E31	5385	03 5.4	30	SF C	3.0	3	E		28	
LEAR		0211	0242	0256	N21	E28	5385	03 5.2	45	SF		3	E		17	
LEAR		0212	0213	0221	S19	W23	5379	03 1.3	9	SF		3	E		18	
LEAR		0540	0549	0600	N12	W32	5377	02 28.8	20	SF		4	E		14	F
[	LEAR	0607	0623	0644	S20	W25	5379	03 1.3	37	SF		4	E		76	UF
	SVTO	0617	0618	0633	S20	W24	5379	03 1.4	16	SF		2	E		23	
	GOES	0922	0929	1009					47		M 1.8					
	RAMY	1339	1342	1401	S19	W30	5379	03 1.3	22	SF		3	E		33	F
[	RAMY	1755	1802	1824	N12	W39	5377	02 28.8	29	SF C	2.1	3	E		54	F
	HOLL	1755	1803	1827	N12	W38	5377	02 28.9	32	SF C	2.1	3	E		77	F
	RAMY	1813	1817	1824	N22	E20	5385	03 5.3	11	SF		3	E		11	
	GOES	2135	2138	2140					5		C 2.1					
GOES	04	0154	0158	0200					6		C 1.3					
GOES		0455		0510					15		C 5.9					
LEAR		0525	0529	0539	N22	E13	5385	03 5.2	14	SF		3	E		34	F
GOES		0932	0939	0948					16		C 1.1					
GOES		1631	1636	1643					12		C 1.8					
GOES		2210	2216	2222					12		C 3.2					
GOES	05	0123E	0130	0202D					39D		C 3.3					
GOES		0159	0205	0213					14		C 3.2					
GOES		0215	0222	0234					19		M 1.0					
SVTO		0615E	0617U	0626	N25	E51	5392	03 9.2	11D	1N		2	E		115	
SVTO		0615E	0618U	0628	N28	E73	5395	03 11.0	13D	SF		2	E		80	
GOES		0754	0820	0830					36		C 2.2					
GOES		0834	0837	0840					6		C 3.7					
GOES		0910	0923	0939					29		C 7.7					
GOES		1036	1044	1052					16		C 6.9					

H α SOLAR FLARES

MARCH 1989

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo Day	Dur (Min)	Imp Opt Xray	Obs See Type	Area Measurement			Remarks
												Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
GOES	05	1418	1421	1425					7	C 2.5					
HOLL		1736	1739	1749	S33	E90		03 12.9	13	SF	3	E		37	
GOES		1828	1836	1842					14	C 4.0					
GOES		1911	1924	1931					20	C 7.5					
HOLL		1945	1954	2004	S33	E73		03 11.6	19	SF C 7.6	3	E		30	
HOLL		1950	1957	2025	N11	W65	5377	02 28.9	35	SF	3	E		27	
HOLL		2010	2021	2030	N18	W61	5383	03 1.2	20	SF	3	E		38	E
RAMY		2011	2017U	2040D	N18	W59	5383	03 1.3	290	SF	2	E		50	F
GOES		2045E	2048	2120D					350	C 5.8					
GOES		2101	2105	2107					6	C 5.4					
GOES		2112	2117	2129					17	C 7.3					
GOES		2132	2136	2148					16	M 1.5					
GOES		2312	2316	2319					7	C 4.8					
HOLL		2352	2356	2412	S20	W61	5379	03 1.3	20	SF C 5.2	3	E		22	
LEAR		2356	2358	2413	S21	W62	5379	03 1.2	17	SF C 5.2	3	E		24	
GOES	06	0017E	0020	0035D					180	C 5.1					
GOES		0034	0039	0043					9	C 7.1					
LEAR		0054	0100	0123	N29	E78	5395		29	2N M 3.0		E		95	K
LEAR		0054	0118	0123	N29	E78	5395	03 12.1	29	2N M 3.0	3	E		118	
GOES		0311	0323	0338					27	M 2.5					
LEAR		0346	0347	0352	N28	E77	5395	03 12.2	6	SF	3	E		24	
GOES		0430	0433	0435					5	C 4.6					
GOES		0558	0633	0658					60	C 9.7					
LEAR		0607	0611	0636	N28	E75	5395	03 12.1	29	SF	3	E		44	
LEAR		0611	0612	0621	N25	E52	5392	03 10.3	10	SF	3	E		35	
LEAR		0642	0642	0649	S21	W67	5379	03 1.1	7	SF	3	E		25	F
LEAR		0743	0745	0751	N25	E52	5392	03 10.3	8	SF	3	E		16	
LEAR		0754	0756	0800	N29	E75	5395	03 12.2	6	SF	3	E		50	
GOES		1134	1142	1146					12	C 8.2					
RAMY		1211E	1218	1308D	N29	E77	5395		57D	1N		E		40	K
RAMY		1211E	1235U	1308D	N29	E77	5395	03 12.5	57D	1N		E		61	H
SVTO		1228	1232	1240	N31	E74	5395	03 12.3	12	1B C 4.9	3	E		147	
SVTO		1354	1410	1624D	N35	E69	5395	03 12.1	150D	3B X15.0	3	E		473	YE
RAMY		1424E	1426U	1655D	N31	E78	5395	03 12.7	151D	3N		E		950	YF
HOLL		1809	1922	1938	N30	E67	5395	03 12.0	89	SF	3	E		39	
HOLL		2218	2226	2247	N32	E60	5395	03 11.7	29	SF	3	E		65	
HOLL		2255	2255	2313	N31	E66	5395	03 12.2	18	SF	3	E		21	
HOLL		2257	2257	2307	S34	E71	5394	03 12.6	10	SF	3	E		23	
HOLL		2350	2403	2432	N27	E61	5395	03 11.7	42	2B	3	E		290	F
LEAR		2353	2402	2430	N28	E70	5395	03 12.5	37	1F	4	E		187	
LEAR		2353	2410	2430	N28	E70	5395		37	1F		E		115	K
PALE	07	0002E	0004U	0005D	N31	E71	5395	03 12.6	3D	1N	2	E		100	F
LEAR		0519	0537	0655	N29	E69	5395		96	1F M 2.0	4	E		138	K
LEAR		0519	0558	0655	N29	E69	5395	03 12.6	96	1F M 2.0	4	E		149	U
LEAR		0556	0600	0618	N18	E57		03 11.6	22	SF	4	E		16	F
SVTO		0558E	0558U	0703	N31	E62	5395	03 12.1	65D	SF	2	E		84	F
SVTO		0720	0726	0809	N33	E67	5395	03 12.6	49	SF	3	E		40	
SVTO		0720	0759	0809	N33	E67	5395		49	SF		E		36	K
SVTO		0846	0914	1027	N33	E70	5395	03 12.9	101	1F	3	E		102	F
SVTO		0846	0949	1027	N33	E70	5395		101	1B		E		174	K
LEAR		0900	0913	0927	N31	E69	5395	03 12.8	27	SF	3	E		71	
GOES		1109	1114	1119					10	C 6.5					
RAMY		1135	1206	1234	N33	E64	5395	03 12.6	59	SF	3	E		39	FH
SVTO		1145	1203	1213	N30	E65	5395	03 12.6	28	SF	3	E		30	
SVTO		1218	1221	1246	N31	E63	5395	03 12.5	28	SF	3	E		52	F
RAMY		1236E	1241	1257	N30	E48	5395	03 11.3	21D	SF	3	E		52	
SVTO		1319	1327	1348	N31	E65	5395	03 12.7	29	1B M 4.1	3	E		194	F
SVTO		1319	1342	1348	N31	E65	5395		29	1B M 4.1		E		30	K
GOES		1340	1344	1409					29	M 2.4					
HOLL		1436	1453	1525	N30	E64	5395	03 12.6	49	1B X 1.8	3	E		227	FH
SVTO		1447	1454	1545	N32	E65	5395	03 12.8	58	2B X 1.8	3	E		275	FE
SVTO		1447	1517	1545	N32	E65	5395		58	2B		E		54	K
RAMY		1615	1652U	1701	N32	E74		03 13.5	46	1F	2	E		120	H
HOLL		1653	1654	1706	N31	E75		03 13.6	13	SF	3	E		23	
HOLL		1653	1703	1724	N29	E63	5395	03 12.6	31	1N M 3.8	3	E		175	FE
GOES		1809	1820	1825					16	C 8.9					

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Mar 89

H α SOLAR FLARES

MARCH 1989

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/USAF		CMP Mo	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
							Region	Day							Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
HOLL	07	1947	1947	1953	N29	E62	5395	03	12.7	6	SF		3	E		19		F
GOES		2003	2006	2010						7	C 2.5							
RAMY		2113	2115	2125	S19	W87	5379	03	1.2	12	SF C 3.6	3	E			19		
RAMY		2120E	2123U	2151D	N32	E71		03	13.5	31D	SF C 9.2	2	E			63		H
PALE		2223	2232	2235D	N30	E59	5395	03	12.6	12D	2B M 4.2	3	E			306		
GOES		2342	2349	2354						12	C 5.3							
PALE	08	0115	0120	0136	N30	E57	5395			21	1N C 5.7		E			337		K
PALE		0115	0127	0136	N30	E57	5395	03	12.5	21	1N C 5.7	2	E			103		F
LEAR		0117	0123	0134	N28	E59	5395	03	12.7	17	SN C 5.7	3	E			79		F
LEAR		0118	0119	0122	S17	W92	5379	03	1.1	4	SF		E			20		
LEAR		0146	0150	0154	N30	E61	5395	03	12.9	8	SF C 3.5	3	E			75		
LEAR		0202	0202	0205	N31	E56	5395	03	12.5	3	SF		E			22		H
PALE		0202	0203	0205	N32	E56	5395	03	12.5	3	SF		E			29		
LEAR		0212	0214	0222	N29	E61	5395	03	12.9	10	SF C 2.9	3	E			47		
PALE		0212	0215	0221	N30	E62	5395	03	13.0	9	SF C 2.9	2	E			90		F
PALE		0300	0302U	0307D	N32	E56	5395	03	12.5	7D	SF C 7.6	2	E			61		
LEAR		0303	0303	0309	N32	E61	5395	03	12.9	6	SF C 7.6	3	E			39		
LEAR		0453E	0453U	0500	N33	E72		03	13.9	7D	SF		E			37		
LEAR		0456	0504	0516	N28	E52	5395	03	12.3	20	SF C 7.6	4	E			11		
LEAR		0522	0522	0526	N29	E53	5395	03	12.4	4	SF		E			61		
LEAR		0628	0631	0636	N30	E57	5395	03	12.7	8	SF C 4.1	4	E			23		
LEAR		0651	0659	0707	N30	E58	5395	03	12.8	16	1F C 5.4	4	E			102		
SVTO		0654	0700	0708	N32	E57	5395	03	12.8	14	SF C 5.4	3	E			57		
GOES		0720	0725	0729						9	C 4.6							
SVTO		0757	0759	0804	N32	E54	5395	03	12.6	7	SN		E			47		
LEAR		0757	0801	0805	N28	E57	5395	03	12.8	8	SF		E			68		
LEAR		0826	0835	0924	N31	E52	5395			58	1N M 5.7		E			164		K
LEAR		0826	0857	0924	N31	E52	5395	03	12.4	58	1B M 5.7	3	E			216		F
RAMY		1158	1202	1215	N29	E48	5395	03	12.3	17	SF		E			45		F
RAMY		1303	1316	1711D	N29	E48	5395	03	12.3	248D	1N C 9.0	3	E			117		FET
GOES		1413E	1442	1649D						156D	M 1.2							
RAMY		1654E	1733	1757	S18	E69	5398	03	13.9	63D	SF		E			52		F
RAMY		1714E	1716U	1735	N30	E47	5395	03	12.4	21D	SF C 3.7	3	E			75		
HOLL		1727	1731	1753	S16	E70	5398	03	14.0	26	SF		E			20		F
PALE		1730	1732	1736	N31	E50	5395	03	12.7	6	SF		E			22		H
HOLL		1731	1732	1740	N31	E47	5395	03	12.4	9	SF		E			24		
PALE		1801	1804U	1804D	N30	E49	5395	03	12.6	3D	1F C 4.4	3	E			126		
GOES		1850	1857	1908						18	M 4.6							
PALE		2049	2053	2104	N31	E45	5395	03	12.4	15	SF		E			21		F
HOLL		2050	2112	2136	N25	E45	5395	03	12.3	46	SF		E			15		
HOLL		2052	2054	2103	N33	E63	5397	03	13.9	11	SF		E			22		
PALE		2108	2110	2130	S15	E70	5398			22	SF		E			66		K
PALE		2108	2116	2130	S15	E70	5398	03	14.2	22	SF		E			36		F
HOLL		2109	2118	2135	S17	E62	5398	03	13.6	26	SF		E			47		
HOLL		2139	2141	2146	S35	E51	5394	03	13.0	7	SF		E			17		
HOLL		2139	2148	2151	N30	E44	5395	03	12.4	12	SF		E			37		
PALE		2234	2236	2249	S15	E68	5398	03	14.1	15	SF C 4.1	3	E			60		
HOLL		2234	2236	2250	S16	E66	5398	03	13.9	16	SF C 4.1	3	E			44		
PALE		2248	2248	2256	N33	E45	5395	03	12.5	8	SF		E			44		
HOLL		2248	2250	2300	N32	E46	5395	03	12.6	12	SF		E			50		
LEAR	09	0152	0155	0204	N28	E46	5395	03	12.7	12	SF		E			25		
PALE		0155E	0157U	0211	N33	E45	5395	03	12.6	16D	SF		E			35		F
LEAR		0224	0224	0236	N31	E42	5395	03	12.4	12	SF		E			17		F
PALE		0228	0230	0300	N30	E48	5395			32	2N		E			80		K
PALE		0228	0242	0300	N30	E48	5395	03	12.9	32	2N M 1.8	3	E			455		FH
LEAR		0239	0243	0259	N30	E49	5395	03	13.0	20	2N M 1.8	4	E			286		FH
LEAR		0303	0313	0333	N28	E47	5395	03	12.8	30	1N C 5.8	3	E			132		
PALE		0303	0313U	0410D	N29	E47	5395	03	12.8	67D	1B C 5.8	3	E			102		F
PALE		0303	0404	0410D	N29	E47	5395			67D	1B		E			88		K
LEAR		0406	0407	0414	N31	E41	5395	03	12.4	8	SN C 7.1	3	E			90		
LEAR		0434	0434	0439	N31	E41	5395	03	12.4	5	SF		E			20		
LEAR		0449	0452	0515	N30	E41	5395	03	12.4	26	SF C 6.9	3	E			29		
LEAR		0453	0458	0615	S34	E41	5394	03	12.5	82	1N		E			132		F
GOES		0750	0753	0758						8	C 4.4							
GOES		0836E	0839	0842D						6D	C 4.4							
LEAR		0926	0936	0956	N32	E40	5395	03	12.5	30	SF		E			49		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/	CMP	Dur (Min)	Imp	Obs	Area Measurement			Remarks	
							USAF Region					Mo	Day	Opt Xray		See	Type	Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)
GOES	09	1003	1011	1024					21	M 7.6						
RAMY		1118E	1118	1142	N30	E39	5395	03	12.5	24D	SF	2	E	42		F
RAMY		1215	1216	1220	N28	E37	5395	03	12.4	5	SF	3	E	24		F
RAMY		1256	1307	1501D	N27	E40	5395	03	12.6	125D	1N M 2.4	3	E	133		FE
RAMY		1256	1501	1501D	N27	E40	5395			125D	1N		E	87		K
RAMY		1334E	1334U	1500D	S22	E54	5398	03	13.7	86D	2N	2	E	258		FE
HOLL		1342E	1347U	1503	S17	E61	5398	03	14.2	81D	2B	3	E	259		FH
HOLL		1400E	1414	1514	N32	E38	5395			74D	1B		E	61		K
HOLL		1400E	1457	1514	N32	E38	5395	03	12.6	74D	1B	3	E	108		F
HOLL		1434	1441	1458	N34	E58	5397	03	14.2	24	SF	3	E	39		
HOLL		1515	1518	1634	N30	E38	5395			79	4B X 4.0		E	73		K
HOLL		1515	1532	1634	N30	E38	5395	03	12.6	79	4B X 4.0	4	E			FH
HOLL		1639	1640	1649	N10	E04		03	10.0	10	SF	4	E	11		
HOLL		1652	1659	1735	N31	E37	5395	03	12.6	43	SF	4	E	45		F
HOLL		1652	1731	1735	N31	E37	5395			43	SF		E	10		K
HOLL		1744	1804	1901	N31	E41	5395			77	SF		E	50		K
HOLL		1744	1849	1901	N31	E41	5395	03	13.0	77	SF	4	E	27		F
RAMY		1756E	1758U	1814D	N29	E38	5395	03	12.7	18D	SF	2	E	13		F
RAMY		1756E	1759U	1813D	S37	E42	5394	03	13.1	17D	SF	2	E	14		F
HOLL		1758	1802	1818	S34	E42	5394	03	13.1	20	SF	4	E	27		
HOLL		1913	1925	1958	N34	E36	5395	03	12.7	45	1B M 1.2	4	E	128		FE
RAMY		1933E	1933U	1943D	N31	E37	5395	03	12.7	10D	SF	2	E	43		F
HOLL		2019	2019	2040	S35	E40	5394	03	13.0	21	SF	4	E	10		
HOLL		2025	2027	2031	N31	E34	5395	03	12.5	6	SF	4	E	14		F
HOLL		2121	2122	2128	N33	E33	5395	03	12.5	7	SF	3	E	20		
HOLL		2226	2229	2246	N32	E36	5395	03	12.8	20	SF	3	E	19		
HOLL		2255	2257	2310	N33	E47	5397	03	13.7	15	SF	3	E	14		
HOLL		2304	2305	2441	N31	E32	5395			97	1B M 1.3		E	38		K
HOLL		2304	2324	2441	N31	E32	5395	03	12.5	97	1B M 1.3	3	E	111		F
LEAR		2314	2324	2416	N30	E36	5395	03	12.8	62	SF M 1.3	3	E	79		F
GOES		2334	2354	2423						49	M 1.6					
LEAR	10	0107	0109	0117	N27	E32	5395	03	12.5	10	SF C 6.4	3	E	94		F
GOES		0201	0211	0220						19	C 3.2					
GOES		0300E	0304	0310D						10D	M 1.4					
LEAR		0345	0406	0428	N31	E30	5395	03	12.5	43	SF C 7.5	3	E	58		F
LEAR		0541	0541	0546	N30	E27	5395	03	12.4	5	SF	3	E	22		F
LEAR		0554	0604	0609	N31	E29	5395	03	12.5	15	SF	3	E	16		
LEAR		0610	0646	0656	N30	E33	5395	03	12.8	46	SF C 9.5	3	E	42		F
SVTO		0659	0811	1421D	N31	E30	5395			442D	2N		E	89		KT
SVTO		0659	1139	1421D	N31	E30	5395	03	12.6	442D	2N	3	E	284		FHT
LEAR		0703	0704	0717	N29	E27	5395	03	12.4	14	SF C 4.9	3	E	32		F
LEAR		0719	0722	0737	N30	E26	5395	03	12.3	18	SF	3	E	28		F
LEAR		0744	0818	0905	N29	E33	5395	03	12.9	81	1N	3	E	142		
LEAR		0744	0853	0905	N29	E33	5395			81	1N		E	40		K
SVTO		0812	0815	0827	N10	W06	5399	03	9.9	15	SF	3	E	19		
SVTO		0907	0907	0923	S34	E33	5394	03	13.0	16	SF	3	E	11		
LEAR		0915	0916	0940	N30	E24	5395	03	12.3	25	SF C 9.3	3	E	26		F
LEAR		0941	0943	0948	N31	E27	5395	03	12.5	7	SF	3	E	18		F
RAMY		1109E	1129	1225	N34	E29	5395			76D	2B M 4.5		E	234		K
RAMY		1109E	1139U	1225	N34	E29	5395	03	12.8	76D	2B M 4.5	2	E	312		FH
RAMY		1304	1310	1418	N28	E25	5395	03	12.5	74	SF C 6.2	3	E	42		FH
HOLL		1340E	1350U	1417	N31	E25	5395	03	12.5	37D	SF	3	E	36		
SVTO		1433	1438	1457	N31	E25	5395	03	12.6	24	SF	3	E	29		
RAMY		1439	1447	1456	N35	E28	5395	03	12.8	17	SF	3	E	12		FH
SVTO		1449	1449	1458	S34	E30	5394	03	13.0	9	SF	3	E	12		
RAMY		1449	1450	1508	S36	E29	5394	03	12.9	19	SF	3	E	25		F
RAMY		1501	1502	1518	N34	E28	5395	03	12.8	17	SF	3	E	21		FH
SVTO		1501	1507	1511	N31	E25	5395	03	12.6	10	SF	3	E	13		
RAMY		1524	1528U	1607D	N29	E28	5395	03	12.8	43D	SF M 1.1	2	E	57		FH
SVTO		1525	1527	1546	N32	E27	5395	03	12.8	21	SF M 1.1	3	E	32		
GOES		1548	1551	1556						8	C 5.9					
RAMY		1651E	1725U	1729D	N31	E23	5395	03	12.5	38D	SF	1	E	15		
HOLL		1723	1723	1727	N31	E22	5395	03	12.5	4	SF C 4.9	3	E	17		E
RAMY		1731E	1737U	1804D	N31	E23	5395	03	12.5	33D	1F	2	E	126		F
PALE		1732	1732	1802	N31	E23	5395	03	12.5	30	2F	3	E	294		E
HOLL		1732	1736	1759	N32	E24	5395	03	12.6	27	SN M 1.1	4	E	57		FE
PALE		1732	1740	1802	N31	E23	5395			30	2F		E	63		K

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP No	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
HOLL	10	1811	1821	1836	N10	W11	5399	03	9.9	25	SF		4	E		20		
HOLL		1837	1916	1919D	N33	E22	5395	03	12.5	42D	3B		4	E		989		
HOLL		1844	1851	2001	S17	E42	5398	03	14.0	77	SF C	5.0	4	E		46		
PALE		1848	1850	2158D	N31	E22	5395			190D	3N X	4.5		E		320		K
PALE		1848	1908	2158D	N31	E22	5395			190D	3B X	4.5		E		935		K
PALE		1848	1912U	2158D	N31	E22	5395	03	12.5	190D	3B X	4.5	3	E		803		UY
RAMY		1936E	1936U	2020D	S15	E42	5398	03	14.0	44D	SF		2	E		10		
HOLL		2208	2211	2229	S15	E41	5398	03	14.0	21	SF		4	E		11		
HOLL		2334	2334	2351	N32	E17	5395	03	12.3	17	SN		4	E		63		E
LEAR		2334	2335	2339	N27	E20	5395	03	12.5	5	SF		3	E		30		
HOLL	11	0036	0036	0046	N30	E24	5395	03	12.9	10	SF		3	E		18		E
LEAR		0154	0155U	0201D	N28	E17	5395	03	12.4	7D	SF M	1.6	2	E		44		
LEAR		0330	0333	0406	N27	E18	5395			36	1N M	2.0		E		222		K
LEAR		0330	0343	0406	N27	E18	5395	03	12.5	36	1N M	2.0	3	E		200		F
LEAR		0431	0435	0441	N29	E16	5395	03	12.4	10	SF		3	E		32		
LEAR		0503	0509	0513	N30	E20	5395	03	12.8	10	SF		3	E		20		
LEAR		0514	0531	0615	N31	E21	5395	03	12.9	61	1N M	2.3	3	E		140		FE
LEAR		0642	0642	0650	N30	E19	5395	03	12.8	8	SF M	1.2	3	E		22		F
SVTO		0642	0645U	0717	N31	E16	5395	03	12.5	35	SF M	1.2	2	E		30		F
SVTO		0746	0748	0758	S14	E35	5398	03	14.0	12	SF		3	E		10		F
SVTO		0758E	0805	0816	N25	W89	5385	03	4.4	18D	SF		2	E				
SVTO		0829	0902	0944	N29	E16	5395			75	2B M	9.7		E		654		K
SVTO		0829	0905	0944	N29	E16	5395	03	12.6	75	2B M	9.7	3	E		590		FH
SVTO		1010E	1011U	1023	N29	E14	5395	03	12.5	13D	SN C	8.3	3	E		58		FH
SVTO		1038	1054	1111	N33	E17	5395	03	12.8	33	SF		3	E		36		F
GOES		1158	1201	1203						5	C	4.0						
RAMY		1220	1228	1300	N32	E14	5395	03	12.6	40	SN C	9.9	3	E		56		FE
SVTO		1222	1223	1250	N32	E14	5395	03	12.6	28	SF C	9.9	3	E		45		FH
RAMY		1242	1304	1326	S18	E23	5398	03	13.3	44	SF		3	E		43		F
SVTO		1258E	1258U	1312	S15	E33	5398	03	14.0	14D	SF		3	E		16		
RAMY		1316	1316	1326	N30	E13	5395	03	12.6	10	SF		3	E		12		FH
RAMY		1339	1340	1345	N30	E17	5395	03	12.9	6	SF		3	E		20		FH
RAMY		1347	1347	1351	N28	E13	5395	03	12.6	4	SF		3	E		18		
RAMY		1358	1408	1429	N28	E13	5395	03	12.6	31	SF		3	E		41		F
RAMY		1358	1424	1429	N28	E13	5395			31	SF M	1.0		E		21		K
SVTO		1402	1405	1436D	N30	E11	5395	03	12.4	34D	SF M	1.0	3	E		33		FH
HOLL		1404	1407	1416	N28	E13	5395	03	12.6	12	SN M	1.0	3	E		23		FE
RAMY		1520E	1544U	1605	N27	E12	5395	03	12.6	45D	1B		2	E		233		FH
HOLL		1522	1522	1529	S15	E31	5398	03	14.0	7	SF		4	E		10		
SVTO		1535	1537	1552	N29	E11	5395			17	3N X	1.2		E		293		K
HOLL		1535	1538	1601	N28	E13	5395	03	12.7	26	2B X	1.2	4	E		468		H
SVTO		1535	1539	1552	N29	E11	5395	03	12.5	17	3N X	1.2	2	E		690		FH
GOES		1604	1607	1610						6	C	3.1						
RAMY		1633E	1643U	1706D	N27	E08	5395	03	12.3	33D	SF		2	E		27		
RAMY		1718E	1720U	1736D	N30	E10	5395	03	12.5	18D	SF		2	E		20		
HOLL		1727	1731	1734	N29	E12	5395	03	12.7	7	SF		4	E		16		
RAMY		1818E	1826	1856D	N30	E10	5395			38D	1N M	1.2		E		86		K
RAMY		1818E	1837U	1856D	N30	E10	5395	03	12.5	38D	1N M	1.2	2	E		122		F
HOLL		1827	1837	1856	N31	E10	5395	03	12.5	29	1N M	1.2	4	E		105		FE
PALE		1828	1935U	2014	N29	E06	5395	03	12.2	106	2B		3	E		260		E
HOLL		1902	1903	1909	N32	E12	5395	03	12.7	7	SF		4	E		22		F
HOLL		1911	1919	2034	S18	E25	5398	03	13.7	83	1N		4	E		125		FE
HOLL		1911	2005	2034	S18	E25	5398			83	1N			E		58		K
PALE		1913	1919	2013	S17	E22	5398	03	13.5	60	SN		3	E		67		F
HOLL		1933	1940	2016	N27	E10	5395	03	12.6	43	2B X	1.3	4	E		405		F
RAMY		1934E	2007U	2033D	S21	E28	5398	03	14.0	59D	SF		2	E		37		
RAMY		1935E	1938U	2033D	N27	E11	5395	03	12.7	58D	3B		2	E		615		F
GOES		2300	2303	2305						5	C	8.6						
LEAR	12	0016	0022	0043	N28	E09	5395			27	2B M	7.3		E		370		K
LEAR		0016	0029	0043	N28	E09	5395	03	12.7	27	2B M	7.3	3	E		394		
HOLL		0018	0026	0044D	N29	E09	5395	03	12.7	26D	2B M	7.3	3	E		263		F
GOES		0044	0047	0049						5	C	7.6						
LEAR		0523	0530	0544	N32	E01	5395	03	12.3	21	SF C	7.5	3	E		27		F
SVTO		0605	0609	0630	N32	E08	5395	03	12.9	25	SF		1	E		28		F
LEAR		0605	0618	0633	N29	E07	5395	03	12.8	28	SN C	8.5	3	E		58		
SVTO		0712E	0712U	0727D	N30	W04	5395	03	12.0	15D	SF		1	E		18		F

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MARCH 1989

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/		Dur (Min)	Imp	Obs	Area Measurement			Remarks
							USAF Region	CMP Mo Day				Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
LEAR	12	0736	0738	0753	N28	E05	5395	03	12.7	17	SF	3	E	42	
LEAR		0803	0804	0812	N29	E06	5395	03	12.8	9	SF	2	E	15	
GOES		0816	0828	0925						69	M 6.7				
LEAR		0824	0839	0914D	N29	E04	5395	03	12.7	50D	1N	3	E	157	FE
SVTO		1108E	1108U	1119	N34	E16	5397	03	13.7	11D	SF	2	E	15	
SVTO		1115	1118	1140	N28	W03	5395	03	12.2	25	SF	2	E	20	F
GOES		1223	1227	1232						9	C 4.5				
SVTO		1242	1248	1305	N28	W01	5395	03	12.4	23	SF	2	E	38	FH
SVTO		1456	1503	1536	N29	E00	5395	03	12.6	40	SB M 2.5	2	E	48	FH
SVTO		1456	1508	1536	N29	E00	5395			40	SB M 2.5		E	158	K
GOES		1538	1550	1555						17	C 4.7				
GOES		1603	1624	1629						26	M 1.8				
GOES		1632	1637	1640						8	C 5.4				
HOLL		1643	1655	1703	S11	E80		03	18.7	20	SF	3	E	38	
HOLL		1648	1652	1704	N28	W03	5395	03	12.5	16	SF	3	E	72	F
GOES		1816	1820	1822						6	C 3.6				
PALE		1857	1908	1934	N27	W06	5395	03	12.3	37	2B C 6.0	3	E	309	F
HOLL		1901	1903	1953	N27	W09	5395			52	1B C 6.0		E	237	K
HOLL		1901	1907	1953	N27	W09	5395	03	12.1	52	1B C 6.0	3	E	220	F
PALE		1949	1952	2001	N30	W02	5395	03	12.7	12	SF	3	E	35	
PALE		2018	2025	2028	N32	E13	5397	03	13.9	10	SF	3	E	16	
PALE		2028	2037	2037D	N32	W03	5395	03	12.6	9D	2N M 6.3	3	E	261	
PALE		2032	2039	2042	N32	E14	5397	03	14.0	10	SF	3	E	23	F
PALE		2206	2220U	2232D	N33	E01	5395	03	13.0	26D	SF	3	E	97	F
LEAR		2335	2337	2343	N28	W04	5395	03	12.7	8	1N M 1.4	3	E	155	F
LEAR	13	0024	0025	0050	N39	E01	5395	03	13.1	26	1F	3	E	120	
GOES		0229	0232	0242						13	C 4.3				
LEAR		0259	0301	0417	N28	W02	5395			78	3N		E	542	K
LEAR		0259	0320	0417	N28	W02	5395	03	13.0	78	3N	3	E	601	UE
LEAR		0448	0449	0452	N31	W04	5395	03	12.9	4	SF	3	E	14	F
LEAR		0533	0534	0536	N30	W11	5395	03	12.4	3	SF	3	E	17	
LEAR		0550	0552	0556	N28	W09	5395	03	12.5	6	SF	3	E	27	F
LEAR		0621	0630	0637	N33	W08	5395	03	12.6	16	SN	3	E	55	F
LEAR		0638	0642	0648	N33	W08	5395	03	12.6	10	SF	3	E	19	F
LEAR		0649	0655	0733	N28	W06	5395	03	12.8	44	SF	3	E	58	FS
SVTO		0712E	0712U	0727D	N30	W04	5395	03	13.0	15D	SF	1	E	18	F
LEAR		0836	0841	0850	N30	W06	5395	03	12.9	14	SF	3	E	16	
GOES		0933	0936	0938						5	C 5.2				
GOES		0942E	0947	0956D						14D	C 7.0				
RAMY		1145	1155U	1256	N30	W14	5395	03	12.4	71	SF	3	E	98	FH
SVTO		1239	1242	1248	S15	E72	5403	03	19.0	9	SF	2	E	87	
RAMY		1240	1241	1246	S14	E69	5403	03	18.7	6	SF	3	E	51	H
RAMY		1259	1309	1452	N32	W14	5395			113	1N M 1.7		E	101	K
RAMY		1259	1315	1452	N32	W14	5395	03	12.4	113	1N M 1.7	3	E	147	FE
SVTO		1300	1315	1431	N33	W15	5395			91	SF M 1.7		E	101	K
SVTO		1300	1344	1431	N33	W15	5395	03	12.3	91	SF	2	E	50	F
HOLL		1456	1511	1642	N32	W15	5395	03	12.4	106	SN	3	E	35	F
SVTO		1521E	1521U	1533	N31	W17	5395	03	12.3	12D	SF	2	E	70	FH
HOLL		1545	1548	1556	S33	W07	5394	03	13.1	11	SF	3	E	40	
RAMY		1546	1548	1555	S34	W06	5394	03	13.2	9	SF	3	E	38	
RAMY		1700	1737U	1955	N29	W11	5395	03	12.8	175	SN	2	E	88	FE
PALE		1731	1737	1854	N32	W16	5395	03	12.5	83	SN M 1.5	3	E	81	FE
PALE		1816	1819	1829	S16	E06	5398	03	14.2	13	SF	3	E	30	F
RAMY		1819E	1820U	1829	S17	E06	5398	03	14.2	10D	SF	2	E	18	F
HOLL		1825	1828	1938	N31	W12	5395	03	12.8	73	SN	3	E	63	E
PALE		1835	1836	1847	N31	E01	5397	03	13.8	12	SF	3	E	16	
RAMY		1841E	1841U	1944D	N32	W01	5397	03	13.7	63D	SF	1	E	52	F
RAMY		1941E	1941U	1952	S34	W11	5394	03	12.9	11D	SF	2	E	11	
HOLL		1946	1949	2003	S17	E73	5403	03	19.4	17	SF	3	E	22	
HOLL		1947	1948	1956	S16	E19		03	15.3	9	SF	3	E	25	
RAMY		1948	1948	1955	S18	E18		03	15.2	7	SF	3	E	12	
RAMY		1948	1949	1955	S20	E72	5403	03	19.3	7	SF	2	E	14	F
PALE		2046	2049	2109	S16	E72	5403	03	19.3	23	SF	3	E	35	F
PALE		2111	2114	2128	N29	W15	5395	03	12.7	17	SF	3	E	11	F
PALE		2211	2240	2323D	N31	W13	5395			72D	SN M 1.2		E	54	K
PALE		2211	2241	2323D	N31	W13	5395	03	12.9	72D	SN M 1.2	3	E	47	F
PALE		2212	2213	2241	S16	E65	5403	03	18.8	29	SF C 5.4	3	E	97	

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Sta	Day	Start (UT)	Max (UT)	End (UT)	NOAA/USAF		CMP Mo	Day	Dur (Min)	Imp			Obs Type	Time (UT)	Area Measurement		Remarks	
					Lat	Cmd				Region	Opt	Xray			See	Apparent (10-6 Disk)		Corr (Sq Deg)
GOES	14	0002	0006	0011					9	C	9.4							
LEAR		0041	0047	0111	N34	W13	5395	03	13.0	30	SF	C 9.5	3	E		32		
LEAR		0047	0048	0054	N32	W03	5397	03	13.8	7	SF			3	E		13	
LEAR		0219	0311	0345	N27	W22	5395	03	12.4	86	1F	M 2.0	3	E		52	F	
PALE		0252	0300	0349	N30	W14	5395	03	13.0	57	SN			3	E		34	F
GOES		0509E	0511	0521D					12D		C 3.7							
GOES		0526E	0528	0537D					11D		C 4.3							
LEAR		0618	0622	0711	N31	W21	5395	03	12.6	53	SF	C 9.3	3	E		48	F	
LEAR		0759	0802	0808	N30	W23	5395	03	12.5	9	SF			3	E		12	F
SVTO		0835	0857	0921	N30	W21	5395	03	12.7	46	SF	M 1.6	3	E		25		
LEAR		0836	0836	0903	N30	W19	5395	03	12.9	27	SF			3	E		32	F
LEAR		0905	0913	0918	N29	W24	5395	03	12.5	13	SF			3	E		12	F
SVTO		0924	0943	0948	N27	W29	5395	03	12.1	24	SF			3	E		11	FH
LEAR		0926	0930	0934	N29	W27	5395	03	12.3	8	SF			3	E		12	F
SVTO		0956	0959	1007	N30	W21	5395	03	12.8	11	SF	C 5.2	3	E		11	F	
RAMY		1259	1303	1335	N29	W20	5395	03	13.0	36	1N	C 6.6	3	E		112	F	
SVTO		1301	1301	1320	N29	W21	5395	03	12.9	19	SN			3	E		89	FH
RAMY		1350	1408U	1505	N28	E51	5404	03	18.6	75	SN			2	E		94	F
SVTO		1350	1413	1448	N30	E56	5404	03	19.0	58	1F			3	E		109	F
HOLL		1351	1404	1441	N28	E55	5404	03	18.9	50	SF			3	E		98	F
HOLL		1423	1429	1434	N30	W25	5395	03	12.6	11	SF			3	E		20	F
HOLL		1425	1425	1431	S33	W21	5394	03	12.9	6	SF			3	E		19	F
RAMY		1425	1425	1437	S33	W21	5394	03	12.9	12	SF			3	E		27	
SVTO		1425	1429	1444	S35	W22	5394	03	12.8	19	SF			3	E		26	F
RAMY		1425	1429	1510	N31	W23	5395	03	12.8	45	SF			3	E		26	
HOLL		1544	1606	1624	N32	W07	5397	03	14.1	40	SF			3	E		59	
SVTO		1545E	1545U	1553	N31	W24	5397	03	12.8	8D	SF			2	E		18	
RAMY		1545	1609	1632	N34	W09	5397	03	13.9	47	SF			3	E		67	
HOLL		1600	1601	1606	N28	W26	5395	03	12.6	6	SN			3	E		38	E
SVTO		1600E	1601U	1609	N27	W22	5395	03	12.9	9D	SF			2	E		20	
RAMY		1600	1602	1606	N28	W25	5395	03	12.7	6	SN			3	E		46	FE
HOLL		1646	1658	2148	N33	W21	5395			302	2B				E		148	KT
RAMY		1646	1701	1808	N32	W12	5397			82	SF				E		79	K
RAMY		1646	1712	1808	N32	W12	5397	03	13.7	82	SN			3	E		60	E
HOLL		1646	1726	2148	N33	W21	5395	03	13.0	302	2B	X 1.1	3	E		431	UF	
HOLL		1647	1708	1753	N32	W15	5397	03	13.5	66	SN			3	E		75	FE
RAMY		1649	1650	1701	S18	E57	5403	03	19.0	12	SF			2	E		11	
PALE		1707E	1707U	1753	N32	W13	5397	03	13.7	46D	SN			3	E		40	
PALE		1707E	1715U	1815	N31	W25	5395	03	12.7	68D	1B			3	E		159	UF
RAMY		1821	1825	1855	S12	E50	5403	03	18.5	34	SF			3	E		33	
RAMY		1822	1825	1842	N32	W24	5395	03	12.9	20	SF			2	E		16	F
PALE		1844	1846	1848	S19	E61	5403	03	19.4	4	SF			3	E		31	
RAMY		1926	1933	1940	N32	W08	5397	03	14.2	14	SF			3	E		23	F
RAMY		1928	1941	2149	N32	W27	5395			141	SB	M 1.4			E		84	K
RAMY		1928	2036	2149	N32	W27	5395	03	12.7	141	SN	M 1.4	3	E		99	FE	
PALE		1933	1935	1939	N33	W08	5397	03	14.2	6	SF			3	E		14	
PALE		1937	1942	2148D	N31	W24	5395			131D	SB	M 1.4			E		68	K
PALE		1937	2004	2148D	N31	W24	5395	03	12.9	131D	SN	M 1.4	3	E		78	FE	
RAMY		2008	2011	2021D	S19	E55	5403	03	19.0	13D	SF			3	E		27	
PALE		2012	2012	2016	S18	E55	5403	03	19.0	4	SF			3	E		26	
HOLL		2058	2058	2106	N20	E25		03	16.8	8	SF			3	E		10	
RAMY		2059E	2059U	2110D	N19	E21		03	16.5	11D	SF			2	E		12	F
HOLL		2109	2109	2200	S16	W10	5398	03	14.1	51	SF			3	E		15	
PALE		2109	2129	2142	S17	W08	5398	03	14.3	33	SF			3	E		59	
HOLL		2142	2146	2157	S19	E51	5403	03	18.8	15	SF			3	E		12	
PALE		2153	2153	2204	S19	E07		03	15.4	11	SF			3	E		23	
HOLL		2153	2155	2204	S20	E06		03	15.4	11	SF			3	E		12	
PALE		2221	2221	2227	N31	W26	5395	03	12.9	6	SF			3	E		24	
LEAR	15	0023	0024	0027	N28	W28	5395	03	12.8	4	SF			3	E		18	
LEAR		0302	0305	0321	N30	W37	5395	03	12.2	19	SF			3	E		28	
PALE		0332	0334	0336	S16	E52	5403	03	19.1	4	SF			3	E		46	
LEAR		0442	0445	0448	N32	W27	5395	03	13.0	6	SF			3	E		13	
LEAR		0457	0501	0520	N33	W25	5395	03	13.2	23	1F	C 5.8	3	E		127	F	
LEAR		0624	0630	0948	N34	W35	5395			204	1F	M 4.8			E		85	K
LEAR		0624	0650	0948	N34	W35	5395	03	12.5	204	1F	M 4.8	3	E		114	ZF	
LEAR		0757	0757	0811	S20	E46	5403	03	18.8	14	SF			3	E		63	
SVTO		0837E	0837U	1249D	N38	W32	5395	03	12.8	252D	1N		1	E		110	FT	

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
															Time (UT)	Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)	
RAMY	15	1227	1234	1239	N34	W37	5395	03	12.6	12	SF	M 1.4	3	E		17		
RAMY		1333	1337	1347	N31	W38	5395	03	12.6	14	SN	M 1.1	3	E		63		F
RAMY		1424	1425	1431	N31	E44	5404	03	19.1	7	SF	C 4.5	3	E		27		F
RAMY		1438	1438	1442	N15	E73		03	21.1	4	SF		3	E		30		H
HOLL		1643	1653	1839	N31	W40	5395	03	12.5	116	2B	M 8.4	3	E		379		F
RAMY		1650	1652	1755	N34	W38	5395	03	12.7	65	1B	M 8.4	3	E		204		F
PALE		1659E	1659U	1730	N33	W39	5395	03	12.6	31D	SF		3	E		99		F
RAMY		1714	1722	1804	S18	W26	5398	03	13.7	50	SF		3	E		70		
HOLL		1717	1722	2431	S19	W27	5398	03	13.6	434	SF		3	E		61		FT
HOLL		1717	1727	2431	S19	W27	5398			434	SF		3	E		106		KT
PALE		1726	1728	1732	S18	W26	5398	03	13.7	6	SF		3	E		37		
RAMY		1735	1737	1759	S13	E35	5403	03	18.4	24	SF		3	E		27		
HOLL		1736	1739	1747	S13	E34	5403	03	18.3	11	SF		3	E		15		F
RAMY		1925	1925	1932	S13	E35	5403	03	18.4	7	SF		3	E		12		
HOLL		1925	1926	1930	S13	E34	5403	03	18.4	5	SF		3	E		22		
PALE		1959	2001	2004	S16	E43	5403	03	19.1	5	SF	C 3.7	3	E		25		
PALE		2012	2022	2026	S15	E44	5403	03	19.2	14	SF		3	E		21		F
RAMY		2016E	2016U	2029D	S16	E43	5403	03	19.1	13D	SF		2	E		16		
HOLL		2121	2124	2127	N29	W47	5395	03	12.2	6	SF	C 8.0	2	E		23		
LEAR	16	0043	0047	0055	S17	W28	5398	03	13.9	12	SF		3	E		25		
LEAR		0140	0145	0155	S16	W29	5398	03	13.9	15	SF		3	E		30		F
LEAR		0154	0203	0315	N28	W48	5395	03	12.3	81	1F	M 3.1	3	E		139		F
LEAR		0253	0254	0258	S15	E40	5403	03	19.1	5	SF		3	E		18		F
SVTO		0558E	0558U	0605D	N33	W62	5395	03	11.3	7D	1F		2	E		141		
SVTO		0715	0721	0800	N32	W57	5395	03	11.8	45	2N		3	E		353		
GOES		0951	1006	1039						48		M 1.0						
RAMY		1111E	1111U	1145D	N32	W65	5395	03	11.3	34D	2B		1	E		412		
RAMY		1222E	1225U	1229D	N29	W55	5395	03	12.2	7D	SF	C 6.2	3	E		20		
RAMY		1440	1452	1504	N17	W02	5407	03	16.4	24	SF		2	E		52		
HOLL		1524	1525	1657	N27	W57	5395	03	12.2	93	2B		3	E		356		FH
RAMY		1524	1526	1645	N36	W47	5395	03	12.9	81	2B	X 3.6	3	E		394		FH
HOLL		1524	1553	1657	N27	W57	5395			93	2B		3	E		80		K
HOLL		1526	1526	1613	N18	W64	5405	03	11.8	47	SF		3	E		15		
RAMY		1528	1531	1541D	N16	W72	5405	03	11.2	13D	SF		2	E		23		
RAMY		1635	1638	1644	S12	E82		03	22.9	9	SF		2	E		17		
RAMY		1646E	1651U	1656	N24	W62	5395	03	11.9	10D	SF		2	E		16		F
RAMY		1724	1725	1739	N18	E00	5407	03	16.7	15	SF		4	E		16		F
RAMY		1732	1738	1917D	N31	W59	5395	03	12.1	105D	3B	M 2.4	3	E		657		YH
RAMY		1732	1803	1917D	N31	W59	5395			105D	3N		3	E		558		K
RAMY		1732	1850	1917D	N31	W59	5395			105D	3N		3	E		118		K
HOLL		1746	1754	1827	N29	W52	5395	03	12.7	41	1N		3	E		105		FE
PALE		1818	1819	1824	N31	W44	5395	03	13.3	6	SF		3	E		85		F
RAMY		1826	1915	2030	N31	W55	5395	03	12.4	124	1N	M 6.5	3	E		171		FE
PALE		1838	1839	1850	N31	W45	5395	03	13.2	12	SF		3	E		35		
HOLL		1842	1844	1850	N32	W53	5395	03	12.6	8	SF		3	E		75		
HOLL		1901	1903	1932	N33	W53	5395			31	1B		3	E		45		K
HOLL		1901	1915	1932	N33	W53	5395	03	12.6	31	1B		3	E		87		F
PALE		1906	1917	1936	N32	W50	5395	03	12.8	30	1N		3	E		196		E
RAMY		2035	2040	2131	N29	W60	5395	03	12.1	56	1B	X 1.4	3	E		201		F
HOLL		2036	2042U	2118	N32	W55	5395	03	12.5	42	1B		3	E		264		E
HOLL		2036	2101	2118	N32	W55	5395			42	1B		3	E		108		K
PALE		2038	2038	2139	N32	W51	5395	03	12.8	61	2F		3	E		342		F
PALE		2038	2056	2139	N32	W51	5395			61	2F		3	E		296		K
HOLL		2120	2125	2128	N18	W70	5392	03	11.5	8	SF		3	E		34		
HOLL		2132	2136	2141	N32	W55	5395	03	12.5	9	SF		3	E		44		
PALE		2202E	2205U	2205D	N16	W04	5407	03	16.6	3D	1F		3	E		120		F
HOLL		2203	2212	2214D	N19	W05	5407	03	16.5	11D	1N	M 1.6	3	E		172		
GOES		2314	2319	2325						11		C 8.2						
LEAR		2333	2335	2339	N34	W52	5395	03	12.8	6	SF		3	E		28		
LEAR	17	0029	0030	0040	S17	W41	5398	03	13.9	11	SF		3	E		16		F
LEAR		0107	0113	0120	N30	W53	5395	03	12.9	13	SF		3	E		23		
LEAR		0150	0157	0202	N27	W57	5395	03	12.6	12	SF	C 7.6	3	E		41		
LEAR		0218	0225	0239	N16	W09	5407	03	16.4	21	SF		3	E		26		
LEAR		0220	0220	0225	N31	W57	5395	03	12.6	5	SF		3	E		23		
LEAR		0235	0238	0257	N32	W57	5395	03	12.6	22	1N		3	E		158		
GOES		0235E	0238	0408D						93D		M 2.5						

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Area Measurement			Remarks
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
[	LEAR	17	0257	0259	0324D	N31 W86	5395			27D	3N			E		665		K
	LEAR		0257	0259	0408	N33 W85	5395			71	3N			E		713		K
[	LEAR		0257	0324U	0324D	N31 W86	5395	03	10.3	27D	3N		3	E		134		
	LEAR		0257	0325	0408	N33 W85	5395	03	10.4	71	3N		3	E		143		
	LEAR		0532	0532	0536	N27 W60	5395	03	12.5	4	SF C	6.6	3	E		37		
[	LEAR		0556	0558	0606	N34 W59	5395	03	12.5	10	1N C	7.5	4	E		125		F
	SVTO		0558E	0558U	0605D	N33 W62	5395	03	12.3	7D	1F		2	E		141		
[	LEAR		0715	0719	0751	N32 W59	5395	03	12.6	36	2B M	6.8	3	E		464		ZE
	SVTO		0715	0721	0800	N32 W57	5395	03	12.8	45	2N M	6.8	3	E		353		
[	LEAR		0715	0727	0751	N32 W59	5395			36	2F M	6.8		E		374		K
	SVTO		0718	0721	1410	N18 W75	5393	03	11.6	412	SF		3	E		20		T
[	LEAR		0719	0722	0725	N20 W74	5392	03	11.6	6	SF		3	E		21		
	LEAR		0807	0810	0815	N26 W62	5395	03	12.5	8	1F		3	E		130		
	SVTO		1107	1109	1131D	N32 W59	5395	03	12.8	24D	2N M	4.1	2	E		289		
	SVTO		1206E	1216U	1226D	S11 E18	5403	03	18.8	20D	1F		1	E		117		
	GOES		1546	1550	1552					6	C	4.0						
[	RAMY		1601	1622	1630	N34 W60	5395	03	12.9	29	SF C	3.9	2	E		24		
	HOLL		1620	1622	1630	N33 W56	5397	03	13.2	10	SF C	3.9	3	E		11		
[	HOLL		1729	1737	1932	N33 W60	5395	03	13.0	123	2B X	6.5	3	E		499		MZ
	HOLL		1729	1815	1932	N33 W60	5395			123	2N			E		146		K
[	PALE		1730	1736U	1941	N33 W62	5395	03	12.8	131	2B X	6.5	3	E		270		ZF
	RAMY		1834	1835	1849	S13 E13	5403	03	18.7	15	SF		3	E		23		F
[	HOLL		1834	1835	1858	S12 E13	5403	03	18.7	24	SF		3	E		27		
	HOLL		1909	1911	1913	S15 E16	5403	03	19.0	4	SF		3	E		11		
[	HOLL		2007	2014	2133	S13 E14	5403	03	18.9	86	2B M	1.4	3	E		325		FH
	RAMY		2010E	2015	2105D	S13 E11	5403	03	18.7	55D	2B M	1.4	2	E		287		FH
	HOLL		2137	2139	2146	N34 W64	5395	03	12.8	9	SF C	4.4	3	E		33		F
	HOLL		2229	2231	2237	N34 W60	5395	03	13.1	8	SF		3	E		35		E
[	LEAR		2311	2312	2330	N37 W64	5395	03	12.8	19	SF M	2.4	3	E		27		
	HOLL		2314	2314	2333	N36 W66	5395	03	12.7	19	SF M	2.4	2	E		36		
[	LEAR	18	0205	0209	0235	S15 E06	5403	03	18.5	30	SN C	7.6	3	E		88		ZF
	PALE		0208	0216U	0216D	S15 E06	5403	03	18.5	8D	SF		3	E		64		F
	LEAR		0739	0741	0746	S12 E05	5403	03	18.7	7	SF		3	E		18		
	GOES		0931	0935	0938					7	C	3.3						
	GOES		1200	1203	1207					7	C	2.8						
[	RAMY		1243	1243	1248D	N36 W71	5395	03	12.8	5D	SF C	9.2	3	E		26		
	SVTO		1243	1244	1259	N36 W85	5395	03	11.7	16	SF C	9.2	3	E		42		
	RAMY		1341	1344	1413	S16 E00	5403	03	18.6	32	SF		3	E		23		
	GOES		1550	1605	1630					40	C	8.7						
[	RAMY		1655	1706	1724	S14 W02	5403	03	18.5	29	SF		3	E		19		F
	PALE		1705E	1705U	1720D	S14 W02	5403	03	18.6	15D	SF		3	E		26		F
	HOLL		1721	1721	1746	S19 E05	5403	03	19.1	25	SF		3	E		10		
	RAMY		1733	1734	1747	N37 W74	5395	03	12.8	14	SF M	4.4	3	E		28		
	RAMY		1838	1839	1846	N14 E40	5409	03	21.8	8	SF		3	E		15		
	RAMY		2030	2031	2053D	S16 W04	5403	03	18.5	23D	1B		3	E		234		UF
	GOES		2030	2034	2038D					8D	M	3.3						
	PALE		2037E	2041U	2115D	S16 W04	5403	03	18.5	38D	1B		3	E		206		UF
	PALE		2103E	2104	2139D	S19 W55	5406	03	14.7	36D	SF		3	E		21		
	HOLL		2127E	2130U	2144	S19 E07	5403	03	19.4	17D	SF		2	E		18		
	GOES		2154	2205	2300					66	M	3.1						
	HOLL		2308	2309	2315	S12 W05	5403	03	18.6	7	SF		2	E		46		
	LEAR	19	0420	0421	0430	N18 E32	5409	03	21.6	10	SF M	1.4	3	E		13		F
	GOES		0620	0631	0655					35	M	1.2						
	GOES		0702	0708	0735					33	M	1.6						
	LEAR		0738	0739	0745	N33 W85	5395	03	12.6	7	SF M	1.3	2	E		21		
	GOES		0809	0833	0850					41	M	1.7						
[	SVTO		0942	0945	1010	S13 W09	5403	03	18.7	28	1F		3	E		142		
	LEAR		0943	0947	0959	S12 W09	5403	03	18.7	16	SF		3	E		69		F
	GOES		0943	1003	1010					27	C	8.6						
	SVTO		1054	1055	1101	N31 W90	5395	03	12.3	7	SF C	4.5	3	E		18		
	GOES		1124	1201	1227					63	C	7.4						
	GOES		1315	1321	1326					11	C	9.5						
	GOES		1459	1513	1541					42	C	6.9						
	HOLL		1816	1819	1829	N18 W41	5407	03	16.6	13	SF C	9.2	3	E		17		
[HOLL		1944	1947	2004	N16 E24	5409			20	SB M	1.7		E		49		K
	HOLL		1944	1959	2004	N16 E24	5409	03	21.6	20	SF M	1.7	3	E		46		F

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Area Measurement			Remarks
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
L	RAMY	19	1947	1959	2006	N17 E22	5409	03	21.5	19	SF	M 1.7	2	E		28		F
	RAMY		2011E	2012U	2014D	S16 W19	5403	03	18.4	3D	SF		2	E		43		
	HOLL		2011	2016	2025	S16 W19	5403	03	18.4	14	SF		3	E		24		F
	GOES		2104	2119	2154					50		M 2.4						
	GOES		2329	2342	2405					36		C 9.2						
	PALE	20	0057	0101	0113	S17 W59	5408	03	15.5	16	SF		3	E		47		
	PALE		0358	0401	0409D	S25 E90		03	27.1	11D	SN	M 2.5	3	E		64		
	LEAR		0359	0402	0418	S26 E90		03	27.1	19	1F	M 2.5	3	E		144		
	LEAR		0553	0610	0632	N20 E16	5416	03	21.5	39	SF		3	E		55		FH
	SVTO		0616E	0616U	0836D	N22 E17	5416	03	21.6	140D	SF		2	E		85		F
	LEAR		0657	0658	0712	S18 W68	5406	03	15.1	15	SF		3	E		21		
	SVTO		1014	1015	1033	S16 W26	5403	03	18.4	19	SN	C 5.0	3	E		94		H
	SVTO		1033	1100	1145	N17 W51	5407	03	16.6	72	SF		3	E		82		F
	RAMY		1103E	1118U	1152	N17 W49	5407	03	16.7	49D	1F		2	E		110		F
	RAMY		1231	1236	1240	N17 E12	5409	03	21.4	9	SF		3	E		12		
	RAMY		1252	1258	1303	S13 W24	5403	03	18.7	11	SF		3	E		13		
	RAMY		1418	1427	1458	S15 E00		03	20.6	40	SF		3	E		36		
	HOLL		1419	1430	1440	S14 E01		03	20.7	21	SF		2	E		49		F
	HOLL		1427	1440	1522	S26 E81	5417	03	26.9	55	SF	M 1.2	2	E		68		FH
	HOLL		1454	1501	1506	N24 W51	5413	03	16.7	12	SF		2	E		18		
	RAMY		1540E	1543U	1552D	N33 W90	5395	03	13.5	12D	SN		3	E				YH
	HOLL		1541	1547	1615	S27 E87	5417	03	27.4	34	SF	M 2.4	2	E		89		F
	HOLL		1558	1607	1617	S14 E00		03	20.7	19	SF		3	E		27		
	RAMY		1610E	1613U	1620D	N33 W90	5395	03	13.5	10D	SF		3	E				YH
	PALE		1728	1741	1749	S14 E00		03	20.7	21	SF		3	E		43		F
	PALE		1731	1738	1740	S25 E76	5417	03	26.6	9	SF		3	E		20		
	PALE		1902	1902	1910	S20 W13	5414	03	19.8	8	SF		3	E		13		
	RAMY		1924	1924	1933	N18 E12	5409	03	21.7	9	SF		3	E		36		
	PALE		1924	1924	1938	N13 E13	5409	03	21.8	14	SF		3	E		36		FE
	RAMY		1954	2004U	2037D	N16 E12	5409	03	21.7	43D	SF		2	E		35		F
	PALE		2008	2008	2036	N18 E16	5409	03	22.0	28	SF		3	E		28		F
	PALE		2008	2017	2036	N18 E16	5409			28	SF			E		49		K
	PALE		2038	2052U	2403D	S25 E76	5417	03	26.7	205D	2N	M 3.1	3	E		309		FE
	PALE		2038	2235	2403D	S25 E76	5417			205D	2N			E		118		K
	PALE		2258	2258	2322	N16 E07	5409	03	21.5	24	SF		3	E		19		F
	PALE	21	0026	0026	0037	N23 W53	5413	03	16.9	11	SF		3	E		15		
	GOES		0051	0110	0148					57		M 1.3						
	PALE		0137	0140	0146	N19 E09	5409	03	21.7	9	SF		3	E		33		
	GOES		0202	0214	0334					92		M 2.9						
	PALE		0207	0222	0228	N34 W24	5404	03	19.2	21	SF		3	E		37		
	LEAR		0330	0333	0350	S27 E76	5417	03	27.1	20	SF		3	E		25		
	LEAR		0402	0407	0438	N16 E04	5409	03	21.5	36	SF		3	E		48		F
	LEAR		0533	0534	0548	S28 E75	5417	03	27.1	15	SF		3	E		17		
	LEAR		0541	0542	0553	N16 E03	5409	03	21.5	12	SF		3	E		12		F
	LEAR		0625	0634	0721	N16 E03	5409	03	21.5	56	SN	M 1.4	3	E		87		F
	LEAR		0722	0731	0756	N17 E02	5409	03	21.4	34	SF		3	E		19		
	LEAR		0739	0742	0811	S29 E77	5417	03	27.3	32	1F	C 5.1	3	E		208		
	LEAR		0858	0909	0938	N17 E01	5409	03	21.4	40	SF	C 9.0	3	E		66		F
	SVTO		0928	1009	1042	N11 E00	5411			74	SF			E		38		K
	SVTO		0928	1025	1042	N11 E00	5411	03	21.4	74	SF		3	E		38		F
	RAMY		1056E	1057U	1106	N16 E03	5409	03	21.7	10D	SF	C 4.6	1	E		29		F
	RAMY		1418	1501	1613	N18 W03	5409	03	21.4	115	SF		3	E		59		F
	RAMY		1418	1529	1613	N18 W03	5409			115	SF			E		51		K
	RAMY		1432	1434	1446	N11 E16	5411	03	22.8	14	SF		3	E		40		F
	HOLL		1434E	1434U	1447	N12 E15	5411	03	22.7	13D	SF		3	E		47		F
	HOLL		1435	1501	1622	N20 W03	5409	03	21.4	107	1N	C 8.7	3	E		115		FE
	HOLL		1435	1529	1622	N20 W03	5409			107	1N			E		97		K
	RAMY		1443	1446	1453	S19 W21	5414	03	20.0	10	SF		3	E		11		F
	HOLL		1548	1603	1652	N23 W65	5413	03	16.6	64	1F		3	E		128		F
	RAMY		1550	1603	1625	N23 W62	5413	03	16.9	35	SF		4	E		43		F
	RAMY		1727	1727	1731	S21 E68	5417	03	26.9	4	SF		3	E		19		
	RAMY		1738	1740	1757	S18 W23	5414	03	20.0	19	SF		3	E		13		
	RAMY		1743	1751	1759	S26 E70	5417	03	27.2	16	SF		3	E		31		
	RAMY		1839E	1843U	1850	N19 E04	5409	03	22.1	11D	SF		2	E		16		F
	HOLL		1929	1929	1943	N19 W67	5407	03	16.7	14	SF		3	E		33		
	RAMY		1930E	1930U	1945D	N20 W66	5407	03	16.8	15D	SF		2	E		30		F

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo Day	Dur (Min)	Imp Opt Xray	Obs See Type	Area Measurement			Remarks	
												Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)		
HOLL	21	1935	1936	1949	N17	W04	5409	03 21.5	14	SF	3 E		12			
RAMY		2024	2026	2034D	S18	W43	5403	03 18.6	10D	SF	3 E		17			
PALE		2024	2028	2041	S17	W43	5403	03 18.6	17	SF	3 E		14			
HOLL		2030	2031	2034	S18	W25	5414	03 19.9	4	SF	3 E		10			
HOLL		2055	2101	2114	N20	W06	5409	03 21.4	19	SF	3 E		21			
PALE		2057	2058	2100	N21	W05	5409	03 21.5	3	SF	3 E		35		F	
PALE		2105	2111	2113	S26	E70	5417	03 27.3	8	SF	3 E		15			
HOLL		2246	2246	2253	S28	E69	5417	03 27.3	7	SF	3 E		11			
HOLL		2338	2339	2348	S16	W42	5403	03 18.8	10	SF	3 E		27			
HOLL	22	0020	0026	0109D	S17	E25	5412	03 23.9	49D	1F	2 E		130			
HOLL		0020	0109	0109D	S17	E25	5412		49D	1F	E		20		K	
PALE		0248	0254	0314	N12	W05	5409	03 21.7	26	SF	2 E		47		F	
LEAR		0250	0256	0315	N13	W05	5409	03 21.7	25	SF	3 E		32		F	
LEAR		0258	0259	0309	S17	W40	5403	03 19.1	11	SF	3 E		31		F	
LEAR		0513	0513	0519	N17	W08	5409	03 21.6	6	SF C 5.6	3 E		30		F	
LEAR		0656	0729	0747	N20	W13	5409	03 21.3	51	SF	3 E		58		F	
SVTO		0703	0704	0743	N21	W13	5409	03 21.3	40	SF	3 E		56		F	
SVTO		0746	0747	0753	S26	E62	5417	03 27.1	7	SF	3 E		22		F	
LEAR		0746	0747	0756	S28	E62	5417	03 27.2	10	SF	3 E		24			
GOES		0840	0843	0901					21	C 2.7						
LEAR		0920	0949	1008D	N18	W05	5409	03 22.0	48D	SF	3 E		44		F	
SVTO		0920	1025	1108	N18	W06	5409	03 21.9	108	1N	3 E		182		F	
SVTO		0928	1025	1042	N11	E00	5411	03 22.4	74	SF	3 E		38		F	
SVTO		0949	1009	1042	N12	W02	5411		53	SF	E		38		K	
SVTO		0949	1025	1042	N12	W02	5411	03 22.2	53	SF	3 E		38		F	
RAMY		1044E	1046U	1108	N17	W05	5409	03 22.1	24D	SF	1 E		97		F	
SVTO		1113	1115	1122	N17	W12	5409	03 21.5	9	SN M 1.2	3 E		76			
RAMY		1114	1116	1123	N20	W14	5409	03 21.4	9	1N M 1.2	3 E		106		EH	
RAMY		1412	1412	1423	S26	E59	5417	03 27.2	11	SF	3 E		13			
RAMY		1435	1437	1500	S27	E59	5417	03 27.2	25	SF	3 E		12		F	
SVTO		1439	1439	1444	N17	W14	5409	03 21.5	5	SF	3 E		29			
RAMY		1439	1440	1447	N17	W14	5409	03 21.5	8	SF	3 E		38		F	
RAMY		1455	1459	1512	N17	W14	5409	03 21.5	17	SF	3 E		26		F	
HOLL		1459	1500	1510	N18	W15	5409	03 21.5	11	SF	3 E		21			
RAMY		1528	1528	1534	N17	W15	5409	03 21.5	6	SF	3 E		20		F	
RAMY		1537	1539	1557	N17	W15	5409	03 21.5	20	SF	3 E		17			
HOLL		1709	1712	1751	N20	W18	5409		42	SF	E		72		K	
HOLL		1709	1724	1751	N20	W18	5409	03 21.3	42	SF C 3.9	3 E		68		F	
HOLL		1800	1813	1842	S27	E57	5417		42	SN	E		28		K	
HOLL		1800	1834	1842	S27	E57	5417	03 27.2	42	SF	3 E		20		F	
HOLL		1853	1854	1859	N19	W14	5409	03 21.7	6	SF	3 E		15			
HOLL		1903	1916	1946	N17	W17	5409	03 21.5	43	1F C 5.6	3 E		127			
PALE		1924	1924	1942	N17	W16	5409	03 21.6	18	1F	3 E		123		F	
PALE		1949	1951	2031	N17	W17	5409	03 21.5	42	1N M 1.0	3 E		211		F	
HOLL		1949	1958	2042	N12	W18	5409	03 21.5	53	1B M 1.0	3 E		169			
RAMY		1957E	1957U	2047	N12	W17	5409	03 21.5	50D	1B M 1.0	1 E		124		F	
PALE		2020	2026	2030	S26	E56	5417	03 27.2	10	SF	3 E		20			
HOLL		2058	2101	2110	S21	E56	5417	03 27.2	12	SF	3 E		20			
LEAR	23	0531	0539	0551	N13	W25	5409	03 21.3	20	SF	3 E		55		F	
RAMY		1147	1147	1152	S16	W57	5403	03 19.2	5	SF	3 E		25			
RAMY		1154	1155	1203	S20	W35	5415	03 20.8	9	SF	3 E		32			
RAMY		1303	1303	1310	S19	W47	5414	03 19.9	7	SF	3 E		10			
HOLL		1341	1344	1353	S21	W49	5414	03 19.8	12	SF	3 E		17			
RAMY		1348	1406	1500	N12	W27	5409	03 21.5	72	1N C 9.8	4 E		185		FE	
HOLL		1354	1406	1441	N13	W28	5409	03 21.5	47	2B C 9.8	2 E		303			
SVTO		1354	1412	1443	N13	W29	5409	03 21.4	49	1F	3 E		222		F	
HOLL		1608	1614	1629	N14	W06		03 23.2	21	SF	3 E		42			
RAMY		1613	1614	1624	N13	W06		03 23.2	11	SF	3 E		19			
RAMY		1620E	1622U	1640	N17	W28	5409	03 21.5	20D	SF	2 E		16			
HOLL		1621	1621	1628	N19	W36	5409	03 20.9	7	SF	3 E		17			
RAMY		1922E	1923U	1936D	S27	E45	5417	03 27.3	14D	SF	2 E		25			
RAMY		1925E	1937	2126D	N18	W28	5409		121D	3B X 1.5	E		418		K	
RAMY		1925E	1948U	2126D	N18	W28	5409	03 21.7	121D	3B X 1.5	2 E		790		UY	
PALE		1946E	1947U	2201D	N17	W28	5409	03 21.7	135D	3B X 1.5	3 E		624		YF	
PALE		2358	2359	2403	S27	E44	5417	03 27.4	5	SF	3 E		36			
PALE	24	0226	0230	0238	N15	W31	5409	03 21.7	12	SF	3 E		22		H	

H α SOLAR FLARES

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks	
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)		
PALE	24	0333	0333	0336	N15	W31	5409	03	21.8	3	SF		3	E		14			
PALE		0346E	0346U	0358	N33	E61		03	29.0	12D	SF		3	E		32			F
RAMY		1216	1223	1259	N12	W40	5409	03	21.5	43	SF		3	E		30			
SVTO		1354	1412	1443	N13	W29	5409	03	22.4	49	1F		3	E		222			F
RAMY		1523	1529	1536	N21	W45	5409	03	21.2	13	SF		3	E		23			
HOLL		1523	1529	1536	N21	W44	5409	03	21.3	13	SF		3	E		22			
HOLL		1602	1611	1742	N15	W28	5411	03	22.5	100	SF		3	E		95			
RAMY		1752	1757	1812	N21	W46	5409	03	21.2	20	SF		4	E		23			F
HOLL		1812	1814	1820	N12	W21	5420	03	23.2	8	SF		3	E		16			
HOLL		1813	1814	1824	N12	W30	5411	03	22.5	11	SF		3	E		18			
RAMY		1813	1814	1837	N12	W30	5411	03	22.5	24	SF		3	E		14			
RAMY		1912	1912	1919	N13	W21	5420	03	23.2	7	SF		3	E		26			F
RAMY		1932	1939	1952	N21	W48	5409	03	21.1	20	SF		3	E		34			F
HOLL		1933	1933	1937	N17	W43	5409	03	21.5	4	SF		3	E		14			
RAMY		2027E	2029U	2050D	N11	W42	5409	03	21.7	23D	2B M 1.2		2	E		257			F
PALE		2028E	2029U	2053D	N17	W44	5409	03	21.5	25D	2B M 1.2		3	E		265			F
HOLL		2040E	2046U	2057D	N13	W43	5409	03	21.6	17D	SN		3	E		89			
PALE		2238E	2240U	2252	N24	W40	5409	03	21.8	14D	SF C 2.7		3	E		16			
LEAR	25	0125	0126	0131	N20	W50	5409	03	21.2	6	SF		3	E		23			
GOES		0242	0245	0250						8		C 2.0							
LEAR		0417	0419	0425	N22	W52	5409	03	21.2	8	SF		3	E		28			
LEAR		0749	0750	0757	N16	W52	5409	03	21.4	8	SF		3	E		22			
HOLL		1531	1535	1610	N13	W56	5409	03	21.4	39	SN C 6.5		4	E		84			FS
RAMY		1532	1534	1603	N12	W57	5409	03	21.3	31	SF C 6.5		3	E		34			F
SVTO		1533	1549	1604D	N11	W57	5409	03	21.3	31D	SF		2	E		77			F
RAMY		1940	1951	2000	N21	W62	5409	03	21.1	20	SF		3	E		26			
RAMY		2008	2011	2015	N20	W62	5409	03	21.1	7	SF		3	E		36			
HOLL		2139	2142	2222	N21	W63	5409	03	21.1	43	SF C 1.5		3	E		65			
HOLL		2254	2257	2302	N14	W57	5409	03	21.6	8	SF		3	E		21			
GOES	26	0022	0026	0031						9		C 1.5							
LEAR		0048	0052	0110	N20	W64	5409	03	21.1	22	SF C 3.9		3	E		76			
HOLL		0051	0052	0104	N21	W63	5409	03	21.2	13	SF C 3.9		3	E		39			
LEAR		0128	0130	0151	S25	E13	5417	03	27.1	23	SF		3	E		31			F
LEAR		0130	0130	0139	N13	W57	5409	03	21.8	9	SF C 3.9		3	E		35			H
GOES		0519	0525	0531						12		C 2.0							
SVTO		0602	0606	0616	S27	E11	5417	03	27.1	14	SF C 1.8		2	E		53			
LEAR		0602	0606	0619	S27	E10	5417	03	27.0	17	SF C 1.8		3	E		22			H
LEAR		0856	0856	0907	N20	W64	5409	03	21.5	11	SF C 2.1		3	E		16			
SVTO		0857	0857	0913	N18	W63	5409	03	21.6	16	SF		3	E		26			
SVTO		1027	1028	1032	S26	E08	5417	03	27.0	5	SF		3	E		25			F
RAMY		1211	1212	1533D	N15	W69	5409			202D	2B		3	E		40			K
RAMY		1211	1310	1533D	N15	W69	5409	03	21.3	202D	2B M 6.6		3	E		388			FH
SVTO		1303E	1315	1341	N11	W66	5409	03	21.6	38D	2N M 6.6		3	E		313			FE
SVTO		1342	1406	1450	N12	W70	5409	03	21.3	68	1F		3	E		128			F
HOLL		1418E	1420U	1459	N13	W69	5409	03	21.4	41D	SN		3	E		92			FE
PALE		2241	2241	2250	S22	E02	5417	03	27.1	9	SF		3	E		13			
PALE		2300	2300	2319	S27	E01	5417	03	27.0	19	SF		3	E		16			
PALE	27	0009	0012	0024	S28	E02	5417	03	27.2	15	SF C 2.5		3	E		24			F
PALE		0217	0222	0246	S26	E00	5417	03	27.1	29	SF C 3.6		3	E		24			
LEAR		0223	0223	0240	S26	E00	5417	03	27.1	17	SF C 3.6		3	E		24			F
PALE		0306	0307	0345	S26	W01	5417			39	1B M 3.5		3	E		180			K
PALE		0306	0315	0345	S26	W01	5417	03	27.0	39	1B M 3.5		3	E		182			F
LEAR		0313	0317	0342	S28	E00	5417	03	27.1	29	1F M 3.5		3	E		112			F
GOES		0651	0654	0658						7		C 1.5							
SVTO		0854	0854	0858	S18	E11	5421	03	28.2	4	SF		3	E		17			H
GOES		1046	1052	1101						15		C 2.0							
SVTO		1117	1121	1134	N12	W77	5409	03	21.7	17	SF C 2.3		3	E		71			
RAMY		1117	1121	1135	N12	W78	5409	03	21.6	18	SF C 2.3		2	E		74			
RAMY		1140	1149U	1240	N18	W80	5409	03	21.4	60	SF		3	E		85			F
SVTO		1149	1151	1204	N15	W77	5409	03	21.7	15	SF		3	E		50			F
SVTO		1211	1211	1233	N12	W78	5409	03	21.6	22	SF		3	E		42			F
SVTO		1446	1447	1510	S26	W06	5417	03	27.1	24	SF C 5.8		3	E		49			F
RAMY		1446	1447	1531D	S28	W07	5417	03	27.1	45D	SF C 5.8		3	E		72			F
RAMY		1539	1541	1549	S28	W06	5417	03	27.2	10	SF		3	E		15			
RAMY		1626	1627	1630	N14	W88	5409	03	21.0	4	1F C 2.9		3	E		109			

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	Dur (Min)	Imp			Obs Type	Area Measurement			Remarks
											Opt	Xray	See		Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
L	SVTO 27	1626	1627	1631	N15	W81	5409	03	21.5	5	SF	C 2.9	3	E		76		
	PALE	1728	1731	1739	N13	W77	5409	03	21.9	11	SF	C 5.5	3	E		23		
	RAMY	1729	1732	1739	N14	W82	5409	03	21.5	10	SF	C 5.5	3	E		57	F	
	PALE	1740	1752	1814	S31	W09	5417	03	27.0	34	SF	C 2.8	3	E		56	F	
	PALE	1901	1903	1913	N14	W80	5409	03	21.7	12	SF		3	E		90	F	
	PALE	1903	1906	1917	S29	W08	5417	03	27.2	14	SF	C 2.4	3	E		40	F	
	RAMY	1930E	1935U	1953D	N14	W90	5411	03	21.0	23D	1F		2	E		127		
	RAMY	1943E	1947U	2002	N15	W83	5409	03	21.5	19D	SF	C 4.9	2	E		53		
	RAMY	2047E	2047U	2053D	S26	W10	5417	03	27.1	6D	SF	C 8.3	1	E		65	F	
	RAMY	2054E	2102U	2116	N15	W84	5409	03	21.5	22D	SF	C 3.4	2	E		55		
GOES	2221	2240	2243						22		C 1.9							
HOLL 28	GOES	0007E	0010U	0056D	S26	W14	5417	03	26.9	49D	SF	C 4.3	2	E		28	F	
	GOES	0055	0100	0103						8		C 3.6						
	GOES	0148	0153	0159						11		C 2.3						
	GOES	0228E	0234	0255D						27D		C 4.7						
	LEAR	0318	0326	0334	S27	W13	5417	03	27.1	16	SF		3	E		29	F	
	LEAR	0559E	0600	0637	S26	E06	5421	03	28.7	38D	SF	C 2.3	3	E		34	F	
	SVTO	0612	0620	0651	S24	E08	5421	03	28.9	39	SF		3	E		65	F	
	LEAR	0744	0748	0755	S29	W16	5417	03	27.1	11	SF	C 9.3	3	E		16		
	SVTO	0803	0804	0814	N12	W17	5425	03	27.0	11	SF		3	E		13		
	GOES	1016	1037	1053						37		M 4.4						
	SVTO	1232	1249	1355	S26	W19	5417			83	SF	C 5.1		E		64	K	
	SVTO	1232	1308	1355	S26	W19	5417	03	27.0	83	SF	C 5.1	3	E		85	F	
	RAMY	1448	1448	1502	S27	W18	5417	03	27.2	14	SF		3	E		10	F	
	RAMY	1547	1550	1558	S28	W18	5417	03	27.2	11	SF		3	E		30	F	
	RAMY	1745	1747	1759	S27	W20	5417	03	27.2	14	SF		3	E		21		
RAMY	1911	1912	1922	S19	W09	5421	03	28.1	11	SF		3	E		24			
HOLL	1925	1934	1943	N17	W88	5411	03	22.1	18	1N M	1.5	3	E		165	FE		
HOLL	2320	2340	2343	S09	W58	5424	03	24.6	23	SF		3	E		14			
GOES 29	GOES	0236	0253	0257						21		C 1.9						
	PALE	0305E	0307	0328	S26	W26	5417	03	27.1	23D	SF		3	E		47	F	
	GOES	0333	0341	0350						17		C 3.4						
	SVTO	0653	0710	0712	S18	E86		04	4.8	19	SF	C 2.8	3	E		13		
	LEAR	0704	0706	0728	S28	W28	5417	03	27.1	24	SF		3	E		34	F	
	SVTO	0704	0711	0726	S26	W29	5417	03	27.0	22	SF		3	E		23	F	
	SVTO	1121	1121	1128	S16	E88		04	5.1	7	SF	C 2.3	3	E		12		
	SVTO	1416	1418	1450	N21	E01	5422	03	29.7	34	SF		3	E		30	F	
	HOLL	1416	1422	1442	N20	E00	5422	03	29.6	26	SF		2	E		54		
	HOLL	1744	1746	1752	S23	E90		04	5.7	8	SF	C 4.3	3	E		18		
	HOLL	1850	1913	1925	S19	E81	5428	04	5.0	35	SF		3	E		22		
	HOLL	1900	1901	1909	S24	W40	5419	03	26.7	9	SF	C 1.5	3	E		33		
	PALE	1900	1902	1904	S24	W39	5417	03	26.8	4	SF	C 1.5	3	E		10		
	HOLL	2250	2251	2255	S19	E80	5428	04	5.0	5	SF		3	E		32		
L	PALE 30	0011	0024	0033	S21	E70	5428	04	4.4	22	SF		3	E		14		
	HOLL	0020	0037	0042	S19	E77	5428	04	4.9	22	SF		3	E		13		
	PALE	0254	0254	0303	S19	E69	5428	04	4.4	9	SF		3	E		53		
	GOES	0350E	0353	0356						6D		C 1.8						
	GOES	0356	0400	0402						6		C 2.0						
	LEAR	0500	0504	0509	S18	E77	5428	04	5.1	9	SF		3	E		34		
	GOES	0534	0537	0540						6		C 1.3						
	LEAR	0637	0638	0643	S18	E77	5428	04	5.1	6	SF		3	E		59		
	GOES	0809	0812	0814						5		C 3.9						
	RAMY	1259	1302	1307	S23	E78	5428	04	5.5	8	SF	C 6.8	4	E		33		
	HOLL	1546	1548	1554	S18	E71	5428	04	5.1	8	SF		3	E		14		
	HOLL	1612	1620	1630	S18	E70	5428	04	5.0	18	SF		3	E		26		
	PALE	1825	1827	1835	S23	E78	5428	04	5.8	10	SF	C 4.3	3	E		15		
	RAMY	1827	1827U	1836D	S22	E78	5428	04	5.8	9D	SF	C 4.3	2	E		27		
	HOLL	1828	1828	1831	S22	E77	5428	04	5.7	3	SF	C 4.3	3	E		26		
	HOLL	2308	2309	2320	S27	E24		04	1.8	12	SF		3	E		23		
	L	LEAR 31	0458	0459	0510	S23	E71	5428	04	5.7	12	SF	C 6.4	3	E		93	
		SVTO	0650	0653	0724	N17	E38	5427	04	3.2	34	SF		3	E		41	
LEAR		0653	0654	0704	N16	E36	5427	04	3.0	11	SF		3	E		16		
RAMY		1225	1226	1232	S24	E64	5428	04	5.5	7	SF	C 2.0	3	E		24		
SVTO		1352	1353	1402	S18	E63	5428	04	5.4	10	SF		3	E		22		

H α SOLAR FLARES

MARCH 1989

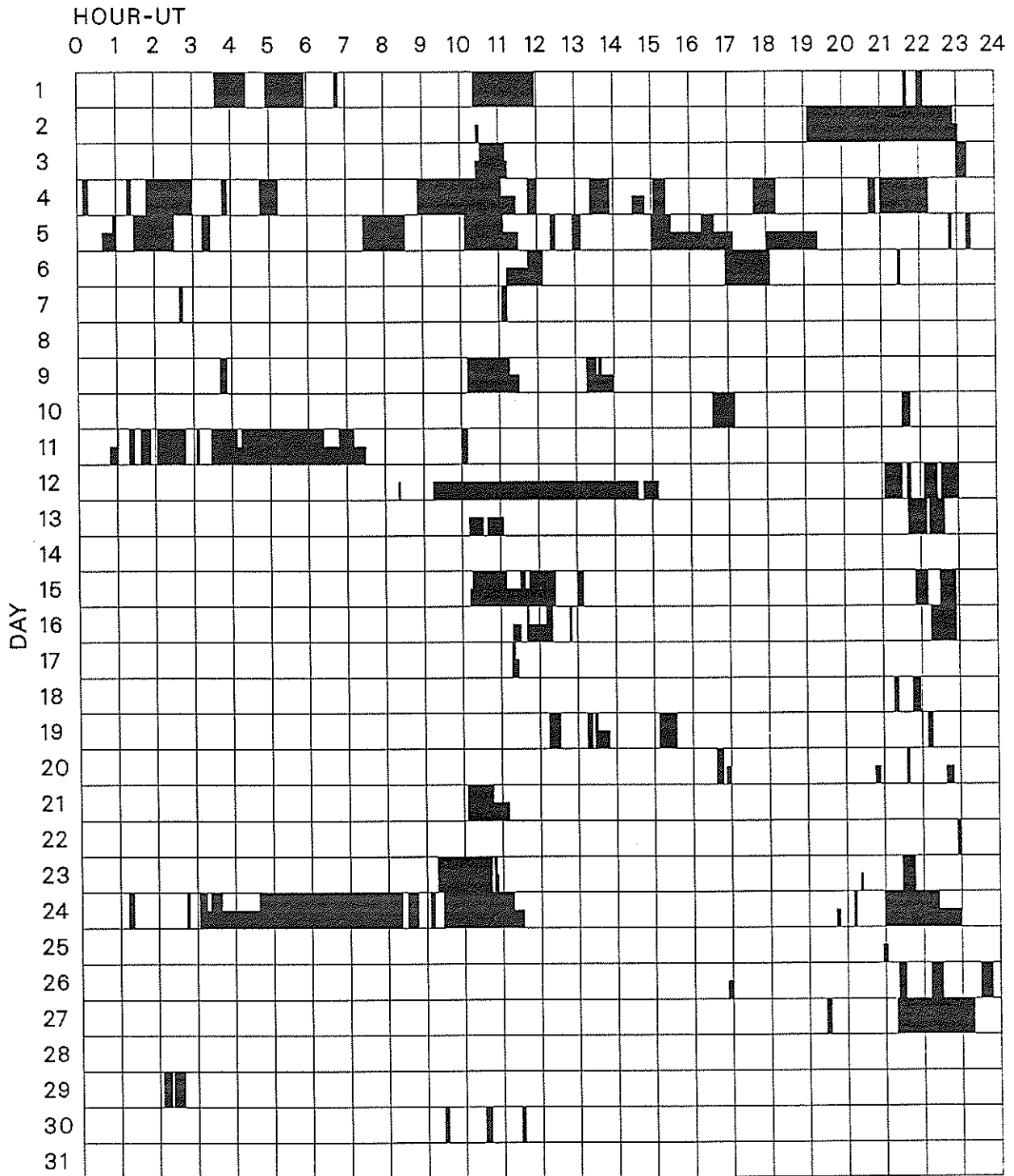
Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/		Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks	
							USAF	CMP						Region	Mo	Day		Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)
[	HOLL	31	1353	1354	1359	S16	E62	5428	04	5.3	6	SF		3	E	56		
[	RAMY		1609	1617	1626	S21	E53	5428	04	4.7	17	SF	C 1.9	3	E	43		
[	HOLL		1611	1616	1623	S18	E57	5428	04	5.0	12	SN		3	E	55		
[	RAMY		1711E	1711U	1722D	N09	E73	5428	04	6.2	11D	SF		2	E	15		
[	RAMY		1837	2018U	2042D	S21	E50	5428	04	4.6	125D	SF		2	E	30		
[	PALE		1844	1846	1907	N19	E31	5427	04	3.1	23	SF		3	E	23		
[	HOLL		1844	1847	1909	N17	E31	5427	04	3.1	25	SF		3	E	32		F
[	RAMY		1845	1851U	1903D	N14	E28	5427	04	2.9	18D	SF		2	E	39		
[	HOLL		1855	1858	1905	S20	E55	5428	04	5.0	10	SF		3	E	30		
[	HOLL		1926	1934	1946	S16	E54	5428	04	4.9	20	SF	C 1.9	3	E	87		
[	PALE		1930	1934	1944	S20	E52	5428	04	4.8	14	SN		3	E	56		
[	HOLL		2005	2005	2015	S20	E54	5428	04	5.0	39	SF	C 1.5	3	E	27		H
[	HOLL		2119	2127	2138	S19	E55	5428	04	5.1	19	SF		3	E	30		
[	HOLL		2302	2308	2348	N17	E29	5427	04	3.2	46	SF		3	E	29		F
[	HOLL		2327	2330	2505	S18	E56	5428			98	SF			E	28		K
[	HOLL		2327	2436	2505	S18	E56	5428	04	5.2	98	SF		3	E	63		FH

"Remarks"

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

INTERVALS OF NO FLARE PATROL OBSERVATION FOR PRECEDING SOLAR FLARE TABLE

MARCH 1989



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.

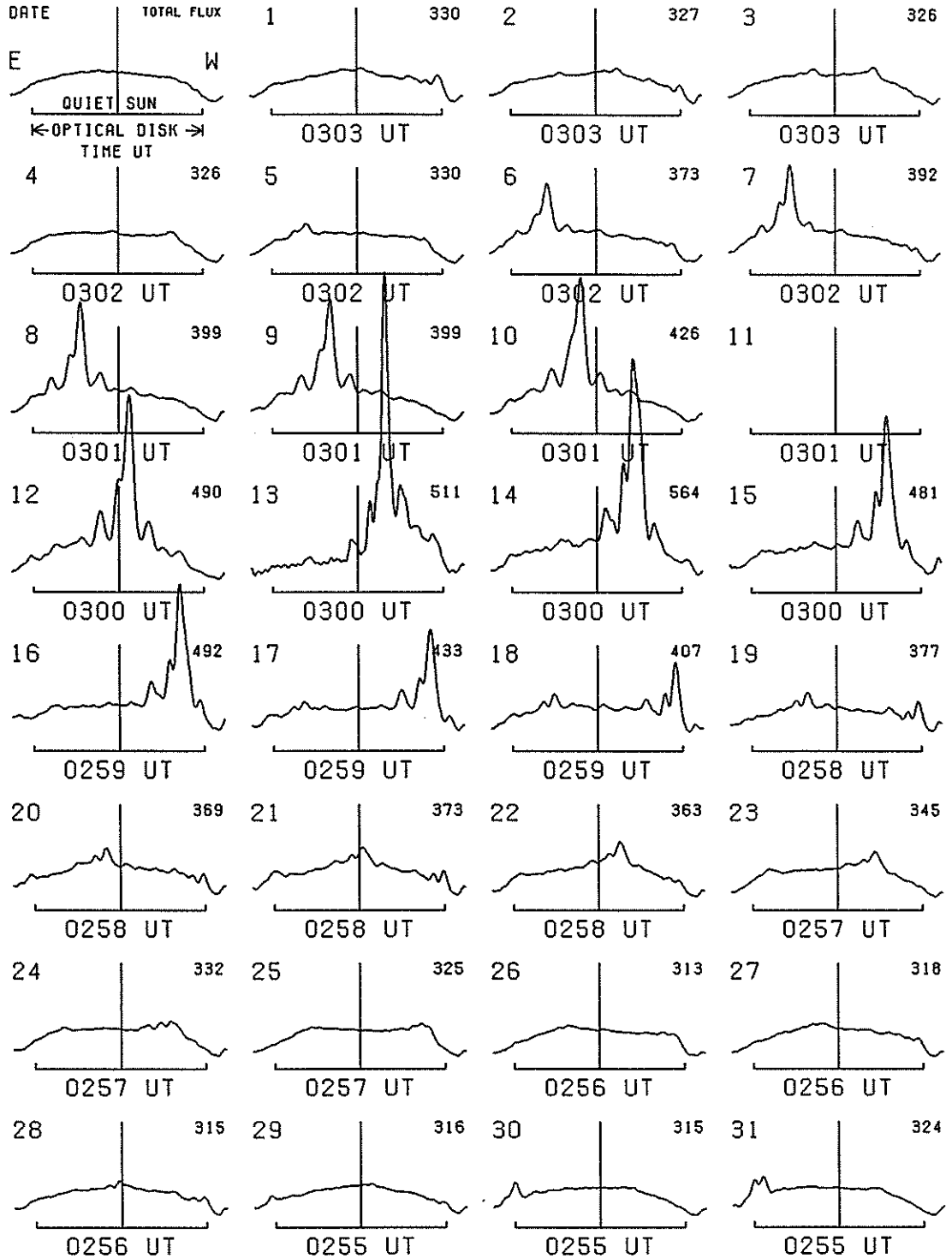
Holloman
Learmonth
Palehua
Ramey
San Vito

EAST-WEST SOLAR SCANS

MARCH 1989

TOYOKAWA, JAPAN

3 CM
FAN BEAM WITH 1.1 MINUTES OF ARC



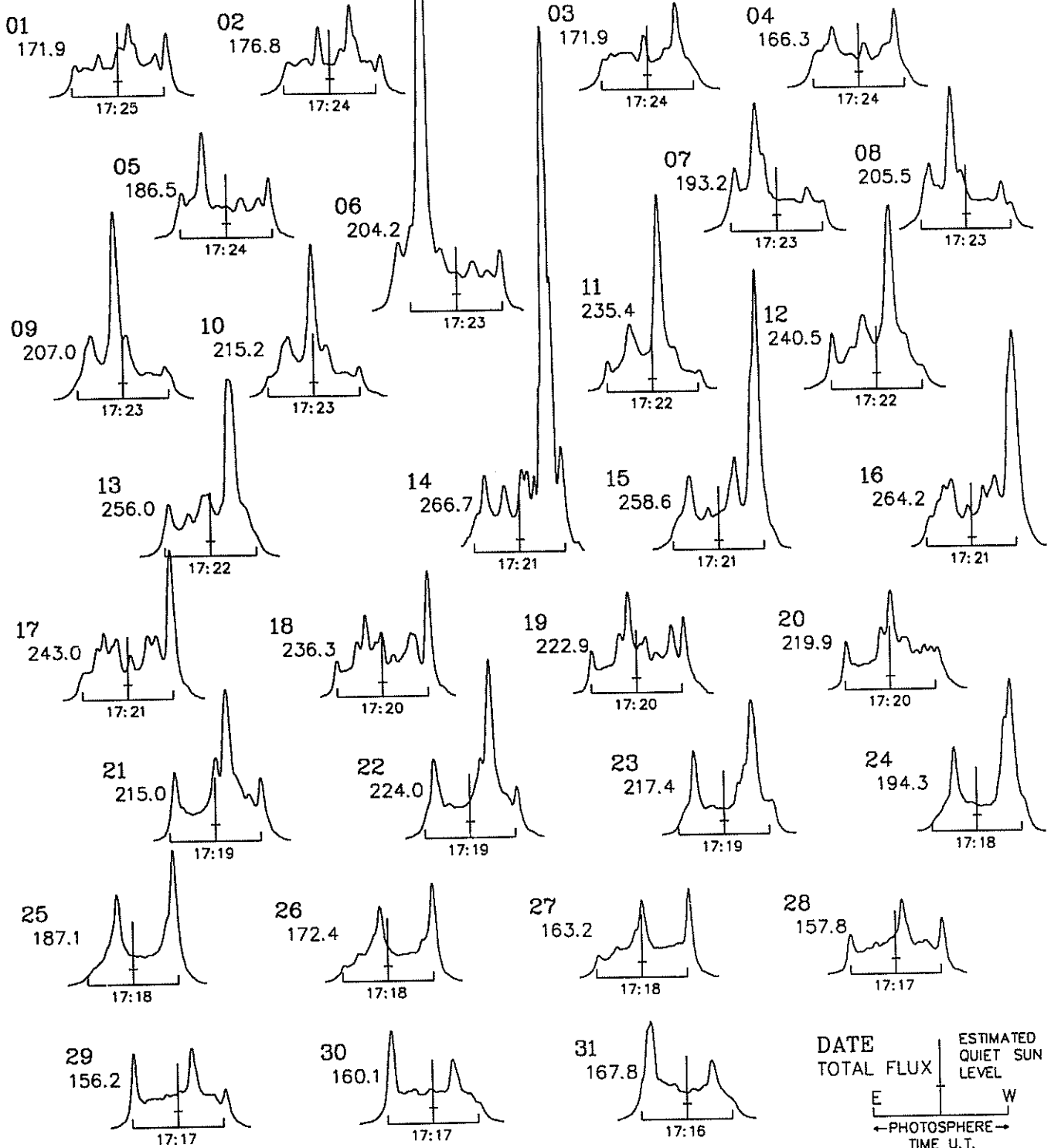
32
Mar 89

Note: All scans taken with 3 dB
attenuation. This means all
scans are one-half normal height.

ALGONQUIN RADIO OBSERVATORY
CANADA

EAST - WEST SOLAR SCANS MARCH 1989

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



EAST - WEST SOLAR SCANS

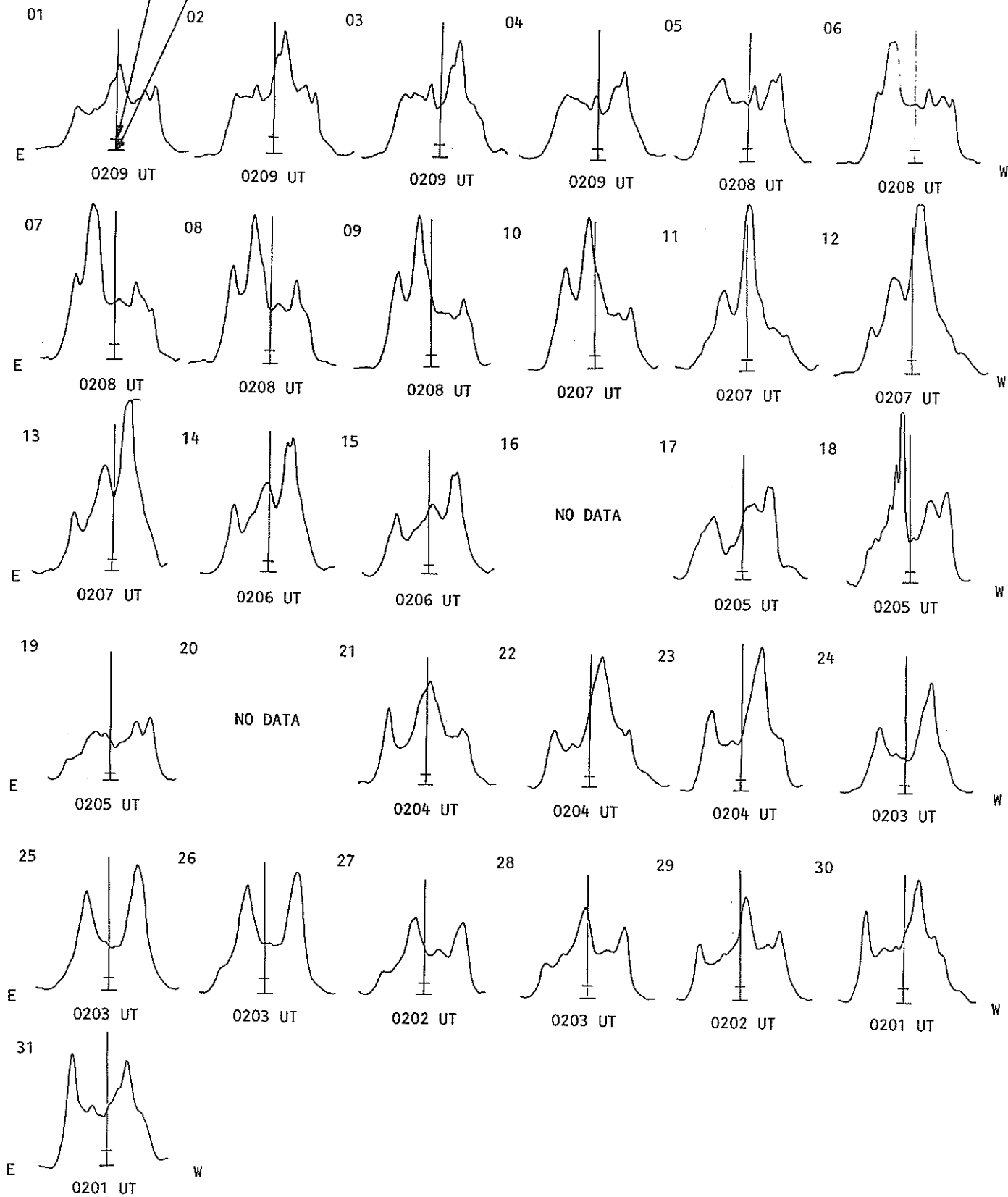
33
Mar 89

Fleurs, Australia

MARCH 1989

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

Estimated Quiet Sun Level
Cold Sky Level



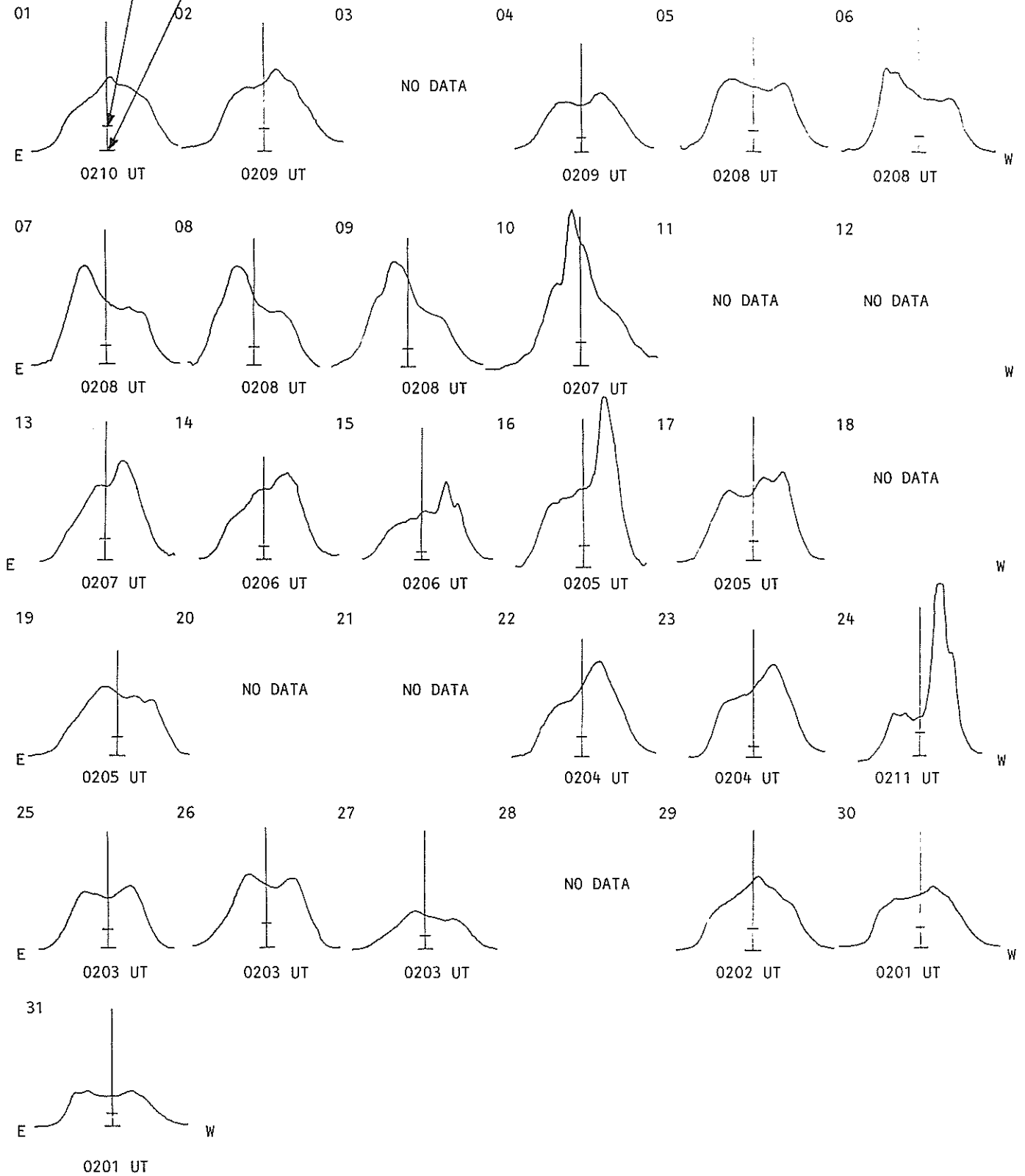
EAST - WEST SOLAR SCANS

Fleurs, Australia

MARCH 1989

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

Estimated Quiet Sun Level
Cold Sky Level

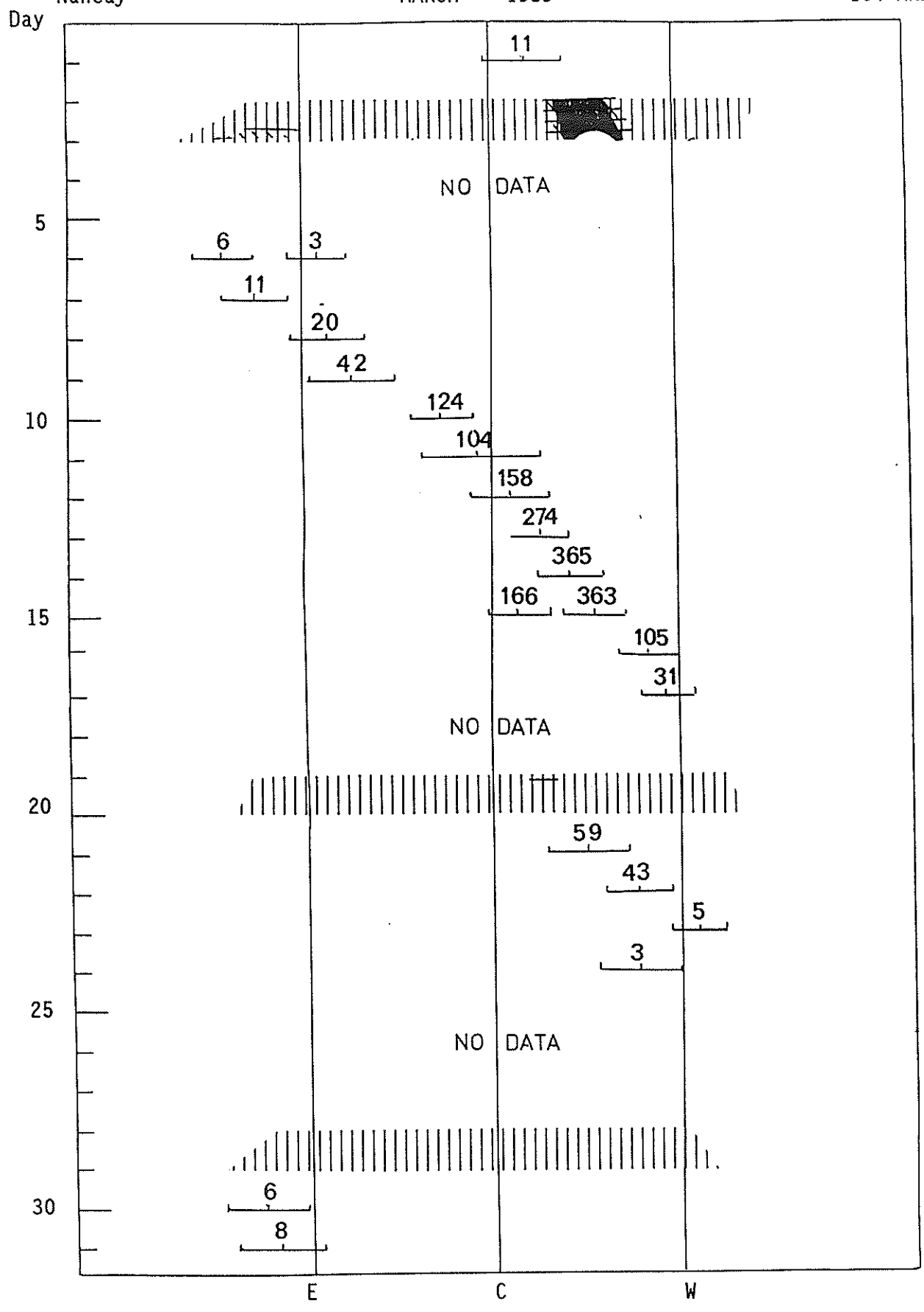


SOLAR INTERFEROMETRIC OBSERVATIONS

MARCH 1989

164 MHz

Nancay



S O L A R R A D I O E M I S S I O N
Selected Fixed Frequency Events

MARCH 1989

Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density (10 ⁻²² W/m ² Hz)		Int	Remarks
						Peak	Mean		
01	2695 SVTO	8 S	0645.0E	0646.0	1.0D	140.0			QL=1 ST=2 TYP=3
02	8800 PALE	8 S	0000.0E	0000.0	2.0D	84.0			QL=1 ST=2 TYP=3
	2695 LEAR	8 S	0614.0E	0615.0	1.0D	15.0			QL=1 ST=2 TYP=3
	8800 LEAR	8 S	0614.0E	0614.0	1.0D	30.0			QL=1 ST=2 TYP=3
	2695 LEAR	8 S	0907.0E	0909.0	2.0D	18.0			QL=1 ST=2 TYP=3
	8800 LEAR	8 S	0910.0E	0911.0	1.0D	13.0			QL=1 ST=2 TYP=3
	2800 OTTA	1 S	1737.9	1738.6	2.7		4.0		
	2800 OTTA	32 ABS	1819.5	1847.0	68.0			2.0	
	2800 OTTA	22 GRF	1934.0	1936.0	54.0			4.0	
03	2695 LEAR	4 S/F	0706.0E	0708.0	4.0D	37.0			QL=1 ST=2 TYP=3
04	2695 LEAR	4 S/F	0454.0E	0455.0	3.0D	30.0			QL=1 ST=2 TYP=3
05	8800 LEAR	8 S	0833.0E	0834.0	1.0D	45.0			QL=1 ST=2 TYP=3
	8400 BERN	4 S/F	0909.0	0913.0	14.0	192.0			
	3200 BERN	4 S/F	0909.0	0913.0	14.0	37.0			
	2695 LEAR	4 S/F	0910.0E	0912.0	3.0D	36.0			QL=1 ST=2 TYP=3
	8800 LEAR	4 S/F	0910.0E	0912.0	7.0D	89.0			QL=1 ST=2 TYP=3
	3200 BERN	46 C	1032.0	1038.2	17.0	15.0			
	8400 BERN	46 C	1032.0	1038.2	17.0	54.0			
	2800 OTTA	4 S/F	1820.5	1833.2	20.0	32.5	13.0		
	8800 SGMR	4 S/F	1830.0E	1833.0	3.0D	75.0			QL=1 ST=2 TYP=3
	8800 PALE	8 S	1912.0E	1913.0	2.0D	220.0			QL=1 ST=2 TYP=3
	2800 OTTA	4 S/F	1912.6	1915.7	13.5	15.2	6.0		
	8800 SGMR	8 S	1913.0E	1913.0	1.0D	120.0			QL=1 ST=2 TYP=3
8800 SGMR	4 S/F	1918.0E	1918.0	6.0D	94.0			QL=1 ST=2 TYP=3	
2800 OTTA	22 GRF	2046.0	2133.0	90.0D	32.9	6.0			
06	8800 LEAR	4 S/F	0034.0E	0035.0	5.0D	40.0			QL=1 ST=2 TYP=3
	8800 LEAR	8 S	0053.0E	0053.0	1.0D	42.0			QL=1 ST=2 TYP=3
	8800 LEAR	8 S	0318.0E	0318.0	1.0D	24.0			QL=1 ST=2 TYP=3
	8800 LEAR	4 S/F	0557.0E	0600.0	29.0D	160.0			QL=1 ST=2 TYP=3
	2695 LEAR	8 S	0600.0E	0600.0	1.0D	19.0			QL=1 ST=2 TYP=3
	8800 SVTO	4 S/F	0607.0E	0617.0	1073.0D	150.0			QL=1 ST=3 TYP=5
	8800 LEAR	4 S/F	0856.0E	0856.0	1083.0D	49.0			QL=1 ST=2 TYP=3
	8800 SVTO	49 GB	1353.0E	1403.0	151.0D	14000.0			QL=1 ST=2 TYP=7
	8800 SGMR	49 GB	1354.0E	1405.0	606.0D	20000.0			QL=1 ST=3 TYP=7
	3200 BERN	47 GB	1355.0	1405.0	100.0	8870.0			
	8400 BERN	47 GB	1355.0	1405.0	100.0	15200.0			
	2800 OTTA	47 GB	1356.0	1446.0	410.0	18180.0	5400.0		
	2695 SVTO	49 GB	1356.0E	1427.0	148.0D	7800.0			QL=1 ST=2 TYP=7
	2695 SGMR	49 GB	1356.0E	1402.0	604.0D	7400.0			QL=1 ST=3 TYP=7
	2695 PALE	4 S/F	1705.0E	1719.0	15.0D	120.0			QL=1 ST=2 TYP=3
	2800 OTTA	29 PBI	1806.0	1806.0	300.0	74.2	37.0		
	8800 SGMR	4 S/F	1843.0E	1843.0	606.0D	57.0			QL=1 ST=3 TYP=3
07	8800 PALE	4 S/F	0001.0E	0003.0	13.0D	140.0			QL=1 ST=2 TYP=3
	2695 LEAR	4 S/F	0003.0E	0003.0	18.0D	16.0			QL=1 ST=2 TYP=3
	8800 LEAR	8 S	0549.0E	0550.0	2.0D	39.0			QL=1 ST=2 TYP=3
	8800 LEAR	49 GB	0557.0E	0557.0	1.0D	950.0			QL=1 ST=2 TYP=6
	2695 LEAR	8 S	0557.0E	0557.0	1.0D	320.0			QL=1 ST=2 TYP=3
	8800 SVTO	8 S	0557.0E	0557.0	1.0D	370.0			QL=1 ST=2 TYP=3
	2695 SVTO	8 S	0557.0E	0557.0	1.0D	280.0			QL=1 ST=2 TYP=3
	2800 OTTA	4 S/F	1317.0	1319.2	11.0	235.2	70.0		
	8800 SGMR	49 GB	1317.0E	1319.0	9.0D	1200.0			QL=1 ST=2 TYP=7
	8800 SVTO	49 GB	1317.0E	1319.0	9.0D	1000.0			QL=1 ST=2 TYP=7
	8400 BERN	47 GB	1317.5	1319.1	3.0	870.0			
	3200 BERN	47 GB	1317.5	1319.1	3.0	161.0			
	2695 SGMR	49 GB	1318.0E	1319.0	2.0D	210.0			QL=1 ST=2 TYP=7
	2695 SVTO	49 GB	1318.0E	1319.0	2.0D	210.0			QL=1 ST=2 TYP=7
	8800 SGMR	49 GB	1451.0E	1454.0	5.0D	1300.0			QL=1 ST=2 TYP=6
	2800 OTTA	4 S/F	1452.0	1455.4	10.0	191.6	57.0		
	8800 SVTO	49 GB	1452.0E	1454.0	4.0D	1100.0			QL=1 ST=2 TYP=6
	2695 SGMR	4 S/F	1453.0E	1455.0	3.0D	180.0			QL=1 ST=2 TYP=3
	2800 OTTA	4 S/F	1653.0	1653.6	2.7	8.9	4.0		
2800 OTTA	4 S/F	1659.8	1700.3	1.5	11.9	5.0			
2800 OTTA	4 S/F	1702.3	1702.8	1.3	65.5	26.0			

S O L A R R A D I O E M I S S I O N
Selected Fixed Frequency Events

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Mar 89

MARCH 1989

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 ⁻²² W/m ² Hz)	Mean		
07	2800	OTTA	22 GRF	1707.6	1709.7	5.4	10.8	5.0		
	8800	SGMR	8 S	1708.0E	1709.0	2.00	110.0			QL=1 ST=2 TYP=3
	8800	PALE	4 S/F	2104.0E	2105.0	5.00	440.0			QL=1 ST=2 TYP=3
	8800	SGMR	49 GB	2104.0E	2105.0	9.00	530.0			QL=1 ST=2 TYP=6
	8800	SGMR	4 S/F	2121.0E	2121.0	176.00	58.0			QL=1 ST=2 TYP=3
	8800	PALE	4 S/F	2230.0E	2232.0	6.00	140.0			QL=1 ST=2 TYP=3
	2695	PALE	8 S	2230.0E	2230.0	1.00	100.0			QL=1 ST=2 TYP=3
	2695	PENT	4 S/F	2231.1	2231.4	2.5	110.5	44.0		
	2695	PENT	4 S/F	2235.6	2235.9	2.0	22.7	6.0		
	8800	PALE	4 S/F	2239.0E	2239.0	90.00	55.0			QL=1 ST=2 TYP=3
	2695	PENT	4 S/F	2245.0	2245.6	6.0	79.3	23.0		
	2695	PALE	4 S/F	2245.0E	2245.0	90.00	81.0			QL=1 ST=2 TYP=3
	2695	LEAR	4 S/F	2245.0E	2245.0	1083.00	44.0			QL=1 ST=2 TYP=3
	8800	PALE	4 S/F	2247.0E	2247.0	5.00	70.0			QL=1 ST=2 TYP=3
08	8800	LEAR	4 S/F	0116.0E	0117.0	3.00	120.0			QL=1 ST=2 TYP=3
	8800	PALE	4 S/F	0117.0E	0117.0	73.00	92.0			QL=1 ST=2 TYP=3
	2695	LEAR	4 S/F	0117.0E	0117.0	1083.00	42.0			QL=1 ST=2 TYP=3
	2695	LEAR	8 S	0213.0E	0213.0	1.00	26.0			QL=1 ST=2 TYP=3
	8800	LEAR	8 S	0213.0E	0214.0	1.00	32.0			QL=1 ST=2 TYP=3
	8800	LEAR	4 S/F	0303.0E	0305.0	5.00	150.0			QL=1 ST=2 TYP=3
	8800	PALE	8 S	0304.0E	0304.0	2.00	93.0			QL=1 ST=2 TYP=3
	2695	LEAR	8 S	0305.0E	0306.0	2.00	25.0			QL=1 ST=2 TYP=3
	8800	LEAR	4 S/F	0310.0E	0311.0	3.00	68.0			QL=1 ST=2 TYP=3
	8800	LEAR	8 S	0324.0E	0325.0	1.00	26.0			QL=1 ST=2 TYP=3
	2695	LEAR	8 S	0456.0E	0456.0	1.00	20.0			QL=1 ST=2 TYP=3
	8800	LEAR	8 S	0456.0E	0456.0	1.00	20.0			QL=1 ST=2 TYP=3
	8800	LEAR	4 S/F	0504.0E	0504.0	3.00	36.0			QL=1 ST=2 TYP=3
	8800	LEAR	4 S/F	0827.0E	0832.0	17.00	340.0			QL=1 ST=2 TYP=3
	8800	SVTO	4 S/F	0827.0E	0832.0	16.00	360.0			QL=1 ST=2 TYP=3
	2695	LEAR	4 S/F	0830.0E	0832.0	14.00	64.0			QL=1 ST=2 TYP=3
	2695	SVTO	8 S	0832.0E	0832.0	1.00	53.0			QL=1 ST=2 TYP=3
	8800	LEAR	4 S/F	0856.0E	0856.0	933.00	240.0			QL=1 ST=2 TYP=3
	8800	SVTO	4 S/F	0856.0E	0856.0	933.00	210.0			QL=1 ST=2 TYP=3
	8800	SVTO	8 S	0935.0E	0935.0	1.00	65.0			QL=1 ST=2 TYP=3
	8800	SVTO	8 S	1238.0E	1238.0	1.00	91.0			QL=1 ST=2 TYP=3
	8800	SGMR	8 S	1302.0E	1303.0	2.00	180.0			QL=1 ST=2 TYP=3
	8800	SVTO	8 S	1302.0E	1303.0	1.00	170.0			QL=1 ST=2 TYP=3
	2800	OTTA	4 S/F	1309.7	1313.8	9.3	28.2	11.0		
	8800	SGMR	4 S/F	1312.0E	1313.0	4.00	160.0			QL=1 ST=2 TYP=3
	8800	SVTO	8 S	1313.0E	1313.0	1.00	150.0			QL=1 ST=2 TYP=3
	8800	SVTO	4 S/F	1446.0E	1447.0	3.00	410.0			QL=1 ST=2 TYP=3
	8800	SGMR	4 S/F	1447.0E	1447.0	4.00	210.0			QL=1 ST=2 TYP=3
	2695	SGMR	8 S	1447.0E	1447.0	2.00	49.0			QL=1 ST=2 TYP=3
	2800	OTTA	4 S/F	1729.5	1731.1	7.6	20.2	8.0		
	2800	OTTA	4 S/F	1746.7	1747.6	6.7	40.3	12.0		
	2800	OTTA	4 S/F	1851.2	1853.6	11.0	117.3	35.0		
	8800	PALE	8 S	2124.0E	2125.0	1.00	83.0			QL=1 ST=2 TYP=3
	8800	SGMR	4 S/F	2125.0E	2125.0	4.00	89.0			QL=1 ST=2 TYP=3
09	8800	LEAR	8 S	0238.0E	0238.0	1.00	59.0			QL=1 ST=2 TYP=3
	2695	LEAR	4 S/F	0239.0E	0242.0	7.00	24.0			QL=1 ST=2 TYP=3
	8800	LEAR	4 S/F	0310.0E	0312.0	13.00	86.0			QL=1 ST=2 TYP=3
	2695	LEAR	8 S	0312.0E	0313.0	1.00	47.0			QL=1 ST=2 TYP=3
	8800	LEAR	8 S	0744.0E	0744.0	1.00	42.0			QL=1 ST=2 TYP=3
	8800	LEAR	8 S	0750.0E	0750.0	1.00	45.0			QL=1 ST=2 TYP=3
	8800	SVTO	8 S	0750.0E	0750.0	1.00	79.0			QL=1 ST=2 TYP=3
	8400	BERN	4 S/F	0832.4	0833.3	2.0	73.0			
	3200	BERN	4 S/F	0832.4	0833.3	2.0	10.0			
	8800	LEAR	8 S	0833.0E	0833.0	1.00	72.0			QL=1 ST=2 TYP=3
	8800	SVTO	4 S/F	0833.0E	0833.0	970.00	84.0			QL=1 ST=2 TYP=3
	8800	LEAR	49 GB	1003.0E	1007.0	9.00	810.0			QL=1 ST=2 TYP=7
	2695	LEAR	49 GB	1003.0E	1004.0	6.00	110.0			QL=1 ST=2 TYP=7
	8800	SVTO	49 GB	1003.0E	1007.0	10.00	1100.0			QL=1 ST=2 TYP=7
	2695	SVTO	49 GB	1004.0E	1004.0	11.00	120.0			QL=1 ST=2 TYP=7
	8800	LEAR	8 S	1014.0E	1016.0	2.00	42.0			QL=1 ST=2 TYP=3
	8800	LEAR	8 S	1026.0E	1027.0	1.00	48.0			QL=1 ST=2 TYP=3
	2695	LEAR	8 S	1027.0E	1027.0	1.00	34.0			QL=1 ST=2 TYP=3
	8800	SGMR	4 S/F	1302.0E	1306.0	12.00	95.0			QL=1 ST=2 TYP=5

S O L A R R A D I O E M I S S I O N
Selected Fixed Frequency Events

MARCH 1989

Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks	
						Peak (10 -22 W/m 2 Hz)	Mean			
09	2695 SGMR	8 S	1305.0E	1307.0	2.0D	27.0			QL=1 ST=2 TYP=3	
	8800 SVTO	4 S/F	1306.0E	1306.0	837.0D	84.0			QL=1 ST=2 TYP=3	
	2800 OTTA	22 GRF	1320.0	1337.0	480.0	43.5	21.0			
	8800 SGMR	8 S	1332.0E	1332.0	1.0D	59.0			QL=1 ST=2 TYP=3	
	2695 SGMR	8 S	1334.0E	1336.0	2.0D	56.0			QL=1 ST=2 TYP=3	
	2800 OTTA	3 S	1351.6	1353.0	8.0	14.0	7.0			
	8800 SGMR	8 S	1352.0E	1352.0	1.0D	100.0			QL=1 ST=3 TYP=3	
	8800 SVTO	8 S	1352.0E	1352.0	1.0D	70.0			QL=1 ST=2 TYP=3	
	2800 OTTA	3 S	1451.0	1453.7	7.1	26.4	13.0			
	3200 BERN	4 S/F	1451.0	1453.4	5.0	29.0				
	8400 BERN	4 S/F	1451.0	1453.4	5.0	90.0				
	8800 SGMR	8 S	1452.0E	1453.0	2.0D	110.0			QL=1 ST=2 TYP=3	
	8800 SVTO	8 S	1452.0E	1452.0	1.0D	61.0			QL=1 ST=2 TYP=3	
	8400 BERN	3 S	1456.4	1456.5	1.2	17.0				
	2800 OTTA	4 S/F	1519.4	1525.6	24.0	106.7	43.0			
	8800 SVTO	4 S/F	1523.0E	1526.0	19.0D	170.0			QL=1 ST=2 TYP=3	
	2695 SVTO	8 S	1524.0E	1524.0	1.0D	80.0			QL=1 ST=2 TYP=3	
	2800 OTTA	3 S	1717.6	1718.8	3.2	57.5	23.0			
	2695 PALE	4 S/F	1718.0E	1718.0	90.0D	59.0			QL=1 ST=2 TYP=3	
	8800 SGMR	8 S	1743.0E	1743.0	1.0D	67.0			QL=1 ST=2 TYP=3	
	8800 PALE	4 S/F	1923.0E	1924.0	4.0D	490.0			QL=1 ST=2 TYP=3	
	2800 OTTA	4 S/F	1924.0	1926.0	4.0	132.1	52.0			
	2695 PALE	8 S	1924.0E	1925.0	1.0D	220.0			QL=1 ST=2 TYP=3	
	8800 SGMR	8 S	1924.0E	1925.0	2.0D	450.0			QL=1 ST=2 TYP=3	
	2695 SGMR	8 S	1925.0E	1926.0	1.0D	200.0			QL=1 ST=2 TYP=3	
	8800 LEAR	4 S/F	2312.0E	2313.0	8.0D	180.0			QL=1 ST=2 TYP=5	
	2695 LEAR	8 S	2312.0E	2312.0	1.0D	37.0			QL=1 ST=2 TYP=3	
	8800 PALE	4 S/F	2318.0E	2318.0	3.0D	78.0			QL=1 ST=2 TYP=3	
	10	8800 LEAR	4 S/F	0202.0E	0203.0	3.0D	23.0			QL=1 ST=2 TYP=3
		8800 PALE	4 S/F	0234.0E	0236.0	3.0D	140.0			QL=1 ST=2 TYP=3
8800 LEAR		4 S/F	0235.0E	0236.0	6.0D	130.0			QL=1 ST=2 TYP=3	
8800 LEAR		4 S/F	0639.0E	0640.0	3.0D	81.0			QL=1 ST=2 TYP=3	
8800 SVTO		8 S	0639.0E	0640.0	1.0D	91.0			QL=1 ST=2 TYP=3	
8800 LEAR		4 S/F	0742.0E	0749.0	15.0D	70.0			QL=1 ST=2 TYP=3	
8800 SVTO		4 S/F	0747.0E	0749.0	4.0D	85.0			QL=1 ST=2 TYP=3	
8800 LEAR		4 S/F	0802.0E	0806.0	10.0D	67.0			QL=1 ST=2 TYP=5	
8800 SVTO		8 S	0806.0E	0806.0	2.0D	81.0			QL=1 ST=2 TYP=3	
2695 LEAR		8 S	0807.0E	0808.0	1.0D	29.0			QL=1 ST=2 TYP=3	
8800 SVTO		8 S	0810.0E	0811.0	1.0D	76.0			QL=1 ST=2 TYP=3	
8800 SVTO		4 S/F	0930.0E	0931.0	3.0D	71.0			QL=1 ST=2 TYP=3	
8800 LEAR		4 S/F	0938.0E	0939.0	4.0D	46.0			QL=1 ST=2 TYP=3	
8800 SVTO		4 S/F	1038.0E	1038.0	3.0D	120.0			QL=1 ST=2 TYP=3	
8800 SVTO		8 S	1113.0E	1114.0	2.0D	64.0			QL=1 ST=2 TYP=3	
2800 OTTA		4 S/F	1353.6	1359.5	33.0	36.6	11.0			
8800 SGMR		4 S/F	1359.0E	1359.0	276.0D	73.0			QL=1 ST=2 TYP=3	
8800 SVTO		49 GB	1505.0E	1526.0	36.0D	1200.0			QL=1 ST=2 TYP=7	
8800 SGMR		49 GB	1522.0E	1526.0	10.0D	1300.0			QL=1 ST=2 TYP=6	
2800 OTTA		4 S/F	1522.2	1526.7	11.0	67.0	20.0			
3200 BERN		4 S/F	1523.0	1526.3	6.0	101.0				
8400 BERN		4 S/F	1523.0	1526.3	6.0	770.0				
2695 SGMR		8 S	1526.0E	1526.0	1.0D	68.0			QL=1 ST=2 TYP=3	
2695 SVTO		8 S	1526.0E	1526.0	1.0D	70.0			QL=1 ST=2 TYP=3	
2800 OTTA		4 S/F	1556.7	1559.0	6.3	48.9	14.0			
2800 OTTA		4 S/F	1644.0	1647.3	17.0D	35.5	11.0			
2800 OTTA		28 PRE	1710.0	1759.3	120.0	11.8	6.0			
8800 SGMR		4 S/F	1735.0E	1735.0	518.0D	140.0			QL=1 ST=2 TYP=3	
8800 PALE		4 S/F	1735.0E	1735.0	1286.0D	130.0			QL=1 ST=2 TYP=3	
2800 OTTA		47 GB	1759.4	2011.0	143.0	7608.0	2280.0			
8800 SGMR	49 GB	1858.0E	1903.0	121.0D	22000.0			QL=1 ST=2 TYP=7		
8800 PALE	49 GB	1858.0E	1934.0	135.0D	20000.0			QL=1 ST=2 TYP=7		
2695 PALE	49 GB	1859.0E	2011.0	141.0D	10000.0			QL=1 ST=2 TYP=7		
2695 SGMR	49 GB	1900.0E	2011.0	129.0D	12000.0			QL=1 ST=2 TYP=7		
2800 OTTA	29 PBI	2123.0	2123.0	240.0D	128.8	51.0				
2800 OTTA	4 S/F	2133.5	2135.5	7.0	281.9	65.0				
2695 SGMR	8 S	2135.0E	2135.0	2.0D	140.0			QL=1 ST=2 TYP=3		
2800 OTTA	4 S/F	2143.0	2147.0	7.3	108.2	32.0				
11	8800 LEAR	8 S	0033.0E	0034.0	1.0D	62.0			QL=1 ST=2 TYP=3	

S O L A R R A D I O E M I S S I O N
Selected Fixed Frequency Events

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MARCH 1989

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 ⁻²² W/m ² Hz)	Mean	Int	Remarks
11	2695	LEAR	8 S	0034.0E	0034.0	1.0D	51.0			QL=1 ST=2 TYP=3
	8800	PALE	8 S	0208.0E	0209.0	2.0D	85.0			QL=1 ST=2 TYP=3
	2695	LEAR	4 S/F	0302.0E	0304.0	3.0D	44.0			QL=1 ST=2 TYP=3
	8800	LEAR	4 S/F	0302.0E	0303.0	3.0D	60.0			QL=1 ST=2 TYP=3
	8800	LEAR	49 GB	0513.0E	0521.0	27.0D	1400.0			QL=1 ST=2 TYP=6
	2695	LEAR	4 S/F	0514.0E	0518.0	23.0D	150.0			QL=1 ST=2 TYP=3
	8800	SVTO	4 S/F	0528.0E	0529.0	29.0D	270.0			QL=1 ST=2 TYP=3
	2695	SVTO	4 S/F	0531.0E	0532.0	3.0D	90.0			QL=1 ST=2 TYP=3
	8800	LEAR	4 S/F	0637.0E	0645.0	19.0D	320.0			QL=1 ST=2 TYP=5
	2695	LEAR	8 S	0645.0E	0646.0	2.0D	30.0			QL=1 ST=2 TYP=3
	8400	BERN	4 S/F	0645.1	0646.1	3.0	244.0			
	3200	BERN	4 S/F	0645.1	0646.4	3.0	30.0			
	8800	LEAR	4 S/F	0707.0E	0708.0	3.0D	66.0			QL=1 ST=2 TYP=3
	8800	SVTO	8 S	0708.0E	0708.0	1.0D	100.0			QL=1 ST=2 TYP=3
	2695	LEAR	8 S	0759.0E	0800.0	2.0D	37.0			QL=1 ST=2 TYP=3
	8800	LEAR	4 S/F	0800.0E	0800.0	3.0D	84.0			QL=1 ST=2 TYP=3
	8800	SVTO	8 S	0800.0E	0800.0	1.0D	73.0			QL=1 ST=2 TYP=3
	8800	LEAR	8 S	0827.0E	0827.0	2.0D	38.0			QL=1 ST=2 TYP=3
	2695	LEAR	4 S/F	0839.0E	0841.0	5.0D	25.0			QL=1 ST=2 TYP=3
	8800	LEAR	4 S/F	0839.0E	0841.0	5.0D	230.0			QL=1 ST=2 TYP=3
	8800	SVTO	4 S/F	0840.0E	0842.0	6.0D	280.0			QL=1 ST=2 TYP=3
	8800	LEAR	49 GB	0900.0E	0901.0	5.0D	1500.0			QL=1 ST=2 TYP=6
	2695	SVTO	8 S	0901.0E	0901.0	1.0D	220.0			QL=1 ST=2 TYP=3
	8800	SVTO	49 GB	0901.0E	0901.0	3.0D	1700.0			QL=1 ST=2 TYP=6
	8400	BERN	47 GB	0901.1	0901.3	1.0	1130.0			
	3200	BERN	47 GB	0901.1	0901.4	1.0	188.0			
	8800	LEAR	8 S	0942.0E	0943.0	2.0D	81.0			QL=1 ST=2 TYP=3
	2695	LEAR	8 S	0942.0E	0943.0	2.0D	38.0			QL=1 ST=2 TYP=3
	8800	SVTO	4 S/F	0943.0E	0943.0	3.0D	92.0			QL=1 ST=2 TYP=3
	8800	SVTO	8 S	1053.0E	1054.0	1.0D	91.0			QL=1 ST=2 TYP=3
	8800	SVTO	4 S/F	1225.0E	1226.0	3.0D	75.0			QL=1 ST=2 TYP=3
	2695	SGMR	8 S	1343.0E	1343.0	2.0D	66.0			QL=1 ST=2 TYP=3
	8400	BERN	3 S	1404.0	1407.2	8.0	95.0			
	3200	BERN	3 S	1404.0	1407.2	8.0	15.0			
	8800	SVTO	4 S/F	1407.0E	1407.0	3.0D	110.0			QL=1 ST=2 TYP=3
	8800	SGMR	4 S/F	1407.0E	1407.0	302.0D	120.0			QL=1 ST=2 TYP=3
	2800	OTTA	32 ABS	1502.0	1605.0	95.0	-21.7	8.0		
	8400	BERN	4 S/F	1536.0	1538.0	4.0	38.0			
	3200	BERN	4 S/F	1536.0	1538.0	4.0	30.0			
	2800	OTTA	4 S/F	1536.5	1538.2	4.4	42.3	12.0		
	2800	OTTA	4 S/F	1726.0	1741.0	27.0	32.3	9.0		
	2800	OTTA	28 PRE	1726.0	1933.0	127.0	37.6	18.0		
	8800	PALE	4 S/F	1825.0E	1826.0	4.0D	120.0			QL=1 ST=2 TYP=3
	8800	SGMR	8 S	1826.0E	1826.0	1.0D	100.0			QL=1 ST=2 TYP=3
	8800	PALE	49 GB	1933.0E	1935.0	3.0D	580.0			QL=1 ST=2 TYP=6
8800	SGMR	49 GB	1933.0E	1935.0	14.0D	830.0			QL=1 ST=3 TYP=6	
2800	OTTA	4 S/F	1933.5	1936.4	14.0	281.4	84.0			
2695	PALE	20 GRF	1934.0E	1935.0	11.0D	210.0			QL=1 ST=2 TYP=2	
2695	SGMR	4 S/F	1935.0E	1936.0	7.0D	220.0			QL=1 ST=3 TYP=3	
2800	OTTA	29 PBI	1947.9	1947.9	132.0	58.3	29.0			
8800	SGMR	8 S	1953.0E	1953.0	2.0D	120.0			QL=1 ST=2 TYP=3	
2695	LEAR	4 S/F	2256.0E	2300.0	4.0D	16.0			QL=1 ST=2 TYP=3	
8800	LEAR	4 S/F	2259.0E	2302.0	4.0D	90.0			QL=1 ST=2 TYP=3	
12	2695	PALE	4 S/F	0018.0E	0019.0	4.0D	87.0			QL=1 ST=2 TYP=5
	2695	LEAR	4 S/F	0018.0E	0030.0	12.0D	120.0			QL=1 ST=2 TYP=5
	8800	LEAR	49 GB	0018.0E	0030.0	18.0D	730.0			QL=1 ST=2 TYP=7
	8800	PALE	49 GB	0018.0E	0029.0	13.0D	580.0			QL=1 ST=3 TYP=6
	8800	LEAR	4 S/F	0522.0E	0525.0	3.0D	240.0			QL=1 ST=2 TYP=5
	8800	LEAR	4 S/F	0536.0E	0536.0	3.0D	32.0			QL=1 ST=2 TYP=3
	8800	LEAR	8 S	0542.0E	0542.0	1.0D	29.0			QL=1 ST=2 TYP=3
	8800	LEAR	8 S	0606.0E	0607.0	2.0D	35.0			QL=1 ST=2 TYP=3
	8800	LEAR	8 S	0701.0E	0702.0	2.0D	28.0			QL=1 ST=2 TYP=3
	2695	LEAR	8 S	0735.0E	0735.0	2.0D	33.0			QL=1 ST=2 TYP=3
	8800	LEAR	4 S/F	0735.0E	0735.0	3.0D	140.0			QL=1 ST=2 TYP=3
	8800	SVTO	4 S/F	0735.0E	0735.0	6.0D	130.0			QL=1 ST=2 TYP=3
	2695	LEAR	4 S/F	0804.0E	0840.0	63.0D	300.0			QL=1 ST=3 TYP=3
	8800	SVTO	49 GB	0814.0E	0839.0	46.0D	2200.0			QL=1 ST=2 TYP=7
	8800	LEAR	49 GB	0814.0E	0839.0	56.0D	2300.0			QL=1 ST=2 TYP=7

S O L A R R A D I O E M I S S I O N
Selected Fixed Frequency Events

MARCH 1989

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks	
							Peak (10 ⁻²² W/m ² Hz)	Mean			
12	2695	SVTO	49 GB	0817.0E	0820.0	5.0D	230.0			QL=1 ST=2 TYP=7	
	8800	SGMR	8 S	1242.0E	1243.0	1.0D	61.0			QL=1 ST=2 TYP=3	
	2695	SVTO	4 S/F	1242.0E	1243.0	6.0D	68.0			QL=1 ST=2 TYP=3	
	8800	SVTO	4 S/F	1242.0E	1243.0	6.0D	81.0			QL=1 ST=2 TYP=3	
	8800	SVTO	20 GRF	1312.0E	1319.0	7.0D	85.0			QL=1 ST=2 TYP=2	
	2800	OTTA	4 S/F	1452.0	1502.0	23.0	593.8	175.0			
	8800	SGMR	49 GB	1455.0E	1501.0	15.0D	1200.0				QL=1 ST=2 TYP=6
	8800	SVTO	49 GB	1455.0E	1501.0	21.0D	1500.0				QL=1 ST=2 TYP=7
	2695	SGMR	49 GB	1456.0E	1502.0	15.0D	570.0				QL=1 ST=2 TYP=6
	2695	SVTO	49 GB	1456.0E	1502.0	19.0D	550.0				QL=1 ST=2 TYP=7
	2800	OTTA	29 PBI	1515.0	1515.0	49.0	19.5	9.0			
	8800	SVTO	4 S/F	1545.0E	1545.0	3.0D	83.0				QL=1 ST=2 TYP=3
	2800	OTTA	4 S/F	1611.0	1620.0	11.0	34.2	10.0			
	8800	SGMR	4 S/F	1619.0E	1619.0	15.0D	75.0				QL=1 ST=2 TYP=3
	2800	OTTA	22 GRF	1638.0	1647.0	23.0D	28.9	8.0			
	8800	SGMR	4 S/F	1646.0E	1646.0	15.0D	180.0				QL=1 ST=2 TYP=3
	2800	OTTA	22 GRF	1839.0	1937.0	110.0	46.8	14.0			
	8800	PALE	8 S	1931.0E	1932.0	1.0D	65.0				QL=1 ST=2 TYP=3
	2695	PALE	4 S/F	1936.0E	1936.0	214.0D	54.0				QL=1 ST=2 TYP=3
	2800	OTTA	4 S/F	2029.0	2037.0	80.0	338.0	135.0			
	8800	PALE	49 GB	2030.0E	2035.0	6.0D	1300.0				QL=1 ST=2 TYP=7
	8800	SGMR	49 GB	2035.0E	2036.0	12.0D	500.0				QL=1 ST=3 TYP=6
	2695	SGMR	4 S/F	2035.0E	2036.0	12.0D	370.0				QL=1 ST=3 TYP=3
	2695	PALE	20 GRF	2036.0E	2036.0	13.0D	440.0				QL=1 ST=2 TYP=2
	8800	PALE	49 GB	2036.0E	2038.0	13.0D	920.0				QL=1 ST=2 TYP=6
	8800	SGMR	49 GB	2047.0E	2052.0	193.0D	540.0				QL=1 ST=3 TYP=7
	8800	PALE	49 GB	2049.0E	2052.0	19.0D	760.0				QL=1 ST=2 TYP=7
	2695	PALE	20 GRF	2049.0E	2101.0	19.0D	300.0				QL=1 ST=2 TYP=2
	2695	SGMR	20 GRF	2050.0E	2101.0	20.0D	210.0				QL=1 ST=3 TYP=2
	8800	PALE	4 S/F	2110.0E	2116.0	11.0D	450.0				QL=1 ST=2 TYP=5
	2695	PALE	8 S	2115.0E	2116.0	2.0D	180.0				QL=1 ST=2 TYP=3
	2695	SGMR	8 S	2115.0E	2115.0	2.0D	100.0				QL=1 ST=2 TYP=3
8800	SGMR	4 S/F	2115.0E	2116.0	7.0D	300.0				QL=1 ST=2 TYP=3	
2695	PENT	4 S/F	2217.0	2218.0	14.0	60.9	24.0				
8800	SGMR	4 S/F	2217.0E	2218.0	4.0D	410.0				QL=1 ST=2 TYP=3	
2695	SGMR	4 S/F	2217.0E	2219.0	4.0D	160.0				QL=1 ST=2 TYP=3	
8800	PALE	49 GB	2217.0E	2218.0	11.0D	880.0				QL=1 ST=2 TYP=6	
2695	PALE	8 S	2218.0E	2218.0	1.0D	66.0				QL=1 ST=2 TYP=3	
8800	LEAR	8 S	2336.0E	2336.0	1.0D	240.0				QL=1 ST=2 TYP=3	
13	8800	PALE	8 S	0025.0E	0027.0	2.0D	100.0			QL=1 ST=2 TYP=3	
	8800	LEAR	8 S	0120.0E	0120.0	1.0D	88.0			QL=1 ST=2 TYP=3	
	8800	LEAR	4 S/F	0131.0E	0134.0	11.0D	180.0			QL=1 ST=2 TYP=5	
	8800	PALE	4 S/F	0133.0E	0134.0	12.0D	200.0			QL=1 ST=2 TYP=3	
	8800	LEAR	4 S/F	0228.0E	0230.0	7.0D	43.0			QL=1 ST=2 TYP=3	
	2695	LEAR	4 S/F	0258.0E	0314.0	26.0D	380.0			QL=1 ST=2 TYP=5	
	8800	LEAR	49 GB	0259.0E	0317.0	25.0D	1400.0			QL=1 ST=2 TYP=7	
	8800	PALE	49 GB	0259.0E	0317.0	33.0D	1200.0			QL=1 ST=2 TYP=7	
	2695	PALE	4 S/F	0259.0E	0314.0	33.0D	330.0			QL=1 ST=2 TYP=5	
	8800	LEAR	8 S	0327.0E	0327.0	1.0D	340.0			QL=1 ST=2 TYP=3	
	2695	PALE	4 S/F	0332.0E	0335.0	11.0D	200.0			QL=1 ST=2 TYP=3	
	8800	PALE	4 S/F	0332.0E	0335.0	12.0D	450.0			QL=1 ST=2 TYP=5	
	2695	LEAR	8 S	0334.0E	0335.0	2.0D	140.0			QL=1 ST=2 TYP=3	
	8800	LEAR	8 S	0532.0E	0532.0	1.0D	24.0			QL=1 ST=2 TYP=3	
	8800	LEAR	4 S/F	0547.0E	0549.0	7.0D	55.0			QL=1 ST=2 TYP=3	
	8800	LEAR	4 S/F	0603.0E	0606.0	17.0D	81.0			QL=1 ST=2 TYP=3	
	8800	LEAR	8 S	0627.0E	0628.0	1.0D	250.0			QL=1 ST=2 TYP=3	
	8800	SVTO	4 S/F	0628.0E	0628.0	652.0D	120.0			QL=1 ST=2 TYP=3	
	8800	LEAR	4 S/F	0702.0E	0703.0	7.0D	100.0			QL=1 ST=2 TYP=3	
	2695	LEAR	4 S/F	0702.0E	0711.0	13.0D	68.0			QL=1 ST=2 TYP=3	
	8800	LEAR	4 S/F	0757.0E	0757.0	1018.0D	35.0			QL=1 ST=2 TYP=3	
	8800	LEAR	4 S/F	0942.0E	0943.0	4.0D	100.0			QL=1 ST=2 TYP=3	
	8800	SVTO	4 S/F	0943.0E	0943.0	6.0D	72.0			QL=1 ST=2 TYP=3	
	3200	BERN	4 S/F	1140.0	1154.0	23.0	18.0				
	8400	BERN	4 S/F	1140.0	1154.0	23.0	55.0				
	8800	SVTO	20 GRF	1310.0E	1311.0	9.0D	140.0				QL=1 ST=2 TYP=2
8800	SGMR	20 GRF	1311.0E	1311.0	6.0D	120.0				QL=1 ST=2 TYP=2	
2800	OTTA	22 GRF	1458.0	1549.0	91.0	16.4	5.0				
8800	SGMR	4 S/F	1509.0E	1509.0	649.0D	52.0				QL=1 ST=2 TYP=3	

S O L A R R A D I O E M I S S I O N
Selected Fixed Frequency Events

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MARCH 1989

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 ⁻²² W/m ² Hz)	Mean		
13	2800	OTTA	22 GRF	1724.0	1826.0	120.0	27.5	8.0		
	[	8800 PALE	4 S/F	1735.0E	1736.0	5.00	240.0			QL=1 ST=2 TYP=3
		8800 SGMR	4 S/F	1735.0E	1736.0	4.00	240.0			QL=1 ST=2 TYP=3
		8800 SGMR	4 S/F	1816.0E	1818.0	6.00	110.0			QL=1 ST=2 TYP=3
	8800	SGMR	8 S	1837.0E	1838.0	2.00	61.0			QL=1 ST=2 TYP=3
	2800	OTTA	22 GRF	2040.0	2118.0	85.0	29.0	9.0		
	8800	SGMR	4 S/F	2051.0E	2053.0	4.00	80.0			QL=1 ST=3 TYP=3
	[	2695 LEAR	8 S	2303.0E	2304.0	1.00	150.0			QL=1 ST=2 TYP=3
8800 LEAR		8 S	2303.0E	2304.0	1.00	350.0			QL=1 ST=2 TYP=3	
14	8800	LEAR	8 S	0001.0E	0003.0	2.00	75.0			QL=1 ST=2 TYP=3
	[	8800 LEAR	8 S	0056.0E	0057.0	2.00	120.0			QL=1 ST=2 TYP=3
		8800 PALE	4 S/F	0056.0E	0057.0	4.00	120.0			QL=1 ST=2 TYP=3
	[	8800 PALE	20 GRF	0236.0E	0250.0	23.00	290.0			QL=1 ST=2 TYP=2
		8800 LEAR	4 S/F	0238.0E	0250.0	27.00	160.0			QL=1 ST=3 TYP=5
	[	2695 LEAR	4 S/F	0247.0E	0254.0	18.00	81.0			QL=1 ST=3 TYP=3
		2695 PALE	20 GRF	0247.0E	0254.0	18.00	120.0			QL=1 ST=2 TYP=2
	2695	PALE	8 S	0305.0E	0306.0	1.00	53.0			QL=1 ST=2 TYP=3
	[	2695 LEAR	8 S	0311.0E	0312.0	2.00	100.0			QL=1 ST=2 TYP=3
		8800 LEAR	8 S	0311.0E	0312.0	1.00	28.0			QL=1 ST=2 TYP=3
	[	8800 PALE	4 S/F	0312.0E	0312.0	1284.00	62.0			QL=1 ST=2 TYP=3
		8800 LEAR	4 S/F	0524.0E	0527.0	8.00	67.0			QL=1 ST=3 TYP=3
	[	8800 LEAR	4 S/F	0606.0E	0607.0	5.00	51.0			QL=1 ST=2 TYP=3
		8800 SVTO	4 S/F	0607.0E	0607.0	9.00	58.0			QL=1 ST=2 TYP=3
	[	8800 LEAR	4 S/F	0617.0E	0631.0	19.00	99.0			QL=1 ST=2 TYP=5
		8800 LEAR	4 S/F	0636.0E	0637.0	6.00	170.0			QL=1 ST=2 TYP=3
	[	8800 SVTO	4 S/F	0636.0E	0637.0	5.00	100.0			QL=1 ST=2 TYP=3
		8800 SVTO	4 S/F	0757.0E	0757.0	5.00	58.0			QL=1 ST=2 TYP=3
	8800	SVTO	4 S/F	0820.0E	0820.0	5.00	63.0			QL=1 ST=2 TYP=3
	8800	LEAR	8 S	0835.0E	0835.0	1.00	59.0			QL=1 ST=2 TYP=3
	[	2695 LEAR	4 S/F	0913.0E	0913.0	1249.00	23.0			QL=1 ST=2 TYP=3
		8800 LEAR	8 S	0915.0E	0916.0	1.00	79.0			QL=1 ST=2 TYP=3
	[	8800 SVTO	4 S/F	0915.0E	0921.0	6.00	81.0			QL=1 ST=2 TYP=5
		8800 LEAR	4 S/F	0924.0E	0925.0	7.00	100.0			QL=1 ST=2 TYP=3
	[	8800 SVTO	4 S/F	0925.0E	0925.0	3.00	90.0			QL=1 ST=2 TYP=5
		8800 SGMR	8 S	1259.0E	1300.0	2.00	110.0			QL=1 ST=3 TYP=3
	[	8800 SVTO	4 S/F	1300.0E	1300.0	3.00	79.0			QL=1 ST=2 TYP=3
		8800 SGMR	8 S	1308.0E	1308.0	2.00	80.0			QL=1 ST=2 TYP=3
	2800	OTTA	22 GRF	1347.0	1351.0	13.00	18.3	9.0		
	[	8800 SGMR	4 S/F	1424.0E	1426.0	8.00	220.0			QL=1 ST=2 TYP=3
		8800 SVTO	4 S/F	1424.0E	1426.0	8.00	180.0			QL=1 ST=2 TYP=3
	[	8400 BERN	46 C	1424.0	1426.1	11.0	112.0			
		3200 BERN	46 C	1424.0	1430.2	11.0	24.0			
	[	2800 OTTA	22 GRF	1426.0	1431.0	42.0	21.0	10.0		
		8800 SGMR	4 S/F	1438.0E	1441.0	9.00	61.0			QL=1 ST=2 TYP=3
	[	2800 OTTA	22 GRF	1545.0	1550.0	49.0	10.8	5.0		
		8800 SVTO	8 S	1552.0E	1552.0	1.00	130.0			QL=1 ST=2 TYP=3
	[	8400 BERN	3 S	1552.3	1552.5	1.0	71.0			
		3200 BERN	3 S	1552.3	1552.5	1.0	5.0			
	[	2800 OTTA	46 C	1634.0	1657.0	29.0	608.0	182.0		
2800 OTTA		46 C	1634.0	1724.0	75.0	656.0	195.0			
[	8800 SGMR	4 S/F	1641.0E	1646.0	10.00	460.0			QL=1 ST=2 TYP=3	
	2695 SGMR	49 GB	1651.0E	1656.0	13.00	640.0			QL=1 ST=2 TYP=6	
[	8800 SGMR	49 GB	1651.0E	1657.0	13.00	2300.0			QL=1 ST=2 TYP=6	
	2695 PALE	49 GB	1657.0E	1724.0	44.00	720.0			QL=1 ST=2 TYP=7	
[	2800 OTTA	46 C	1703.0	1710.0	11.0	285.0	114.0			
	2695 SGMR	4 S/F	1704.0E	1708.0	11.00	300.0			QL=1 ST=2 TYP=5	
[	8800 SGMR	49 GB	1704.0E	1705.0	11.00	690.0			QL=1 ST=2 TYP=6	
	8800 PALE	49 GB	1711.0E	1724.0	32.00	2900.0			QL=1 ST=2 TYP=7	
[	2800 OTTA	46 C	1714.0	1724.0	35.0	656.0	197.0			
	2695 SGMR	49 GB	1715.0E	1724.0	21.00	730.0			QL=1 ST=2 TYP=7	
[	8800 SGMR	49 GB	1715.0E	1724.0	21.00	4000.0			QL=1 ST=2 TYP=7	
	2695 SGMR	4 S/F	1736.0E	1736.0	4.00	130.0			QL=1 ST=2 TYP=3	
[	8800 SGMR	20 GRF	1736.0E	1736.0	17.00	410.0			QL=1 ST=2 TYP=2	
	2800 OTTA	29 PBI	1749.0	1749.0	90.0	32.3	16.0			
[	2800 OTTA	22 GRF	1935.0	1946.0	50.0	12.4	6.0			
	8800 PALE	4 S/F	1935.0E	1940.0	10.00	100.0			QL=1 ST=2 TYP=5	
[8800 SGMR	20 GRF	1935.0E	1940.0	10.00	110.0			QL=1 ST=2 TYP=2	
	2800 OTTA	4 S/F	2029.0	2030.0	5.0	167.6	83.0			

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S O L A R R A D I O E M I S S I O N
Selected Fixed Frequency Events

MARCH 1989

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks	
							Peak (10 ⁻²² W/m ² Hz)	Mean			
14	8800	PALE	49 GB	2029.0E	2029.0	9.0D	600.0			QL=1 ST=2 TYP=6	
	2695	PALE	8 S	2029.0E	2029.0	2.0D	120.0			QL=1 ST=2 TYP=3	
	2695	SGMR	8 S	2029.0E	2029.0	2.0D	120.0			QL=1 ST=2 TYP=3	
	8800	SGMR	49 GB	2029.0E	2029.0	7.0D	660.0			QL=1 ST=2 TYP=6	
	2800	OTTA	29 PBI	2034.0	2034.0	94.0	27.0	13.0			
	2800	OTTA	4 S/F	2035.0	2036.0	5.0	16.7	6.0			
	8800	SGMR	8 S	2036.0E	2037.0	2.0D	72.0				QL=1 ST=2 TYP=3
	8800	SGMR	20 GRF	2046.0E	2052.0	9.0D	140.0				QL=1 ST=2 TYP=2
	2800	OTTA	20 GRF	2054.0	2103.0	66.0	8.1	4.0			
15	8800	PALE	8 S	0318.0E	0318.0	1.0D	76.0			QL=1 ST=3 TYP=3	
	8800	LEAR	8 S	0445.0E	0446.0	1.0D	74.0			QL=1 ST=2 TYP=3	
	8800	LEAR	49 GB	0625.0E	0648.0	45.0D	2400.0			QL=1 ST=3 TYP=7	
	8800	SVTO	4 S/F	0626.0E	0629.0	15.0D	210.0			QL=1 ST=2 TYP=3	
	8800	SVTO	49 GB	0645.0E	0648.0	14.0D	2000.0			QL=1 ST=2 TYP=6	
	2695	LEAR	49 GB	0645.0E	0648.0	25.0D	620.0			QL=1 ST=3 TYP=6	
	2695	SVTO	49 GB	0646.0E	0648.0	29.0D	580.0			QL=1 ST=2 TYP=6	
	8800	SVTO	8 S	0819.0E	0819.0	2.0D	150.0			QL=1 ST=2 TYP=3	
	8800	LEAR	4 S/F	0819.0E	0819.0	16.0D	140.0			QL=1 ST=2 TYP=3	
	2695	LEAR	8 S	0827.0E	0829.0	2.0D	30.0			QL=1 ST=2 TYP=3	
	8800	SGMR	8 S	1215.0E	1215.0	1.0D	270.0			QL=1 ST=2 TYP=3	
	8800	SVTO	4 S/F	1215.0E	1215.0	6.0D	280.0			QL=1 ST=2 TYP=3	
	2695	SVTO	4 S/F	1215.0E	1215.0	6.0D	150.0			QL=1 ST=2 TYP=3	
	2695	SGMR	4 S/F	1215.0E	1215.0	705.0D	130.0			QL=1 ST=1 TYP=3	
	8400	BERN	4 S/F	1215.2	1215.4	1.5	184.0				
	3200	BERN	4 S/F	1215.2	1215.4	1.5	123.0				
	8800	SGMR	4 S/F	1331.0E	1333.0	4.0D	97.0				QL=1 ST=2 TYP=5
	8800	SVTO	4 S/F	1331.0E	1333.0	6.0D	100.0				QL=1 ST=2 TYP=5
	3200	BERN	46 C	1331.0	1333.1	5.0	25.0				
	8400	BERN	46 C	1331.0	1331.4	5.0	60.0				
	8800	SGMR	8 S	1622.0E	1623.0	1.0D	120.0				QL=1 ST=2 TYP=3
	2800	OTTA	3 S	1648.5	1652.3	13.0	2476.0	742.0			
	8800	SGMR	49 GB	1650.0E	1651.0	21.0D	6100.0				QL=1 ST=2 TYP=6
	2695	SGMR	49 GB	1651.0E	1652.0	20.0D	2400.0				QL=1 ST=2 TYP=6
	8800	PALE	4 S/F	1657.0E	1700.0	9.0D	320.0				QL=1 ST=2 TYP=5
	2695	PALE	4 S/F	1657.0E	1659.0	4.0D	130.0				QL=1 ST=2 TYP=3
	2800	OTTA	29 PBI	1703.5	1703.5	167.0	81.2	40.0			
2695	PENT	3 S	2001.9	2002.3	8.0	117.2	35.0				
8800	PALE	8 S	2002.0E	2002.0	1.0D	260.0				QL=1 ST=2 TYP=3	
2695	PALE	8 S	2002.0E	2002.0	1.0D	110.0				QL=1 ST=2 TYP=3	
8800	SGMR	8 S	2002.0E	2002.0	1.0D	290.0				QL=1 ST=2 TYP=3	
2695	SGMR	8 S	2002.0E	2002.0	1.0D	110.0				QL=1 ST=2 TYP=3	
16	2695	LEAR	20 GRF	0155.0E	0204.0	22.0D	430.0			QL=1 ST=2 TYP=2	
	8800	LEAR	20 GRF	0156.0E	0203.0	21.0D	230.0			QL=1 ST=2 TYP=2	
	2695	PALE	20 GRF	0156.0E	0204.0	26.0D	390.0			QL=1 ST=2 TYP=2	
	8800	PALE	20 GRF	0157.0E	0204.0	12.0D	190.0			QL=1 ST=2 TYP=2	
	8800	LEAR	4 S/F	0610.0E	0611.0	3.0D	58.0			QL=1 ST=2 TYP=3	
	8800	LEAR	49 GB	0949.0E	0954.0	12.0D	670.0			QL=1 ST=2 TYP=6	
	8800	SVTO	49 GB	0950.0E	0954.0	850.0D	570.0			QL=1 ST=1 TYP=6	
	2695	LEAR	4 S/F	0952.0E	0953.0	8.0D	150.0			QL=1 ST=2 TYP=3	
	2695	SVTO	4 S/F	0952.0E	0954.0	848.0D	130.0			QL=1 ST=1 TYP=3	
	3200	BERN	4 S/F	0952.0	0954.2	5.0	88.0				
	8800	SVTO	8 S	1115.0E	1116.0	1.0D	91.0				QL=1 ST=2 TYP=3
	2695	SGMR	49 GB	1523.0E	1525.0	30.0D	9300.0				QL=1 ST=2 TYP=7
	8800	SGMR	49 GB	1523.0E	1525.0	30.0D	31000.0				QL=1 ST=2 TYP=7
	8800	SVTO	49 GB	1523.0E	1525.0	32.0D	23000.0				QL=1 ST=2 TYP=7
	2695	SVTO	49 GB	1523.0E	1525.0	44.0D	7800.0				QL=1 ST=2 TYP=7
	2800	OTTA	47 GB	1523.3	1526.0	21.2	7015.0	2104.0			
	8400	BERN	47 GB	1523.4	1525.2	4.5	15200.0				
	3200	BERN	47 GB	1523.4	1525.4	4.5	2760.0				
	2800	OTTA	29 PBI	1544.5	1544.5	520.0	131.0	65.0			
	8800	SGMR	4 S/F	1553.0E	1554.0	3.0D	290.0				QL=1 ST=2 TYP=3
	2800	OTTA	4 S/F	1553.0	1554.5	3.0	59.3	17.0			
	2695	SGMR	8 S	1554.0E	1554.0	2.0D	140.0				QL=1 ST=2 TYP=3
	8800	SGMR	4 S/F	1613.0E	1613.0	3.0D	66.0				QL=1 ST=2 TYP=3
8800	PALE	8 S	1752.0E	1753.0	2.0D	190.0				QL=1 ST=2 TYP=3	
8800	SGMR	8 S	1752.0E	1753.0	2.0D	200.0				QL=1 ST=2 TYP=3	
2800	OTTA	3 S	1752.2	1754.0	2.0	42.4	17.0				

S O L A R R A D I O E M I S S I O N
Selected Fixed Frequency Events

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MARCH 1989

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 ⁻²² W/m ² Hz)	Mean		
16	2800	OTTA	3 S	1853.5	1854.1	1.3	25.4	7.0		
	8800	SGMR	4 S/F	1914.0E	1914.0	16.00	140.0			QL=1 ST=2 TYP=3
	2800	OTTA	20 GRF	1914.1	1923.3	57.0	22.5	11.0		
	8800	SGMR	20 GRF	2039.0E	2041.0	10.00	260.0			QL=1 ST=2 TYP=2
	2800	OTTA	4 S/F	2039.6	2039.8	1.2	91.3	45.0		
	2800	OTTA	4 S/F	2040.8	2042.1	6.8	64.9	19.0		
	2695	PALE	8 S	2041.0E	2041.0	1.00	67.0			QL=1 ST=2 TYP=3
	2695	SGMR	8 S	2041.0E	2042.0	1.00	58.0			QL=1 ST=2 TYP=3
	2800	OTTA	20 GRF	2047.6	2052.3	110.0	87.3	35.0		
	8800	SGMR	20 GRF	2049.0E	2051.0	7.00	79.0			QL=1 ST=3 TYP=2
	2695	SGMR	20 GRF	2051.0E	2052.0	7.00	78.0			QL=1 ST=3 TYP=2
	2800	OTTA	4 S/F	2202.0	2207.0	13.6	52.9	16.0		
	2695	PALE	8 S	2206.0E	2207.0	1.00	51.0			QL=1 ST=2 TYP=3
	2695	PENT	4 S/F	2245.0	2247.1	4.6	18.0	7.0		
2695	PENT	4 S/F	2314.5	2316.5	5.1	53.4	16.0			
17	8800	LEAR	8 S	0216.0E	0216.0	2.00	37.0			QL=1 ST=2 TYP=3
	2695	LEAR	8 S	0216.0E	0216.0	2.00	49.0			QL=1 ST=2 TYP=3
	8800	LEAR	8 S	0236.0E	0236.0	2.00	67.0			QL=1 ST=2 TYP=3
	2695	LEAR	8 S	0236.0E	0236.0	2.00	75.0			QL=1 ST=2 TYP=3
	2695	PALE	8 S	0236.0E	0236.0	1.00	57.0			QL=1 ST=2 TYP=3
	8800	PALE	8 S	0241.0E	0242.0	1.00	68.0			QL=1 ST=2 TYP=3
	8800	LEAR	4 S/F	0242.0E	0245.0	4.00	110.0			QL=1 ST=2 TYP=5
	2695	LEAR	8 S	0244.0E	0245.0	2.00	240.0			QL=1 ST=2 TYP=3
	8800	PALE	8 S	0245.0E	0245.0	1.00	100.0			QL=1 ST=2 TYP=3
	2695	PALE	8 S	0245.0E	0245.0	1.00	190.0			QL=1 ST=2 TYP=3
	8800	LEAR	4 S/F	0257.0E	0257.0	1278.00	58.0			QL=1 ST=2 TYP=3
	8800	LEAR	8 S	0331.0E	0331.0	2.00	250.0			QL=1 ST=2 TYP=3
	2695	LEAR	8 S	0331.0E	0331.0	1.00	90.0			QL=1 ST=2 TYP=3
	2695	PALE	8 S	0331.0E	0331.0	1.00	67.0			QL=1 ST=2 TYP=3
	8800	PALE	8 S	0331.0E	0331.0	2.00	140.0			QL=1 ST=2 TYP=3
	8800	LEAR	4 S/F	0335.0E	0337.0	5.00	120.0			QL=1 ST=2 TYP=3
	8800	PALE	4 S/F	0335.0E	0337.0	5.00	160.0			QL=1 ST=2 TYP=3
	2695	LEAR	8 S	0530.0E	0530.0	1.00	51.0			QL=1 ST=2 TYP=3
	8800	LEAR	4 S/F	0530.0E	0530.0	3.00	190.0			QL=1 ST=2 TYP=3
	8800	SVTO	8 S	0530.0E	0530.0	1.00	100.0			QL=1 ST=2 TYP=3
	8800	LEAR	4 S/F	0557.0E	0557.0	3.00	97.0			QL=1 ST=2 TYP=3
	8800	SVTO	8 S	0557.0E	0557.0	1.00	99.0			QL=1 ST=2 TYP=3
	2695	LEAR	49 GB	0715.0E	0716.0	10.00	630.0			QL=1 ST=2 TYP=6
	2695	SVTO	49 GB	0716.0E	0717.0	5.00	600.0			QL=1 ST=2 TYP=6
	8800	SVTO	49 GB	0716.0E	0716.0	10.00	1900.0			QL=1 ST=2 TYP=6
	8400	BERN	47 GB	0716.0	0716.5	2.0	990.0			
	3200	BERN	47 GB	0716.0	0716.5	2.0	460.0			
	8400	BERN	4 S/F	0806.2	0807.1	1.5	62.0			
	3200	BERN	4 S/F	0806.2	0807.1	1.5	23.0			
	8800	SVTO	4 S/F	1107.0E	1108.0	6.00	180.0			QL=1 ST=2 TYP=3
	2695	SVTO	8 S	1107.0E	1107.0	1.00	67.0			QL=1 ST=2 TYP=3
	8400	BERN	46 C	1107.3	1108.2	2.0	112.0			
	3200	BERN	46 C	1107.3	1107.4	2.0	59.0			
	8800	SGMR	4 S/F	1650.0E	1650.0	430.00	65.0			QL=1 ST=3 TYP=3
	2800	OTTA	47 GB	1734.0	1739.0	17.2	3921.0	1176.0		
	8800	PALE	49 GB	1734.0E	1735.0	6.00	7500.0			QL=1 ST=2 TYP=7
	2695	PALE	49 GB	1734.0E	1738.0	8.00	2500.0			QL=1 ST=2 TYP=7
	2695	SGMR	49 GB	1734.0E	1738.0	386.00	3100.0			QL=1 ST=1 TYP=7
	2800	OTTA	29 PBI	1751.2	1751.2	85.0	71.5	35.0		
	2800	OTTA	5 S	1807.8	1808.1	0.8	40.4	20.0		
2800	OTTA	22 GRF	1810.3	1814.3	9.7	17.4	8.0			
2695	SGMR	4 S/F	1822.0E	1823.0	3.00	65.0			QL=1 ST=2 TYP=3	
8800	SGMR	4 S/F	1822.0E	1823.0	4.00	75.0			QL=1 ST=2 TYP=3	
2800	OTTA	3 S	1822.6	1823.7	3.6	66.4	26.0			
8800	PALE	4 S/F	1823.0E	1823.0	386.00	61.0			QL=1 ST=2 TYP=3	
2800	OTTA	4 S/F	1857.9	1859.4	5.1	19.9	6.0			
2800	OTTA	4 S/F	1906.7	1907.7	2.3	35.8	10.0			
2800	OTTA	4 S/F	2008.7	2013.1	8.5	93.0	28.0			
8800	PALE	4 S/F	2011.0E	2011.0	3.00	100.0			QL=1 ST=2 TYP=3	
8800	SGMR	4 S/F	2011.0E	2011.0	3.00	130.0			QL=1 ST=2 TYP=3	
2695	SGMR	4 S/F	2011.0E	2013.0	3.00	88.0			QL=1 ST=2 TYP=3	
2695	PALE	8 S	2012.0E	2013.0	2.00	75.0			QL=1 ST=2 TYP=3	
8800	LEAR	4 S/F	2308.0E	2311.0	9.00	180.0			QL=1 ST=2 TYP=3	

S O L A R R A D I O E M I S S I O N
Selected Fixed Frequency Events

MARCH 1989

Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
						Peak (10 ⁻²² W/m ² Hz)	Mean		
17	2695 PENT	3 S	2310.0	2312.0	5.1	65.4	19.0		
	2695 LEAR	4 S/F	2310.0E	2311.0	4.0D	73.0			QL=1 ST=2 TYP=3
18	2695 LEAR	4 S/F	0205.0E	0205.0	4.0D	36.0			QL=1 ST=2 TYP=3
	8800 LEAR	4 S/F	0205.0E	0205.0	52.0D	66.0			QL=1 ST=2 TYP=3
	8800 PALE	4 S/F	0205.0E	0205.0	229.0D	73.0			QL=1 ST=2 TYP=3
	2695 LEAR	8 S	0931.0E	0932.0	2.0D	46.0			QL=1 ST=3 TYP=3
	8800 LEAR	8 S	0931.0E	0932.0	2.0D	99.0			QL=1 ST=3 TYP=3
	8800 SVTO	4 S/F	0932.0E	0932.0	6.0D	86.0			QL=1 ST=2 TYP=3
	8800 SGMR	49 GB	1242.0E	1242.0	4.0D	560.0			QL=1 ST=2 TYP=6
	8800 SVTO	49 GB	1242.0E	1246.0	4.0D	560.0			QL=1 ST=2 TYP=7
	3200 BERN	47 GB	1242.0	1244.2	3.5	32.0			
	8400 BERN	47 GB	1242.0	1242.5	3.5	300.0			
	8800 SGMR	49 GB	1732.0E	1733.0	7.0D	950.0			QL=1 ST=2 TYP=6
	2695 SGMR	8 S	1732.0E	1733.0	2.0D	35.0			QL=1 ST=2 TYP=3
	2800 OTTA	4 S/F	1733.0	1758.5	65.0	188.4	56.0		
	8800 SGMR	4 S/F	1740.0E	1750.0	380.0D	230.0			QL=1 ST=3 TYP=5
	2695 SGMR	4 S/F	1747.0E	1750.0	373.0D	130.0			QL=1 ST=3 TYP=5
	2800 OTTA	4 S/F	2026.5	2032.0	15.0	435.0	130.0		
	2695 SGMR	4 S/F	2028.0E	2031.0	6.0D	440.0			QL=1 ST=2 TYP=3
	2695 PALE	4 S/F	2029.0E	2031.0	5.0D	380.0			QL=1 ST=2 TYP=3
8800 SGMR	4 S/F	2029.0E	2031.0	4.0D	250.0			QL=1 ST=2 TYP=3	
8800 PALE	4 S/F	2030.0E	2031.0	3.0D	220.0			QL=1 ST=2 TYP=3	
8800 PALE	49 GB	2155.0E	2156.0	5.0D	780.0			QL=1 ST=2 TYP=6	
8800 SGMR	49 GB	2155.0E	2156.0	4.0D	760.0			QL=1 ST=2 TYP=6	
19	8800 LEAR	8 S	0135.0E	0135.0	2.0D	55.0			QL=1 ST=2 TYP=3
	2800 OTTA	3 S	1316.1	1316.7	3.8	41.8	12.0		
	2800 OTTA	28 PRE	1732.0	1839.0	68.0	26.6	13.0		
	2800 OTTA	4 S/F	1840.5	1851.5	34.0	266.7	133.0		
	8800 SGMR	4 S/F	1841.0E	1850.0	17.0D	360.0			QL=1 ST=2 TYP=5
	2695 SGMR	4 S/F	1842.0E	1851.0	16.0D	240.0			QL=1 ST=2 TYP=3
	2695 PALE	4 S/F	1843.0E	1850.0	23.0D	230.0			QL=1 ST=2 TYP=5
	8800 PALE	4 S/F	1847.0E	1850.0	15.0D	230.0			QL=1 ST=2 TYP=3
	2695 SGMR	4 S/F	1858.0E	1859.0	10.0D	200.0			QL=1 ST=2 TYP=3
	8800 SGMR	20 GRF	1858.0E	1858.0	11.0D	260.0			QL=1 ST=2 TYP=2
	2800 OTTA	29 PBI	1915.0	1915.0	152.0	41.1	20.0		
	8800 SGMR	4 S/F	1916.0E	1917.0	3.0D	88.0			QL=1 ST=2 TYP=3
	2800 OTTA	4 S/F	1933.0	1957.5	81.0	70.2	21.0		
	2695 SGMR	4 S/F	1945.0E	1957.0	15.0D	55.0			QL=1 ST=2 TYP=3
	2695 PALE	20 GRF	1952.0E	1958.0	10.0D	72.0			QL=1 ST=2 TYP=2
	2695 PENT	4 S/F	2329.0	2332.5	27.0	155.0	46.0		
	8800 LEAR	4 S/F	2329.0E	2330.0	6.0D	120.0			QL=1 ST=2 TYP=3
	8800 PALE	4 S/F	2329.0E	2330.0	7.0D	160.0			QL=1 ST=2 TYP=3
2695 LEAR	4 S/F	2330.0E	2331.0	4.0D	85.0			QL=1 ST=2 TYP=3	
2695 PALE	4 S/F	2330.0E	2331.0	4.0D	100.0			QL=1 ST=2 TYP=3	
8800 PALE	8 S	2340.0E	2340.0	1.0D	78.0			QL=1 ST=2 TYP=3	
20	8800 LEAR	4 S/F	0359.0E	0400.0	3.0D	160.0			QL=1 ST=2 TYP=3
	2695 LEAR	8 S	0400.0E	0401.0	2.0D	96.0			QL=1 ST=2 TYP=3
	2695 PALE	8 S	0400.0E	0401.0	1.0D	83.0			QL=1 ST=2 TYP=3
	8800 PALE	8 S	0400.0E	0400.0	1.0D	140.0			QL=1 ST=2 TYP=3
	8800 SVTO	4 S/F	1148.0E	1150.0	6.0D	52.0			QL=1 ST=2 TYP=3
	8800 SGMR	4 S/F	1150.0E	1150.0	3.0D	63.0			QL=1 ST=2 TYP=3
	2800 OTTA	3 S	1347.7	1351.7	17.7	333.6	100.0		
	8800 SGMR	49 GB	1348.0E	1351.0	10.0D	810.0			QL=1 ST=2 TYP=6
	8800 SVTO	49 GB	1348.0E	1351.0	10.0D	790.0			QL=1 ST=2 TYP=6
	8400 BERN	47 GB	1348.0	1351.2	6.0	544.0			
	3200 BERN	47 GB	1348.0	1351.3	6.0	323.0			
	2695 SGMR	4 S/F	1349.0E	1351.0	7.0D	290.0			QL=1 ST=2 TYP=3
	2695 SVTO	4 S/F	1349.0E	1351.0	7.0D	290.0			QL=1 ST=2 TYP=3
	8800 SGMR	49 GB	1420.0E	1422.0	7.0D	760.0			QL=1 ST=2 TYP=6
	8800 SVTO	49 GB	1420.0E	1422.0	9.0D	760.0			QL=1 ST=2 TYP=6
	8400 BERN	47 GB	1420.3	1422.0	7.0	425.0			
	3200 BERN	47 GB	1420.3	1422.0	7.0	85.0			
	2695 SVTO	8 S	1421.0E	1421.0	2.0D	95.0			QL=1 ST=2 TYP=3
8800 SGMR	8 S	1426.0E	1427.0	2.0D	310.0			QL=1 ST=2 TYP=3	
8800 SGMR	8 S	1923.0E	1923.0	1.0D	83.0			QL=1 ST=2 TYP=3	
2800 OTTA	22 GRF	1924.0	1955.0	50.0	10.4	3.0			

S O L A R R A D I O E M I S S I O N
Selected Fixed Frequency Events

45
Mar 89

MARCH 1989

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak	Mean		
							(10 ⁻²² W/m ² Hz)			
20	2800	OTTA	20 GRF	2028.0	2122.0	120.00	31.8	16.0		
	2800	OTTA	3 S	2042.0	2049.0	14.0	39.8	12.0		
	2695	SGMR	20 GRF	2047.0E	2048.0	2.00	67.0			QL=1 ST=3 TYP=2
	2695	PALE	20 GRF	2048.0E	2048.0	1.00	53.0			QL=1 ST=2 TYP=2
	8800	SGMR	20 GRF	2115.0E	2116.0	1.00	57.0			QL=1 ST=3 TYP=2
21	8800	LEAR	4 S/F	0501.0E	0502.0	4.00	51.0			QL=1 ST=2 TYP=3
	2695	LEAR	8 S	0540.0E	0541.0	1.00	33.0			QL=1 ST=2 TYP=3
	8800	LEAR	8 S	0540.0E	0541.0	2.00	130.0			QL=1 ST=2 TYP=3
	8800	SVTO	4 S/F	0541.0E	0541.0	580.00	110.0			QL=1 ST=2 TYP=3
	8800	LEAR	4 S/F	0632.0E	0634.0	4.00	160.0			QL=1 ST=2 TYP=3
	2695	LEAR	8 S	0633.0E	0634.0	2.00	69.0			QL=1 ST=2 TYP=3
	2695	SVTO	4 S/F	0633.0E	0634.0	1047.00	72.0			QL=1 ST=1 TYP=3
	8400	BERN	46 C	0633.0	0634.1	2.5	110.0			
	3200	BERN	46 C	0633.0	0634.1	2.5	59.0			
	8800	LEAR	4 S/F	1010.0E	1010.0	4.00	84.0			QL=1 ST=2 TYP=3
	8800	SVTO	8 S	1010.0E	1010.0	1.00	70.0			QL=1 ST=2 TYP=3
	2800	OTTA	22 GRF	1419.0	1540.0	200.0	19.6	9.0		
	8800	SGMR	20 GRF	1459.0E	1501.0	3.00	140.0			QL=1 ST=2 TYP=2
	8800	SVTO	8 S	1501.0E	1501.0	1.00	71.0			QL=1 ST=2 TYP=3
	2695	PALE	8 S	1658.0E	1658.0	1.00	55.0			QL=1 ST=2 TYP=3
2800	OTTA	22 GRF	1825.0	1944.0	225.0	34.3	10.0			
22	8800	LEAR	4 S/F	0511.0E	0513.0	8.00	320.0			QL=1 ST=2 TYP=3
	2695	LEAR	8 S	0512.0E	0513.0	2.00	24.0			QL=1 ST=2 TYP=3
	3200	BERN	4 S/F	1025.2	1026.0	2.0	17.0			
	8400	BERN	4 S/F	1025.2	1026.0	2.0	35.0			
	8800	SVTO	4 S/F	1026.0E	1026.0	539.00	64.0			QL=1 ST=2 TYP=3
	2800	OTTA	20 GRF	1912.0	1915.0	35.00	4.8	2.0		
	2800	OTTA	3 S	1947.0	1949.0	8.5	133.0	40.0		
	8800	PALE	8 S	1948.0E	1948.0	2.00	130.0			QL=1 ST=2 TYP=3
	2695	PALE	8 S	1948.0E	1948.0	2.00	120.0			QL=1 ST=2 TYP=3
	8800	SGMR	4 S/F	1948.0E	1948.0	3.00	170.0			QL=1 ST=2 TYP=3
	2695	SGMR	8 S	1948.0E	1948.0	2.00	120.0			QL=1 ST=2 TYP=3
	2800	OTTA	29 PBI	1955.5	1955.5	100.0	12.1	6.0		
	23	2800	OTTA	4 S/F	1348.0	1405.0	33.0	66.4	19.0	
8800		SVTO	20 GRF	1400.0E	1404.0	7.00	96.0			QL=1 ST=2 TYP=2
8800		SVTO	20 GRF	1401.0E	1404.0	6.00	96.0			QL=1 ST=2 TYP=2
8800		SGMR	20 GRF	1401.0E	1404.0	10.00	98.0			QL=1 ST=2 TYP=2
2695		SGMR	4 S/F	1402.0E	1404.0	9.00	60.0			QL=1 ST=2 TYP=3
2695		SVTO	8 S	1402.0E	1404.0	2.00	54.0			QL=1 ST=2 TYP=3
2800		OTTA	29 PBI	1411.0	1411.0	97.0	18.3	8.0		
2800		OTTA	47 GB	1913.0	1941.0	52.0	1741.0	522.0		
2695		PALE	49 GB	1928.0E	1941.0	62.00	1600.0			QL=1 ST=2 TYP=7
2695		SGMR	49 GB	1928.0E	1941.0	272.00	1600.0			QL=1 ST=3 TYP=6
8800		PALE	49 GB	1929.0E	1940.0	71.00	2500.0			QL=1 ST=2 TYP=6
8800		SGMR	49 GB	1929.0E	1940.0	271.00	2200.0			QL=1 ST=3 TYP=6
2800		OTTA	29 PBI	2005.0	2005.0	175.0	91.5	45.0		
2695		SGMR	4 S/F	2026.0E	2028.0	9.00	63.0			QL=1 ST=2 TYP=3
2695		SGMR	8 S	2037.0E	2038.0	2.00	56.0			QL=1 ST=2 TYP=3
2800	OTTA	4 S/F	2050.5	2056.5	9.5	83.2	25.0			
2695	SGMR	4 S/F	2054.0E	2056.0	6.00	130.0			QL=1 ST=2 TYP=3	
8800	SGMR	4 S/F	2054.0E	2054.0	6.00	160.0			QL=1 ST=2 TYP=3	
2695	PALE	8 S	2055.0E	2056.0	2.00	88.0			QL=1 ST=2 TYP=3	
2800	OTTA	4 S/F	2121.5	2124.5	9.5	47.1	18.0			
24	2800	OTTA	20 GRF	1539.0	1722.0	375.0	26.1	13.0		
	2800	OTTA	3 S	2025.0	2029.0	12.0	238.0	72.0		
	2695	PALE	4 S/F	2026.0E	2028.0	5.00	230.0			QL=1 ST=2 TYP=3
	8800	PALE	4 S/F	2026.0E	2028.0	7.00	420.0			QL=1 ST=2 TYP=3
	8800	SGMR	49 GB	2026.0E	2028.0	5.00	510.0			QL=1 ST=2 TYP=6
	2695	SGMR	4 S/F	2026.0E	2028.0	4.00	220.0			QL=1 ST=2 TYP=3
2800	OTTA	4 S/F	2047.0	2052.0	15.0	27.6	8.0			
25	2800	OTTA	22 GRF	1526.0	1548.0	134.0	33.9	7.0		
	8800	SGMR	8 S	1547.0E	1547.0	2.00	120.0			QL=1 ST=2 TYP=3
	8800	SVTO	8 S	1547.0E	1547.0	1.00	130.0			QL=1 ST=2 TYP=3
	3200	BERN	4 S/F	1547.1	1547.5	2.5	27.0			

S O L A R R A D I O E M I S S I O N
Selected Fixed Frequency Events

MARCH 1989

Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
						Peak (10 -22 W/m 2 Hz)	Mean		
25	8400 BERN	4 S/F	1547.1	1547.5	2.5	102.0			
26	2695 SGMR	4 S/F	1308.0E	1309.0	4.0D	290.0			QL=1 ST=2 TYP=3
	2695 SVTO	4 S/F	1308.0E	1309.0	4.0D	300.0			QL=1 ST=2 TYP=3
	2800 OTTA	3 S	1308.5	1310.0	13.0	382.0	115.0		
	8800 SGMR	4 S/F	1309.0E	1309.0	3.0D	410.0			QL=1 ST=2 TYP=3
	8800 SVTO	4 S/F	1404.0E	1404.0	493.0D	110.0			QL=1 ST=2 TYP=3
	8800 SGMR	4 S/F	1404.0E	1404.0	651.0D	75.0			QL=1 ST=2 TYP=3
27	2800 OTTA	3 S	1446.0	1447.0	23.0	18.9	4.0		
	2800 OTTA	4 S/F	2035.5	2036.5	17.0	16.3	3.0		
28	8800 LEAR	4 S/F	0318.0E	0318.0	8.0D	25.0			QL=1 ST=2 TYP=3
	2695 LEAR	8 S	0318.0E	0318.0	2.0D	33.0			QL=1 ST=2 TYP=3
	2800 OTTA	4 S/F	1925.0	1929.0	26.0	62.1	18.0		
	2695 PALE	8 S	1927.0E	1928.0	2.0D	58.0			QL=1 ST=2 TYP=3
	2695 SGMR	4 S/F	1927.0E	1927.0	3.0D	60.0			QL=1 ST=2 TYP=3
	2800 OTTA	24 R	1951.0	1951.0	360.0D	7.5	4.0		
29	8800 LEAR	8 S	0246.0E	0247.0	1.0D	70.0			QL=1 ST=2 TYP=3

Reports are received routinely from the following observatories:

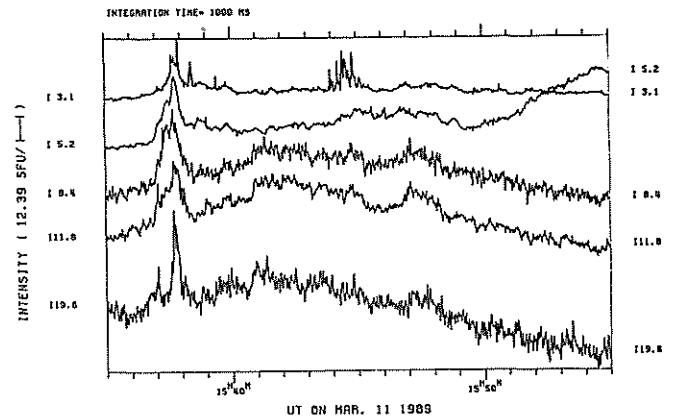
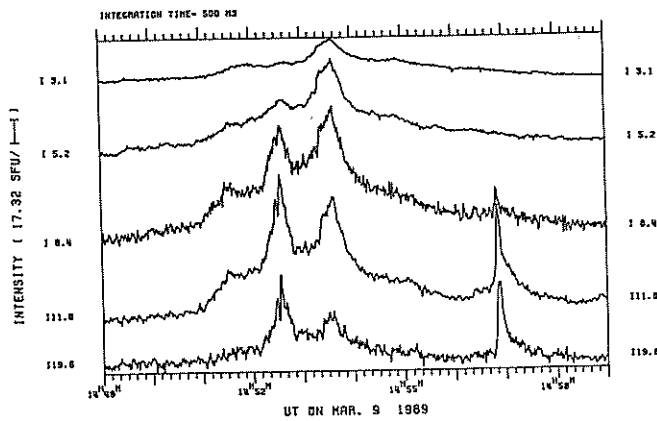
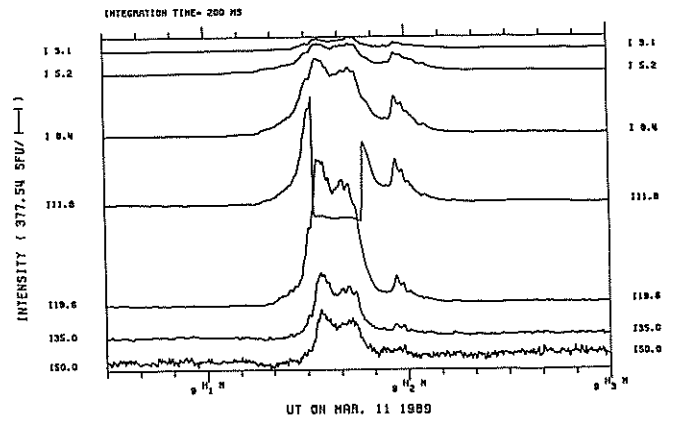
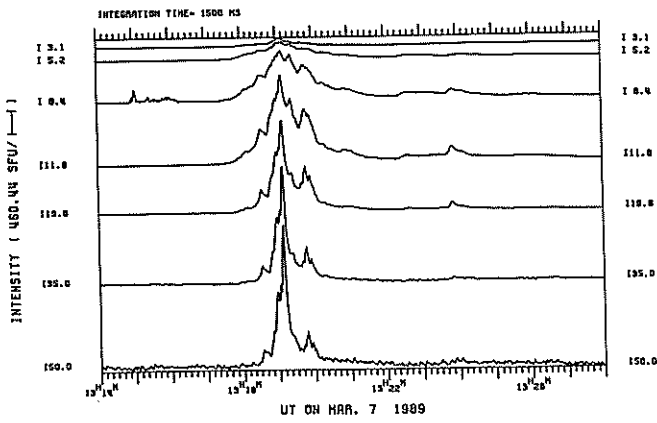
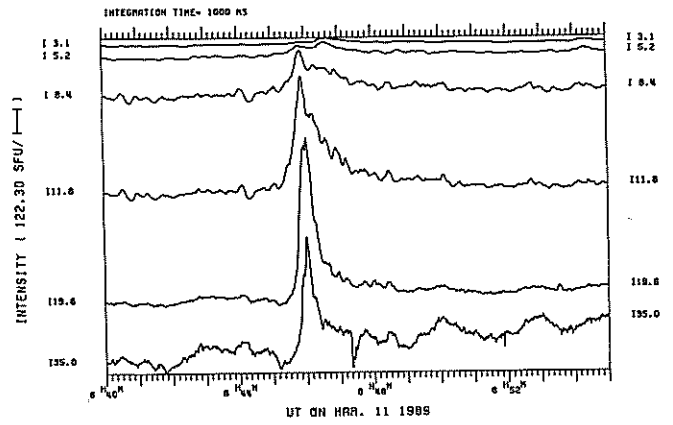
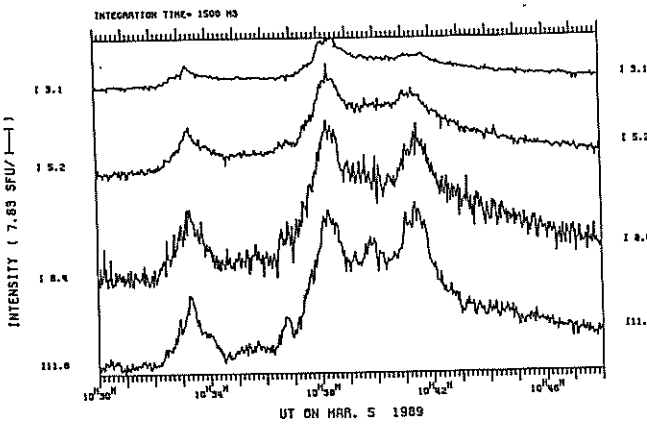
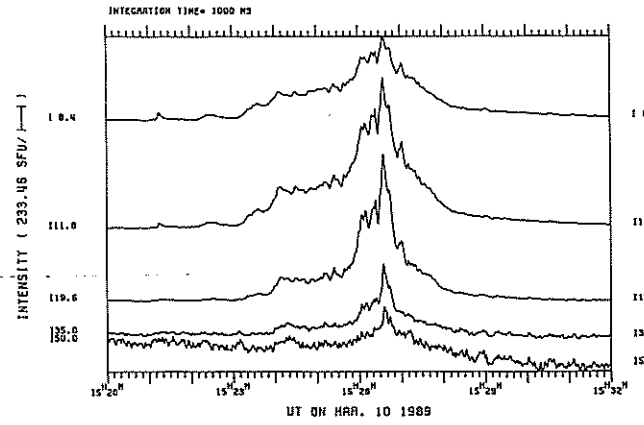
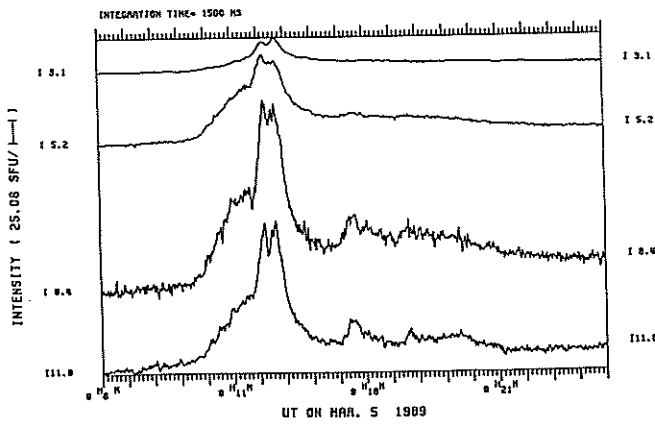
BERN = Berne LEAR = Learmonth PALE = Palehua SGMR = Sagamore Hill
 OTTA = Ottawa PENT = Penticton SVTO = San Vito

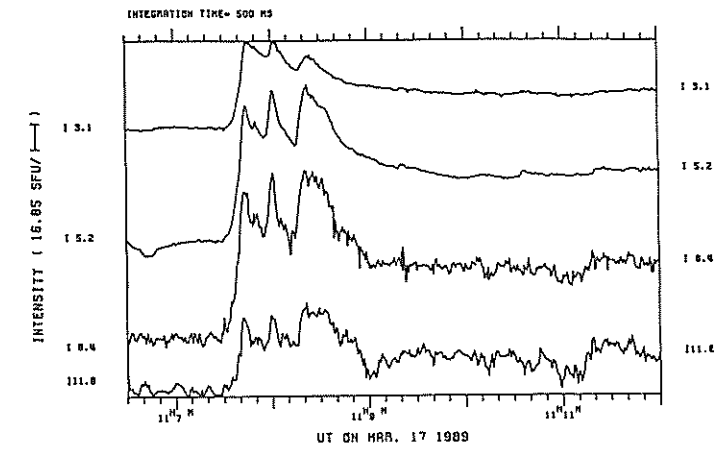
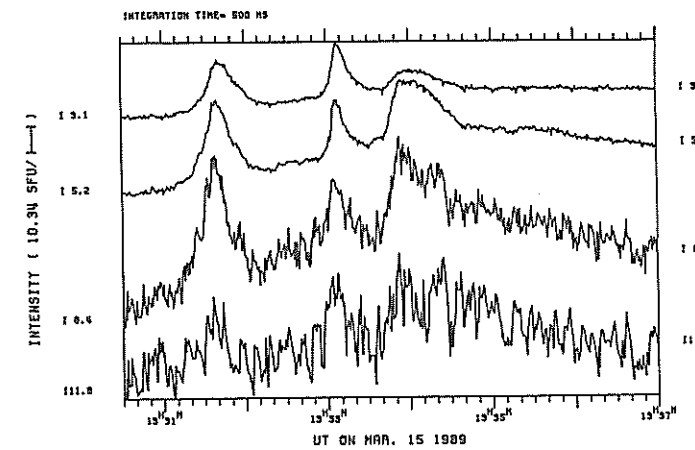
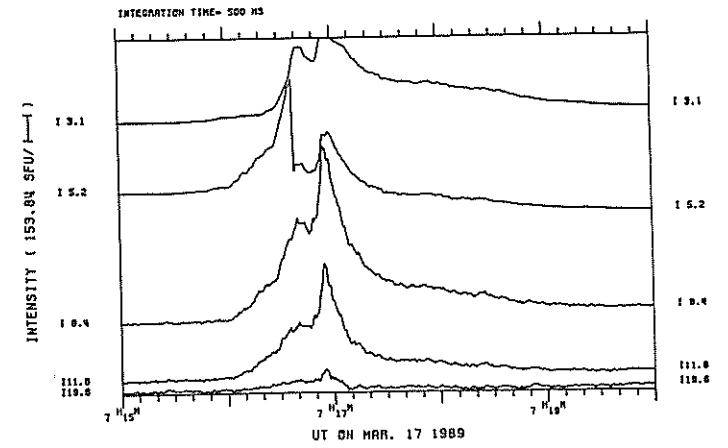
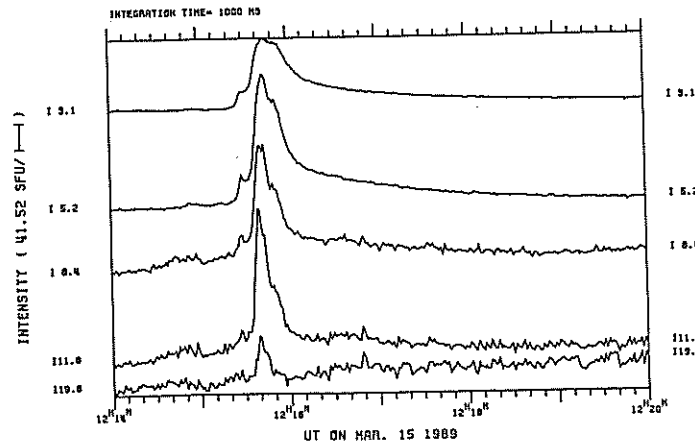
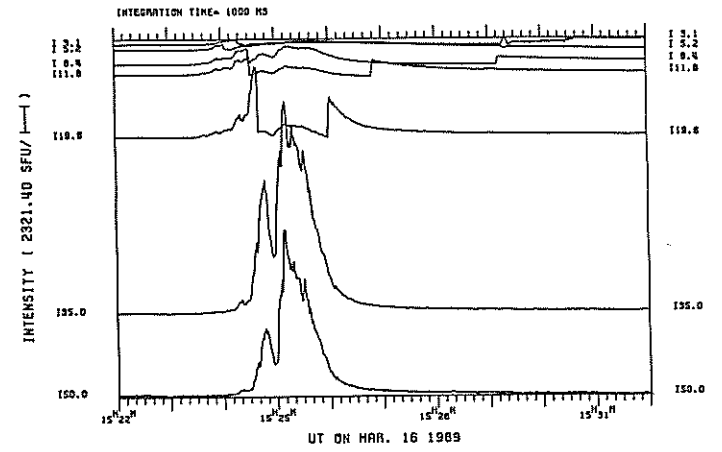
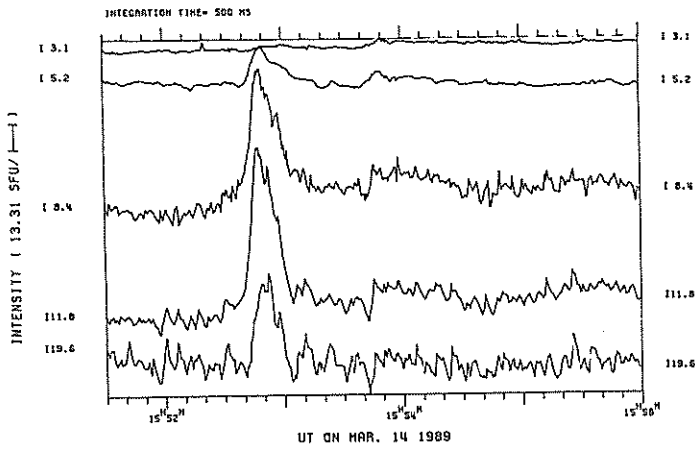
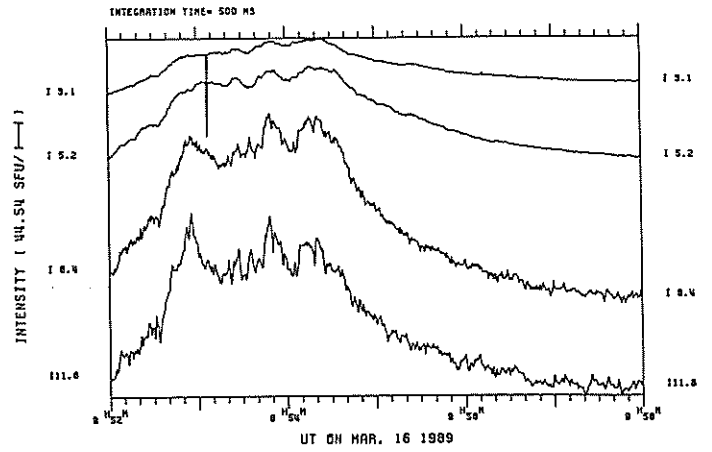
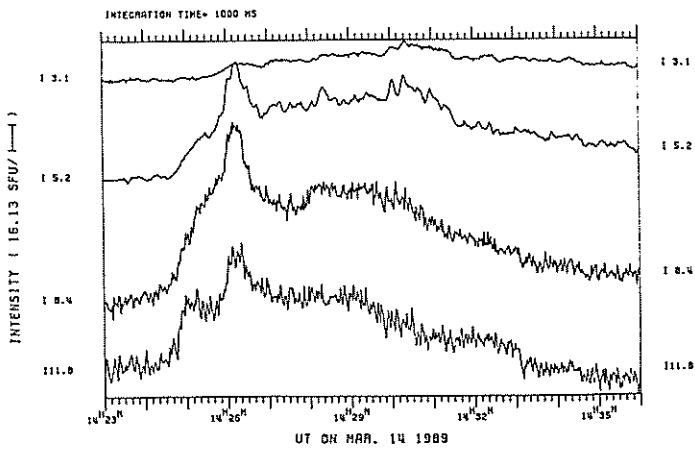
Explanation of Type Codes:

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	40 Rise Only	16A Fall A	27AF Rise and Fall AF	
21A Simple 3A GRF	40F Rise Only F	260 Fall Only	31A Post Burst Decrease A	
2A Simple 1AF	4P Post Rise	26F Fall F	32A Absorption A	

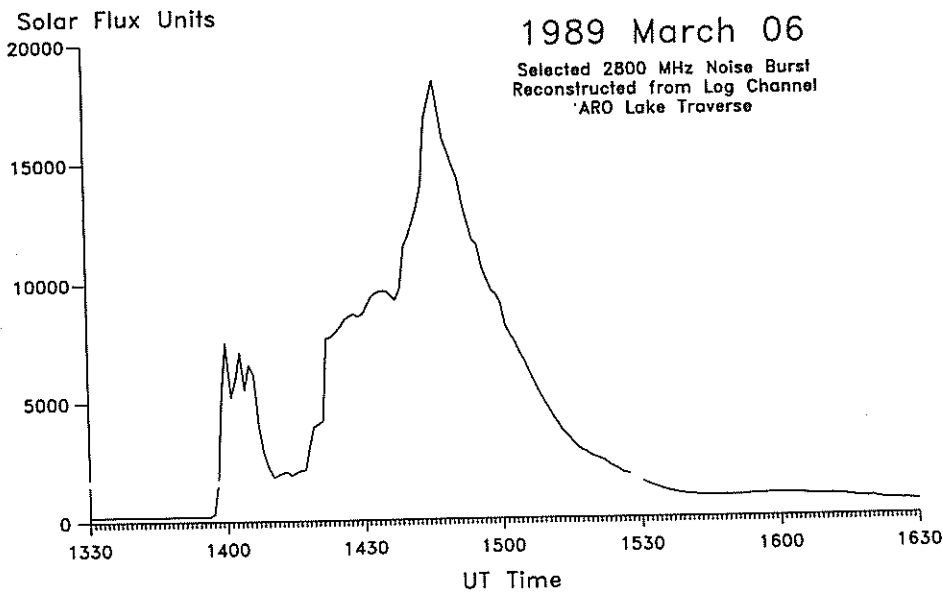
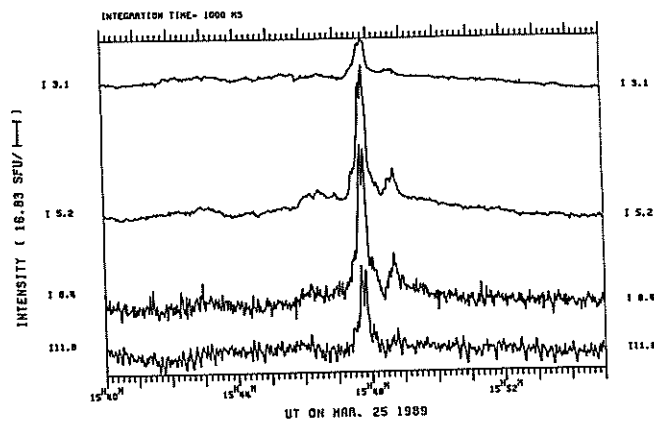
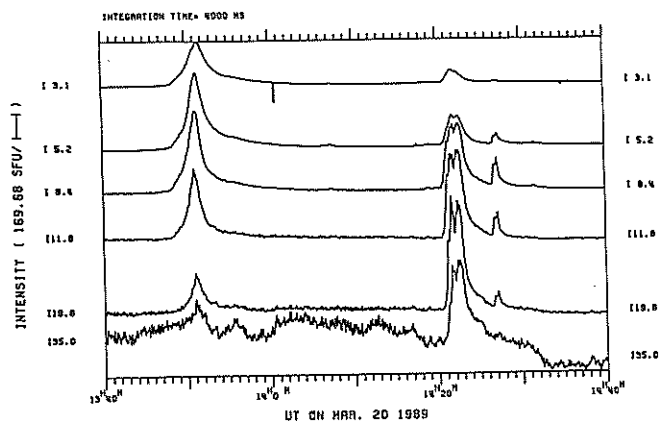
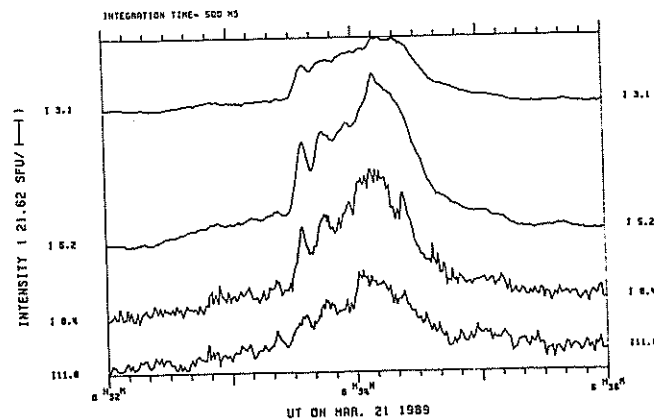
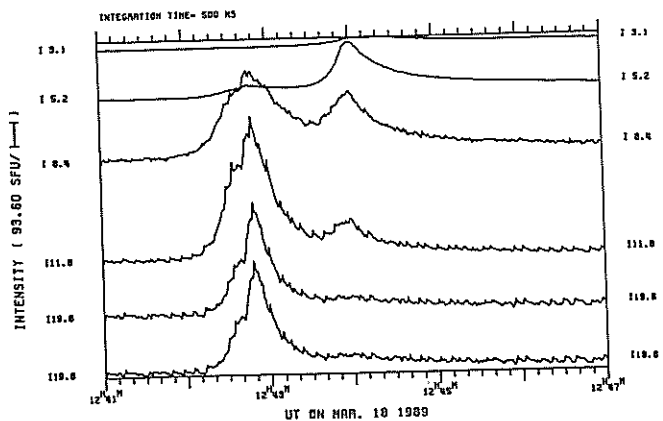
RSTN Site Information: Beginning in April 1986, the RSTN sites LEAR, PALE, SGMR, and SVTO fixed frequency solar radio data are periodically adjusted to several world standard stations. These world standard stations include: Kislovodsk, USSR 15,500 MHz; Ottawa, Canada 2800 MHz; Hiraiso, Japan 500 and 200 MHz; and Toyokawa, Japan 9400, 3750, 2000 and 1000 MHz.

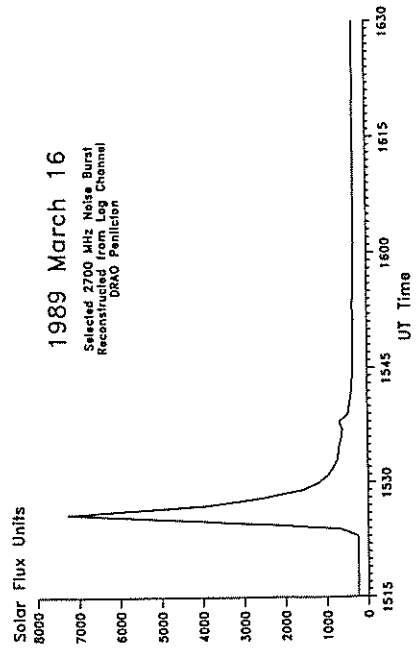
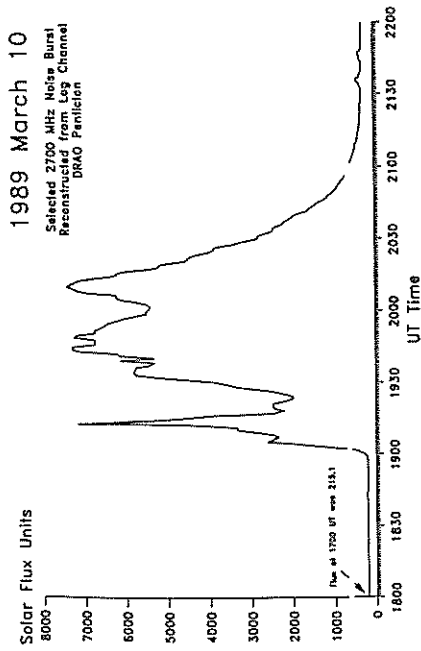
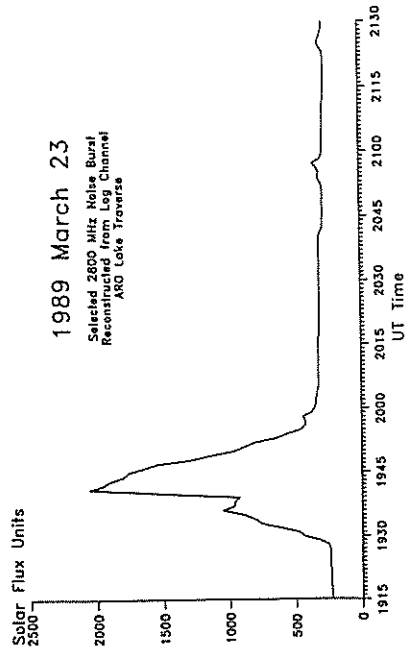
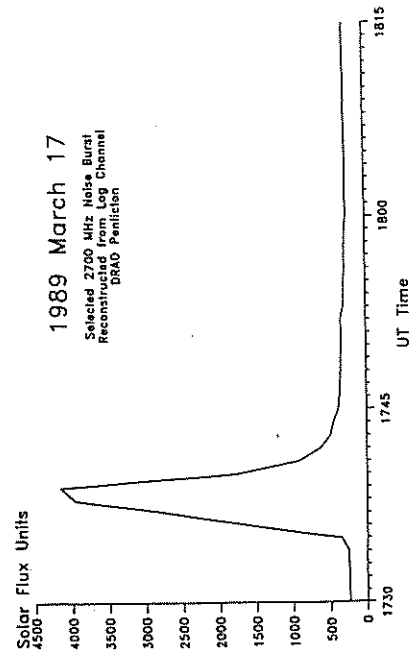
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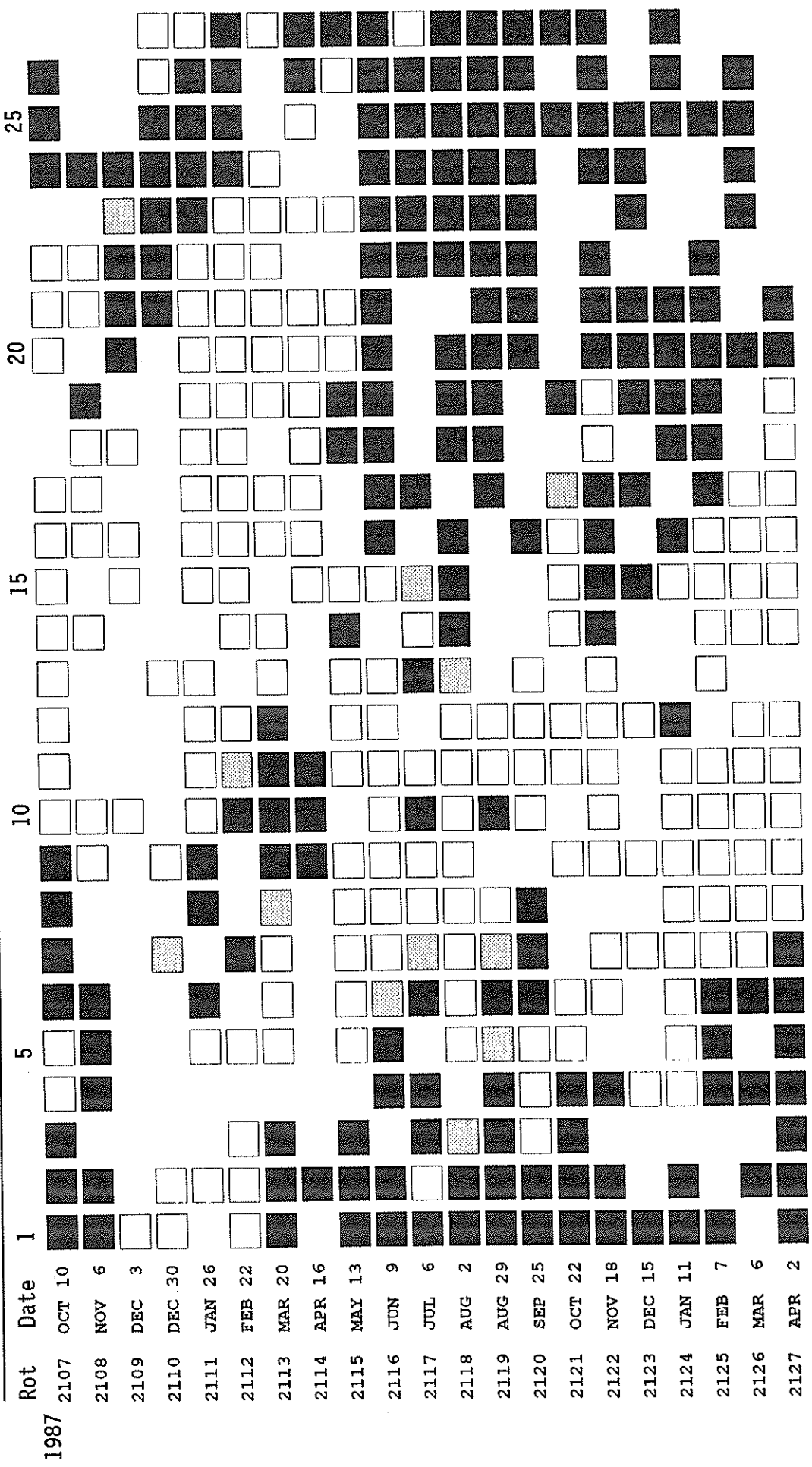


STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

Day	1988									1989		
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1	12	13	14	-35	5	-27	-15	23	-3	.	.	.
2	21	12	7	-51	-22	-2	-19	24	-5	-19	.	.
3	.	28	.	-29	-14	-4	.	.	-4	-22	.	-66
4	35	29	33	-9	1	-2	8	40	-12	-41	-65	.
5	42	25	.	-13	.	16	12	19	2	.	-46	.
6	.	37	.	-39	5	.	15	3	4	-65	-4	.
7	45	.	12	39	18	-22	10	0	-24	-85	-13	-10
8	41	39	-14	-18	43	43	.	.	-27	-101	.	.
9	53	.	-25	-29	48	45	.	-9	-33	.	.	-58
10	47	6	-17	.	51	.	-8	.	.	.	-16	.
11	43	-8	.	-16	22	.	.	.	-62	-16	-6	-16
12	36	-11	-14	-1	25	.	.	.	-47	-23	-18	37
13	.	-22	-11	14	23	.	.	.	-53	.	23	39
14	.	-29	-1	15	1	-30	-36	.	-38	10	34	61
15	8	-25	13	-6	-14	-44	-33	-35	-30	24	55	63
16	.	.	22	2	-15	-50	-43	.	.	23	73	40
17	-25	10	28	.	-20	-54	-39	-46	.	16	66	32
18	.	17	27	-3	.	-46	-52	-43	34	74	.	.
19	.	15	30	3	-36	-49	-53	-46	.	101	116	64
20	.	12	37	-1	-38	-64	-40	.	.	120	131	73
21	.	22	35	.	-49	-67	-37	-19	56	119	94	14
22	.	.	.	-16	.	-64	-34	.	.	-29	40	12
23	.	5	15	.	-57	-57	-38	29	61	.	-13	.
24	-6	5	-3	.	-79	-36	-36	31	.	.	-7	.
25	-20	4	-35	.	-91	-29	-17	.	.	22	-35	-50
26	-26	-6	-67	.	-77	-8	14	30	65	-37	-64	.
27	.	7	-75	-49	-57	6	15	31	.	.	-108	.
28	.	.	-80	-79	-24	34	.	24	.	-50	-93	-110
29	.	.	-57	-51	-10	13	.	26	-5	-64	.	-105
30	18	-19	-29	-15	-20	-6	15	18	.	-91	.	-106
31	.	-13	.	-3	-20	.	.	.	-24	-101	.	-100

Dot symbol indicates no data available for the day.

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.

C O N T E N T S

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P R E L I M I N A R Y H - A L P H A S O L A R S Y N O P T I C C H A R T
CARRINGTON ROTATION NUMBER 1812
(5 February to 4 March 1989)

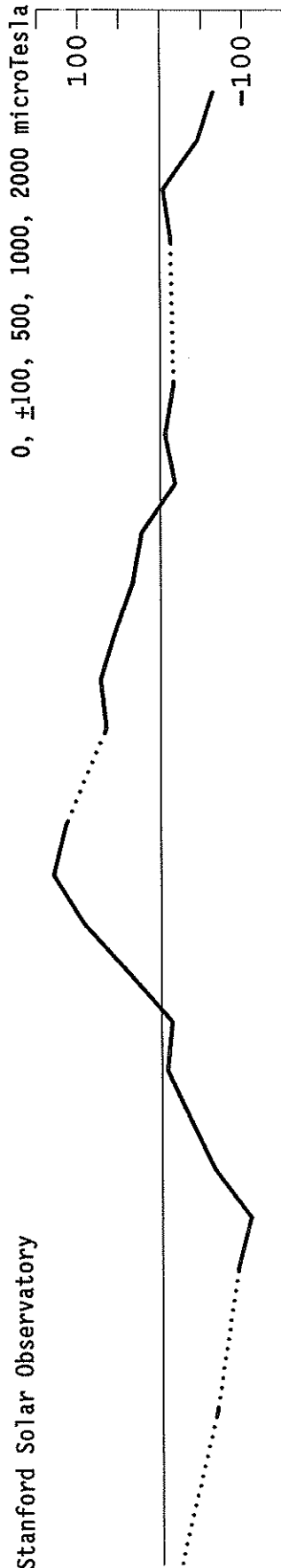
Dates of Observations Below Days of Year:

THIS CHART AND THE SOLAR MAGNETIC SOURCE SURFACE FIELD SYNOPTIC CHART ARE UNAVAILABLE AT TIME OF PUBLICATION.

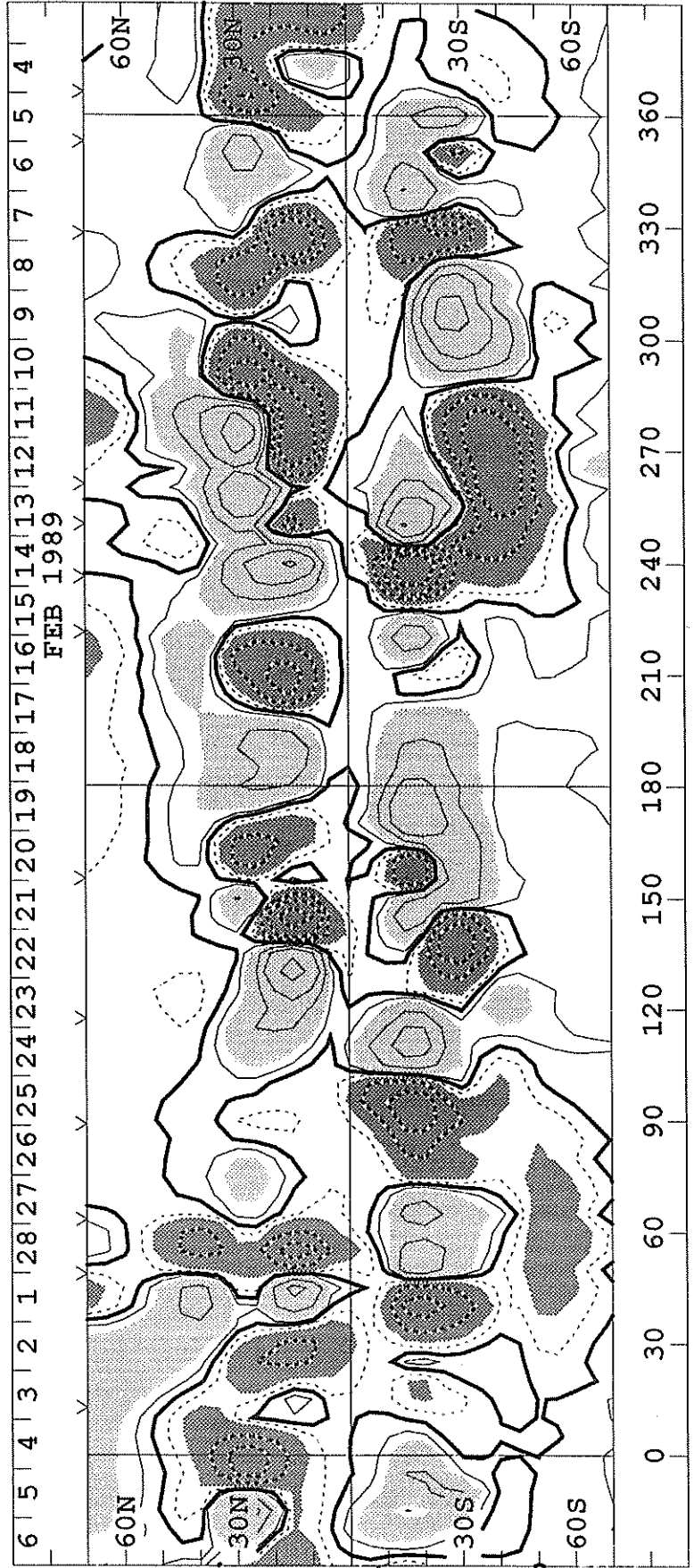
Heliographic Longitude

SOLAR MAGNETIC FIELD SYNOPTIC CHART
CARRINGTON ROTATION NUMBER 1812
(5 February to 4 March 1989)

Stanford Solar Observatory



Photospheric Magnetic Field 0, \pm 100, 500, 1000, 2000 MicroTesla

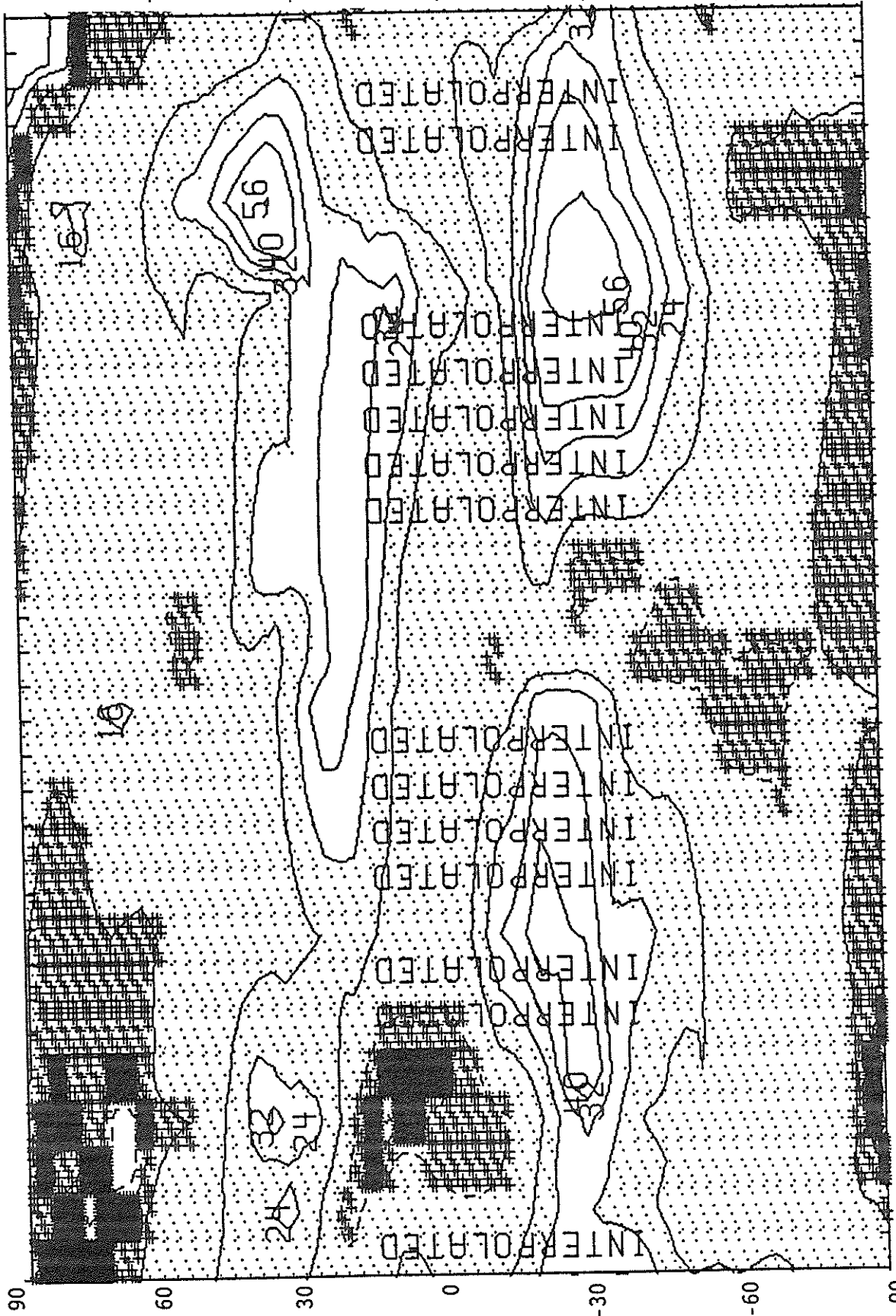


Heliographic Longitude

1812

SACRAMENTO PEAK CORONAL GREEN LINE SYNOPTIC MAP--EAST LIMB
CARRINGTON ROTATION NUMBER 1812 (5 February to 4 March 1989)

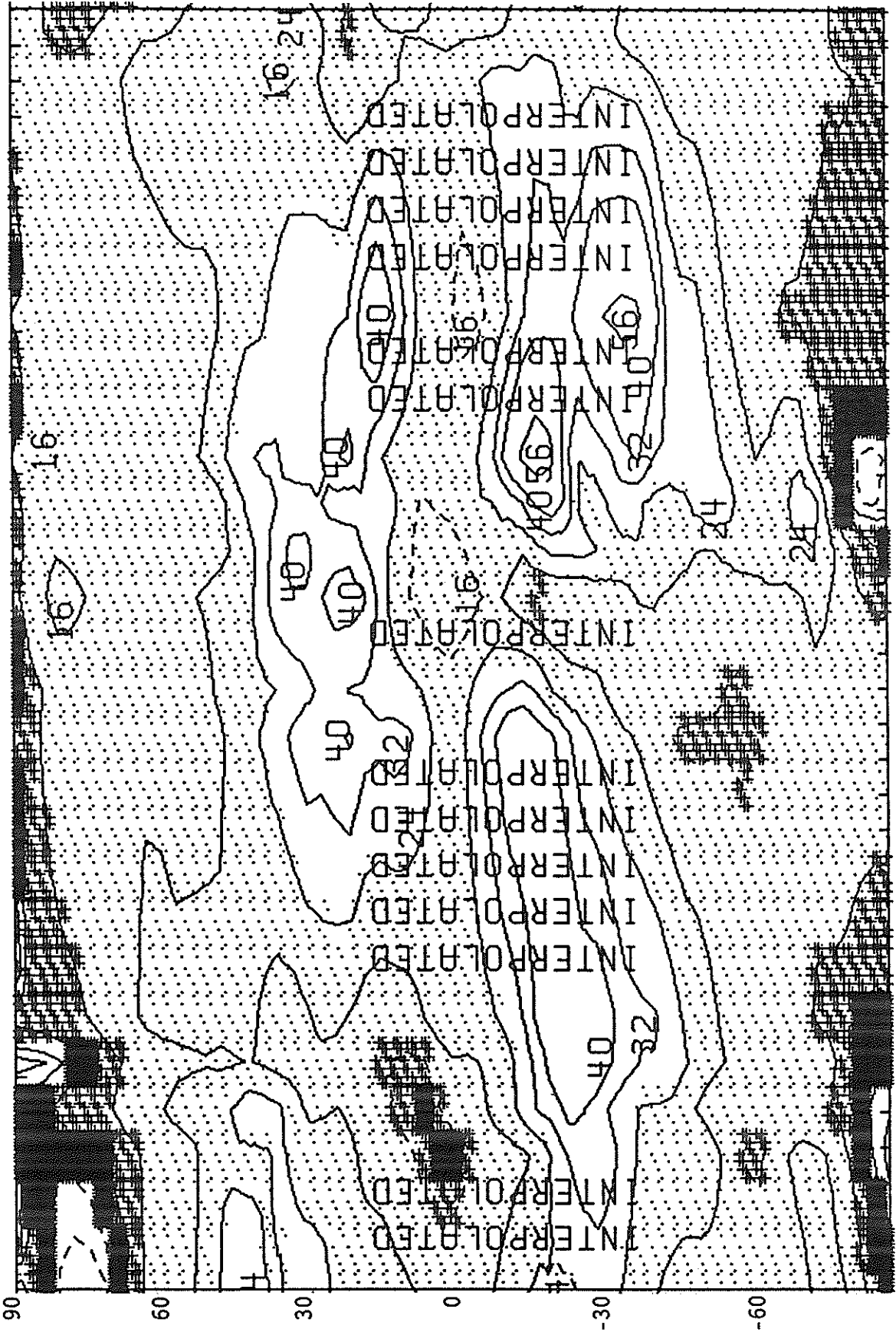
63----- Day of Year of CMP -----36



Heliographic Longitude 360
0
-90

SACRAMENTO PEAK CORONAL GREEN LINE SYNOPSIS MAP--WEST LIMB
CARRINGTON ROTATION NUMBER 1812 (5 February to 4 March 1989)

63 ----- Day of Year of CMP ----- 36

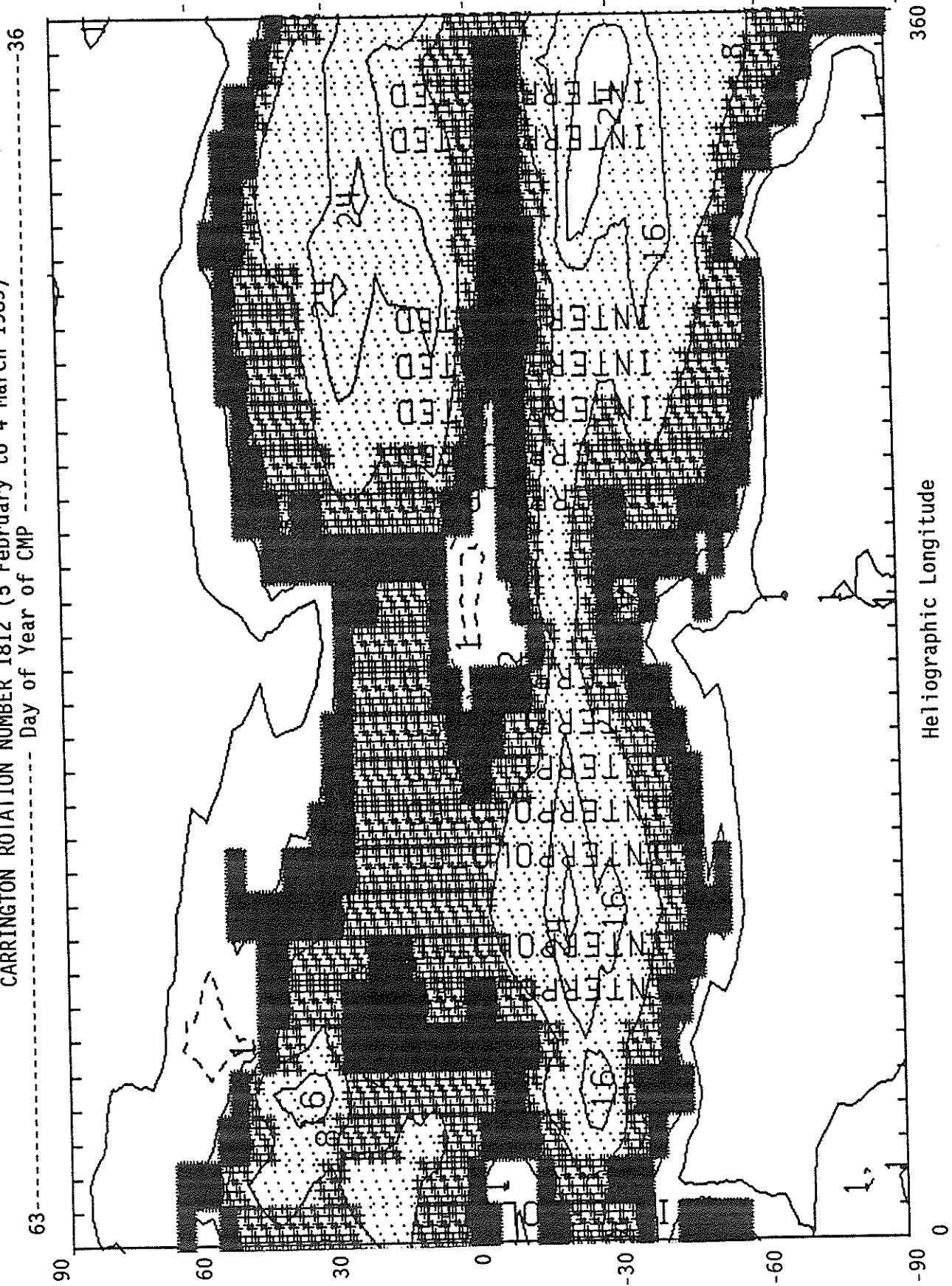


Heliographic Longitude

360

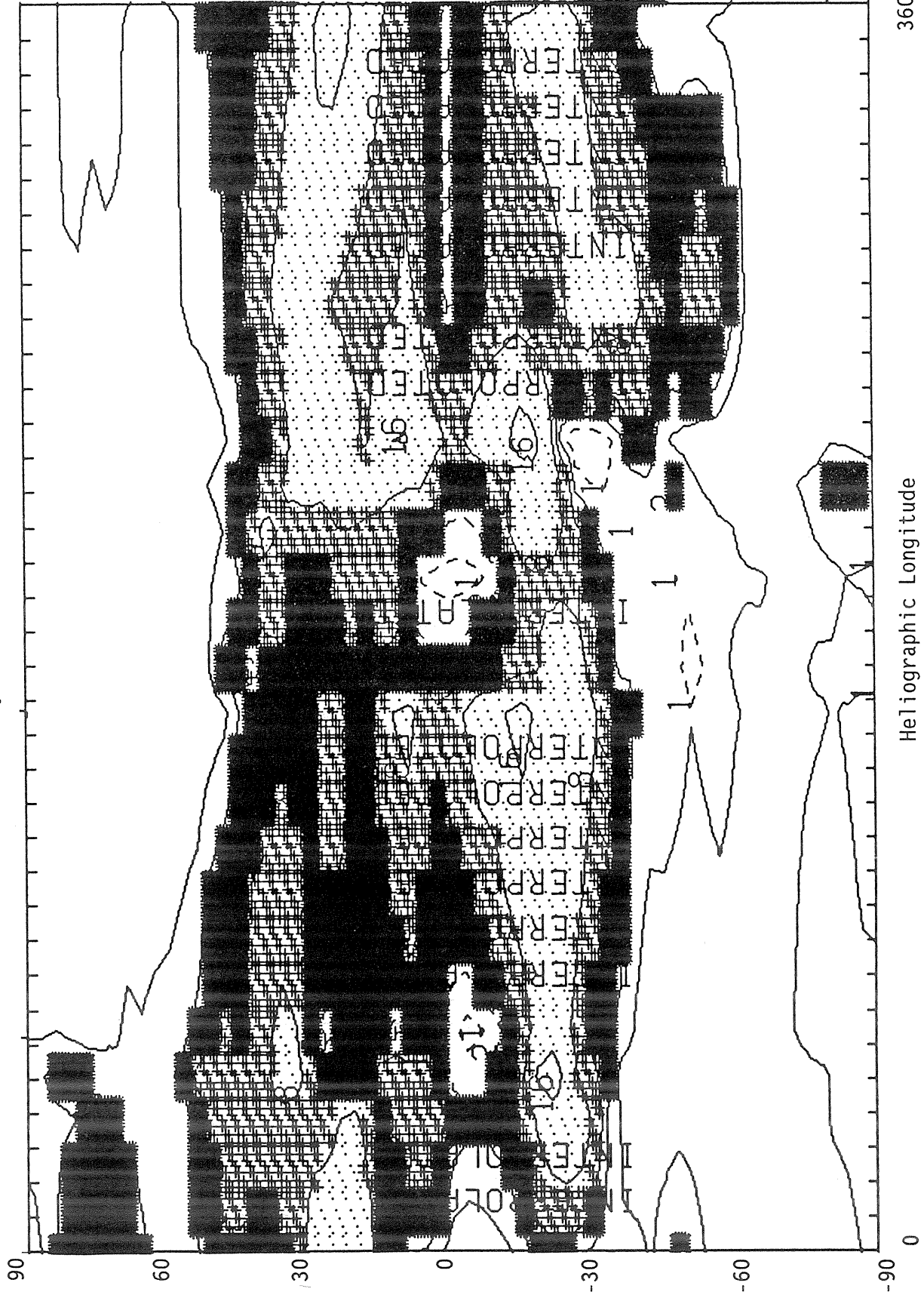
0

SACRAMENTO PEAK CORONAL RED LINE SYNOPTIC MAP--EAST LIMB
CARRINGTON ROTATION NUMBER 1812 (5 February to 4 March 1989)
----- Day of Year of CMP -----



SACRAMENTO PEAK CORONAL RED LINE SYNOPTIC MAP--WEST LIMB
CARRINGTON ROTATION NUMBER 1812 (5 February to 4 March 1989)

63----- Day of Year of CMP -----36



Heliographic Longitude

360

0

90

60

30

0

-30

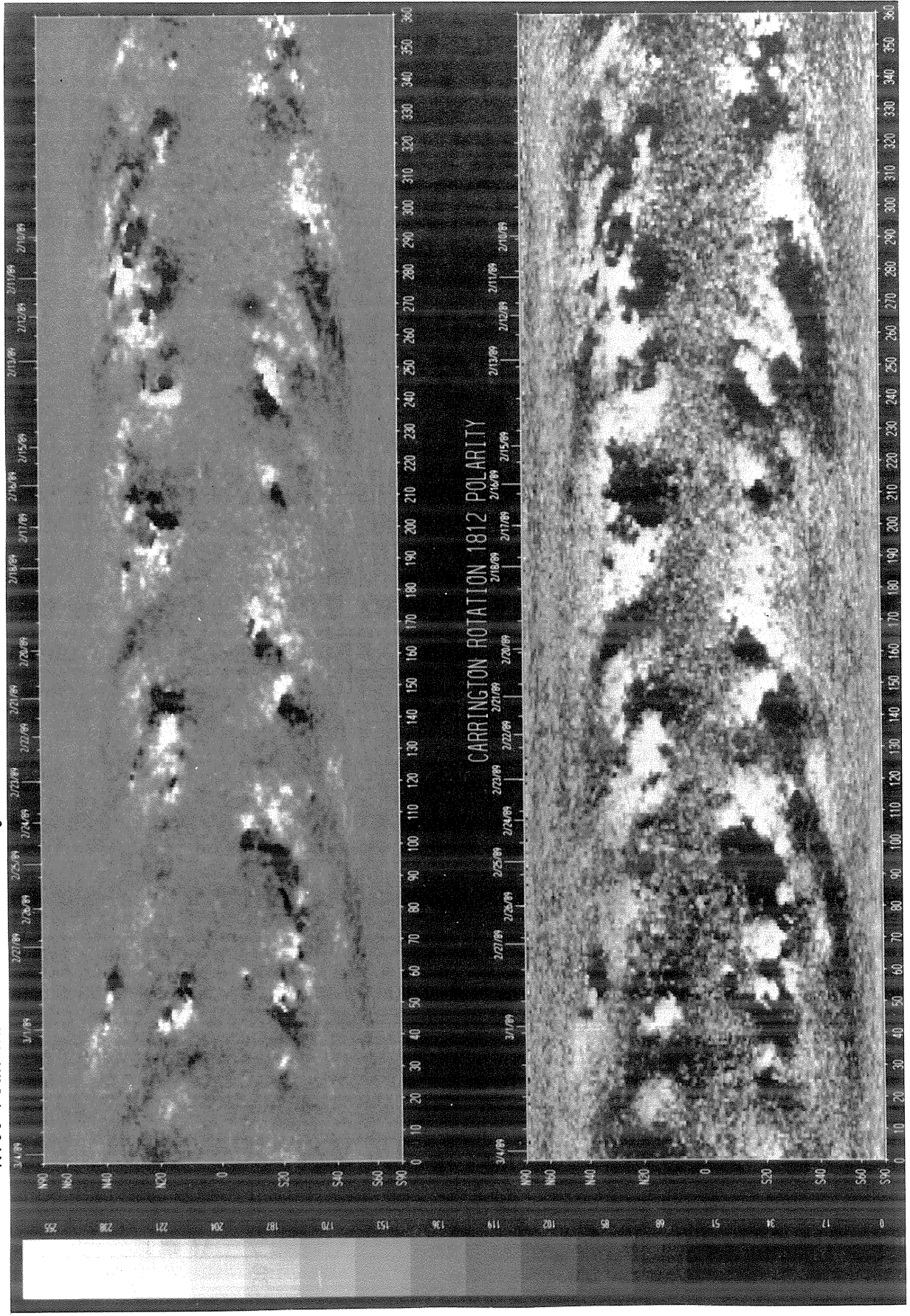
-60

-90

S O L A R M A G N E T I C F I E L D S Y N O P T I C C H A R T
CARRINGTON ROTATION NUMBER 1812
(5 February to 4 March 1989)

Kitt Peak National Observatory

Dates of Observation

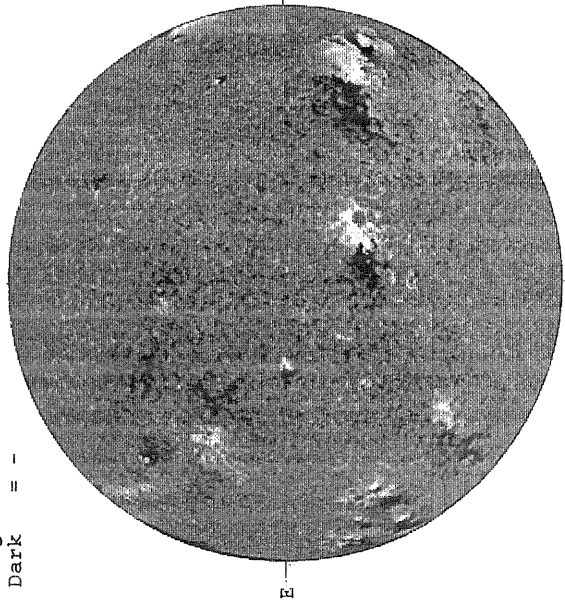


Heliographic Longitude

FEBRUARY 1, 1989 (P=-12.20, B₀ = -6.03, L₀ = 59.41)

KITT PEAK MAGNETOGRAM

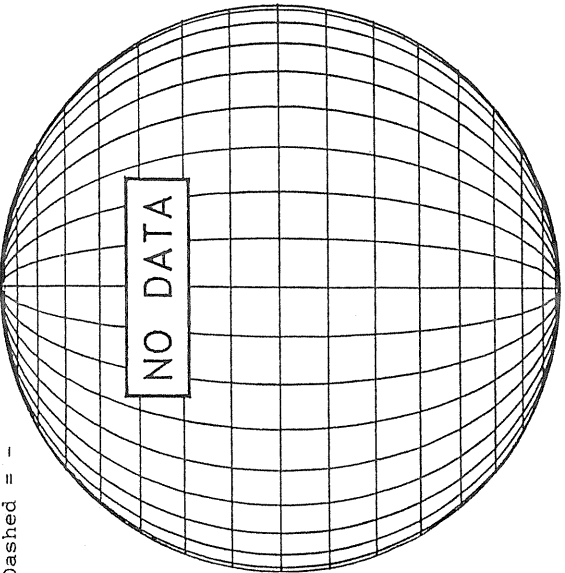
Bright = +
Dark = -



1839 UT

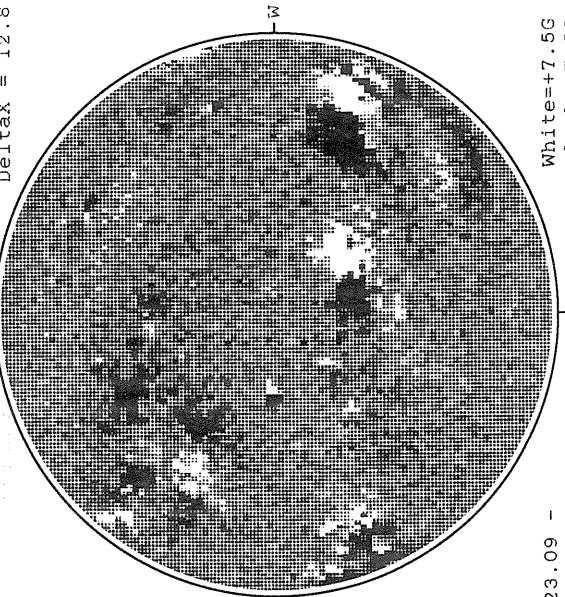
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

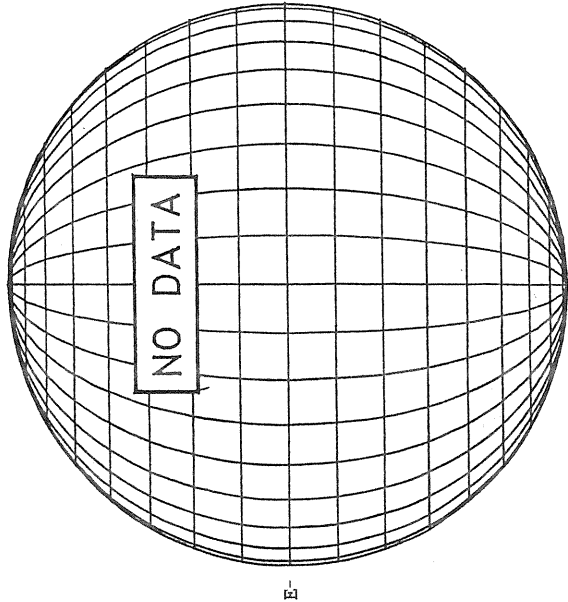
Delta_y = 20.3
Delta_x = 12.8



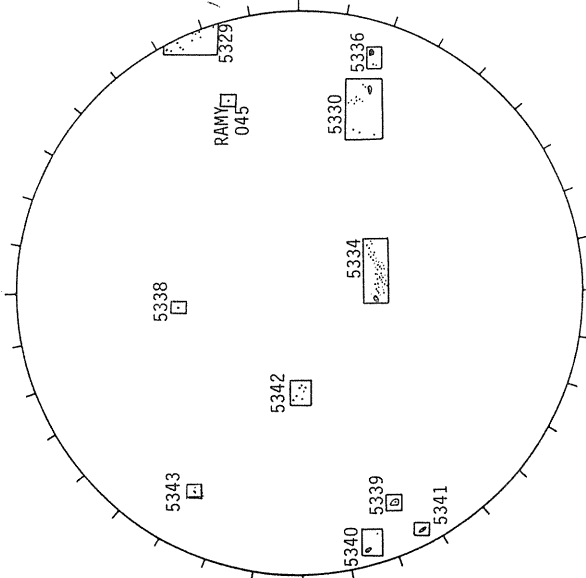
23.09 -
23.43 UT

White = +7.5G
Black = -7.5G

HOLLOMAN H-ALPHA

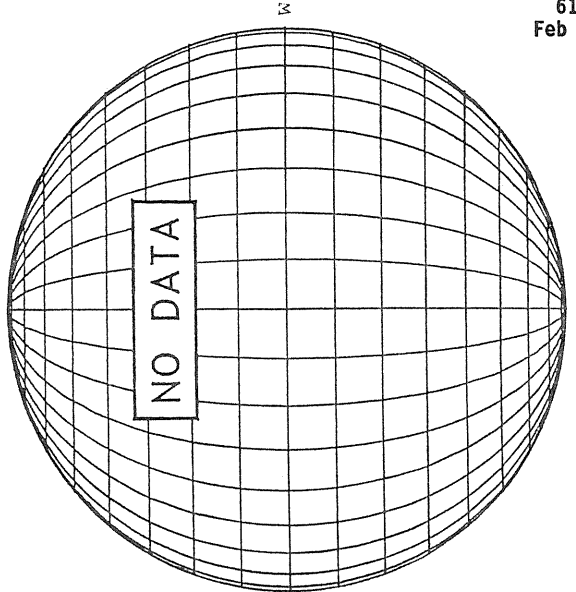


RAMEY SUNSPOT



1412 UT

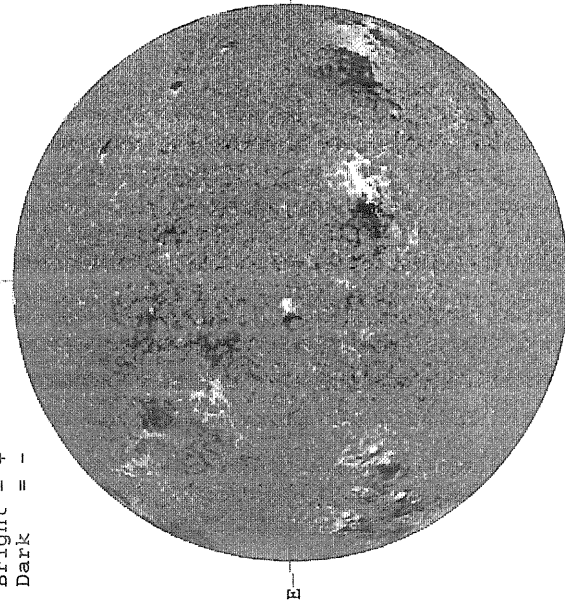
SACRAMENTO PEAK CORONA (1.15 Radii)



FEBRUARY 2, 1989 (P=-12.61, B₀ =-6.10, L₀ = 46.24)

KITT PEAK MAGNETOGRAM

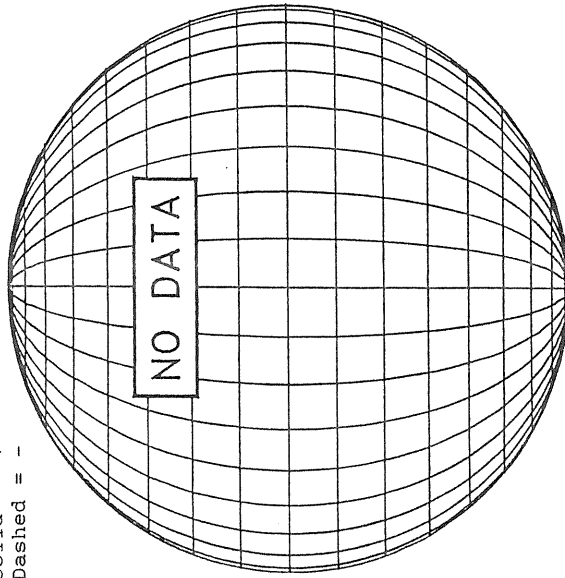
Bright = +
Dark = -



1711 UT

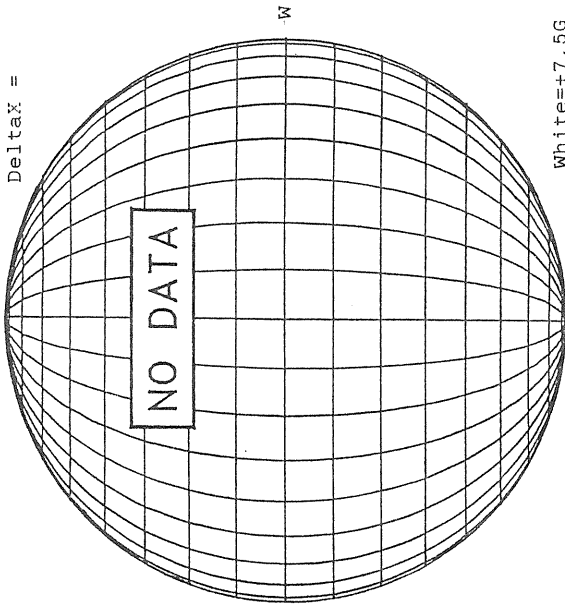
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



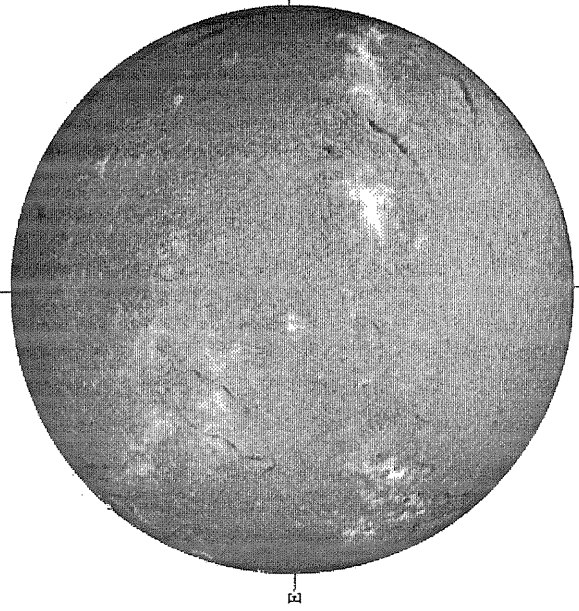
MT. WILSON MAGNETOGRAM

Deltaγ =
Deltaα =



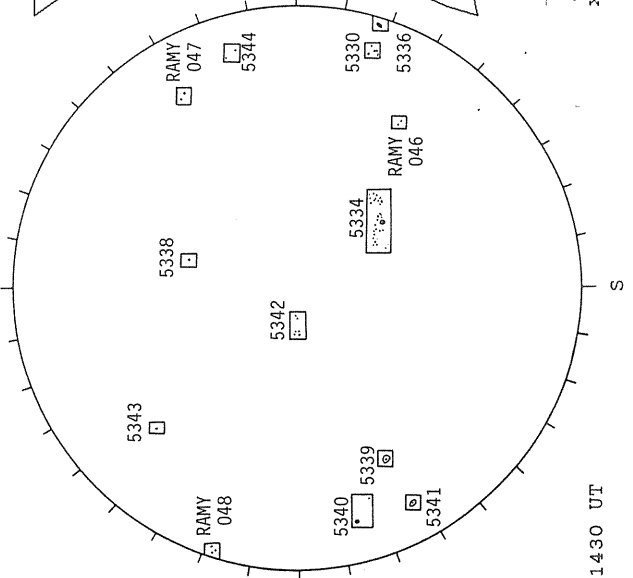
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



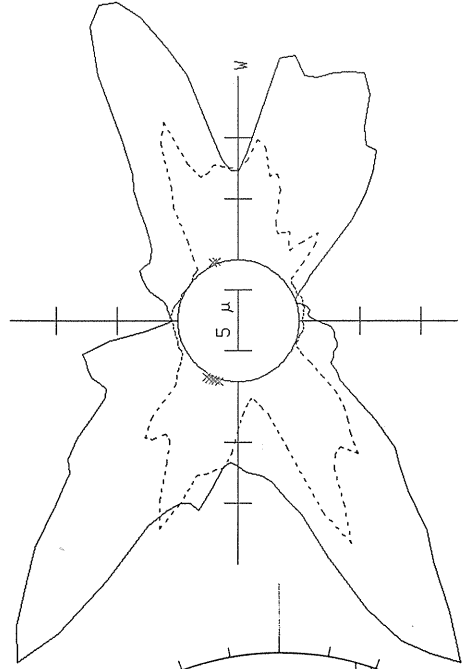
1546 UT

RAMEY SUNSPOT



1430 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

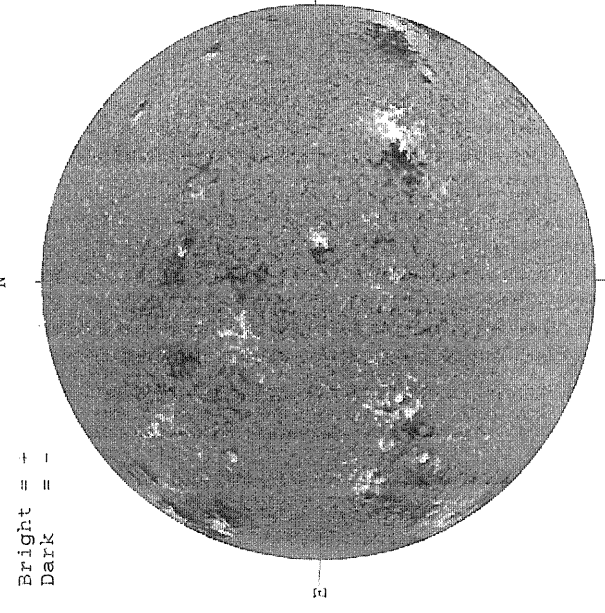


— 5303A, 1705 UT
... 6374A, 1825 UT
XXXX 5694A, 1816 UT

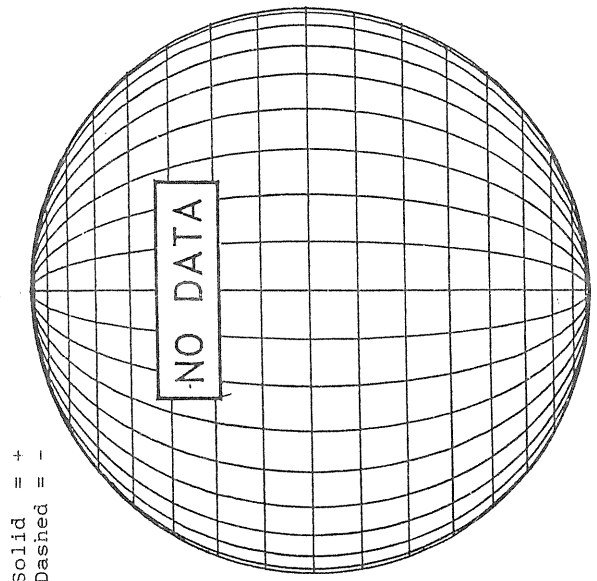
S

FEBRUARY 3, 1989 (P=-13.01, B₀ =-6.16, L₀ = 33.08)

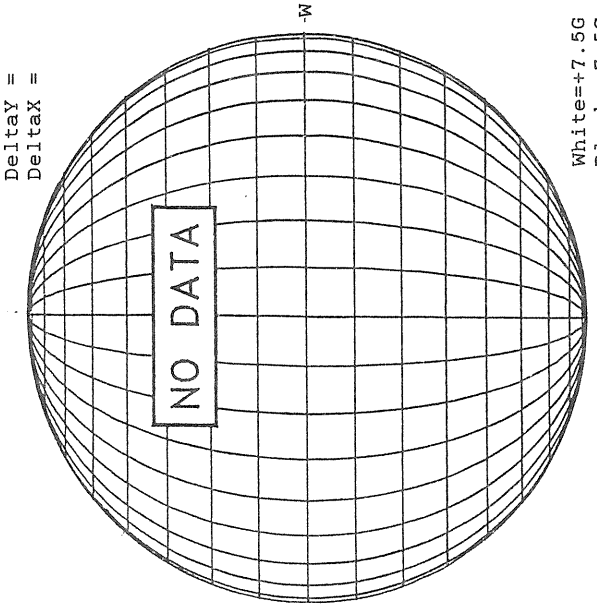
KITT PEAK MAGNETOGRAM



STANFORD MAGNETOGRAM



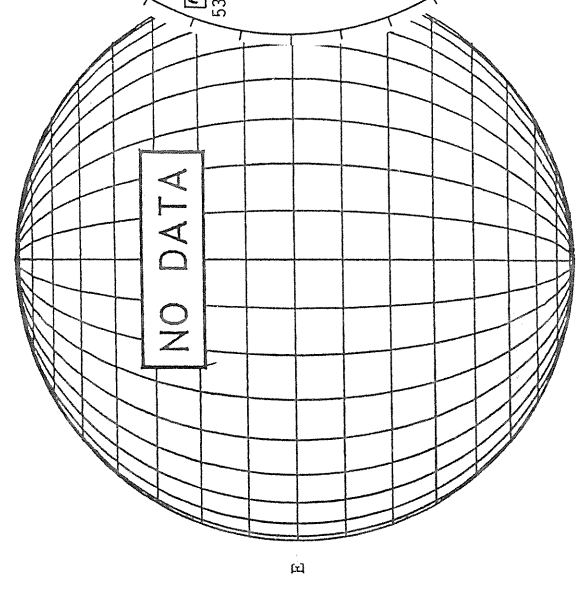
MT. WILSON MAGNETOGRAM



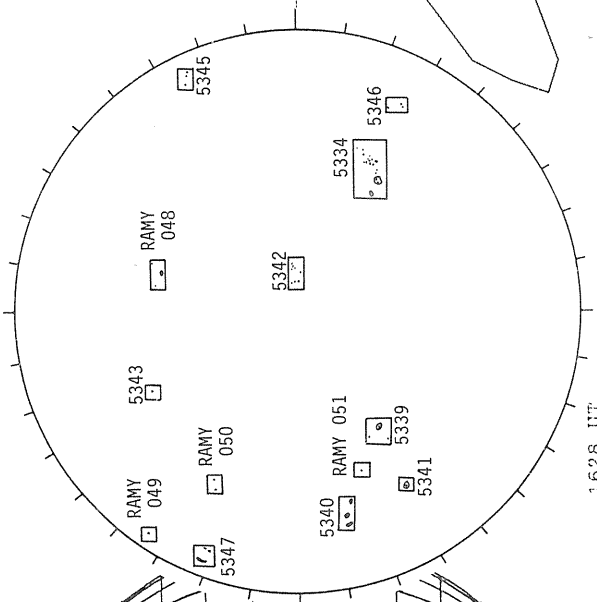
White=+7.5G
Black=-7.5G

1717 UT

BOULDER H-ALPHA

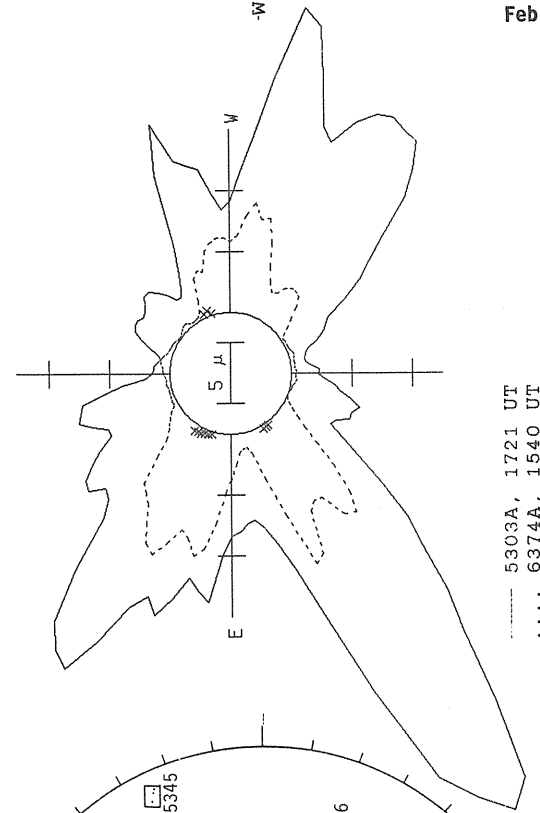


RAMEY SUNSPOT



1628 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

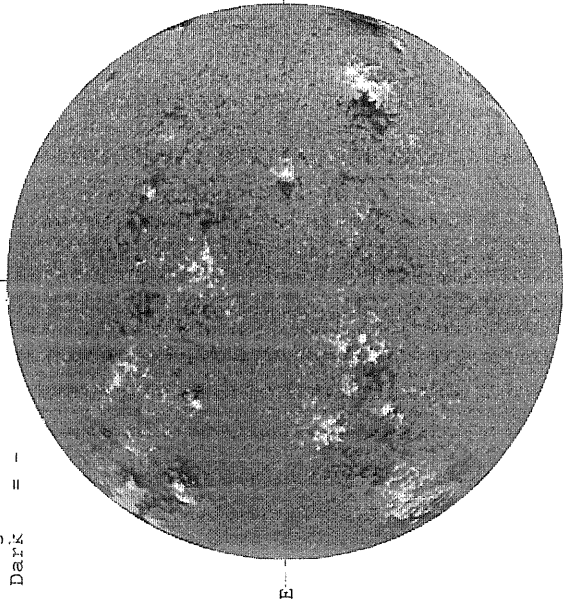


----- 5303A, 1721 UT
..... 6374A, 1540 UT
XXXX 5694A, 1753 UT

FEBRUARY 4, 1989 (P=-13.40, B₀ =-6.23, L₀ = 19.91)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1717 UT

STANFORD MAGNETOGRAM

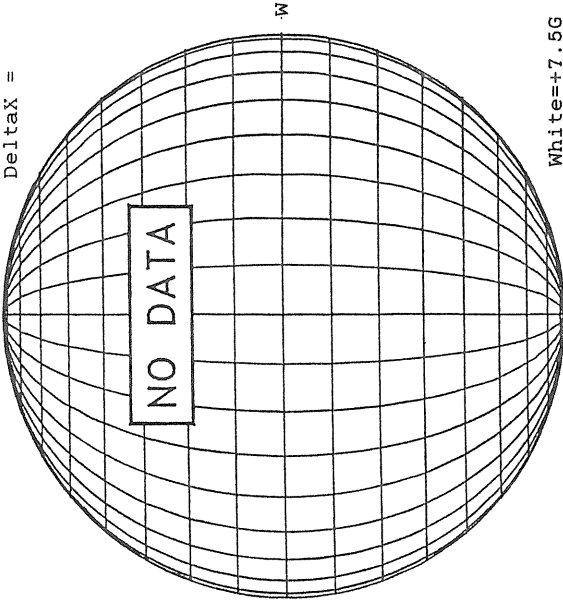
Solid = +
Dashed = -



2308 UT

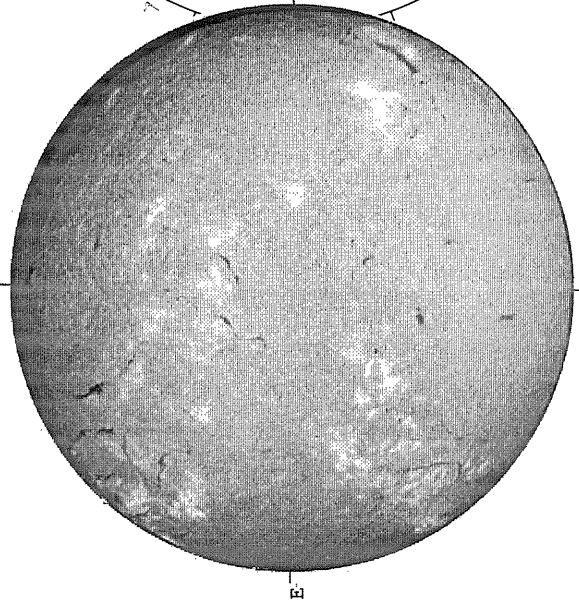
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



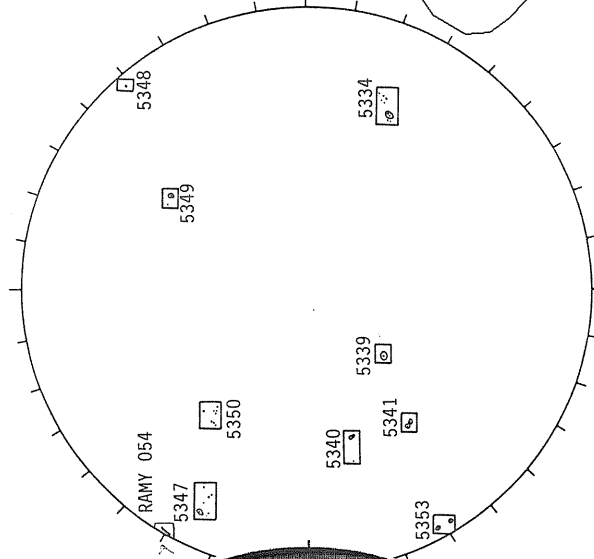
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



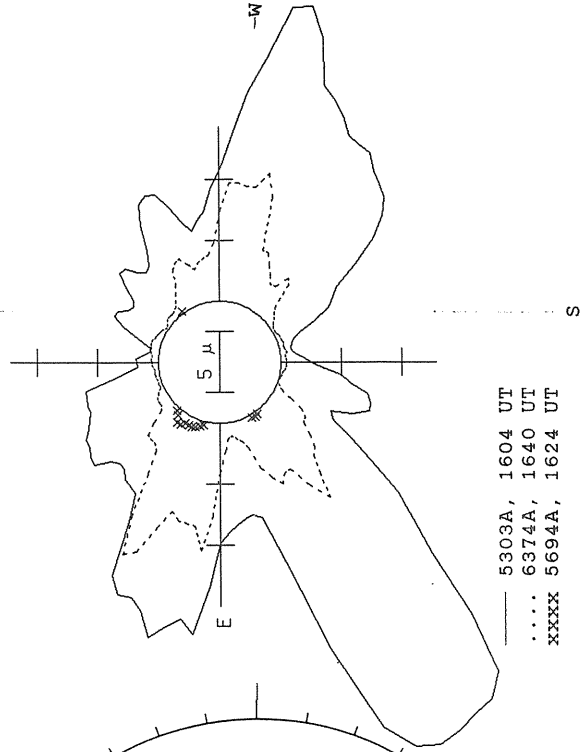
1550 UT

RAMEY SUNSPOT



1310 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

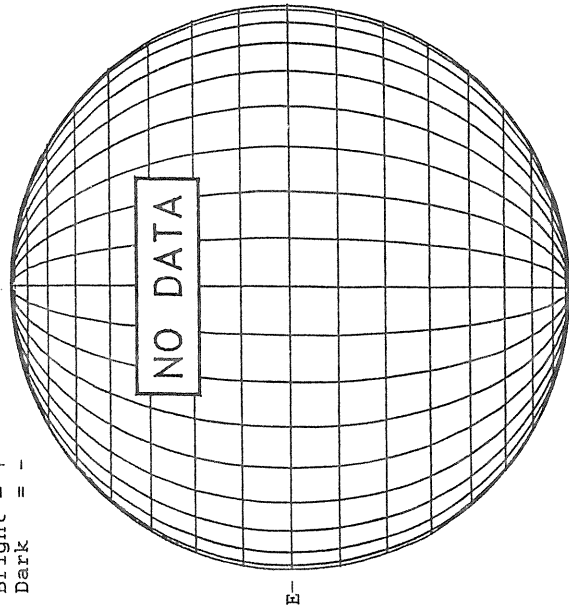


— 5303A, 1604 UT
... 6374A, 1640 UT
XXXX 5694A, 1624 UT

FEBRUARY 5, 1989 (P=-13.80, B₀ = -6.29, I₀ = 6.74)

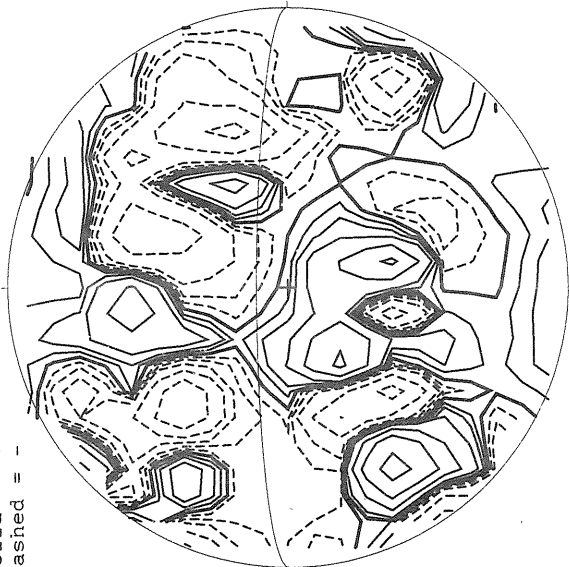
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



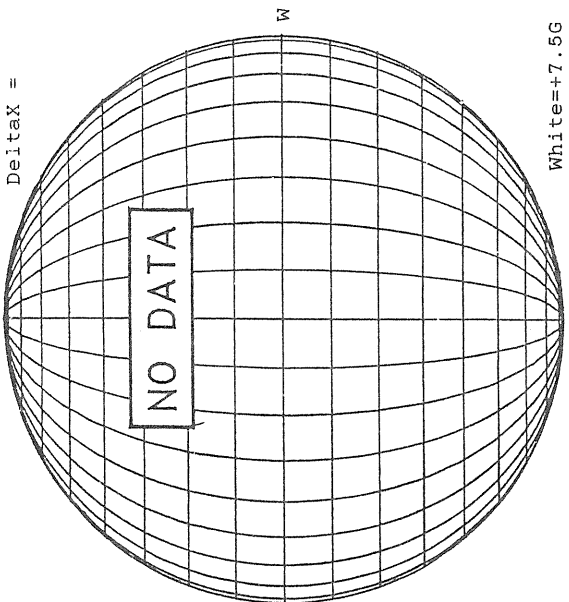
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



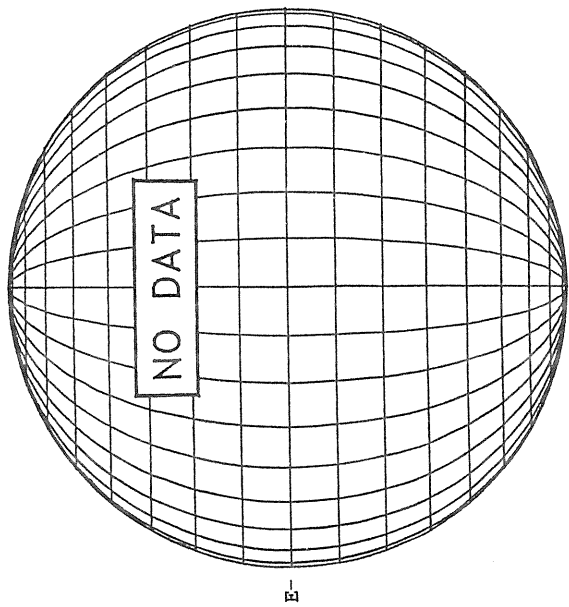
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =

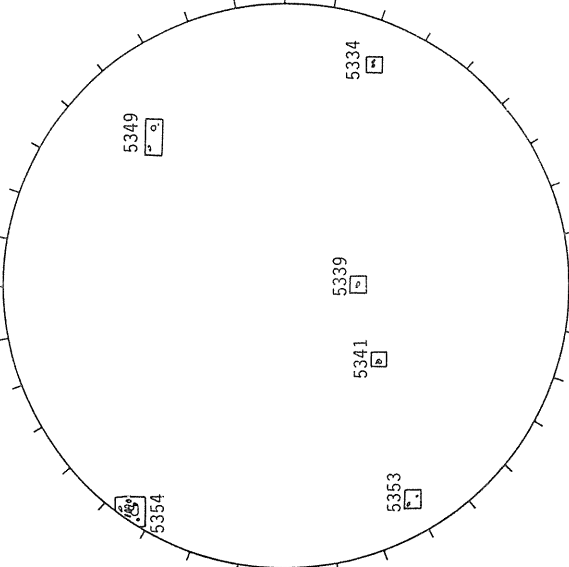


White = +7.5G
Black = -7.5G

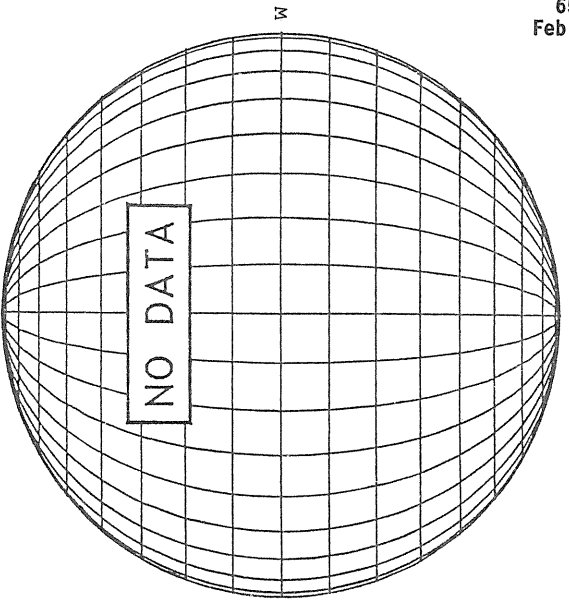
BOULDER H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)



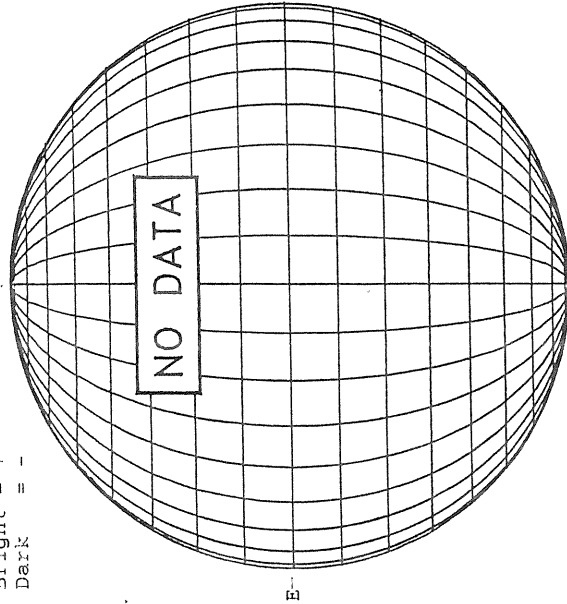
2329 UT

1740 UT

FEBRUARY 6, 1989 (P=-14.18, B₀ = -6.36, L₀ = 353.58)

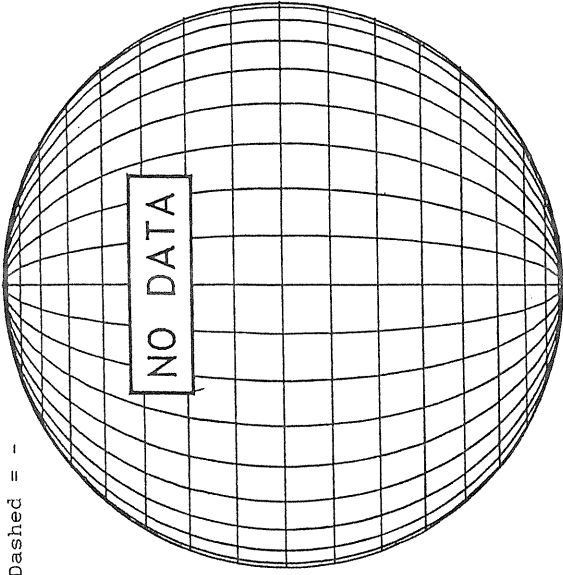
KITP PEAK MAGNETOGRAM

Bright = +
Dark = -



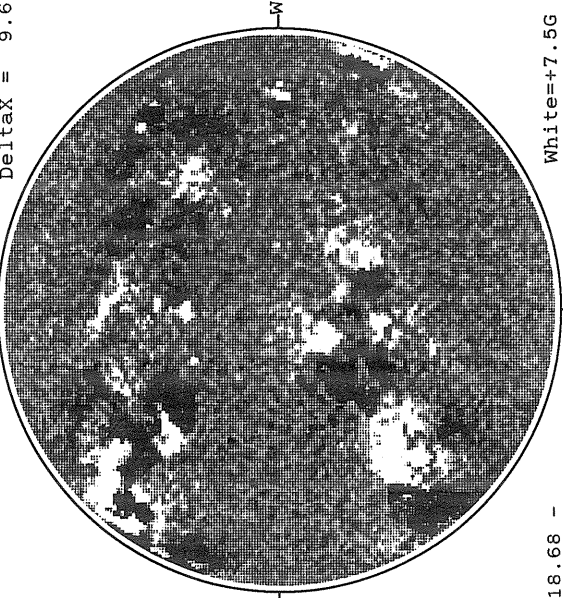
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

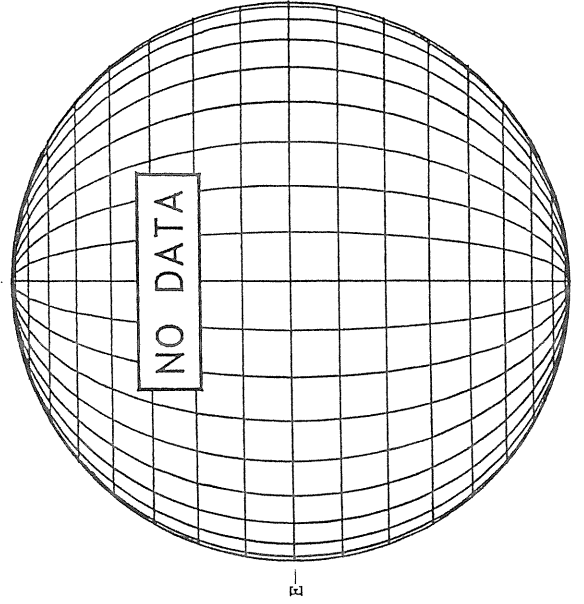
Delta γ = 12.9
Delta α = 9.6



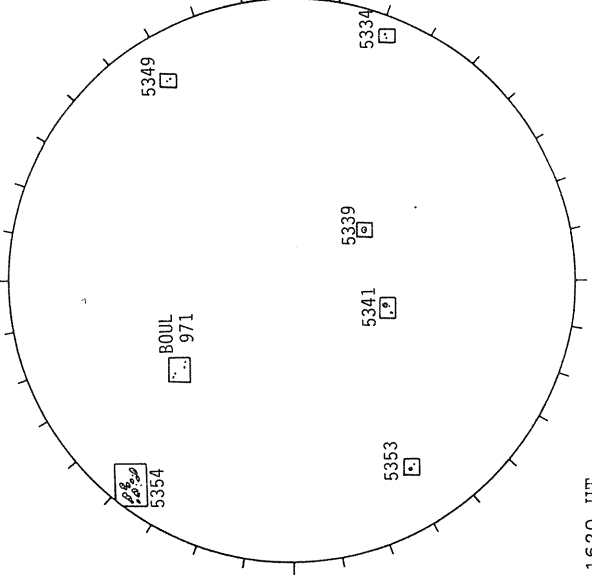
18.68 -
19.66 UT

White = +7.5G
Black = -7.5G

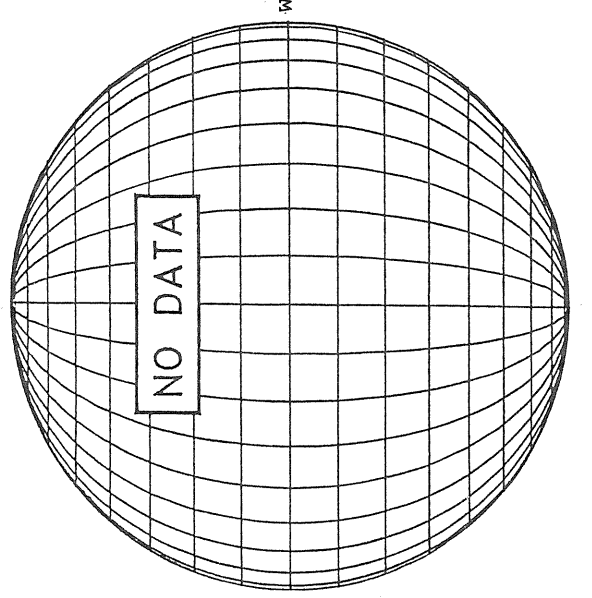
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)

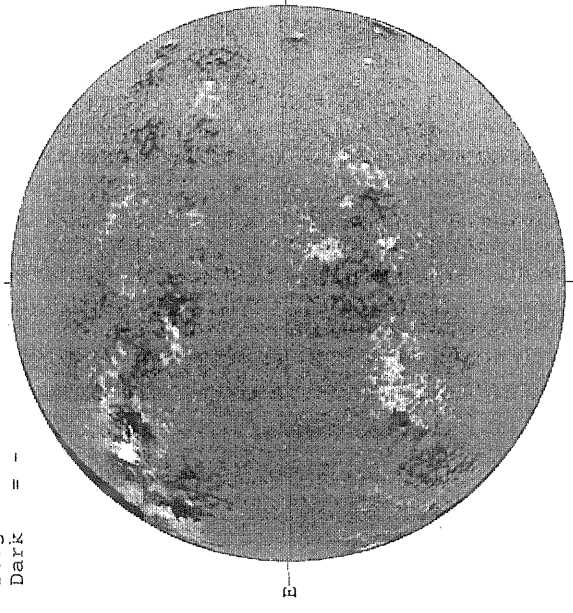


1620 UT

FEBRUARY 7, 1989 (P=-14.56, B_O = -6.42, L_O = 340.41)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1813 UT

STANFORD MAGNETOGRAM

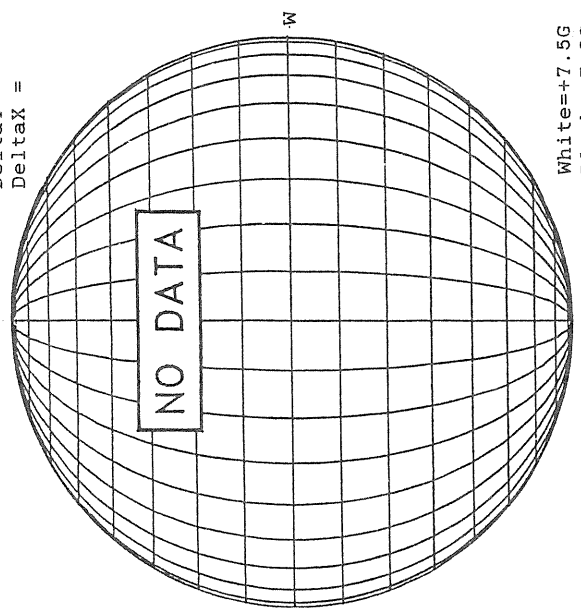
Solid = +
Dashed = -



2004 UT

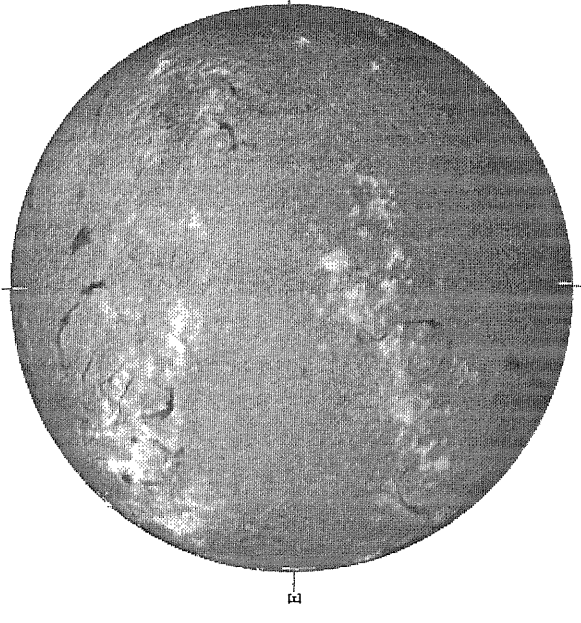
MT. WILSON MAGNETOGRAM

Delta_Y =
Delta_X =



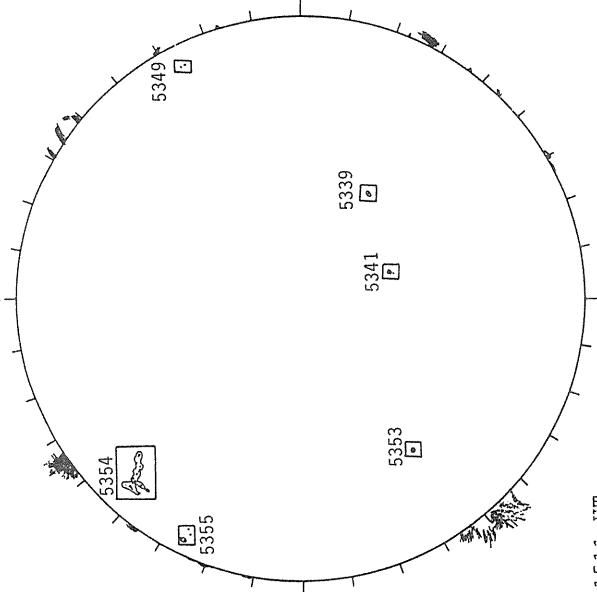
White = +7.5G
Black = -7.5G

BOULDER H-ALPHA



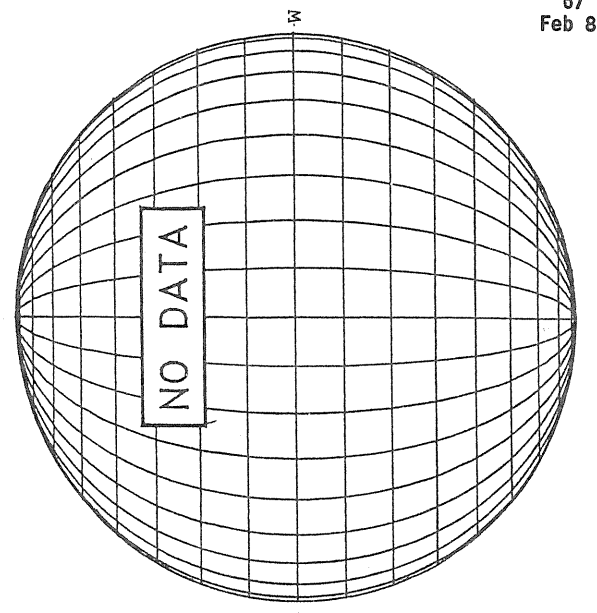
1637 UT

BOULDER SUNSPOT



1511 UT
1637 UT BOUL FROM

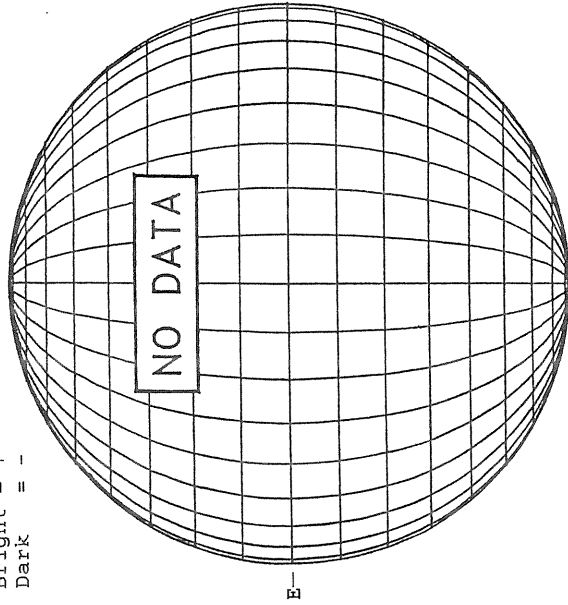
SACRAMENTO PEAK CORONA (1.15 Radii)



FEBRUARY 8, 1989 (P=-14.94, B₀ = -6.48, L₀ = 327.24)

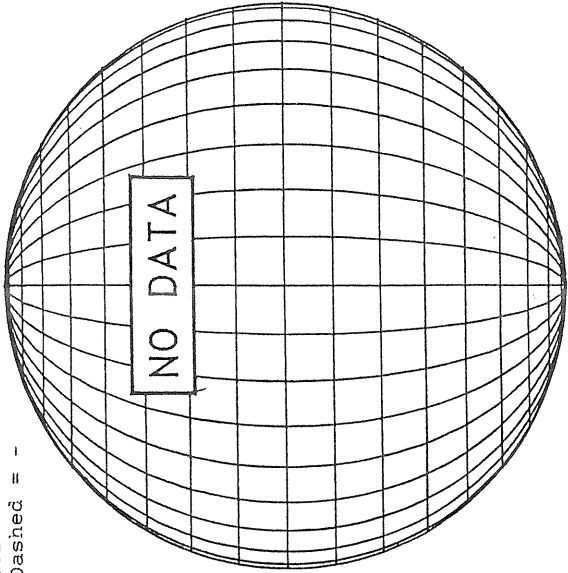
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



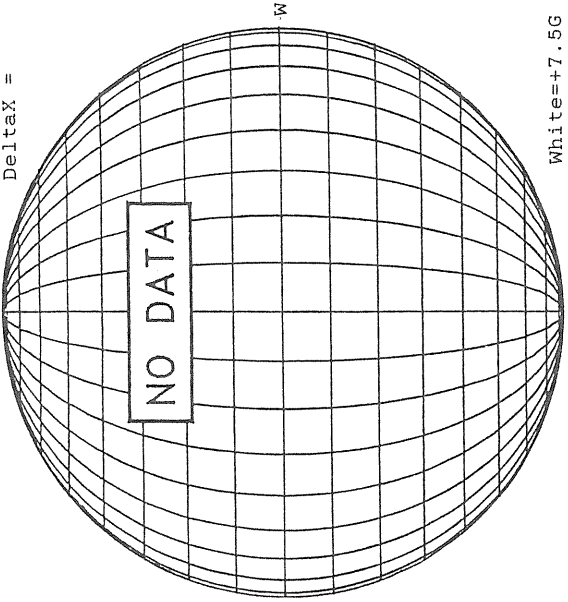
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



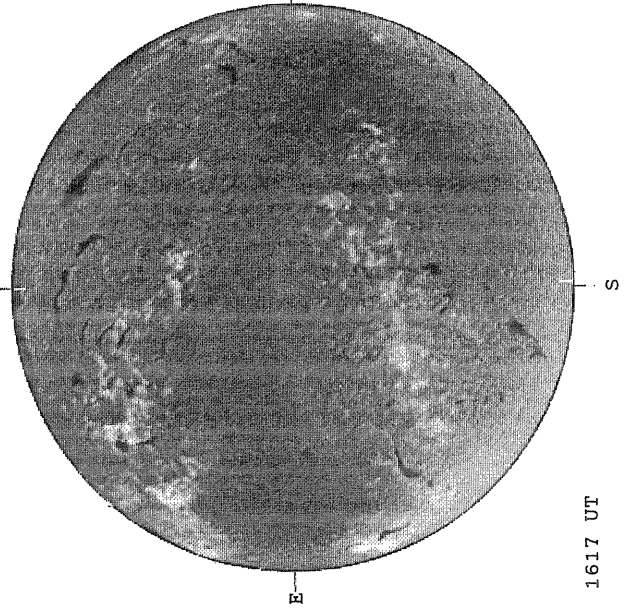
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



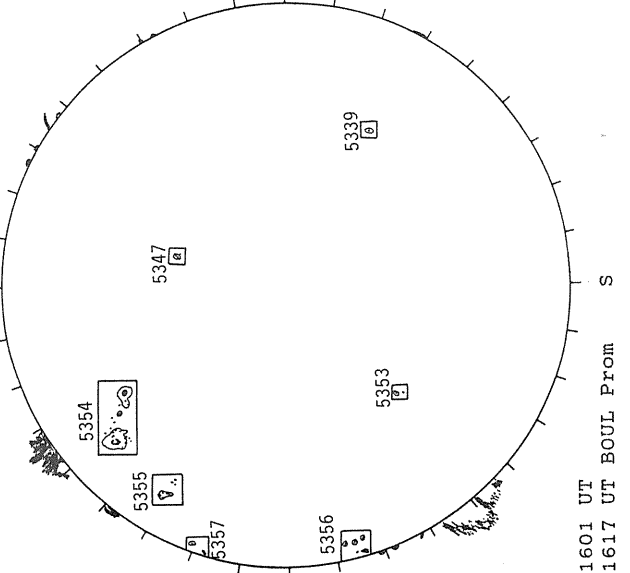
White = +7.5G
Black = -7.5G

BOULDER H-ALPHA



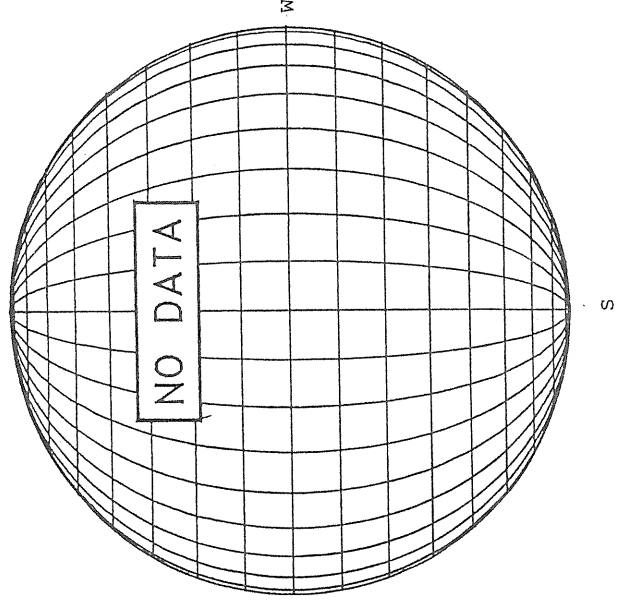
1617 UT

BOULDER SUNSPOT



1601 UT
1617 UT BOUL FROM S

SACRAMENTO PEAK CORONA (1.15 Radii)

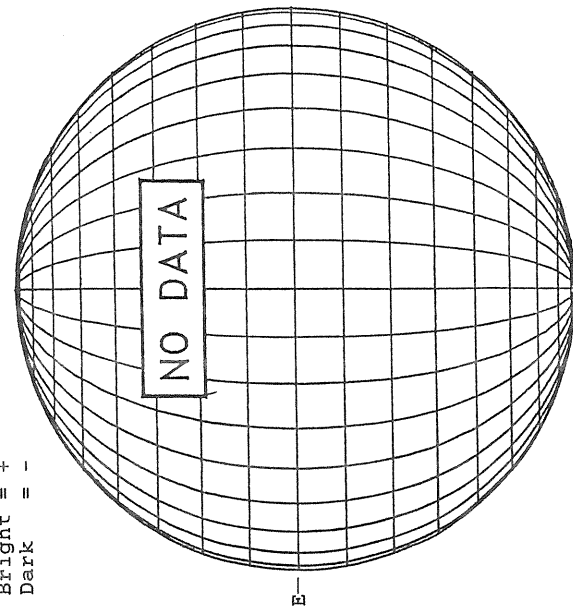


S

FEBRUARY 9, 1989 (P=-15.31, B₀ =-6.53, L₀ = 314.08)

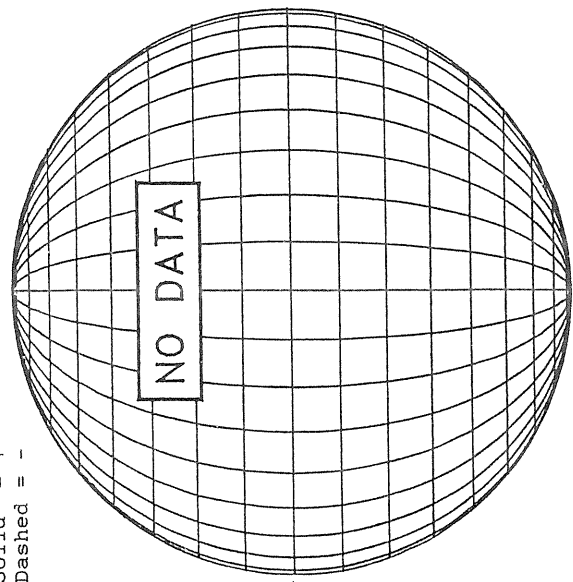
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



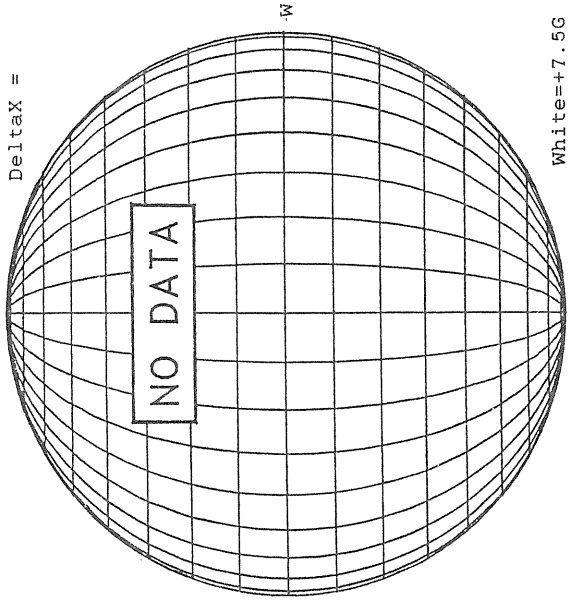
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



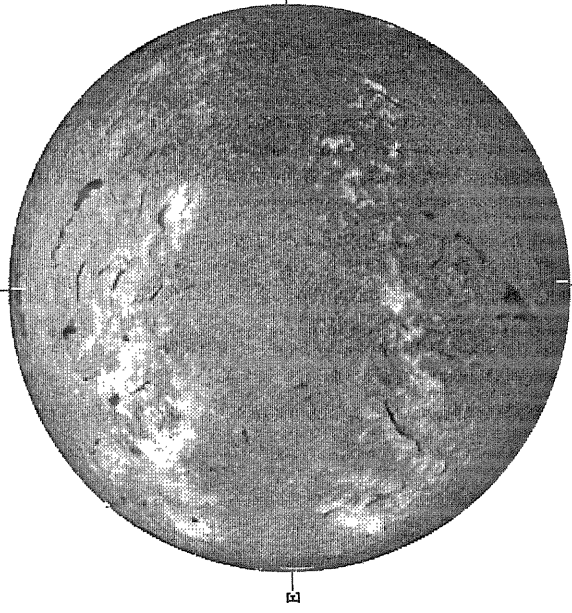
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



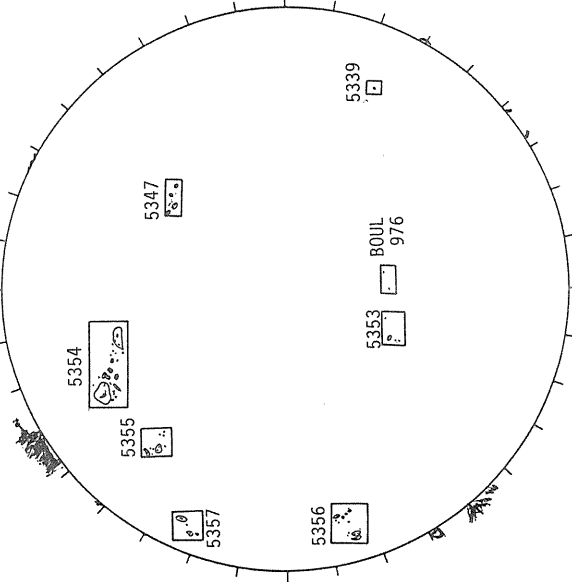
White=+7.5G
Black=-7.5G

BOULDER H-ALPHA



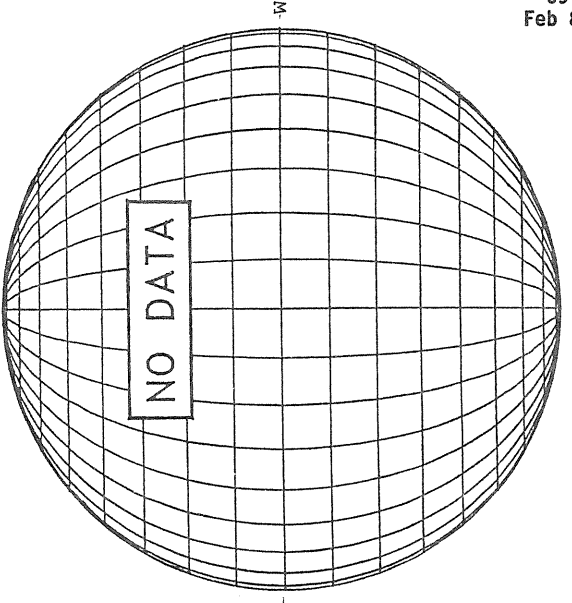
1650 UT

BOULDER SUNSPOT



1635 UT
1650 UT BOUL FROM

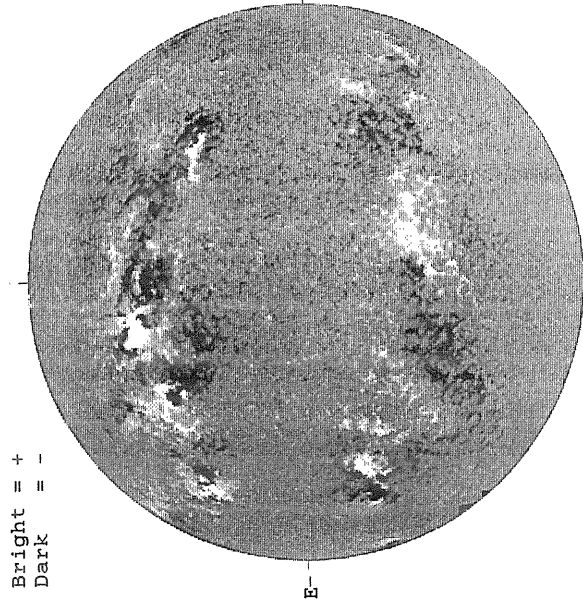
SACRAMENTO PEAK CORONA (1.15 Radii)



S

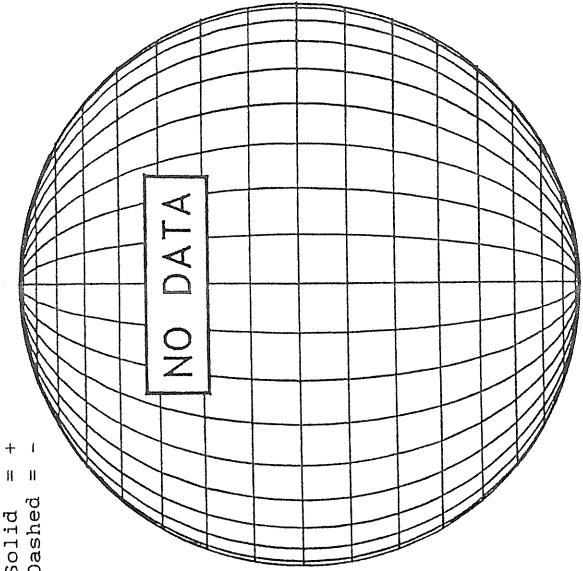
FEBRUARY 10, 1989 (P=-15.68, B₀ =-6.59, L₀ = 300.91)

KITT PEAK MAGNETOGRAM



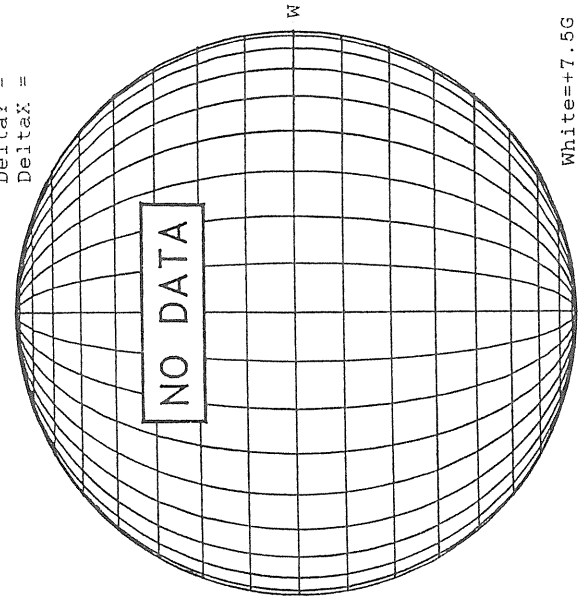
1802 UT

STANFORD MAGNETOGRAM



Solid = +
Dashed = -

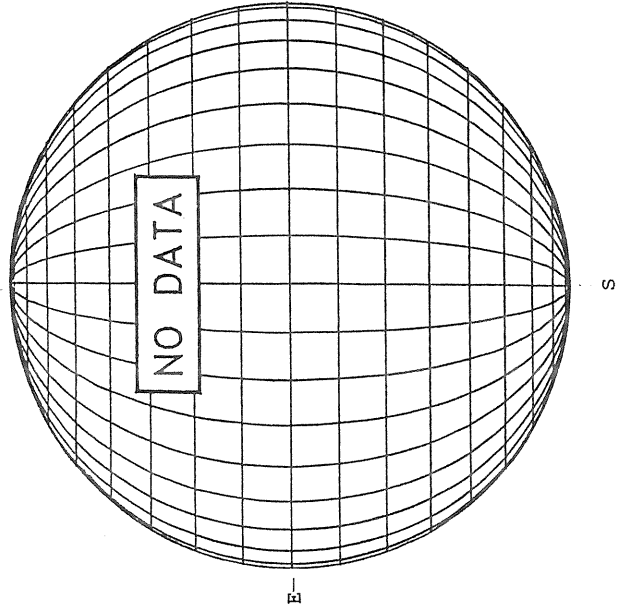
MT. WILSON MAGNETOGRAM



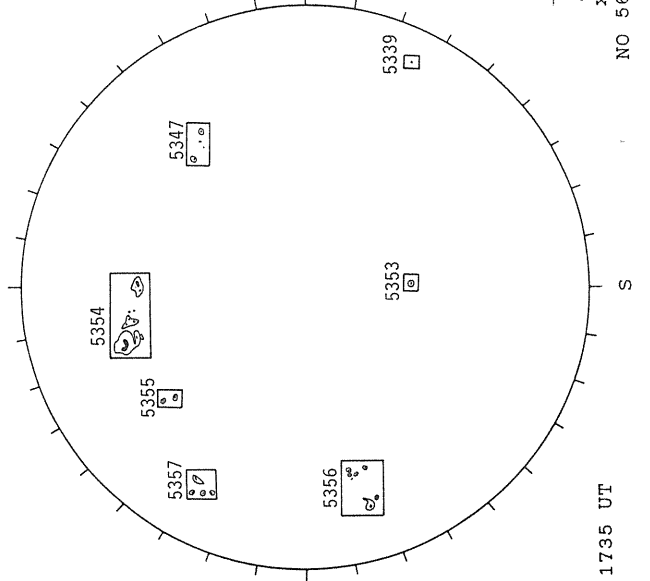
Delta₁ =
Delta₂ =

White = +7.5G
Black = -7.5G

HOLLOMAN H-ALPHA

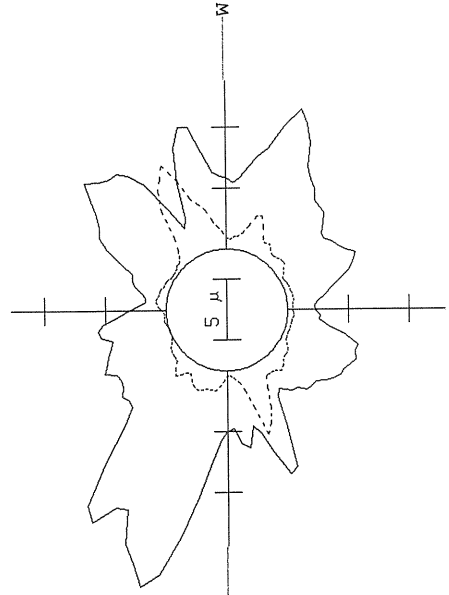


BOULDER SUNSPOT



1735 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

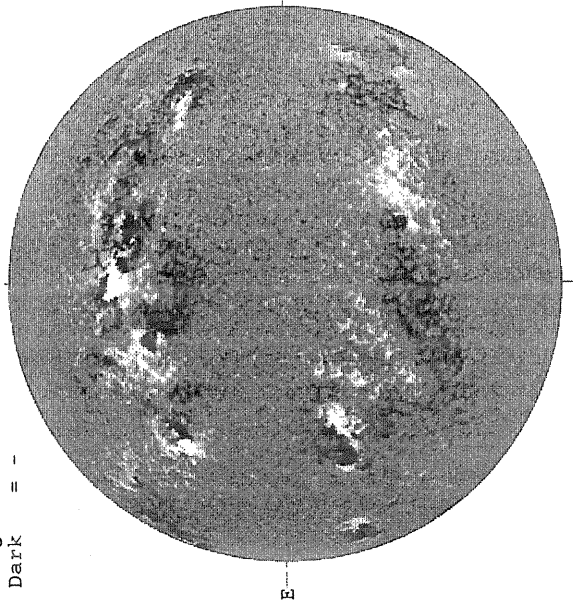


5303A, 1548 UT
6374A, 1651 UT
.....
XXXXX 5694A, 1634 UT
NO 5694A ACTIVITY TODAY

FEBRUARY 11, 1989 (P=-16.04, B₀ =-6.64, I₀ = 287.74)

KITT PEAK MAGNETOGRAM

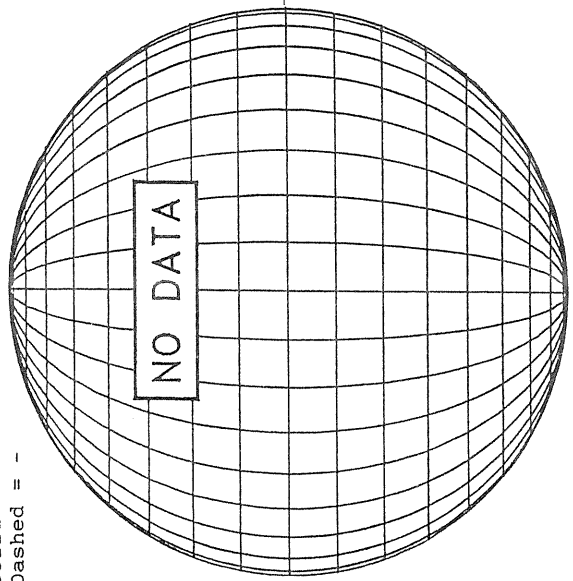
Bright = +
Dark = -



1726 UT

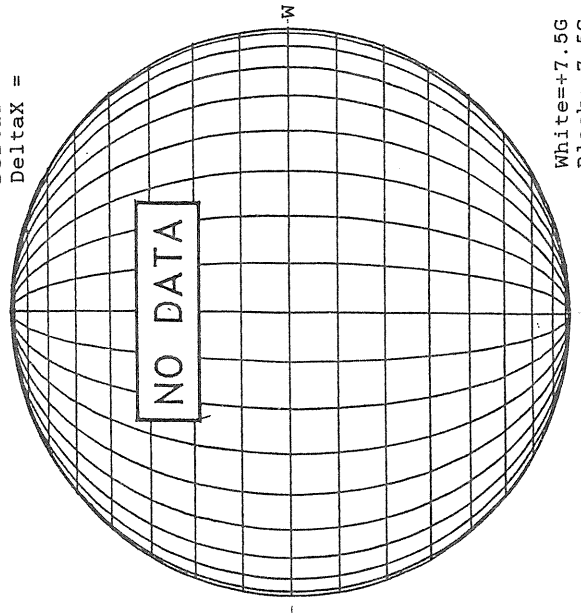
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



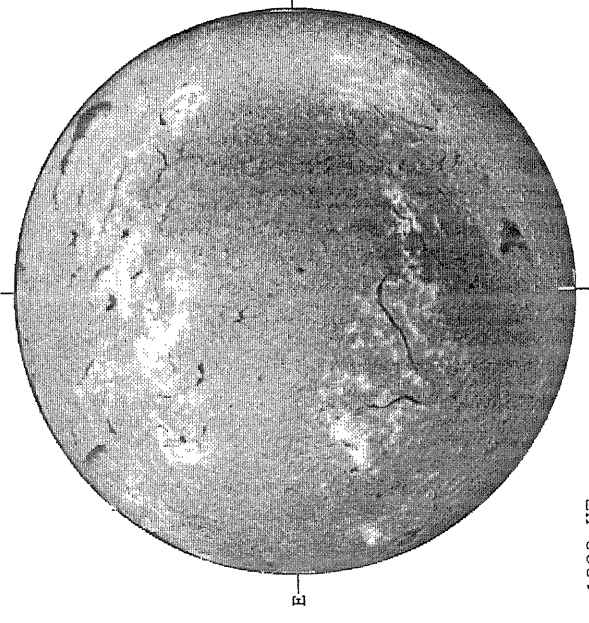
MT. WILSON MAGNETOGRAM

Deltaγ =
DeltaX =



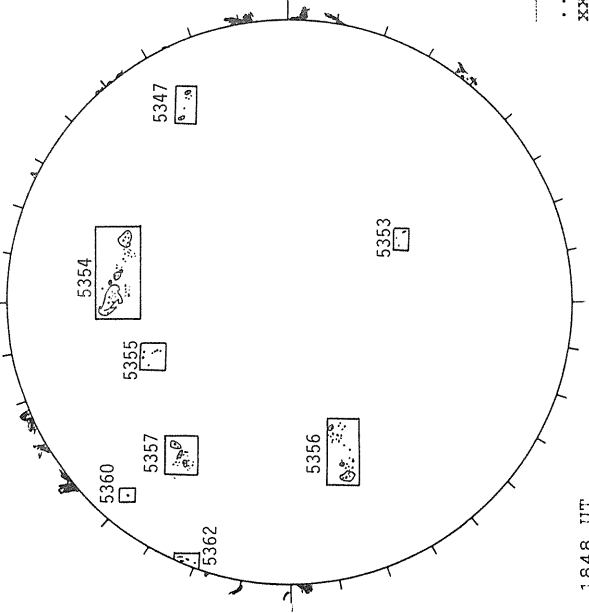
White=+7.5G
Black=-7.5G

BOULDER H-ALPHA



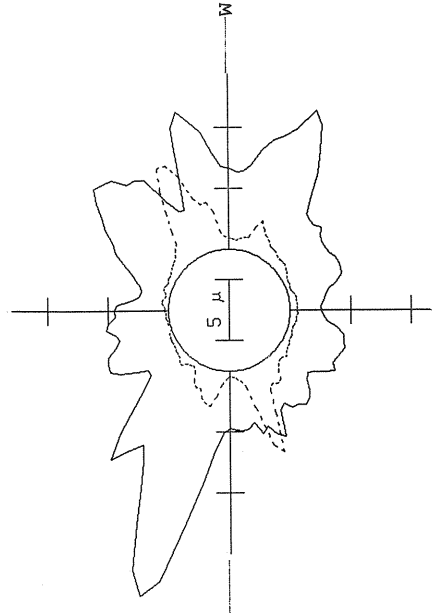
1838 UT

BOULDER SUNSPOT



1848 UT
1838 UT BOUL From

SACRAMENTO PEAK CORONA (1.15 Radii)

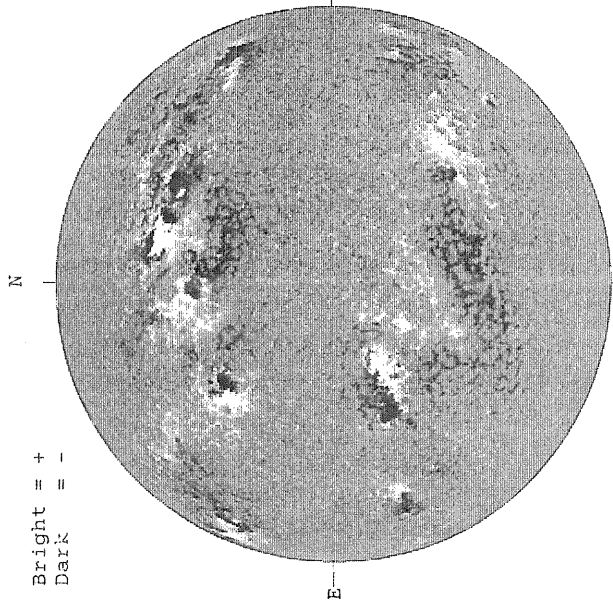


..... 5303A, 1537 UT
.... 6374A, 1618 UT
xxxx 5694A, 1603 UT
NO 5694A ACTIVITY TODAY

FEBRUARY 12, 1989 (P=-16.39, B₀ = -6.69, L₀ = 274.58)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1514 UT

STANFORD MAGNETOGRAM

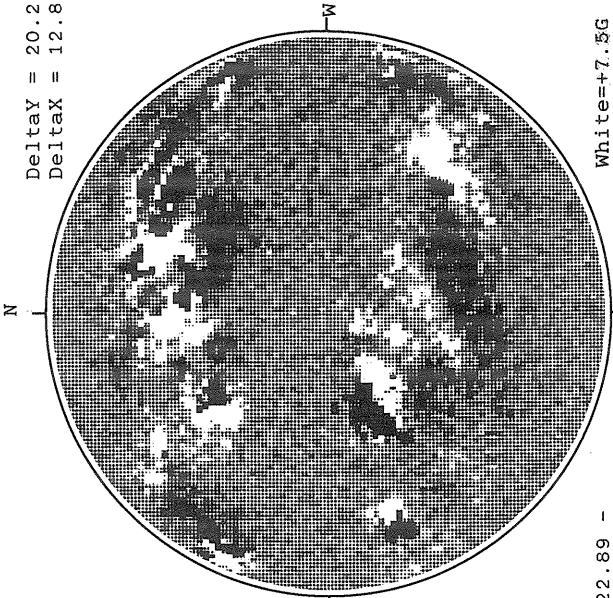
Solid = +
Dashed = -



2217 UT

MT. WILSON MAGNETOGRAM

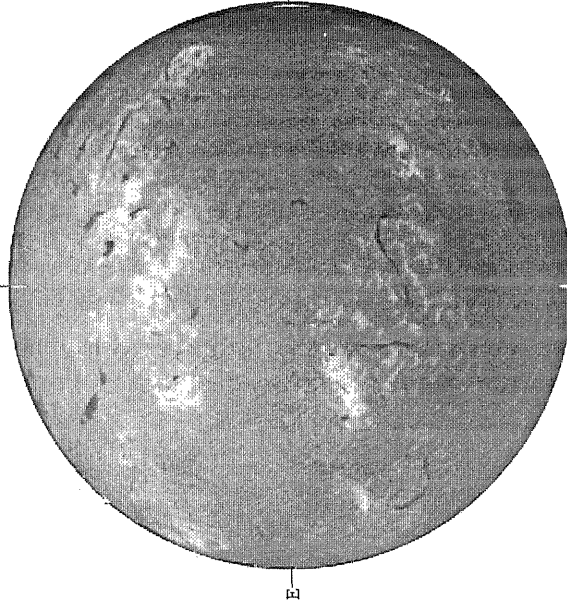
Delta_Y = 20.2
Delta_X = 12.8



22.89 -
23.24 UT

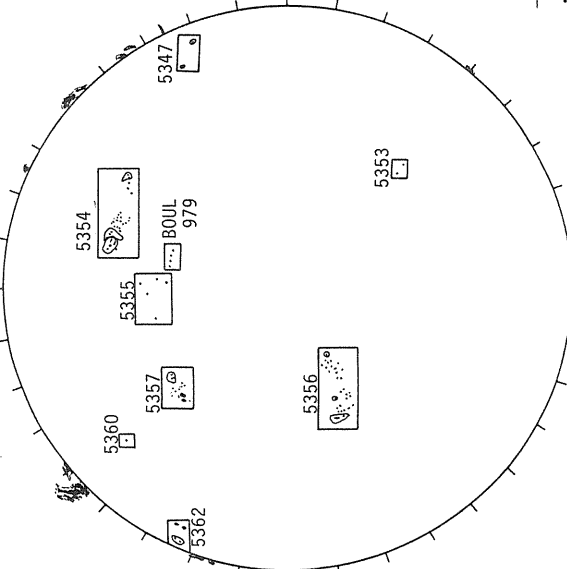
White = +7.5G
Black = -7.5G

BOULDER H-ALPHA



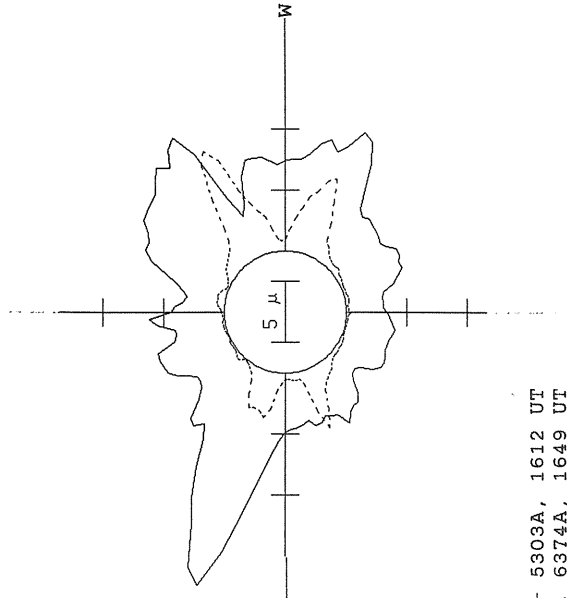
1805 UT

BOULDER SUNSPOT



1814 UT BOUL Prom
1805 UT BOUL Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)

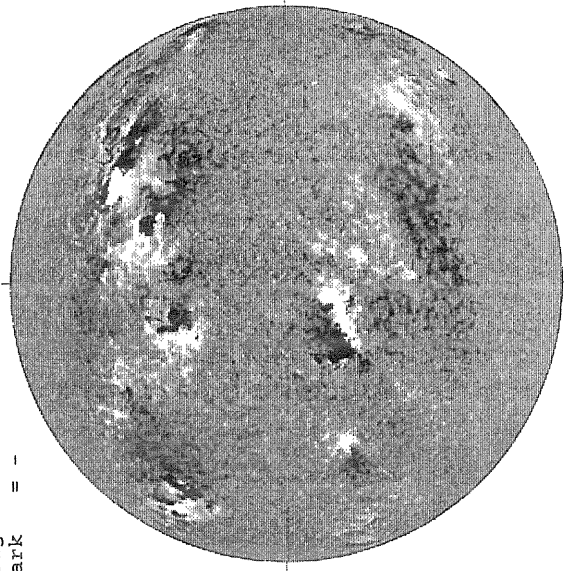


— 5303A, 1612 UT
... 6374A, 1649 UT
XXXX 5694A, 1632 UT
NO 5694A ACTIVITY TODAY

FEBRUARY 13, 1989 (P=-16.74, B₀ =-6.74, L₀ = 261.41)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1727 UT

STANFORD MAGNETOGRAM

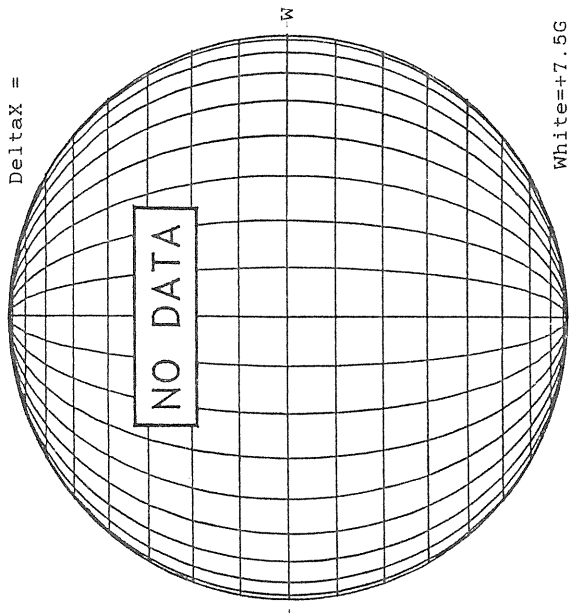
Solid = +
Dashed = -



1752 UT

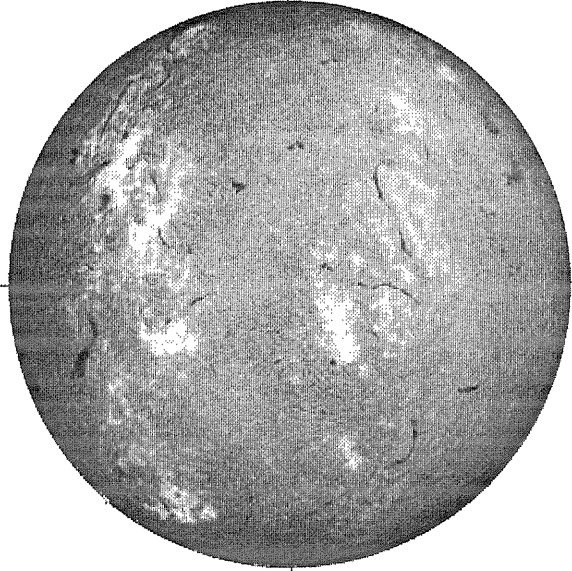
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



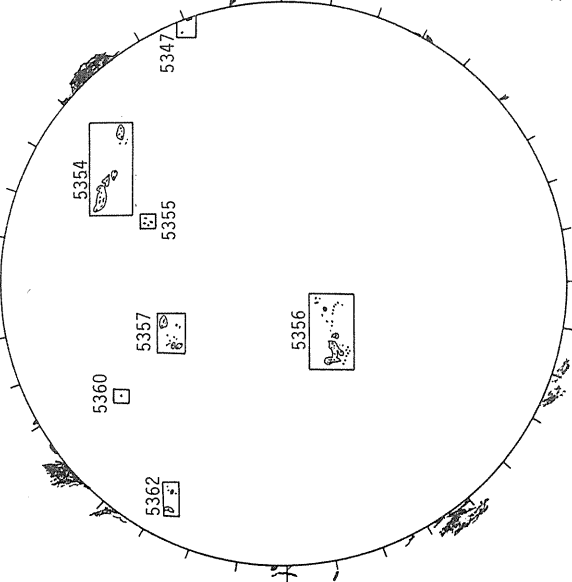
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



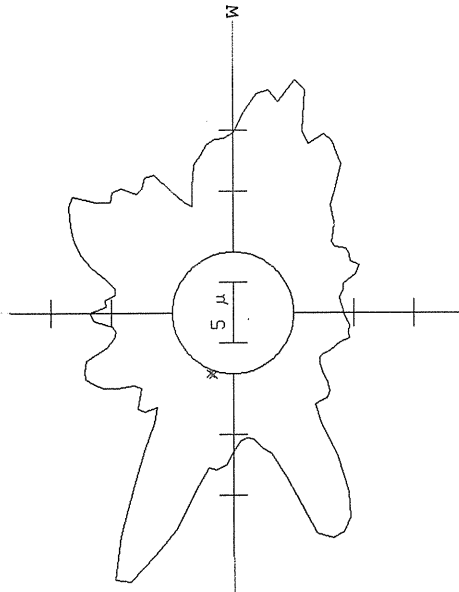
1548 UT

BOULDER SUNSPOT



1520 UT
1720 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



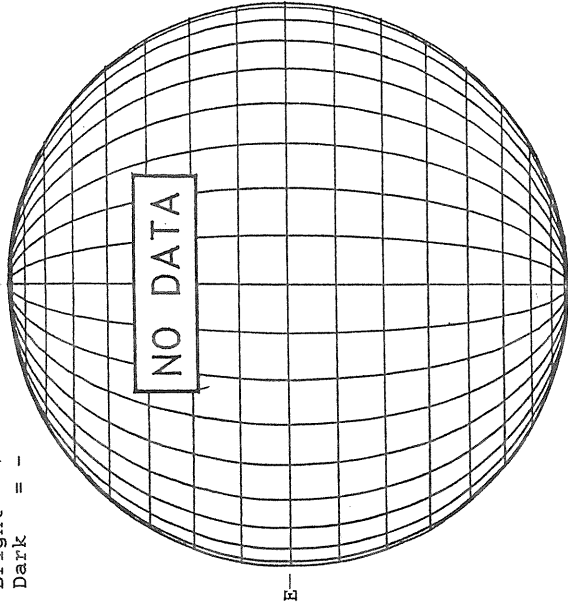
5303A, 2102 UT
xxxx 5694A, 2118 UT

S

FEBRUARY 14, 1989 (P=-17.09, B₀ = -6.78, L₀ = 248.24)

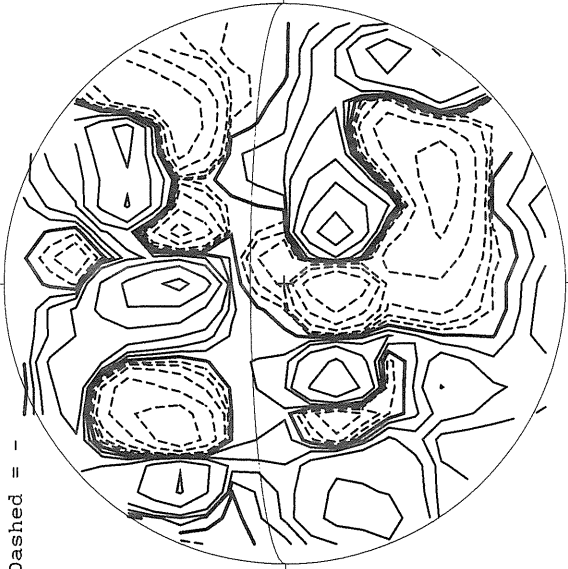
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



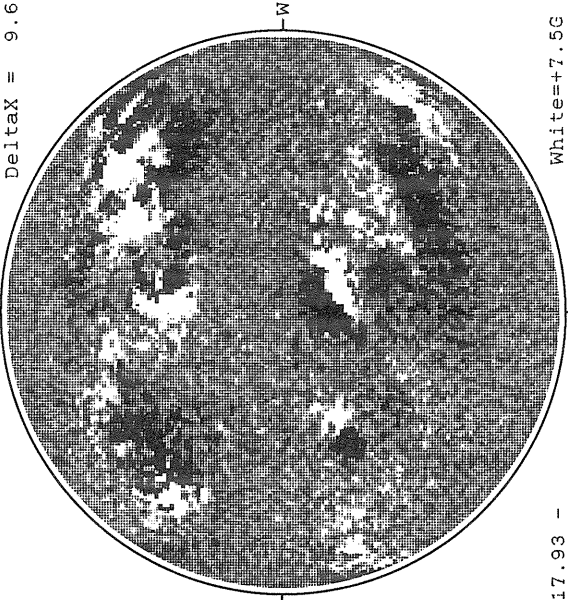
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

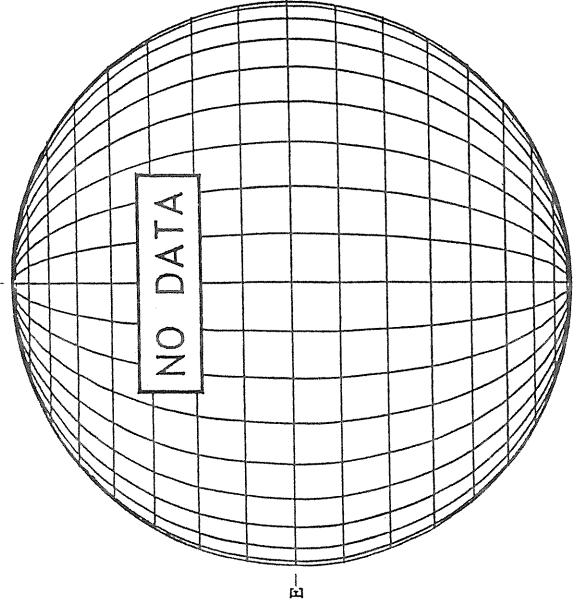
DeltaY = 13.0
DeltaX = 9.6



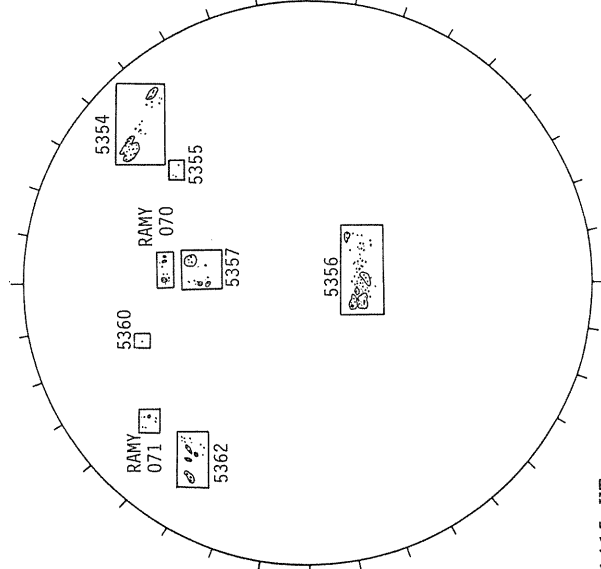
17.93 -
18.90 UT

White = +7.5G
Black = -7.5G

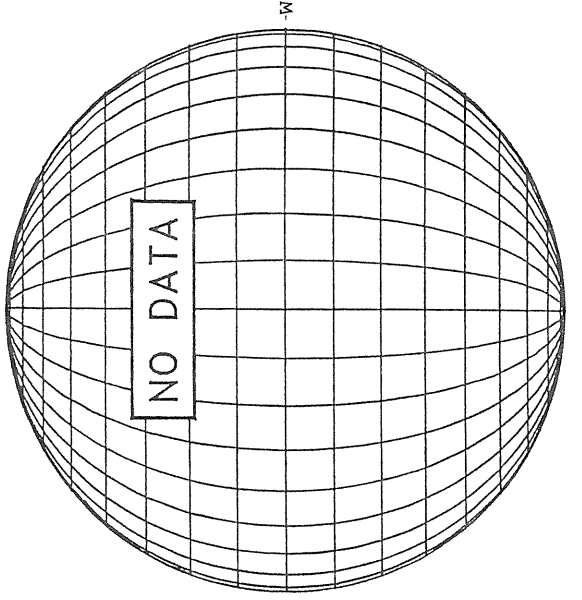
HOLLOMAN H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)



1415 UT

S

S

W

E

E

N

N

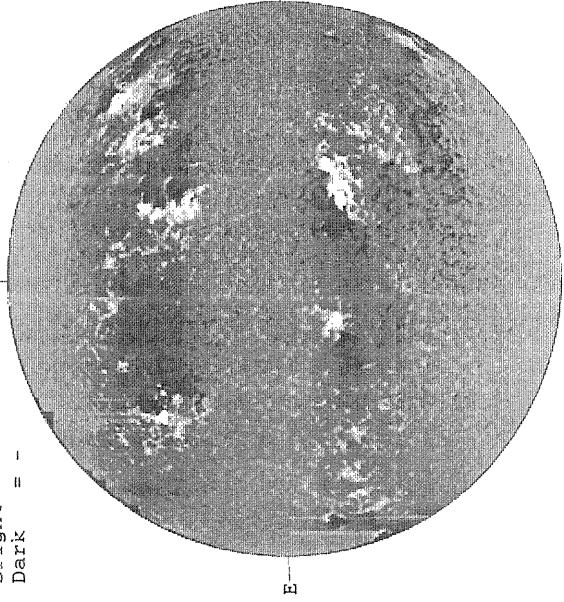
W

W

FEBRUARY 15, 1989 (P=-17.43, B₀ =-6.82, L₀ = 235.07)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1803 UT

STANFORD MAGNETOGRAM

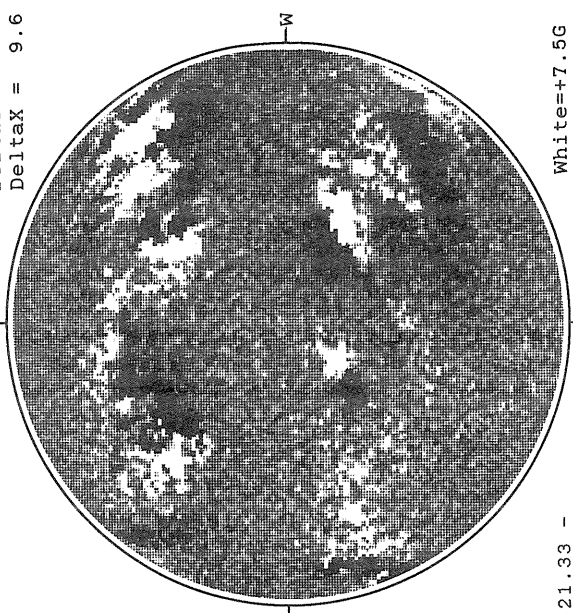
Solid = +
Dashed = -



2214 UT

MT. WILSON MAGNETOGRAM

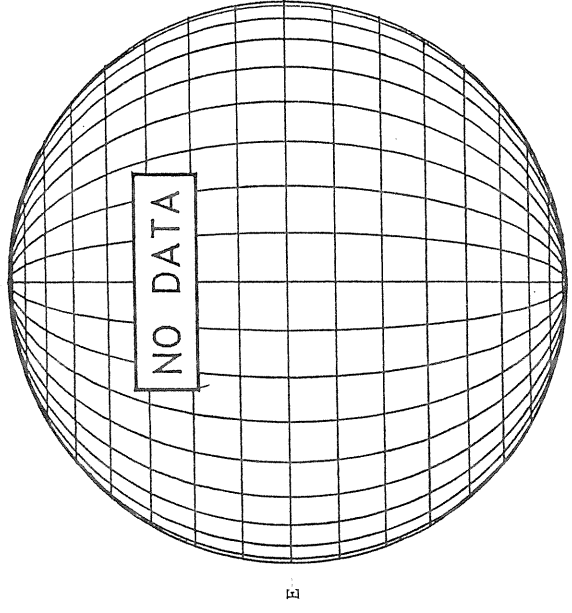
DeltaY = 13.1
DeltaX = 9.6



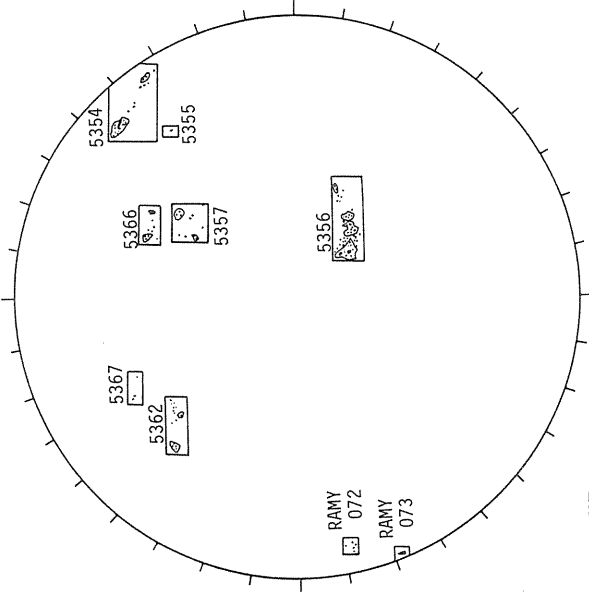
21.33 -
22.33 UT

White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA

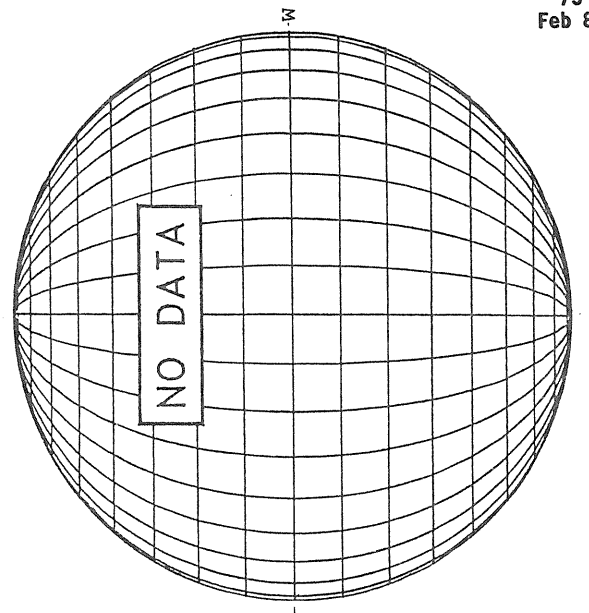


RAMEY SUNSPOT



1526 UT

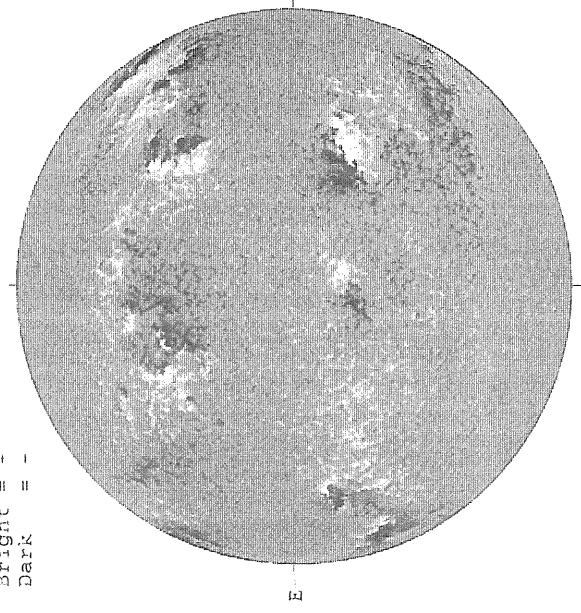
SACRAMENTO PEAK CORONA (1.15 Radii)



FEBRUARY 16, 1989 (P=-17.76, B₀ = -6.87, L₀ = 221.91)

KITT PEAK MAGNETOGRAM

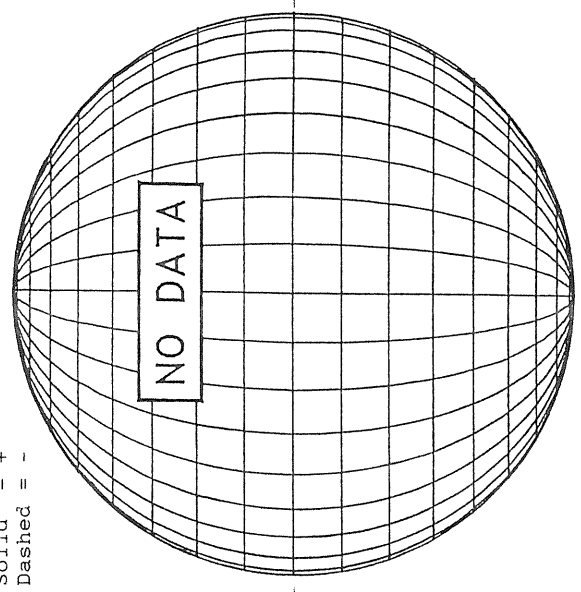
Bright = +
Dark = -



1623 UT

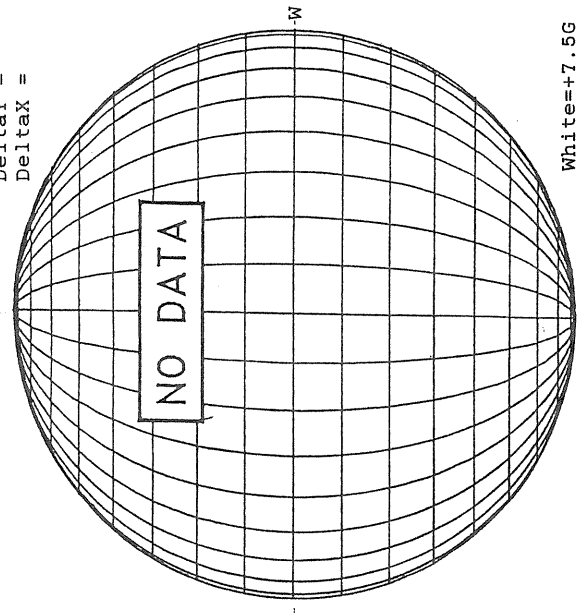
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



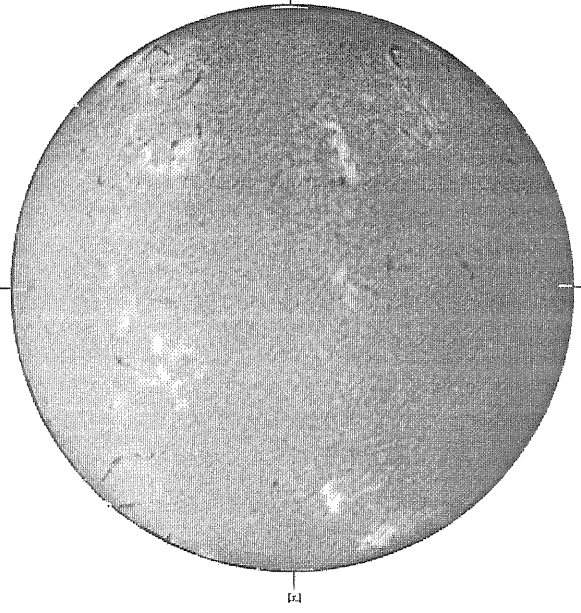
MT. WILSON MAGNETOGRAM

Delta_y =
Delta_x =



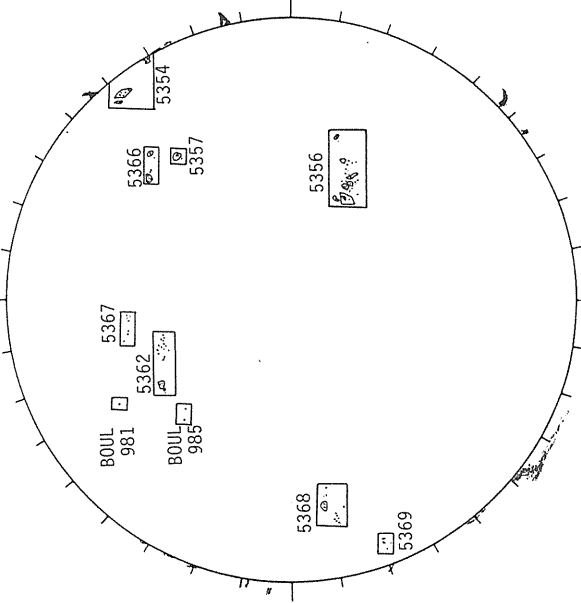
White = +7.5G
Black = -7.5G

BOULDER H-ALPHA



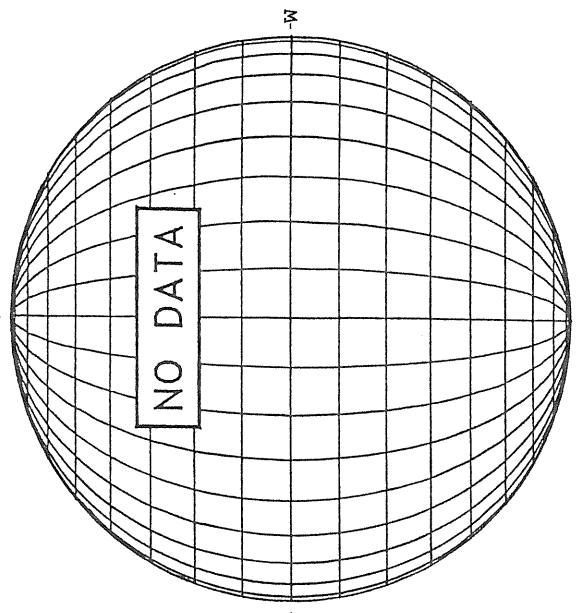
1648 UT

BOULDER SUNSPOT



1640 UT
1648 UT BOUL Prom

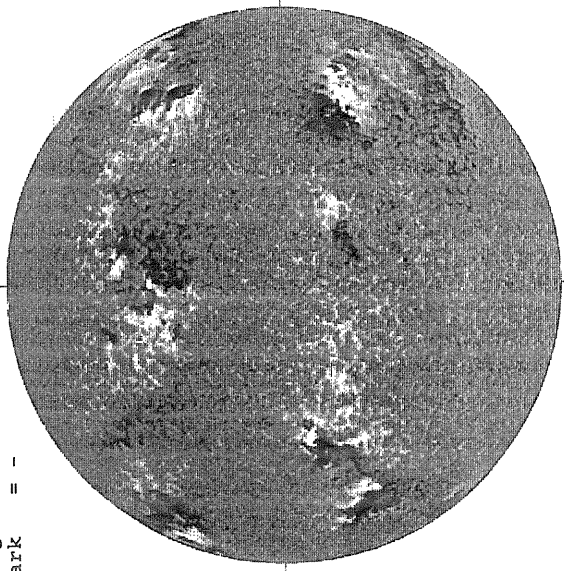
SACRAMENTO PEAK CORONA (1.15 Radii)



FEBRUARY 17, 1989 (P=-18.09, B₀ = -6.91, L₀ = 208.74)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1632 UT

STANFORD MAGNETOGRAM

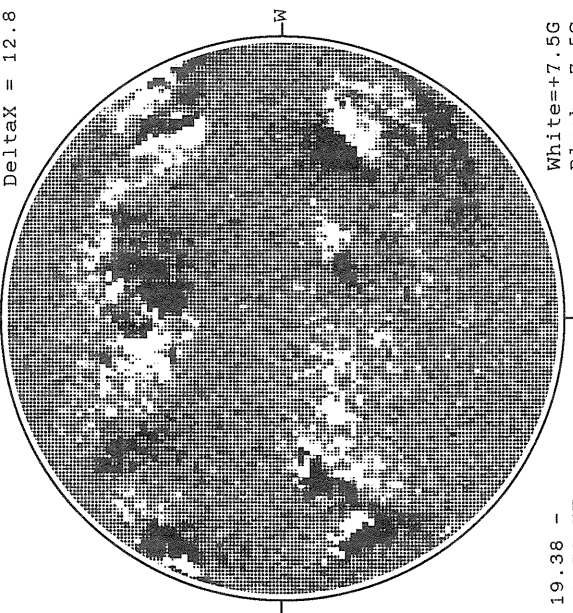
Solid = +
Dashed = -



0044 UT

MT. WILSON MAGNETOGRAM

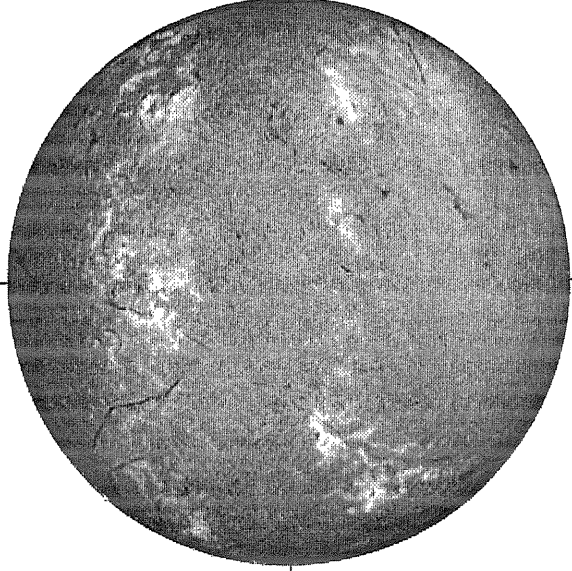
DeltaY = 20.2
DeltaX = 12.8



19.38 -
19.73 UT

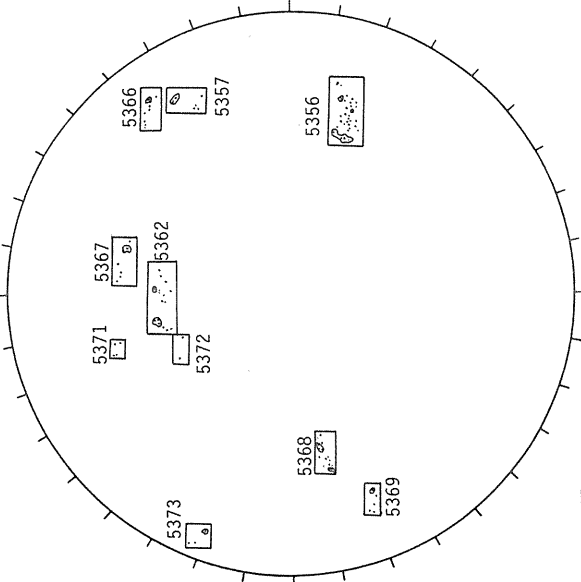
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



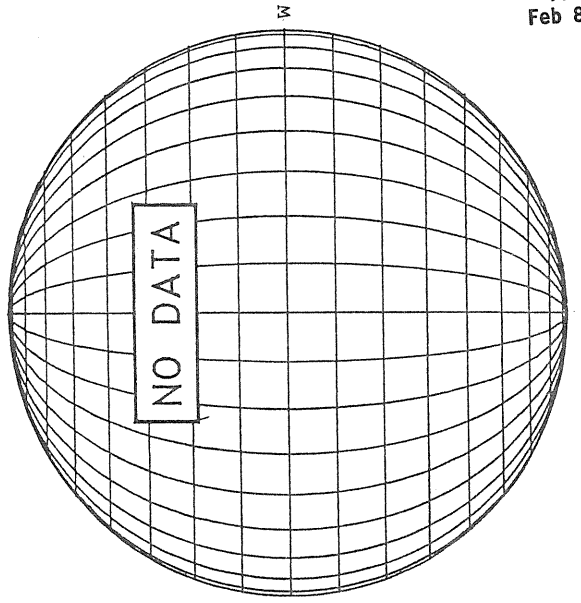
1639 UT

RAMEY SUNSPOT



1730 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

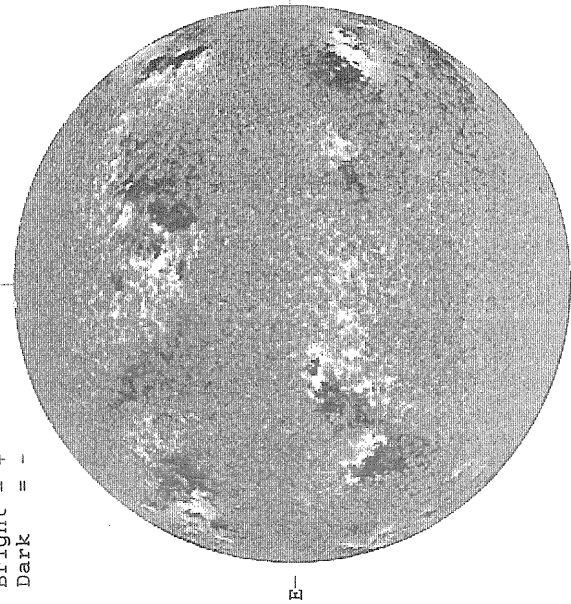


S

FEBRUARY 18, 1989 (P=-18.41, B₀ = -6.94, L₀ = 195.57)

KITT PEAK MAGNETOGRAM

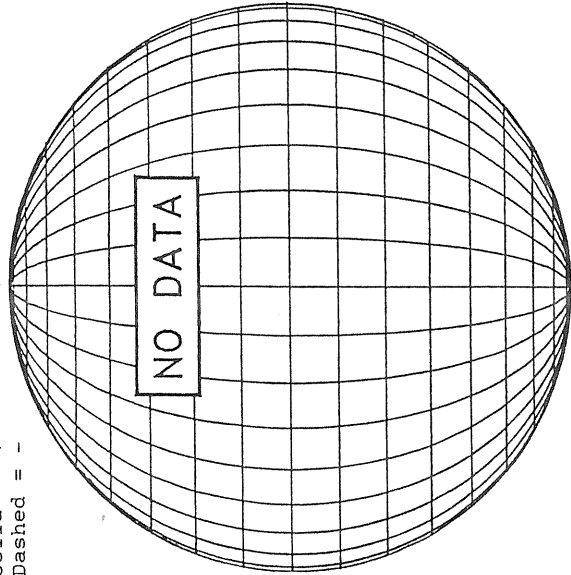
Bright = +
Dark = -



1525 UT

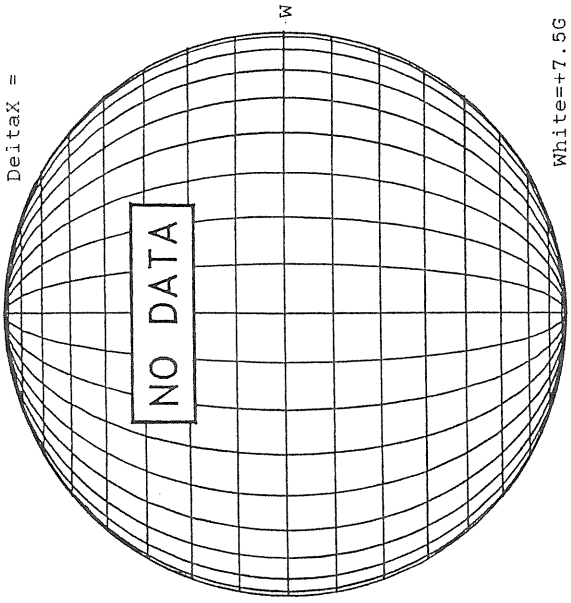
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



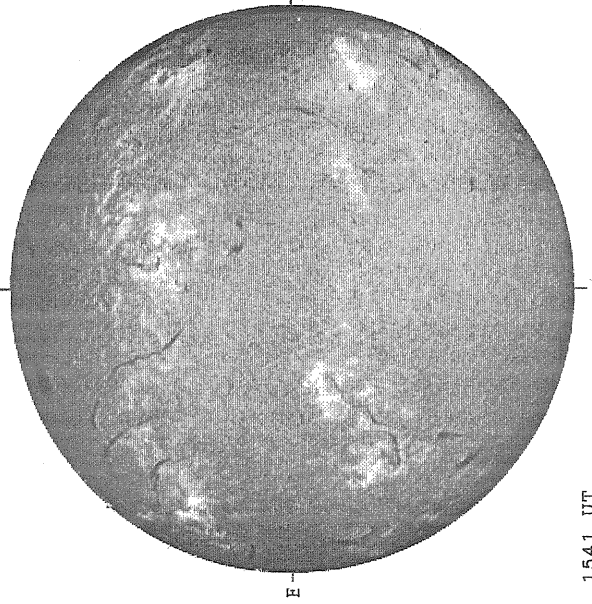
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



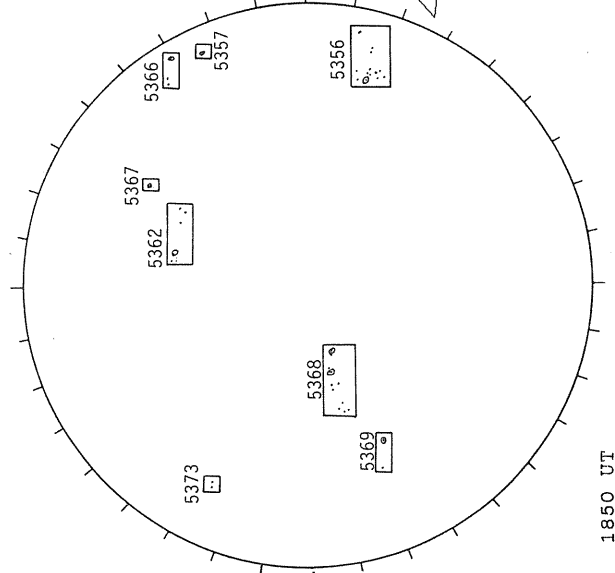
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



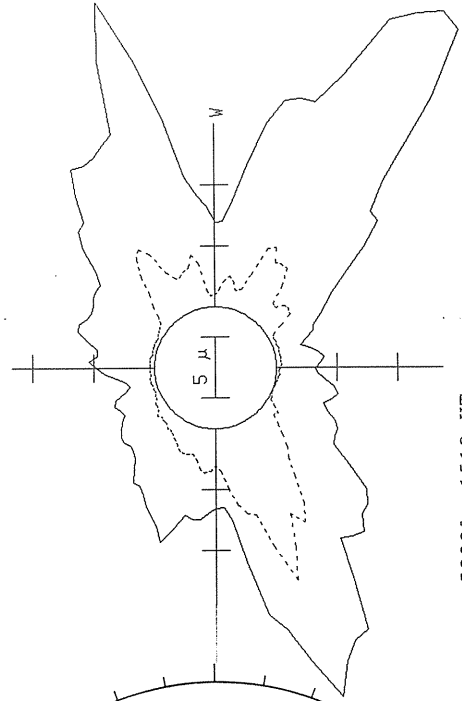
1541 UT

BOULDER SUNSPOT



1850 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

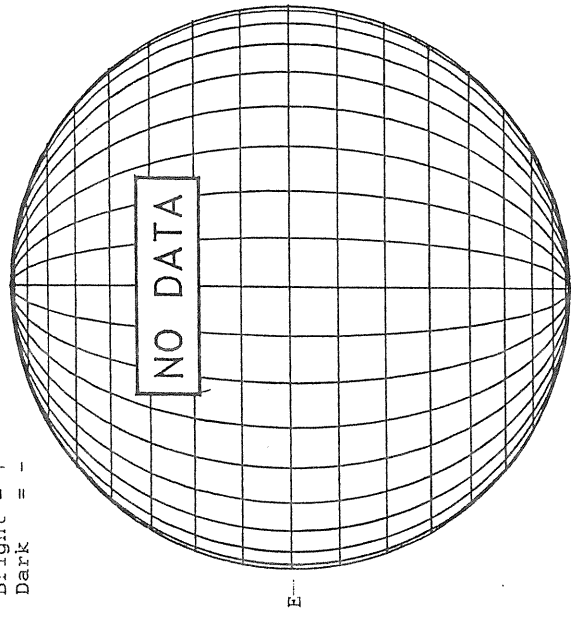


— 5303A, 1510 UT
 6374A, 1602 UT
 XXXX 5694A, 1543 UT
 NO 5694A ACTIVITY TODAY

FEBRUARY 19, 1989 (P=-18.72, B₀ = -6.98, L₀ = 182.40)

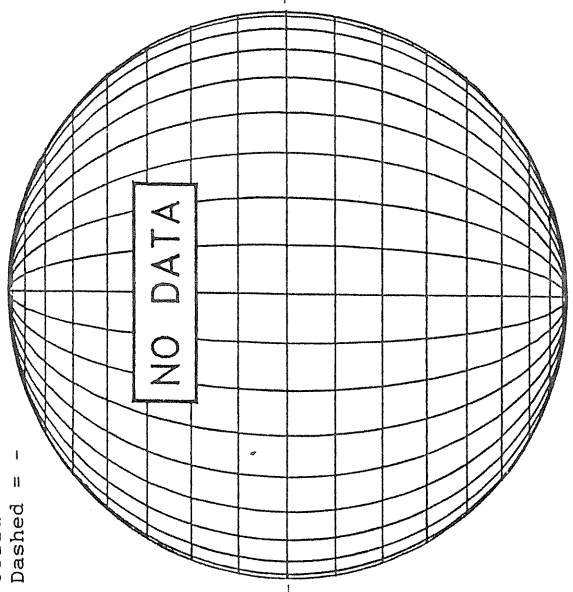
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



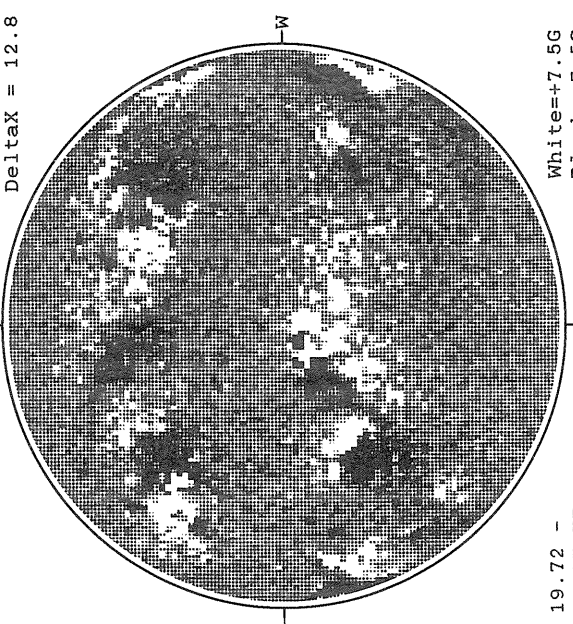
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

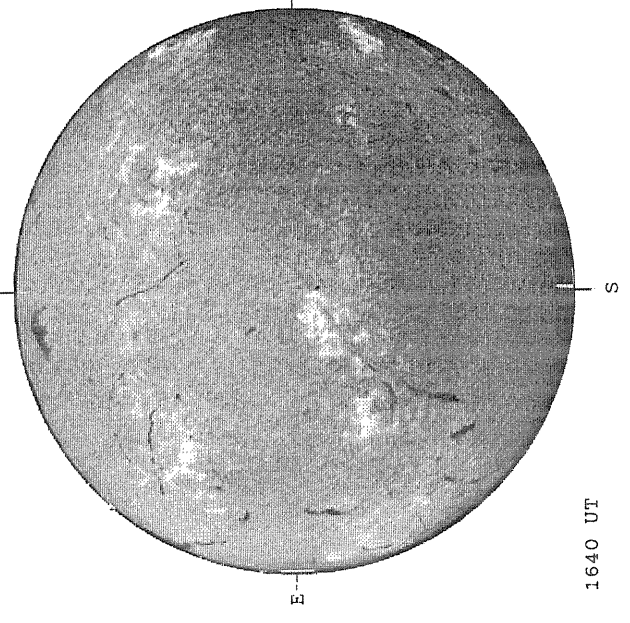
DeltaY = 20.2
DeltaX = 12.8



19.72 -
20.07 UT

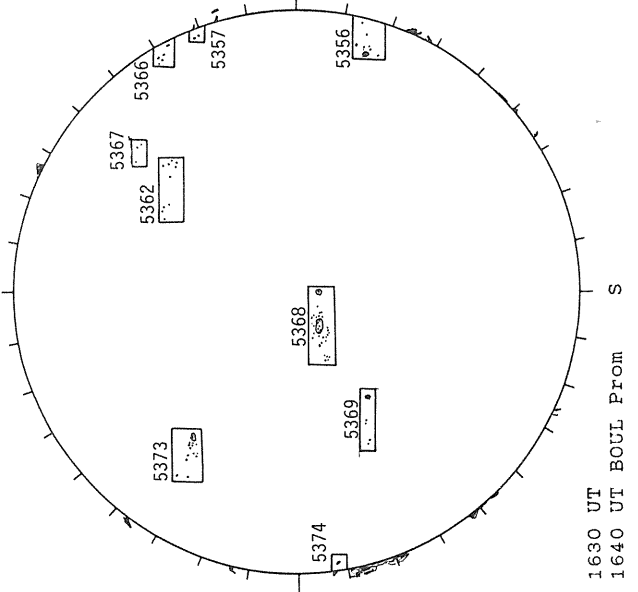
White = +7.5G
Black = -7.5G

BOULDER H-ALPHA



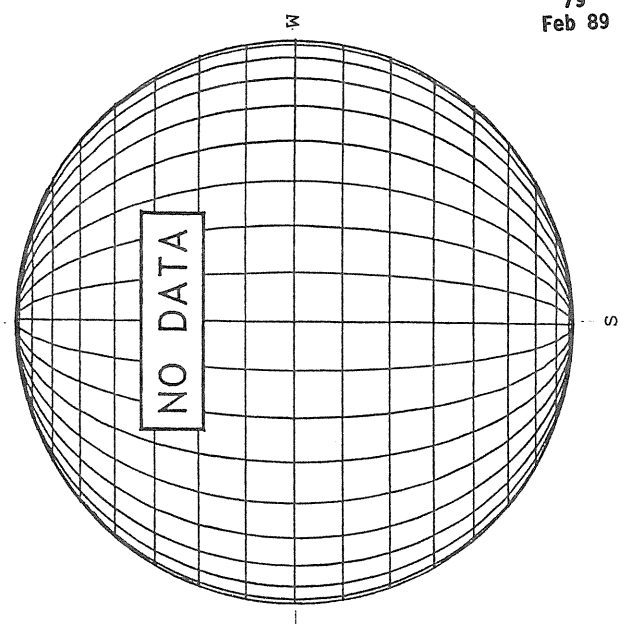
1640 UT

BOULDER SUNSPOT



1630 UT
1640 UT BOUL Prom

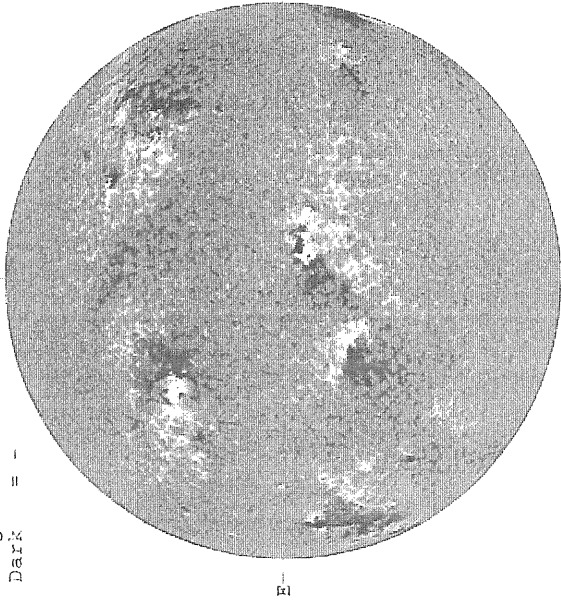
SACRAMENTO PEAK CORONA (1.15 Radii)



FEBRUARY 20, 1989 (P=-19.03, B₀ = -7.01, L₀ = 169.23)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1520 UT

STANFORD MAGNETOGRAM

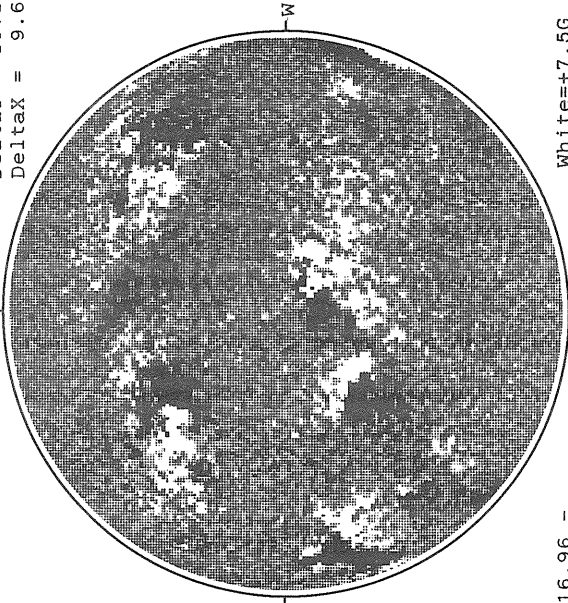
Solid = +
Dashed = -



2244 UT

MT. WILSON MAGNETOGRAM

DeltaY = 13.1
DeltaX = 9.6

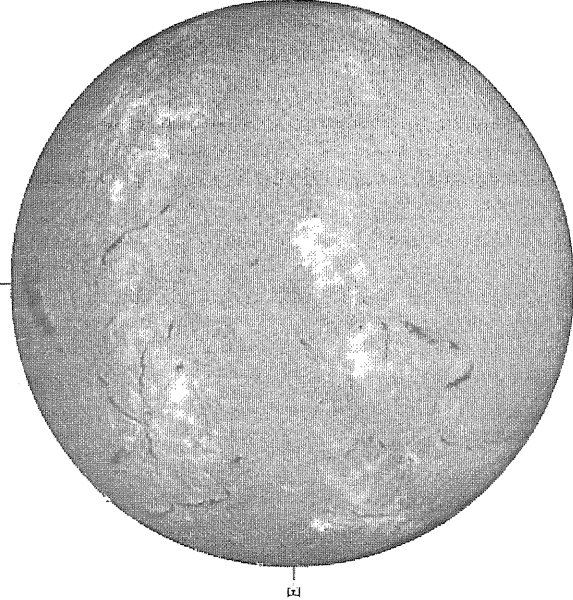


16.96 -
17.92 UT

White = +7.5G
Black = -7.5G

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -

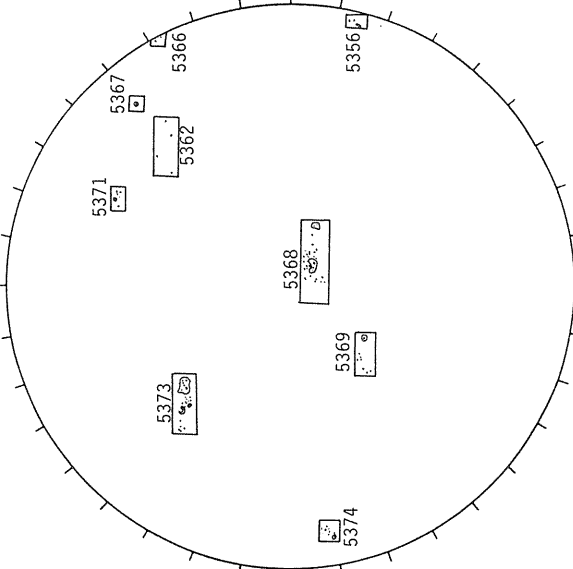


1727 UT

SACRAMENTO PEAK H-ALPHA

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

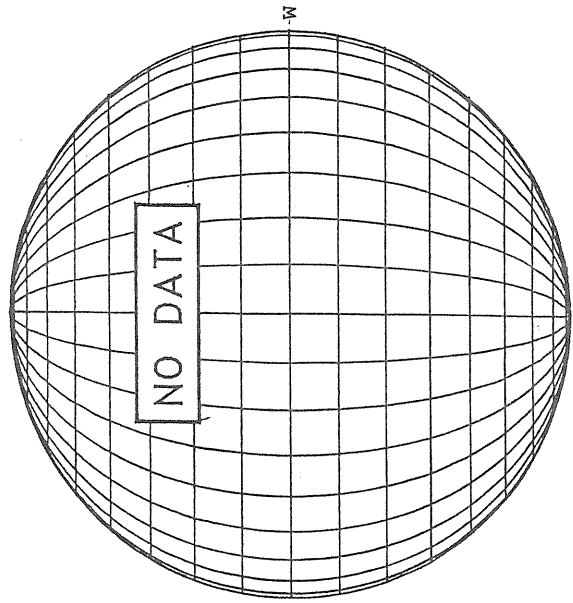


1252 UT

RAMEY SUNSPOT

MT. WILSON MAGNETOGRAM

DeltaY = 13.1
DeltaX = 9.6

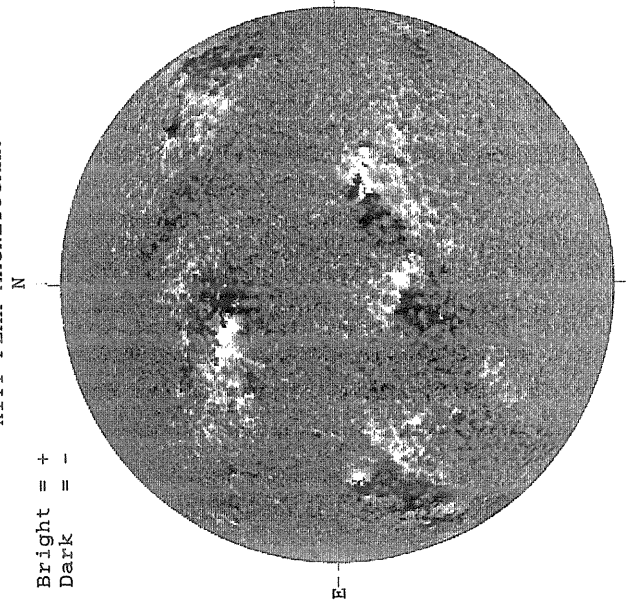


SACRAMENTO PEAK CORONA (1.15 Radii)

FEBRUARY 21, 1989 (P=-19.34, B₀ = -7.04, L₀ = 156.06)

KITT PEAK MAGNETOGRAM

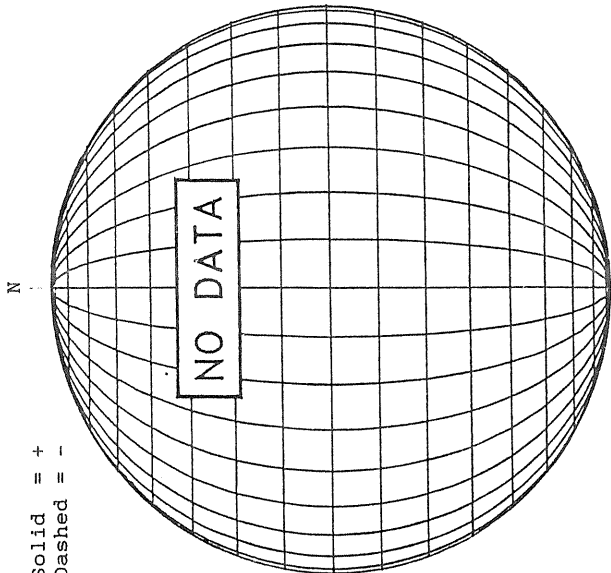
Bright = +
Dark = -



1736 UT

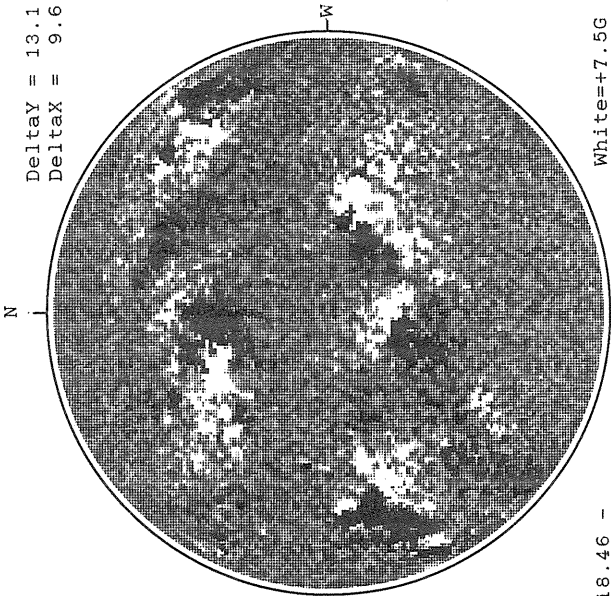
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

Delta γ = 13.1
Delta α = 9.6

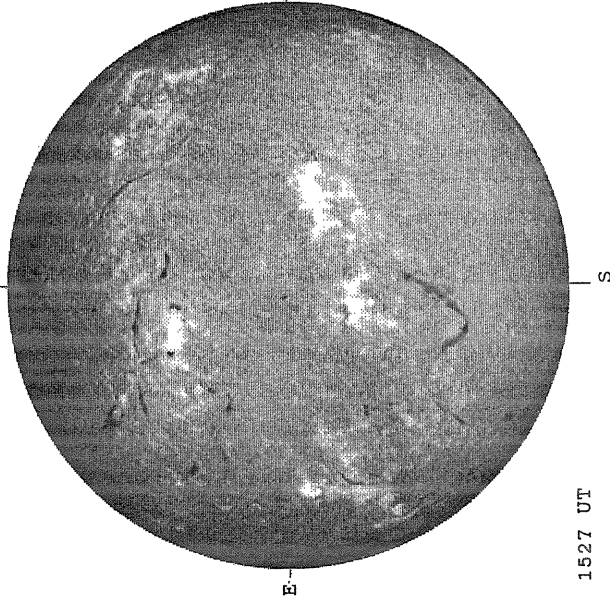


18.46 -
19.42 UT

White = +7.5G
Black = -7.5G

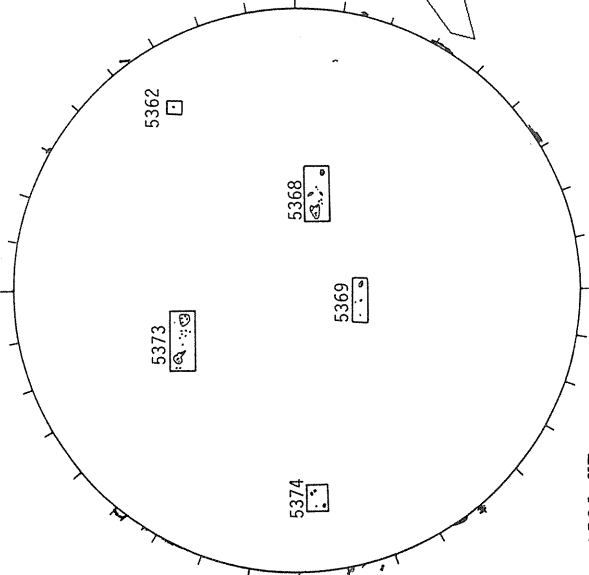
SACRAMENTO PEAK H-ALPHA

SACRAMENTO PEAK H-ALPHA



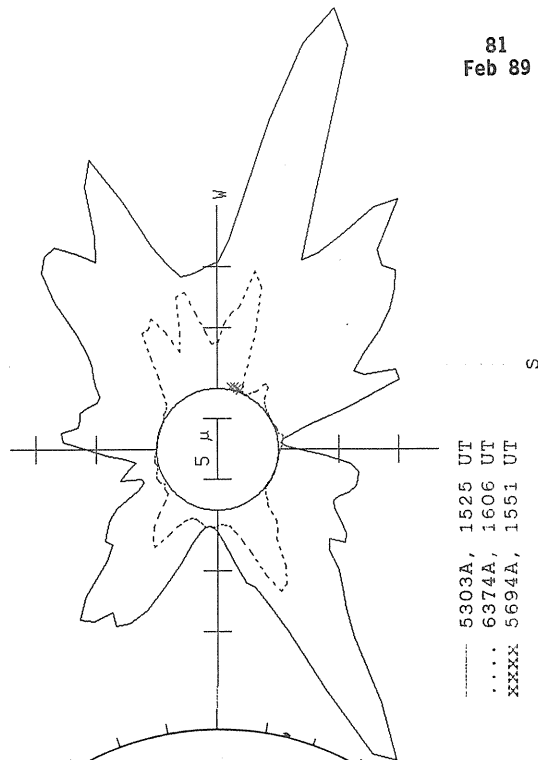
1527 UT

BOULDER SUNSPOT



1502 UT
1513 UT BOUL FROM

SACRAMENTO PEAK CORONA (1.15 Radii)

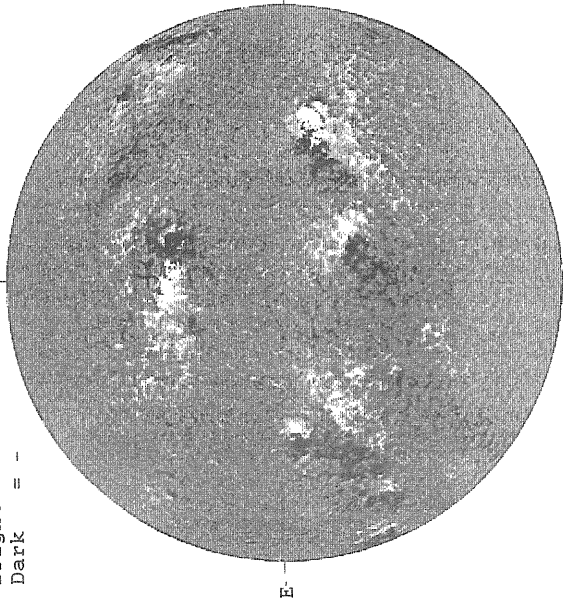


..... 5303A, 1525 UT
.... 6374A, 1606 UT
XXXX 5694A, 1551 UT

FEBRUARY 22, 1989 (P=-19.64, B₀ = -7.07, L₀ = 142.69)

KITT PEAK MAGNETOGRAM

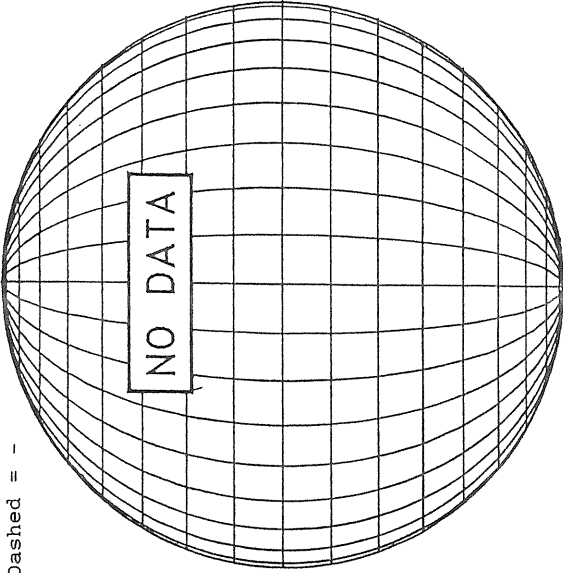
Bright = +
Dark = -



1654 UT

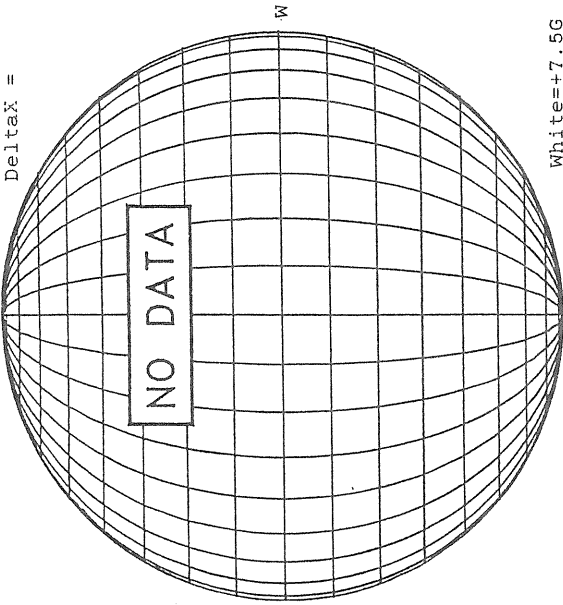
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



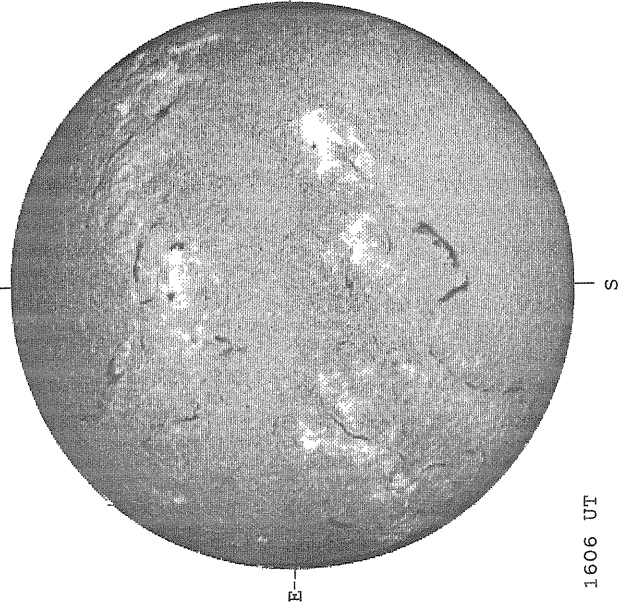
MT. WILSON MAGNETOGRAM

DeltaX =
DeltaY =



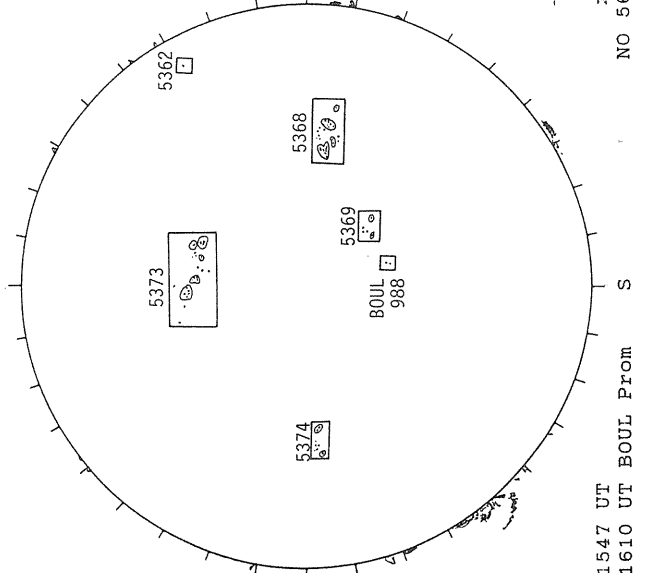
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



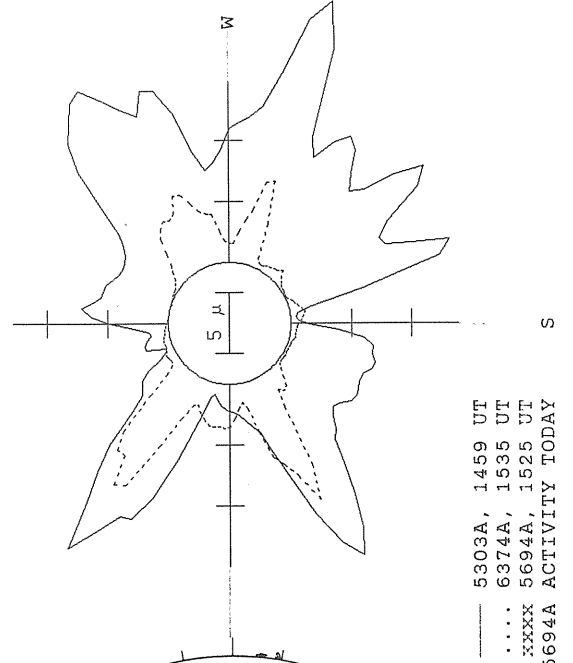
1606 UT

BOULDER SUNSPOT



1547 UT
1610 UT BOUL Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)

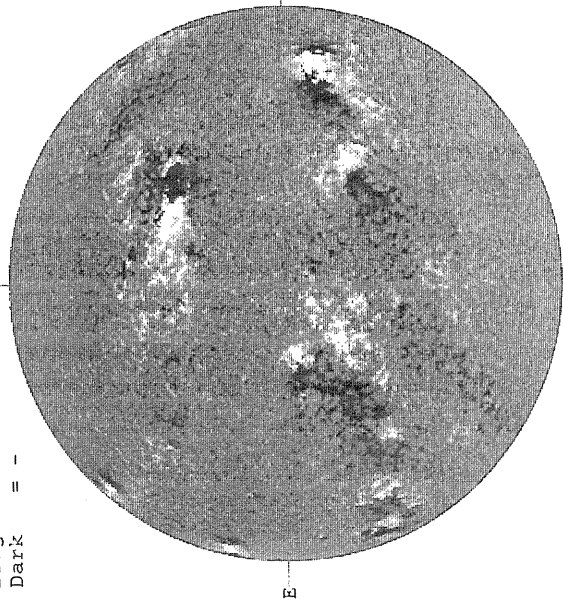


— 5303A, 1459 UT
... 6374A, 1535 UT
XXXX 5694A, 1525 UT
NO 5694A ACTIVITY TODAY

FEBRUARY 23, 1989 (P=-19.93, B₀ =-7.09, L₀ = 129.72)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1749 UT

STANFORD MAGNETOGRAM

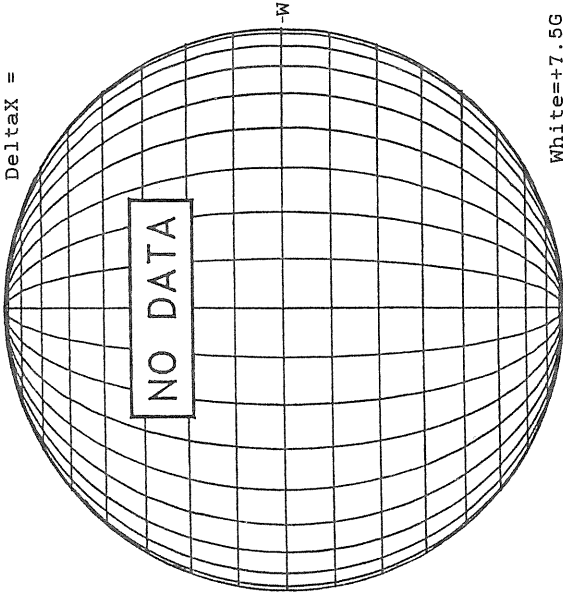
Solid = +
Dashed = -



1930 UT

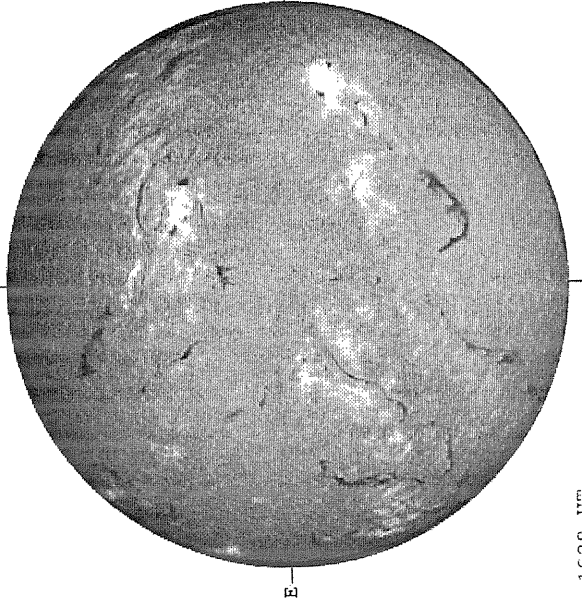
MT. WILSON MAGNETOGRAM

Delta_Y =
Delta_X =



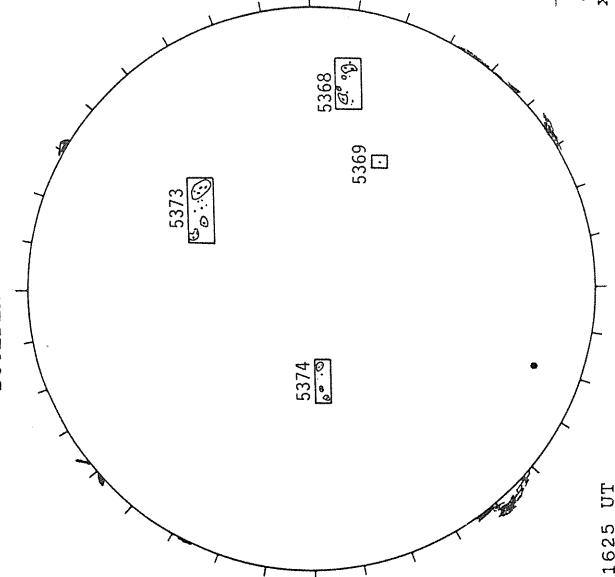
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



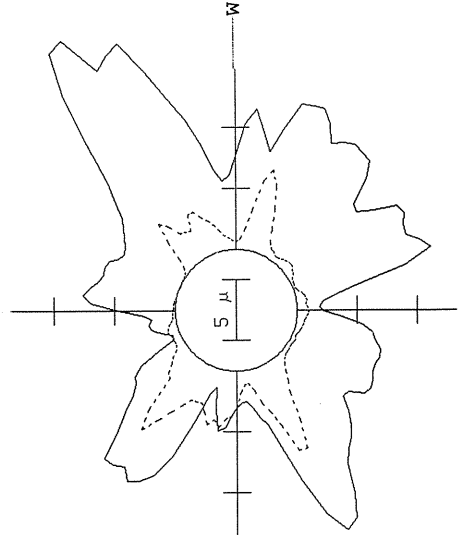
1638 UT

BOULDER SUNSPOT



1625 UT BOUL Prom
1728 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



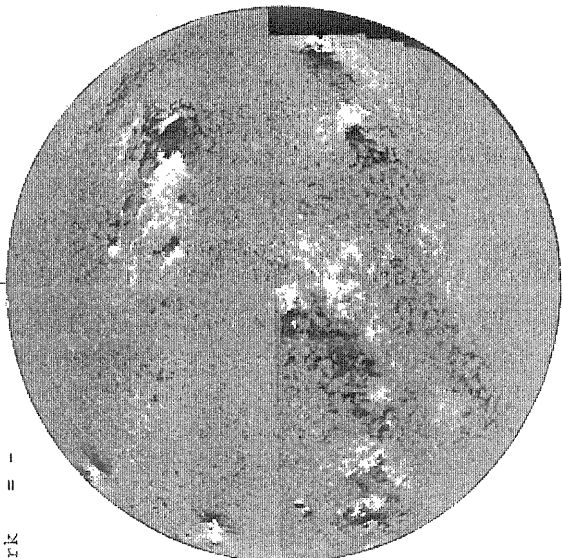
— 5303A, 1532 UT
... 6374A, 1604 UT
xxxx 5694A, 1551 UT
NO 5694A ACTIVITY TODAY

S

FEBRUARY 24, 1989 (P=-20.21, B₀ = -7.12, L₀ = 116.55)

KITT PEAK MAGNETOGRAM

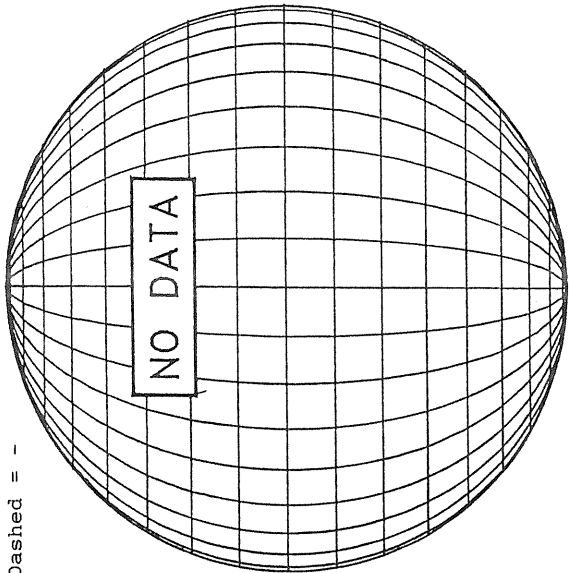
Bright = +
Dark = -



1801 UT

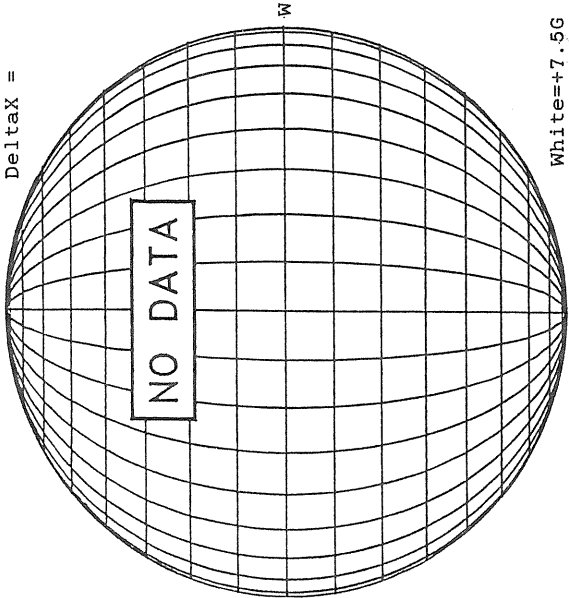
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



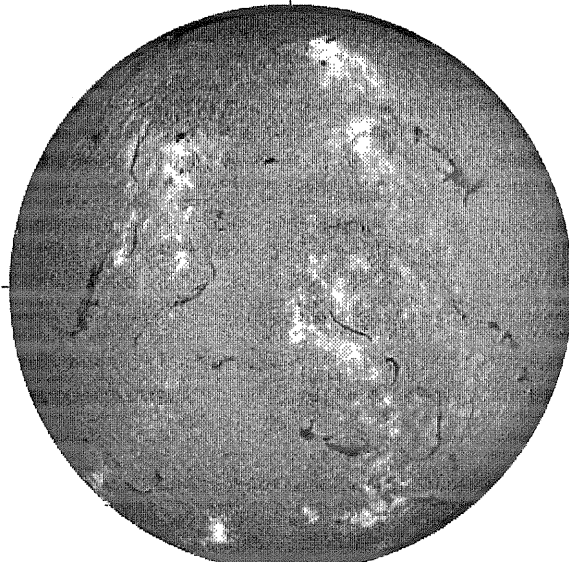
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



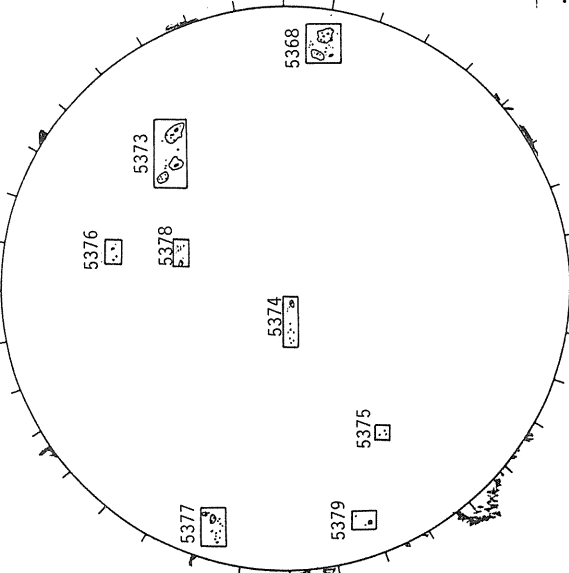
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



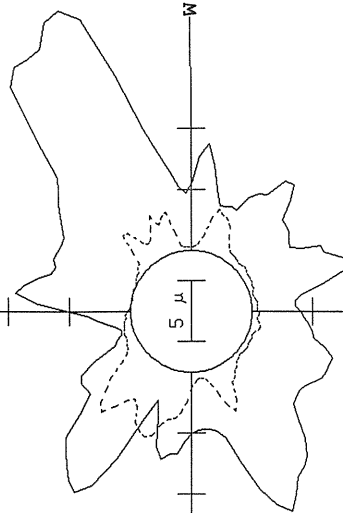
1535 UT

BOULDER SUNSPOT



1647 UT
1820 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

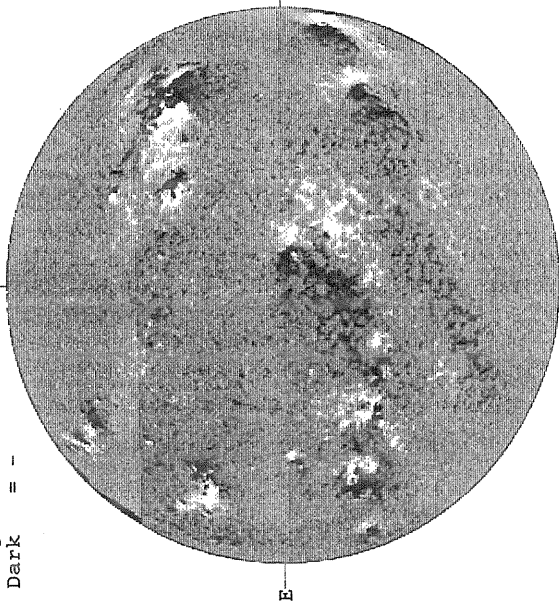


— 5303A, 1656 UT
... 6374A, 1728 UT
xxxx 5694A, 1715 UT
NO 5694A ACTIVITY TODAY

FEBRUARY 25, 1989 (P=-20.49, B₀ = -7.14, L₀ = 103.38)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1740 UT

STANFORD MAGNETOGRAM

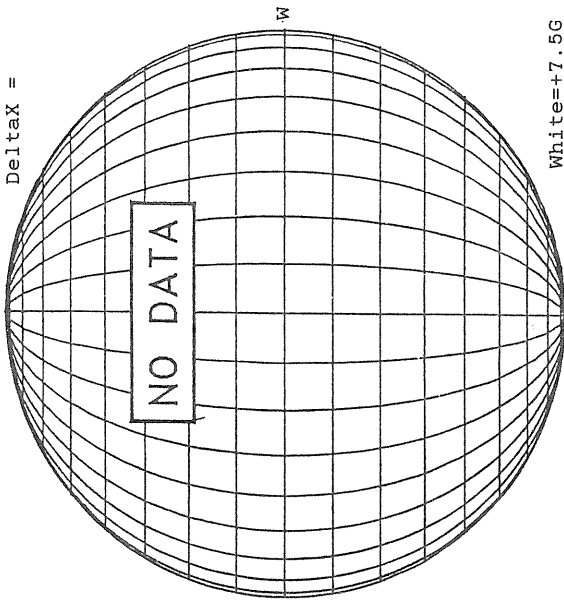
Solid = +
Dashed = -



2311 UT

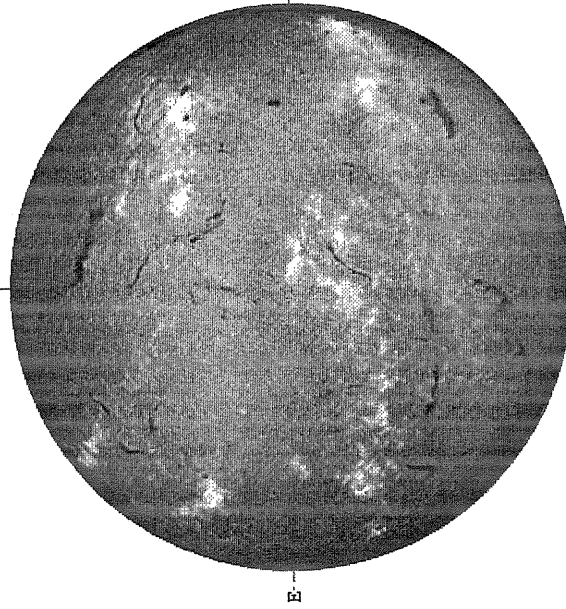
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



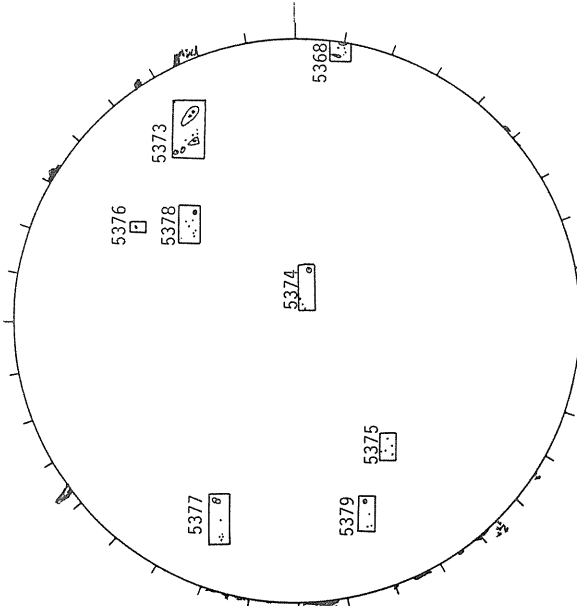
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



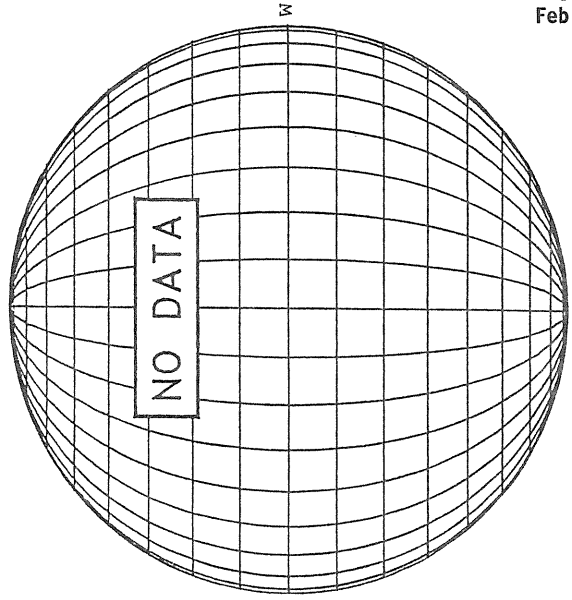
1557 UT

BOULDER SUNSPOT



1600 UT
1610 UT BOUL Prom

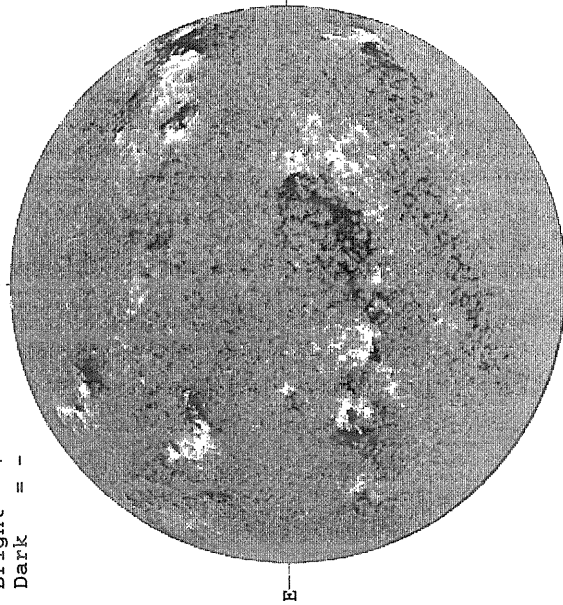
SACRAMENTO PEAK CORONA (1.15 Radii)



FEBRUARY 26, 1989 (P=-20.77, B₀ = -7.16, L₀ = 90.20)

KITT PEAK MAGNETOGRAM

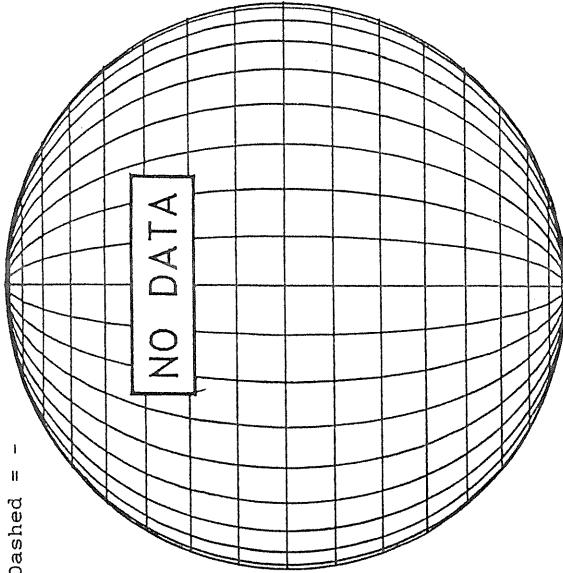
Bright = +
Dark = -



1752 UT

STANFORD MAGNETOGRAM

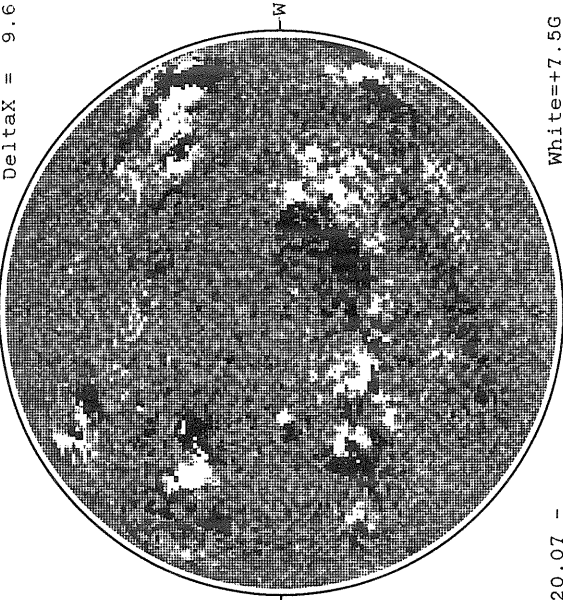
Solid = +
Dashed = -



20.07 -
21.04 UT

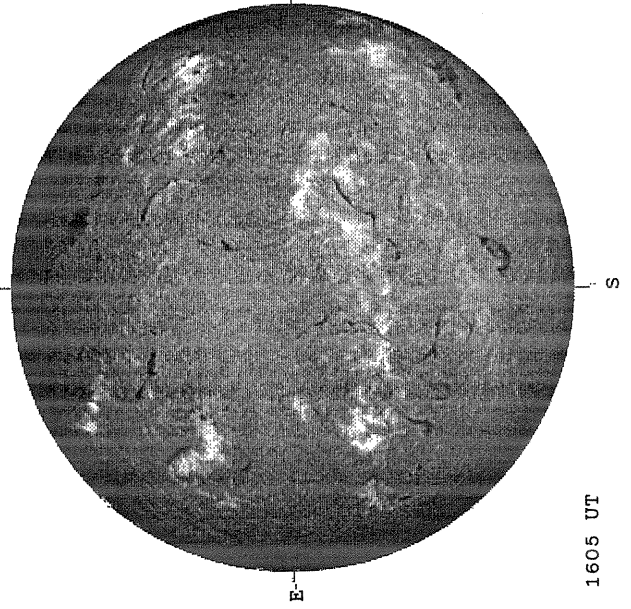
MT. WILSON MAGNETOGRAM

Delta_Y = 13.0
Delta_X = 9.6



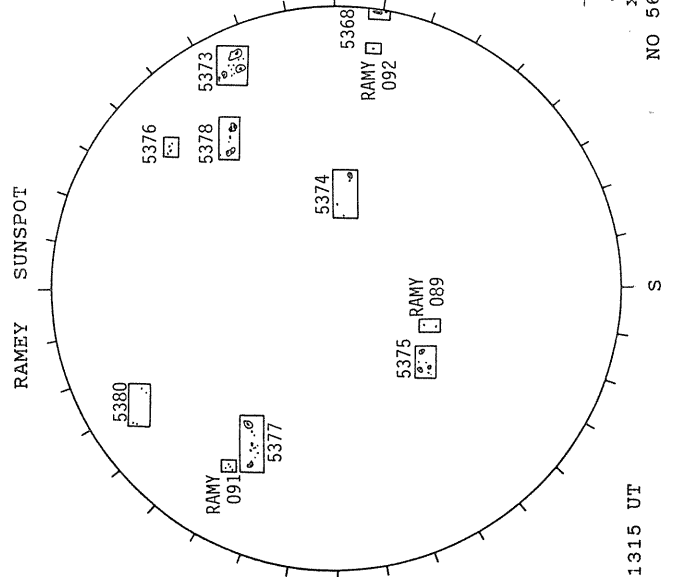
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



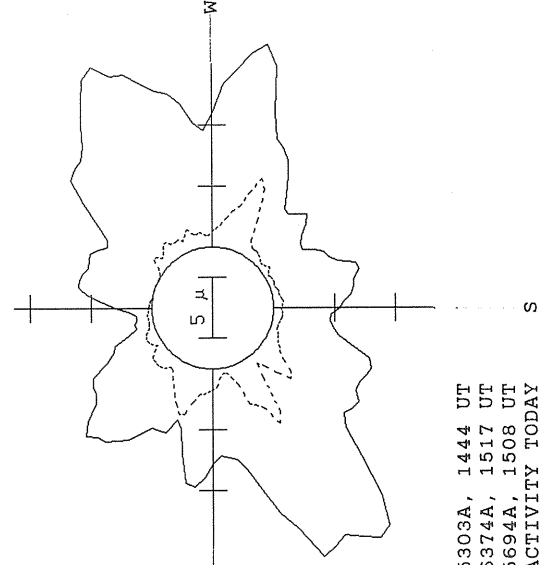
1605 UT

RAMEY SUNSPOT



1315 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

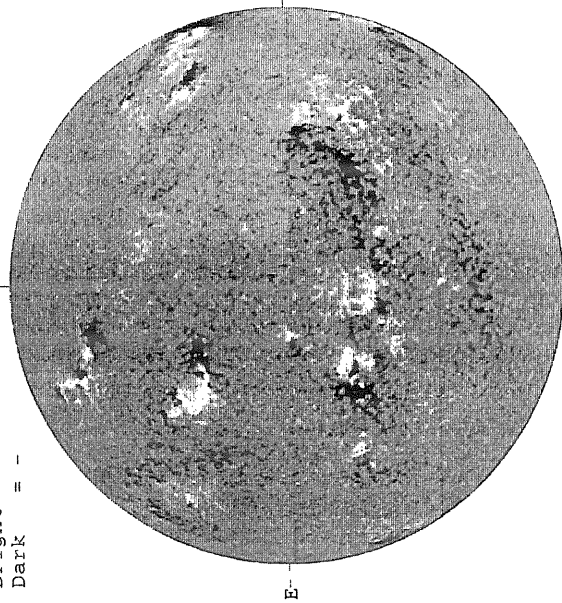


— 5303A, 1444 UT
... 6374A, 1517 UT
xxxxx 5694A, 1508 UT
NO 5694A ACTIVITY TODAY

FEBRUARY 27, 1989 (P=-21.03, B₀ = -7.18, L₀ = 77.03)

KITT PEAK MAGNETOGRAM

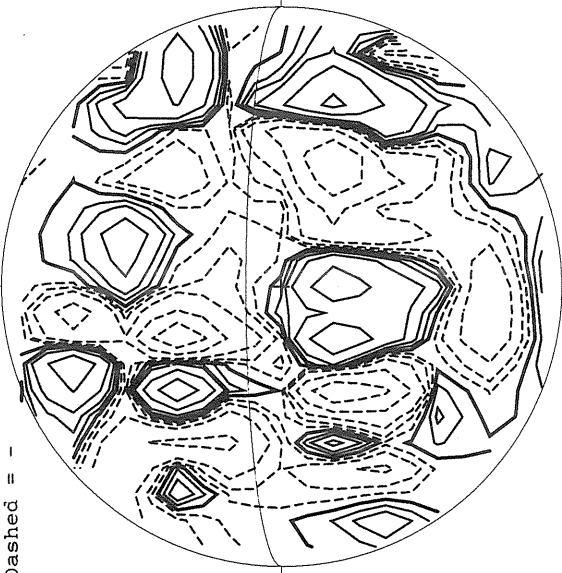
Bright = +
Dark = -



1601 UT

STANFORD MAGNETOGRAM

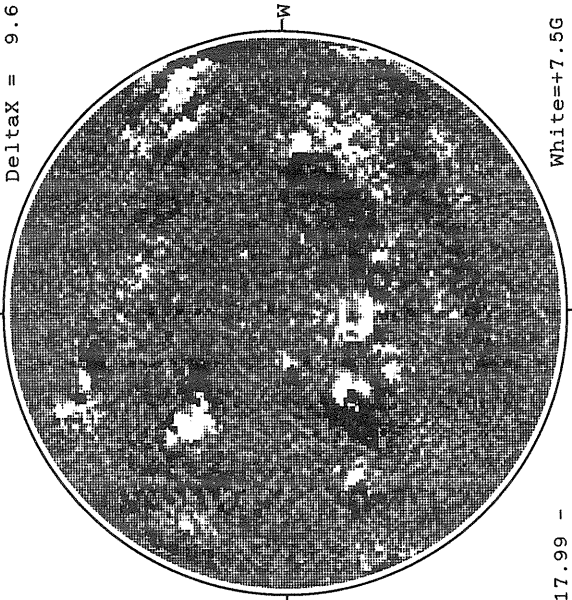
Solid = +
Dashed = -



2140 UT

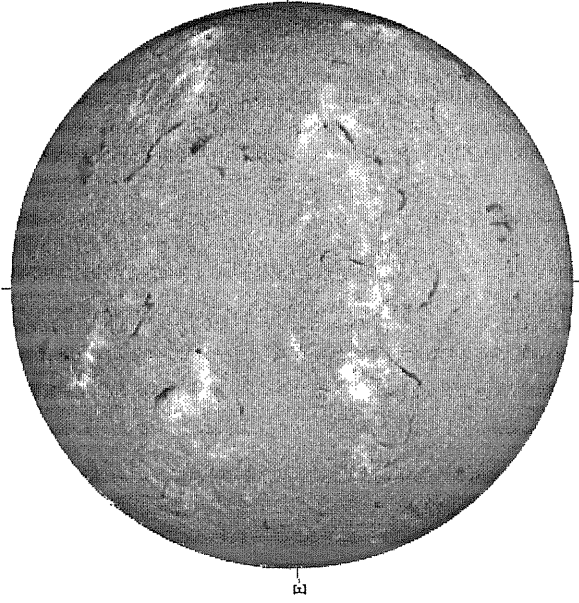
MT. WILSON MAGNETOGRAM

DeltaY = 13.0
DeltaX = 9.6



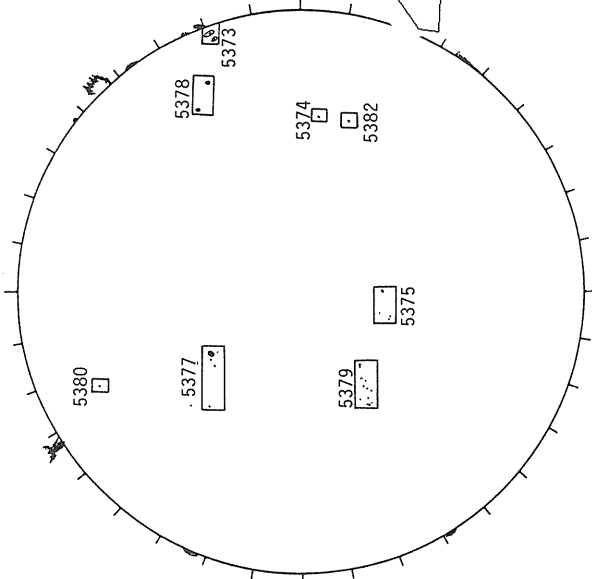
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



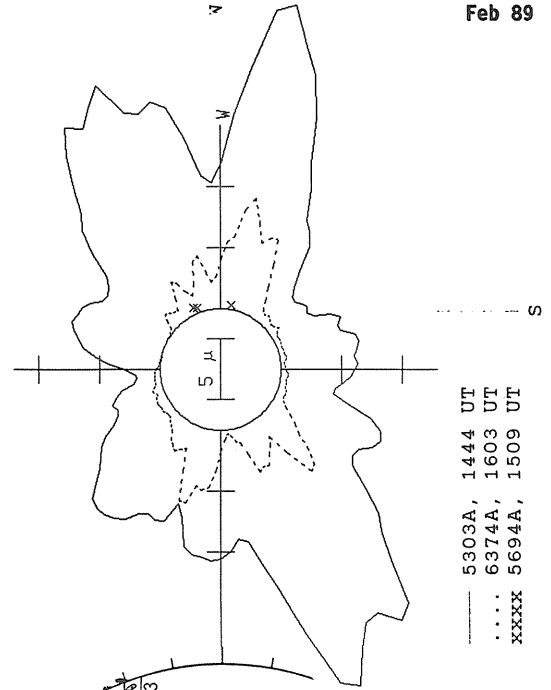
1550 UT

BOULDER SUNSPOT



1727 UT
1813 UT BOUL FROM

SACRAMENTO PEAK CORONA (1.15 Radii)

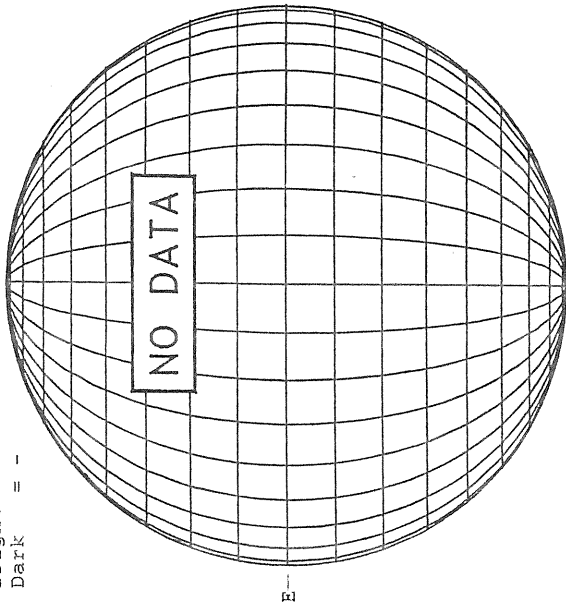


— 5303A, 1444 UT
... 6374A, 1603 UT
xxxx 5694A, 1509 UT

FEBRUARY 28, 1989 (P=-21.30, B₀ = -7.19, I₀ = 63.86)

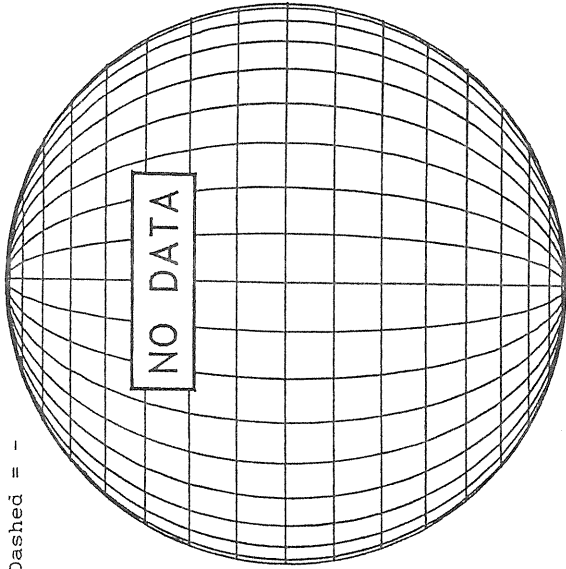
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



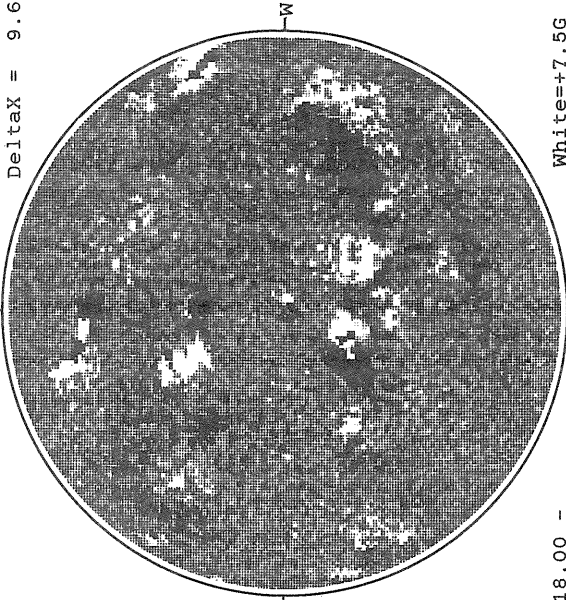
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

DeltaY = 13.0
DeltaX = 9.6

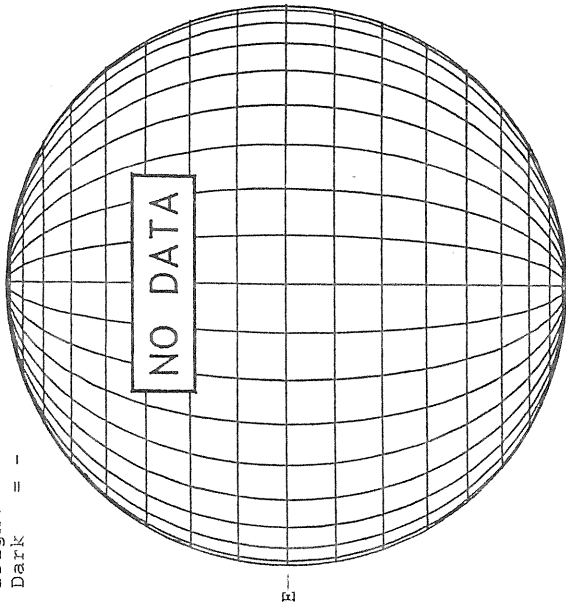


18.00 -
18.97 UT

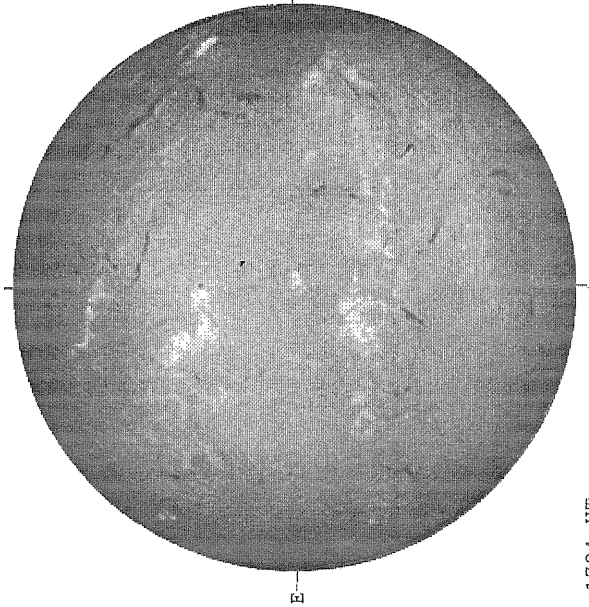
White = +7.5G
Black = -7.5G

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -

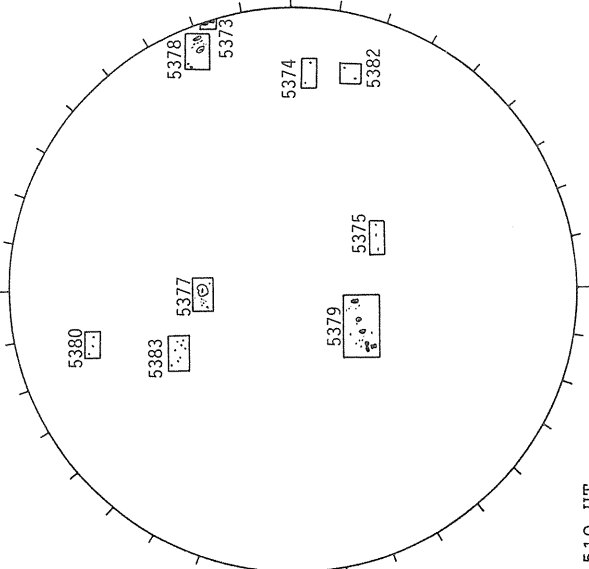


SACRAMENTO PEAK H-ALPHA



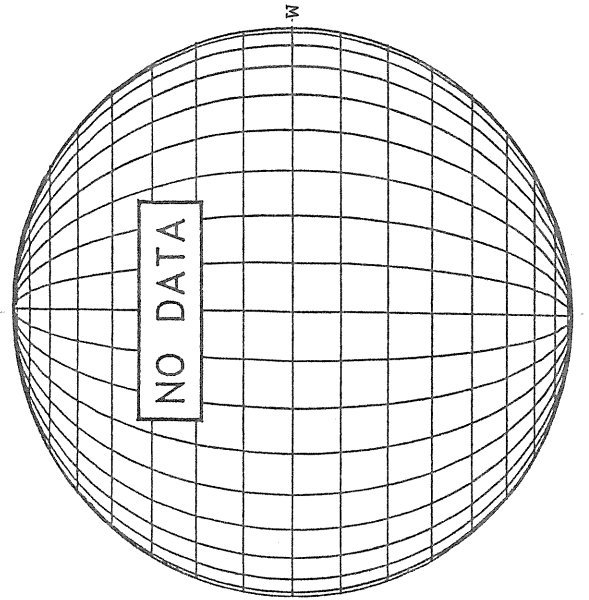
1724 UT

RAMEY SUNSPOT



1510 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



S

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

FEBRUARY 1989

NOAA/ USAF Group	Mt Wilson Group	Sta	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
5334		SVTO	01	25	1058	S20	E88	02	1.2		A	AX	80	3	2	2
5334		RAMY	01	25	1320	S20	E81	01	31.7		B	CSI	80	13	8	4
5334		HOLL	01	25	1705	S21	E85	02	1.2		B	DAI	210	13	10	4
5334		PALE	01	25	1950	S21	E83	02	1.2		B	EAI	300	10	11	3
5334		LEAR	01	26	0040	S19	E80	02	1.1		B	FAC	300	12	16	3
5334		CULG	01	26	0315	S15	E76	01	31.9		B	DAI	140	13	10	2
5334		SVTO	01	26	0850	S19	E78	02	1.3		B	FKC	620	11	16	3
5334	25013	MWIL	01	26	1620	S22	E71	02	1.1	4	(B)					
5334		BOUL	01	26	1630	S21	E77	02	1.6		B	EAI	270	15	14	3
5334		HOLL	01	26	1915	S20	E71	02	1.2		B	EAI	480	17	13	4
5334		PALE	01	26	1925	S20	E68	02	1.0		B	EAI	370	14	13	3
5334		RAMY	01	26	2017	S21	E71	02	1.3		B	EKI	570	24	15	3
5334		LEAR	01	27	0100	S20	E69	02	1.3		B	EAI	410	15	14	3
5334		CULG	01	27	0310	S16	E67	02	1.2		B	EAI	180	16	12	2
5334		SVTO	01	27	0850	S20	E64	02	1.3		BG	EAC	380	32	13	3
5334		RAMY	01	27	1429	S18	E60	02	1.2		B	EAI	570	33	14	3
5334		BOUL	01	27	1550	S21	E62	02	1.4		B	EAC	510	21	15	3
5334	25013	MWIL	01	27	1550	S22	E61	02	1.3	5	(B)					
5334		PALE	01	27	1940	S21	E58	02	1.3		B	EKI	360	23	14	3
5334		HOLL	01	27	2115	S21	E57	02	1.2		B	EAI	400	31	13	3
5334		LEAR	01	28	0050	S20	E55	02	1.2		B	EAI	260	18	13	3
5334		CULG	01	28	0325	S16	E55	02	1.3		B	EAI	200	19	14	1
5334		RAMY	01	28	1530	S20	E48	02	1.3		B	EAI	320	23	14	3
5334		HOLL	01	28	1550	S20	E46	02	1.2		B	EAI	270	32	14	4
5334		LEAR	01	29	0020	S20	E43	02	1.3		B	EAI	210	22	13	3
5334		CULG	01	29	0210	S17	E42	02	1.3		B	EAI	160	25	13	1
5334		RAMY	01	29	1300	S18	E37	02	1.3		B	EA	280	22	14	2
5334	25013	MWIL	01	29	1530	S21	E35	02	1.3	4	(B)					
5334		HOLL	01	29	1540	S20	E34	02	1.2		B	EAI	210	27	14	3
5334		BOUL	01	29	1708	S21	E34	02	1.3		B	EAI	170	25	14	3
5334		PALE	01	29	1810	S21	E33	02	1.3		B	EAI	300	21	14	2
5334		LEAR	01	30	0035	S20	E30	02	1.3		B	EAI	180	46	15	3
5334		CULG	01	30	0300	S18	E28	02	1.2		B	EAI	190	15	13	1
5334		SVTO	01	30	1003	S21	E23	02	1.2		BGD	EAI	170	35	13	2
5334		BOUL	01	30	1535	S20	E22	02	1.3		B	EAI	320	11	12	1
5334	25013	MWIL	01	30	1630	S23	E22	02	1.4	5	(D)					
5334		HOLL	01	30	1652	S22	E21	02	1.3		BD	EAI	300	37	14	3
5334		RAMY	01	30	1915	S20	E21	02	1.4		BGD	EAI	300	43	16	3
5334		PALE	01	30	2240	S22	E19	02	1.4		BG	EAI	220	30	13	3
5334		LEAR	01	31	0112	S20	E17	02	1.3		BD	EAI	30	40	15	3
5334		CULG	01	31	0334	S19	E16	02	1.4		BD	EAI	50	20	14	1
5334		SVTO	01	31	0800	S21	E12	02	1.2		BD	EAI	260	39	14	2
5334		RAMY	01	31	1430	S22	E08	02	1.2		BD	EKI	310	46	13	4
5334	25013	MWIL	01	31	1630	S23	E08	02	1.3	5	(B)					
5334		HOLL	01	31	1845	S22	E08	02	1.4		BD	EAI	290	42	12	2
5334		PALE	01	31	1920	S22	E07	02	1.3		BD	EAI	270	32	12	3
5334		LEAR	02	01	0016	S22	E05	02	1.4		B	ESI	230	25	12	3
5334		CULG	02	01	0310	S20	E03	02	1.4		BG	EAI	100	32	13	1
5334		SVTO	02	01	1010	S22	W01	02	1.3		BD	EAI	170	34	12	2
5334		RAMY	02	01	1412	S21	W06	02	1.1		B	EAI	230	61	13	3
5334	25013	MWIL	02	01	1630	S22	W04	02	1.4	5	(B)					
5334		LEAR	02	02	0026	S22	W10	02	1.2		B	ESI	230	26	12	3
5334		CULG	02	02	0300	S20	W11	02	1.3		BG	EAI	100	29	12	2
5334		SVTO	02	02	1101	S23	W14	02	1.4		BG	EAI	140	35	14	2
5334		RAMY	02	02	1430	S21	W17	02	1.3		B	CSO	150	32	12	3
5334		HOLL	02	02	1700	S21	W18	02	1.3		B	EAO	130	29	13	3
5334		LEAR	02	03	0026	S23	W23	02	1.2		B	EAI	130	37	12	3
5334		CULG	02	03	0245	S22	W22	02	1.4		B	DAI	170	21	10	1
5334		SVTO	02	03	0922	S22	W27	02	1.3		B	EAO	190	27	11	3
5334		HOLL	02	03	1550	S22	W30	02	1.3		B	CAO	90	20	10	3
5334		RAMY	02	03	1628	S20	W31	02	1.3		B	CAI	140	20	9	1
5334		PALE	02	03	1920	S22	W31	02	1.4		B	EAO	100	13	11	2
5334		LEAR	02	04	0133	S23	W35	02	1.4		B	DAO	120	24	10	3
5334		CULG	02	04	0310	S23	W35	02	1.4		B	CAI	50	15	9	1
5334		SVTO	02	04	1100	S21	W42	02	1.2		B	CAO	130	17	8	2
5334		RAMY	02	04	1310	S21	W44	02	1.2		B	CAI	110	17	9	3
5334		HOLL	02	04	1742	S23	W45	02	1.3		B	CAO	100	17	9	3
5334		PALE	02	04	2205	S23	W45	02	1.4		B	CSO	50	14	9	3
5334		LEAR	02	05	0045	S21	W46	02	1.5		B	CAI	170	13	8	3

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Feb 89

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

FEBRUARY 1989

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5334		CULG	02 05 0240	S24 W46	02 1.5		A	HA	30	5	2	2
5334		SVTO	02 05 0820	S22 W51	02 1.4		B	CSO	40	7	3	3
5334	25013	MWIL	02 05 1645	S22 W55	02 1.5	4	(AF)					
5334		BOUL	02 05 1740	S22 W58	02 1.3		B	DSO	40	2	3	1
5334		PALE	02 05 2058	S21 W57	02 1.5		B	BXO	10	5	3	2
5334		HOLL	02 05 2230	S22 W60	02 1.3		B	BXO	10	2	2	1
5334		LEAR	02 06 0055	S22 W60	02 1.4		B	BXO	10	4	3	3
5334		CULG	02 06 0301	S22 W61	02 1.4		A	AX	20	2	2	2
5334		SVTO	02 06 0947	S22 W65	02 1.4		B	CRO	40	2	2	2
5334		BOUL	02 06 1620	S22 W69	02 1.4		B	DSO	30	2	2	1
5334	25013	MWIL	02 06 1645	S23 W68	02 1.4	3	(AP)					
5334		RAMY	02 06 1725	S22 W68	02 1.5		B	CRI	30	6	3	4
5334		PALE	02 06 1910	S23 W70	02 1.4		A	AX	20	3	2	3
5334		LEAR	02 07 0045	S23 W71	02 1.6		B	CRO	40	3	7	2
5334		RAMY	02 07 1550	S21 W71	02 2.2		A	AX	10	1	1	2
5334		PALE	02 07 2030	S21 W72	02 2.3		A	AX	10	1	1	3
5334A		SVTO	02 01 1010	S23 E06	02 1.9		B	CRO	20	8	4	2
5338		CULG	01 29 0210	N24 E52	02 2.1		B	BXO		2	2	1
5338		RAMY	01 29 1300	N23 E46	02 2.1		B	BXO	10	4	4	2
5338		HOLL	01 29 1540	N20 E45	02 2.1		B	BXO	10	5	3	3
5338		BOUL	01 29 1708	N21 E46	02 2.2		B	BXO		2	3	3
5338		PALE	01 29 1810	N20 E45	02 2.2		B	BXO	10	2	3	2
5338		LEAR	01 30 0035	N21 E41	02 2.2		B	BXO	20	4	4	3
5338		CULG	01 30 0300	N23 E38	02 2.0		A	AX		2	2	1
5338		SVTO	01 30 1003	N21 E37	02 2.2		A	HR		2		2
5338		BOUL	01 30 1535	N20 E34	02 2.2		B	BXO	20	2	3	1
5338	25015	MWIL	01 30 1630	N19 E33	02 2.2	5	(B)					
5338		HOLL	01 30 1652	N20 E32	02 2.1		B	BXO	10	2	3	3
5338		RAMY	01 30 1915	N22 E29	02 2.0		B	BXO	10	2	3	3
5338		PALE	01 30 2240	N19 E29	02 2.1		B	BXO	10	2	3	3
5338		LEAR	01 31 0112	N21 E28	02 2.2		B	BXO	10	2	2	3
5338		CULG	01 31 0334	N22 E25	02 2.1		B	BXO	10	2	3	1
5338		SVTO	01 31 0800	N20 E26	02 2.3		A	AX		1		2
5338		RAMY	01 31 1430	N19 E23	02 2.3		A	AX	10	1	1	4
5338	25015	MWIL	01 31 1630	N19 E21	02 2.3	3	(AF)					
5338		HOLL	01 31 1845	N21 E20	02 2.3		A	AX		1		2
5338		PALE	01 31 1920	N20 E20	02 2.3		A	AX		1		3
5338		RAMY	02 01 1412	N19 E03	02 1.8		A	AX		1	1	3
5338		LEAR	02 02 0026	N21 W01	02 1.9		A	HS	10	1	1	3
5338		CULG	02 02 0300	N22 W01	02 2.0		A	AX	10	1	1	2
5338		RAMY	02 02 1430	N17 W06	02 2.1		A	AX	10	1	1	3
5342		RAMY	02 01 1412	S05 E21	02 3.2		B	BXI	20	8	4	3
5342		LEAR	02 02 0026	S06 E15	02 3.1		B	CSO	50	7	4	3
5342		SVTO	02 02 1101	S05 E09	02 3.1		B	DAO	40	8	5	2
5342		RAMY	02 02 1430	S05 E07	02 3.1		B	CRO	20	6	4	3
5342		HOLL	02 02 1700	S05 E05	02 3.1		B	BXO	10	9	5	3
5342		LEAR	02 03 0026	S04 E02	02 3.2		B	BXO	20	8	5	3
5342		CULG	02 03 0245	S05 W01	02 3.0		B	DRI	20	9	5	1
5342		SVTO	02 03 0922	S06 W04	02 3.1		B	DRO	20	11	4	3
5342		HOLL	02 03 1550	S05 W07	02 3.1		B	BXO	10	7	5	3
5342		RAMY	02 03 1628	S05 W08	02 3.1		B	CRO	20	8	5	1
5342		PALE	02 03 1920	S05 W09	02 3.1		B	BXO	20	8	4	2
5342		LEAR	02 04 0133	S06 W13	02 3.1		B	CRO	10	11	8	3
5342		CULG	02 04 0310	S06 W13	02 3.1		B	BXO		3	4	1
5338A		RAMY	01 31 1430	S07 E34	02 3.1		B	BXO	10	3	2	4
5338A		HOLL	01 31 1845	S06 E33	02 3.2		A	AX	10	3	2	2
5349		LEAR	02 03 0026	N23 E02	02 3.2		B	CSO	10	3	2	3
5349		CULG	02 03 0245	N23 W02	02 3.0		A	HS	10	1	1	1
5349		SVTO	02 03 0922	N23 W04	02 3.1		B	CRO	20	6	4	3
5349		HOLL	02 03 1550	N23 W07	02 3.1		B	CRO	20	6	4	3
5349		RAMY	02 03 1628	N24 W08	02 3.1		B	CRO	20	4	5	1
5349		PALE	02 03 1920	N23 W10	02 3.0		B	CSO	50	3	4	2
5349		LEAR	02 04 0133	N24 W12	02 3.1		B	CRO	40	5	5	3
5349		CULG	02 04 0310	N23 W15	02 3.0		B	DRO	20	2	5	1

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5349		RAMY	02 04 1310	N23	W20	02 3.0		B	CRO	20	2	3	3
5349		HOLL	02 04 1742	N24	W22	02 3.0		B	CRO	40	7	5	3
5349		PALE	02 04 2205	N23	W24	02 3.1		B	BXO	20	7	5	3
5349		LEAR	02 05 0045	N22	W25	02 3.1		B	CSO	40	4	5	3
5349		CULG	02 05 0240	N21	W28	02 3.0		B	BXO	10	5	5	2
5349		SVTO	02 05 0820	N23	W30	02 3.0		B	CSO	30	7	5	3
5349		RAMY	02 05 1400	N22	W33	02 3.0		B	BXO	70	12	6	3
5349	25022	MWIL	02 05 1645	N23	W35	02 3.0	5	(BP)					
5349		BOUL	02 05 1740	N22	W34	02 3.1		B	DSO	60	3	7	1
5349		PALE	02 05 2058	N24	W37	02 3.0		B	CAO	40	8	6	2
5349		HOLL	02 05 2230	N24	W37	02 3.1		B	CSO	1210	8	7	1
5349		LEAR	02 06 0055	N22	W39	02 3.0		B	CSO	40	8	7	3
5349		CULG	02 06 0301	N23	W42	02 2.9		B	CSO	20	3	4	2
5349		SVTO	02 06 0947	N23	W46	02 2.9		B	CRO	60	3	5	2
5349		BOUL	02 06 1620	N23	W50	02 2.8		B	CSO	10	2	2	1
5349	25022	MWIL	02 06 1645	N22	W48	02 3.0	4	(AP)					
5349		RAMY	02 06 1725	N23	W51	02 2.8		A	HR	20	2	2	4
5349		PALE	02 06 1910	N22	W50	02 2.9		B	CAO	40	3	4	3
5349		LEAR	02 07 0045	N21	W55	02 2.8		B	CRO	40	2	3	2
5349		CULG	02 07 0312	N24	W56	02 2.8		A	HA	20	2	1	2
5349		SVTO	02 07 0833	N21	W59	02 2.8		B	CRO	40	2	1	2
5349		BOUL	02 07 1511	N22	W62	02 2.9		B	BXO	20	2	2	1
5349		RAMY	02 07 1550	N23	W65	02 2.6		A	AX	10	3	2	2
5349	25022	MWIL	02 07 1815	N22	W64	02 2.8	4	(AP)					
5349		PALE	02 07 2030	N23	W70	02 2.5		A	HS	20	1	2	3
5349		LEAR	02 08 0055	N22	W68	02 2.8		A	AX	10	1	1	2
5349		CULG	02 08 0350	N23	W69	02 2.8		A	AX	10	1		2
5349		SVTO	02 08 0815	N22	W67	02 3.2		B	BXO	10	3	5	2
5349A		PALE	02 07 2030	S20	W58	02 3.4		A	AX		2	1	3
5349A		LEAR	02 08 0055	S21	W59	02 3.5		A	BXO	10	2	2	2
5349B		HOLL	02 03 1550	N11	E02	02 3.8		A	AX		2	2	3
5349B		PALE	02 03 1920	N12	W01	02 3.7		A	AX		2	2	2
5349B		LEAR	02 04 0133	N12	W05	02 3.7		B	BXO	10	2	3	3
5349C		HOLL	02 04 1742	N26	W04	02 4.4		B	BXO	10	2	2	3
5343		RAMY	01 31 1430	N24	E60	02 5.2		A	AX	10	1	1	4
5343	25016	MWIL	01 31 1630	N25	E58	02 5.2	3	(AP)					
5343		CULG	02 01 0310	N30	E50	02 5.1		A	AX		1		1
5343		SVTO	02 01 1010	N25	E47	02 5.1		B	BXO	10	3	3	2
5343		RAMY	02 01 1412	N26	E47	02 5.2		B	BXO	10	2	2	3
5343		CULG	02 02 0300	N26	E39	02 5.1		A	AX	10	1	1	2
5343		SVTO	02 02 1101	N25	E33	02 5.0		A	HA	20	1	1	2
5343		RAMY	02 02 1430	N25	E33	02 5.2		A	HR	20	1	1	3
5343		HOLL	02 02 1700	N25	E32	02 5.2		A	AX	10	1	1	3
5343		LEAR	02 03 0026	N26	E27	02 5.1		A	HS	10	1	1	3
5343		CULG	02 03 0245	N27	E24	02 5.0		A	AX		1		1
5343		SVTO	02 03 0922	N26	E22	02 5.1		A	AX		1		3
5343		HOLL	02 03 1550	N25	E18	02 5.0		A	AX		1		3
5343		RAMY	02 03 1628	N25	E18	02 5.1		A	AX		1	1	1
5343		PALE	02 03 1920	N25	E16	02 5.0		A	AX		1		2
5343		HOLL	02 04 1742	N26	E10	02 5.5		A	AX		1	1	3
5343		PALE	02 04 2205	N27	E10	02 5.7		A	AX	10	1	1	3
5339		LEAR	01 30 0035	S22	E88	02 5.8		A	HS	10	1	1	3
5339		SVTO	01 30 1003	S23	E77	02 5.3		A	HS	50	2	1	2
5339		BOUL	01 30 1535	S22	E80	02 5.8		A	HS	120	1	2	1
5339	25016	MWIL	01 30 1630	S23	E77	02 5.6	4	AP					
5339		HOLL	01 30 1652	S22	E77	02 5.6		A	HS	90	1	2	3
5339		RAMY	01 30 1915	S17	E75	02 5.5		A	HS	110	1	2	3
5339		PALE	01 30 2240	S22	E72	02 5.5		A	HS	120	1	2	3
5339		LEAR	01 31 0112	S21	E75	02 5.8		A	HS	60	2	2	3
5339		CULG	01 31 0334	S17	E71	02 5.5		A	HS	50	1	1	1
5339		SVTO	01 31 0800	S21	E69	02 5.6		A	HS	90	1	10	2
5339		RAMY	01 31 1430	S23	E67	02 5.8		A	HS	80	1	2	4
5339	25017	MWIL	01 31 1630	S23	E65	02 5.7	5	(AP)					
5339		HOLL	01 31 1845	S22	E63	02 5.6		A	HS	90	1	1	2

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NOAA/ USAF Group	Mt Wilson Group	Observation Time Mo Day (UT)	Lat	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5339		PALE 01 31 1920	S22 E65	02 5.8		A	HS	80	1	2	3
5339		LEAR 02 01 0016	S22 E60	02 5.6		A	HS	40	1	1	3
5339		CULG 02 01 0310	S16 E60	02 5.7		A	HS	40	1	1	1
5339		SVTO 02 01 1010	S22 E57	02 5.8		B	CAO	80	3	5	2
5339		RAMY 02 01 1412	S22 E52	02 5.6		A	HS	100	1	2	3
5339	25017	MWIL 02 01 1630	S22 E53	02 5.8	5	(AP)					
5339		LEAR 02 02 0026	S22 E48	02 5.7		A	HS	60	2	2	3
5339		CULG 02 02 0300	S20 E47	02 5.7		A	HS	60	1	1	2
5339		SVTO 02 02 1101	S22 E42	02 5.7		A	HA	50	1	2	2
5339		RAMY 02 02 1430	S22 E40	02 5.7		A	HS	60	1	2	3
5339		HOLL 02 02 1700	S21 E39	02 5.7		A	HS	40	1	1	3
5339		LEAR 02 03 0026	S22 E36	02 5.8		A	HS	70	1	2	3
5339		CULG 02 03 0245	S19 E35	02 5.8		A	HS	20	1	1	1
5339		SVTO 02 03 0922	S21 E31	02 5.8		A	HS	70	1	2	3
5339		HOLL 02 03 1550	S20 E28	02 5.8		B	CSO	40	2	4	3
5339		RAMY 02 03 1628	S22 E28	02 5.8		B	CSO	70	3	4	1
5339		PALE 02 03 1920	S22 E23	02 5.6		A	HS	70	1	2	2
5339		LEAR 02 04 0133	S21 E22	02 5.7		B	CSO	90	7	6	3
5339		CULG 02 04 0310	S19 E22	02 5.8		A	HS	40	1	1	1
5339		SVTO 02 04 1100	S21 E16	02 5.7		A	HA	70	1	1	2
5339		RAMY 02 04 1310	S21 E15	02 5.7		A	HS	80	1	2	3
5339		HOLL 02 04 1742	S22 E13	02 5.7		B	CSO	70	6	5	3
5339		PALE 02 04 2205	S22 E10	02 5.7		A	HS	80	1	2	3
5339		LEAR 02 05 0045	S22 E11	02 5.9		B	CAO	70	5	6	3
5339		CULG 02 05 0240	S21 E09	02 5.8		A	HS	20	1	1	2
5339		SVTO 02 05 0820	S23 E06	02 5.8		B	CSO	70	3	5	3
5339		RAMY 02 05 1400	S22 E04	02 5.9		B	CSO	90	5	4	3
5339	25017	MWIL 02 05 1645	S22 E01	02 5.8	5	(AP)					
5339		BOUL 02 05 1740	S21 E00	02 5.7		A	HS	30	1	1	1
5339		PALE 02 05 2058	S21 W03	02 5.6		A	HS	80	1	2	2
5339		HOLL 02 05 2230	S22 W03	02 5.7		A	HS	60	1	2	1
5339		LEAR 02 06 0055	S22 W03	02 5.8		A	HS	60	2	2	3
5339		CULG 02 06 0301	S21 W05	02 5.7		A	HS	50	1	1	2
5339		SVTO 02 06 0947	S21 W09	02 5.7		A	HA	40	1	2	2
5339		BOUL 02 06 1620	S21 W12	02 5.8		A	HS	30	1	1	1
5339	25017	MWIL 02 06 1645	S22 W12	02 5.8	4	(AP)					
5339		RAMY 02 06 1725	S22 W13	02 5.7		A	HS	70	1	2	4
5339		PALE 02 06 1910	S22 W14	02 5.7		A	HS	40	1	2	3
5339		LEAR 02 07 0045	S22 W16	02 5.8		A	HS	30	1	1	2
5339		CULG 02 07 0312	S20 W19	02 5.7		A	HS	30	2	1	2
5339		SVTO 02 07 0833	S22 W21	02 5.7		A	HA	50	2	2	2
5339		BOUL 02 07 1511	S21 W24	02 5.8		B	CSO	30	2	1	1
5339		RAMY 02 07 1550	S21 W26	02 5.7		A	HS	40	3	2	2
5339	25017	MWIL 02 07 1815	S22 W26	02 5.8	4	(AP)					
5339		PALE 02 07 2030	S21 W27	02 5.8		B	CSO	50	2	2	3
5339		LEAR 02 08 0055	S22 W29	02 5.8		A	HS	30	3	1	2
5339		CULG 02 08 0350	S20 W31	02 5.8		A	HS	10	2	1	2
5339		SVTO 02 08 0815	S22 W34	02 5.7		A	HR	20	2	2	2
5339		BOUL 02 08 1601	S23 W37	02 5.8		A	HS	50	1	2	1
5339		HOLL 02 08 1915	S21 W40	02 5.7		A	HR	10	1	1	2
5339		PALE 02 08 1918	S23 W40	02 5.7		B	CSO	30	3	2	3
5339		LEAR 02 09 0030	S24 W42	02 5.8		A	HA	10	1	1	2
5339		CULG 02 09 0300	S23 W42	02 5.9		A	HS	10	1	1	1
5339		SVTO 02 09 1025	S23 W48	02 5.7		A	HR	30	1	1	2
5339		BOUL 02 09 1635	S24 W50	02 5.8		A	AX	10	1	1	2
5339		RAMY 02 09 1640	S22 W52	02 5.7		A	HR	30	1	1	2
5339		HOLL 02 09 1800	S24 W51	02 5.8		A	HR	10	1	1	3
5339		PALE 02 09 2114	S22 W54	02 5.7		A	HA	20	2	2	3
5339		LEAR 02 10 0010	S23 W55	02 5.8		A	AX	20	1	1	4
5339		CULG 02 10 0300	S26 W56	02 5.8		A	AX		1		2
5339		SVTO 02 10 1016	S23 W62	02 5.6		A	HR	20	1	1	2
5339		RAMY 02 10 1338	S22 W61	02 5.9		A	HR	20	1	2	2
5339		HOLL 02 10 1520	S23 W64	02 5.7		A	AX	10	1	1	4
5339	25017	MWIL 02 10 1645	S22 W64	02 5.8	3	AP					
5339		BOUL 02 10 1735	S26 W62	02 5.9		A	AX	10	1	1	1
5339		LEAR 02 11 0105	S23 W69	02 5.7		A	AX		1		3
5339		CULG 02 11 0330	S27 W69	02 5.8		A	AX		1		2
5339		SVTO 02 11 0903	S23 W72	02 5.8		A	HR	20	1	1	2
5339		RAMY 02 11 1437	S22 W73	02 6.0		A	AX	10	2	1	4

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day											(UT)
5339	25017	MWIL	02	11	1530	S23 W77	02 5.7	3	AP					
5339A		SVTO	01	31	0800	S17 E79	02 6.3		A	AX		1		2
5339A		RAMY	01	31	1430	S17 E78	02 6.5		B	DSO	70	3	6	4
5339A	25018	MWIL	01	31	1630	S18 E76	02 6.5	4	(AP)					
5339A	25018	MWIL	02	01	1630	S17 E63	02 6.5	5	(AP)					
5339A		HOLL	02	02	1700	S18 E49	02 6.4		A	AX	10	2	1	3
5339A		LEAR	02	03	0026	S18 E46	02 6.5		A	AX	30	2	2	3
5339A		HOLL	02	03	1550	S18 E37	02 6.5		A	AX		1		3
5339A		RAMY	02	03	1628	S18 E38	02 6.6		A	AX		1		1
5350		HOLL	02	03	1550	N13 E39	02 6.6		B	BXO		2	3	3
5350		RAMY	02	03	1628	N12 E40	02 6.7		B	BXO	10	2	3	1
5350		PALE	02	03	1920	N12 E38	02 6.7		B	BXO	10	2	3	2
5350		LEAR	02	04	0133	N14 E35	02 6.7		B	BXO	10	6	5	3
5350		CULG	02	04	0310	N16 E32	02 6.5		B	BXO		2	5	1
5350		RAMY	02	04	1310	N14 E28	02 6.7		B	CRO	20	7	5	3
5350		HOLL	02	04	1742	N15 E25	02 6.6		B	CAO	20	8	5	3
5350		PALE	02	04	2205	N13 E22	02 6.6		B	BXO	20	10	5	3
5350		LEAR	02	05	0045	N15 E21	02 6.6		B	BXO	20	7	4	3
5350		CULG	02	05	0240	N16 E21	02 6.7		A	AX		3		2
5350		SVTO	02	05	0820	N14 E19	02 6.8		A	AX	6000	3	1	3
5350		RAMY	02	05	1400	N13 E16	02 6.8		A	AX	20	3	2	3
5350	25023	MWIL	02	05	1645	N13 E14	02 6.7	4	(AF)					
5350		LEAR	02	06	0055	N15 E06	02 6.5		B	BXO	10	6	5	3
5339B		RAMY	02	07	1550	N33 W13	02 6.6		A	AX		2		2
5341	25019	MWIL	01	31	1630	S27 E82	02 7.1	3	AP					
5341		HOLL	01	31	1845	S26 E82	02 7.1		A	HS	60	1	2	2
5341		LEAR	02	01	0016	S27 E78	02 7.1		A	HS	60	1	2	3
5341		CULG	02	01	0310	S26 E76	02 7.0		A	HS	100	1	2	1
5341		SVTO	02	01	1010	S26 E71	02 6.9		A	HA	110	1	2	2
5341		RAMY	02	01	1412	S26 E70	02 7.0		A	HS	70	1	2	3
5341	25019	MWIL	02	01	1630	S26 E70	02 7.1	5	(AP)					
5341		LEAR	02	02	0026	S25 E66	02 7.1		A	HS	70	1	2	3
5341		CULG	02	02	0300	S24 E65	02 7.1		A	HS	40	1	1	2
5341		SVTO	02	02	1101	S26 E59	02 7.0		A	HA	40	1	2	2
5341		RAMY	02	02	1430	S27 E58	02 7.1		A	HS	80	1	2	3
5341		HOLL	02	02	1700	S26 E55	02 7.0		A	HS	50	1	1	3
5341		LEAR	02	03	0026	S27 E53	02 7.1		A	HS	60	1	2	3
5341		CULG	02	03	0245	S22 E52	02 7.1		A	HS	30	1	1	1
5341		SVTO	02	03	0922	S27 E48	02 7.1		A	HS	90	1	2	3
5341		HOLL	02	03	1550	S25 E45	02 7.1		A	HS	80	1	2	3
5341		RAMY	02	03	1628	S26 E44	02 7.1		A	HS	80	1	2	1
5341		PALE	02	03	1920	S22 E43	02 7.1		A	HS	70	1	2	2
5341		LEAR	02	04	0133	S26 E39	02 7.1		A	HS	80	3	2	3
5341		CULG	02	04	0310	S22 E39	02 7.1		A	HS	30	2	2	1
5341		RAMY	02	04	1310	S26 E32	02 7.0		A	HS	80	4	2	3
5341		HOLL	02	04	1742	S27 E31	02 7.1		B	CAO	60	7	3	3
5341		PALE	02	04	2205	S26 E28	02 7.1		B	CSO	60	5	3	3
5341		LEAR	02	05	0045	S26 E28	02 7.2		B	CAO	70	8	3	3
5341		CULG	02	05	0240	S23 E27	02 7.2		B	CSO	50	5	2	2
5341		SVTO	02	05	0820	S26 E23	02 7.1		A	HS	30	4	2	3
5341		RAMY	02	05	1400	S26 E19	02 7.0		A	HS	50	3	2	3
5341	25019	MWIL	02	05	1645	S26 E18	02 7.1	5	(BP)					
5341		BOUL	02	05	1740	S25 E17	02 7.0		A	HS	20	1	1	1
5341		PALE	02	05	2058	S27 E16	02 7.1		B	CSO	40	7	4	2
5341		HOLL	02	05	2230	S27 E15	02 7.1		B	DAO	90	5	3	1
5341		LEAR	02	06	0055	S27 E15	02 7.2		B	DSO	70	9	3	3
5341		CULG	02	06	0301	S26 E13	02 7.1		A	HS	40	7	3	2
5341		BOUL	02	06	1620	S26 E06	02 7.1		B	DSO	40	3	3	1
5341	25019	MWIL	02	06	1645	S26 E06	02 7.2	4	(B)					
5341		RAMY	02	06	1725	S27 E04	02 7.0		B	DAI	40	8	3	4
5341		PALE	02	06	1910	S27 E04	02 7.1		B	DSO	40	7	3	3
5341		LEAR	02	07	0045	S27 E03	02 7.3		B	CAO	40	6	3	2
5341		CULG	02	07	0312	S26 W01	02 7.0		B	CSO	30	4	2	2
5341		SVTO	02	07	0833	S26 W03	02 7.1		B	CRO	20	5	3	2
5341		BOUL	02	07	1511	S26 W07	02 7.1		B	CSO	30	2	1	1

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5341		RAMY	02 07 1550	S27 W05	02 7.3		B	DSO	40	7	8	2
5341	25019	MWIL	02 07 1815	S26 W08	02 7.1	4	(AP)					
5341		PALE	02 07 2030	S27 W09	02 7.1		B	CSO	50	3	3	3
5341		LEAR	02 08 0055	S26 W12	02 7.1		A	HS	20	4	2	2
5341		CULG	02 08 0350	S26 W13	02 7.1		B	CSO	10	2	1	2
5341		SVTO	02 08 0815	S27 W16	02 7.1		B	CRO	10	2	2	2
5341		PALE	02 08 1918	S23 W28	02 6.6		A	AX		2		3
5341	25019	MWIL	02 10 1645	S27 W47	02 7.0	3	AP					
5340		RAMY	01 31 1430	S17 E79	02 6.6		A	HS	50	1	2	4
5340	25020	MWIL	01 31 1630	S16 E85	02 7.1	2	AP					
5340		HOLL	01 31 1845	S16 E79	02 6.8		B	DSO	60	2	7	2
5340		PALE	01 31 1920	S16 E78	02 6.7		B	CAO	60	2	11	3
5340		LEAR	02 01 0016	S16 E74	02 6.6		B	DSO	60	2	10	3
5340		CULG	02 01 0310	S16 E73	02 6.7		B	CRO	30	2	10	1
5340		SVTO	02 01 1010	S16 E70	02 6.7		B	DAO	80	2	9	2
5340		RAMY	02 01 1412	S16 E67	02 6.7		B	DSO	60	2	9	3
5340	25020	MWIL	02 01 1630	S15 E71	02 7.1	4	(AP)					
5340		LEAR	02 02 0026	S15 E61	02 6.6		B	DSO	70	2	10	3
5340		CULG	02 02 0300	S15 E61	02 6.7		B	DSO	30	2	7	2
5340		SVTO	02 02 1101	S16 E55	02 6.6		B	CAO	40	4	9	2
5340		RAMY	02 02 1430	S17 E55	02 6.8		B	CSO	50	2	8	3
5340		HOLL	02 02 1700	S13 E62	02 7.4		B	CSO	20	2	9	3
5340		LEAR	02 03 0026	S14 E55	02 7.2		B	DSO	50	4	7	3
5340		CULG	02 03 0245	S13 E51	02 7.0		B	CSO	30	4	15	1
5340		SVTO	02 03 0922	S13 E53	02 7.4		B	DRO	40	6	7	3
5340		HOLL	02 03 1550	S13 E49	02 7.3		B	CAO	40	8	8	3
5340		RAMY	02 03 1628	S14 E48	02 7.3		B	DRO	50	5	7	1
5340		PALE	02 03 1920	S13 E43	02 7.0		B	DSO	60	4	6	2
5340		LEAR	02 04 0133	S13 E45	02 7.4		B	CAO	40	11	6	3
5340		CULG	02 04 0310	S10 E42	02 7.3		B	CSO	10	4	8	1
5340		SVTO	02 04 1100	S13 E37	02 7.2		B	CRO	10	4	7	2
5340		RAMY	02 04 1310	S13 E36	02 7.3		B	CSO	10	2	7	3
5340		HOLL	02 04 1742	S14 E32	02 7.1		A	HS	10	1	1	3
5340		PALE	02 04 2205	S13 E28	02 7.0		A	HS	20	1	1	3
5340		LEAR	02 05 0045	S12 E30	02 7.3		B	CSO	30	6	6	3
5340		CULG	02 05 0240	S11 E28	02 7.2		B	BXO		4	3	2
5340		SVTO	02 05 0820	S14 E24	02 7.2		B	BXO	10	4	4	3
5340		RAMY	02 05 1400	S13 E22	02 7.2		B	BXO	20	2	3	3
5340		LEAR	02 06 0055	S12 E16	02 7.2		B	CSO	10	5	3	3
5340		LEAR	02 07 0045	S12 E04	02 7.3		B	BXO	10	2	2	2
5340		LEAR	02 08 0055	S13 W10	02 7.3		B	BXO	10	5	4	2
5340		CULG	02 08 0350	S12 W12	02 7.2		B	BXO	10	3	3	2
5340		SVTO	02 08 0815	S13 W15	02 7.2		B	BXO		3	3	2
5340		LEAR	02 09 0030	S17 W24	02 7.2		A	AX	10	4	2	2
5340		LEAR	02 11 0105	S15 W38	02 8.2		A	AX	10	1	1	3
5340		LEAR	02 13 0011	S17 W63	02 8.2		B	BXO	10	2	4	3
5340A		CULG	02 07 0312	N12 E04	02 7.4		A	AX		1		2
5340B		LEAR	02 09 0030	S17 W15	02 7.9		A	AX	10	1	1	2
5347		RAMY	02 02 1430	N16 E75	02 8.3		B	BXO	70	3	8	3
5347		HOLL	02 02 1700	N16 E80	02 8.8		B	FSO	70	3	15	3
5347		LEAR	02 03 0026	N18 E73	02 8.6		B	ESO	120	3	11	3
5347		CULG	02 03 0245	N22 E70	02 8.5		B	ESI	80	5	11	1
5347		SVTO	02 03 0922	N18 E70	02 8.7		B	DSO	100	5	10	3
5347		HOLL	02 03 1550	N18 E67	02 8.8		B	DAO	100	8	9	3
5347		RAMY	02 03 1628	N18 E66	02 8.7		B	DSO	230	4	9	1
5347		PALE	02 03 1920	N19 E67	02 8.9		B	CSO	160	3	10	2
5347		LEAR	02 04 0133	N18 E59	02 8.5		B	DKO	60	6	11	3
5347		CULG	02 04 0310	N23 E58	02 8.6		B	CAO	80	4	9	1
5347		RAMY	02 04 1310	N19 E53	02 8.6		B	CSO	110	8	10	3
5347		HOLL	02 04 1742	N18 E50	02 8.5		B	CAO	50	11	6	3
5347		PALE	02 04 2205	N18 E48	02 8.6		B	BXO	40	11	9	3
5347		LEAR	02 05 0045	N18 E46	02 8.5		B	CAO	70	12	10	3
5347		CULG	02 05 0240	N22 E43	02 8.4		B	BXO	10	7	11	2
5347		SVTO	02 05 0820	N17 E40	02 8.4		B	BXO	40	11	13	3
5347		RAMY	02 05 1400	N18 E39	02 8.5		B	CRO	50	9	12	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5347	25024	MWIL	02 05 1645	N17	E37	02 8.5	4	(BF)					
5347		PALE	02 05 2058	N19	E35	02 8.5		B	BXO	10	5	11	2
5347		CULG	02 06 0301	N19	E28	02 8.3		B	BXO	10	5	9	2
5347		SVTO	02 06 0947	N19	E26	02 8.4		B	BXO	30	7	9	2
5347		BOUL	02 06 1620	N17	E19	02 8.1		B	BXO	10	4	3	1
5347	25024	MWIL	02 06 1645	N18	E21	02 8.3	3	(BP)					
5347		RAMY	02 06 1725	N18	E21	02 8.3		B	CRI	30	12	11	4
5347		PALE	02 06 1910	N18	E20	02 8.3		B	BXO	20	5	8	3
5347		LEAR	02 07 0045	N19	E16	02 8.2		B	CAO	30	11	7	2
5347		CULG	02 07 0312	N18	E15	02 8.3		B	BXO	10	4	4	2
5347		SVTO	02 07 0833	N19	E13	02 8.3		B	CRO	20	3	2	2
5347		RAMY	02 07 1550	N18	E09	02 8.3		B	BXI	110	10	7	2
5347		PALE	02 07 2030	N18	E05	02 8.2		B	BXO	10	5	3	3
5347		LEAR	02 08 0055	N19	E03	02 8.3		B	BXO	20	9	3	2
5347		CULG	02 08 0350	N18	W01	02 8.1		B	BXO	10	8	5	2
5347		SVTO	02 08 0815	N17	W03	02 8.1		B	DRI	20	7	5	2
5347		BOUL	02 08 1601	N16	W07	02 8.1		B	CAO	30	3	2	1
5347		HOLL	02 08 1915	N17	W08	02 8.2		B	CSO	20	3	3	2
5347		PALE	02 08 1918	N17	W08	02 8.2		B	BXO	40	17	5	3
5347		LEAR	02 09 0030	N17	W10	02 8.3		B	CRO	20	9	4	2
5347		CULG	02 09 0300	N16	W14	02 8.1		B	DRO	10	5	3	1
5347		SVTO	02 09 1025	N16	W17	02 8.1		B	DAO	60	14	5	2
5347		BOUL	02 09 1635	N17	W19	02 8.2		B	DAI	60	10	7	2
5347		RAMY	02 09 1640	N18	W19	02 8.2		B	DAI	100	14	8	2
5347		HOLL	02 09 1800	N16	W20	02 8.2		B	DAO	90	13	6	3
5347		PALE	02 09 2114	N17	W20	02 8.4		B	BAI	150	13	7	3
5347		LEAR	02 10 0010	N16	W23	02 8.3		B	DAO	70	19	6	4
5347		CULG	02 10 0300	N15	W26	02 8.1		B	DAI	50	12	7	2
5347		SVTO	02 10 1016	N17	W29	02 8.2		B	DAO	120	14	8	2
5347		RAMY	02 10 1338	N17	W29	02 8.4		B	DAI	190	12	8	2
5347		HOLL	02 10 1520	N17	W32	02 8.2		B	DAO	80	18	8	4
5347	25030	MWIL	02 10 1645	N16	W32	02 8.3	5	B					
5347		BOUL	02 10 1735	N17	W32	02 8.3		B	DSO	110	4	8	1
5347		LEAR	02 11 0105	N17	W37	02 8.2		B	DAO	140	11	9	3
5347		CULG	02 11 0330	N15	W39	02 8.2		B	DSO	80	7	7	2
5347		SVTO	02 11 0903	N18	W42	02 8.2		B	DAO	140	12	9	2
5347		RAMY	02 11 1437	N17	W44	02 8.3		B	DSO	170	13	9	4
5347	25030	MWIL	02 11 1530	N17	W45	02 8.2	5	(B)					
5347		HOLL	02 11 1822	N17	W45	02 8.3		B	DAO	120	6	9	3
5347		BOUL	02 11 1848	N17	W46	02 8.3		B	DSO	80	8	10	3
5347		LEAR	02 12 0017	N17	W50	02 8.2		B	EAO	100	7	11	3
5347		CULG	02 12 0254	N17	W51	02 8.2		B	DSO	70	5	9	2
5347		SVTO	02 12 1015	N16	W56	02 8.2		B	DSO	80	5	10	3
5347		RAMY	02 12 1415	N17	W58	02 8.2		B	DSO	100	4	9	3
5347	25030	MWIL	02 12 1530	N17	W58	02 8.2	4	(B)					
5347		HOLL	02 12 1543	N16	W58	02 8.2		B	DSO	80	3	10	3
5347		BOUL	02 12 1814	N17	W60	02 8.2		B	ESO	80	2	11	1
5347		PALE	02 12 2015	N17	W61	02 8.2		B	DAO	70	3	11	3
5347		LEAR	02 13 0011	N16	W63	02 8.2		B	DSO	80	2	10	3
5347		BOUL	02 13 0150	N17	W64	02 8.2		B	CSO	90	2	15	1
5347		CULG	02 13 0330	N13	W66	02 8.2		B	DSO	60	2	9	1
5347		SVTO	02 13 1030	N16	W71	02 8.0		B	ESO	50	3	12	4
5347		HOLL	02 13 1550	N16	W75	02 8.0		B	BXO	80	2	11	2
5347		RAMY	02 13 1620	N17	W70	02 8.4		B	DSO	90	3	10	2
5347		PALE	02 13 1935	N18	W74	02 8.2		B	BXO	10	2	10	3
5347		LEAR	02 14 0025	N17	W71	02 8.6		A	AX	10	1	1	4
5363		RAMY	02 12 1415	S37	W54	02 8.2		B	BXO	10	2	3	3
5363	25041	MWIL	02 12 1530	S38	W55	02 8.2	3	(B)					
5363		HOLL	02 12 1543	S39	W56	02 8.1		B	BXO	20	2	5	3
5363		PALE	02 12 2015	S38	W59	02 8.1		B	BXO	10	5	4	3
5363		LEAR	02 13 0011	S36	W60	02 8.2		A	AX	10	4	2	3
5363		CULG	02 13 0330	S39	W59	02 8.3		B	BXO	10	3	1	1
5363		SVTO	02 13 1030	S37	W67	02 8.0		B	BXO	10	3	1	4
5363		HOLL	02 13 1550	S37	W68	02 8.2		B	BXO	50	2	7	2
5363		RAMY	02 13 1620	S37	W69	02 8.1		B	BXO	30	3	4	2
5363		PALE	02 13 1935	S37	W70	02 8.2		B	BXO	10	2	5	3
5363		LEAR	02 14 0025	S38	W72	02 8.2		B	BXO	10	2	4	4

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5361		LEAR	02 08 0055	S18	E03	02 8.3		A	AX	10	1	1	2
5361		CULG	02 11 0330	S18	W39	02 8.2		A	AX		1		2
5361		RAMY	02 11 1437	S15	W45	02 8.2		A	AX		1		4
5361	25036	MWIL	02 11 1530	S16	W46	02 8.1	3	AP					
5361		HOLL	02 11 1822	S16	W48	02 8.1		A	AX	10	1	1	3
5361		SVTO	02 12 1015	S16	W55	02 8.2		B	CRO	10	6	4	3
5361		RAMY	02 12 1415	S16	W57	02 8.3		B	BXO	10	3	3	3
5361	25036	MWIL	02 12 1530	S16	W58	02 8.2	3	(B)					
5361		HOLL	02 12 1543	S17	W60	02 8.1		B	BXO	20	2	3	3
5361		PALE	02 12 2015	S16	W60	02 8.3		B	BXO	10	4	3	3
5351		SVTO	02 03 0922	N31	E71	02 9.0		A	AX		1		3
5351		HOLL	02 03 1550	N30	E65	02 8.8		A	AX	10	1	1	3
5351		RAMY	02 03 1628	N30	E65	02 8.8		A	AX	10	1	1	1
5351		PALE	02 03 1920	N29	E63	02 8.7		A	AX		1		2
5351		LEAR	02 04 0133	N31	E65	02 9.2		B	BXO	30	3	10	3
5351		LEAR	02 05 0045	N31	E49	02 8.9		A	AX	10	1	1	3
5351		PALE	02 08 1918	N31	E01	02 8.9		A	AX		1		3
5351		LEAR	02 09 0030	N29	E03	02 9.2		B	BXO	10	4	6	2
5358		SVTO	02 08 0815	S28	E13	02 9.3		A	AX		2	2	2
5358		LEAR	02 09 0030	S31	W02	02 8.9		A	AX	10	1	1	2
5358		SVTO	02 09 1025	S28	W01	02 9.3			AA		1	1	2
5358		BOUL	02 09 1635	S30	W02	02 9.5		B	BX		2	6	2
5358		RAMY	02 09 1640	S29	W04	02 9.4		B	BXO		2	3	2
5358		HOLL	02 09 1800	S29	W03	02 9.5		B	BXO		4	5	3
5358		PALE	02 09 2114	S28	W05	02 9.5					5	4	3
5358		LEAR	02 10 0010	S29	W06	02 9.5		B	BXO	10	6	5	4
5358		SVTO	02 10 1016	S29	W12	02 9.5		A	AX	10	2	2	2
5358		RAMY	02 10 1338	S27	W14	02 9.5		B	BXO	10	2	3	2
5358		HOLL	02 10 1520	S28	W15	02 9.5		B	BXO	20	8	5	4
5358	25031	MWIL	02 10 1645	S28	W16	02 9.4	2	X					
5358		LEAR	02 11 0105	S28	W21	02 9.4		B	BXO	10	2	2	3
5358		PALE	02 12 2015	S30	W31	02 10.4		B	BXO	10	6	6	3
5358		PALE	02 13 1935	S29	W43	02 10.4		A	AX		1		3
5358		PALE	02 14 1810	S28	W56	02 10.4		A	AX		1	1	3
5353		PALE	02 03 1920	S31	E83	02 10.3		A	AX		1		2
5353		LEAR	02 04 0133	S28	E81	02 10.4		B	BXO	60	2	4	3
5353		CULG	02 04 0310	S25	E79	02 10.2		B	CSO	20	2	3	1
5353		RAMY	02 04 1310	S30	E74	02 10.4		B	DSO	60	2	4	3
5353		HOLL	02 04 1742	S31	E74	02 10.6		B	DAO	80	2	10	3
5353		PALE	02 04 2205	S29	E71	02 10.5		A	HS	60	2	1	3
5353		LEAR	02 05 0045	S29	E70	02 10.5		B	CAO	60	4	4	3
5353		CULG	02 05 0240	S26	E69	02 10.5		B	DSO	20	2	2	2
5353		SVTO	02 05 0820	S30	E66	02 10.5				50	0	3	3
5353		RAMY	02 05 1400	S30	E64	02 10.6		B	DSO	80	2	3	3
5353	25025	MWIL	02 05 1645	S29	E61	02 10.5	4	(B)					
5353		BOUL	02 05 1740	S29	E62	02 10.6		B	CSO	40	2	3	1
5353		PALE	02 05 2058	S30	E59	02 10.5		BG	DAO	70	5	4	2
5353		HOLL	02 05 2230	S32	E59	02 10.6		B	CSO	50	2	3	1
5353		LEAR	02 06 0055	S29	E57	02 10.5		B	DSO	60	2	2	3
5353		CULG	02 06 0301	S29	E55	02 10.4		B	DSO	20	4	3	2
5353		SVTO	02 06 0947	S29	E53	02 10.6		A	HA	40	1	1	2
5353		BOUL	02 06 1620	S29	E49	02 10.5		B	CSO	30	2	2	1
5353	25025	MWIL	02 06 1645	S29	E49	02 10.5	5	(BF)					
5353		RAMY	02 06 1725	S31	E47	02 10.4		B	DSO	80	4	3	4
5353		PALE	02 06 1910	S30	E48	02 10.6		B	DSO	60	2	3	3
5353		LEAR	02 07 0045	S28	E45	02 10.5		B	CAO	60	3	5	2
5353		CULG	02 07 0312	S30	E42	02 10.4		B	CSO	40	2	3	2
5353		SVTO	02 07 0833	S29	E41	02 10.6		B	CAO	40	2	2	2
5353		BOUL	02 07 1511	S29	E37	02 10.5		A	HS	30	1	1	1
5353		RAMY	02 07 1550	S30	E36	02 10.5		B	CSO	50	2	3	2
5353	25025	MWIL	02 07 1815	S29	E35	02 10.5	4	(BF)					
5353		PALE	02 07 2030	S30	E35	02 10.6		B	CSO	50	3	3	3
5353		LEAR	02 08 0055	S28	E33	02 10.6		A	HS	50	1	1	2
5353		CULG	02 08 0350	S29	E30	02 10.5		A	HS	20	1	1	2
5353		SVTO	02 08 0815	S29	E28	02 10.5		A	HR	20	2	1	2
5353		BOUL	02 08 1601	S31	E25	02 10.6		B	CSO	40	2	2	1

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5353		HOLL	02 08 1915	S30 E21	02 10.4		B	CSO	10	3	3	2
5353		PALE	02 08 1918	S31 E23	02 10.6		B	CSO	40	6	1	3
5353		LEAR	02 09 0030	S30 E20	02 10.6		A	HA	20	5	1	2
5353		CULG	02 09 0300	S28 E20	02 10.7		B	DSO	10	2	2	1
5353		SVTO	02 09 1025	S30 E15	02 10.6		B	DRO	30	4	2	2
5353		BOUL	02 09 1635	S30 E09	02 10.4		B	DAO	20	5	6	2
5353		RAMY	02 09 1640	S31 E11	02 10.6		B	DSI	30	4	3	2
5353		HOLL	02 09 1800	S30 E11	02 10.6		B	CRO	20	4	3	3
5353		PALE	02 09 2114	S32 E09	02 10.6		A	HA	30	7	2	3
5353		LEAR	02 10 0010	S30 E06	02 10.5		B	CSO	20	8	6	4
5353		CULG	02 10 0300	S30 E06	02 10.6		B	CSO	20	7	7	2
5353		SVTO	02 10 1016	S32 E03	02 10.7		B	CAO	30	8	4	2
5353		RAMY	02 10 1338	S31 W01	02 10.5		B	DAI	40	8	5	2
5353		HOLL	02 10 1520	S31 W02	02 10.5		B	CAO	40	11	4	4
5353	25025	MWIL	02 10 1645	S30 W02	02 10.5	4	(B)					
5353		BOUL	02 10 1735	S29 W01	02 10.6		A	HS	60	1	2	1
5353		LEAR	02 11 0105	S30 W06	02 10.6		B	CAO	20	5	4	3
5353		CULG	02 11 0330	S30 W06	02 10.7		B	CSO	10	5	4	2
5353		SVTO	02 11 0903	S31 W11	02 10.5		B	CRO	30	4	3	2
5353		RAMY	02 11 1437	S29 W17	02 10.3		B	CRO	30	9	7	4
5353	25025	MWIL	02 11 1530	S30 W14	02 10.5	4	(B)					
5353		HOLL	02 11 1822	S31 W16	02 10.5		B	CSO	20	6	4	3
5353		BOUL	02 11 1848	S30 W15	02 10.6		B	BXO		3	4	3
5353		LEAR	02 12 0017	S30 W19	02 10.5		A	HS	10	1	1	3
5353		CULG	02 12 0254	S30 W20	02 10.5		B	CSO	10	2	2	2
5353		SVTO	02 12 1015	S30 W25	02 10.5		B	CSO	10	7	4	3
5353		RAMY	02 12 1415	S32 W27	02 10.4		B	CRO	40	8	8	3
5353	25025	MWIL	02 12 1530	S30 W28	02 10.4	4	(BF)					
5353		BOUL	02 12 1814	S30 W29	02 10.5		B	BXO		2	2	1
5353		LEAR	02 13 0011	S31 W32	02 10.5		B	BXO	10	3	3	3
5353		CULG	02 13 0330	S31 W32	02 10.6		A	AX		1		1
5353		SVTO	02 13 1030	S30 W38	02 10.4		A	AX		2		4
5353		HOLL	02 13 1550	S29 W40	02 10.5		A	AX	10	1	1	2
5353		RAMY	02 13 1620	S29 W41	02 10.5		A	AX		1		2
5353		LEAR	02 14 0025	S31 W44	02 10.5		A	AX	10	1	1	4
5353		CULG	02 14 0425	S29 W46	02 10.6		A	AX	10	1		1
5353		SVTO	02 14 0757	S29 W49	02 10.5		A	HR	10	1	1	2
5354		RAMY	02 04 1310	N30 E80	02 10.8		A	HS	90	1	3	3
5354		HOLL	02 04 1742	N30 E79	02 10.9		B	EKO	200	4	15	3
5354		PALE	02 04 2205	N30 E75	02 10.8		B	DKO	180	5	10	3
5354		LEAR	02 05 0045	N30 E78	02 11.2		B	DKI	360	6	7	3
5354		CULG	02 05 0240	N34 E76	02 11.2		B	DKO	300	5	9	2
5354		RAMY	02 05 1400	N31 E70	02 11.1		BD	EKC	990	17	14	3
5354	25026	MWIL	02 05 1645	N28 E67	02 10.9	5	(AP)					
5354		BOUL	02 05 1740	N32 E68	02 11.1		B	FKC	780	7	17	1
5354		PALE	02 05 2058	N30 E70	02 11.4		BGD	FKC	1380	32	18	2
5354		HOLL	02 05 2230	N32 E68	02 11.3		BD	EKI	1290	16	12	1
5354		LEAR	02 06 0055	N33 E67	02 11.4		BGD	FKC	1590	25	20	3
5354		CULG	02 06 0301	N31 E66	02 11.3		BGD	FKC	1470	27	19	2
5354		SVTO	02 06 0947	N31 E66	02 11.6		BGD	FKC	2050	22	17	2
5354		BOUL	02 06 1620	N33 E60	02 11.4		BGD	FKC	870	25	19	1
5354	25026	MWIL	02 06 1645	N31 E59	02 11.3	5	(D)					
5354		RAMY	02 06 1725	N31 E57	02 11.2		BGD	FKC	1880	43	17	4
5354		PALE	02 06 1910	N32 E58	02 11.4		BGD	FKC	1760	49	20	3
5354		LEAR	02 07 0045	N33 E52	02 11.2		BGD	FKC	1360	39	17	2
5354		CULG	02 07 0312	N32 E55	02 11.5		BGD	FKC	1400	30	19	2
5354		SVTO	02 07 0833	N31 E50	02 11.3		BGD	FKC	2200	28	20	2
5354		BOUL	02 07 1511	N32 E46	02 11.3		BGD	FKC	1390	13	17	1
5354		RAMY	02 07 1550	N31 E46	02 11.3		BGD	FKC	1870	57	19	2
5354	25026	MWIL	02 07 1815	N31 E45	02 11.3	5	(BG)					
5354		PALE	02 07 2030	N32 E45	02 11.4		BGD	FKC	1250	53	20	3
5354		LEAR	02 08 0055	N31 E38	02 11.0		BGD	FKI	1330	37	20	2
5354		CULG	02 08 0350	N32 E40	02 11.3		BGD	FKC	1250	37	19	2
5354		SVTO	02 08 0815	N30 E35	02 11.1		BGD	FKI	910	45	19	2
5354		BOUL	02 08 1601	N30 E32	02 11.2		B	FKC	1720	25	19	1
5354		HOLL	02 08 1915	N30 E31	02 11.2		BG	FKI	1000	27	17	2
5354		PALE	02 08 1918	N31 E30	02 11.2		BGD	FKC	1050	65	20	3
5354		LEAR	02 09 0030	N30 E25	02 11.0		BGD	FKI	1190	51	20	2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5354		CULG	02	09	0300	N34	E25	02	11.1		B	FKC	720	33	19	1
5354		SVTO	02	09	1025	N29	E21	02	11.1		BGD	FKI	1520	63	19	2
5354		BOUL	02	09	1635	N32	E17	02	11.0		B	FKI	1300	33	21	2
5354		RAMY	02	09	1640	N30	E20	02	11.3		BGD	FKC	1760	50	20	2
5354		HOLL	02	09	1800	N29	E19	02	11.2		BGD	FKI	1450	55	20	3
5354		PALE	02	09	2114	N31	E19	02	11.4		BGD	FKC	1290	40	19	3
5354		LEAR	02	10	0010	N30	E15	02	11.2		BGD	FKI	1200	40	19	4
5354		CULG	02	10	0300	N32	E11	02	11.0		B	FKC	1100	47	19	2
5354		SVTO	02	10	1016	N31	E11	02	11.3		B	FKI	1400	51	20	2
5354		RAMY	02	10	1338	N31	E09	02	11.3		BGD	FKI	1630	53	20	2
5354		HOLL	02	10	1520	N29	E08	02	11.3		BGD	FKI	1350	65	21	4
5354	25026	MWIL	02	10	1645	N30	E07	02	11.2	5	(D)					
5354		BOUL	02	10	1735	N32	E07	02	11.3		BGD	FKC	1530	11	20	1
5354		LEAR	02	11	0105	N31	E01	02	11.1		BGD	FKI	1400	38	20	3
5354		CULG	02	11	0330	N31	W02	02	11.0		B	FKC	1200	36	19	2
5354		SVTO	02	11	0903	N30	W01	02	11.3		BG	FKI	1900	48	22	2
5354		RAMY	02	11	1437	N31	W03	02	11.4		BGD	FKC	1650	87	20	4
5354	25026	MWIL	02	11	1530	N30	W04	02	11.3	5	(D)					
5354		HOLL	02	11	1822	N30	W06	02	11.3		BGD	FKC	1910	41	22	3
5354		BOUL	02	11	1848	N31	W06	02	11.3		BGD	FKC	1340	60	21	3
5354		LEAR	02	12	0017	N31	W09	02	11.3		BGD	FKI	1510	41	20	3
5354		CULG	02	12	0254	N30	W13	02	11.1		BGD	FKI	1740	41	20	2
5354		SVTO	02	12	1015	N30	W15	02	11.2		BG	FKI	1620	55	24	3
5354		RAMY	02	12	1415	N31	W16	02	11.3		BGD	FKC	1800	71	21	3
5354	25026	MWIL	02	12	1530	N30	W16	02	11.4	5	(D)					
5354		HOLL	02	12	1543	N31	W18	02	11.2		BGD	FKI	1680	45	21	3
5354		BOUL	02	12	1814	N31	W18	02	11.3		B	FKI	850	30	20	1
5354		PALE	02	12	2015	N32	W19	02	11.3		BGD	FKI	1500	54	21	3
5354		LEAR	02	13	0011	N30	W22	02	11.3		BG	FKC	1200	58	23	3
5354		BOUL	02	13	0150	N31	W29	02	10.8		B	FKI	1040	19	22	1
5354		CULG	02	13	0330	N28	W26	02	11.1		B	FKI	1030	39	21	1
5354		SVTO	02	13	1030	N30	W27	02	11.3		BGD	FKI	1480	56	25	4
5354		HOLL	02	13	1550	N32	W34	02	11.0		BG	FKI	1640	26	25	2
5354		RAMY	02	13	1620	N30	W30	02	11.3		BGD	FKC	1680	36	21	2
5354		PALE	02	13	1935	N32	W31	02	11.4		BGD	FKI	1180	58	21	3
5354		LEAR	02	14	0025	N31	W35	02	11.2		BG	FKI	940	38	20	4
5354		CULG	02	14	0425	N31	W36	02	11.3		BGD	FKI	1000	35	22	1
5354		SVTO	02	14	0757	N30	W39	02	11.3		BGD	FKI	1510	42	22	2
5354		RAMY	02	14	1415	N31	W40	02	11.4		BGD	FKI	1280	43	21	2
5354	25026	MWIL	02	14	1600	N31	W42	02	11.3	5	(BG)					
5354		PALE	02	14	1810	N30	W43	02	11.4		BGD	FKI	1190	47	23	3
5354		LEAR	02	15	0230	N31	W49	02	11.2		B	FKO	610	26	21	3
5354		CULG	02	15	0243	N29	W50	02	11.2		BGD	FKI	1020	22	21	1
5354		SVTO	02	15	0847	N30	W53	02	11.2		BG	FKO	1330	18	23	2
5354		RAMY	02	15	1526	N31	W55	02	11.3		BGD	FKI	950	23	21	2
5354	25026	MWIL	02	15	1615	N31	W55	02	11.3	5	BG					
5354		HOLL	02	15	1704	N30	W55	02	11.4		BGD	FKI	930	16	23	1
5354		PALE	02	15	1800	N33	W60	02	11.0		BGD	FKI	1230	27	23	4
5354		LEAR	02	16	0025	N31	W63	02	11.0		BGD	FKI	1230	30	22	3
5354		CULG	02	16	0439	N30	W60	02	11.5		BGD	FKO	520	8	23	2
5354		SVTO	02	16	1140	N30	W64	02	11.4		BG	FKI	780	7	22	1
5354		RAMY	02	16	1446	N31	W66	02	11.4		BG	FKO	740	9	23	2
5354		BOUL	02	16	1640	N31	W64	02	11.6		B	FKO	500	7	24	2
5354	25026	MWIL	02	16	1715	N31	W68	02	11.3	5	BG					
5354		PALE	02	16	1815	N32	W69	02	11.3		BG	FKI	750	10	22	3
5354		LEAR	02	17	0048	N34	W70	02	11.4		BG	FKI	570	9	20	3
5354		CULG	02	17	0440	N31	W75	02	11.3		A	HK	180	4	6	3
5354		SVTO	02	17	0800	N35	W76	02	11.2		B	EKI	510	5	12	1
5354	25026	MWIL	02	17	1600	N33	W71	02	12.0	5	AF					
5354		PALE	02	17	1945	N33	W75	02	11.9		A	HA	420	5	5	4
5354		HOLL	02	17	2155	N35	W75	02	11.9		B	DAO	180	2	5	3
5354		LEAR	02	18	0321	N32	W80	02	11.8		B	CAO	150	3	6	2
5365		RAMY	02	09	1640	N16	E27	02	11.7		A	AX		1	1	2
5365		HOLL	02	09	1800	N17	E25	02	11.6		A	AX		1		3
5365		RAMY	02	10	1338	N13	E16	02	11.8		A	AX		1	1	2
5365	25032	MWIL	02	10	1645	N13	E14	02	11.7	4	(AP)					
5365		RAMY	02	12	1415	N17	W07	02	12.1		A	AX	10	3	2	3
5365	25042	MWIL	02	12	1530	N17	W06	02	12.2	5	(AP)					

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5365		BOUL	02 12 1814	N17 W06	02 12.3		B	BXO		4	5	1
5365		LEAR	02 13 0011	N17 W13	02 12.0		A	AX	10	1	1	3
5365		CULG	02 13 0330	N17 W13	02 12.1		A	AX		1	1	1
5365		PALE	02 13 1935	N17 W27	02 11.8		A	AX	10	2	2	3
5355		LEAR	02 06 0055	N20 E79	02 12.1		B	CAO	30	2	2	3
5355		CULG	02 06 0301	N20 E80	02 12.2		A	HS	30	1	2	2
5355		SVTO	02 06 0947	N20 E77	02 12.3		A	HA	70	1	2	2
5355	25027	MWIL	02 06 1645	N19 E71	02 12.1	4	(AP)					
5355		RAMY	02 06 1725	N20 E72	02 12.2		B	CSO	80	4	5	4
5355		PALE	02 06 1910	N20 E71	02 12.2		B	CAO	60	5	6	3
5355		LEAR	02 07 0045	N22 E70	02 12.4		B	CAO	40	3	9	2
5355		CULG	02 07 0312	N20 E70	02 12.5		B	CAO	30	3	6	2
5355		SVTO	02 07 0833	N21 E66	02 12.4		B	DRO	60	3	9	2
5355		BOUL	02 07 1511	N21 E62	02 12.4		B	CAO	100	4	7	1
5355		RAMY	02 07 1550	N21 E61	02 12.3		B	DKO	170	13	8	2
5355	25027	MWIL	02 07 1815	N21 E62	02 12.5	4	(AP)					
5355		PALE	02 07 2030	N22 E63	02 12.7		B	DAO	150	8	8	3
5355		LEAR	02 08 0055	N23 E56	02 12.3		B	CAO	100	7	7	2
5355		CULG	02 08 0350	N22 E58	02 12.6		B	DKO	100	11	7	2
5355		SVTO	02 08 0815	N22 E52	02 12.3		B	DKO	190	19	7	2
5355		BOUL	02 08 1601	N21 E49	02 12.4		B	CKO	280	7	7	1
5355		HOLL	02 08 1915	N20 E47	02 12.4		B	CSO	50	6	6	2
5355		PALE	02 08 1918	N22 E49	02 12.6		B	CAO	150	25	7	3
5355		LEAR	02 09 0030	N21 E42	02 12.2		B	EKO	160	14	12	2
5355		CULG	02 09 0300	N25 E43	02 12.4		B	CKO	110	9	7	1
5355		SVTO	02 09 1025	N21 E39	02 12.4		BGD	DKO	260	19	8	2
5355		BOUL	02 09 1635	N22 E35	02 12.4		B	DAO	100	12	8	2
5355		RAMY	02 09 1640	N20 E38	02 12.6		B	DAO	9290	19	19	2
5355		HOLL	02 09 1800	N22 E35	02 12.4		B	CAO	150	20	9	3
5355		PALE	02 09 2114	N21 E36	02 12.6		B	DAI	190	16	8	3
5355		LEAR	02 10 0010	N22 E33	02 12.5		B	DAO	180	24	7	4
5355		CULG	02 10 0300	N24 E30	02 12.4		B	CAO	80	12	8	2
5355		SVTO	02 10 1016	N21 E28	02 12.6		B	DAO	790	18	8	2
5355		RAMY	02 10 1338	N21 E27	02 12.6		B	DAO	110	23	9	2
5355		HOLL	02 10 1520	N20 E24	02 12.5		B	CAO	160	24	8	4
5355	25027	MWIL	02 10 1645	N21 E24	02 12.5	5	(D)					
5355		BOUL	02 10 1735	N23 E25	02 12.6		B	DSO	100	2	3	1
5355		LEAR	02 11 0105	N22 E20	02 12.6		B	DAO	70	17	5	3
5355		CULG	02 11 0330	N23 E16	02 12.4		B	CAO	20	9	7	2
5355		SVTO	02 11 0903	N23 E17	02 12.7		B	DAO	60	11	4	2
5355		RAMY	02 11 1437	N22 E12	02 12.5		BG	DRI	50	14	8	4
5355	25027	MWIL	02 11 1530	N21 E12	02 12.6	4	(BG)					
5355		HOLL	02 11 1822	N20 E10	02 12.5		B	DSO	40	14	10	3
5355		BOUL	02 11 1848	N22 E12	02 12.7		B	BXO		6	4	3
5355		LEAR	02 12 0017	N22 E08	02 12.6		B	DAO	20	7	6	3
5355		CULG	02 12 0254	N23 E06	02 12.6		B	BXO	10	3	3	2
5355		SVTO	02 12 1015	N21 E03	02 12.6		B	CRO	20	13	15	3
5355		RAMY	02 12 1415	N22 E01	02 12.7		BG	CRI	40	21	8	3
5355	25027	MWIL	02 12 1530	N22 E00	02 12.6	3	(B)					
5355		HOLL	02 12 1543	N21 W02	02 12.5		B	BXO	30	10	10	3
5355		BOUL	02 12 1814	N23 E03	02 13.0		B	BXO		4	9	1
5355		PALE	02 12 2015	N20 W02	02 12.7		B	BXO	20	11	11	3
5355		LEAR	02 13 0011	N22 W04	02 12.7		B	BXO	10	6	11	3
5355		BOUL	02 13 0150	N22 W04	02 12.8		B	BXO	10	4	2	1
5355		CULG	02 13 0330	N22 W08	02 12.5		B	BXO		3	4	1
5355		SVTO	02 13 1030	N20 W15	02 12.3		B	BXI	30	15	16	4
5355		HOLL	02 13 1550	N22 W15	02 12.5		B	BXO	50	4	5	2
5355		RAMY	02 13 1620	N22 W13	02 12.7		B	CRO	20	7	5	2
5355		PALE	02 13 1935	N21 W15	02 12.7		B	BXO	250	14	8	3
5355		LEAR	02 14 0025	N21 W19	02 12.6		B	BXO	20	5	3	4
5355		CULG	02 14 0425	N21 W20	02 12.6		B	BXO	10	2	2	1
5355		SVTO	02 14 0757	N22 W23	02 12.6		B	CAO	30	3	3	2
5355		RAMY	02 14 1415	N21 W25	02 12.7		B	BXO	10	3	3	2
5355	25027	MWIL	02 14 1600	N21 W27	02 12.6	4	(B)					
5355		PALE	02 14 1810	N23 W26	02 12.7		B	BXO	10	5	4	3
5355		LEAR	02 15 0230	N21 W34	02 12.5		A	AX	10	1	1	3
5355		CULG	02 15 0243	N19 W34	02 12.5		A	AX	10	1	1	1
5355		SVTO	02 15 0847	N19 W38	02 12.5		A	HR	10	1	1	2

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NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5355		RAMY	02	15	1526	N22	W40	02	12.6		A	AX		1		2
5355	25027	MWIL	02	15	1615	N21	W41	02	12.5	3	AF					
5355		PALE	02	15	1800	N23	W42	02	12.5		B	BXO	30	2	3	4
5355		LEAR	02	16	0025	N21	W47	02	12.4		A	AX	10	2	2	3
5365A		RAMY	02	11	1437	S32	E12	02	12.5		A	AX		1		4
5365A	25037	MWIL	02	11	1530	S33	E11	02	12.5	2	(AP)					
5365A		LEAR	02	12	0017	S32	E09	02	12.7		A	AX	10	1	1	3
5365A		LEAR	02	13	0011	S33	W05	02	12.6		A	AX	10	1	1	3
5365B		RAMY	02	11	1437	S20	E13	02	12.6		A	AX		1		4
5365B	25038	MWIL	02	11	1530	S20	E13	02	12.6	3	X					
5365C	25051	MWIL	02	17	1600	S17	W58	02	13.2	4	(AP)					
5364	25039	MWIL	02	11	1530	N21	E21	02	13.2	2	AF					
5364		CULG	02	12	0254	N23	E14	02	13.2		A	AX	10	1		2
5364		RAMY	02	12	1415	N22	E08	02	13.2		A	AX		1		3
5364	25039	MWIL	02	12	1530	N21	E07	02	13.2	3	(AF)					
5364		HOLL	02	12	1543	N21	E08	02	13.3		A	AX	10	1		3
5364		PALE	02	12	2015	N21	E07	02	13.4		A	AX		1		3
5364		PALE	02	13	1935	N17	W06	02	13.4		A	AX		1		3
5364A		LEAR	02	10	0010	S32	E50	02	14.0		A	AX	10	2	1	4
5364A		LEAR	02	15	0230	S28	W20	02	13.5		A	AX	10	1	1	3
5364A		CULG	02	15	0243	S28	W19	02	13.6		A	AX	10	1		1
5364A	25045	MWIL	02	15	1615	S26	W28	02	13.5	3	X					
5364B	25029	MWIL	02	07	1815	S15	E80	02	13.8	3	AP					
5356		RAMY	02	07	1550	S16	E80	02	13.7		B	DSI	150	11	5	2
5356	25028	MWIL	02	07	1815	S17	E79	02	13.8	4	(AP)					
5356		PALE	02	07	2030	S15	E78	02	13.7		B	DSO	150	5	5	3
5356		LEAR	02	08	0055	S16	E79	02	14.0		B	DSO	120	4	5	2
5356		CULG	02	08	0350	S16	E76	02	13.9		B	EAO	90	8	11	2
5356		SVTO	02	08	0815	S17	E74	02	14.0		B	DSO	140	11	10	2
5356		BOUL	02	08	1601	S17	E73	02	14.2		B	ESO	490	5	11	1
5356		HOLL	02	08	1915	S17	E68	02	14.0		B	EAO	220	15	12	2
5356		PALE	02	08	1918	S15	E74	02	14.4		B	DAI	280	13	14	3
5356		LEAR	02	09	0030	S14	E66	02	14.0		B	EAO	310	17	11	2
5356		CULG	02	09	0300	S13	E67	02	14.2		B	EAO	180	11	13	1
5356		SVTO	02	09	1025	S17	E63	02	14.2		B	EKO	540	26	13	2
5356		BOUL	02	09	1635	S16	E61	02	14.3		B	EAI	190	14	13	2
5356		RAMY	02	09	1640	S18	E60	02	14.3		B	EAO	510	20	12	2
5356		HOLL	02	09	1800	S17	E60	02	14.3		B	FAO	300	29	19	3
5356		PALE	02	09	2114	S16	E61	02	14.5		B	EKI	440	19	15	3
5356		LEAR	02	10	0010	S16	E57	02	14.3		BG	EKO	370	22	14	4
5356		CULG	02	10	0300	S13	E56	02	14.3		B	EKO	260	17	14	2
5356		SVTO	02	10	1016	S16	E53	02	14.4		B	EAO	460	35	15	2
5356		RAMY	02	10	1338	S17	E49	02	14.3		B	EAO	470	28	14	2
5356		HOLL	02	10	1520	S17	E48	02	14.3		B	EAO	340	39	13	4
5356	25028	MWIL	02	10	1645	S17	E48	02	14.3	5	(B)					
5356		BOUL	02	10	1735	S16	E48	02	14.4		B	EAI	410	8	14	1
5356		LEAR	02	11	0105	S16	E43	02	14.3		B	EAI	380	37	11	3
5356		CULG	02	11	0330	S14	E43	02	14.4		B	EAO	290	26	14	2
5356		SVTO	02	11	0903	S17	E39	02	14.3		B	EKO	570	31	15	2
5356		RAMY	02	11	1437	S16	E36	02	14.3		BG	FKI	450	64	17	4
5356	25028	MWIL	02	11	1530	S17	E36	02	14.4	5	(B)					
5356		HOLL	02	11	1822	S15	E35	02	14.4		B	EKO	410	40	15	3
5356		BOUL	02	11	1848	S16	E34	02	14.4		B	FKI	290	42	16	3
5356		LEAR	02	12	0017	S16	E30	02	14.3		B	EAI	320	41	15	3
5356		CULG	02	12	0254	S15	E29	02	14.3		B	FKO	310	31	16	2
5356		SVTO	02	12	1015	S17	E25	02	14.3		BG	FKI	400	56	16	3
5356		RAMY	02	12	1415	S17	E23	02	14.3		B	FKI	510	59	18	3
5356	25028	MWIL	02	12	1530	S17	E23	02	14.4	5	(D)					
5356		HOLL	02	12	1543	S17	E23	02	14.4		B	FKI	350	32	16	3
5356		BOUL	02	12	1814	S17	E21	02	14.3		B	FAI	180	32	16	1
5356		PALE	02	12	2015	S17	E21	02	14.4		B	FKI	330	44	16	3
5356		LEAR	02	13	0011	S17	E18	02	14.4		BG	FKI	510	71	16	3

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5356		BOUL	02 13 0150	S17 E10	02 13.8		B	FAI	310	48	16	1
5356		CULG	02 13 0330	S14 E17	02 14.4		B	EKO	310	32	15	1
5356		SVTO	02 13 1030	S17 E13	02 14.4		BG	FKI	590	74	17	4
5356		HOLL	02 13 1550	S16 E09	02 14.3		BG	FKI	1060	34	18	2
5356		RAMY	02 13 1620	S18 E09	02 14.4		BG	FKC	930	53	17	2
5356		PALE	02 13 1935	S17 E09	02 14.5		BG	FKI	810	59	18	3
5356		LEAR	02 14 0025	S17 E04	02 14.3		BG	FKC	920	90	18	4
5356		CULG	02 14 0425	S17 E03	02 14.4		BG	FKI	890	47	17	1
5356		SVTO	02 14 0757	S17 E01	02 14.4		BG	FKI	1210	50	17	2
5356		RAMY	02 14 1415	S18 W02	02 14.4		BG	FKC	1150	66	17	2
5356	25028	MWIL	02 14 1600	S17 W01	02 14.6	5	(D)					
5356		PALE	02 14 1810	S18 W04	02 14.4		BG	FKC	1050	57	20	3
5356		LEAR	02 15 0230	S18 W09	02 14.4		BG	FKC	910	53	16	3
5356		CULG	02 15 0243	S17 W08	02 14.5		BG	FKC	910	27	16	1
5356		SVTO	02 15 0847	S18 W12	02 14.4		BG	FKI	1910	56	17	2
5356		RAMY	02 15 1526	S18 W17	02 14.3		BGD	FKC	1140	66	17	2
5356	25028	MWIL	02 15 1615	S17 W14	02 14.6	5	(D)*					
5356		HOLL	02 15 1704	S16 W16	02 14.5		BG	FKI	1060	36	17	1
5356		PALE	02 15 1800	S16 W16	02 14.5		BG	FKI	980	57	17	4
5356		LEAR	02 16 0025	S16 W21	02 14.4		BG	FKI	980	65	17	3
5356		CULG	02 16 0439	S17 W24	02 14.4		BG	FKI	750	42	17	2
5356		SVTO	02 16 1140	S16 W28	02 14.4		BG	FKI	730	30	16	1
5356		RAMY	02 16 1446	S17 W28	02 14.5		BG	FKC	720	43	17	2
5356		BOUL	02 16 1640	S17 W27	02 14.6		B	FKI	420	45	16	2
5356	25028	MWIL	02 16 1715	S17 W28	02 14.6	5	BG					
5356		PALE	02 16 1815	S18 W31	02 14.4		BG	FKI	660	40	16	3
5356		LEAR	02 17 0048	S18 W31	02 14.7		BG	FKI	670	45	17	3
5356		CULG	02 17 0440	S17 W36	02 14.4		BG	FKI	330	25	16	3
5356		SVTO	02 17 0800	S17 W40	02 14.3		BG	FKI	460	24	17	1
5356	25028	MWIL	02 17 1600	S17 W41	02 14.5	5	(B)					
5356		RAMY	02 17 1730	S16 W43	02 14.5		BG	FKC	630	37	16	2
5356		PALE	02 17 1945	S16 W46	02 14.3		BG	FKI	360	43	18	4
5356		HOLL	02 17 2155	S16 W45	02 14.5		BG	FKI	500	46	19	3
5356		LEAR	02 18 0321	S17 W50	02 14.3		BG	FKI	500	30	19	2
5356		CULG	02 18 0415	S19 W49	02 14.4		B	FKI	260	18	18	2
5356		SVTO	02 18 0830	S17 W49	02 14.6		BG	FKI	260	32	19	4
5356		RAMY	02 18 1425	S15 W55	02 14.4		B	FAI	360	52	18	3
5356	25028	MWIL	02 18 1745	S17 W55	02 14.6	5	(B)					
5356		BOUL	02 18 1850	S17 W51	02 14.9		B	CSO	60	12	20	1
5356		PALE	02 18 1910	S16 W58	02 14.4		BG	FAI	250	32	18	4
5356		HOLL	02 18 2148	S16 W58	02 14.5		B	CAO	200	23	19	3
5356		LEAR	02 19 0218	S18 W61	02 14.4		B	CAO	180	23	17	3
5356		CULG	02 19 0325	S17 W61	02 14.5		B	CAO	60	9	16	3
5356		SVTO	02 19 0826	S17 W64	02 14.5		BG	FAI	150	30	17	4
5356		RAMY	02 19 1340	S16 W70	02 14.3		B	FSI	240	14	20	3
5356	25028	MWIL	02 19 1600	S17 W66	02 14.6	5	(B)					
5356		BOUL	02 19 1630	S18 W64	02 14.8		B	CSO	40	9	20	2
5356		HOLL	02 19 2005	S16 W70	02 14.5		B	CSO	90	7	18	2
5356		PALE	02 19 2215	S17 W72	02 14.4		B	CSO	40	14	16	3
5356		LEAR	02 20 0227	S18 W68	02 14.9		B	CAO	70	4	4	2
5356		CULG	02 20 0345	S18 W70	02 14.8		A	HA	70	5	9	2
5356		SVTO	02 20 0850	S17 W73	02 14.8		B	DAO	80	8	6	3
5356		RAMY	02 20 1252	S15 W74	02 14.9		B	DSO	60	4	4	3
5356	25028	MWIL	02 20 1600	S17 W74	02 15.0	4	(AP)					
5356		HOLL	02 20 1838	S17 W77	02 14.9		B	BXO	20	4	4	3
5356		PALE	02 20 1940	S16 W78	02 14.9		B	BXO	10	4	4	3
5366		LEAR	02 14 0025	N25 E05	02 14.4		B	BXO	20	9	5	4
5366		CULG	02 14 0425	N24 E03	02 14.4		B	DSO	30	7	5	1
5366		SVTO	02 14 0757	N25 E01	02 14.4		B	DAO	80	6	5	2
5366		RAMY	02 14 1415	N24 W04	02 14.3		B	DSO	100	13	6	2
5366	25043	MWIL	02 14 1600	N24 W04	02 14.3	5	(B)					
5366		PALE	02 14 1810	N23 W05	02 14.4		B	DSO	90	9	7	3
5366		LEAR	02 15 0230	N24 W11	02 14.2		B	DAO	100	12	7	3
5366		CULG	02 15 0243	N24 W12	02 14.2		B	DSO	80	7	7	1
5366		SVTO	02 15 0847	N23 W14	02 14.3		B	DAO	60	9	7	2
5366		RAMY	02 15 1526	N24 W16	02 14.4		B	DSO	160	13	7	2
5366	25043	MWIL	02 15 1615	N24 W17	02 14.4	5	B					
5366		HOLL	02 15 1704	N23 W17	02 14.4		B	DAO	170	13	8	1

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Lat	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5366		PALE	02 15 1800	N23 W16	02 14.5		B	DAO	180	14	8	4
5366		LEAR	02 16 0025	N24 W22	02 14.3		B	DAO	210	19	8	3
5366		CULG	02 16 0439	N25 W25	02 14.2		B	DAI	90	13	8	2
5366		SVTO	02 16 1140	N25 W30	02 14.2		B	DAO	290	9	8	1
5366		RAMY	02 16 1446	N24 W29	02 14.4		B	DAO	140	10	9	2
5366		BOUL	02 16 1640	N24 W31	02 14.3		B	DAO	90	7	8	2
5366	25043	MWIL	02 16 1715	N24 W32	02 14.2	5	B					
5366		PALE	02 16 1815	N25 W32	02 14.3		B	EAO	220	6	11	3
5366		LEAR	02 17 0048	N25 W35	02 14.3		B	DAO	140	8	10	3
5366		CULG	02 17 0440	N23 W39	02 14.2		B	DAO	90	3	8	3
5366		SVTO	02 17 0800	N25 W42	02 14.1		B	DAO	100	7	10	1
5366	25043	MWIL	02 17 1600	N24 W45	02 14.2	5	(B)					
5366		RAMY	02 17 1730	N26 W45	02 14.2		B	DAO	140	9	10	2
5366		PALE	02 17 1945	N25 W45	02 14.3		B	CAO	100	12	9	4
5366		HOLL	02 17 2155	N25 W46	02 14.3		B	DAO	130	12	8	3
5366		LEAR	02 18 0321	N23 W48	02 14.4		B	EAO	180	11	11	2
5366		CULG	02 18 0415	N23 W49	02 14.4		B	DAO	50	4	7	2
5366		SVTO	02 18 0830	N25 W53	02 14.2		B	DAO	110	6	10	4
5366		RAMY	02 18 1425	N25 W56	02 14.3		B	CAO	70	9	10	3
5366	25043	MWIL	02 18 1745	N25 W58	02 14.2	5	(B)					
5366		BOUL	02 18 1850	N25 W64	02 13.8		B	CSO	50	3	12	1
5366		PALE	02 18 1910	N25 W58	02 14.3		B	CAO	50	6	8	4
5366		HOLL	02 18 2148	N25 W58	02 14.4		B	CRO	30	4	8	3
5366		LEAR	02 19 0218	N25 W64	02 14.1		B	CSO	70	5	10	3
5366		CULG	02 19 0325	N24 W67	02 14.0		A	HS	40	1	1	3
5366		SVTO	02 19 0826	N25 W68	02 14.1		B	DSO	60	5	9	4
5366		RAMY	02 19 1340	N26 W69	02 14.2		B	DSO	120	5	10	3
5366	25043	MWIL	02 19 1600	N25 W69	02 14.3	4	(BP)					
5366		BOUL	02 19 1630	N25 W70	02 14.3		B	CSO	60	5	15	2
5366		HOLL	02 19 2005	N26 W74	02 14.1		B	CSO	70	4	14	2
5366		PALE	02 19 2215	N27 W77	02 13.9		B	CSO	50	5	10	3
5366		LEAR	02 20 0227	N25 W72	02 14.5		A	HS	50	1	2	2
5366		SVTO	02 20 0850	N25 W75	02 14.5		A	AX		1		3
5366		RAMY	02 20 1252	N26 W78	02 14.5		B	BXO	30	2	3	3
5357		LEAR	02 08 0055	N18 E79	02 14.0		A	HS	90	1	1	2
5357		CULG	02 08 0350	N18 E80	02 14.2		A	HS	90	1	2	2
5357		SVTO	02 08 0815	N16 E78	02 14.2		B	DAO	150	6	7	2
5357		BOUL	02 08 1601	N17 E75	02 14.4		B	DAO	240	2	10	1
5357		HOLL	02 08 1915	N15 E70	02 14.1		B	DSO	170	2	9	2
5357		PALE	02 08 1918	N17 E75	02 14.5		B	DAI	210	5	10	3
5357		LEAR	02 09 0030	N17 E70	02 14.3		B	DSO	170	5	6	2
5357		CULG	02 09 0300	N19 E67	02 14.2		B	DSO	210	5	7	1
5357		SVTO	02 09 1025	N16 E63	02 14.2		B	DSO	350	9	9	2
5357		BOUL	02 09 1635	N17 E60	02 14.2		B	DSO	260	3	8	2
5357		RAMY	02 09 1640	N15 E60	02 14.2		B	DSI	340	11	8	2
5357		HOLL	02 09 1800	N16 E60	02 14.3		B	DSO	320	9	10	3
5357		PALE	02 09 2114	N16 E59	02 14.3		B	DAI	180	14	7	3
5357		LEAR	02 10 0010	N16 E55	02 14.2		B	DSO	230	6	6	4
5357		CULG	02 10 0300	N19 E53	02 14.2		B	DSO	180	10	7	2
5357		SVTO	02 10 1016	N18 E54	02 14.5		B	DAO	340	15	9	2
5357		RAMY	02 10 1338	N16 E51	02 14.4		B	DAI	370	16	10	2
5357		HOLL	02 10 1520	N15 E47	02 14.2		B	DSI	310	25	10	4
5357	25033	MWIL	02 10 1645	N16 E48	02 14.3	5	(B)					
5357		BOUL	02 10 1735	N17 E47	02 14.3		B	DAO	360	4	7	1
5357		LEAR	02 11 0105	N16 E43	02 14.3		B	DAI	280	21	7	3
5357		CULG	02 11 0330	N19 E41	02 14.3		B	DSI	260	12	8	2
5357		SVTO	02 11 0903	N18 E40	02 14.4		B	DAO	280	18	8	2
5357		RAMY	02 11 1437	N17 E37	02 14.4		B	DAI	360	28	8	4
5357	25033	MWIL	02 11 1530	N16 E36	02 14.4	5	(B)					
5357		HOLL	02 11 1822	N17 E35	02 14.4		B	DAI	320	24	8	3
5357		BOUL	02 11 1848	N16 E35	02 14.4		B	DAI	160	24	7	3
5357		LEAR	02 12 0017	N17 E31	02 14.4		B	DAI	250	23	10	3
5357		CULG	02 12 0254	N18 E29	02 14.3		B	DAI	290	20	8	2
5357		SVTO	02 12 1015	N16 E26	02 14.4		BG	DAI	410	28	7	3
5357		RAMY	02 12 1415	N17 E24	02 14.4		B	DAI	370	39	8	3
5357	25033	MWIL	02 12 1530	N16 E23	02 14.4	5	(B)					
5357		HOLL	02 12 1543	N17 E22	02 14.3		B	DAO	340	16	9	3
5357		BOUL	02 12 1814	N17 E21	02 14.3		B	DAI	190	14	7	1

S U N S P O T G R O U P S
(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5357		PALE	02 12 2015	N17 E21	02 14.4		B	DAI	220	21	8	3
5357		LEAR	02 13 0011	N17 E17	02 14.3		B	DAI	270	31	7	3
5357		BOUL	02 13 0150	N16 E09	02 13.7		B	DAI	280	15	8	1
5357		CULG	02 13 0330	N18 E15	02 14.3		B	DAO	170	16	7	1
5357		SVTO	02 13 1030	N16 E14	02 14.5		B	DKI	290	23	7	4
5357		HOLL	02 13 1550	N17 E10	02 14.4		B	DHI	460	15	8	2
5357		RAMY	02 13 1620	N16 E10	02 14.4		B	DHI	310	15	7	2
5357		PALE	02 13 1935	N16 E08	02 14.4		B	DAI	290	36	7	3
5357		LEAR	02 14 0025	N17 E05	02 14.4		B	DAO	270	27	7	4
5357		CULG	02 14 0425	N16 E03	02 14.4		B	DAI	200	17	8	1
5357		SVTO	02 14 0757	N17 E02	02 14.5		B	DAO	270	17	7	2
5357		RAMY	02 14 1415	N15 W03	02 14.4		B	DHO	260	22	7	2
5357	25033	MWIL	02 14 1600	N17 W04	02 14.4	5	(B)					
5357		PALE	02 14 1810	N16 W04	02 14.4		B	DHO	280	26	8	3
5357		LEAR	02 15 0230	N17 W09	02 14.4		B	DAO	170	15	6	3
5357		CULG	02 15 0243	N16 W10	02 14.3		B	DAO	150	13	8	1
5357		SVTO	02 15 0847	N16 W13	02 14.4		B	DAO	250	8	7	2
5357		RAMY	02 15 1526	N16 W15	02 14.5		B	DAO	220	11	7	2
5357	25033	MWIL	02 15 1615	N17 W17	02 14.4	5	B					
5357		HOLL	02 15 1704	N15 W15	02 14.6		B	DHO	210	10	8	1
5357		PALE	02 15 1800	N17 W17	02 14.4		B	DHO	190	10	7	4
5357		LEAR	02 16 0025	N16 W22	02 14.3		B	DHO	180	14	8	3
5357		CULG	02 16 0439	N17 W24	02 14.4		B	DAO	140	7	7	2
5357		SVTO	02 16 1140	N17 W28	02 14.3		B	CSO	180	5	6	1
5357		RAMY	02 16 1446	N16 W28	02 14.5		B	CSO	140	5	7	2
5357		BOUL	02 16 1640	N18 W33	02 14.2		A	HA	100	3	2	2
5357	25033	MWIL	02 16 1715	N17 W31	02 14.4	5	BP					
5357		PALE	02 16 1815	N15 W28	02 14.6		B	CSO	190	6	6	3
5357		LEAR	02 17 0048	N19 W34	02 14.4		B	CAO	130	5	6	3
5357		CULG	02 17 0440	N17 W41	02 14.1		A	HS	70	1	2	3
5357		SVTO	02 17 0800	N18 W43	02 14.0		A	AA	90	1	2	1
5357	25033	MWIL	02 17 1600	N17 W45	02 14.2	5	(AP)					
5357		RAMY	02 17 1730	N17 W44	02 14.4		B	CAO	190	7	5	2
5357		PALE	02 17 1945	N19 W48	02 14.1		A	HA	140	2	2	4
5357		HOLL	02 17 2155	N19 W48	02 14.2		A	HA	130	2	2	3
5357		LEAR	02 18 0321	N18 W51	02 14.2		A	HA	130	2	2	2
5357		CULG	02 18 0415	N17 W52	02 14.2		A	HS	50	1	1	2
5357		SVTO	02 18 0830	N18 W55	02 14.2		A	HA	100	1	2	4
5357		RAMY	02 18 1425	N18 W58	02 14.2		A	HA	90	5	3	3
5357	25033	MWIL	02 18 1745	N17 W59	02 14.2	5	(AP)					
5357		BOUL	02 18 1850	N18 W62	02 14.1		A	HS	40	1	1	1
5357		PALE	02 18 1910	N19 W60	02 14.2		A	HA	90	2	2	4
5357		HOLL	02 18 2148	N19 W60	02 14.3		A	HA	80	3	2	3
5357		LEAR	02 19 0218	N18 W64	02 14.2		A	HA	90	2	2	3
5357		CULG	02 19 0325	N18 W63	02 14.3		A	HS	60	1	2	3
5357		SVTO	02 19 0826	N18 W68	02 14.2		A	HS	90	1	2	4
5357		RAMY	02 19 1340	N18 W70	02 14.2		A	HS	90	2	2	3
5357	25033	MWIL	02 19 1600	N17 W71	02 14.3	4	(AP)					
5357		BOUL	02 19 1630	N18 W73	02 14.1		A	HA	30	2	3	2
5357		HOLL	02 19 2005	N19 W75	02 14.1		A	HS	30	2	2	2
5357		PALE	02 19 2215	N17 W78	02 14.0		A	HS	30	1	2	3
5357		LEAR	02 20 0227	N17 W78	02 14.2		A	HS	40	1	2	2
5360		SVTO	02 10 1016	N29 E72	02 16.1		A	HR	30	1	2	2
5360		RAMY	02 10 1338	N27 E67	02 15.8		A	HR	60	1	2	2
5360	25034	MWIL	02 10 1645	N28 E66	02 15.8	4	(AP)					
5360		LEAR	02 11 0105	N31 E62	02 15.9		A	AX	10	1	1	3
5360		CULG	02 11 0330	N31 E58	02 15.7		A	AX		1		2
5360		SVTO	02 11 0903	N29 E57	02 15.8		A	HR	30	1	2	2
5360		RAMY	02 11 1437	N28 E53	02 15.7		A	HR	30	2	2	4
5360	25034	MWIL	02 11 1530	N29 E54	02 15.9	4	(AP)					
5360		HOLL	02 11 1822	N29 E52	02 15.8		A	AX	20	1	1	3
5360		BOUL	02 11 1848	N30 E53	02 15.9		A	AX		1		3
5360		LEAR	02 12 0017	N30 E48	02 15.8		A	AX	10	1	1	3
5360		CULG	02 12 0254	N31 E46	02 15.7		A	AX	10	1	1	2
5360		SVTO	02 12 1015	N30 E43	02 15.8		A	AX	10	1		3
5360		RAMY	02 12 1415	N29 E39	02 15.6		A	AX	10	1	1	3
5360	25034	MWIL	02 12 1530	N29 E39	02 15.7	4	(AP)					
5360		HOLL	02 12 1543	N29 E39	02 15.7		A	AX	10	1		3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

FEBRUARY 1989

NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5360		BOUL	02	12	1814	N29	E38	02	15.7		A	AX		1		1
5360		PALE	02	12	2015	N29	E38	02	15.8		A	AX	10	1	1	3
5360		LEAR	02	13	0011	N30	E33	02	15.6		A	AX	10	1	1	3
5360		BOUL	02	13	0150	N29	E25	02	15.0		A	AX		1		1
5360		CULG	02	13	0330	N30	E30	02	15.5		A	AX	10	1	1	1
5360		SVTO	02	13	1030	N29	E29	02	15.7		A	AX		1		4
5360		HOLL	02	13	1550	N30	E26	02	15.7		A	AX	10	1	1	2
5360		RAMY	02	13	1620	N29	E25	02	15.6		A	AX		1	1	2
5360		PALE	02	13	1935	N29	E25	02	15.8		A	AX	10	1		3
5360		LEAR	02	14	0025	N30	E20	02	15.6		A	AX	10	1	1	4
5360		CULG	02	14	0425	N30	E19	02	15.7		A	AX	10	1		1
5360		SVTO	02	14	0757	N29	E11	02	15.2		A	HR	20	1	2	2
5360		RAMY	02	14	1415	N29	E14	02	15.7		A	AX	10	1	1	2
5360	25034	MWIL	02	14	1600	N28	E13	02	15.7	5	AP					
5360		PALE	02	14	1810	N28	E13	02	15.8		A	AX		3	1	3
5360		LEAR	02	15	0230	N30	E06	02	15.6		A	AX	10	1	1	3
5360		CULG	02	15	0243	N30	E04	02	15.4		A	AX	10	1		1
5359		SVTO	02	10	1016	S16	E77	02	16.3		A	HR	30	1	2	2
5359		RAMY	02	10	1338	S19	E78	02	16.5		B	BXO	10	2	2	2
5359	25035	MWIL	02	10	1645	S18	E77	02	16.6	3	(AP)					
5359		LEAR	02	11	0105	S13	E75	02	16.7		B	BXO	20	2	2	3
5359		CULG	02	11	0330	S15	E71	02	16.5		A	AX		1		2
5359		SVTO	02	11	0903	S17	E68	02	16.5		B	BXO	40	3	3	2
5359		RAMY	02	11	1437	S17	E64	02	16.5		B	BXO	10	3	4	4
5359	25035	MWIL	02	11	1530	S18	E65	02	16.6	4	B					
5359		HOLL	02	11	1822	S18	E64	02	16.6		A	AX	30	3	2	3
5359		LEAR	02	12	0017	S16	E60	02	16.6		B	BXO	10	2	2	3
5359		HOLL	02	12	1543	S18	E57	02	17.0		A	AX	10	1	1	3
5359		SVTO	02	13	1030	S19	E48	02	17.1		A	AX		1		4
5359		SVTO	02	15	0847	S19	E21	02	17.0		A	HR	10	1	1	2
5359		LEAR	02	16	0025	S18	E13	02	17.0		A	AX	10	2	2	3
5367		LEAR	02	14	0025	N31	E40	02	17.2		A	AX	10	1	1	4
5367		SVTO	02	14	0757	N30	E38	02	17.3		B	DRO	20	3	5	2
5367		RAMY	02	14	1415	N29	E34	02	17.2		B	BXO	10	6	5	2
5367	25044	MWIL	02	14	1600	N29	E33	02	17.2	3	(B)					
5367		PALE	02	14	1810	N28	E32	02	17.2		B	BXO		4	5	3
5367		LEAR	02	15	0230	N29	E24	02	17.0		A	AX	10	1	1	3
5367		CULG	02	15	0243	N30	E23	02	16.9		A	AX	10	1		1
5367		SVTO	02	15	0847	N29	E20	02	16.9		A	HR	10	1	1	2
5367		RAMY	02	15	1526	N28	E20	02	17.2		B	BXO	10	3	5	2
5367	25044	MWIL	02	15	1615	N29	E19	02	17.2	3	B					
5367		PALE	02	15	1800	N28	E18	02	17.1		B	BXO	10	3	3	4
5367		LEAR	02	16	0025	N30	E13	02	17.0		B	CAO	40	6	7	3
5367		CULG	02	16	0439	N29	E12	02	17.1		B	CSO	10	3	5	2
5367		SVTO	02	16	1140	N29	E08	02	17.1		B	CSO	40	6	4	1
5367		RAMY	02	16	1446	N28	E08	02	17.2		B	CRO	50	9	6	2
5367		BOUL	02	16	1640	N29	E07	02	17.2		B	BXO		7	6	2
5367	25044	MWIL	02	16	1715	N29	E05	02	17.1	4	BP					
5367		PALE	02	16	1815	N28	E07	02	17.3		B	CSO	160	14	5	3
5367		LEAR	02	17	0048	N29	E02	02	17.2		B	CAO	40	13	6	3
5367		CULG	02	17	0440	N30	W03	02	16.9		B	CSO	30	3	6	3
5367		SVTO	02	17	0800	N29	W02	02	17.2		B	CSO	60	10	7	1
5367	25044	MWIL	02	17	1600	N28	W06	02	17.2	5	(B)					
5367		RAMY	02	17	1730	N29	W07	02	17.2		B	CSO	120	10	8	2
5367		PALE	02	17	1945	N29	W07	02	17.3		B	CSO	60	13	9	4
5367		HOLL	02	17	2155	N29	W09	02	17.2		B	CSO	50	13	9	3
5367		LEAR	02	18	0321	N29	W12	02	17.2		B	CSO	120	10	9	2
5367		CULG	02	18	0415	N30	W13	02	17.1		B	CSO	20	3	7	2
5367		SVTO	02	18	0830	N28	W19	02	16.9		A	HS	70	2	2	4
5367		RAMY	02	18	1425	N27	W22	02	16.9		A	HA	60	3	3	3
5367	25044	MWIL	02	18	1745	N27	W24	02	16.9	5	(AP)					
5367		BOUL	02	18	1850	N28	W24	02	16.9		A	HS	10	1	1	1
5367		PALE	02	18	1910	N28	W25	02	16.8		A	HA	50	2	2	4
5367		HOLL	02	18	2148	N28	W25	02	16.9		A	HA	30	2	2	3
5367		LEAR	02	19	0218	N27	W29	02	16.8		A	HS	50	1	2	3
5367		CULG	02	19	0325	N27	W30	02	16.8		A	HS	30	1	1	3
5367		SVTO	02	19	0826	N28	W30	02	17.0		B	CSO	40	5	5	4

SUNSPOT GROUPS
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FEBRUARY 1989

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5367		RAMY	02	19	1340	N28 W33	02 17.0		B	CRI	60	4	5	3
5367	25044	MWIL	02	19	1600	N27 W34	02 17.0	4	(BP)					
5367		BOUL	02	19	1630	N28 W34	02 17.0		B	BXO		3	6	2
5367		HOLL	02	19	2005	N28 W35	02 17.1		B	CSO	30	5	7	2
5367		PALE	02	19	2215	N28 W41	02 16.7		B	CSO	30	5	6	3
5367		LEAR	02	20	0227	N27 W39	02 17.1		B	CSO	30	3	5	2
5367		CULG	02	20	0345	N26 W43	02 16.8		A	HS	20	1	1	2
5367		SVTO	02	20	0850	N27 W46	02 16.8		A	HS	20	1	1	3
5367		RAMY	02	20	1252	N28 W47	02 16.9		A	HR	20	2	1	3
5367	25044	MWIL	02	20	1600	N27 W48	02 16.9	4	(AP)					
5367		HOLL	02	20	1838	N28 W48	02 17.0		B	BXO	10	2	3	3
5367		PALE	02	20	1940	N28 W58	02 16.3		A	AX	20	2	2	3
5367		LEAR	02	21	0244	N26 W56	02 16.8		A	AX	10	2	2	2
5367		CULG	02	21	0312	N27 W54	02 16.9		A	AX	20	2	2	3
5367		SVTO	02	21	0925	N28 W59	02 16.8		A	AX		2	2	3
5367		RAMY	02	21	1430	N29 W59	02 17.0		B	BXO	20	2	1	3
5367		HOLL	02	21	1530	N28 W62	02 16.8		B	BXO	40	2	4	3
5367	25044	MWIL	02	21	1615	N27 W61	02 16.9	4	(AP)					
5367		PALE	02	21	1905	N29 W63	02 16.8		A	AX	10	1	1	3
5367A		RAMY	02	21	1430	N13 W51	02 17.7		A	AX	10	1	1	3
5362		SVTO	02	11	0903	N19 E79	02 17.4		A	HR	100	2	2	2
5362		RAMY	02	11	1437	N18 E76	02 17.4		B	DSO	100	7	5	4
5362	25040	MWIL	02	11	1530	N19 E76	02 17.4	4	B					
5362		HOLL	02	11	1822	N19 E77	02 17.6		B	DAO	180	4	8	3
5362		BOUL	02	11	1848	N18 E75	02 17.5		B	DSO	120	4	6	3
5362		LEAR	02	12	0017	N20 E73	02 17.6		B	DAO	180	5	8	3
5362		CULG	02	12	0254	N23 E75	02 17.9		B	EKO	150	6	12	2
5362		SVTO	02	12	1015	N20 E71	02 17.8		B	EKO	270	16	14	3
5362		RAMY	02	12	1415	N19 E67	02 17.7		B	EKO	270	10	11	3
5362	25040	MWIL	02	12	1530	N20 E67	02 17.8	4	(B)					
5362		HOLL	02	12	1543	N20 E65	02 17.6		B	DSO	210	7	9	3
5362		BOUL	02	12	1814	N21 E67	02 17.9		B	FAO	300	4	16	1
5362		PALE	02	12	2015	N20 E65	02 17.8		B	DKO	260	6	10	3
5362		LEAR	02	13	0011	N21 E63	02 17.8		B	FKO	310	13	16	3
5362		BOUL	02	13	0150	N20 E63	02 17.9		B	EAO	180	6	10	1
5362		CULG	02	13	0330	N23 E59	02 17.7		B	EKO	180	5	12	1
5362		SVTO	02	13	1030	N20 E59	02 17.9		B	DKO	260	11	10	4
5362		HOLL	02	13	1550	N21 E54	02 17.8		B	DHO	410	5	10	2
5362		RAMY	02	13	1620	N20 E54	02 17.8		B	EKO	270	9	13	2
5362		PALE	02	13	1935	N19 E53	02 17.9		B	EKI	240	7	12	3
5362		LEAR	02	14	0025	N21 E51	02 17.9		B	EAO	240	12	14	4
5362		CULG	02	14	0425	N20 E47	02 17.8		B	EKO	190	15	14	1
5362		SVTO	02	14	0757	N21 E46	02 17.8		B	EAO	240	17	13	2
5362		RAMY	02	14	1415	N20 E42	02 17.8		B	EKO	280	19	13	2
5362	25040	MWIL	02	14	1600	N20 E41	02 17.8	5	(B)					
5362		PALE	02	14	1810	N20 E42	02 18.0		B	EKO	230	15	14	3
5362		LEAR	02	15	0230	N22 E35	02 17.8		B	EAO	280	11	13	3
5362		CULG	02	15	0243	N23 E34	02 17.7		B	EAO	180	8	13	1
5362		SVTO	02	15	0847	N20 E32	02 17.8		B	EAO	190	12	13	2
5362		RAMY	02	15	1526	N19 E28	02 17.8		B	EAI	240	18	13	2
5362	25040	MWIL	02	15	1615	N20 E28	02 17.8	5	B					
5362		HOLL	02	15	1704	N20 E29	02 17.9		B	EAO	230	11	15	1
5362		PALE	02	15	1800	N20 E28	02 17.9		B	EAO	240	17	13	4
5362		LEAR	02	16	0025	N22 E20	02 17.5		B	EAO	180	27	12	3
5362		CULG	02	16	0439	N20 E19	02 17.6		B	EAO	140	14	12	2
5362		SVTO	02	16	1140	N21 E16	02 17.7		B	EAO	220	13	14	1
5362		RAMY	02	16	1446	N20 E16	02 17.8		B	EAO	240	17	13	2
5362		BOUL	02	16	1640	N21 E16	02 17.9		B	EAO	60	18	13	2
5362	25040	MWIL	02	16	1715	N20 E15	02 17.9	5	BG					
5362		PALE	02	16	1815	N20 E15	02 17.9		B	EAO	190	20	13	3
5362		LEAR	02	17	0048	N20 E10	02 17.8		B	EAO	200	34	12	3
5362		CULG	02	17	0440	N21 E08	02 17.8		B	EAO	140	13	13	3
5362		SVTO	02	17	0800	N20 E06	02 17.8		B	EAO	240	25	14	1
5362	25040	MWIL	02	17	1600	N20 E03	02 17.9	4	(D)					
5362		RAMY	02	17	1730	N20 E01	02 17.8		B	EAO	280	22	12	2
5362		PALE	02	17	1945	N20 E01	02 17.9		B	EAO	140	29	12	4
5362		HOLL	02	17	2155	N19 E01	02 18.0		B	FAO	150	35	20	3

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SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5362		LEAR	02 18 0321	N21 W05	02 17.7		BG	EAO	150	20	13	2
5362		CULG	02 18 0415	N20 W05	02 17.8		B	EAO	170	15	12	2
5362		SVTO	02 18 0830	N21 W07	02 17.8		B	ESO	70	15	13	4
5362		RAMY	02 18 1425	N20 W09	02 17.9		BG	ESI	70	19	14	3
5362	25040	MWIL	02 18 1745	N20 W12	02 17.8	4	(B)					
5362		BOUL	02 18 1850	N21 W09	02 18.1		B	CSO	20	6	11	1
5362		PALE	02 18 1910	N20 W12	02 17.9		B	ESO	40	18	12	4
5362		HOLL	02 18 2148	N19 W12	02 18.0		B	ESO	50	17	13	3
5362		LEAR	02 19 0218	N21 W16	02 17.9		B	ESO	60	13	13	3
5362		CULG	02 19 0325	N21 W17	02 17.8		B	ESO	60	10	12	3
5362		SVTO	02 19 0826	N21 W19	02 17.9		B	CSO	40	8	12	4
5362		RAMY	02 19 1340	N21 W23	02 17.8		BG	DRI	40	8	14	3
5362	25040	MWIL	02 19 1600	N20 W24	02 17.8	4	(BP)					
5362		BOUL	02 19 1630	N20 W23	02 17.9		B	BXO	10	10	14	2
5362		HOLL	02 19 2005	N20 W25	02 17.9		B	BXO	20	11	13	2
5362		PALE	02 19 2215	N20 W28	02 17.8		B	BXO	20	9	12	3
5362		LEAR	02 20 0227	N20 W30	02 17.8		B	CRO	20	6	12	2
5362		CULG	02 20 0345	N21 W26	02 18.2		A	AX	10	2	2	2
5362		SVTO	02 20 0850	N21 W26	02 18.4		B	BXO	10	3	4	3
5362		RAMY	02 20 1252	N20 W31	02 18.2		B	BXO	10	4	15	3
5362	25040	MWIL	02 20 1600	N21 W32	02 18.2	4	(AP)					
5362		HOLL	02 20 1838	N21 W36	02 18.0		B	BXO	10	4	12	3
5362		PALE	02 20 1940	N21 W38	02 17.9		B	BXO	10	7	13	3
5362		LEAR	02 21 0244	N20 W43	02 17.8		A	BXO	20	5	10	2
5362		CULG	02 21 0312	N20 W43	02 17.8		B	BXO	10	3	9	3
5362		SVTO	02 21 0925	N21 W46	02 17.9		B	BXO	10	3	9	3
5362		RAMY	02 21 1430	N22 W48	02 17.9		B	BXO	20	2	8	3
5362		BOUL	02 21 1502	N21 W45	02 18.2		A	AX		1		1
5362		HOLL	02 21 1530	N22 W45	02 18.2		A	AX	20	1	1	3
5362	25040	MWIL	02 21 1615	N20 W48	02 18.0	4	(AP)					
5362		PALE	02 21 1905	N22 W47	02 18.2		A	AX	10	1	1	3
5362		CULG	02 22 0305	N20 W45	02 18.7		B	BXO	10	2	8	2
5362		LEAR	02 22 0745	N21 W54	02 18.2		A	AX	10	1	1	2
5362		BOUL	02 22 1547	N21 W57	02 18.3		A	AX	10	1	1	2
5362		RAMY	02 22 1548	N22 W56	02 18.3		A	AX		1	1	3
5362		HOLL	02 22 1625	N22 W57	02 18.3		A	AX	10	1	1	3
5362	25040	MWIL	02 22 1700	N22 W58	02 18.2	4	(B)					
5362A		LEAR	02 20 0227	N37 W26	02 18.0		B	BXO	10	2	3	2
5362A		SVTO	02 20 0850	N38 W29	02 18.0		B	BXO	10	2	4	3
5372		SVTO	02 16 1140	N18 E27	02 18.5		B	BXO	10	4	2	1
5372		RAMY	02 16 1446	N15 E27	02 18.6		B	BRO	30	2	3	2
5372		BOUL	02 16 1640	N16 E25	02 18.6		B	BXO		2	3	2
5372	25049	MWIL	02 16 1715	N16 E25	02 18.6	5	B					
5372		PALE	02 16 1815	N15 E25	02 18.6		B	BXO	10	2	3	3
5372		LEAR	02 17 0048	N17 E21	02 18.6		B	BRO	20	2	4	3
5372		CULG	02 17 0440	N19 E17	02 18.5		B	BXO	10	3	4	3
5372		SVTO	02 17 0800	N17 E17	02 18.6		B	BXO	10	2	4	1
5372	25049	MWIL	02 17 1600	N16 E13	02 18.6	4	(B)					
5372		RAMY	02 17 1730	N16 E12	02 18.6		B	BXO	20	2	5	2
5372		PALE	02 17 1945	N16 E11	02 18.6		B	BXO	10	2	5	4
5372		RAMY	02 18 1425	N17 E03	02 18.8		A	AX		1		3
5372		PALE	02 18 1910	N16 W01	02 18.7		A	AX		1		4
5372		LEAR	02 19 0218	N17 W06	02 18.6		A	AX	10	1	1	3
5371	25046	MWIL	02 15 1615	N31 E42	02 19.0	3	B					
5371		HOLL	02 15 1704	N32 E43	02 19.1		B	BXO	10	2	4	1
5371		PALE	02 15 1800	N29 E42	02 19.0		B	BXO	10	3	3	4
5371		LEAR	02 16 0025	N34 E38	02 19.0		B	BXO	10	7	5	3
5371		SVTO	02 16 1140	N33 E26	02 18.5		A	AX	30	1		1
5371		RAMY	02 16 1446	N30 E29	02 18.9		B	BXO	20	3	4	2
5371		BOUL	02 16 1640	N31 E25	02 18.7		A	AX		1		2
5371	25046	MWIL	02 16 1715	N31 E26	02 18.8	3	AP					
5371		PALE	02 16 1815	N31 E27	02 18.9		B	BXO	10	2	3	3
5371		LEAR	02 17 0048	N31 E22	02 18.8		B	BXO	10	4	5	3
5371		CULG	02 17 0440	N32 E16	02 18.5		A	AX	10	1	1	3
5371		SVTO	02 17 0800	N32 E18	02 18.7		B	BXO	10	4	4	1
5371	25046	MWIL	02 17 1600	N31 E14	02 18.8	4	(BP)					

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(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)		Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5371		RAMY	02 17	1730	N31 E13	02 18.7		B	CRO	60	4	4	2
5371		PALE	02 17	1945	N31 E12	02 18.8		B	BXO	10	4	3	4
5371		HOLL	02 17	2155	N31 E11	02 18.8		B	BXO	10	4	3	3
5371	25052	MWIL	02 19	1600	N32 W10	02 18.9	3	(AF)					
5371		LEAR	02 20	0227	N30 W16	02 18.8		A	AX	10	1	1	2
5371		SVTO	02 20	0850	N30 W20	02 18.8		B	BXO	10	6	4	3
5371		RAMY	02 20	1252	N31 W21	02 18.9		B	DRI	100	7	4	3
5371	25052	MWIL	02 20	1600	N31 W21	02 19.0	4	(B)					
5371		HOLL	02 20	1838	N30 W25	02 18.8		B	BXO	50	9	6	3
5371		PALE	02 20	1940	N31 W24	02 18.9		B	BXO	40	12	7	3
5371		LEAR	02 21	0244	N29 W32	02 18.6		B	CAO	20	4	3	2
5371		CULG	02 21	0312	N30 W32	02 18.6		B	DSO	20	3	3	3
5371		SVTO	02 21	0925	N30 W33	02 18.8		B	CAO	20	5	6	3
5371		RAMY	02 21	1430	N31 W36	02 18.8		B	BXO	20	3	4	3
5371		HOLL	02 21	1530	N31 W38	02 18.6		B	BXO	40	3	5	3
5371	25052	MWIL	02 21	1615	N30 W37	02 18.8	4	(BP)					
5371		CULG	02 22	0305	N30 W44	02 18.7		A	AX		1		2
5368		SVTO	02 15	0847	S13 E68	02 20.5		A	AX	20	1	1	2
5368		RAMY	02 15	1526	S14 E64	02 20.5		B	BXO	30	5	5	2
5368	25047	MWIL	02 15	1615	S13 E64	02 20.5	4	B					
5368		HOLL	02 15	1704	S12 E66	02 20.7		B	CSO	40	3	4	1
5368		LEAR	02 16	0025	S11 E58	02 20.4		B	DAO	100	12	6	3
5368		CULG	02 16	0439	S11 E55	02 20.3		B	DAO	90	9	8	2
5368		SVTO	02 16	1140	S11 E50	02 20.2		B	DAO	140	11	8	1
5368		RAMY	02 16	1446	S14 E51	02 20.5		B	DAO	150	14	9	2
5368		BOUL	02 16	1640	S11 E48	02 20.3		B	CAO	90	12	9	2
5368	25047	MWIL	02 16	1715	S13 E49	02 20.4	5	B					
5368		PALE	02 16	1815	S12 E48	02 20.4		B	DAO	170	18	8	3
5368		LEAR	02 17	0048	S12 E45	02 20.4		B	DAI	60	15	10	3
5368		CULG	02 17	0440	S09 E42	02 20.3		B	DAO	90	6	10	3
5368		SVTO	02 17	0800	S12 E41	02 20.4		B	DAO	160	16	10	1
5368	25047	MWIL	02 17	1600	S13 E36	02 20.4	5	(B)					
5368		RAMY	02 17	1730	S13 E34	02 20.3		B	EAI	220	18	13	2
5368		PALE	02 17	1945	S13 E34	02 20.4		B	DAO	160	24	13	4
5368		HOLL	02 17	2155	S12 E32	02 20.3		B	DSI	210	29	14	3
5368		LEAR	02 18	0321	S12 E29	02 20.3		B	EAO	170	31	13	2
5368		CULG	02 18	0415	S11 E28	02 20.3		B	EAI	110	14	14	2
5368		SVTO	02 18	0830	S12 E26	02 20.3		BG	EKI	200	33	15	4
5368		RAMY	02 18	1425	S12 E22	02 20.2		BG	EAI	310	46	15	3
5368	25047	MWIL	02 18	1745	S12 E20	02 20.2	5	(D)					
5368		BOUL	02 18	1850	S12 E17	02 20.1		B	EAI	80	14	14	1
5368		PALE	02 18	1910	S12 E19	02 20.2		B	EAI	230	35	15	4
5368		HOLL	02 18	2148	S12 E17	02 20.2		BG	EAI	230	31	14	3
5368		LEAR	02 19	0218	S12 E15	02 20.2		BG	FAI	260	47	16	3
5368		CULG	02 19	0325	S11 E14	02 20.2		BG	DAI	150	13	14	3
5368		SVTO	02 19	0826	S11 E12	02 20.2		BGD	EKI	310	31	15	4
5368		RAMY	02 19	1340	S12 E09	02 20.2		BGD	FKI	410	28	16	3
5368	25047	MWIL	02 19	1600	S12 E06	02 20.1	5	(BG)					
5368		BOUL	02 19	1630	S11 E06	02 20.1		B	EAI	200	32	15	2
5368		HOLL	02 19	2005	S12 E06	02 20.3		BG	FAI	290	38	16	2
5368		PALE	02 19	2215	S12 E04	02 20.2		BG	FAI	250	30	17	3
5368		LEAR	02 20	0227	S11 E01	02 20.2		BG	FAI	250	41	16	2
5368		CULG	02 20	0345	S11 E02	02 20.3		BG	FAI	200	20	18	2
5368		SVTO	02 20	0850	S11 W01	02 20.3		BG	FAI	360	41	17	3
5368		RAMY	02 20	1252	S12 W05	02 20.1		BGD	FKI	370	42	16	3
5368	25047	MWIL	02 20	1600	S11 W07	02 20.1	5	(D)					
5368		HOLL	02 20	1838	S12 W07	02 20.2		BG	FAI	440	55	16	3
5368		PALE	02 20	1940	S13 W08	02 20.2		BG	FKI	340	52	17	3
5368		LEAR	02 21	0244	S13 W13	02 20.1		BG	EKI	270	23	13	2
5368		CULG	02 21	0312	S12 W13	02 20.1		BG	FAI	340	41	16	3
5368		SVTO	02 21	0925	S11 W16	02 20.2		BG	FKI	420	61	16	3
5368		RAMY	02 21	1430	S11 W19	02 20.2		BD	FKI	520	37	16	3
5368		BOUL	02 21	1502	S11 W20	02 20.1		B	EAI	250	19	12	1
5368		HOLL	02 21	1530	S12 W19	02 20.2		BG	FKI	700	45	18	3
5368	25047	MWIL	02 21	1615	S11 W21	02 20.1	6	(D)					
5368		PALE	02 21	1905	S12 W22	02 20.1		BG	FKI	390	35	16	3
5368		CULG	02 22	0305	S12 W27	02 20.1		BG	EAI	400	40	11	2
5368		LEAR	02 22	0745	S12 W30	02 20.1		BGD	EKI	730	35	11	2

S U N S P O T G R O U P S
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NOAA/ USAF Group	Mt Wilson Group	Observation Time (UT)	Mo	Day	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5368		SVTO	02	22	0833	S11 W31	02	20.0		BG	EKI	540	30	12	1
5368		BOUL	02	22	1547	S11 W34	02	20.1		B	EKI	550	31	14	2
5368		RAMY	02	22	1548	S12 W34	02	20.1		B	FKI	660	30	13	3
5368		HOLL	02	22	1625	S12 W35	02	20.0		BG	EKI	620	32	14	3
5368	25047	MWIL	02	22	1700	S12 W34	02	20.1	5	(BG)					
5368		CULG	02	23	0350	S12 W42	02	20.0		BG	EAI	320	22	14	2
5368		LEAR	02	23	0515	S12 W41	02	20.1		BG	EKI	480	39	13	2
5368		SVTO	02	23	1012	S12 W44	02	20.1		B	EKO	510	28	13	1
5368		RAMY	02	23	1330	S11 W47	02	20.0		B	EKI	620	36	13	3
5368		HOLL	02	23	1518	S10 W47	02	20.1		B	EKI	850	30	15	3
5368	25047	MWIL	02	23	1540	S12 W48	02	20.0	5	(B)					
5368		BOUL	02	23	1625	S13 W48	02	20.1		B	EKI	440	11	13	1
5368		PALE	02	23	2010	S12 W50	02	20.1		B	EKI	870	30	15	3
5368		LEAR	02	24	0111	S13 W52	02	20.1		B	FKC	840	39	17	2
5368		CULG	02	24	0500	S11 W54	02	20.1		B	EKI	700	20	12	2
5368		SVTO	02	24	0854	S11 W58	02	20.0		B	EKI	810	33	14	1
5368		RAMY	02	24	1415	S12 W59	02	20.1		BG	EKI	910	44	13	4
5368		HOLL	02	24	1549	S11 W59	02	20.2		BG	EKI	860	29	14	4
5368		BOUL	02	24	1647	S13 W62	02	20.0		B	EKI	1080	24	14	1
5368	25047	MWIL	02	24	1800	S12 W61	02	20.1	5	B					
5368		PALE	02	24	2025	S12 W64	02	20.0		B	EKI	820	28	14	3
5368		LEAR	02	25	0049	S13 W66	02	20.0		B	FKI	920	34	16	4
5368		CULG	02	25	0320	S13 W66	02	20.1		B	EKI	480	15	11	3
5368		SVTO	02	25	1220	S11 W73	02	20.0		B	EKI	750	9	14	2
5368		RAMY	02	25	1345	S10 W73	02	20.1		B	EKI	680	31	13	3
5368		BOUL	02	25	1600	S11 W75	02	20.0		B	FAO	300	7	16	2
5368		HOLL	02	25	1640	S14 W74	02	20.1		BG	FKI	830	20	18	3
5368		PALE	02	25	1945	S10 W75	02	20.2		B	EKI	370	10	11	3
5368		LEAR	02	26	0015	S13 W78	02	20.1		B	FKI	450	12	16	4
5368		CULG	02	26	0315	S14 W76	02	20.4		B	DAO	280	7	9	2
5368		SVTO	02	26	0731	S10 W78	02	20.4		B	DAO	70	2	3	2
5368		RAMY	02	26	1315	S11 W80	02	20.5		B	EKO	200	2	13	1
5368	25047	MWIL	02	26	1550	S11 W80	02	20.6	4	AF					
5368		PALE	02	26	1834	S10 W87	02	20.2		A	HK	180	1	5	3
5368		HOLL	02	26	1855	S15 W80	02	20.7		B	BXO	260	3	21	3
5368		LEAR	02	27	0045	S11 W90	02	20.3		A	HA	60	1	1	3
5368A		LEAR	02	19	0218	N19 E18	02	20.5		A	AX	10	2	2	3
5368B		SVTO	02	21	0925	S20 W10	02	20.6		A	AX		1		3
5368C	25062	MWIL	02	24	1800	N25 W39	02	21.7	3	X					
5369		SVTO	02	15	0847	S19 E79	02	21.4		A	HR	80	1	2	2
5369		RAMY	02	15	1526	S22 E77	02	21.6		A	HS	90	1	2	2
5369	25048	MWIL	02	15	1615	S22 E78	02	21.7	4	BP					
5369		HOLL	02	15	1704	S21 E79	02	21.8		A	HS	60	11	2	1
5369		PALE	02	15	1800	S23 E72	02	21.3		A	HS	120	2	2	4
5369		LEAR	02	16	0025	S20 E71	02	21.4		B	CAO	140	6	8	3
5369		CULG	02	16	0439	S21 E67	02	21.3		A	HS	40	4	3	2
5369		SVTO	02	16	1140	S20 E66	02	21.5		B	CSO	70	6	7	1
5369		RAMY	02	16	1446	S23 E66	02	21.7		B	CAO	100	5	7	2
5369		BOUL	02	16	1640	S22 E65	02	21.7		B	DSO	30	4	6	2
5369	25048	MWIL	02	16	1715	S22 E65	02	21.7	5	BP					
5369		PALE	02	16	1815	S23 E63	02	21.6		B	CSO	60	7	8	3
5369		LEAR	02	17	0048	S20 E60	02	21.6		B	CSO	70	11	8	3
5369		CULG	02	17	0440	S18 E57	02	21.5		A	HS	20	2	3	3
5369		SVTO	02	17	0800	S21 E57	02	21.7		B	CSO	80	9	7	1
5369	25048	MWIL	02	17	1600	S22 E52	02	21.7	5	(B)					
5369		RAMY	02	17	1730	S21 E51	02	21.6		B	CSO	100	5	8	2
5369		PALE	02	17	1945	S22 E53	02	21.9		B	CSO	70	13	11	4
5369		HOLL	02	17	2155	S21 E50	02	21.7		B	CSO	80	12	13	3
5369		LEAR	02	18	0321	S22 E47	02	21.7		B	DAO	110	10	9	2
5369		CULG	02	18	0415	S19 E47	02	21.8		B	CAO	30	3	9	2
5369		SVTO	02	18	0830	S21 E44	02	21.7		B	CSO	50	10	9	4
5369		RAMY	02	18	1425	S22 E40	02	21.7		B	CAI	90	9	9	3
5369	25048	MWIL	02	18	1745	S21 E39	02	21.7	5	(B)					
5369		BOUL	02	18	1850	S21 E36	02	21.5		B	CAO	40	3	8	1
5369		PALE	02	18	1910	S22 E40	02	21.9		B	CSO	50	8	10	4

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5369		HOLL	02 18 2148	S22 E36	02 21.7		B	CSO	50	7	9	3
5369		LEAR	02 19 0218	S21 E36	02 21.8		B	CSO	60	6	8	3
5369		CULG	02 19 0325	S19 E33	02 21.7		B	HSO	40	2	7	3
5369		SVTO	02 19 0826	S21 E32	02 21.8		B	CSO	60	10	11	4
5369		RAMY	02 19 1340	S21 E30	02 21.9		B	CSO	70	9	11	3
5369	25048	MWIL	02 19 1600	S21 E26	02 21.7	5	(B)					
5369		BOUL	02 19 1630	S21 E25	02 21.6		B	CSO	30	6	12	2
5369		HOLL	02 19 2005	S21 E25	02 21.7		B	CSO	70	11	11	2
5369		PALE	02 19 2215	S22 E26	02 21.9		B	DSO	50	12	13	3
5369		LEAR	02 20 0227	S21 E23	02 21.9		B	ESO	60	11	11	2
5369		CULG	02 20 0345	S20 E21	02 21.8		BG	CSO	50	5	10	2
5369		SVTO	02 20 0850	S20 E20	02 21.9		B	DSO	70	13	10	3
5369		RAMY	02 20 1252	S21 E15	02 21.7		B	CSI	60	10	8	3
5369	25048	MWIL	02 20 1600	S21 E12	02 21.6	5	(B)					
5369		HOLL	02 20 1838	S21 E15	02 21.9		B	CSO	70	15	12	3
5369		PALE	02 20 1940	S20 E14	02 21.9		B	CAI	60	15	12	3
5369		LEAR	02 21 0244	S22 E10	02 21.9		B	CSO	40	11	11	2
5369		CULG	02 21 0312	S20 E09	02 21.8		B	CSO	20	7	11	3
5369		SVTO	02 21 0925	S22 E10	02 22.2		B	EKI	60	29	15	3
5369		RAMY	02 21 1430	S21 E03	02 21.8		B	CAI	90	17	12	3
5369		BOUL	02 21 1502	S19 E02	02 21.8		B	CSO	30	4	7	1
5369		HOLL	02 21 1530	S22 E04	02 21.9		B	CSI	180	16	15	3
5369	25048	MWIL	02 21 1615	S21 E02	02 21.8	5	(B)					
5369		PALE	02 21 1905	S21 E02	02 21.9		B	CAO	60	10	13	3
5369		CULG	02 22 0305	S20 W03	02 21.9		B	CSO	10	12	10	2
5369		LEAR	02 22 0745	S20 W08	02 21.7		B	CAO	70	18	9	2
5369		SVTO	02 22 0833	S21 W09	02 21.7		B	CAO	40	6	5	1
5369		BOUL	02 22 1547	S19 W13	02 21.7		B	CAO	70	7	5	2
5369		RAMY	02 22 1548	S18 W12	02 21.7		B	CAO	70	10	9	3
5369		HOLL	02 22 1625	S24 W11	02 21.8		B	BXO	60	18	15	3
5369	25048	MWIL	02 22 1700	S21 W13	02 21.7	5	(BP)					
5369		CULG	02 23 0350	S20 W20	02 21.6		B	CR	10	3	4	2
5369		LEAR	02 23 0515	S22 W18	02 21.8		B	CRO	10	8	10	2
5369		SVTO	02 23 1012	S21 W26	02 21.4		A	HR	10	1	1	1
5369		RAMY	02 23 1330	S20 W26	02 21.6		B	BXO	50	5	4	3
5369		HOLL	02 23 1518	S20 W27	02 21.6		B	BXO	10	3	4	3
5369	25048	MWIL	02 23 1540	S21 W27	02 21.6	4	(AP)					
5369		BOUL	02 23 1625	S20 W28	02 21.5		A	AX		1		1
5369		PALE	02 23 2010	S21 W30	02 21.5		B	BXO	10	5	4	3
5369		LEAR	02 24 0111	S21 W28	02 21.9		B	CAO	20	7	9	2
5369		CULG	02 24 0500	S20 W36	02 21.4		A	AX	10	1	1	2
5369		SVTO	02 24 0854	S20 W38	02 21.5		A	AX		1		1
5369		HOLL	02 24 1549	S21 W42	02 21.4		B	BXO		2	3	4
5369	25048	MWIL	02 24 1800	S22 W43	02 21.4	4	AP					
5369		LEAR	02 25 0049	S19 W54	02 20.9		B	BXO	10	3	3	4
5369A		RAMY	02 26 1315	S11 W59	02 22.1		A	AX		1	1	1
5369A	25070	MWIL	02 26 1550	S12 W59	02 22.2	3	(B)					
5369A		PALE	02 26 1834	S12 W60	02 22.2		B	BXO	10	2	3	3
5369B		RAMY	02 21 1430	S29 E11	02 22.5		A	AX		1		3
5369B		BOUL	02 22 1547	S24 W05	02 22.3		B	BXO	10	2	1	2
5369B		HOLL	02 24 1549	S27 W30	02 22.3		A	AX		3	2	4
5369B	25064	MWIL	02 24 1800	S27 W31	02 22.3	3	X					
5373	25050	MWIL	02 16 1715	N15 E76	02 22.5	3	AP					
5373		PALE	02 16 1815	N15 E78	02 22.7		A	AX	10	1	1	3
5373		LEAR	02 17 0048	N18 E75	02 22.7		B	CSO	20	3	8	3
5373		SVTO	02 17 0800	N17 E67	02 22.4		A	AX	10	1		1
5373	25050	MWIL	02 17 1600	N17 E68	02 22.8	4	(B)					
5373		RAMY	02 17 1730	N16 E63	02 22.5		B	CSO	140	4	8	2
5373		PALE	02 17 1945	N16 E64	02 22.7		B	BXO	30	6	9	4
5373		HOLL	02 17 2155	N17 E63	02 22.7		B	CSO	50	7	10	3
5373		LEAR	02 18 0321	N16 E58	02 22.5		B	CSO	60	6	8	2
5373		CULG	02 18 0415	N17 E53	02 22.2		A	AX	10	1	1	2
5373		SVTO	02 18 0830	N17 E58	02 22.8		B	DRO	50	7	9	4
5373		RAMY	02 18 1425	N17 E53	02 22.6		B	CRO	50	10	10	3
5373	25050	MWIL	02 18 1745	N17 E50	02 22.5	5	(B)					
5373		BOUL	02 18 1850	N15 E46	02 22.3		A	AX		2	2	1

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5373		PALE	02 18 1910	N16 E50	02 22.6		B	CRO	20	7	9	4
5373		HOLL	02 18 2148	N15 E49	02 22.6		B	CRO	30	10	10	3
5373		LEAR	02 19 0218	N17 E45	02 22.5		B	CRO	50	13	12	3
5373		CULG	02 19 0325	N19 E39	02 22.1		A	HR	20	2	2	3
5373		SVTO	02 19 0826	N18 E42	02 22.5		B	EAI	90	21	12	4
5373		RAMY	02 19 1340	N17 E40	02 22.6		B	EAI	160	20	11	3
5373	25050	MWIL	02 19 1600	N16 E37	02 22.5	5	(B)					
5373		BOUL	02 19 1630	N16 E34	02 22.3		B	CAO	70	15	12	2
5373		HOLL	02 19 2005	N15 E37	02 22.6		B	FAI	180	25	16	2
5373		PALE	02 19 2215	N16 E30	02 22.2		B	EKI	300	12	13	3
5373		LEAR	02 20 0227	N17 E32	02 22.5		B	EAI	240	22	13	2
5373		CULG	02 20 0345	N19 E32	02 22.6		BG	EAI	200	11	13	2
5373		SVTO	02 20 0850	N16 E28	02 22.5		B	EAI	350	33	13	3
5373		RAMY	02 20 1252	N16 E26	02 22.5		B	EKI	500	30	14	3
5373	25050	MWIL	02 20 1600	N16 E23	02 22.4	5	(B)					
5373		HOLL	02 20 1838	N17 E23	02 22.5		B	EKI	600	29	13	3
5373		PALE	02 20 1940	N17 E22	02 22.5		B	EKI	510	31	15	3
5373		LEAR	02 21 0244	N17 E17	02 22.4		B	EKI	540	26	14	2
5373		CULG	02 21 0312	N17 E16	02 22.3		B	EKI	560	19	14	3
5373		SVTO	02 21 0925	N17 E13	02 22.4		B	EKI	670	45	14	3
5373		RAMY	02 21 1430	N19 E10	02 22.4		B	EKI	660	42	14	3
5373		BOUL	02 21 1502	N17 E11	02 22.5		B	EAI	370	20	12	1
5373		HOLL	02 21 1530	N17 E09	02 22.3		B	FKI	850	31	16	3
5373	25050	MWIL	02 21 1615	N16 E07	02 22.2	5	(BG)					
5373		PALE	02 21 1905	N18 E07	02 22.3		B	FKI	830	38	16	3
5373		CULG	02 22 0305	N17 E02	02 22.3		B	FKI	600	39	16	2
5373		LEAR	02 22 0745	N17 E00	02 22.3		B	FKI	730	36	15	2
5373		SVTO	02 22 0833	N18 W01	02 22.3		B	EKO	660	23	15	1
5373		BOUL	02 22 1547	N17 W02	02 22.5		B	FKI	810	29	18	2
5373		RAMY	02 22 1548	N19 W04	02 22.3		B	FKI	780	33	19	3
5373		HOLL	02 22 1625	N17 W05	02 22.3		BG	FKI	990	34	18	3
5373	25050	MWIL	02 22 1700	N16 W04	02 22.4	5	(BG)					
5373		CULG	02 23 0350	N16 W12	02 22.2		B	EKI	300	23	14	2
5373		LEAR	02 23 0515	N17 W12	02 22.3		B	EKI	730	33	14	2
5373		SVTO	02 23 1012	N17 W13	02 22.4		B	EKO	1100	23	13	1
5373		RAMY	02 23 1330	N17 W17	02 22.3		B	EKI	1030	32	14	3
5373		HOLL	02 23 1518	N16 W16	02 22.4		B	FKI	1240	32	17	3
5373	25050	MWIL	02 23 1540	N17 W18	02 22.3	5	(B)					
5373		BOUL	02 23 1625	N17 W17	02 22.4		B	EKI	680	12	13	1
5373		PALE	02 23 2010	N17 W19	02 22.4		B	EKI	820	23	14	3
5373		LEAR	02 24 0111	N17 W23	02 22.3		B	EKI	1000	37	14	2
5373		CULG	02 24 0500	N17 W25	02 22.3		B	EKI	940	22	14	2
5373		SVTO	02 24 0854	N18 W36	02 21.6		B	EKO	1320	23	14	1
5373		RAMY	02 24 1415	N17 W31	02 22.2		B	FKI	1050	36	16	4
5373		HOLL	02 24 1549	N16 W30	02 22.4		B	EKO	1020	33	15	4
5373		BOUL	02 24 1647	N17 W31	02 22.3		B	EKI	990	19	14	1
5373	25050	MWIL	02 24 1800	N17 W32	02 22.3	5	B					
5373		PALE	02 24 2025	N17 W34	02 22.3		B	EKI	910	23	14	3
5373		LEAR	02 25 0049	N17 W37	02 22.2		B	EKI	960	45	13	4
5373		CULG	02 25 0320	N16 W38	02 22.2		B	EKI	730	16	13	3
5373		SVTO	02 25 1220	N17 W41	02 22.4		B	EKI	770	14	14	2
5373		RAMY	02 25 1345	N18 W42	02 22.4		B	EKI	990	49	13	3
5373		BOUL	02 25 1600	N17 W44	02 22.3		B	EKI	600	9	14	2
5373		HOLL	02 25 1640	N16 W45	02 22.3		B	FKI	920	35	16	3
5373		PALE	02 25 1945	N17 W46	02 22.3		B	EKI	600	27	13	3
5373		LEAR	02 26 0015	N17 W48	02 22.4		B	EKI	680	27	12	4
5373		CULG	02 26 0315	N15 W51	02 22.3		B	EKI	600	13	12	2
5373		SVTO	02 26 0731	N18 W51	02 22.4		B	EAO	500	9	13	2
5373		RAMY	02 26 1315	N18 W55	02 22.4		B	EKI	740	14	11	1
5373	25050	MWIL	02 26 1550	N17 W56	02 22.4	5	(B)					
5373		PALE	02 26 1834	N17 W57	02 22.4		B	EKI	810	14	12	3
5373		HOLL	02 26 1855	N16 W58	02 22.4		B	FKI	910	19	19	3
5373		LEAR	02 27 0045	N17 W61	02 22.4		B	EKI	460	16	12	3
5373		CULG	02 27 0306	N17 W62	02 22.4		B	EKI	350	9	10	2
5373		SVTO	02 27 0743	N17 W65	02 22.4		B	EAO	440	12	12	2
5373		RAMY	02 27 1448	N17 W69	02 22.4		B	DHI	810	9	10	2
5373	25050	MWIL	02 27 1530	N16 W69	02 22.4	4	(B)					
5373		HOLL	02 27 1632	N16 W70	02 22.4		B	EKO	870	10	13	3
5373		BOUL	02 27 1727	N17 W72	02 22.2		B	EHO	420	2	11	1

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5373		LEAR	02 28 0145	N14	W76	02 22.3		B	EKI	390	4	11	3
5373		CULG	02 28 0322	N16	W74	02 22.5		B	DKO	140	3	10	2
5373		SVTO	02 28 1038	N16	W78	02 22.5		A	HA	230	1	4	2
5373		RAMY	02 28 1510	N17	W79	02 22.6		A	HA	120	1	2	3
5373	25050	MWIL	02 28 1600	N14	W80	02 22.6	5	(AF)					
5373		PALE	02 28 2233	N16	W88	02 22.3		A	HA	60	1	3	3
5373A	25063	MWIL	02 24 1800	S21	W31	02 22.4	2	X					
5373B	25054	MWIL	02 21 1615	S27	E11	02 22.5	4	(AF)					
5373D		HOLL	02 24 1549	N17	W18	02 23.3		A	AX		2	1	4
5373C	25055	MWIL	02 22 1700	N27	E10	02 23.5	4	(B)					
5373C	25055	MWIL	02 24 1800	N26	W18	02 23.3	3	X					
5373E	25065	MWIL	03 01 1615	N14	W77	02 23.9	5	AF)					
5376		LEAR	02 22 0745	N28	E18	02 23.7		A	AX	10	2	1	2
5376		SVTO	02 22 0833	N28	E18	02 23.8		A	HR	20	1	1	1
5376		RAMY	02 22 1548	N28	E12	02 23.6		B	BXO	10	2	5	3
5376		LEAR	02 23 0515	N28	E02	02 23.4		B	BXO	10	6	6	2
5376		RAMY	02 23 1330	N30	E05	02 23.9		B	BXO	40	3	2	3
5376		HOLL	02 23 1518	N29	E03	02 23.9		B	BXO	10	3	3	3
5376	25057	MWIL	02 23 1540	N29	E03	02 23.9	4	(B)					
5376		PALE	02 23 2010	N28	E01	02 23.9		B	BXO	10	4	3	3
5376		LEAR	02 24 0111	N28	W02	02 23.9		B	CRO	20	4	10	2
5376		CULG	02 24 0500	N29	W06	02 23.7		A	AX	10	2	1	2
5376		SVTO	02 24 0854	N30	W07	02 23.8		B	BXO	10	5	4	1
5376		RAMY	02 24 1415	N30	W09	02 23.9		B	BXO	20	9	4	4
5376		HOLL	02 24 1549	N29	W09	02 23.9		B	BXO	10	7	4	4
5376	25057	BOUL	02 24 1647	N30	W08	02 24.1		B	BXO	20	4	4	1
5376		MWIL	02 24 1800	N29	W10	02 24.0	4	(B)					
5376		PALE	02 24 2025	N29	W10	02 24.1		B	CRO	20	5	4	3
5376		CULG	02 25 0320	N29	W17	02 23.8		B	CRO	10	2	3	3
5376		SVTO	02 25 1220	N27	W20	02 23.9		A	AX	10	3	1	2
5376		BOUL	02 25 1600	N28	W22	02 23.9		A	AX		1		2
5376		HOLL	02 25 1640	N29	W24	02 23.8		A	AX	30	4	2	3
5376		PALE	02 25 1945	N29	W23	02 24.0		B	BXO	20	4	5	3
5376		LEAR	02 26 0015	N28	W27	02 23.9		B	BXO	10	4	4	4
5376		CULG	02 26 0315	N28	W31	02 23.7		A	HA	10	2	1	2
5376		RAMY	02 26 1315	N30	W35	02 23.8		A	AX	20	4	3	1
5376	25057	MWIL	02 26 1550	N29	W34	02 24.0	3	(BP)					
5376		HOLL	02 26 1855	N29	W37	02 23.9		B	BXO	50	5	6	3
5376		LEAR	02 27 0045	N29	W40	02 23.9		B	BXO	20	3	3	3
5376		RAMY	02 27 1448	N29	W47	02 23.9		A	AX	20	2	2	2
5376	25057	MWIL	02 27 1530	N29	W47	02 24.0	4	(B)					
5376		HOLL	02 27 1632	N28	W49	02 23.8		B	BXO	20	3	3	3
5376		LEAR	02 28 0145	N28	W53	02 23.9		B	BXO	30	3	4	3
5376A		PALE	02 25 1945	S11	W23	02 24.1		A	AX		2	2	3
5378		RAMY	02 23 1330	N18	E09	02 24.2		A	AX	10	1	1	3
5378		HOLL	02 23 1518	N16	E08	02 24.2		B	BXO	20	3	4	3
5378	25058	MWIL	02 23 1540	N19	E08	02 24.3	3	(AP)					
5378		PALE	02 23 2010	N14	E05	02 24.2		B	BXO		2	1	3
5378		LEAR	02 24 0111	N16	E02	02 24.2		B	BXO	10	6	3	2
5378		CULG	02 24 0500	N16	W02	02 24.0		A	AX	10	5	3	2
5378		SVTO	02 24 0854	N15	W04	02 24.1		B	BXO	10	6	4	1
5378		RAMY	02 24 1415	N16	W07	02 24.1		B	CRO	40	11	4	4
5378		HOLL	02 24 1549	N15	W07	02 24.1		B	BXO	20	11	4	4
5378		BOUL	02 24 1647	N15	W07	02 24.2		B	CSO	70	13	4	1
5378	25065	MWIL	02 24 1800	N15	W08	02 24.1	5	B					
5378		PALE	02 24 2025	N15	W09	02 24.2		B	DAO	40	9	6	3
5378		LEAR	02 25 0049	N14	W12	02 24.1		B	DAO	60	19	6	4
5378		CULG	02 25 0320	N16	W13	02 24.1		B	DAI	30	10	6	3
5378		SVTO	02 25 1220	N15	W17	02 24.2		B	DSO	80	10	6	2
5378		RAMY	02 25 1345	N17	W18	02 24.2		B	DAI	130	26	8	3
5378		BOUL	02 25 1600	N16	W20	02 24.1		B	CSO	10	9	7	2

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5378		HOLL	02 25 1640	N16 W21	02 24.1		B	CAI	110	24	7	3
5378		PALE	02 25 1945	N16 W24	02 24.0		B	CAI	60	14	8	3
5378		LEAR	02 26 0015	N15 W25	02 24.1		B	DAI	120	18	6	4
5378		CULG	02 26 0315	N15 W28	02 24.0		B	DAI	50	9	7	2
5378		SVTO	02 26 0731	N17 W29	02 24.1		B	DAO	70	4	8	2
5378		RAMY	02 26 1315	N16 W33	02 24.0		B	DAI	120	9	8	1
5378	25065	MWIL	02 26 1550	N15 W33	02 24.2	5	(B)					
5378		PALE	02 26 1834	N15 W34	02 24.2		B	DSO	120	7	9	3
5378		HOLL	02 26 1855	N16 W36	02 24.0		B	CSO	120	9	16	3
5378		LEAR	02 27 0045	N15 W38	02 24.1		B	DAO	140	9	9	3
5378		CULG	02 27 0306	N14 W39	02 24.2		B	DAO	30	6	8	2
5378		SVTO	02 27 0743	N17 W44	02 24.0		B	DRO	9070	3		2
5378		RAMY	02 27 1448	N15 W45	02 24.2		B	DRO	60	6	8	2
5378	25065	MWIL	02 27 1530	N15 W46	02 24.2	4	(B)					
5378		HOLL	02 27 1632	N15 W46	02 24.2		B	CSO	50	8	10	3
5378		BOUL	02 27 1727	N16 W46	02 24.2		B	BXO	30	2	8	1
5378		LEAR	02 28 0145	N15 W52	02 24.1		B	CRO	80	13	10	3
5378		CULG	02 28 0322	N15 W52	02 24.2		B	DSO	20	10	9	2
5378		SVTO	02 28 1038	N15 W61	02 23.8		B	DAO	200	10	6	2
5378		RAMY	02 28 1510	N15 W59	02 24.2		B	DAO	260	13	10	3
5378	25065	MWIL	02 28 1600	N15 W63	02 23.9	5	(D)					
5378		PALE	02 28 2233	N15 W68	02 23.8		B	DKO	390	7	7	3
5378		LEAR	03 01 0050	N13 W67	02 24.1		B	EKI	360	10	12	3
5378		CULG	03 01 0318	N16 W65	02 24.3		B	CAO	220	7	11	2
5378		SVTO	03 01 0727	N13 W69	02 24.2		B	DKO	450	9	8	2
5378		RAMY	03 01 1415	N17 W72	02 24.2		B	EAO	240	6	11	4
5378		HOLL	03 01 1805	N15 W75	02 24.2		B	EKI	290	6	14	3
5378		LEAR	03 02 0122	N17 W81	02 24.0		B	EKI	180	3	11	3
5378		CULG	03 02 0310	N12 W78	02 24.3		A	HS	60	2	3	2
5282		PALE	02 28 2233	S26 W57	02 24.5		B	BXO	10	3	3	3
5282A		RAMY	02 25 1345	S16 W10	02 24.8		B	BXO	10	5	5	3
5282A		PALE	02 25 1945	S15 W12	02 24.9		B	BXO	10	2	4	3
5382		HOLL	02 25 1640	S17 W12	02 24.8		B	BXO	20	5	5	3
5382		LEAR	02 26 0015	S17 W18	02 24.6		B	BXO	10	3	4	4
5382	25071	MWIL	02 26 1550	S17 W25	02 24.7	3	(AP)					
5382		PALE	02 26 1834	S18 W27	02 24.7		B	BXO	10	2	3	3
5382		HOLL	02 26 1855	S17 W28	02 24.7		B	BXO	30	6	5	3
5382		LEAR	02 27 0045	S17 W30	02 24.7		B	BXO	10	5	3	3
5382		CULG	02 27 0306	S17 W31	02 24.8		B	CAO	10	4	6	2
5382		SVTO	02 27 0743	S15 W33	02 24.8		B	CRO	20	3	2	2
5382		RAMY	02 27 1448	S15 W39	02 24.7		A	AX	10	2	2	2
5382	25071	MWIL	02 27 1530	S16 W38	02 24.8	4	(AP)					
5382		HOLL	02 27 1632	S16 W38	02 24.8		A	AX	10	3	2	3
5382		BOUL	02 27 1727	S15 W39	02 24.8		A	AX	10	1	1	1
5382		LEAR	02 28 0145	S16 W44	02 24.7		A	AX	10	2	2	3
5382		CULG	02 28 0322	S15 W45	02 24.7		A	AX	10	1		2
5382		SVTO	02 28 1038	S17 W49	02 24.7		B	BXO	10	2	3	2
5382		RAMY	02 28 1510	S16 W51	02 24.8		B	BXO	20	2	2	3
5382	25071	MWIL	02 28 1600	S16 W51	02 24.8	4	(B)					
5374		SVTO	02 19 0826	S09 E80	02 25.3		B	CRO	50	3	6	4
5374		RAMY	02 19 1340	S10 E76	02 25.3		B	DRO	60	2	5	3
5374	25053	MWIL	02 19 1600	S09 E74	02 25.2	4	(B)					
5374		BOUL	02 19 1630	S10 E77	02 25.5		A	HS	30	1	1	2
5374		HOLL	02 19 2005	S10 E73	02 25.3		B	CSO	40	3	3	2
5374		PALE	02 19 2215	S10 E72	02 25.3		B	BXO	40	5	4	3
5374		LEAR	02 20 0227	S08 E69	02 25.3		B	CSO	60	6	5	2
5374		CULG	02 20 0345	S07 E69	02 25.3		A	AX	10	1	1	2
5374		SVTO	02 20 0850	S10 E66	02 25.3		B	DSO	60	9	6	3
5374		RAMY	02 20 1252	S10 E63	02 25.3		B	DRI	70	9	6	3
5374	25053	MWIL	02 20 1600	S09 E61	02 25.2	5	(B)					
5374		HOLL	02 20 1838	S08 E60	02 25.3		B	DSO	80	9	7	3
5374		PALE	02 20 1940	S09 E60	02 25.3		B	CAI	80	13	8	3
5374		LEAR	02 21 0244	S08 E54	02 25.2		B	DSO	60	7	7	2
5374		CULG	02 21 0312	S08 E55	02 25.2		B	DSO	50	5	7	3
5374		SVTO	02 21 0925	S09 E52	02 25.3		B	DAO	160	13	7	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)		Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5374		RAMY	02 21	1430	S09 E49	02 25.3		B	DAI	120	13	7	3
5374		BOUL	02 21	1502	S09 E48	02 25.2		B	DSO	70	4	6	1
5374		HOLL	02 21	1530	S08 E46	02 25.1		B	DAO	290	6	9	3
5374	25053	MWIL	02 21	1615	S09 E47	02 25.2	4	(B)					
5374		PALE	02 21	1905	S10 E45	02 25.2		B	DAO	170	13	8	3
5374		CULG	02 22	0305	S07 E41	02 25.2		B	DAO	90	10	7	2
5374		LEAR	02 22	0745	S08 E39	02 25.2		B	DAI	100	19	8	2
5374		SVTO	02 22	0833	S09 E38	02 25.2		B	DAO	110	12	7	1
5374		BOUL	02 22	1547	S08 E33	02 25.1		B	DAO	120	9	7	2
5374		RAMY	02 22	1548	S09 E34	02 25.2		B	DAO	130	16	8	3
5374		HOLL	02 22	1625	S09 E34	02 25.2		B	DAO	160	13	8	3
5374	25053	MWIL	02 22	1700	S09 E33	02 25.2	5	(B)					
5374		CULG	02 23	0350	S08 E26	02 25.1		B	DAO	60	6	7	2
5374		LEAR	02 23	0515	S09 E26	02 25.2		B	DSO	90	7	7	2
5374		SVTO	02 23	1012	S09 E24	02 25.2		B	DAO	160	9	8	1
5374		RAMY	02 23	1330	S09 E22	02 25.2		B	DAO	100	7	9	3
5374		HOLL	02 23	1518	S09 E22	02 25.3		B	DAO	130	9	9	3
5374	25053	MWIL	02 23	1540	S09 E19	02 25.1	5	(B)					
5374		BOUL	02 23	1625	S08 E19	02 25.1		B	DAI	110	5	8	1
5374		PALE	02 23	2010	S11 E18	02 25.2		B	DAO	130	10	8	3
5374		LEAR	02 24	0111	S09 E15	02 25.2		B	DAO	170	17	8	2
5374		CULG	02 24	0500	S09 E12	02 25.1		B	DAO	80	6	9	2
5374		SVTO	02 24	0854	S08 E12	02 25.3		B	DAO	120	6	9	1
5374		RAMY	02 24	1415	S08 E08	02 25.2		B	DSO	110	18	9	4
5374		HOLL	02 24	1549	S09 E07	02 25.2		BG	DAO	90	15	9	4
5374		BOUL	02 24	1647	S08 E07	02 25.2		B	DAO	100	12	8	1
5374	25053	MWIL	02 24	1800	S09 E06	02 25.2	5	B					
5374		PALE	02 24	2025	S09 E05	02 25.2		B	DAO	100	14	9	3
5374		LEAR	02 25	0049	S09 E01	02 25.1		B	DAO	130	20	9	4
5374		CULG	02 25	0320	S08 E01	02 25.2		B	DSI	50	15	8	3
5374		SVTO	02 25	1220	S10 W03	02 25.3		B	DSO	60	9	9	2
5374		RAMY	02 25	1345	S07 W06	02 25.1		B	CSO	60	12	8	3
5374		BOUL	02 25	1600	S08 W07	02 25.1		B	CSO	20	4	8	2
5374		HOLL	02 25	1640	S08 W07	02 25.2		B	CSO	80	10	10	3
5374		PALE	02 25	1945	S09 W10	02 25.1		B	CAI	50	7	9	3
5374		LEAR	02 26	0015	S09 W11	02 25.2		B	CAO	50	9	9	4
5374		CULG	02 26	0315	S10 W13	02 25.1		B	CAO	20	5	9	2
5374		SVTO	02 26	0731	S09 W15	02 25.2		B	CAO	40	3	9	2
5374		RAMY	02 26	1315	S08 W19	02 25.1		B	CSO	40	4	7	1
5374	25053	MWIL	02 26	1550	S09 W20	02 25.1	5	(BP)					
5374		PALE	02 26	1834	S08 W22	02 25.1		B	CSO	50	6	10	3
5374		HOLL	02 26	1855	S09 W23	02 25.1		B	CSO	80	6	12	3
5374		LEAR	02 27	0045	S09 W25	02 25.1		B	CAO	30	8	10	3
5374		CULG	02 27	0306	S09 W26	02 25.2		B	CSO	20	3	9	2
5374		SVTO	02 27	0743	S09 W33	02 24.8		B	CRO	20	2	5	2
5374		RAMY	02 27	1448	S09 W34	02 25.1		B	BXO	20	5	10	2
5374	25053	MWIL	02 27	1530	S09 W34	02 25.1	5	(B)					
5374		HOLL	02 27	1632	S10 W33	02 25.2		B	BXO	20	3	11	3
5374		BOUL	02 27	1727	S09 W39	02 24.8		A	AX	10	1	1	1
5374		LEAR	02 28	0145	S10 W39	02 25.1		B	CRO	30	2	9	3
5374		CULG	02 28	0322	S09 W40	02 25.1		B	CSO	10	3	10	2
5374		SVTO	02 28	1038	S09 W51	02 24.6		A	HR	20	1	1	2
5374		RAMY	02 28	1510	S08 W48	02 25.0		B	BXO	20	2	6	3
5374	25053	MWIL	02 28	1600	S09 W53	02 24.7	4	(AP)					
5374		PALE	02 28	2233	S08 W58	02 24.6		A	AX	10	1	1	3
5374		LEAR	03 01	0050	S10 W58	02 24.8		A	HR	20	1	1	3
5374		CULG	03 01	0318	S09 W58	02 24.9		A	AX		1		2
5374		SVTO	03 01	0727	S09 W61	02 24.8		A	AX		1		2
5374		RAMY	03 01	1415	S08 W65	02 24.8		A	AX	10	1	1	4
5374	25053	MWIL	03 01	1615	S08 W68	02 24.7	4	(AP)					
5374		HOLL	03 01	1805	S09 W64	02 25.0		B	BXO	40	3	8	3
5374		HOLL	03 02	1550	S09 W74	02 25.2		A	AX		1		3
5384		LEAR	03 01	0050	S19 W42	02 25.9		A	AX	10	1	1	3
5384		HOLL	03 01	1805	S18 W55	02 25.7		B	BXO	20	3	4	3
5374A		SVTO	02 25	1220	S17 E09	02 26.2		B	BXO	10	4	4	2
5374A		PALE	02 25	1945	S21 E03	02 26.0		B	BXO		5	6	3
5374A		PALE	02 28	2233	S19 W42	02 25.7		A	AX		2	1	3

SUNSPOT GROUPS
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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long- Extent (Deg)	Qual
5374B		PALE	02 25 1945	N18 E13	02 26.8		A	AX	10	3	2	3
5375		SVTO	02 20 0850	S25 E80	02 26.6		A	AX	10	2	3	3
5375		HOLL	02 20 1838	S24 E75	02 26.6		A	AX		1		3
5375		PALE	02 20 1940	S27 E75	02 26.7		A	AX		1		3
5375		SVTO	02 21 0925	S25 E68	02 26.7		A	AX		1		3
5375		RAMY	02 21 1430	S24 E65	02 26.6		B	BXO	20	3	3	3
5375		HOLL	02 21 1530	S24 E66	02 26.7		B	BXO	30	3	13	3
5375		PALE	02 21 1905	S22 E65	02 26.8		B	BXO	20	2	3	3
5375		RAMY	02 22 1548	S25 E49	02 26.4		B	BXO	20	3	6	3
5375		HOLL	02 22 1625	S27 E52	02 26.7		B	BXO	20	3	17	3
5375	25056	MWIL	02 22 1700	S24 E47	02 26.3	3	(B)					
5375		RAMY	02 23 1330	S24 E34	02 26.2		A	AX	10	1	1	3
5375		HOLL	02 23 1518	S23 E37	02 26.5		B	BXO	10	3	5	3
5375		RAMY	02 24 1415	S25 E37	02 27.5		A	AX	10	2	2	4
5375		HOLL	02 24 1549	S27 E35	02 27.4		B	BXO	10	6	3	4
5375		BOUL	02 24 1647	S26 E35	02 27.4		B	BXO	10	3	2	1
5375	25066	MWIL	02 24 1800	S27 E34	02 27.4	4	AP					
5375		PALE	02 24 2025	S26 E39	02 27.9		B	BXO	10	6	11	3
5375		LEAR	02 25 0049	S24 E33	02 27.6		B	CAO	40	6	7	4
5375		CULG	02 25 0320	S22 E38	02 28.0		A	HR	10	2	3	3
5375		RAMY	02 25 1345	S24 E31	02 28.0		B	CRO	20	12	7	3
5375		BOUL	02 25 1600	S24 E30	02 28.0		B	BXO		5	5	2
5375		HOLL	02 25 1640	S25 E27	02 27.8		B	CRO	80	13	12	3
5375		PALE	02 25 1945	S25 E26	02 27.8		B	CAI	40	14	11	3
5375		LEAR	02 26 0015	S24 E23	02 27.8		B	CRO	40	16	10	4
5375		CULG	02 26 0315	S23 E24	02 28.0		B	CAO	20	7	4	2
5375		SVTO	02 26 0731	S24 E20	02 27.8		B	DAO	40	6	4	2
5375		RAMY	02 26 1315	S24 E17	02 27.9		B	DAO	50	7	6	1
5375	25066	MWIL	02 26 1550	S25 E16	02 27.9	5	(BG)					
5375		PALE	02 26 1834	S24 E16	02 28.0		B	CSO	40	10	8	3
5375		HOLL	02 26 1855	S25 E15	02 27.9		B	CRO	120	13	9	3
5375		LEAR	02 27 0045	S24 E13	02 28.0		BG	CRO	50	12	7	3
5375		CULG	02 27 0306	S24 E10	02 27.9		BG	CAO	20	10	7	2
5375		SVTO	02 27 0743	S24 E07	02 27.9		B	BXO	20	7	7	2
5375		RAMY	02 27 1448	S24 E05	02 28.0		B	BXO	10	11	11	2
5375	25066	MWIL	02 27 1530	S25 E04	02 27.9	4	(BG)					
5375		HOLL	02 27 1632	S25 E03	02 27.9		B	CRO	30	15	12	3
5375		BOUL	02 27 1727	S24 E02	02 27.9		B	BXO	20	4	7	1
5375		LEAR	02 28 0145	S24 W06	02 27.6		B	CRO	30	10	10	3
5375		CULG	02 28 0322	S23 W03	02 27.9		BG	CSO	10	3	6	2
5375		SVTO	02 28 1038	S24 W07	02 27.9		B	CRO	20	2	6	2
5375	25066	MWIL	02 28 1600	S24 W13	02 27.7	5	(BG)					
5375		PALE	02 28 2233	S23 W15	02 27.8		B	BXO	10	2	6	3
5375		LEAR	03 01 0050	S24 W16	02 27.9		B	CRO	20	6	6	3
5375		CULG	03 01 0318	S24 W17	02 27.9		B	BXO	10	2	5	2
5375		SVTO	03 01 0727	S24 W21	02 27.8		A	AX		1		2
5375		RAMY	03 01 1415	S24 W22	02 28.0		B	BXO	10	2	7	4
5375	25066	MWIL	03 01 1615	S24 W25	02 27.8	4	(BP)					
5375		HOLL	03 01 1805	S24 W24	02 28.0		B	BXO	20	4	8	3
5375B	25067	MWIL	02 24 1800	S25 E42	02 28.0	4	X					
5375A		RAMY	02 24 1415	S06 E52	02 28.5		B	BXO	10	3	2	4
5375A		HOLL	02 24 1549	S08 E54	02 28.7		B	BXO	10	3	5	4
5375A	25068	MWIL	02 24 1800	S09 E52	02 28.6	4	X					
5375A		SVTO	02 25 1220	S08 E41	02 28.6		A	AX	10	1		2
5375A		RAMY	02 25 1345	S07 E38	02 28.4		A	AX		2	2	3
5377		LEAR	02 23 0515	N12 E75	02 28.9		A	AX	20	1	1	2
5377		SVTO	02 23 1012	N12 E80	03 1.4		B	CRO	70	2	7	1
5377		RAMY	02 23 1330	N12 E74	03 1.1		B	BXO	120	4	5	3
5377		HOLL	02 23 1518	N12 E76	03 1.4		B	BXO	60	8	10	3
5377	25060	MWIL	02 23 1540	N12 E75	03 1.3	3	B					
5377		PALE	02 23 2010	N11 E70	03 1.1		B	CAO	60	9	12	3
5377		LEAR	02 24 0111	N13 E69	03 1.2		B	EAO	90	14	12	2
5377		CULG	02 24 0500	N12 E66	03 1.2		B	DRO	30	4	11	2
5377		SVTO	02 24 0854	N12 E68	03 1.5		B	ERO	80	16	12	1
5377		RAMY	02 24 1415	N13 E62	03 1.3		B	EAI	160	23	12	4

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5377		HOLL	02 24 1549	N12 E61	03 1.2		B	CRO	120	27	10	4
5377		BOUL	02 24 1647	N11 E59	03 1.1		B	EAI	230	19	13	1
5377	25060	MWIL	02 24 1800	N11 E59	03 1.2	5	B					
5377		PALE	02 24 2025	N11 E60	03 1.4		B	EAI	100	23	12	3
5377		LEAR	02 25 0049	N13 E55	03 1.2		B	EAO	170	26	11	4
5377		CULG	02 25 0320	N14 E52	03 1.1		B	EAI	90	14	12	3
5377		SVTO	02 25 1220	N14 E53	03 1.5		B	EAO	180	15	13	2
5377		RAMY	02 25 1345	N12 E48	03 1.2		B	EKI	290	24	12	3
5377		BOUL	02 25 1600	N13 E46	03 1.1		B	CSO	80	6	12	2
5377		HOLL	02 25 1640	N13 E46	03 1.2		B	CAI	320	26	15	3
5377		PALE	02 25 1945	N13 E46	03 1.3		B	CAI	120	12	12	3
5377		LEAR	02 26 0015	N13 E42	03 1.2		B	EAI	180	16	13	4
5377		CULG	02 26 0315	N15 E38	03 1.0		B	EAO	120	7	12	2
5377		SVTO	02 26 0731	N12 E37	03 1.1		B	EAO	170	6	12	2
5377		RAMY	02 26 1315	N12 E35	03 1.2		B	EAI	230	13	13	1
5377	25060	MWIL	02 26 1550	N10 E32	03 1.1	5	(B)					
5377		PALE	02 26 1834	N12 E32	03 1.2		B	EAI	230	24	13	3
5377		HOLL	02 26 1855	N13 E31	03 1.1		B	CSI	300	33	10	3
5377		LEAR	02 27 0045	N12 E28	03 1.1		B	EAO	180	20	13	3
5377		CULG	02 27 0306	N12 E26	03 1.1		B	EAI	100	13	13	2
5377		SVTO	02 27 0743	N12 E25	03 1.2		B	EAO	170	10	13	2
5377		RAMY	02 27 1448	N11 E20	03 1.1		B	CSI	130	18	12	2
5377	25060	MWIL	02 27 1530	N12 E18	03 1.0	5	(BP)					
5377		HOLL	02 27 1632	N13 E20	03 1.2		B	CSO	140	13	13	3
5377		BOUL	02 27 1727	N12 E18	03 1.1		B	CSO	90	6	13	1
5377		LEAR	02 28 0145	N11 E08	02 28.7		B	CKO	140	11	7	3
5377		CULG	02 28 0322	N12 E08	02 28.7		A	HA	120	4	4	2
5377		SVTO	02 28 1038	N12 E03	02 28.7		B	CAO	210	9	4	2
5377		RAMY	02 28 1510	N12 E03	02 28.8		A	HK	220	11	6	3
5377	25060	MWIL	02 28 1600	N12 E02	02 28.8	5	(BP)					
5377		PALE	02 28 2233	N12 W03	02 28.7		B	DSI	180	12	6	3
5377		LEAR	03 01 0050	N12 W05	02 28.6		B	DKO	180	7	6	3
5377		CULG	03 01 0318	N12 W05	02 28.8		B	DAO	130	6	4	2
5377		SVTO	03 01 0727	N12 W08	02 28.7		B	DHO	260	9	5	2
5377		RAMY	03 01 1415	N12 W12	02 28.7		B	DKO	230	6	6	4
5377	25060	MWIL	03 01 1615	N12 W13	02 28.7	5	(BG)					
5377		HOLL	03 01 1805	N12 W13	02 28.8		BG	CKI	300	14	6	3
5377		LEAR	03 02 0122	N12 W17	02 28.8		B	DHI	130	10	5	3
5377		CULG	03 02 0310	N11 W20	02 28.6		B	DAO	190	10	6	2
5377		SVTO	03 02 1325	N12 W26	02 28.6		B	CAO	160	5	5	2
5377		RAMY	03 02 1400	N13 W25	02 28.7		A	HH	260	10	5	4
5377		HOLL	03 02 1550	N12 W25	02 28.8		B	CSO	190	5	5	3
5377		LEAR	03 03 0024	N12 W31	02 28.7		B	CHO	200	9	6	3
5377		CULG	03 03 0330	N11 W34	02 28.6		A	HA	190	3	3	1
5377		SVTO	03 03 0847	N13 W36	02 28.6		A	HA	240	3	3	2
5377		RAMY	03 03 1330	N12 W38	02 28.7		A	HH	260	3	4	4
5377		HOLL	03 03 1658	N12 W40	02 28.7		B	CSO	260	2	3	2
5377	25060	MWIL	03 03 1715	N12 W42	02 28.5	5	(AP)					
5377		LEAR	03 04 0015	N12 W44	02 28.7		A	HS	120	3	2	3
5377		CULG	03 04 0455	N10 W47	02 28.7		A	HS	120	1	2	1
5377		SVTO	03 04 1147	N14 W52	02 28.6		A	HA	200	1	3	1
5377		RAMY	03 04 1239	N12 W52	02 28.6		A	HH	190	1	3	3
5377	25060	MWIL	03 04 1545	N12 W53	02 28.7	6	(AP)					
5377		BOUL	03 04 1635	N12 W58	02 28.3		A	HS	150	1	2	1
5377		HOLL	03 04 2231	N12 W57	02 28.6		A	HS	190	1	2	3
5377		LEAR	03 05 0109	N11 W58	02 28.7		A	HS	150	2	2	3
5377		CULG	03 05 0256	N12 W59	02 28.7		A	HS	170	1	2	2
5377		SVTO	03 05 0725	N14 W64	02 28.5		A	HS	180	1	3	3
5377		RAMY	03 05 1255	N12 W63	02 28.8		A	HH	240	1	3	3
5377	25060	MWIL	03 05 1530	N12 W66	02 28.7	5	(AP)					
5377		BOUL	03 05 1700	N12 W67	02 28.7		A	HS	100	1	2	2
5377		HOLL	03 05 1710	N12 W69	02 28.5		A	HS	100	1	2	2
5377		PALE	03 05 1815	N12 W68	02 28.6		A	HS	220	1	2	3
5377		LEAR	03 06 0025	N17 W71	02 28.6		A	HS	120	1	2	3
5377		CULG	03 06 0257	N13 W69	02 28.9		A	HS	120	1	1	2
5377		SVTO	03 06 0758	N14 W78	02 28.4		A	HS	160	1	3	3
5377		BOUL	03 06 1437	N12 W82	02 28.4		A	HS	80	1	3	1
5377	25060	MWIL	03 06 1600	N13 W80	02 28.6	5	(AP)					
5377		RAMY	03 06 1628	N12 W78	02 28.8		A	HS	120	1	2	3

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S U N S P O T G R O U P S
(Ordered by Central Meridian Passage Date)

FEBRUARY 1989

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5377		HOLL	03 06 2010	N11 W85	02 28.4		A	HH	180	1	4	3
5377		PALE	03 06 2340	N12 W86	02 28.5		A	HS	60	1	2	2
5377		LEAR	03 07 0025	N12 W90	02 28.2		A	HK	60	1	4	3

Stations reporting:

BOUL = Boulder
CULG = Culgoora

HOLL = Holloman
LEAR = Learmonth

MWIL = Mt. Wilson
PALE = Palehua

RAMY = Ramey
SVTO = San Vito

SUDDEN IONOSPHERIC DISTURBANCES

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Feb 89

FEBRUARY 1989

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF-SPA	SES			
01	0004	0011	0032	1-	1			1			No flare		
01	0101	0124	0149D	1-	3			1	1		0112	C3.5	
01	0149E	0210	0328	3-	5	1		1	1	1	0205	M1.4	5334
01	0327	0330	0343	1-	3			1	1		No flare		
01	0347	0353	0405D	1-	3			1	1		0343	C3.0	
01	0457	0515	0620	2-	3			1	1		0502	C5.3	5329
01	0651	0700	0716	1-	1			1			0626		5334
01	0737	0744	0807D	2-	5			1	1	1	0739	C6.4	5334
01	0807E	0816	0900	2	5			1	1	1	0803	C7.9	5329
01	0902	0935	1035	2	3		2				0925		5334
01	0943	1014	1027D	2+	5	1	2	1	1	3	1007	M3.9	5334
01	1027E	1038	1038D	2+	5	1		1		1	1007	M3.9	5334
01	1318	1325	1435	2+	3					3	No flare		
01	1405	1413	1505D	2	3		1			2	No flare		
01	1613	1618	1645	2-	3					6	1609	C5.2	5329
01	1703	1706	1714	1-	1					1	No flare		
01	1740	1743	1801	1	3					5	1737	C4.9	
01	1900	1902	1907	1-	3					2	1858	C2.9	
01	2119	2123	2132	1-	1			1			2116		5334
02	0207	0217	0241	1-	1			1			No flare		
02	0446	0450	0457	1-	1					1	No flare		
02	0545	0550	0611	1-	1			1			No flare		
02	0822	0825	0857	1-	5			1		2	0821	C3.2	5334
02	1002	1004	1019	1-	3			1		1	0953	C3.0	5334
02	1122	1127	1151	1-	5	1	2	1	1	3	1124	C7.5	5334
02	1725	1730	1830	2+	3					8	1726	M1.0	5334
02	2030	2032	2041	1-	1					1	2028	C2.4	
03	0003	0009	0051D	1-	1			1			No flare		
03	0051E	0105	0206	1-	1			1			0049	C4.1	
03	0258	0317	0432	2+	5	1		1	1	1	No flare		
03	0447	0500	0544	1-	5			1	1	1	No flare		
03	0800	0817	0922	1-	1			1			0911		
03	1050	1108	1139	1-	5			1	1	1	No flare		
03	1228	1230U	1243	1-	1					1	No flare		
03	1356	1412	1412D	2	5	3	4		1	6	1408	M3.0	5336
03	1825	1831	1917	2+	1					1	No flare		
03	2255	2304	2333	1-	1			1			No flare		
04	0009	0025	0147	1+	3	1		1			0005	C9.9	
04	0215	0228	0258	1-	3			1	1		0211	C4.4	5334
04	0300	0306	0336	1-	3			1	1		0259	C3.6	
04	0416	0424	0514	1	5			1	1	1	0416	C4.1	
04	0525	0538	0608D	2	5			1	1	1	0527	C6.9	
04	0608E	0626	0748	1+	3			1		1	No flare		
04	0801	0817	0847	1-	3			1		1	0809		5334
04	0849	0855	0911	1-	1			1			No flare		
04	0912	0916	0931	1-	1			1			No flare		
04	0950	1012	1336	3+	5	3	3	1	1	4	0950	X1.5	
04	1740	1742	1805	1	1					1	No flare		
04	2306	2320	2354	1-	1			1			2301	C3.9	5354
05	0040	0043	0102D	1-	1					1	No flare		
05	0127	0144	0155D	1	5			1	1	1	No flare		
05	0155E	0200	0310	2-	3			1	1		0153	C5.6	
05	0449	0505	0612D	3-	5	1		1	1	1	0451	C9.8	5354
05	0612E	0622	0714	1-	3			1	1		No flare		
05	0733	0739	0756	1-	1			1			0734	C2.5	
05	0806	0810	0914	1-	5			1	1	2	0806	C4.2	5354
05	0918	0923	0940	1-	3			1		1	0931	C2.7	
05	1052	1108	1224	1-	5		1	1		1	1036		5354
05	1857	1859	1915D	1-	1					1	1840		5354
05	1917	1920	1955	2	3					2	No flare		
05	2107	2120	2201	1-	3			1		1	2112	C3.6	5354
05	2245	2248	2300	1-	1			1			No flare		
05	2328	2336	0024	1	1			1			2329	C8.6	5354

SUDDEN IONOSPHERIC DISTURBANCES

FEBRUARY 1989

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF-SPA	SES			
06	0031	0048	0108	1-	1			1			0026		5334
06	0115	0124	0145D	1-	3			1	1		0128E	C3.0	
06	0145E	0154	0212D	1-	3			1	1		0146	C3.4	
06	0212E	0221	0333D	3-	5	1		1	1		0212	M1.1	5354
06	0333	0346	0401	1-	3			1	1		No flare		
06	0533	0538	0628D	2	5	1		1	1		0534	C8.0	5354
06	0628E	0641	0730	1-	3			1	1		No flare		
06	0805	0811	0838D	1	5		2	1	1	2	0805	C6.1	5354
06	0916	0931	1040	3+	5	1	2	1	1	4	0919	M1.2	5354
06	1018	1020	1040	1	1		1				No flare		
06	1107	1115	1135	1	5		2		1	1	1105	C6.2	
06	1217	1339U	1400	1	1		1				1334	C2.9	
06	1425	1428	1500	2-	1					1	No flare		
06	1435	1440	1500	1+	5	1	2		1	7	1433	C6.7	
06	1540	1542	1600	1	1					1	No flare		
06	1643	1647	1720	2	5					9	1642	M2.1	
06	1916	1924	1954	1-	5			1		7	1917	M1.4	5354
06	2037	2050	2110	1-	1			1			2035E	C9.6	5354
06	2120	2128	2204	1	5	1		1		1	2050E	C5.9	
06	2333E	2339	2351	1-	1			1			2321E	C5.2	
06	2351E	2357	0029	1-	1			1			No flare		
07	0030	0034	0050	1-	3			1	1		No flare		
07	0054	0057	0111	1-	3			1	1		0055E	C4.0	
07	0130	0136	0210D	2-	3			1	1		0131	C7.0	5354
07	0210E	0218	0304	2+	5	1		1	1		0209	M1.2	
07	0406	0416	0440	1-	1			1			No flare		
07	0440	0447	0506	1-	1			1			No flare		
07	0511	0525	0544	1-	1			1			No flare		
07	0621	0625	0650D	1-	3			1	1		0622	C3.8	
07	0650E	0653	0716	1-	1			1			0652E	C3.5	
07	0754	0758	0841	1-	3			1		1	0753	C3.6	
07	0917	0928	0951	1-	5		1	1		1	0917	C3.0	5354
07	1045	1057	1143	1-	1			1			No flare		
07	1440	1445	1500	1+	5	2	3		1	8	1443E	C9.0	5354
07	1639	1641	1727	2	3					4	1638	M2.1	5354
07	1940	1940	2040	2+	1					1	No flare		
07	2238	2248	2312	1-	1			1			No flare		
08	0114	0122	0141	1-	3			1	1		No flare		
08	0256	0300	0310	1-	3			1	1		No flare		
08	0323	0346	0444D	1	3			1	1		0322	C3.9	
08	0444E	0446	0526	1-	5			1	1	1	*		
08	0536	0545	0559	1-	1			1			*		
08	0604	0616	0647D	1-	5			1	1	1	0608	C3.5	5354
08	0647E	0705	0735	1-	1			1			*		
08	0846	0848	0900	1-	1			1			No flare		
08	0944	0951	1047	1	5			1	1	2	0935	M1.1	5354
08	1043	1044	1051	1-	1					1	No flare		
08	1100	1115	1224	2	5	1	2	1	1	3	1059	M1.9	5355
08	1407	1410	1420	1-	1					1	*		
08	1445	1447	1512	1	1		1				1437		5347
08	1508	1512	1535	1	5	1	3		1	8	1449	M1.4	5354
08	1700	1715	1745	2	3					3	1706	C6.2	5354
08	2006	2239U	0034	2+	5	1				4	1953E	M9.8	5354
09	0131	0136	0229	1-	3			1	1		*		
09	0235	0240	0306	1-	3			1	1		0235	C6.2	5355
09	0545	0603	0641	1-	1			1			*		
09	0800	0807	0839	1-	5			1	1	1	0800	C3.8	
09	0927	0929	0945	1-	1					1	0924		5355
09	1118	1128U	1213	1	1		1				No flare		
09	1210	1212	1220	1-	1					1	1212		5354
09	1258	1304	1421	2	5	3	4	1	1	11	1252	X3.9	5355
09	1927	1933	2022	1-	5			1		6	1927	M1.0	5354
10	0149	0200	0228	1-	3			1	1		0128		5347
10	0406	0440	0758	3+	5	1		1	1	1	0407	X1.8	5355

*No flare patrol.

FEBRUARY 1989

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF- SPA	SES			
10	0845	0850	0917	1-	5			1		2	0840	C3.6	5354
10	1036	1042	1054	1-	5	1	1	1	1	1	1035	C3.9	5354
10	1213	1232	1316	1-	1		1	1			1212		5356
10	2033	2035	2113	2-	5					4	2033	C4.9	5356
11	0056	0102	0119	1-	3			1	1		No flare		
11	0353	0406	0423	1-	1			1			No flare		
11	0633	0640	0718	1-	1			1			No flare		
11	1122	1138U	1138	1	1						No flare		
11	1137	1149	1320	1	5	2	3	1	1	3	1139E	M2.9	5355
11	1458	1500	1510	1-	5		1			5	1458	C3.6	5354
11	1621	1624	1700	1+	5					7	1618	C6.5	5357
11	1857	1912	2014	1+	1	1					No flare		
12	0204	0215	0250	1-	3			1	1		0203		5354
12	0355	0405	0420	1-	3			1	1		0357	C2.2	5354
12	0830	0846	0910D	1-	1				1		No flare		
12	0925	0927	0940	1-	1					1	0924	C1.7	5356
12	1007	1009	1020	1-	1					1	1006	C1.7	5356
12	1209	1211	1220	1-	1					1	1208E	C1.8	5356
12	1223	1229	1250	1-	1					1	1225	C3.8	5356
12	2241	2250	2322	1-	1			1			No flare		
13	0151	0155	0214	1-	3			1	1		No flare		
13	0322	0332	0500	2	5	1		1	1		0323	C8.4	5354
13	0902	0912	0944	1-	5			1		2	0902E	C2.4	
13	0940	1008	1028	1	1		1				No flare		
13	1207	1211	1246	1-	5	1		1	1	1	1157	C4.2	5356
13	1628	1632	1658	1+	3					4	1630E	C3.7	5362
13	1815	1822	1945	2+	5					7	1811	M1.4	5355
13	2333	2341	0040	1-	1			1			2332	C6.3	5356
14	0009	0037	0119D	1-	1			1			No flare		
14	0350	0355	0417	1-	3			1	1		0348		5357
14	0439	0517	0604D	3	5	1		1	1	1	0440	M2.0	5354
14	0604E	0608	0608D	2+	5	1		1	1	1	0603		5356
14	0628E	0644	0704D	2+	5	1		1	1	1	0620		5354
14	0704E	0717	0816	3-	5	1		1	1	1	0727E		5354
14	0804	0820	0854	1	1				1		No flare		
14	0934	0939	1021	1	3		2			1	0946		5355
14	1139	1155	1230	2	3			1		1	1156E		5354
14	1424	1426	1435	1-	5		2			4	1423E	C5.6	5356
14	1528	1531	1545	1	3		1			1	1531E		5354
14	1650	1655	1703	1-	1					1	*		
15	0003	0034	0119D	1-	1			1			0013		5356
15	0119E	0139	0245	1-	1			1			0115		5355
15	0327	0336	0421	1	3			1	1		0325	C6.5	5354
15	0425	0431	0447	1-	3			1	1		0426		5356
15	0522	0530	0550	1-	3			1	1		0521	C2.9	5356
15	0604	0606	0626	1-	1			1			No flare		
15	0641	0652	0739	1-	3			1	1		0642		5354
15	0850	0858	0948	1-	5		1	1	1	3	0854	C5.4	5356
15	1335	1338	1355	1-	3					4	1339	C3.4	5356
15	1424	1429	1445	1-	5	1			1	5	1422	C5.6	5354
15	1505	1517U	1532	1	3		1			1	*		
15	1630	1632	1700	1+	1					1	*		
15	1850	1852	1903	1-	3					2	1849	C3.1	5356
15	1905	1910	1940	2	1					1	No flare		
16	0051	0054	0111	1-	3			1	1		0050	C3.0	
16	0308	0313	0332	1-	3			1	1		0306		5368
16	0340	0400	0425D	3-	5	1		1	1	1	0340	M2.2	5362
16	0425E	0431	0645	3+	5			1	1	2	0424	M3.5	5354
16	0700	0710	0748	1-	3			1	1		0702		5356
16	0805	0839	0909	1-	3			1		1	0836		5356

*No flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

FEBRUARY 1989

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF-SPA	SES			
16	1107	1114	1155	1-	1			1			1135E		5368
16	1633	1645	1804	1	5			1		7	1631E	M2.5	
16	1915	1928	2010	1-	1			1			*		
16	2111	2117	2133	1-	1			1			2108	C5.1	5368
16	2151	2159	2232	1-	3			1		2	2153E	C5.7	
17	0027	0034	0100	1-	1			1			No flare		
17	0520	0523	0552	1-	1			1			No flare		
17	0714	0721	0805	1-	5			1	1	1	0714	C3.5	
17	1222	1223	1226	1-	1					1	No flare		
17	1230	1231	1240	1-	1					1	No flare		
17	1305	1306	1320	1-	1					1	No flare		
17	1430	1433	1445	1-	1					1	No flare		
17	1715	1728	1830	2+	3					4	1715		5368
17	2213	2225	2316	2+	5	1		1		2	2212E	M1.9	
18	0016	0036	0100D	1-	1			1			0006E		5356
18	0114	0122	0155	1-	1			1			No flare		
18	0347	0502	0656	1+	3			1	1		0349	C5.6	
18	0746	0756	0954	2+	5	1		1	1	3	0744	C9.9	
18	1422	1426	1440	1	1		1				1402		5368
18	1544	1545	1600	1-	1					1	1537	C2.2	5373
18	1840	1845	1903	1	1					1	1832	C3.5	5366
19	0018	0040	0100D	1-	3			1	1		0057	C6.3	5357
19	0100E	0115	0246	1	3			1	1		0100		5357
19	0436	0442	0506	1-	1			1			*		
19	0640	0659	0728	1-	1			1			*		
19	0911	0915	0937	1-	1			1			0922E	C3.6	5362
19	1223	1238	1310	1+	1					1	1225	C3.5	5368
19	1350	1408	1536	2	5	2	3	1	1	11	1346	C9.7	5368
19	1738	1744	1758	1-	1			1			No flare		
19	2111	2127	2249	1-	5			1		3	2124E	C5.7	5368
20	0032	0038	0108	1-	3			1	1		0031	C3.7	
20	0307	0311	0328	1-	3			1	1		No flare		
20	1035	1037	1047	1-	1		1				*		
20	1352	1410	1540	3-	5	3	3	1	1	9	1356E	M2.5	5368
20	1452	1455	1528D	1+	1		1				No flare		
21	0026	0029	0046	1-	1			1			0026E	C2.4	
21	0318	0327	0342	1-	1			1			0311E	C2.4	
21	0519	0525	0556	1-	3			1	1		*		
21	0739	0747	0808	1-	3			1		1	No flare		
21	0818	0824	0841	1-	1			1			*		
21	0903	0913	1006	1-	3			1		3	0900	C3.9	
21	1030	1035	1104	1-	5	1	1	1	1	1	1025	C4.1	5373
21	1206	1225	1351D	3	5	3	1	1	1	3	1207	M2.7	5368
21	1351E	1406	1427	1-	5		1	1	1	3	1350	C5.5	
21	1458	1510	1525	1-	5	1		1	1	5	No flare		
21	1559	1605	1622	1+	3					3	1602	C4.4	
21	1651	1700	1717	1	3					4	1704E	C4.9	5368
21	1741	1743	1800	1	3					4	1739	C6.3	
21	1801	1803	1818D	1-	1					1	No flare		
21	1817	1820	1850	1+	3					4	1803E	M3.9	5368
21	2106	2114	2126D	1-	3			1		2	2104	C7.2	5368
21	2121E	2202	2303	2+	5	1		1		2	2158E	M2.8	
21	2346	2358	0138	3	5	2		1			2343E	M7.9	5368
22	0211E	0215	0246D	1-	3			1	1		*		
22	0247	0252	0312	1-	3			1	1		*		
22	0331	0354	0424	1-	3			1	1		*		
22	0431	0440	0613	1-	3			1	1		0430E	C4.8	
22	0449	0451	0510	1-	3			1	1		0447	C4.2	
22	0649	0657	0753	1-	1			1			0645	C4.2	
22	0759	0806	0857	2	5	2		1	1	5	0756E	M1.3	

*No flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

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FEBRUARY 1989

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF-SPA	SES			
22	0905	0912	0920	1-	3	1			1	1	0906		5371
22	0943	0957	1031D	2	5	1	1	1	1	1	0944	M1.3	5368
22	1031	1051	1142	2-	5	1	1	1	1	1	1040E		5368
22	1143	1147	1147D	1-	1				1		No flare		
22	1158	1203	1210	1-	3	1			1		No flare		
22	1216	1221	1230	1-	3	1	1		1	1	1207		5368
22	1242	1245	1245D	1-	3	1			1		1242	C4.5	5368
22	1301	1308	1338	1	5		2	1	1	1	1258E	M1.0	5368
22	1320	1322	1335	1-	3	1	1		1		1257	M1.0	5368
22	1403	1408	1422	1-	5	1	1	1	1		No flare		
22	1442	1447	1507	1-	5		3	1	1	5	1438	C7.9	5368
22	1600	1609	1625	1-	5			1		4	No flare		
22	1713	1717	1730	1-	3					3	1714		5368
22	1743	1748	1845	2+	5					6	1742	C6.9	5368
22	2143	2157	2224	1-	1			1			No flare		
22	2351	0002	0113	1-	3			1	1		2353	C3.4	5368
23	0157	0209	0328	1	3			1	1		0157	C9.6	5362
23	0353	0412	0432D	1	3			1	1		No flare		
23	0431E	0500	0613D	2+	5	1		1	1		0422	M1.2	5368
23	0532	0533	0540	1-	1		1				*		
23	0613E	0630	0725	1-	1			1			No flare		
23	0708	0714	0730	1-	1					1	No flare		
23	0757	0804	0854	1-	1			1			No flare		
23	1052	1057	1142	2-	1		1				*		
23	1224	1231	1250	1-	3				1	1	1225	C2.6	
23	1716	1724	1754	1-	5			1		5	1705	C6.7	5368
23	1943	1951	2013	1-	5			1		2	1938	C6.6	5368
23	2110	2114	2125	1-	5			1		2	2045	C5.3	5368
24	0001	0012	0051	1-	1			1			0002E		5369
24	0134	0150	0218D	1-	3			1	1		No flare		
24	0218E	0227	0251	1-	3			1	1		No flare		
24	0512	0515	0538	1-	1			1			*		
24	0607	0618	0636	1-	1			1			*		
24	0644	0648	0703	1-	1			1			*		
24	0805	0817	0825D	1-	5			1	1	1	*		
24	0825E	0833	0909	1-	5	1		1	1	3	0824	C4.2	
24	0917	0925	0939	1-	5		1	1	1	3	0913	C4.1	
24	1144	1152	1215	1-	5	1	1		1		1145		5368
24	1221	1229	1253	1-	5	1		1	1	1	1219	C3.9	5368
24	1421	1433	1521	2-	5	2	2	1	1	6	1419	C8.3	5368
24	1542	1546	1551	1-	3					2	1543	C4.7	5368
24	1602	1614	1622	1-	5			1		3	1609	C4.2	
24	2008	2020	2059	1	5	1		1		4	2006	C9.7	5377
24	2106	2111	2131	1-	5			1		4	2106	C5.3	5368
24	2258	2303	2356D	1-	5	1		1		1	2259	C7.0	5368
24	2357	0010	0105	1+	3			1	1		0001E	C3.4	5368
25	0117	0132	0232	1	3			1	1		0116	C6.4	5380
25	0336	0344	0414D	1-	3			1	1		0337	C2.8	5368
25	0414E	0421	0512	1-	5	1		1	1		0414	C3.7	
25	0636	0640	0704	2	1		1				No flare		
25	0747	0752	0813	1-	3			1	1		No flare		
25	1116	1121	1140	1-	5	1			1	1	*		
25	1403	1405	1415	1-	3					3	No flare		
25	1514	1515	1545	1	3					3	No flare		
25	1923	1926	2000	1	5					5	1856	C4.2	5373
25	2152	2157	2236	1-	1			1			2157	C3.7	5368
25	2327	2334	2347D	1-	1			1			2327	C3.9	
25	2347E	0002	0027	1-	3			1	1		2345		5373
26	0230	0235	0248	1-	3			1	1		0231	C2.4	5378
26	0323	0340	0528	2-	5	1		1	1		0323	C6.0	5380
26	0546	0556	0637	1-	3			1	1		0547		5373
26	0644	0647U	0728	2	1		1				No flare		
26	0805	0808	0856	1-	5			1	1	1	0833	C2.3	

*No flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

FEBRUARY 1989

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF-SPA	SES			
26	1257	1303	1310	1-	1				1		No flare		
26	1321	1323	1335	1-	1				1		1319	C2.7	
26	1653	1658	1730	2	3					3	1653	C4.3	5379
26	2058	2102	2117	1	1					1	No flare		
26	2314	2329	2351	1-	1			1			2320		5373
27	0135	0141	0347	2	5	2		1	1		0135	M1.8	5379
27	0636	0641	0653	1-	5			1	1	1	0636	C2.4	5373
27	0849	0859	0925	1	5	1	1	1	1	2	0845	C2.5	
27	1003	1011	1025	1	1					1	1007E	C2.5	5379
27	1224	1246	1324	2	1		1				*		
27	1438	1510	1530	1	1		1				No flare		
27	2113	2120	2142	1-	1			1			1949	C4.3	5373
28	0305	0312	0337	1-	3			1	1		0301		5383
28	0410	0419	0455	1-	3			1	1		No flare		
28	0602	0615	0659	1-	1			1			No flare		
28	1110	1112	1120	1-	1		1				No flare		
28	1443	1453	1513	1+	1		1				No flare		
28	1520	1525	1530	1-	3				1	1	1518	C2.7	5379
28	1645	1647	1705D	1	1					1	1646	C2.6	
28	1705	1707	1736	1+	1					1	1625	C4.9	5378
28	1807	1817	1915	2+	3					3	1756	M1.7	5378
28	2104	2146	2204	1-	1			1			2140E	C4.2	
28	2318	2326	2343	1-	1			1			2322	C5.6	5378

*No flare patrol.

OBSERVATORIES REPORTING FOR FEBRUARY 1989

Amherst, New Hampshire, USA	SES	Lintong, People's Rep of China	SPA
Bayonne, New Jersey, USA	SES	Louisville, Kentucky, USA	SES
Darmstadt, German Fed Rep	SWF	Maui, Hawaii, USA	SWF
Edenvale, Rep of S. Africa	SES	Panska Ves, Czechoslovakia	SES, SEA, SWF
Farsta, Sweden	SES	Paterson, New Jersey, USA	SES
Hiraiso, Japan	SWF	San Jose, California, USA	SES
Houston, Texas, USA	SES	Sofia, Bulgaria	SES
Inubo, Japan	SPA	Tavares, Florida, USA	SES
Juliusruh, German Dem Rep	SWF	Tucson, Arizona, USA	SES
Kandilli, Turkey	SEA	Uccle, Belgium	SEA
Kuhlungsborn, German Dem Rep	SEA, SPA	Upice, Czechoslovakia	SEA
LaCrescenta, California, USA	SES	Valley Cottage, New York, USA	SES
Latrobe, Pennsylvania	SES	Vlasim, Czechoslovakia	SEA

Observations are not necessarily continuous.

SUDDEN IONOSPHERIC DISTURBANCES

FEBRUARY 1989

SIDs BY NOAA/SESC REGIONS

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
Reg. No.																												
5329	3																											
5334	7	4		2		1																						
5336			1																									
5347								1		1																		
5354				1	6	6	4	5	2	2	1	2	1	5	3	1												
5355								1	3	1	1		1	1	1													
5356										2		4	2	2	6	2		1										
5357											1			1					2									
5362													1			1			1				1					
5366																1												
5368																3	1	1	3	1	5	10	4	7	2			
5369																								1				
5371																						1						
5373																		1				1			2	2	2	
5377																								1				
5378																										1		3
5379																									1	2	1	
5380																									1	1		
5383																												1

Number of events with X-Ray flares																												
	10	5	2	7	7	14	9	7	4	4	3	5	6	2	6	6	2	4	5	2	13	11	6	10	6	5	5	6

Number of events with no flare reported																												
	5	3	7	4	5	6	7	4	1		5	2	2	2	2		6	1	1	2	3	5	4	2	4	3	1	4

Number of events with no flare patrol																												
							4	2						1	2	1				2	1	2	3	2	4	1		1

Total SID events																												
	19	8	10	12	14	21	16	16	9	6	8	8	8	12	14	11	9	7	9	5	18	23	12	18	12	10	7	11

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S O L A R R A D I O E M I S S I O N
Spectral Observations

FEBRUARY 1989

Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
01			LEAR				0000.0	0000.0	2				III
			LEAR				0523.0	0525.0	1				III
			LEAR				0634.0	0634.0	2				III
	0732	1559	WEIS										
			LEAR				0739.0	0741.0	1				III
			PALE				2320.0	2320.0	1				III
			LEAR				2357.0	2357.0	2				III
02			LEAR				0432.0	0434.0	2				III
			LEAR				0725.0	0731.0	2				III
	0731	1327	WEIS										
	1436	1559	WEIS										
			PALE				2032.0	2032.0	1				III
			LEAR				2357.0	2357.0	2				III
03			LEAR				0246.0	0251.0	1				III
			LEAR				0509.0	0510.0	1				III
			LEAR				0631.0	0632.0	2				III
			LEAR				0713.0	0713.0	1				III
			LEAR				0728.0	0734.0	3				III
			SVTO				0729.0	0729.0	2				III
			LEAR				0757.0	0818.0	2				S
	0831	1602	WEIS				0811.1	0811.7	1				III G
			WEIS				1152.5	1153.7	1				III G
			WEIS				1153.4	1153.7	1				Spikes
			WEIS				1426.8	1436.3	2				II H, HB
04			LEAR				0019.0	0025.0	2				II
			LEAR				0201.0	0208.0	2				III
			LEAR				0454.0	0456.0	2				III
	0728	1111	WEIS	0954.6	0957.7	1							Spikes
			WEIS				0956.0	0956.1	1				III B
			LEAR				0958.0	1023.0	3				II
			SVTO				0958.0	1017.0	2				II
			WEIS				0958.8	1022.8	3				II H, HB
			WEIS				1006.3	1007.6	2				Spikes
			LEAR				1013.0	1052.0	2				IV
			SVTO				1017.0	1104.0	2				IV
			WEIS				1030.6	1031.3	1				III G
			LEAR				1055.0	1056.0	2				III
			WEIS				1100.2	1100.3	2				III B
	1118	1604	WEIS										
			SGMR				1444.0	1451.0	1				III
			SGMR				1706.0	1706.0	1				III
05			LEAR				0059.0	0100.0	2				III
			LEAR				0333.0	0336.0	2				III
	0726	1603	WEIS				1046.3	1049.9	2				III G
			LEAR				1048.0	1049.0	2				III
06			LEAR				0249.0	0250.0	1				III
			LEAR				0400.0	0401.0	1				III
			LEAR				0443.0	0444.0	2				III
			LEAR				0507.0	0509.0	1				III
			LEAR				0607.0	0608.0	1				III
			LEAR				0622.0	0623.0	2				III
			LEAR				0657.0	0700.0	2				III
			LEAR				0720.0	0720.0	1				III
	0726	1607	WEIS				1333.5	1336.2	2				III G
			SGMR				1334.0	1336.0	2				V
			SGMR				1647.0	1701.0	2				II
			SGMR				1706.0	1714.0	1				III
			PALE				2113.0	2115.0	2				V
			SGMR				2113.0	2115.0	1				III
			LEAR				2318.0	1050.0	1				CONT
			LEAR				2323.0	2328.0	2				III
	07			LEAR				0022.0	0027.0	2			
			LEAR				0028.0	0031.0	3				III

S O L A R R A D I O E M I S S I O N
Spectral Observations

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Feb 89

FEBRUARY 1989

Observation			Decimetric Band			Metric Band			Dekametric Band			Spectral Type		
Day	Start (UT)	End (UT)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)			
07	0723	1533	PALE				0028.0	0030.0	2				V	
			WEIS											
			LEAR				0902.0	0906.0	2					V
			SGMR				1655.0	1656.0	1					III
			SGMR				1714.0	1714.0	1					III
			LEAR				2312.0	2313.0	1					III
			LEAR				2344.0	2344.0	2					III
			LEAR				2344.0	2344.0	1					III
			LEAR				2345.0	0600.0	1				CONT	
08			LEAR				0200.0	0202.0	3				III	
			PALE				0201.0	0202.0	3				V	
			LEAR				0336.0	0338.0	2				III	
			LEAR				0340.0	0341.0	2				III	
			LEAR				0413.0	0414.0	2				III	
			LEAR				0539.0	0541.0	2				III	
			LEAR				0550.0	0551.0	2				III	
			LEAR				0624.0	0626.0	2				III	
			LEAR				0637.0	0643.0	2				III	
			LEAR				0704.0	0705.0	2				III	
			LEAR				0719.0	0720.0	2				III	
			LEAR				0753.0	0815.0	2				S	
			LEAR				0828.0	0828.0	1				III	
			LEAR				0835.0	0855.0	3				S	
			SVTO				0846.0	0847.0	3				III	
			LEAR				0904.0	1050.0	1				CONT	
		0721	1258	WEIS			1124.2	1125.1	3				III	
				WEIS			1213.7	1214.3	2				III	
				SGMR			1251.0	1257.0	1				S	
				WEIS			1251.4	1251.5	2				III	
				WEIS			1255.2	1256.8	2				III	
				SGMR			1440.0	1443.0	2				V	
		1306	1609	WEIS			1440.7	1442.6	2				III	
				SGMR			1538.0	1538.0	2				III	
				SGMR			1555.0	1558.0	1				S	
				PALE			1740.0	1741.0	1				III	
				SGMR			1740.0	1742.0	3				V	
				SGMR			1856.0	1858.0	2				V	
				PALE			1956.0	1958.0	1				V	
				PALE			2014.0	2017.0	1				V	
				SGMR			2015.0	2016.0	1				III	
				PALE			2029.0	2049.0	1				II	
	PALE					2055.0	2139.0	1				CONT		
	SGMR					2130.0	2145.0	2				II		
	PALE					2144.0	2144.0	1				V		
	PALE					2151.0	2152.0	1				III		
	PALE					2209.0	2209.0	1				III		
	LEAR					2226.0	2229.0	1				III		
	PALE			2226.0	2229.0	1				III				
	LEAR			2245.0	1049.0	2				CONT				
	PALE			2255.0	2255.0	1				III				
	PALE			2259.0	2302.0	3				V				
09			LEAR				0103.0	0108.0	2				III	
			LEAR				0303.0	0304.0	2				III	
			LEAR				0716.0	0717.0	2				III	
			LEAR				0837.0	0839.0	3				III	
		0722	1612	WEIS			0838.7	0838.9	2				III	
				WEIS	1257.1	1257.7	2						Spikes	
				WEIS			1259.7	1305.7	3				II H	
				SVTO			1302.0	1307.0	1				II	
				SGMR			1303.0	1310.0	1				II	
				SGMR			1509.0	1509.0	1				III	
				SGMR			1735.0	1736.0	1				III	
				SGMR			1829.0	1846.0	2				S	
				PALE			1841.0	1844.0	2				V	
				PALE			1921.0	1930.0	2				S	
				SGMR			1922.0	1931.0	2				S	
				PALE			1938.0	1953.0	2				II	

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Observation Start End Day (UT) (UT) Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)		
09				1939.0	1951.0	2				II	
				2230.0	2231.0	2				III	
				2230.0	2232.0	1				III	
				2307.0	2308.0	3				III	
				2307.0	2308.0	3				V	
10				0006.0	0012.0	2				III	
				0028.0	0036.0	2				III	
				0111.0	0111.0	2				III	
				0134.0	0135.0	2				III	
				0201.0	0208.0	2				III	
				0249.0	0249.0	1				III	
				0308.0	0309.0	1				III	
				0320.0	0325.0	2				III	
				0344.0	0344.0	1				III	
				0409.0	0410.0	1				III	
				0439.0	0449.0	2				II	
				0534.0	0546.0	2				II	
				0557.0	0617.0	3				S	
				0611.0	0612.0	2				III	
				0637.0	0639.0	1				III	
				0651.0	0651.0	2				III	
				0708.0	0714.0	3				III	
				0737.0	0738.0	2				III	
				0753.0	0756.0	3				III	
				0754.0	0755.0	3				III	
				0853.0	0856.0	3				III	
				1235.0	1322.0	2				CONT	
				1245.0	1253.0	1				II	
	0718 1454			1247.0	1248.9	1				II	
				1253.0	1448.0	1				CONT	
				1422.5	1422.6	1				III B	
				1446.2	1446.7	1				III G	
1541 1614				1608.0	1608.0	1				III	
11				0130.0	0130.0	1				III	
				0227.0	0227.0	1				III	
				0449.0	0449.0	2				III	
				0544.0	0545.0	1				III	
				0717.0	0717.0	2				III	
				0730.0	0731.0	1				III	
				0803.0	0804.0	1				III	
	0716 1614			1203.7	1204.3	1				III G	
				1307.1	1307.2	2				III B	
				1457.0	1503.0	2				III	
				1457.0	1459.6	2				III G	
				1503.4	1503.5	1				III B	
	12				0031.0	0035.0	2				III
					0055.0	0057.0	3				III
				0055.0	0055.0	2				III	
				0155.0	0157.0	3				III	
				0309.0	0325.0	2				S	
				0357.0	0359.0	2				III	
				0427.0	0428.0	1				III	
				0438.0	1048.0	1				CONT	
				0540.0	0541.0	2				III	
				0653.0	0654.0	2				III	
				0706.0	0707.0	2				III	
				0727.0	0730.0	2				III	
0716 1418				0729.1	0729.8	1				III G	
				0752.0	0752.0	2				III	
				0813.0	0814.0	2				III	
				0813.8	0813.9	1				III B	
				0853.3	0853.4	2				U	
				0922.4	0923.4	2				Spikes, RS	
				0940.8	0940.9	1				Spikes, RS	
				1005.4	1006.7	1				Spikes, RS	

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Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)		
12			WEIS				1034.0	1056.0	1				I	
			WEIS				1054.7	1055.3	2				IIIG	
			WEIS				1057.3	1057.6	2				Spikes	
			WEIS				1127.9	1129.3	2				IIIG,Spikes	
			WEIS				1150.0	1150.8	2				IIIG	
			WEIS				1204.3	1204.4	1				IIIB	
			WEIS				1224.6	1229.9	3				Spikes,RS	
			WEIS				1315.7	1316.0	3				Spikes,RS	
			SGMR				1322.0	1322.0	1				III	
			WEIS				1322.1	1322.3	1				IIIB	
			WEIS				1322.7	1322.9	3				Spikes,RS	
			SGMR				1340.0	1345.0	1				III	
			WEIS				1340.4	1342.0	2				IIIG,U	
			WEIS				1344.7	1345.7	2				IIIG	
			SGMR				1442.0	1443.0	1				V	
		1433	1619	WEIS				1543.7	1544.1	2				IIIB,U
				SGMR				1731.0	1739.0	1				III
				PALE				1932.0	1932.0	1				III
				SGMR				1932.0	1932.0	1				III
				PALE				2000.0	2000.0	1				V
			SGMR				2000.0	2001.0	1				V	
			PALE				2058.0	2101.0	1				III	
			LEAR				2332.0	2339.0	2				III	
			PALE				2332.0	2332.0	2				V	
13			LEAR				0056.0	0057.0	2				III	
			LEAR				0056.0	0105.0	2				III	
			LEAR				0129.0	0130.0	1				III	
			LEAR				0138.0	0140.0	3				III	
			PALE				0138.0	0139.0	1				III	
			LEAR				0146.0	1047.0	2				CONT	
			LEAR				0456.0	0457.0	2				III	
			LEAR				0801.0	0802.0	2				III	
			WEIS				0907.1	0907.2	2				IIIB	
		0713	1619	WEIS				1212.0	1603.0	3				IIIN
				SGMR				1238.0	1239.0	2				III
				WEIS				1238.8	1240.2	3				IIIG
				SGMR				1312.0	1312.0	1				III
				WEIS				1325.9	1327.7	3				IIIGG
				SGMR				1326.0	1327.0	2				III
				SGMR				1413.0	1414.0	1				III
				SGMR				1443.0	1445.0	2				V
				WEIS				1443.7	1445.2	3				IIIG
				SGMR				1534.0	1535.0	1				III
				SGMR				1534.0	1542.0	1				S
				SGMR				1603.0	1603.0	1				III
				SGMR				1628.0	1628.0	1				III
				SGMR				1813.0	1814.0	2				III
				PALE				1814.0	1814.0	1				III
				PALE				1836.0	1836.0	1				III
				SGMR				1836.0	1846.0	2				V
				PALE				1842.0	1845.0	1				V
				LEAR				2329.0	2330.0	2				III
			LEAR				2343.0	1046.0	2				CONT	
14			LEAR				0011.0	0012.0	3				III	
			PALE				0011.0	0012.0	2				III	
			LEAR				0207.0	0211.0	2				III	
			PALE				0209.0	0209.0	1				V	
			LEAR				0510.0	0510.0	2				III	
			LEAR				0721.0	0726.0	2				III	
		0711	1135	WEIS				0721.5	0721.7	1				U
				LEAR				0753.0	0754.0	2				III
				WEIS				1117.7	1118.3	1				IIIG
				WEIS				1122.4	1127.9	2				IIIGG
				SGMR				1300.0	1530.0	1				CONT
		1502	1619	WEIS				1517.0	1608.0	2				IIIN
				SGMR				1643.0	1643.0	1				III
				PALE				1905.0	1905.0	2				III

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Observation Start End Day (UT) (UT) Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)		
14	PALE			1906.0	1906.0	2				III	
	SGMR			1906.0	1906.0	1				III	
	PALE			1924.0	1924.0	2				III	
	PALE			2108.0	2113.0	1				V	
	PALE			2125.0	2125.0	1				III	
	PALE			2153.0	2156.0	2				V	
	LEAR			2256.0	2257.0	1				III	
	LEAR			2314.0	2314.0	1				III	
	LEAR			2332.0	2333.0	2				III	
	PALE			2332.0	2332.0	2				III	
	LEAR			2338.0	2345.0	1				III	
	PALE			2345.0	2355.0	2				S	
	LEAR			2349.0	2356.0	3				III	
	LEAR			2356.0	1046.0	3				CONT	
15	PALE			0034.0	0332.0	3				CONT	
	SVTO			0624.0	0922.0	2				CONT	
	0712 0728	WEIS									
		SVTO			0915.0	0916.0	3				III
	0806 1331	WEIS			0915.1	0916.5	2				IIIG
		WEIS			1002.4	1004.8	2				IIIG
		WEIS			1212.2	1212.4	2				IIIG
		WEIS			1246.4	1249.4	2				IIIG
		SGMR			1325.0	1325.0	1				III
		WEIS			1325.6	1326.2	2				IIIG
		SGMR			1416.0	1416.0	1				III
	1455 1622	WEIS									
		SGMR			1830.0	1832.0	2				V
		PALE			1847.0	1848.0	2				V
	SGMR			1847.0	1849.0	2				V	
	PALE			1928.0	1928.0	1				III	
	PALE			2027.0	2027.0	1				III	
	PALE			2051.0	2054.0	1				V	
	PALE			2117.0	2117.0	1				III	
	LEAR			2330.0	2332.0	1				III	
	LEAR			2358.0	0006.0	1				III	
16	LEAR			0030.0	0030.0	2				III	
	LEAR			0103.0	0108.0	2				III	
	PALE			0103.0	0108.0	2				III	
	LEAR			0127.0	0132.0	1				III	
	LEAR			0219.0	0222.0	2				III	
	LEAR			0238.0	0247.0	2				III	
	LEAR			0245.0	1045.0	1				CONT	
	LEAR			0308.0	0314.0	2				V	
	PALE			0309.0	0309.0	2				III	
	LEAR			0330.0	0336.0	2				III	
	PALE			0334.0	0334.0	1				III	
	SVTO			0638.0	0639.0	2				III	
	LEAR			0640.0	0641.0	2				V	
	LEAR			0700.0	0701.0	2				III	
	SVTO			0833.0	0833.0	2				III	
	LEAR			0834.0	0837.0	2				III	
	0707 1624	WEIS			1015.5	1016.6	2				IIIG
		WEIS			1238.3	1238.7	2				IIIG
		SGMR			1640.0	1641.0	1				V
		PALE			1741.0	1809.0	1				S
		PALE			1829.0	2003.0	2				S
		SGMR			1854.0	1855.0	3				III
		SGMR			1906.0	1906.0	1				III
		SGMR			1954.0	1955.0	3				III
	LEAR			2234.0	2235.0	1				III	
	LEAR			2254.0	2255.0	1				III	
	LEAR			2330.0	2332.0	1				III	
	PALE			2356.0	2358.0	1				III	
	LEAR			2358.0	0003.0	2				III	
17	LEAR			0020.0	0021.0	3				III	
	PALE			0020.0	0021.0	2				V	

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Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
17			LEAR				0119.0	0127.0	2				III
			PALE				0121.0	0121.0	1				III
			LEAR				0149.0	0151.0	2				III
			PALE				0150.0	0150.0	1				III
			LEAR				0203.0	0209.0	2				III
			PALE				0208.0	0209.0	1				III
			LEAR				0242.0	0244.0	3				V
			PALE				0242.0	0243.0	1				III
			LEAR				0316.0	0317.0	2				III
			LEAR				0433.0	0435.0	3				V
			LEAR				0501.0	0502.0	1				III
			LEAR				0618.0	0620.0	1				III
			LEAR				0625.0	0625.0	2				III
			LEAR				0640.0	0640.0	2				III
			LEAR				0652.0	0653.0	2				III
			LEAR				0721.0	0722.0	3				III
		0705	1318	WEIS			0721.1	0721.7	1				IIIG
				LEAR			0909.0	0911.0	2				III
				LEAR			0918.0	0919.0	1				III
				LEAR			0920.0	0925.0	3				III
				SVTO			0921.0	0923.0	3				III
			WEIS			0921.1	0925.0	2				IIIG	
			WEIS			1228.3	1228.6	1				IIIG	
			WEIS			1303.9	1304.4	2				IIIB,U	
	1409	1624	WEIS			1421.3	1421.6	2				IIIB,U	
18			LEAR				0114.0	0129.0	2				S
			LEAR				0432.0	1044.0	1				CONT
		0706	1627	WEIS			1229.7	1230.0	1				IIIB
				PALE			1841.0	1842.0	1				III
				SGMR			1842.0	1842.0	1				V
				PALE			2157.0	2158.0	1				III
				PALE			2215.0	2216.0	1				III
19			LEAR				0059.0	0107.0	2				III
			PALE				0059.0	0107.0	2				III
			LEAR				0156.0	0157.0	1				III
			LEAR				0159.0	0207.0	2				III
			LEAR				0400.0	0404.0	1				III
			LEAR				0920.0	0938.0	2				S
		0702	1629	WEIS			1208.1	1208.7	1				IIIB
				WEIS			1235.6	1236.8	1				IIIG
				WEIS			1252.7	1252.9	1				U
				SGMR			1301.0	1302.0	1				III
			WEIS			1301.2	1302.8	2				IIIG	
20	0700	1600	WEIS										
			SGMR				1429.0	1432.0	1				V
	1606	1629	WEIS										
			PALE				1722.0	1745.0	1				S
			PALE				1759.0	1811.0	1				S
			PALE				1825.0	1905.0	1				S
		PALE				1920.0	1923.0	1				III	
21	0659	1045	WEIS	0922.9	0924.1	1							II
	1123	1345	WEIS				1126.6	1127.8	2				IIIG
			WEIS				1226.9	1237.6	2				DCIM
			WEIS				1233.1	1233.3	1				IIIB
			WEIS				1251.9	1253.1	1				IIIG,RS
			SGMR				1732.0	1732.0	1				III
22			LEAR				0000.0	0215.0	1				CONT
			LEAR				0122.0	0123.0	2				III
			LEAR				0312.0	0329.0	2				S
			LEAR				0702.0	1008.0	2				III
		0656	1634	WEIS			0738.6	0742.8	1				Spikes
				LEAR			0832.0	0832.0	1				III
				WEIS			0832.4	0832.5	2				IIIB
				LEAR			0925.0	0926.0	2				III

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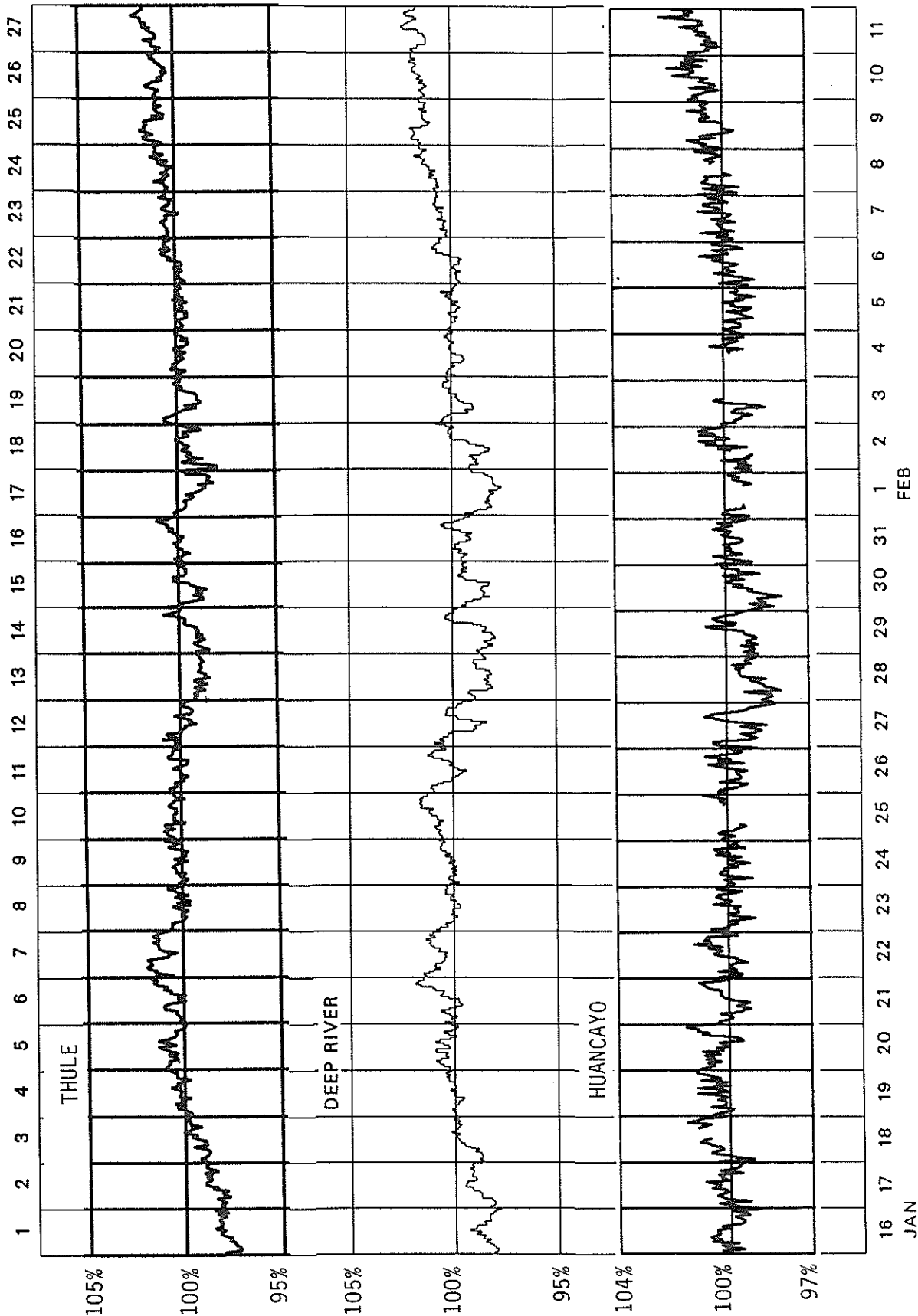
Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
26			PALE				0313.0	0313.0	2				III
			LEAR				0322.0	0323.0	1				III
			LEAR				0416.0	0422.0	2				III
			LEAR				0612.0	1038.0	2				CONT
		0648	1639	WEIS			0700.0	1625.0	1				IIIN
				SGMR			1309.0	1311.0	1				III
				SGMR			1542.0	1542.0	1				III
				SGMR			1719.0	1719.0	1				III
				SGMR			1751.0	1751.0	1				III
				SGMR			1809.0	1810.0	1				III
				SGMR			1924.0	1927.0	1				III
				PALE			2031.0	2031.0	2				III
				LEAR			2241.0	2342.0	1				III
				PALE			2241.0	2242.0	1				V
				LEAR			2342.0	2343.0	2				III
				PALE			2342.0	2342.0	1				III
			LEAR			2357.0	0020.0	2				S	
27			PALE				0002.0	0014.0	2				S
			LEAR				0044.0	1037.0	2				CONT
			PALE				0115.0	0115.0	2				V
			LEAR				0130.0	0130.0	2				III
			LEAR				0200.0	0209.0	2				III
			PALE				0200.0	0209.0	1				III
			LEAR				0246.0	0256.0	2				III
			LEAR				0306.0	0318.0	2				S
			LEAR				0355.0	0356.0	2				III
			LEAR				0422.0	0423.0	2				III
			LEAR				0618.0	0622.0	2				III
		0648	0823	WEIS									
				LEAR			0736.0	0736.0	2				III
		0831	1642	WEIS			0845.3	0845.4	2				DCIM
				LEAR			0912.0	0913.0	3				III
				WEIS			0912.0	1639.0	2				IIIN
				LEAR			0958.0	1000.0	3				III
				WEIS			0958.7	1000.4	3				IIIG
				WEIS			1219.6	1221.2	3				IIIG
				SGMR			1333.0	1336.0	2				III
				WEIS			1334.8	1337.6	3				IIIGG
				SGMR			1651.0	1651.0	2				III
				SGMR			1700.0	1705.0	2				S
				SGMR			1743.0	1752.0	2				S
				SGMR			1821.0	1821.0	1				III
				SGMR			1839.0	1902.0	1				S
				SGMR			1934.0	1934.0	1				III
				SGMR			2005.0	2209.0	1				CONT
				PALE			2023.0	2153.0	1				CONT
				LEAR			2248.0	1037.0	2				CONT
28	0644	1643	WEIS			0825.0	0832.0	2				I	
			SGMR			1249.0	1250.0	1				III	
			PALE			1822.0	1828.0	1				II	
			SGMR			1822.0	1835.0	1				II	
			SGMR			1920.0	1921.0	2				V	
			PALE			1921.0	1922.0	2				V	

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

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

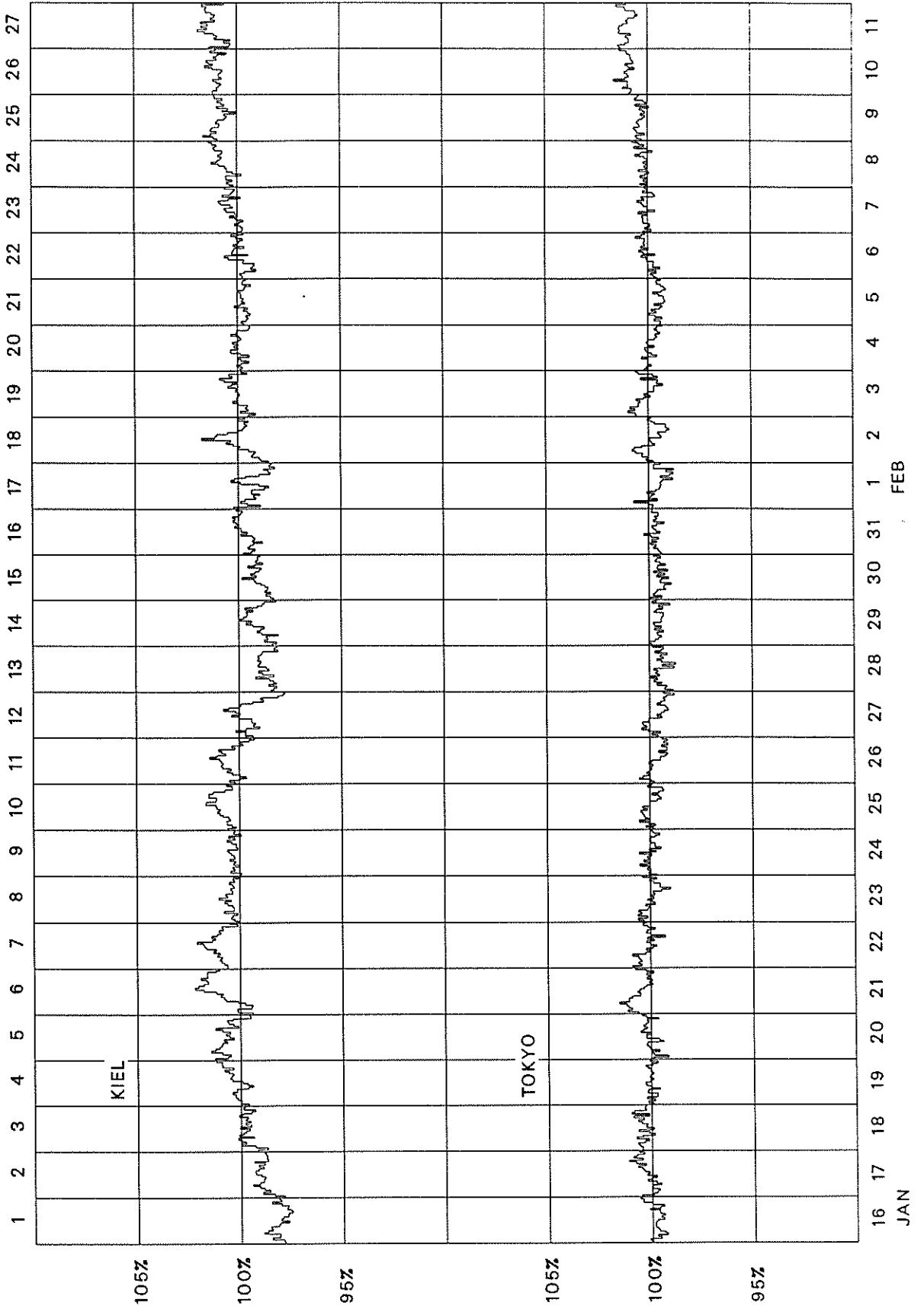
COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2124 (January 1989-February 1989)



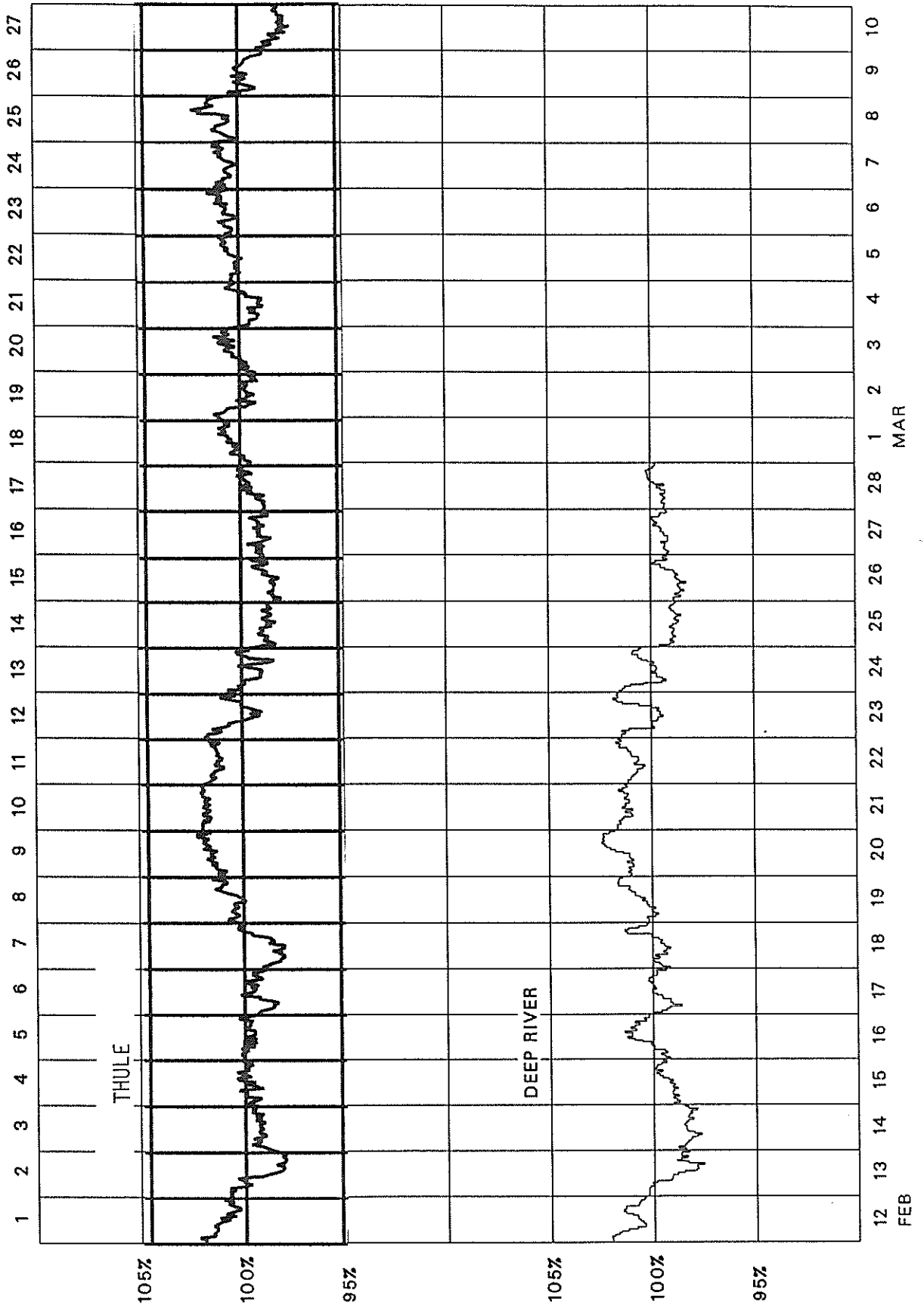
COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2124 (January 1989-February 1989)



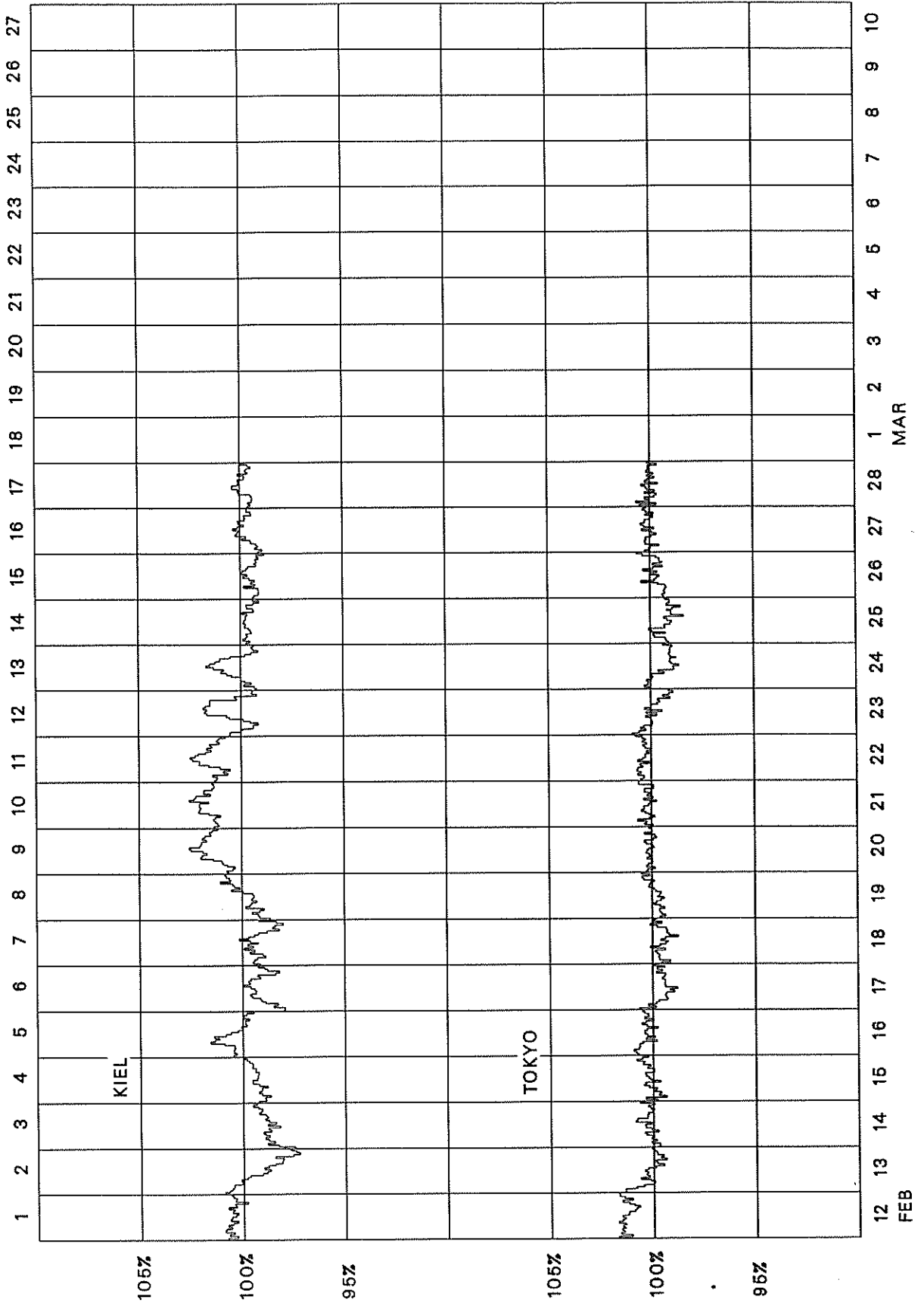
COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2125 (February 1989-March 1989)



COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2125 (February 1989-March 1989)



C O S M I C R A Y I N D I C E S
(Neutron Monitor)

FEBRUARY 1989

Day	THULE Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	TOKYO Average (cts/h)/256	HUANCAYO Average (cts/h)/100
1	4043	6263.4	5641.5	3653.0	3499.4	1674.7(28)
2	4048	6326.7	5681.1	3686.5	3510.1	1680.3
3	4062	6364.3	5687.7	3722.8	3521.4	1675.2(30)
4	4066	6368.2	5681.9	3694.7	3509.7	1678.0(20)
5	4065	6366.6	5670.5	3699.8	3496.1	1674.5
6	4082	6375.2	5678.5	3702.0(34)	3515.2	1679.4
7	4093	6402.2	5700.4	3719.8	3518.7	1685.0
8	4102	6438.9	5727.9	---	3522.6	1687.7
9	4119	6463.2	5738.5	3702.7(36)	3528.1	1691.7
10	4110	6470.0	5746.3	3724.7	3549.0	1698.0
11	4132	6478.5	5755.4	3734.9	3551.6	1696.2
12	4086	6405.3	5689.2	3704.0	3539.6	1688.6
13	4005	6273.2	5608.8	3616.3	3497.9	1673.3
14	4007	6224.5	5592.0	3620.7	3498.7	1669.6
15	4030	6288.6	5620.3	3637.0	3497.2	1678.0(28)
16	4030	6357.2	5681.2	3676.5	3505.8	1687.0
17	4006	6312.8	5606.9	3599.9	3476.6	1670.1
18	3990	6328.0	5613.3	3616.5	3476.7	1671.2
19	4066	6373.7	5650.2	3670.1	3486.5	1671.7
20	4106	6434.3	5744.4	3745.2	3495.9	1682.9
21	4118	6417.8	5753.8	3737.9	3499.7	1678.5
22	4095	6397.2	5742.9	3703.0	3506.4	1678.3
23	4057	6370.5	5687.3	3657.1	3488.2	1671.4
24	4023	6352.2	5673.5	3648.6(38)	3471.6	1671.7
25	3986	6264.8	5639.5	3580.1	3465.6	1660.4
26	3983	6266.7	5625.9	3582.1	3482.0	1662.6
27	3997	6297.9	5643.2	3629.2	3495.9	1667.6
28	4017	6313.0	5649.2	3637.6	3494.2	1669.8
Mean	4054	6357.0	5676.1	3669.5	3503.5	1677.7

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.

G E O M A G N E T I C A C T I V I T Y I N D I C E S

February 1989

Day	Kp Three-Hourly Indices								Sum	Ap	Cp	Km Three-Hourly Indices								aa Provisional					
	1	2	3	4	5	6	7	8				1	2	3	4	5	6	7	8	Am	N	S	M		
1	D2	5-	5-	3-	4-	4+	3-	3+	5+	31+	29	1.3	4	4-	3-	4-	5-	3-	4-	5	51	52	46	47	51
2		4	4-	2+	1+	3-	2	5+	4	25+	21	1.1	4-	3-	2	1	2	2+	5-	4	33	36	29	19	46
3	D1	6-	6-	4-	4-	5-	5+	5-	5-	38	44	1.5	5-	5-	3	3+	4+	4+	5-	4+	61	73	53	56	70
4	D3	5-	4	3	4-	4	3-	4	4	30	24	1.2	4	3	3-	3	4-	3-	4-	4-	37	43	32	31	43
5		4	4-	4-	3	3	3+	4-	4+	29-	22	1.1	3+	3	3	3-	3	3+	4-	4	35	42	28	30	40
6	D5	5-	3+	4-	4-	3+	4-	4-	3+	29+	23	1.1	4-	3	3+	3+	3	4-	3+	3	36	38	37	39	37
7	D4	4-	4	4	4	4-	4	4-	4	31	25	1.2	3+	3	3+	3+	3+	4-	3	4-	37	50	41	39	52
8		4-	3+	3	3	2+	2+	2-	3	22+	14	0.8	3	2+	2+	3-	3-	2	2-	3	22	30	19	31	18
9		4	4+	3	3	3	3	3+	3	27-	19	1.0	3+	3+	3-	2+	3-	3-	3+	3	28	35	32	37	30
10		4	3	2+	3	3+	1	1-	1-	18	12	0.7	3+	3-	2	2+	3+	1	1-	1-	19	24	17	25	16
11	Q9A	1	1-	2-	2+	3-	3-	4-	3	18-	10	0.6	1-	1	1+	2-	3	3-	4-	3-	19	22	21	11	32
12		3	3-	2	2+	3-	3-	4-	4-	23-	14	0.8	2+	2	2	2	2	3	4-	3+	23	32	19	20	32
13		4+	4	4-	4-	3+	4-	3	3-	28+	21	1.1	4-	3+	3+	4	3+	4-	3	2+	39	38	41	46	34
14		3	4	3-	2+	3	4-	1+	1	21	14	0.8	2+	3-	3-	3-	3-	4-	1+	1+	21	29	22	26	25
15		1+	3-	2-	2-	1+	3+	4	4+	20+	14	0.8	1+	3-	2-	2-	1	3+	4-	4-	24	26	26	15	37
16		4	5-	2+	3	3	1+	2+	3	24-	17	0.9	4-	4	2+	2+	3	1+	3-	3+	30	29	34	35	29
17	Q3	2+	2+	2-	1+	1-	0+	1-	1+	11-	5	0.2	3-	2+	1+	2-	1	1-	1	2-	11	24	13	18	19
18	Q7A	1	3-	2	1-	3+	3	3-	1	16	9	0.5	1+	3-	1+	1-	3	3	3-	1	17	19	18	12	24
19	Q8A	1	1	2+	2	2+	3	2	3+	17	9	0.5	1	1+	2-	2	2	3+	2	3+	18	21	18	12	26
20		3+	3+	4-	3+	4	4	4	2+	28	21	1.1	3	3	3+	3	3+	3+	4-	2	32	36	32	34	35
21	Q10A	3-	2+	3+	3	2-	3	2-	1+	19	11	0.6	3-	2	3	3-	1+	3+	1+	1+	20	21	18	22	17
22		2	2+	4	3+	3-	2	3	2+	22-	13	0.7	2+	2-	3+	3+	2+	2	3-	2	22	26	17	25	18
23	Q2	1+	1	1+	1	1	1	1+	2+	10+	5	0.2	2-	1	1+	1+	1	1	1	2	9	11	7	8	10 C
24	Q6A	3-	3-	3-	2+	3-	1+	1	1+	17-	9	0.5	2+	2+	2	2	3-	2-	1+	2-	15	22	14	23	13
25	Q5A	1	2-	3+	2	2-	1	1+	1	13	7	0.3	1+	1+	3	2	1+	1	1+	1+	13	15	11	18	8 KK
26	Q1	1-	0+	1	1	2-	1-	0+	1	7-	4	0.1	1	1-	1-	1+	2-	1-	0+	1+	7	7	6	7	7 CC
27	Q4	2	1-	1-	1+	2+	3-	2-	2-	13	6	0.3	2-	1	1	1+	2+	3-	2-	2-	13	16	11	9	19 K
28		1+	2	3-	2	3	3	3+	4-	21	13	0.7	1+	2	2+	2	3-	3	3	4-	23	29	28	19	38
Mean											15	0.77									25.5	30.4	24.7	27.5	
Day	Kn Three-Hourly Indices								An	Ks Three-Hourly Indices								Prov							
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8	As	Sa	Ri	Ra	Rs	IMF		
1	4	4	2+	3+	5-	3-	4-	5-	49	4	4-	3-	4-	5-	2+	3+	5+	53	184.8	141	132	138	-	-	
2	3+	3-	2	1	2+	2+	5	4	34	4-	3-	2	1	2-	2	5-	4	32	171.2	144	148	123	-	-	
3	5-	4+	3	3+	5-	5-	5-	4+	63	4+	5-	3	4-	4+	4	5-	4+	60	185.8*	164	169	139	-	-	
4	4	3	3-	3	3+	3	3+	3+	34	4	3+	3-	3-	4	3-	4	4-	40	183.4	133	152	136	-	-	
5	3+	3	3+	2+	3	4-	4-	4-	35	4-	3	3	3-	3-	3	4-	4	35	195.1	127	127	149	-	-	
6	4	3	3	3+	3	4	3+	3-	37	3+	3	3+	3+	3	4-	3+	3	36	205.3*	127	127	160	-	-	
7	3	3	3+	3+	3+	4-	3+	4	38	3+	3	3+	4-	3+	4-	3	3+	37	210.5	132	127	165	-	-	
8	3	3-	3-	2+	3-	2+	1+	3	22	3+	2	2+	3-	2+	2-	2	3	22	243.9	161	150	201	-	-	
9	3+	3+	2+	3-	3	3-	3	3	29	3+	3+	3	2	2+	3-	3+	3-	27	259.3	172	158	218	-	-	
10	3+	3-	2	2+	3+	1	1-	0+	19	3	3-	2	2+	3+	1-	0+	1-	17	269.8	192	200	229	-	-	
11	1	1	1+	2-	3-	3-	4-	3-	19	1-	1	2-	2	3+	3-	3+	3-	19	257.0	190	201	216	-	-	
12	2+	2	2-	2	3-	3	4-	3	23	2	2	2+	2-	2-	3	4-	3+	23	257.3	216	216	216	-	-	
13	3+	3	3	4	4-	4-	3	3-	36	4-	4-	4-	4	3	4-	3+	2	41	258.4	210	207	217	-	-	
14	3-	3	2+	3-	3-	4	2-	1	23	2-	3-	3-	2+	3-	3	1+	2-	20	260.7	208	221	220	-	-	
15	1+	3-	2-	2-	1+	3+	4-	4-	23	2-	3-	2-	2-	1-	3+	4-	4-	24	241.3	185	187	199	-	-	
16	4-	4-	2+	2+	3	2-	3-	3+	29	4	4+	3-	3-	3-	1+	3-	4-	33	241.1	195	191	198	-	-	
17	2	2	2-	2-	1+	1	1	2-	11	3	2+	1	2-	1	0	1-	2-	11	233.9*	201	192	191	-	-	
18	1+	2+	1+	1-	3	3	3-	1	17	2-	3-	1	1-	3	3	2+	1	17	213.8	163	156	169	-	-	
19	1	1+	2-	2-	2	3+	2	3+	18	1	2-	2	2+	2-	3	2+	3+	18	214.0	157	152	169	-	-	
20	3	3	3+	3	3+	4-	3+	2	33	3	3	4-	3	4-	3	4-	2	33	202.2*	169	174	156	-	-	
21	2+	2	3	3-	2-	4-	1+	1	21	3-	2	3-	3-	1+	3	1+	2-	19	217.8	149	152	173	-	-	
22	2-	2	4-	3+	3-	2	3+	2	23	3-	2-	3	3	2	2	2+	2	20	213.9	142	132	169	-	-	
23	1	1	1	1+	1	1+	1+	2+	9	2	1+	1+	2-	1	1	1-	2	9	214.7*	134	126	170	-	-	
24	3-	2+	2	2-	3+	2-	1+	2-	16	2-	2	2	2+	3-	2-	1+	2-	15	213.4	153	163	168	-	-	
25	1	1+	3	2	2+	2-	1+	2-	13	2-	2-	3	2	1+	0+	1+	1+	12	203.8*	189	191	158	-	-	
26	1	0+	1-	1	2+	1-	0+	1+	6	1	1	1-	1+	1+	0+	0+	1+	7	190.3*	176	169	144	-	-	
27	2-	1-	1	1+	2+	3	2-	2-	13	2	1+	1	1+	2	3-	1+	2-	13	168.6*	147	147	120	-	-	
28	2-	2	2+	2	3	3	3+	3+	24	1+	2+	2+	2	3-	3-	3-	4-	23	163.5	128	121	115	-	-	
Mean											25.6										25.6	217.0	164.5	163.9	172.4

DAILY AVERAGE INDICES Ap

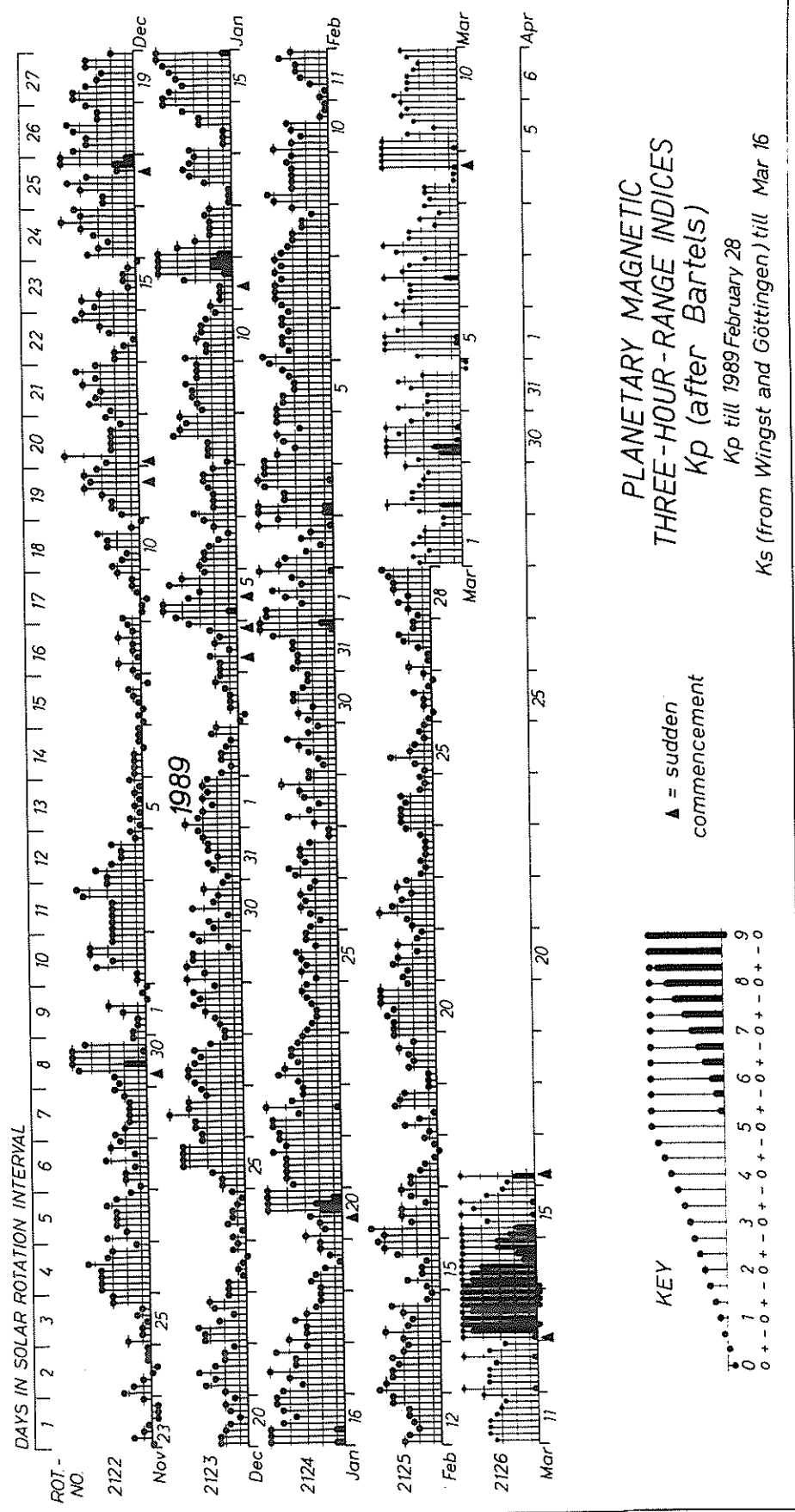
March 1988 to February 1989

DAY	MAR 88	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN 89	FEB
1	4	13	5	6	14	8	21	11	7	5	15	29
2	6	19	7	5	10	5	12	5	30	15	6	21
3	10	48	7	2	7	6	8	3	26	18	4	44
4	19	78	13	3	4	2	7	9	8	10	9	24
5	8	24	20	10	5	6	4	18	10	4	33	22
6	19	48	106	8	11	5	3	38	13	3	10	23
7	11	15	13	6	8	5	5	6	17	3	10	25
8	26	7	13	6	10	3	6	7	18	5	17	14
9	13	10	10	8	3	13	4	17	12	4	16	19
10	12	16	11	9	7	9	7	85	14	8	12	12
11	14	9	6	7	21	8	51	13	10	17	37	10
12	9	14	5	4	15	16	20	6	18	14	20	14
13	5	10	5	6	5	17	10	6	8	20	11	21
14	12	9	4	20	7	21	11	6	11	13	14	14
15	20	6	6	9	11	16	12	6	13	10	38	14
16	14	5	11	6	22	8	6	10	18	25	43	17
17	9	5	24	10	6	5	20	15	11	35	28	5
18	7	7	18	14	9	8	34	30	8	25	15	9
19	4	9	6	21	9	8	23	12	4	20	7	9
20	6	7	6	13	3	17	11	18	2	7	45	21
21	2	8	10	5	26	7	11	7	6	11	28	11
22	3	44	8	12	27	24	20	3	4	13	30	13
23	5	21	6	8	12	10	11	6	2	4	22	5
24	5	7	8	17	7	11	8	6	4	4	10	9
25	10	6	6	27	6	15	12	4	7	22	12	7
26	49	5	8	17	16	9	8	7	20	25	10	4
27	34	6	3	9	12	15	5	8	12	20	12	6
28	26	11	3	10	11	9	5	9	9	14	13	13
29	32	6	7	26	7	13	4	3	8	20	10	
30	34	7	12	22	6	12	8	5	37	11	12	
31	11		9		8	13		10		12	32	
MEAN	14	16	12	11	10	10	12	13	12	13	19	15

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

University of Göttingen

Kp through February 28, 1989



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

FEBRUARY 1989

Sta	Geomag Lat	Commencement Time		Type	SC Amplitudes			Maximum 3-Hour K Index Day(3-Hour Periods)	Ranges			End Hour Day (UT)	
		Day (UT)	(UT)		D (Min)	H (Gamma)	Z (Gamma)		K (Min)	H (Gamma)	Z (Gamma)		
FRD	49.6N	31	----	..	..	..	..	31(7,8) 01(5,8) 03(1,5,7) 04(1)	5	27	170	56	-- --
UJJ	13.5N	31	1100	..	..	..	..		-	5	93	26	07 24
ABG	09.5N	31	1100	..	..	..	..	31(7,8) 01(5) 02(7,8) 03(7) 06(6) 07(6)	5	5	109	37	07 24
ANN	01.5N	31	1100	..	..	..	..		-	6	44	91	07 24
GNA	43.2S	31	17--	..	..	..	..	01(8)	6	29	100	100	02 07
GUA	04.0N	01	22--	..	..	..	..	02(1)	5	--	90	40	02 08
HER	33.7S	01	22--	..	..	..	..	01(8)	5	18	59	75	02 03
COL	64.6N	02	18--	..	..	..	..	03(6)	7	243	1320	810	04 18
SIT	60.0N	02	19--	..	..	..	..	03(6)	7	--	--	470	04 09
HYB	07.6N	02	1200	..	..	..	..	02(7,8) 03(7)	5	4	107	29	05 07
GUA	04.0N	02	1847	..	..	..	..	03(1)	5	--	110	30	03 07
ETT	00.6S	02	1500	..	..	..	..		-	4	159	59	04 13
HER	33.7S	02	18--	..	..	..	..	03(2,7)	5	27	91	91	04 01
GNA	43.2S	02	18--	..	..	..	..	02(7) 03(1,8) 04(1)	5	21	100	90	08 03
GUA	04.0N	03	11--	..	..	..	..	03(4)	5	--	110	20	04 07
ETT	00.6S	05	1400	..	..	..	..		-	4	185	59	08 15
GUA	04.0N	06	23--	..	..	..	..	07(1)	5	--	80	40	07 06
COL	64.6N	07	06--	..	..	..	..	07(4,5,6)	6	132	1070	480	07 22
KGL	56.5S	07	0923	SC*	2	36	12	07(4,5,6,7,8) 08(1)	4	26	172	176	08 14
GUA	04.0N	08	2330	..	..	..	..	08(8)	5	--	110	30	09 06
HYB	07.6N	11	1559	SC	.1	12	- 1	11(7) 12(6,7) 13(4,5)	4	4	110	27	13 23
GUA	04.0N	11	1600	..	..	..	..	12(1)	5	--	90	50	12 05
ETT	00.6S	11	1600	..	..	..	..		-	7	193	61	13 20
GUA	04.0N	13	02--	..	..	..	..	13(4)	5	--	130	30	13 19
UJJ	13.5N	15	1400	..	..	..	..		-	3	89	28	16 24
ABG	09.5N	15	1400	..	..	..	..	16(2)	5	4	108	31	16 24
HYB	07.6N	15	0500	..	..	..	..	16(2)	5	4	110	24	17 04
GUA	04.0N	15	23--	..	..	..	..	16(2)	6	--	110	30	16 16
ANN	01.5N	15	1400	..	..	..	..		-	3	172	56	16 24
HYB	07.6N	19	0500	..	..	..	..	20(5)	5	4	150	34	20 23
GUA	04.0N	19	2223	..	..	..	..	20(1)	6	10	190	40	20 19

Stations:

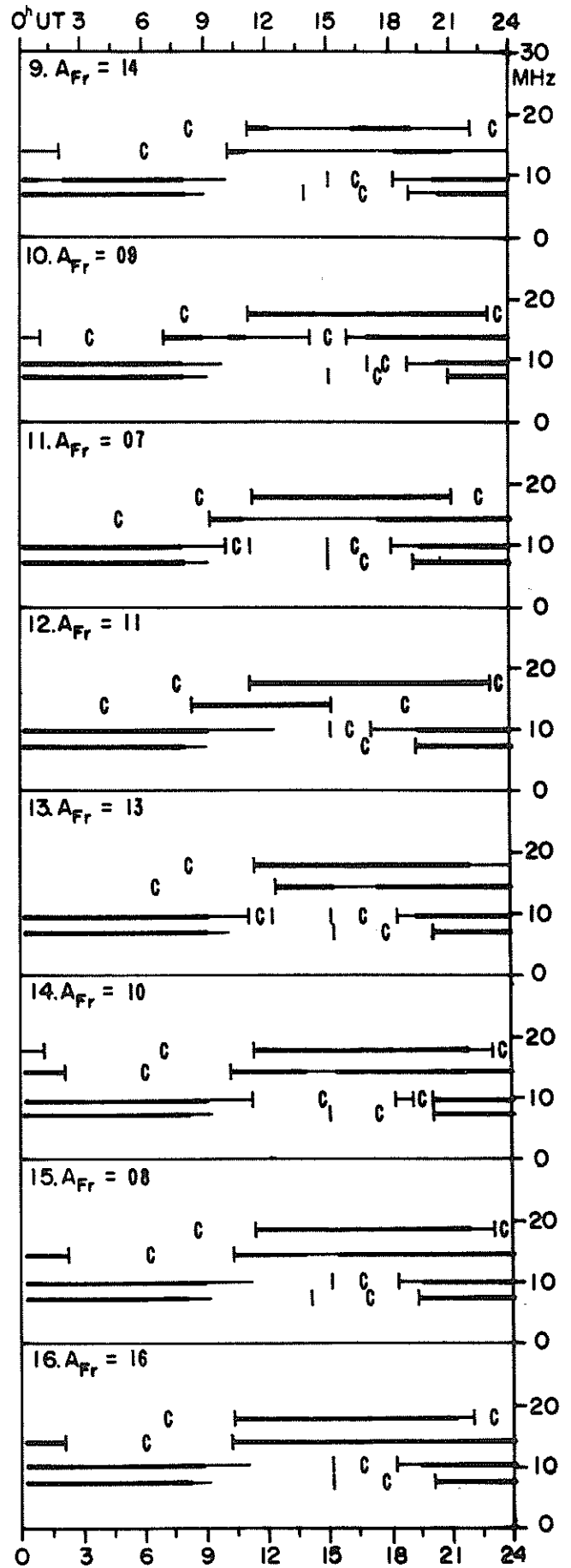
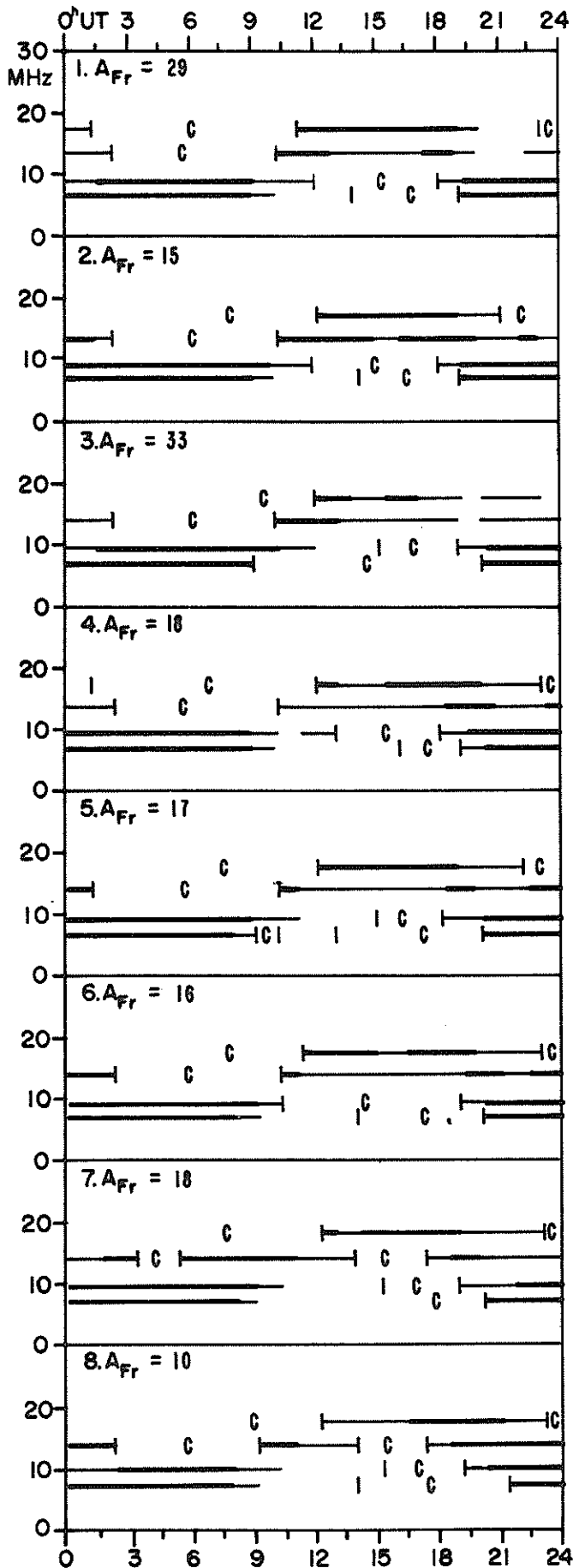
ABG = ALIBAG
ANN = ANNAMALAINAGAR
API = APIA
BJI = BEIJING
CNB = CANBERRA
COL = COLLEGE

ETT = ETAIYAPURAM
FRD = FREDERICKSBURG
GNA = GNANGARA
GUA = GUAM
HER = HERMANUS

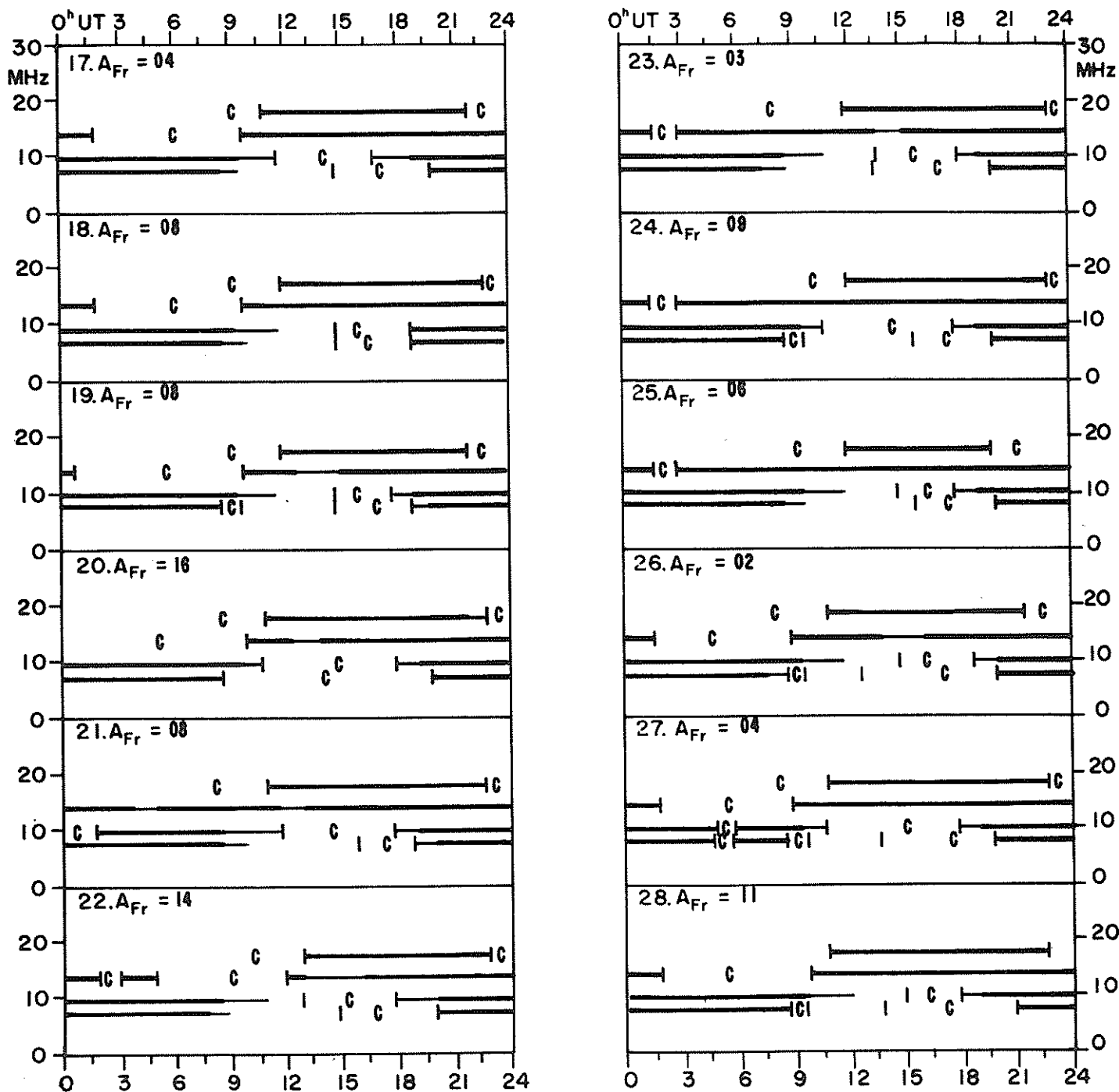
HON = HONOLULU
HYB = HYDERABAD
JAI = JAIPUR
KGL = KERGUELEN
KRC = KARACHI

PMG = PORT MORESBY
SHL = SHILLONG
SIT = SITKA
TRD = TRIVANDRUM
UJJ = UJJAIN
WIT = WITTEVEEN

TRANSMISSION FREQUENCY RANGES--NORTH ATLANTIC PATH
FEBRUARY 1989



TRANSMISSION FREQUENCY RANGES--NORTH ATLANTIC PATH
FEBRUARY 1989



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 $1 \mu\text{V/m}$ (transmitter power reduced to 1 kW). Observed field strengths between -12 dB and -40 dB above $1 \mu\text{V/m}$ are represented by the fine line.

RADIO PROPAGATION QUALITY INDICES
FEBRUARY 1989

Day	For Circuits from Norddeich to:					
	Bracknell England	Rome Italy	Teheran Iran	New York USA (East)	Tokyo Japan	Canberra Australia
1.	5.7	5.2	5.3	4.4	7.2	5.5
2.	6.0	6.1	4.6	5.1	7.3	5.7
3.	5.3	6.3	5.9	3.9	6.5	5.2
4.	5.4	6.0	4.9	5.1	7.6	5.7
5.	6.0	6.1	6.0	4.5	7.7	6.0
6.	5.3	6.2	6.4	4.3	7.4	6.0
7.	5.0	6.1	7.3	4.8	7.3	6.2
8.	5.2	6.1	6.3	4.9	7.2	5.7
9.	5.1	5.2	6.5	4.7	7.7	6.2
10.	5.2	5.3	6.5	5.6	6.6	6.1
11.	6.0	5.9	6.3	6.2	7.5	6.1
12.	6.2	6.3	7.3	6.4	7.8	6.4
13.	5.9	6.4	7.5	6.8	7.5	6.8
14.	6.0	5.6	7.4	6.5	6.3	6.5
15.	6.5	5.8	7.3	6.8	6.6	6.8
16.	5.8	5.4	7.1	7.3	7.0	6.1
17.	7.2	5.8	7.5	7.8	7.8	7.6
18.	7.0	6.9	7.4	8.0	7.3	7.4
19.	6.5	6.9	8.1	7.8	7.6	7.3
20.	7.0	7.0	8.3	7.3	7.7	7.5
21.	7.0	7.3	8.2	7.4	7.2	7.2
22.	6.9	7.6	8.2	6.6	7.0	6.5
23.	6.9	7.2	8.0	7.5	8.0	7.0
24.	7.1	7.6	8.6	8.5	7.2	8.0
25.	7.0	7.7	8.3	8.5	7.9	7.4
26.	7.5	7.4	8.4	7.7	8.2	7.3
27.	7.5	7.9	7.7	7.8	7.0	7.9
28.	7.3	7.5	7.2	7.5	7.4	7.4
MEAN:	6.3	6.5	7.1	6.4	7.3	6.6

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 0.1 to 9.9 where 6.0 is normal. Conditions are "normal" (index = 6.0), if they respond to the average of the preceeding 27 days.

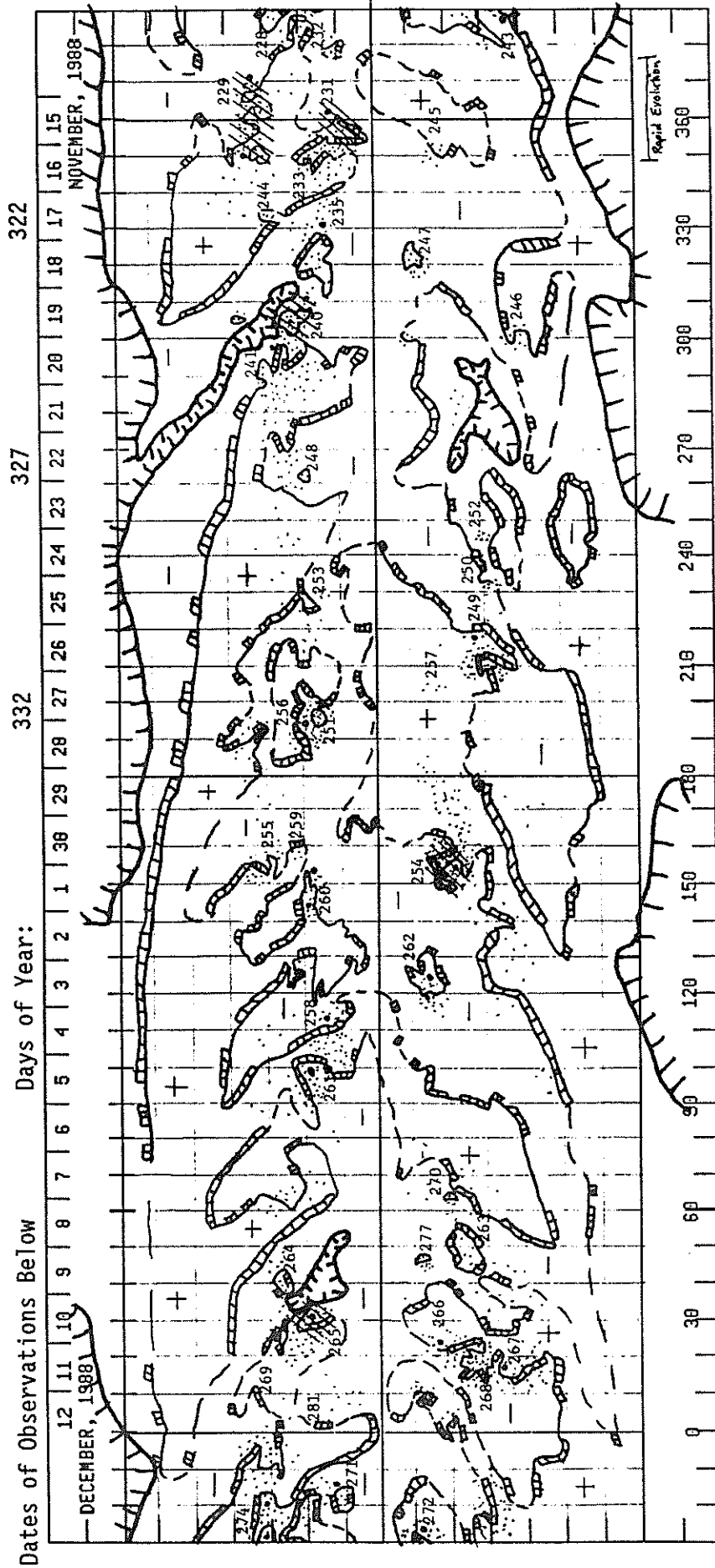
SCALE FOR QUALITY INDICES:


- 0.1 - 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

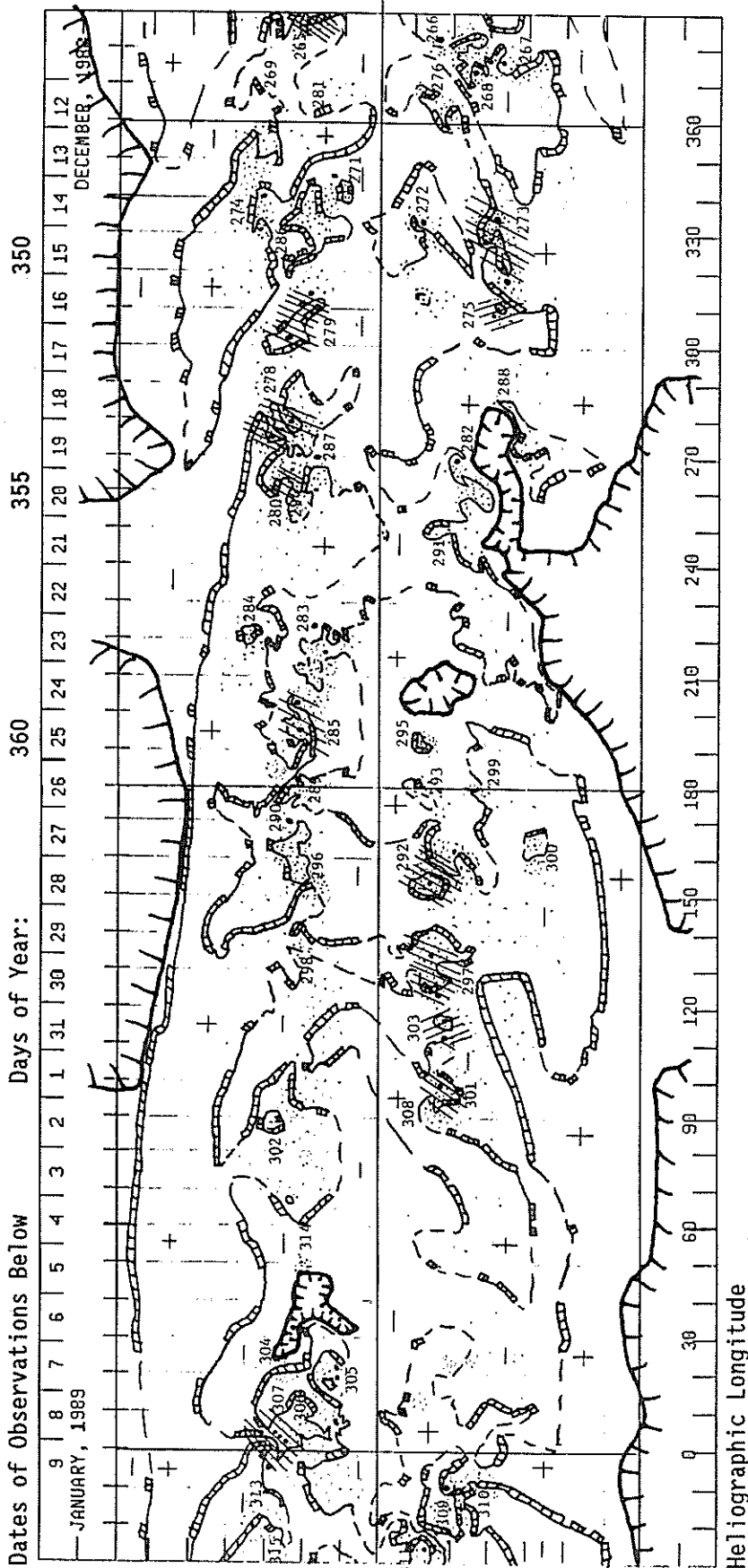
Prompt Reports	LATE DATA	Number 536	Part I	Page
SOLAR ACTIVE REGIONS				
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	also Boulder Magnetometer and Deep River Cosmic Rays			

PRELIMINARY H - ALPHA SOLAR SYNOPTIC CHART
CARRINGTON ROTATION NUMBER 1809
(15 November to 12 December 1988)



Heliographic Longitude  = λ 10830 Coronal Hole Estimate
Last Revised 03/29/89 PSM/KMP

PRELIMINARY H - ALPHA SOLAR SYNOPSIS CHART
CARRINGTON ROTATION NUMBER 1810
(12 December 1988 to 9 January 1989)

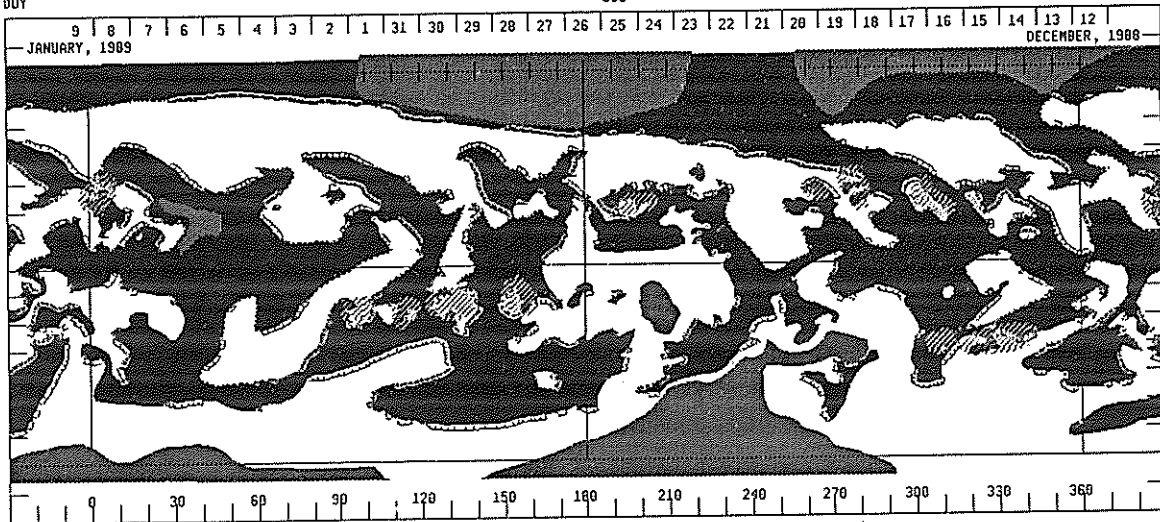
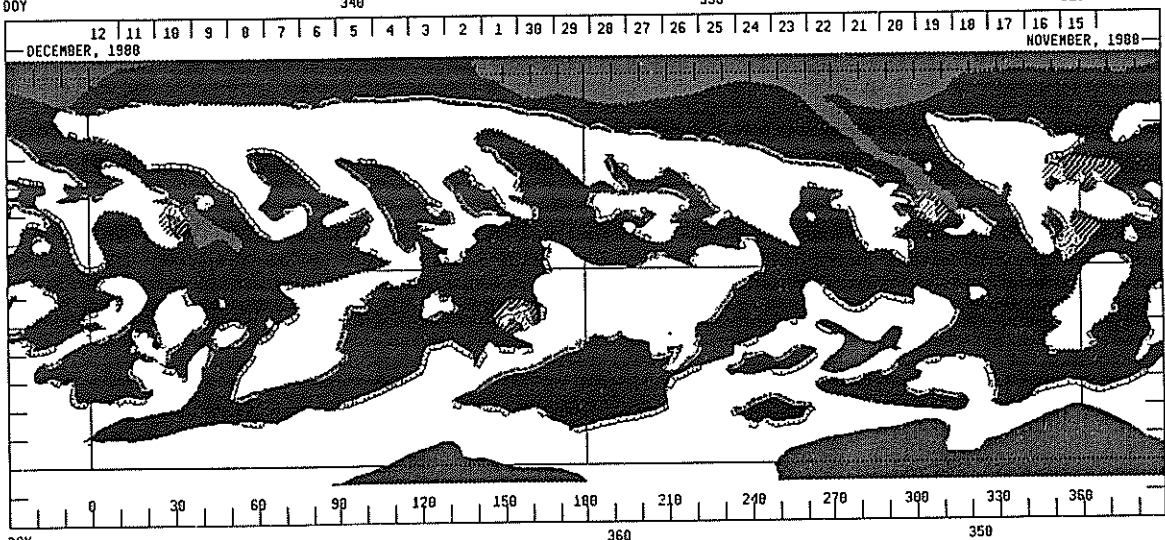
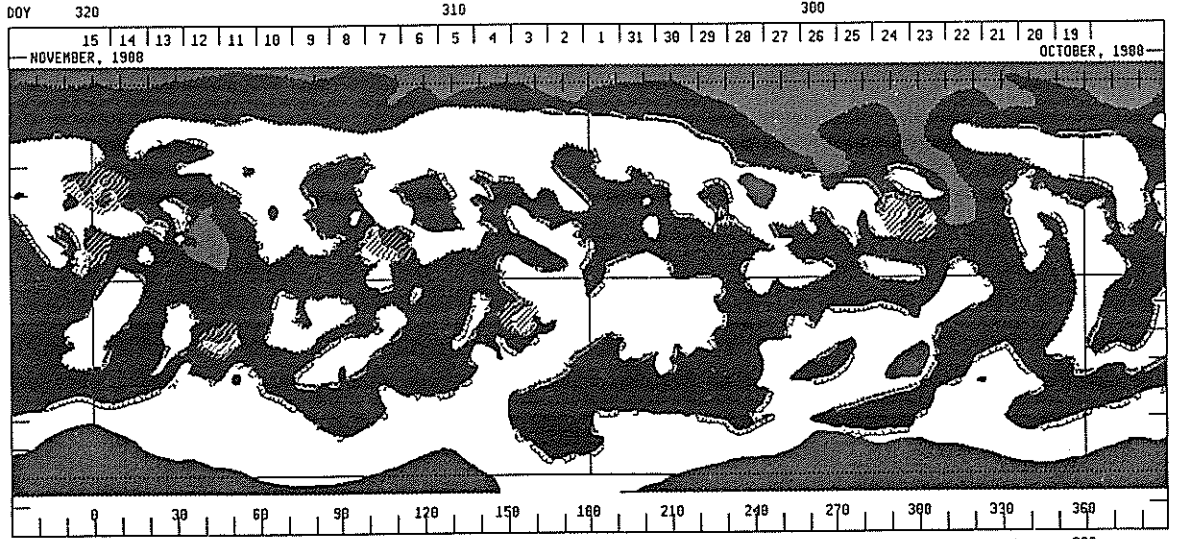


Last Revised 04/19/89 KNP/PSN

 λ 10830 Coronal Hole Estimate

Heliographic Longitude

SHADED H-ALPHA SOLAR SYNOPTIC CHARTS
Carrington Rot. 1808-1810 19 October 1988 to 9 January 1989



□ = Positive Polarity ■ = Negative Polarity ■ = 10630 Coronal Hole Estimate ▨ = X-Ray Flares > M1

Heliographic Longitude

C O S M I C R A Y I N D I C E S
(Neutron Monitor)

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Late
Jan 89

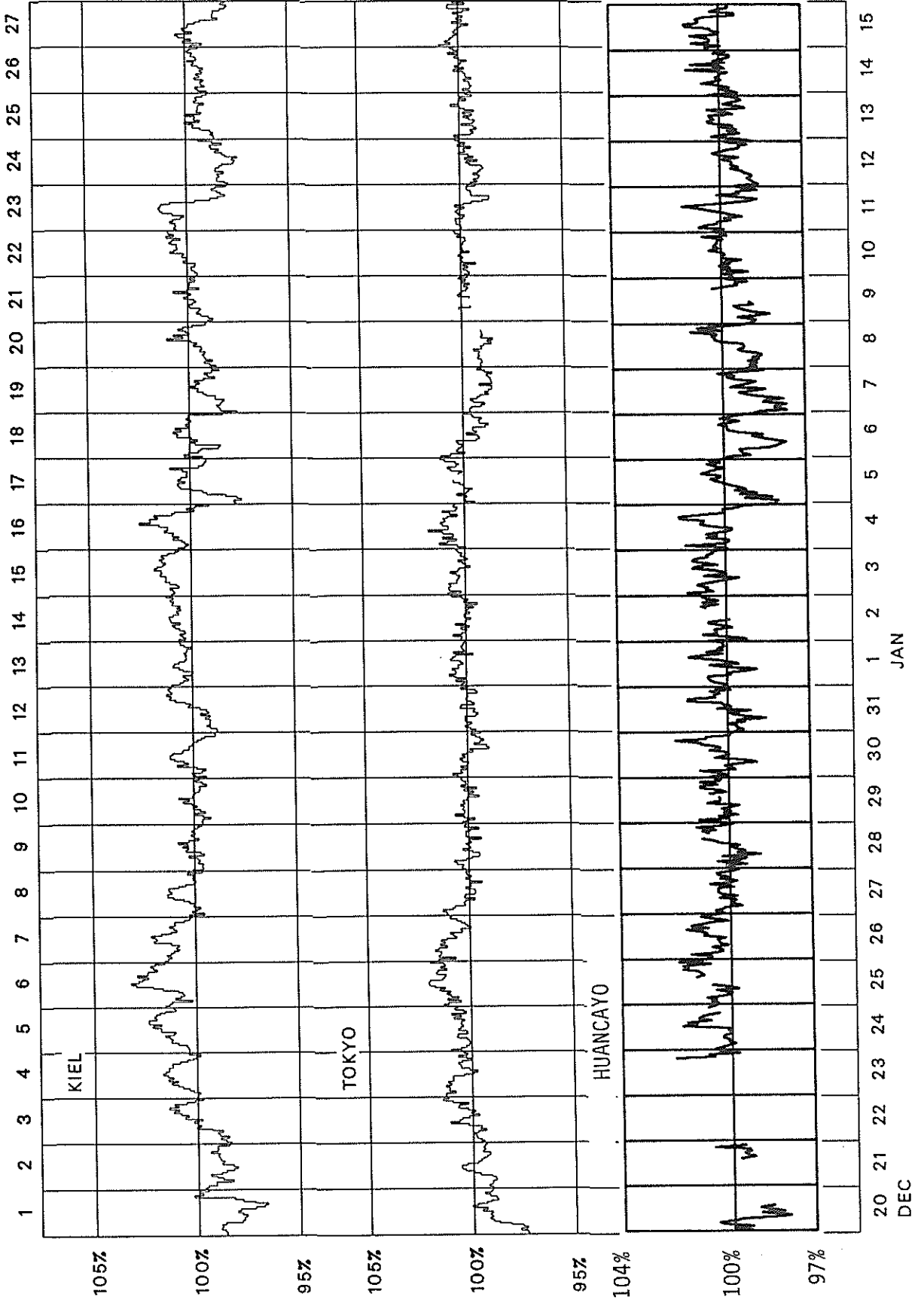
JANUARY 1989

Day	THULE Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	TOKYO Average (cts/h)/256	HUANCAYO Average (cts/h)/100
1	4068	6409.8	5692.9	3717.3	3522.8	1684.9(32)
2	4084	6396.3	5710.9	3707.0	3512.2	1687.9(38)
3	4126	6442.0	5736.7	3712.9	3523.1	1692.1
4	4085	6439.7	5717.5	3710.8	3537.7	1687.6
5	4019	6321.9	5642.9	3677.2	3518.2	1676.3
6	4048	6324.5	5661.3	3674.9	3500.7	1668.2
7	4008	6278.2	5609.2	3643.3	3475.9	1662.2
8	4047	6332.9	5647.2	3685.5	3476.5	1673.6
9	4043	6350.7	5651.7	3671.6	3505.5	1668.4(36)
10	4056	6386.0	5684.4	3686.1	3506.4	1680.3
11	4047	6359.8	5667.1	3677.8	3500.4	1679.2
12	3969	6227.3	5573.5	3613.9	3492.0	1671.1
13	4022	6304.6	5628.8	3643.5	3498.8	1677.2
14	4023	6331.7	5636.0	3669.7	3505.0	1681.9
15	4041	6316.0	5623.9	3674.0	3515.2	1687.2
16	3991	6273.3	5579.1	3631.8	3507.6	1682.6
17	4013	6302.4	5625.8	3646.6	3524.3	1684.5
18	4048	6340.4	5670.5	3679.3	3530.0	1692.8
19	4084	6374.6	5704.4	3697.6	3515.4	1690.4
20	4100	6398.2	5724.5	3717.0	3516.3	1692.4
21	4104	6406.9	5742.1	3725.1	3534.8	1684.2
22	4128	6428.5	5749.5	3756.3	3522.2	1685.7
23	4081	6381.5	5711.7	3729.0	3514.9	1681.7
24	4081	6385.7	5703.5	3721.8	3514.2	1680.8
25	4092	6436.7	5738.1	3741.2	3514.0	1683.3(30)
26	4080	6397.0	5711.9	3723.5	3503.4	1680.4
27	4070	6359.3	5657.6	3686.5	3501.3	1674.1
28	4032	6282.7	5611.1	3648.4	3495.5	1665.4
29	4050	6305.2	5633.6	3663.5	3499.6	1674.6
30	4056	6309.2	5628.9	3649.0	3496.2	1669.1
31	4081	6348.6	5671.5	3685.6	3503.9	1679.2
Mean	4057	6353.3	5669.3	3685.9	3509.4	1679.8

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.

COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2123 (December 1988-January 1989)



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

JANUARY 1989

Storm Sudden Commencements (ssc)				Solar Flare Effects (sfe)		
Day	Time	Quality:	Station Group*	Day	Begin-End	Station(s)
04	0847	A:	NUR	02	1008-1036	WNG
		B:	WNG* BJI LNP MPO CNB*	04	0846-0907	CLF AQU (see ssc)
		C:	NGK* BDV*	07	0415-0422	LNP
		sfe:	CLF AQU	09	0104-0111	LNP
04	2305	A:	DOB NUR NAG COI* BJI PEN ALM	10	0904-0945	NGK CLF
			MPO GNA* CZT* DUM	13	0351-0354	LNP
		B:	WNG* NGK CLF* GCK MMB AQU FRD*	14	0403-0500	MMB KAK KNY
			KAK* KNY* CNB* KGL*	16	0321-0328	LNP
		C:	BDV* AMS*	18	1148-1230	ALM
05	1324	B:	WNG* NAG* AQU COI* PEN	24	0845-0855	NAG
		C:	NGK CLF* GCK	26	0421-0428	LNP
		bps:	MPO	27	0328-0333	LNP
06	2354	A:	PEN MPO	28	0951-1003	MPO
		B:	WNG NAG COI	30	0106-0109	LNP
		C:	NGK BDV	31	0306-0315	LNP
		si:	ALM	31	1116-1130	NAG MPO (ssc*: BDV CLF)
11	1206	A:	NUR NAG* GCK* BJI PEN QUE MPO			
			CZT* KGL*			
		B:	DOB WNG* BDV* AQU* COI* FRD KNY			
			LNP GNA* CNB			
		C:	NGK* CLF* MMB ALM KAK AMS*			
13	1326	B:	BJI LNP			
		C:	PEN CNB			
		bps:	MPO			
20	1129	A:	NAG* FRD QUE			
		B:	SOD* WNG BDV* CLF BJI KNY LNP*			
		C:	COI			
20	1232	A:	BJI MMB* KAK			

Reporting Observatories: (up to the 1st of March 1989)

SOD DOB NUR WNG NGK BDV CLF NAG GCK MMB AQU COI BJI FRD
PEN ALM KAK KNY QUE LNP MPO GNA CNB AMS CZT KGL DUM

Three-letter codes identify each observatory. Reporting stations have been grouped by the character of the observed event. The letter A means very remarkable; B means fair, ordinary, but unmistakable; and C means very poor, doubtful.

ERRATA: The SC reported on November 9, 1988, at 0604 UT actually occurred at 0634 UT.
These data appeared in SCD 534 Part 1 page 162.

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Late
Jul 88

PIONEER VENUS ORBITER
ONE HOUR MAGNETIC FIELD AVERAGES AT APOAPSIS
VENUS SOLAR ORBITAL COORDINATES

UNIVERSAL TIME	NANOTESLAS			BT	REGION W=WAKE
	BXvso	BYvso	BZvso		
88 183 JUL 1 14:40:00	7.12	-6.28	1.47	10.51	
88 184 JUL 2 14:40:00	-3.20	-4.89	.82	7.29	
88 185 JUL 3 14:40:00	-5.45	-5.16	4.14	9.14	
88 186 JUL 4 14:40:00					
88 187 JUL 5 14:40:00					
88 188 JUL 6 14:40:00	6.59	-4.32	-.82	13.72	
88 189 JUL 7 14:40:00	9.43	-8.72	-6.83	14.82	
88 190 JUL 8 14:40:00	6.34	-12.01	.88	13.70	
88 191 JUL 9 14:40:00	4.56	-5.08	-.39	7.00	
88 192 JUL 10 14:40:00	-6.48	11.69	-2.07	13.79	
88 193 JUL 11 14:40:00	8.71	-7.45	-.43	12.23	
88 194 JUL 12 14:40:00	11.82	-5.73	10.51	17.66	
88 195 JUL 13 14:40:00	8.24	2.16	-1.82	9.28	
88 196 JUL 14 14:40:00	6.83	-3.61	6.61	10.93	
88 197 JUL 15 14:40:00	6.36	-5.21	-.58	8.96	
88 198 JUL 16 14:40:00	-5.53	1.93	-.12	7.12	
88 199 JUL 17 14:40:00	-4.97	5.66	4.32	11.23	
88 200 JUL 18 14:40:00	-9.32	1.26	-4.76	12.26	
88 201 JUL 19 14:40:00	-7.75	3.62	4.46	10.57	
88 202 JUL 20 14:40:00	-8.02	4.86	2.55	10.36	
88 203 JUL 21 14:40:00	-10.20	-7.68	-6.09	14.27	
88 204 JUL 22 14:40:00					
88 205 JUL 23 14:40:00	-1.30	1.21	-.47	4.97	
88 206 JUL 24 14:40:00	-5.33	10.06	4.82	14.52	
88 207 JUL 25 14:40:00	-10.06	5.63	.90	12.67	
88 208 JUL 26 14:40:00	2.11	-5.16	7.89	10.16	
88 209 JUL 27 14:40:00	8.06	-10.02	2.93	14.48	
88 210 JUL 28 14:40:00	5.54	-3.87	2.86	9.79	
88 211 JUL 29 14:40:00	5.61	-4.57	-5.75	11.47	
88 212 JUL 30 14:40:00					
88 213 JUL 31 14:40:00					

Source: Institute of Geophysics and Planetary Physics, UCLA

PIONEER VENUS					
DATE JAN88	TIME (UT)	ESV (deg)	Uh+ (km/sec)	Nh+ (N/cc)	Th+ (x10E6 deg/K)
1	0213	102	412.	23.7	.167
2	0235		360.	5.7	.073
3	0223		552.	11.9	.236
4	----				
5	0217		479	11.5	.315
6	----				
7	0207		392.	13.9	.048
8	0353		344.	16.3	.129
9	0334		425.	3.9	.021
10	----				
11	0220		345.	44.8	.010
12	0234		329.	25.7	.074
13	0223		331.	38.9	.034
14	0218		320.	73.5	.009
15	0222		339.	25.9	.130
16	0215	93	391.	31.9	.179
17	----				
18	0319		456.	14.5	.181
19	----				
20	----				
21	0235		359.	26.8	.149
22	----				
23	0121		314.	70.3	.023
24	0136		464.	26.6	.183
25	0142		358.	17.2	.080
26	0133		368.	47.4	.074
27	0127		327.	52.6	.014
28	0111		554.	14.6	.255
29	0212		480.	13.5	.199
30	0121	86	361.	11.1	.099
31	----				

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Late
Feb 88

PIONEER VENUS					
DATE FEB88	TIME (UT)	ESV (deg)	Uh+ (km/sec)	Nh+ (N/cc)	Th+ (x10E6 deg/K)
1	-----				
2	-----				
3	0600	83	471.	5.9	.195
4	0507		516.	19.2	.294
5	0603		540.	5.2	.513
6	-----				
7	0524		331.	11.6	.051
8	0649		360.	21.8	.159
9	0652		409.	16.2	.147
10	0721		384.	18.8	.095
11	0854		340.	32.9	.120
12	0813		374.	9.0	.165
13	0759		415.	21.1	.156
14	-----				
15	0546	76	344.	14.7	.045
16	0713		381.	6.7	.085
17	0633		308.	14.4	.087
18	0621		398.	21.7	.066
19	-----				
20	0656		337.	16.7	.067
21	0624		326.	59.4	.029
22	0704		338.	47.8	.041
23	0333		358.	17.7	.081
24	0407		344.	85.1	.044
25	0343		358.	37.8	.066
26	0429		555.	19.9	.568
27	0344		607.	9.8	.426
28	0328		531.	10.6	.240
29	0323	68	509.	7.7	.155

PIONEER VENUS					
DATE MAR88	TIME (UT)	ESV (deg)	Uh+ (km/sec)	Nh+ (N/cc)	Th+ (x10E6 deg/K)
1	0337	68	410.	20.4	.135
2	-----				
3	0314		399.	37.8	.177
4	0318		554.	10.9	.344
5	0315		561.	4.7	.251
6	0316		531.	11.8	.170
7	0314		403.	18.2	.128
8	0344		430.	17.7	.176
9	0313		507.	11.0	.238
10	0345		547.	9.1	.381
11	0310		421.	13.5	.243
12	0305		383.	21.5	.214
13	0354		461.	19.8	.302
14	-----				
15	0539		334.	51.0	.019
16	1200	56	386.	15.4	.147
17	1202		363.	17.5	.104
18	-----				
19	1208		407.	18.5	.166
20	1206		465.	18.5	.270
21	1204		463.	80.7	.161
22	-----				
23	1205		382.	29.2	.153
24	1204		383.	49.8	.062
25	1207		394.	17.2	.061
26	1213		467.	9.3	.159
27	1207		407.	49.5	.053
28	-----				
29	0053		396.	19.8	.093
30	1217		408.	7.7	.025
31	1210		497.	14.0	.033

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Late
Apr 88

PIONEER VENUS					
DATE APR88	TIME (UT)	ESV (deg)	Uh+ (km/sec)	Nh+ (N/cc)	Th+ (x10E6 deg/K)
1	1205	46	535.	19.6	.355
2	1207		517.	13.5	.336
3	1206		545.	12.0	.326
4	1203		462.	9.7	.090
5	1209		501.	20.2	.288
6	1202		553.	3.6	.039
7	1203		437.	9.5	.070
8	1200		504.	9.6	.216
9	1203		422.	18.4	.096
10	-----				
11	1201		405.	31.6	.155
12	1206		321.	34.6	.040
13	1205		330.	9.1	.067
14	1207		388.	17.7	.214
15	1214	37	377.	15.9	.099
16	1201		354.	30.4	.055
17	1201		420.	23.2	.065
18	1208		376.	18.6	.168
19	1205		330.	37.6	.027
20	1204		393.	22.7	.091
21	1204		387.	33.9	.040
22	1308		372.	13.9	.037
23	1208		347.	40.6	.058
24	1245		339.	26.7	.150
25	1201		338.	34.3	.045
26	1206		299.	21.4	.015
27	-----				
28	1256		329.	24.1	.214
29	1209		344.	19.3	.067
30	1206		345.	17.3	.076

PIONEER VENUS					
DATE MAY88	TIME (UT)	ESV (deg)	Uh+ (km/sec)	Nh+ (N/cc)	Th+ (x10E6 deg/K)
1	1207	27	324.	36.6	.072
2	1207		312.	34.5	.056
3	1208		558.	12.5	.399
4	1208		500.	14.9	.157
5	1232		431.	21.9	.195
6	1226		484.	17.8	.239
7	-----				
8	-----				
9	1208		447.	8.6	.095
10	1208		371.	14.4	.114
11	1208		364.	32.0	.058
12	1200		437.	11.6	.431
13	1212		357.	31.0	.024
14	1205		354.	68.7	.051
15	1202	18	338.	85.3	.106
16	1201		415.	11.7	.149
17	1201		447.	7.1	.156
18	1231		577.	8.9	.106
19	1202		491.	13.6	.091
20	1200		379.	25.8	.044
21	1204		349.	71.1	.028
22	-----				
23	-----				
24	1209		399.	22.7	.087
25	1216		327.	37.2	.020
26	1208		355.	22.6	.057
27	1204		396.	43.2	.060
28	1208		389.	16.3	.167
29	1205		486.	11.2	.654
30	1205		459.	6.5	.337
31	1205		387.	5.6	.053

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Late
Jun 88

PIONEER VENUS					
DATE JUN88	TIME (UT)	ESV (deg)	Uh+ (km/sec)	Nh+ (N/cc)	Th+ (x10E6 deg/K)
1	1209	7	363.	14.2	.123
2	1205		314.	36.7	.032
3	1208		295.	29.7	.019
4	1205		345.	64.2	.033
5	1237		281.	47.8	.035
6	1214		306.	31.1	.135
7	1202		286.	67.3	.015
8	1301		361.	38.8	.144
9	1206		401.	9.6	.214
10	1205		339.	15.3	.053
11	1203		310.	56.0	.014
12	1206		352.	114.3	.059
13	-----				
14	1205		444.	11.8	.167
15	1206	2	360.	13.7	.143
16	1207		389.	12.5	.137
17	1237		356.	54.2	.026
18	1208		531.	19.7	.334
19	1200		427.	15.9	.489
20	1208		479.	7.4	.138
21	1201		492.	15.2	.284
22	1203		478.	14.7	.134
23	1209		517.	33.6	.046
24	1209		420.	34.4	.026
25	-----				
26	1209		465.	22.6	.012
27	1209		462.	56.5	.040
28	1204		446.	11.4	.302
29	1209		614.	6.8	.186
30	1209		560.	3.9	.203

PIONEER VENUS					
DATE JUL88	TIME (UT)	ESV (deg)	Uh+ (km/sec)	Nh+ (N/cc)	Th+ (x10E6 deg/K)
1	1200	12	430.	19.0	.168
2	1203		484.	11.7	.117
3	0604		382.	16.1	.149
4	0618		377.	21.1	.046
5	0609		363.	56.6	.046
6	-----		306.	31.1	.135
7	0823		332.	17.1	.037
8	0803		290.	24.6	.171
9	0708		292.	32.2	.057
10	0637		296.	46.4	.180
11	0452		463.	24.5	.571
12	0315		484.	13.8	.126
13	-----				
14	-----				
15	0327	20	409.	11.9	.046
16	0315		369.	26.9	.044
17	0330		513.	21.1	.431
18	0316		502.	9.4	.174
19	0325		561.	6.1	.294
20	0310		527.	3.9	.130
21	0315		498.	15.9	.035
22	0319		385.	9.8	.015
23	0345		313.	5.7	.016
24	0410		341.	8.6	.124
25	0315		345.	11.5	.055
26	0310		382.	24.7	.148
27	0637		602.	40.3	.119
28	0335		510.	15.6	.842
29	0330		516.	6.7	.511
30	0346		509.	6.3	.352
31	0330		405.	24.8	.385

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Late
Aug 88

PIONEER VENUS					
DATE AUG88	TIME (UT)	ESV (deg)	Uh+ (km/sec)	Nh+ (N/cc)	Th+ (x10E6 deg/K)
1	0337	30	381.	18.7	.172
2	-----				
3	0354		344.	19.3	.094
4	0349		362.	16.5	.030
5	-----				
6	0353		300.	31.4	.023
7	-----				
8	-----				
9	0332		313.	40.2	.019
10	0348		299.	26.1	.099
11	0333		383.	43.4	.056
12	0313		337.	15.1	.036
13	0518		298.	25.1	.046
14	0150		437.	22.6	.192
15	0329	39	500.	10.6	.167
16	0330		546.	8.3	.240
17	-----				
18	-----				
19	0405		432.	7.3	.139
20	0639		526.	18.7	.456
21	0730		402.	9.0	.108
22	0708		364.	23.6	.380
23	0758		318.	45.9	.058
24	0857		388.	37.2	.162
25	0923		488.	19.4	.313
26	0618		503.	15.3	.656
27	0608		506.	14.0	.084
28	0716		414.	23.7	.252
29	-----				
30	0610		386.	28.6	.183
31	-----				

PIONEER VENUS					
DATE SEP88	TIME (UT)	ESV (deg)	Uh+ (km/sec)	Nh+ (N/cc)	Th+ (x10E6 deg/K)
1	----				
2	0537	51	403.	15.5	.223
3	----				
4	----				
5	0557		390.	14.5	.215
6	0514		334.	29.7	.061
7	0528		335.	12.1	.065
8	0547		290.	22.6	.057
9	0523		307.	26.6	.065
10	0618		369.	24.8	.167
11	0543		388.	18.8	.117
12	0508		304.	122.7	.130
13	0437		454.	22.8	.458
14	0602		514.	10.9	.176
15	0620		419.	14.4	.223
16	0721	60	381.	16.9	.118
17	----				
18	0553		321.	17.4	.065
19	0549		314.	20.9	.113
20	0728		297.	35.8	.164
21	0706		251.	63.4	.052
22	0617		337.	26.9	.143
23	0740		368.	93.6	.061
24	0801		290.	65.9	.109
25	0641		404.	31.1	.283
26	----				
27	0513		575.	23.3	.053
28	0625		463.	27.3	.049
29	0651		325.	21.1	.030
30	----				

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Late
Oct 88

PIONEER VENUS						
DATE OCT88	TIME (UT)	ESV (deg)	Uh+ (km/sec)	Nh+ (N/cc)	Th+ (x10E6 deg/K)	
	1	0533	69	287.	38.0	.024
	2	0512		289.	52.5	.036
	3	0859		345.	39.7	.477
	4	0833		402.	5.5	.032
	5	0933		388.	33.9	.032
	6	0643		384.	27.0	.027
	7	0624		330.	20.5	.034
	8	0641		424.	38.7	.096
	9	0710		466.	12.4	.030
	10	0744		345.	24.8	.012
	11	-----				
	12	0635		394.	13.8	.093
	13	0420		411.	17.2	.128
	14	0406		561.	22.2	.218
	15	0539		858.	29.3	.041
	16	0722	78	497.	8.1	.071
	17	-----				
	18	0613		484.	14.7	.139
	19	0545		401.	10.7	.061
	20	0631		427.	44.7	.252
	21	0634		435.	13.9	.191
	22	0619		387.	24.3	.059
	23	0620		329.	24.3	.013
	24	0603		318.	117.8	.025
	25	0754		542.	13.6	.424
	26	1200		506.	10.6	.156
	27	1200		468.	7.6	.163
	28	1204		424.	13.3	.189
	29	1202		339.	17.1	.053
	30	1204		485.	7.6	.267
	31	1202		464.	11.6	.146

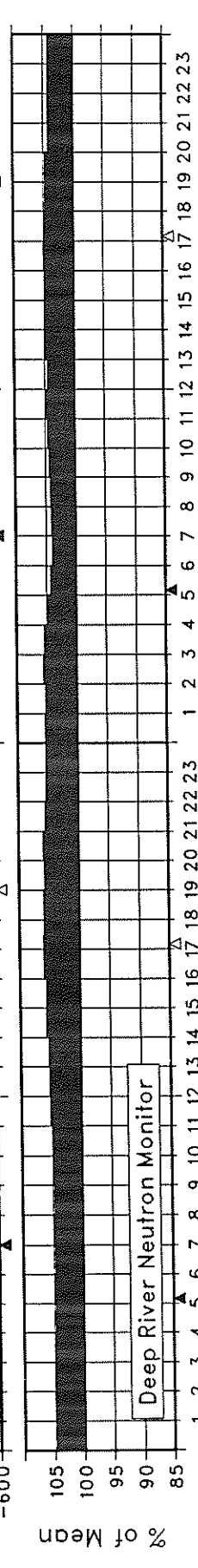
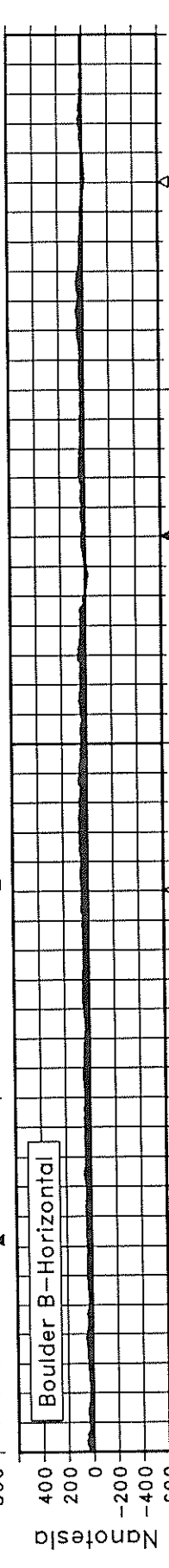
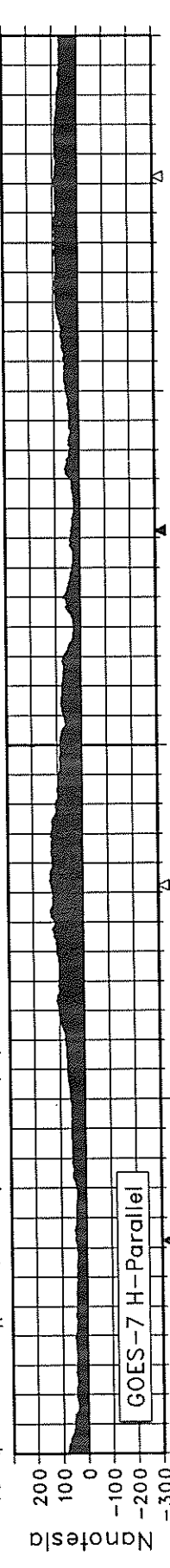
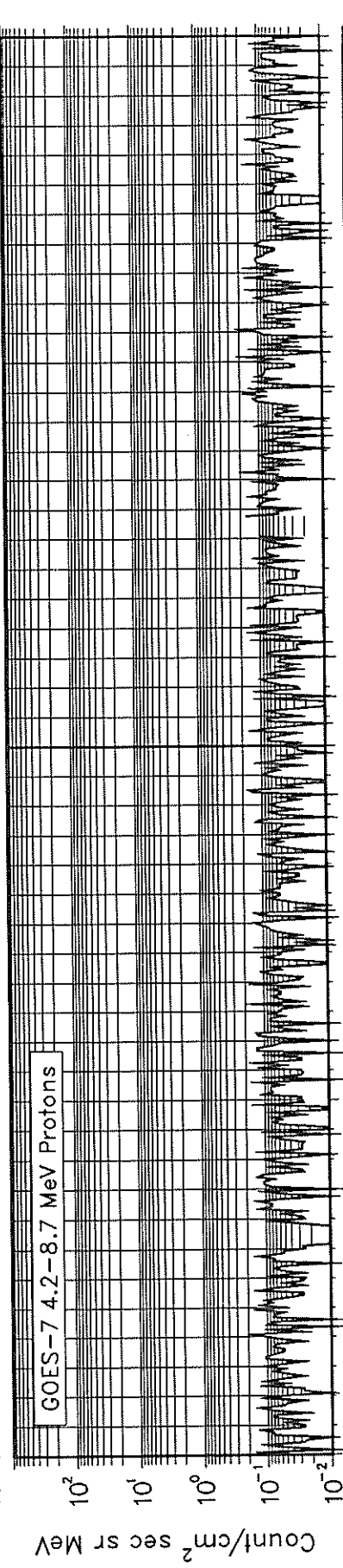
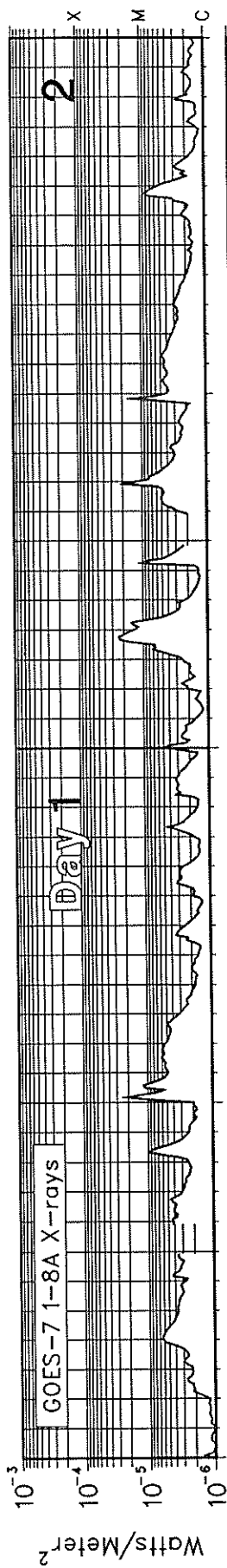
PIONEER VENUS						
DATE NOV88	TIME (UT)	ESV (deg)	Uh+ (km/sec)	Nh+ (N/cc)	Th+ (x10E6 deg/K)	
	1	1202	88	396.	11.0	.164
	2	1202		368.	16.7	.111
	3	1202		392.	6.4	.202
	4	1204		299.	29.1	.019
	5	-----				
	6	-----				
	7	-----				
	8	1207		318.	29.6	.067
	9	-----				
	10	1204		405.	13.8	.145
	11	1201		389.	18.5	.121
	12	-----				
	13	-----				
	14	-----				
	15	1213	97	438.	10.2	.387
	16	1225		492.	11.9	.068
	17	1206		421.	11.2	.089
	18	1209		333.	24.0	.110
	19	1211		315.	18.6	.019
	20	1209		461.	29.7	.546
	21	1209		712.	4.7	.425
	22	1304		528.	5.9	.226
	23	1200		483.	13.2	.114
	24	1202		493.	9.4	.194
	25	1204		460.	7.3	.170
	26	0053		583.	8.6	.402
	27	-----				
	28	1219		383.	11.5	.037
	29	-----				
	30	1203		337.	23.8	.027

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Late
Dec 88

PIONEER VENUS					
DATE DEC88	TIME (UT)	ESV (deg)	Uh+ (km/sec)	Nh+ (N/cc)	Th+ (x10E6 deg/K)
1	1218	107	303.	8.1	.028
2	-----				
3	1208		503.	13.1	.274
4	1225		582.	11.9	.162
5	1234		445.	9.9	.082
6	1205		495.	7.9	.140
7	1204		499.	13.4	.355
8	1206		509.	9.3	.123
9	1206		409.	11.3	.090
10	1247		576.	4.7	.333
11	1207		518.	9.8	.177
12	1208		392.	9.3	.097
13	1206		453.	11.9	.067
14	1207		348.	13.8	.044
15	1209	115	364.	35.8	.117
16	1240		512.	31.7	.242
17	1200		415.	17.6	.070
18	1201		389.	22.9	.036
19	1203		516.	15.4	.214
20	-----				
21	-----				
22	-----				
23	-----				
24	1208		428.	12.6	.319
25	-----				
26	1201		631.	29.1	.036
27	1218		476.	2.6	.033
28	1201		410.	15.9	.305
29	1219		460.	49.4	.040
30	1204		409.	11.9	.006
31	1216		362.	9.5	.030

SOLAR-TERRESTRIAL ENVIRONMENT

March 1989



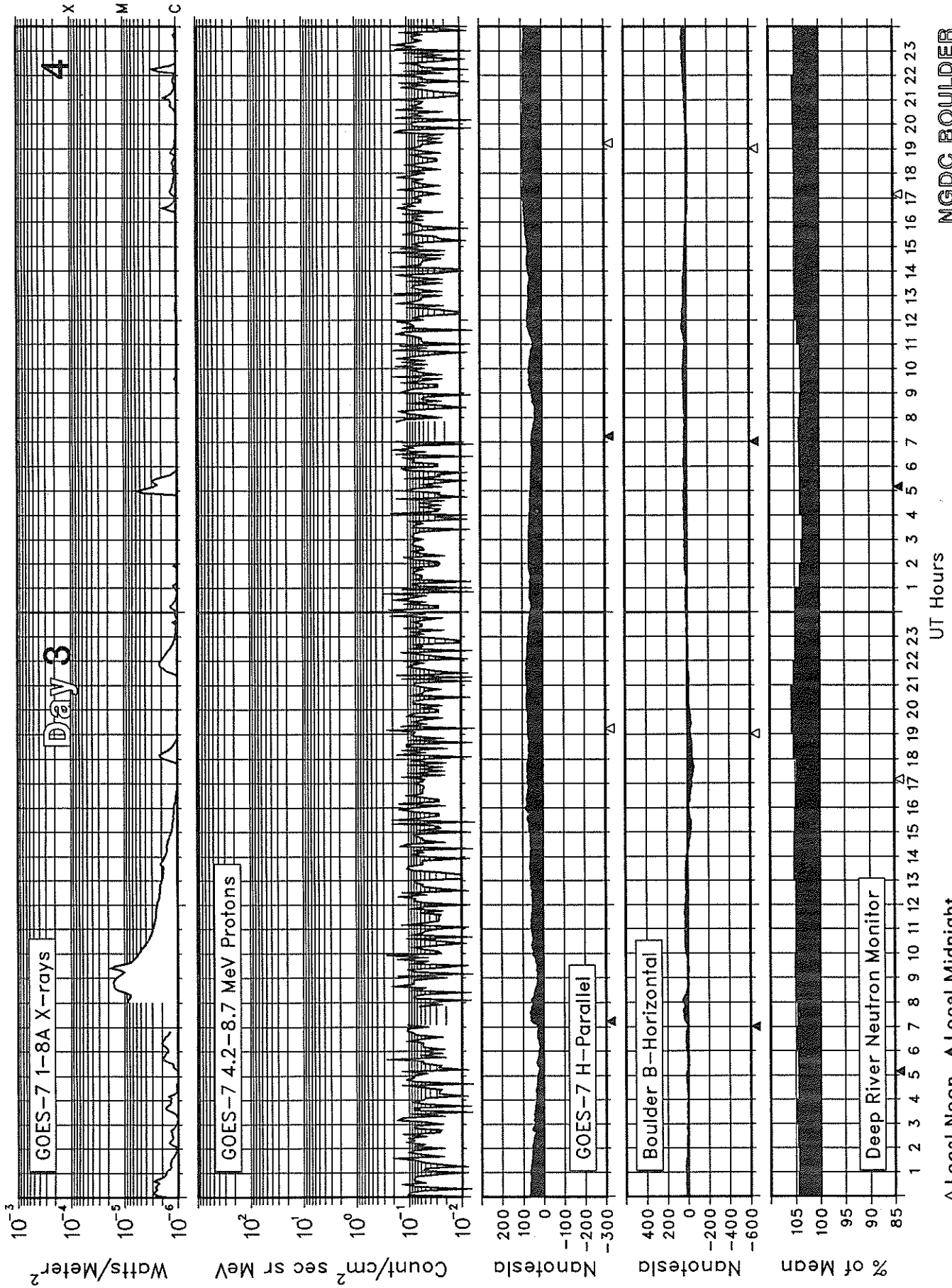
UT Hours

▲ Local Noon ▲ Local Midnight

NGDC BOULDER

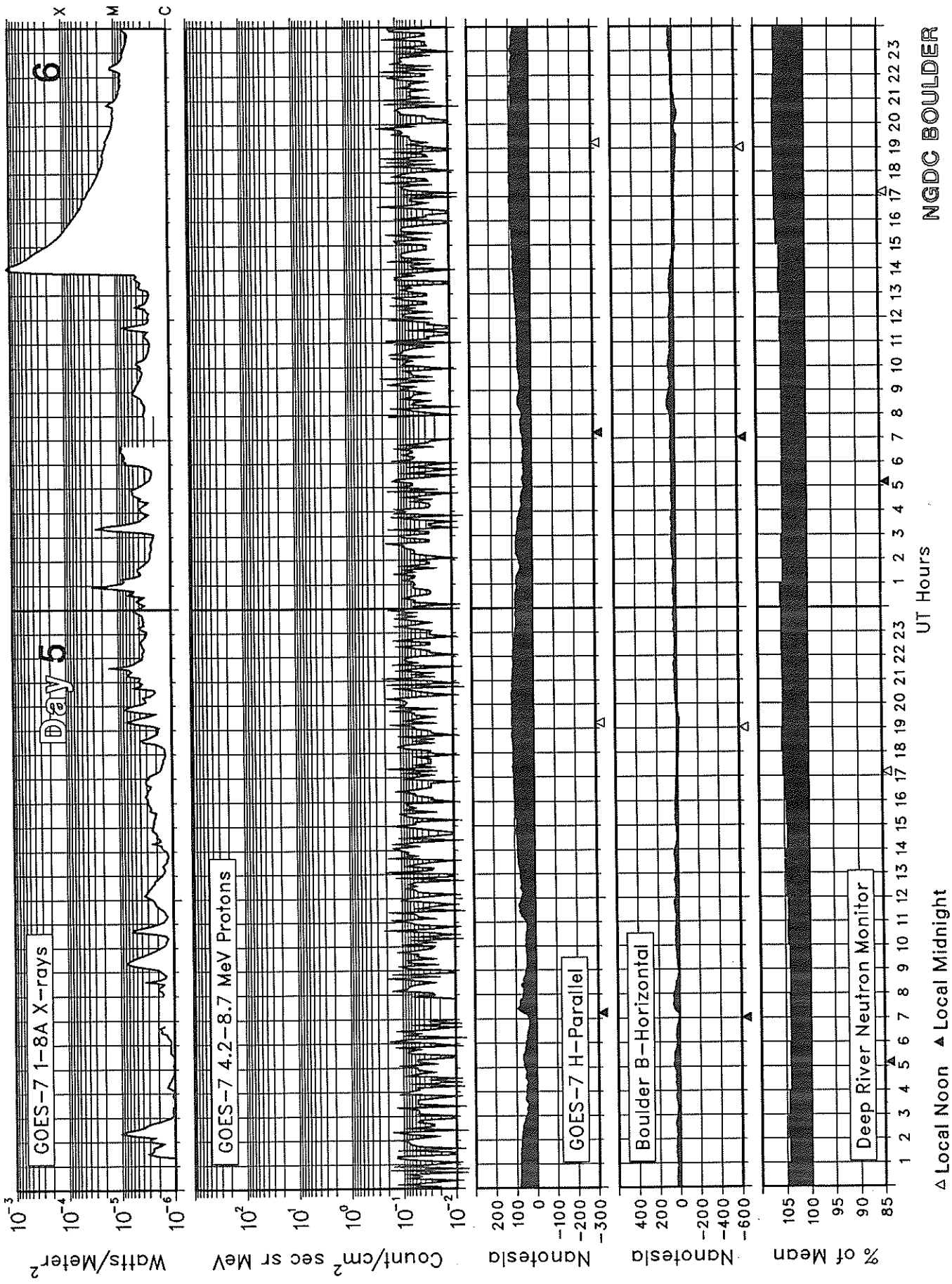
SOLAR-TERRESTRIAL ENVIRONMENT

March 1989



SOLAR-TERRESTRIAL ENVIRONMENT

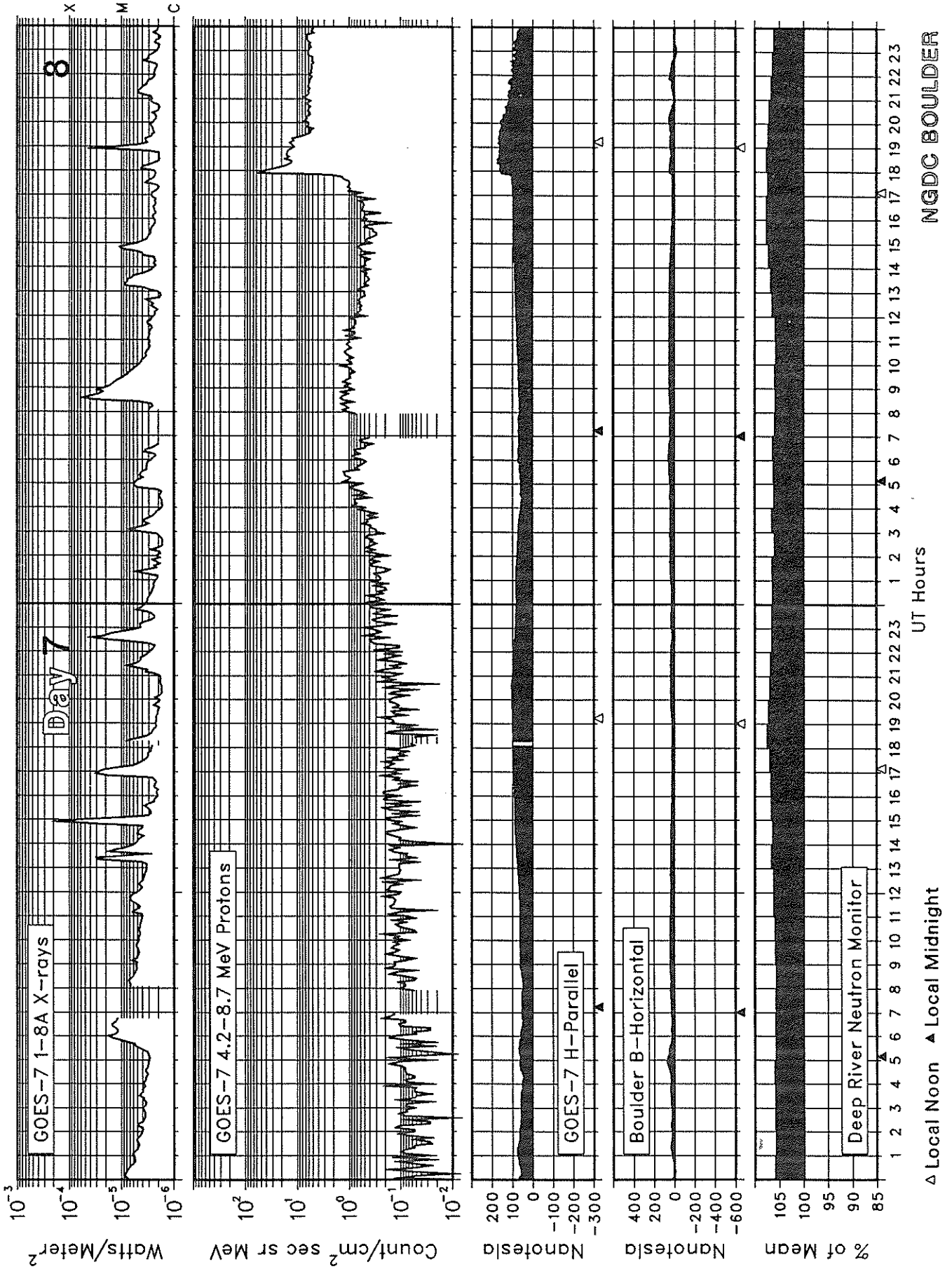
March 1989



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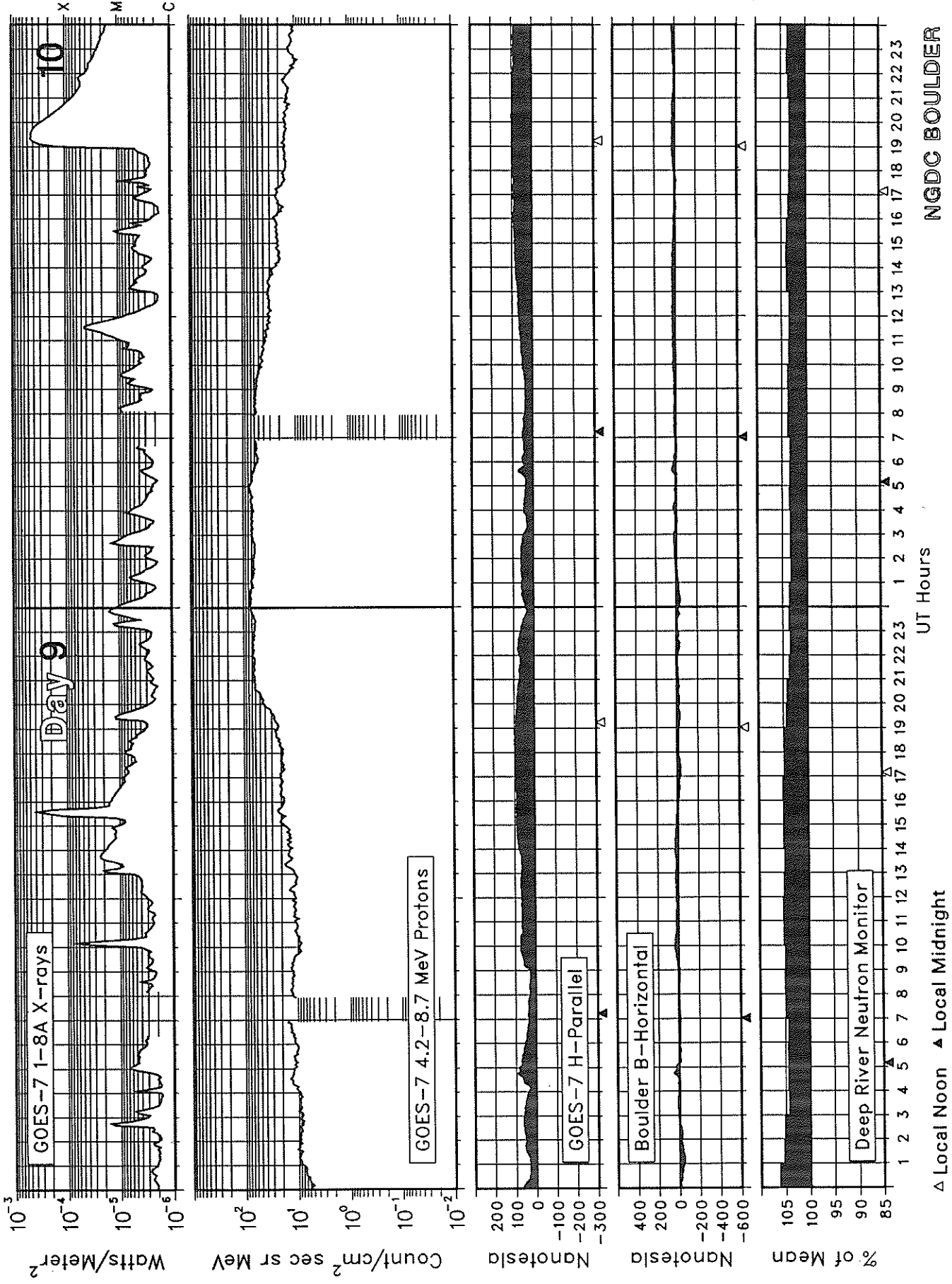
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March 1989



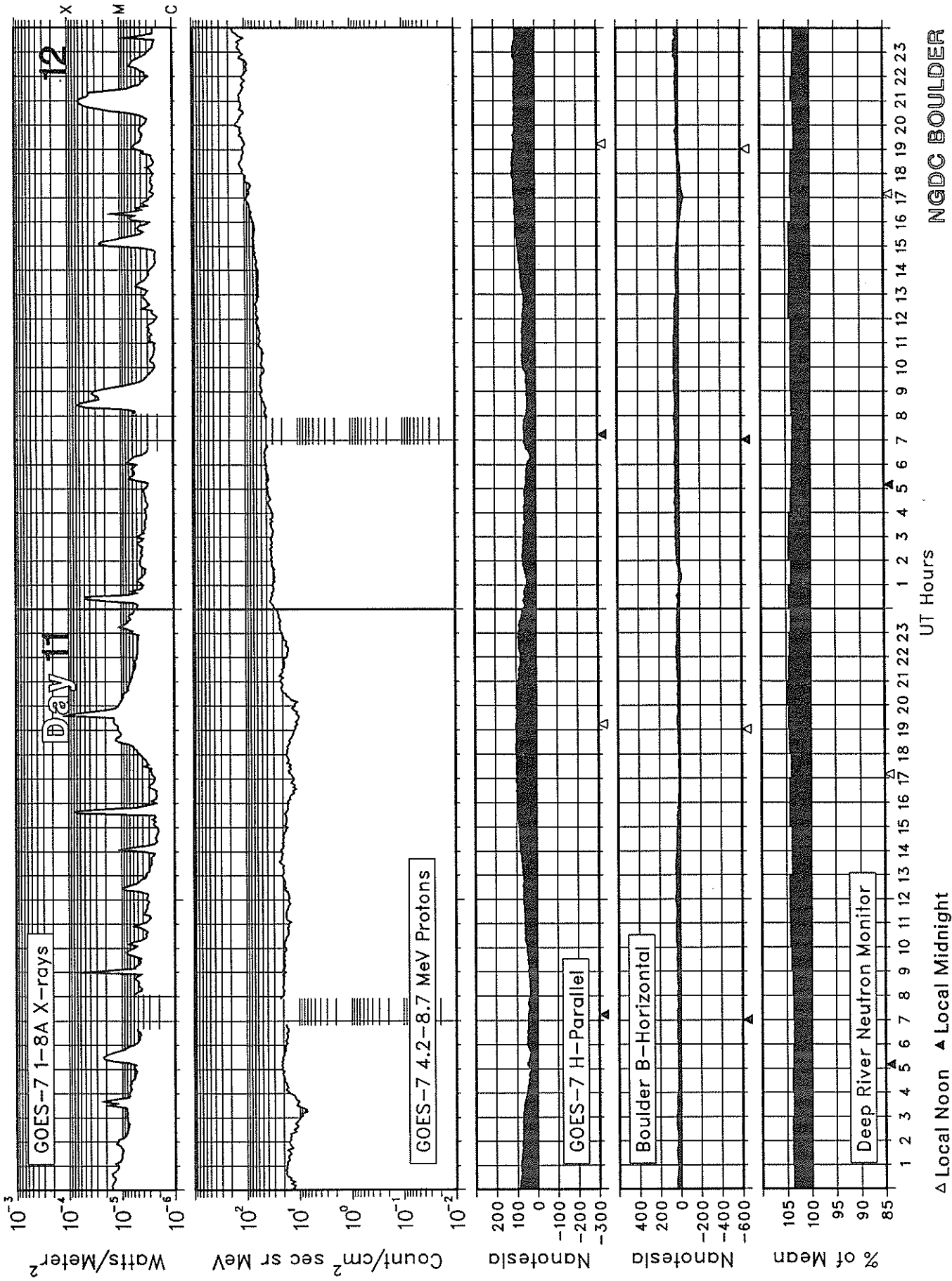
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March 1989



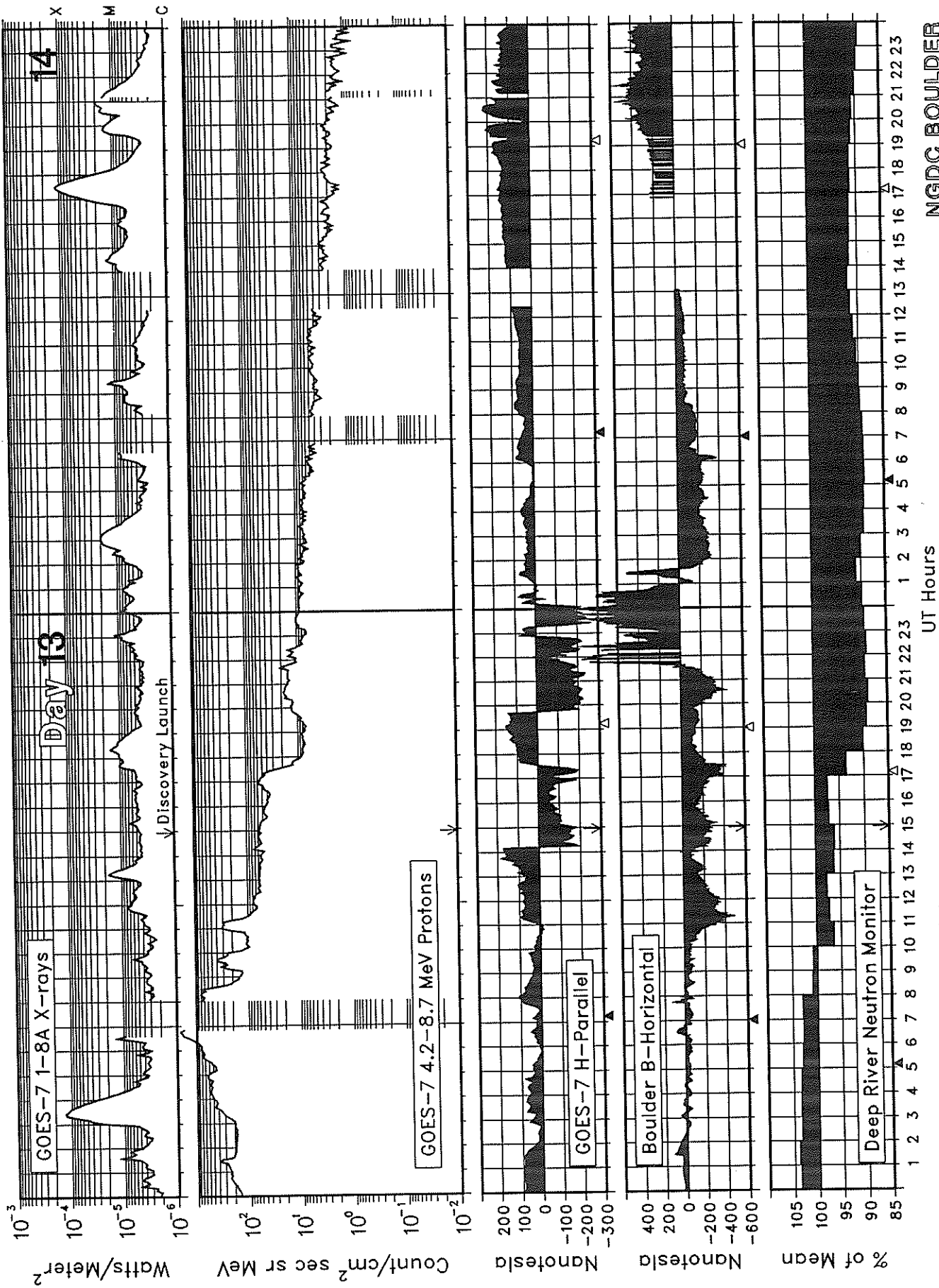
SOLAR-TERRESTRIAL ENVIRONMENT

March 1989



SOLAR-TERRESTRIAL ENVIRONMENT

March 1989



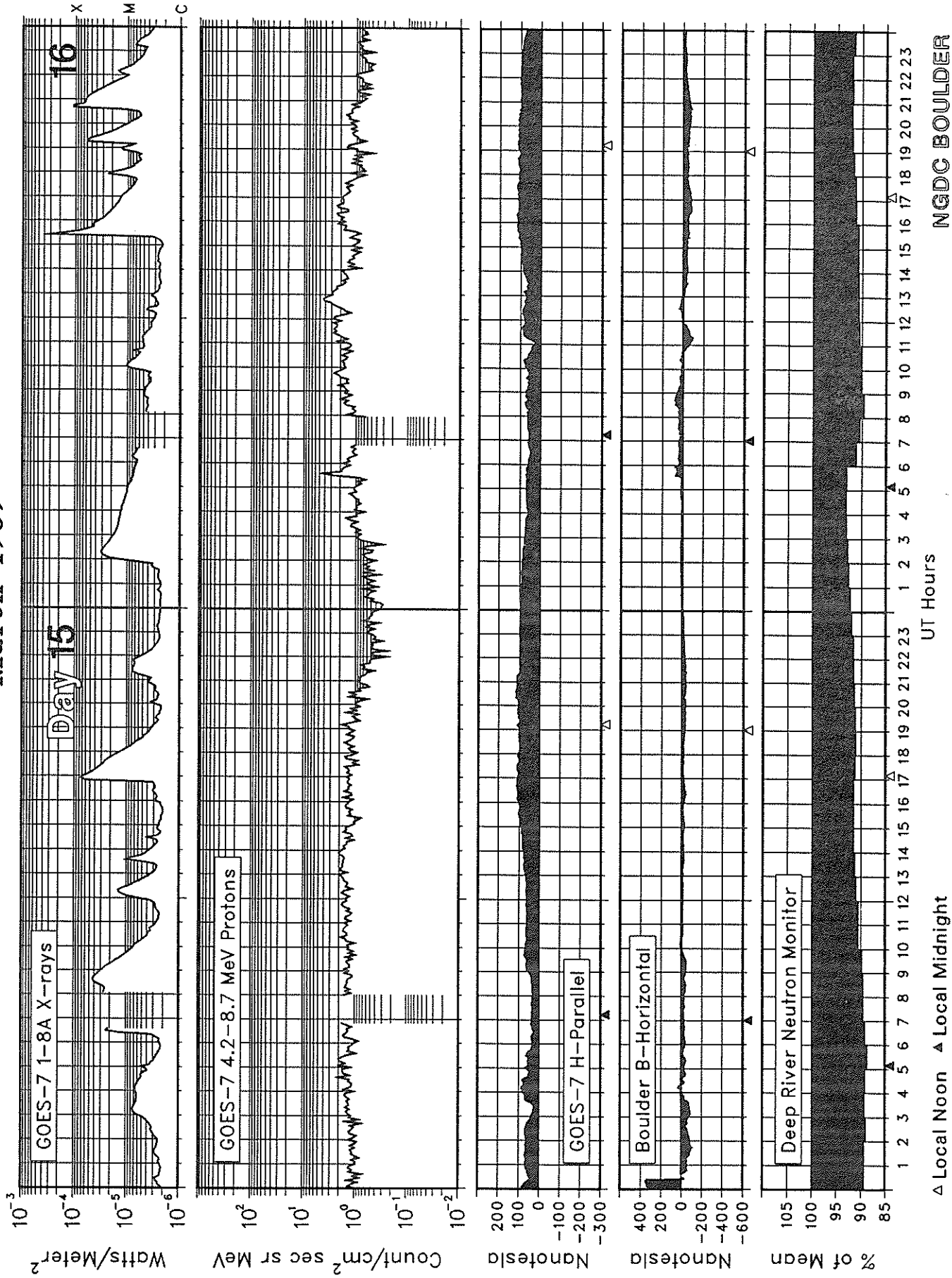
UT Hours

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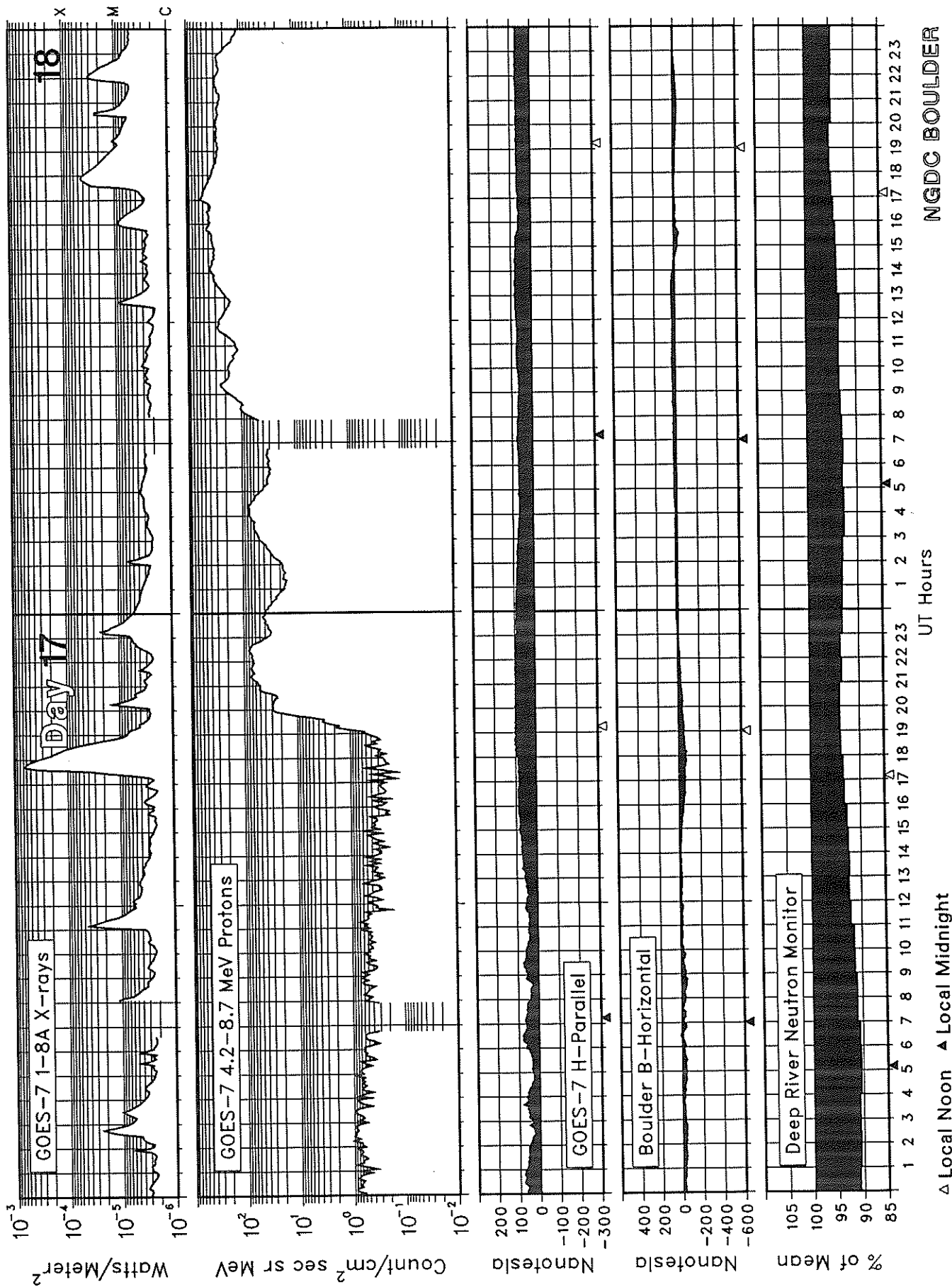
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March 1989



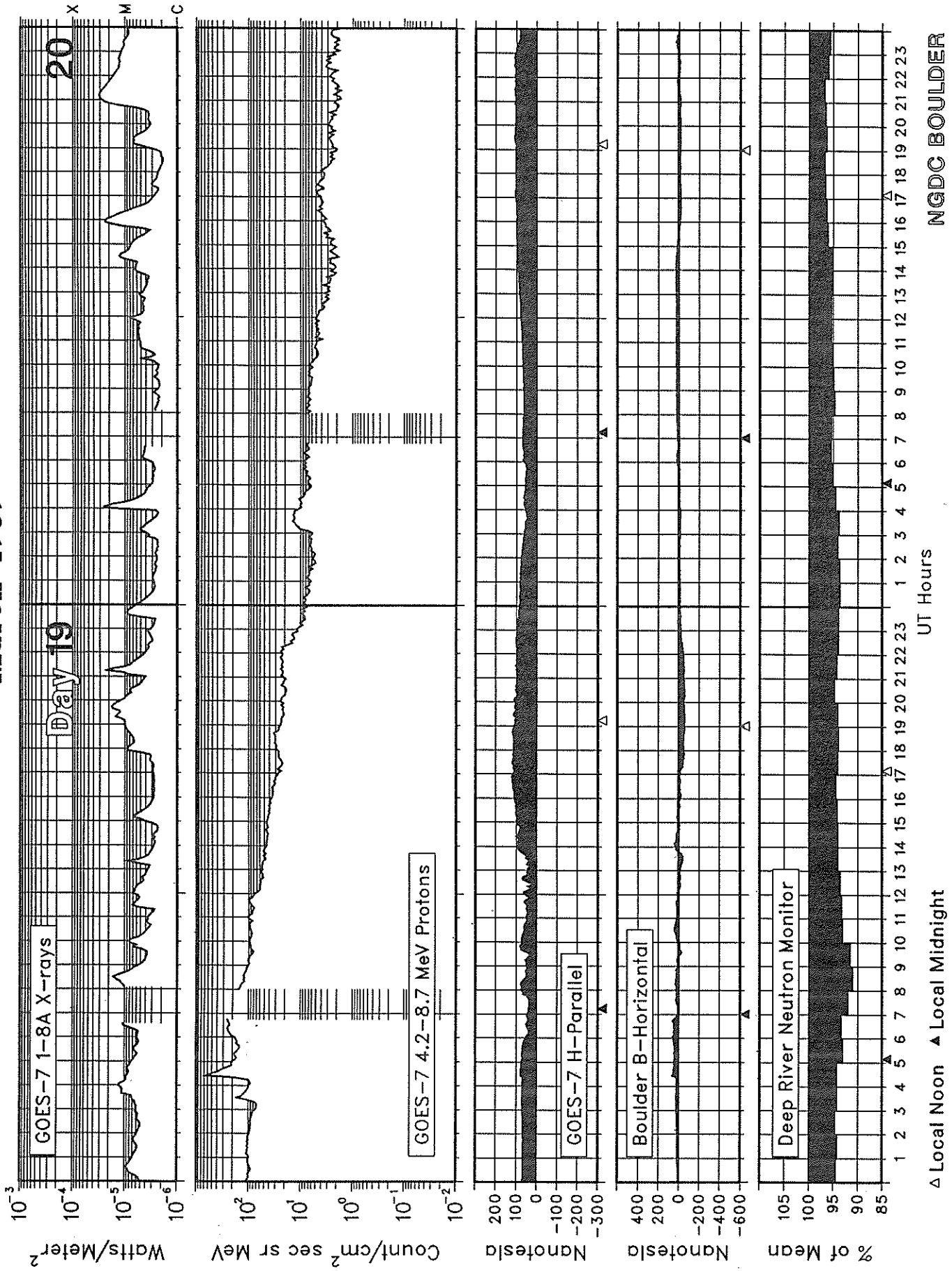
SOLAR-TERRESTRIAL ENVIRONMENT

March 1989



SOLAR-TERRESTRIAL ENVIRONMENT

March 1989

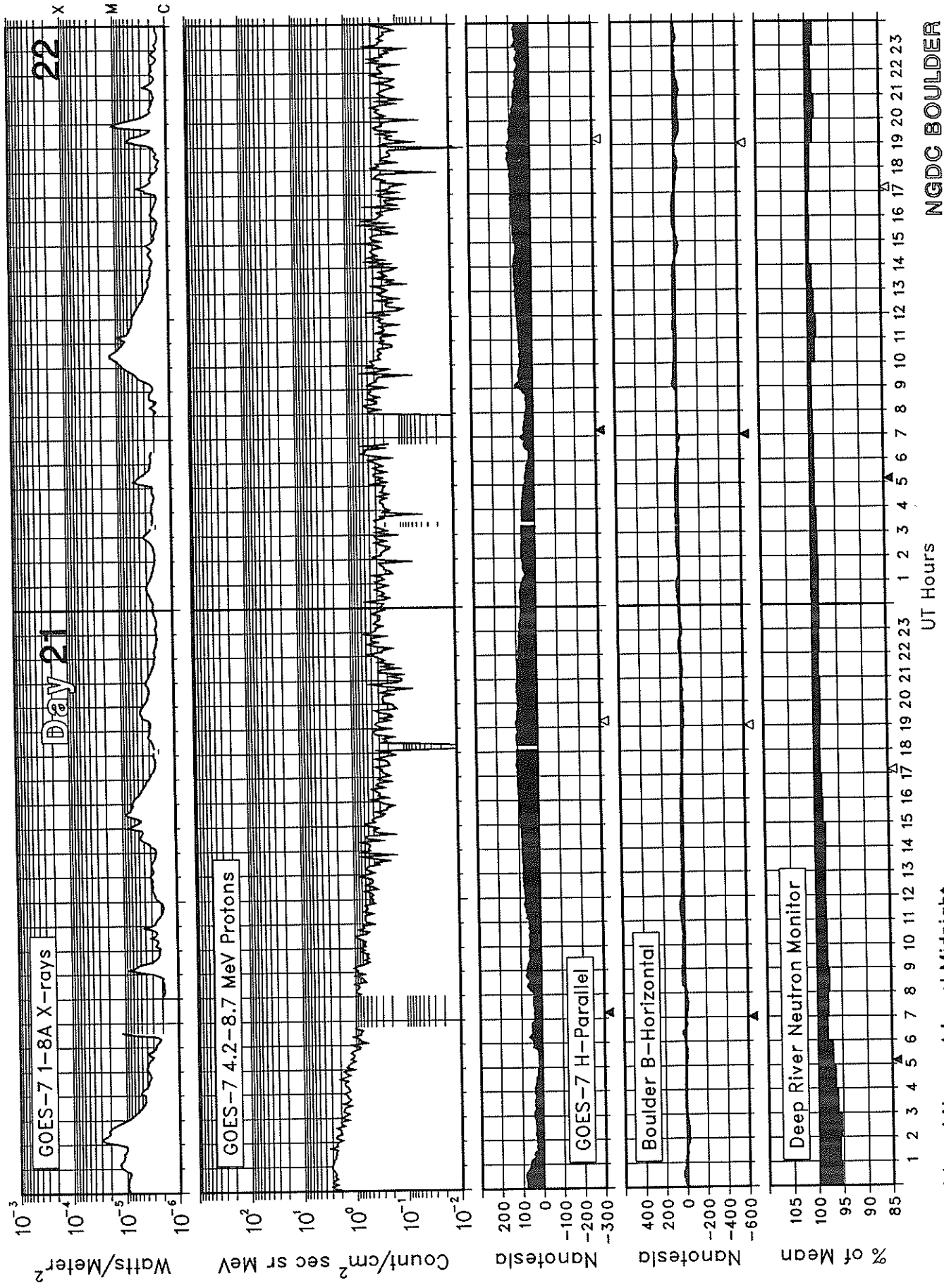


NGDC BOULDER

▲ Local Noon ▲ Local Midnight

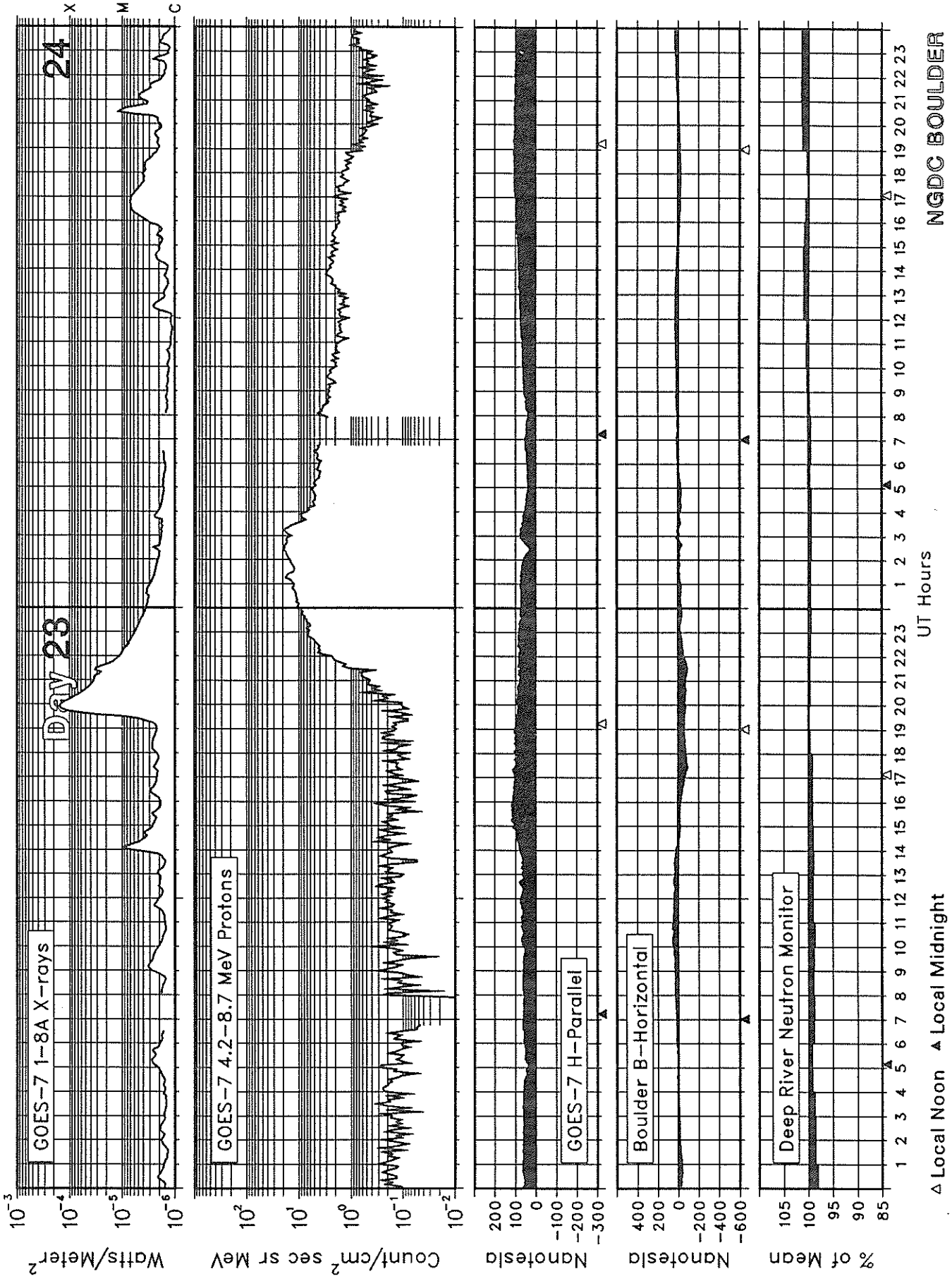
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March 1989



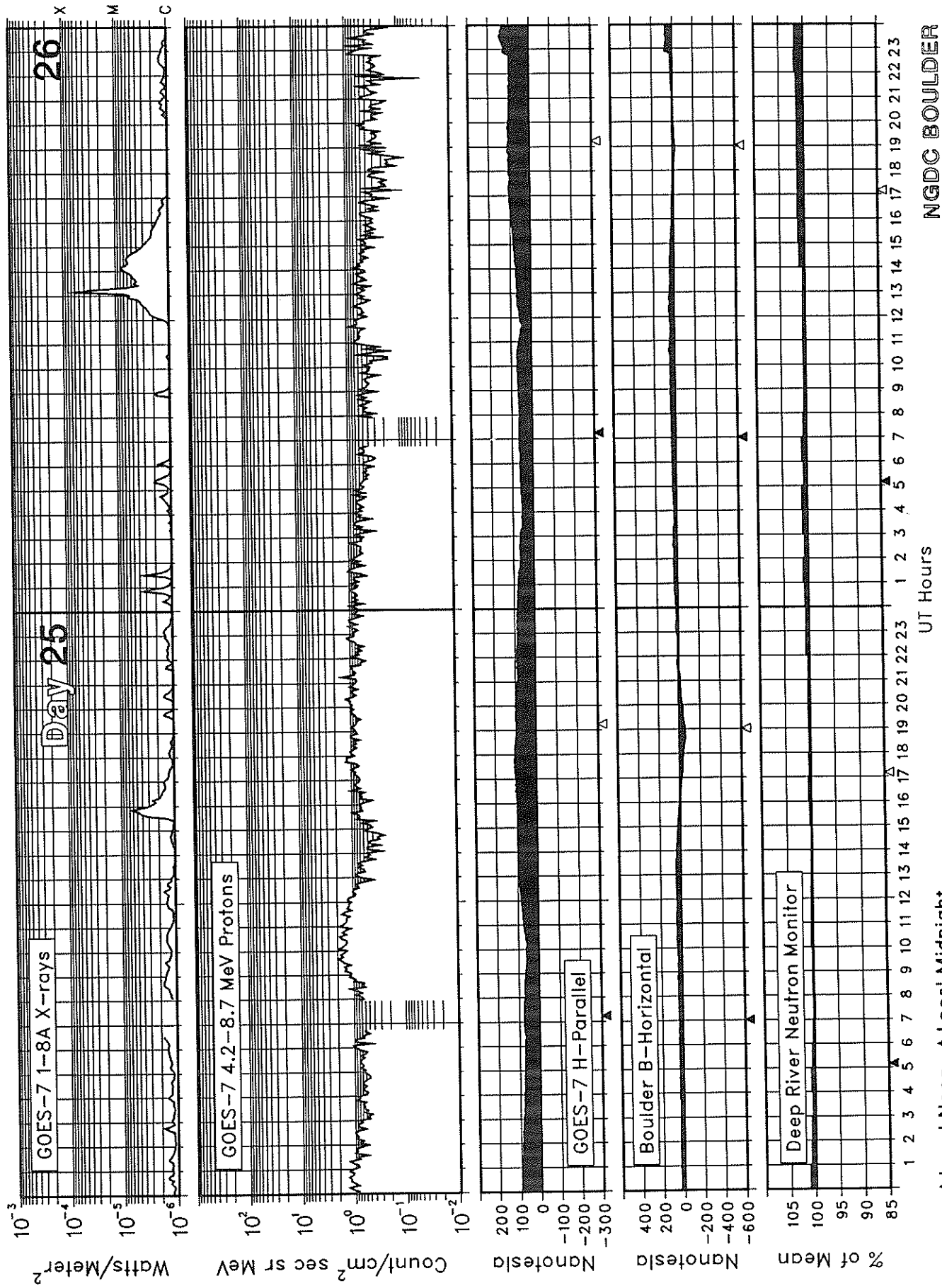
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March 1989



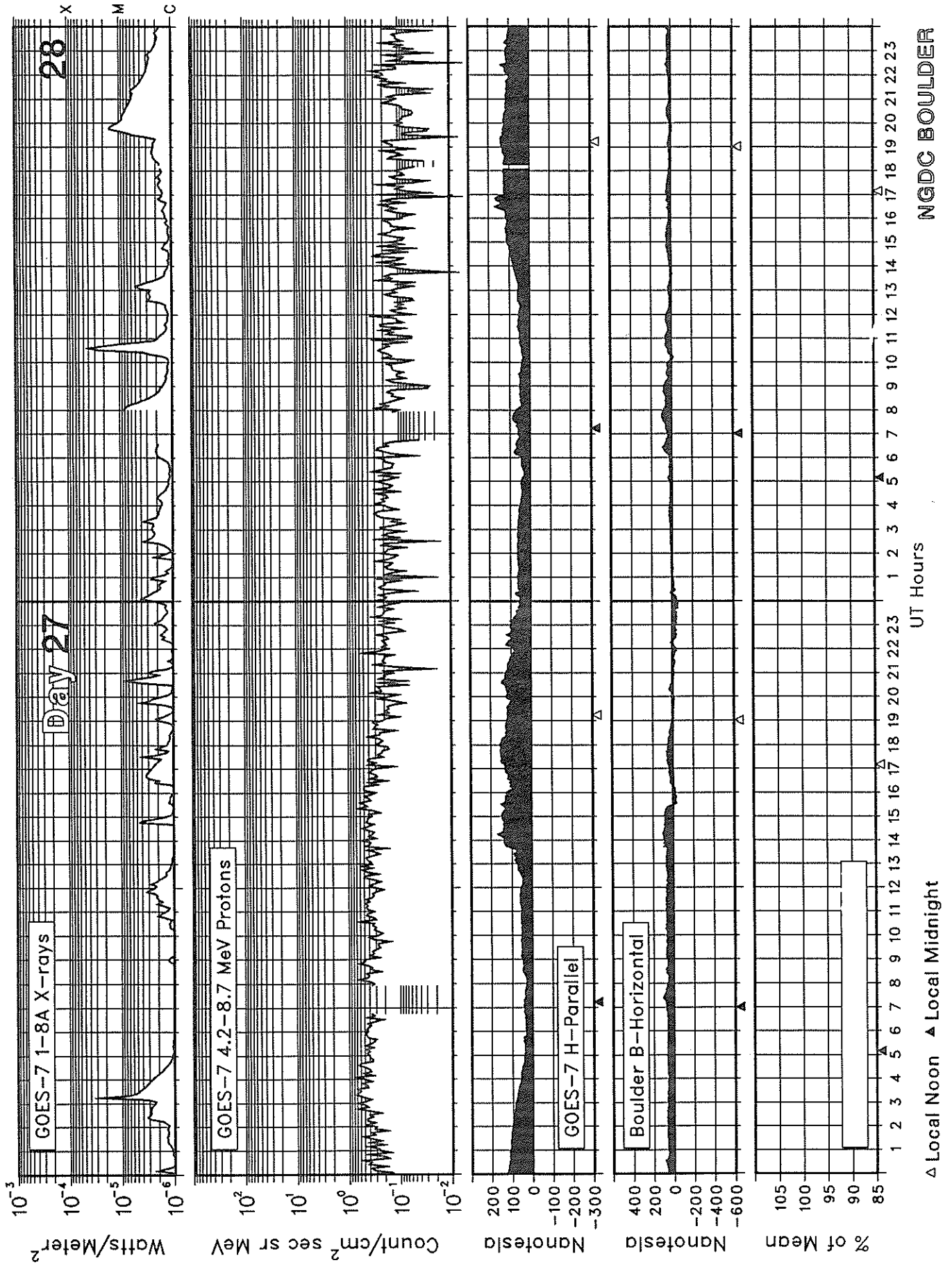
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March 1989



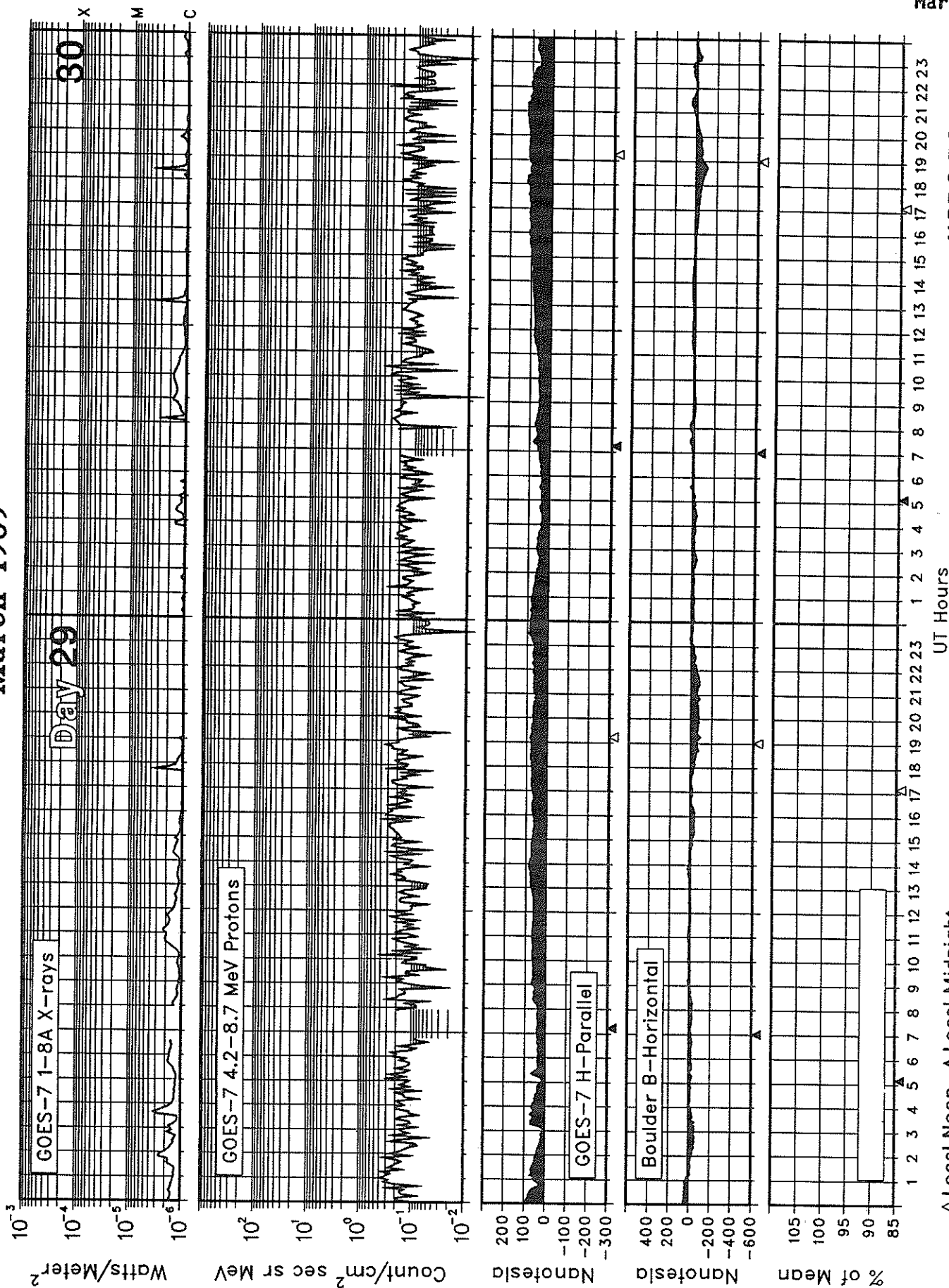
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March 1989



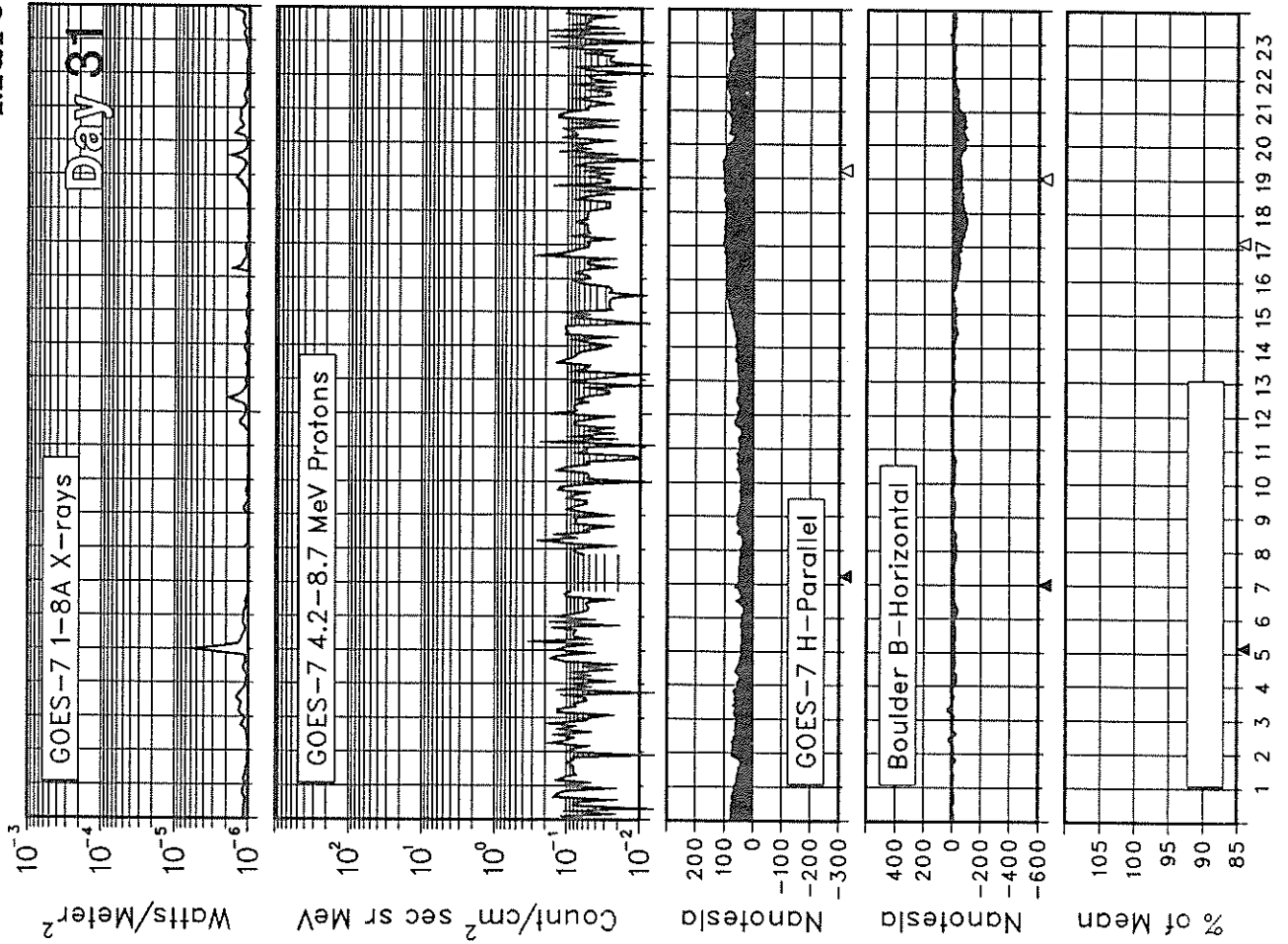
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March 1989



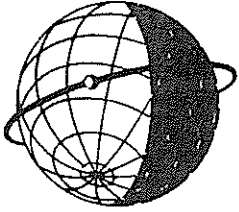
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March 1989

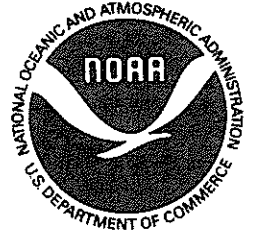


▲ Local Noon ▲ Local Midnight

UT Hours



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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:

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