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NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE

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Solar-Geophysical Data prompt reports

Data for April, March 1993, and Late Data

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SOLAR-GEOPHYSICAL DATA

Number 585

(Issued in Two Parts)

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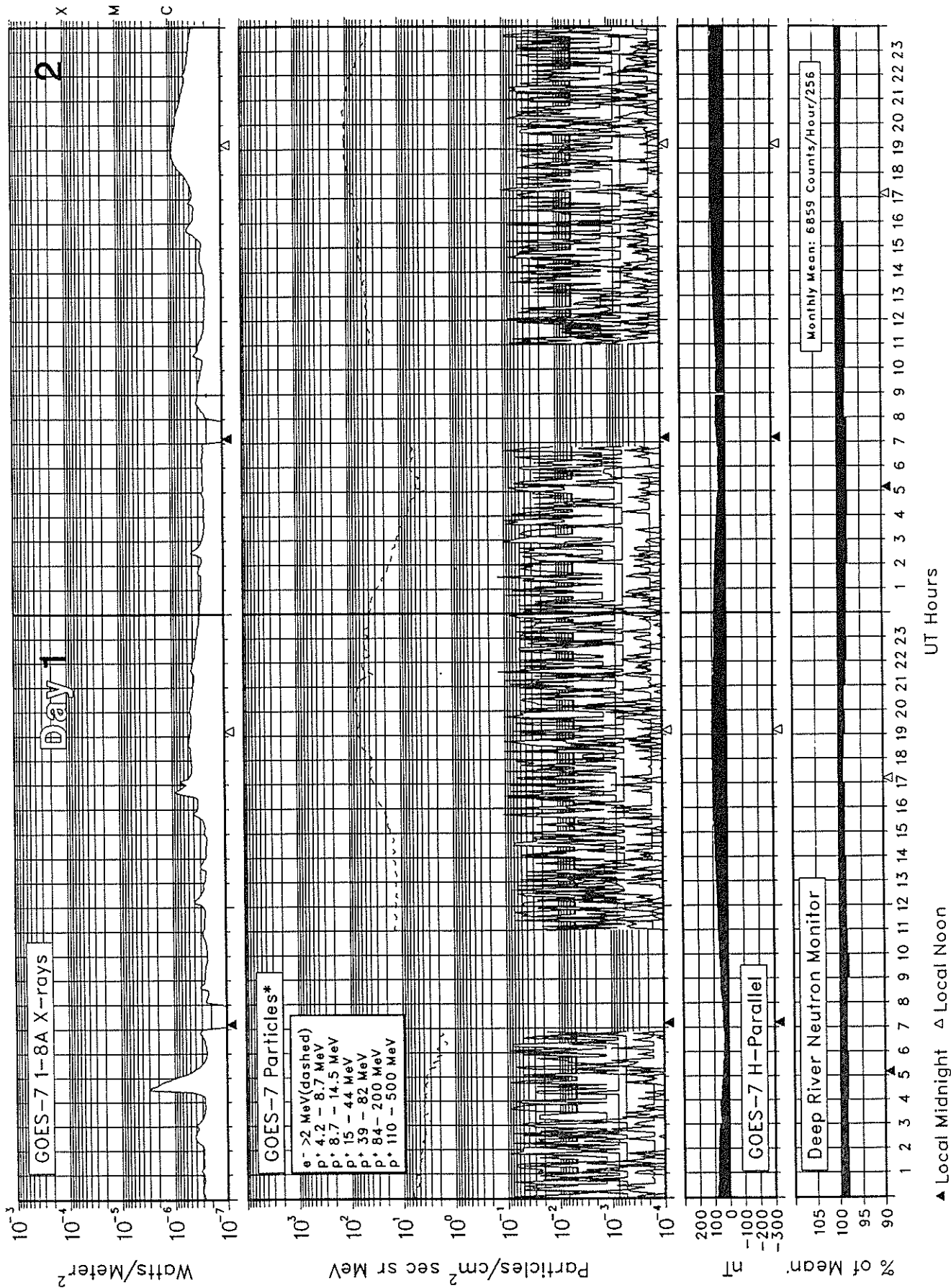
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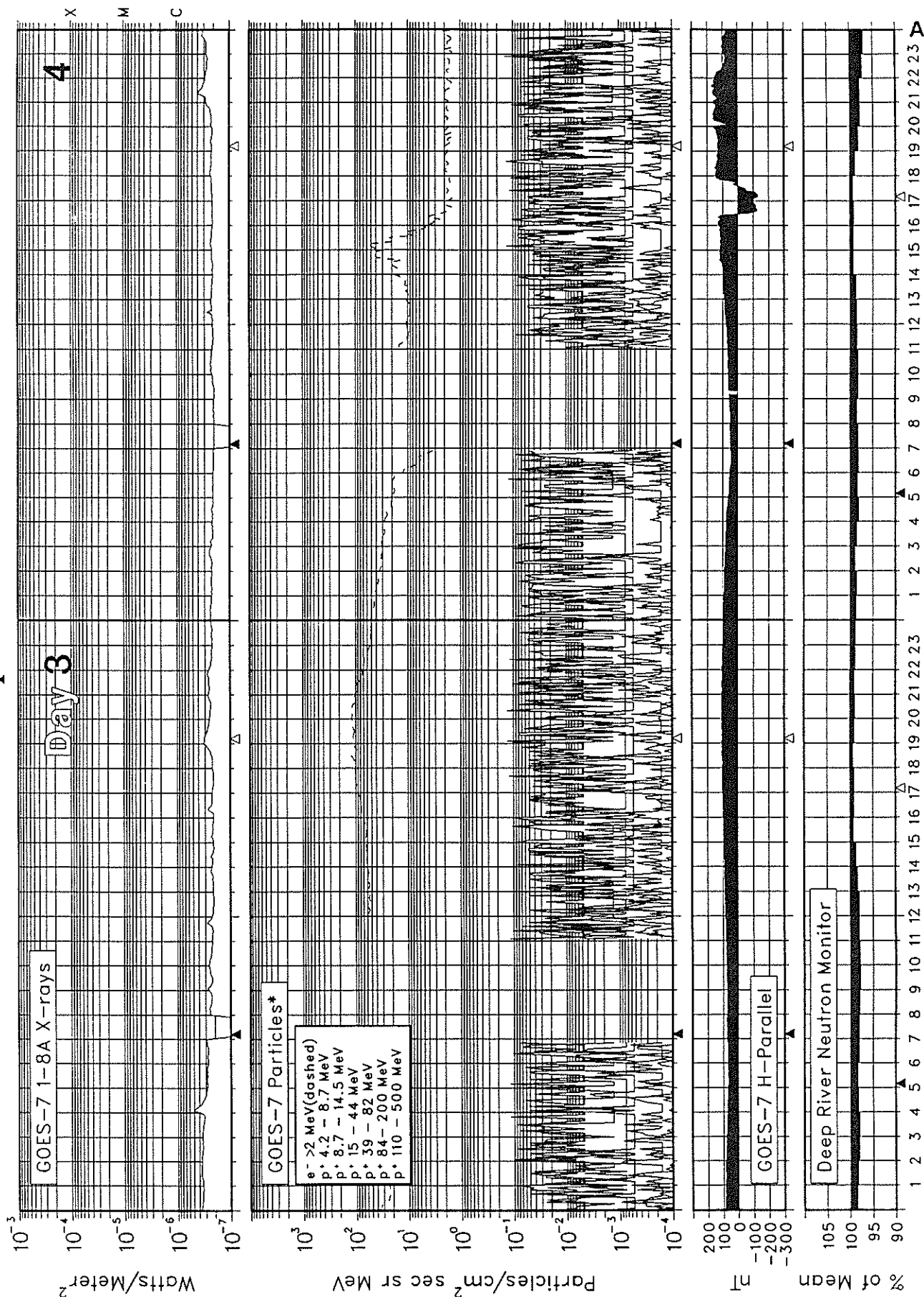
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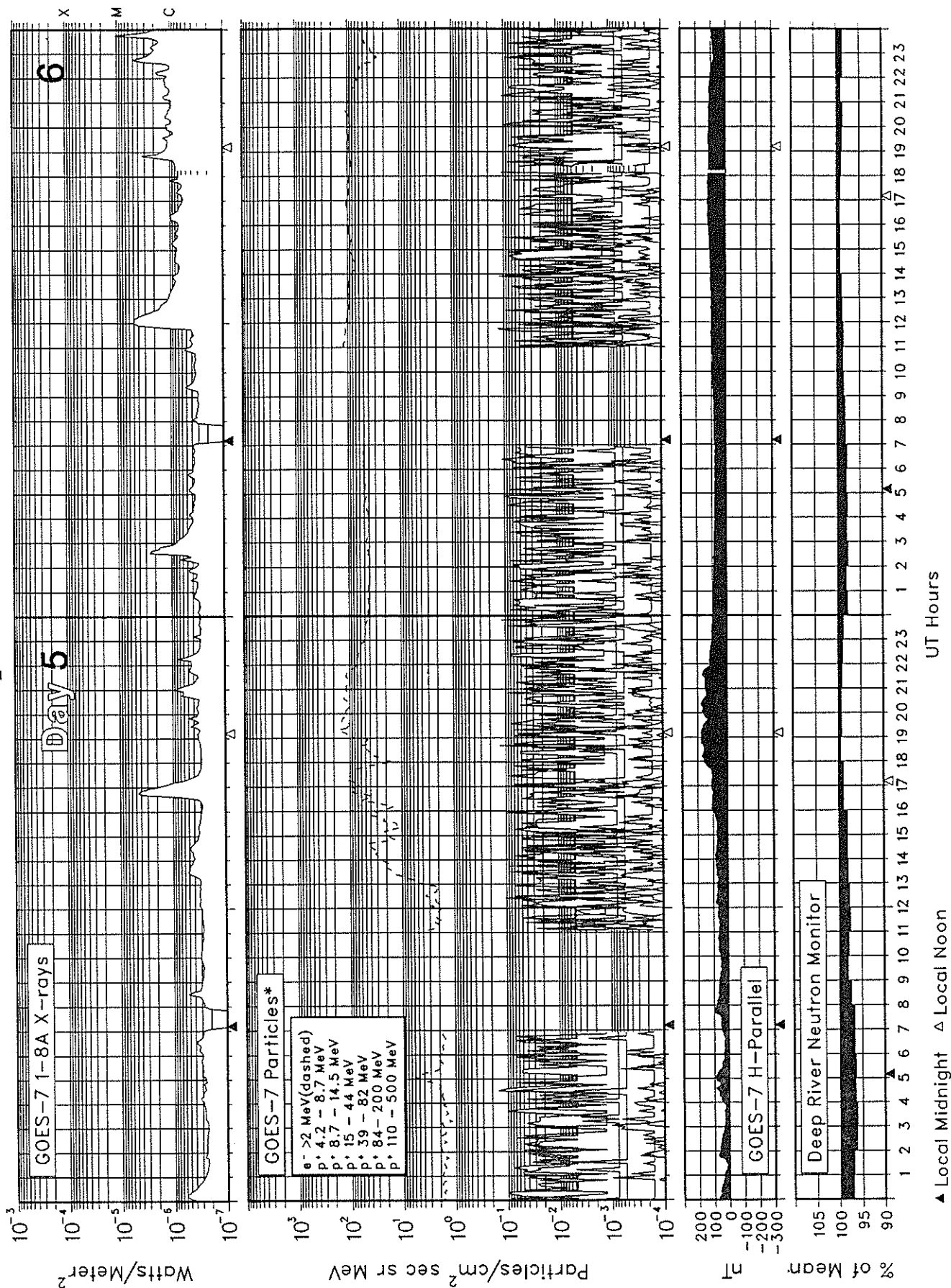
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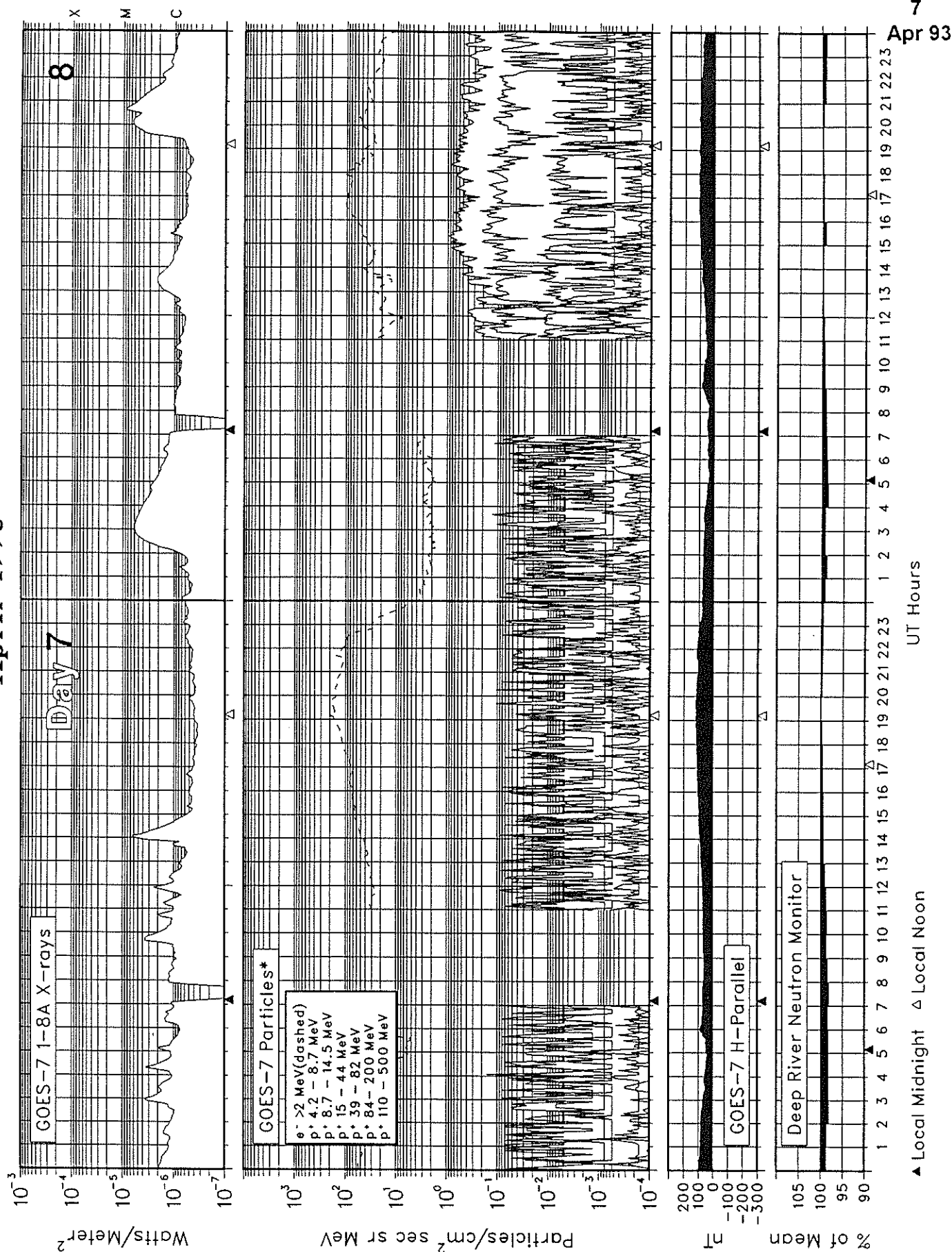
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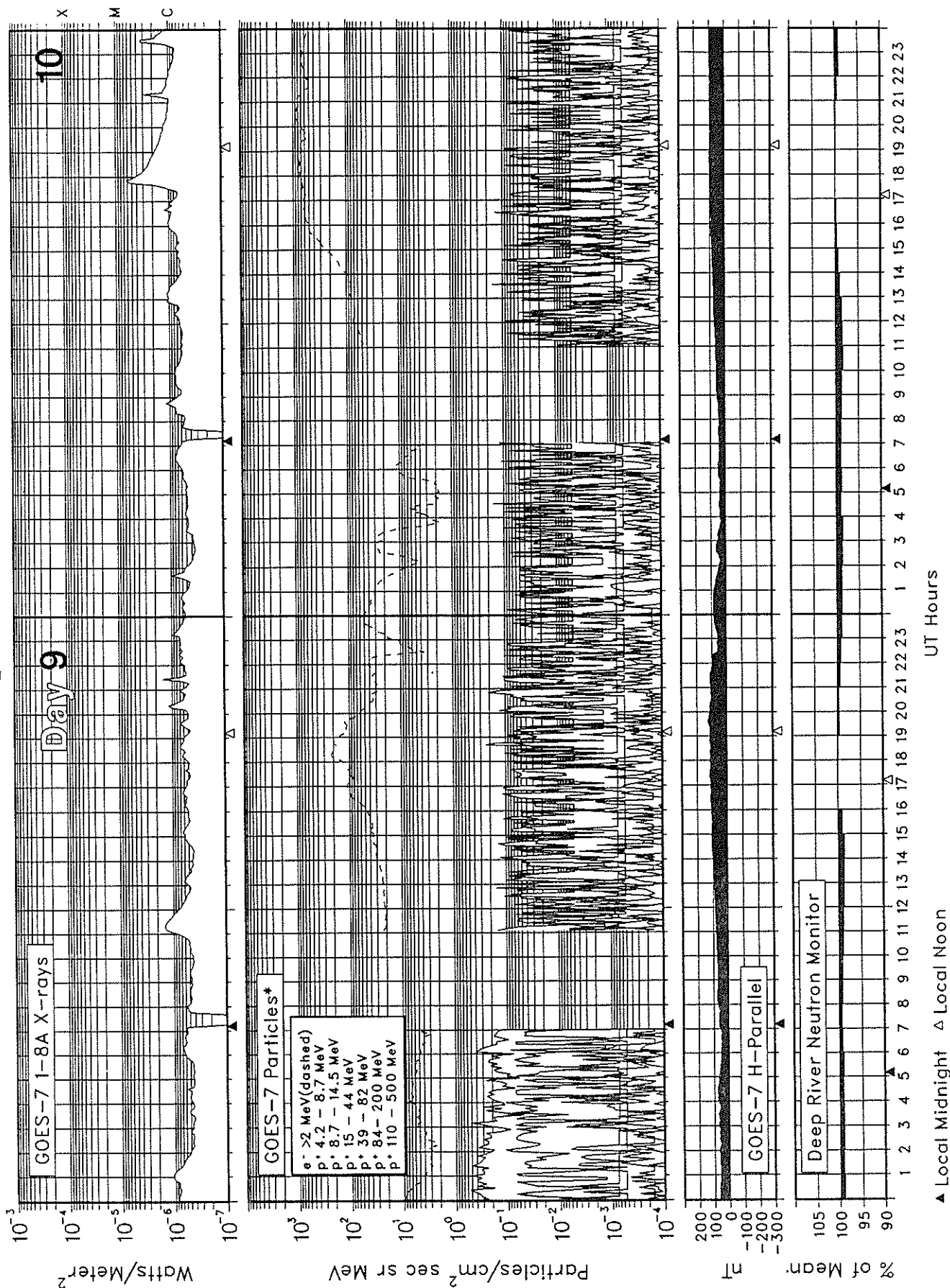
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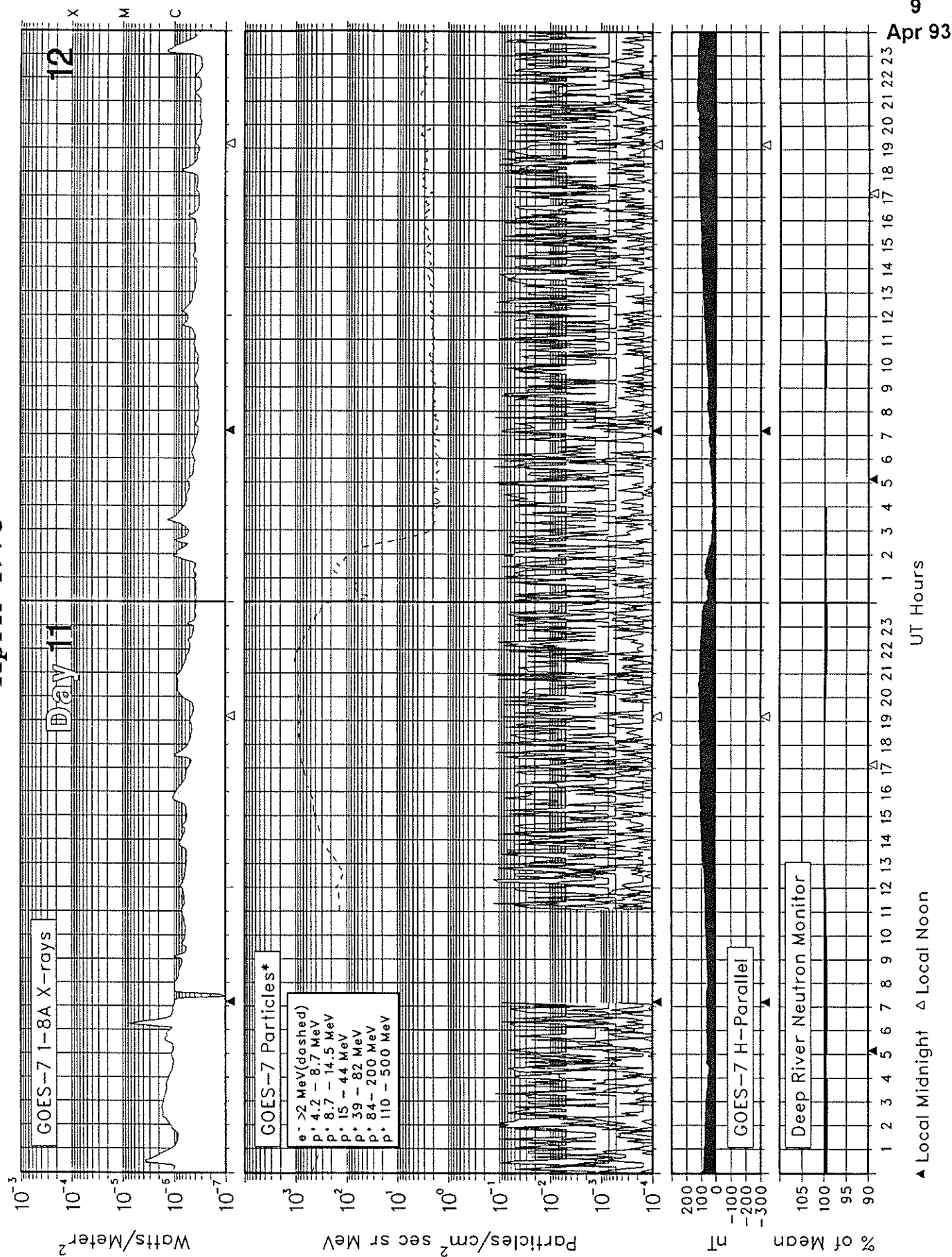
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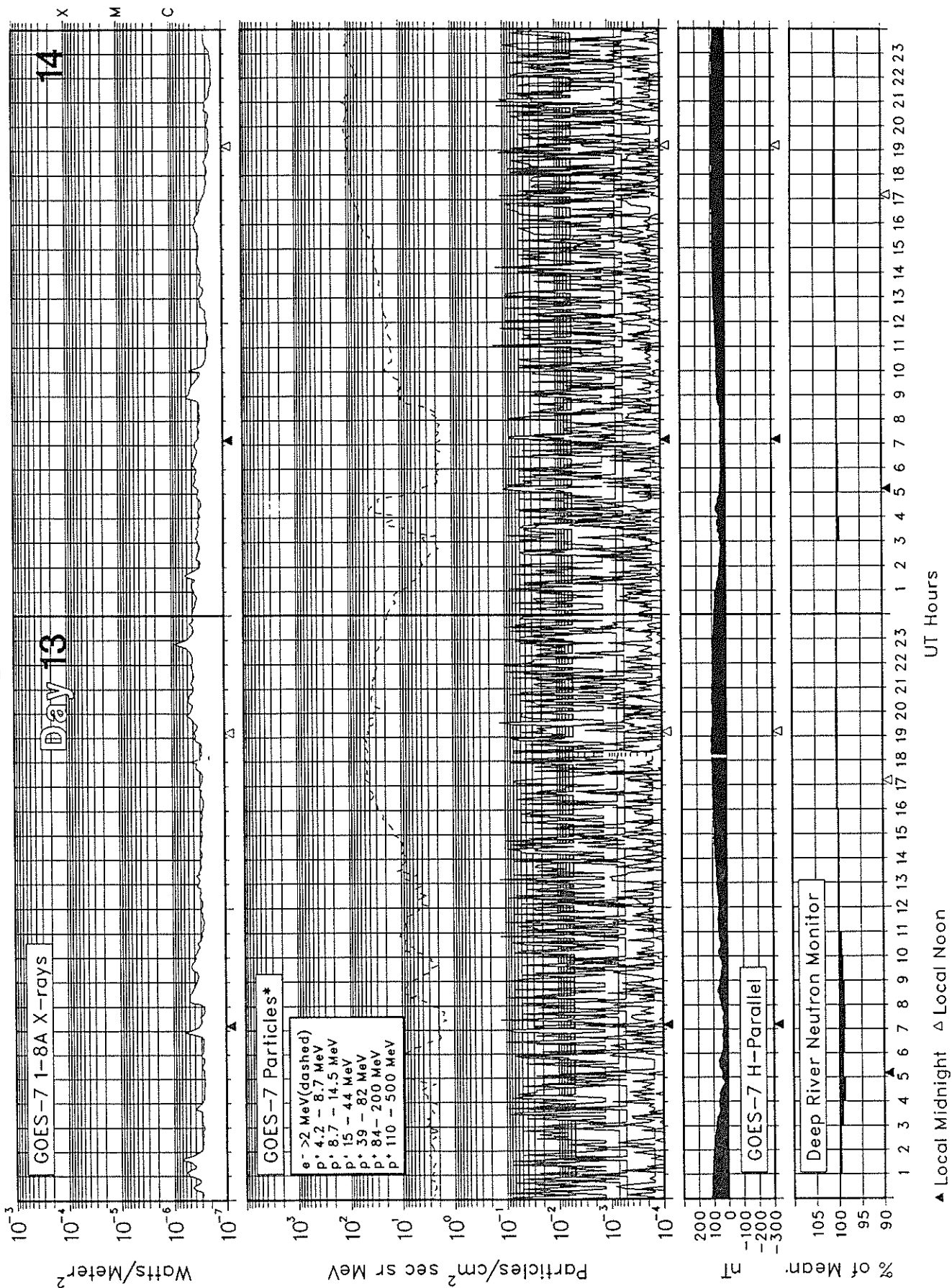
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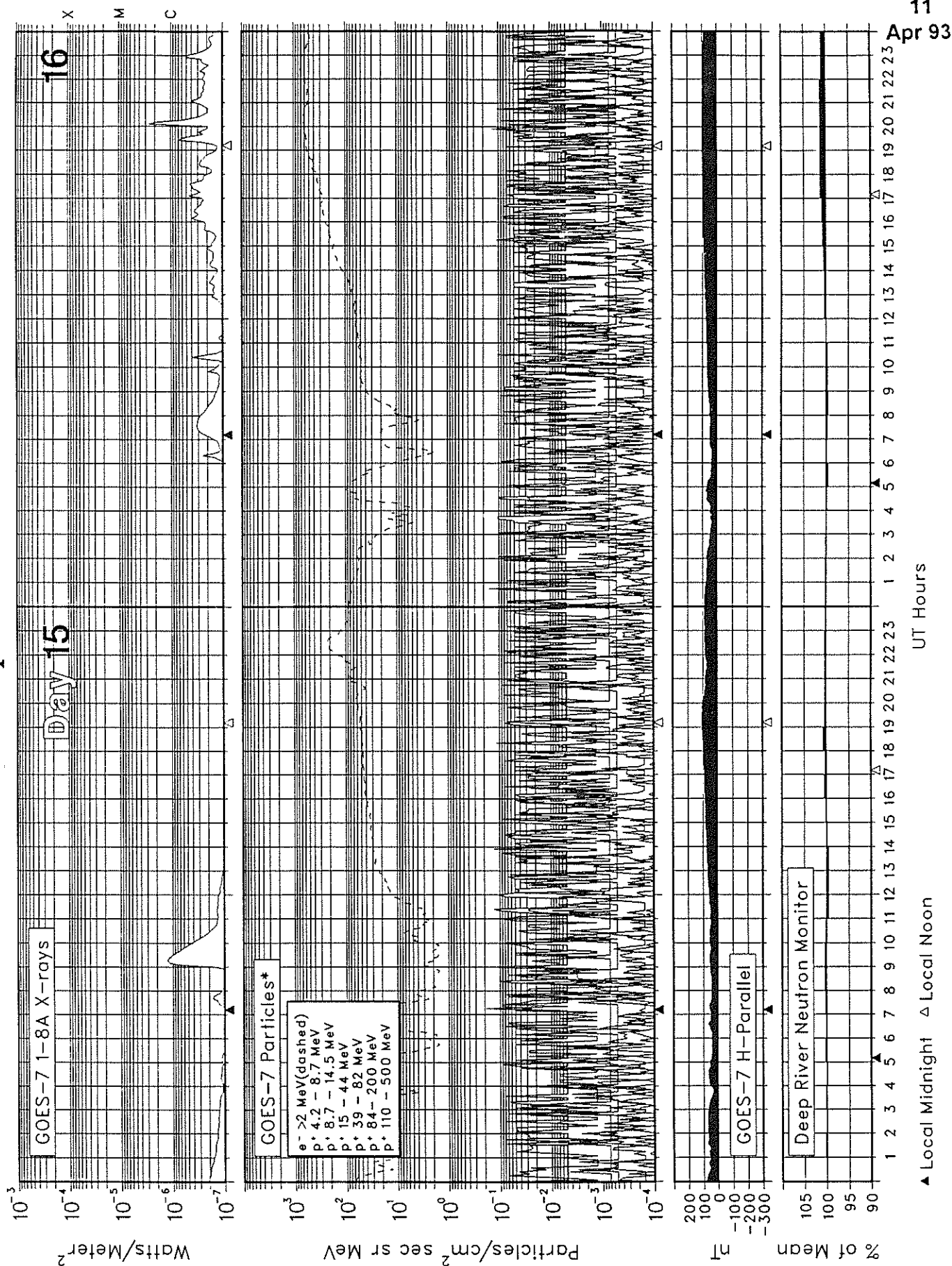
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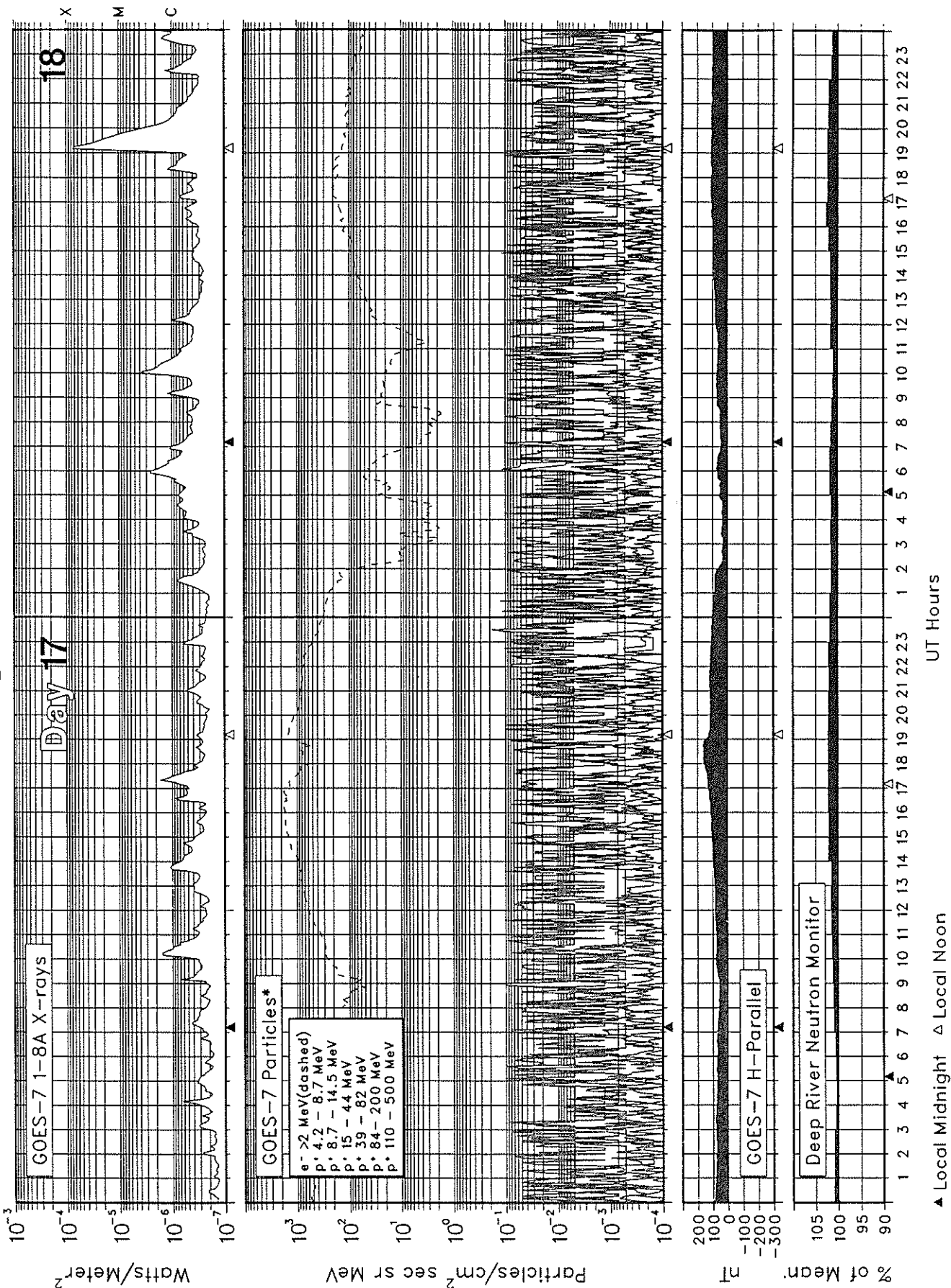
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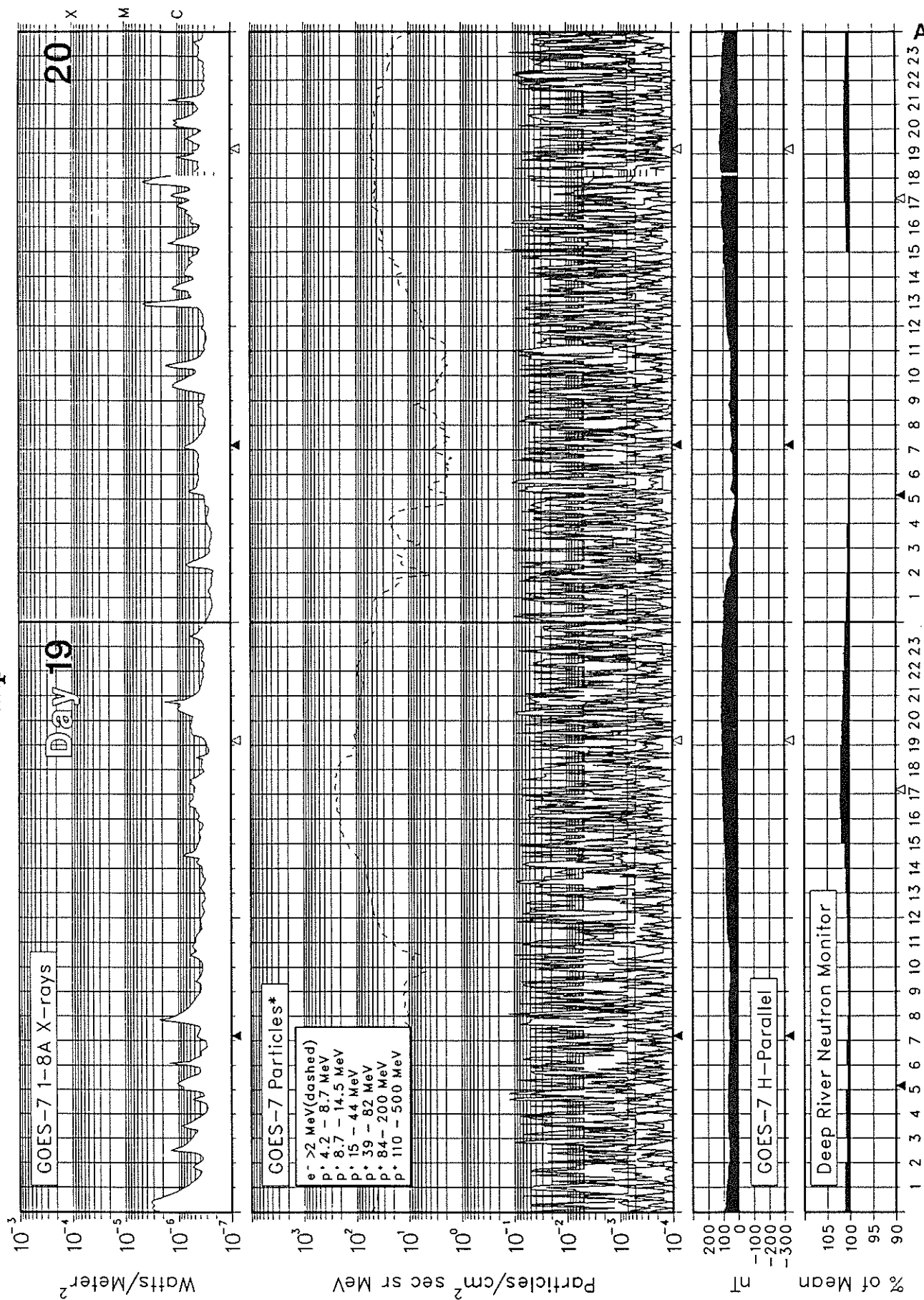
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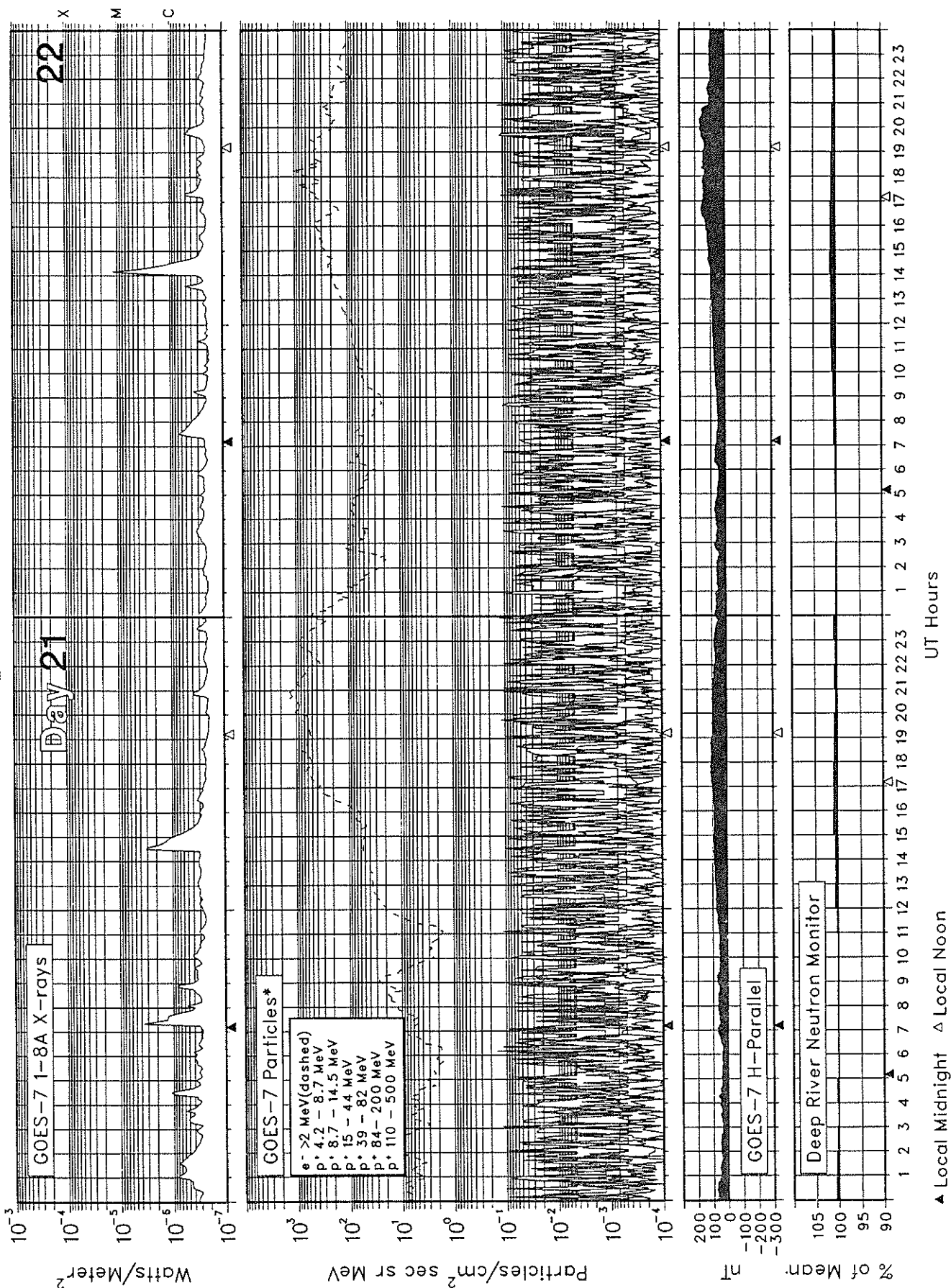


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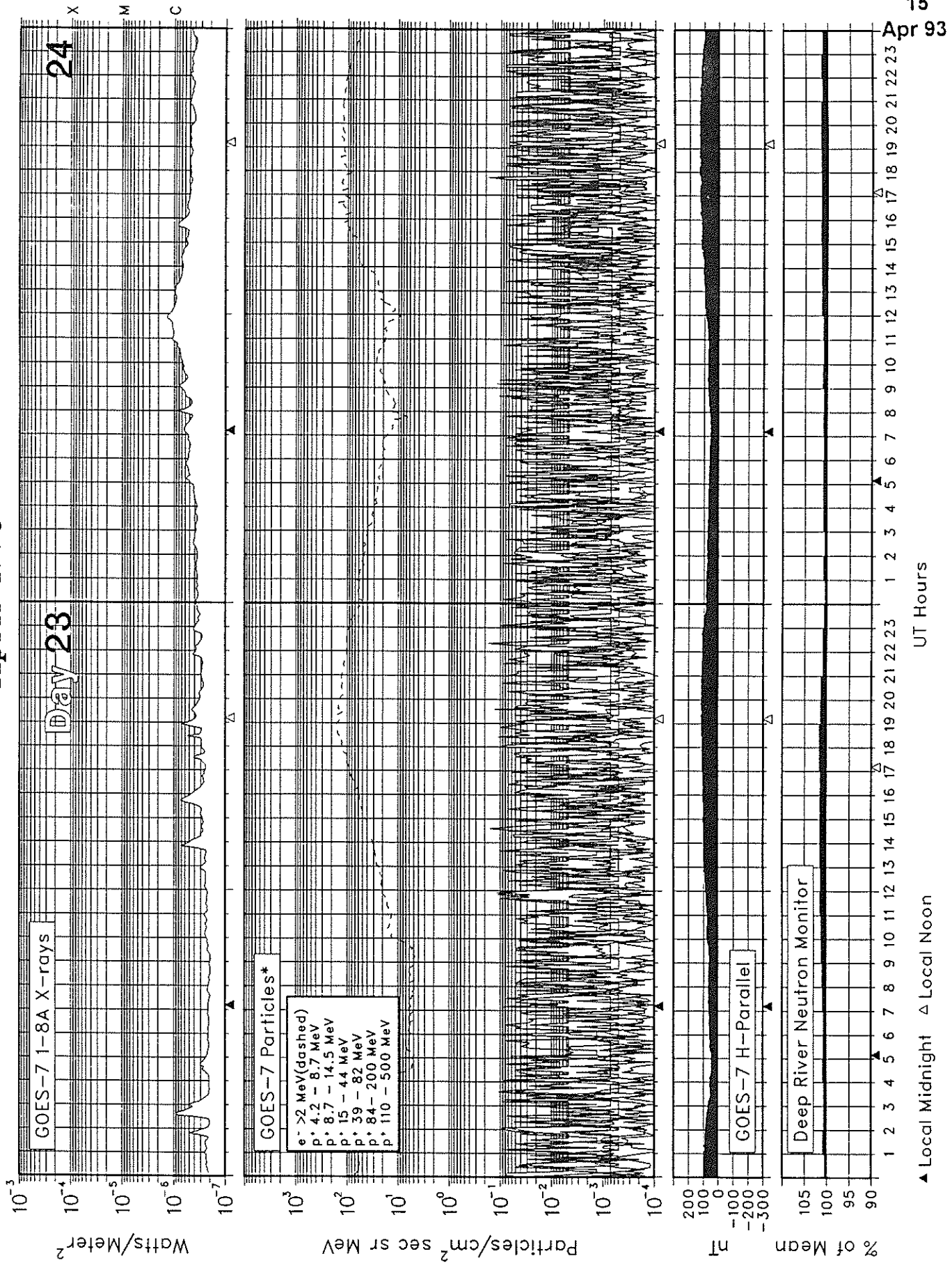
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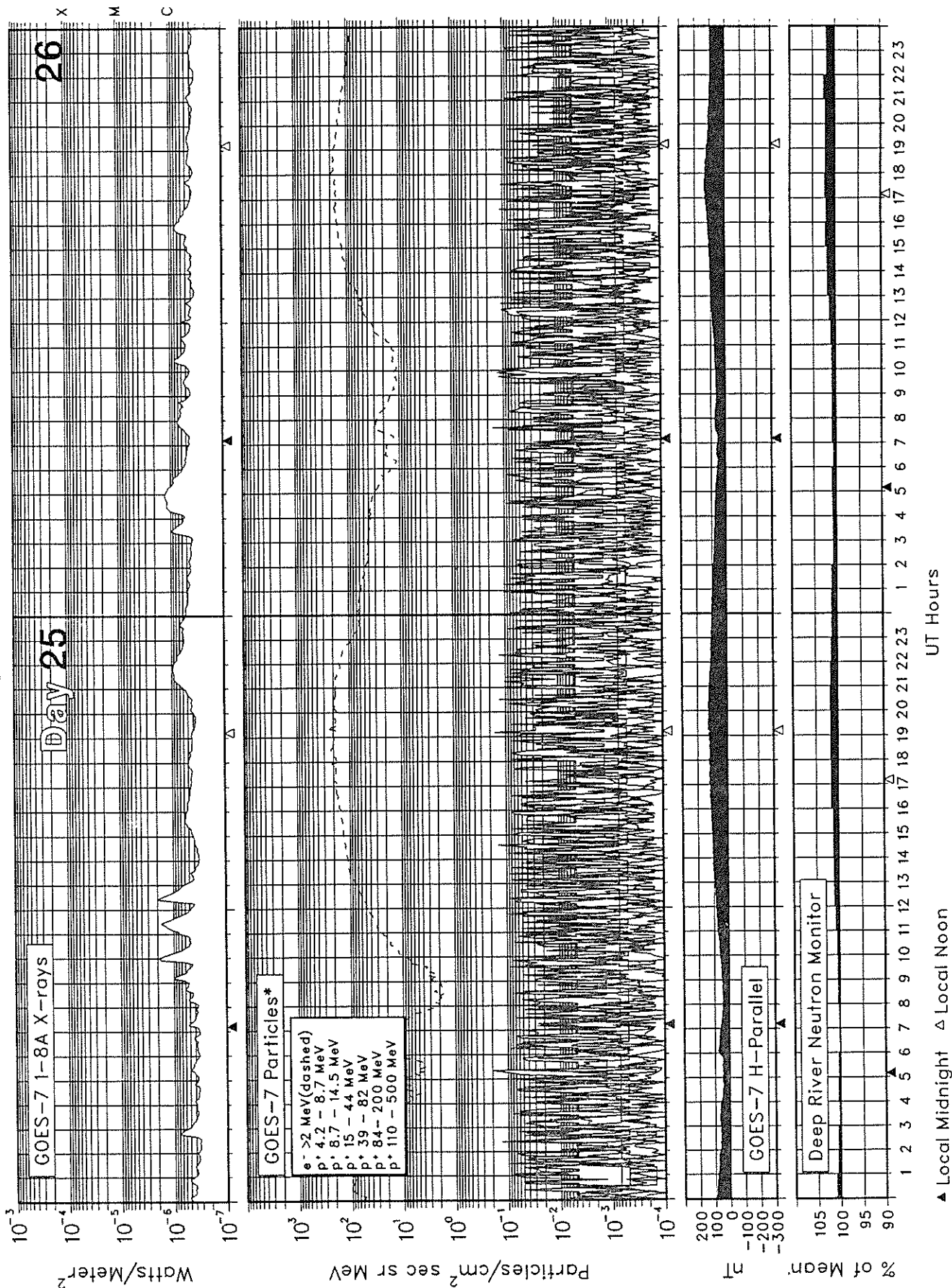


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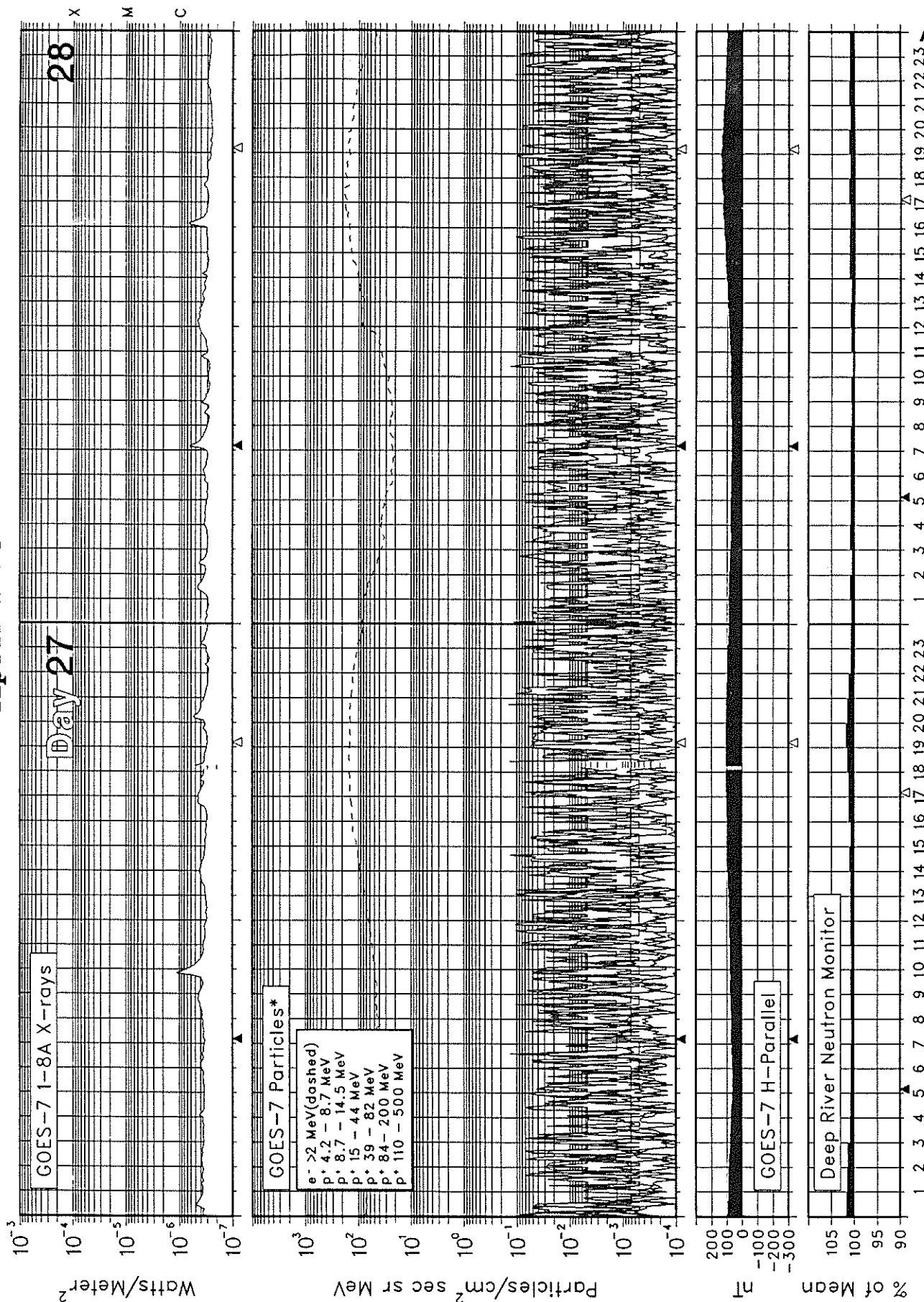
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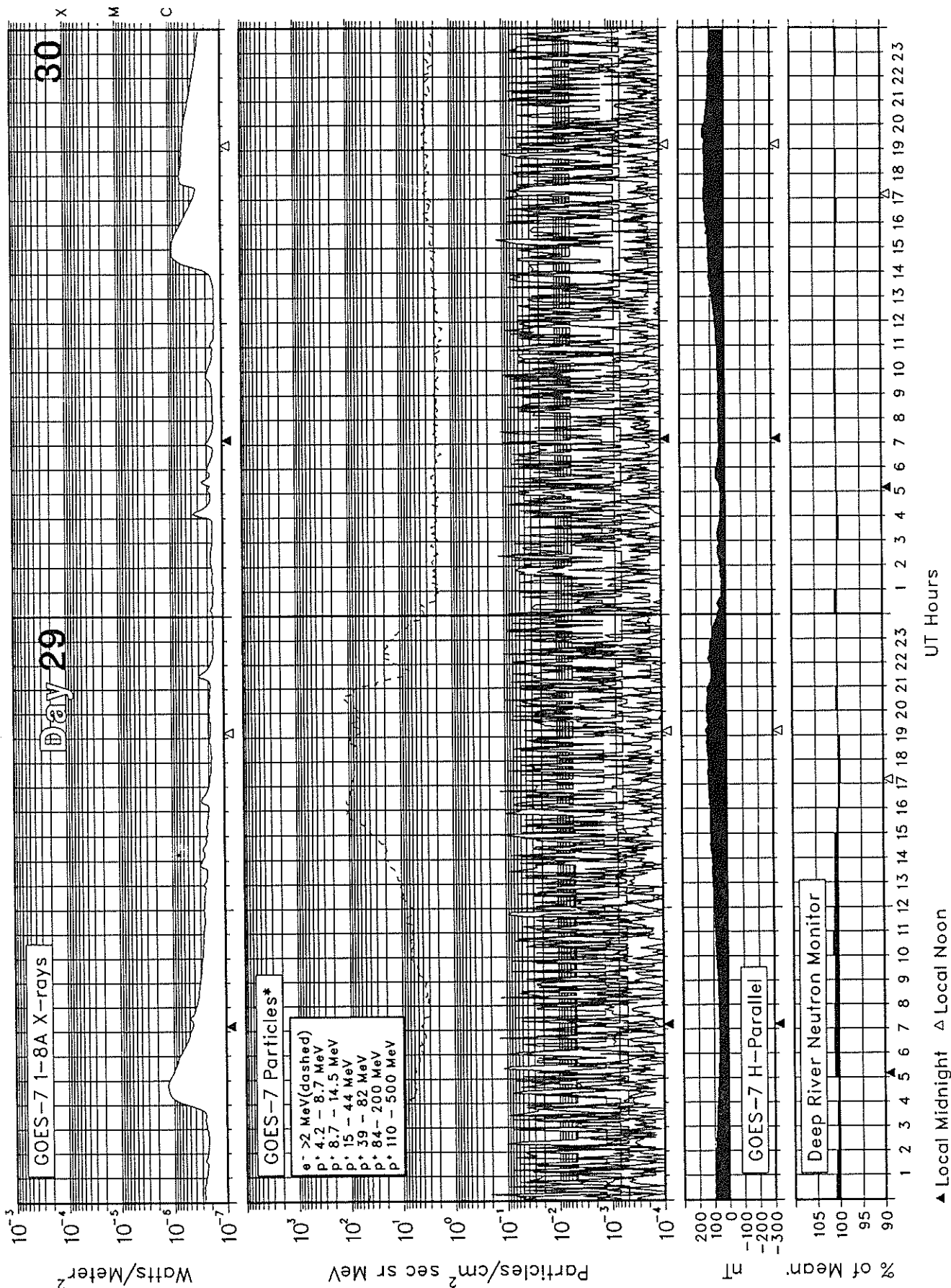
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April 1993



ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

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Summary of the Geolert Messages													
APRIL 1993													
Julian Day	Date of Issue	Date of Obser- vation	Wolf No.	10-cm Solar Flux	A- index	Location		Flares			Date of Forecast	Region Forecast ¹	Geoadvice ¹
						°Lat	°Long	Total	M	X			
091	01	31	101	125	7	N05	E03	4	0	0	01	E	SOL: Eruptive MAG: Quiet PROTON: Quiet
						S12	E21	8	0	0	01	E	
						S07	E53	0	0	0	01	Q	
						S22	E07	0	0	0	01	Q	
						N10	W36	0	0	0	01	Q	
092	02	01	110	124	8	N06	W10	1	0	0	02	E	SOL: Eruptive MAG: Quiet PROTON: Quiet
						S13	E08	3	0	0	02	E	
						S06	E37	0	0	0	02	E	
						S22	W07	0	0	0	02	Q	
						N09	W51	2	0	0	02	Q	
093	03	02	099	121	5	S08	E45	0	0	0	02	Q	SOL: Eruptive MAG: Quiet PROTON: Quiet
						N06	W23	0	0	0	03	E	
						S12	W06	0	0	0	03	E	
						S06	E23	0	0	0	03	E	
						S21	W20	0	0	0	03	Q	
094	04	03	130	117	1	N09	W63	0	0	0	03	Q	SOL: Eruptive MAG: Quiet PROTON: Quiet
						N07	W36	0	0	0	04	E	
						S12	W19	1	0	0	04	Q	
						N07	W61	0	0	0	04	Q	
						S05	E10	0	0	0	04	E	
095	05	04	095	116	26	S20	W34	0	0	0	04	Q	SOL: Eruptive MAG: Quiet PROTON: Quiet
						S11	E42	0	0	0	04	Q	
						S10	E49	0	0	0	04	Q	
						N07	W54	0	0	0	05	E	
						S11	W34	0	0	0	05	Q	
096	06	05	101	119	66	S05	W03	0	0	0	05	Q	SOL: Eruptive MAG: Minor PROTON: Quiet
						S20	W46	1	0	0	05	E	
						S11	E28	0	0	0	05	E	
						S09	E35	1	0	0	05	Q	
						N08	W69	0	0	0	06	Q	
097	07	06	131	133	10	S10	W48	0	0	0	06	Q	SOL: Eruptive MAG: Active PROTON: Quiet
						S05	W15	0	0	0	06	Q	
						S19	W60	1	0	0	06	Q	
						S11	E15	1	0	0	06	E	
						S07	E24	0	0	0	06	Q	
098	08	07	100	130	13	N08	W83	0	0	0	07	Q	SOL: Eruptive MAG: Quiet PROTON: Quiet
						S10	W61	0	0	0	07	Q	
						S06	W28	3	0	0	07	E	
						S18	W75	0	0	0	07	Q	
						S11	E01	5	0	0	07	E	
099	09	08	145	143	17	S07	E11	0	0	0	07	Q	SOL: Eruptive MAG: Quiet PROTON: Quiet
						S11	W75	0	0	0	08	Q	
						S06	W40	1	0	0	08	E	
						S10	W12	9	0	0	08	E	
						S07	W06	0	0	0	08	Q	
099	09	08	145	143	17	S12	W86	0	0	0	09	Q	SOL: Eruptive MAG: Quiet PROTON: Quiet
						S06	W52	3	0	0	09	E	
						S10	W25	7	0	0	09	E	
						S06	W21	4	0	0	09	E	
						N17	W09	0	0	0	09	Q	
099	09	08	145	143	17	N06	W20	0	0	0	09	Q	

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages

APRIL 1993

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A- index	Location		Flares			Date of Forecast	Region Forecast ¹	Geoadvice ¹	1
						° Lat	° Long	Total	M	X				
100	10	09	134	136	20	S06	W67	0	0	0	10	E	SOL: Eruptive	
						S10	W38	2	0	0	10	E	MAG: Active	
						S06	W35	6	0	0	10	E	PROTON: Quiet	
						N17	W25	0	0	0	10	Q		
						N05	W36	2	0	0	10	Q		
101	11	10	118	126	20	S06	W79	4	0	0	11	E	SOL: Eruptive	
						S06	W53	2	0	0	11	E	MAG: Minor	
						N17	W37	0	0	0	11	Q	PROTON: Quiet	
						N05	W48	6	0	0	11	Q		
						N15	E29	0	0	0	11	Q		
102	12	11	090	119	9	S11	W92	0	0	0	12	E	SOL: Eruptive	
						S09	W66	3	0	0	12	E	MAG: Quiet	
						N05	W63	1	0	0	12	Q	PROTON: Quiet	
						N16	E09	0	0	0	12	Q		
						N23	W63	0	0	0	12	Q		
103	13	12	056	103	11	S10	W77	2	0	0	13	E	SOL: Eruptive	
						N06	W76	4	0	0	13	E	MAG: Quiet	
						N15	W06	0	0	0	13	Q	PROTON: Quiet	
						N23	W77	0	0	0	13	Q		
104	14	13	039	097	25	S07	W80	0	0	0	14	Q	SOL: Quiet	
						N07	W83	1	0	0	14	Q	MAG: Quiet	
						N19	W13	0	0	0	14	Q	PROTON: Quiet	
105	15	14	040	092	17	N17	W28	0	0	0	15	Q	SOL: Quiet	
						N05	E52	0	0	0	15	Q	MAG: Quiet	
						S27	E18	0	0	0	15	Q	PROTON: Quiet	
106	16	15	030	088	26	N17	W42	0	0	0	16	Q	SOL: Quiet	
						N05	E38	1	0	0	16	Q	MAG: Quiet	
						S27	E18	0	0	0	16	Q	PROTON: Quiet	
107	17	16	042	090	12	N15	W58	0	0	0	17	Q	SOL: Eruptive	
						N06	E25	1	0	0	17	Q	MAG: Active	
						N08	E76	2	0	0	17	E	PROTON: Quiet	
108	18	17	057	096	8	N17	W69	3	0	0	18	E	SOL: Eruptive	
						N07	E10	0	0	0	18	Q	MAG: Active	
						N09	E62	9	0	0	18	E	PROTON: Quiet	
						S05	W14	0	0	0	18	Q		
109	19	18	094	106	16	N17	W84	5	0	0	19	E	SOL: Eruptive	
						N07	W02	0	0	0	19	Q	MAG: Active	
						N10	E52	9	1	0	19	A	PROTON: Quiet	
						S04	W28	0	0	0	19	Q		
						S16	E10	0	0	0	19	Q		
						S14	E70	8	0	0	19	E		
110	20	19	113	111	9	N16	W99	0	0	0	20	Q	SOL: Eruptive	
						N05	W17	0	0	0	20	Q	MAG: Active	
						N10	E38	13	0	0	20	E	PROTON: Quiet	
						S15	E56	4	0	0	20	E		
						S06	W12	0	0	0	20	Q		
						N05	W44	0	0	0	20	Q		
						S13	E19	0	0	0	20	Q		
						N05	E31	1	0	0	20	Q		

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

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Summary of the Geoalert Messages						APRIL 1993							
Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location		Flares			Date of Forecast	Region Forecast ¹	Geoadvice ¹
						° Lat	° Long	Total	M	X			
111	21	20	157	119	23	N10	E25	15	0	0	21	E	SOL: Eruptive MAG: Quiet PROTON: Quiet
						S14	E43	2	0	0	21	Q	
						S06	W25	0	0	0	21	Q	
						S14	E05	5	0	0	21	Q	
						N05	E17	0	0	0	21	Q	
						S11	W27	0	0	0	21	Q	
						N09	W16	0	0	0	21	Q	
						S11	E14	0	0	0	21	Q	
112	22	21	147	119	25	N11	E12	2	0	0	22	E	SOL: Eruptive MAG: Active PROTON: Quiet
						S13	E29	0	0	0	22	Q	
						S06	W38	0	0	0	22	Q	
						S14	W09	5	0	0	22	E	
						N06	E03	0	0	0	22	Q	
						S11	W00	0	0	0	22	Q	
113	23	22	134	117	15	N11	W02	4	1	0	23	E	SOL: Eruptive MAG: Active PROTON: Quiet
						S13	E16	2	0	0	23	Q	
						S14	W16	1	0	0	23	E	
						N07	W11	0	0	0	23	Q	
						S11	W13	1	0	0	23	Q	
						S21	E69	0	0	0	23	Q	
114	24	23	154	122	9	N11	W15	2	0	0	24	E	SOL: Eruptive MAG: Quiet PROTON: Quiet
						S13	E04	0	0	0	24	Q	
						S13	W35	2	0	0	24	E	
						N07	W25	0	0	0	24	Q	
						N10	W47	0	0	0	24	Q	
						S10	W26	0	0	0	24	Q	
						S21	E56	0	0	0	24	Q	
						N11	E51	0	0	0	24	Q	
115	25	24	174	129	7	N11	W28	0	0	0	25	E	SOL: Eruptive MAG: Quiet PROTON: Quiet
						S13	W11	0	0	0	25	Q	
						S13	W48	5	0	0	25	E	
						N08	W39	0	0	0	25	Q	
						N12	W60	0	0	0	25	Q	
						S09	W42	0	0	0	25	Q	
						S22	E43	0	0	0	25	Q	
						N09	E40	1	0	0	25	Q	
116	26	25	124	125	13	N06	E73	0	0	0	25	Q	
						N11	W40	7	0	0	26	E	SOL: Eruptive MAG: Quiet PROTON: Quiet
						S15	W22	2	0	0	26	Q	
						S14	W61	2	0	0	26	E	
						N10	W74	0	0	0	26	Q	
						S10	W56	1	0	0	26	Q	
						S21	E32	0	0	0	26	Q	
						N07	E59	0	0	0	26	Q	
						N10	E07	0	0	0	26	Q	
117	27	26	081	123	4	N12	W54	0	0	0	27	E	SOL: Eruptive MAG: Quiet PROTON: Quiet
						S14	W37	0	0	0	27	Q	
						S14	W76	7	0	0	27	E	
						N10	W87	1	0	0	27	Q	
						N07	E46	0	0	0	27	Q	

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ALERT PERIODS **INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE**

Summary of the Geoalert Messages

APRIL 1993

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A- index	Location		Flares			Date of Forecast	Region Forecast ¹	Geoadvice ¹
						° Lat	° Long	Total	M	X			
118	28	27	091	118	3	N12	W69	3	0	0	28	E	SOL: Eruptive
						S13	W51	1	0	0	28	Q	MAG: Quiet
						S14	W86	0	0	0	28	E	PROTON: Quiet
						N07	E34	0	0	0	28	Q	
						S13	E10	1	0	0	28	Q	
						S12	E72	0	0	0	28	Q	
119	29	28	062	114	3	N13	W83	0	0	0	29	E	SOL: Eruptive
						N09	E20	3	0	0	29	Q	MAG: Quiet
						S12	W03	2	0	0	29	Q	PROTON: Quiet
						S11	E60	0	0	0	29	Q	
120	30	29	060	107	10	N08	E07	0	0	0	30	Q	SOL: Quiet
						S12	W16	0	0	0	30	Q	MAG: Quiet
						S12	E47	0	0	0	30	Q	PROTON: Quiet
						S04	E36	0	0	0	30	Q	

¹ Region Forecast and Flare Geoadvice

Q =Quiet (<50% probability of C-class flares)
E =Eruptive (C-class flares expected, probability >=50%)
A =Active (M-class flares expected, probability >=50%)
M =Major (X-class flares expected, probability >=50%)
P =Proton (Proton flares expected, probability >=50%)
Warning condition (activity levels expected to increase, but no
numeric forecast given)
Nil (end of Alert period)
No forecast

Magnetic Geoadvice

Quiet
Active conditions expected (A>=20 or K=4)
Minor storm expected (A>=30 or K=5)
Major magstorm expected (A>=50 or K>=6)
Severe magstorm expected (A>=100 or K>=7)
Magstorm in progress (A>=30 or K>=4)
Warning condition (activity levels expected
to increase, but no numeric forecast given)
Nil (end of Alert period)
No forecast

Proton Geoadvice

Quiet
Proton event expected (10 pfu at >10 MeV)
Major proton event expected (100 pfu at >100 MeV)
Proton event in progress (>10 MeV)
Warning condition (activity levels expected to increase, but no
numeric forecast given)
Nil (end of Alert period)
No forecast

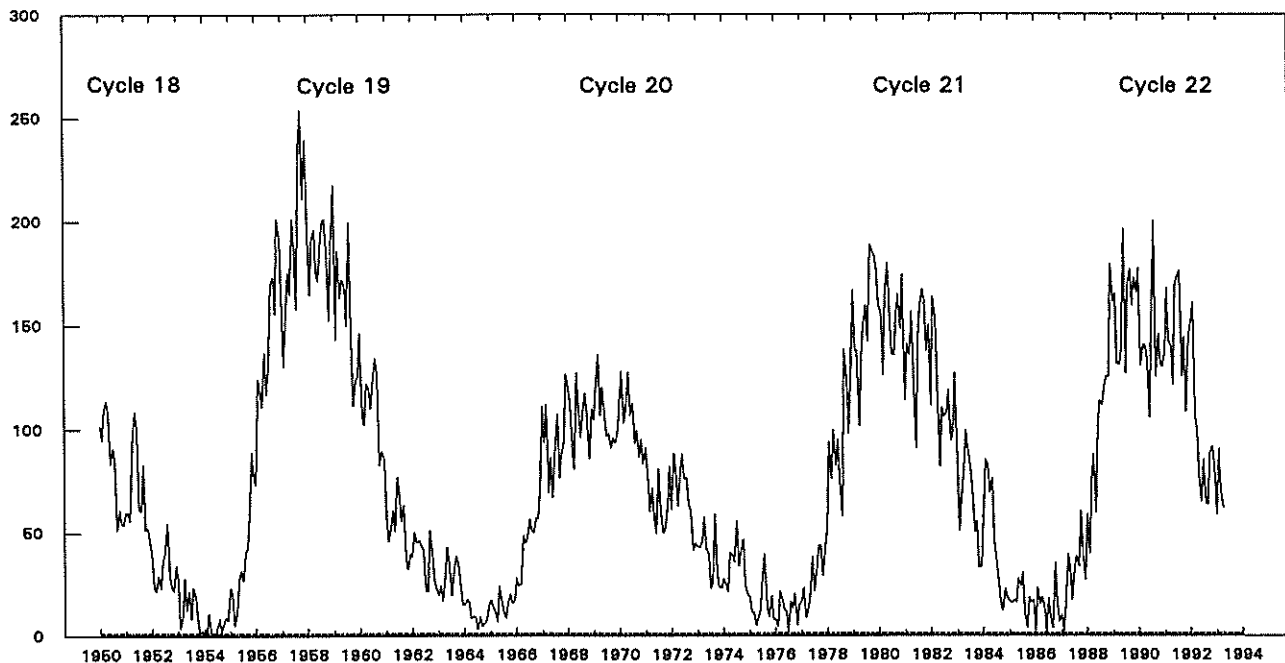
STRATWARM ALERTS

04/01/93 03:30:00

GEOALERT WWA091 STRATWARM ALERT/WED/STRATWARM EXISTS.

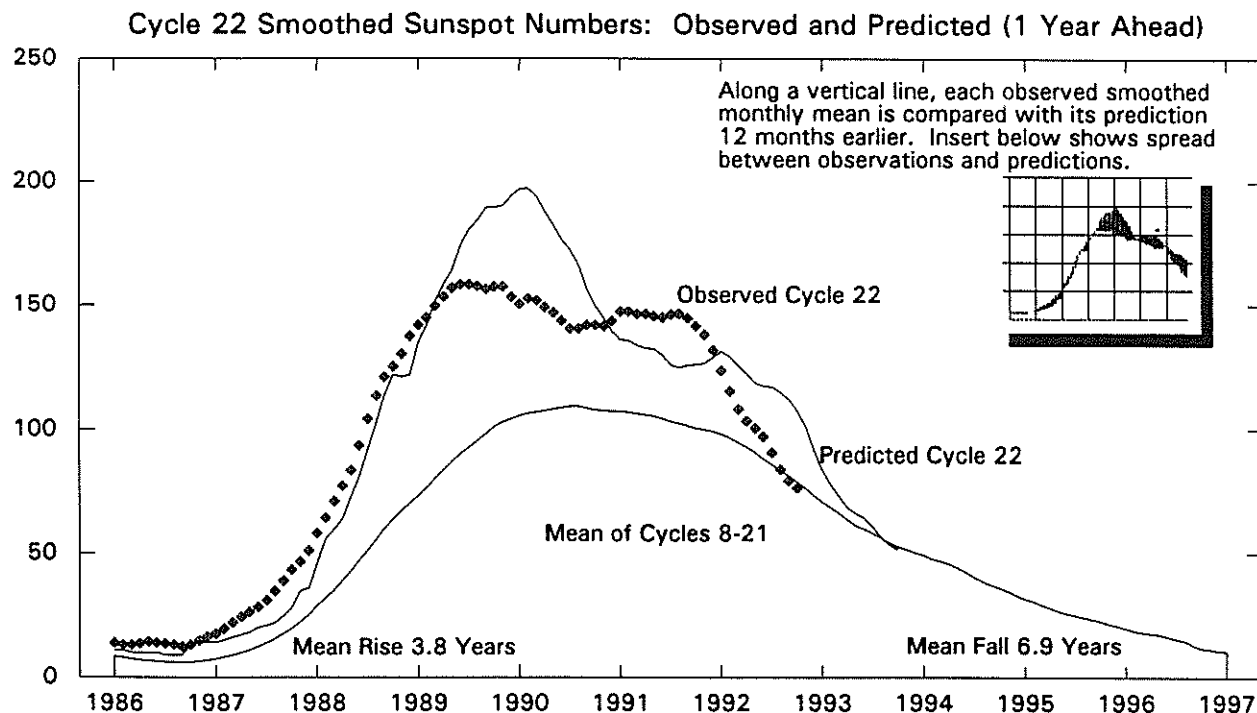
TEMPERATURE GRADIENT REVERSED BETWEEN 60N AND THE POLE AT 10 HPA AND ABOVE IN THE UP-
PER STRATOSPHERE, MEAN ZONAL WIND AT 60N DECREASING IN THE MIDDLE STRATOSPHERE.
FINAL WARMING IN PROGRESS.

Monthly Mean Sunspot Numbers Jan 1950 - Apr 1993



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
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	161.3	165.1	131.4	130.6	138.5	196.2	126.9	168.9	176.7	159.4	173.0	165.5	157.6 M
1990	177.3	130.5	140.3	140.3	132.2	105.4	149.4	200.3	125.2	145.5	131.4	129.7	142.6
1991	136.9	167.5	141.9	140.0	121.3	169.7	173.7	176.3	125.3	144.1	108.2	144.4	145.7
1992	150.0	161.1	106.7	99.8	73.8	65.2	85.7	64.5	63.9	88.7	91.8	82.6	94.3
1993	59.1	90.5	70.5	61.9									70.5

Values are preliminary since Jan 1993. For the yearly means, each 'M' marks a sunspot cycle maximum and each 'm' a minimum.



Smoothed Sunspot Numbers (Observed and Predicted) for Parts of Solar Cycles 21 and 22

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
1986	14	13	13	14	14	14	14	13	12	13	15	16	14
1987	18	20	22	24	26	28	31	35	39	44	47	51	32
1988	58	65	71	78	84	94	104	114	121	125	130	138	98
1989	142	145	150	154	157	158	158	158	157	157	158	154	154
1990	151	153	152	149	147	144	141	140	142	142	142	144	146
1991	148	148	147	146	146	145	146	147	145	142	138	132	144
1992 ()	124	115	108	103	100	97	91	84	80	76	74 (3)	71 (5)	94 (4)
1993 ()	69 (5)	67 (6)	65 (8)	62 (9)	60 (10)	58 (11)	57 (11)	55 (13)	53 (15)	52 (16)	50 (17)	49 (19)	58 (12)
1994 ()	48 (20)	46 (20)	46 (20)	44 (21)	43 (21)	42 (22)	40 (23)	38 (24)	36 (25)	35 (25)	34 (26)	32 (25)	40 (23)

Solar Cycle 21
 Solar Cycle 22
 Min, Max, and Predictions

September 1986 marks the minimum of Solar Cycle 21 and the onset of Cycle 22, which in turn, reached a maximum in July 1989.

Observed and Predicted Numbers. For the end of Cycle 21, and the rise and decline of Cycle 22, the table above lists observed smoothed sunspot numbers up to the one that includes the most recent monthly mean. We based these smoothed values on final monthly means through Dec 1992 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 Jul 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 October 1993 prediction. There exists a 90% chance that in October 1993 the actual smoothed number will fall somewhere between 36 and 68.

Points to Ponder. The McNish-Lincoln prediction method generates useful estimates of smoothed, monthly mean sunspot numbers for no more than 12 months ahead. Beyond 12 months, the predictions regress toward the mean of all 14 cycles of observations used in the computation. Moreover, the method remains very sensitive to the date defining the onset of the current 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 Sep 1986.

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INTERNATIONAL RELATIVE SUNSPOT NUMBERS

Day	May 92	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan [†] 93	Feb [†]	Mar [†]	Apr [†]
01	88	31	78	65	47	85	104	65	46	22	86	67
02	86	38	66	90	49	98	88	56	37	34	80	67
03	90	72	63	103	44	95	68	59	36	69	84	75
04	98	74	71	103	46	105	86	59	52	85	98	67
05	96	81	78	94	47	122	95	51	66	119	105	75
06	93	70	77	89	52	113	95	48	84	129	96	89
07	72	64	79	86	44	103	96	34	81	128	93	79
08	82	60	83	93	38	88	74	63	89	134	82	81
09	79	70	102	93	57	91	76	91	94	126	89	87
10	73	74	129	74	54	73	74	99	100	114	81	74
11	68	82	133	60	59	57	84	116	91	95	86	55
12	80	102	132	53	63	41	83	109	94	97	77	37
13	87	86	126	61	77	36	62	113	107	92	67	19
14	78	77	151	82	77	43	69	115	69	78	56	15
15	65	60	161	76	75	40	70	112	58	73	60	15
16	45	64	159	96	76	54	84	109	59	84	56	15
17	41	64	140	90	62	55	100	105	62	68	60	36
18	59	59	102	71	54	73	102	98	66	78	69	49
19	54	63	88	69	63	92	108	97	68	88	72	51
20	59	56	66	59	62	75	98	97	52	97	70	89
21	110	55	65	48	65	98	85	84	47	92	78	98
22	106	69	67	44	66	104	95	91	34	100	73	93
23	113	73	54	36	89	95	115	79	30	101	63	96
24	99	70	43	38	90	114	122	78	45	90	42	98
25	66	64	37	20	75	113	125	81	51	88	40	88
26	57	59	54	30	84	125	116	90	37	86	46	50
27	80	38	61	34	86	138	116	73	38	86	51	62
28	59	43	53	33	62	131	99	86	37	82	51	51
29	41	70	39	40	72	111	92	78	35		54	41
30	30	67	47	35	81	100	74	69	36		58	38
31	33		53	36		82		56	32		61	
Mean	73.8	65.2	85.7	64.5	63.9	88.7	91.8	82.6	59.1	90.5	70.5	61.9

[†]=preliminary. The yearly mean sunspot number equals 94.3 for 1992.

Dominion Radio Observatory PENTICTON 2800 MHz (10.7 cm) SOLAR FLUX Adjusted to 1 AU

Day	May 92	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 93	Feb	Mar	Apr
01	133.0	101.4	134.1	113.6	101.6	118.2	144.8	127.1	118.3	121.5	129.6	123.5
02	138.0	105.0	141.2	128.2	106.3	119.5	138.8	126.0	117.4	124.7	141.0	120.7
03	127.8	110.1	141.1	135.1	108.9	120.2	132.9	121.3	120.6	133.0	148.6	117.0
04	137.0	111.5	141.3	134.7	106.4	126.1	140.4	115.9	117.1	143.2	163.8	116.4
05	135.4	118.4	150.6	134.3	121.2	130.1	133.6	112.4	120.8	155.6	162.5	118.9
06	133.0	123.2	155.4	141.9	141.3	137.3	130.5	115.9	125.8	178.8	164.0	133.1
07	131.5	119.2	159.9	145.4	133.6	135.8	132.4	116.1	126.3	171.2	150.9	130.0
08	145.3	118.7	156.6	147.5	130.8	125.4	129.7	124.8	128.6	183.4	144.3	143.5
09	129.2	122.3	165.0	141.1	118.5	121.0	129.9	129.6	124.5	180.3	140.6	136.0
10	126.9	129.3	175.7	136.3	118.4	112.1	133.7	137.5	127.7	175.0	146.7	139.2
11	128.8	133.1	173.9	133.9	120.1	110.0	132.0	159.0	127.4	168.8	148.0	119.4
12	127.8	130.6	177.8	131.7	118.7	106.5	124.7	163.1	135.6	144.9	158.7	103.7
13	128.2	127.5	181.4	132.3	128.8	108.2	122.2	167.6	136.6	131.7	139.9	97.7
14	129.3	127.2	181.3	132.0	123.1	104.9	123.4	161.8	128.8	137.9	134.2	92.8
15	124.8	124.7	173.3	133.8	121.5	97.8	124.1	150.4	121.9	131.6	129.7	88.8
16	118.5	122.9	162.8	140.0	127.9	99.9	133.7	145.8	129.1	130.5	120.5	90.0
17	115.5	134.4	140.4	137.1	120.6	105.8	148.9	145.5	121.9	121.4	122.4	96.5
18	120.2	119.8	130.2	132.7	118.5	111.4	158.2L	144.9	117.7	123.2	126.2	106.6
19	134.5	119.1	122.3	138.0	113.4	123.4	157.1	142.2	112.7	113.4	133.4	111.9
20	140.3	116.8	127.5	159.1	107.1	131.9	155.0	143.2	106.5	120.6	127.0	119.9
21	145.5	121.3	111.8	127.8	110.4	139.2	161.3K	140.8	103.3	120.3	129.7	120.5
22	148.4	120.0	107.7	124.4	112.3	149.2	162.0	137.6	101.0	130.3	126.6	118.4
23	145.6	125.5	101.9	113.2	112.6	140.3	171.7	139.3	102.7	129.6	120.1	122.9
24	136.9	121.8	103.2	104.0	112.6	145.1	169.4	132.0	101.6	132.7	114.4	130.3
25	126.1	127.4	101.5	100.1	116.5	159.4	162.4	132.0	102.6	125.5	116.0	126.2
26	122.1	115.3	104.3	94.4	117.3	167.9	158.2	127.2	103.3	123.8	116.4	125.0
27	117.7	113.1	103.4	95.8	121.6	168.9	152.6	121.2	107.6	121.6	122.4	119.6
28	113.9	112.0	98.5	97.6	116.6	172.3	144.7	123.4	108.6	121.4	125.8	115.2
29	108.1	114.4	101.1	97.1	117.7	161.6	136.0	121.3	110.7		128.3	108.1
30	101.7	127.0	99.9	96.6	116.2	225.8*	135.9	121.9	109.6		128.7	107.4
31	101.8		106.3	99.0		147.3		125.8	115.6		124.9	
Mean	128.2	120.4	136.5	125.1	118.0	130.0*	142.0	134.6	117.2	139.1	135.0	116.7

* = corrected for burst in progress; K = wet snow on antenna (2300 UT measurement); L = value enhanced by burst

DAILY SOLAR INDICES

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April 1993

Day	Day of Year	Bartels Cycle Day	Sunspot Numbers		Obs Flux Pentiction (2800)	Solar Flux Adjusted to 1 Astronomical Unit								
			Int	Amer		SGMR (15400)	SGMR (8800)	SGMR (4995)	Pentic (2800)	SGMR (2695)	SGMR (1415)	SGMR (610)	SGMR (410)	SGMR (245)
01	91	25	67	70	123.6	436	202	148	123.5	55	90	63	30	13
02	92	26	67	64	120.8	507	225	155	120.7	50	89	59	36	11
03	93	27	75	85	117.0	552	238	161	117.0	---	87	68	34	11
04	94	1	67	67	116.3	544	240	162	116.4	---	84	65	35	16
05	95	2	75	79	118.8	564	244	165	118.9	---	84	62	34	17
06	96	3	89	92	132.8	567	253	182	133.1	---	85	63	31	11
07	97	4	79	82	129.7	565	246	176	130.0	---	83	59	36	14
08	98	5	81	91	143.1	565	247	180	143.5	120	84	56	30	10
09	99	6	87	90	135.5	562	247	183	136.0	140	83	59	33	16
10	100	7	74	78	138.6	535	246	180	139.2	122	83	54	29	18
11	101	8	55	63	118.8	---	245	174	119.4	---	79	52	30	15
12	102	9	37	36	103.2	480	---	111	103.7	93	67	49	32	16
13	103	10	19	20	97.2	---	221	141	97.7	89	66	43	26	11
14	104	11	15	15	92.2	541	227	140	92.8	85	63	49	29	11
15	105	12	15	14	88.2	531	222	136	88.8	85	60	51	29	12
16	106	13	15	26	90.2	537	221	136	90.9	117	61	51	29	13
17	107	14	36	39	95.7	---	220	143	96.5	86	62	50	28	14
18	108	15	49	54	105.7	551	233	153	106.6	90	66	55	32	16
19	109	16	51	70	110.9	549	231	156	111.9	99	74	59	34	17
20	110	17	89	96	118.8	552	235	168	119.9	112	75	56	34	16
21	111	18	98	98	119.3	547	232	164	120.5	115	78	58	32	17
22	112	19	93	96	117.1	---	227	159	118.4	115	78	54	32	16
23	113	20	96	104	121.5	450	238	164	122.9	120	82	61	32	16
24	114	21	98	106	128.8	560	243	177	130.3	131	88	63	33	---
25	115	22	88	88	124.6	552	242	173	126.2	126	85	63	33	15
26	116	23	50	57	123.3	531	241	170	125.0	123	85	64	35	17
27	117	24	62	62	118.0	546	245	166	119.6	123	85	62	34	14
28	118	25	51	52	113.6	562	239	160	115.2	116	82	64	32	14
29	119	26	41	43	106.5	554	235	155	108.1	111	79	61	31	11
30	120	27	38	34	105.8	553	235	156	107.4	113	82	63	32	13
Mean			61.9	65.7	115.9	538	235	165	116.7	106	78	58	32	14

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

The observed and the adjusted Pentiction fluxes tabulated here are the "Series C" daily values reported by the Dominion Radio Astrophysical Observatory, Pentiction, British Columbia, Canada. Numbers in parentheses in the column headings denote frequencies in MHz.

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

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H α SOLAR FLARES

APRIL 1993

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF		CMP Mo	Day	Dur (Min)	Imp		Obs See	Type	Area Measurement			Remarks
							Region					Time (UT)	Apparent (10-6 Disk)			Corr (Sq Deg)			
LEAR	01	0423	0433	0504	S11	E19	7463	04	2.6	41	1N	C 3.9	3	E		138		UF	
SVTO		0842	0844	0850	S11	E16	7463	04	2.6	8	SF	B 4.0	3	E		17			
GOES		1205	1214	1226						21		B 3.9							
SVTO		1336	1337	1342	S11	E13	7463	04	2.5	6	SF	B 3.0	3	E		14		F	
HOLL		1543	1549	1603	N08	W41	7467	03	29.7	20	SF	B 4.3	3	E		62		F	
RAMY		1548	1549	1553	N09	W47	7467	03	29.2	5	SF		3	E		22			
HOLL		1634	1639	1712	N04	W07	7461	04	1.2	38	SF	B 9.6	3	E		51		F	
RAMY		1638	1639	1644	N06	W07	7461	04	1.2	6	SF		3	E		22		F	
HOLL		1705	1708	1717	N10	W47	7467	03	29.3	12	SF	B 8.0	3	E		42		F	
RAMY		1706	1707	1716	N09	W47	7467	03	29.3	10	SF		3	E		28		F	
GOES	03	0402	0407	0414						12		B 5.1							
LEAR		0705	0706	0718	S13	W09	7463	04	2.6	13	SF	C 1.2	3	E		33		F	
SVTO	04	1232	1233	1245	S21	W47	7466	03	31.9	13	SF	B 3.3	3	E		25			
HOLL		2123E	2125	2133	S10	E37	7470	04	7.7	100	SF		2	E		21		H	
PALE		2123	2128	2140	S08	E38	7470	04	7.7	17	SF		3	E		27			
GOES	05	0001	0012	0028						27		B 6.0							
GOES		0829	0834	0903						34		B 5.9							
GOES		1635	1648	1700						25		C 4.6							
GOES		1929	1931	1935						6		B 4.7							
GOES		1947	1951	1956						9		B 5.3							
HOLL		2057	2058	2109	S12	E16	7469	04	7.1	12	SF	B 9.4	3	E		18		F	
PALE		2218E	2219U	2222	S20	W62	7466	04	1.2	40	SF	B 9.7	3	E		46			
GOES		2308	2312	2315						7		B 4.5							
GOES	06	0130	0133	0136						6		B 4.8							
GOES		0150	0155	0159						9		B 5.5							
GOES		0217	0222	0225						8		B 8.3							
LEAR		0234	0238	0257	S07	W14	7465	04	5.0	23	SF	C 2.9	2	E		79		F	
GOES		0547	0551	0553						6		B 5.6							
GOES		0805	0808	0810						5		B 5.3							
GOES		0919	0926	0933						14		B 5.4							
GOES		1051	1058	1104						13		B 5.6							
RAMY		1119	1125	1136	S09	W17	7465	04	5.2	17	SF		3	E		22		H	
RAMY		1150	1156	1252	S08	W18	7465	04	5.1	62	1F	C 5.6	3	E		111		FE	
RAMY		1201	1202	1208	S11	E11	7469	04	7.3	7	SF		3	E		14		F	
RAMY		1209	1219	1227	S10	E11	7469	04	7.3	18	SF		3	E		21		F	
RAMY		1244	1245	1254	S11	E08	7469	04	7.1	10	SF		3	E		12		F	
RAMY		1355	1356	1402	S11	E09	7469	04	7.2	7	SF		3	E		14		F	
GOES		1748	1751	1753						5		C 1.4							
PALE		1846	1851	1902D	S12	E08	7469	04	7.4	160	SF	C 4.4	3	E		75			
GOES		2111	2115	2120						9		C 1.6							
GOES		2210	2215	2219						9		C 1.9							
GOES		2239	2247	2254						15		C 5.2							
PALE		2319E	2319U	2325D	S14	E10	7469	04	7.7	60	SF		2	E		21			
GOES		2343	2346	2352						9		M 1.5							
GOES	07	0255	0259	0305						10		C 4.2							
GOES		0415	0421	0427						12		C 4.1							
GOES		0503	0512	0515						12		C 2.2							
SVTO		0615	0616	0630	S12	E00	7469	04	7.3	15	SF	C 1.4	3	E		31		F	
GOES		0641	0644	0646						5		C 1.7							
SVTO		0801	0807	0821	S11	W05	7469	04	6.9	20	SF	C 1.3	3	E		39		F	
SVTO		0919	0927	0932	S12	W02	7469	04	7.2	13	SF		3	E		25		F	
SVTO		0938	0942	0958	S10	W31	7465	04	5.1	20	SF	C 4.1	3	E		62		FE	
SVTO		0949	0951	1014	S12	W02	7469	04	7.2	25	SF		3	E		19		F	
SVTO		1042	1045	1054	S12	W01	7469	04	7.4	12	SN	C 3.0	3	E		41		E	
RAMY		1110	1115	1132	S12	W04	7469	04	7.2	22	SF		3	E		18		F	
SVTO		1113	1116	1121	S12	W04	7469	04	7.2	8	SF		3	E		15			
RAMY		1141	1154	1201	S12	W05	7469	04	7.1	20	SF	C 3.5	3	E		48		F	
SVTO		1145	1154	1201	S12	W03	7469	04	7.3	16	SN		3	E		48		E	
HOLL		1303E	1303U	1312	S13	W04	7469	04	7.2	90	SF		1	E		17			
HOLL		1341	1358	1458	S12	W07	7469	04	7.0	77	1N		3	E		167		F	
RAMY		1342	1343	1346	S12	W04	7469	04	7.3	4	SF		3	E		31		F	
SVTO		1343	1343	1347	S12	W03	7469	04	7.3	4	SF	C 1.2	3	E		29		H	
SVTO		1354	1401	1455D	S12	W07	7469	04	7.0	610	SN		3	E		84		E	

H α SOLAR FLARES

APRIL 1993

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Region	NOAA/ USAF Mo	CMP Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Area Measurement			Remarks
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
RAMY	07	1356	1357	1426	S12	W06	7469	04	7.1	30	SF	C 7.6	3	E		42		FE
GOES		1520	1523	1526						6		B 6.4						
PALE	08	0054E	0055U	0103D	S13	W11	7469	04	7.2	9D	SF		3	E		36		F
PALE		0113E	0126U	0135D	S12	W10	7469	04	7.3	22D	1F	B 8.8	2	E		122		F
LEAR		0123	0125	0133	S12	W10	7469	04	7.3	10	SN	B 8.8	3	E		44		F
LEAR		0211	0320	0440	S06	W41	7465	04	5.0	149	1F	C 5.9	3	E		124		F
LEAR		0217	0220	0231	S13	W10	7469	04	7.3	14	SF		3	E		27		F
LEAR		0655	0702	0709	S09	W45	7465	04	4.9	14	SF		3	E		27		
RAMY		1132	1132	1140	S08	W15	7470	04	7.3	8	SF		3	E		10		
RAMY		1229	1232	1235	S12	W23	7469	04	6.8	6	SF		3	E		30		
RAMY		1332	1335	1341	S12	W23	7469	04	6.8	9	SF	C 2.1	4	E		14		
HOLL		1446	1528	1552	S06	W18	7470	04	7.3	66	SF		3	E		62		F
HOLL		1449	1545	1553	S11	W19	7469	04	7.2	64	SF		3	E		55		F
RAMY		1524	1529	1534	S07	W19	7470	04	7.2	10	SF	C 1.3	4	E		46		F
HOLL		1553	1614	1625	S06	W18	7470	04	7.3	32	SF	B 9.9	3	E		23		F
HOLL		1931	2000	2033	S11	W22	7469	04	7.1	62	SF		3	E		93		F
RAMY		1937	1958	2026	S10	W21	7469	04	7.2	49	SF	C 6.5	3	E		54		F
PALE		1939E	1948U	2126D	S13	W21	7469	04	7.2	107D	1N		3	E		124		FE
HOLL		2034	2037	2207	N16	E62		04	13.5	93	1N	C 9.2	3	E		125		US
RAMY		2035	2041	2128	N18	E62		04	13.6	53	SF		3	E		65		F
HOLL		2109	2133	2145	S03	W52	7465	04	5.0	36	SF		3	E		43		F
RAMY		2110	2134	2141	S06	W52	7465	04	5.0	31	SF		3	E		36		F
PALE		2123E	2125	2204D	S09	W50	7465	04	5.1	41D	SF		3	E		63		F
HOLL		2204	2210	2223	S06	W23	7470	04	7.2	19	SF		3	E		25		F
PALE		2331	2342	2352	S04	W57	7465	04	4.7	21	SF		3	E		79		
PALE		2334	2334	2338	N04	W21	7472	04	7.4	4	SF		3	E		21		F
PALE		2340	2348	2350	S08	W22	7470	04	7.3	10	SF		3	E		16		
PALE		2342	2343	2350	N04	W21	7472	04	7.4	8	SF		3	E		22		
PALE		2359E		2409D	S08	W22	7470	04	7.3	10D	SF		3	E		23		
PALE	09	0017	0018	0021	N04	W22	7472	04	7.4	4	SF		3	E		23		
PALE		0022	0023	0029	N04	W22	7472	04	7.4	7	SF		3	E		19		
PALE		0022	0028	0031	S08	W22	7470	04	7.4	9	SF		3	E		13		
LEAR		0826	0829	0831	S09	W27	7470	04	7.3	5	SF		3	E		27		
SVTO		0833	0834	0838	S10	W26	7469	04	7.4	5	SF		3	E		15		F
GOES		1046	1119	1208						82		C 1.4						
HOLL		1456	1502	1509	S06	W30	7470	04	7.4	13	SF		3	E		22		F
SVTO		1459	1500	1505	S08	W30	7470	04	7.4	6	SF		3	E		13		F
HOLL		1616	1617	1623	S08	W44	7469	04	6.4	7	SF		3	E		21		F
SVTO		1617	1617	1622	S11	W44	7469	04	6.4	5	SF		3	E		11		
GOES		1739	1742	1744						5		B 7.1						
HOLL		1814	1816	1829	S06	W33	7470	04	7.3	15	SF		3	E		35		F
GOES		1927	1930	1932						5		B 8.6						
HOLL		2011	2022	2034	S05	W35	7470	04	7.2	23	SF	C 1.2	3	E		50		F
HOLL		2123	2125	2136	S06	W35	7470	04	7.3	13	SN	C 2.1	3	E		70		
RAMY		2124	2125	2135	S07	W36	7470	04	7.2	11	SF		3	E		53		F
PALE	10	0121	0133	0137	N03	W38	7472	04	7.2	16	SF		3	E		43		
LEAR		0137	0140	0200	S09	W69	7465	04	4.9	23	SF	C 1.0	3	E		61		F
PALE		0326	0328	0335	S04	W70	7465	04	4.9	9	SF		3	E		23		
GOES		0840	0846	0855						15		C 1.1						
RAMY		1224	1226	1233	N06	W43	7472	04	7.3	9	SF	B 8.7	3	E		31		F
RAMY		1247	1249	1256	N06	W43	7472	04	7.3	9	SF	C 1.1	3	E		16		F
HOLL		1510	1517	1523D	N06	W46	7472	04	7.2	13D	SF		3	E		30		
HOLL		1640	1641	1650	S02	W80	7465	04	4.7	10	SF	C 1.3	3	E		17		
RAMY		1655	1655	1701	N05	W47	7472	04	7.2	6	SF		3	E		18		
PALE		1728	1733	1745	N04	W47	7472	04	7.2	17	SF		3	E		81		
RAMY		1730	1735	1740	N06	W47	7472	04	7.2	10	SF		3	E		42		
RAMY		1739	1747	1823	S07	W47	7470	04	7.2	44	1N	C 6.6	3	E		146		UF
HOLL		1739	1748	1820	S04	W48	7470	04	7.1	41	1N		3	E		150		F
PALE		1740	1744	1819	S08	W48	7470	04	7.1	39	1N		3	E		109		UF
HOLL		2120	2120	2124	S01	W83	7465	04	4.7	4	SF	C 4.4	3	E		56		
HOLL		2323	2324	2329	S07	W54	7469	04	6.9	6	SF	C 1.4	3	E		22		
HOLL		2331	2334	2354	S08	W51	7469	04	7.1	23	1N	C 9.1	3	E		116		FE
PALE		2333	2340U	2346D	S15	W52	7469	04	7.0	13D	1N		3	E		169		F
HOLL	11	0021	0029	0200	S09	W55	7469	04	6.9	99	1B		3	E		132		FH

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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	See	Obs Type	Time (UT)	Area Measurement		Remarks
																Apparent (10-6 Disk)	Corr (Sq Deg)	
L PALE	11	0024	0028	0045	S13	W54	7469	04	6.9	21	SN	C 6.2	3	E		96		EH
GOES		0612	0616	0622						10		C 8.9						
GOES		0904	0909	0914						10		C 1.2						
RAMY		1202	1206	1213	S10	W59	7469	04	7.1	11	SF		3	E		10		
SVTO		1345	1345	1349	S12	W63	7469	04	6.8	4	SF		3	E		11		F
GOES		1526	1541	1614						48		C 1.0						
HOLL		1657	1658	1706	N07	W62	7472	04	7.1	9	SF		1	E		10		
GOES		1726	1733	1744						18		C 1.0						
GOES		2304	2308	2311						7		B 6.1						
PALE	12	0013	0013	0025	N07	W66	7472	04	7.1	12	SF		3	E		23		
GOES		0152	0156	0201						9		C 1.1						
GOES		0230	0238	0242						12		C 1.0						
PALE		0306	0307	0313	N07	W68	7472	04	7.0	7	SF		2	E		29		
PALE		0320	0327	0343D	S12	W67	7469	04	7.1	23D	SF	C 1.5	3	E		44		
PALE		0323	0330	0348D	N07	W68	7472	04	7.0	25D	SF		3	E		28		
GOES		1131	1139	1147						16		B 6.8						
GOES		1606	1610	1616						10		B 5.6						
HOLL		1805	1809	1815	S05	W74	7469	04	7.2	10	SF	B 7.6	3	E		34		
PALE		2305	2309	2324	N01	W76	7472	04	7.3	19	SF	C 1.4	3	E		73		F
GOES	13	0026	0036	0041						15		B 4.6						
PALE		0143E	0147U	0205D	N02	W77	7472	04	7.3	22D	SF	B 7.4	2	E		59		
GOES		0652	0659	0704						12		B 6.0						
GOES		0807	0817	0856						49		B 5.1						
GOES		1759	1802	1804						5		B 5.0						
GOES		2027	2030	2037						10		B 5.5						
GOES		2247	2252	2256						9		B 9.5						
GOES	14	0854	0902	0928						34		B 4.9						
GOES		1003	1007	1012						9		B 4.7						
GOES	15	0901	0920	0948						47		C 1.2						
HOLL		1500	1504	1509	N04	E44	7475	04	18.9	9	SF		3	E		19		
GOES	16	0352	0355	0359						7		B 1.1						
SVTO		0619E	0621	0630	N05	E35	7475	04	18.9	11D	SF	B 2.8	3	E		16		
GOES		0658	0735	0812						74		B 3.2						
GOES		0948	0952	0956						8		B 2.1						
GOES		1020	1026	1031						11		B 4.4						
GOES		1111	1115	1117						6		B 1.5						
GOES		1242	1245	1247						5		B 1.4						
GOES		1409	1418	1431						22		B 1.7						
GOES		1452	1456	1459						7		B 2.3						
GOES		1540	1544	1546						6		B 2.5						
RAMY		1601	1603	1610	N09	E79		04	22.6	9	SF	B 4.1	3	E		25		
GOES		1704	1709	1712						8		B 5.0						
PALE		1733E	1746U	1938D	N10	E81		04	22.8	125D	SF		3	E		30		
GOES		1921	1927	1937						16		B 7.2						
GOES		1945	1948	1951						6		B 3.2						
GOES		2003	2010	2013						10		C 3.5						
GOES		2052	2107	2112						20		B 4.3						
GOES		2241	2246	2248						7		B 3.0						
GOES		2253	2304	2306						13		B 5.5						
GOES	17	0026	0029	0033						7		B 2.5						
GOES		0202	0205	0207						5		B 5.1						
PALE		0309	0314	0329	N15	W60	7473	04	12.6	20	SF	B 3.2	3	E		13		
GOES		0334	0337	0340						6		B 3.4						
GOES		0408	0411	0414						6		B 9.8						
GOES		0435	0438	0444						9		B 2.8						
GOES		0643	0646	0650						7		B 3.3						
GOES		0703	0706	0708						5		B 3.2						
GOES		0908	0912	0914						6		B 9.9						
SVTO		1011E	1012U	1023	N15	W64	7473	04	12.6	12D	SF	C 1.6	2	E		33		
SVTO		1242	1245	1307D	N11	E75	7477	04	23.2	25D	SF		3	E		34		
RAMY		1242	1248	1255	N10	E74	7477	04	23.1	13	SF		3	E		28		
GOES		1336	1346	1402						26		C 1.1						

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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)	
RAMY	17	1442	1445	1459	N10	E72	7477	04	23.0	17	SF		3	E		52		
HOLL		1442	1446	1459	N08	E74	7477	04	23.2	17	SF	B 8.2	3	E		69		
SVTO		1443	1445	1453	N11	E73	7477	04	23.1	10	SF		3	E		46		
SVTO		1535E	1539U	1541D	N09	E71	7477	04	23.0	60	SF		2	E		10		
RAMY		1535	1543	1546	N10	E70	7477	04	22.9	11	SF		3	E		12		
HOLL		1536	1536	1540	N07	E71	7477	04	23.0	4	SF		3	E		10		
HOLL		1609	1609	1621	N18	W70	7473	04	12.3	12	SF		3	E		21		
HOLL		1630	1654	1745	N07	E71	7477	04	23.0	75	SF	B 9.8	3	E		68		
RAMY		1659	1700	1738	N09	E70	7477	04	23.0	39	SF	C 1.8	3	E		42		
RAMY		1748	1755	1807	N10	E67	7477	04	22.8	19	SF		3	E		11		
RAMY		1838	1841	1845	N10	E68	7477	04	22.9	7	SF		3	E		12		
RAMY		1905	1913	1919	N10	E68	7477	04	22.9	14	SF		3	E		31		
HOLL		1910	1911	1917	N08	E68	7477	04	22.9	7	SF		3	E		24		
HOLL		2007	2009	2014	N08	E70	7477	04	23.1	7	SF		3	E		12		
GOES		2057	2102	2110						13		B 5.5						
GOES		2147	2152	2157						10		B 3.7						
GOES		2253	2259	2306						13		B 7.4						
GOES	18	0057	0139	0146						49		B 6.9						
LEAR		0318	0319	0325	S15	E83		04	24.4	7	SF		3	E		39		
GOES		0328	0332	0337						9		B 6.8						
LEAR		0428	0428	0432	S15	E83		04	24.5	4	SF		3	E		29		
LEAR		0432	0435	0443	N16	W78	7473	04	12.3	11	SF	B 7.8	3	E		40		
LEAR		0524	0533	0602	N12	E62	7477	04	22.9	38	SF		3	E		35		
LEAR		0548	0550	0613	N16	W79	7473	04	12.2	25	SF	C 2.7	3	E		31		
LEAR		0611	0626	0650	N12	E61	7477	04	22.8	39	SF		3	E		47		F
LEAR		0618	0620	0629	N16	W79	7473	04	12.3	11	SF		3	E		25		
GOES		0655	0659	0704						9		C 1.3						
GOES		0821	0824	0830						9		B 5.7						
LEAR		0824	0841	0900	N16	W84	7473	04	12.0	36	SF		3	E		42		
SVTO		0832	0834	0839	N14	W77	7473	04	12.5	7	SF		3	E		18		
SVTO		0842	0849	0901	N15	W78	7473	04	12.4	19	SF		3	E		22		
LEAR		0902	0910	0921	N11	E61	7477	04	23.0	19	SF	C 1.2	3	E		39		
SVTO		0928	0929	0934	S12	E78		04	24.3	6	SF		3	E		12		
SVTO		0951	0959	1020	S15	E79		04	24.4	29	1F	C 4.5	3	E		102		FH
SVTO		1102	1104	1112	S14	E75		04	24.1	10	SF		3	E		20		
RAMY		1210	1211	1220	N10	E59	7477	04	22.9	10	SF		3	E		17		F
SVTO		1210	1211	1221	N11	E60	7477	04	23.0	11	SF	C 1.1	3	E		27		
SVTO		1436	1446	1502	N11	E57	7477	04	22.9	26	SF		3	E		19		
HOLL		1455	1507	1514	S14	E74		04	24.2	19	SF		3	E		22		
RAMY		1618	1622	1630	N10	E55	7477	04	22.8	12	SF		3	E		12		F
HOLL		1643	1645	1651	S17	E70	7480	04	24.0	8	SF		3	E		37		
HOLL		1709	1712	1721	S19	E76	7480	04	24.5	12	SF	B 8.1	3	E		50		FH
RAMY		1709	1715	1719	S17	E75	7480	04	24.4	10	SF		3	E		35		FH
PALE		1714	1717	1720	S17	E75	7480	04	24.4	6	SF		3	E		80		H
RAMY		1818	1824	1830	N10	E54	7477	04	22.8	12	SF	C 1.1	3	E		20		F
RAMY		1907	1909	2011	N10	E55	7477	04	22.9	64	1B	M 8.7	3	E		247		FE
HOLL		1910E	1912U	2010	N08	E57	7477	04	23.1	60D	SB		1	E		80		F
GOES		2214	2221	2228						14		C 1.4						
GOES		2324	2342	2355						31		C 1.5						
LEAR		2340	2407	2435	N10	E52	7477	04	22.9	55	SF	C 3.4	3	E		96		F
HOLL	19	0002E	0002U	0032D	N08	E53	7477	04	23.0	30D	SF		2	E		89		F
GOES		0146	0151	0200						14		B 5.6						
LEAR		0219	0231	0244	N09	E50	7477	04	22.8	25	SF	C 1.5	3	E		45		
GOES		0325	0331	0338						13		B 9.4						
GOES		0432	0440	0444						12		B 5.6						
LEAR		0450	0515	0531	N10	E48	7477	04	22.8	41	SF	C 1.1	3	E		74		F
SVTO		0603	0604	0615	N11	E50	7477	04	23.0	12	SF	C 2.1	3	E		20		F
LEAR		0604	0604	0614	N11	E51	7477	04	23.1	10	SF		3	E		21		F
SVTO		0635	0636	0643	S15	E65	7480	04	24.2	8	SF		3	E		22		F
SVTO		0700	0701	0719	N11	E47	7477	04	22.8	19	SF		3	E		16		
LEAR		0748	0751	0805	S16	E67	7480	04	24.4	17	SF	C 2.7	3	E		77		F
SVTO		0748	0754	0805	S16	E67	7480	04	24.4	17	SF		3	E		47		F
RAMY		1231	1231	1235	N10	E45	7477	04	22.9	4	SF		3	E		22		
SVTO		1307	1316	1324	N11	E43	7477	04	22.8	17	SF		3	E		21		
HOLL		1431	1433	1445	N09	E43	7477	04	22.8	14	SF		3	E		15		
SVTO		1431	1433	1451	N10	E44	7477	04	22.9	20	SF	B 9.4	3	E		16		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	(Min)	Imp Opt	Xray	See	Obs Type	Time (UT)	Area Measurement		Remarks
																Apparent (10-6 Disk)	Corr (Sq Deg)	
HOLL	19	1658	1700	1708	S14	E63	7480	04	24.5	10	SF		3	E		12		
[RAMY		1709	1726	1752	N13	E41	7477	04	22.8	43	SF		3	E		30		
HOLL		1724	1728	1730	N09	E41	7477	04	22.8	6	SF		2	E		10		
PALE		1724E	1823U	1917	N10	E43	7477	04	22.9	113D	SF		3	E		60		FE
GOES		1828	1831	1833						5		B 5.2						
RAMY		1924	1925	1931	N11	E41	7477	04	22.9	7	SF	C 2.8	3	E		11		
RAMY		2016	2016	2023	S17	E59	7480	04	24.3	7	SF		3	E		11		
RAMY		2023	2023	2036	N12	E40	7477	04	22.9	13	SF		3	E		12		
HOLL		2046	2050	2055	N08	E44	7477	04	23.2	9	SF		3	E		10		
PALE		2128E	2137U	2153D	N11	E40	7477	04	22.9	25D	SF		3	E		46		
HOLL		2150	2153	2158	N05	E32	7484	04	22.3	8	SF		3	E		31		H
PALE		2204E	2205U	2213D	N12	E40	7477	04	22.9	9D	SF		2	E		43		
GOES		2322	2327	2332						10		B 6.2						
PALE	20	0202E	0202U	0210D	S13	E57	7480	04	24.4	8D	SF		3	E		22		
PALE		0215	0218U	0228	N10	E37	7477	04	22.9	13	SF	B 7.3	3	E		24		
GOES		0515	0520	0525						10		B 7.4						
LEAR		0703	0706	0745	N11	E35	7477	04	22.9	42	SF	B 8.2	3	E		31		F
SVTO		0927	0945	1001	N11	E33	7477	04	22.9	34	SF	C 1.2	3	E		14		F
SVTO		1012	1012	1018	N12	E33	7477	04	22.9	6	SF		3	E		11		F
SVTO		1020	1021	1033	S14	E53	7480	04	24.4	13	SF	C 1.8	3	E		48		F
HOLL		1247E	1254U	1305	N11	E31	7477	04	22.9	18D	SF	C 5.6	1	E		72		
[RAMY		1251	1251	1301	N10	E31	7477	04	22.9	10	SF		3	E		45		FE
SVTO		1251	1253	1314	N11	E31	7477	04	22.9	23	SN	C 5.6	3	E		64		EH
RAMY		1305	1305	1313	N11	E30	7477	04	22.8	8	SF		3	E		13		F
HOLL		1323	1346	1353D	S14	E10	7483	04	21.3	30D	SF		1	E		33		H
SVTO		1329	1334	1344	N10	E31	7477	04	22.9	15	SF		3	E		22		F
[RAMY		1330	1332	1347	N10	E31	7477	04	22.9	17	SF	C 1.3	3	E		21		F
RAMY		1331	1331	1347	S14	E10	7483	04	21.3	16	SF		3	E		10		F
HOLL		1333	1351U	1353D	N09	E29	7477	04	22.7	20D	SF		1	E		33		
SVTO		1413	1417	1429	S14	E10	7483	04	21.3	16	SF	B 7.7	3	E		22		F
SVTO		1517	1519	1541	N12	E30	7477	04	22.9	24	SF	C 1.6	3	E		24		E
GOES		1611	1615	1618						7		B 7.7						
RAMY		1655E	1656U	1704	S15	E08	7483	04	21.3	9D	SF		3	E		12		F
RAMY		1655E	1658	1705	N11	E28	7477	04	22.8	10D	SF		3	E		19		F
HOLL		1707	1746	1825	N11	E28	7477	04	22.8	78	SN	C 1.3	3	E		52		E
[RAMY		1713	1715	1739	N11	E28	7477	04	22.8	26	SF		3	E		15		F
PALE		1717E	1718U	1737D	N12	E29	7477	04	22.9	20D	SF		2	E		19		
HOLL		1728	1747	1848	S14	E09	7483	04	21.4	80	SF		3	E		55		
RAMY		1738	1745	1800	S15	E08	7483	04	21.3	22	SF		4	E		27		F
RAMY		1744	1752	1815	N11	E29	7477	04	22.9	31	SF	C 5.1	4	E		44		F
HOLL		1847	1850	1919	N11	E28	7477	04	22.9	32	SF	C 1.2	3	E		33		
HOLL		1920	1951	2018	N11	E27	7477	04	22.8	58	SF		3	E		10		
HOLL		2004	2011	2031	S14	E07	7483	04	21.4	27	SF		3	E		37		F
[PALE		2004	2011U	2037D	S14	E08	7483	04	21.4	33D	SF		3	E		54		F
PALE		2020	2020U	2047D	N11	E28	7477	04	22.9	27D	SF	C 1.3	3	E		20		
HOLL		2109	2109	2119	N11	E27	7477	04	22.9	10	SF	C 1.6	3	E		16		F
PALE		2109	2114	2124	N11	E27	7477	04	22.9	15	SF		3	E		31		
LEAR	21	0059	0103	0128	S14	E03	7483	04	21.3	29	SF	B 8.9	3	E		36		F
PALE		0135	0137U	0204	S15	E04	7483	04	21.4	29	SF		3	E		80		
PALE		0327	0329	0331	S14	E02	7483	04	21.3	4	SF	B 5.2	3	E		12		
GOES		0344	0348	0352						8		B 5.8						
LEAR		0425	0429	0455	N11	E23	7477	04	22.9	30	SF	C 1.2	3	E		38		F
GOES		0720	0720	0759						39		C 4.5						
GOES		0804	0808	0810						6		B 6.3						
SVTO		0849	0855	0904	S15	E02	7483	04	21.5	15	SF	C 1.1	3	E		21		FH
[LEAR		0849	0856	0907	S14	E01	7483	04	21.4	18	SF		1	E		23		F
RAMY		1431	1431	1517	S15	W04	7483	04	21.3	46	SN	C 4.5	3	E		53		FE
SVTO		1431	1434	1518	S14	W04	7483	04	21.3	47	SF		3	E		65		F
GOES		2048	2055	2103						15		B 4.1						
GOES		2330	2334	2339						9		B 3.6						
LEAR	22	0727	0727	0739	S16	E30	7480	04	24.6	12	SF	B 7.0	3	E		27		F
SVTO		0735	0737	0741	S16	E31	7480	04	24.7	6	SF		3	E		16		F
[LEAR		0914	0914	0920	S14	E24	7480	04	24.2	6	SF	B 5.6	3	E		20		
SVTO		0914	0914	0921	S14	E24	7480	04	24.2	7	SF	B 5.6	3	E		26		F
GOES		0959	1002	1005						6		B 2.9						

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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)	
GOES	22	1117	1121	1125						8		B 3.2						
RAMY		1144	1145	1153	N11	E05	7477	04	22.9	9	SF		3	E		14		F
SVTO		1326	1336	1352	N11	E05	7477	04	22.9	26	SF	B 6.7	3	E		29		
SVTO		1403	1413	1450	N11	E03	7477	04	22.8	47	1N		3	E		119		FE
SVTO		1406	1410	1430	S15	W17	7483	04	21.3	24	SF		3	E		67		FE
HOLL		1407	1409	1512	N11	E04	7477	04	22.9	65	SB	M 1.5	3	E		54		F
RAMY		1407	1410	1431	S14	W16	7483	04	21.4	24	SF		3	E		62		F
RAMY		1408	1409	1441	N11	E03	7477	04	22.8	33	SB		3	E		65		ZF
HOLL		1716	1719	1729	S11	W10	7487	04	22.0	13	SF	B 6.6	3	E		53		F
RAMY		1717	1719	1730	S10	W10	7487	04	22.0	13	SF		3	E		46		F
PALE		1721E	1723U	1730D	S11	W08	7487	04	22.1	90	SF		3	E		43		F
PALE		1943	1947	2011	N11	E00	7477	04	22.8	28	SF	B 5.3	3	E		23		F
HOLL		1946	1946	2012	N10	E01	7477	04	22.9	26	SF		3	E		19		F
GOES	23	0146	0151	0157						11		B 5.4						
GOES		0230	0239	0247						17		C 1.1						
SVTO		1348	1350	1411	N10	W10	7477	04	22.8	23	SF	B 7.6	3	E		29		F
RAMY		1348	1400	1404D	N09	W10	7477	04	22.8	160	SF		3	E		44		F
RAMY		1540	1544	1555	N09	W11	7477	04	22.8	15	SF	B 7.8	3	E		47		F
SVTO		1540	1544	1606	N09	W11	7477	04	22.8	26	SF	B 7.8	3	E		26		F
RAMY		1723	1723	1728	S14	W32	7483	04	21.3	5	SF	B 5.4	3	E		26		F
GOES		1823	1827	1829						6		B 8.0						
GOES		1850	1856	1905						15		B 7.5						
HOLL		2326	2327	2333	S13	W37	7483	04	21.2	7	SF		2	E		23		
SVTO	24	0759	0801	0808	S17	W42	7483	04	21.1	9	SF	C 1.0	3	E		15		F
SVTO		0902	0903	0913	N11	E47	7489	04	27.9	11	SF	B 8.5	3	E		29		F
SVTO		1040	1059	1113	S15	W43	7483	04	21.2	33	SF		4	E		15		F
RAMY		1120E	1128U	1131D	S14	W44	7483	04	21.1	110	SF		2	E		20		F
GOES		1150	1152	1159						9		C 1.3						
SVTO		1234	1313	1325	S15	W44	7483	04	21.2	51	SF		3	E		14		F
SVTO		1406	1418	1428	S15	W45	7483	04	21.2	22	SF		3	E		16		F
RAMY		1536	1540	1602	S14	W46	7483	04	21.2	26	SF	B 8.6	3	E		30		F
SVTO		1539	1546	1617	S15	W46	7483	04	21.2	38	SF		3	E		16		F
PALE		2102	2137	2214	S14	W48	7483	04	21.2	72	SF		3	E		20		
GOES	25	0244	0250	0302						18		B 8.4						
LEAR		0715	0716	0734	N10	W34	7477	04	22.7	19	SF		3	E		18		
SVTO		0715	0719	0726	N13	W33	7477	04	22.8	11	SF	B 5.6	3	E		13		
GOES		0810	0820	0829						19		B 5.5						
SVTO		0832	0841	0852	N12	W35	7477	04	22.7	20	SF	B 6.4	3	E		16		
SVTO		0845	0850	0900	S10	W50	7487	04	21.6	15	SF		3	E		17		H
SVTO		0910	0910	0916	N10	W35	7477	04	22.7	6	SF	C 1.0	3	E		10		F
SVTO		0922	0922	0925	N12	W34	7477	04	22.8	3	SF		3	E		20		F
SVTO		0959	1004	1014	N12	W35	7477	04	22.8	15	SF	C 1.9	3	E		26		H
SVTO		1021	1025	1031	N10	W35	7477	04	22.8	10	SF		3	E		12		F
SVTO		1124	1126U	1136D	N12	W36	7477	04	22.8	120	SF	C 1.7	3	E		19		F
GOES		1219	1228	1240						21		C 2.0						
HOLL		1603	1604	1657D	S13	W20	7480	04	24.1	54D	SF		3	E		14		F
HOLL		1606	1612	1624	S11	W60	7483	04	21.1	18	SF		3	E		41		F
PALE		1845	1846	1852	S14	W59	7483	04	21.3	7	SF		3	E		19		
GOES		2055	2135	2230						95		B 9.0						
HOLL		2335	2337	2340	S13	W24	7480	04	24.2	5	SF		3	E		12		
GOES	26	0323	0332	0346						23		B 9.5						
PALE		0348E	0400U	0419D	S14	W65	7483	04	21.2	310	SF	C 1.2	3	E		68		H
GOES		1010	1028	1041						31		B 8.6						
RAMY		1123	1123	1129	S12	W71	7483	04	21.1	6	SF	B 7.2	4	E		11		
SVTO		1125	1126	1129	S14	W68	7483	04	21.3	4	SF		3	E		15		F
RAMY		1149	1149	1154	S12	W71	7483	04	21.1	5	SF		4	E		13		
SVTO		1205	1206	1212	S13	W72	7483	04	21.1	7	SF		3	E		35		
RAMY		1205	1206	1214	S12	W71	7483	04	21.1	9	SF	B 7.3	4	E		41		
RAMY		1247	1251	1257	S12	W71	7483	04	21.2	10	SF	B 5.1	4	E		50		
SVTO		1250	1251	1254	S14	W69	7483	04	21.3	4	SF		3	E		29		
RAMY		1259	1300	1307	S12	W71	7483	04	21.2	8	SF		4	E		14		
HOLL		1435	1435	1449	S09	W75	7483	04	21.0	14	SF		3	E		13		F
HOLL		1505E	1508U	1515	N14	W89	7486	04	19.9	100	SF		2	E		63		
SVTO		1513	1516	1521	N10	W87	7486	04	20.1	8	SF		3	E		23		

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Apr 93

H α SOLAR FLARES

APRIL 1993

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF		CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Area Measurement			Remarks
							Region									Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
GOES	26	1537	1554	1611							34		B 8.1						
SVTO	27	0948	0949	1004	N12	W61	7477		04	22.8	16	SF	C 1.1	3	E		38		F
HOLL		1810	1820	1845	S14	E13	7492		04	28.7	35	SF		3	E		16		
HOLL		1816	1816	1820	N13	W68	7477		04	22.6	4	SF	B 6.7	3	E		20		
HOLL		2003	2012	2025	S14	W46	7480		04	24.3	22	SF	B 6.6	3	E		47		
PALE		2011	2012	2016	S14	W46	7480		04	24.4	5	SF	B 6.6	3	E		15		
HOLL		2219	2221	2224	N15	W68	7477		04	22.8	5	SF		3	E		22		
PALE		2220E	2222	2232D	N10	W64	7477		04	23.1	12D	SF		3	E		19		
SVTO	28	0707E	0710U	0730	N09	E29	7490		04	30.5	23D	SF		2	E		43		F
LEAR		0709	0712	0730	N09	E29	7490		04	30.5	21	SF	B 6.9	3	E		41		F
RAMY		1118	1119	1228D	S13	E05	7492		04	28.8	70D	SF		3	E		12		H
HOLL		1328	1411	1423	S13	E03	7492		04	28.8	55	SF		3	E		21		H
HOLL		1340	1348	1359	N09	E25	7490		04	30.4	19	SF		3	E		29		
RAMY		1410	1411	1420	S13	E04	7492		04	28.9	10	SF		3	E		13		F
GOES		1604	1610	1618							14		B 7.2						
HOLL		1741	1747	1750	N08	E25	7490		04	30.6	9	SF		3	E		13		
PALE		1742E	1742U	1802D	N09	E23	7490		04	30.5	20D	SF		3	E		11		
GOES	29	0345	0452	0600							135		C 1.3						
HOLL		1349	1353	1357	N09	W21	7489		04	28.0	8	SF		3	E		10		F
GOES		2124	2132	2143							19		B 3.0						
GOES	30	0406	0413	0421							15		B 3.8						
GOES		0526	0530	0536							10		B 2.7						
SVTO		1418	1419	1424	S06	E29	7494		05	2.8	6	SF		3	E		12		
GOES		1732	1752	2030							178		B 6.1						

"Remarks"

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.

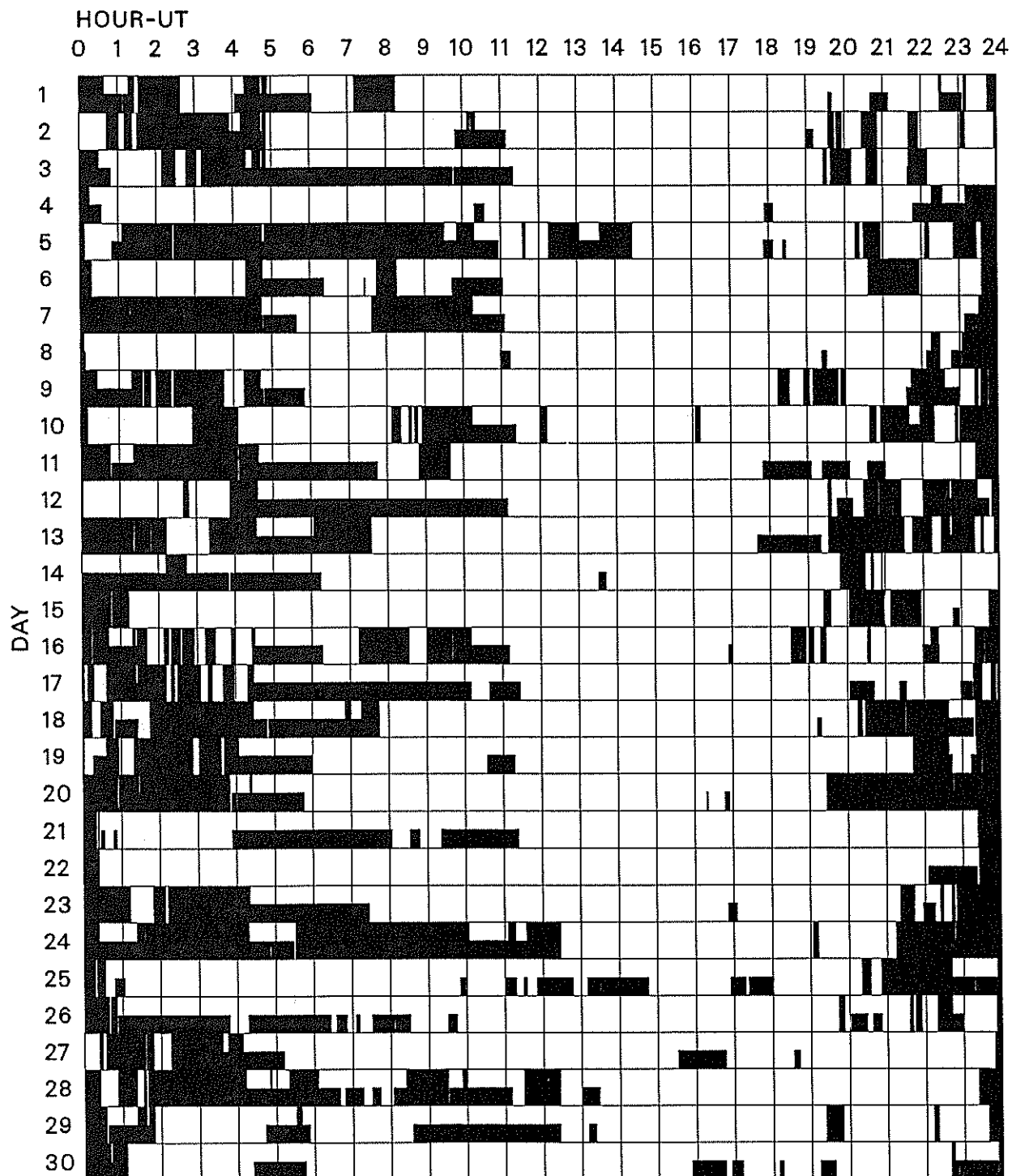
O = Observations have been made in the H and K lines of Ca II.
 P = Flare shows Helium D3 in emission.
 Q = Flare shows Balmer continuum in emission.
 R = Marked asymmetry in H-alpha line suggests ejection of high-velocity material.
 S = Brightness follows disappearance of filament in same position.
 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.

Observation Type: C=Cinematographic, E=Electronic, P=Photographic, V=Visual

INTERVALS OF NO FLARE PATROL OBSERVATION FOR PRECEDING SOLAR FLARE TABLE

35
Apr 93

APRIL 1993



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

36
Apr 93

SOLAR RADIO EMISSION Selected Fixed Frequency Events

APRIL 1993

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 ⁻²² W/m ² Hz)	Mean	Int	Remarks
06	2695	LEAR	8 S	2344.0	2345.0	1.0	52.0			QL=4 ST=2 TYP=3
	8800	PALE	8 S	2344.0	2344.0	1.0	83.0			QL=2 ST=2 TYP=3
	2695	PALE	8 S	2344.0	2345.0	1.0	51.0			QL=2 ST=2 TYP=3
08	2695	SVTO	8 S	0932.0	0932.0	U	21.0			QL=2 ST=2 TYP=3
	2695	SGMR	4 S/F	2036.0	2038.0	18.0	44.0			QL=2 ST=2 TYP=3
09	8800	PALE	8 S	0229.0	0229.0	U	59.0			QL=4 ST=2 TYP=3
10	2695	PALE	8 S	1744.0	1744.0	1.0	31.0			QL=4 ST=2 TYP=3
	2695	SGMR	8 S	1744.0	1745.0	2.0	24.0			QL=4 ST=2 TYP=3
	8800	PALE	8 S	2118.0	2118.0	1.0	24.0			QL=4 ST=2 TYP=3
	2695	PALE	8 S	2118.0	2119.0	1.0	40.0			QL=4 ST=2 TYP=3
	2695	LEAR	8 S	2332.0	2333.0	2.0	170.0			QL=4 ST=2 TYP=3
	2695	PALE	8 S	2332.0	2333.0	2.0	140.0			QL=4 ST=2 TYP=3
	8800	PALE	8 S	2332.0	2333.0	1.0	72.0			QL=4 ST=2 TYP=3
11	2695	LEAR	8 S	0027.0	0027.0	U	32.0			QL=4 ST=2 TYP=3
	2695	SVTO	8 S	0612.0	0613.0	2.0	150.0			QL=2 ST=2 TYP=3
	2695	LEAR	8 S	0613.0	0613.0	1.0	110.0			QL=4 ST=2 TYP=3
	8800	SVTO	8 S	0613.0	0613.0	1.0	44.0			QL=4 ST=2 TYP=3
16	2695	PALE	8 S	2006.0	2006.0	1.0	70.0			QL=4 ST=2 TYP=3
	2695	SGMR	8 S	2006.0	2006.0	1.0	95.0			QL=2 ST=2 TYP=3
18	2695	PALE	49 GB	1905.0	1908.0	11.0	680.0			QL=4 ST=2 TYP=6
	2695	SGMR	49 GB	1906.0	1908.0	11.0	650.0			QL=2 ST=2 TYP=6
	8800	PALE	49 GB	1907.0	1908.0	9.0	1400.0			QL=4 ST=2 TYP=6
	8800	SGMR	49 GB	1907.0	1908.0	10.0	1200.0			QL=4 ST=2 TYP=6
21	8800	LEAR	4 S/F	0718.0	0720.0	8.0	54.0			QL=4 ST=2 TYP=3
	8800	SVTO	8 S	0720.0	0720.0	U	53.0			QL=2 ST=2 TYP=3
22	8800	SGMR	4 S/F	1407.0	1408.0	7.0	430.0			QL=4 ST=2 TYP=3
	8800	SVTO	4 S/F	1407.0	1408.0	593.0	370.0			QL=4 ST=1 TYP=3
	2695	SGMR	4 S/F	1408.0	1408.0	6.0	97.0			QL=2 ST=2 TYP=3
	2695	SVTO	4 S/F	1408.0	1408.0	592.0	120.0			QL=2 ST=1 TYP=3

Reports are received routinely from the following observatories:

LEAR = Learmonth

PALE = Palehua

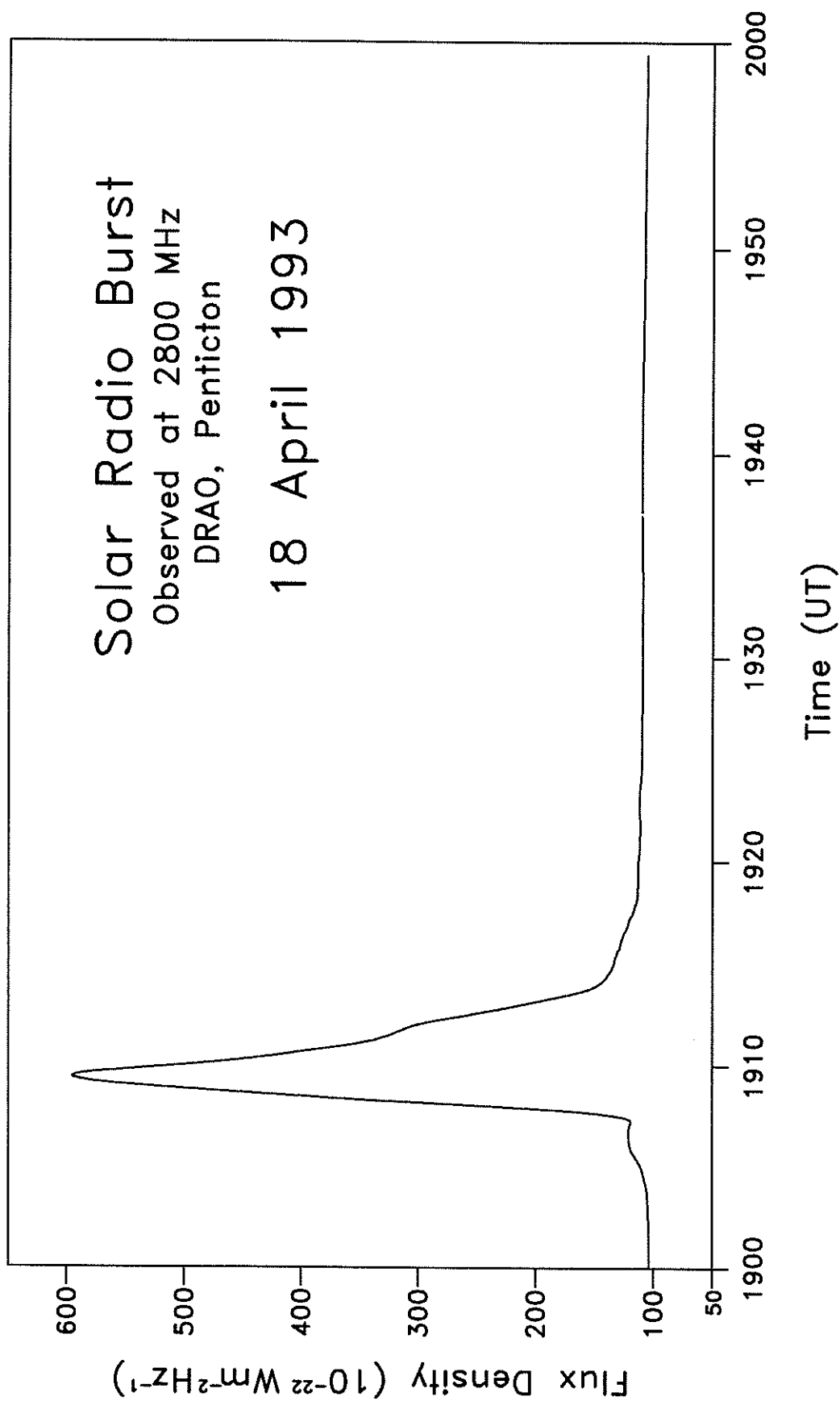
SGMR = Sagamore Hill

SVTO = San Vito

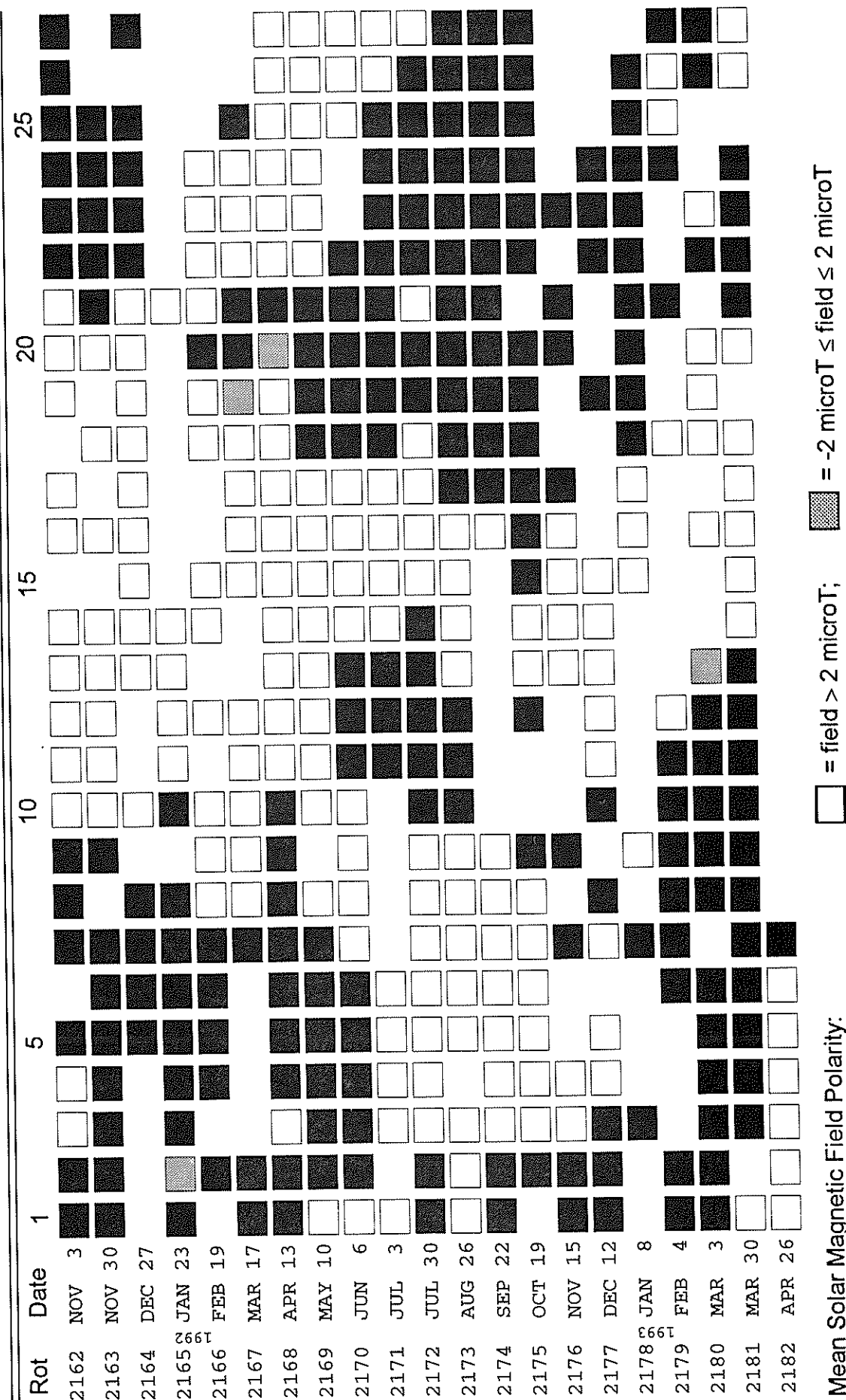
Explanation of Type Code:

1 Simple 1	7 Minor +	24 Rise	30 Post Burst Increase A	43 Onset of Noise Storm
2 Simple 1F	8 Spike	25 Rise A	31 Post Burst Decrease	44 Noise Storm in Progress
3 Simple 2	20 Simple 3	26 Fall	33 Absorption	45 Complex
4 Simple 2F	21 Simple 3A	27 Rise and Fall	40 Fluctuation	46 Complex F
5 Simple	22 Simple 3F	28 Precursor	41 Group of Bursts	47 Great Burst
6 Minor	23 Simple 3AF	29 Post Burst Increase	42 Series of Bursts	48 Major
1A Simple 1A	4A Simple 2AF	24PF Post Rise F	27F Rise and Fall F	
3A Simple 2A	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; Penticton, Canada 2800 MHz; Hiraio, Japan 500 and 200 MHz; and Toyokawa, Japan 9400, 3750, 2000 and 1000 MHz.



STANFORD MEAN SOLAR MAGNETIC FIELD



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

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

Day	1992 May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	1993 Jan	Feb	Mar	Apr
1	7	14	8	39	88	.	19	-16	.	-8	1	-1
2	0	17	17	60	67	.	-5	.	-33	-25	-30	-11
3	-1	23	13	58	43	.	-24	.	-28	.	-38	-11
4	21	47	.	58	-22	.	-41	-39	-22	-61	-44	-25
5	25	52	33	46	-27	.	-57	-38	.	-52	-56	-38
6	32	17	39	38	-18	.	-47	.	.	.	-51	-63
7	43	-5	21	37	13	4	-48	-20	.	.	-58	-68
8	43	-12	18	-4	24	-17	.	.	.	.	-40	-59
9	33	-18	.	-45	19	-40	-29	.	.	-27	.	-55
10	15	-18	.	-44	29	-68	-7	.	-38	-30	-25	-37
11	-13	-2	.	-10	-18	-57	-1	.	.	-28	-41	-14
12	-19	20	.	-2	-25	-31	-5	-50	.	-51	-37	20
13	-30	20	-52	10	-53	-38	-16	-41	.	-46	-50	44
14	-44	18	-46	9	-46	-29	-24	-15	-3	-36	-19	59
15	-50	6	-16	34	-33	-33	-23	8	.	21	0	64
16	-14	-18	2	14	-30	-14	-19	11	1	.	.	53
17	25	-13	8	-19	-26	-5	20	.	.	.	.	.
18	.	-19	24	-4	-26	-13	57	6	.	.	65	13
19	21	12	25	11	-9	.	.	-9	.	.	.	-1
20	28	35	-31	-14	-13	-5	.	.	.	.	41	-11
21	39	23	-56	-12	-22	.	-2	-3	.	48	36	-13
22	35	10	-55	-17	-23	24	.	11	67	.	4	-9
23	62	-21	-59	-3	-1	50	-9	42	69	.	.	.
24	88	-50	-55	-6	17	66	.	57	61	-43	-26	20
25	85	-45	-42	1	54	47	.	49	-14	.	4	1
26	50	-36	-26	4	79	20	.	40	-53	.	.	9
27	-64	-11	-5	25	85	-7	60	.	-62	-1	.	18
28	-51	.	1	55	60	.	62	.	-44	13	-11	39
29	-27	.	4	.	39	.	55	.	-19	.	-11	43
30	-13	17	-1	101	7	-14	11	-59	-28	.	8	18
31	8	.	-5	97	.	22	.	.	-2	.	.	.

Dot symbol indicates no data available for the day.

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Prompt Reports

Number 585 Part I

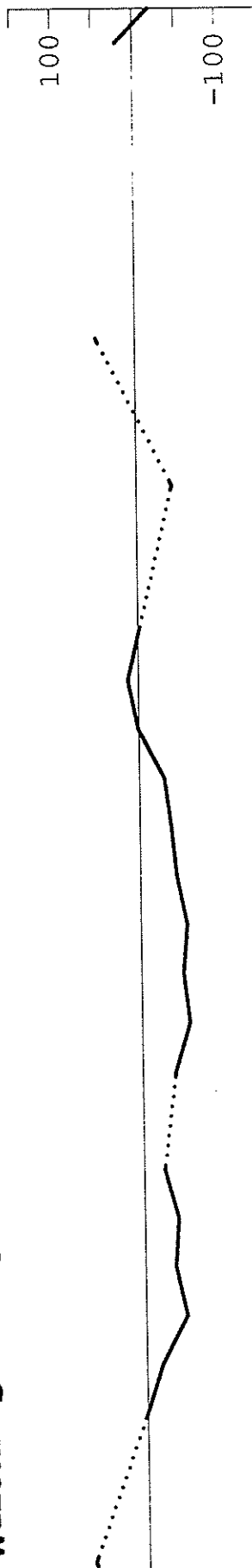
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SOLAR MAGNETIC FIELD SYNOPTIC CHART
CARRINGTON ROTATION NUMBER 1866
(17 February 16 March 1993)

WILCOX SOLAR OBSERVATORY

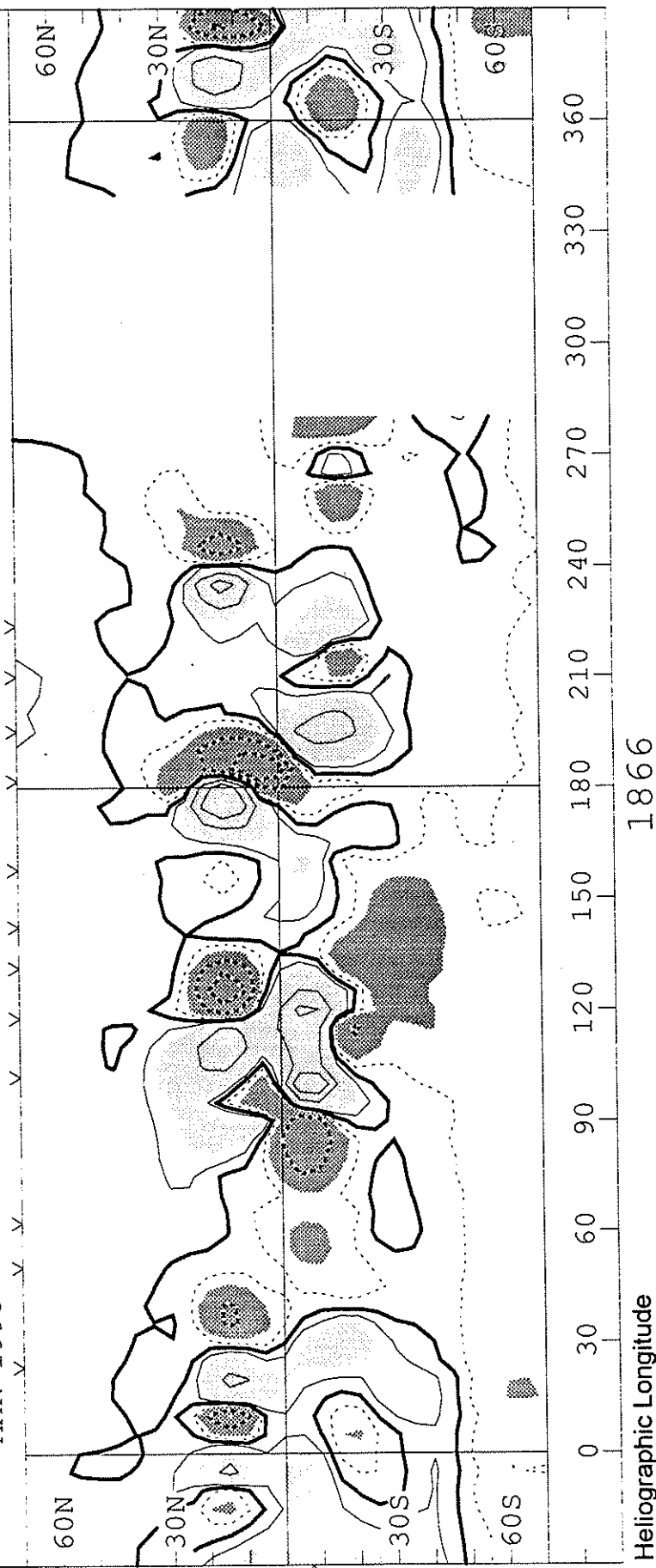
Mean Field



Photospheric Magnetic Field

0, +100, 500, 1000, 2000 MicroTesla

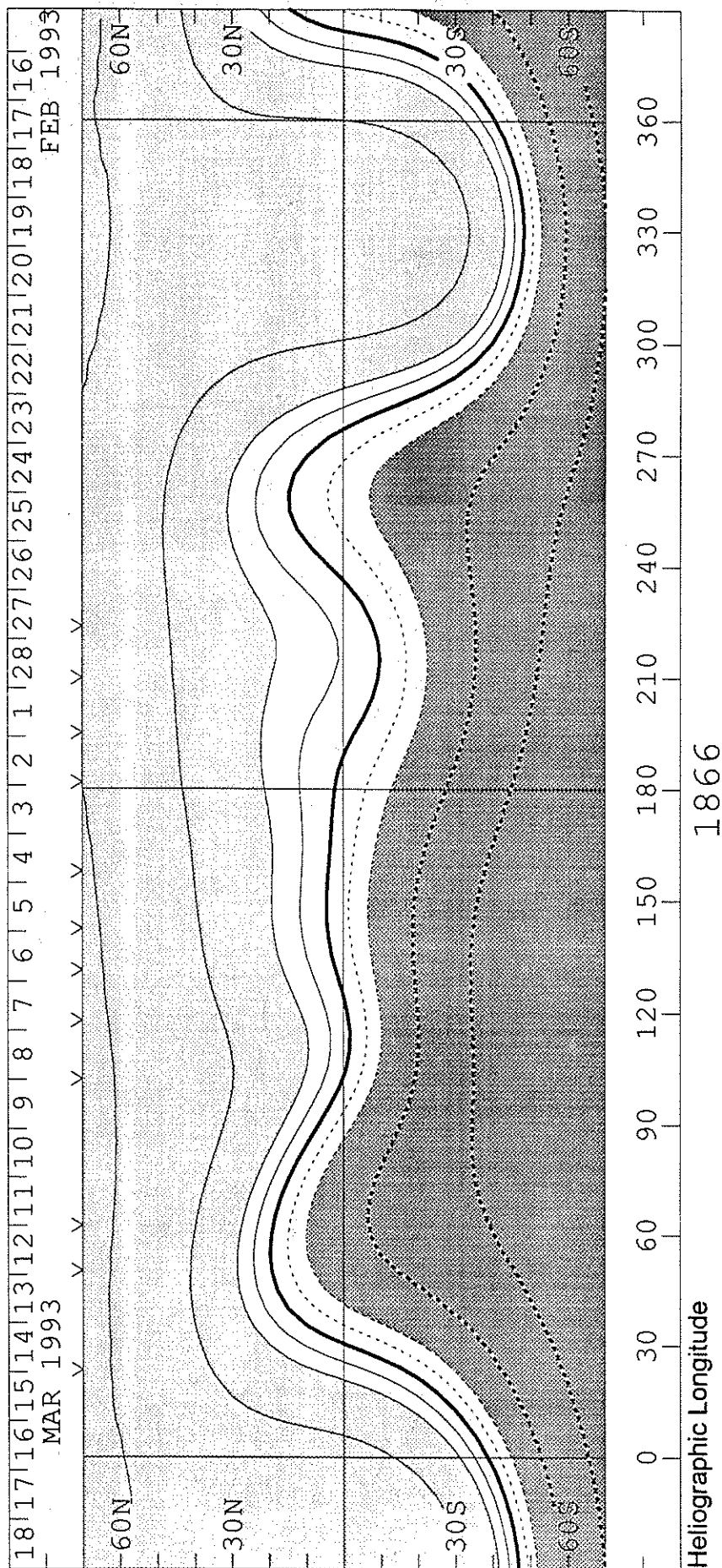
18|17|16|15|14|13|12|11|10|9|8|7|6|5|4|3|2|1|128|27|26|25|24|23|22|21|20|19|18|17|16|
MAR 1993 FEB 1993



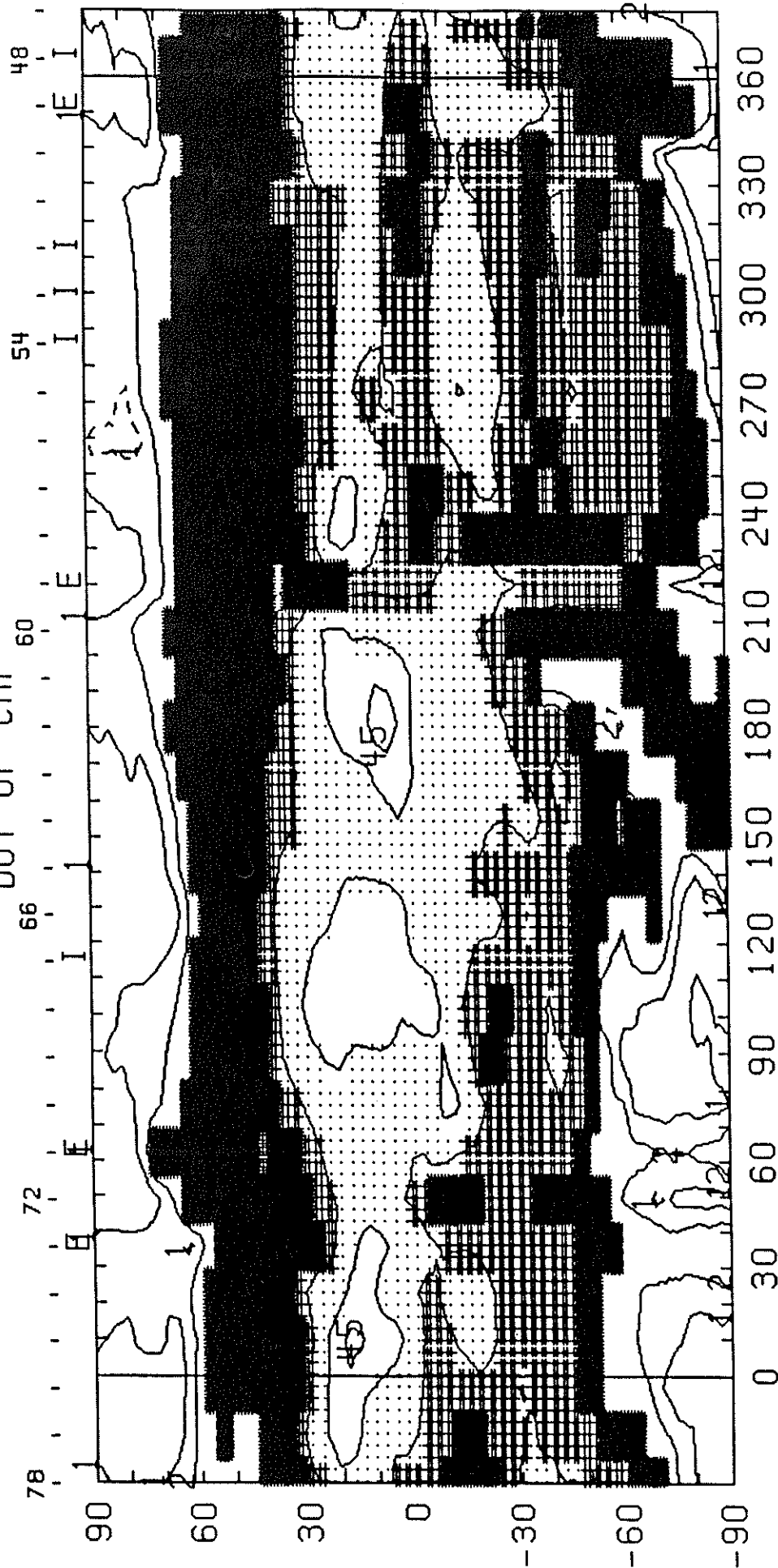
SOLAR MAGNETIC FIELD SYNOPSIS CHART **SOURCE SURFACE FIELD** **CARRINGTON ROTATION NUMBER 1866** **(17 February to 16 March 1993)**

Wilcox Solar Observatory

0, ± 1 , 2, 5, 10, 20 microTesla



CARRINGTON ROTATION NUMBER 1866 ; SAC. PEAK FE XIV AT R = 1.15
DOY OF CMP



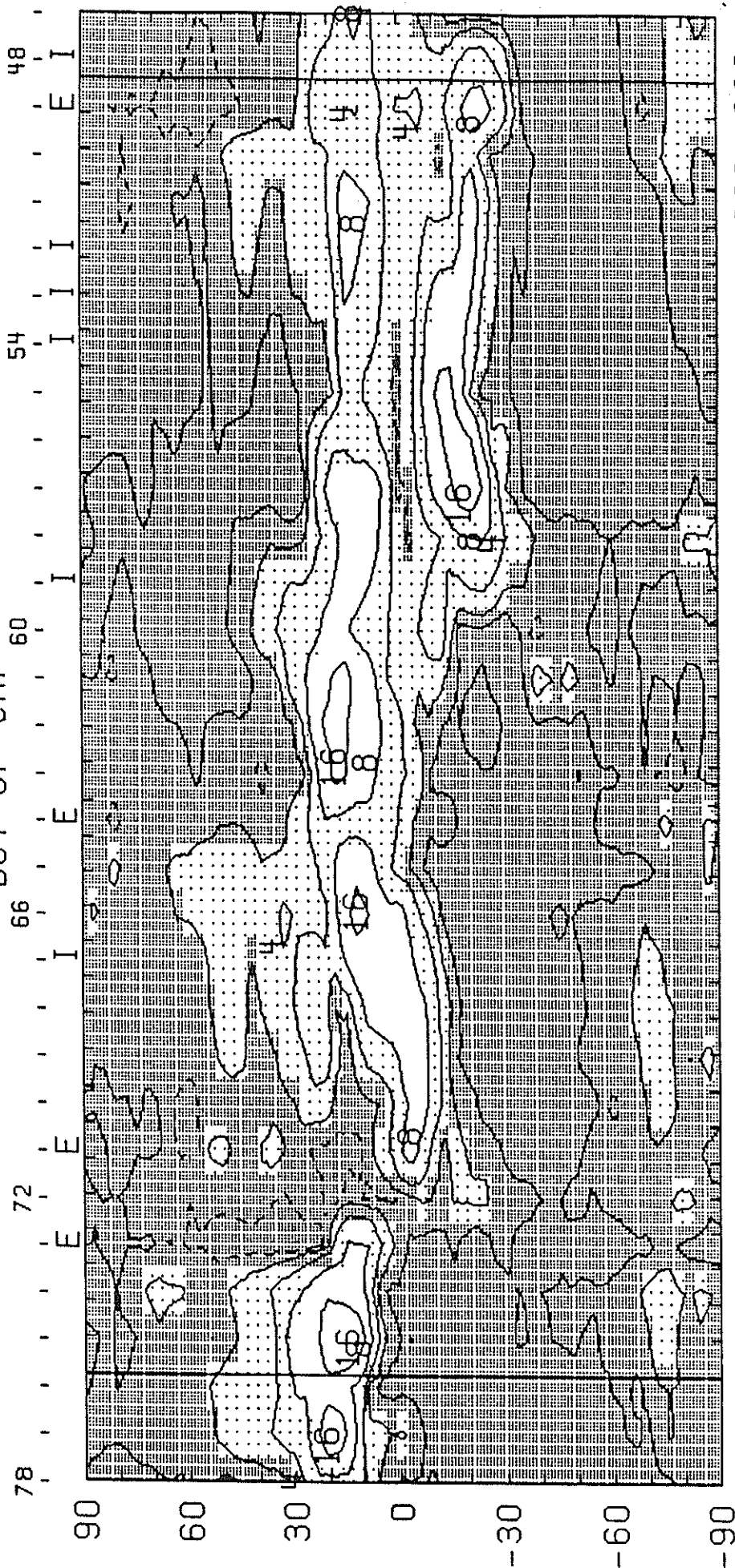
HELIOGRAPHIC LONGITUDE

$\lambda_{ave} = 10.36^\circ$

1993 W+E LIMB CONTOURS: 1,2,6,10,15,30,45,60,75 MILLIONTHS OF I
(23-Apr-93) CORONAL HOLES ARE SHOWN AS WHITE SURROUNDED BY BLACK

CARRINGTON ROTATION NUMBER 1866 ; SAC. PEAK FE X AT R = 1.15

DOY OF CMP

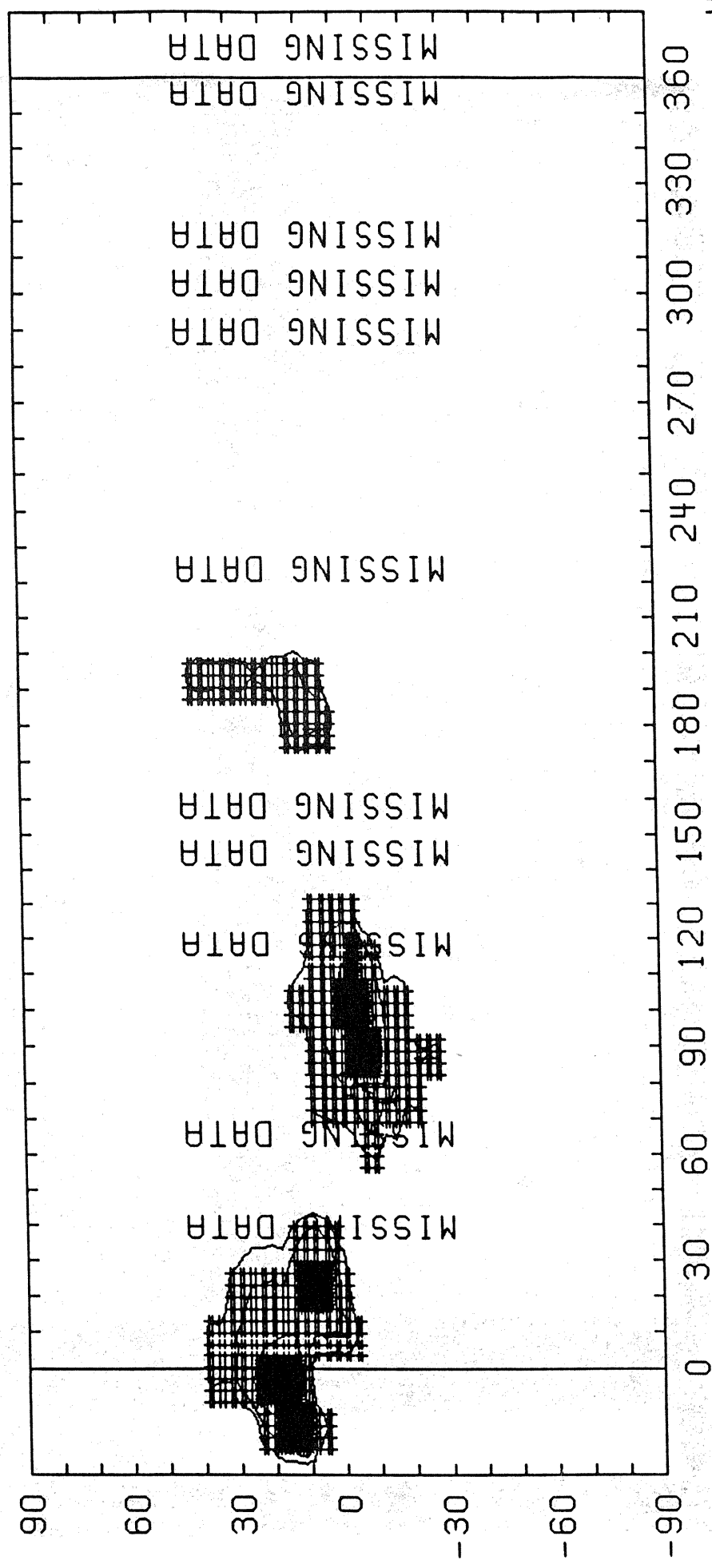


HELIOGRAPHIC LONGITUDE I_{ave} = 2.40 μ W
 1993 W+E LIMB CONTOURS: 1,2,4,8,16,32,48,64,80 MILLIONTHS OF I₀
 (10-May-93)

CARRINGTON ROTATION NUMBER 1866 ; SAC. PEAK CA XV at R = 1.13

DOY OF CMB

78 72 66 54 48 .

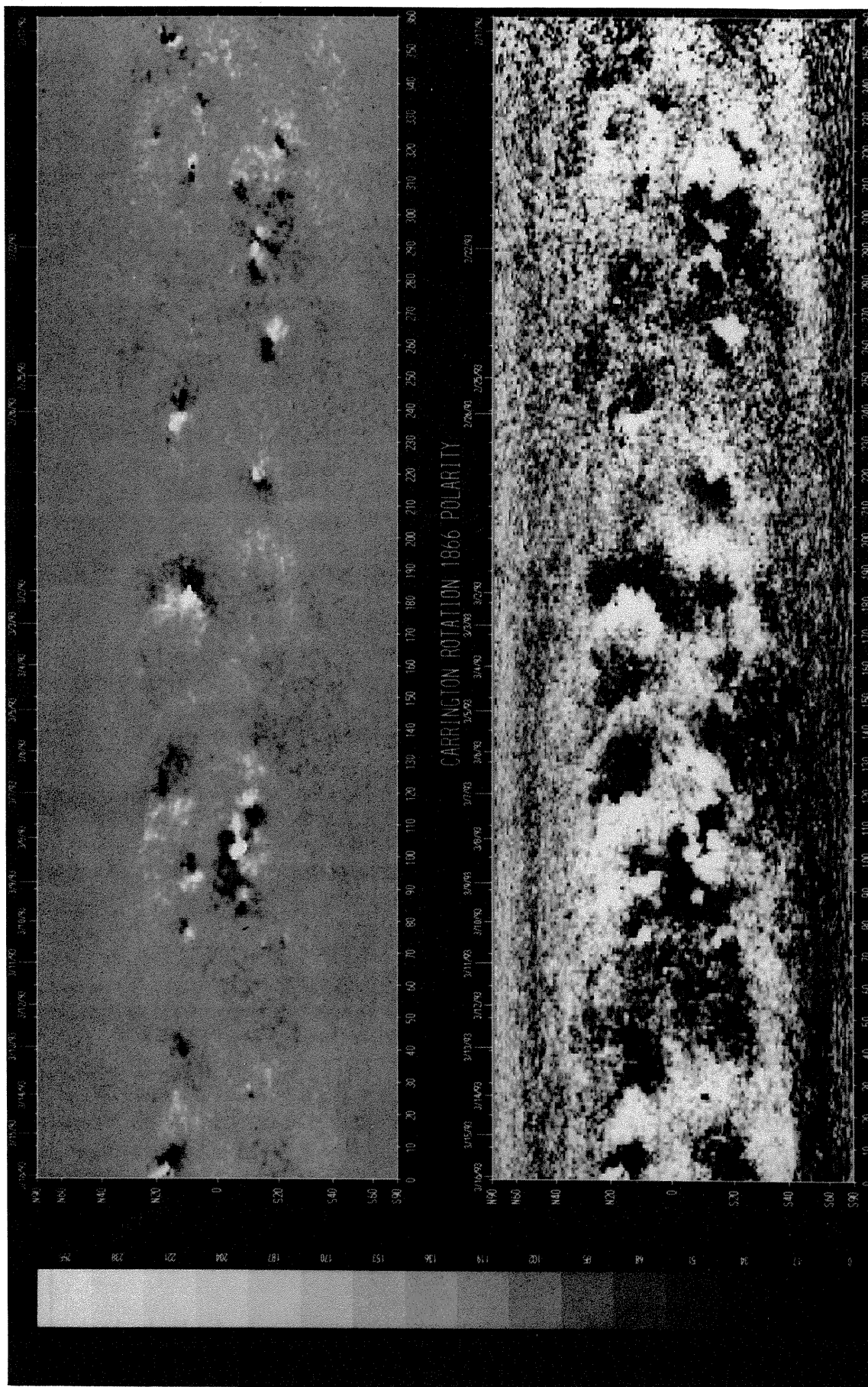


E
1993 WEST LIMB CONTOURS: YELLOW-MINIMUM, 1, 2, 4, 8 MILLIONTHS OF Io
(23-Apr-93)

SOLAR MAGNETIC FIELD SYNOPSIS CHART
CARRINGTON ROTATION NUMBER 1866
(17 February to 16 March 1993)

National Solar Observatory/Kitt Peak

Dates of Observation



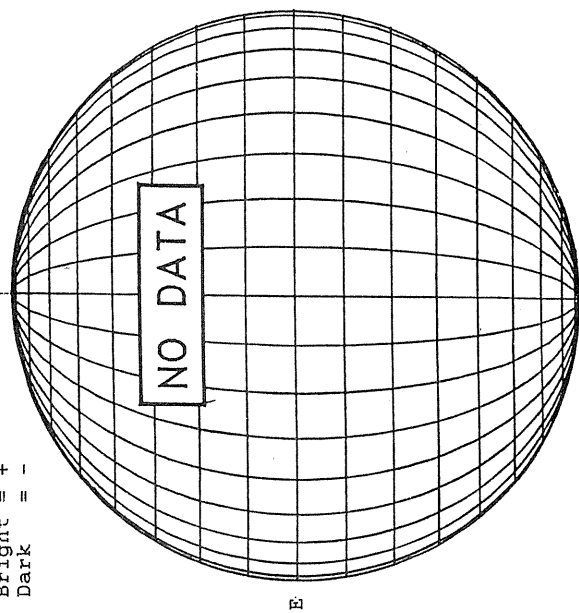
Heliographic Longitude

MARCH 1, 1993 (P=-21.55, B_O = -7.20, L_O = 207.26)

KITT PEAK MAGNETOGRAM
5507A

Bright = +
Dark = -

N

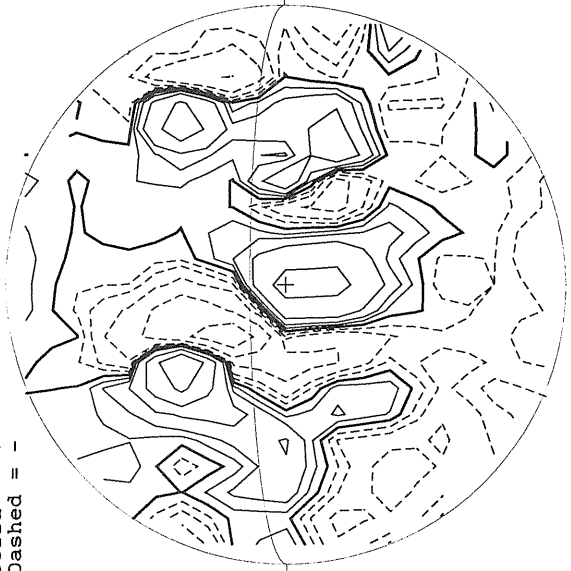


E

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

N

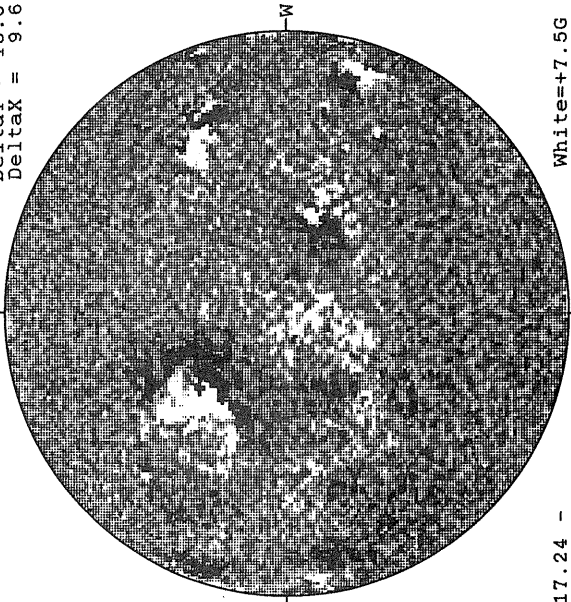


2155 UT

MT. WILSON MAGNETOGRAM

N

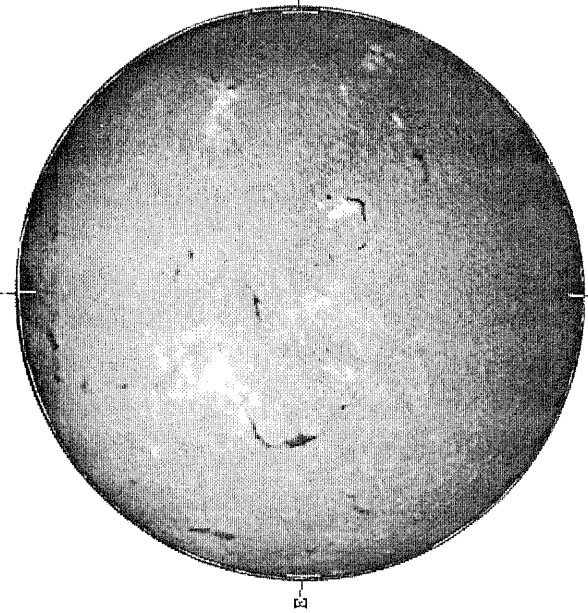
DeltaY = 13.0
DeltaX = 9.6



17.24 -
18.20 UT

White = +7.5G
Black = -7.5G

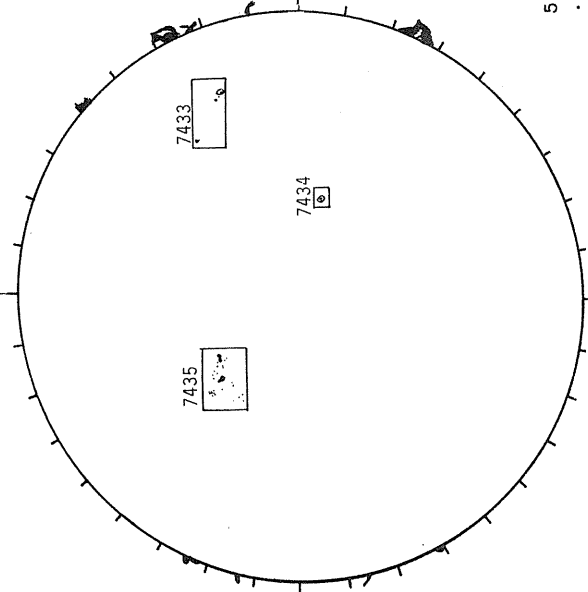
BOULDER H-ALPHA



1606 UT

S

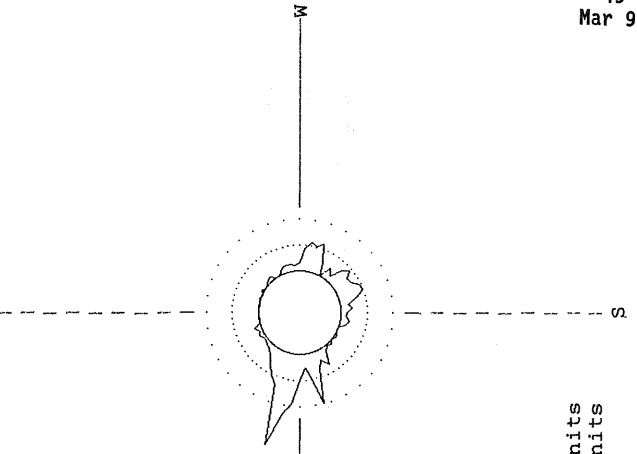
BOULDER SUNSPOT



1508 UT

0837 UT LOMNICKY Prom

LOMNICKY PEAK CORONA (1.15 Radii)



5303A, 0928 UT
... 50 abs. units
... 100 abs. units

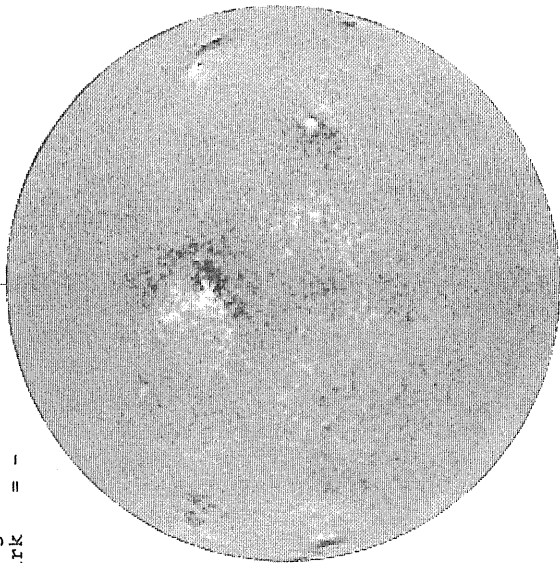
S

50
Mar 93

MARCH 2, 1993 (P=-21.80, B₀ = -7.21, L₀ = 194.08)

KITT PEAK MAGNETOGRAM
N **5507A**

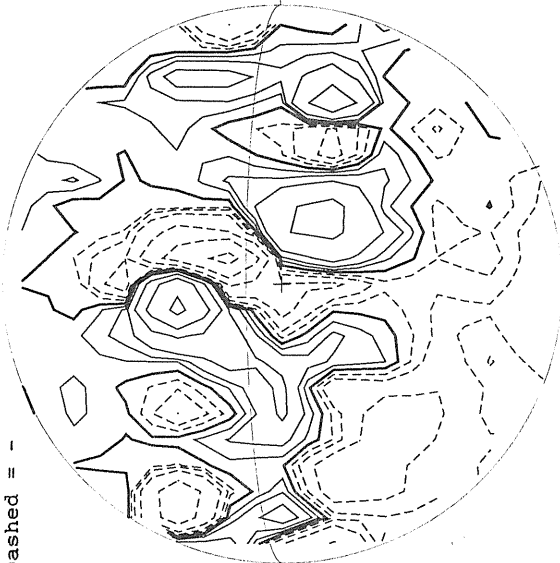
Bright = +
Dark = -



2054 UT

STANFORD MAGNETOGRAM
N

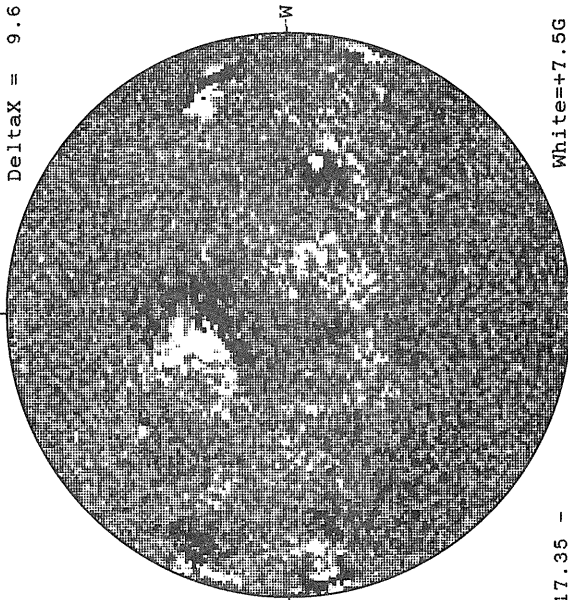
Solid = +
Dashed = -



2223 UT

MT. WILSON MAGNETOGRAM
N

Delta Y = 13.0
Delta X = 9.6



17.35 -
18.31 UT

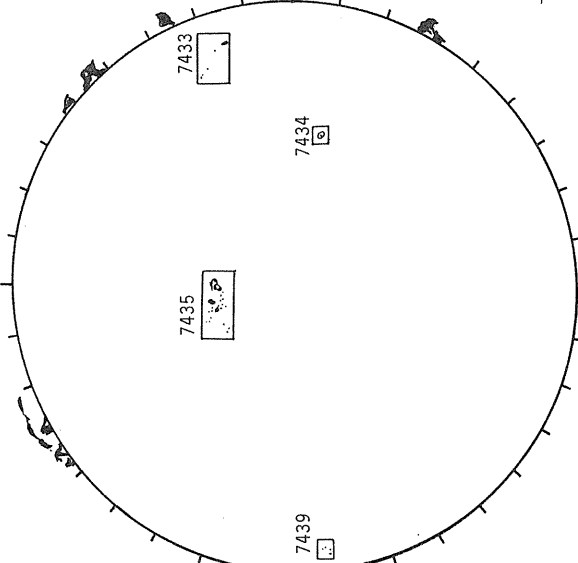
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



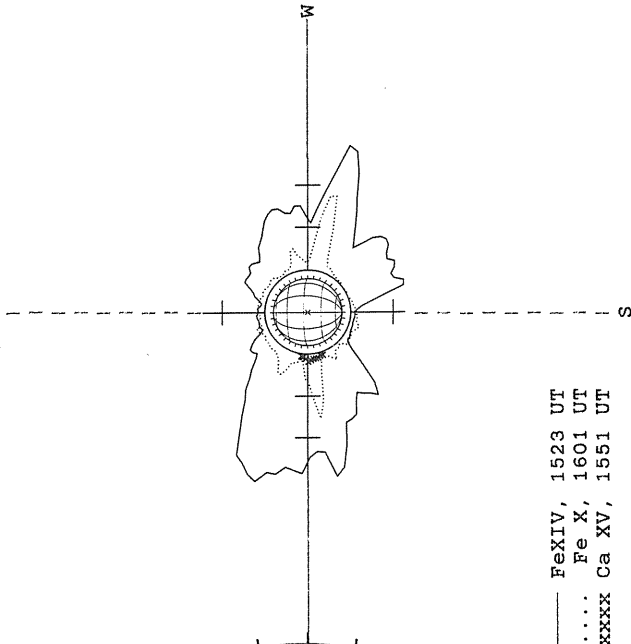
1556 UT

BOULDER SUNSPOT



1504 UT
1157 UT LOMNICKY Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

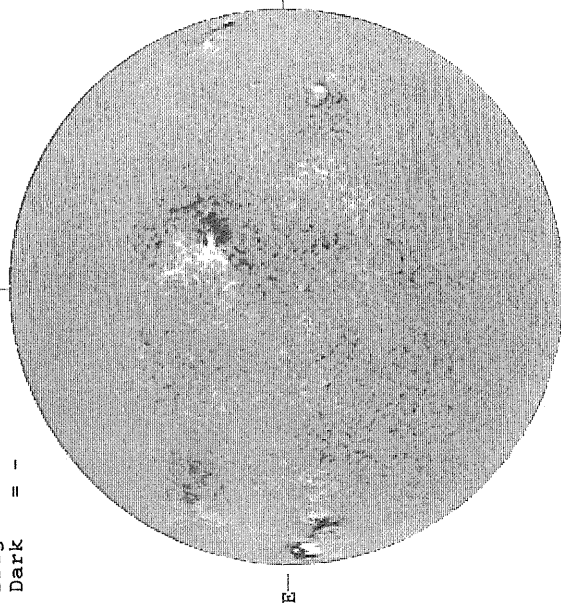


MARCH 3, 1993 (P=-22.04, B₀ = -7.22, L₀ = 180.91)

KITT PEAK MAGNETOGRAM

5507A

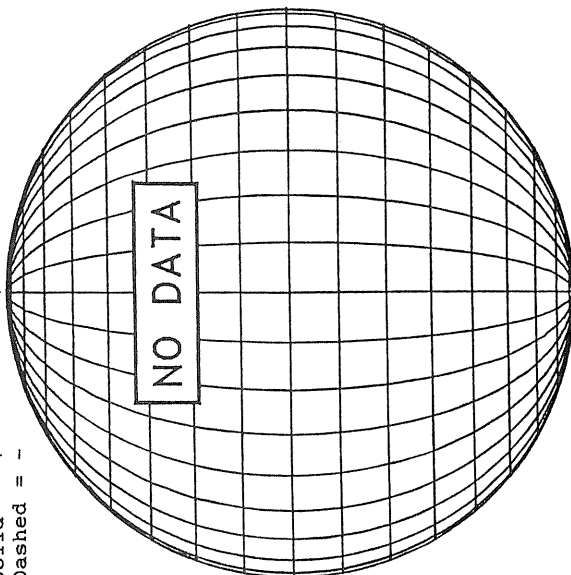
Bright = +
Dark = -



1502 UT

STANFORD MAGNETOGRAM

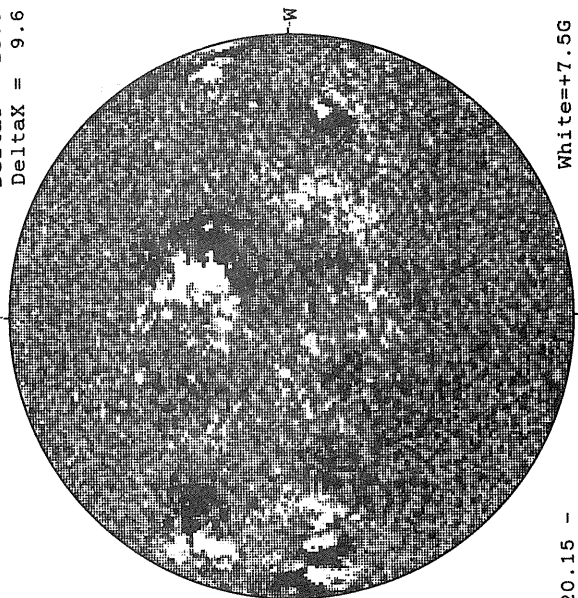
Solid = +
Dashed = -



20.15 -
21.11 UT

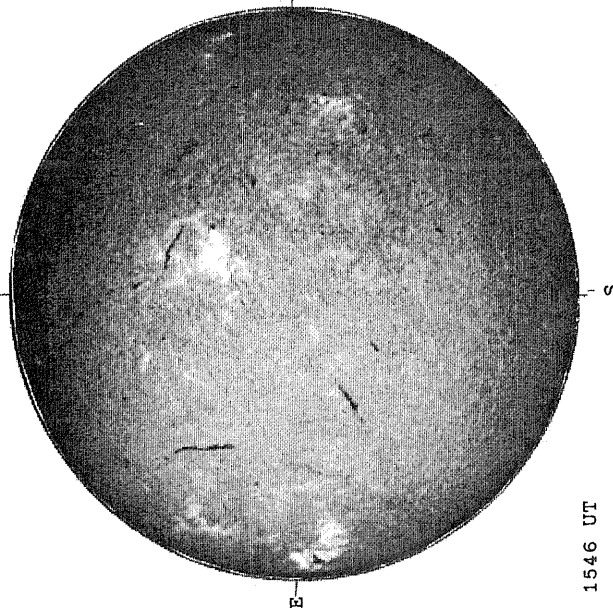
MT. WILSON MAGNETOGRAM

DeltaY = 13.0
DeltaX = 9.6



White = +7.5G
Black = -7.5G

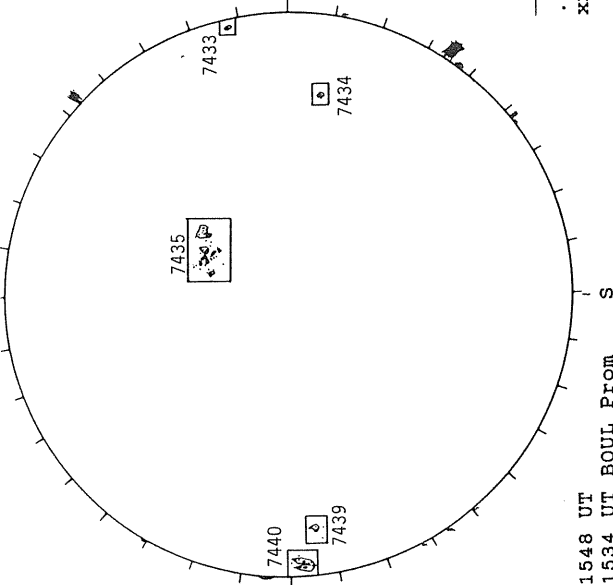
SACRAMENTO PEAK H-ALPHA



1546 UT

BOULDER SUNSPOT

SACRAMENTO PEAK CORONA (1.15 Radii)



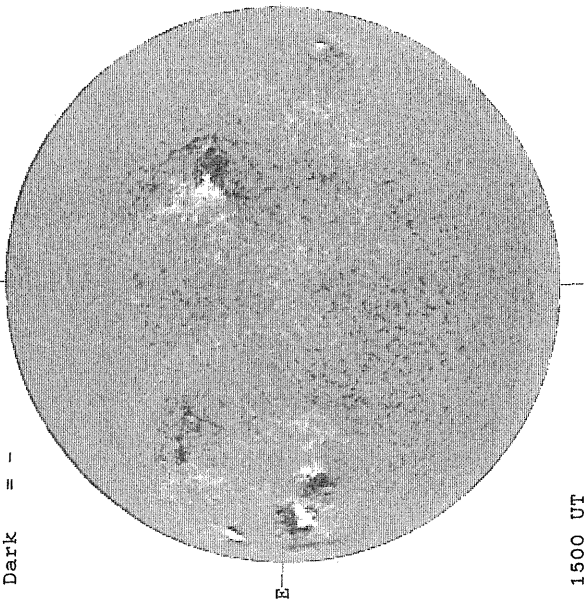
1548 UT
1534 UT BOUL Prom

— Fe XIV, 1532 UT
.... Fe X, 1602 UT
xxxx Ca XV, 1547 UT

MARCH 4, 1993 (P=-22.28, B₀ = -7.23, L₀ = 167.74)

KITT PEAK MAGNETOGRAM
5507A

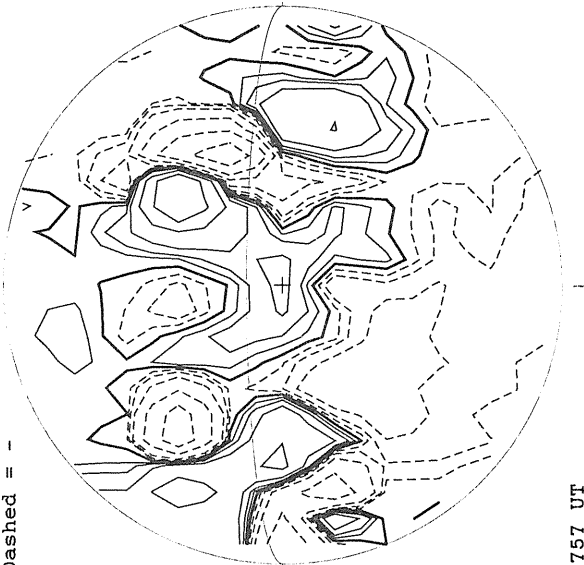
Bright = +
Dark = -



1500 UT

STANFORD MAGNETOGRAM

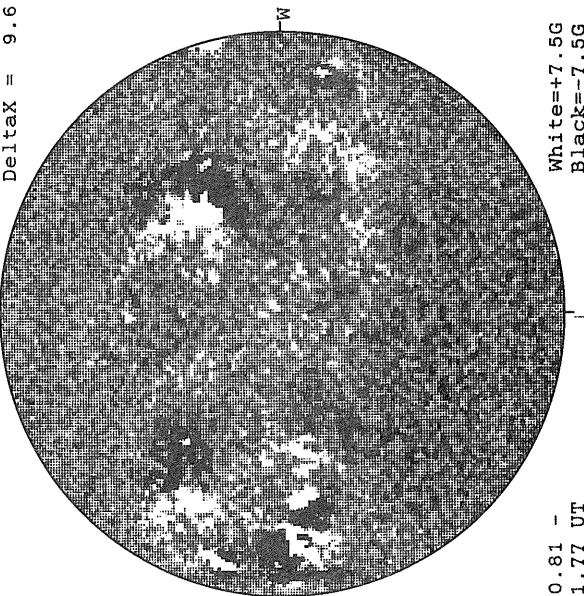
Solid = +
Dashed = -



1757 UT

MT. WILSON MAGNETOGRAM

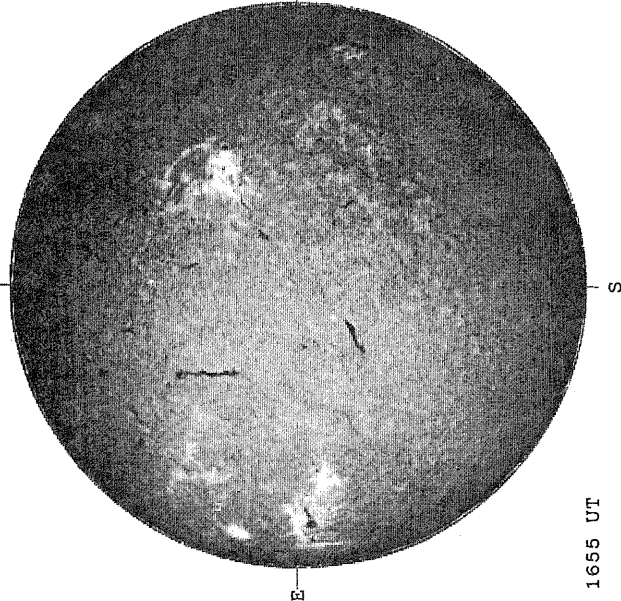
Delta Y = 13.0
Delta X = 9.6



20.81 -
21.77 UT

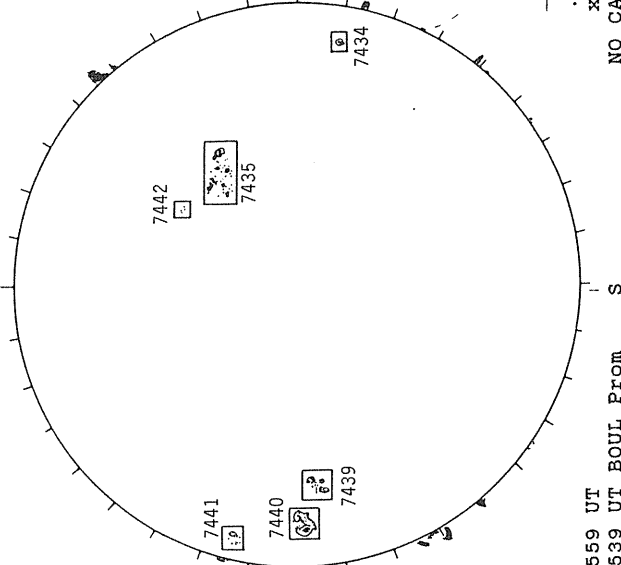
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



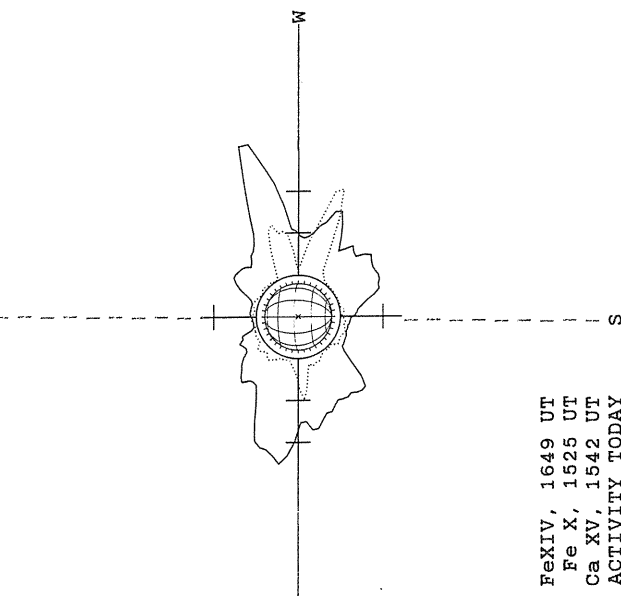
1655 UT

BOULDER SUNSPOT



1559 UT
1539 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



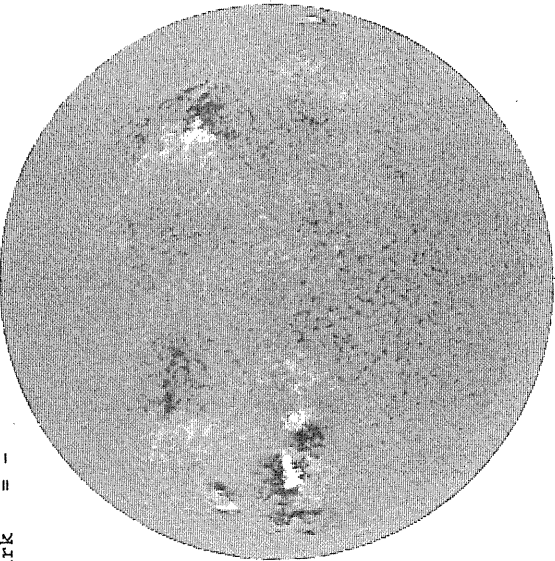
— Fe XIV, 1649 UT
.... Fe X, 1525 UT
xxxx Ca XV, 1542 UT
NO CA XV ACTIVITY TODAY

MARCH 5, 1993 (P=-22.51, B₀ = -7.23, L₀ = 154.56)

KITT PEAK MAGNETOGRAM

5507A

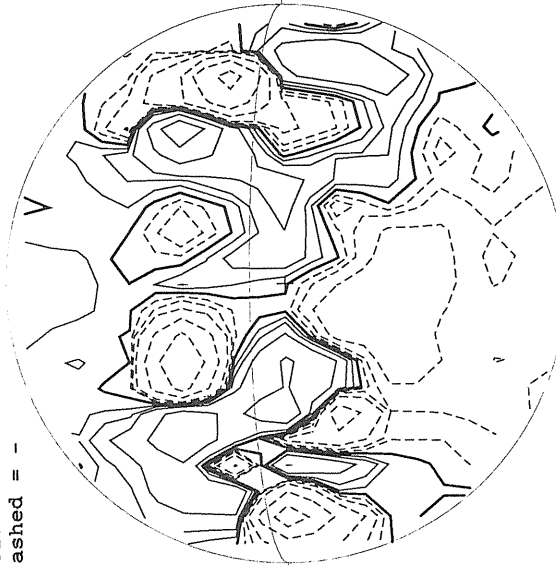
Bright = +
Dark = -



1457 UT

STANFORD MAGNETOGRAM

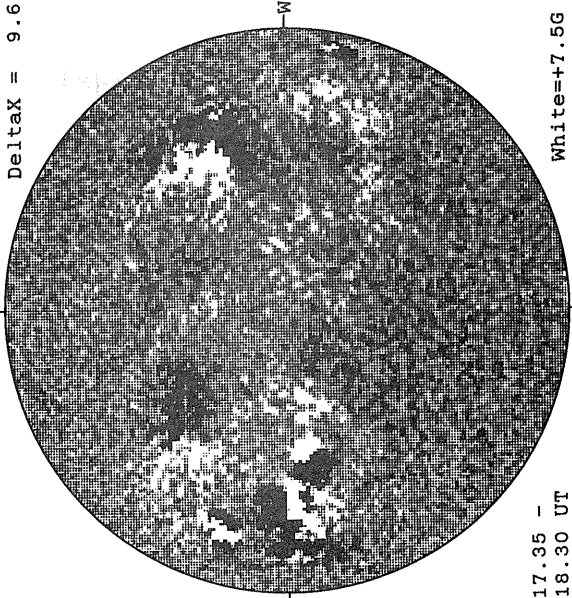
Solid = +
Dashed = -



2219 UT

MT. WILSON MAGNETOGRAM

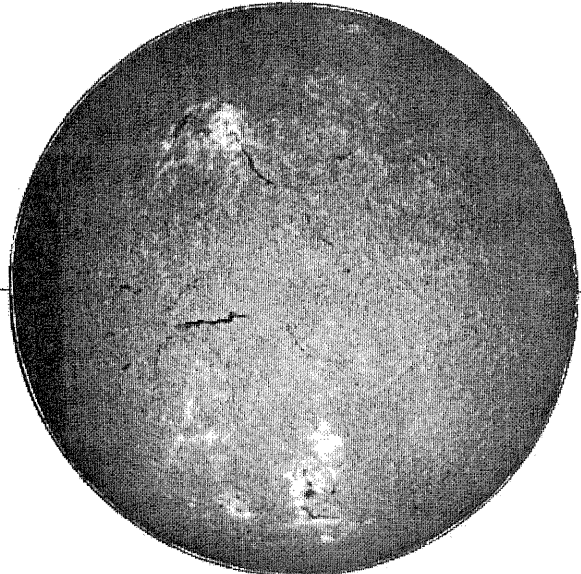
DeltaY = 13.1
DeltaX = 9.6



17.35 -
18.30 UT

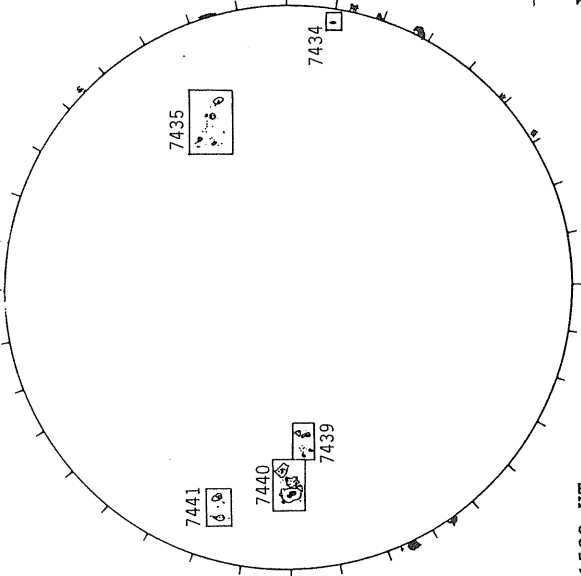
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



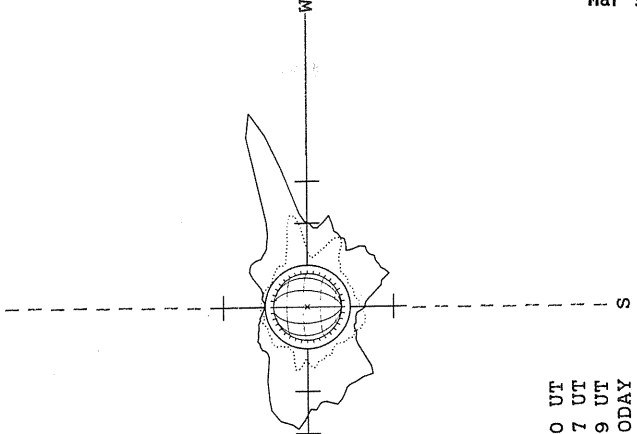
1505 UT

BOULDER SUNSPOT



1539 UT
1526 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



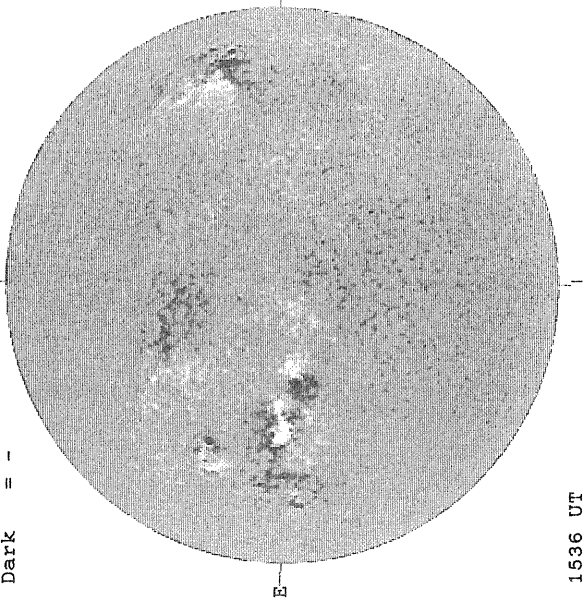
— Fe XIV, 1500 UT
.... Fe X, 1537 UT
xxxx Ca XV, 1529 UT
NO CA XV ACTIVITY TODAY

54
Mar 93

MARCH 6, 1993 (P=-22.73, B₀ = -7.23, L₀ = 141.39)

KITT PEAK MAGNETOGRAM
5507A

Bright = +
Dark = -



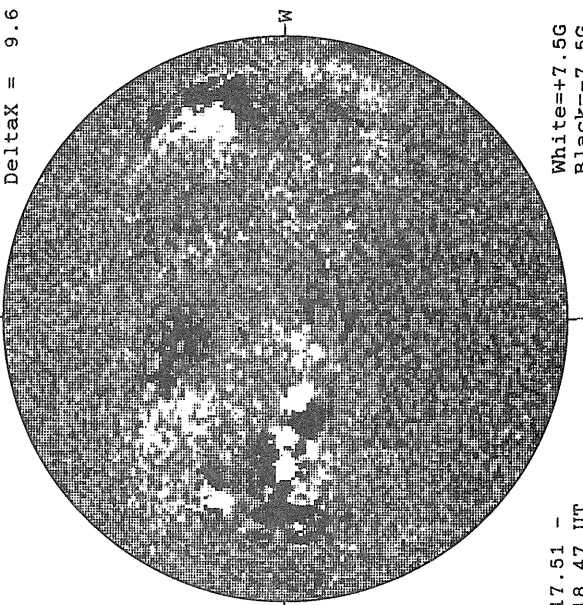
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



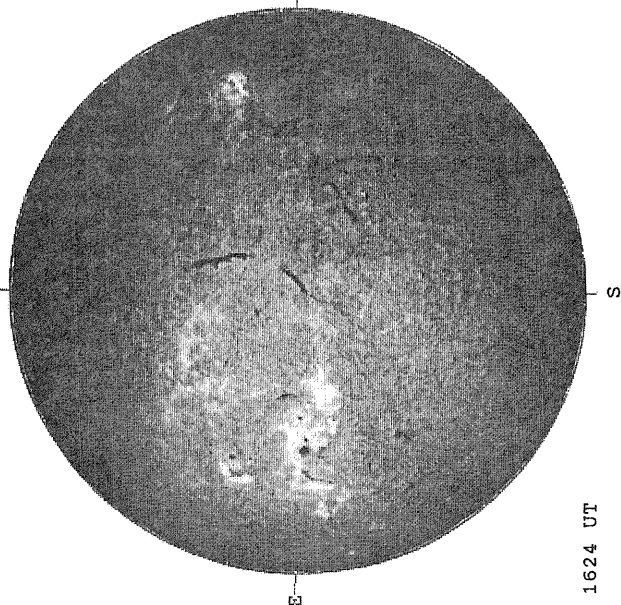
MT. WILSON MAGNETOGRAM

DeltaY = 13.1
DeltaX = 9.6

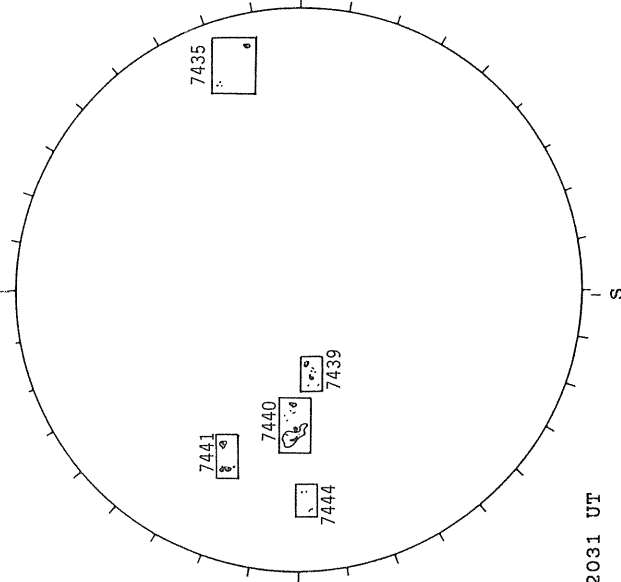


White = +7.5G
Black = -7.5G

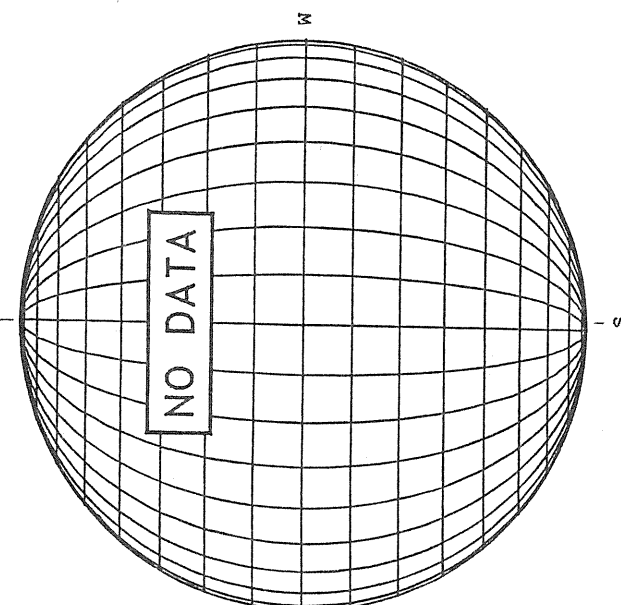
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



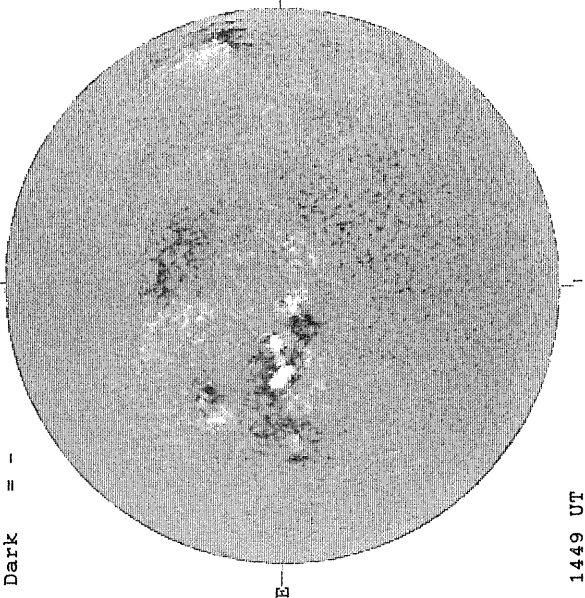
SACRAMENTO PEAK CORONA (1.15 Radii)



MARCH 7, 1993 (P=-22.95 B₀ = -7.23, L₀ = 128.21)

KITT PEAK MAGNETOGRAM
5507A

Bright = +
Dark = -



1449 UT

STANFORD MAGNETOGRAM

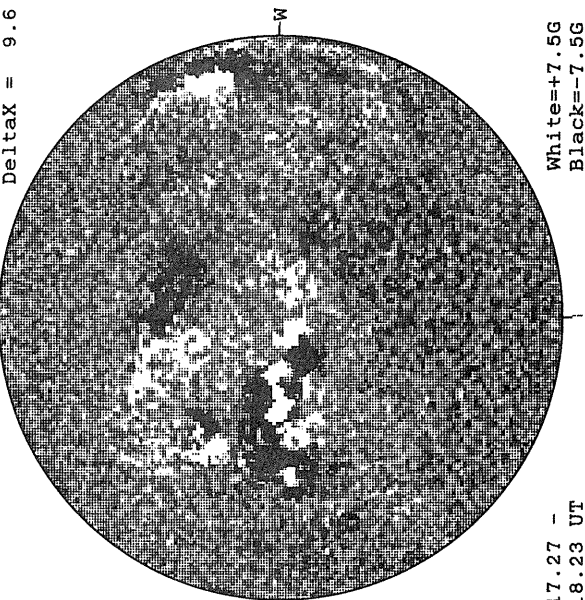
Solid = +
Dashed = -



1851 UT

MT. WILSON MAGNETOGRAM

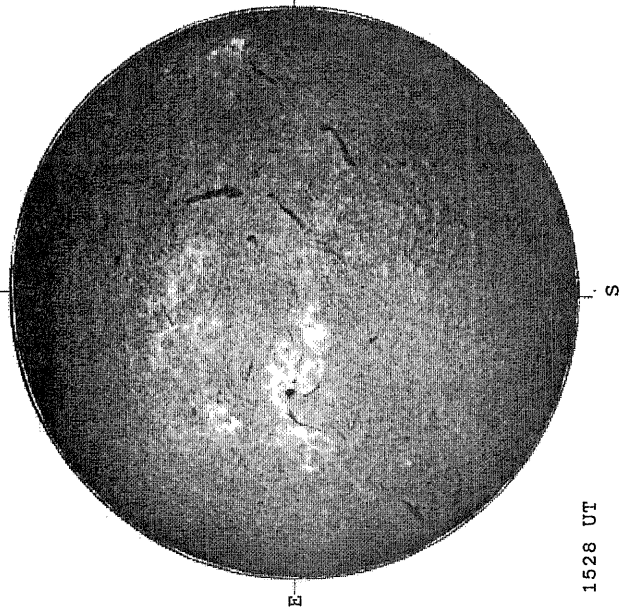
DeltaY = 13.1
DeltaX = 9.6



17.27 -
18.23 UT

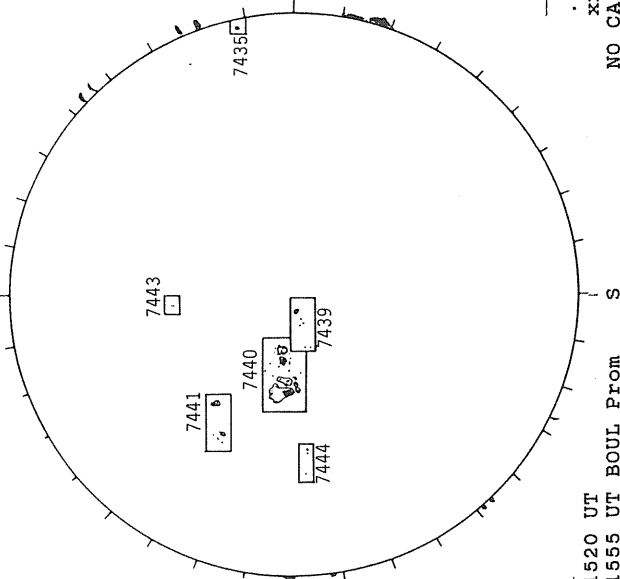
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



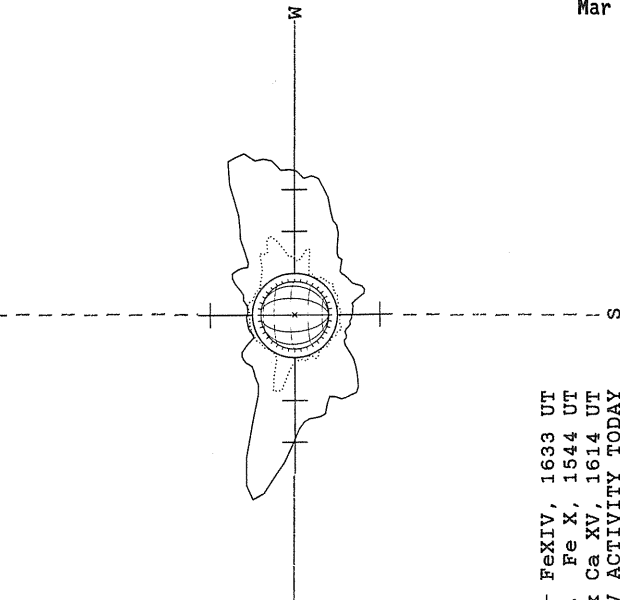
1528 UT

BOULDER SUNSPOT



1520 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



1555 UT BOUL Prom

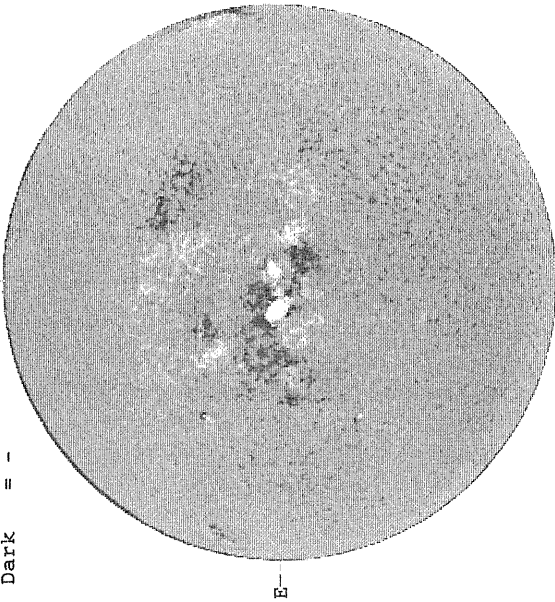
— Fe XIV, 1633 UT
.... Fe X, 1544 UT
xxxx Ca XV, 1614 UT
NO CA XV ACTIVITY TODAY

MARCH 8, 1993 (P=-23.16, B₀ = -7.23, L₀ = 115.04)

KITT PEAK MAGNETOGRAM

5507A

Bright = +
Dark = -



1546 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

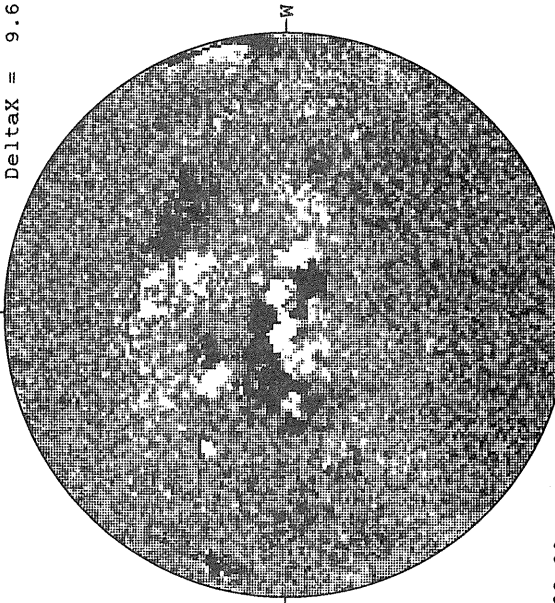


2336 UT

MT. WILSON MAGNETOGRAM

N

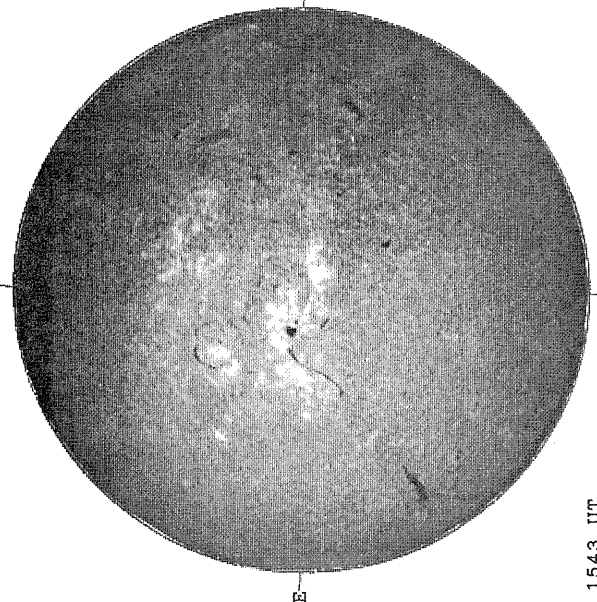
DeltaY = 13.1
DeltaX = 9.6



20.99 -
21.95 UT

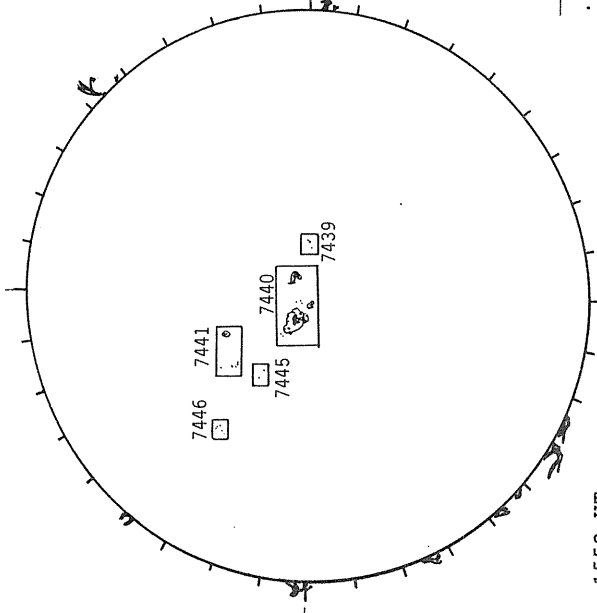
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



1543 UT

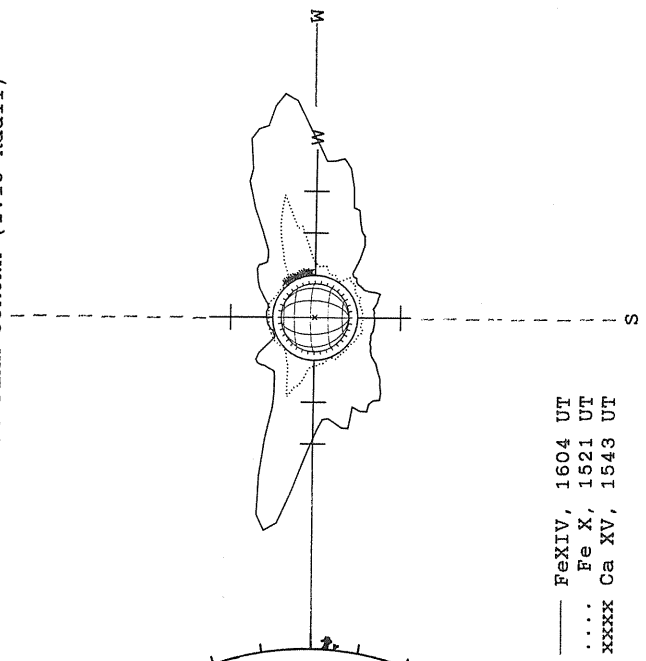
BOULDER SUNSPOT



1553 UT

1329 UT LOMNICKY Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



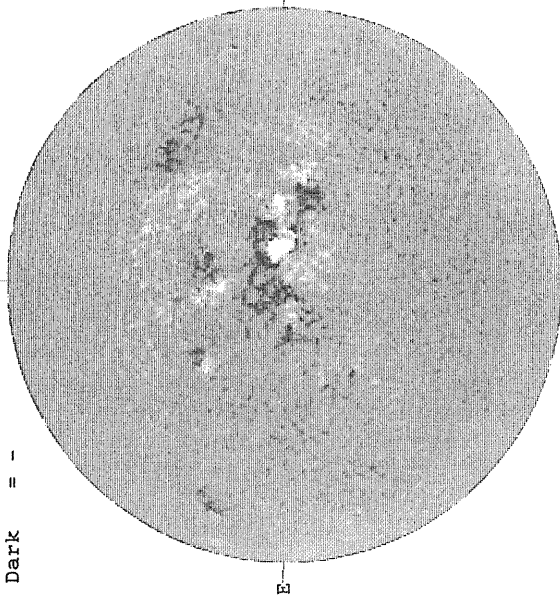
— Fe XIV, 1604 UT
.... Fe X, 1521 UT
xxxx Ca XV, 1543 UT

MARCH 9, 1993 (P=-23.36 B₀ = -7.23, L₀ = 101.86)

KITT PEAK MAGNETOGRAM

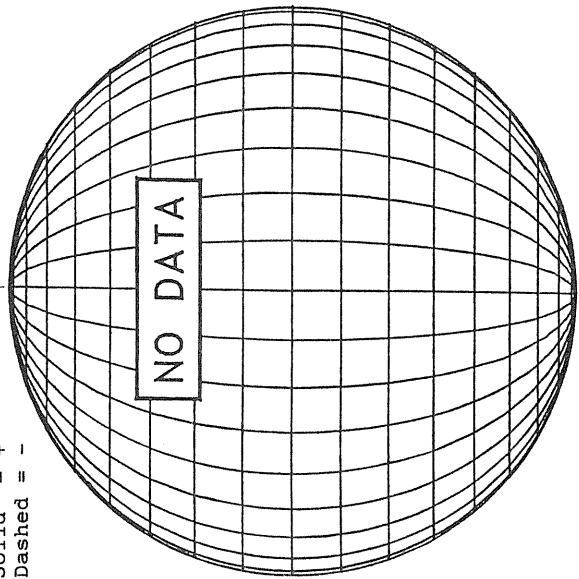
5507A

Bright = +
Dark = -



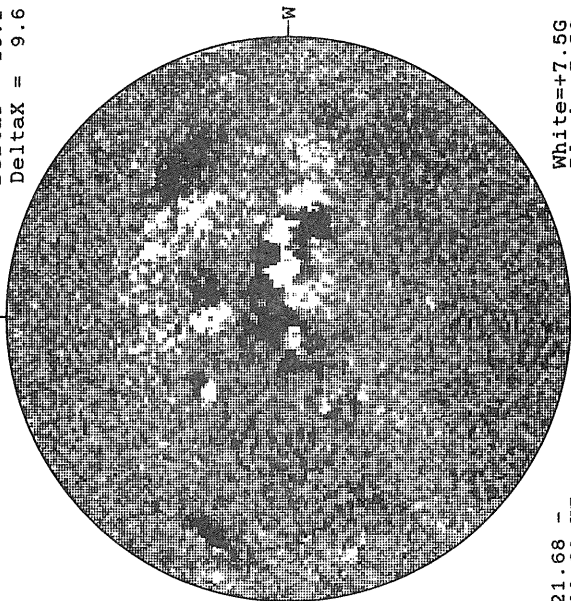
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

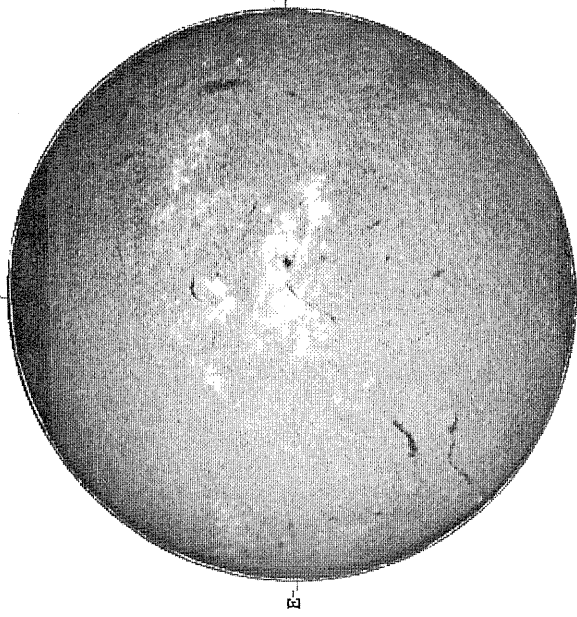


MT. WILSON MAGNETOGRAM

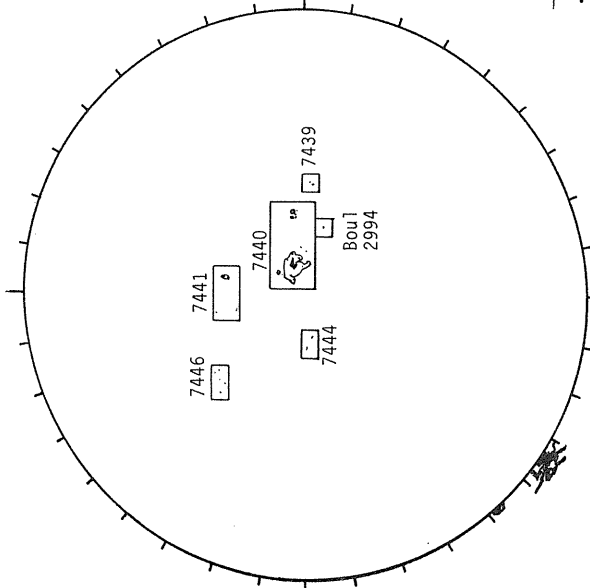
DeltaY = 13.1
DeltaX = 9.6



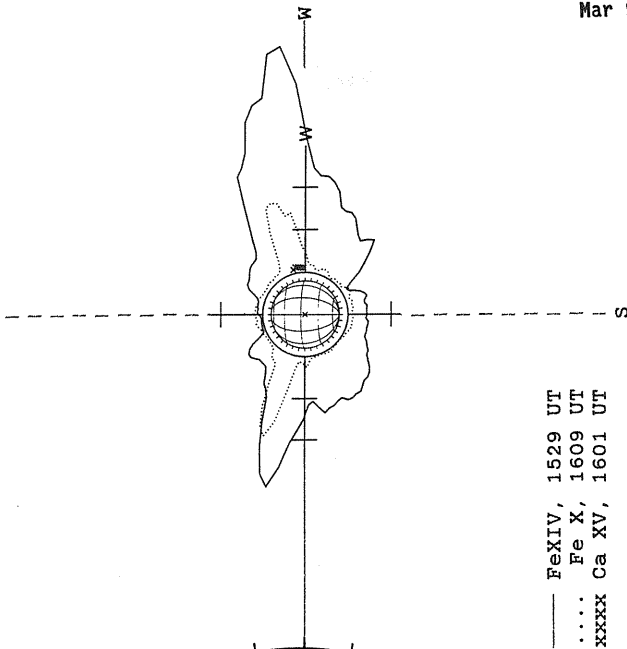
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)



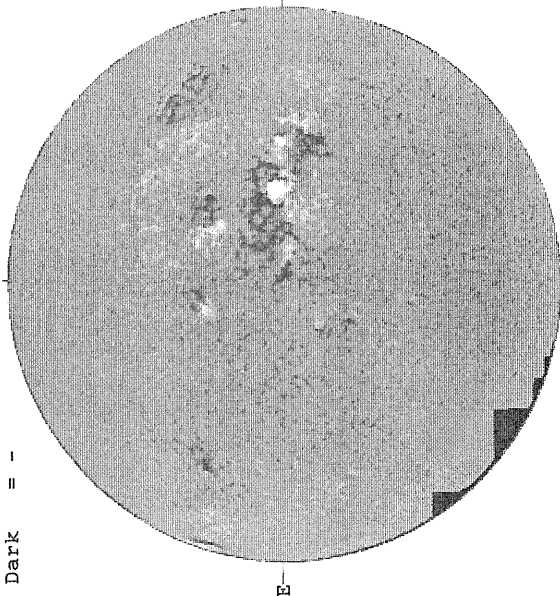
1451 UT
0809 UT LOMNICKY From

MARCH 10, 1993 (P=-23.56, B₀ = -7.22, L₀ = 88.68)

KITT PEAK MAGNETOGRAM

5507A

Bright = +
Dark = -

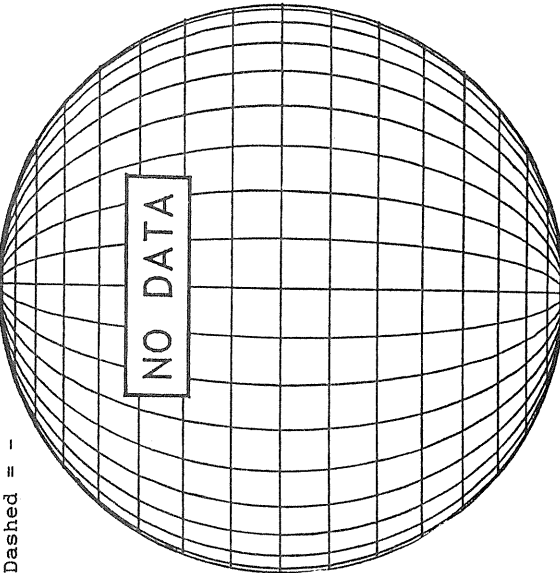


1540 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

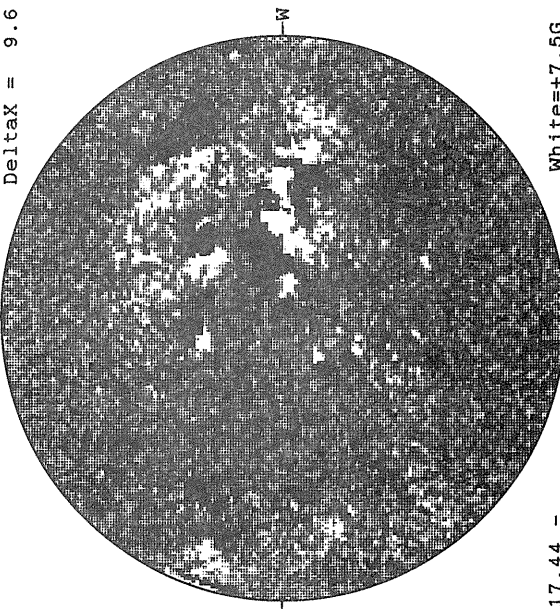


17.44 -
18.40 UT

MT. WILSON MAGNETOGRAM

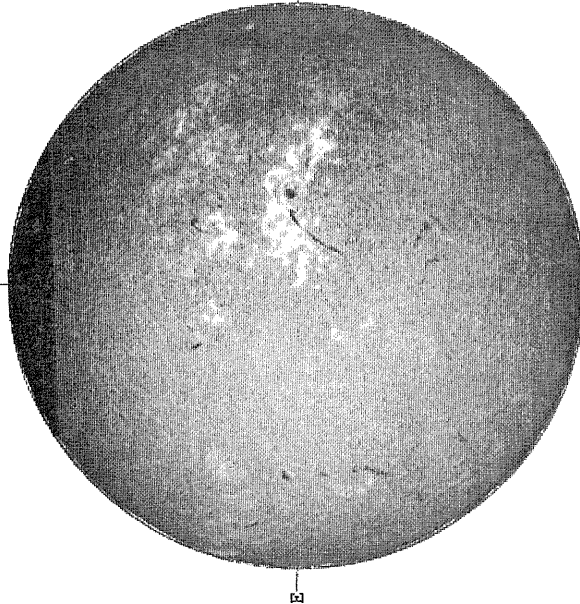
N

DeltaY = 13.1
DeltaX = 9.6



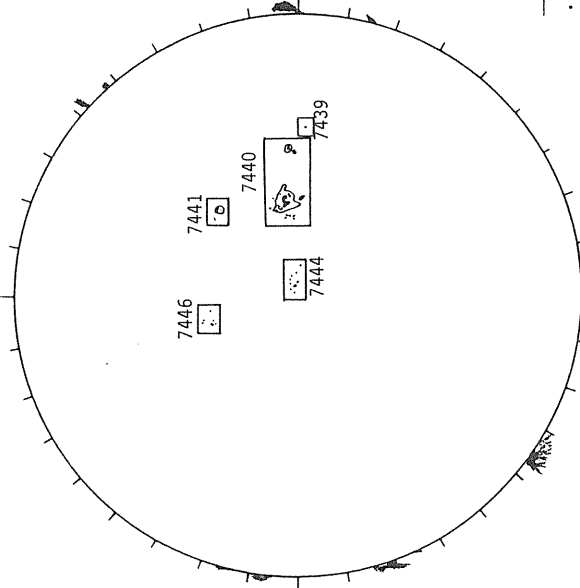
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



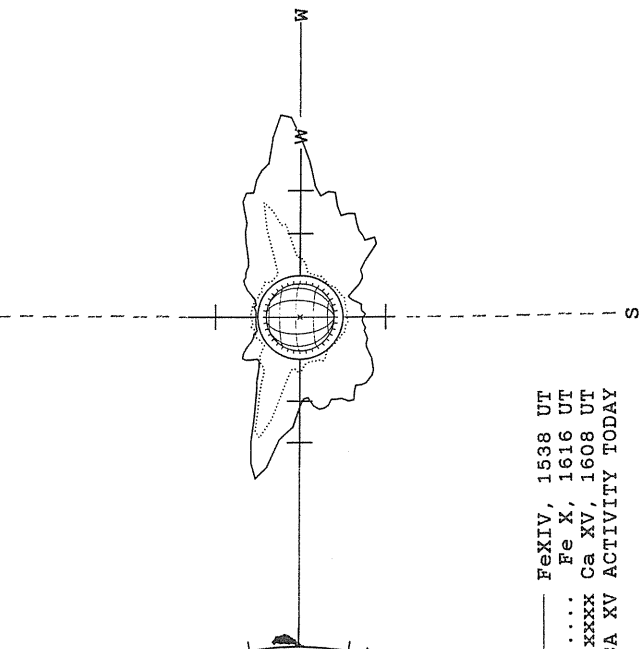
1554 UT

BOULDER SUNSPOT



1554 UT
1610 UT BOUL PROM

SACRAMENTO PEAK CORONA (1.15 Radii)

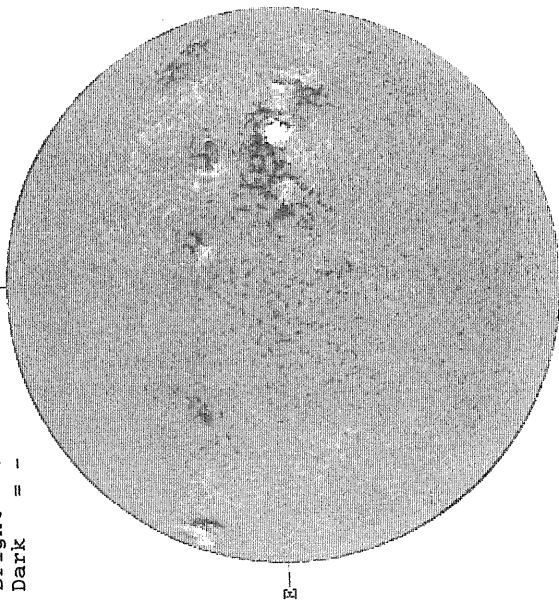


— Fe XIV, 1538 UT
... Fe X, 1616 UT
xxxx Ca XV, 1608 UT
NO CA XV ACTIVITY TODAY

MARCH 11, 1993 (P=-23.75, B_O = -7.21, L_O = 75.50)

KITT PEAK MAGNETOGRAM
5507A

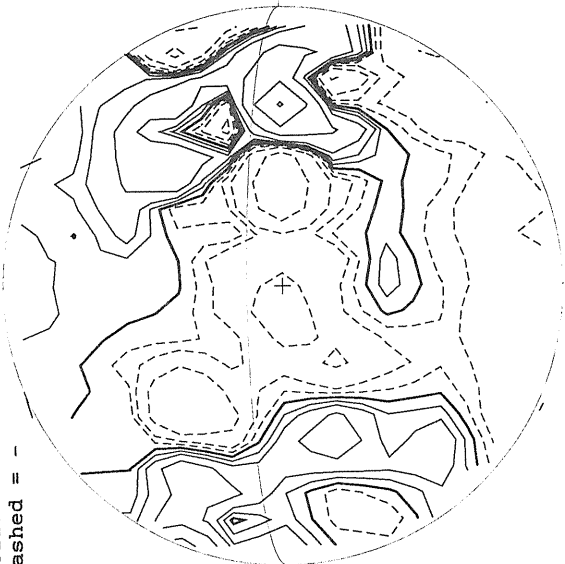
Bright = +
Dark = -



1457 UT

STANFORD MAGNETOGRAM

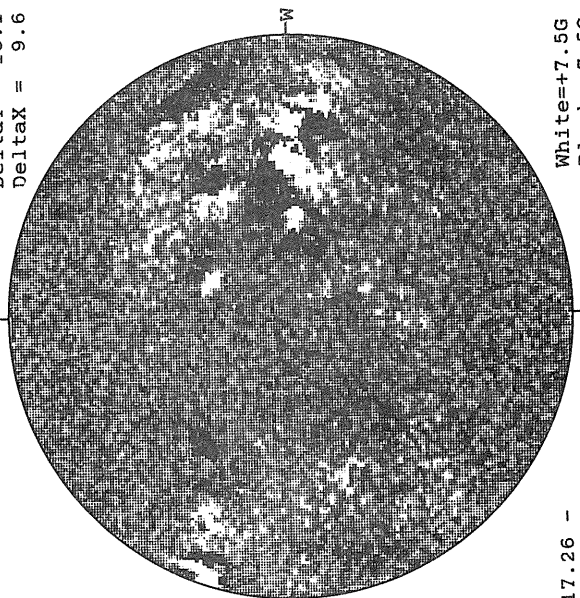
Solid = +
Dashed = -



2342 UT

MT. WILSON MAGNETOGRAM

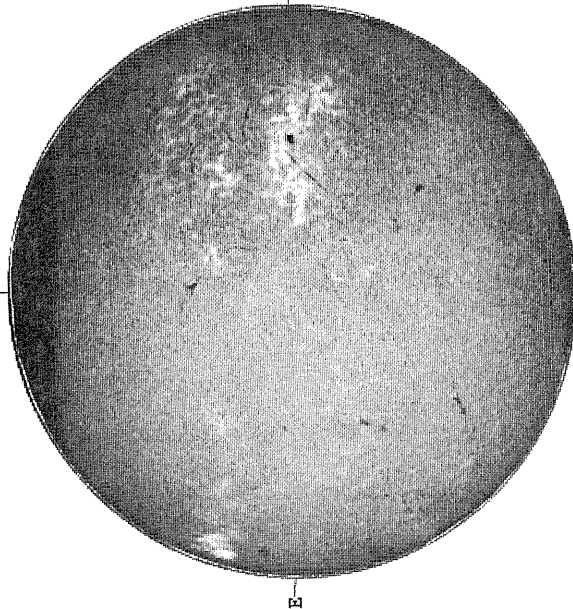
Delta_{ay} = 13.1
Delta_{ax} = 9.6



17.26 -
18.22 UT

White = +7.5G
Black = -7.5G

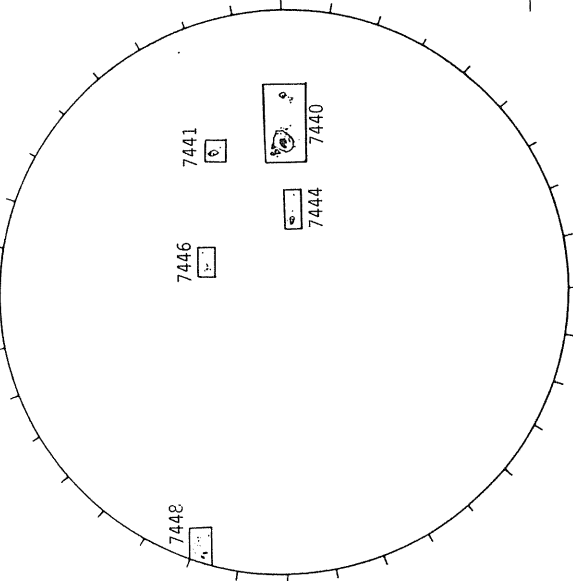
SACRAMENTO PEAK H-ALPHA



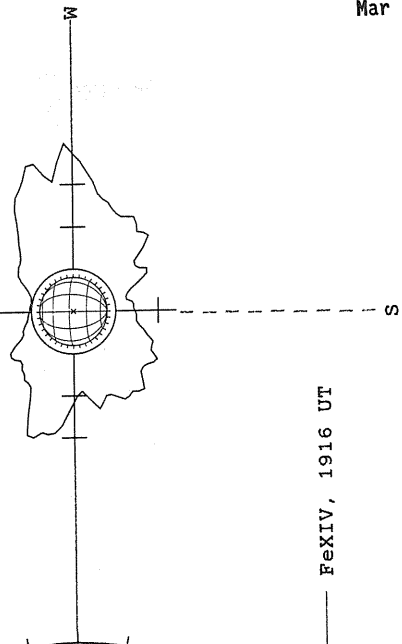
1550 UT

RAMEY SUNSPOT

SACRAMENTO PEAK CORONA (1.15 Radii)



1306 UT



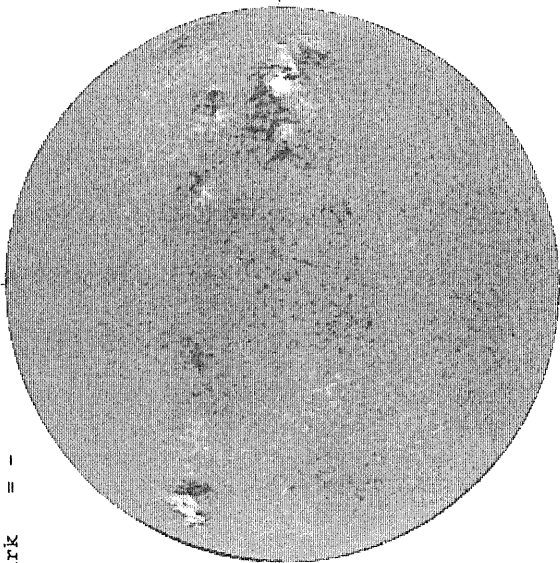
FeXIV, 1916 UT

60
Mar 93

MARCH 12, 1993 (P=-23.93, B₀ = -7.20, L₀ = 62.32)

KITT PEAK MAGNETOGRAM
5507A

Bright = +
Dark = -



1446 UT

STANFORD MAGNETOGRAM

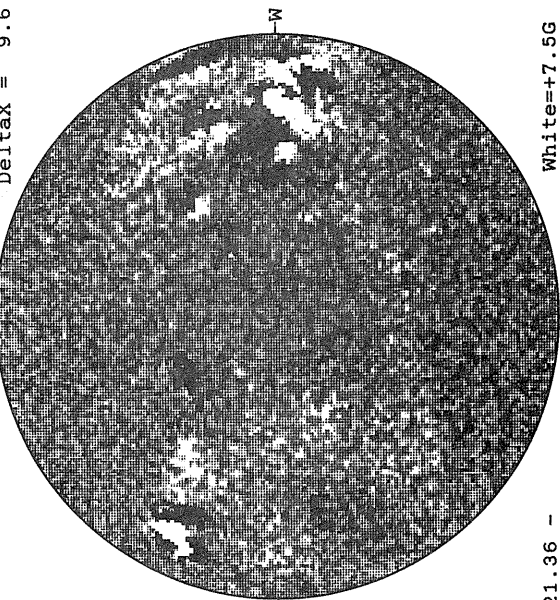
Solid = +
Dashed = -



2153 UT

MT. WILSON MAGNETOGRAM

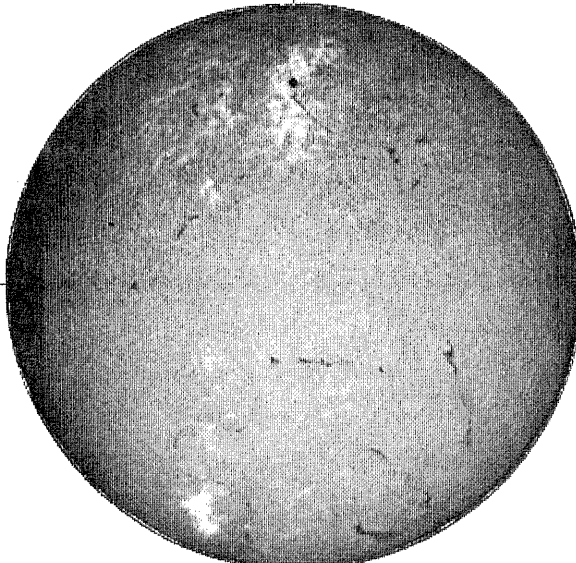
DeltaY = 13.1
DeltaX = 9.6



21.36 -
22.32 UT

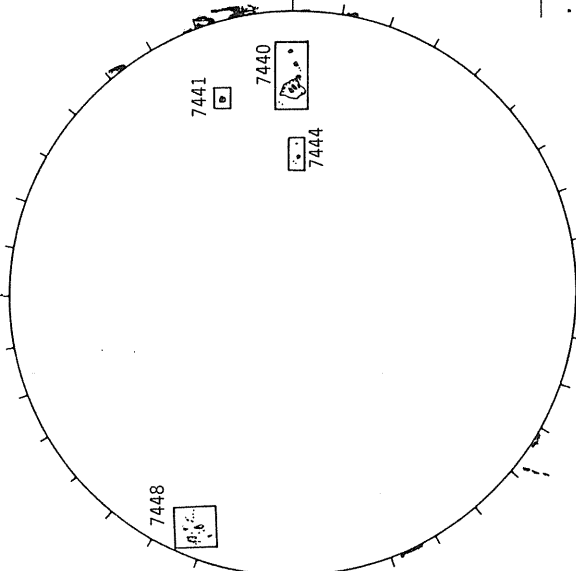
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



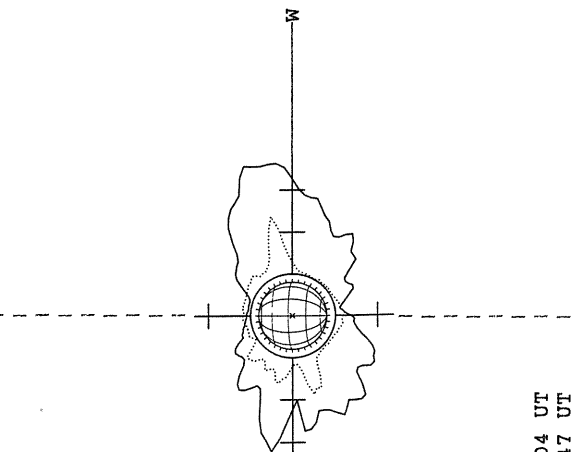
1609 UT

BOULDER SUNSPOT



1550 UT
1537 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



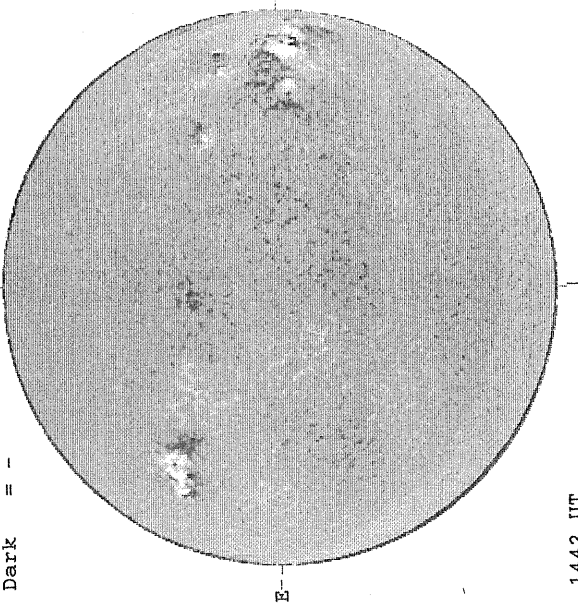
— Fe XIV, 1604 UT
.... Fe X, 1647 UT

MARCH 13, 1993 (P=-24.11, B₀ = -7.18, L₀ = 49.15)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -

N **5507A**

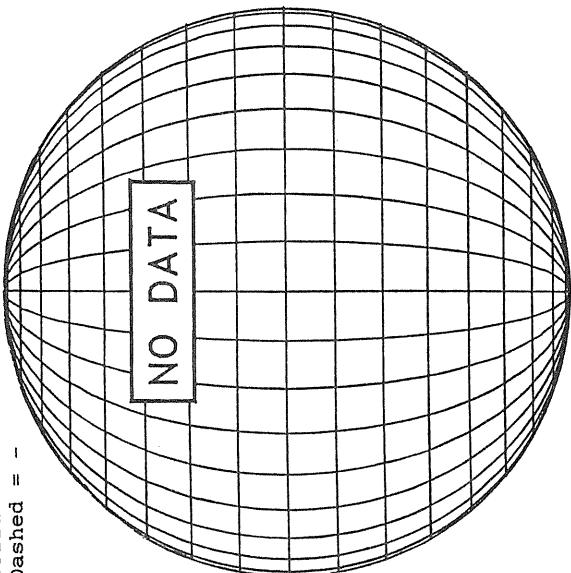


1442 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

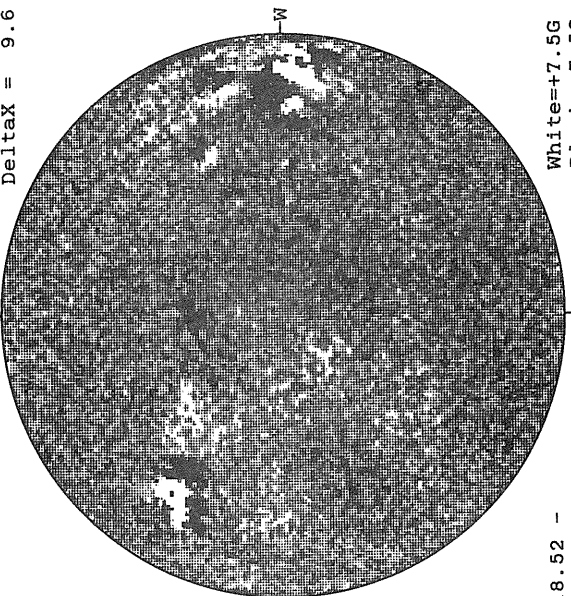
N



MT. WILSON MAGNETOGRAM

Delta Y = 13.1
Delta X = 9.6

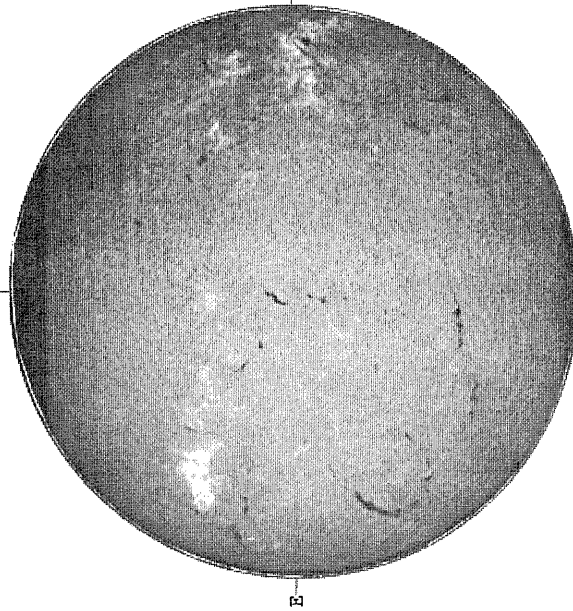
N



18.52 -
19.48 UT

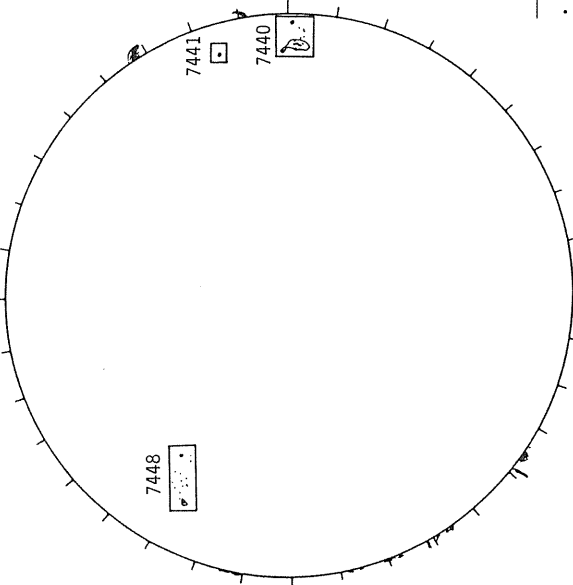
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



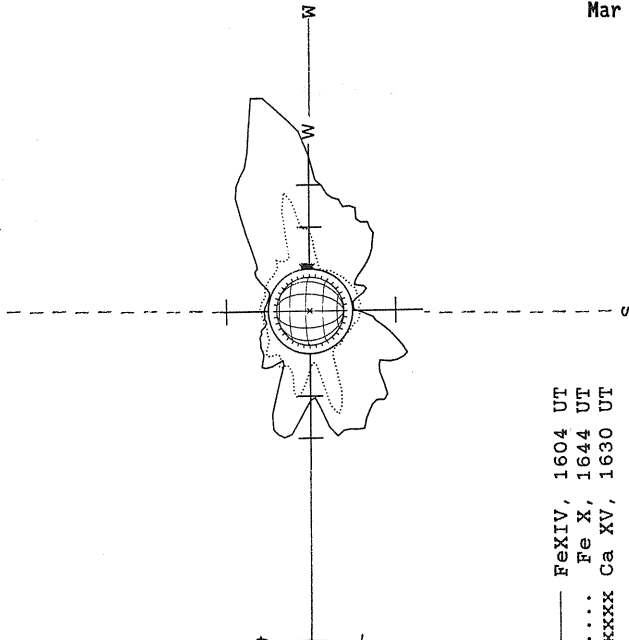
1610 UT

BOULDER SUNSPOT



1750 UT BOUL FROM
1735 UT BOUL FROM

SACRAMENTO PEAK CORONA (1.15 Radii)



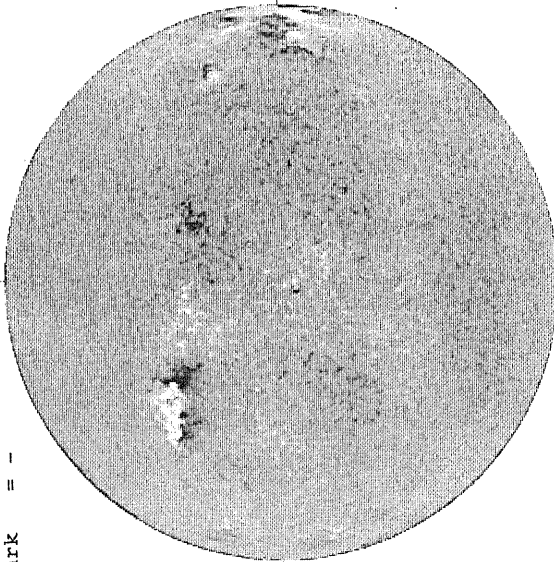
— Fe XIV, 1604 UT
... Fe X, 1644 UT
xxxx Ca XV, 1630 UT

MARCH 14, 1993 (P=-24.28, B₀ = -7.17, L₀ = 35.97)

KITT PEAK MAGNETOGRAM

5507A

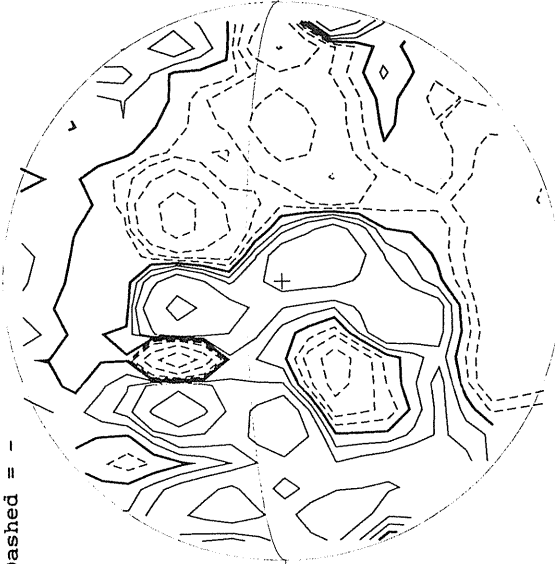
Bright = +
Dark = -



1828 UT

STANFORD MAGNETOGRAM

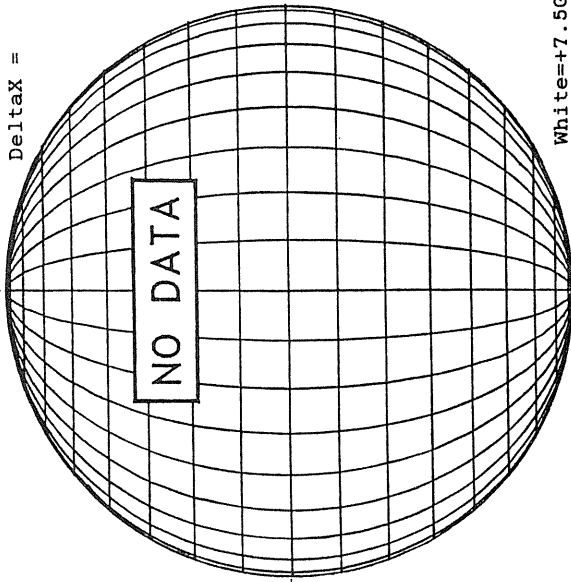
Solid = +
Dashed = -



2250 UT

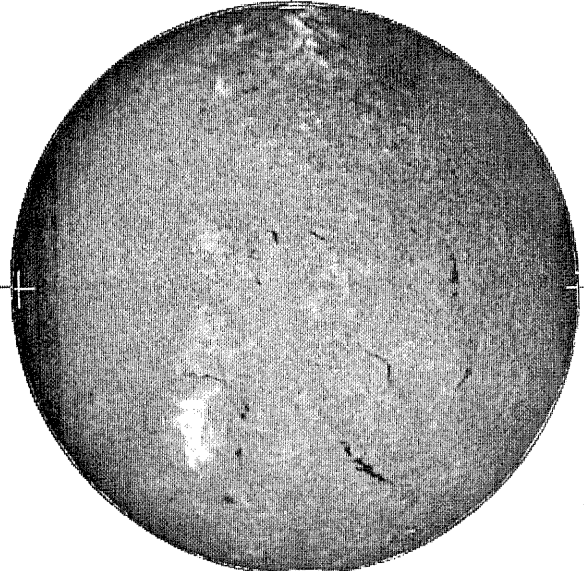
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



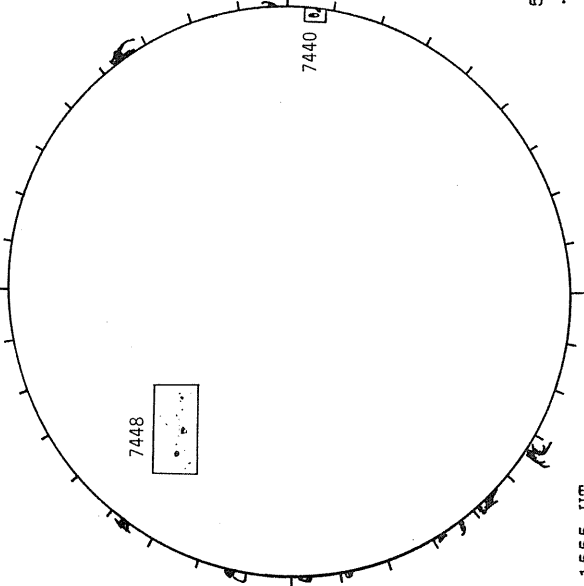
White = +7.5G
Black = -7.5G

BOULDER H-ALPHA



1435 UT

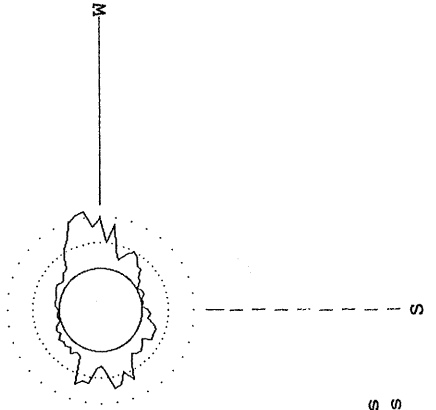
BOULDER SUNSPOT



1555 UT

0806 UT LOMNICKY Prom

LOMNICKY STIT CORONA (1.15 Radii)



5303A, 0829 UT
... 50 abs. units
... 100 abs. units

MARCH 15, 1993 (P=-24.44, B₀ = -7.15, L₀ = 22.79)

KITT PEAK MAGNETOGRAM
5507A

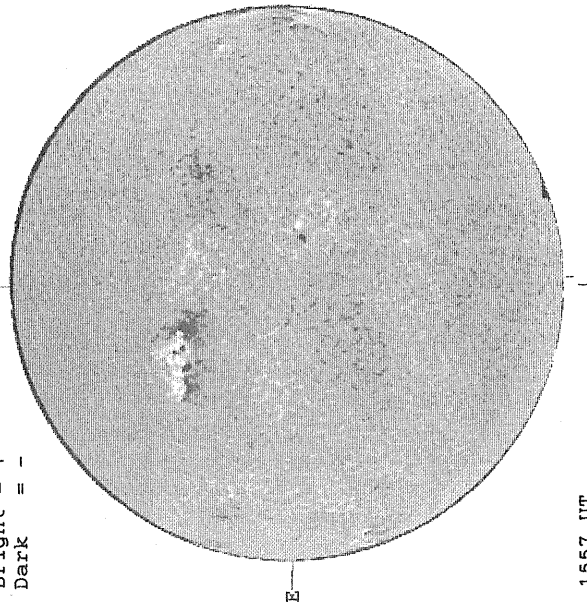
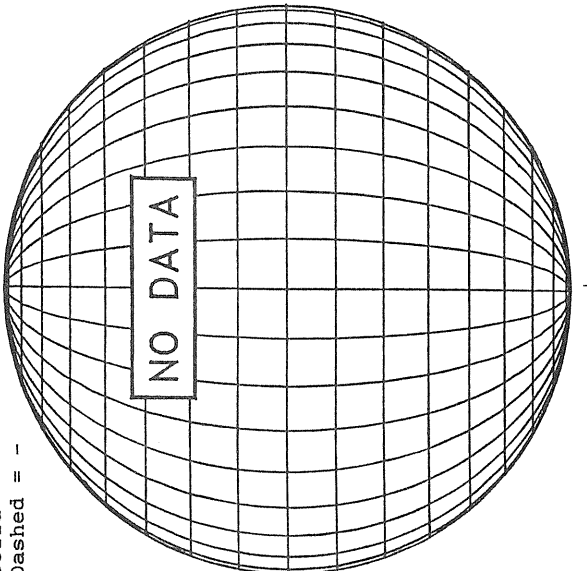
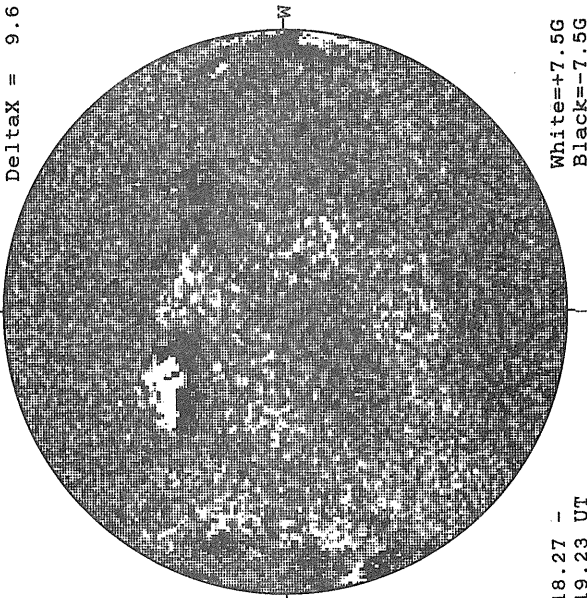
Bright = +
Dark = -

STANFORD MAGNETOGRAM

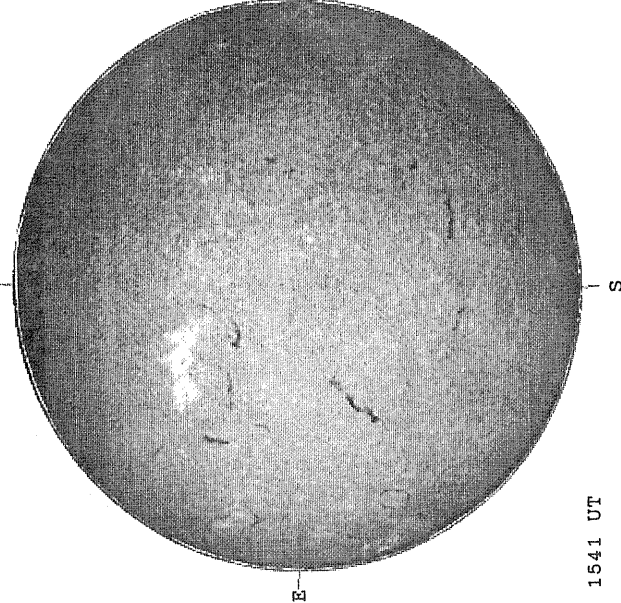
Solid = +
Dashed = -

MT. WILSON MAGNETOGRAM

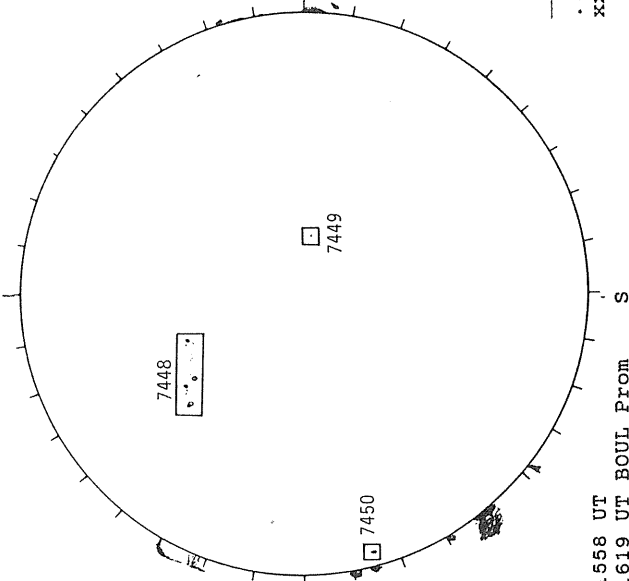
DeltaY = 13.1
DeltaX = 9.6



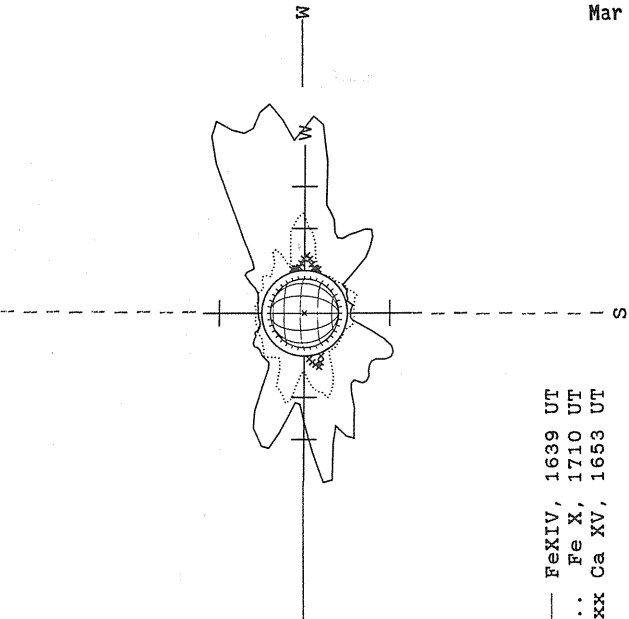
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)



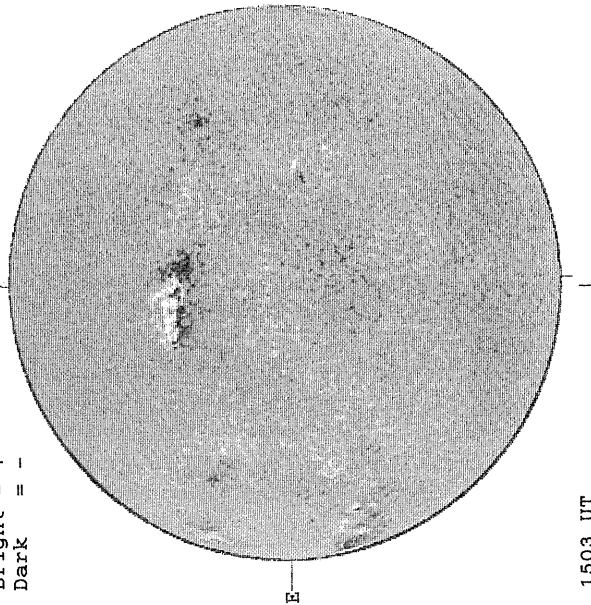
— FeXIV, 1639 UT
... Fe X, 1710 UT
xxxx Ca XV, 1653 UT

64
Mar 93

MARCH 16, 1993 (P=-24.60, B₀ =-7.13, L₀ = 9.60)

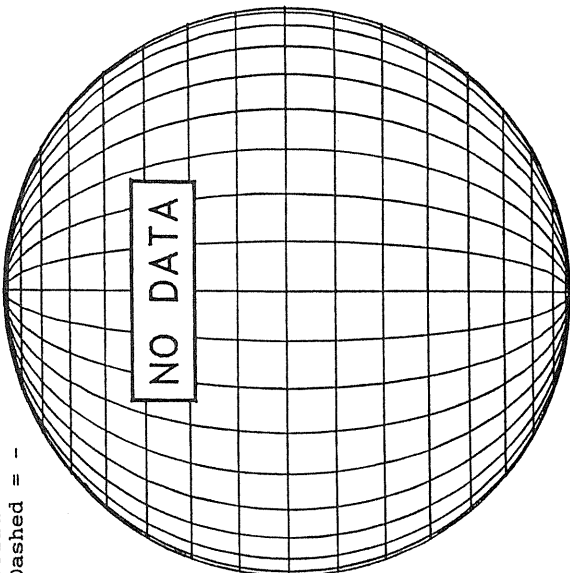
KITT PEAK MAGNETOGRAM
5507A

Bright = +
Dark = -



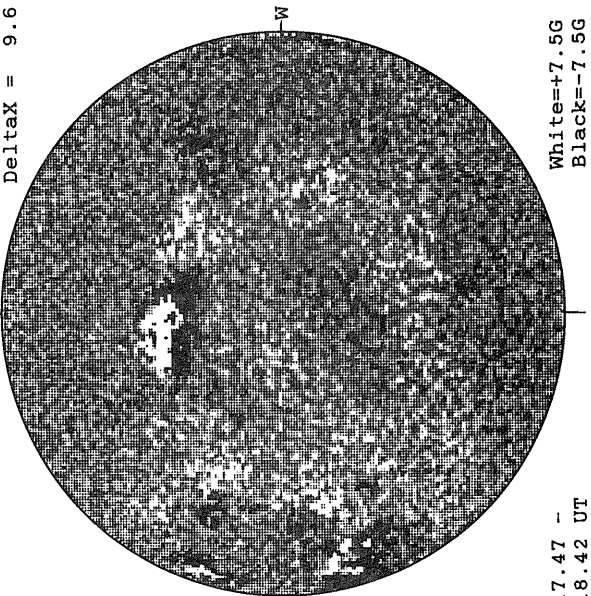
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



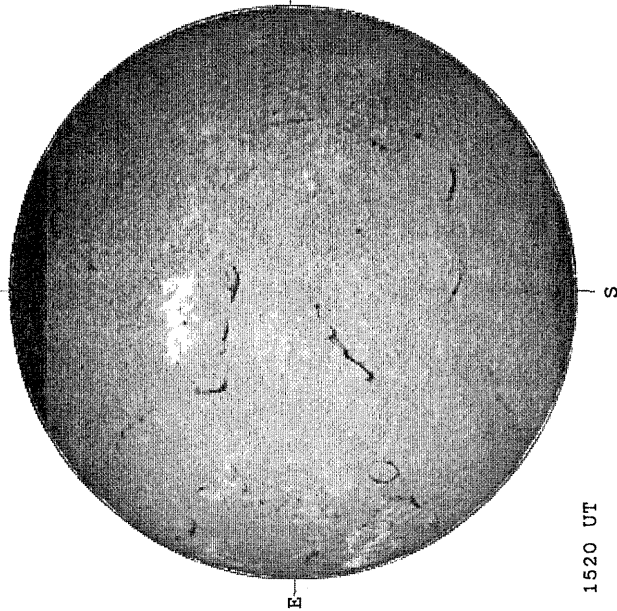
MT. WILSON MAGNETOGRAM

DeltaY = 13.1
DeltaX = 9.6

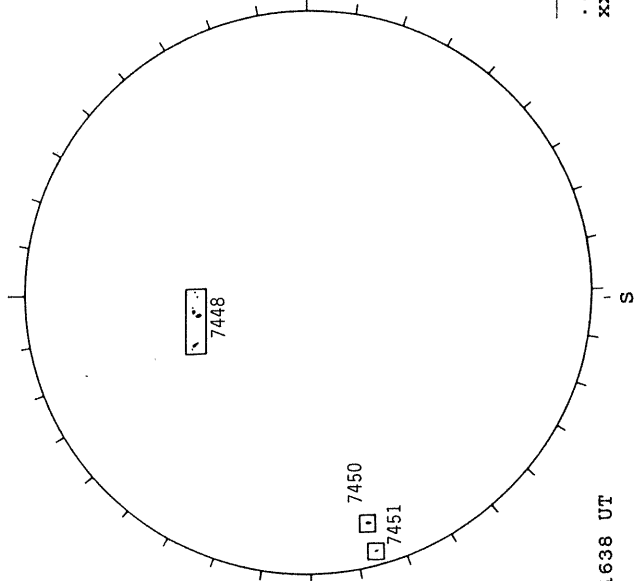


White=+7.5G
Black=-7.5G

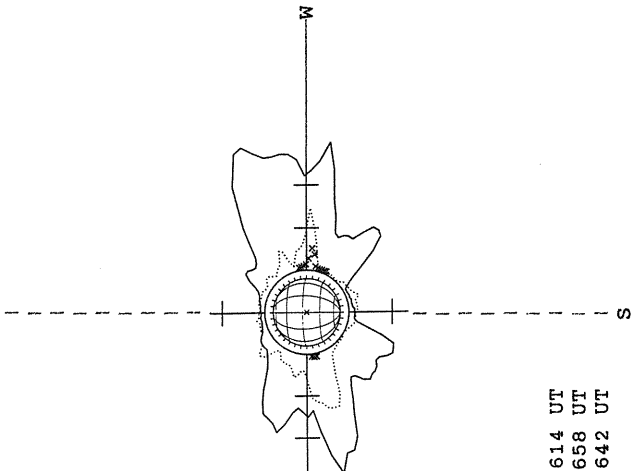
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)

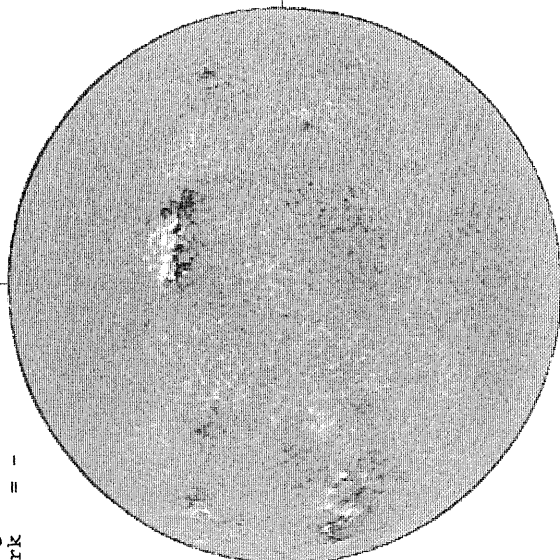


— FeXIV, 1614 UT
.... Fe X, 1658 UT
xxxx Ca XV, 1642 UT

MARCH 17, 1993 (P=-24.75, B₀ =-7.11, I₀ = 356.42)

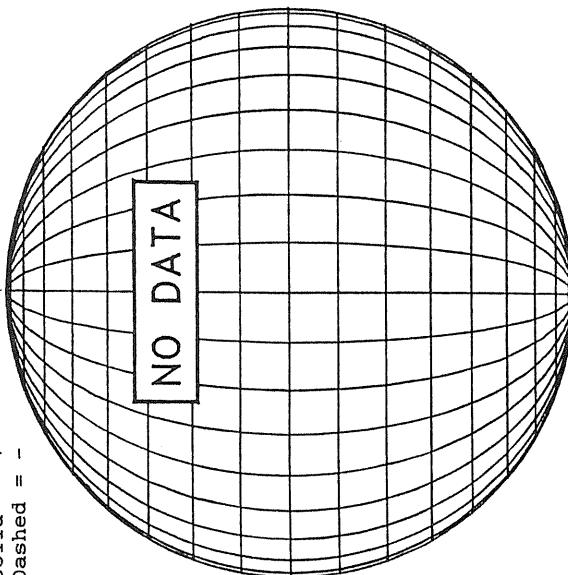
KITT PEAK MAGNETOGRAM
5507A

Bright = +
Dark = -



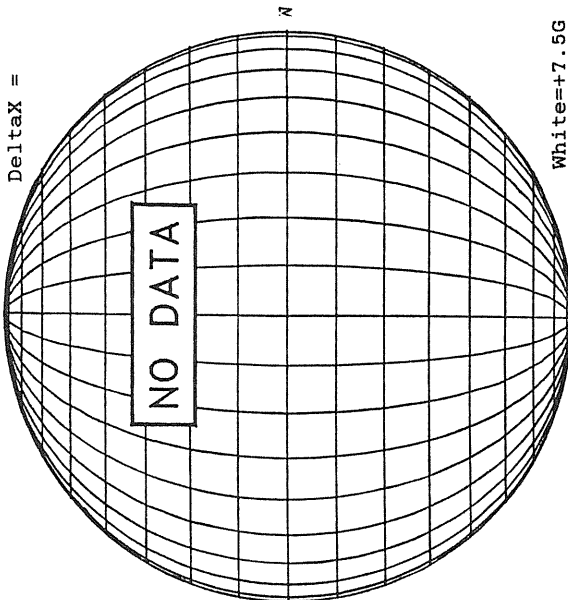
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



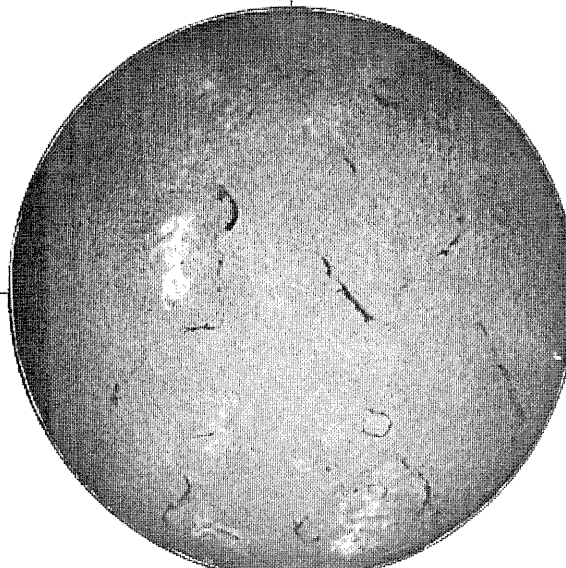
MT. WILSON MAGNETOGRAM

Deltaγ =
DeltaX =

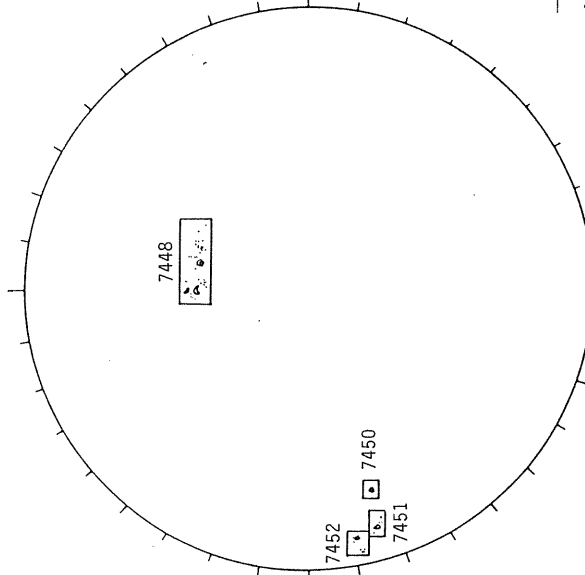


White=+7.5G
Black=-7.5G

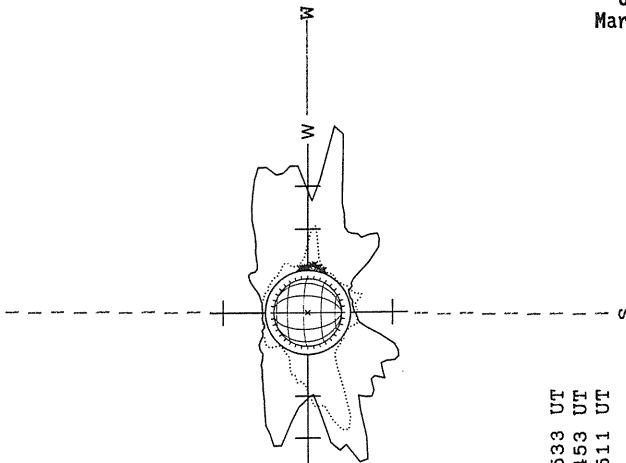
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)



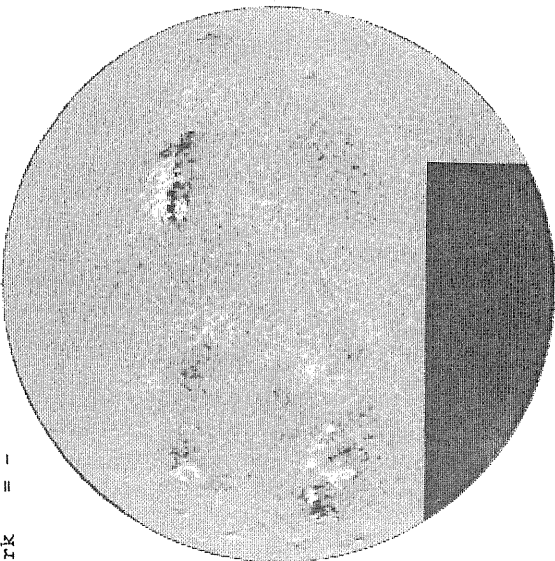
— FeXIV, 1533 UT
... Fe X, 1453 UT
xxxx Ca XV, 1511 UT

66
Mar 93

MARCH 18, 1993 (P=-24.89, B_O =-7.08, L_O = 343.24)

KITT PEAK MAGNETOGRAM
N
5507A

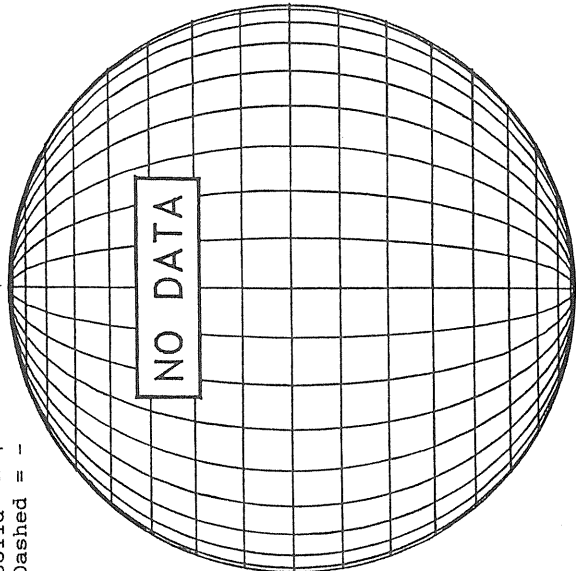
Bright = +
Dark = -



1530 UT

STANFORD MAGNETOGRAM
N

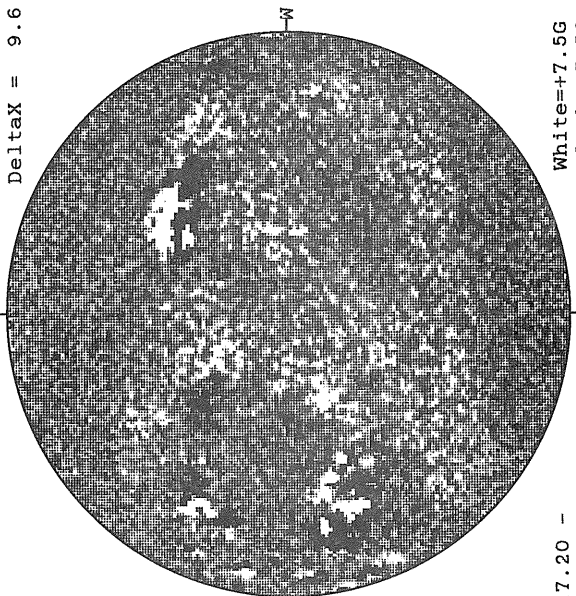
Solid = +
Dashed = -



17.20 -
18.15 UT

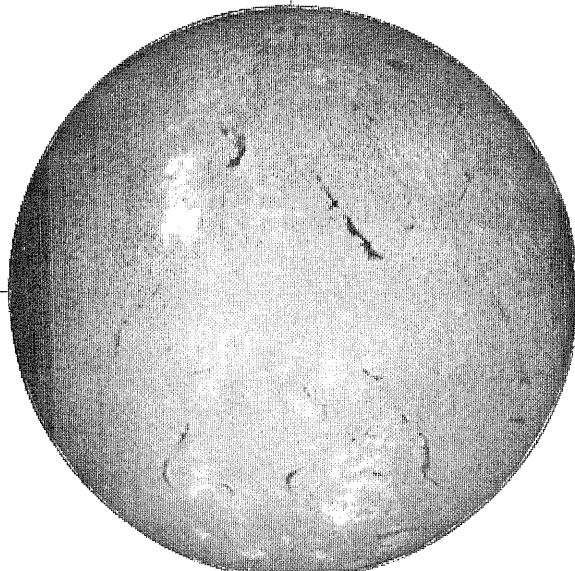
MT. WILSON MAGNETOGRAM
N

DeltaY = 13.1
DeltaX = 9.6



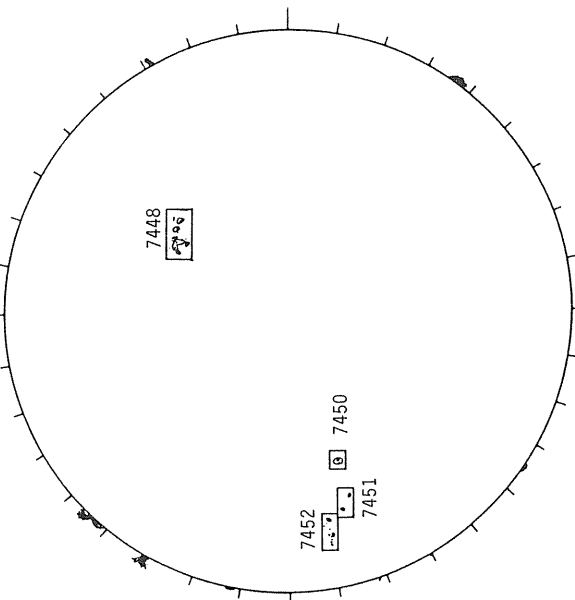
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



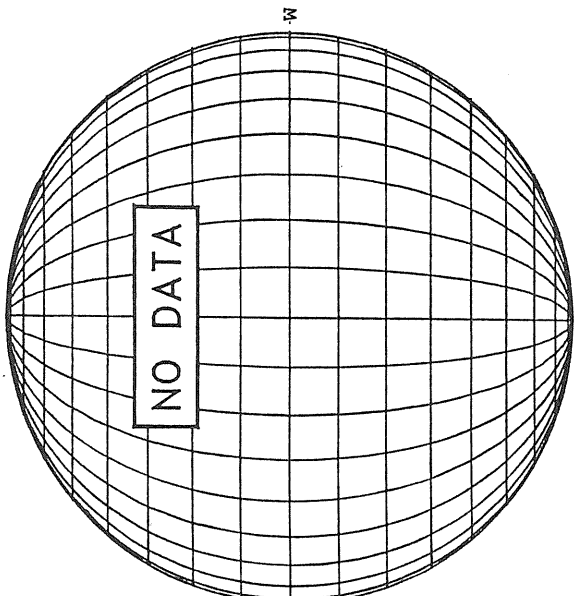
1617 UT

BOULDER SUNSPOT



1538 UT
1602 UT BOUL Prom

LOMNICKY STIT CORONA (1.15 Radii)



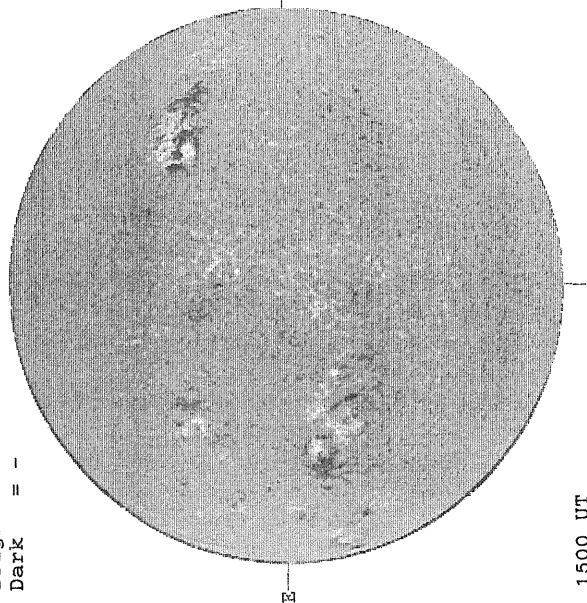
NO DATA

MARCH 19, 1993 (P=-25.03, B₀ = -7.06, L₀ = 330.06)

KITT PEAK MAGNETOGRAM

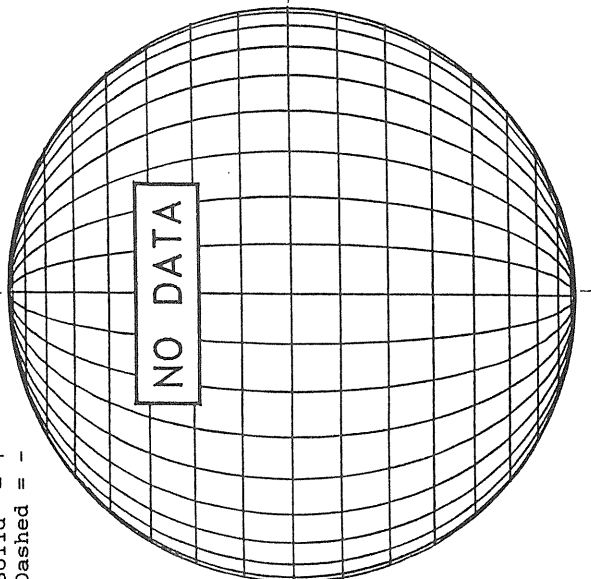
5507A

Bright = +
Dark = -



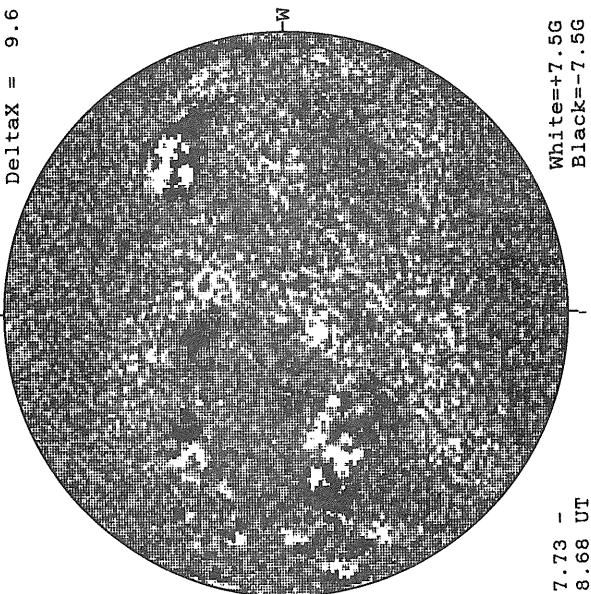
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

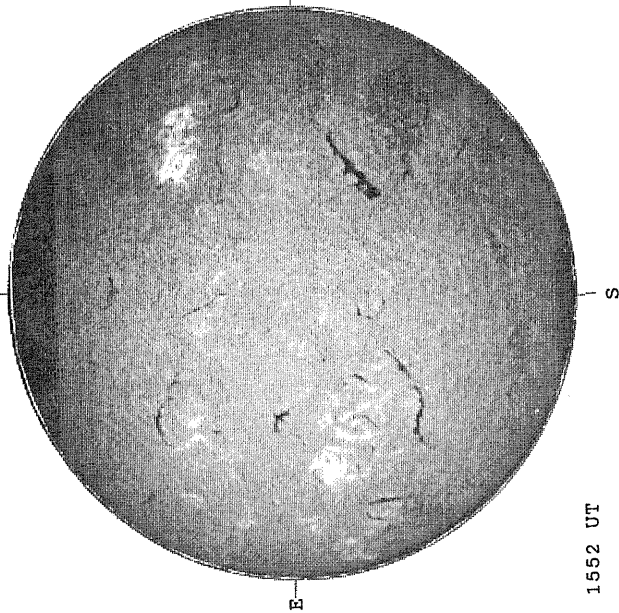


MT. WILSON MAGNETOGRAM

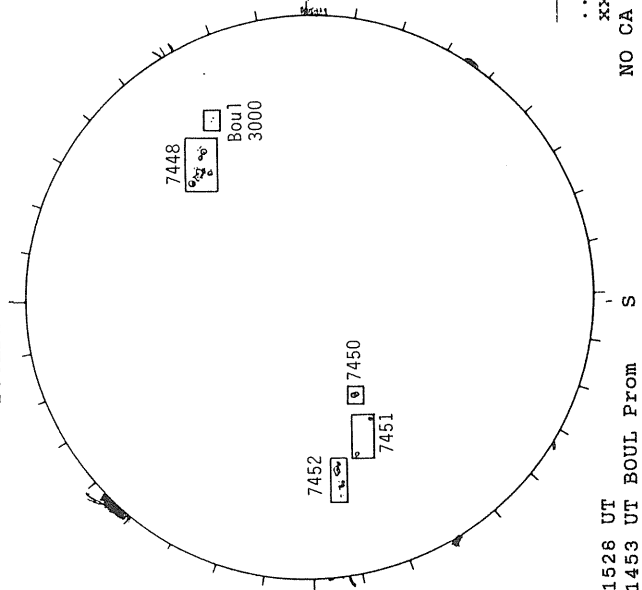
DeltaY = 13.1
DeltaX = 9.6



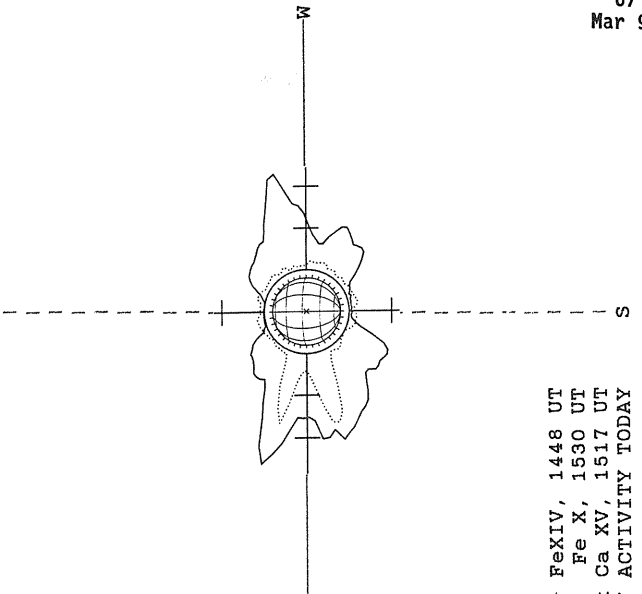
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)



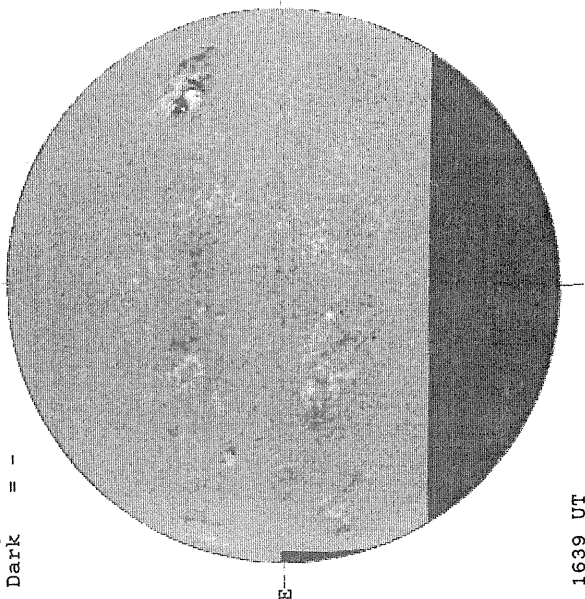
— FeXIV, 1448 UT
.... Fe X, 1530 UT
xxxx Ca XV, 1517 UT
NO CA XV ACTIVITY TODAY

68
Mar 93

MARCH 20, 1993 (P=-25.16, B₀ = -7.03, L₀ = 316.88)

KITT PEAK MAGNETOGRAM
5507A

Bright = +
Dark = -



1639 UT

STANFORD MAGNETOGRAM

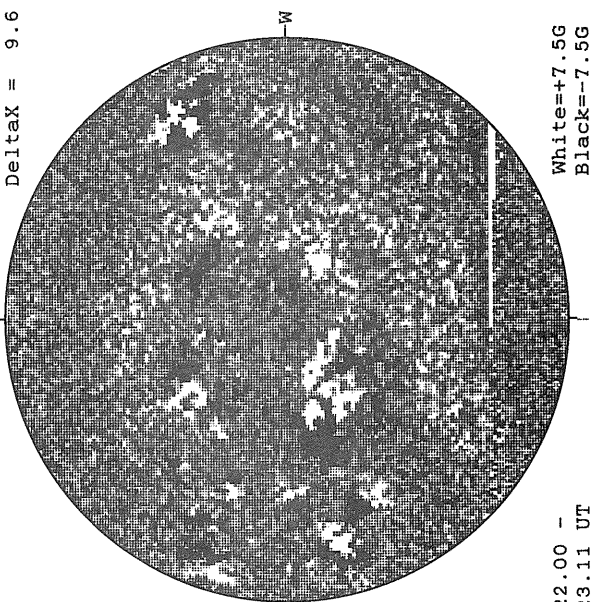
Solid = +
Dashed = -



2025 UT

MT. WILSON MAGNETOGRAM

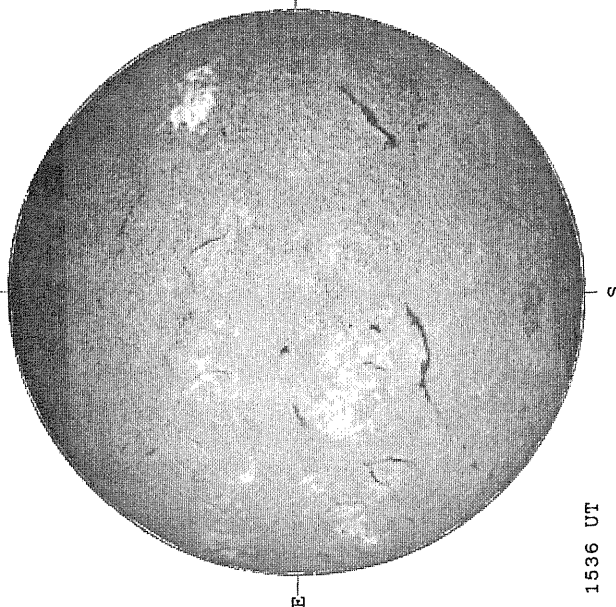
Delta Y = 13.1
Delta X = 9.6



22.00 -
23.11 UT

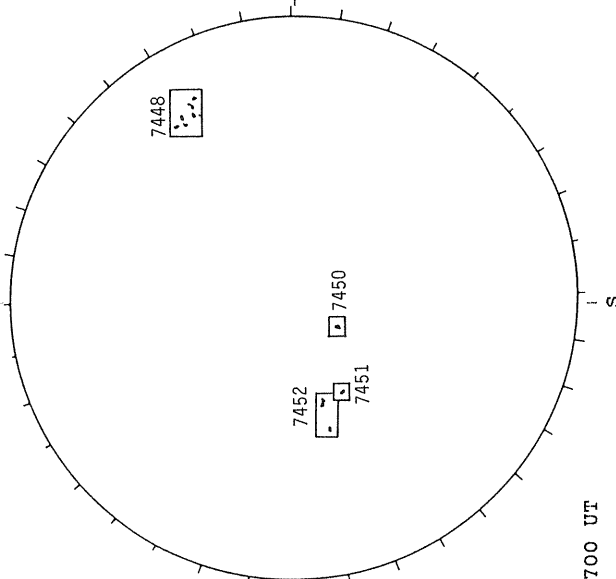
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



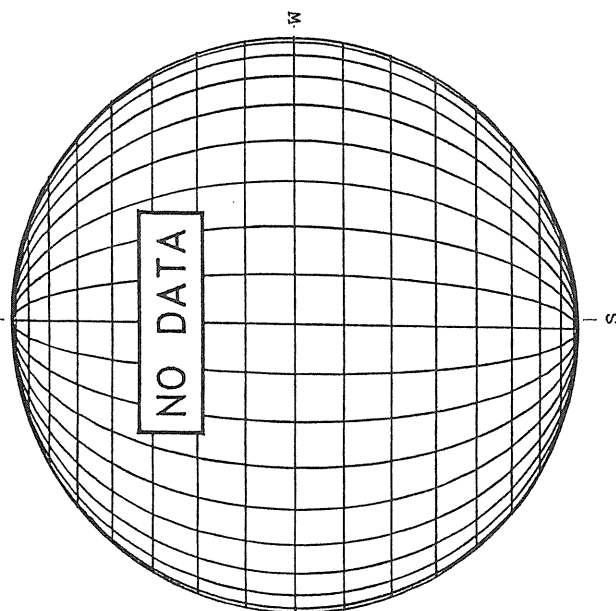
1536 UT

BOULDER SUNSPOT



1700 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

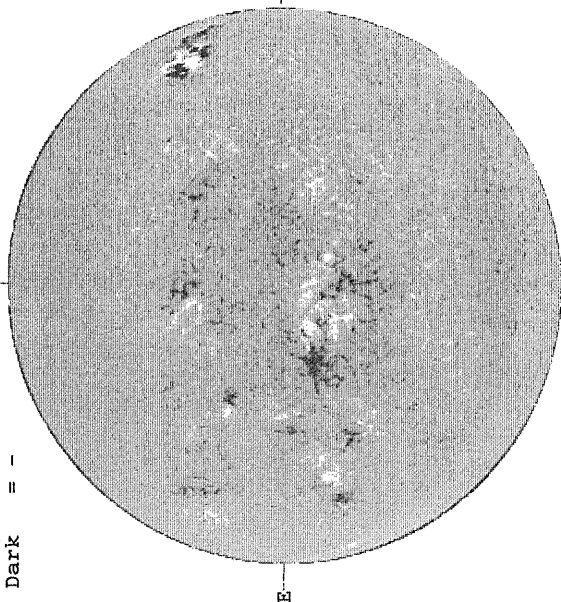


NO DATA

MARCH 21, 1993 (P=-25.28, B₀ = -7.00 L₀ = 303.69)

KITT PEAK MAGNETOGRAM
N

Bright = +
Dark = -



1439 UT

STANFORD MAGNETOGRAM
N

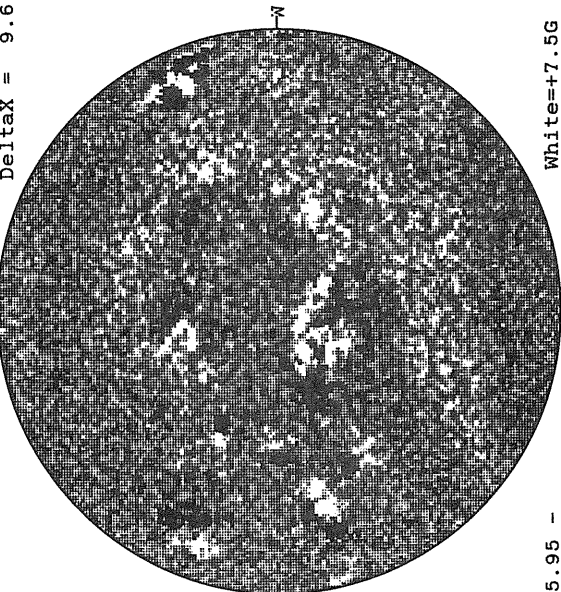
Solid = +
Dashed = -



1901 UT

MT. WILSON MAGNETOGRAM
N

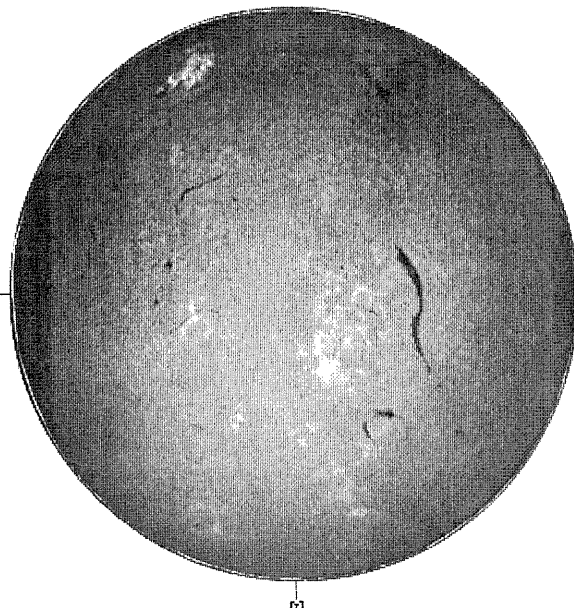
DeltaY = 13.1
DeltaX = 9.6



15.95 -
16.90 UT

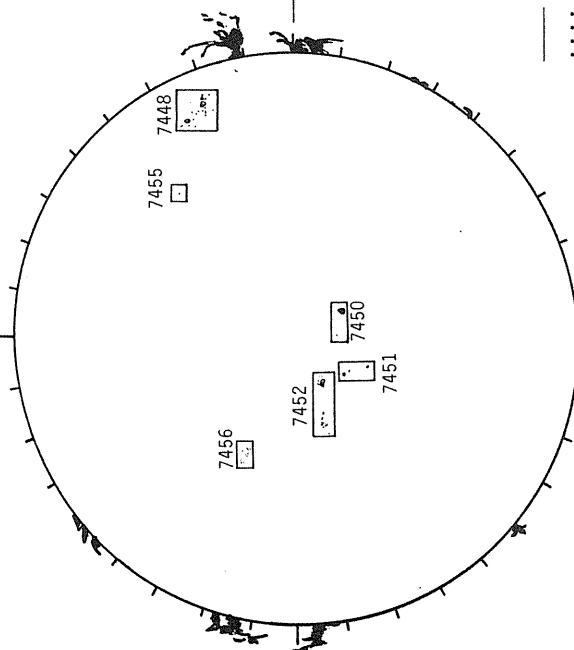
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



1549 UT

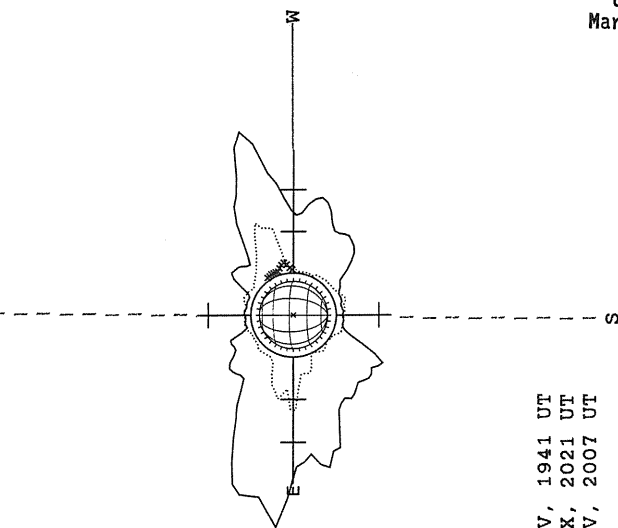
BOULDER SUNSPOT



1510 UT

0947 UT LOMNICKY Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



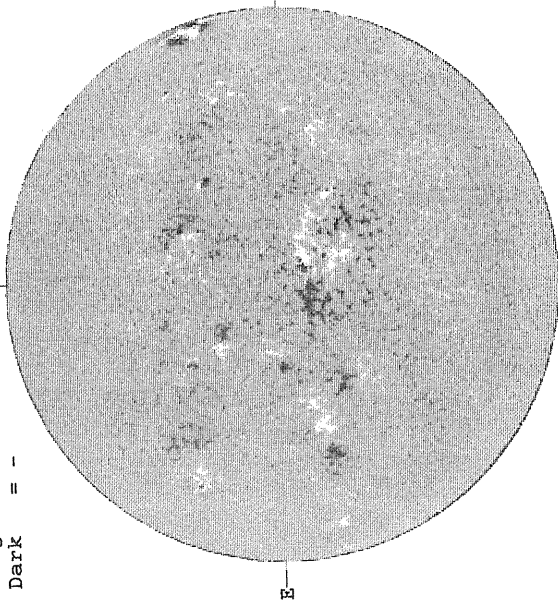
— Fe XIV, 1941 UT
... Fe X, 2021 UT
xxxx Ca XV, 2007 UT

70
Mar 93

MARCH 22, 1993 (P=-25.40, B₀ = -6.96, L₀ = 290.51)

KITT PEAK MAGNETOGRAM
5507A

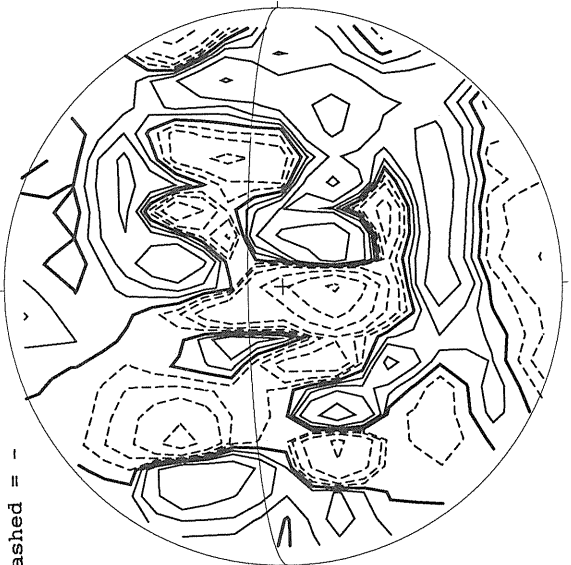
Bright = +
Dark = -



1551 UT

STANFORD MAGNETOGRAM

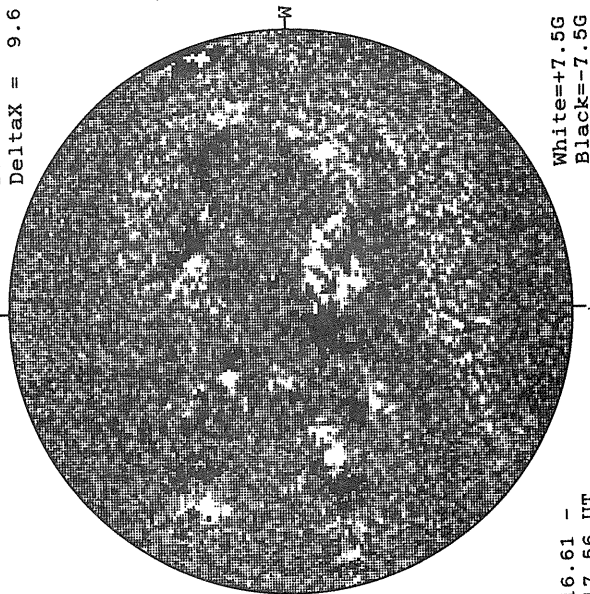
Solid = +
Dashed = -



2021 UT

MT. WILSON MAGNETOGRAM

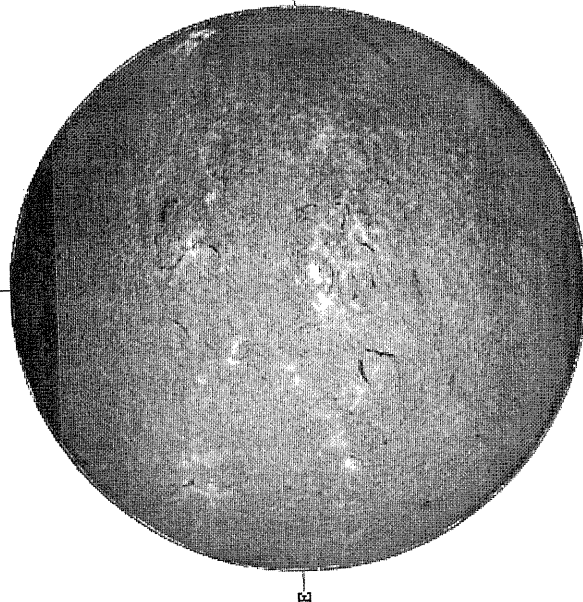
DeltaY = 13.1
DeltaX = 9.6



16.61 -
17.56 UT

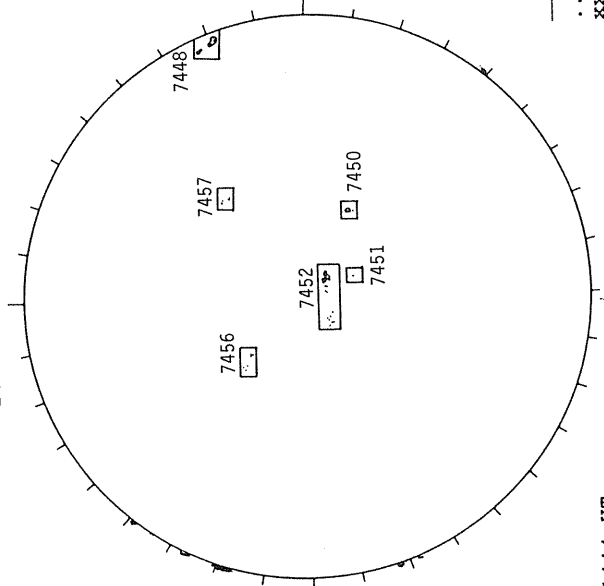
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



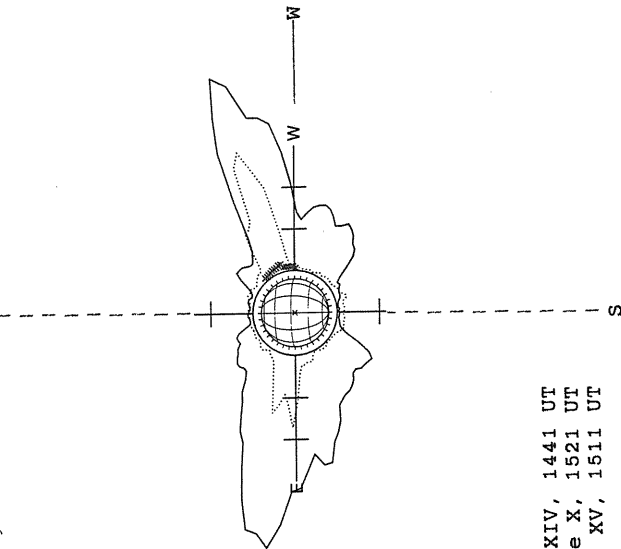
1530 UT

BOULDER SUNSPOT



1444 UT BOUL FROM
1453 UT BOUL FROM

SACRAMENTO PEAK CORONA (1.15 Radii)

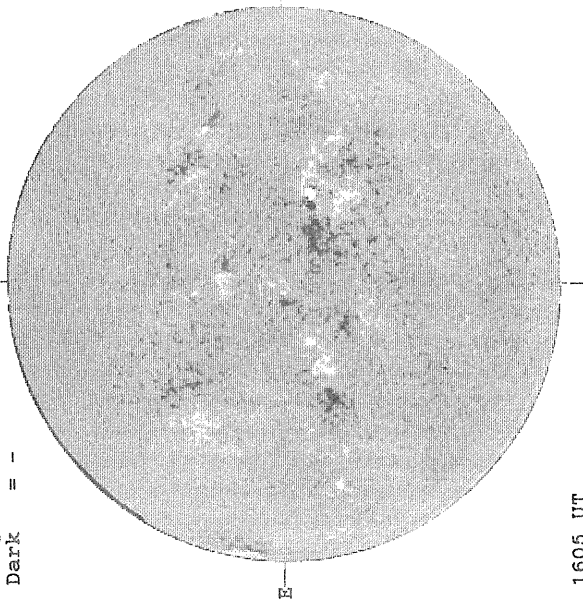


— FeXIV, 1441 UT
.... Fe X, 1521 UT
xxxxx Ca XV, 1511 UT

MARCH 23, 1993 (P=-25.51, B_O =-6.93, L_O = 277.32)

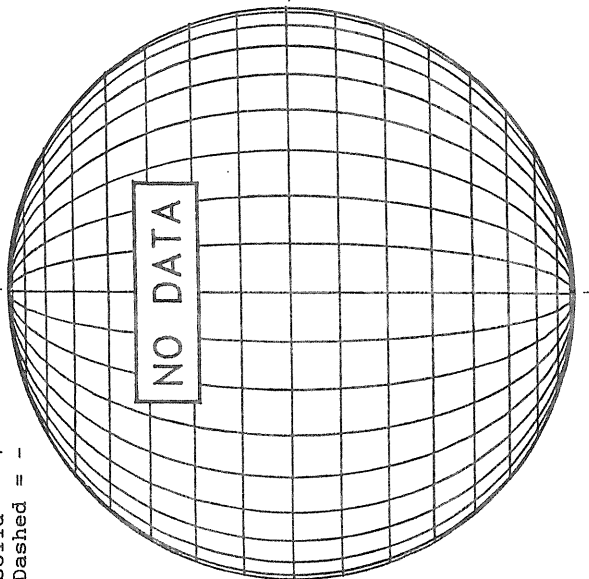
KITT PEAK MAGNETOGRAM
5507A

Bright = +
Dark = -



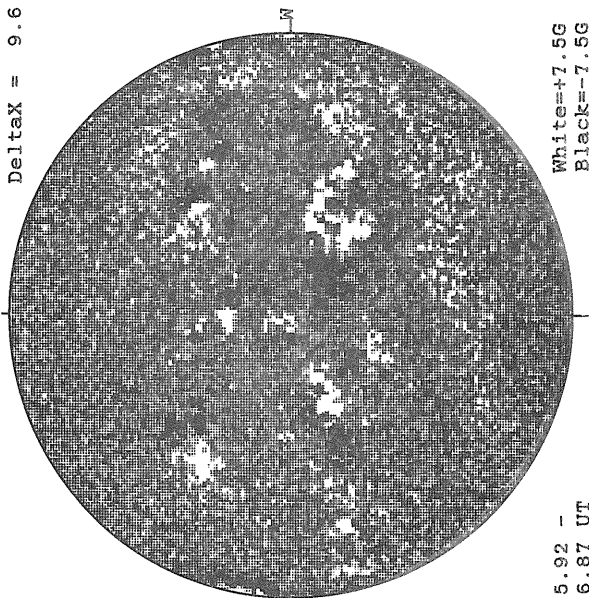
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



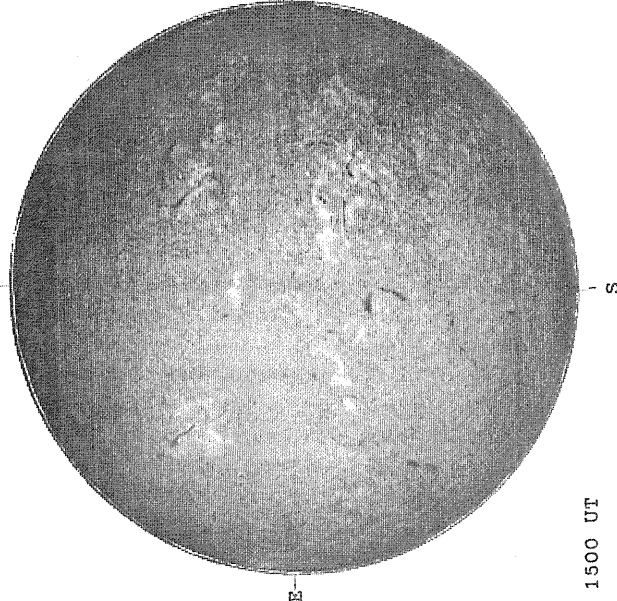
MT. WILSON MAGNETOGRAM

DeltaY = 13.1
DeltaX = 9.6

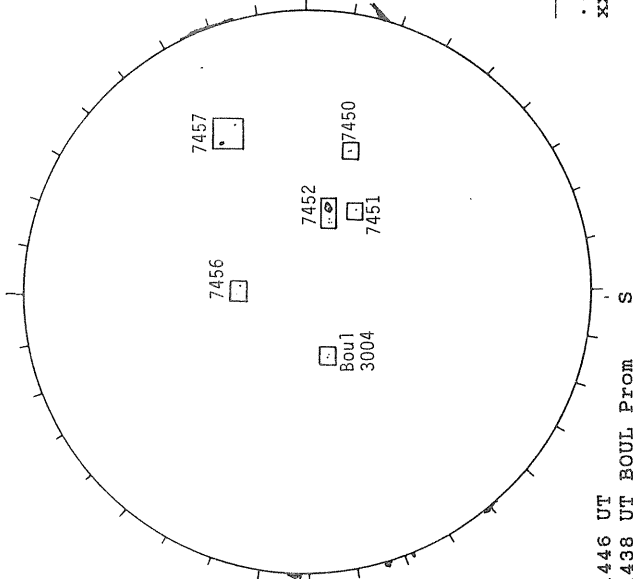


White=+7.5G
Black=-7.5G

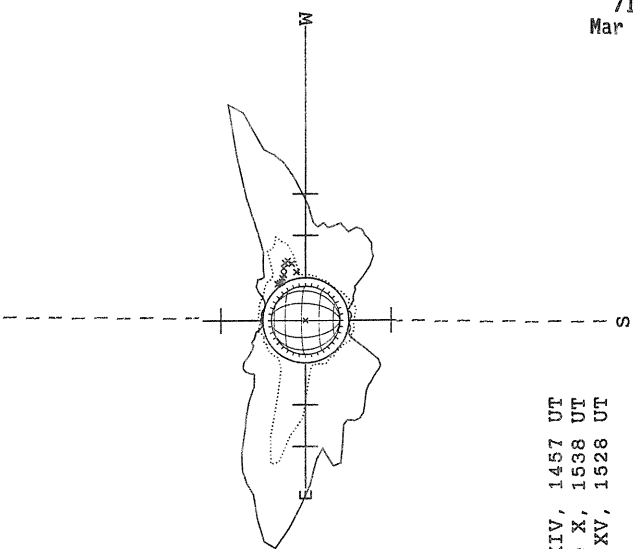
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)

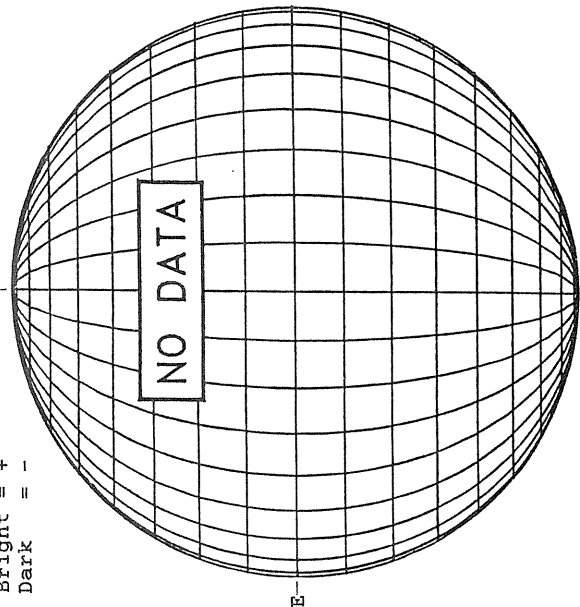


— Fe XIV, 1457 UT
.... Fe X, 1538 UT
xxxx Ca XV, 1528 UT

MARCH 24, 1993 (P=-25.61 B₀ = -6.89, L₀ = 264.14)

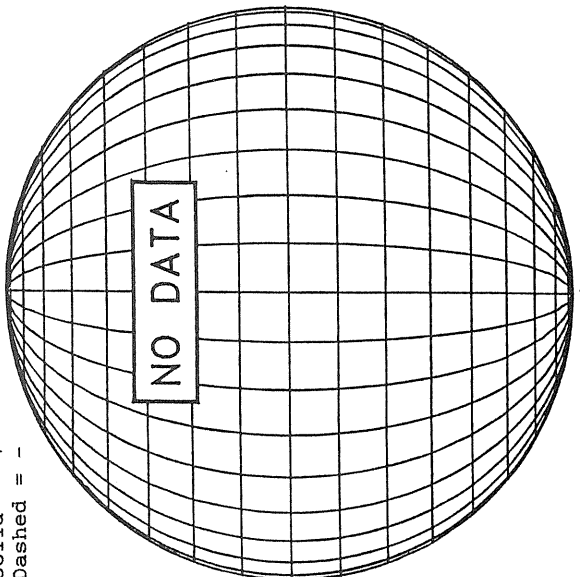
KITT PEAK MAGNETOGRAM
5507A

Bright = +
Dark = -



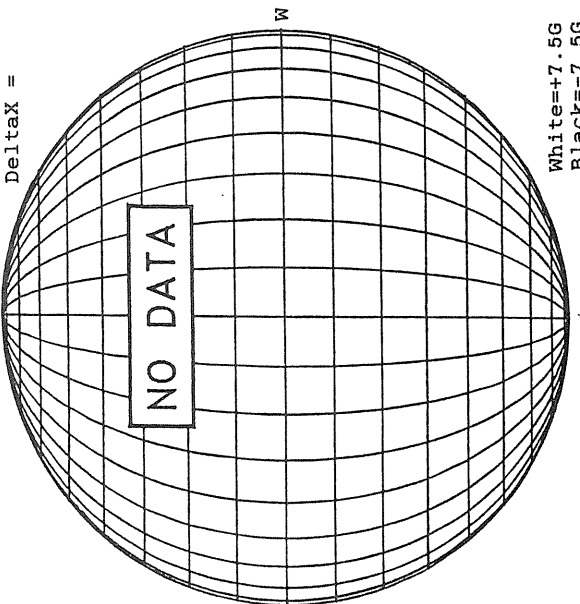
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



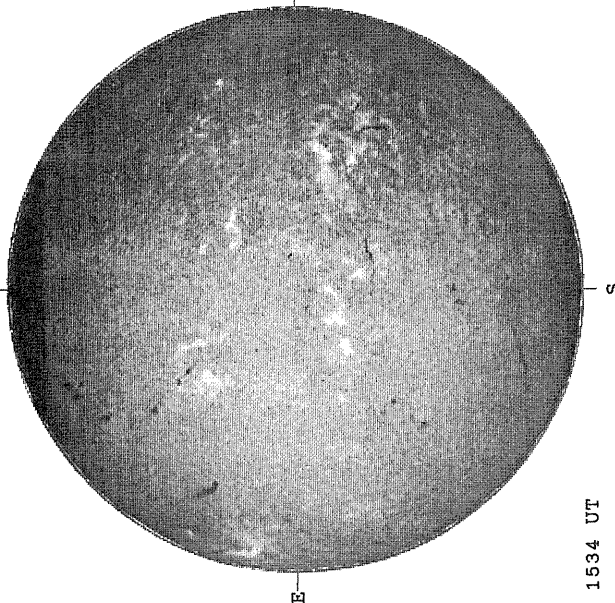
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



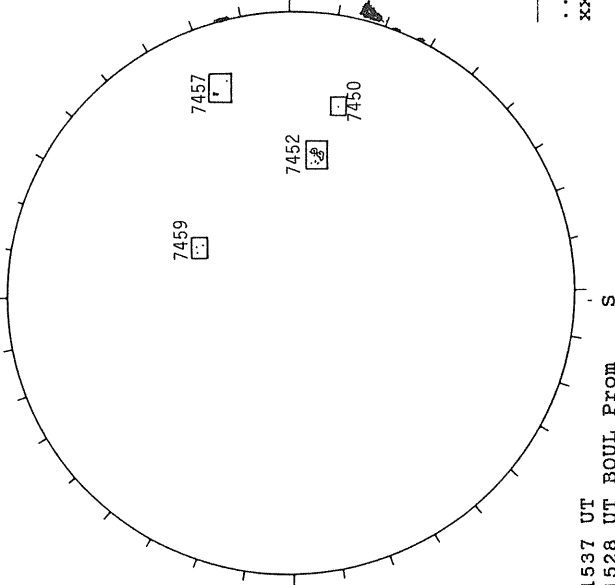
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



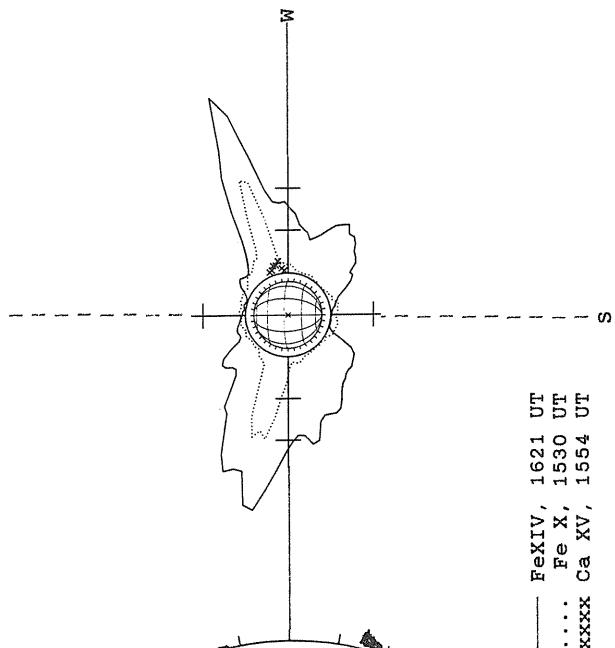
1534 UT

BOULDER SUNSPOT



1537 UT
1528 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

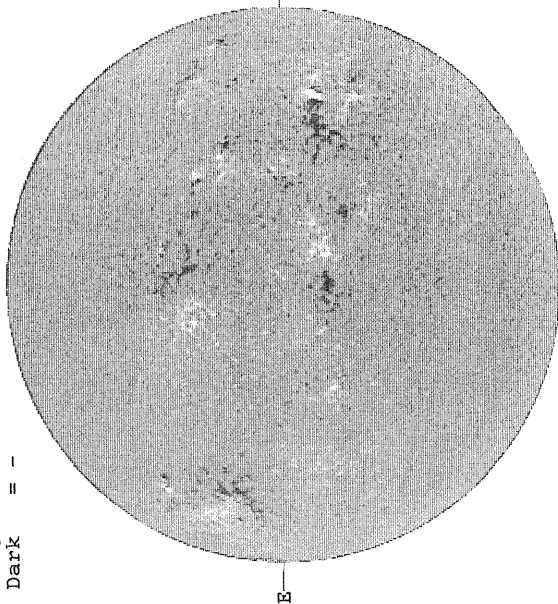


— Fe XIV, 1621 UT
.... Fe X, 1530 UT
xxxx Ca XV, 1554 UT

MARCH 25, 1993 (P=-25.71 B₀ =-6.85, L₀ = 250.95)

KITT PEAK MAGNETOGRAM
N **5507A**

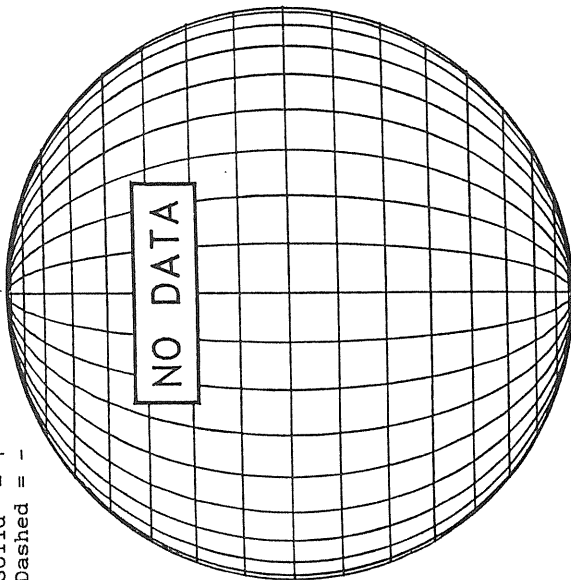
Bright = +
Dark = -



1445 UT

STANFORD MAGNETOGRAM

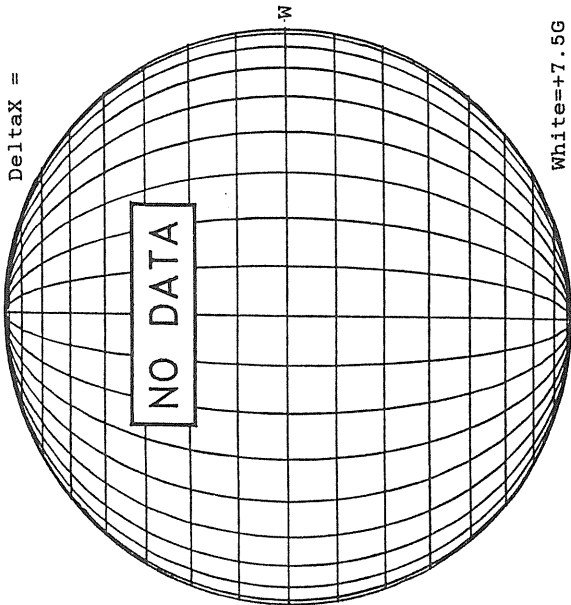
Solid = +
Dashed = -



NO DATA

MT. WILSON MAGNETOGRAM

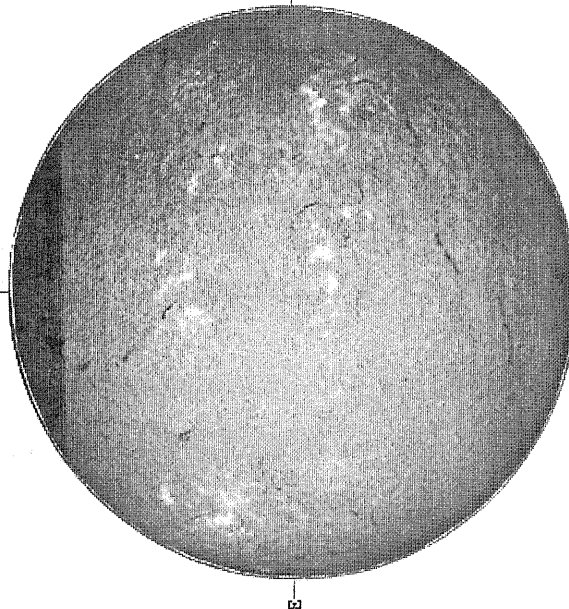
DeltaY =
DeltaX =



NO DATA

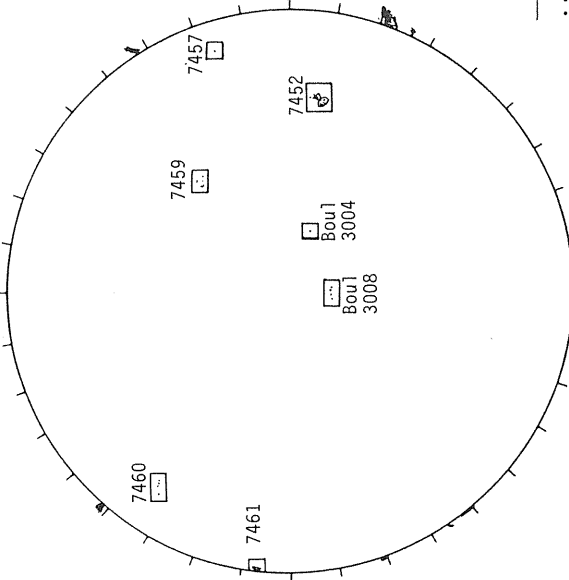
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



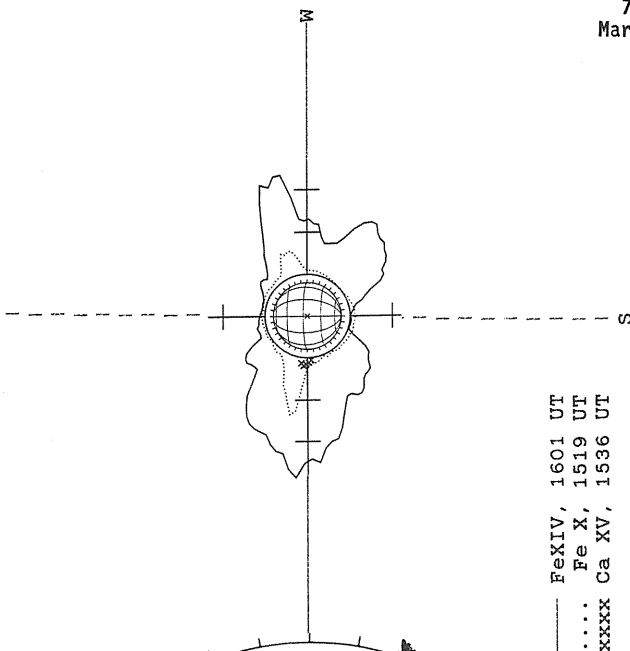
1529 UT

BOULDER SUNSPOT



1534 UT
1456 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

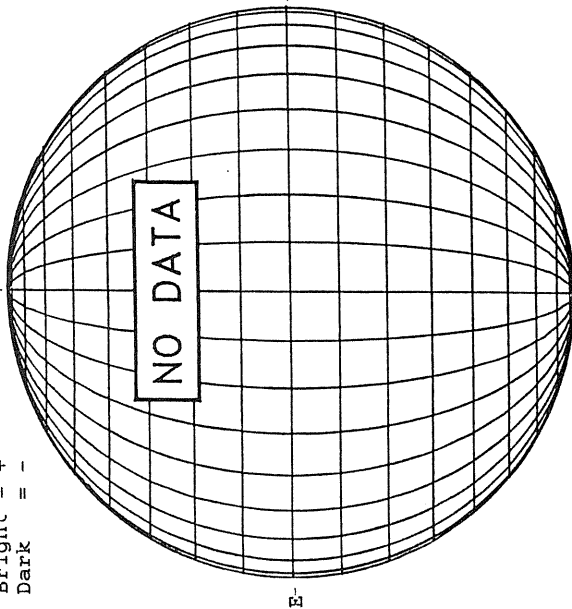


Fe XIV, 1601 UT
Fe X, 1519 UT
xxxx Ca XV, 1536 UT

MARCH 26, 1993 (P=-25.79, B₀ =-6.81, L₀ = 237.76)

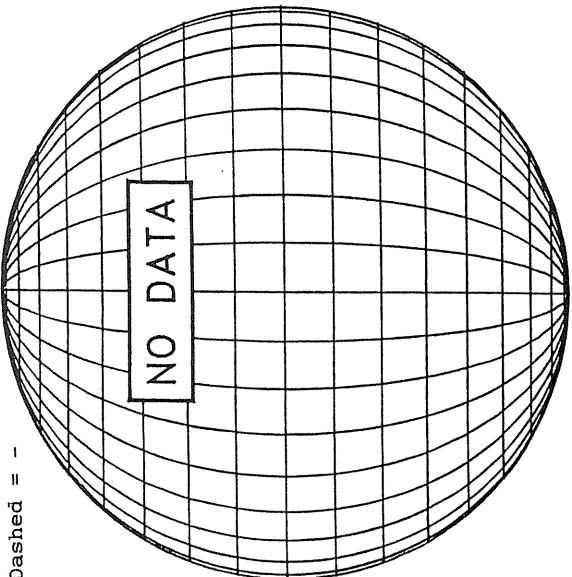
KITT PEAK MAGNETOGRAM
5507A

Bright = +
Dark = -



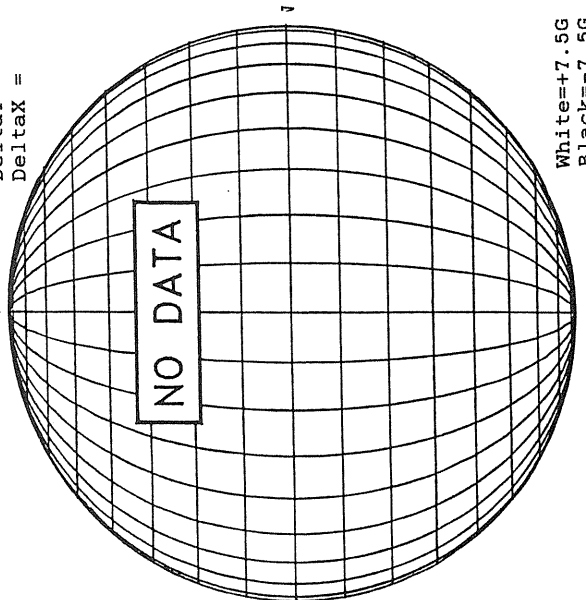
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



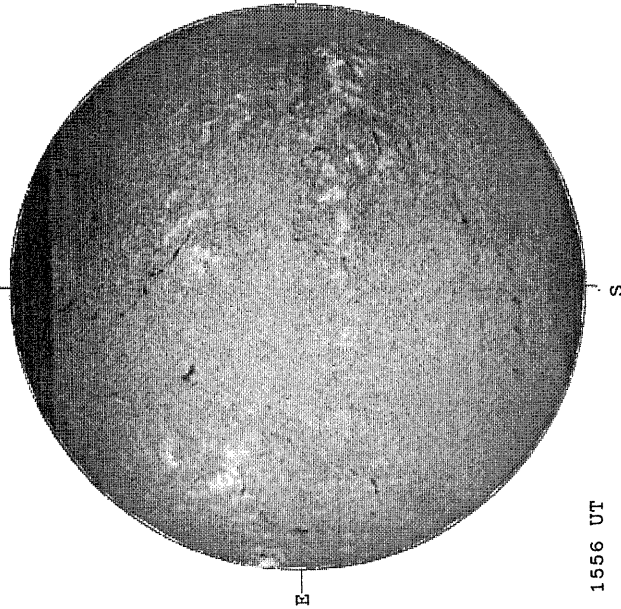
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



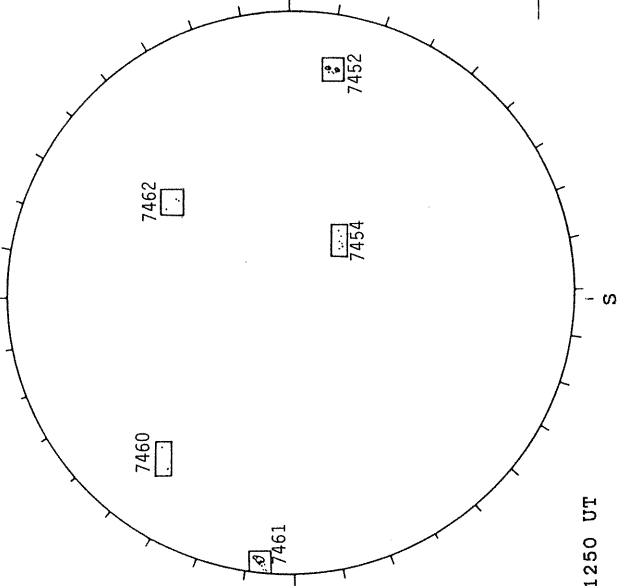
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



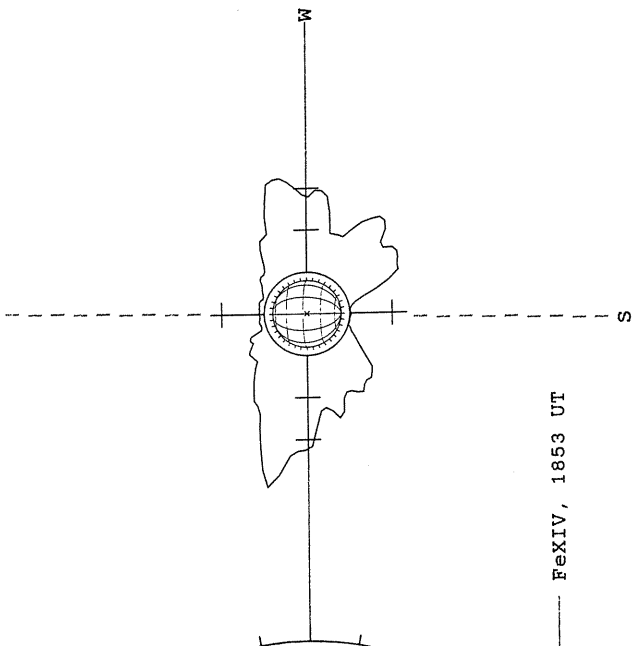
1556 UT

RAMEY SUNSPOT



1250 UT

SACRAMENTO PEAK CORONA (1.15 Radli)



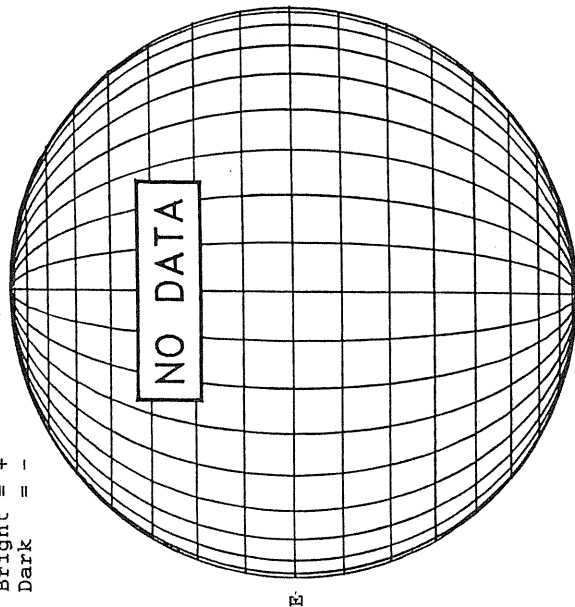
FeXIV, 1853 UT

MARCH 27, 1993 (P=-25.87, B₀ =-6.77, L₀ = 224.58)

KITT PEAK MAGNETOGRAM

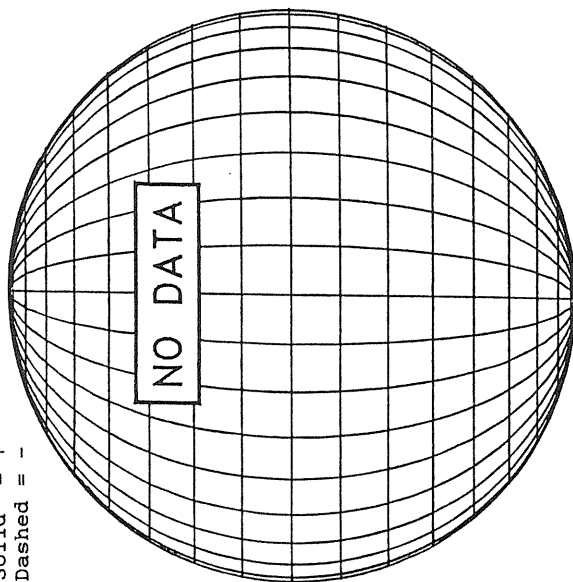
5507A

Bright = +
Dark = -



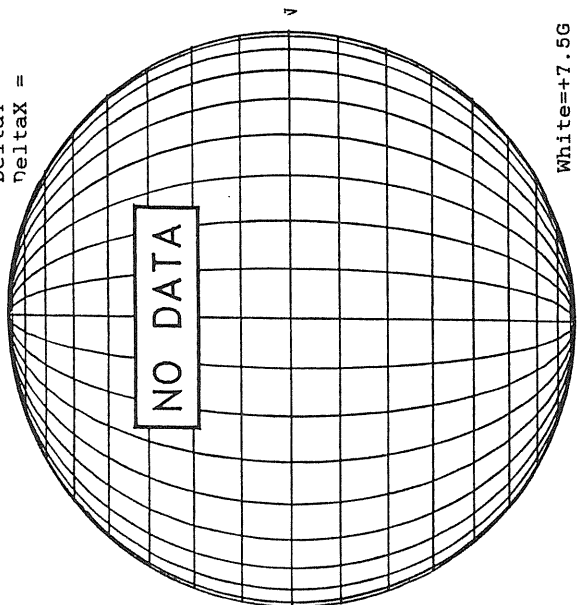
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



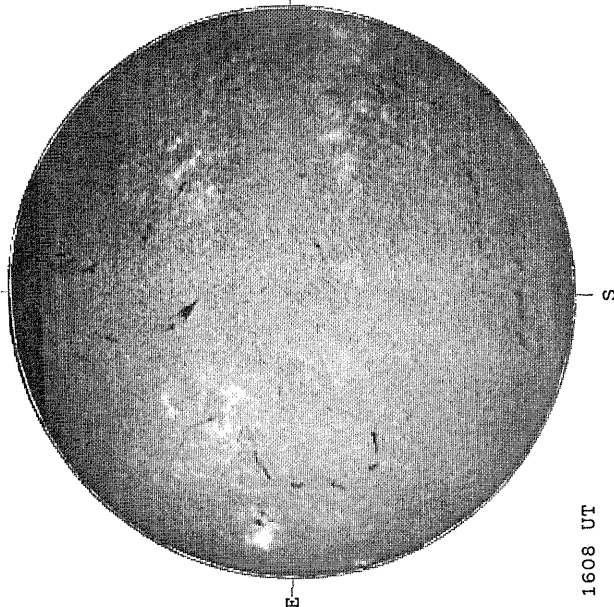
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



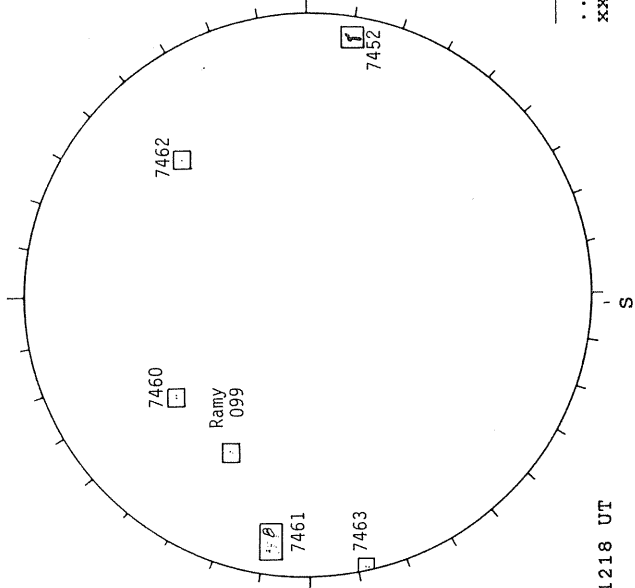
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



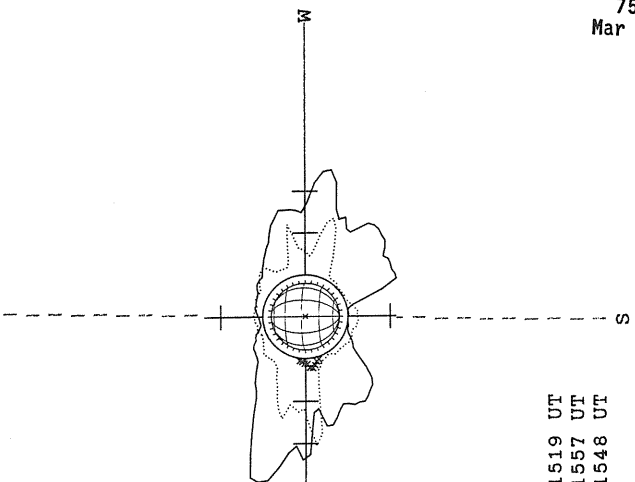
1608 UT

RAMEY SUNSPOT



1218 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

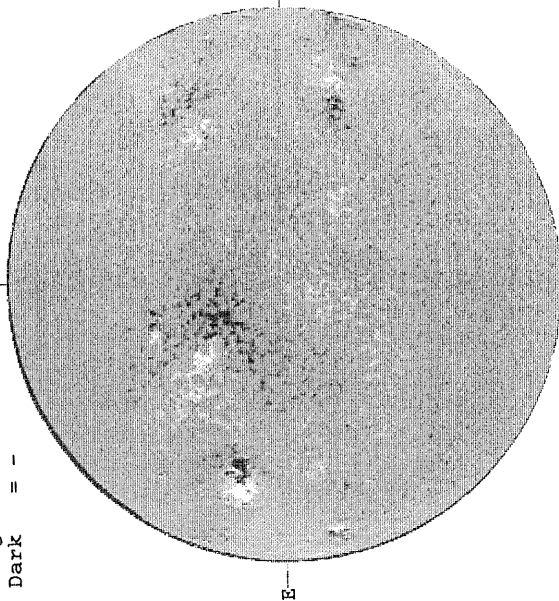


— FeXIV, 1519 UT
.... Fe X, 1557 UT
xxxx Ca XV, 1548 UT

MARCH 28, 1993 (P=-25.95 B₀ =-6.72, L₀ = 211.39)

KITT PEAK MAGNETOGRAM
5507A

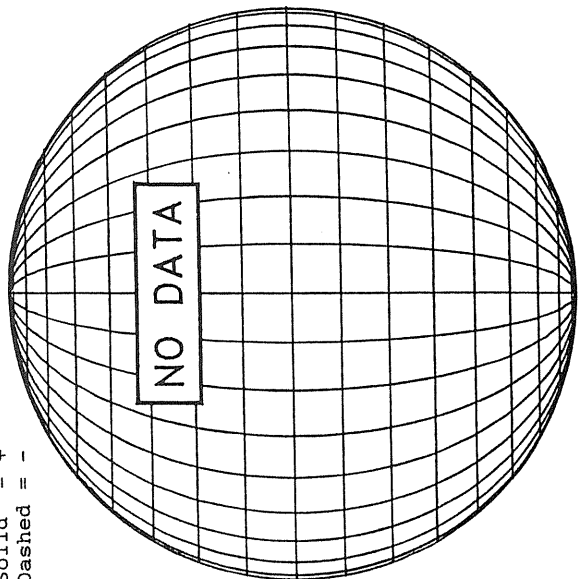
Bright = +
Dark = -



1456 UT

STANFORD MAGNETOGRAM

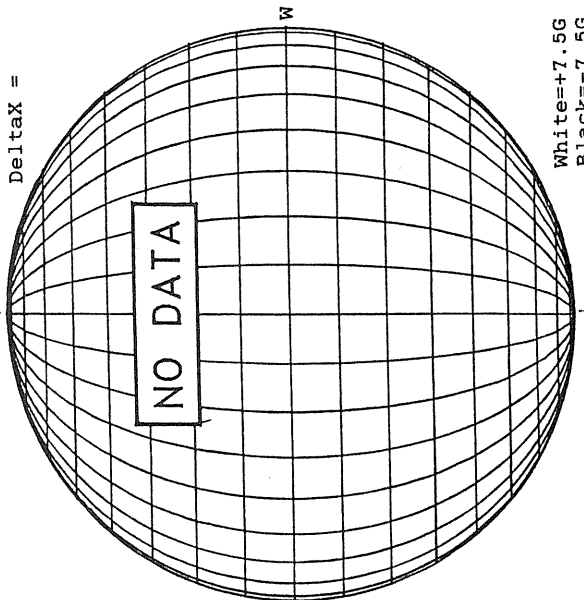
Solid = +
Dashed = -



NO DATA

MT. WILSON MAGNETOGRAM

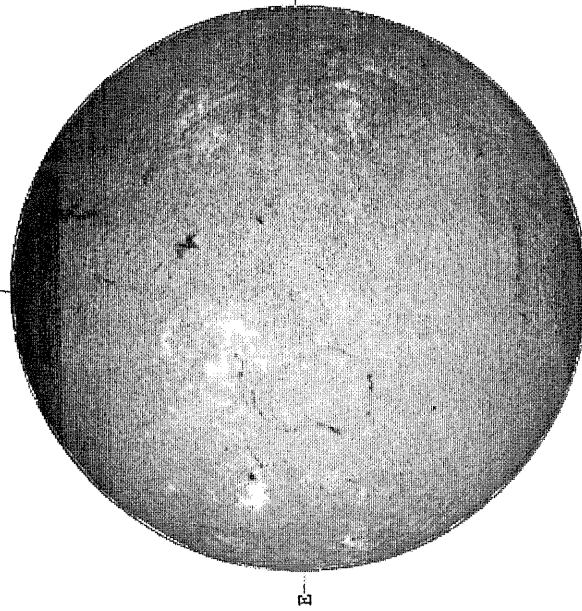
Delta Y =
Delta X =



NO DATA

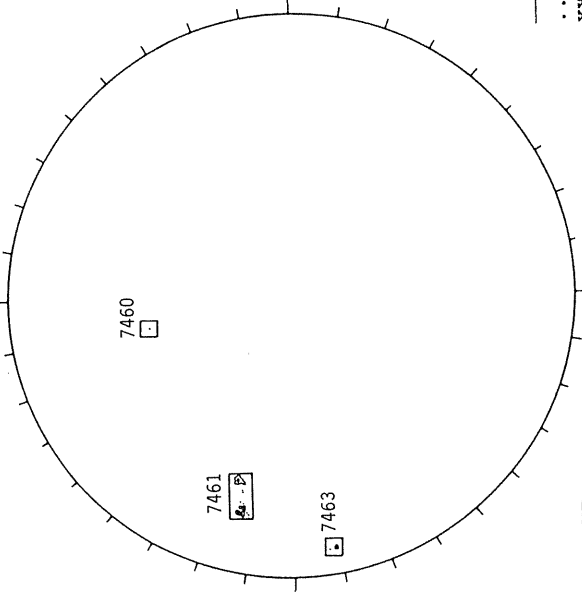
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



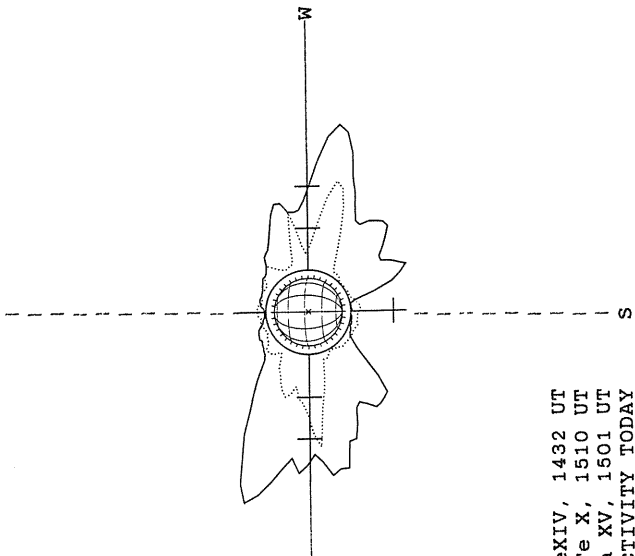
1552 UT

BOULDER SUNSPOT



1545 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

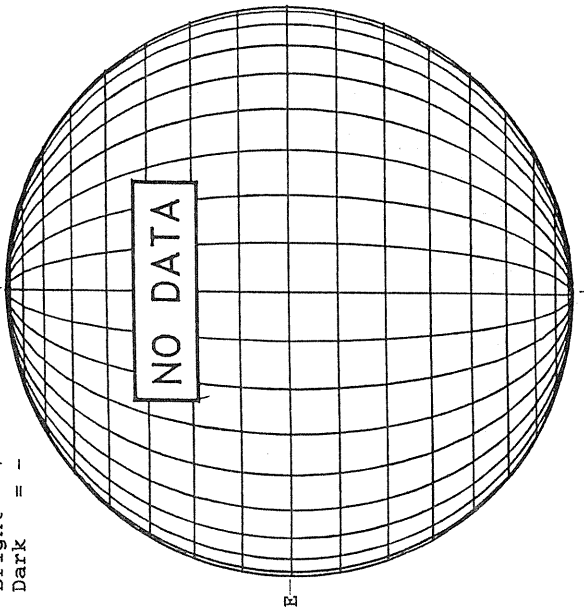


— FeXIV, 1432 UT
.... Fe X, 1510 UT
xxxxx Ca XV, 1501 UT
NO CA XV ACTIVITY TODAY

MARCH 29, 1993 (P=-26.01, B₀ =-6.68, L₀ = 198.20)

KITT PEAK MAGNETOGRAM
5507A

Bright = +
Dark = -



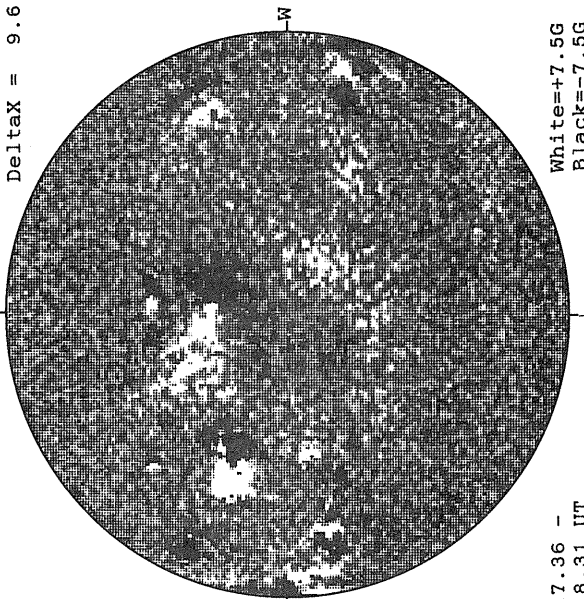
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

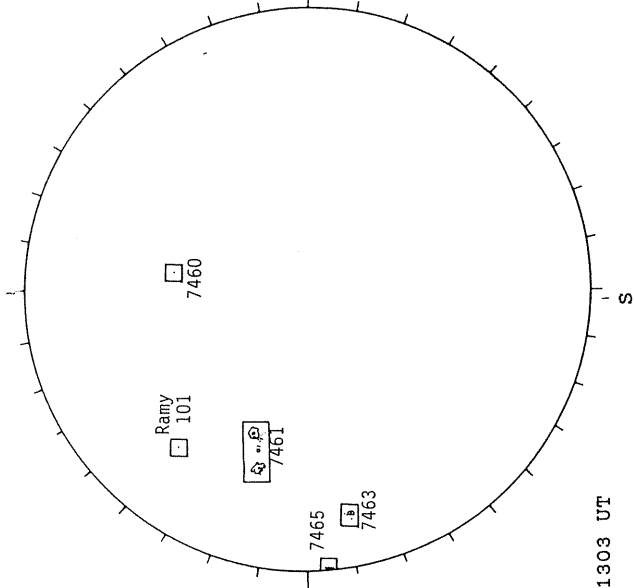
DeltaY = 13.0
DeltaX = 9.6



17.36 -
18.31 UT

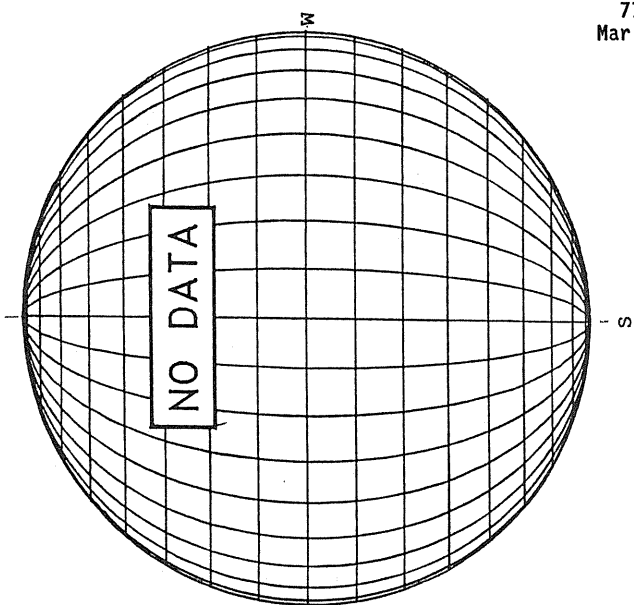
White=+7.5G
Black=-7.5G

RAMEY SUNSPOT



1303 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

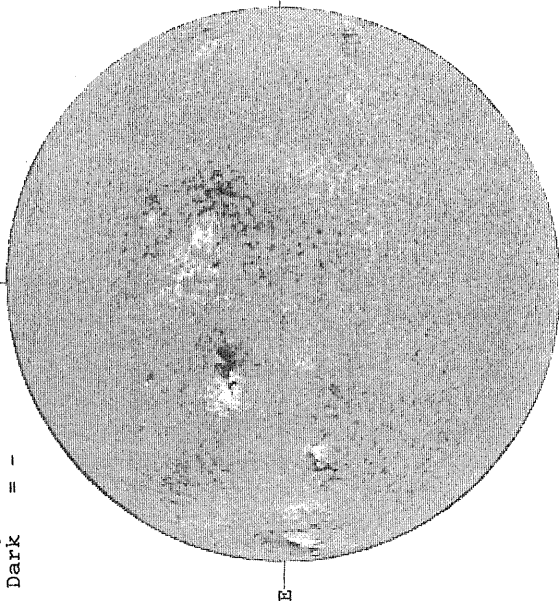


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Mar 93

MARCH 30, 1993 (P=-26.07, B₀ =-6.63, L₀ = 185.01)

KITT PEAK MAGNETOGRAM
N
5507A

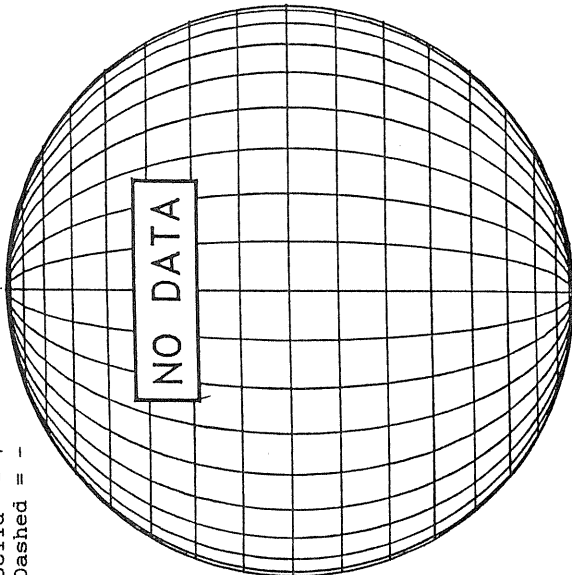
Bright = +
Dark = -



1444 UT

STANFORD MAGNETOGRAM
N

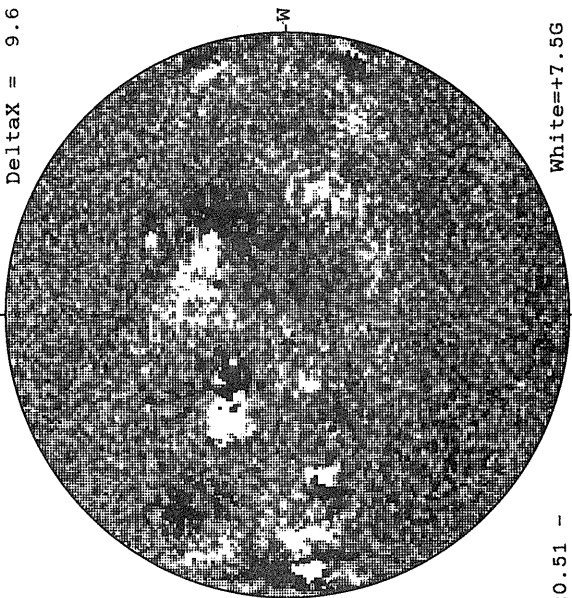
Solid = +
Dashed = -



20.51 -
21.45 UT

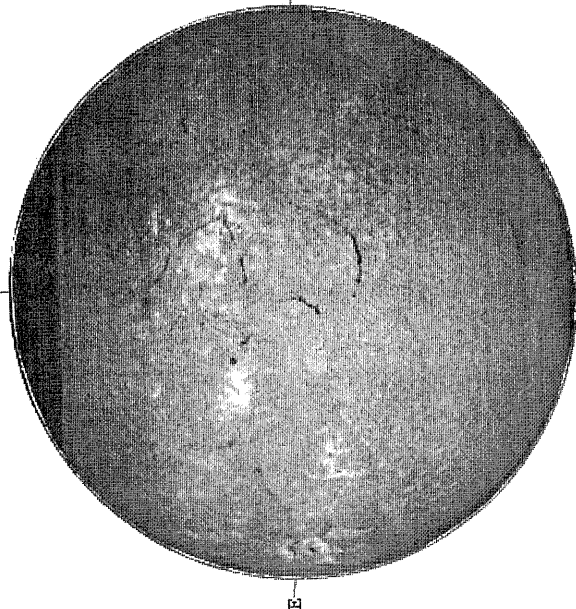
MT. WILSON MAGNETOGRAM
N

DeltaY = 13.0
DeltaX = 9.6



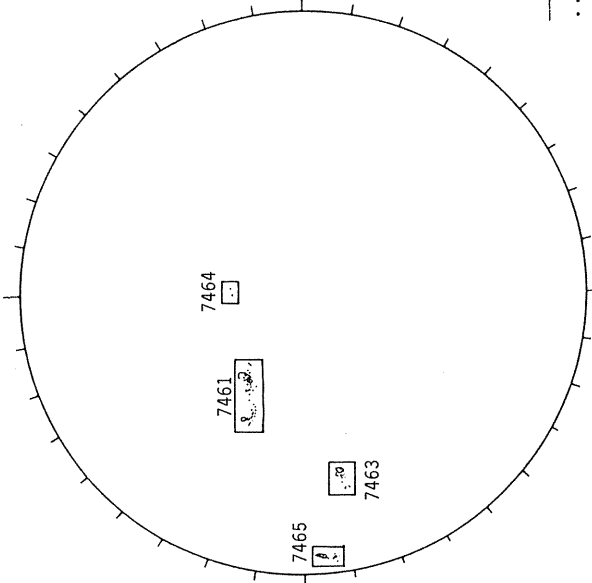
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



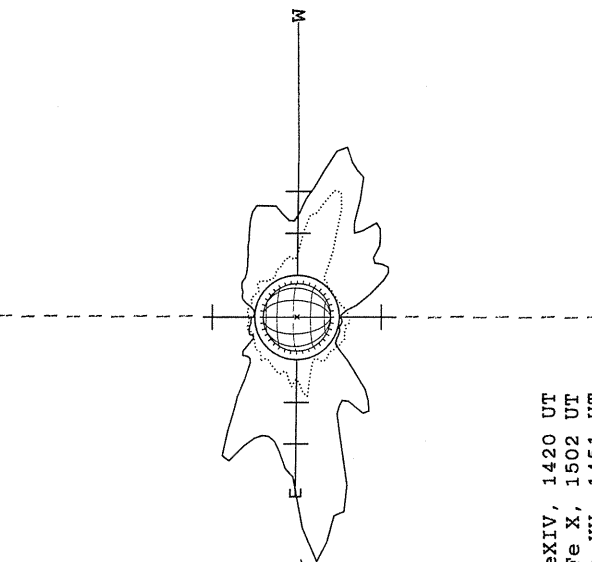
1639 UT

RAMEY SUNSPOT



1205 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

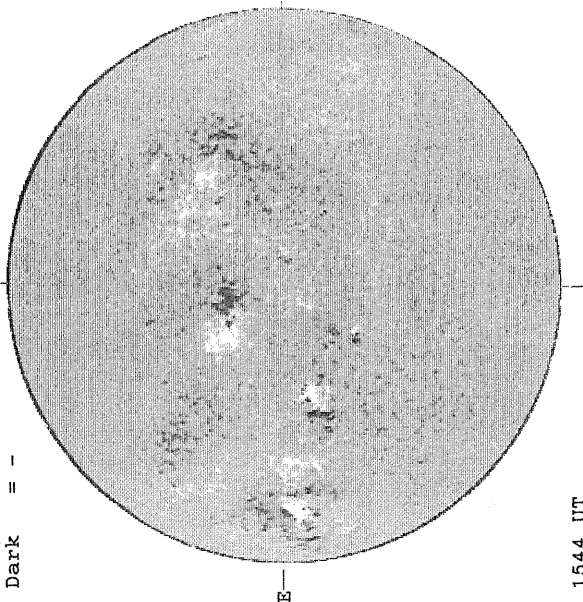


— Fe XIV, 1420 UT
.... Fe X, 1502 UT
xxxxx Ca XV, 1451 UT
NO CA XV ACTIVITY TODAY

MARCH 31, 1993 (P=-26.13, B₀ = -6.58 L₀ = 171.81)

KITT PEAK MAGNETOGRAM
5507A

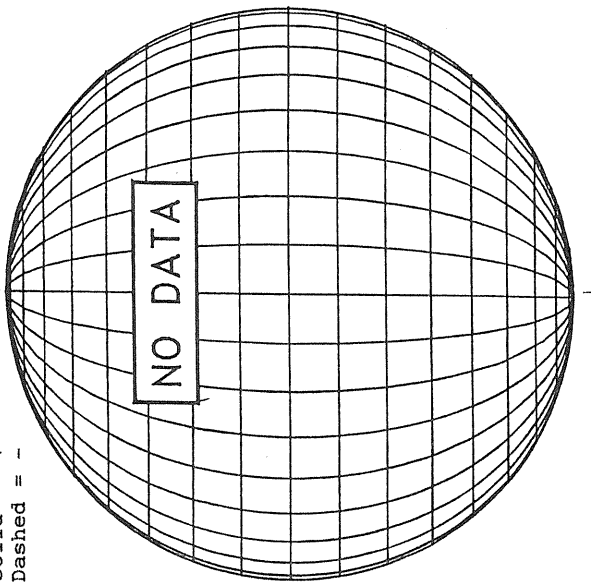
Bright = +
Dark = -



1544 UT

STANFORD MAGNETOGRAM

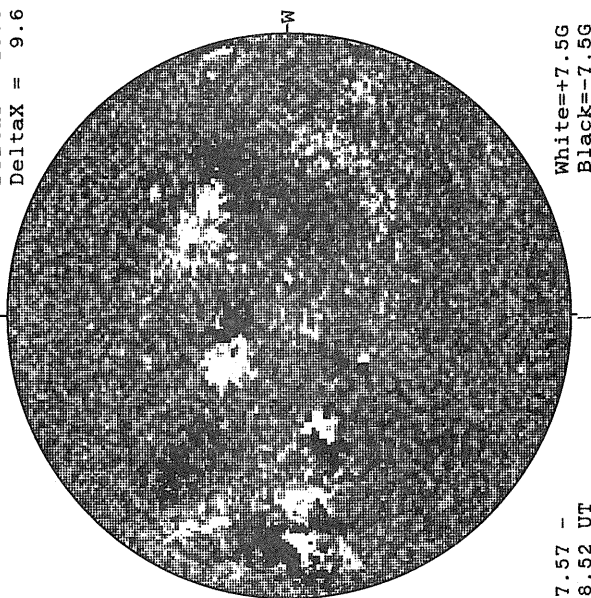
Solid = +
Dashed = -



17.57 -
18.52 UT

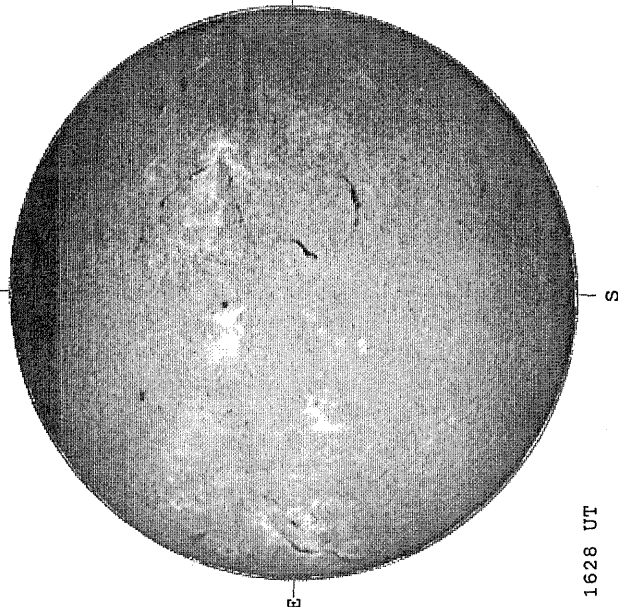
MT. WILSON MAGNETOGRAM

DeltaY = 13.0
DeltaX = 9.6



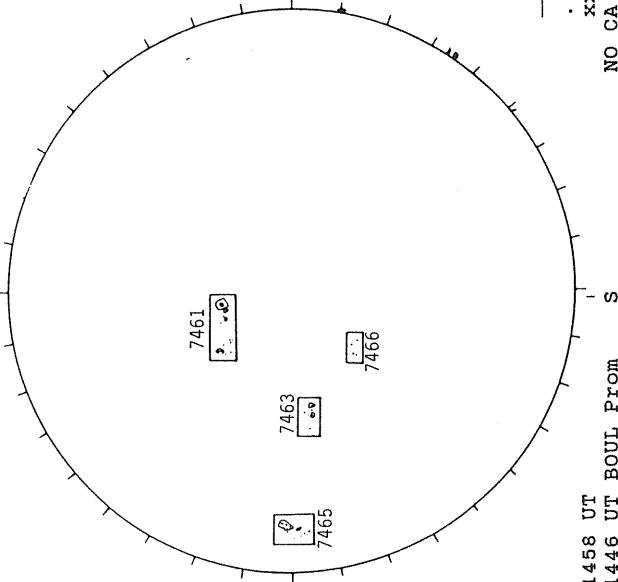
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



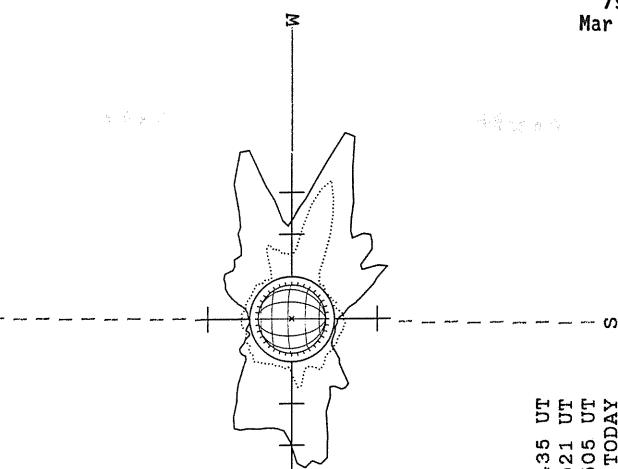
1628 UT

BOULDER SUNSPOT



1458 UT
1446 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

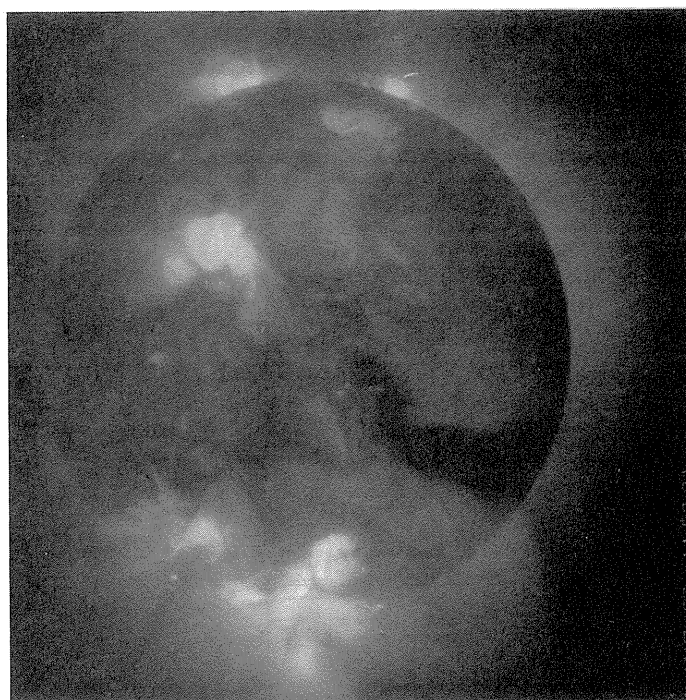
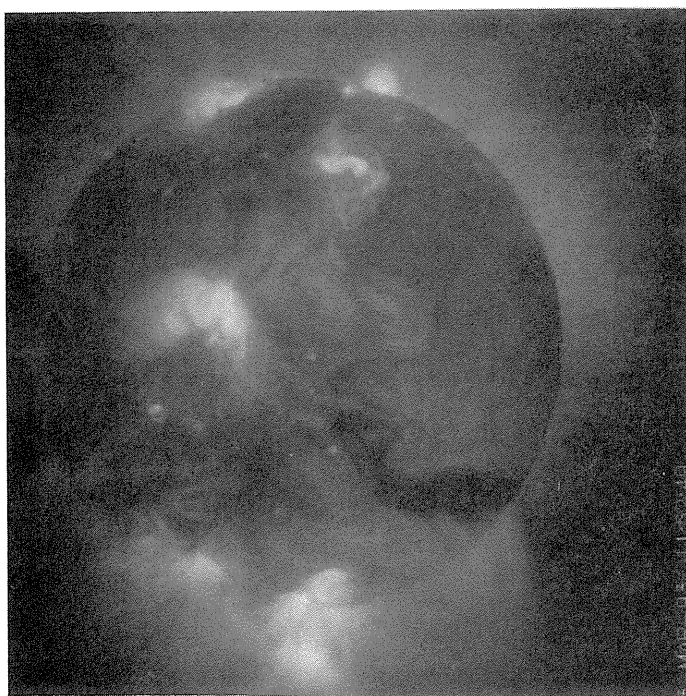
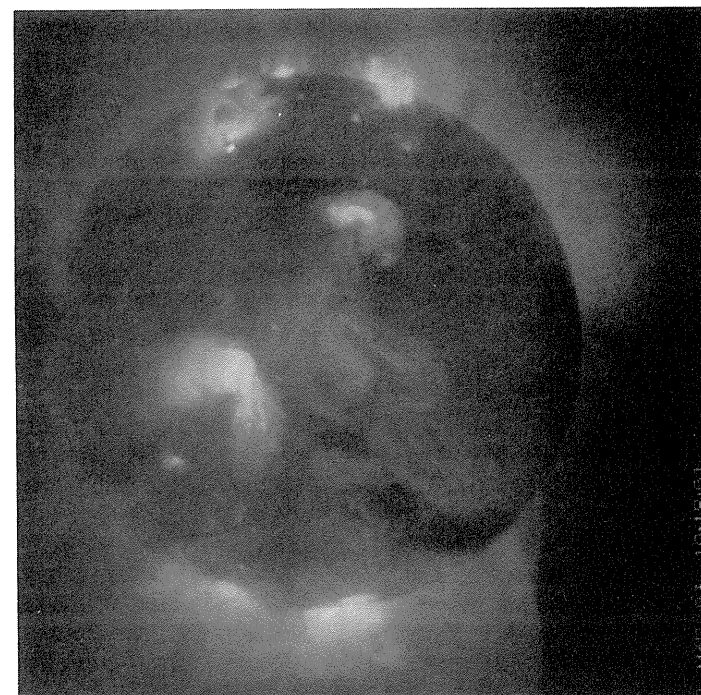
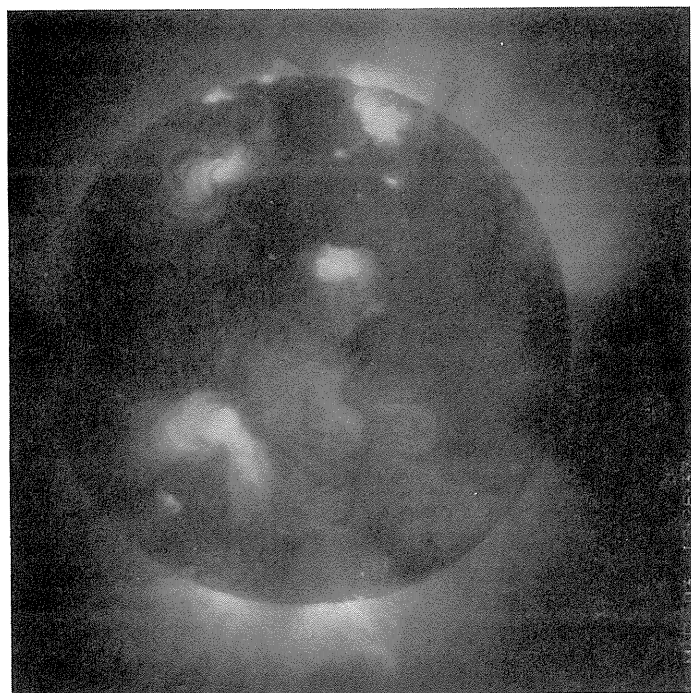


— FeXIV, 1435 UT
.... Fe X, 1521 UT
xxxx Ca XV, 1505 UT
NO CA XV ACTIVITY TODAY

**YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES**

**March
1993**

Day 1 Day 3
12:26:37 UT 11:52:49 UT



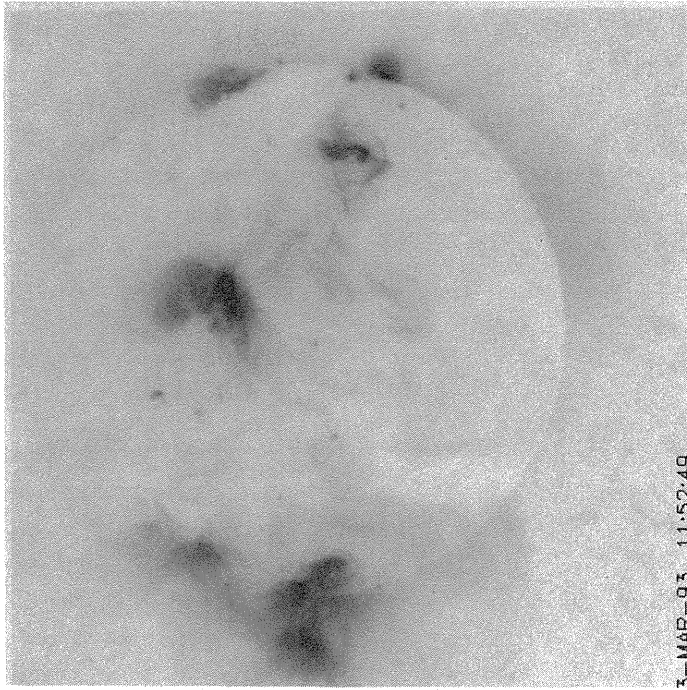
Day 2 Day 4
10:18:01 UT 11:50:21 UT

**YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES**

**March
1993**

Day 1 Day 3
12:26:37 UT 11:52:49 UT

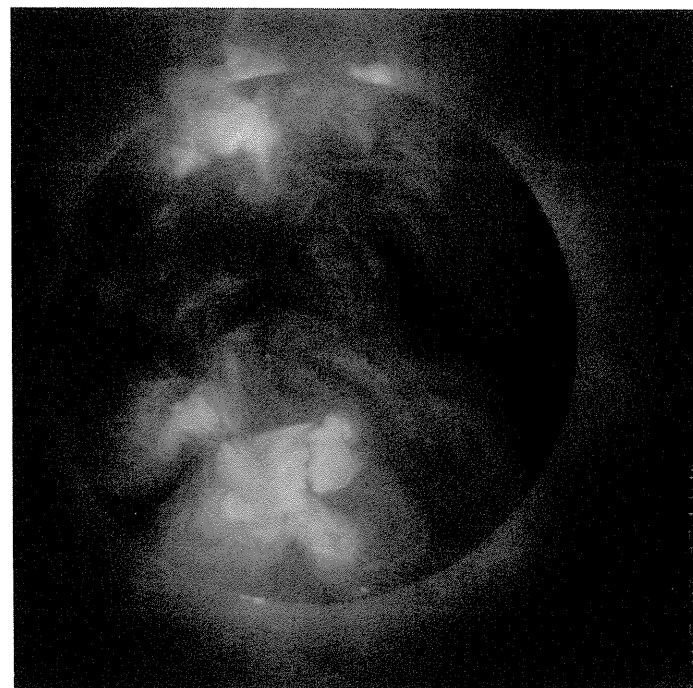
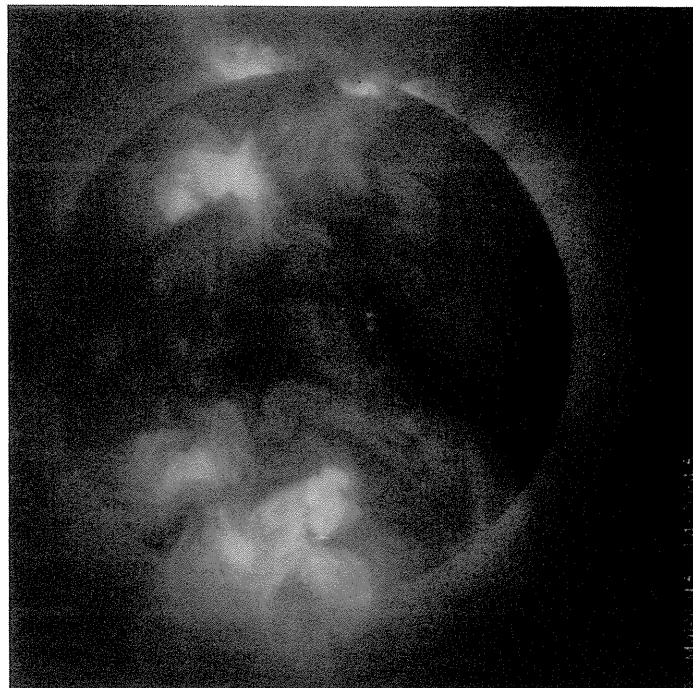
Day 2 Day 4
10:18:01 UT 11:50:21 UT



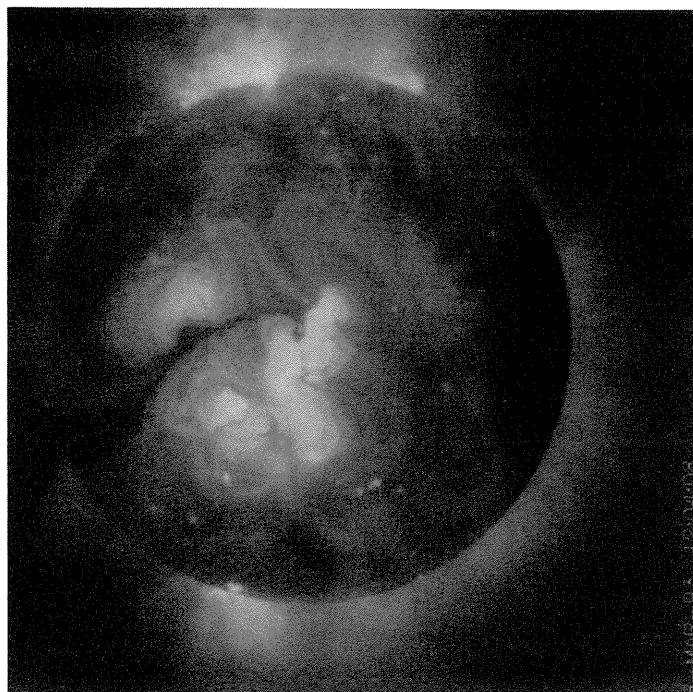
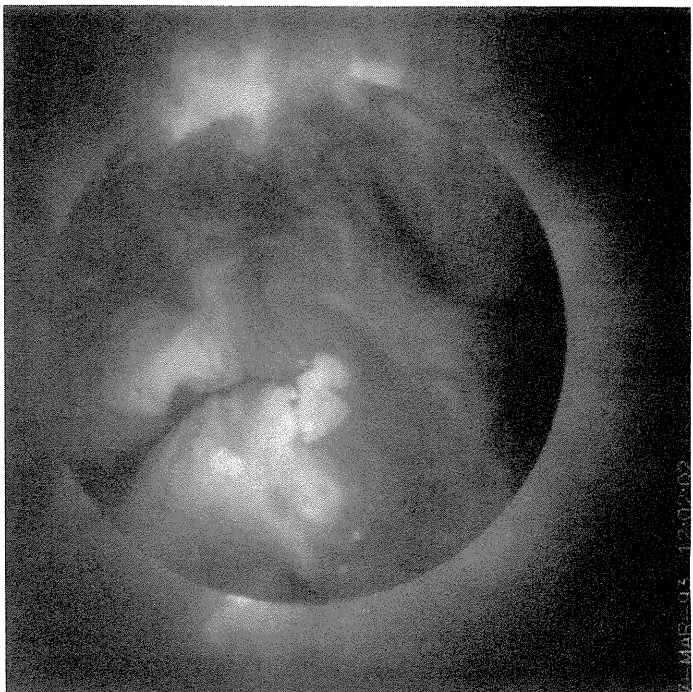
YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

March
1993

Day 5 Day 7
14:20:43 UT 12:02:02 UT



Day 6 Day 8
13:14:45 UT 12:04:08 UT



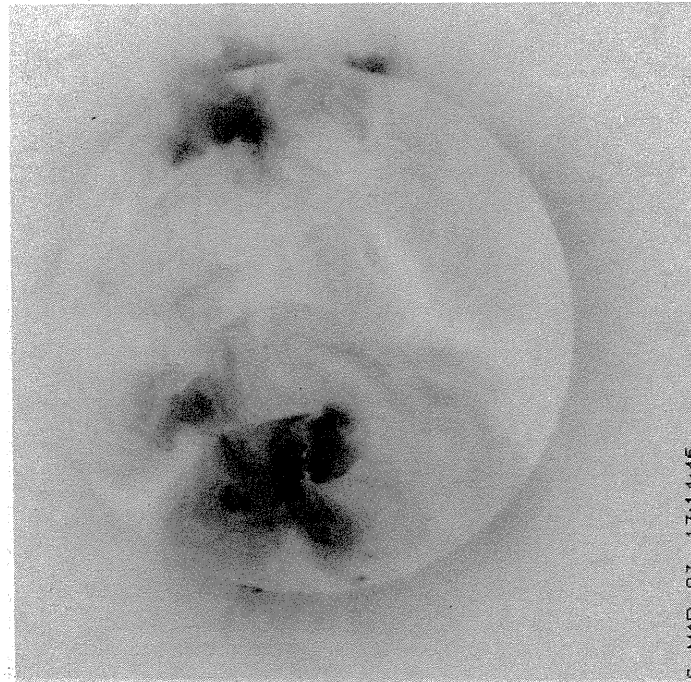
**YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES**

**March
1993**

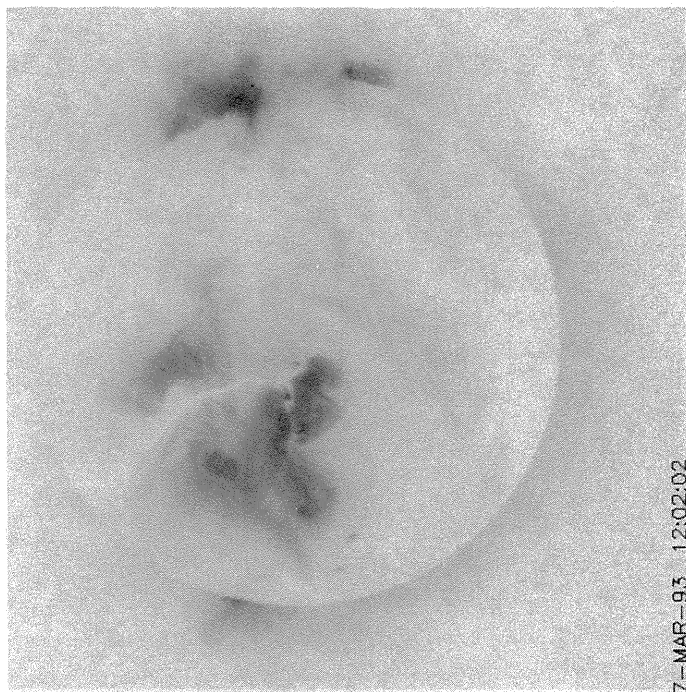
Day 5 Day 7
14:20:43 UT 12:02:02 UT



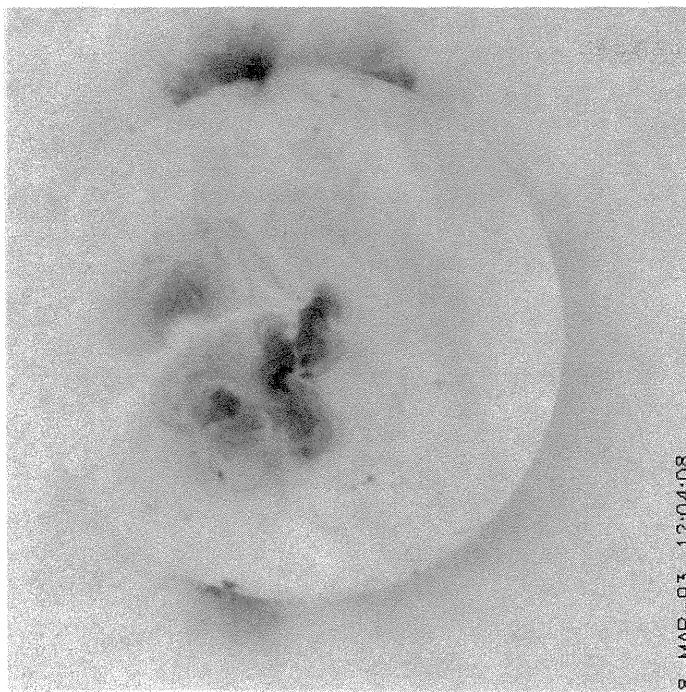
5-MAR-93 14:20:43



6-MAR-93 13:14:45



7-MAR-93 12:02:02



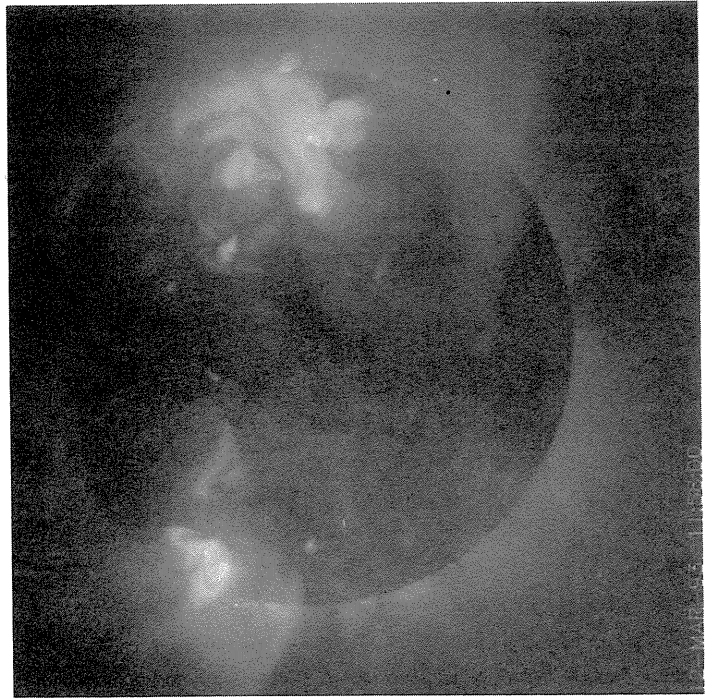
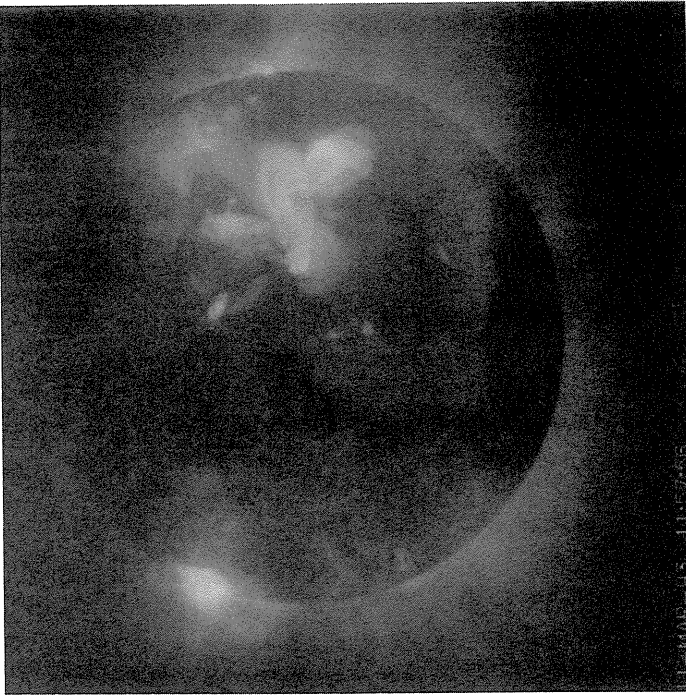
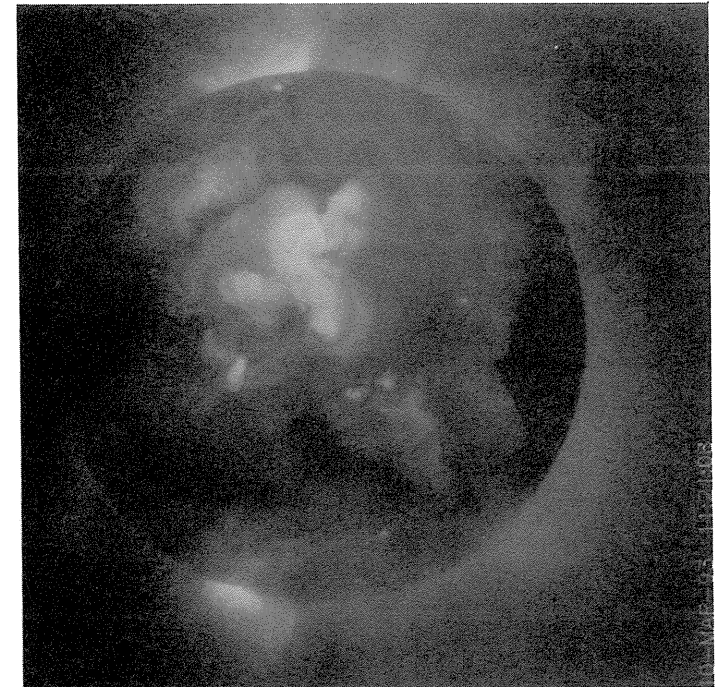
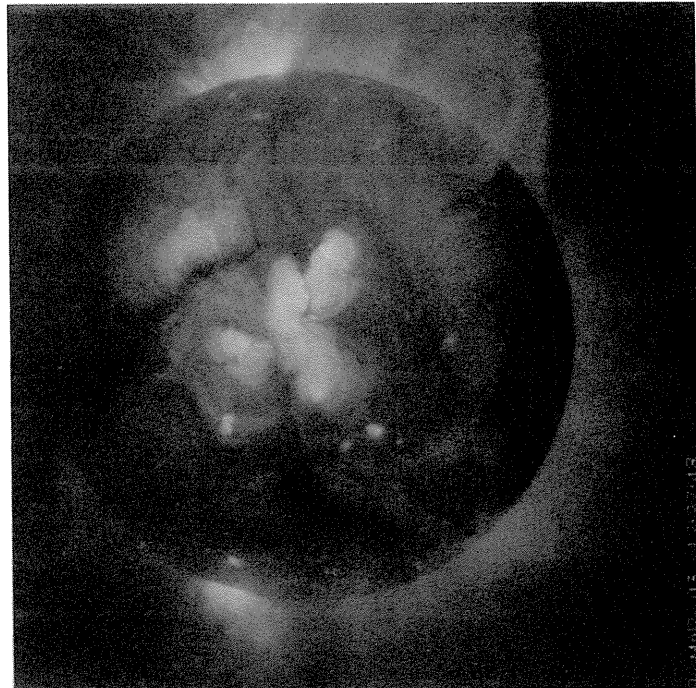
8-MAR-93 12:04:08

Day 6 Day 8
13:14:45 UT 12:04:08 UT

**YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES**

**March
1993**

Day 9 Day 11
12:27:48 UT 11:57:56 UT

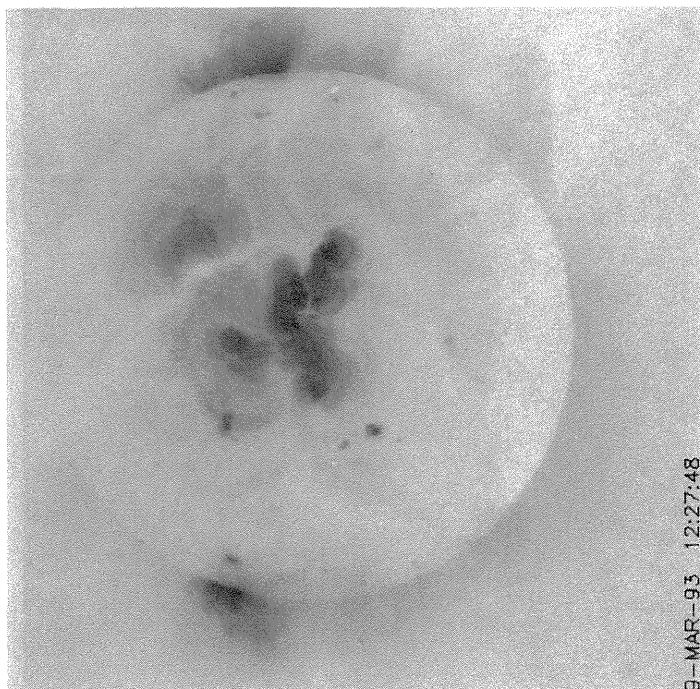


Day 10 Day 12
11:21:08 UT 11:58:00 UT

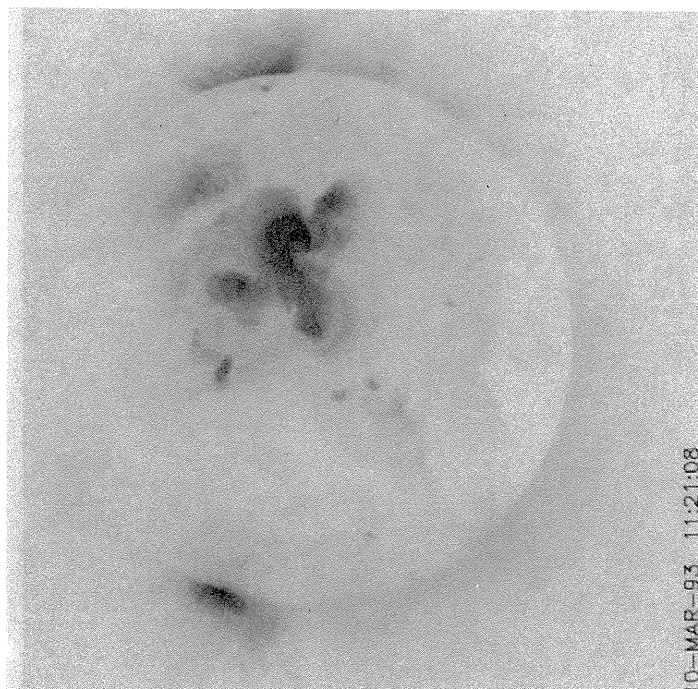
**YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES**

**March
1993**

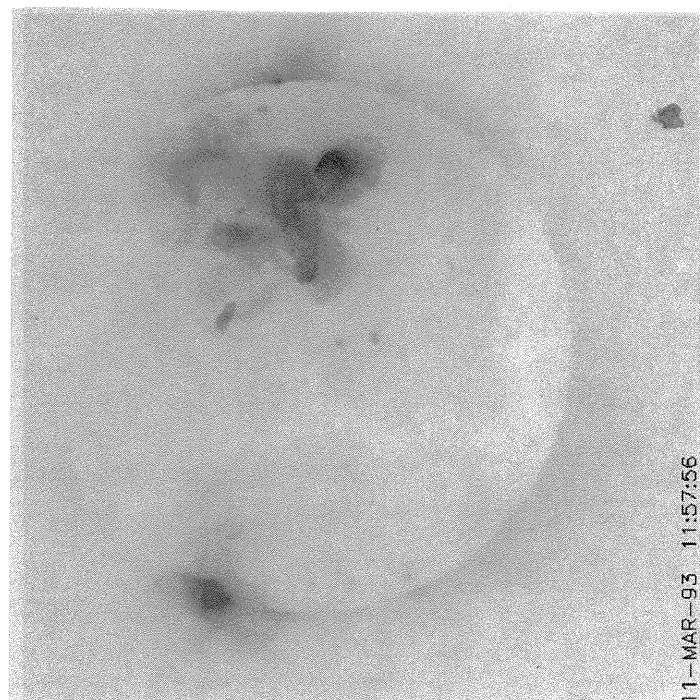
Day 9 Day 11
12:27:48 UT 11:57:56 UT



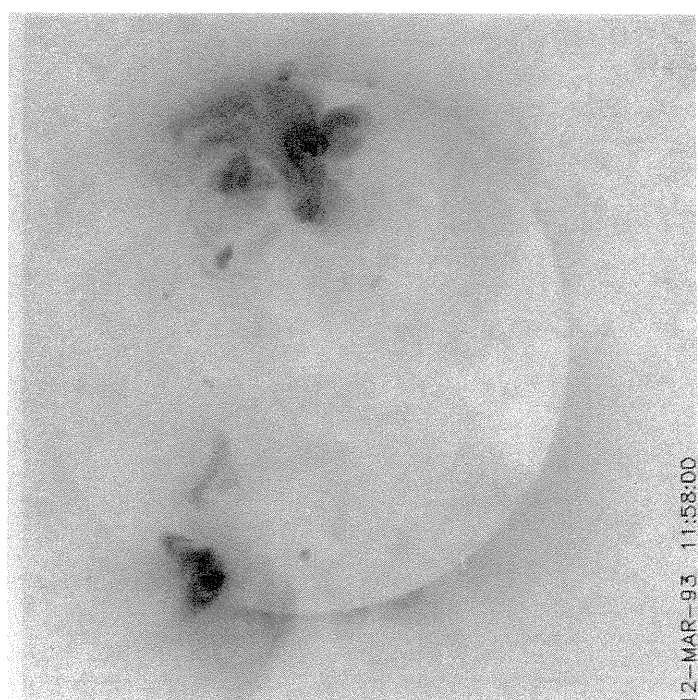
9-MAR-93 12:27:48



10-MAR-93 11:21:08



11-MAR-93 11:57:56



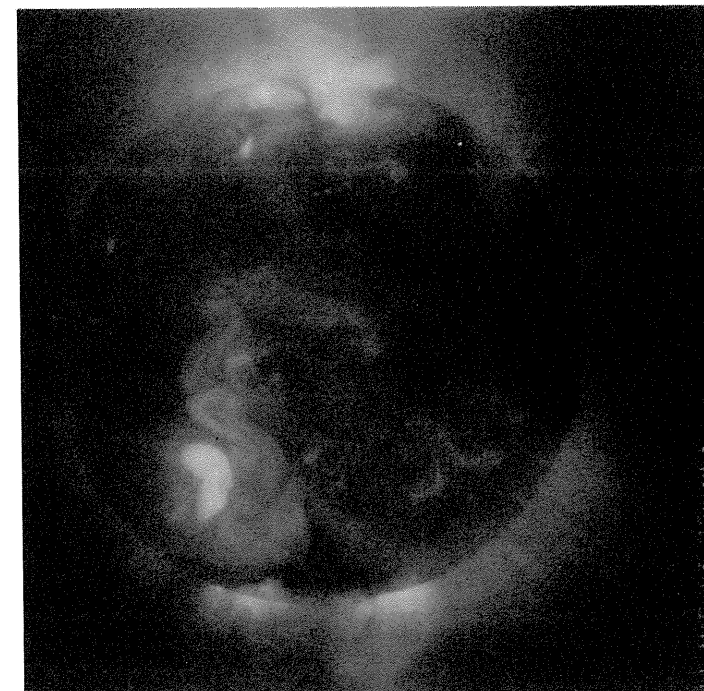
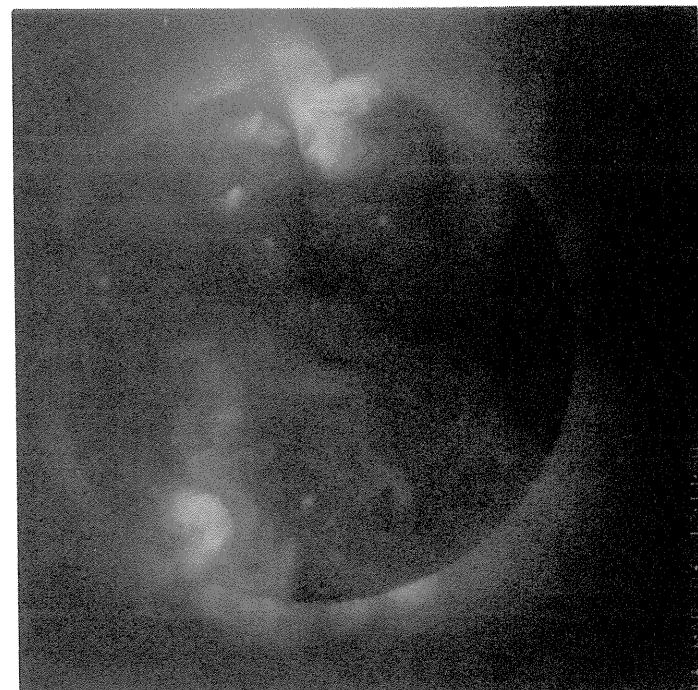
12-MAR-93 11:58:00

Day 10 Day 12
11:21:08 UT 11:58:00 UT

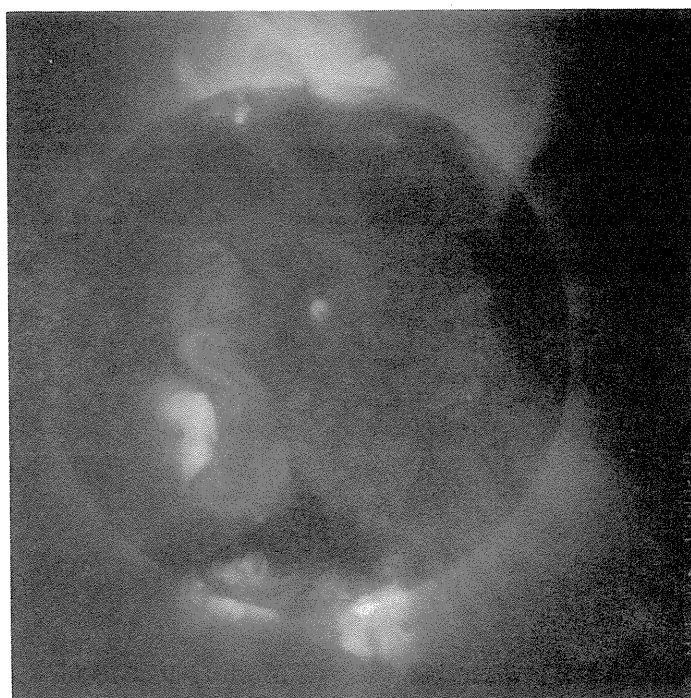
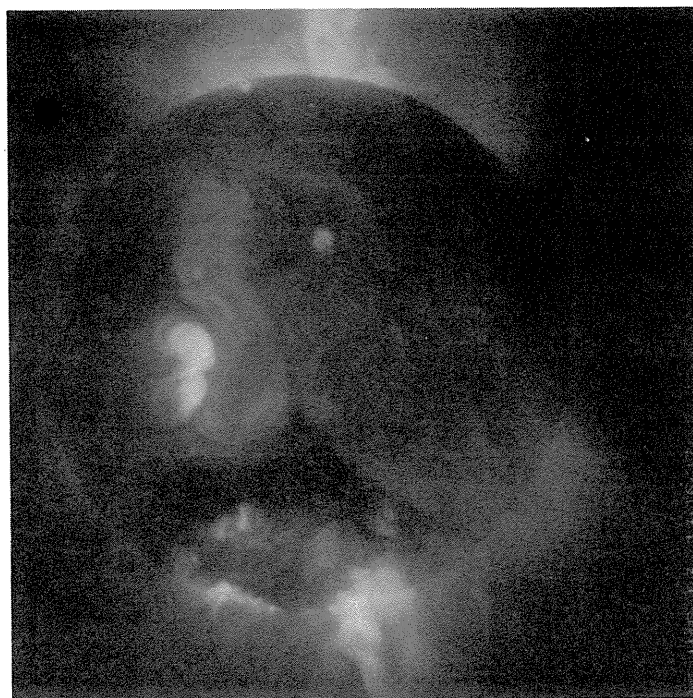
**YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES**

**March
1993**

Day 13 Day 15
12:14:59 UT 11:41:29 UT



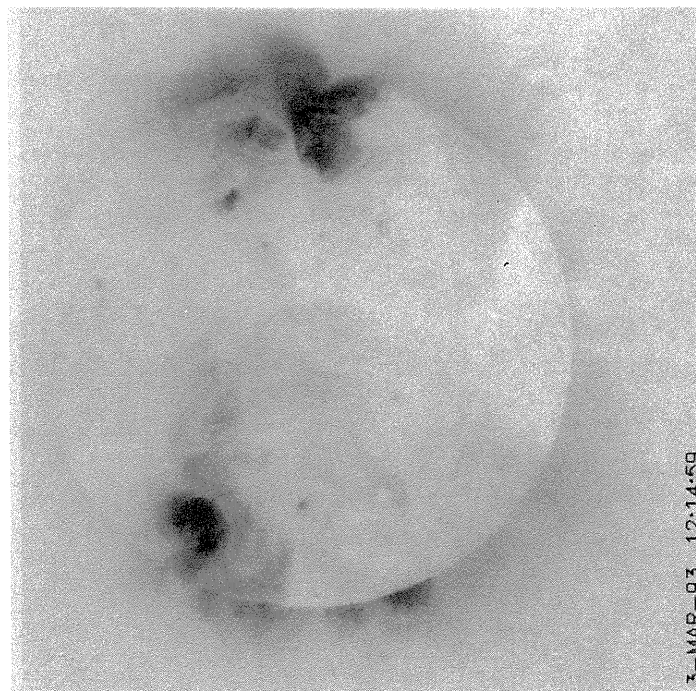
Day 14 Day 16
12:28:53 UT 13:15:27 UT



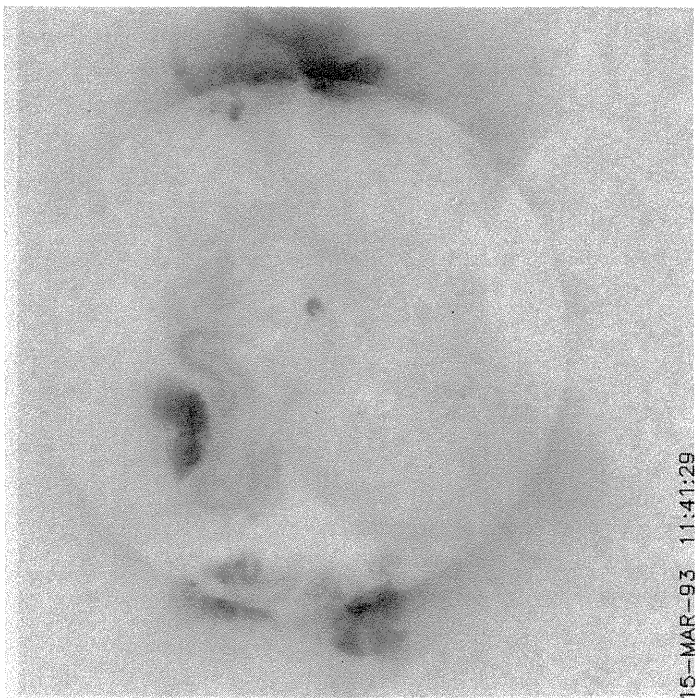
**YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES**

**March
1993**

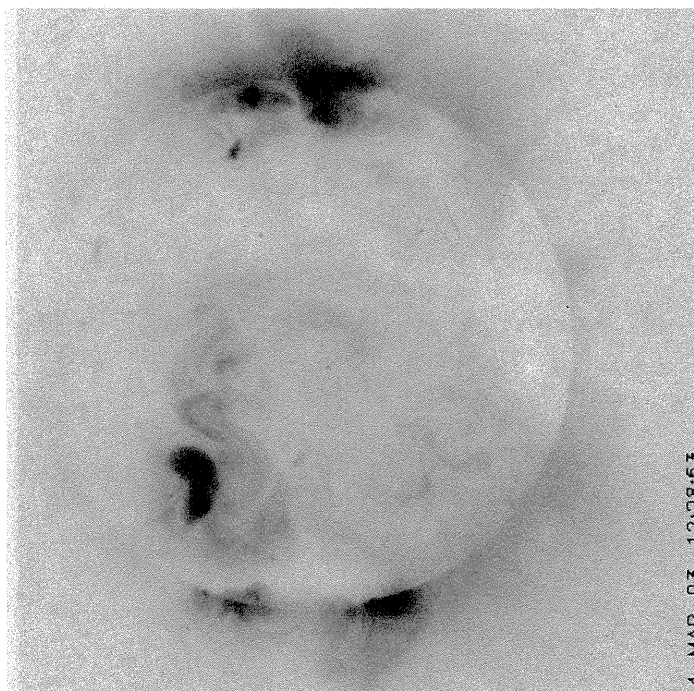
Day 13 Day 15
12:14:59 UT 11:41:29 UT



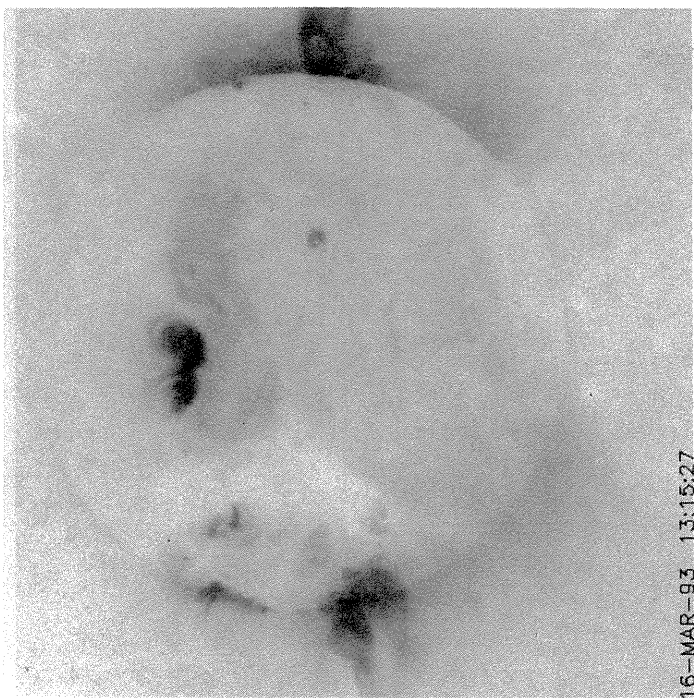
13-MAR-93 12:14:59



15-MAR-93 11:41:29



14-MAR-93 12:28:53



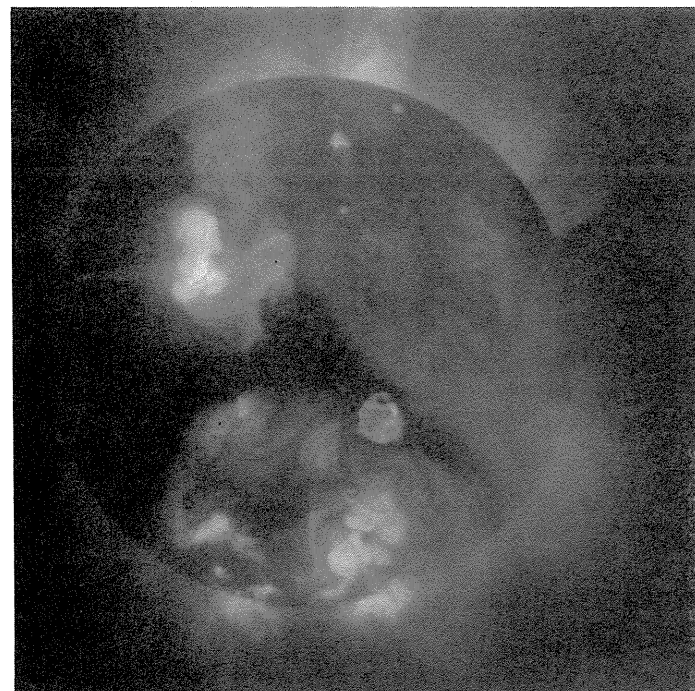
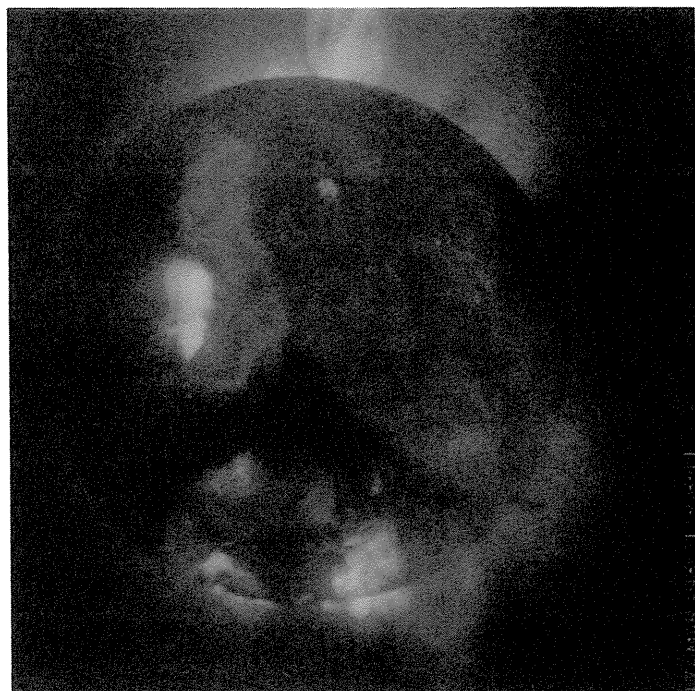
16-MAR-93 13:15:27

Day 14 Day 16
12:28:53 UT 13:15:27 UT

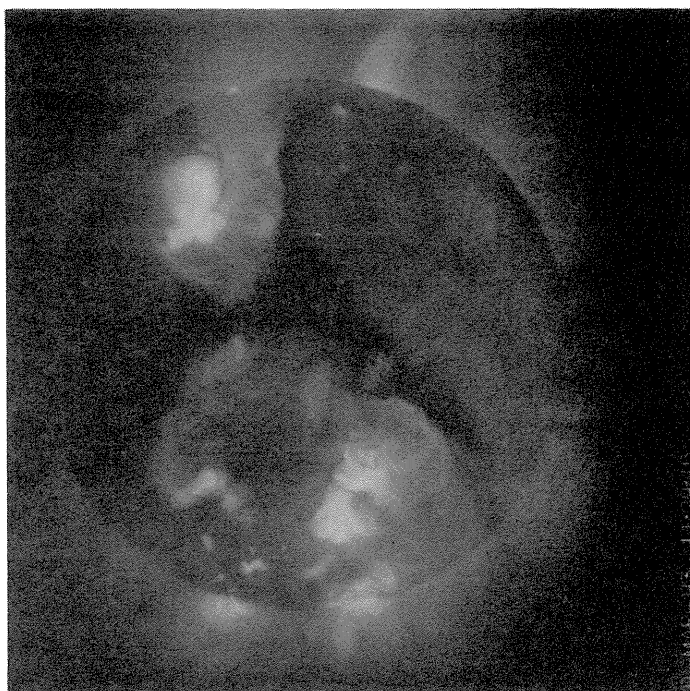
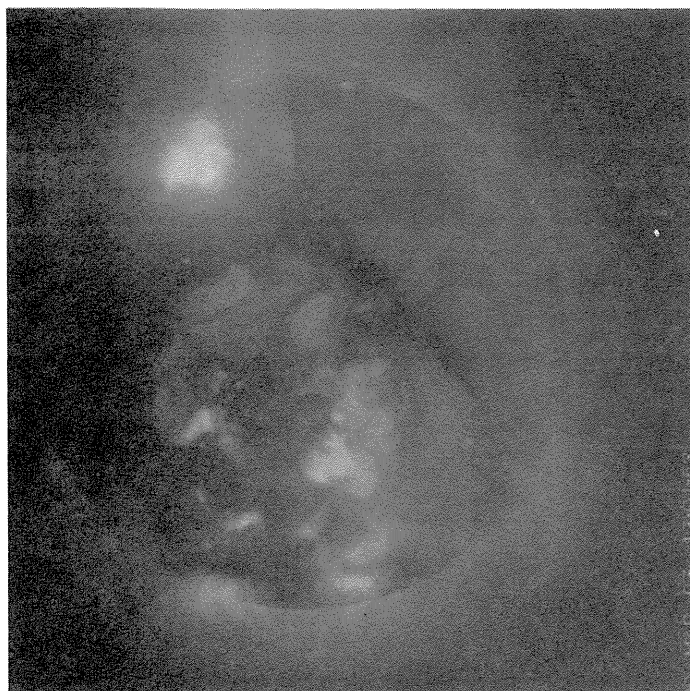
YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

March
1993

Day 17 Day 19
11:56:11 UT 11:29:10 UT



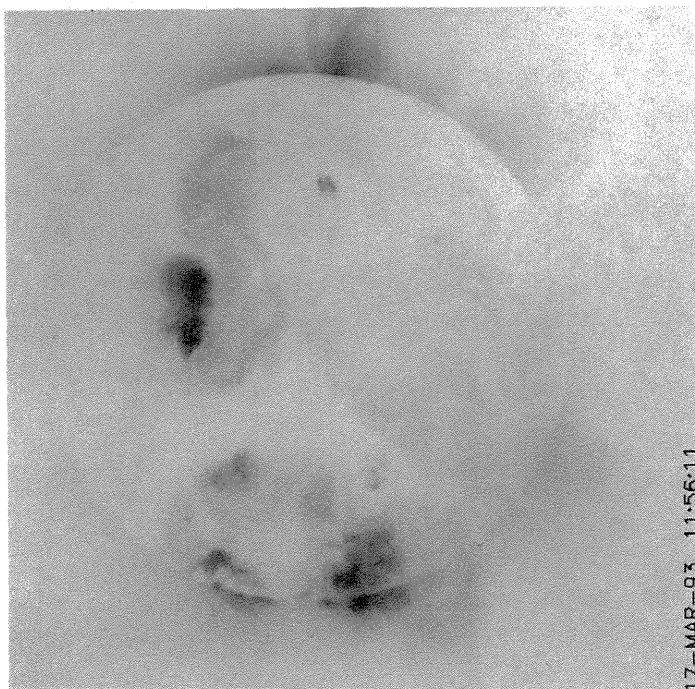
Day 18 Day 20
12:37:16 UT 13:01:58 UT



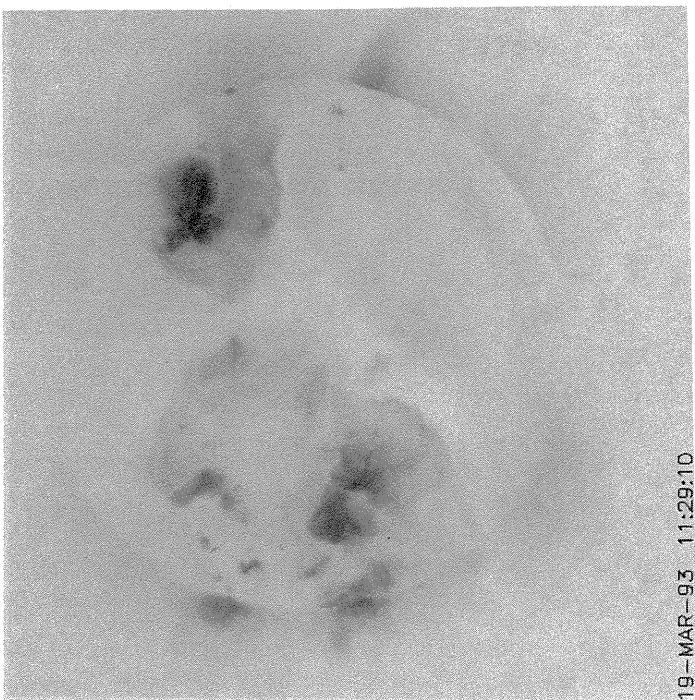
**YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES**

**March
1993**

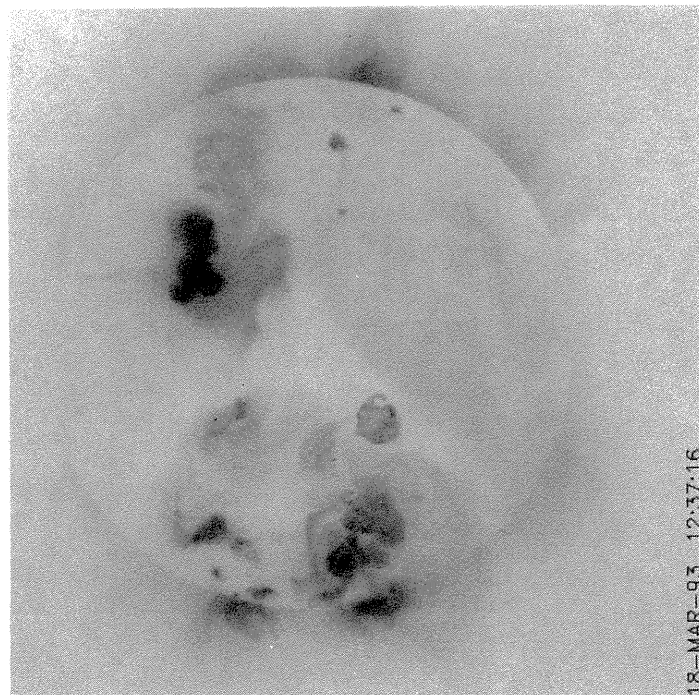
Day 17 Day 19
11:56:11 UT 11:29:10 UT



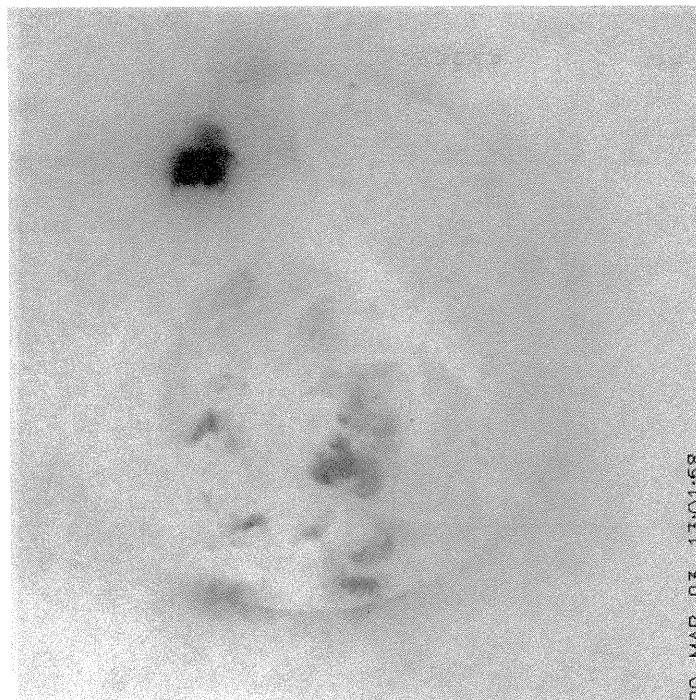
17-MAR-93 11:56:11



19-MAR-93 11:29:10



18-MAR-93 12:37:16



20-MAR-93 13:01:58

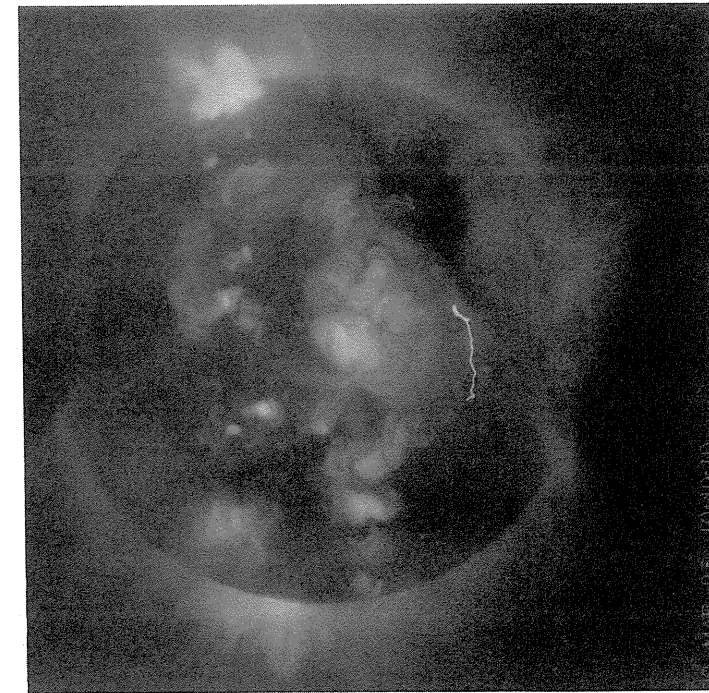
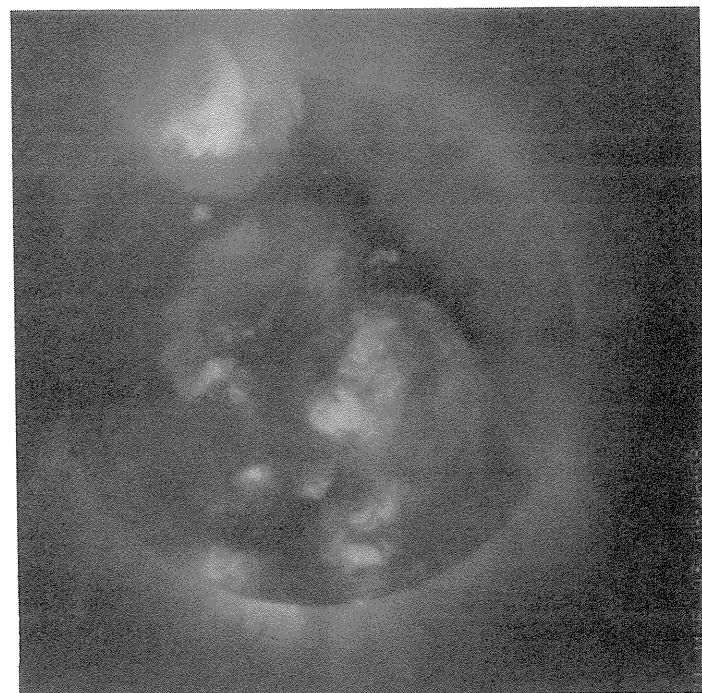
Day 18 Day 20
12:37:16 UT 13:01:58 UT

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Mar 93

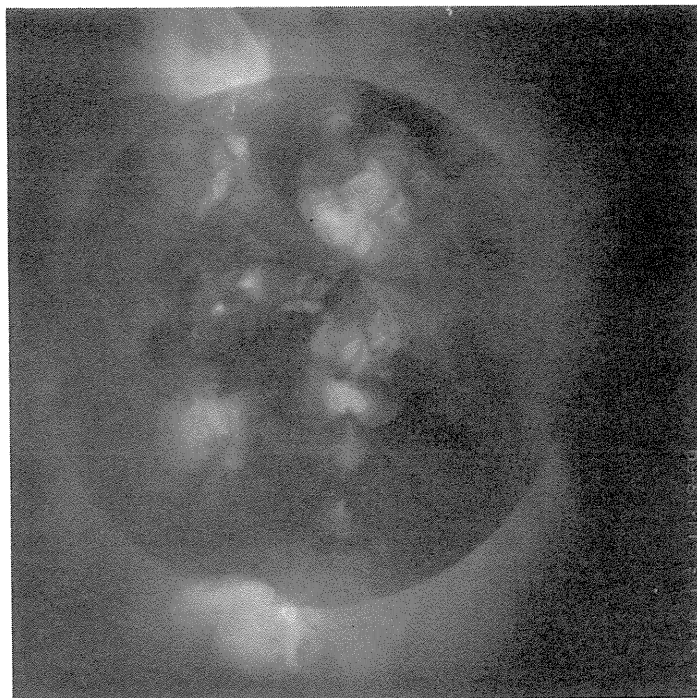
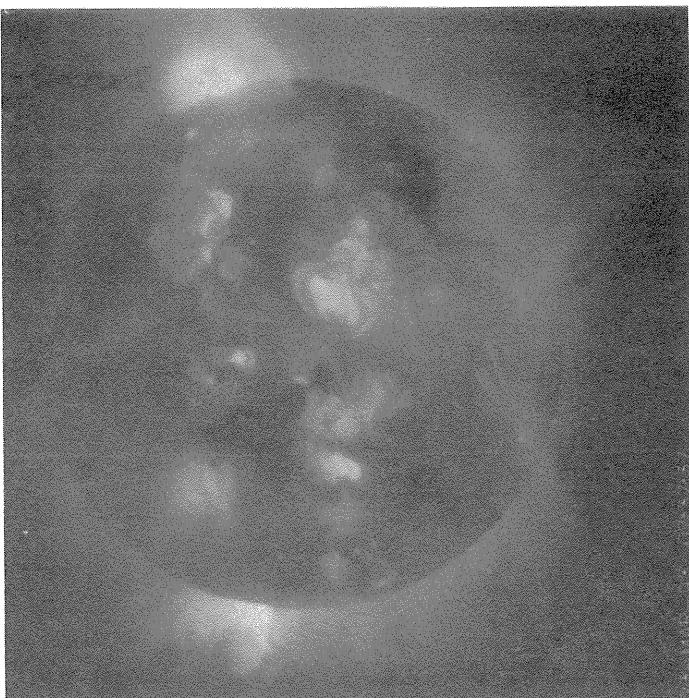
**YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES**

**March
1993**

Day 21 Day 23
08:46:58 UT 07:37:37 UT



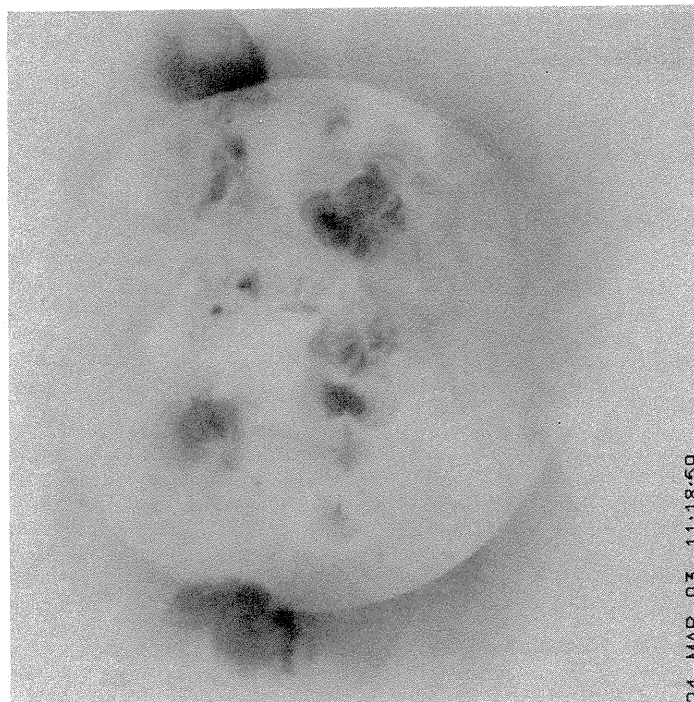
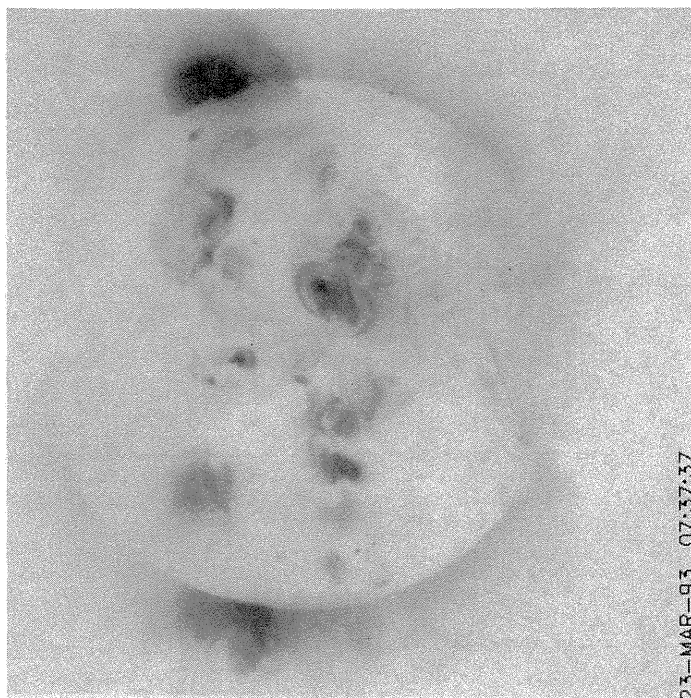
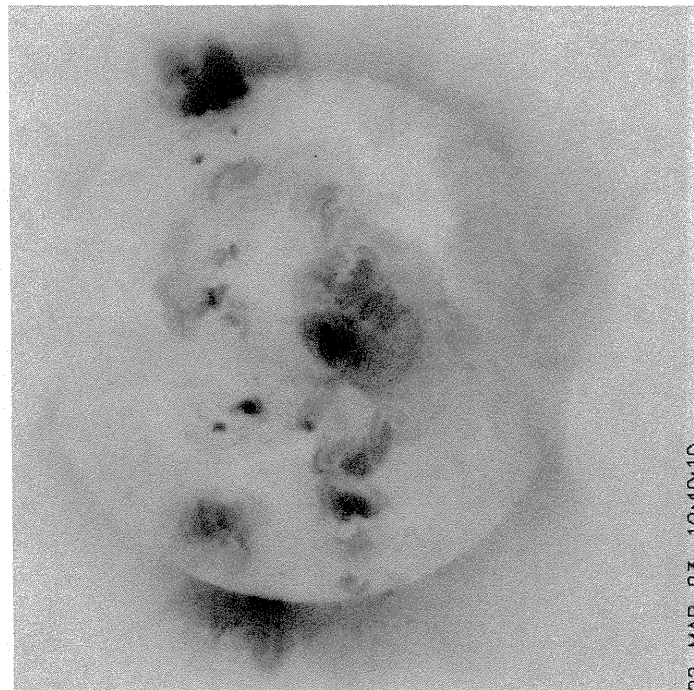
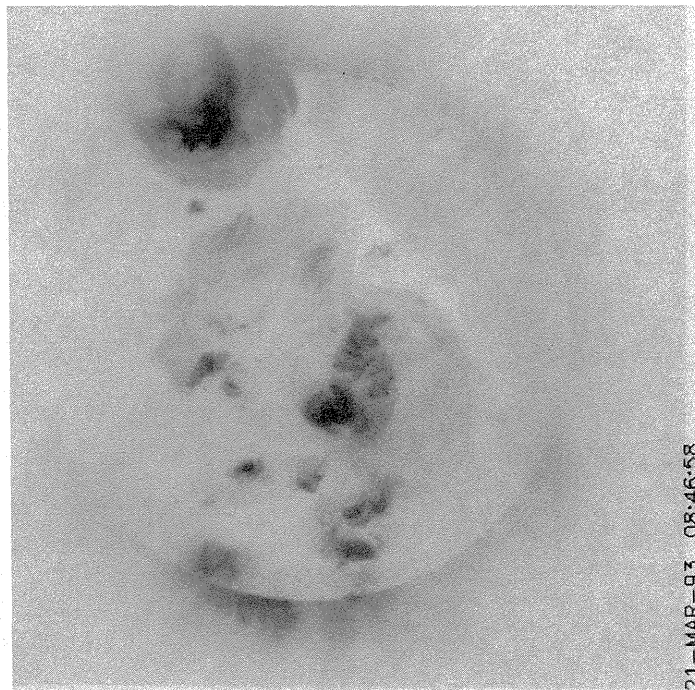
Day 22 Day 24
10:40:10 UT 11:18:59 UT



**YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES**

**March
1993**

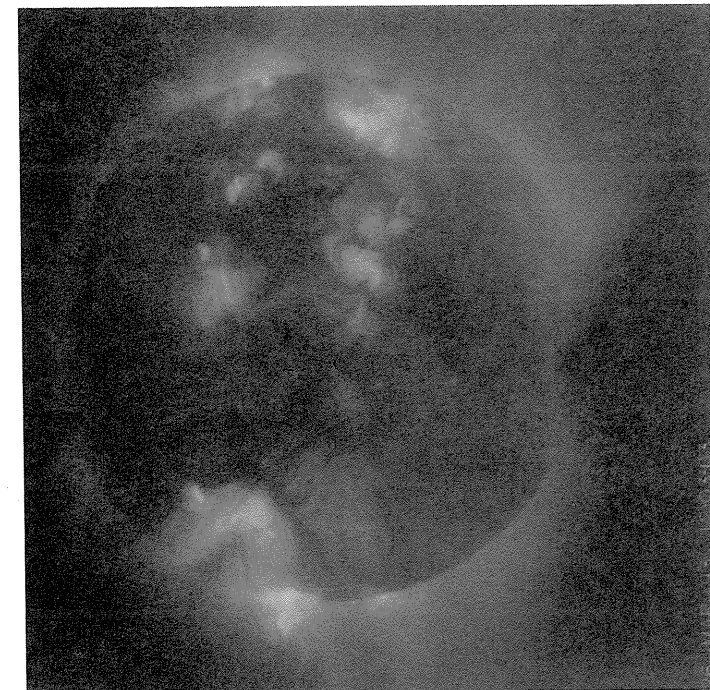
Day 21 Day 23
08:46:58 UT 07:37:37 UT



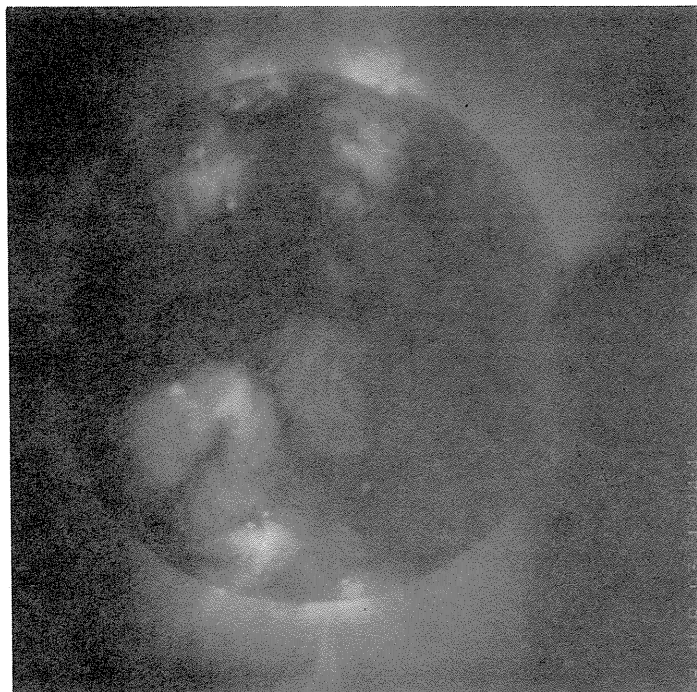
**YOHKOH
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Day 25 Day 27
11:49:27 UT 12:22:17 UT



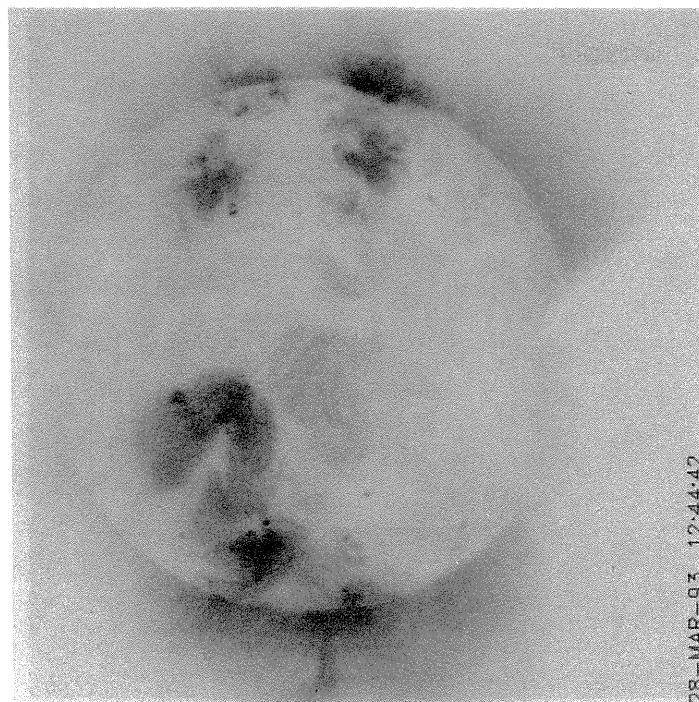
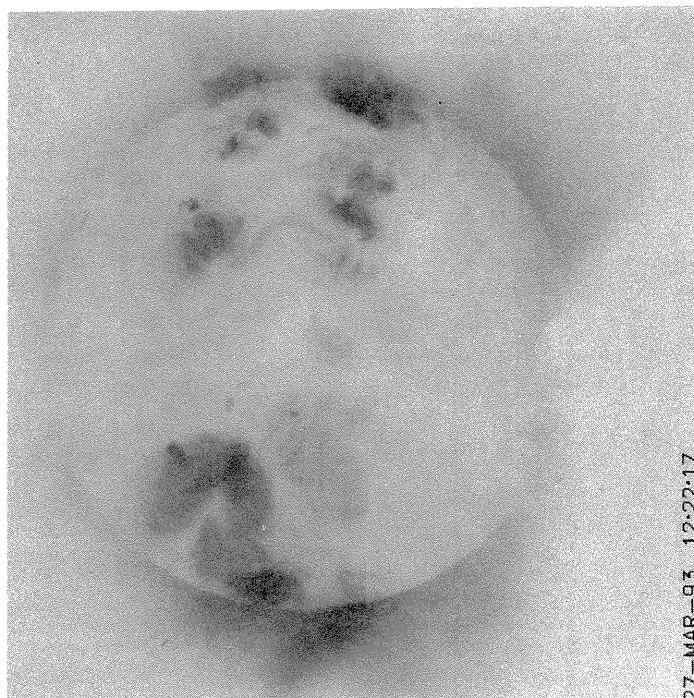
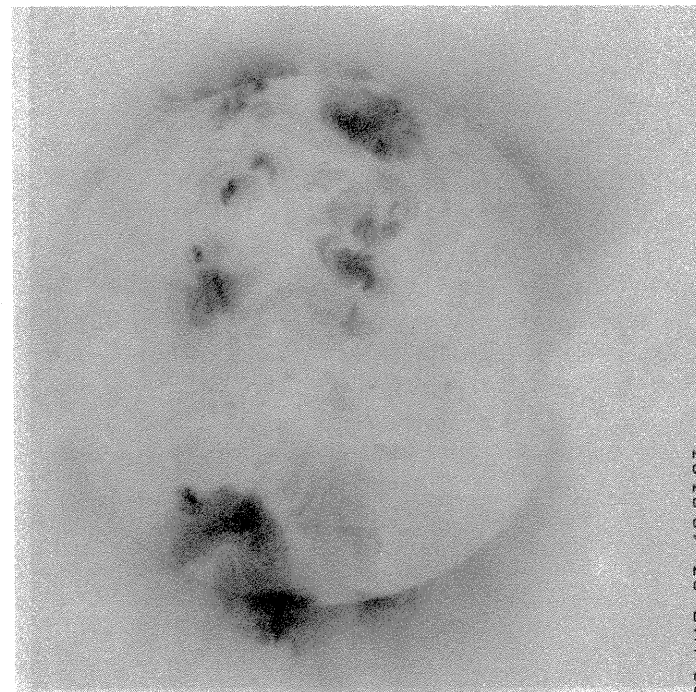
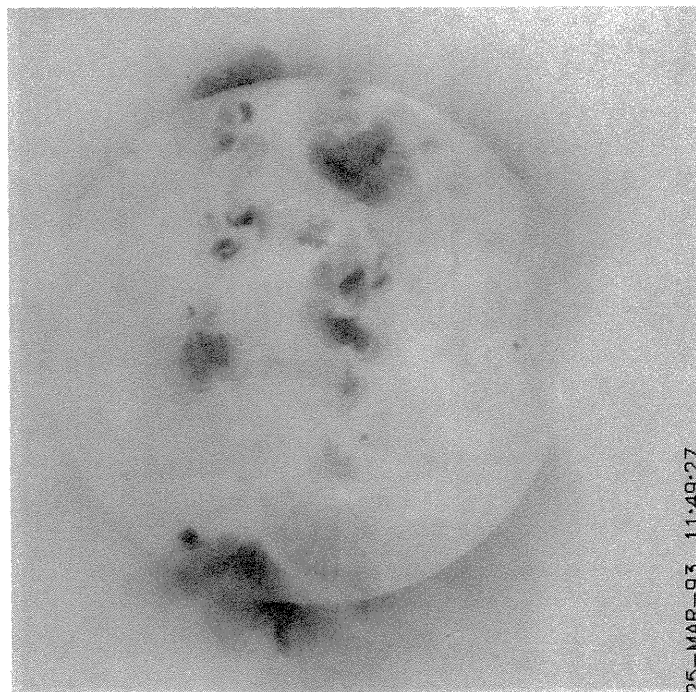
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1993

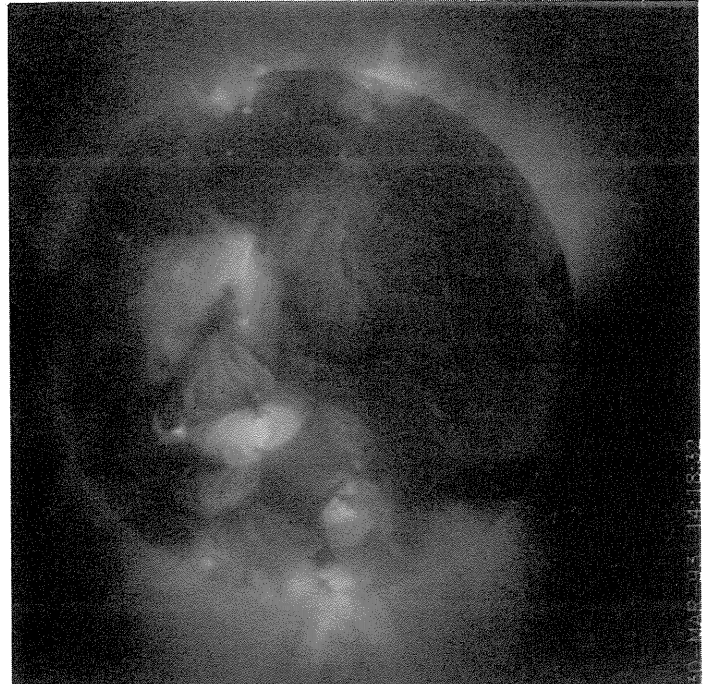
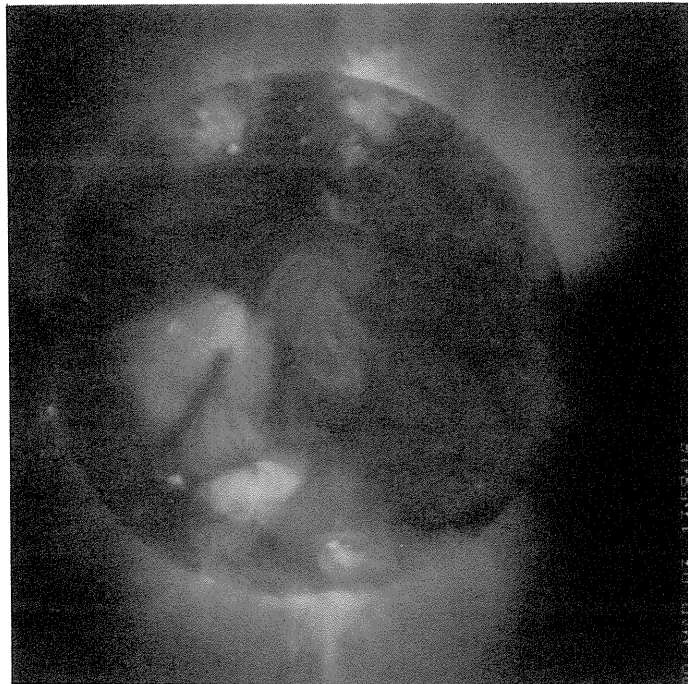
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11:49:27 UT 12:22:17 UT



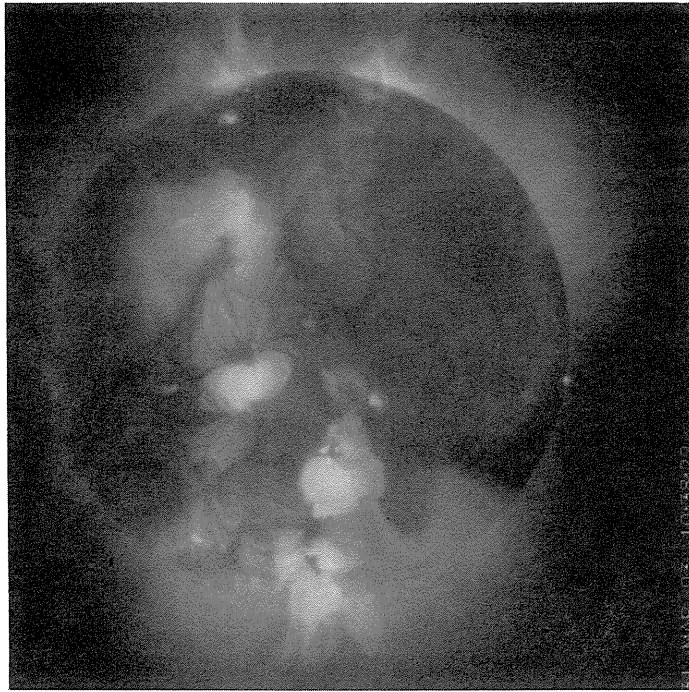
**YOHKOH
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**March
1993**

Day 29 Day 31
13:58:16 UT 10:38:22 UT



Day 30
14:18:32 UT



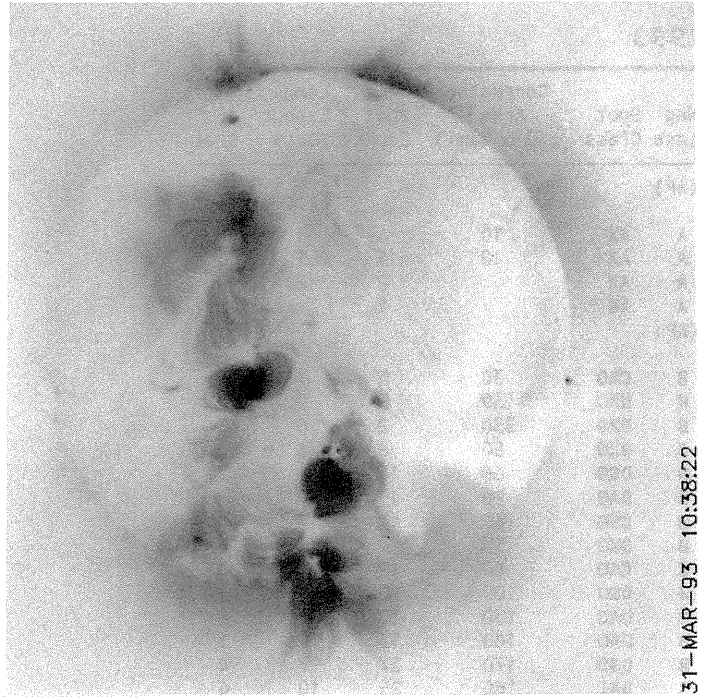
**YOHKOH
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**March
1993**

Day 29 Day 31
13:58:16 UT 10:38:22 UT



29-MAR-93 13:58:16



31-MAR-93 10:38:22

Day 30
14:18:32 UT



30-MAR-93 14:18:32

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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
7434A	27781	MWIL	03 03 1545	S12 W29	03 1.5	4	(AP)					
7434B		RAMY	02 25 1250	N20 E70	03 2.9		A	AX	10	1	1	4
7434B		LEAR	02 27 0146	N16 E46	03 2.6		A	AX	10	1	1	3
7434B		HOLL	02 28 1520	N15 E23	03 2.4		A	AX		2	2	2
7434B		PALE	02 28 1910	N15 E22	03 2.5		A	AX		1		3
7434B	27779	MWIL	03 02 1600	N12 W06	03 2.2	3	(AP)					
7435		RAMY	02 25 1250	N10 E74	03 3.1		B	CRO	30	5	7	4
7435		HOLL	02 25 1820	N08 E68	03 2.9		B	BXO	30	3	5	3
7435		PALE	02 25 2312	N09 E68	03 3.1		B	BXO	330	2	6	3
7435		LEAR	02 26 0124	N08 E65	03 2.9		B	BXO	80	6	6	3
7435		SVTO	02 26 1015	N07 E59	03 2.8		B	DSO	60	14	6	2
7435		RAMY	02 26 1315	N10 E60	03 3.1		B	DAO	90	15	9	4
7435		HOLL	02 26 1900	N09 E57	03 3.1		B	CSO	60	12	7	3
7435		PALE	02 26 1920	N08 E56	03 3.0		B	BXO	50	7	7	3
7435		LEAR	02 27 0146	N11 E52	03 3.0		B	CAO	80	12	7	3
7435		SVTO	02 27 0800	N08 E48	03 2.9		B	DSO	100	12	7	2
7435		RAMY	02 27 1300	N11 E45	03 2.9		B	DAO	130	17	8	4
7435		BOUL	02 27 1608	N10 E43	03 2.9		B	DAO	100	13	9	3
7435		LEAR	02 28 0002	N09 E40	03 3.0		B	DSO	170	27	7	4
7435		RAMY	02 28 1255	N11 E32	03 2.9		B	DAI	160	25	10	4
7435		HOLL	02 28 1520	N08 E31	03 3.0		B	DAI	70	18	9	2
7435		BOUL	02 28 1525	N10 E29	03 2.8		B	DAO	120	18	9	4
7435		PALE	02 28 1910	N09 E28	03 2.9		B	DAO	120	24	9	3
7435	27777	MWIL	02 28 1930	N11 E28	03 2.9	5	BG					
7435		LEAR	03 01 0005	N07 E25	03 2.9		B	DAO	130	28	10	4
7435		RAMY	03 01 1405	N09 E19	03 3.0		B	DAI	160	46	10	3
7435		BOUL	03 01 1508	N10 E17	03 2.9		B	DAI	140	31	10	2
7435	27777	MWIL	03 01 1600	N09 E16	03 2.9	5	(BG)					
7435		HOLL	03 01 1805	N08 E16	03 2.9		B	EAI	190	34	11	3
7435		PALE	03 01 1905	N07 E16	03 3.0		B	EAO	180	30	12	3
7435		LEAR	03 02 0016	N08 E13	03 3.0		B	DSI	120	46	10	3
7435		SVTO	03 02 0750	N08 E08	03 2.9		B	DAI	400	36	10	3
7435		RAMY	03 02 1449	N08 E04	03 2.9		BG	EAI	240	43	11	2
7435		BOUL	03 02 1504	N09 E04	03 2.9		B	EAI	270	30	13	3
7435	27777	MWIL	03 02 1600	N09 E02	03 2.8	5	(D)					
7435		HOLL	03 02 1635	N08 E04	03 3.0		BG	EAI	240	35	12	3
7435		PALE	03 02 1950	N09 E02	03 3.0		B	EAO	220	39	14	3
7435		LEAR	03 03 0035	N09 W04	03 2.7		B	DAO	310	15	9	3
7435		SVTO	03 03 1027	N08 W07	03 2.9		B	DAO	260	36	10	4
7435		RAMY	03 03 1232	N08 W08	03 2.9		BG	DAI	300	54	10	3
7435		HOLL	03 03 1545	N09 W08	03 3.0		B	EAI	200	40	11	3
7435	27777	MWIL	03 03 1545	N09 W13	03 2.7	5	(D)					
7435		BOUL	03 03 1548	N09 W10	03 2.9		B	EKI	410	46	11	3
7435		PALE	03 03 1805	N09 W10	03 3.0		B	EAO	340	42	12	3
7435		LEAR	03 04 0030	N10 W16	03 2.8		B	EAO	310	24	11	2
7435		SVTO	03 04 1030	N10 W20	03 2.9		BG	EAI	120	28	11	2
7435		RAMY	03 04 1305	N09 W23	03 2.8		BG	EKI	290	53	12	3
7435		HOLL	03 04 1505	N10 W22	03 3.0		B	EAI	180	37	10	3
7435	27777	MWIL	03 04 1530	N10 W24	03 2.8	5	(B)					
7435		BOUL	03 04 1559	N09 W24	03 2.9		B	EAI	260	42	11	3
7435		PALE	03 04 2308	N10 W27	03 2.9		B	ESI	260	49	12	3
7435		LEAR	03 05 0024	N08 W28	03 2.9		B	DAO	160	32	10	2
7435		RAMY	03 05 1320	N09 W35	03 2.9		B	EAI	200	38	11	3
7435	27777	MWIL	03 05 1515	N10 W36	03 2.9	5	(B)					
7435		BOUL	03 05 1539	N10 W37	03 2.9		B	EAI	250	27	12	3
7435		HOLL	03 05 1810	N10 W38	03 2.9		B	ESI	110	24	12	3
7435		PALE	03 05 1858	N08 W38	03 2.9		B	ESO	170	27	12	3
7435		LEAR	03 06 0006	N10 W42	03 2.8		B	CAO	140	28	12	4
7435		RAMY	03 06 1323	N10 W49	03 2.9		B	EAO	140	15	15	4
7435		HOLL	03 06 1445	N08 W48	03 3.0		B	CSO	60	18	12	3
7435	27777	MWIL	03 06 1530	N10 W50	03 2.9	5	(B)					
7435		PALE	03 06 1956	N10 W53	03 2.8		B	CAO	90	6	13	3
7435		BOUL	03 06 2031	N09 W52	03 2.9		B	CSO	60	4	14	3
7435		LEAR	03 07 0005	N10 W57	03 2.7		B	CSO	60	8	13	4
7435		SVTO	03 07 1312	N08 W59	03 3.1		B	CAO	100	4	4	2
7435		RAMY	03 07 1330	N09 W64	03 2.7		B	CSO	30	2	11	3
7435		BOUL	03 07 1530	N08 W65	03 2.8		A	HS	50	1	2	3

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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
7435	27777	MWIL	03 07 1530	N10	W68	03 2.5	4	(B)					
7435		PALE	03 07 2100	N11	W72	03 2.4		A	HS	50	1	2	3
7435		HOLL	03 07 2251	N08	W74	03 2.4		A	HS	60	1	1	3
7435		LEAR	03 08 0004	N08	W75	03 2.4		A	HR	30	1	2	3
7442		LEAR	03 01 0005	N17	E35	03 3.7		A	AX		1	1	4
7442		LEAR	03 02 0016	N18	E22	03 3.7		A	AX	10	1	1	3
7442		RAMY	03 03 1232	N18	W01	03 3.4		B	BXO	10	3	2	3
7442		RAMY	03 04 1305	N17	W15	03 3.4		A	AX		3	2	3
7442	27782	MWIL	03 04 1530	N18	W16	03 3.4	3	(AF)					
7442		BOUL	03 04 1559	N18	W17	03 3.4		B	BXO	10	4	2	3
7442		LEAR	03 05 0024	N17	W22	03 3.3		A	AX	10	1	1	2
7442A		AMY	02 28 1255	N23	E52	03 4.5		A	X		1		R
7442A		HOLL	02 28 1520	N22	E50	03 4.5		A	AX		1		2
7442A		BOUL	02 28 1525	N24	E51	03 4.6		A	AX		1		4
7442A		LEAR	03 01 0005	N25	E46	03 4.6		B	BXO	10	2	2	4
7442A		LEAR	03 02 0016	N24	E36	03 4.8		A	AX	30	3	3	3
7442A		SVTO	03 02 0750	N25	E32	03 4.8		B	BXO	10	2	3	3
7438A		PALE	03 04 2308	S22	E03	03 5.2		A	AX	10	1	1	3
7438A		PALE	03 05 1858	S20	W08	03 5.2		A	AX	10	1	1	3
7447		PALE	03 09 1945	N10	W53	03 5.8		A	AX		1		3
7447		LEAR	03 10 0018	N09	W59	03 5.6		A	AX	20	1	1	3
7447		SVTO	03 10 0727	N08	W61	03 5.7		A	AX	20	1	1	3
7447		RAMY	03 10 1220	N08	W66	03 5.6		A	AX		1		4
7447		PALE	03 10 2005	N09	W71	03 5.5		A	AX		1		3
7447		LEAR	03 11 0248	N06	W73	03 5.6		A	AX	10	1	1	2
7447A		HOLL	03 04 1505	N13	E29	03 6.8		A	AX		1		3
7447A		PALE	03 04 2308	N14	E25	03 6.8		A	AX	10	1	1	3
7447A		LEAR	03 05 0024	N17	E23	03 6.8		A	AX	10	1	1	2
7447A		RAMY	03 05 1320	N17	E15	03 6.7		A	AX		2	1	3
7447A	27784	MWIL	03 05 1515	N15	E15	03 6.8	3	(AP)					
7447A		PALE	03 05 1858	N15	E14	03 6.8		A	AX	10	2	1	3
7447A	27787	MWIL	03 08 1615	N15	W24	03 6.9	4	(AP)					
7439		RAMY	03 01 1405	S10	E87	03 8.1		A	HS	40	1	2	3
7439	27778	MWIL	03 01 1600	S08	E85	03 8.0	5	AP					
7439		HOLL	03 01 1805	S11	E80	03 7.8		A	HS	90	1	2	3
7439		PALE	03 01 1905	S11	E82	03 8.0		A	HS	60	1	1	3
7439		LEAR	03 02 0016	S12	E78	03 7.9		A	HA	60	1	2	3
7439		SVTO	03 02 0750	S11	E73	03 7.8		B	CSO	40	4	6	3
7439		RAMY	03 02 1449	S10	E71	03 7.9		B	DAO	70	7	6	2
7439		BOUL	03 02 1504	S08	E72	03 8.0		B	BXO	30	4	5	3
7439	27778	MWIL	03 02 1600	S10	E70	03 7.9	5	(B)					
7439		HOLL	03 02 1635	S10	E70	03 7.9		B	CSO	80	6	5	3
7439		PALE	03 02 1950	S09	E71	03 8.1		B	BXO	50	6	4	3
7439		LEAR	03 03 0035	S11	E66	03 8.0		B	DAO	110	3	5	3
7439		SVTO	03 03 1027	S10	E59	03 7.9		B	CSO	90	4	6	4
7439		RAMY	03 03 1232	S11	E61	03 8.1		B	DAO	80	8	5	3
7439	27778	MWIL	03 03 1545	S09	E57	03 7.9	5	(BP)					
7439		HOLL	03 03 1545	S12	E58	03 8.0		B	DAO	60	4	6	3
7439		BOUL	03 03 1548	S09	E57	03 7.9		B	CAO	110	5	6	3
7439		PALE	03 03 1805	S12	E57	03 8.0		B	CSO	100	5	4	3
7439		LEAR	03 04 0030	S10	E51	03 7.8		B	CAO	30	3	3	2
7439		SVTO	03 04 1030	S11	E48	03 8.0		B	DAO	80	9	6	2
7439		RAMY	03 04 1305	S10	E47	03 8.1		B	DAI	100	25	7	3
7439		HOLL	03 04 1505	S11	E45	03 8.0		B	DAO	140	11	6	3
7439	27778	MWIL	03 04 1530	S10	E46	03 8.1	5	(B)					
7439		BOUL	03 04 1559	S09	E45	03 8.0		B	DAO	170	17	5	3
7439		PALE	03 04 2308	S12	E41	03 8.0		B	DAO	220	10	6	3
7439		LEAR	03 05 0024	S11	E42	03 8.2		B	DAO	100	8	5	2
7439		RAMY	03 05 1320	S10	E34	03 8.1		B	DAO	100	16	6	3
7439	27778	MWIL	03 05 1515	S10	E32	03 8.0	4	(B)					
7439		BOUL	03 05 1539	S09	E33	03 8.1		B	DAI	120	16	6	3
7439		HOLL	03 05 1810	S10	E31	03 8.1		B	DAO	60	10	6	3
7439		PALE	03 05 1858	S11	E30	03 8.0		B	CAO	120	7	6	3

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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
7439		LEAR	03 06 0006	S10 E29	03 8.2		B	DAO	90	20	7	4
7439		RAMY	03 06 1323	S09 E21	03 8.1		B	DAO	80	22	7	4
7439		HOLL	03 06 1445	S10 E20	03 8.1		B	CSO	60	14	6	3
7439	27778	MWIL	03 06 1530	S09 E19	03 8.1	4	(BP)					
7439		PALE	03 06 1956	S11 E15	03 7.9		B	CAO	70	13	6	3
7439		BOUL	03 06 2031	S09 E17	03 8.1		B	DAI	50	10	6	3
7439		LEAR	03 07 0005	S09 E15	03 8.1		B	CAO	60	19	6	4
7439		SVTO	03 07 1312	S09 E06	03 8.0		B	DSO	40	6	3	2
7439		RAMY	03 07 1330	S08 E05	03 7.9		B	CAO	50	12	3	3
7439	27778	MWIL	03 07 1530	S09 E05	03 8.0	5	(BP)					
7439		BOUL	03 07 1530	S10 E07	03 8.2		B	CAO	30	7	8	3
7439		PALE	03 07 2100	S10 E04	03 8.2		B	CAO	50	11	4	3
7439		HOLL	03 07 2251	S09 E00	03 7.9		B	CRO	30	8	3	3
7439		LEAR	03 08 0004	S09 W01	03 7.9		B	CAO	40	11	4	3
7439		RAMY	03 08 1215	S09 W07	03 8.0		B	CAO	30	9	4	3
7439		SVTO	03 08 1431	S11 W06	03 8.1		B	CSO	20	11	8	3
7439		BOUL	03 08 1553	S08 W09	03 8.0		B	BXO	20	3	3	2
7439	27778	MWIL	03 08 1615	S10 W08	03 8.1	4	(B)					
7439		HOLL	03 08 1852	S09 W11	03 8.0		B	BXO	30	4	3	3
7439		LEAR	03 09 0702	S07 W19	03 7.9		B	BXO	20	2	3	2
7439		SVTO	03 09 0748	S09 W18	03 8.0		B	CSO	20	3	2	3
7439		RAMY	03 09 1202	S09 W20	03 8.0		B	CRO	20	3	3	3
7439		BOUL	03 09 1451	S07 W23	03 7.9		A	AX		2		2
7439		HOLL	03 09 1455	S10 W19	03 8.2		B	CSO	30	7	10	3
7439	27778	MWIL	03 09 1545	S10 W22	03 8.0	4	(B)					
7439		PALE	03 09 1945	S07 W26	03 7.9		B	BXO	20	2	3	3
7439		LEAR	03 10 0018	S08 W28	03 7.9		B	BXO	20	2	3	3
7439		SVTO	03 10 0727	S07 W29	03 8.1		B	BXO	20	5	5	3
7439		RAMY	03 10 1220	S09 W33	03 8.0		B	BXO	20	6	5	4
7439		HOLL	03 10 1515	S07 W37	03 7.9		A	AX		1		2
7439	27778	MWIL	03 10 1545	S09 W35	03 8.0	4	(B)					
7439		BOUL	03 10 1554	S07 W37	03 7.9		A	AX	10	1		2
7439		PALE	03 10 2005	S07 W39	03 7.9		A	AX		1		3
7439		LEAR	03 11 0248	S08 W43	03 7.9		A	AX	10	1	1	2
7443		HOLL	03 04 1505	N16 E41	03 7.7		A	AX		1		3
7443		PALE	03 04 2308	N17 E38	03 7.8		A	AX	10	1	1	3
7443		LEAR	03 05 0024	N15 E35	03 7.7		A	AX	10	1	1	2
7443	27785	MWIL	03 05 1515	N18 E28	03 7.8	2	(AP)					
7443		HOLL	03 05 1810	N18 E27	03 7.8		B	DSO	160	10	9	3
7443		PALE	03 05 1858	N17 E26	03 7.8		A	AX	10	2	2	3
7443		RAMY	03 06 1323	N17 E16	03 7.8		A	AX		2	1	4
7443		RAMY	03 07 1330	N18 E02	03 7.7		A	AX		2	1	3
7443		BOUL	03 07 1530	N17 E02	03 7.8		A	AX		2	1	3
7443	27785	MWIL	03 07 1530	N18 E02	03 7.8	3	(AP)					
7443		PALE	03 07 2100	N18 E01	03 7.9		B	BXO	10	5	4	3
7443		LEAR	03 08 0004	N18 W04	03 7.7		B	BXO	10	5	5	3
7443A		BOUL	03 09 1451	S20 W14	03 8.5		A	AX		2		2
7443A		LEAR	03 10 0018	S21 W17	03 8.7		B	BXO	20	2	3	3
7440		RAMY	03 02 1449	S04 E85	03 9.0		BD	DKC	280	5	10	2
7440	27780	MWIL	03 02 1600	S06 E86	03 9.1	5	X					
7440		HOLL	03 02 1635	S06 E85	03 9.0		B	CKO	360	5	6	3
7440		PALE	03 02 1950	S05 E85	03 9.2		B	CSO	150	8	10	3
7440		LEAR	03 03 0035	S07 E78	03 8.9		B	DAO	270	4	5	3
7440		SVTO	03 03 1027	S07 E72	03 8.8		B	DAO	650	5	7	4
7440		RAMY	03 03 1232	S07 E73	03 9.0		BD	DKC	740	7	9	3
7440	27780	MWIL	03 03 1545	S06 E73	03 9.1	5	(D)					
7440		HOLL	03 03 1545	S08 E74	03 9.2		B	DKO	730	6	7	3
7440		BOUL	03 03 1548	S05 E70	03 8.9		B	DKC	850	13	9	3
7440		PALE	03 03 1805	S08 E70	03 9.0		B	DHO	680	5	10	3
7440		LEAR	03 04 0030	S06 E66	03 9.0		B	DKI	620	10	8	2
7440		SVTO	03 04 1030	S06 E60	03 8.9		B	DKI	190	22	10	2
7440		RAMY	03 04 1305	S07 E58	03 8.9		BD	DKC	850	22	9	3
7440		HOLL	03 04 1505	S08 E58	03 9.0		BD	DKC	810	20	7	3
7440	27780	MWIL	03 04 1530	S06 E58	03 9.0	6	(D)					
7440		BOUL	03 04 1559	S05 E57	03 8.9		BD	DKC	970	22	10	3
7440		PALE	03 04 2308	S08 E53	03 8.9		BD	DKO	1020	17	10	3

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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
7440	27780	LEAR	03 05 0024	S05 E54	03 9.0		BG	DKI	720	10	10	2
7440		RAMY	03 05 1320	S07 E45	03 8.9		BD	DKC	860	34	10	3
7440		MWIL	03 05 1515	S07 E45	03 9.0	5	(D)					
7440		BOUL	03 05 1539	S05 E43	03 8.9		BGD	EKI	980	29	11	3
7440		HOLL	03 05 1810	S07 E43	03 9.0		B	DKC	850	32	10	3
7440	27780	PALE	03 05 1858	S07 E43	03 9.0		B	EKO	690	19	11	3
7440		LEAR	03 06 0006	S07 E40	03 9.0		BGD	EKC	660	51	11	4
7440		RAMY	03 06 1323	S07 E31	03 8.9		BD	EKI	780	30	12	4
7440		HOLL	03 06 1445	S05 E31	03 8.9		B	EKO	680	17	11	3
7440		MWIL	03 06 1530	S06 E32	03 9.0	5	(D)					
7440	27780	PALE	03 06 1956	S07 E27	03 8.8		B	E I	770	27	12	3
7440		BOUL	03 06 2031	S05 E28	03 8.9		B	DKI	590	12	10	3
7440		LEAR	03 07 0005	S07 E27	03 9.0		BGD	EKC	810	61	13	4
7440		SVTO	03 07 1312	S07 E19	03 9.0		BGD	EKI	950	37	14	2
7440		RAMY	03 07 1330	S06 E17	03 8.8		GD	EKI	830	51	13	3
7440	27780	BOUL	03 07 1530	S05 E16	03 8.8		B	EKI	810	35	13	3
7440		MWIL	03 07 1530	S06 E16	03 8.8	5	(D)					
7440		PALE	03 07 2100	S07 E16	03 9.1		B	EKI	810	37	13	3
7440		HOLL	03 07 2251	S06 E13	03 8.9		BGD	EKI	780	40	13	3
7440		LEAR	03 08 0004	S06 E12	03 8.9		BGD	EKO	770	57	13	3
7440	27780	RAMY	03 08 1215	S06 E05	03 8.9		BGD	EKI	930	58	13	3
7440		SVTO	03 08 1431	S05 E05	03 9.0		BGD	EKI	980	31	14	3
7440		BOUL	03 08 1553	S05 E04	03 9.0		B	EKC	820	31	13	2
7440		MWIL	03 08 1615	S06 E03	03 8.9	5	(D)					
7440		HOLL	03 08 1852	S06 E02	03 8.9		BG	EKO	800	29	13	3
7440	27780	LEAR	03 09 0702	S06 W06	03 8.8		BGD	EKO	770	27	15	2
7440		SVTO	03 09 0748	S04 W06	03 8.9		BGD	EKI	860	36	14	3
7440		RAMY	03 09 1202	S04 W09	03 8.8		BGD	EKO	840	39	14	3
7440		BOUL	03 09 1451	S05 W10	03 8.9		B	EKI	820	18	15	2
7440		HOLL	03 09 1455	S04 W11	03 8.8		BGD	EKI	770	27	14	3
7440	27780	MWIL	03 09 1545	S06 W10	03 8.9	6	(D)					
7440		PALE	03 09 1945	S05 W13	03 8.8		B	FKI	760	32	16	3
7440		LEAR	03 10 0018	S05 W16	03 8.8		BGD	EKO	830	28	15	3
7440		SVTO	03 10 0727	S04 W16	03 9.1		BGD	FKI	920	40	16	3
7440		RAMY	03 10 1220	S05 W21	03 8.9		BGD	EKO	900	41	14	4
7440	27780	HOLL	03 10 1515	S05 W26	03 8.7		BGD	EKI	730	20	14	2
7440		MWIL	03 10 1545	S05 W23	03 8.9	6	(D)					
7440		BOUL	03 10 1554	S05 W24	03 8.9		BGD	FKI	740	22	16	2
7440		PALE	03 10 2005	S05 W27	03 8.8		B	EKO	770	18	15	3
7440		LEAR	03 11 0248	S06 W32	03 8.7		BGD	EKO	810	18	15	2
7440	27780	SVTO	03 11 0845	S05 W35	03 8.7		BGD	EKI	780	22	17	2
7440		RAMY	03 11 1306	S05 W38	03 8.7		BGD	FKO	930	30	16	3
7440		MWIL	03 11 1600	S05 W37	03 8.9	6	(D)					
7440		HOLL	03 11 1825	S05 W39	03 8.8		BGD	FKC	780	29	16	3
7440		PALE	03 11 2000	S05 W47	03 8.3		BG	FHO	670	21	16	2
7440	27780	LEAR	03 12 0010	S06 W45	03 8.6		BGD	FKI	670	32	16	4
7440		RAMY	03 12 1201	S05 W50	03 8.8		BGD	FKO	890	23	18	3
7440		HOLL	03 12 1530	S04 W50	03 8.9		BG	FKO	1060	27	16	3
7440		BOUL	03 12 1550	S05 W52	03 8.8		B	FKI	780	21	17	3
7440		MWIL	03 12 1645	S05 W51	03 8.9	6	(D)					
7440	27780	PALE	03 12 2230	S05 W54	03 8.9		B	FHO	830	17	16	3
7440		LEAR	03 13 0010	S05 W58	03 8.7		BGD	FKO	850	17	18	3
7440		SVTO	03 13 1130	S04 W60	03 9.0		BGD	FK	1200	27	20	4
7440		RAMY	03 13 1247	S05 W63	03 8.8		BGD	FKO	860	20	17	3
7440		HOLL	03 13 1500	S04 W65	03 8.8		BG	FKO	860	9	17	3
7440	27780	MWIL	03 13 1530	S05 W64	03 8.8	6	(D)					
7440		BOUL	03 13 1750	S05 W66	03 8.8		B	FKI	870	10	17	3
7440		PALE	03 13 2055	S03 W70	03 8.6		B	FKI	910	11	16	3
7440		LEAR	03 14 0718	S06 W71	03 9.0		BGD	DKO	60	8	3	2
7440		SVTO	03 14 1057	S06 W72	03 9.1		BG	DKO	470	7	8	4
7440	27780	RAMY	03 14 1245	S05 W75	03 8.9		BG	DKO	620	7	9	4
7440		BOUL	03 14 1555	S05 W80	03 8.7		B	DSO	210	2	10	2
7440		PALE	03 14 1845	S03 W81	03 8.7		BG	DKO	330	5	10	3
7440		HOLL	03 14 2356	S04 W83	03 8.8		B	EKO	30	2	11	1
7440		LEAR	03 15 0105	S06 W75	03 9.4		A	HK	300	3	4	1
7440	27780	SVTO	03 15 0840	S07 W87	03 8.8		A	HS	150	1	1	4
7440		RAMY	03 15 1159	S05 W86	03 9.1		A	HK	150	3	3	4
7440		MWIL	03 15 1545	S06 W89	03 9.0	4	X					
7440		HOLL	03 15 1645	S05 W88	03 9.1		A	AX	30	1	1	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
7441		SVTO	03 04 1030	N07	E67	03 9.4		B	BXO	120	4	6	2
7441		RAMY	03 04 1305	N08	E65	03 9.4		B	DAO	80	9	6	3
7441		HOLL	03 04 1505	N07	E65	03 9.5		B	CSO	80	7	7	3
7441	27783	MWIL	03 04 1530	N10	E64	03 9.4	4	(B)					
7441		BOUL	03 04 1559	N10	E64	03 9.5		B	CAO	120	11	6	3
7441		PALE	03 04 2308	N07	E58	03 9.3		B	DAO	250	7	7	3
7441		LEAR	03 05 0024	N08	E63	03 9.7		B	DAO	220	8	6	2
7441		RAMY	03 05 1320	N08	E52	03 9.4		B	DAO	180	9	9	3
7441	27783	MWIL	03 05 1515	N09	E53	03 9.6	5	(B)					
7441		BOUL	03 05 1539	N09	E52	03 9.5		B	DAO	230	9	8	3
7441		HOLL	03 05 1810	N08	E51	03 9.6		B	DSO	160	10	9	3
7441		PALE	03 05 1858	N08	E49	03 9.5		B	ESO	260	12	11	3
7441		LEAR	03 06 0006	N09	E49	03 9.7		B	DAO	260	23	9	4
7441		RAMY	03 06 1323	N08	E39	03 9.5		B	DAO	130	10	9	4
7441		HOLL	03 06 1445	N09	E39	03 9.5		B	DSO	160	10	9	3
7441	27783	MWIL	03 06 1530	N10	E38	03 9.5	5	(B)					
7441		PALE	03 06 1956	N06	E36	03 9.5		B	DAO	210	7	8	3
7441		BOUL	03 06 2031	N09	E36	03 9.5		B	DAO	160	5	8	3
7441		LEAR	03 07 0005	N09	E34	03 9.5		B	DAO	180	15	8	4
7441		SVTO	03 07 1312	N08	E28	03 9.6		B	DAO	140	13	8	2
7441		RAMY	03 07 1330	N09	E27	03 9.6		B	DAO	180	14	8	3
7441	27783	MWIL	03 07 1530	N09	E25	03 9.5	4	(B)					
7441		BOUL	03 07 1530	N09	E27	03 9.7		B	DAO	100	9	10	3
7441		PALE	03 07 2100	N07	E27	03 9.9		B	DAO	140	13	8	3
7441		HOLL	03 07 2251	N08	E22	03 9.6		B	DAO	140	10	8	3
7441		LEAR	03 08 0004	N08	E21	03 9.6		B	CAO	100	10	9	3
7441		RAMY	03 08 1215	N08	E15	03 9.6		B	DAO	90	11	8	3
7441		SVTO	03 08 1431	N08	E16	03 9.8		B	DAO	100	10	8	3
7441		BOUL	03 08 1553	N09	E13	03 9.6		B	CSO	80	8	7	2
7441	27783	MWIL	03 08 1615	N09	E12	03 9.6	5	(BP)					
7441		HOLL	03 08 1852	N09	E12	03 9.7		B	CSO	100	9	8	3
7441		LEAR	03 09 0702	N09	E05	03 9.7		B	CSO	110	10	8	2
7441		SVTO	03 09 0748	N09	E05	03 9.7		B	CAO	100	10	8	3
7441		RAMY	03 09 1202	N08	E02	03 9.6		B	DAO	100	7	9	3
7441		BOUL	03 09 1451	N09	E01	03 9.7		B	CSO	90	5	8	2
7441		HOLL	03 09 1455	N08	E01	03 9.7		B	CSO	70	7	9	3
7441	27783	MWIL	03 09 1545	N09	W03	03 9.4	5	(BP)					
7441		PALE	03 09 1945	N08	W02	03 9.7		B	CSO	80	8	10	3
7441		LEAR	03 10 0018	N11	W06	03 9.6		B	CSO	100	5	8	3
7441		SVTO	03 10 0727	N09	W11	03 9.5		B	CSO	70	5	3	3
7441		RAMY	03 10 1220	N09	W13	03 9.5		B	CSO	70	5	3	4
7441		HOLL	03 10 1515	N10	W17	03 9.3		B	CSO	60	4	3	2
7441	27783	MWIL	03 10 1545	N09	W17	03 9.4	5	(AP)					
7441		BOUL	03 10 1554	N09	W17	03 9.4		B	CAO	110	4	3	2
7441		PALE	03 10 2005	N09	W18	03 9.5		B	CSO	60	2	4	3
7441		LEAR	03 11 0248	N09	W24	03 9.3		B	CSO	40	2	3	2
7441		SVTO	03 11 0845	N09	W28	03 9.3		B	CSO	50	2	2	2
7441		RAMY	03 11 1306	N08	W30	03 9.3		A	HA	100	3	2	3
7441	27783	MWIL	03 11 1600	N09	W32	03 9.3	5	(AP)					
7441		HOLL	03 11 1825	N09	W32	03 9.4		A	HS	100	1	2	3
7441		PALE	03 11 2000	N09	W33	03 9.3		A	HS	70	1	2	2
7441		LEAR	03 12 0010	N09	W37	03 9.2		A	HS	80	2	2	4
7441		RAMY	03 12 1201	N11	W44	03 9.2		B	CAO	70	4	10	3
7441		HOLL	03 12 1530	N10	W43	03 9.4		A	HS	110	1	2	3
7441		BOUL	03 12 1550	N09	W44	03 9.3		A	HA	80	1	2	3
7441	27783	MWIL	03 12 1645	N09	W46	03 9.2	5	(AP)					
7441		PALE	03 12 2230	N09	W47	03 9.4		A	HS	60	1	2	3
7441		LEAR	03 13 0010	N10	W49	03 9.3		A	HS	80	1	2	3
7441		SVTO	03 13 1130	N08	W55	03 9.3		A	HS	80	1	2	4
7441		RAMY	03 13 1247	N09	W57	03 9.2		A	HS	70	2	2	3
7441		HOLL	03 13 1500	N11	W58	03 9.3		A	HA	70	2	2	3
7441	27783	MWIL	03 13 1530	N09	W59	03 9.2	5	(AP)					
7441		BOUL	03 13 1750	N10	W61	03 9.1		A	HS	20	1	1	3
7441		PALE	03 13 2055	N10	W60	03 9.4		A	HS	30	1	1	3
7441		LEAR	03 14 0718	N08	W69	03 9.1		A	HS	20	1	1	2
7441		SVTO	03 14 1057	N08	W69	03 9.3		A	HS	50	2	3	4
7441		RAMY	03 14 1245	N09	W72	03 9.1		A	HA	50	2	5	4
7441		PALE	03 14 1845	N11	W75	03 9.1		A	HS	30	1	1	3

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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
7441		HOLL	03 14 2356	N12 W78	03 9.1		A	AX	10	2	1	1
7441		LEAR	03 15 0105	N08 W77	03 9.3		A	AX	10	1	1	1
7441A	27791	MWIL	03 11 1600	S04 W23	03 9.9	4	(B)					
7441B	27792	MWIL	03 11 1600	N12 W22	03 10.0	3	(AF)					
7445		HOLL	03 07 2251	N01 E28	03 10.0		A	AX	10	2	2	3
7445		LEAR	03 08 0004	N02 E27	03 10.0		B	BXO	10	2	3	3
7445		RAMY	03 08 1215	N02 E19	03 9.9		A	AX	10	3	2	3
7445		SVTO	03 08 1431	N02 E20	03 10.1		B	BXO	10	2	4	3
7445		BOUL	03 08 1553	N02 E17	03 9.9		B	BXO		5	3	2
7445	27788	MWIL	03 08 1615	N03 E17	03 9.9	4	(B)					
7445		HOLL	03 09 1455	N05 E08	03 10.2		B	BXO	10	5	4	3
7445	27793	MWIL	03 11 1600	N01 W21	03 10.1	4	(AP)					
7444	27786	MWIL	03 05 1515	S07 E65	03 10.5	3	(AP)					
7444		HOLL	03 05 1810	S08 E62	03 10.4		A	AX	10	1		3
7444		PALE	03 05 1858	S08 E62	03 10.4		A	AX	20	2	2	3
7444		LEAR	03 06 0006	S07 E61	03 10.6		B	BXO	20	7	5	4
7444		RAMY	03 06 1323	S07 E52	03 10.4		B	BXO	10	5	5	4
7444		HOLL	03 06 1445	S07 E51	03 10.4		B	BXO	10	4	5	3
7444	27786	MWIL	03 06 1530	S08 E51	03 10.5	4	(B)					
7444		PALE	03 06 1956	S10 E48	03 10.4		B	CSO	60	6	6	3
7444		BOUL	03 06 2031	S07 E48	03 10.4		B	BXO	30	4	6	3
7444		LEAR	03 07 0005	S08 E46	03 10.4		B	BXO	30	11	6	4
7444		SVTO	03 07 1312	S07 E38	03 10.4		B	CRO	30	4	6	2
7444		RAMY	03 07 1330	S07 E37	03 10.3		B	BXO	10	3	6	3
7444		BOUL	03 07 1530	S08 E36	03 10.3		B	BXO	10	3	7	3
7444	27786	MWIL	03 07 1530	S08 E36	03 10.3	3	(B)					
7444		PALE	03 07 2100	S10 E35	03 10.5		B	BXO	40	5	7	3
7444		HOLL	03 07 2251	S08 E32	03 10.3		B	BXO	10	3	8	3
7444		LEAR	03 08 0004	S08 E31	03 10.3		B	BXO	10	4	8	3
7444		RAMY	03 08 1215	S07 E24	03 10.3		B	BXO	20	5	7	3
7444		LEAR	03 09 0702	S08 E14	03 10.3		A	AX	10	1	1	2
7444		SVTO	03 09 0748	S09 E13	03 10.3		B	BXO	10	2	2	3
7444		RAMY	03 09 1202	S09 E11	03 10.3		B	BXO	10	4	3	3
7444		BOUL	03 09 1451	S08 E10	03 10.4		B	BXO	10	4	3	2
7444		HOLL	03 09 1455	S09 E10	03 10.4		B	BXO	10	4	3	3
7444	27786	MWIL	03 09 1545	S08 E10	03 10.4	4	(B)					
7444		PALE	03 09 1945	S09 E07	03 10.3		B	BXO	20	3	5	3
7444		LEAR	03 10 0018	S08 E04	03 10.3		B	BXO	20	5	4	3
7444		SVTO	03 10 0727	S10 E00	03 10.3		B	CRO	20	8	6	3
7444		RAMY	03 10 1220	S08 W01	03 10.4		B	DAO	30	10	7	4
7444		HOLL	03 10 1515	S08 W02	03 10.5		B	CRO	20	9	5	2
7444	27786	MWIL	03 10 1545	S07 W03	03 10.4	5	(B)					
7444		BOUL	03 10 1554	S07 W04	03 10.4		B	CRO	30	9	6	2
7444		PALE	03 10 2005	S07 W06	03 10.4		B	CRO	30	10	7	3
7444		LEAR	03 11 0248	S08 W10	03 10.4		B	BXO	20	7	7	2
7444		SVTO	03 11 0845	S08 W13	03 10.4		B	CRO	50	6	3	2
7444		RAMY	03 11 1306	S07 W17	03 10.3		B	CAO	30	6	6	3
7444	27786	MWIL	03 11 1600	S07 W18	03 10.3	4	(B)					
7444		HOLL	03 11 1825	S08 W20	03 10.3		B	CSO	30	7	5	3
7444		PALE	03 11 2000	S07 W19	03 10.4		B	CSO	40	3	4	2
7444		LEAR	03 12 0010	S07 W23	03 10.3		B	CSO	30	7	5	4
7444		RAMY	03 12 1201	S07 W28	03 10.4		B	CAO	30	10	5	3
7444		HOLL	03 12 1530	S07 W30	03 10.4		B	CRO	40	4	5	3
7444		BOUL	03 12 1550	S07 W31	03 10.3		B	CAO	20	4	5	3
7444	27786	MWIL	03 12 1645	S07 W30	03 10.4	4	(B)					
7444		PALE	03 12 2230	S07 W35	03 10.3		B	BXO	20	6	5	3
7444		LEAR	03 13 0010	S07 W34	03 10.5		B	CRO	10	3	4	3
7444		SVTO	03 13 1130	S06 W38	03 10.6		B	BXO	20	5	5	4
7444		RAMY	03 13 1247	S06 W42	03 10.4		B	BXO	10	5	6	3
7444		HOLL	03 13 1500	S06 W42	03 10.5		B	BXO		3	3	3
7444	27786	MWIL	03 13 1530	S07 W43	03 10.4	4	(B)					
7444		PALE	03 13 2055	S05 W51	03 10.0		A	AX	10	2	2	3
7444A		HOLL	03 09 1455	S22 E21	03 11.2		B	BXO	10	4	3	3
7444A		PALE	03 09 1945	S23 E17	03 11.1		A	AX		1		3

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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
7444A		LEAR	03 10 0018	S21	E22	03 11.7		A	AX	10	1	1	3
7446		RAMY	03 08 1215	N11	E32	03 10.9		B	BXO	10	2	2	3
7446		BOUL	03 08 1553	N11	E30	03 10.9		B	BXO	10	5	3	2
7446	27789	MWIL	03 08 1615	N12	E30	03 10.9	4	(B)					
7446		HOLL	03 08 1852	N10	E28	03 10.9		B	BXO	30	7	3	3
7446		LEAR	03 09 0702	N11	E22	03 10.9		B	BXO	30	6	5	2
7446		SVTO	03 09 0748	N10	E25	03 11.2		B	BXO	20	6	4	3
7446		RAMY	03 09 1202	N10	E20	03 11.0		B	BXO	10	6	4	3
7446		BOUL	03 09 1451	N11	E18	03 11.0		B	BXO	20	5	6	2
7446		HOLL	03 09 1455	N10	E20	03 11.1		B	BXO	10	5	4	3
7446	27789	MWIL	03 09 1545	N11	E17	03 10.9	4	(AP)					
7446		PALE	03 09 1945	N08	E16	03 11.0		B	BXO	30	7	6	3
7446		LEAR	03 10 0018	N11	E13	03 11.0		B	BXO	30	7	5	3
7446		SVTO	03 10 0727	N08	E12	03 11.2		B	BXO	20	8	5	3
7446		RAMY	03 10 1220	N10	E07	03 11.0		B	CRO	200	8	5	4
7446		HOLL	03 10 1515	N09	E07	03 11.2		B	BXO	10	6	4	2
7446	27789	MWIL	03 10 1545	N11	E05	03 11.0	4	(B)					
7446		BOUL	03 10 1554	N11	E04	03 11.0		B	CRO	20	6	3	2
7446		PALE	03 10 2005	N10	E04	03 11.1		B	CSO	20	6	5	3
7446		LEAR	03 11 0248	N10	W02	03 11.0		B	BXO	20	5	5	2
7446		SVTO	03 11 0845	N10	W01	03 11.3		B	BXO	20	2	5	2
7446		RAMY	03 11 1306	N10	W06	03 11.1		B	BXO	10	6	4	3
7446	27789	MWIL	03 11 1600	N10	W07	03 11.1	4	(B)					
7446		LEAR	03 12 0010	N09	W12	03 11.1		A	AX	10	2	2	4
7446A		HOLL	03 15 1645	N12	W24	03 13.9		A	AX		1		3
7449		PALE	03 14 1845	S10	E02	03 14.9		B	CSO	20	3	3	3
7449		HOLL	03 14 2356	S10	W02	03 14.8		B	BXO		2	3	1
7449		LEAR	03 15 0105	S09	W02	03 14.9		B	BXO	10	2	3	1
7449		SVTO	03 15 0840	S09	W07	03 14.8		B	BXO	10	2	3	4
7449		RAMY	03 15 1159	S09	W09	03 14.8		B	BXO		2	4	4
7449	27794	MWIL	03 15 1545	S09	W13	03 14.7	4	(AP)					
7449		BOUL	03 15 1558	S08	W12	03 14.8		A	AX		1		2
7449		HOLL	03 15 1645	S09	W12	03 14.8		A	AX	10	2	1	3
7449		PALE	03 15 2000	S08	W14	03 14.8			AX		1		3
7449A		BOUL	03 19 1528	N14	W42	03 16.5		A	AX	10	2	2	3
7449A	27799	MWIL	03 19 1600	N14	W43	03 16.4	4	(AP)					
7448	27790	MWIL	03 10 1545	N16	E79	03 16.6	4	(X					
7448		PALE	03 10 2005	N16	E80	03 16.9		A	AX		1		3
7448		LEAR	03 11 0248	N15	E75	03 16.8		B	BXO	30	2	2	2
7448		SVTO	03 11 0845	N17	E70	03 16.7		B	BXO	70	6	13	2
7448		RAMY	03 11 1306	N16	E69	03 16.8		B	CAO	120	12	14	3
7448	27790	MWIL	03 11 1600	N16	E70	03 17.0	5	(B					
7448		HOLL	03 11 1825	N15	E68	03 16.9		B	FSO	140	12	18	3
7448		PALE	03 11 2000	N14	E65	03 16.7		B	FSO	180	12	17	2
7448		LEAR	03 12 0010	N16	E67	03 17.1		B	FAO	190	20	16	4
7448		RAMY	03 12 1201	N17	E59	03 17.0		BG	FAO	230	34	16	3
7448		HOLL	03 12 1530	N14	E58	03 17.0		B	EAO	340	19	15	3
7448		BOUL	03 12 1550	N17	E59	03 17.1		B	EAI	410	31	15	3
7448	27790	MWIL	03 12 1645	N17	E58	03 17.1	4	(D)					
7448		PALE	03 12 2230	N15	E53	03 16.9		B	EAO	230	16	14	3
7448		LEAR	03 13 0010	N17	E53	03 17.0		B	FAO	230	30	16	3
7448		SVTO	03 13 1130	N15	E46	03 17.0		BG	FAO	140	26	16	4
7448		RAMY	03 13 1247	N17	E46	03 17.0		BG	FAO	280	34	16	3
7448		HOLL	03 13 1500	N15	E45	03 17.0		B	CAI	150	27	15	3
7448	27790	MWIL	03 13 1530	N17	E46	03 17.1	5	(D)					
7448		BOUL	03 13 1750	N17	E44	03 17.1		B	FSI	140	14	15	3
7448		PALE	03 13 2055	N17	E42	03 17.1		B	FSI	160	33	16	3
7448		LEAR	03 14 0718	N17	E37	03 17.1		B	DAO	40	24	18	2
7448		SVTO	03 14 1057	N15	E34	03 17.0		BG	FAO	210	34	16	4
7448		RAMY	03 14 1245	N17	E33	03 17.0		BG	FAI	300	28	16	4
7448		BOUL	03 14 1555	N17	E30	03 16.9		B	FAI	130	18	18	2
7448		PALE	03 14 1845	N17	E29	03 17.0		B	FSI	180	23	17	3
7448		HOLL	03 14 2356	N15	E24	03 16.8		BG	FAI	120	20	18	1
7448		LEAR	03 15 0105	N16	E27	03 17.1		B	EAO	220	28	17	1

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMP	Max	Mag	Spot	Corrected	Spot	Long.			
			Mo	Day	(UT)	Mo	Day	H	Class	Class	(10-6 Hemi)	Count	Extent (Deg)	Qual	
7448	27790	SVTO	03	15	0840	N17 E19	03	16.8		BG	EAI	180	15	4	
7448		RAMY	03	15	1159	N17 E19	03	16.9		BG	FAI	250	17	4	
7448		MWIL	03	15	1545	N16 E18	03	17.0	5	(D)					
7448		BOUL	03	15	1558	N18 E18	03	17.0		B	ESO	160	14	2	
7448		HOLL	03	15	1645	N17 E18	03	17.1		BG	FSI	140	35	16	3
7448		PALE	03	15	2000	N17 E18	03	17.2		B	FSO	130	39	17	3
7448	27790	LEAR	03	16	0200	N17 E11	03	16.9		BG	FAO	150	22	16	2
7448		RAMY	03	16	1339	N17 E05	03	16.9		BG	FAI	200	48	18	4
7448		MWIL	03	16	1545	N16 E05	03	17.0	5	(D)					
7448		HOLL	03	16	1550	N17 E04	03	17.0		BG	FSI	140	30	19	3
7448		BOUL	03	16	1638	N17 E06	03	17.1		B	ESO	110	7	12	1
7448		PALE	03	16	1830	N17 E04	03	17.1		B	FSO	150	45	20	3
7448	27790	LEAR	03	17	0010	N17 W03	03	16.8		BG	FSO	150	21	19	3
7448		RAMY	03	17	1242	N17 W07	03	17.0		BG	FAI	200	42	18	4
7448		HOLL	03	17	1510	N16 W08	03	17.0		BG	FSI	150	24	18	3
7448		MWIL	03	17	1530	N16 W05	03	17.3	5	(BG)					
7448		LEAR	03	18	0038	N17 W14	03	17.0		BG	FSO	190	28	19	3
7448		SVTO	03	18	0855	N16 W14	03	17.3		BG	DSI	240	17	13	2
7448	27790	RAMY	03	18	1244	N17 W18	03	17.2		BGD	EAI	290	35	12	4
7448		MWIL	03	18	1530	N16 W16	03	17.4	5	(D)					
7448		BOUL	03	18	1538	N16 W17	03	17.4		B	DAI	290	18	8	2
7448		PALE	03	18	1930	N17 W18	03	17.4		BG	EAI	250	34	13	3
7448		HOLL	03	18	2310	N17 W20	03	17.4		BD	EAC	280	16	12	1
7448		LEAR	03	19	0020	N17 W21	03	17.4		BGD	EAI	310	29	12	3
7448	27790	SVTO	03	19	0745	N18 W25	03	17.4		BGD	EAI	280	21	12	3
7448		RAMY	03	19	1220	N15 W27	03	17.5		BG	EAI	320	24	11	3
7448		BOUL	03	19	1528	N16 W30	03	17.4		B	DAI	300	23	9	3
7448		MWIL	03	19	1600	N16 W30	03	17.4	5	(D)					
7448		HOLL	03	19	1640	N16 W29	03	17.5		BGD	DAC	300	36	10	3
7448		LEAR	03	20	0020	N18 W35	03	17.3		BGD	DAO	260	20	9	2
7448	27790	SVTO	03	20	0900	N18 W41	03	17.2		BGD	DKI	480	23	10	2
7448		RAMY	03	20	1345	N15 W40	03	17.5		BG	DAI	280	26	9	2
7448		HOLL	03	20	1415	N17 W41	03	17.5		BGD	EAI	320	21	10	4
7448		BOUL	03	20	1700	N16 W43	03	17.4		B	ESI	150	8	11	3
7448		MWIL	03	20	1800	N16 W45	03	17.3	5	(BG)					
7448		PALE	03	20	2320	N16 W45	03	17.5		BGD	EAI	340	15	9	2
7448	27790	LEAR	03	21	0030	N18 W48	03	17.4		BG	EAI	280	21	11	3
7448		SVTO	03	21	0835	N18 W52	03	17.4		BG	DKI	270	26	10	3
7448		RAMY	03	21	1221	N17 W52	03	17.6		BG	DAI	310	33	10	4
7448		MWIL	03	21	1500	N18 W56	03	17.4	5	(BG)					
7448		BOUL	03	21	1510	N16 W55	03	17.5		B	FSO	310	24	19	3
7448		HOLL	03	21	1830	N18 W58	03	17.3		BG	DAI	220	23	10	2
7448	27790	PALE	03	21	1930	N17 W56	03	17.5		BG	DAI	340	20	11	3
7448		LEAR	03	22	0010	N17 W60	03	17.4		BG	DAI	270	16	10	2
7448		RAMY	03	22	1241	N18 W69	03	17.3		BG	DAI	270	15	10	3
7448		SVTO	03	22	1400	N18 W69	03	17.3		BG	DKO	390	12	7	2
7448		BOUL	03	22	1444	N18 W70	03	17.3		B	DAI	240	6	10	2
7448		MWIL	03	22	1530	N18 W70	03	17.3	5	(B)					
7448	27790	HOLL	03	22	1900	N15 W70	03	17.5		BG	DSO	240	9	8	2
7448		PALE	03	22	2243	N17 W73	03	17.4		B	DAO	210	7	8	2
7448		LEAR	03	23	0040	N17 W69	03	17.8		BG	DAI	230	7	7	3
7448		RAMY	03	23	1307	N17 W81	03	17.4		A	HS	40	2	3	2
7448		HOLL	03	23	1415	N15 W85	03	17.1		B	DSO	50	2	4	3
7448		SVTO	03	23	1440	N15 W80	03	17.5		B	BXO	40	4	3	3
7448	27790	MWIL	03	23	1510	N19 W82	03	17.4	3	X					
7455	27801	MWIL	03	20	1800	N19 W21	03	19.1	3	(AP)					
7455		PALE	03	20	2320	N19 W24	03	19.1		A	AX	10	1		2
7455		LEAR	03	21	0030	N19 W25	03	19.1		A	AX	10	1	1	3
7455		SVTO	03	21	0835	N18 W27	03	19.3		B	BXO	30	5	5	3
7455		RAMY	03	21	1221	N19 W31	03	19.1		A	AX		1		4
7455		MWIL	03	21	1500	N19 W33	03	19.1	4	(AP)					
7455	27801	BOUL	03	21	1510	N19 W33	03	19.1		A	HS	10	1		3
7455		HOLL	03	21	1830	N20 W34	03	19.2		A	AX	10	1		2
7455		PALE	03	21	1930	N20 W35	03	19.1		A	HR	10	1	1	3
7455		LEAR	03	22	0010	N19 W38	03	19.1		A	AX	10	1	1	2
7457		RAMY	03	22	1241	N09 W19	03	21.1		B	DRO	30	4	3	3
7457		SVTO	03	22	1400	N10 W20	03	21.1		B	DSO	40	4	3	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
7457	27804	BOUL	03 22 1444	N10 W21	03 21.0		B	BXO	20	4	3	2
7457		MWIL	03 22 1530	N09 W22	03 21.0	5	(B)					
7457		HOLL	03 22 1900	N08 W22	03 21.1		B	CSO	40	3	3	2
7457		PALE	03 22 2243	N10 W26	03 21.0		B	DSO	70	2	4	2
7457		LEAR	03 23 0040	N10 W25	03 21.1		B	CRO	30	4	5	3
7457		RAMY	03 23 1307	N10 W33	03 21.1		B	DAO	20	2	4	2
7457		HOLL	03 23 1415	N11 W33	03 21.1		B	DAO	40	2	5	3
7457		SVTO	03 23 1440	N10 W33	03 21.1		B	DSO	60	2	7	3
7457		BOUL	03 23 1446	N10 W34	03 21.1		B	CSO	40	2	6	2
7457		MWIL	03 23 1510	N10 W35	03 21.0	5	(B)					
7457	27804	PALE	03 23 2205	N11 W36	03 21.2		B	DSO	50	3	5	3
7457		LEAR	03 24 0020	N10 W39	03 21.1		B	DSO	40	2	4	3
7457		SVTO	03 24 1015	N13 W45	03 21.0		B	DSO	30	2	6	2
7457		RAMY	03 24 1242	N09 W45	03 21.1		B	DAO	20	3	4	3
7457		HOLL	03 24 1450	N12 W46	03 21.1		B	CAO	30	3	6	4
7457		BOUL	03 24 1537	N10 W48	03 21.0		B	CAO	30	3	5	3
7457		MWIL	03 24 1630	N11 W48	03 21.1	4	(B)					
7457		LEAR	03 25 0010	N12 W50	03 21.2		A	HS	20	1	1	3
7457		RAMY	03 25 1200	N12 W57	03 21.2		A	HR	20	1	1	3
7457		SVTO	03 25 1424	N12 W57	03 21.3		B	BXO	10	2	3	4
7457	27804	BOUL	03 25 1534	N12 W60	03 21.1		A	AX	10	1		3
7457		HOLL	03 25 1730	N13 W60	03 21.2		A	AX	10	1	1	4
7457		PALE	03 25 2030	N11 W60	03 21.3		A	AX	20	2	2	3
7457		LEAR	03 26 0007	N12 W64	03 21.2		A	AX		1	1	3
7450	27795	PALE	03 14 1845	S20 E82	03 21.0		A	HS	30	1	2	3
7450		HOLL	03 14 2356	S21 E80	03 21.1		A	HS	120	1	2	1
7450		LEAR	03 15 0105	S17 E79	03 21.0		A	HR	30	1	2	1
7450		SVTO	03 15 0840	S17 E76	03 21.1		A	HS	80	1	1	4
7450		RAMY	03 15 1159	S18 E72	03 21.0		A	HS	70	1	2	4
7450		MWIL	03 15 1545	S18 E72	03 21.1	4	(AP)					
7450		BOUL	03 15 1558	S16 E72	03 21.1		A	HS	120	1	2	2
7450		HOLL	03 15 1645	S18 E72	03 21.2		A	HS	100	1	2	3
7450		PALE	03 15 2000	S19 E70	03 21.2		A	HS	50	1	2	3
7450		LEAR	03 16 0200	S17 E66	03 21.1		A	HA	60	1	2	2
7450	27795	RAMY	03 16 1339	S17 E59	03 21.0		A	HS	80	1	2	4
7450		MWIL	03 16 1545	S18 E60	03 21.2	5	(AP)					
7450		HOLL	03 16 1550	S18 E58	03 21.1		A	HS	80	2	1	3
7450		BOUL	03 16 1638	S16 E57	03 21.0		A	HS	60	1	1	1
7450		PALE	03 16 1830	S20 E58	03 21.2		A	HS	70	1	2	3
7450		LEAR	03 17 0010	S15 E55	03 21.2		A	HS	800	1	2	3
7450		RAMY	03 17 1242	S17 E48	03 21.2		A	HS	60	1	2	4
7450		HOLL	03 17 1510	S20 E49	03 21.4		B	CSO	30	3	7	3
7450		MWIL	03 17 1530	S17 E46	03 21.1	4	(BP)					
7450		LEAR	03 18 0038	S17 E42	03 21.2		A	HS	80	1	2	3
7450	27795	SVTO	03 18 0855	S17 E37	03 21.2		A	HS	60	1	2	2
7450		RAMY	03 18 1244	S17 E34	03 21.1		A	HA	70	1	2	4
7450		MWIL	03 18 1530	S16 E33	03 21.1	5	(AP)					
7450		BOUL	03 18 1538	S16 E33	03 21.1		A	HA	90	2	2	2
7450		PALE	03 18 1930	S17 E32	03 21.2		A	HA	50	1	2	3
7450		HOLL	03 18 2310	S19 E32	03 21.4		B	CSO	80	3	11	1
7450		LEAR	03 19 0020	S17 E29	03 21.2		A	HS	90	1	2	3
7450		SVTO	03 19 0745	S17 E23	03 21.1		A	HS	100	1	2	3
7450		RAMY	03 19 1220	S18 E25	03 21.4		B	DAO	80	3	7	3
7450		BOUL	03 19 1528	S16 E20	03 21.2		A	HS	60	1	2	3
7450	27795	MWIL	03 19 1600	S16 E19	03 21.1	5	(BP)					
7450		HOLL	03 19 1640	S17 E22	03 21.4		B	CSO	80	5	10	3
7450		LEAR	03 20 0020	S16 E15	03 21.1		A	HS	60	1	2	2
7450		SVTO	03 20 0900	S16 E09	03 21.0		A	HS	100	1	2	2
7450		RAMY	03 20 1345	S17 E09	03 21.2		A	HS	50	1	2	2
7450		HOLL	03 20 1415	S16 E08	03 21.2		A	HS	40	1	2	4
7450		BOUL	03 20 1700	S16 E06	03 21.2		A	HS	30	1	1	3
7450		MWIL	03 20 1800	S16 E06	03 21.2	5	(AP)					
7450		PALE	03 20 2320	S17 E03	03 21.2		A	HS	100	1	2	2
7450		LEAR	03 21 0030	S17 E02	03 21.2		A	HS	60	1	2	3
7450	27795	SVTO	03 21 0835	S15 W02	03 21.2		B	CSO	80	4	5	3
7450		RAMY	03 21 1221	S16 W04	03 21.2		A	HA	60	2	2	4
7450		MWIL	03 21 1500	S17 W06	03 21.2	5	(AP)					
7450		BOUL	03 21 1510	S15 W03	03 21.4		B	CSO	60	2	6	3

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7450		HOLL	03 21 1830	S16 W08	03 21.2		A	HS	80	1	2	2
7450		PALE	03 21 1930	S16 W08	03 21.2		A	HS	110	1	2	3
7450		LEAR	03 22 0010	S17 W10	03 21.2		A	HS	70	1	2	2
7450		RAMY	03 22 1241	S16 W18	03 21.2		A	HA	40	3	2	3
7450		SVTO	03 22 1400	S15 W17	03 21.3		A	HA	40	4	2	2
7450		BOUL	03 22 1444	S15 W19	03 21.2		A	HS	50	3	1	2
7450	27795	MWIL	03 22 1530	S17 W18	03 21.3	4	(AP)					
7450		HOLL	03 22 1900	S16 W20	03 21.3		A	HS	30	3	1	2
7450		PALE	03 22 2243	S15 W23	03 21.2		A	HS	40	1	2	2
7450		LEAR	03 23 0040	S16 W23	03 21.3		A	HA	40	3	2	3
7450		RAMY	03 23 1307	S15 W31	03 21.2		A	HA	10	2	1	2
7450		HOLL	03 23 1415	S16 W32	03 21.2		B	CAO	20	3	4	3
7450		SVTO	03 23 1440	S15 W30	03 21.3		A	HS	20	3	2	3
7450		BOUL	03 23 1446	S15 W31	03 21.3		A	AX	10	2		2
7450	27795	MWIL	03 23 1510	S16 W32	03 21.2	4	(AP)					
7450		PALE	03 23 2205	S14 W33	03 21.4		A	HS	10	1	1	3
7450		LEAR	03 24 0020	S16 W36	03 21.3		A	HS	10	1	1	3
7450		SVTO	03 24 1015	S13 W40	03 21.4		A	HS	10	2	1	2
7450		RAMY	03 24 1242	S16 W42	03 21.3		A	AX	10	2	2	3
7450		HOLL	03 24 1450	S14 W44	03 21.3		A	AX	10	2	1	4
7450		BOUL	03 24 1537	S14 W44	03 21.3		A	AX		1		3
7450	27795	MWIL	03 24 1630	S16 W45	03 21.3	4	(AP)					
7450A	27802	MWIL	03 20 1800	S11 E13	03 21.7	3	(AP)					
7450A		PALE	03 20 2320	S13 E15	03 22.1		B	CSO	80	4	8	2
7450A		SVTO	03 21 0835	S11 E08	03 21.9		B	BXO	10	2	1	3
7450A		RAMY	03 21 1221	S14 E10	03 22.3		B	BXO		2	2	4
7451	27796	MWIL	03 15 1545	S17 E88	03 22.3	3	AP					
7451		HOLL	03 15 1645	S18 E85	03 22.2		A	AX	30	2	2	3
7451		PALE	03 15 2000	S20 E80	03 21.9		B	BXO	30	2	3	3
7451		LEAR	03 16 0200	S19 E75	03 21.8		B	BXO	30	3	4	2
7451		RAMY	03 16 1339	S18 E71	03 22.0		B	CAO	60	3	4	4
7451	27796	MWIL	03 16 1545	S17 E72	03 22.1	4	(AP)					
7451		HOLL	03 16 1550	S15 E75	03 22.3		B	ESO	110	6	14	3
7451		BOUL	03 16 1638	S15 E71	03 22.1		A	HS	30	1	1	1
7451		PALE	03 16 1830	S20 E69	03 22.0		B	CSO	110	4	6	3
7451		LEAR	03 17 0010	S16 E66	03 22.0		B	CAO	700	5	3	3
7451		RAMY	03 17 1242	S17 E59	03 22.0		B	CAO	60	4	7	4
7451		HOLL	03 17 1510	S17 E58	03 22.0		B	CSO	40	5	4	3
7451	27796	MWIL	03 17 1530	S17 E59	03 22.1	4	(AP)					
7451		LEAR	03 18 0038	S17 E53	03 22.0		B	CAO	70	8	10	3
7451		SVTO	03 18 0855	S17 E47	03 21.9		B	CSO	40	5	5	2
7451		RAMY	03 18 1244	S18 E46	03 22.0		B	CAO	30	3	7	4
7451	27796	MWIL	03 18 1530	S17 E45	03 22.1	4	(AP)					
7451		BOUL	03 18 1538	S17 E44	03 22.0		B	CSO	40	2	4	2
7451		PALE	03 18 1930	S19 E43	03 22.1		B	CAO	40	6	7	3
7451		HOLL	03 18 2310	S18 E42	03 22.2		A	AX	20	1	1	1
7451		LEAR	03 19 0020	S18 E38	03 21.9		B	CSO	30	3	8	3
7451		SVTO	03 19 0745	S18 E35	03 22.0		B	CAO	40	7	9	3
7451		RAMY	03 19 1220	S18 E34	03 22.1		B	CAO	30	3	6	3
7451		BOUL	03 19 1528	S17 E30	03 21.9		B	DSO	40	2	8	3
7451	27796	MWIL	03 19 1600	S17 E31	03 22.0	4	(AP)					
7451		HOLL	03 19 1640	S17 E33	03 22.2		A	HR	10	1	1	3
7451		LEAR	03 20 0020	S17 E25	03 21.9		B	CSO	10	2	9	2
7451		SVTO	03 20 0900	S20 E22	03 22.0		B	BXO	10	2	1	2
7451		RAMY	03 20 1345	S17 E22	03 22.2		A	HR	10	2	1	2
7451		HOLL	03 20 1415	S17 E21	03 22.2		A	HS	20	2	2	4
7451		BOUL	03 20 1700	S17 E20	03 22.2		A	HS	20	1	1	3
7451	27796	MWIL	03 20 1800	S17 E19	03 22.2	4	(AP)					
7451		PALE	03 20 2320	S18 E17	03 22.3		A	AX	20	2	2	2
7451		LEAR	03 21 0030	S18 E16	03 22.2		B	CSO	20	2	2	3
7451		SVTO	03 21 0835	S18 E12	03 22.3		B	CSO	20	10	4	3
7451		RAMY	03 21 1221	S18 E09	03 22.2		A	HA	20	2	2	4
7451	27796	MWIL	03 21 1500	S18 E08	03 22.2	4	(AP)					
7451		BOUL	03 21 1510	S18 E07	03 22.2		B	DSO	20	3	6	3
7451		HOLL	03 21 1830	S16 E06	03 22.2		A	AX	10	3	2	2
7451		PALE	03 21 1930	S17 E05	03 22.2		A	HR	20	3	2	3
7451		LEAR	03 22 0010	S17 E03	03 22.2		A	HS	10	1	1	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
7451		RAMY	03 22 1241	S18 W03	03 22.3		A	HR	10	3	3	3
7451		SVTO	03 22 1400	S16 W05	03 22.2		A	HS	10	1	1	2
7451		BOUL	03 22 1444	S16 W04	03 22.3		A	AX	10	1	1	2
7451		HOLL	03 22 1900	S18 W06	03 22.3		A	AX	10	2	2	2
7451		PALE	03 22 2243	S16 W10	03 22.2		A	AX	10	1	1	2
7451		LEAR	03 23 0040	S17 W09	03 22.3		A	HX	10	1	1	3
7451		RAMY	03 23 1307	S17 W17	03 22.2		A	AX		1		2
7451		HOLL	03 23 1415	S17 W18	03 22.2		A	AX		1		3
7451		SVTO	03 23 1440	S17 W16	03 22.4		B	CRO	20	2	4	3
7451		BOUL	03 23 1446	S16 W17	03 22.3		A	AX		1		2
7451	27796	MWIL	03 23 1510	S18 W19	03 22.2	4	(AP)					
7451		PALE	03 23 2205	S17 W21	03 22.3		A	AX	10	2	2	3
7451		LEAR	03 24 0020	S18 W23	03 22.3		A	HS	10	1	1	3
7451		HOLL	03 24 1450	S17 W31	03 22.3		A	AX		1		4
7451A		HOLL	03 20 1415	N10 E21	03 22.2		A	AX		2	1	4
7451A		RAMY	03 22 1241	N12 W04	03 22.2		A	AX		1		3
7452		RAMY	03 16 1339	S13 E79	03 22.5		B	DAO	90	2	4	4
7452	27797	MWIL	03 16 1545	S13 E79	03 22.6	4	(X)					
7452		PALE	03 16 1830	S15 E79	03 22.7		B	CSO	90	4	7	3
7452		LEAR	03 17 0010	S13 E73	03 22.5		B	BXO	120	3	3	3
7452		RAMY	03 17 1242	S12 E68	03 22.6		B	CSO	60	8	8	4
7452		HOLL	03 17 1510	S13 E67	03 22.7		B	CSO	20	5	9	3
7452	27797	MWIL	03 17 1530	S12 E67	03 22.7	4	(B)					
7452		LEAR	03 18 0038	S12 E63	03 22.8		B	CSO	60	8	11	3
7452		SVTO	03 18 0855	S12 E58	03 22.7		B	CAO	40	10	9	2
7452		RAMY	03 18 1244	S12 E55	03 22.7		B	DAI	80	14	10	4
7452	27797	MWIL	03 18 1530	S12 E54	03 22.7	4	(B)					
7452		BOUL	03 18 1538	S13 E53	03 22.6		B	DSI	100	10	10	2
7452		PALE	03 18 1930	S12 E54	03 22.9		B	DAI	60	15	10	3
7452		HOLL	03 18 2310	S13 E49	03 22.7		B	BXO	40	10	8	1
7452		LEAR	03 19 0020	S12 E50	03 22.8		B	DAO	60	19	11	3
7452		SVTO	03 19 0745	S12 E45	03 22.7		B	DAO	50	21	11	3
7452		RAMY	03 19 1220	S12 E42	03 22.7		B	EAI	150	15	11	3
7452		BOUL	03 19 1528	S12 E40	03 22.6		B	DAI	120	12	10	3
7452	27797	MWIL	03 19 1600	S12 E40	03 22.7	5	(B)					
7452		HOLL	03 19 1640	S13 E40	03 22.7		B	DSI	170	19	9	3
7452		LEAR	03 20 0020	S12 E35	03 22.6		B	DSO	80	10	9	2
7452		SVTO	03 20 0900	S13 E30	03 22.6		B	EAI	130	12	11	2
7452		RAMY	03 20 1345	S13 E30	03 22.8		B	DAO	90	10	10	2
7452		HOLL	03 20 1415	S13 E27	03 22.6		B	EAO	90	9	16	4
7452		BOUL	03 20 1700	S13 E25	03 22.6		B	DSO	50	4	8	3
7452	27797	MWIL	03 20 1800	S12 E24	03 22.5	5	(B)					
7452		PALE	03 20 2320	S14 E26	03 22.9		B	CSO	50	5	5	2
7452		LEAR	03 21 0030	S10 E21	03 22.6		B	CAO	90	8	11	3
7452		SVTO	03 21 0835	S12 E18	03 22.7		B	CSI	70	21	12	3
7452		RAMY	03 21 1221	S12 E16	03 22.7		B	CAO	80	19	13	4
7452	27797	MWIL	03 21 1500	S12 E12	03 22.5	5	(B)					
7452		BOUL	03 21 1510	S11 E13	03 22.6		B	CSO	60	20	13	3
7452		HOLL	03 21 1830	S11 E12	03 22.7		B	DAO	60	11	10	2
7452		PALE	03 21 1930	S13 E10	03 22.6		B	CSO	110	14	12	3
7452		LEAR	03 22 0010	S12 E10	03 22.8		B	CSO	90	10	11	2
7452		RAMY	03 22 1241	S12 E01	03 22.6		B	EAO	140	13	11	3
7452		SVTO	03 22 1400	S12 E02	03 22.7		B	DAO	180	13	12	2
7452		BOUL	03 22 1444	S11 E01	03 22.7		B	CSO	120	16	11	2
7452	27797	MWIL	03 22 1530	S12 W03	03 22.4	5	(D)					
7452		HOLL	03 22 1900	S12 W02	03 22.6		BD	EAI	100	12	11	2
7452		PALE	03 22 2243	S12 W04	03 22.6		B	CAO	170	13	12	2
7452		LEAR	03 23 0040	S12 W07	03 22.5		BD	DAO	130	13	10	3
7452		RAMY	03 23 1307	S12 W16	03 22.3		BD	DAI	150	13	5	2
7452		HOLL	03 23 1415	S12 W17	03 22.3		BD	DAO	140	6	4	3
7452		SVTO	03 23 1440	S12 W15	03 22.5		B	DAO	180	6	5	3
7452		BOUL	03 23 1446	S11 W16	03 22.4		B	CSO	120	6		2
7452	27797	MWIL	03 23 1510	S12 W17	03 22.3	5	(BP)					
7452		PALE	03 23 2205	S12 W16	03 22.7		BD	CAO	130	15	12	3
7452		LEAR	03 24 0020	S12 W21	03 22.4		B	DSO	90	5	4	3
7452		SVTO	03 24 1015	S10 W27	03 22.4		BD	DKO	120	8	5	2
7452		RAMY	03 24 1242	S12 W28	03 22.4		B	DAO	120	13	5	3

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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
7452	27797	HOLL	03 24 1450	S11	W27	03 22.6		B	DAO	100	10	8	4
7452		BOUL	03 24 1537	S11	W30	03 22.4		B	DAO	150	8	4	3
7452		MWIL	03 24 1630	S12	W33	03 22.2	5	(BP)					
7452		LEAR	03 25 0010	S12	W35	03 22.4		B	DAO	170	7	4	3
7452		RAMY	03 25 1200	S12	W42	03 22.3		B	DAI	160	13	4	3
7452		SVTO	03 25 1424	S12	W42	03 22.4		B	DAO	200	22	5	4
7452		BOUL	03 25 1534	S11	W44	03 22.3		B	DAO	190	8	3	3
7452		HOLL	03 25 1730	S11	W44	03 22.4		BD	DAC	230	8	4	4
7452		PALE	03 25 2030	S12	W46	03 22.4		B	DAO	200	7	4	3
7452		LEAR	03 26 0007	S12	W48	03 22.4		B	DAO	110	6	3	3
7452		RAMY	03 26 1250	S12	W55	03 22.4		B	DAO	120	6	3	3
7452		HOLL	03 26 1525	S10	W57	03 22.3		BD	DAC	190	5	4	2
7452		PALE	03 26 2145	S11	W60	03 22.4		B	CAO	150	8	2	3
7452		LEAR	03 27 0030	S13	W62	03 22.3		B	DAO	140	3	3	2
7452		RAMY	03 27 1218	S12	W68	03 22.4		B	DAO	140	4	4	4
7452		HOLL	03 27 1733	S07	W70	03 22.5		B	CAO	90	4	4	3
7452		PALE	03 27 1957	S12	W73	03 22.3		B	DSO	100	3	4	3
7452		LEAR	03 28 0015	S12	W71	03 22.7		B	BXO	60	3	3	2
7452		SVTO	03 28 0910	S10	W75	03 22.7		B	BXO	80	3	5	2
7452		RAMY	03 28 1211	S11	W80	03 22.5		B	CRO	30	3	3	4
7452		HOLL	03 28 1455	S12	W84	03 22.3		A	HS	30	1	1	3
7456	27803	RAMY	03 18 1244	N05	E68	03 23.6		A	AX	10	1		4
7456		RAMY	03 20 1345	N05	E40	03 23.6		A	AX	10	2	1	2
7456		HOLL	03 20 1415	N04	E39	03 23.5		A	AX	10	2	1	4
7456		MWIL	03 20 1800	N05	E37	03 23.5	4	(AP)					
7456		PALE	03 20 2320	N04	E35	03 23.6		A	AX	10	3	2	2
7456		LEAR	03 21 0030	N05	E33	03 23.5		B	BXO	10	2	1	3
7456		SVTO	03 21 0835	N06	E30	03 23.6		B	BXO	20	9	5	3
7456		RAMY	03 21 1221	N05	E27	03 23.5		B	CRO	20	6	5	4
7456		MWIL	03 21 1500	N05	E26	03 23.6	4	(B)					
7456		BOUL	03 21 1510	N05	E24	03 23.4		B	CRO	30	10	4	3
7456		HOLL	03 21 1830	N06	E24	03 23.6		B	BXO	20	5	5	2
7456		PALE	03 21 1930	N05	E24	03 23.6		B	DSO	40	5	6	3
7456		LEAR	03 22 0010	N07	E23	03 23.7		B	BXO	20	4	5	2
7456		RAMY	03 22 1241	N05	E15	03 23.6		B	CRO	20	6	4	3
7456		SVTO	03 22 1400	N06	E13	03 23.5		A	AX	20	5	5	2
7456		BOUL	03 22 1444	N06	E13	03 23.6		B	BXO	110	6	4	2
7456		MWIL	03 22 1530	N05	E12	03 23.5	4	(B)					
7456		PALE	03 22 2243	N06	E11	03 23.8		A	AX	10	2	1	2
7456		HOLL	03 23 1415	N06	E00	03 23.6		A	AX		3	2	3
7456		SVTO	03 23 1440	N05	E01	03 23.7		B	BXO	10	5	5	3
7456	27803	BOUL	03 23 1446	N07	W01	03 23.5		B	BXO	10	2	3	2
7456		MWIL	03 23 1510	N06	W01	03 23.5	3	(B)					
7456		PALE	03 23 2205	N06	W03	03 23.7		A	AX	10	2	2	3
7456		HOLL	03 24 1450	N06	W09	03 23.9		A	AX		2	2	4
7453	27798	LEAR	03 18 0038	S05	E78	03 23.9		A	AX	10	1	1	3
7453		MWIL	03 18 1530	S05	E67	03 23.6	3	(AP)					
7453		PALE	03 18 1930	S07	E68	03 23.9		A	AX	10	2	2	3
7453		LEAR	03 19 0020	S05	E63	03 23.7		A	AX	10	1	1	3
7453		SVTO	03 19 0745	S06	E58	03 23.7		B	BXO	20	2	1	3
7459	27806	HOLL	03 20 1415	N13	E43	03 23.8		B	BXO	10	3	3	4
7459		RAMY	03 22 1241	N11	E18	03 23.9		B	BXO		2	2	3
7459		RAMY	03 24 1242	N12	W07	03 24.0		B	CAO	10	2	3	3
7459		HOLL	03 24 1450	N13	W09	03 23.9		A	AX		2	2	4
7459		BOUL	03 24 1537	N12	W10	03 23.9		B	BXO	10	3	2	3
7459		MWIL	03 24 1630	N12	W10	03 23.9	4	(B)					
7459		LEAR	03 25 0010	N12	W14	03 23.9		B	DSO	30	2	2	3
7459		RAMY	03 25 1200	N12	W21	03 23.9		B	CAO	30	4	3	3
7459		SVTO	03 25 1424	N12	W21	03 24.0		B	CRO	30	5	4	4
7459		BOUL	03 25 1534	N12	W24	03 23.8		B	BXO	10	4	3	3
7459		HOLL	03 25 1730	N12	W23	03 24.0		A	AX	20	3	2	4
7459		PALE	03 25 2030	N12	W23	03 24.1		A	AX		2	1	3
7459		LEAR	03 26 0007	N12	W28	03 23.9		A	AX		1	1	3
7459A		BOUL	03 23 1446	S19	E11	03 24.4		A	AX		2		2
7459A		RAMY	03 24 1242	S19	W01	03 24.4		A	AX		1		3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CHP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
7459A		HOLL	03 24 1450	S19 W02	03 24.5		A	AX		1		4
7458		HOLL	03 23 1415	S12 E12	03 24.5		A	AX		1		3
7458		SVTO	03 23 1440	S13 E15	03 24.7		A	AX	10	1	1	3
7458	27805	MWIL	03 23 1510	S12 E13	03 24.6	4	(AP)					
7458		PALE	03 23 2205	S11 E13	03 24.9		B	CSO	10	3	5	3
7458		SVTO	03 24 1015	S11 E03	03 24.6		A	AX		2	1	2
7458		RAMY	03 24 1242	S13 E01	03 24.6		A	AX		1		3
7458		HOLL	03 24 1450	S12 E00	03 24.6		A	AX		1	1	4
7458		BOUL	03 25 1534	S11 W13	03 24.7		A	AX		1		3
7458		PALE	03 25 2030	S11 W14	03 24.8		A	AX	10	4	2	3
7458A		RAMY	03 19 1220	S13 E74	03 25.1		A	AX	10	1	1	3
7458A	27800	MWIL	03 19 1600	S06 E70	03 24.9	3	(AP)					
7458A		HOLL	03 19 1640	S14 E70	03 25.0		A	AX		1		3
7462		HOLL	03 25 1730	N19 W08	03 25.1		A	AX	10	2	2	4
7462		PALE	03 25 2030	N19 W08	03 25.2		A	AX	10	2	2	3
7462		LEAR	03 26 0007	N19 W13	03 25.0		B	BXO	10	4	2	3
7462		RAMY	03 26 1250	N18 W20	03 25.0		B	CRO	10	3	4	3
7462		HOLL	03 26 1525	N18 W20	03 25.1		B	BXO	10	2	3	2
7462		PALE	03 26 2145	N22 W23	03 25.1		A	AX	10	1	1	3
7462		LEAR	03 27 0030	N19 W25	03 25.1		A	AXO	10	1	1	2
7462		RAMY	03 27 1218	N21 W32	03 25.0		A	AX		1		4
7454		PALE	03 18 1945	S15 E88	03 25.5		A	AX		1		3
7454		SVTO	03 19 0745	S14 E81	03 25.4		B	BXO	30	3	1	3
7454		SVTO	03 20 0900	S16 E68	03 25.5		B	BXO	10	3	4	2
7454		SVTO	03 25 1424	S16 W04	03 25.3		A	AX		1		4
7454		BOUL	03 25 1534	S15 E00	03 25.6		B	BXO	10	4	3	3
7454		HOLL	03 25 1730	S16 W02	03 25.6		A	AX	20	3	2	4
7454		PALE	03 25 2030	S16 W03	03 25.6		B	BXO	20	5	4	3
7454		RAMY	03 26 1250	S16 W12	03 25.6		B	BXO	10	6	4	3
7454A		RAMY	03 25 1200	N12 E11	03 26.3		A	AX	10	2	2	3
7460		LEAR	03 25 0010	N20 E58	03 29.4		A	AX	20	1	1	3
7460		RAMY	03 25 1200	N20 E52	03 29.5		B	CSO	30	6	4	3
7460		SVTO	03 25 1424	N20 E50	03 29.4		B	BXO	10	3	4	4
7460		BOUL	03 25 1534	N23 E48	03 29.3		B	BXO	20	4	5	3
7460		HOLL	03 25 1730	N22 E49	03 29.5		B	BXO	50	5	3	4
7460		PALE	03 25 2030	N20 E48	03 29.5		B	BXO	20	5	4	3
7460		LEAR	03 26 0007	N22 E45	03 29.5		B	BXO	10	4	5	3
7460		RAMY	03 26 1250	N22 E37	03 29.4		B	DRO	10	2	6	3
7460		HOLL	03 26 1525	N18 E36	03 29.4		B	BXO	20	2	6	2
7460		PALE	03 26 2145	N22 E34	03 29.5		B	CRO	40	4	8	3
7460		LEAR	03 27 0030	N21 E29	03 29.2		A	AXO	10	1	1	2
7460		RAMY	03 27 1218	N22 E23	03 29.3		A	AX	10	2	1	4
7460		HOLL	03 27 1733	N19 E21	03 29.3		A	AX	10	1	1	3
7460		PALE	03 27 1957	N21 E19	03 29.3		A	AX	10	1	1	3
7460		LEAR	03 28 0015	N23 E16	03 29.2		A	AX	10	1	1	2
7460		RAMY	03 28 1211	N22 E09	03 29.2		A	HR	10	1	1	4
7460		HOLL	03 28 1455	N22 E12	03 29.5		B	BXO	10	2	6	3
7460		BOUL	03 28 1545	N23 E06	03 29.1		A	AX		1		3
7460		PALE	03 28 1800	N21 E06	03 29.2		A	AX		1	1	3
7460		LEAR	03 29 0020	N22 E03	03 29.2		A	AX	10	1	1	2
7460		PALE	03 29 0125	N22 W00	03 29.0		A	AX		1	1	1
7460		RAMY	03 29 1303	N22 W04	03 29.2		A	AX		1	1	3
7460	27807	MWIL	03 29 1530	N22 W06	03 29.2	4	(AP)					
7460		HOLL	03 29 2210	N22 W08	03 29.3		A	AX		1		1
7460		LEAR	03 30 0010	N22 W11	03 29.2		A	AX	10	1	1	3
7467		RAMY	04 01 1150	N08 W44	03 29.3		A	AX	10	1	1	3
7467		BOUL	04 01 1447	N10 W46	03 29.2		B	BXO	10	6	3	3
7467		HOLL	04 01 1455	N09 W46	03 29.3		B	BXO	20	4	4	3
7467	27811	MWIL	04 01 1500	N08 W46	03 29.3	3	(B)					
7467		PALE	04 01 2345	N10 W50	03 29.3		A	AX	20	4	2	3
7467		LEAR	04 02 0015	N08 W51	03 29.3		B	BXO	20	3	3	2
7467		SVTO	04 02 1120	N09 W56	03 29.4		B	BXO	20	3	3	4

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			CMP		Max	Mag	Spot	Corrected Area	Spot	Long. Extent	Qual		
			Mo	Day	(UT)	Lat	CMD	Mo	Day	H	Class	Class	(10-6 Hemi)	Count	(Deg)	
7467		RAMY	04	02	1211	N10	W57	03	29.3		B	BXO	10	2	3	4
7467		PALE	04	03	1930	N09	W70	03	29.6		A	AX		1		3
7467A		PALE	03	27	1957	N08	E22	03	29.5		B	BXO	20	4	4	3
7467A	27811	MWIL	03	30	1530	N10	W12	03	29.7	4	(B)					
7467A		RAMY	03	31	1250	N10	W30	03	29.3		A	AX		1		4
7467A	27811	MWIL	03	31	1515	N08	W30	03	29.4	3	(AF)					
7467A		PALE	03	31	1900	N09	W32	03	29.4		A	AX		1		3
7464		RAMY	03	27	1218	N10	E33	03	30.0		A	AX	10	2	1	4
7464		RAMY	03	28	1211	N10	E20	03	30.0		B	BXO	10	4	3	4
7464		HOLL	03	28	1455	N10	E19	03	30.0		B	BXO	10	4	5	3
7464		PALE	03	28	1800	N10	E18	03	30.1		A	AX		1	1	3
7464		RAMY	03	30	1205	N08	W01	03	30.4		A	AX	10	2	2	3
7464		HOLL	03	30	1510	N10	W08	03	30.0		B	BXO	10	1	12	3
7464	27813	MWIL	03	30	1530	N07	W02	03	30.5	3	(AF)					
7464		PALE	03	30	1740	N08	W03	03	30.5		A	AX		1		2
7464A	27812	MWIL	03	30	1530	N13	W02	03	30.5	4	(AF)					

Stations reporting:

BOUL = Boulder
CULG = Culgoora

HOLL = Holloman
LEAR = Learmonth

MWIL = Mt. Wilson
PALE = Palehua

RAMY = Ramey
SVTO = San Vito

SUDDEN IONOSPHERIC DISTURBANCES

MARCH 1993

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	0622	0632	0720	1-	5			1		1	0620	C2.6	7435
01	0851	0905	0932	1	1		1				No flare		
01	0934	0947	1004	1	1		1				No flare		
01	1005	1015	1058	1	1		1				No flare		
01	1059	1100	1108	1-	1					1	1059	C1.1	
01	1336	1420	1456	1	1		1				1404E		7435
01	1644	1654	1730	2-	5					9	1533E	C3.9	7435
01	1902	1907	1917	1-	5					4	1903	C1.2	
01	2330	2336	2350	1-	5			1		2	2328	C1.5	
02	0316	0320	0336	1-	1			1			*		
02	0502	0514	0538D	1-	1			1			No flare		
02	0538E	0542	0606	1-	1			1			No flare		
02	1205	1226	1244	1	1		1				No flare		
02	1428	1435	1515	1+	1		1				*		
02	1502	1510	1534	1+	5		1			11	1503	C5.0	
02	1809	1821	1920	2	3					8	1807	C4.2	7435
02	2040	2054	2106D	2	5			1		7	2040		7435
02	2106E	2144	2600D	2+	5	1		1		7	2104	M5.1	7440
03	0346	0352	0412	1-	1			1			*		
03	0706	0712	0730	1-	5		1	1		2	0705	C3.0	
03	1005	1019	1044	1	1		1				No flare		
03	1046	1052	1106	1-	5			1		4	1021	C2.7	7435
03	1525	1529	1551	1	5		1			9	1521	C2.4	7440
03	1730	1732	1738	1-	1					1	1731		7435
03	1943	1946	2003	1	1					1	1943	C1.1	
04	0104	0120	0210	2-	5	1		1		1	0104	C6.8	7435
04	0446	0500	0520	1-	1			1			0444	C1.7	
04	1008	1024	1104	1	5	1	2	1		6	1009	M1.0	7435
04	1035	1039	1056	1+	3					2	1030		7440
04	1113	1116	1125	1-	1					1	1112	C1.5	
04	1218	1225	1247	1+	1					1	1217	C8.1	7434
04	1225	1240	1305	1-	3	1	1			3	1228E		7440
04	1343	1349	1416	1-	3		1			1	1342		7440
04	1515	1517	1528	1-	1					1	1515	C1.4	7435
04	1903	1904	1911	1-	1					1	1902	C1.3	
05	0040	0048	0134	1	5	1		1		1	0039	C4.5	7441
05	0622	0628	0648D	1-	5			1		1	0622	C1.9	7435
05	0648E	0654	0706	1-	1			1			0645		7440
05	1120	1124	1138	1-	3					2	1120	C5.9	
05	1124	1132	1154	1-	5	1	2	1		5	1120	C5.9	
05	1241	1244	1312	1	1		1				No flare		
05	1418	1432	1452	1	1		1				No flare		
05	1548	1552	1615	1	1		1				1545		7440
06	0047	0055	0105	1-	1					1	0047		7440
06	0136	0148	0202	1-	1			1			0132	C1.2	
06	0723	0808U	0915	2	1		1				No flare		
06	1008	1012	1020	1-	5			1		6	1006	C2.7	
06	1034	1042	1126	2	5	4	2	1		6	1032	M3.8	
06	1042	1117	1150	2+	1					1	No flare		
06	1245	1245	1300	1-	1					1	1246	C1.3	7435
06	1423	1425	1456	1	1		1				No flare		
06	1858	1901	1912	1-	3					7	1856	C2.0	7435
06	1913	1915	1927	1-	3					3	1912	C1.9	7440
06	2018	2046	2220	3-	5	2		1		10	2014	M7.7	7440
06	2226	2232	2300	1-	5	1		1		3	2226	C7.9	7440
07	0734	0738	0744	1-	5			1		1	0735E		7440
07	0931	0946U	0957	1	1		1				0939E		7440
07	1256	1307	1338	1+	5		1			6	1259E		7440
07	1403	1422	1438	1	1		1				No flare		
07	1649	1654	1710	1-	5					2	1647	B9.6	
07	1829	1830	1838	1-	1					1	1828	B8.5	7440

* = no flare patrol.

MARCH 1993

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			
07	2024	2028	2046	1	1					1	No flare		
07	2135	2139	2154	1	1					1	2134	C1.4	7440
07	2239	2246	2300	1	1					1	2238	C1.2	
07	2336	2346	2402	1-	1			1			2316	C1.6	7441
08	0018	0030U	0052	1-	5			1		1	0022	C1.5	
08	1020	1020	1031	1-	1					1	No flare		
08	1110	1119	1139	1	1		1				No flare		
08	1205	1209	1216	1-	1					1	1207		7440
08	1215	1240	1310	1	1		1				No flare		
08	1354	1411	1454	1	1		1				*		
08	1455	1513U	1530	1	1		1				No flare		
08	1746	1751	1807	1-	3					6	1742	C2.1	
08	2116	2120	2125	1-	1					1	2116	B8.2	
09	0214	0220	0240	1-	1			1			0210	C1.4	
09	0530	0542	0610	1-	1			1			0520	C1.2	
09	1233	1236	1245	1-	1					1	No flare		
09	1340	1342	1355	1-	1					1	1338	B9.5	
10	0842	0859U	0929	1	1		1				No flare		
10	0931	0932	0945D	1-	1					1	0917	C2.3	7440
10	0942	0950	1003	1-	3		1			4	0917	C2.3	7440
10	1145	1200	1232	2	3					2	1141	C4.1	7440
10	1212	1227	1255	1	1		1				No flare		
10	1357	1413	1433	1	1		1				No flare		
10	1700	1701	1711	1-	1					1	1700		7440
10	1808	1815	1839	1+	3					2	1808	C1.7	7440
10	1959	2000	2015	1-	1					1	1957		7440
11	0211	0220	0230D	1-	3	1		1			0210	C2.3	
11	0230E	0316	0552	2	3	1		1			0229	C6.3	7440
11	0712	0716	0730	1-	5		1	1			0712	C1.7	7440
11	0756	0804	0830	1-	5			1		2	0757E	C3.4	7448
11	1145	1153	1215	1+	1					1	No flare		
11	1345	1348	1400	1-	1					1	1345		7448
11	1433	1438	1452	1	5	2	2			15	1432	C9.7	7448
11	1516	1518	1524	2-	5	2	2			17	1515	M1.1	7440
11	1541	1613	1630	2+	1					1	1525E		7448
11	1646	1653	1717	1+	5					9	1646	C4.5	7448
11	1737	1740	1800	1	1					1	No flare		
11	1905	1915	1934	1+	3					8	1903	C4.6	7440
11	2154	2203	2312	3-	5	3		1		8	2151	M7.3	7448
11	2346	2356	2406	1-	1			1			*		
12	0003	0037	0107	1	1	1					0025		7448
12	0400	0406	0416D	1-	5			1		1	0358	C1.9	
12	0416E	0429	0522	2	3	1		1			0418	C7.0	7448
12	0710	0716	0754	1-	5		1	1		2	0708	C4.9	7448
12	1101	1112	1124	1	3		1			1	No flare		
12	1159	1202	1216	1-	3		1			5	1159	C3.2	7448
12	1229	1236	1307	1+	5		1			3	1232	C3.8	7448
12	1352	1359	1447	1	1		1				No flare		
12	1617	1628	1650	1+	3					2	No flare		
12	1647	1654	1728	2	1					1	1648E		7440
12	1706	1750	1942	3	3					2	1703	M7.0	7440
12	1734	1759	1849	2+	5					7	1703	M7.0	7440
12	1812	1849	1910	2+	1					1	1833		7448
12	2034	2038	2048	1-	1			1			*		
12	2158	2201	2222	1-	5			1		1	2157	C3.9	7440
13	0330	0342	0430	1	3	1		1			*		
13	0638	0700	0748	2-	5		1	1			No flare		
13	0804	0826	0843	1-	3		1			1	No flare		
13	0901	0910	0928	1	5			1		6	0901	C2.9	7448
13	1143	1218	1354	1	1		1				No flare		
13	1258	1300	1312	1-	5					6	1257	C3.9	7440

* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

MARCH 1993

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			
13	1512	1526	1550	1-	5		1	1		7	1509	C5.1	7448
13	1748	1800	1844	2-	3					4	1747	C4.5	7440
13	1914	1917	1926	1-	1					1	*		
14	1116	1209U	1246	2	1		1				1103	C1.0	
14	1230	1232	1240	1-	1					1	No flare		
14	1255	1257	1303	1-	1					1	No flare		
14	1438	1444	1450	1	5	1				4	1431	C1.6	
15	0306	0320	0352	1-	1			1			0213	C2.0	
15	1000	1006	1022	1-	5			1		3	0958	C3.0	
15	1304	1315	1336	1+	3					2	1301		7448
15	1334	1340	1359	1	5		1			1	1332	C1.6	7448
15	1441	1445	1512	2-	1					1	1441	C4.0	
15	1507	1524	1546	1	5		1			2	*		
15	1851	1852	1905D	1-	1					1	1849	C1.6	
15	1908	1912	1934	1	5			1		5	1904	C5.5	
15	2010	2045	2130	2-	1					1	2039	M2.9	7440
15	2040	2132	2422	2-	5	1		1			2039	M2.9	7440
16	0244	0252	0330	1	3	1		1			0241	C5.5	7448
16	0411	0416	0452	1-	5			1		1	0411	C2.9	
16	0602	0608	0624	1-	1			1			0601		7448
16	0658	0704	0712	1-	1			1			No flare		
16	0752	0758	0810	1-	1			1			0751		7448
16	0910	0913	0929	1	3					2	0911	C2.2	7448
16	1606	1620	1702	1+	5		1			1	1601	C2.2	
16	1730	1736	1805	2	1					1	1732		7448
17	0002	0008	0026	1-	1			1			*		
17	0413	0418	0438	1-	1			1			0411	C1.0	
17	1518	1526	1559	1+	1					1	1522E	C1.0	7448
17	1734	1737	1750	1-	1					1	1735		7448
17	1801	1807	1835	1	3					4	1801	C1.7	7448
18	0052	0058	0106	1-	1			1			0051	C1.1	
18	0110	0116	0138	1-	5			1		1	0110	C1.6	
18	1119	1125	1125D	1	1					1	No flare		
18	1154	1206	1250	1+	1					1	1154	C1.9	7448
18	1433	1438	1450	1-	1					1	1437		7448
18	1515	1522	1543	1	5					8	1514	C3.2	7448
18	1720	1721	1733	1-	3					2	1721	C1.3	7748
18	2254	2300	2314D	1-	5			1		1	2254E	C3.1	7448
18	2314E	2318	2346	1-	1			1			2254E	C3.1	7448
19	0010	0022	0140	1-	5			1		1	0009	C3.6	7448
19	0219	0238	0320	2	3	1		1			0219	C5.6	7448
19	1235	1309	1335	2+	1					1	1233	C1.5	
19	1958	2002	2036	1+	3					5	1959	C2.8	7448
19	2228	2234	2244	1-	1			1			No flare		
20	0030	0034	0046	1-	1			1			0041E		7448
20	0050	0108	0242D	2+	5	2		1			0047	M1.8	7448
20	0134E	0142	0200	1-	1	1					*		
20	0240E	0248	0334	2-	3	1		1			0246	C7.2	7448
20	0705	0710	0742	1	5			1		4	0706	C3.8	7448
20	0746	0754	0818	1-	5			1		3	0743	C1.8	7448
20	0954	1014	1046	1+	5			1		4	0949	C7.2	7448
20	1111	1125	1125D	1	1					1	No flare		
20	1206	1222	1250	1+	5		1	1		7	1203	C6.4	7448
20	1258	1306	1330	1	1					1	1255	C2.5	7448
20	1427	1438	1455	1	1					1	1426	C2.5	7448
20	1506	1508	1515	1-	3					2	No flare		
20	1655	1659	1717	1	3					8	1650	C3.9	7448
20	1739	1754	1846	2+	3					9	1735E	C4.6	7448
20	1823	1827	1835	1-	1					1	No flare		
20	2144	2152	2206	1-	1			1			2143	C2.0	7448

* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

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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			
21	0104	0108	0124D	1-	1			1			0103	C1.8	
21	0124E	0132	0158	1-	5			1		2	0121	C2.3	7452
21	0320	0340	0508	3	5	1		1		2	0322	M2.1	7448
21	0717	0723	0755	1	1					1	0712	C1.8	7448
21	1042	1048	1054	1-	5		1			1	No flare		
21	1201	1204	1208	1-	1					1	1156	B9.0	
21	1318	1327	1348	1	1		1				No flare		
21	1507	1509	1523	1-	5					10	1507	C3.4	7448
21	1705	1710	1744	2-	3					4	1705	C3.3	7452
21	1823	1828	1846	1-	3					5	1824	C2.3	7448
21	2053	2058	2113	1-	1					1	2052	C1.3	
21	2340	2346	2356	1-	1			1			2337	C1.6	
22	0100	0108	0148	1-	5			1		1	0100	C3.8	7452
22	0752	0801	0822	1-	1			1			No flare		
22	1401	1406	1424	1	5					5	1345	C2.5	7452
22	1404	1430	1430D	2	1					1	No flare		
22	1445	1448	1525	1-	1					1	1445	C2.4	7452
22	1616	1620	1646	1+	5					6	1608	C4.4	7452
22	1623	1630	1703	1	1					1	No flare		
22	1738	1745	1749	1-	1					1	1738	C1.3	7452
22	1747	1752	1811	1-	3					3	1748	C1.5	
22	1947	1953	2015	1+	1					1	1947		7448
22	2103	2115	2128	1	3					2	2103	C1.2	7452
23	0012	0020	0042	1-	1			1			0010	C2.3	
23	0120	0152	0324	3-	3	2		1		1	0129	M2.3	7448
23	0344	0402	0430	1-	1			1			0347	C5.6	
23	0446	0452	0522	1-	1			1			0445	C3.8	
23	0646	0650	0712	1-	1			1			No flare		
23	0734	0742	0756	1-	1			1			0734	C1.5	
23	0814	0820	0834	1-	5	1		1		3	0809	C2.6	
23	1504	1507	1518	1-	5					7	1504	C2.6	7448
23	1902	1907	1936	1+	3					5	1901	C4.2	
23	2146	2156	2210	1-	1			1			2147	C2.3	
23	2348	2358	2424	1-	5			1		1	2347	C2.5	
24	0044	0056	0106	1-	1			1			No flare		
24	0140	0146	0218	1-	5			1		1	0140	C3.1	7448
24	0322	0329	0432	2+	3	1		1			0320	C6.6	
24	0816	0822	0834	1-	5		1	1			0809	C1.1	
24	1445	1450	1500	1-	1					1	1448	C1.0	
24	1450	1501	1529	1	3					2	1448	C1.0	
25	0050	0058	0112	1-	1			1			0046	C1.0	
25	1759	1800	1813	1-	3					2	1801	C1.1	7452
25	1921	1924	1932	1-	1					1	1914	C1.0	
25	1955	1958	2009	1-	3					4	1954	C1.5	
25	2104	2108	2114	1-	1					1	2104	C1.1	
27	1308	1326	1432	1	1		1				1305		7461
28	0036	0042	0052	1-	1			1			0032	C1.5	
28	0822	0832	0840	1-	5			1		4	0825	C1.8	7461
28	1501	1504	1520	1-	5					9	1501	C2.1	7463
29	0046	0050	0116	1-	1			1			0045	C1.6	7461
29	0814	0818	0828	1-	1			1			0815	C1.2	7461
29	0832	0836	0904	2	5	1	1	1		2	0832	C9.4	7461
29	0938	0946	1014	1	1		1				No flare		
29	1051	1053	1108	1-	1					1	1052	C1.1	
29	1215	1228	1228D	1	1					1	No flare		
29	1253	1302	1330	2+	5	3	3	1		4	1252	M1.0	7461
29	1704	1716	1748	2-	5					8	1719	C7.1	7461
30	0101	0108	0220	3-	5	2		1		2	0100	M2.6	7461
30	0329	0334	0402	1-	1			1			0329	C1.9	7463

* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

MARCH 1993

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			
30	0739	0749U	0830	1	1		1				0745	B8.3	7463
30	0852	0922	0950	1	1		1				*		
30	1253	1255	1308	1-	5					4	1254	C3.3	7461
30	2015	2030	2055D	2	1					1	2013	C1.5	7461
30	2055	2059	2130	2	1					1	2056	C1.4	7461
30	2230	2236	2254	1-	5			1		1	2226	C1.4	7461
31	0028	0036	0052	1-	1			1			0027	C1.0	7461
31	0346	0356	0454	1+	3	1		1			0345	C3.8	7461
31	0610	0616	0626	1-	5			1		1	0609	C1.3	7463
31	0709	0714	0753	1	1		1				No flare		
31	0804	0812	0826	1	1		1				No flare		
31	0905	0914	0930	1+	5	1	2	1		3	0902	B5.7	7463

* = no flare patrol.

OBSERVATORIES REPORTING FOR MARCH 1993

Amherst, New Hampshire, USA	SES	Locust Grove, Georgia, USA	SES
Athens, Georgia, USA	SES	Madison, Wisconsin, USA	SES
Ayrshire, Scotland	SES	Manahawkin, New Jersey, USA	SES
Boksburg, Rep of S. Africa	SES	Maui, Hawaii, USA	SWF
Cranford, New Jersey, USA	SES	Nampa, Idaho, USA	SES
Darmstadt, Germany	SWF	Nerja, Spain	SES
Durham, New Hampshire, USA	SES	Panska Ves, Czechoslovakia	SES, SEA, SWF
Farsta, Sweden	SES	Rochester, New Hampshire, USA	SES
Gettysburg, Pennsylvania, USA	SES	San Francisco, California, USA	SES
Hiraiso, Japan	SWF	Sofia, Bulgaria	SES
Houston, Texas, USA	SES	Tucson, Arizona, USA	SES
Hudson, Ohio, USA	SES	Upice, Czechoslovakia	SEA
Huntsville, Alabama, USA	SES	Wellington, Ohio, USA	SES
Inubo, Japan	SPA	Windsor Locks, Connecticut, USA	SES
Itapetinga, Brazil	SPA, SES	Ziar nad Hronom, Czechoslovakia	SEA
LaCrescenta, California, USA	SES	Zilina, Czechoslovakia	SEA

Observations are not necessarily continuous.

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

Spectral Observations

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MARCH 1993

Observation Day	Start End		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	(UT)	(UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
01	0655	1530	ONDR										
	0621	1418	POTS				0824.0	1418.0U	1				I,S,W
			POTS				1024.9	1025.5	1				I
			POTS				1305.0	1305.2	1				IIIB
			PALE				2228.0	2323.0	1				S
02			LEAR				0203.0	0224.0	2				S
			PALE				0204.0	0206.0	1				III
			LEAR				0256.0	0256.0	1				III
			PALE				0259.0	0317.0	1				S
			LEAR				0315.0	0317.0	2				III
			PALE				0413.0	0413.0	1				III
			LEAR				0428.0	0429.0	2				III
			LEAR				0602.0	0605.0	3				III
			SVTO				0602.0	0604.0	2				III
			POTS				0641.0E	1003.0U	1				IIIG/INT:1
	0641	1501	POTS				0641.0E	1003.0U	1				I,S,C,DC
	0653	1354	ONDR										
	0700	1200	IZMI				0700.0E	0929.4	1				IS
			LEAR				0849.0	0850.0	2				III
			POTS				0849.1	0850.6	2				IIIG
			IZMI				0850.5	0850.8	1				IIIG
			POTS				0903.5	1019.5U	1				RSGG,W
			POTS				1003.0U	1501.0U	1				IIIG
			POTS	1018.9	1019.0	1							DCIM
			SVTO				1024.0	1025.0	2				III
			POTS				1024.1	1029.4	3				IIIGG,C,RS
			POTS				1024.1	1029.4	3				SPIKES
			IZMI				1024.2	1025.6	2				IIIG,V
			IZMI				1028.8	1029.3	1				IIIG
			IZMI				1106.8	1107.9	2				IIIGG
			POTS				1106.8	1107.9	3				IIIGG
			IZMI				1132.4	1132.6	1				IIIG
			POTS				1135.3	1137.0	2				IIIG
			IZMI				1135.4	1136.2	2				IIIG
			POTS				1210.9	1215.2	2				IIIGG,C,U
			POTS				1215.0U	1501.0U	1				I,S
			POTS				1252.0	1254.1	3				IIIG
			SGMR				1252.0	1252.0	1				III
			SVTO				1252.0	1252.0	2				III
			SGMR				1729.0	1729.0	1				V
			PALE				2114.0	2214.0	1				CONT
			SGMR				2127.0	2135.0	2				III
03	0645	1534	ONDR										
	0627	1508	POTS				0719.8	0720.0	1				IIIG
			POTS				0720.0U	1508.0U	1				I,S,C,DC
			POTS				0952.5	1508.0U	1				IIIG
			POTS				1101.6	1101.7	2				IIIG
	0700	1200	IZMI				1101.7	1103.8	1				IIIG
			IZMI				1142.0	1200.0D	1				IN
			POTS				1228.2	1228.3	1				RS
			SGMR				1250.0	1254.0	1				III
			POTS				1317.9	1318.7	2				IIIG
			POTS				1332.5	1332.7	2				IIIB
			SGMR				1416.0	1633.0	1				CONT
			PALE				2215.0	2215.0	1				III
04			LEAR				0100.0	0121.0	1				S
			PALE				0135.0	0136.0	2				III
			LEAR				0136.0	0136.0	2				III
			LEAR				0243.0	0247.0	2				III
			PALE				0243.0	0243.0	1				III
			LEAR				0325.0	0329.0	2				III
			LEAR				0417.0	0430.0	2				S
			LEAR				0516.0	0516.0	1				III
			POTS				0621.0E	1514.0U	1				IIIG
	0621	1514	POTS				0621.0E	1514.0U	1				I,S
			LEAR				0633.0	0634.0	1				III

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Mar 93

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

MARCH 1993

Observation			Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)		Int (1-3)
04	0700	1200	POTS				0633.7	0633.8	2				IIIB
			LEAR				0806.0	0830.0	1				CONT
			IZMI				0806.1	0820.7	1				IIIGG
			LEAR				0838.0	0855.0	1				S
			IZMI				0838.8	0838.9	1				IIIB
			IZMI				0842.2	0858.0	1				IN
			SVTO				1029.0	1036.0	3				V
			POTS				1029.2	1046.3	3				IIIGG,RS
			IZMI				1029.3	1038.4	3				IIIGG,V
			POTS	1034.5	1035.2	3							DCIM
	0642	1535	ONDR	1035.2	1035.3	2							IIIB
			IZMI				1045.0	1046.3	1				IIIG
			IZMI				1049.5	1200.0	1				IN
			POTS	1159.9	1200.0	1							DCIM
			POTS				1213.8	1311.9	3				II ? U
			POTS				1213.8	1311.9	3				IV IIIGG
			SGMR				1223.0	1230.0	2				III
			SVTO				1223.0	1229.0	3				III
			SGMR				1231.0	1239.0	2				IV
			SVTO				1232.0	1240.0	3				IV
			ONDR	1259.7	1305.5	3							IIIG
			SGMR				1301.0	1311.0	2				III
			SVTO				1301.0	1310.0	2				III
			SVTO				1341.0	1344.0	2				III
			POTS				1341.4	1349.7	3				IIIGG,C,U
			SGMR				1342.0	1343.0	2				III
			SGMR				1407.0	1408.0	2				III
			SVTO				1407.0	1435.0	2				S
			POTS				1407.2	1408.4	3				IIIG
			SGMR				1434.0	1435.0	2				III
			SGMR				1502.0	1503.0	1				III
			SGMR				1554.0	1558.0	2				III
			SVTO				1554.0	1554.0	2				III
			SGMR				1741.0	1742.0	2				III
			PALE				1844.0	1844.0	1				III
			SGMR				1845.0	1845.0	1				III
			SGMR				2000.0	2000.0	1				III
			PALE				2135.0	2135.0	1				III
			SGMR				2135.0	2135.0	1				III
			05	0637	1501	LEAR				0111.0	0113.0	3	
PALE							0111.0	0112.0	2				III
LEAR							0327.0	0327.0	1				III
LEAR							0539.0	0547.0	2				III
LEAR							0637.0	0639.0	2				III
POTS							0637.4	0639.1	2				IIIG
0700	1200	POTS					0638.0E	1501.0U	2				U,S,C,DC
		SVTO					0638.0	0639.0	1				III
		LEAR					0704.0	0705.0	2				III
		IZMI					0704.5	0705.0	1				IIIG
		POTS					0704.5	0704.9	1				IIIG
		POTS					0725.1	0726.2	2				IIIG
		IZMI					0725.4	0727.1	2				IIIG
		LEAR					0726.0	0726.0	3				III
		SVTO					0726.0	0726.0	2				III
		IZMI					0844.0	0844.1	1				III
		LEAR					0844.0	0844.0	2				III
		POTS					0844.0	0844.2	1				IIIB
		IZMI					0855.2	1200.0D	1				IN,DP,RS
		POTS					0922.3	0922.5	1				IIIG
		IZMI					0941.8	0950.0	2				IIIGG,U
		POTS					0944.2	0955.9	3				IIIGG,C
		LEAR					0945.0	0946.0	2				III
		0643		1537	ONDR				0955.6	1332.0	1		
IZMI						1032.4	1032.7	1				IIIG	
POTS						1153.0	1153.1	1				IIIB	
POTS						1223.3	1232.4	2				IIIGG	
SVTO						1230.0	1415.0	2				CONT	
SGMR						1312.0	1400.0	2				CONT	

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

Spectral Observations

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MARCH 1993

Observation			Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)		Int (1-3)
05			POTS				1318.0	1324.7	1				IIIGG,RS
			POTS				1350.1	1350.3	1				UNCLF
			POTS				1416.0	1422.6	3				IIIG,C
			POTS				1416.0	1422.6	3				RS,U
			SGMR				1422.0	1422.0	2				III
			SVTO				1422.0	1422.0	2				III
06			LEAR				0054.0	0055.0	2				III
			PALE				0054.0	0055.0	1				III
			LEAR				0209.0	0211.0	2				III
			LEAR				0359.0	0359.0	2				III
	0700	1200	IZMI				0747.9	0748.0	1				IIIB
			IZMI				0815.1	0822.0	2				IIIGG
			LEAR				0816.0	0817.0	2				III
			SVTO				0816.0	0817.0	2				III
	0643	1537	ONDR				0816.7	1359.0	1				IN
			IZMI				0822.3	0916.5	1				IS
	0700	1200	IZMI				0916.5	1200.00	2				IS,C,IIIN
			SVTO				1024.0	1424.0	2				CONT
			SGMR				1153.0	1430.0	1				CONT
			SGMR				1527.0	1704.0	1				CONT
			PALE				1837.0	2059.0	2				CONT
			SGMR				1846.0	2055.0	1				CONT
			PALE				2021.0	2026.0	2				V
			PALE				2026.0	2054.0	2				II
			SGMR				2031.0	2051.0	1				II
			SGMR				2055.0	2217.0	1				IV
			LEAR				2238.0	1030.0	2				IV
07			LEAR				0335.0	0345.0	3				III
			PALE				0342.0	0342.0	2				III
			LEAR				0435.0	0445.0	3				S
			LEAR				0541.0	0542.0	2				III
			SVTO				0653.0	1008.0	2				IV
			LEAR				0750.0	0804.0	3				S
	0700	1200	IZMI				0750.8	0751.7	2				IIIG
			IZMI				0803.1	0804.1	3				IIIG
			LEAR				0909.0	0920.0	3				S
	0641	1539	ONDR	1007.3	1007.5	3	1007.3	1007.5	3				IIIG,P
			SVTO				1040.0	1625.0	2				S
			ONDR				1120.4	1120.5	1				IIIG
			SGMR				1157.0	1505.0	1				S
			SGMR				1304.0	1305.0	2				III
			ONDR	1304.9	1305.5	3	1304.9	1305.5	3				IIIGG,U
			SGMR				1440.0	1441.0	2				III
			SGMR				1535.0	1536.0	2				III
			SGMR				1540.0	1541.0	2				III
			SGMR				1558.0	1949.0	1				CONT
			PALE				1829.0	1835.0	2				V
			SGMR				1829.0	1835.0	2				III
			SGMR				1856.0	1857.0	2				V
			PALE				1903.0	1904.0	1				III
			PALE				1925.0	0209.0	1				CONT
			PALE				1956.0	1958.0	2				V
			SGMR				1956.0	1958.0	3				III
			PALE				2028.0	2029.0	2				III
			SGMR				2028.0	2029.0	2				III
			SGMR				2053.0	2053.0	1				III
			PALE				2059.0	0233.0	1				IV
			PALE				2149.0	2154.0	3				V
			SGMR				2149.0	2153.0	3				III
			PALE				2206.0	2208.0	2				III
			SGMR				2206.0	2208.0	1				III
			LEAR				2239.0	1130.0	2				CONT
			LEAR				2319.0	2345.0	3				S
08			PALE				0034.0	0244.0	3				S
			LEAR				0035.0	0122.0	3				S
			LEAR				0156.0	0159.0	3				III

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

Spectral Observations

MARCH 1993

Observation			Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)		Int (1-3)
08			SVTO				0607.0	1127.0	2				CONT
			POTS				0622.0E	1500.0U	2				IIIG
	0622	1500	POTS				0622.0E	1500.0U	3				I,S,C,DC
	0630	1542	ONDR										
	0700	1200	IZMI				0700.0E	1200.0D	2				IS,C,IIIS
			LEAR				0727.0	0751.0	3				S
			IZMI				0736.3	0748.1	3				IIIGG
			POTS				0737.9	0748.0	3				IIIG
			LEAR				0819.0	0821.0	2				III
			POTS				1033.0	1033.2	3				IIIG
			IZMI				1033.1	1033.4	3				IIIG
			POTS				1110.1	1110.5	3				IIIG
			POTS				1227.9	1228.1	3				IIIG,RS
			SGMR				1228.0	1228.0	1				III
			SGMR				1229.0	2050.0	1				CONT
			SVTO				1413.0	1437.0	2				S
			POTS				1418.9	1435.6	3				IIIGG
			SGMR				1419.0	1422.0	2				V
			SGMR				1435.0	1437.0	2				V
			SGMR				1514.0	1515.0	2				V
			SGMR				1614.0	1620.0	2				V
			SVTO				1614.0	1615.0	2				III
			SGMR				1633.0	1634.0	2				III
			PALE				1712.0	1713.0	1				III
			SGMR				1712.0	1713.0	2				V
			PALE				1833.0	1833.0	1				III
			PALE				1839.0	0131.0	1				CONT
			LEAR				2300.0	1029.0	1				CONT
09			LEAR				0035.0	0122.0	3				S
			LEAR				0156.0	0159.0	3				III
			LEAR				0551.0	0552.0	2				III
			POTS				0631.0E	1501.0U	3				IIIGINT1,2
	0631	1501	POTS				0631.0E	1501.0U	3				I,S,C,DC
			LEAR				0632.0	0634.0	2				III
	0636	1545	ONDR										
	0700	1200	IZMI				0700.0E	1200.0D	2				IS,C,IIIS
			LEAR				0727.0	0751.0	3				S
			LEAR				0819.0	0821.0	2				III
			SVTO				0819.0	1102.0	1				CONT
			LEAR				0824.0	0824.0	2				III
			SVTO				0824.0	0824.0	1				III
			POTS				0857.2	0857.4	1				RS
			SVTO				1308.0	1351.0	1				CONT
			LEAR				2239.0	1130.0	2				CONT
			PALE				2313.0	2314.0	1				III
			LEAR				2319.0	2345.0	3				S
			LEAR				2325.0	2325.0	2				III
			PALE				2325.0	2325.0	1				III
10			POTS				0628.0E	1523.0U	3				IIIG/INT:1
	0628	1523	POTS				0628.0E	1523.0U	3				I,S,C,DC
			LEAR				0642.0	0642.0	1				III
	0700	1200	IZMI				0700.0E	1100.5	1				IS,C
			POTS				0924.0	0934.7	2				IIIGG
			IZMI				0929.2	0929.5	1				IIIB,U
			POTS				1013.6	1017.8	3				IIIGG,RS
			IZMI				1014.4	1015.5	2				IIIG,U
			POTS				1034.0	1034.2	2				IIIG
			IZMI				1100.5	1200.0D	2				IS,G,IIIN
			POTS				1102.2	1523.0U	3				IIIGG
			SVTO				1104.0	1629.0	3				CONT
			POTS				1118.2	1118.3	1				RS
			SGMR				1152.0	2128.0	3				CONT
	0655	1547	ONDR	1321.0	1324.8	3	1321.5	1324.8	2				DCIM
			PALE				1754.0	1759.0	2				III
			SGMR				1754.0	1755.0	2				V
			PALE				1811.0	2338.0	2				CONT

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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)	
11						0118.0	0155.0	2				S
						0121.0	0155.0	1				S
						0136.0	1026.0	2				CONT
						0238.0	0316.0	1				CONT
						0548.0	0648.0	2				S
						0613.0E	1502.00	3				IIIG/INT:1
0613	1502					0613.0E	1502.00	3				I,S,C,DC
0700	1200					0700.0E	1200.00	2				IS,C,IIIN
0633	1547		0725.0	1359.0	1	0725.0	1329.0	2				IN
						0957.9	0958.6	2				IIIG
						1037.0	1037.0	2				III
						1100.6	1209.00	2				IIIGG
						1101.3	1117.2	3				IIIGG
						1133.0	1915.0	1				CONT
						1320.4	1321.0	3				IIIG
						1947.0	0115.0	2				CONT
						1950.0	1958.0	1				III
						2011.0	2032.0	1				S
						2158.0	2200.0	2				III
						2200.0	2206.0	1				II
						2200.0	2203.0	2				II
						2300.0	1025.0	2				CONT
12						0005.0	0009.0	2				V
						0021.0	0026.0	2				V
						0202.0	0202.0	1				III
						0621.0E	1507.00	3				IIIG/INT:1
0621	1507					0621.0E	1507.00	3				I,S,C,DC
						0622.0	1030.0	2				CONT
						0628.1	0633.3	2				IIIG,RS
0630	1550											
0700	1200					0700.0E	1200.00	2				IS,C,IIIN
						0706.0	0710.0	3				III
						0706.0	0710.0	2				III
						0706.5	0709.4	3				IIIG
						0707.0	0709.9	3				IIIG
						0907.6	0907.8	3				IIIB
0700	1200					0907.7	0907.8	2				IIIG
						1004.9	1005.4	3				IIIG,V
						1004.9	1005.5	3				IIIG,C
						1144.0	1159.0	2				S
						1158.0	1159.0	1				III
						1200.1	1200.3	2				IIIG,RS
						1404.5	1407.5	3				IIIG,U
						1605.0	1610.0	1				III
						1745.0	1750.0	1				III
						1752.0	1808.0	2				II
						1752.0	1755.0	2				II
						1755.0	1927.0	2				IV
						1818.0	1818.00	2				IV
						2322.0	1025.0	1				CONT
13						0304.0	0304.0	2				III
						0416.0	0417.0	2				III
						0635.0	0715.0	2				S
						0635.0	0714.0	2				S
0700	1200					0700.0E	1200.30	1				IS,IIIN
						0746.3	0746.4	2				IIIB
0627	1552					0910.0	1359.0	2				IN
						1335.0	1339.0	1				III
						1738.0	1742.0	1				III
						1753.0	1808.0	1				S
						1753.0	1756.0	2				III
						1808.0	1808.0	1				III
						1835.0	1909.0	1				CONT
						1843.0	1903.0	2				S
						1844.0	1903.0	2				S
14						0013.0	0044.0	2				S

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Spectral Observations

MARCH 1993

Observation			Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
Day (UT)	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)		Int (1-3)
14			PALE				0018.0	0032.0	1				S
			LEAR				0315.0	0345.0	1				S
			LEAR				0408.0	0416.0	2				V
	0700	1200	IZMI				0700.0E	1200.0D	1				IS
	0624	1553	ONDR	0756.0	1400.0	1	0756.0	1400.0	1				IN
			IZMI				1130.0	1200.0	1				IN
			IZMI				1154.0	1154.2	2				IIIIG,V
			PALE				1945.0	1945.0	2				III
			SGMR				1945.0	1945.0	2				III
			PALE				2134.0	2208.0	1				S
			LEAR				2312.0	2313.0	1				V
			PALE				2312.0	2313.0	2				V
15			PALE				0005.0	0008.0	2				III
			PALE				0042.0	0042.0	1				III
			LEAR				0118.0	0119.0	2				III
			PALE				0118.0	0119.0	2				III
			LEAR				0158.0	0203.0	2				III
			PALE				0203.0	0203.0	1				III
			LEAR				0328.0	0345.0	2				S
			PALE				0328.0	0328.0	1				III
			LEAR				0525.0	0527.0	2				III
			SVTO				0525.0	0525.0	2				III
			POTS				0636.0E	1504.0U	2				IIIIG/INT:1
	0636	1504	POTS				0636.0E	1504.0U	2				I,S,C,DC
			LEAR				0646.0	0647.0	2				III
			SVTO				0646.0	0646.0	2				III
			POTS				0646.5	0646.9	3				IIIIG,RS
			LEAR				0654.0	0703.0	1				III
	0700	1200	IZMI				0700.0E	1200.0D	1				IS
			LEAR				0732.0	0732.0	1				III
			LEAR				0903.0	0917.0	2				S
			POTS				0903.2	0903.4	2				IIIIG
			IZMI				0903.3	0903.6	2				IIIIG
			IZMI				0914.0	0917.3	2				IIIIG,V
			SVTO				0916.0	0917.0	2				III
			POTS				0916.6	0917.1	2				IIIIG
			LEAR				0957.0	0957.0	1				III
			SVTO				0957.0	0957.0	2				III
			POTS				0957.5	0957.9	3				IIIIG,RS
	0700	1200	IZMI				0957.7	0957.9	2				IIIIG,U
			POTS				1013.3	1013.4	2				IIIIG
			POTS				1032.8	1052.1	2				IIIIG
			IZMI				1042.8	1043.1	2				IIIIG,U
			POTS				1103.4	1103.5	3				IIIIG
			IZMI				1103.5	1103.6	2				IIIIG
			SVTO				1151.0	1159.0	2				III
			IZMI				1151.3	1151.6	2				IIIIG
			POTS				1151.3	1158.9	2				IIIIG,V
			SGMR				1158.0	1159.0	1				III
			IZMI				1158.8	1159.0	2				IIIIG
			POTS				1218.5	1219.0	2				IIIIG
			POTS				1239.2	1239.7	2				IIIIG
			POTS				1250.9	1256.4	2				IIIIG
			POTS				1412.9	1413.0	2				IIIIG
			POTS				1426.2	1426.4	2				IIIIG
			POTS				1436.7	1437.2	3				IIIIG
			SGMR				1437.0	1529.0	1				S
	0623	1555	ONDR										IV J
			POTS				1455.7	1458.9	3				IIIIG
			SVTO				1458.0	1459.0	2				III
			SGMR				1529.0	1557.0	1				CONT
			SVTO				1539.0	1551.0	2				S
			SGMR				1627.0	1628.0	2				III
			SVTO				1628.0	1628.0	2				III
			SGMR				1638.0	1641.0	2				III
			PALE				1739.0	1740.0	1				III
			SGMR				1739.0	1740.0	1				III
			PALE				1826.0	1827.0	1				III

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Observation			Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)		Int (1-3)
15			SGMR				1826.0	1827.0	1				III
			PALE				1904.0	1905.0	2				III
			SGMR				1904.0	1905.0	2				III
			PALE				2002.0	2017.0	1				S
			SGMR				2002.0	2003.0	1				III
			SGMR				2016.0	2017.0	2				III
			PALE				2119.0	2122.0	2				V
			SGMR				2120.0	2122.0	2				III
			PALE				2122.0	2140.0	1				CONT
			SGMR				2125.0	2125.0	1				III
16			LEAR				0056.0	0056.0	1				III
	0621	1556	ONDR										
			POTS				0625.0E	1231.0	1				IIIG/INT:1
	0625	1503	POTS				0625.0E	1231.0	1				I,S
			POTS				1039.7	1040.5	1				IIIG
	0700	1200	IZMI				1039.9	1040.0	1				IIIB
			POTS				1120.7	1125.0	1				IIIG
			POTS				1404.5	1404.7	3				IIIG
			POTS				1426.0	1426.2	2				UNCLF
			SGMR				1608.0	1635.0	1				S
			PALE				1805.0	1806.0	2				III
			SGMR				1805.0	1806.0	2				III
			PALE				2000.0	2000.0	1				III
			SGMR				2000.0	2000.0	1				III
			PALE				2055.0	2056.0	1				III
			SGMR				2056.0	2056.0	1				III
			PALE				2136.0	2137.0	2				III
			SGMR				2136.0	2137.0	2				III
			LEAR				2337.0	2337.0	2				III
			PALE				2337.0	2337.0	1				III
17			LEAR				0124.0	0124.0	1				III
			PALE				0124.0	0124.0	1				III
			LEAR				0507.0	0559.0	1				S
			SVTO				0539.0	0539.0	2				III
	0621	1558	ONDR										
			POTS				0637.0E	1500.0U	1				IIIG/INT:1
	0637	1500	POTS				0637.0E	1500.0U	1				I,S,W
			POTS				0655.0	0655.1	1				IIIB
	0700	1200	IZMI				0720.6	0720.8	1				IIIG
			POTS				0720.6	0720.8	1				IIIG
			POTS				0742.0	0742.4	1				IIIG,RS
			LEAR				0757.0	0803.0	2				III
			SVTO				0757.0	0803.0	2				III
			POTS				0757.7	0802.9	3				IIIGG
			IZMI				0757.8	0758.2	2				IIIG
	0700	1200	IZMI				0802.5	0802.9	2				IIIG
			POTS				1110.8	1111.4	3				IIIG,RS
			POTS				1142.3	1142.4	1				IIIB
			POTS				1304.5	1304.6	1				IIIB
			POTS				1311.0	1311.1	1				IIIB
			POTS				1426.8	1426.9	2				IIIB
			POTS				1447.6	1448.2	2				IIIG
18			LEAR				0050.0	0051.0	1				III
			PALE				0050.0	0051.0	1				III
			LEAR				0437.0	0449.0	3				S
	0616	1558	ONDR										
	0643	1505	POTS				0643.0E	0910.0U	1				I,S
			LEAR				0729.0	0745.0	3				S
			SVTO				0729.0	0731.0	3				V
			POTS				0729.7	0745.0	3				IIIGG
	0700	1200	IZMI				0730.8	0731.0	2				IIIG,V
			SVTO				0741.0	0745.0	3				III
			IZMI				0741.8	0745.1	1				IIIG
			LEAR				0842.0	0843.0	1				III
			POTS				1233.8	1303.0U	1				IIIGG,RSG
			SGMR				1249.0	1250.0	1				III

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Spectral Observations

MARCH 1993

Observation			Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)		Int (1-3)
18			POTS				1303.0U	1505.0U	1				I,S
19			LEAR				0022.0	0128.0	1				CONT
			PALE				0030.0	0130.0	1				CONT
	0617	1601	ONDR										
	0629	1505	POTS				0708.1	0708.3	1				IIIG
			POTS				0724.0	1505.0U	1				I,S,C
			POTS				0940.7	0940.9	2				IIIG
			POTS				0957.5	1025.0U	3				IV P,Z
			POTS				1234.4	1235.7	2				UNCLF
			POTS				1242.4	1321.0U	1				II ? ,IIIG
			POTS				1242.4	1321.0U	1				RS
			SGMR				1247.0	1336.0	1				IV
			SVTO				1250.0	1326.0	1				IV
20			LEAR				0049.0	0054.0	3				V
			PALE				0049.0	0055.0	3				III
			LEAR				0054.0	0055.0	2				II
			LEAR				0055.0	0600.0	2				IV
			PALE				0101.0	0230.0	1				IV
			PALE				0233.0	0247.0	2				S
			LEAR				0241.0	0247.0	2				V
	0617	1602	ONDR	0904.3	0905.5	2							DCIM
			SVTO				1000.0	1104.0	1				CONT
			ONDR	1020.8	1021.3	1							DCIM
			SGMR				1202.0	1203.0	1				III
			SVTO				1202.0	1230.0	3				S
			ONDR	1202.1	1231.0	3							CONT,DCIM
			SGMR				1209.0	1210.0	2				III
			ONDR	1209.2	1209.7	3	1209.2	1209.7	3				IIIG,U
			SGMR				1216.0	1218.0	2				III
			ONDR	1355.4	1518.3	3							DCIM
			SGMR				1425.0	1427.0	2				V
			SVTO				1425.0	1426.0	3				III
			ONDR	1534.8	1549.7	3							CONT
			SGMR				1604.0	1609.0	2				V
			SGMR				1619.0	1620.0	2				V
			SGMR				1649.0	1658.0	3				III
			PALE				1652.0	1657.0	2				III
			PALE				1904.0	1906.0	2				V
			SGMR				1905.0	1906.0	2				V
			PALE				1927.0	1927.0	1				III
			SGMR				1927.0	1927.0	1				III
			PALE				2116.0	2117.0	2				V
			SGMR				2117.0	2117.0	2				III
			PALE				2142.0	2143.0	2				III
			SGMR				2142.0	2143.0	2				III
			PALE				2215.0	2216.0	2				V
			SGMR				2215.0	2216.0	1				III
			LEAR				2325.0	2325.0	2				III
			LEAR				2336.0	2338.0	3				III
21			LEAR				0027.0	0027.0	1				III
			PALE				0027.0	0027.0	1				III
			LEAR				0414.0	0417.0	3				V
			LEAR				0445.0	0445.0	1				III
			SVTO				0514.0	0515.0	2				III
	0609	1606	ONDR										
			LEAR				0710.0	0712.0	2				III
			SVTO				0710.0	0712.0	2				III
			LEAR				0757.0	0757.0	2				III
			SVTO				0757.0	0757.0	2				III
	0700	1200	IZMI				0757.2	0757.6	1				IIIG
	0700	1200	IZMI				0814.3	0814.5	1				IIIG
			IZMI				0818.4	0815.5	1				IIIB
			LEAR				0828.0	0829.0	2				III
			SVTO				0828.0	0828.0	2				III
			IZMI				0828.4	0828.7	2				IIIG
			IZMI				0838.1	0838.2	1				IIIG

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Observation			Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)		Int (1-3)
21			IZMI				0859.6	0859.9	2				IIIG
			IZMI				1020.5	1020.6	1				IIIG
			IZMI				1120.7	1120.8	1				IIIG
			SGMR				1216.0	1218.0	1				III
			SVTO				1216.0	1218.0	2				III
			SGMR				1243.0	1255.0	1				S
			SVTO				1243.0	1255.0	2				S
			SGMR				1434.0	1445.0	1				S
			SVTO				1434.0	1445.0	2				S
			SVTO				1523.0	1527.0	3				III
			SGMR				1524.0	1525.0	2				III
			SGMR				1530.0	1533.0	1				III
			PALE				1852.0	1852.0	1				III
			SGMR				1852.0	1852.0	1				III
			PALE				1929.0	1930.0	1				III
			PALE				2012.0	2012.0	1				III
			SGMR				2012.0	2012.0	1				III
			PALE				2023.0	2023.0	1				III
			SGMR				2023.0	2023.0	1				III
22	0607	1604	ONDR										
	0627	1351	POTS				0627.0E	1351.0U	1				I,S,C
			POTS				0643.1	0643.2	1				IIIB
			POTS				0924.1	0924.2	1				IIIB
			POTS				1146.5	1146.9	1				IIIG
			POTS				1328.5	1328.9	1				IIIG
23			LEAR				0136.0	0137.0	1				III
			LEAR				0139.0	0330.0	1				CONT
			LEAR				0149.0	0149.0	2				III
			PALE				0149.0	0149.0	1				III
			LEAR				0748.0	0748.0	2				III
			SVTO				0748.0	0748.0	1				III
	0700	1200	IZMI				0748.2	0748.5	2				IIIG
	0625	1507	POTS				0748.2	0748.5	3				IIIG
	0605	1609	ONDR	0845.2	0846.3	2	0845.2	0846.3	2				IIIG
			POTS				0845.2	0852.8	3				IIIG,U
			LEAR				0846.0	0846.0	1				III
			SVTO				0846.0	0846.0	1				III
			IZMI				0846.2	0846.4	2				IIIG
			POTS				0922.9	1153.0U	1				I,S
			POTS				1029.9	1116.5	1				IIIGG
			POTS				1138.4	1140.7	3				IIIGG,RS
			ONDR	1138.5	1138.7	3	1138.5	1138.7	3				IIIG
			IZMI				1138.6	1138.8	1				IIIG
			POTS				1258.8	1259.3	2				IIIG
			POTS				1333.6	1607.0U	1				I,S
			POTS				1405.9	1412.3	1				IIIGG,RS
24			LEAR				0216.0	0218.0	2				III
			PALE				0216.0	0216.0	1				III
			LEAR				0424.0	0425.0	2				III
	0603	1611	ONDR										
	0605	1507	POTS				0814.5	0816.6	1				IIIGG
			POTS	1026.0	1026.7	1							DCIM
			POTS	1105.0	1105.9	1							DCIM
			POTS				1105.5	1114.1	1				IIIG,RS
			POTS				1207.2	1207.3	1				I
			POTS				1246.5	1246.7	1				I
			POTS				1352.5	1507.0U	1				I,S,IIIG
			SGMR				1547.0	1548.0	2				V
			SVTO				1547.0	1547.0	2				III
25	0615	1501	POTS				0630.4	0630.5	1				IIIB
			POTS				0727.1	0727.2	1				IIIB
			POTS				1039.3	1040.1	1				DCIM
	0600	1610	ONDR	1315.6	1316.2	1							IIIGG
			ONDR	1339.7	1345.0	2							DCIM
			POTS	1339.7	1346.2	2							DCIM

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Observation				Decimetric Band			Metric Band			Dekametric Band			Spectral Type
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
25			ONDR	1544.8	1545.2	1							IIIG
26	0637	1502	POTS				0637.0E	1502.0U	1				I,S,DC
	0700	1200	IZMI				0814.7	0816.6	1				IIIG
	0826	1614	ONDR										
			POTS	0832.6	0932.9	2							DCIM
			POTS				0837.1	0837.3	1				IIIG
			IZMI				1113.8	1114.0	1				IIIG
			POTS	1122.0	1122.8	1							DCIM
			POTS	1349.0	1350.1	3							DCIM
			SGMR				1359.0	1400.0	2				III
			SVTO				1401.0	1401.0	2				V
			SGMR				1405.0	1414.0	2				II
			SVTO				1406.0	1408.0	2				II
			POTS	1409.5	1411.7	3							DCIM
			PALE				2115.0	2116.0	1				III
			SGMR				2115.0	2116.0	1				III
27	0556	1614	ONDR										
			LEAR				0616.0	0616.0	1				III
	0700	1200	IZMI				0809.5	0811.6	1				IIIG
			IZMI				0821.2	0821.5	1				IIIG
			IZMI				0853.0	0858.8	2				IIIGG
			LEAR				0853.0	0854.0	3				III
			SVTO				0853.0	0854.0	3				V
			IZMI				1005.7	1016.3	2				IIIG
			SGMR				1058.0	1058.0	1				III
			SVTO				1058.0	1058.0	2				III
			IZMI				1058.2	1058.3	1				IIIB
			IZMI				1116.9	1117.0	2				IIIG
			SGMR				1117.0	1118.0	1				III
			SVTO				1117.0	1118.0	3				III
			IZMI				1144.6	1146.9	2				IIIG
			SGMR				1322.0	1322.0	1				III
			SGMR				1337.0	1338.0	1				III
			SVTO				1337.0	1338.0	1				III
			SGMR				1427.0	1431.0	2				V
			SVTO				1429.0	1430.0	2				III
			SGMR				1630.0	1634.0	2				V
			SGMR				1759.0	1800.0	1				III
			SGMR				1829.0	1830.0	1				III
			PALE				2008.0	2010.0	2				V
			SGMR				2008.0	2011.0	2				V
28	0554	1617	ONDR				0705.0	1400.0	1				IN
			LEAR				0824.0	0825.0	1				III
			SVTO				0824.0	0825.0	2				III
			ONDR	0825.4	0825.5	2							IIIG
	0600	1200	IZMI				0927.0	0943.0	1				IN
			LEAR				0942.0	0942.0	1				III
			SVTO				0942.0	0942.0	2				III
			IZMI				0942.1	0942.2	1				IIIN
			ONDR				1210.0	1210.8	2				IIIGG
			SGMR				1210.0	1211.0	1				III
			SGMR				1236.0	1242.0	1				III
			SVTO				1236.0	1242.0	2				III
			ONDR	1330.5	1330.9	2							IIIG
			SGMR				1349.0	1355.0	2				V
			SVTO				1349.0	1355.0	2				V
			SGMR				1434.0	1434.0	1				III
			SVTO				1434.0	1434.0	1				III
			SGMR				1500.0	1510.0	3				V
			SVTO				1501.0	1504.0	2				V
			SGMR				1554.0	1554.0	1				III
			SGMR				1739.0	1740.0	1				III
			PALE				1740.0	1740.0	1				III
			PALE				1912.0	1914.0	2				III
			SGMR				1912.0	1914.0	2				V
			PALE				2228.0	2229.0	1				III

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MARCH 1993

Observation			Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)		Int (1-3)
29			PALE				0155.0	0159.0	2				III
			LEAR				0448.0	0459.0	2				S
			LEAR				0525.0	0537.0	3				S
			SVTO				0537.0	0537.0	2				III
0601	1529		POTS				0601.0E	1529.00	1				I,S,C,IIIG
0600	1200		IZMI				0609.0	0609.3	1				IIIG
			POTS				0609.0	0612.4	2				IIIG,U
			POTS				0624.5	0638.8	3				IIIGG,C,RS
			IZMI				0626.9	0636.8	2				IIIG
			LEAR				0634.0	0635.0	2				III
			SVTO				0634.0	0635.0	2				III
			IZMI				0651.5	0651.7	1				IIIB
			POTS				0651.5	0658.3	3				IIIGG,RS
			POTS				0719.1	0728.3	2				IIIGG
			POTS				0803.5	0818.80	3				RSGG,IIIGG
			IZMI				0803.6	0816.4	2				IIIGG
			LEAR				0812.0	0813.0	2				III
			SVTO				0813.0	0813.0	2				III
			LEAR				0831.0	0833.0	3				III
			SVTO				0831.0	0833.0	3				III
			POTS				0831.5	0844.50	3				IV IIIGG
			POTS				0831.5	0844.50	3				V
			IZMI				0831.7	0834.5	2				IIIG,V,F
0552	1617		ONDR	0831.5	0833.8	3	0831.5	0833.8	3				CONT
			IZMI				0920.0	0923.0	1				IIIG
			LEAR				0922.0	0922.0	1				III
			SVTO				0922.0	0928.0	2				III
			POTS				0922.1	0928.8	2				IIIGG
			POTS	0940.0	0940.3	1							DCIM
			IZMI				0951.2	0953.0	1				IIIG
			POTS				1006.3	1006.4	1				IIIB
0600	1200		IZMI				1007.4	1008.0	1				IIIG
			SVTO				1019.0	1024.0	2				V
			POTS				1019.2	1046.4	3				II ? IIIGG
			POTS				1019.2	1046.4	3				RS
			ONDR	1042.0	1045.3	3							IIIGG
			ONDR	1107.0	1108.0	3	1107.0	1108.3	3				IIIG
			POTS				1107.4	1107.9	3				IIIG,C,RS
			POTS				1251.3	1258.1	3				II ? IIIGG
			POTS				1251.3	1258.1	3				IV U
			ONDR	1251.5	1256.7	2	1255.3	1256.0	1				DCIM
			POTS				1346.4	1350.7	3				IIIGG
			SGMR				1347.0	1351.0	2				V
			SVTO				1347.0	1351.0	2				V
			SGMR				1529.0	1533.0	2				V
			SVTO				1531.0	1531.0	2				III
			SGMR				1701.0	1708.0	1				III
			PALE				1709.0	1711.0	1				III
			SGMR				1709.0	1714.0	3				V
			PALE				1850.0	1851.0	1				III
			SGMR				1850.0	1851.0	1				III
			PALE				1903.0	1904.0	2				III
			SGMR				1903.0	1905.0	2				III
			PALE				1933.0	1935.0	2				III
			SGMR				1933.0	1935.0	1				III
			PALE				2015.0	2027.0	2				S
			SGMR				2015.0	2027.0	2				S
			PALE				2117.0	2118.0	2				III
			SGMR				2117.0	2118.0	1				III
			PALE				2204.0	2204.0	2				III
			PALE				2259.0	2302.0	2				III
			LEAR				2300.0	2301.0	1				III
30			LEAR				0005.0	0022.0	1				S
			PALE				0005.0	0005.0	1				III
			LEAR				0102.0	0116.0	3				S
			PALE				0102.0	0116.0	2				S
			LEAR				0303.0	0304.0	2				III
			LEAR				0328.0	0334.0	3				V

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MARCH 1993

Observation			Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
Day (UT)	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)		Int (1-3)
30			PALE				0329.0	0331.0	2				III
			LEAR				0455.0	0456.0	3				III
			SVTO				0455.0	0455.0	2				III
			LEAR				0525.0	0527.0	3				V
			SVTO				0525.0	0527.0	3				V
			SVTO				0535.0	0537.0	1				III
			LEAR				0536.0	0538.0	2				V
	0601	1517	POTS				0601.0E	1517.0U	1				I,S,IIIG
			SVTO				0605.0	0607.0	1				III
			LEAR				0620.0	0620.0	1				III
			POTS				0620.0	0620.2	1				IIIG
			POTS				0646.1	0646.2	2				IIIB
			POTS				0707.2	0714.7	1				IIIG
	0600	1200	IZMI				0740.8	0751.8	3				IIIGG,V
			POTS				0741.8	0755.0	3				IIIGG,C
			LEAR				0742.0	0747.0	3				III
			SVTO				0742.0	0747.0	2				III
			IZMI				0902.2	0903.1	1				IIIG
			POTS				0902.2	0903.1	1				IIIG
			POTS				0934.8	0947.3	3				IIIGG,RS
			IZMI				0936.3	0936.4	1				IIIB
			IZMI				0938.8	0939.0	1				IIIB
	0549	1621	ONDR				0938.8	0939.0	3				IIIG,U
			LEAR				0946.0	0947.0	1				V
			SVTO				0946.0	1002.0	2				S
			IZMI				0956.7	0957.7	2				IIIG
			POTS				1008.4	1027.4	3				IIIGG,UG
			POTS				1008.4	1027.4	3				SPIKES
			IZMI				1025.4	1027.4	2				IIIG,U
			ONDR	1025.7	1027.4	2							IIIG
			POTS				1045.8	1046.0	1				IIIB,RS
			POTS	1105.9	1106.1	1							DCIM
			POTS				1128.0	1135.3	3				IIIGG,UG
			IZMI				1128.4	1133.4	2				IIIG,U
			POTS	1129.6	1129.7	1							DCIM
			SGMR				1217.0	1227.0	2				III
			SVTO				1217.0	1226.0	2				III
			POTS				1217.4	1229.4	3				IIIGG
			SGMR				1248.0	1248.0	2				III
			SVTO				1248.0	1248.0	2				III
			POTS				1248.1	1258.4	3				IIIGG,C,UG
			ONDR	1254.5	1255.0	3	1254.7	1255.1	3				IIIGG,U
			POTS				1317.9	1318.0	2				IIIB
			SGMR				1318.0	1318.0	1				III
			POTS				1330.3	1334.2	3				IIIGG,V
			SVTO				1331.0	1347.0	2				S
			SGMR				1332.0	1332.0	2				V
			POTS				1346.6	1356.0	3				IIIG
			SGMR				1347.0	1347.0	2				III
			POTS				1439.7	1439.8	1				IIIB
		SGMR				1634.0	1643.0	2				V	
		PALE				1831.0	1833.0	1				III	
		SGMR				1831.0	1834.0	1				III	
		PALE				1908.0	1912.0	2				III	
		SGMR				1908.0	1911.0	2				III	
		PALE				1949.0	1954.0	2				III	
		SGMR				1950.0	1955.0	2				III	
		PALE				2036.0	2049.0	3				S	
		SGMR				2037.0	2049.0	2				S	
		PALE				2112.0	2113.0	1				III	
		PALE				2113.0	2114.0	1				III	
		SGMR				2113.0	2202.0	2				S	
		PALE				2154.0	2202.0	2				III	
		PALE				2230.0	2308.0	2				S	
		LEAR				2253.0	2259.0	2				V	
31			LEAR				0003.0	0006.0	2				V
			PALE				0003.0	0005.0	2				V
			LEAR				0055.0	0056.0	2				III

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

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Observation			Decimetric Band			Metric Band			Dekametric Band			Spectral Type
Start	End	Sta	Start	End	Int	Start	End	Int	Start	End	Int	
Day	(UT)		(UT)	(UT)	(UT)	(1-3)	(UT)	(UT)	(1-3)	(UT)	(UT)	(1-3)
31			PALE			0155.0	0207.0	2				S
			LEAR			0156.0	0209.0	3				S
			LEAR			0248.0	0314.0	1				S
			LEAR			0328.0	0334.0	2				III
			LEAR			0436.0	0450.0	2				S
			SVTO			0454.0	0502.0	2				III
			LEAR			0459.0	0503.0	3				III
			LEAR			0514.0	0515.0	1				III
			SVTO			0600.0	0614.0	3				S
			LEAR			0601.0	0615.0	3				S
0547	1529		POTS			0601.0	0615.6	3				IIIGG
0600	1200		IZMI			0601.3	0611.2	2				IIIGG
			POTS			0621.01	5290.00	1				I,S,IIIG
			POTS			0626.2	0626.9	1				IIIB,RS
			POTS			0714.9	0717.0	2				IIIG
			LEAR			0715.0	0716.0	2				III
			SVTO			0715.0	0716.0	1				III
			IZMI			0802.7	0808.0	1				IIIG
			POTS			0802.7	0821.5	2				IIIG
			SVTO			0808.0	0821.0	2				S
			LEAR			0812.0	0821.0	2				III
			POTS			0840.8	0841.4	1				IIIG
0537	1622		ONDR	0904.4	0905.2	2						IIIGG
			POTS			0931.0	0958.4	3				IIIGG
			IZMI			0934.9	0958.4	3				IIIGG
			SVTO			0935.0	1026.0	3				S
			LEAR			0941.0	0946.0	3				III
			POTS			1024.8	1026.9	3				IIIG
			IZMI			1024.9	1025.5	3				IIIG
			POTS			1102.3	1120.0	2				IIIG
			SVTO			1117.0	1156.0	2				S
			IZMI			1119.6	1120.0	1				IIIG
			SGMR			1142.0	1146.0	2				III
			POTS			1142.2	1202.9	3				IIIGG
			IZMI			1142.3	1147.0	3				IIIGG
			SGMR			1153.0	1156.0	1				III
			POTS			1245.1	1245.2	3				RS
			POTS			1320.0	1320.5	3				IIIG
			SGMR			1320.0	1320.0	3				III
			SVTO			1320.0	1320.0	2				III
			POTS			1334.0	1346.9	3				IIIGG,RS
			SGMR			1338.0	1346.0	2				III
			POTS			1400.1	1405.7	3				IIIGG,V,RS
			SGMR			1402.0	1405.0	2				III
			POTS			1415.2	1525.90	3				IIIGG
			SGMR			1420.0	1556.0	3				S
			SGMR			1632.0	1632.0	1				III
			SGMR			1704.0	1707.0	3				V
			PALE			1705.0	1708.0	2				III
			SGMR			1733.0	1740.0	1				III
			PALE			1804.0	1805.0	2				III
			SGMR			1804.0	1805.0	3				III
			SGMR			1858.0	1905.0	1				III
			PALE			1859.0	1905.0	1				III
			SGMR			2039.0	2040.0	1				III
			PALE			2041.0	2041.0	1				III

SOLAR RADIO NOISE STORMS AT 164 MHZ FROM NANCAY RADIOHELIOGRAPH

This table provides daily information on the heliographic two dimensional positions, flux densities and durations of the noise storms observed at 164 MHz with the Nancay Radioheliograph located at N47 E02. In its new mode of operation, 2 one-dimensional independent scans of the solar brightness distributions are measured with an east-west and a north-south array. The field of view covers the whole Sun and the spatial resolution at 164 MHz varies from 1.2' x 3.2' in summer to 1.2' x 7.1' in winter. The analysis of these two data sets allows one to compute the heliographic 2D position of noise storms.

Only those noise storms with duration longer than one hour are reported in this publication. The position of the centroid of the noise storm averaged over 1 hour (generally around 12 UT) is indicated. This position is corrected from ionospheric refraction. The precision on the centroid of the position is of the order of 0.03 $R_{\odot}$ while the mean size of noise storms is rather around 0.1 $R_{\odot}$ at this frequency. The flux density of the noise storm is the mean value measured during the observing interval. In the case of a relatively weak active Sun, low flux density noise storms are reported. However, in case of a higher solar activity, the position of low flux density noise storms may not be determined and reported. The list of the days when the Radioheliograph was not operating is indicated below the table, if necessary.

SOLAR RADIO NOISE STORMS AT 164 MHZ FROM NANCAY RADIOHELIOGRAPH

MARCH 1993

	HELIOGRAPHIC POSITIONS				
DAY	MEAN VALUES*		IMP**	OBSERVING TIME***	
	E-W	S-N		START(UT)	END (UT)
01/03/93	+0.26	+0.24	2	0900E	1200
03/03/93	+0.77	+0.11	2	1045	1500D
04/03/93	-1.05	-0.28	1	0900E	1500D
04/03/93	+1.00	+0.17	2	1215	1415
05/03/93	-0.96	-0.39	2	0910E	1500D
05/03/93	-0.56	-0.27	1	1300	1500D
06/03/93	-0.48	+0.09	4	0900E	1510D
07/03/93	-0.21	-0.07	3	0910E	1505D
08/03/93	+0.06	+0.14	5	0850E	1500D
09/03/93	+0.41	-0.01	3	0900E	1500D
10/03/93	+0.47	+0.21	5	1100	1500D
11/03/93	+0.74	+0.06	2	0900E	1500D
12/03/93	+0.91	+0.06	3	0900E	1500D
13/03/93	+1.15	+0.11	4	0905E	1500D
14/03/93	+1.44	+0.25	3	0930E	1500D
19/03/93	+0.48	+0.50	2	1300	1500D
20/03/93	+0.87	+0.70	2	0910E	1600D
26/03/93	-1.20	-0.14	1	0900E	1530D

15,16,17 MARCH : NO DATA

OTHER DAYS : NO DETECTABLE NOISE STORMS

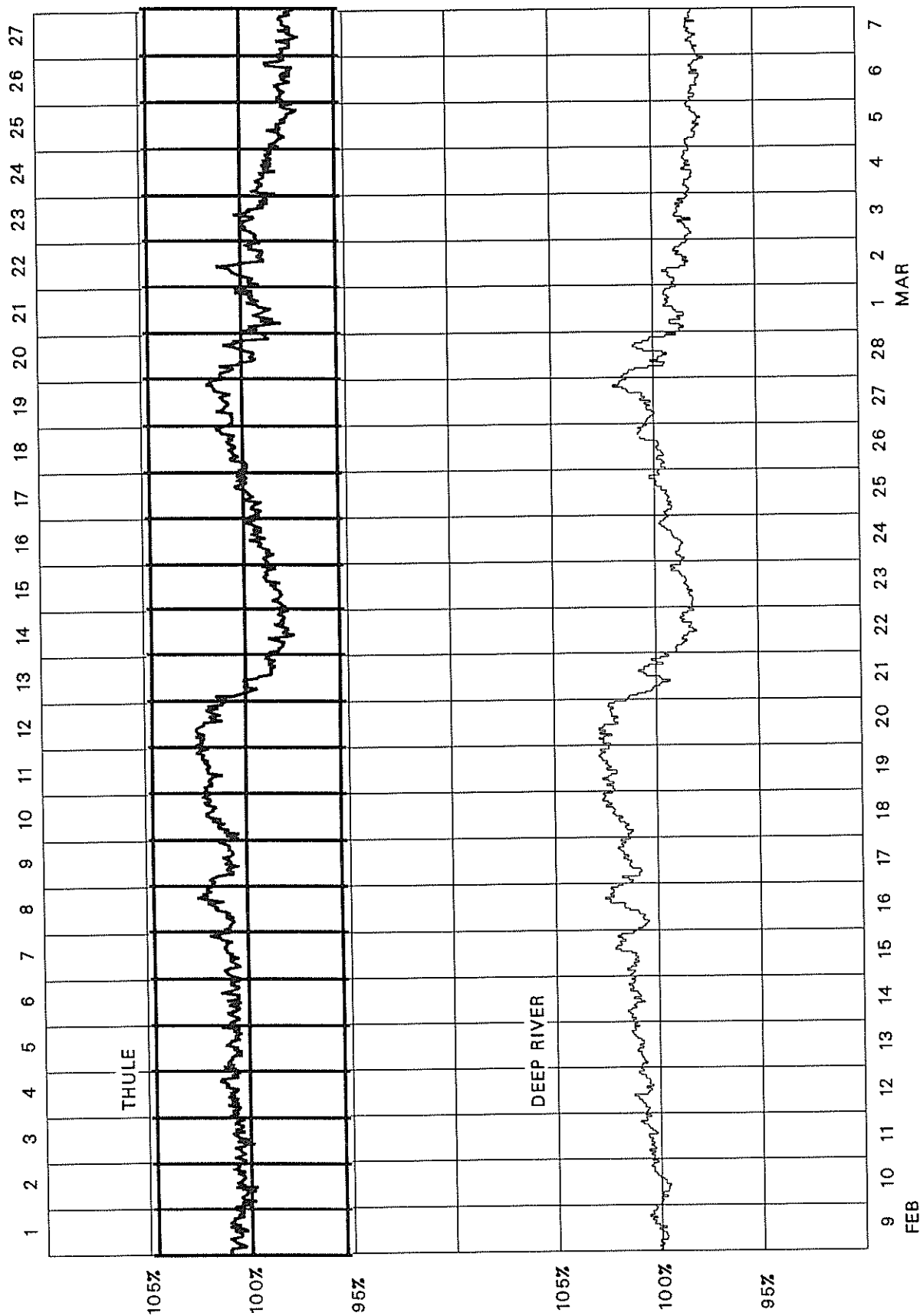
* POSITIVE E-W AND S-N COORDINATES CORRESPOND TO THE N-W SOLAR QUADRANT

** IMP 1: FLUX<5 SFU IMP 2 : 5<FLUX<20 SFU IMP 3: 20<FLUX<100 SFU
IMP 4: 100<FLUX<300 SFU IMP 5: FLUX>300 SFU

*** E NOISE STORM IN PROGRESS AT THE BEGINNING OF THE NANCAY OBSERVATIONS
D NOISE STORM IN PROGRESS AT THE END OF THE NANCAY OBSERVATIONS

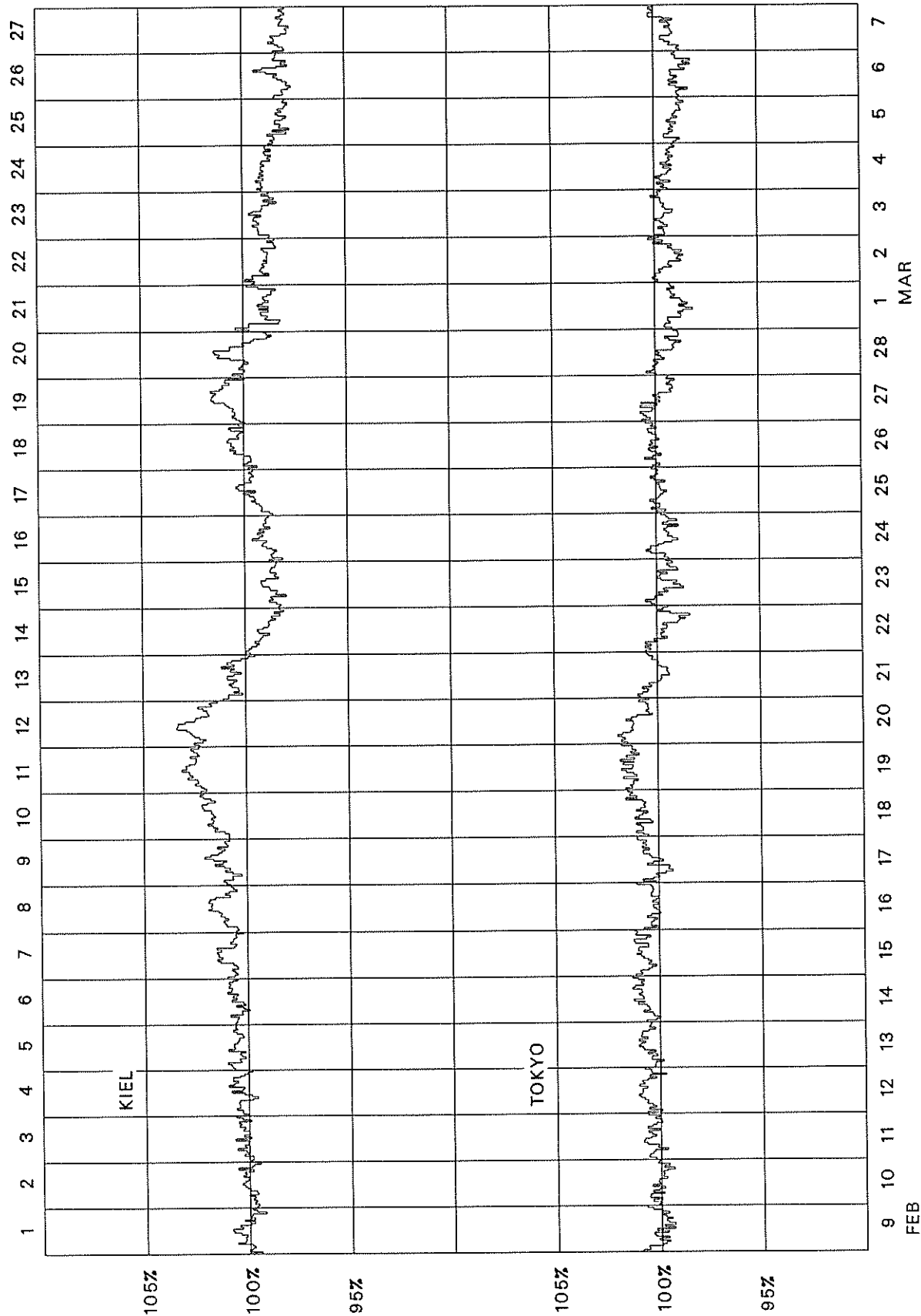
COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2179 (February 1993-March 1993)



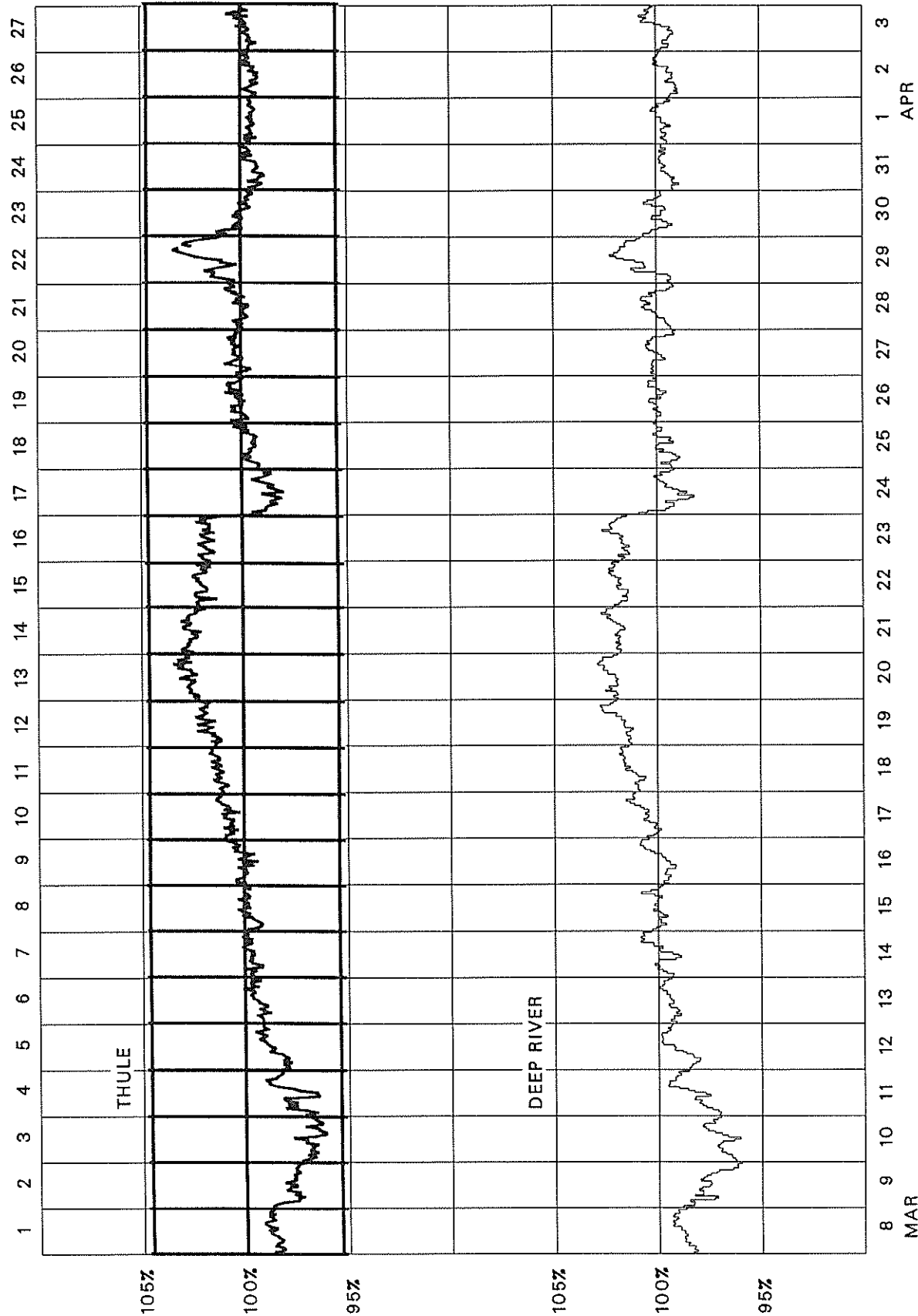
COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2179 (February 1993-March 1993)



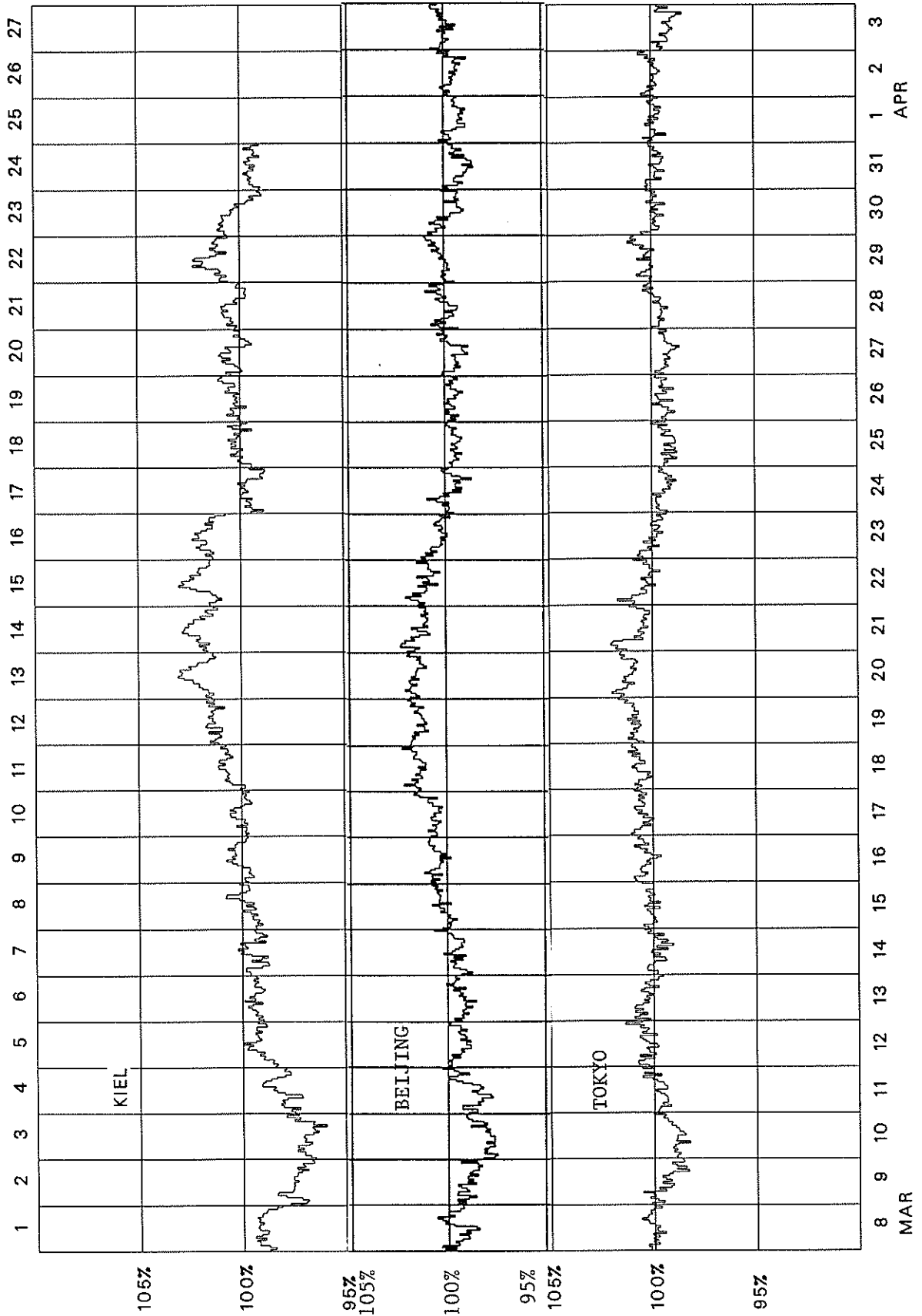
COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2180 (March 1993-April 1993)



COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2180 (March 1993-April 1993)



COSMIC RAY INDICES
(Neutron Monitor)

MARCH 1993

Day	THULE Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	BEIJING Average (cts/h) 256	TOKYO Average (cts/h)/256	HUANCAYO Average (cts/h)/100
1	4263	6726.7	5914.8	3888.1	1971.9	3501.7	
2	4276	6710.1	5910.0	3876.9	1969.3	3717.3	
3	4267	6690.7	5915.2	3868.4	1966.5	3523.5	
4	4239	6675.9	5909.6	3859.5	1957.3	3515.4	
5	4199	6657.2	5863.7	3830.6	1963.5	3501.7	
6	4200	6649.5	5865.5	3824.8	1958.4	3495.8	
7	4187	6659.9	5859.1	3839.2	1972.6	3517.8	
8	4214	6684.7	5890.7	3860.8	1968.9	3532.7	
9	4169	6597.5	5794.2	3810.2	1956.9	3508.7	
10	4124	6559.5	5766.0	3764.1	1940.0	3495.5	
11	4174	6651.7	5834.5	3836.1	1954.9	3521.4	
12	4212	6700.3	5898.4	3872.4	1965.7	3544.4	
13	4246	6723.7	5910.6	3890.8	1963.7	3542.8	
14	4261	6759.5	5916.1	3888.2	1968.3	3525.4	
15	4265	6763.6	5931.5	3914.8	1981.6	3534.5	
16	4281	6755.0	5953.7	3925.3	1988.6	3545.9	
17	4313	6804.0	5948.5	3921.2*	1992.1	3550.5	
18	4333	6850.8	5989.4	3954.5*	2007.5	3554.7	
19	4355	6884.8	6029.2	3967.5*	2006.5	3563.5	
20	4397	6917.0	6072.6	4003.7*	2009.0	3474.8	
21	4393	6899.2	6070.3	3995.6*	2004.9	3558.5	
22	4369	6889.5	6062.3	3987.2*	1999.5	3545.6	
23	4356	6886.5	6048.4	3980.4*	1984.9	3528.8	
24	4217	6724.3	5921.7	3897.2*	1972.5	3511.6	
25	4257	6738.1	5954.8	3902.9	1968.3	3503.7	
26	4285	6764.7	5972.5	3914.5	1970.2	3510.6	
27	4286	6762.7	5967.0	3921.7	1969.0	3505.4	
28	4281	6759.5	5968.2	3881.4(10)	1978.5	3521.5	
29	4354	6822.9	6025.8	3971.3(24)	1981.1	3542.8	
30	4275	6759.4	5965.5	3896.6	1973.7	3526.0	
31	4249	6730.5	5915.7	3868.4	1961.7	3524.4	
Mean	4268	6747.1	5937.0	3871.7	1975.1	3527.4	

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.

* = A+B calculated from B only assuming A/B= 0.995.

GEOMAGNETIC ACTIVITY INDICES

March 1993

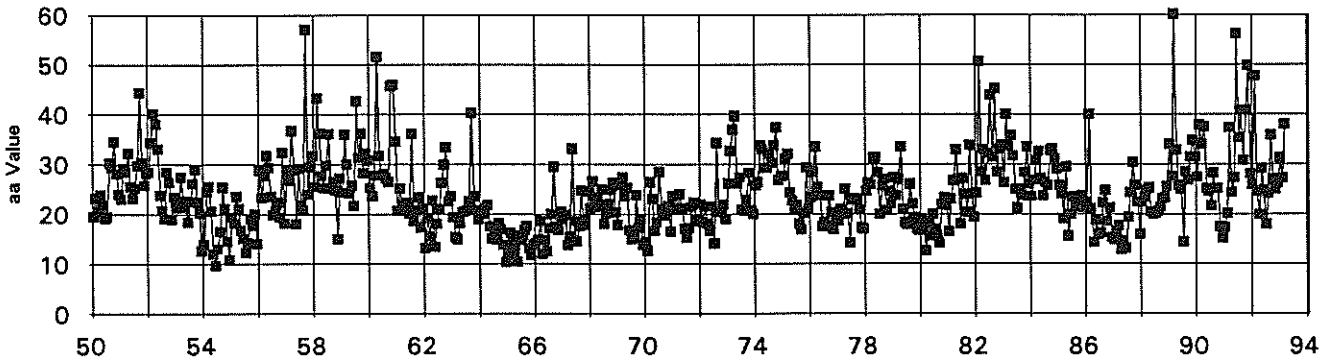
March 1993																											
Day	Kp Three-Hourly Indices								Sum	Ap	Cp	Km Three-Hourly Indices								aa Provisional							
	1	2	3	4	5	6	7	8				1	2	3	4	5	6	7	8	Am	N	S	M				
1		2	2	3	4-	5-	4-	3	3+	25+	18	1.0	2+	2-	3	3	5-	4-	3	3	33	38	33	24	47		
2		2-	3+	5-	3+	3	4	4+	5-	29	24	1.2	1+	3-	4	3	3-	4	4	5-	40	42	34	29	47		
3		4+	4+	4	4-	4	5-	6-	4+	35	35	1.4	3+	3	4-	3	4	4+	5	4-	49	56	37	29	63		
4		6-	5	4-	3-	1+	3	3-	1+	25+	23	1.1	5	4-	3+	2+	1	3	3-	2-	33	37	24	41	19		
5	Q1A	3+	2	2+	2-	1	1-	1-	2	14-	7	0.4	3	1+	2	2-	1-	1	1	2-	12	14	9	14	9 C		
6	Q3A	1+	1-	2	3-	2	2	3	2	16-	8	0.4	1+	1-	2	3-	2	2+	3	2+	17	19	20	13	25		
7		4-	5	4+	2-	2	2	4+	4	27-	22	1.1	4-	4	4	2+	1+	2+	4-	4-	35	45	26	37	34		
8		3+	3+	3+	2	3+	5-	4-	6+	30	29	1.3	3-	3-	3	2+	3	4+	4-	5+	43	45	46	23	68		
9	D1	7-	7-	6+	6-	5-	4+	3+	5-	42+	64	1.7	6	6-	6-	5-	4+	4	3+	5-	92	76	83	100	60		
10	Q9A	5	3+	2	1+	3+	2	1	3-	21-	15	0.8	4+	3-	2-	2-	3	2-	1	2	23	29	17	27	20		
11	D3	3-	1+	3	5-	6-	7-	6	6-	36-	50	1.6	2	2-	3+	4+	5+	6	5+	5	75	68	75	34	109		
12		6-	3+	3	3	3-	4	5	4-	30+	28	1.2	5	3-	3-	3-	3-	4-	4+	4-	44	52	30	35	47		
13		5-	5	4-	3-	3+	5	5	3	32+	31	1.3	4+	4-	3-	3-	3	5-	5-	3	47	43	49	44	49		
14		3-	3-	3+	4	4	4	4	4+	29	23	1.1	3-	2+	3-	3+	4-	4-	4-	5-	40	43	32	26	49		
15	D4	4+	4-	6-	5+	5+	5-	4+	5+	39-	45	1.5	4+	4-	5	5+	5+	4+	4	5	81	55	89	67	77		
16	D5	4+	5	5+	5-	3-	6-	5	2+	35	39	1.4	4+	4-	4+	4-	3-	5-	4	2+	50	56	51	55	62		
17		4	3+	2+	5-	3+	3-	4-	5-	29-	23	1.1	4-	3-	3-	4-	4-	3-	4-	4+	39	41	32	38	35		
18		5	4-	4-	3+	3	2-	2	2+	25-	18	1.0	4	3	3+	3-	3	2-	2+	2+	29	31	28	39	20		
19	Q5A	2-	1+	2	3-	2+	4	3	2-	19-	11	0.6	2-	1+	2+	3-	2	3+	3-	2	19	19	18	15	22		
20		2+	4	4-	5-	4	4-	3-	2+	27+	21	1.1	3-	3	3+	4	4-	3+	3-	2+	33	42	35	35	42		
21		3	4+	4-	5	5+	4	3+	3+	32	30	1.3	3-	3-	3	4+	4+	4-	3	3	41	44	46	42	48		
22		4-	3+	4	4+	3+	4+	4	4	31	25	1.2	3-	3	3+	4	3	3+	4-	4-	37	50	31	40	40		
23	Q7A	3-	2-	2	2	3	2-	2	4+	19+	12	0.7	2+	1+	2-	2	3-	2-	2	4-	19	21	19	16	24		
24	D2	4	6	7+	6	5-	4+	3+	4+	40	58	1.7	4-	5-	6-	5-	4	4-	4-	4	67	74	67	92	49		
25	Q8A	3+	3	3+	3+	3-	4-	3	2-	24	16	0.9	3	3	3-	3	3	3+	3-	1+	26	28	27	30	25		
26	Q2A	1	2+	1+	2	2-	1+	3	2+	15	8	0.4	1	2+	1+	2	2-	1+	3-	2+	14	20	14	14	20		
27	Q6A	3	2	2+	1+	3	3+	2	4-	21-	12	0.7	3-	2-	2	1+	3-	3+	2+	3	21	34	21	19	37		
28		4-	3-	2	2+	2	3	4	5-	24+	17	0.9	3	2+	2+	3	2+	3	3+	5-	32	37	37	26	48		
29	Q10A	4+	5	4+	2-	1-	1	1-	3	21-	18	1.0	4	3-	4	2-	1+	1	1-	2+	25	26	21	31	16		
30		3+	2+	3+	3	4	5-	3	2+	26	19	1.0	3-	3-	3+	3-	3+	4	3	3-	32	42	37	30	49		
31	Q4A	4	2	2-	1-	2	2+	2	3-	17+	10	0.5	4-	2-	1+	1+	2+	2+	2+	3-	20	22	17	17	22		
Mean											24	1.05	37.7											40.3	35.6	37.9	
Day	Kn Three-Hourly Indices								An	Ks Three-Hourly Indices								As	Sa	Prov							
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			Ri	Ra	Rs	IMF				
1	2+	2-	3-	3	5-	4	3	3	37	2+	2-	3	3	4+	3	3-	3-	29	129.6	86	80	78					
2	1+	3	4	3+	3-	4	4	4-	40	1	2+	4-	3-	3-	4-	4-	5	40	141.0	80	81	90					
3	3+	3	3+	3	4+	4	5-	4-	48	4-	3	4-	3	4-	4+	5	4	51	148.6	84	84	98					
4	5	4-	3+	3-	1+	3	2+	2-	32	5	4-	3+	2	1	3	3-	2-	33	163.8	98	102	115					
5	3-	1+	2+	2-	1-	1+	1	2	12	3+	1+	2	2	1-	1-	1-	2-	12	162.5	105	114	114					
6	1	1-	2	3-	2	2+	3	2+	17	1+	1-	2-	3-	2+	3-	3-	2+	17	164.0	96	101	115					
7	3+	4	4-	3-	1+	2+	4-	4-	34	4-	4	4	2-	1+	2	3+	4-	36	150.9	93	98	101					
8	3-	3	3	3-	3+	4+	4-	5+	46	3-	2+	3-	2	3-	4	3+	5+	39	144.3	82	102	94					
9	6	6	6-	5-	5-	4+	3+	5-	96	6	6-	6-	4	4	3+	3+	5-	89	140.6	89	95	90					
10	4	3-	2	2-	3	2	1+	2+	22	5-	3	2-	2-	3-	2-	1	2	23	146.7	81	82	96					
11	2	1+	3	4+	5+	6-	5+	5-	72	2-	2-	3+	4	5+	6+	5+	5	78	148.0	86	79	98					
12	5	3-	2+	3-	3	4	4	3+	41	5	3-	3-	3-	3-	4-	5-	4-	46	158.7	77	76	109					
13	4	4	3	3-	3	5-	5-	3	48	5-	3	3-	3	3	4+	5-	3-	45	139.9	67	66	89					
14	3-	3-	3	3+	4	4	4-	4	40	3-	2+	2+	3	4-	4-	4-	5	40	134.2	56	54	83					
15	4-	4-	5	5	6-	4	4	5-	77	5	3+	5	5+	5	4+	4	5+	84	129.7	60	58	78					
16	4	4-	4+	4-	3-	5-	4+	2+	50	4+	4-	4+	4-	3-	5	4-	2+	50	120.5	56	58	68					
17	3+	3	3	4	3+	2+	3+	4	38	4-	3	2	4-	4-	3-	4-	5-	41	122.4	60	57	70					
18	4	3+	3+	3-	3+	2	2	2-	29	4	3-	4-	3	3	1+	2+	3-	29	126.2	69	65	74					
19	1+	1+	2+	3-	2+	4-	3	2	21	2+	1+	2	3-	2-	3	2+	2	18	133.4	72	73	82					
20	2+	3	3+	4+	4	4-	3-	3-	36	3-	3-	3+	4-	3-	3	2+	2+	29	127.0	70	70	75					
21	3-	4-	3	4	5-	4	3	3	43	3-	3+	3	4+	4+	3	3-	3-	38	129.7	78	86	78					
22	3+	3	3+	4	3+	4-	4	4-	42	2+	3-	3	4	4	3	4-	4-	33	126.6	73	70	75					
23	2+	1+	2	2	3-	2	2	4	21	2+	1+	2-	2	3-	2-	2-	4-	18	120.1	63	61	68					
24	4-	5	6-	5-	4	4-	4-	4-	68	4-	4+	6-	5-	4	3+	4-	4+	66	114.4	42	48	62					
25	3-	3-	3	3+	3+	3+	3-	1+	28	3-	3	2+	3	3-	3	2+	1+	23	116.0	40	44	63					
26	1-	2+	1+	2	2-	1+	3	3	16	1+	2+	1	2	2-	1+	2	2-	12	116.4	46	54	64					
27	3-	2-	2+	2-	3	4-	2	3+	23	2+	2-	2	1+	3-	3	3-	3-	20	122.4	51	58	70					
28	3	2	2	3	2+	3	3+	4+	30	3	3-	2+	3	2+	3	4-	5-	35	125.8	51	54	74					
29	4-	4	4	2	1+	1	1	3	27	4	3	4	1+	1	1+	1-	2-	23	128.3	54	52	77					
30	3	2+	3+	3-	3+	4	3-	2+	32	3-	3	3+	3-	3	4+	3	3-	32	128.7	58	60	77					
31	4-	2	1+	1+	2+	2+	3-	3-	19	4	1+	2-	1+	2+	2+	2+	3-	20	124.9	61	67	73					
Mean											38.2		37.1											135.0	70.5	72.5	83.8

DAILY AVERAGE INDICES Ap

April 1992 to March 1993

DAY	1992 APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	1993 JAN	FEB	MAR
1	13	15	8	19	8	2	26	16	17	10	31	18
2	6	12	5	16	5	23	9	23	9	24	21	24
3	32	9	6	5	4	48	6	17	15	33	10	35
4	12	12	4	4	15	33	7	25	15	31	7	23
5	15	5	6	9	35	28	5	15	7	17	6	7
6	24	5	5	5	16	17	10	14	5	16	5	8
7	19	13	12	4	26	22	8	12	16	23	27	22
8	20	29	46	5	16	18	8	11	26	15	40	29
9	6	39	17	4	12	84	26	42	19	16	28	64
10	5	179	20	6	7	88	10	12	17	25	17	15
11	3	70	26	4	13	32	24	19	10	21	20	50
12	4	11	40	15	6	5	34	16	8	12	11	28
13	6	21	12	23	11	5	23	17	8	12	12	31
14	6	4	6	12	15	8	25	12	10	22	6	23
15	10	5	10	6	8	10	35	19	14	14	4	45
16	5	4	4	12	8	12	22	10	6	11	6	39
17	4	3	5	5	4	93	16	8	25	13	36	23
18	19	16	27	5	6	31	12	7	9	11	13	18
19	17	14	12	4	9	13	16	7	11	22	7	11
20	18	8	7	8	26	8	12	4	13	14	26	21
21	8	8	9	11	20	7	6	7	14	7	27	30
22	12	50	10	34	39	17	9	17	7	7	30	25
23	8	14	13	16	73	9	5	31	8	4	8	12
24	13	8	22	7	10	4	3	12	8	10	6	58
25	10	10	14	11	5	11	7	12	5	25	6	16
26	8	8	8	4	11	8	14	10	4	22	5	8
27	5	10	11	7	14	4	31	5	8	11	4	12
28	10	13	15	17	5	16	19	6	39	7	19	17
29	7	19	38	5	16	62	27	5	42	5		18
30	10	14	37	9	6	35	16	13	10	12		19
31		8		10	4		10		11	59		10
MEAN	11	21	15	10	15	25	15	14	13	17	16	24

MONTHLY MEAN aa INDICES 01/50-03/93



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4	22.5	26.1	29.0	22.4	20.2	12.6	22.2
1954	13.9	24.5	25.5	20.6	12.0	9.7	13.1	16.5	25.4	21.1	14.5	10.9	17.3
1955	19.3	18.2	23.6	21.1	16.7	15.1	12.3	14.3	19.1	17.8	19.9	14.1	17.6
1956	28.7	23.3	27.6	31.7	29.3	23.5	19.8	20.7	22.4	19.3	32.3	18.2	24.7
1957	28.7	26.8	36.7	28.8	18.1	29.1	21.7	20.7	57.0	24.0	29.5	31.7	29.4
1958	25.5	43.2	36.1	27.6	25.2	29.7	36.0	25.1	26.5	24.7	15.0	27.2	28.5
1959	24.3	35.9	29.9	24.2	25.7	21.6	42.5	31.2	36.1	28.2	32.1	30.8	30.2
1960	25.2	23.5	27.6	51.5	31.6	27.6	28.1	27.2	26.4	45.6	45.9	34.5	32.9
1961	20.6	25.1	22.0	21.8	22.3	20.1	36.0	18.5	20.7	23.3	17.3	21.1	22.4
1962	13.2	19.2	15.5	22.6	13.4	18.1	21.0	26.2	29.8	33.3	22.5	23.5	21.5
1963	19.3	15.3	14.9	18.2	20.4	20.5	20.8	22.5	40.2	23.5	20.7	18.9	21.3
1964	20.1	20.1	21.0	21.7	17.5	15.1	16.9	14.8	18.2	16.9	13.8	10.3	17.2
1965	11.8	16.3	14.3	12.6	10.5	15.7	14.7	16.8	17.5	13.1	11.7	13.8	14.1
1966	14.2	14.8	18.6	12.0	14.8	12.5	17.1	20.0	29.4	17.5	16.8	20.5	17.3
1967	18.9	19.8	13.8	15.5	33.1	18.6	14.4	17.5	24.7	17.8	18.9	24.5	19.8
1968	21.1	26.5	23.3	22.2	21.4	24.9	18.0	20.1	22.0	24.8	26.2	20.3	22.6
1969	17.8	25.8	27.3	23.6	25.2	16.7	15.0	15.3	23.8	17.2	18.7	13.8	20.0
1970	14.4	12.7	26.4	23.1	16.6	18.3	28.4	21.0	19.7	20.6	21.6	16.5	19.9
1971	23.5	21.2	21.1	23.9	21.1	17.0	15.2	17.1	21.4	22.2	18.8	18.6	20.1
1972	21.9	18.3	21.5	18.1	16.6	21.5	14.0	34.2	20.4	20.4	21.8	18.9	20.6
1973	26.1	32.7	36.9	39.6	26.1	27.3	20.9	20.6	22.8	28.2	20.7	19.9	26.8
1974	25.8	26.4	33.7	32.9	29.2	29.2	32.0	30.2	33.7	37.3	26.8	27.5	30.4
1975	27.6	31.1	32.0	24.3	22.7	20.7	21.7	18.1	16.9	20.2	29.3	21.1	23.8
1976	23.3	28.5	33.4	25.4	23.7	17.5	18.4	17.7	23.7	20.4	16.9	18.6	22.3
1977	18.7	21.0	19.9	24.9	20.1	14.2	22.9	23.2	23.0	20.9	17.3	17.0	20.3
1978	24.6	26.2	25.9	31.3	31.2	28.3	19.9	25.6	27.0	20.8	24.6	22.0	25.6
1979	27.3	23.7	26.9	33.5	21.0	18.3	17.9	26.0	22.0	19.3	17.1	16.8	22.5
1980	19.0	17.3	12.7	18.4	15.6	20.0	17.0	15.9	14.2	21.9	23.3	21.7	18.1
1981	16.5	23.1	26.6	32.8	26.9	18.0	27.2	24.0	20.4	33.7	24.1	19.3	24.4
1982	24.2	50.6	28.5	32.9	26.7	32.1	43.9	31.4	45.1	28.5	33.0	33.8	34.2
1983	26.2	40.0	33.6	35.7	31.6	24.9	21.3	24.9	23.7	28.3	33.5	26.0	29.1
1984	23.5	26.7	30.7	32.5	27.2	23.7	26.4	25.8	32.6	33.1	31.0	29.0	28.5
1985	25.7	24.1	19.0	29.5	15.6	19.9	23.4	22.0	21.2	22.2	23.7	21.4	22.3
1986	22.4	40.0	21.1	14.3	18.8	15.9	16.3	22.3	24.7	18.6	21.2	15.3	20.9
1987	14.8	16.6	17.6	12.9	14.7	13.2	19.3	24.3	30.3	25.8	22.4	16.0	19.0
1988	22.4	23.4	24.8	25.2	20.5	20.0	20.2	20.6	21.4	23.2	23.3	25.5	22.5
1989	33.9	27.5	60.1	32.8	25.7	24.9	14.4	28.4	26.7	31.4	34.7	31.4	31.0
1990	27.4	37.8	33.9	37.4	25.1	24.6	21.6	28.2	25.1	25.1	17.4	15.2	26.6
1991	17.2	20.1	37.3	24.3	27.3	56.2	35.2	40.8	30.7	44.1	49.7	28.0	34.2
1992	25.9	47.7	24.5	19.8	29.1	24.8	17.9	24.1	35.8	27.0	25.0	26.1	27.3
1993	31.2	27.1	37.9										32.1

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

MARCH 1993

Sta	Geomag Lat	Commencement			SC Amplitudes			Maximum 3-Hour K Index Day(3-Hour Periods)	Ranges			End	
		Day	Time (UT)	Type	D (Min)	H (Gamma)	Z (Gamma)		K (Min)	D (Gamma)	H (Gamma)	Z (Gamma)	Day (UT)
FRD 49.4N	01	----	..	..	..	..	..	04(1)	6	30	105	53	04 10
GUA 04.3N	01	11--	..	..	..	..	..	01(5)	5	--	50	10	01 19
HYB 07.6N	02	0200	..	..	..	..	..	02(3) 03(6,7)	5	3	102	25	04 19
HER 33.6S	02	18--	..	..	..	..	..	02(8)	5	23	59	71	03 04
HER 33.6S	03	16--	..	..	..	..	..	03(7)	5	21	62	82	04 11
HYB 07.6N	07	0100	..	..	..	..	..	08(6)	6	2	146	14	-- --
GUA 04.3N	07	01--	..	..	..	..	..	07(2)	6	--	150	30	07 10
FRD 49.4N	08	2138	SC*	-	3.4	68	- 9	09(1,2) 11(5,7) 12(1)	6	37	243	134	18 06
BJI 28.8N	08	2138	SC	-	1.3	52	3	08(8)	7	12	192	30	10 20
KRC 16.4N	08	04--	..	..	..	..	..	08(8)	7	11	165	100	10 18
UJJ 13.6N	08	2137	SC	-	.5	47	- 10	08(8)	6	6	136	24	10 24
ABG 09.4N	08	2137	SC	-	.6	38	- 8	08(8)	6	7	132	42	10 24
HYB 07.6N	08	2136	SC	-	.4	41	- 2	09(1,3)	6	6	146	21	10 20
GUA 04.3N	08	13--	..	..	..	..	..	08(6)	5	--	60	--	08 21
GUA 04.3N	08	2137	SC	-	.2	14	- 5	09(1)	7	10	250	50	09 18
ANN 01.5N	08	2137	SC	-	1.4	38	24	09(2)	6	13	220	90	10 06
PMG 18.3S	08	2137	SC	-	.5	43	22	09(2)	6	25	136	98	10 03
HER 33.6S	08	2137	SC	-	2	28	14	09(1)	6	30	200	140	10 04
GNA 43.0S	08	2137	SC*	-	8	33	- 36 *	08(8) 09(1)	6	36	172	110	09 16
CNB 43.6S	08	2137	SC	-	3.6	18	- 5	09(1)	9	119	1032	850	10 16
KGL 57.2S	08	2138	SC	-	5	41	15	09(1)	5	--	60	20	10 06
GUA 04.3N	09	19--	..	..	..	..	..	09(8)	7	10	156	34	12 11
BJI 28.8N	11	0640	SC	-	.5	21	1	11(6)	7	8	197	70	14 --
KRC 16.4N	11	0640	SC	-	1.8	30	18	11(6)	7	5	208	33	12 02
UJJ 13.6N	11	0639	SC	-	.5	22	- 5	11(7)	6	5	230	34	12 02
ABG 09.4N	11	0639	SC	-	.6	19	- 7	11(6)	7	5	246	24	13 22
HYB 07.6N	11	0641	SC	-	.2	20	- 2	11(4)	6	--	100	30	12 08
GUA 04.3N	11	0640	SC	-	1.2	38	12	11(5)	7	31	130	200	12 06
ANN 01.5N	11	0640	SC	-	.5	14	15	11(6)	6	22	136	64	12 03
PMG 18.3S	11	0640	SC	-	4 *	11	3	11(5,6)	9	195	1254	400	15 01
HER 33.6S	11	0640	SC	-	2.4	- 15	- 15	12(7)	5	15	75	70	13 04
GNA 43.0S	11	0641	SC	-	.6	25	2	13(7)	5	--	100	20	14 06
CNB 43.6S	11	0641	SC	-	2	4	3	13(6,7)	5	18	64	93	13 22
KGL 57.2S	11	0641	SC	-	2	4	3	14(8)	5	10	51	46	15 02
HER 33.6S	12	19--	..	..	..	..	..	15(4,5)	6	19	140	130	16 06
GUA 04.3N	13	16--	..	..	..	..	..	15(5)	6	14	154	45	16 20
HER 33.6S	13	16--	..	..	..	..	..	15(3,5,6,8)	5	4	130	70	17 15
HER 33.6S	14	21--	..	..	..	..	..	16(2,3,6,7)	5	5	80	80	23 00
GNA 43.0S	14	11--	..	..	..	..	..	15(5,6,8)	5	5	157	44	16 03
BJI 28.8N	15	0526	SC	-	.6	19	1	15(4)	6	5	178	31	17 04
KRC 16.4N	15	00--	..	..	..	..	..	15(5)	6	--	180	20	15 20
UJJ 13.6N	15	0400	..	..	..	..	..	16(2)	5	--	60	20	16 20
ABG 09.4N	15	0400	..	..	..	..	..	15(4,5)	6	5	160	70	16 21
HYB 07.6N	15	0527	SC	-	.1	21	- 2	15(6,7,8) 16(6)	5	24	126	121	16 19
GUA 04.3N	15	0526	SC*	-	.2	19	- 5	15(3,5)	6	21	142	50	15 19
GUA 04.3N	15	22--	..	..	..	..	..	15(7,8) 16(6)	6	96	637	389	17 06
ANN 01.5N	15	0400	..	..	..	..	..	19(4) 20(4) 21(4)	5	5	80	80	23 00
PMG 18.3S	15	0526	SC	-	.4	15	15	22(7)	5	5	80	80	23 00
HER 33.6S	15	0521	SC	-	2	3	8	20(4) 21(4,5)	5	4	133	26	22 23
CNB 43.6S	15	04--	..	..	..	..	..	20(4)	5	--	80	10	20 19
KGL 57.2S	15	0527	SC	-	6	- 29	- 5	20(4)	5	25	74	46	20 14
KRC 16.4N	18	1908	SC	-	..	10	07	20(4)	5	25	74	46	20 14
HYB 07.6N	20	0400	..	..	..	..	..	20(4)	5	25	74	46	20 14
GUA 04.3N	20	05--	..	..	..	..	..	20(4)	5	25	74	46	20 14
HER 33.6S	20	05--	..	..	..	..	..	20(4)	5	25	74	46	20 14

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Mar 93

PRINCIPAL MAGNETIC STORMS

MARCH 1993

Sta	Geomag Lat	Commencement			SC Amplitudes			Maximum 3-Hour K Index Day(3-Hour Periods)	Ranges			End		
		Day	Time (UT)	Type	D (Min)	H (Gamma)	Z (Gamma)		D (Min)	H (Gamma)	Z (Gamma)	Day	Hour (UT)	
GUA	04.3N	21	10--	..	..	..	..	21(4)	5	--	40	10	21	20
FRD	49.4N	23	2155	SC*	.8	52	- 7	24(3)	6	21	127	93	25	21
BJI	28.8N	23	2155	SC	.5	29	2	24(4)	6	13	164	39	25	21
KRC	16.4N	23	2148	SC	- 2.7	45	22	23(8) 24(2,3,4,5,8)	5	6	120	80	25	01
UJJ	13.6N	23	2154	SC	- .8	33	- 8		-	5	107	44	25	01
ABG	09.4N	23	2154	SC	- .8	28	- 10	24(4,5,8)	5	5	105	51	25	01
HYB	07.6N	23	2156	SC	- .6	29	- 2	23(8) 24(3,4,5,8)	5	5	116	31	25	21
GUA	04.3N	23	2155	SC	- .4	23	- 6	24(1)	6	10	200	30	24	14
ANN	01.5N	23	2154	SC	- 1.4	30	20		-	4	173	70	25	01
HER	33.6S	23	2156	SC	2	30	20	24(4,8)	5	32	122	67	25	01
CNB	43.6S	23	2155	SC	- 3.9	9	10	24(3)	6	22	158	66	24	23
KGL	57.2S	23	2155	SC	.6	31	10	24(8)	6	35	310	175	25	21
PMG	18.3S	24	04--	..	..	..	..	24(4)	6	6	130	60	25	20
HYB	07.6N	28	1500	..	..	..	..	28(8) 30(3,6)	5	5	128	33	30	23
GUA	04.3N	28	22--	..	..	..	..	29(2)	5	--	130	20	29	10
HER	33.6S	28	21--	..	..	..	..	28(8)	5	18	80	67	29	04
UJJ	13.6N	30	0700	..	..	..	..		-	3	63	26	31	01
ABG	09.4N	30	0700	..	..	..	..	30(6)	5	3	100	42	31	01
ANN	01.5N	30	0700	..	..	..	..		-	2	130	98	31	01

Stations:

ABG = ALIBAG
ANN = ANNAMALAINAGAR
API = APIA
BJI = BEIJING
CNB = CANBERRA
CMO = 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

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Late
Jan 93

COSMIC RAY INDICES
(Neutron Monitor)

JANUARY 1993

Day	THULE Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	BEIJING Average (cts/h) 256	TOKYO Average (cts/h)/256	HUANCAYO Average (cts/h)/100
1	4319	6809.1	5955.5	3928.4	1977.9	3498.2	
2	4308	6787.1	5956.5	3936.8	1990.2	3498.0	
3	4274	6718.0	5930.1	3918.2	1985.7	3489.0	
4	4290	6726.7	5963.4	3931.9	1988.5	3501.0	
5	4295	6753.1	5953.3	3929.5	1988.1	3508.6	
6	4302	6769.3	5941.6	3932.8	1986.3	3501.6	
7	4296	6756.9	5942.4	3926.5	1984.8	3495.2	
8	4294	6752.7	5941.4	3937.9	1981.0	3505.8	
9	4301	6759.8	5931.7	3922.8	1988.4	3507.2	
10	4284	6754.5	5919.4	3909.4	1988.8	3496.5	
11	4273	6742.5	5934.2	3929.5	1990.5	3507.3	
12	4285	6753.3	5961.5	3932.0	1994.0	3517.3	
13	4308	6798.4	5978.4	3936.7	1998.3	3522.2	
14	4345	6841.9	6005.3	3979.1	2017.1	3531.7	
15	4371	6889.1	6024.4	4000.5	2028.3	3539.6	
16	4381	6898.4	6027.6	4000.6	2021.7	3540.8	
17	4393	6942.9	6053.4	4026.9	2034.3	3563.5	
18	4408	6954.7	6082.2	4025.2	2025.4	3556.5	
19	4379	6952.5	6079.1	4049.5	2028.5	3562.2	
20	4315	6836.7	6008.0	3969.8*	2015.7	3550.4	
21	4343	6859.7	6002.7	3969.8*	2012.0	3542.8	
22	4370	6876.8	6043.5	3977.4(36)*	2019.7	3552.1	
23	4382	6913.8	6064.6	--	2025.4	3552.5	
24	4392	6932.8	6092.0	--	2032.2	3563.2	
25	4371	6900.5	6094.0	3985.6*	2024.9	3546.5	
26	4310	6826.2	6022.5	3952.4*	2020.1	3519.9	
27	4299	6806.4	5995.3	3933.3*	1999.2	3509.5	
28	4306	6828.2	6002.8	3943.7*	1994.4	3512.7	
29	4324	6842.8	6013.8	3948.6*	1994.9	3510.9	
30	4317	6841.3	5990.1	3948.0	1989.1	3514.3	
31	4292	6776.4	5954.5	3943.8	1998.0	3519.4	
Mean	4327	6825.9	5995.7	3958.3	2004.0	3523.8	

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.

* = A+B calculated from B section only, assuming A/B= 0.997 (average from earlier in month). A section slightly noisy.

COSMIC RAY INDICES
(Neutron Monitor)

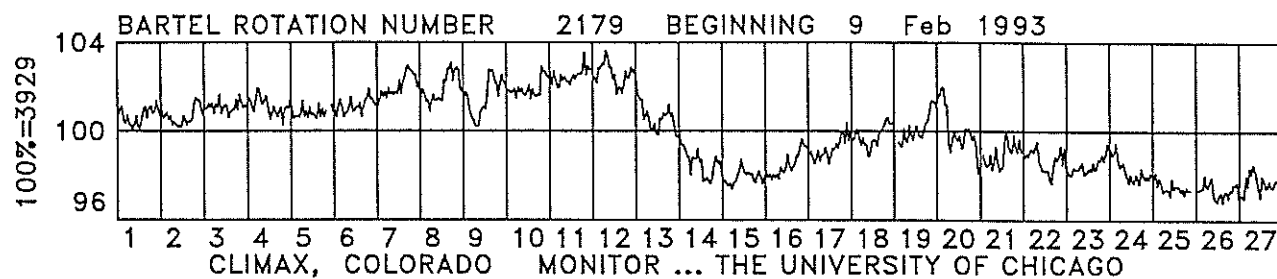
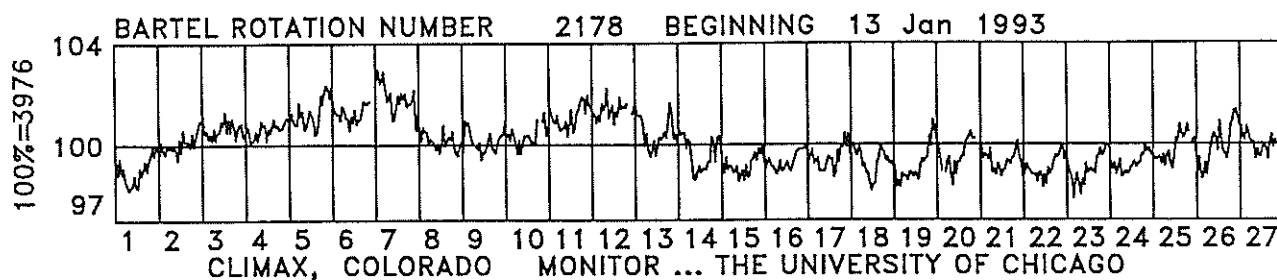
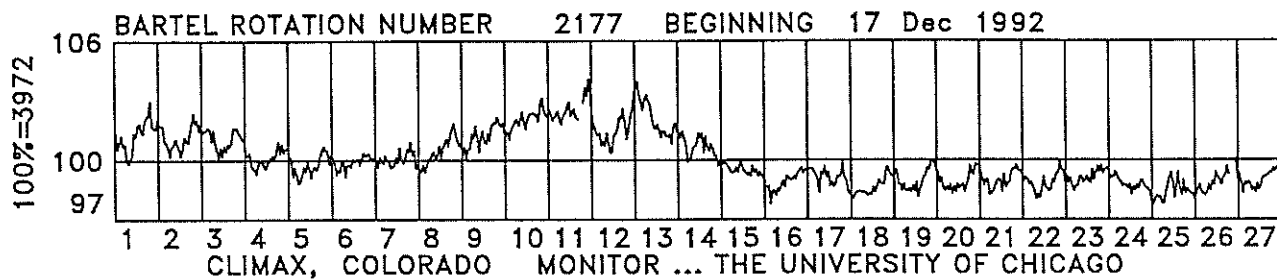
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Late
Feb 93

FEBRUARY 1993

Day	THULE Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	BEIJING Average (cts/h) 256	TOKYO Average (cts/h)/256	HUANCAYO Average (cts/h)/100
1	4306	6814.5	5964.3	3956.8	1997.6	3542.3	
2	4296	6778.5	5956.2	3949.2	1989.5	3547.7	
3	4308	6772.0	5952.0	3939.4	1985.5	3533.5	
4	4306	6805.0	5960.4	3938.0	1984.7	3534.9	
5	4319	6824.3	5970.9	3945.4	1983.7	3535.2	
6	4338	6895.5	5992.4	3969.0	1987.0	3527.9	
7	4360	6879.6	6004.0	3974.6	2000.8	3530.6	
8	4349	6853.5	5999.7	3976.7	2000.6	3541.1	
9	4329	6800.9	5974.7	3955.2	1983.4	3536.0	
10	4313	6793.9	5967.1	3955.0	1984.4	3537.6	
11	4318	6826.9	5981.8	3971.8	1986.8	3548.5	
12	4335	6843.4	5990.7	3972.8	1988.7	3558.0	
13	4331	6860.1	6003.9	3961.0	1987.3	3556.0	
14	4329	6876.0	6005.1	3972.8	1995.2	3564.1	
15	4340	6893.0	6023.4	4008.0	1990.4	3564.8	
16	4360	6895.3	6039.7	4004.2	1992.5	3547.0	
17	4343	6890.5	6036.4	3981.2*	2000.6	3547.5	
18	4362	6926.8	6069.6	3996.8*	2004.5	3567.9	
19	4383	6955.8	6121.8	4028.2	1999.6	3584.0	
20	4382	6950.3	6112.1	4029.5*	1997.0	3574.9	
21	4272	6807.6	6004.2	3953.4*(34)	1993.3	3541.6	
22	4213	6695.2	5915.2	3857.3(22)	1987.3	3524.9	
23	4228	6693.5	5889.3	3848.3	1976.2	3522.2	
24	4260	6731.9	5907.0	3869.8*	1974.5	3522.0	
25	4285	6765.8	5945.3	3898.1*	1976.0	3533.3	
26	4320	6794.0	5984.0	3920.5*(24)	1984.8	3540.7	
27	4340	6841.6	6020.7	3936.7*	1989.0	3532.4	
28	4295	6808.1	5976.8	3931.9*	2005.6	3520.9	
Mean	4319	6831.2	5991.7	3960.3	1990.2	3543.5	

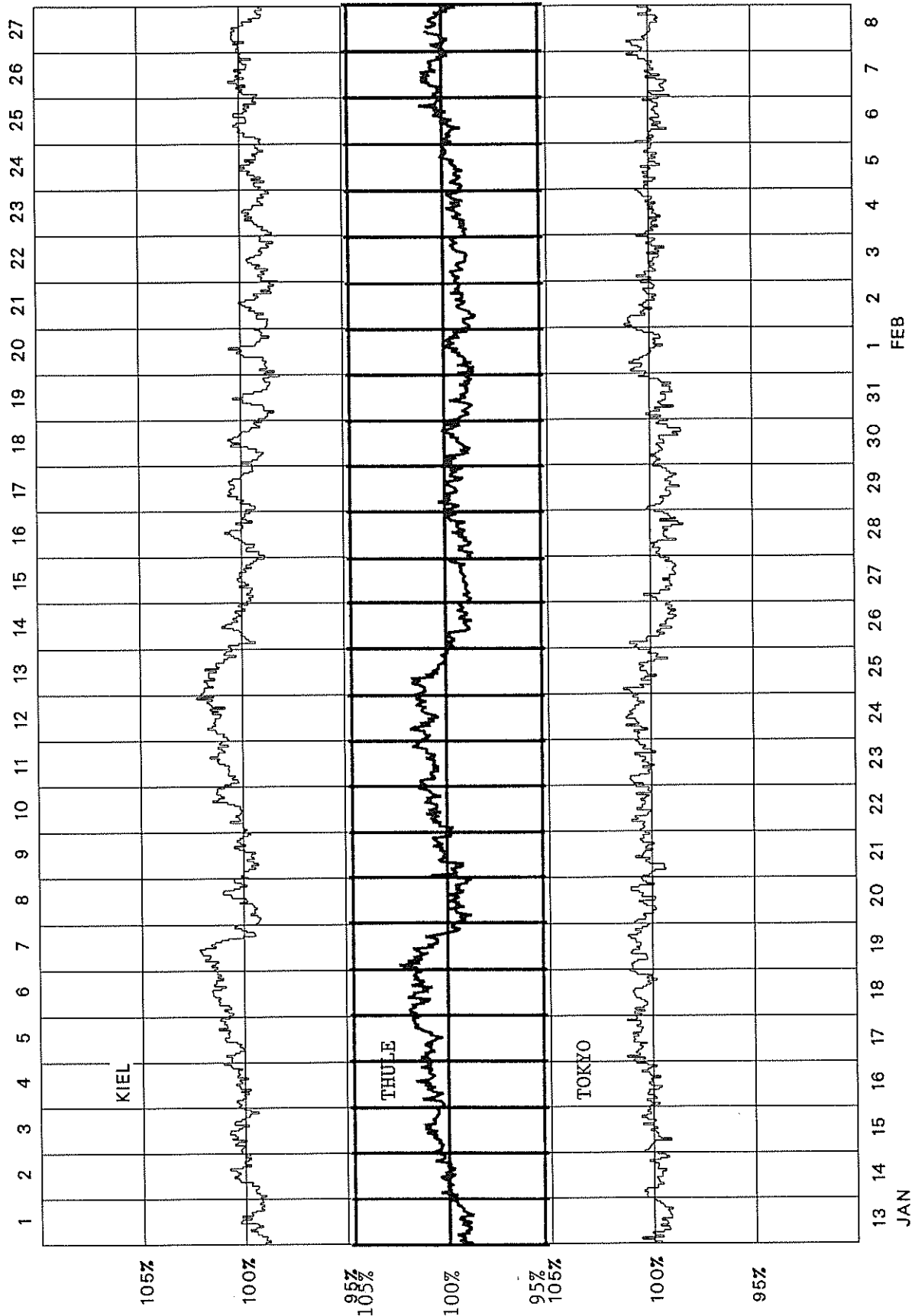
For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax and Huancayo, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours.

* = A+B calculated from B section only, assuming A/B= 0.997; A section variably noisy.



COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2178 (January 1993-February 1993)



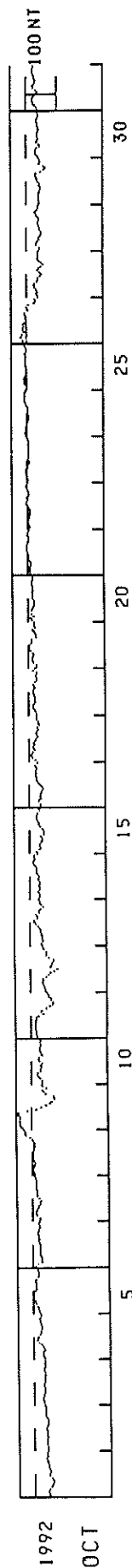
WDC-C2 FOR GEOMAGNETISM, KYOTO UNIVERSITY

HOURLY EQUATORIAL DST VALUES (PROVISIONAL)

OCTOBER 1992

UNIT=NT
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
U.T.

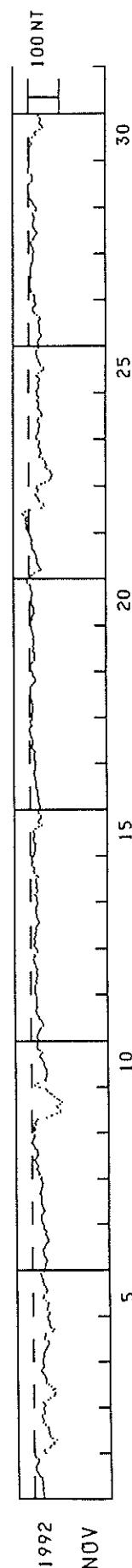
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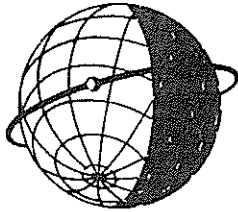


HOURLY EQUATORIAL DST VALUES (PROVISIONAL)

NOVEMBER 1992

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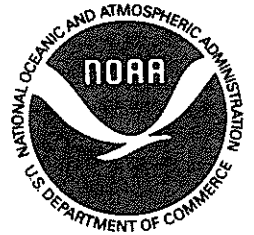




WORLD DATA CENTER A

FOR

SOLAR-TERRESTRIAL PHYSICS



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

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