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Number 589

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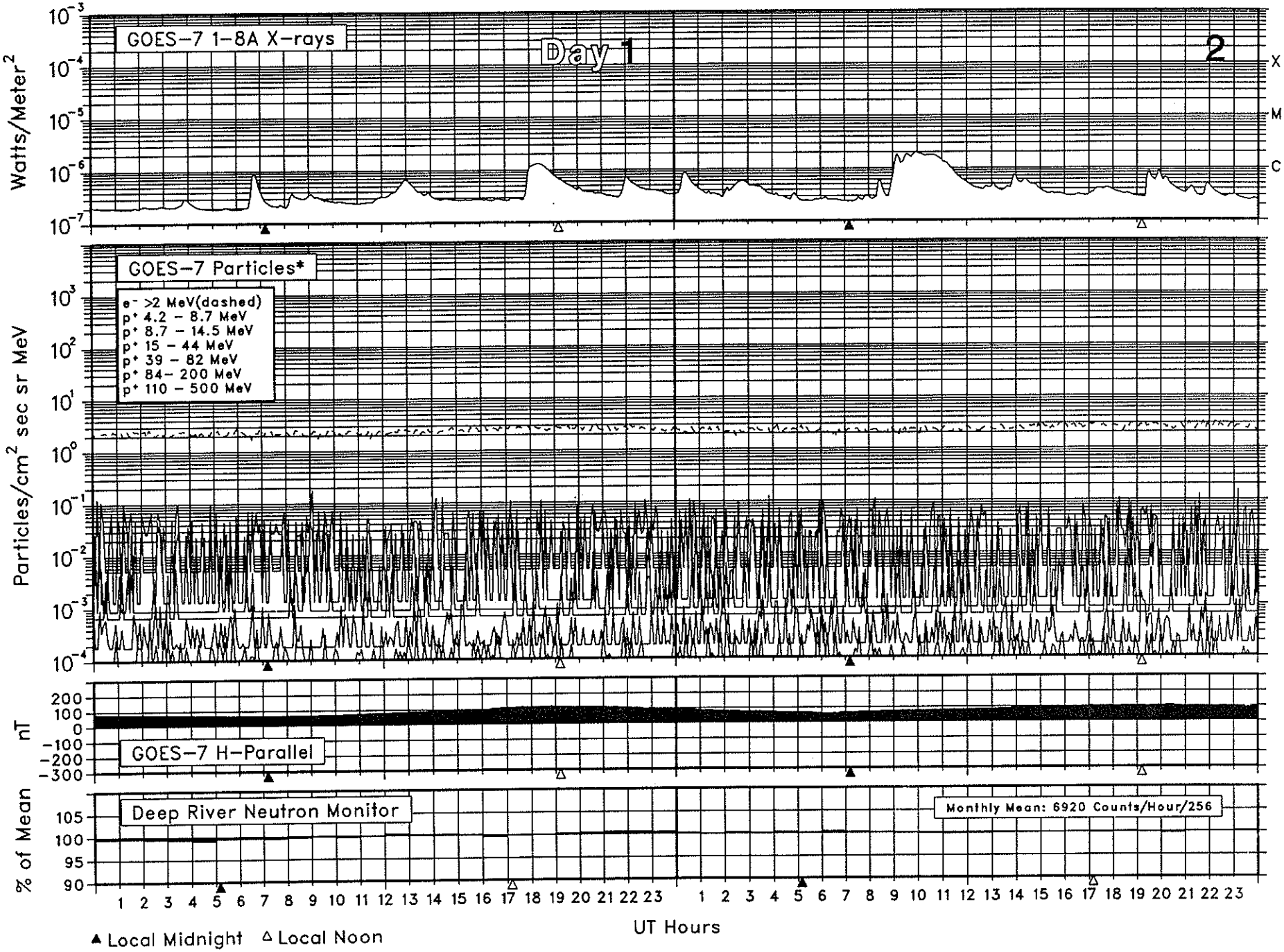

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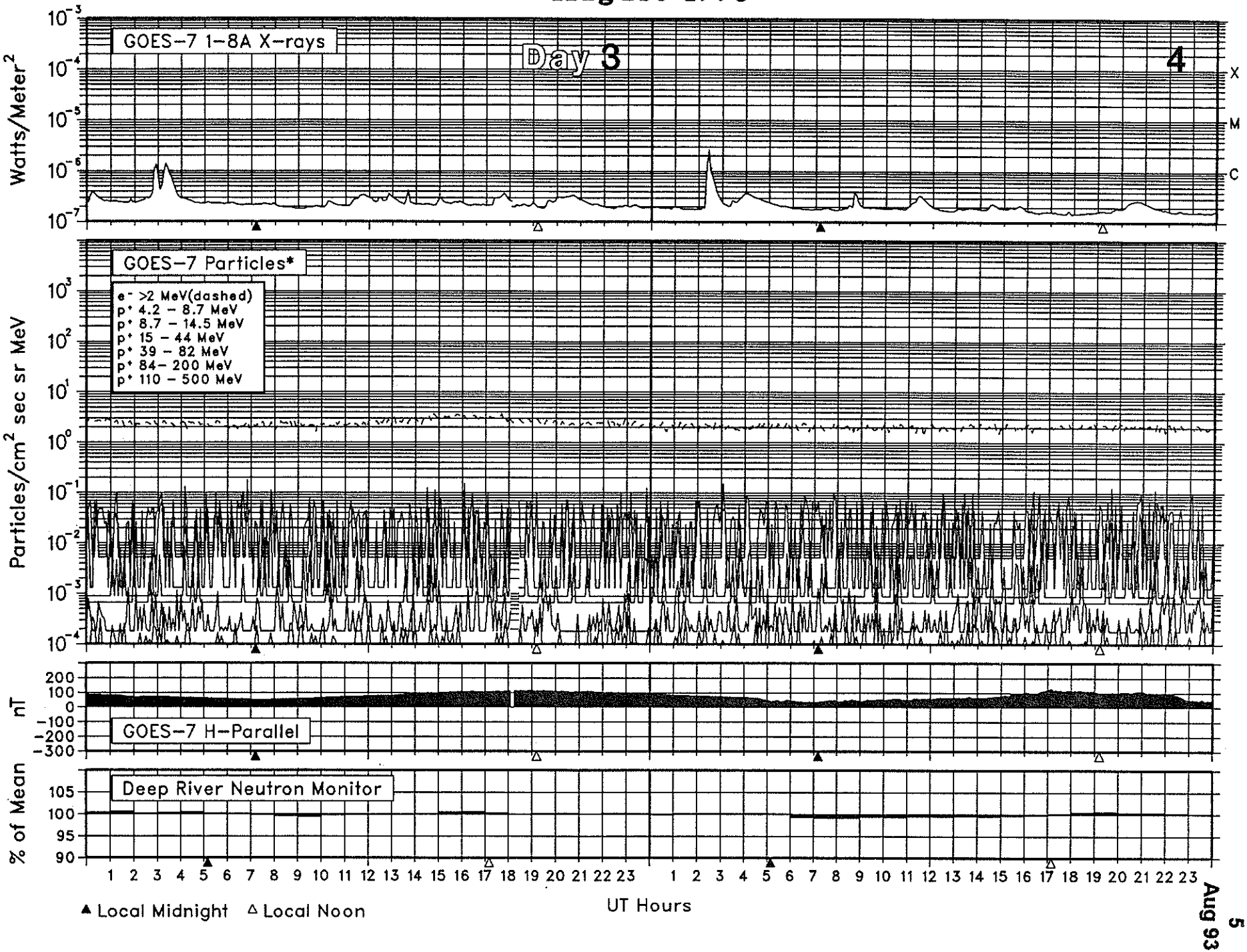
August 1993



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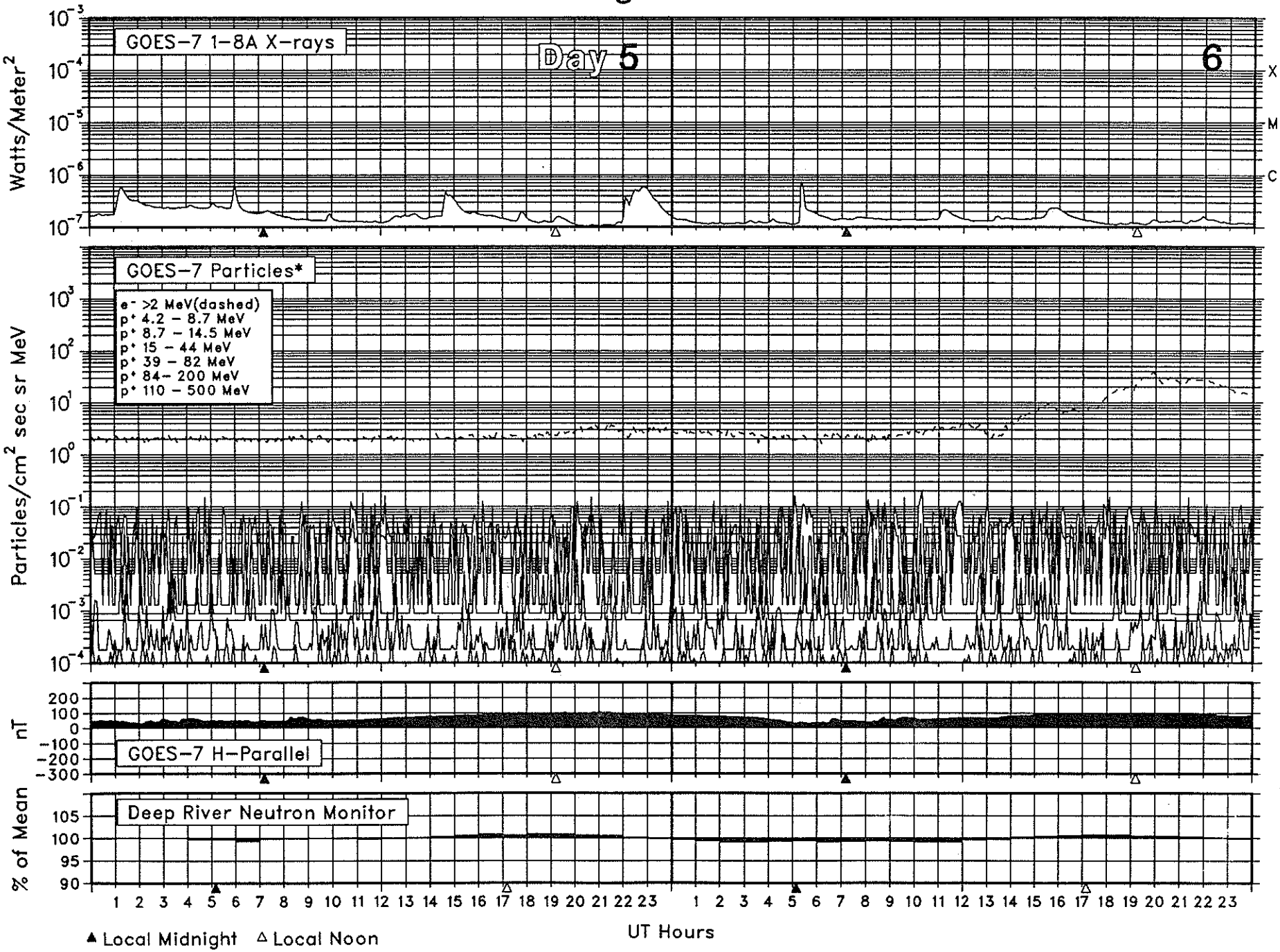

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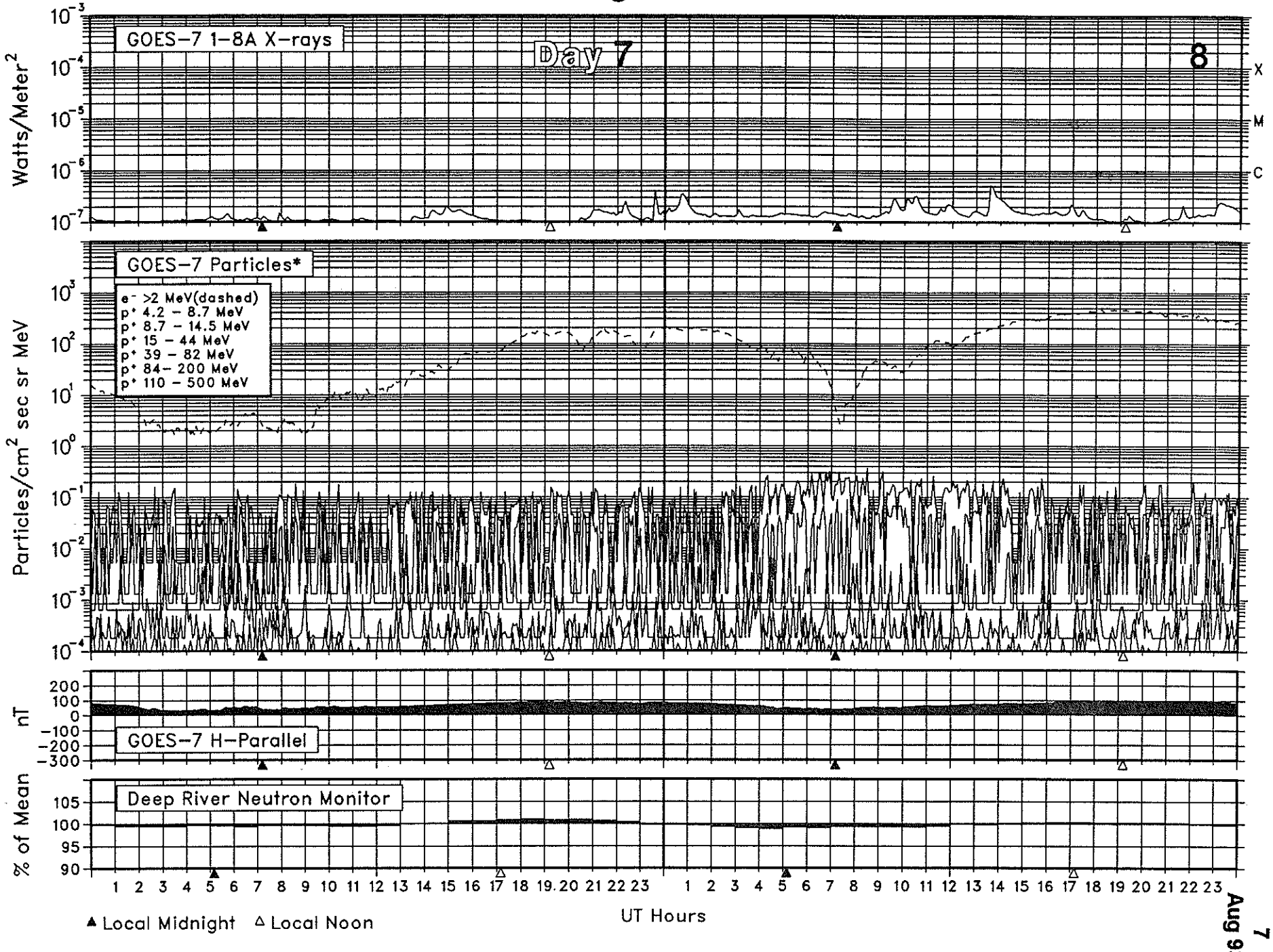

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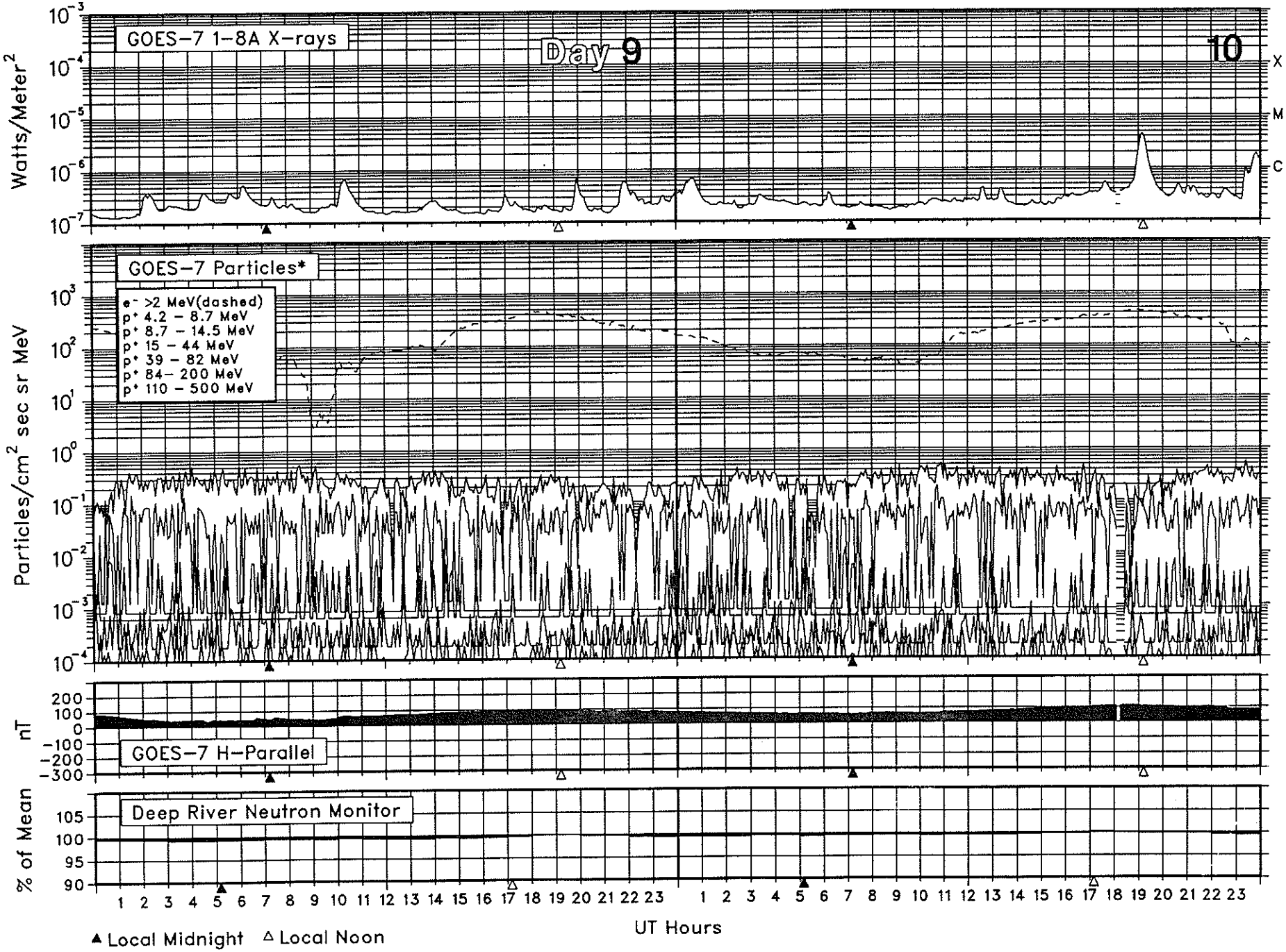

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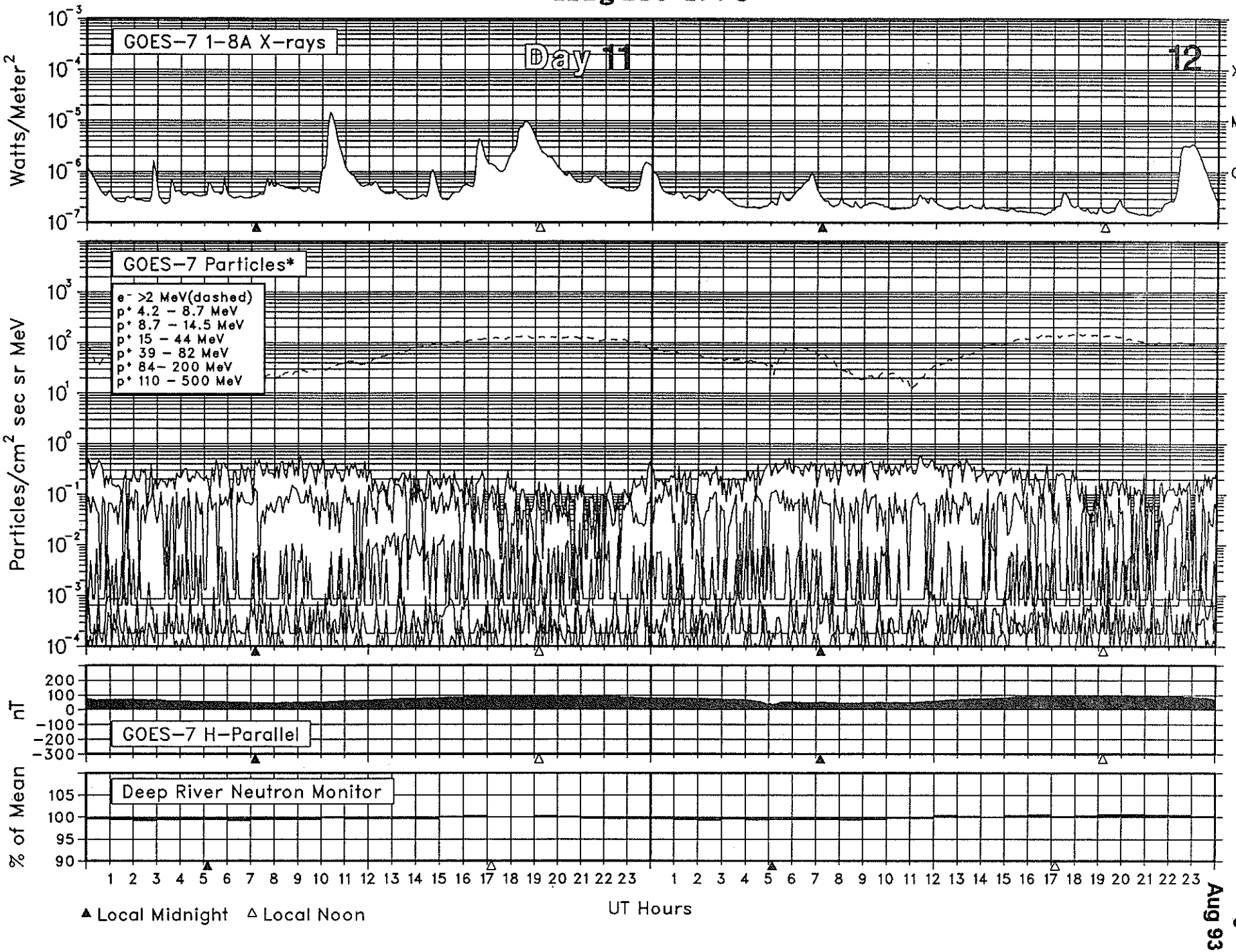

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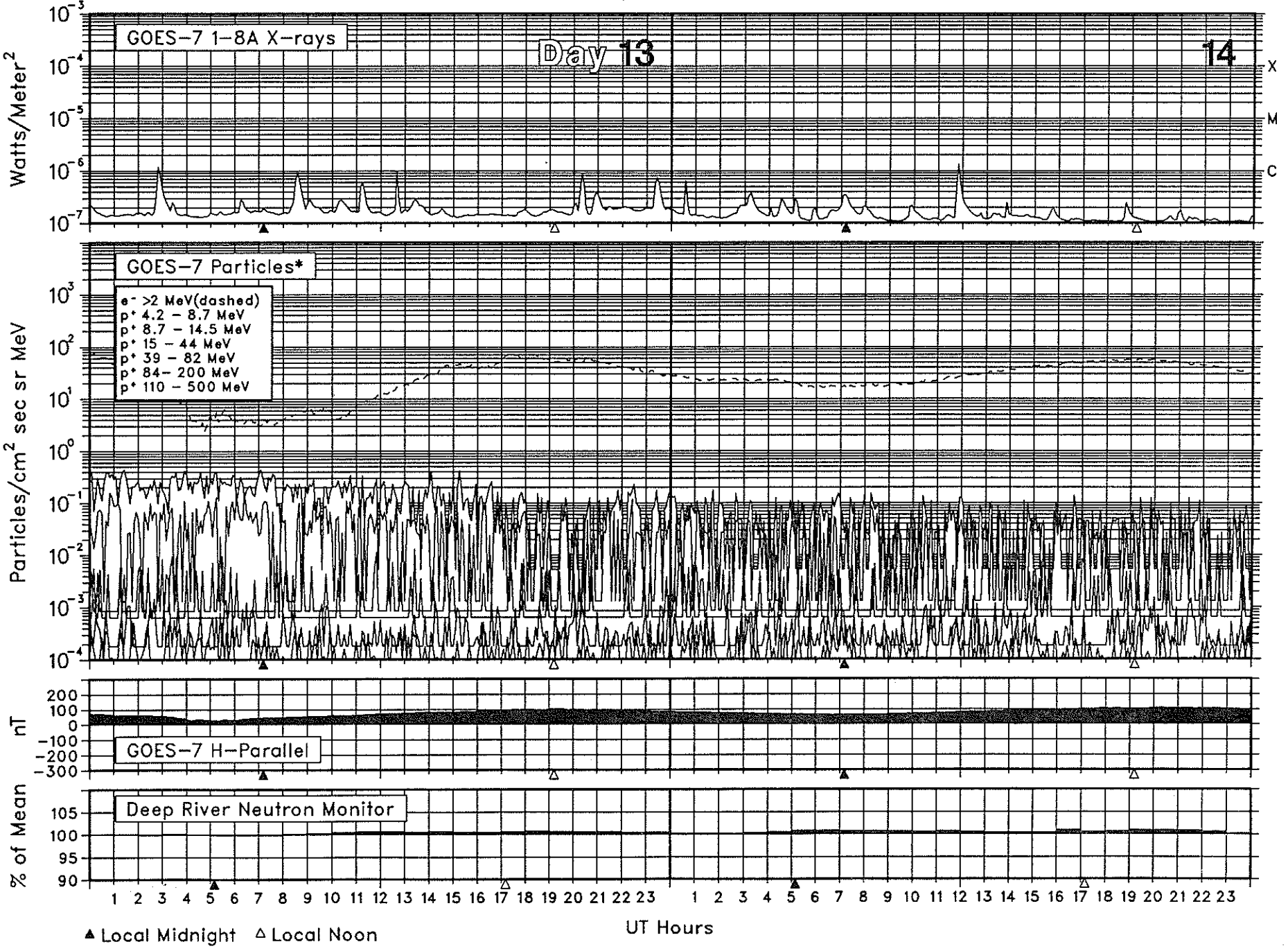

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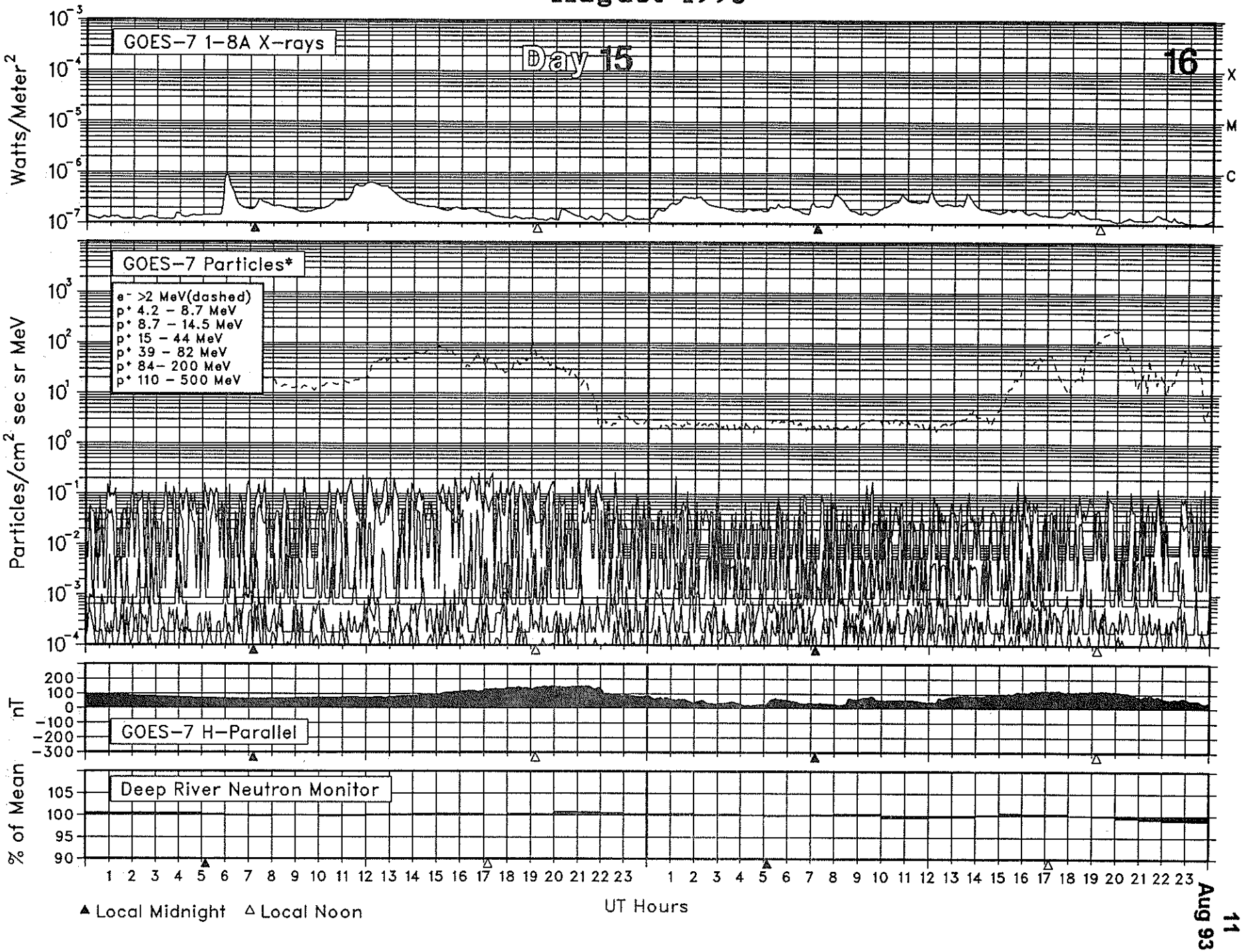

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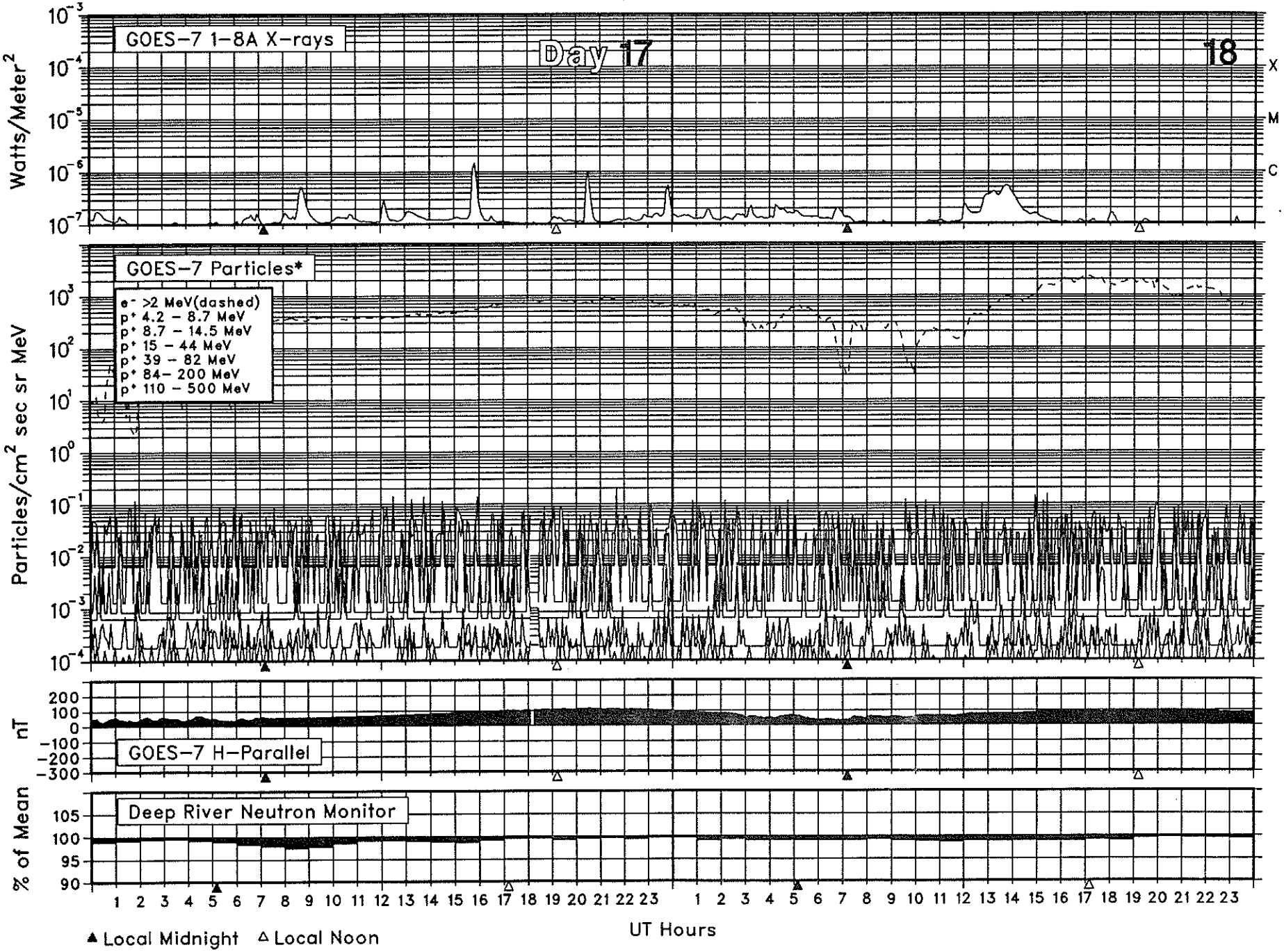

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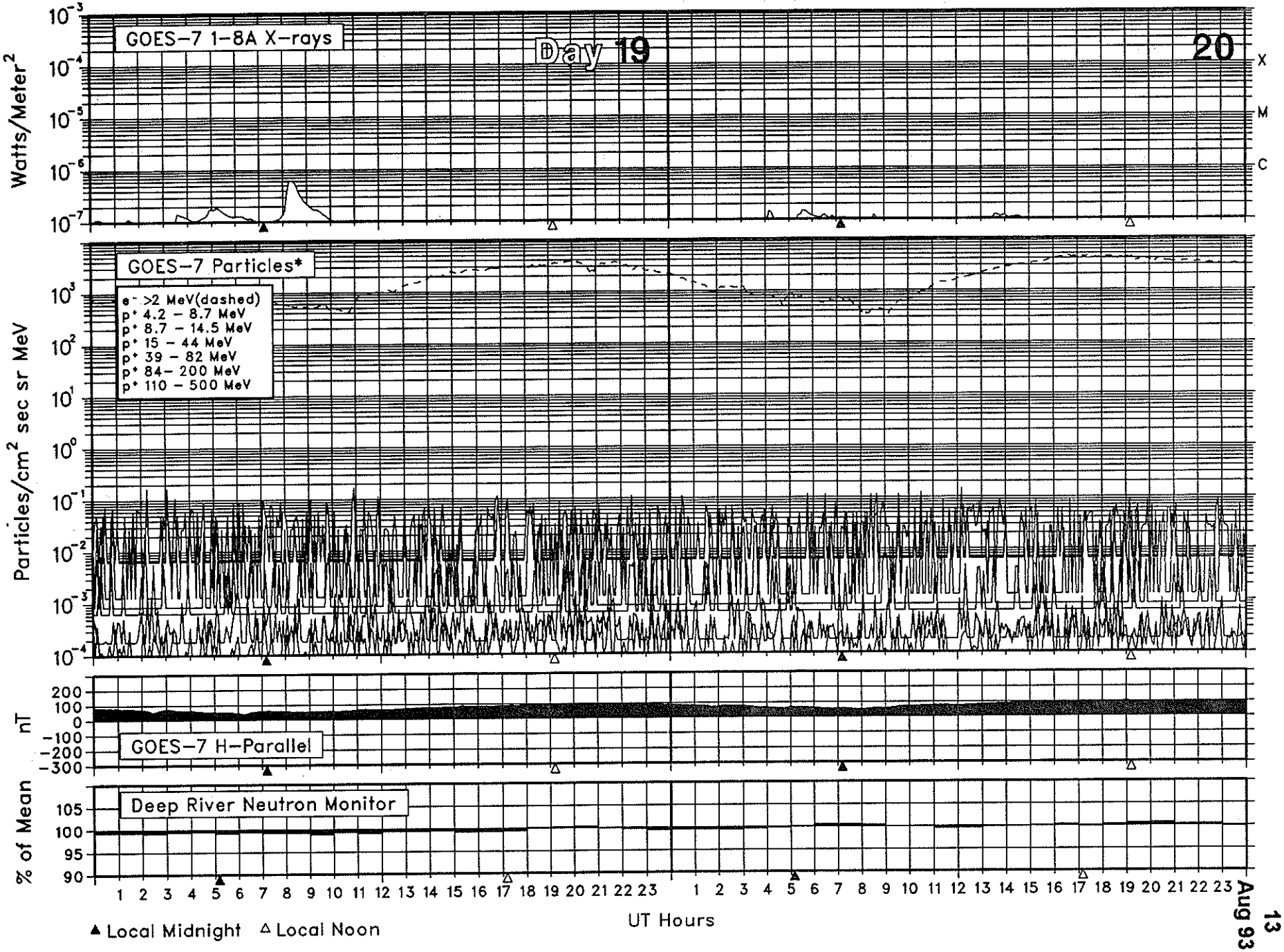

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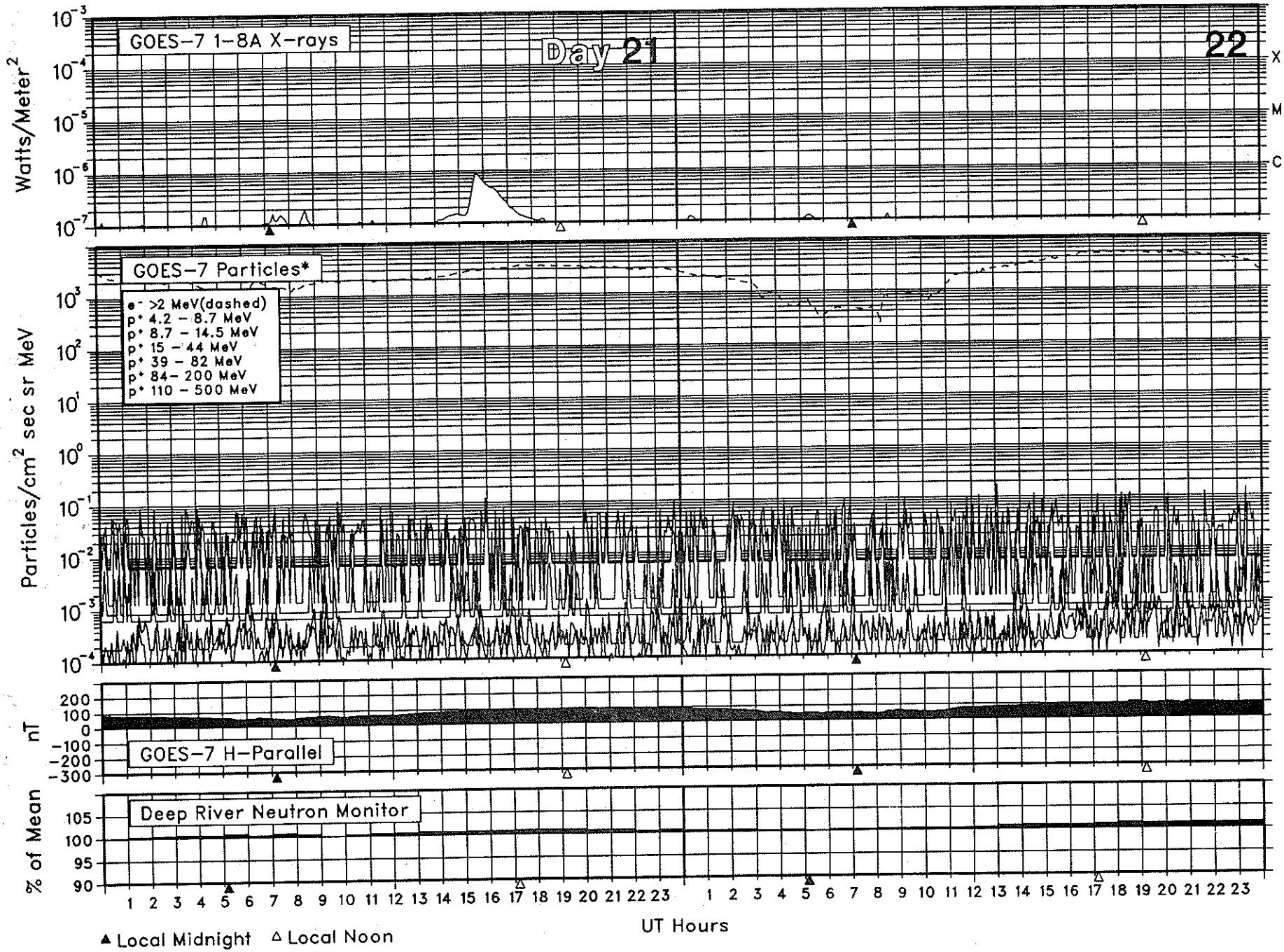

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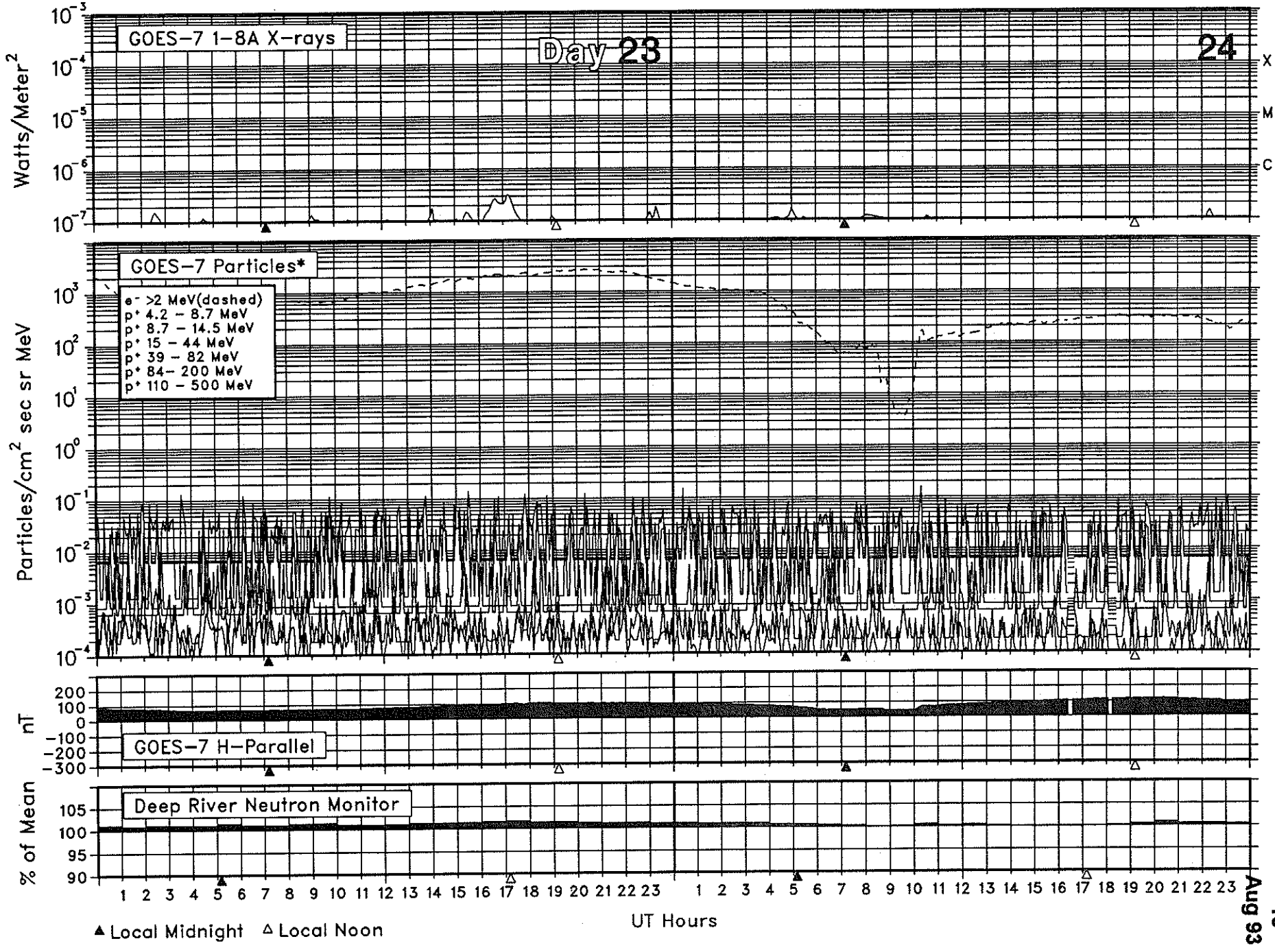

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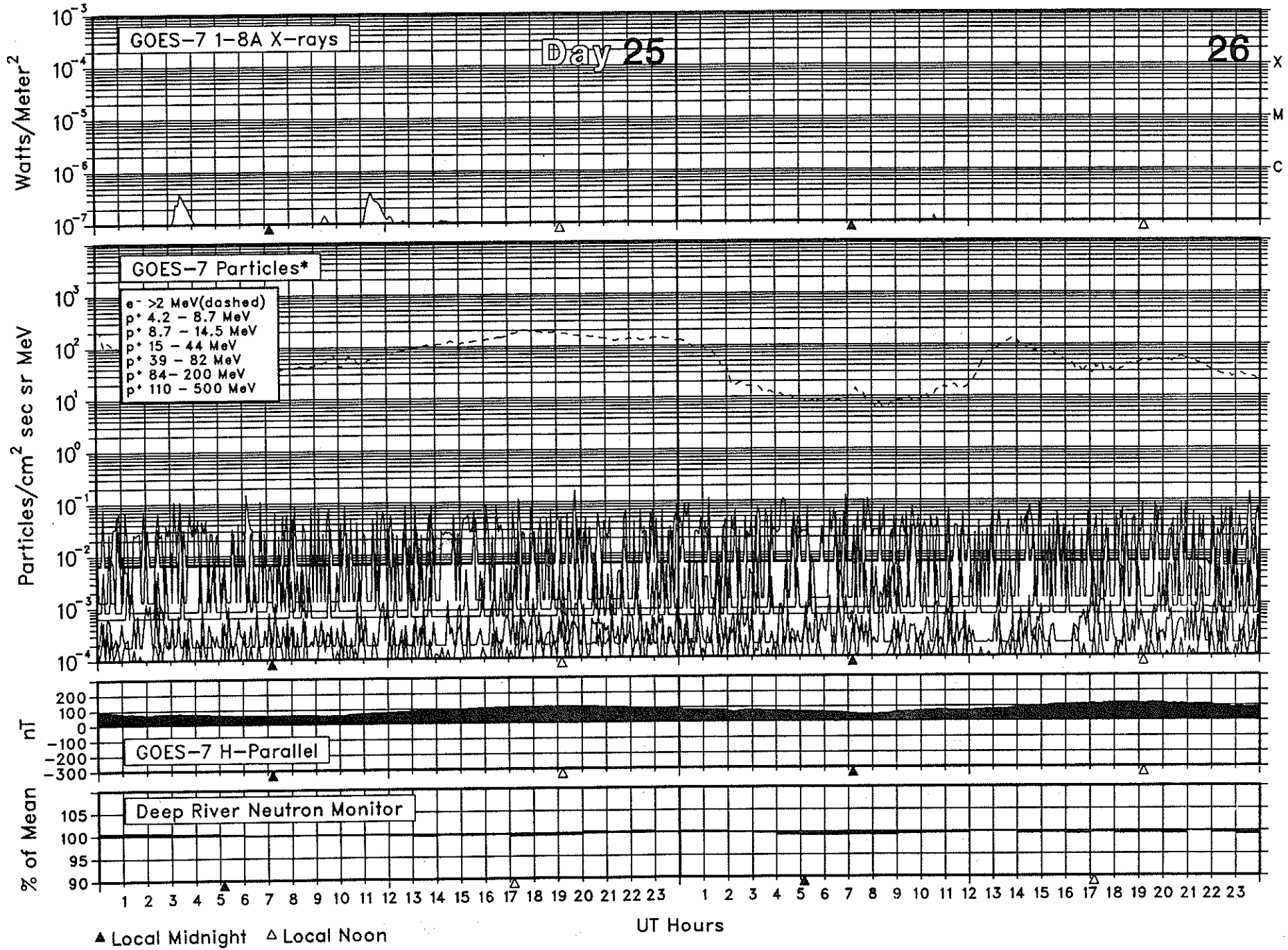

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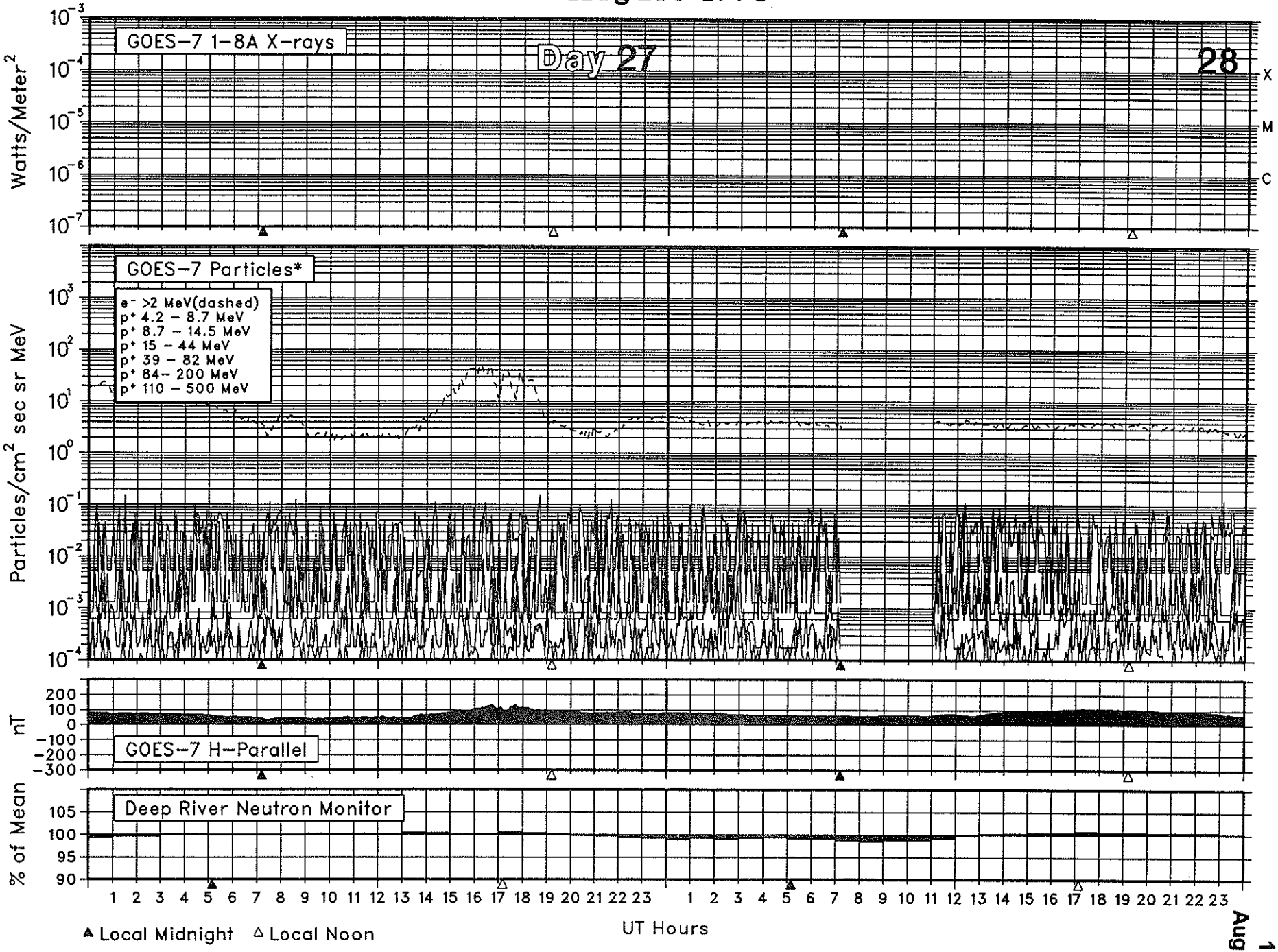

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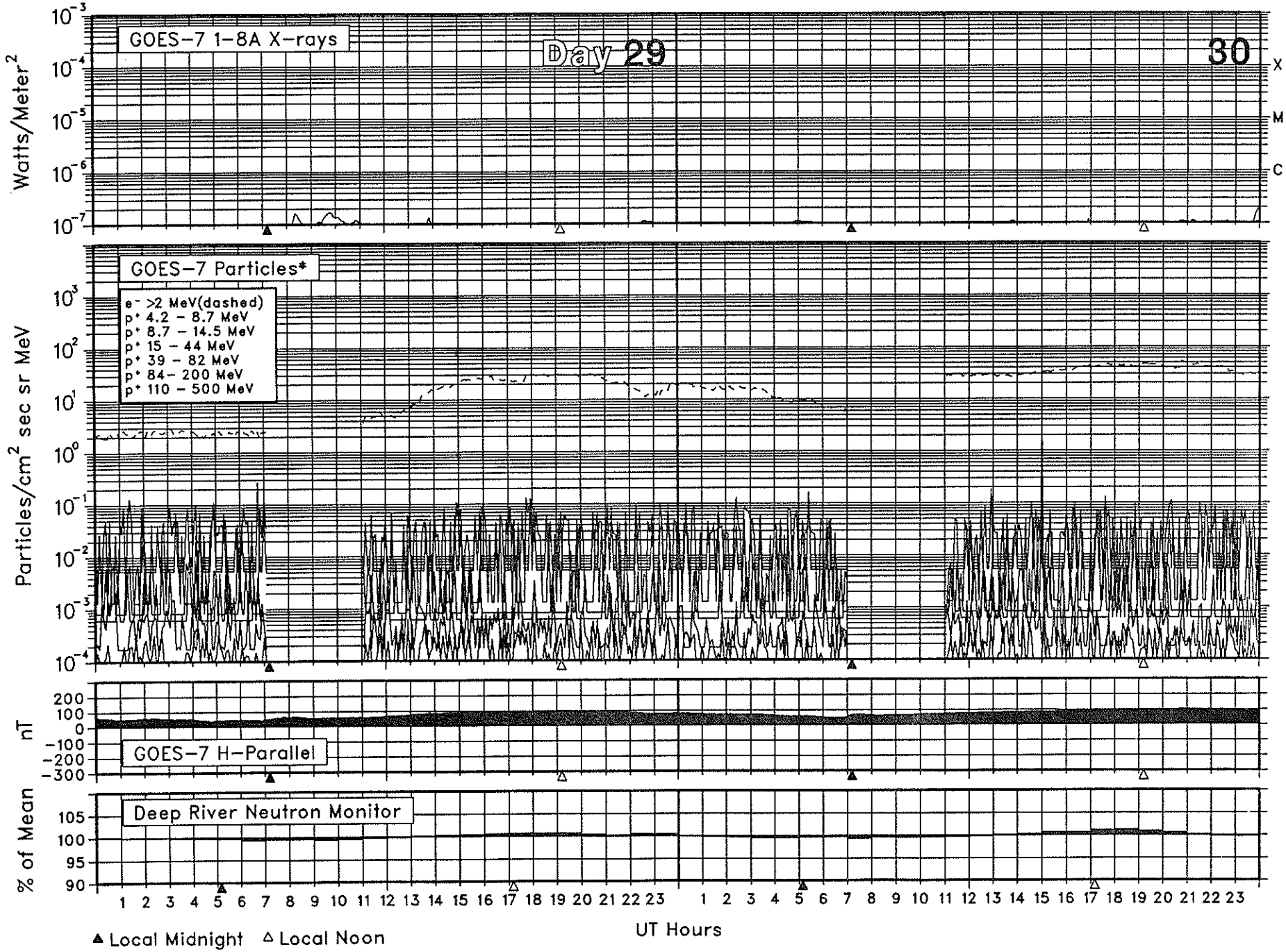

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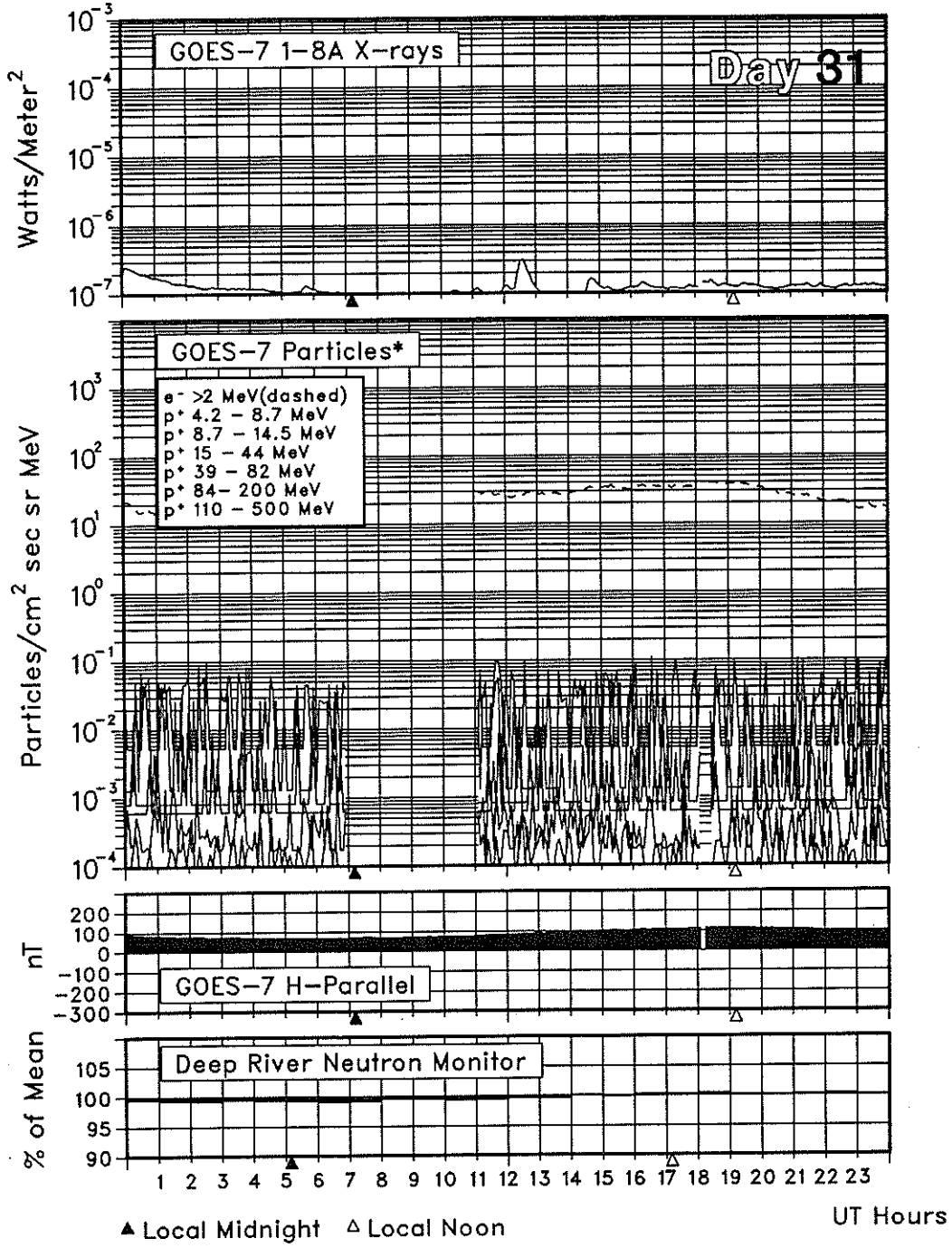


ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages **AUGUST 1993**

Julian Day	Date of Issue	Date of Obser-vation	Wolf No.	10-cm Solar Flux	A-index	Location °Lat °Long	Flares Total	Flares M	Flares X	Date of Forecast	Region Forecast [1]	Geoadvice[1]
213	01	31	066	096	3	N14 W32	2	0	0	01	Q	SOL: Quiet
						S12 W44	1	0	0	01	Q	MAG: Quiet
						N08 E03	0	0	0	01	Q	PROTON: Quiet
						N12 W25	0	0	0	01	Q	
214	02	01	073	100	0	N15 W49	0	0	0	02	Q	SOL: Quiet
						S12 W58	0	0	0	02	Q	MAG: Quiet
						N08 W10	0	0	0	02	Q	PROTON: Quiet
						N18 W38	0	0	0	02	Q	
						S17 E72	0	0	0	02	Q	
						N13 E86	0	0	0	02	E	
215	03	02	070	101	1	N16 W61	0	0	0	03	Q	SOL: Eruptive
						S12 W70	0	0	0	03	Q	MAG: Quiet
						N09 W22	0	0	0	03	Q	PROTON: Quiet
						N18 W52	1	0	0	03	Q	
						S18 E59	0	0	0	03	Q	
						N12 E72	0	0	0	03	Q	
216	04	03	040	098	3	N14 W74	0	0	0	04	Q	SOL: Eruptive
						S17 E45	0	0	0	04	Q	MAG: Active
						N12 E63	1	0	0	04	E	PROTON: Quiet
217	05	04	041	096	16	N14 W86	0	0	0	05	Q	SOL: Eruptive
						S18 E31	0	0	0	05	Q	MAG: Active
						N12 E50	0	0	0	05	E	PROTON: Quiet
218	06	05	029	094	17	S17 E19	0	0	0	06	Q	SOL: Eruptive
						N13 E37	3	0	0	06	E	MAG: Quiet
						N12 E50	0	0	0	06	E	PROTON: Quiet
219	07	06	049	094	18	S16 E08	0	0	0	07	Q	SOL: Eruptive
						N12 E23	2	0	0	07	E	MAG: Active
						S14 W15	0	0	0	07	Q	PROTON: Quiet
220	08	07	062	091	12	S14 W04	0	0	0	08	Q	SOL: Quiet
						N12 E10	1	0	0	08	Q	MAG: Quiet
						S16 W28	0	0	0	08	Q	PROTON: Quiet
						N17 E73	0	0	0	08	Q	
221	09	08	036	091	10	N12 W02	1	0	0	09	E	SOL: Quiet
						N17 E61	1	0	0	09	Q	MAG: Quiet
						S14 W15	0	0	0	09	Q	PROTON: Quiet
222	10	09	088	096	11	S18 W32	0	0	0	10	Q	SOL: Quiet
						N11 W16	4	0	0	10	Q	MAG: Quiet
						N15 E49	0	0	0	10	Q	PROTON: Quiet
						N10 E28	0	0	0	10	Q	
						N09 W31	1	0	0	10	Q	
223	11	10	082	102	6	N11 W29	3	0	0	11	E	SOL: Quiet
						N16 E34	0	0	0	11	Q	MAG: Quiet
						N11 E14	0	0	0	11	Q	PROTON: Quiet
						N09 W44	7	0	0	11	Q	
						S02 E74	0	0	0	11	Q	
224	12	11	092	108	3	N12 W42	0	0	0	12	Q	SOL: Eruptive
						N16 E21	0	0	0	12	Q	MAG: Quiet
						N11 W00	0	0	0	12	Q	PROTON: Quiet
						N09 W56	11	1	0	12	E	
						S02 E62	2	0	0	12	E	
						N09 W73	0	0	0	12	Q	

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages — AUGUST 1993

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location °Lat	Location °Long	Flares Total	Flares M	Flares X	Date of Forecast	Region Forecast [1]	Geoadvice[1]
225	13	12	092	101	6	N12	W60	1	0	0	13	Q	SOL: Eruptive
						N17	E06	0	0	0	13	Q	MAG: Quiet
						N11	W13	0	0	0	13	Q	PROTON: Quiet
						N09	W69	1	0	0	13	E	
						S01	E48	1	0	0	13	Q	
226	14	13	089	097	5	N13	W75	1	0	0	14	Q	SOL: Eruptive
						N18	W05	0	0	0	14	Q	MAG: Quiet
						N12	W26	0	0	0	14	Q	PROTON: Quiet
						N10	W84	0	0	0	14	Q	
						S01	E35	3	0	0	14	Q	
						S09	E67	0	0	0	14	Q	
227	15	14	070	092	1	N12	W87	0	0	0	15	Q	SOL: Quiet
						N19	W16	0	0	0	15	Q	MAG: Quiet
						N12	W41	0	0	0	15	Q	PROTON: Quiet
						N08	W98	0	0	0	15	Q	
						S01	E22	2	0	0	15	Q	
						S10	E55	0	0	0	15	Q	
228	16	15	047	091	8	N17	W30	0	0	0	16	Q	SOL: Quiet
						S02	E09	0	0	0	16	Q	MAG: Active
						S10	E41	0	0	0	16	Q	PROTON: Quiet
229	17	16	028	090	34	S02	W07	0	0	0	17	Q	SOL: Quiet
						S10	E28	0	0	0	17	Q	MAG: Minor
						S10	E41	0	0	0	17	Q	PROTON: Quiet
230	18	17	035	093	33	S02	W17	0	0	0	18	Q	SOL: Quiet
						S10	E15	0	0	0	18	Q	MAG: Quiet
						S08	E73	0	0	0	18	Q	PROTON: Quiet
231	19	18	051	092	19	S03	W33	0	0	0	19	Q	SOL: Quiet
						S10	E03	0	0	0	19	Q	MAG: Quiet
						S08	E62	0	0	0	19	Q	PROTON: Quiet
						S16	W65	0	0	0	19	Q	
232	20	19	043	092	13	S03	W46	0	0	0	20	Q	SOL: Quiet
						S10	W10	0	0	0	20	Q	MAG: Quiet
						S09	E50	1	0	0	20	Q	PROTON: Quiet
233	21	20	027	092	9	S10	W23	0	0	0	21	Q	SOL: Quiet
						S08	E37	0	0	0	21	Q	MAG: Quiet
						S09	E50	1	0	0	21	Q	PROTON: Quiet
234	22	21	043	095	5	S10	W36	0	0	0	22	Q	SOL: Eruptive
						S08	E23	2	0	0	22	Q	MAG: Quiet
						N10	E58	0	0	0	22	Q	PROTON: Quiet
235	23	22	065	094	4	S11	W49	0	0	0	23	Q	SOL: Quiet
						S08	E10	0	0	0	23	Q	MAG: Quiet
						N10	E45	0	0	0	23	Q	PROTON: Quiet
						S11	W40	0	0	0	23	Q	
						S11	E62	0	0	0	23	Q	
236	24	23	053	093	2	S10	W61	0	0	0	24	Q	SOL: Quiet
						S08	W04	1	0	0	24	Q	MAG: Quiet
						N09	E30	1	0	0	24	Q	PROTON: Quiet
						S12	E48	0	0	0	24	Q	

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages — AUGUST 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			
237	25	24	079	091	3	S10	W75	0	0	0	25	Q	SOL: Quiet
						S08	W17	0	0	0	25	Q	MAG: Quiet
						N10	E17	0	0	0	25	Q	PROTON: Quiet
						S11	E35	0	0	0	25	Q	
						S17	W57	0	0	0	25	Q	
						N21	E67	0	0	0	25	Q	
238	26	25	084	089	2	S10	W88	0	0	0	26	Q	SOL: Quiet
						S09	W30	1	0	0	26	Q	MAG: Quiet
						N10	E03	0	0	0	26	Q	PROTON: Quiet
						S18	W71	0	0	0	26	Q	
						N21	E53	0	0	0	26	Q	
						N07	E66	0	0	0	26	Q	
239	27	26	069	088	5	S10	W44	0	0	0	27	Q	SOL: Quiet
						N09	W13	0	0	0	27	Q	MAG: Quiet
						N21	E41	0	0	0	27	Q	PROTON: Quiet
						N08	E55	1	0	0	27	Q	
						S11	W12	0	0	0	27	Q	
240	28	27	059	088	16	S08	W58	0	0	0	28	Q	SOL: Quiet
						N09	W27	0	0	0	28	Q	MAG: Quiet
						N21	E28	0	0	0	28	Q	PROTON: Quiet
						N07	E41	0	0	0	28	Q	
241	29	28	071	088	7	S10	W71	0	0	0	29	Q	SOL: Quiet
						N08	W40	0	0	0	29	Q	MAG: Quiet
						N21	E14	0	0	0	29	Q	PROTON: Quiet
						N07	E28	0	0	0	29	Q	
242	30	29	064	090	9	S09	W85	0	0	0	30	Q	SOL: Quiet
						N09	W55	0	0	0	30	Q	MAG: Quiet
						N21	E03	0	0	0	30	Q	PROTON: Quiet
						N06	E12	0	0	0	30	Q	
243	31	30	059	089	3	N08	W68	0	0	0	31	Q	SOL: Quiet
						N21	W11	0	0	0	31	Q	MAG: Active
						N07	W00	0	0	0	31	Q	PROTON: Quiet
						S08	E31	0	0	0	31	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, probabiljty >=50%)
P =Proton (Proton flares exptected, 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

NO STRATWARMS RECORDED

INTERNATIONAL RELATIVE SUNSPOT NUMBERS

Day	Sep 92	Oct	Nov	Dec	Jan 93	Feb	Mar	Apr†	May†	Jun†	Jul†	Aug†
01	47	85	104	65	46	22	76	67	33	105	58	38
02	49	98	88	56	41	34	80	67	30	102	57	40
03	44	95	68	59	38	73	84	75	42	101	66	36
04	46	105	86	59	52	85	93	67	69	82	80	35
05	47	122	95	51	71	119	105	75	80	74	68	26
06	52	113	95	48	84	121	96	89	71	83	58	49
07	44	103	96	34	81	128	93	79	74	70	45	43
08	38	88	74	63	89	134	82	81	81	55	40	47
09	57	91	76	91	94	126	85	87	87	46	38	59
10	54	73	74	99	100	114	81	74	120	47	31	65
11	59	57	84	116	91	95	86	55	125	35	35	73
12	63	41	83	109	94	97	77	37	111	18	35	58
13	77	36	62	113	96	92	67	19	85	10	51	60
14	77	43	69	115	69	82	56	15	59	8	63	39
15	75	40	70	112	58	73	60	15	51	9	66	29
16	76	54	84	109	59	88	56	15	37	10	63	21
17	62	55	100	105	62	68	60	36	32	17	67	29
18	54	73	102	98	66	80	69	49	29	13	80	28
19	63	92	108	97	68	88	72	51	13	15	76	28
20	62	75	98	97	52	97	70	89	33	21	69	22
21	65	98	85	84	47	92	78	98	27	25	64	31
22	66	104	95	91	34	100	73	93	20	27	54	42
23	89	95	115	79	30	101	63	96	23	51	68	42
24	90	114	122	78	45	90	42	98	33	50	66	56
25	75	113	125	81	51	88	40	88	53	55	61	53
26	84	125	116	90	37	86	46	50	66	62	55	44
27	86	138	116	73	43	86	51	62	59	67	66	46
28	62	131	99	86	37	88	51	51	74	69	59	48
29	72	111	92	78	35		54	41	88	75	47	49
30	81	100	74	69	36		58	38	97	70	45	37
31		82		56	32		61		96		46	28
Mean	63.9	88.7	91.8	82.6	59.3	91.0	69.8	61.9	61.2	49.1	57.3	42.0

†=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	Sep 92	Oct	Nov	Dec	Jan 93	Feb	Mar	Apr	May	Jun	Jul	Aug
01	101.6	118.2	144.8	127.1	118.3	121.5	129.6	123.5	104.2	140.4	111.8	102.8
02	106.3	119.5	138.8	126.0	117.4	124.7	141.0	120.7	104.7	143.4	113.6	103.7
03	108.9	120.2	132.9	121.3	120.6	133.0	148.6	117.0	108.9	140.4	114.2	100.8
04	106.4	126.1	140.4	115.9	117.1	143.2	163.8	116.4	112.4	133.7	110.1	98.9
05	121.2	130.1	133.6	112.4	120.8	155.6	162.5	118.9	120.0	137.7	103.9	97.0
06	141.3	137.3	130.5	115.9	125.8	178.8	164.0	133.1	122.2	131.3	98.4	97.1
07	133.6	135.8	132.4	116.1	126.3	171.2	150.9	130.0	133.0	115.7	96.5	93.8
08	130.8	125.4	129.7	124.8	128.6	183.4	144.3	143.5	131.2	115.2	96.4	93.4
09	118.5	121.0	129.9	129.6	124.5	180.3	140.6	136.0	131.5	118.9	93.2	99.1
10	118.4	112.1	133.7	137.5	127.7	175.0	146.7	139.2	136.8	116.0	89.0	104.5
11	120.1	110.0	132.0	159.0	127.4	168.8	148.0	119.4	134.7	104.9	85.8	111.2
12	118.7	106.5	124.7	163.1	135.6	144.9	158.7	103.7	129.0	96.2	88.7	103.2
13	128.8	108.2	122.2	167.6	136.6	131.7	139.9	97.7	122.4	89.4	89.5	99.2
14	123.1	104.9	123.4	161.8	128.8	137.9	134.2	92.8	114.6	86.4	95.7	94.6
15	121.5	97.8	124.1	150.4	121.9	131.6	129.7	88.8	106.7	84.6	96.3	92.8
16	127.9	99.9	133.7	145.8	129.1	130.5	120.5	90.0	101.1	85.0	100.3	92.4
17	120.6	105.8	148.9	145.5	121.9	121.4	122.4	96.5	98.4	86.1	102.6	95.1
18	118.5	111.4	158.2L	144.9	117.7	123.2	126.2	106.6	93.5	87.4	103.7	94.3
19	113.4	123.4	157.1	142.2	112.7	113.4	133.4	111.9	93.1	88.8	104.1	93.9
20	107.1	131.9	155.0	143.2	106.5	120.6	127.0	119.9	93.4	94.1	105.6	93.8
21	110.4	139.2	161.3K	140.8	103.3	120.3	129.7	120.5	93.3	94.0	108.9	97.0
22	112.3	149.2	162.0	137.6	101.0	130.3	126.6	118.4	94.1	99.8	111.2	96.2
23	112.6	140.3	171.7	139.3	102.7	129.6	120.1	122.9	97.3	113.1	113.3	94.8
24	112.6	145.1	169.4	132.0	101.6	132.7	114.4	130.3	100.9	125.4	109.8	92.5
25	116.5	159.4	162.4	132.0	102.6	125.5	116.0	126.2	102.4	122.6	105.1	90.6
26	117.3	167.9	158.2	127.2	103.3	123.8	116.4	125.0	110.4	126.0	106.8	90.2
27	121.6	168.9	152.6	121.2	107.6	121.6	122.4	119.6	122.7	131.7	106.4	89.4
28	116.6	172.3	144.7	123.4	108.6	121.4	125.8	115.2	129.2	127.8	104.6	90.2
29	117.7	161.6	136.0	121.3	110.7		128.3	108.1	132.5	126.7	103.5	91.7
30	116.2	225.8*	135.9	121.9	109.6		128.7	107.4	144.1	120.3	100.8	90.7
31		147.3		125.8	115.6		124.9		142.1		99.1	90.6
Mean	118.0	130.0*	142.0	134.6	117.2	139.1	135.0	116.7	114.9	112.8	102.2	96.0

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

DAILY SOLAR INDICES

August 1993

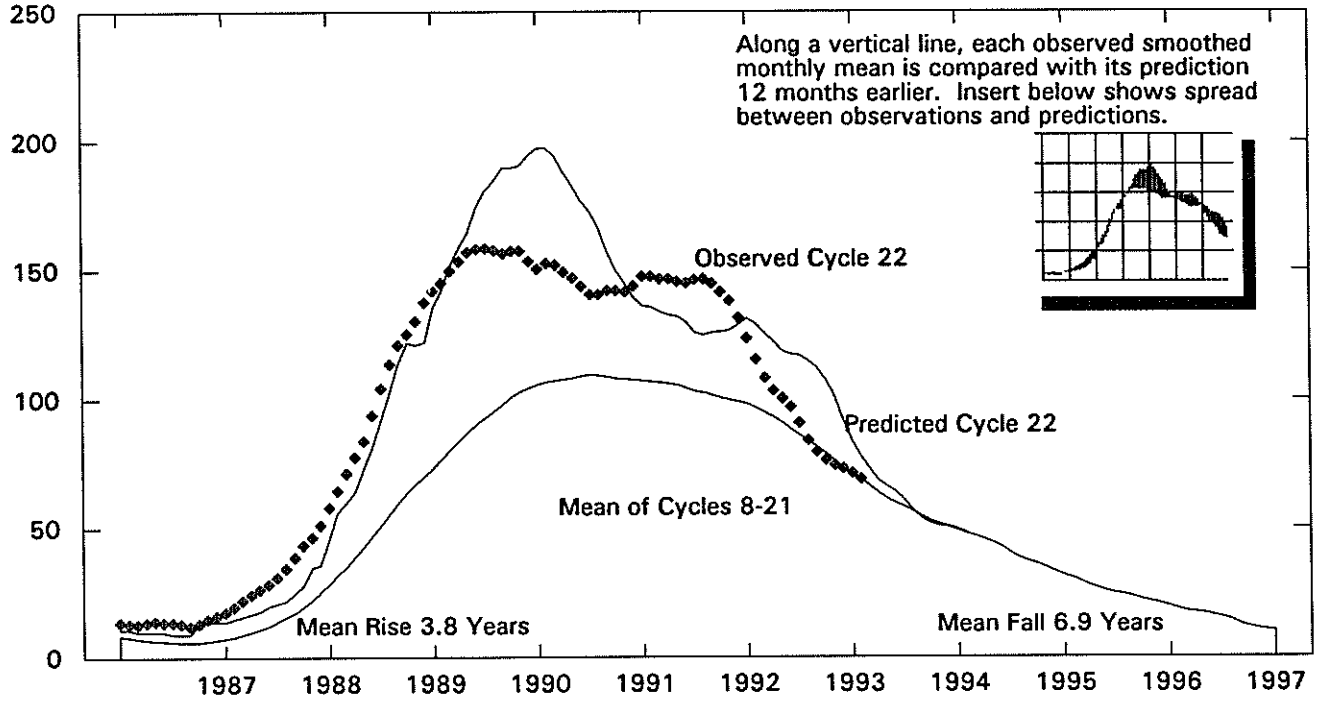
Day	Day of Year	Bartels Cycle Day	Sunspot Numbers Int	Sunspot Numbers Amer	Obs Flux Penticton (2800)	Solar Flux Adjusted to 1 Astronomical Unit — LEAR (15400)	LEAR (8800)	LEAR (4995)	Pentic (2800)	LEAR (2695)	LEAR (1415)	LEAR (610)	LEAR (410)	LEAR (245)
1	213	12	38	42	99.8	527	237	146	102.8	96	76	50	30	14
2	214	13	40	38	100.7	540	239	149	103.7	98	73	47	29	13
3	215	14	36	34	97.9	532	238	152	100.8	98	74	51	41	
4	216	15	35	33	96.1	511	235	147	98.9	95	73	46	28	15
5	217	16	26	26	94.3	506	234	143	97.0	96	72	51	28	16
6	218	17	49	34	94.4	503	233	141	97.1	93	73	49	27	15
7	219	18	43	43	91.3	510	237	140	93.8	92	73	47	27	13
8	220	19	47	40	90.9	512	231	138	93.4	89	66	47	27	13
9	221	20	59	60	96.5	506	231	138	99.1	90	71	49	26	13
10	222	21	65	65	101.8	513	234	144	104.5	96	73	49	28	13
11	223	22	73	66	108.3	521	244	155	111.2	101	72	49	28	16
12	224	23	58	60	100.5	508	238	151	103.2	96	72	46	26	14
13	225	24	60	62	96.7	503	237	148	99.2	97	70	47	28	13
14	226	25	39	45	92.2	500	233	145	94.6	90	74	47	27	13
15	227	26	29	30	90.5	514	233	143	92.8	89	67	49	28	13
16	228	27	21	23	90.1	520	233	140	92.4	89	69	48	29	15
17	229	1	29	28	92.8	519	230	138	95.1	87	68	50	28	15
18	230	2	28	31	92.1	531	235	142	94.3	91	74	54	29	16
19	231	3	28	27	91.7	507	227	140	93.9	89	66	52	28	15
20	232	4	22	23	91.6	515	229	142	93.8	91	72	52	29	15
21	233	5	31	35	94.8	505	233	141	97.0	91	71	51	29	15
22	234	6	42	45	94.0	500	231	144	96.2	91	69	50	28	15
23	235	7	42	44	92.8	513	235	143	94.8	92	78	52	33	18
24	236	8	56	55	90.6	502	228	142	92.5	91	72	51	29	18
25	237	9	53	54	88.7	500	231	141	90.6	89	65	50	28	14
26	238	10	44	49	88.3	513	229	136	90.2	87	--	47	29	14
27	239	11	46	52	87.6	521	230	137	89.4	86	64	49	28	13
28	240	12	48	53	88.4	524	229	138	90.2	86	67	47	28	14
29	241	13	49	50	90.0	520	234	139	91.7	88	65	48	27	14
30	242	14	37	41	89.0	516	231	138	90.7	89	--	45	27	13
31	243	15	28	36	89.0	523	234	140	90.6	87	65	47	27	13
MEAN			42.0	42.7	93.7	514	233	142	96.0	91	70	48	28	14

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

The observed and the adjusted Penticton fluxes tabulated here are the "Series C" daily values reported by the Dominion Radio Astrophysical Observatory, Penticton, 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 Learmonth (LEAR) observations.

Cycle 22 Smoothed Sunspot Numbers: Observed and Predicted (1 Year Ahead)



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
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	73	94
1993	71	69	67	64	62	60	58	57	55	53	52	51	60
( )			(3)	(5)	(7)	(8)	(10)	(12)	(14)	(16)	(17)	(19)	(9)
1994	50	48	47	46	45	43	41	39	38	36	35	33	42
( )	(20)	(20)	(20)	(21)	(21)	(21)	(22)	(23)	(24)	(24)	(25)	(25)	(22)
1995	32	31	29	28	27	26	25	24	23	22	22	21	26
( )	(24)	(24)	(24)	(24)	(23)	(23)	(23)	(22)	(21)	(20)	(19)	(19)	(22)

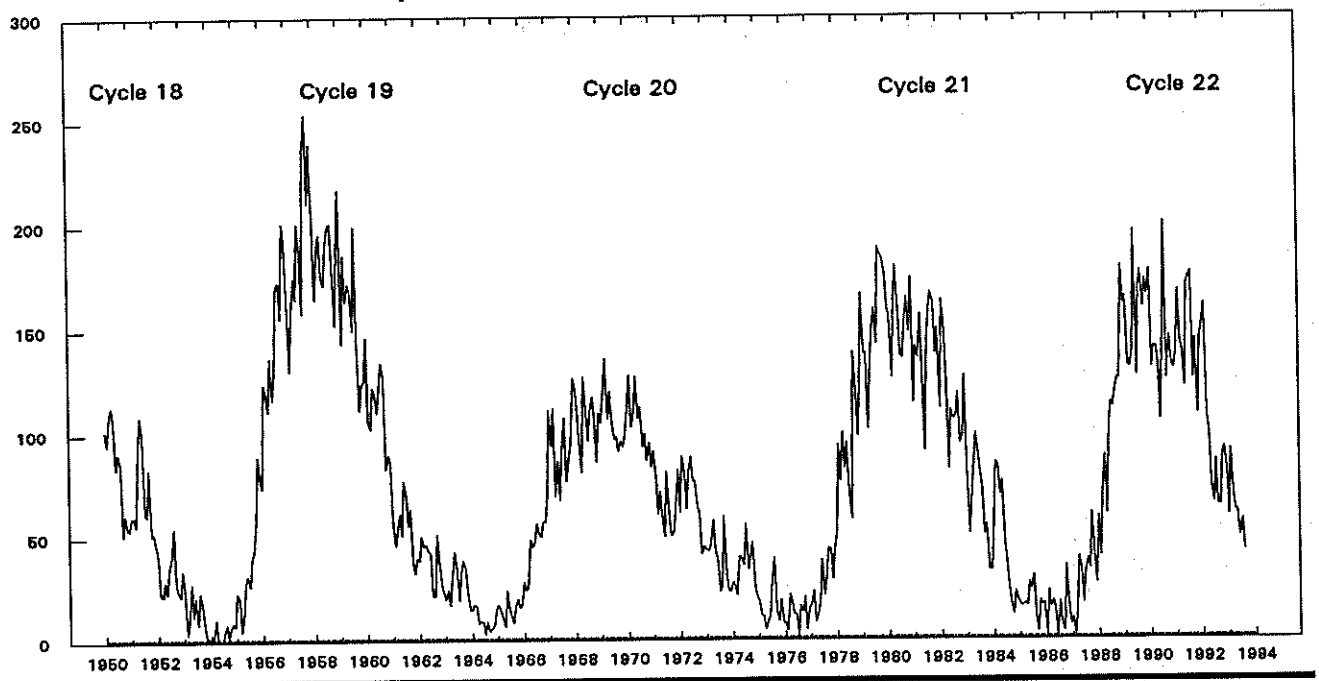
Solar Cycle 21 | Solar Cycle 22 | Min, Max, and Predictions

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 Mar 1993 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 February 1994 prediction. There exists a 90% chance that in February 1994 the actual smoothed number will fall somewhere between 28 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.

Monthly Mean Sunspot Numbers Jan 1950 - Aug 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	59.3	91.0	69.8	61.9	61.2	49.1	57.3	42.0					61.4	

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

Hα SOLAR FLARES

AUGUST 1993

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	01	0635	0646	0656						21		B 9.1						
GOES		1220	1302	1318						58		B 6.7						
GOES		1751	1823	1902						71		C 1.3						
GOES	02	0016	0027	0041						25		B 9.1						
LEAR		0452	0453	0505	N17	W42	7556	07	30.1	13	SF		3	E		15		
GOES		0823	0828	0835						12		B 6.8						
GOES		0854	0957	1117						143		C 2.0						
GOES		1352	1358	1406						14		B 7.6						
GOES		1925	1929	1935						10		C 1.2						
GOES		2149	2154	2204						15		B 5.7						
GOES	03	0009	0013	0026						17		B 4.1						
GOES		0247	0255	0300						13		C 1.5						
GOES		0310	0323	0331						21		C 1.4						
SVTO		1146	1146	1152	N17	E85	7558	08	9.9	6	SF		3	E		16		
GOES		1336	1340	1342						6		B 6.1						
GOES	04	0219	0225	0227						8		C 6.4						
GOES		0838	0843	0848						10		B 4.6						
GOES	05	0105	0119	0135						30		B 6.3						
SVTO		0558	0600	0616	N13	E50	7558	08	9.0	18	SF	B 7.8	3	E		93		F
GOES		0950	0954	0959						9		B 2.0						
RAMY		1438	1439	1447	N10	E50	7558	08	9.4	9	SF		3	E		21		FH
SVTO		1438	1440	1450	N10	E50	7558	08	9.4	12	SF	B 5.1	3	E		30		H
HOLL		2211	2212	2311	N09	E46	7558	08	9.4	60	SF	B 5.9	3	E		18		F
SVTO	06	0520	0523	0530D	N10	E38	7558	08	9.1	10D	SF	C 1.1	2	E		47		FH
GOES		1103	1113	1129						26		B 2.1						
HOLL		1541E	1541U	1610D	N12	E28	7558	08	8.8	29D	SF	B 2.3	3	E		33		F
GOES	07	0753	0756	0758						5		B 1.9						
LEAR		2335	2337	2342	N09	E12	7558	08	8.9	7	SF	B 5.5	3	E		24		F
GOES	08	0006	0009	0015						9		B 2.1						
GOES		0038	0044	0055						17		B 3.6						
SVTO		0933	0935	0940	N18	E70	7560	08	13.7	7	SF	B 3.0	3	E		11		F
GOES		1003	1009	1017						14		B 3.0						
GOES		1330	1336	1349						19		B 5.5						
HOLL		1656	1658	1705	N09	E02	7558	08	8.8	9	SF	B 2.4	3	E		26		
GOES		1721	1725	1731						10		B 1.8						
GOES		2131	2136	2141						10		B 2.2						
LEAR	09	0208	0216	0235	N13	W03	7558	08	8.9	27	SF	B 3.9	3	E		32		F
GOES		0431	0438	0448						17		B 4.0						
GOES		0534	0541	0550						16		B 3.9						
GOES		0607	0614	0623						16		B 5.6						
GOES		0725	0728	0731						6		B 3.5						
SVTO		1003	1013	1037	N12	W08	7558	08	8.8	34	SF	B 7.2	3	E		48		F
HOLL		1657	1701	1721	N12	W11	7558	08	8.9	24	SF	B 3.7	3	E		38		F
RAMY		1701	1703	1709	N11	W12	7558	08	8.8	8	SF		3	E		18		F
HOLL		1957	1957	2031	N10	W13	7558	08	8.8	34	SF	B 7.8	3	E		62		F
HOLL		2144	2159	2214	N10	W15	7558	08	8.8	30	SF	B 6.2	3	E		60		F
HOLL		2312	2312	2318D	N09	W29	7562	08	7.8	6D	SF		3	E		14		
GOES		2325	2329	2332						7		B 3.5						
LEAR	10	0021	0022	0045	N10	W14	7558	08	9.0	24	SF	B 6.2	3	E		16		F
HOLL		0023	0027	0039	N10	W15	7558	08	8.9	16	SF		3	E		26		F
LEAR		0027	0042	0052	N10	W31	7562	08	7.7	25	SF	B 7.1	3	E		12		F
GOES		0323	0327	0334						11		B 3.2						
GOES		0613	0619	0622						9		B 4.0						
RAMY		1236	1240	1251	N09	W36	7562	08	7.8	15	SF	B 5.0	3	E		47		F
SVTO		1237	1237	1249	N07	W36	7562	08	7.8	12	SF		3	E		17		F
RAMY		1256	1257	1303	N09	W36	7562	08	7.8	7	SF		3	E		25		F
SVTO		1257	1259	1303	N06	W36	7562	08	7.8	6	SF		3	E		17		F
SVTO		1322	1323	1332	N09	W23	7558	08	8.8	10	SF	B 4.7	3	E		17		F
GOES		1733	1738	1745						12		B 5.7						

Hα S O L A R F L A R E S

AUGUST 1993

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	10	1855	1905	1948	N12	W26	7558	08	8.8	53	1N	C 4.6	3	E		172		UF
RAMY		1857	1904	1941	N06	W26	7558	08	8.8	44	1N		3	E		166		UF
RAMY		1939	1939	1952	N09	W42	7562	08	7.7	13	SF		3	E		17		
HOLL		1939	1941	1946	N09	W41	7562	08	7.7	7	SF		3	E		11		H
HOLL		2033	2034	2047	N09	W41	7562	08	7.8	14	SF	B 5.1	3	E		12		
GOES		2059	2102	2109						10		B 4.6						
HOLL		2101	2118	2217	N09	W41	7562	08	7.8	76	SF	B 4.8	3	E		17		FH
LEAR		2321E	2322U	2341	N09	W42	7562	08	7.8	20D	SF		2	E		22		F
LEAR	11	0054	0059	0107	N09	W43	7562	08	7.8	13	SF		3	E		22		F
LEAR		0140	0145	0208	N10	W44	7562	08	7.8	28	SF	B 3.8	3	E		57		F
LEAR		0248	0250	0311	N10	W45	7562	08	7.7	23	SF	C 1.7	3	E		81		F
LEAR		0334	0336	0407	N09	W44	7562	08	7.8	33	SF	B 7.9	3	E		43		F
SVTO		0515E	0535	0539	N07	W46	7562	08	7.8	24D	SF	B 7.6	3	E		13		F
SVTO		0550	0552	0602	N07	W46	7562	08	7.8	12	SF	B 8.8	3	E		16		F
GOES		0735	0741	0745						10		B 8.3						
LEAR		0750	0751	0755	N11	W46	7562	08	7.9	5	SF	B 7.6	3	E		29		
SVTO		1013	1029	1052	N07	W48	7562	08	7.8	39	SN	M 1.5	3	E		94		F
HOLL		1437	1441	1506	N08	W52	7562	08	7.7	29	SF	C 1.1	3	E		15		
HOLL		1552	1635	1711	S02	E67	7563	08	16.7	79	SF	C 4.4	3	E		88		FH
SVTO		1630	1637	1649	N01	E67	7563	08	16.7	19	SF		3	E		54		F
HOLL		1746	1753	1801	S04	E65	7563	08	16.6	15	SF		3	E		17		FH
RAMY		1802	1803	1806	S04	E68	7563	08	16.8	4	SF		3	E		11		
HOLL		1804	1806	1814	N08	W53	7562	08	7.8	10	SF		3	E		15		F
HOLL		1805	1817	1908	S02	E64	7563	08	16.5	63	SF		3	E		46		F
GOES		1811	1835	1854						43		C 9.9						
HOLL		2024	2029	2032	N08	W53	7562	08	7.9	8	SF		3	E		17		F
GOES		2331	2349	2403						32		C 1.6						
GOES	12	0551	0648	0656						65		B 9.6						
GOES		0757	0800	0802						5		B 4.3						
SVTO		1122	1122	1128	N00	E57	7563	08	16.7	6	SF		3	E		13		F
GOES		1144	1147	1154						10		B 3.5						
SVTO		1401	1404	1406	N08	W64	7562	08	7.8	5	SF	B 2.8	3	E		13		FH
HOLL		1717	1723	1756	N12	W51	7558	08	8.9	39	SF	B 4.1	3	E		39		F
SVTO		1720E	1724	1728	N13	W45	7558	08	9.3	8D	SF		1	E		41		F
RAMY		1722	1722	1726	N03	W51	7558	08	8.9	4	SF		3	E		12		F
GOES		1856	1859	1903						7		B 2.3						
GOES		2216	2257	2317						61		C 3.5						
GOES	13	0242	0253	0256						14		C 1.6						
GOES		0324	0327	0332						8		B 2.7						
GOES		0612	0617	0624						12		B 2.9						
GOES		0820	0837	0844						24		B 9.7						
GOES		1107	1114	1121						14		B 6.8						
RAMY		1242	1244	1249	N00	E46	7563	08	17.0	7	SF	C 1.8	3	E		36		
SVTO		1242	1244U	1253	N01	E46	7563	08	17.0	11	SF		3	E		55		
HOLL		1245E	1251U	1255	S02	E42	7563	08	16.7	10D	SF		1	E		42		H
HOLL		1349	1352	1354	S01	E44	7563	08	16.9	5	SF		3	E		11		
HOLL		2018	2028	2035	S01	E40	7563	08	16.8	17	SF	C 1.1	3	E		50		H
RAMY		2024E	2029	2033	N00	E41	7563	08	16.9	9D	SF		3	E		16		
GOES		2048	2057	2106						18		B 4.0						
LEAR		2316E	2318	2330	N13	W68	7558	08	8.8	14D	SF	B 7.9	2	E		20		F
HOLL	14	0037	0039	0043	S02	E33	7563	08	16.5	6	SF	B 9.3	3	E		14		F
GOES		0403	0406	0409						6		B 2.1						
GOES		0426	0432	0442						16		B 2.9						
GOES		0502	0509	0512						10		B 4.1						
GOES		0549	0556	0600						11		B 2.1						
GOES		0950	0954	0957						7		B 2.6						
GOES		1143	1150	1155						12		C 1.6						
SVTO		1245	1245	1248	N00	E26	7563	08	16.5	3	SF	B 1.9	3	E		14		
GOES		1347	1351	1353						6		B 3.1						
GOES		1842	1846	1851						9		B 2.6						
GOES		2056	2100	2103						7		B 2.0						
GOES	15	0549	0601	0611						22		C 1.0						
GOES		0719	0723	0909						110		B 3.0						

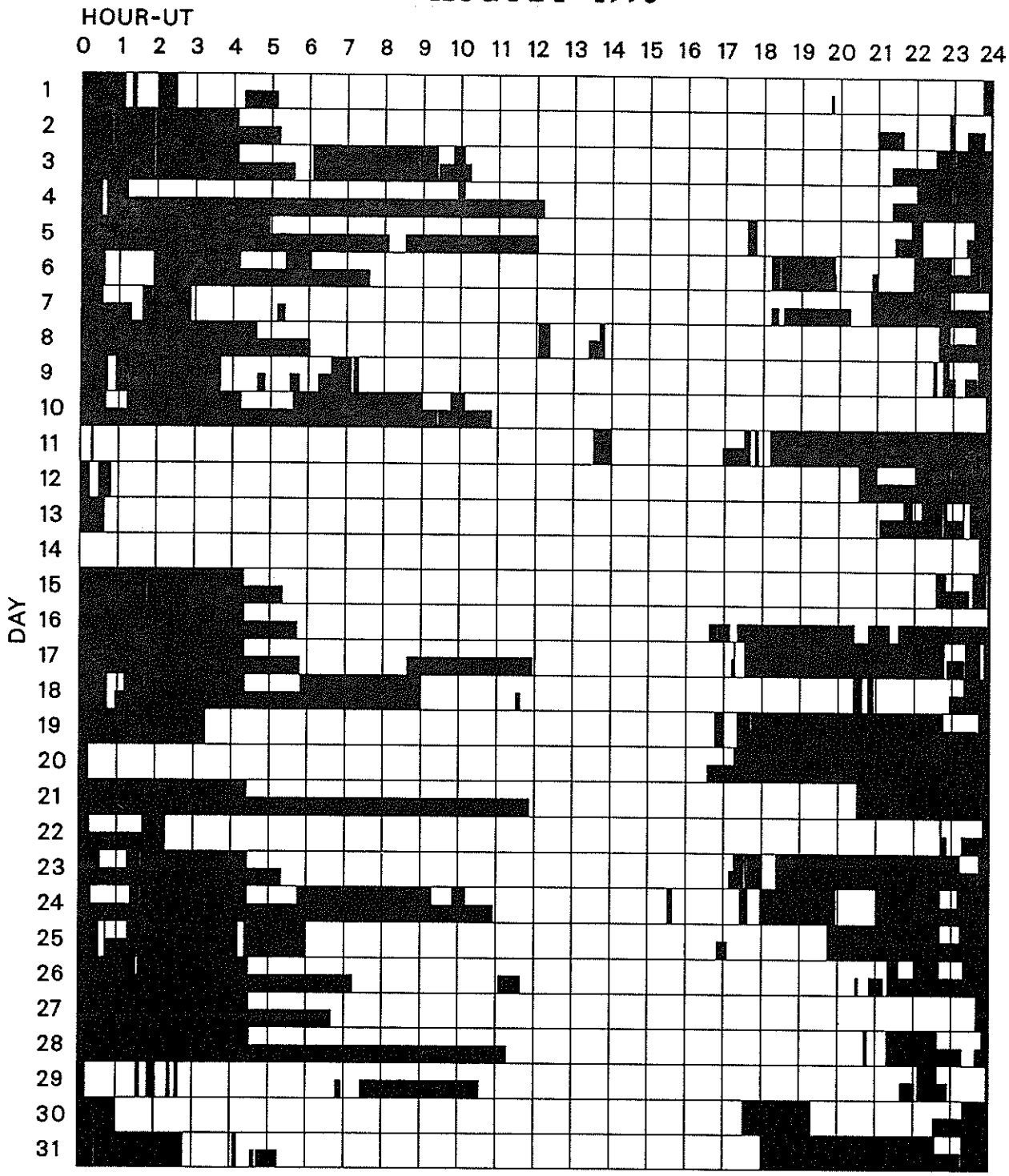
Hα S O L A R F L A R E S

AUGUST 1993

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	15	1113	1208	1323						130		B 6.4						
GOES		2008	2018	2043						35		B 1.9						
GOES	16	0653	0758	0821						88		B 4.0						
GOES		1326	1333	1342						16		B 4.1						
GOES	17	0834	0847	0857						23		B 5.4						
GOES		1204	1210	1214						10		B 3.7						
GOES		1542	1550	1555						13		C 1.7						
HOLL		2027	2028	2037	S08	E78	7566	08	23.7	10	SF	C 1.3	3	E		25		
GOES		2344	2350	2353						9		B 7.3						
GOES	18	0310	0314	0319						9		B 2.6						
GOES		0414	0418	0422						8		B 2.9						
GOES		0638	0651	0706						28		B 2.1						
GOES		1158	1203	1211						13		B 2.8						
GOES		2313	2316	2319						6		B 1.5						
LEAR	19	0808	0808	0827	S07	E60	7566	08	23.8	19	SF		3	E		49		F
SVTO		0810	0813	0823	S04	E58	7566	08	23.7	13	SF	B 6.2	3	E		23		F
GOES	20	0408	0414	0419						11		B 1.6						
GOES		0833	0837	0843						10		B 1.3						
GOES	21	0012	0015	0018						6		B 1.4						
GOES		0154	0158	0201						7		B 1.4						
GOES		0310	0314	0317						7		B 1.2						
GOES		0429	0435	0437						8		B 2.3						
GOES		0716	0720	0724						8		B 1.8						
GOES		0830	0834	0836						6		B 2.0						
SVTO		0836	0838	0843	S10	E30	7566	08	23.6	7	SF	B 2.9	3	E		14		H
RAMY		1120	1122	1127	S10	E29	7566	08	23.6	7	SF		3	E		13		FH
HOLL		1531	1541	1605	S07	E28	7566	08	23.7	34	SF		3	E		30		F
SVTO		1539	1540	1552	S03	E26	7566	08	23.6	13	SF		3	E		19		
RAMY		1540	1540	1546	S02	E26	7566	08	23.6	6	SF	B 8.9	4	E		17		
GOES	22	1031	1034	1038						7		B 1.2						
GOES	23	0430	0435	0440						10		B 1.2						
SVTO		1405	1405	1409	S09	E04	7566	08	23.9	4	SF	B 3.1	3	E		12		F
HOLL		1624	1644	1657	N10	E36	7568	08	26.4	33	SF		3	E		30		F
GOES		2302	2305	2307						5		B 1.9						
GOES		2319	2323	2325						6		B 2.2						
GOES	24	0457	0502	0507						10		B 1.6						
GOES		2213	2222	2228						15		B 1.4						
GOES	25	0316	0320	0323						7		B 3.5						
GOES		0326	0330	0339						13		B 4.0						
GOES		0641	0648	0652						11		B 1.2						
GOES		0922	0931	0941						19		B 1.4						
SVTO		1120	1122	1142	S08	W22	7566	08	23.8	22	SF	B 4.3	3	E		30		F
SVTO	26	1038	1038	1048	N07	E61	7573	08	31.0	10	SF	B 2.3	3	E		12		H
GOES	29	0239	0243	0248						9		B 1.3						
GOES		0816	0823	0831						15		B 1.6						
GOES		0930	0946	0956						26		B 1.7						
GOES		1228	1231	1233						5		B 1.1						
GOES		1350	1353	1355						5		B 1.6						
GOES	31	1224	1236	1246						22		B 3.2						

INTERVALS OF NO FLARE PATROL OBSERVATION
FOR PRECEDING SOLAR FLARE TABLE

AUGUST 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

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

AUGUST 1993

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean	Int	Remarks
09	2695	LEAR	8 S	0726.0	0727.0	2.0	53.0			QL=4 ST=2 TYP=3
10	2695	SGMR	8 S	1902.0	1903.0	1.0	29.0			QL=2 ST=2 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 Precusor	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

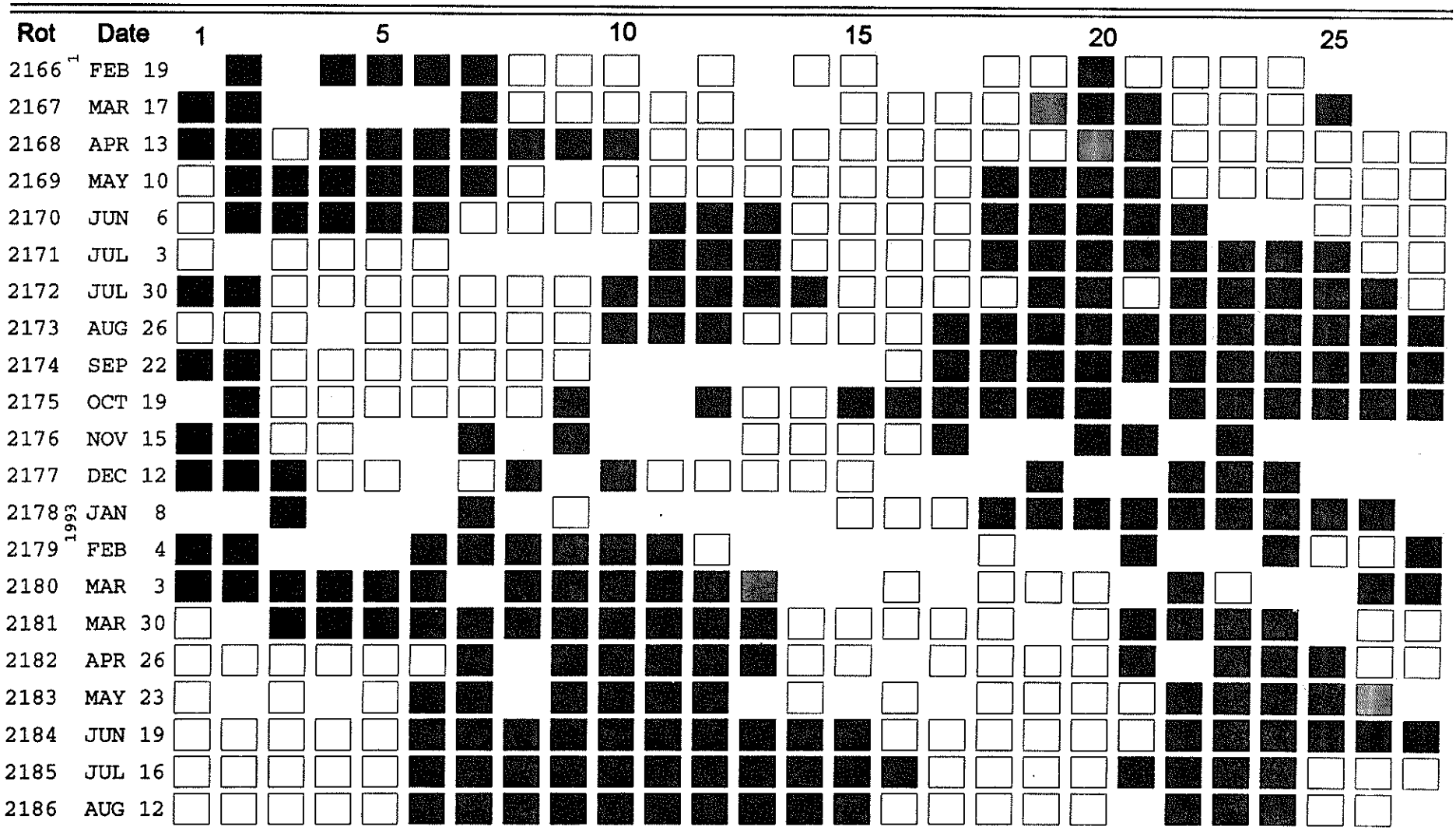
RSTN Site Information: Beginning in April 1986, the RSTN sites LEAR, PALE, SGMR, and SVTO fixed frequency solar radio data are periodically adjusted to several world standard stations. These world standard stations include: Kislovodsk, USSR 15,500 MHz; Penticton, Canada 2800 MHz; Hiraiso, Japan 500 and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

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

Day	1992 Sep	Oct	Nov	Dec	1993 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
1	88	.	19	-16	.	-8	1	-1	4	-81	-32	14
2	67	.	-5	.	-33	-25	-30	-11	-29	-84	-12	30
3	43	.	-24	.	-28	.	-38	-11	.	-56	-2	20
4	-22	.	-41	-39	-22	-61	-44	-25	-86	.	13	8
5	-27	.	-57	-38	.	-52	-56	-38	-85	3	34	-7
6	-18	.	-47	.	.	.	-51	-63	-83	.	30	-3
7	13	4	-48	-20	.	.	-58	-68	-48	60	26	-2
8	24	-17	.	.	.	.	-40	-59	-14	.	19	-8
9	19	-40	-29	.	.	-27	.	-55	9	56	7	12
10	29	-68	-7	.	-38	-30	-25	-37	44	37	-5	37
11	-18	-57	-1	.	.	-28	-41	-14	.	21	-8	42
12	-25	-31	-5	-50	.	-51	-37	20	75	6	-10	51
13	-53	-38	-16	-41	.	-46	-50	44	41	-5	-24	51
14	-46	-29	-24	-15	-3	-36	-19	59	30	-17	-11	41
15	-33	-33	-23	8	.	21	0	64	7	-16	-2	27
16	-30	-14	-19	11	1	.	.	53	-7	-22	46	25
17	-26	-5	20	.	.	.	.	.	.	0	55	-10
18	-26	-13	57	6	.	.	65	13	-12	.	43	-6
19	-9	.	.	-9	.	.	.	-1	-26	42	43	-9
20	-13	-5	.	.	.	.	41	-11	-14	70	13	-17
21	-22	.	-2	-3	.	48	36	-13	3	66	-19	-31
22	-23	24	.	11	67	.	4	-9	19	60	-28	-30
23	-1	50	-9	42	69	.	.	.	38	45	-26	-25
24	17	66	.	57	61	-43	-26	20	.	-12	-22	-25
25	54	47	.	49	-14	.	4	1	60	-53	-28	-37
26	79	20	.	40	-53	.	.	9	.	-61	-45	-30
27	85	-7	60	.	-62	-1	.	18	21	-61	-20	5
28	60	.	62	.	-44	13	-11	39	-15	-66	-13	27
29	39	.	55	.	-19		-11	43	-42	-74	-26	26
30	7	-14	11	-59	-28		8	18	.	-44	-33	4
31		22		.	-2		.		-75		-2	3

Dot symbol indicates no data available for the day.

STANFORD MEAN SOLAR MAGNETIC FIELD



Mean Solar Magnetic Field Polarity: = field > 2 microT; = -2 microT ≤ field ≤ 2 microT; = field < -2 microT; No box = no data available

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

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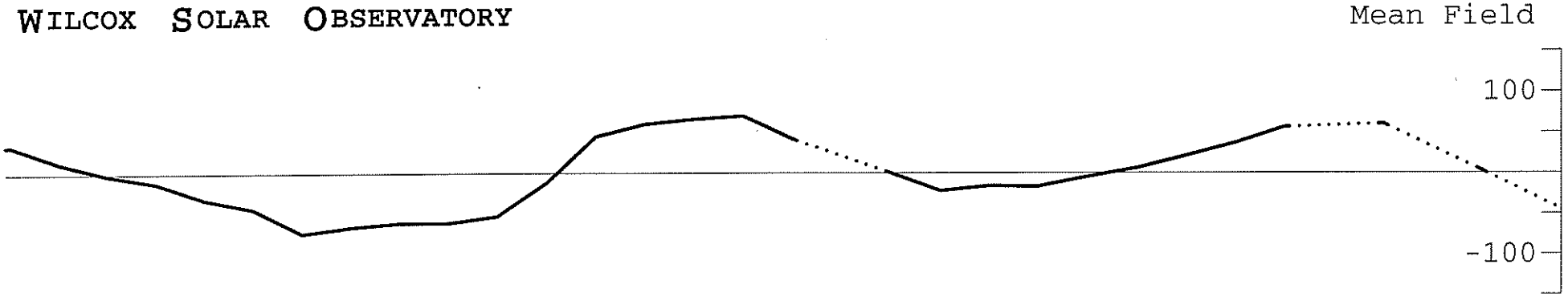
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1870

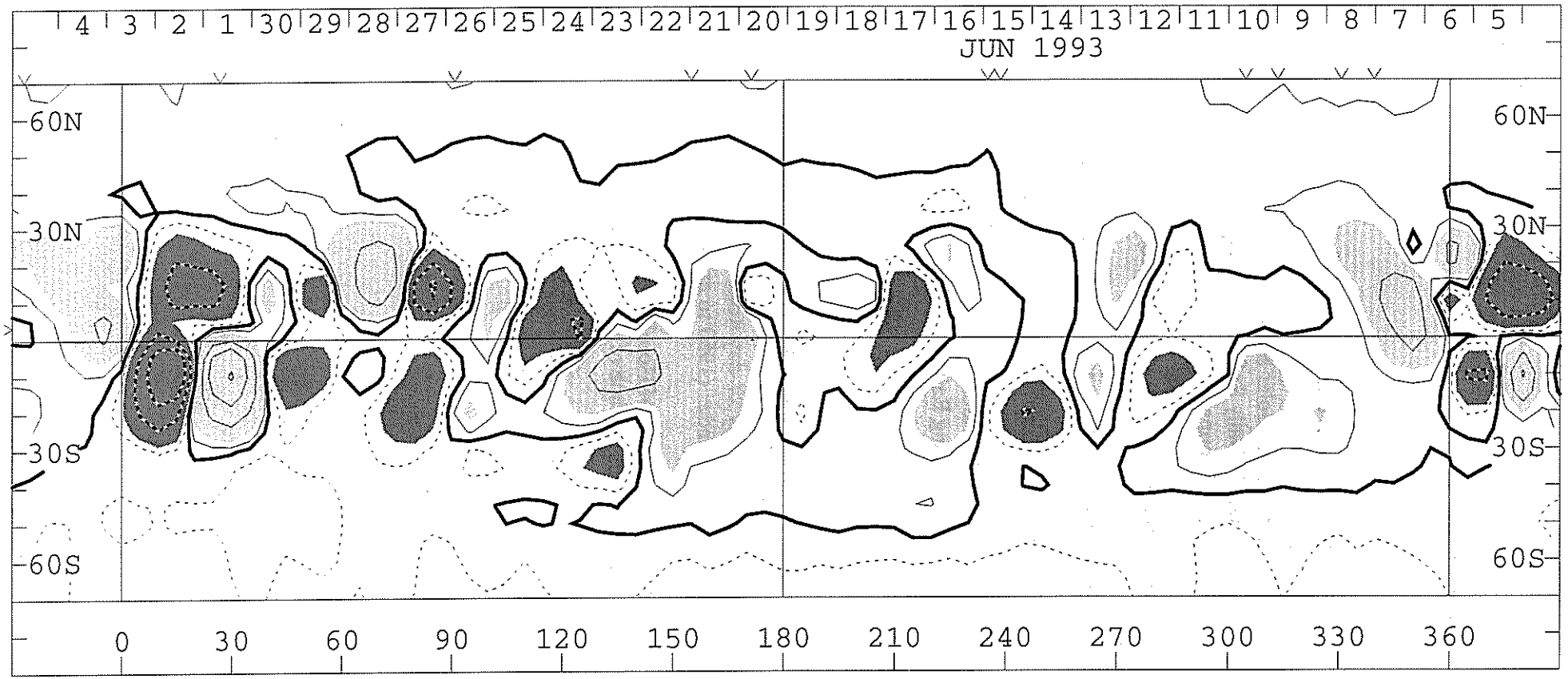
(6 June to 3 July 1993)

WILCOX SOLAR OBSERVATORY



Photospheric Magnetic Field

0, ±100, 500, 1000, 2000 MicroTesla



1870

SOLAR MAGNETIC FIELD SYNOPTIC CHART

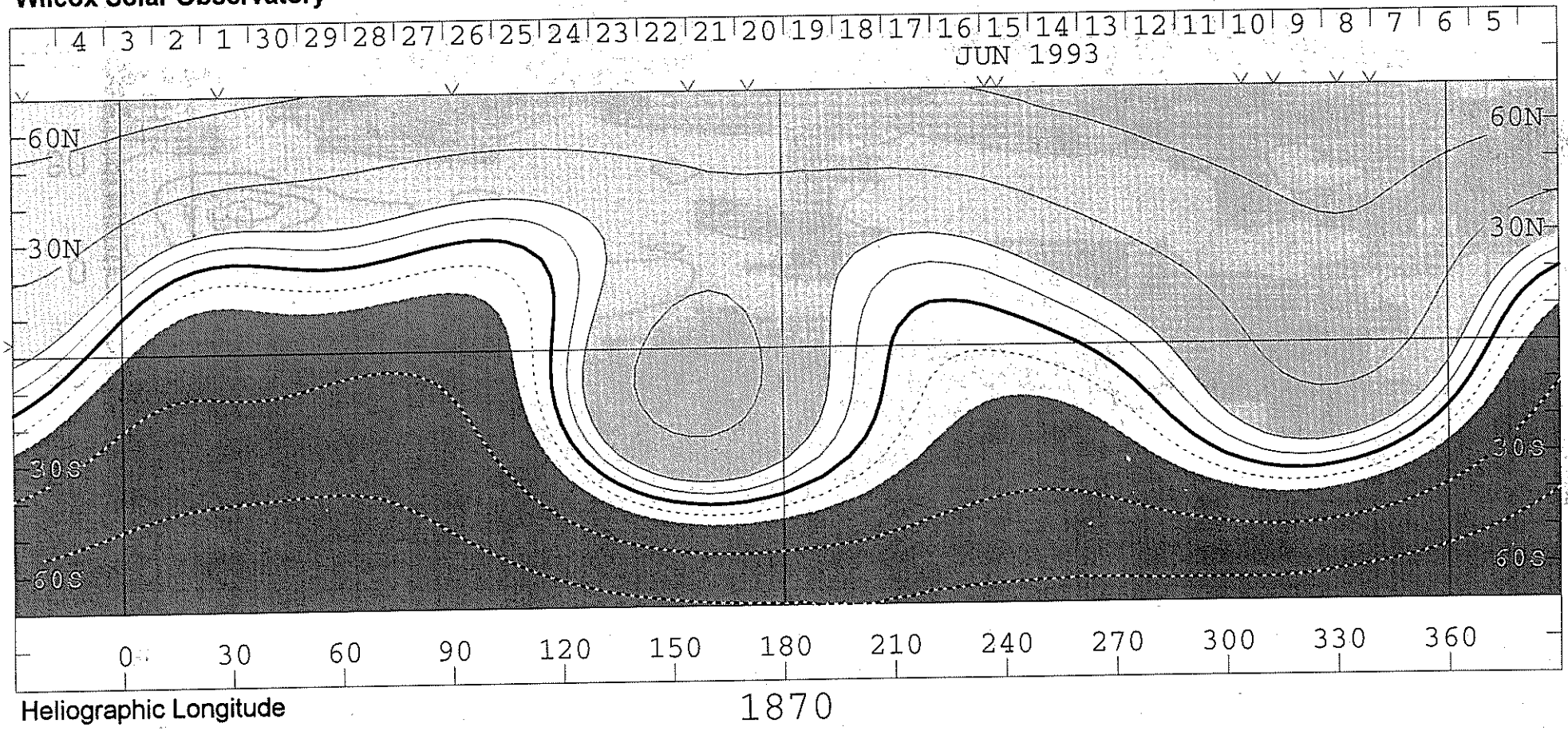
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 1870

(6 June to 3 July 1993)

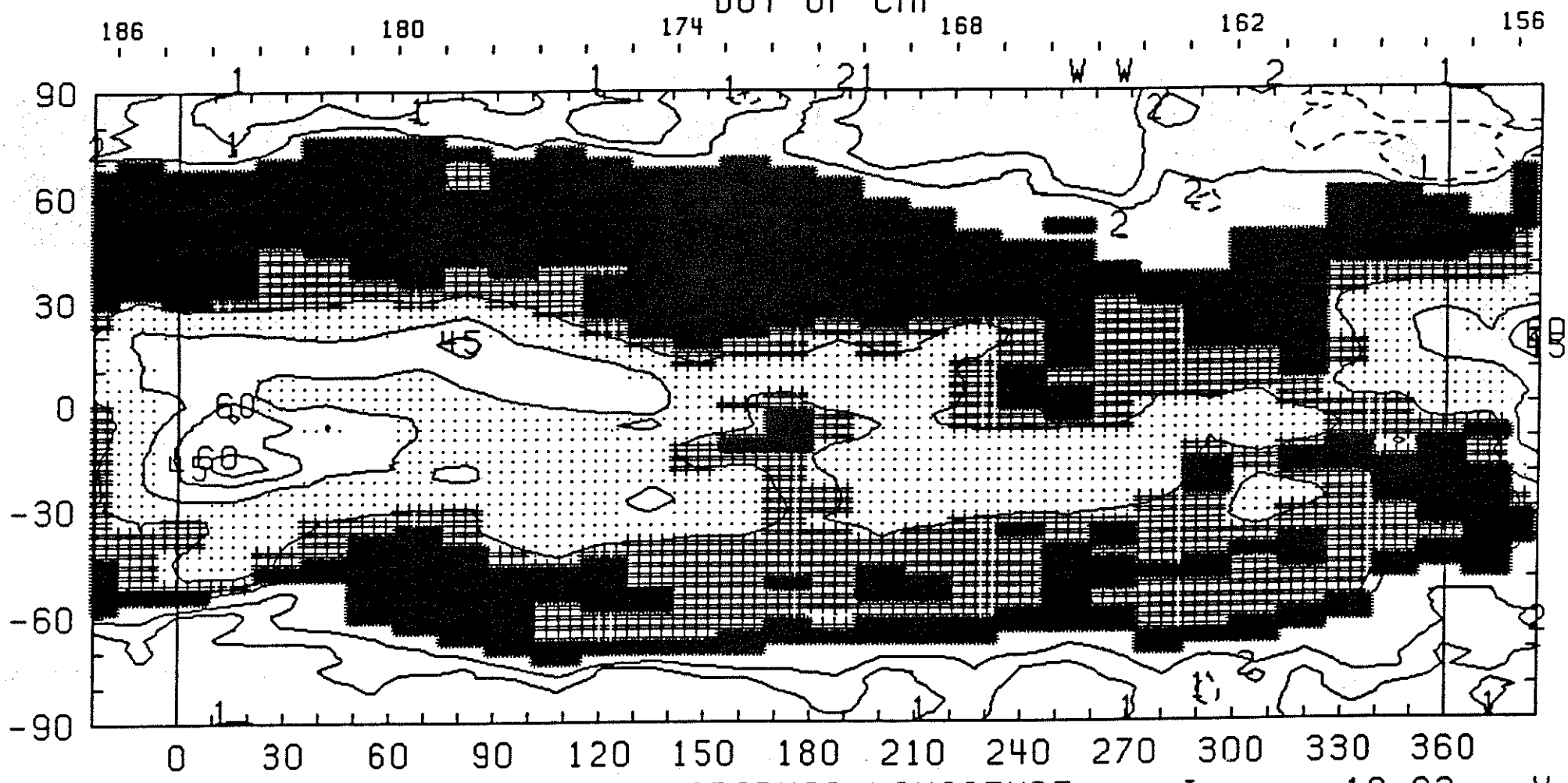
Wilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla



37
Jul 93

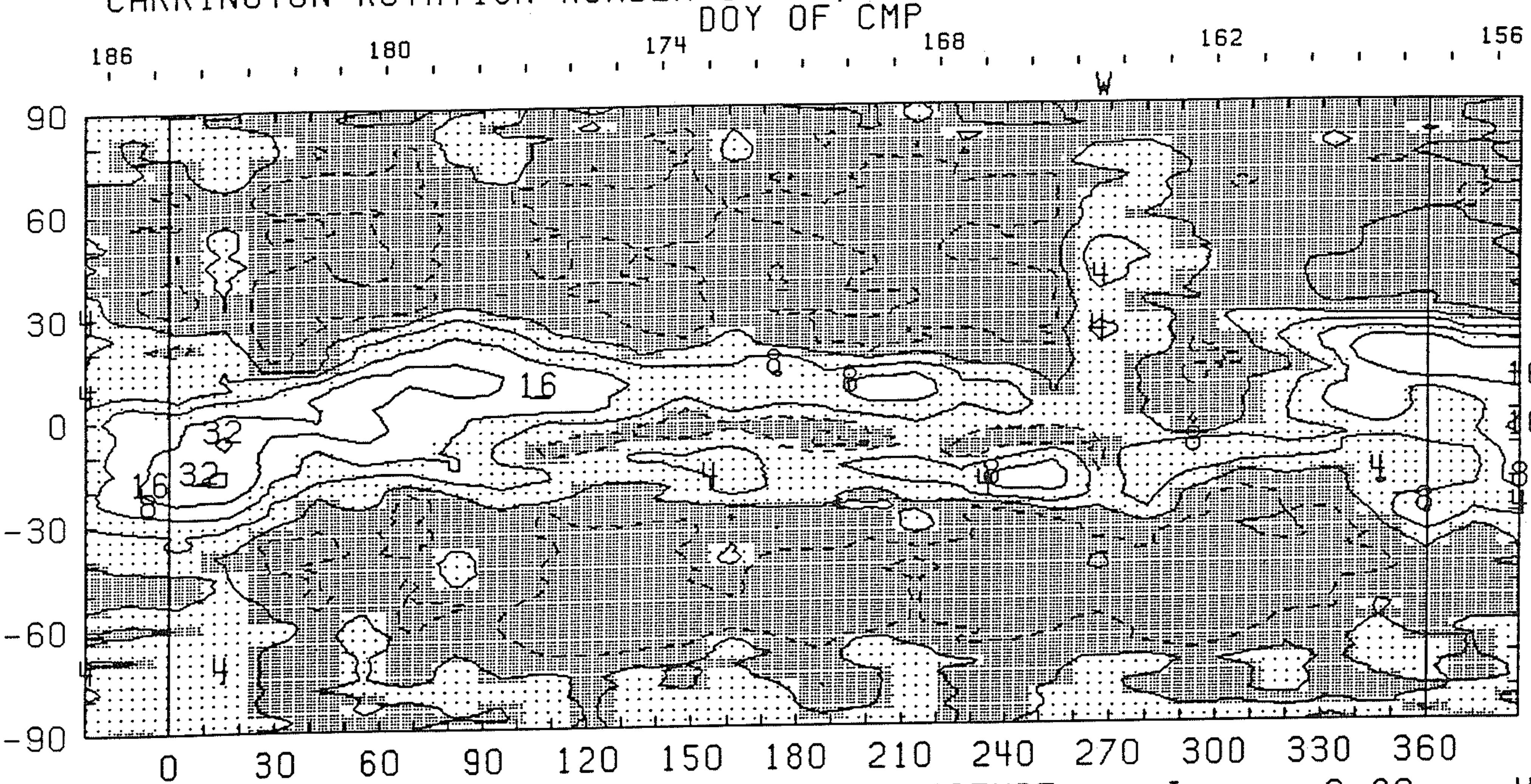
CARRINGTON ROTATION NUMBER 1870 ; SAC.PEAK FE XIV AT R = 1.15



Iave = 10.83μ

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

CARRINGTON ROTATION NUMBER 1870 ; SAC.PEAK FE X AT R = 1.15

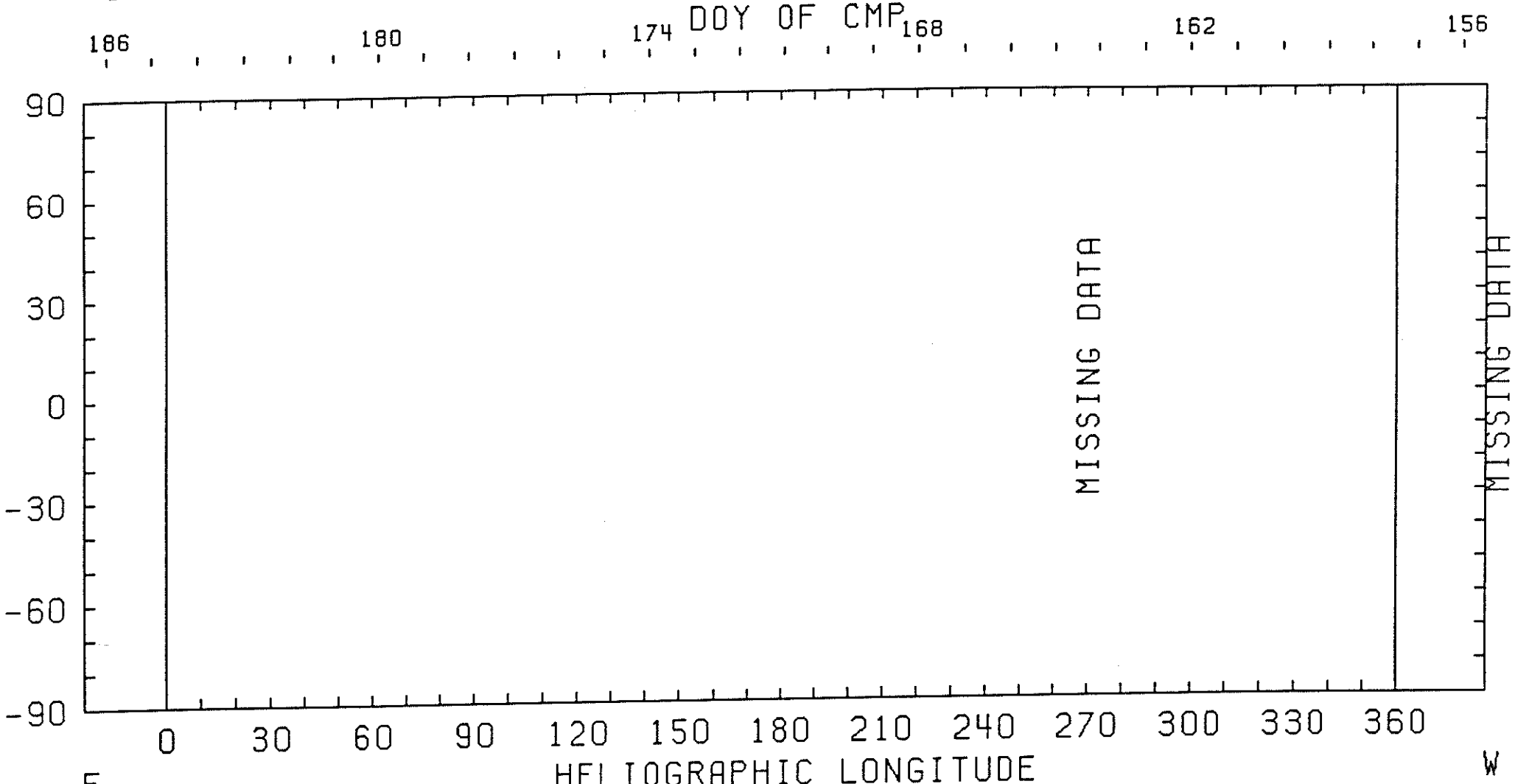


HELIOGRAPHIC LONGITUDE Iave = 2.88μ

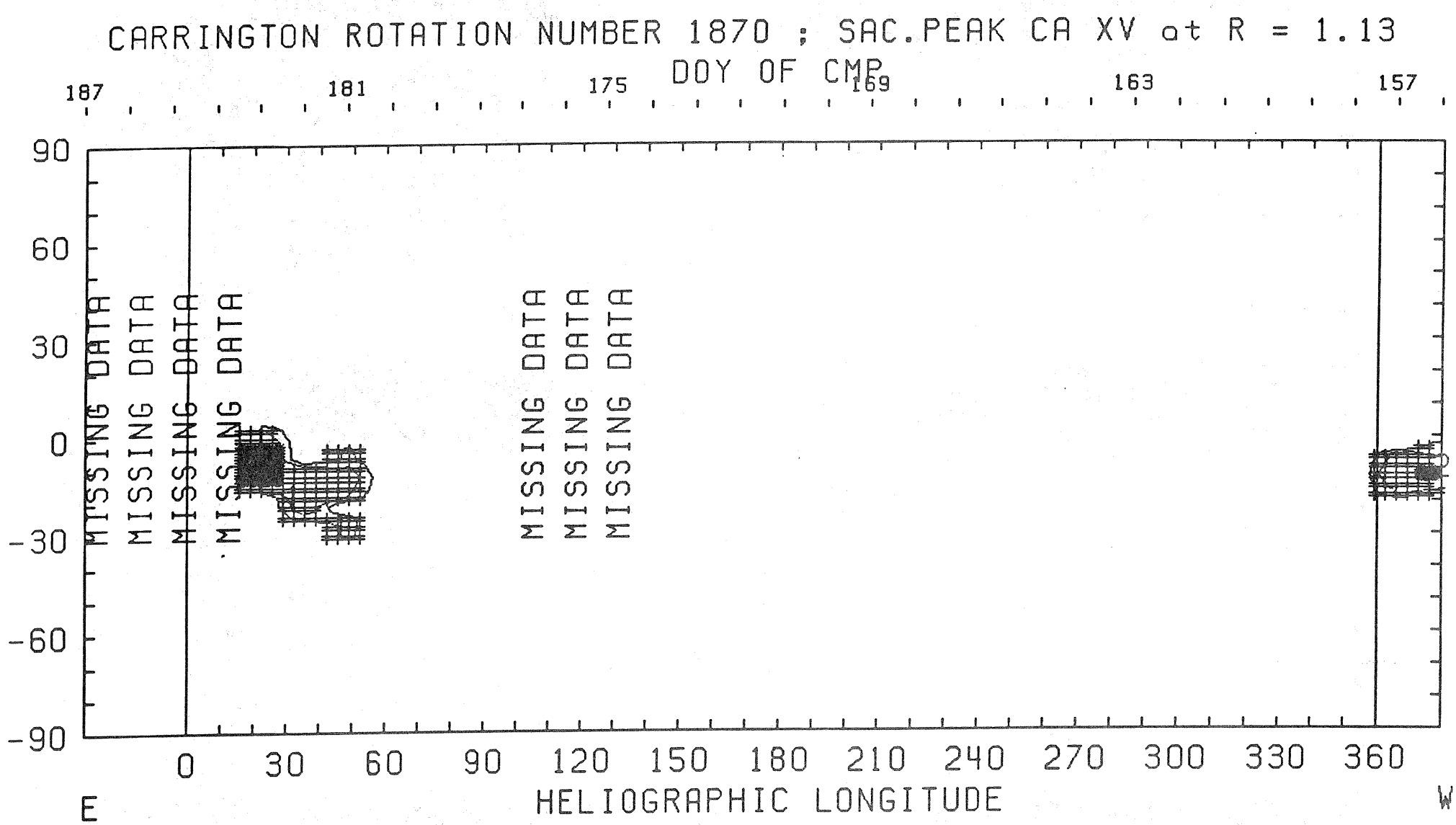
1993 E+W LIMB CONTOURS: 1,2,4,8,16,32,48,64,80 MILLIONTHS OF Io

(27-Aug-93)

CARRINGTON ROTATION NUMBER 1870 ; SAC.PEAK CA XV at R = 1.13



1993 EAST LIMB CONTOURS: YELLOW-MINIMUM, 1, 2, 4, 8 MILLIONTHS OF Io
(27-Aug-93)



1993 WEST LIMB CONTOURS: YELLOW-MINIMUM, 1, 2, 4, 8 MILLIONTHS OF Io

(27-Aug-93)

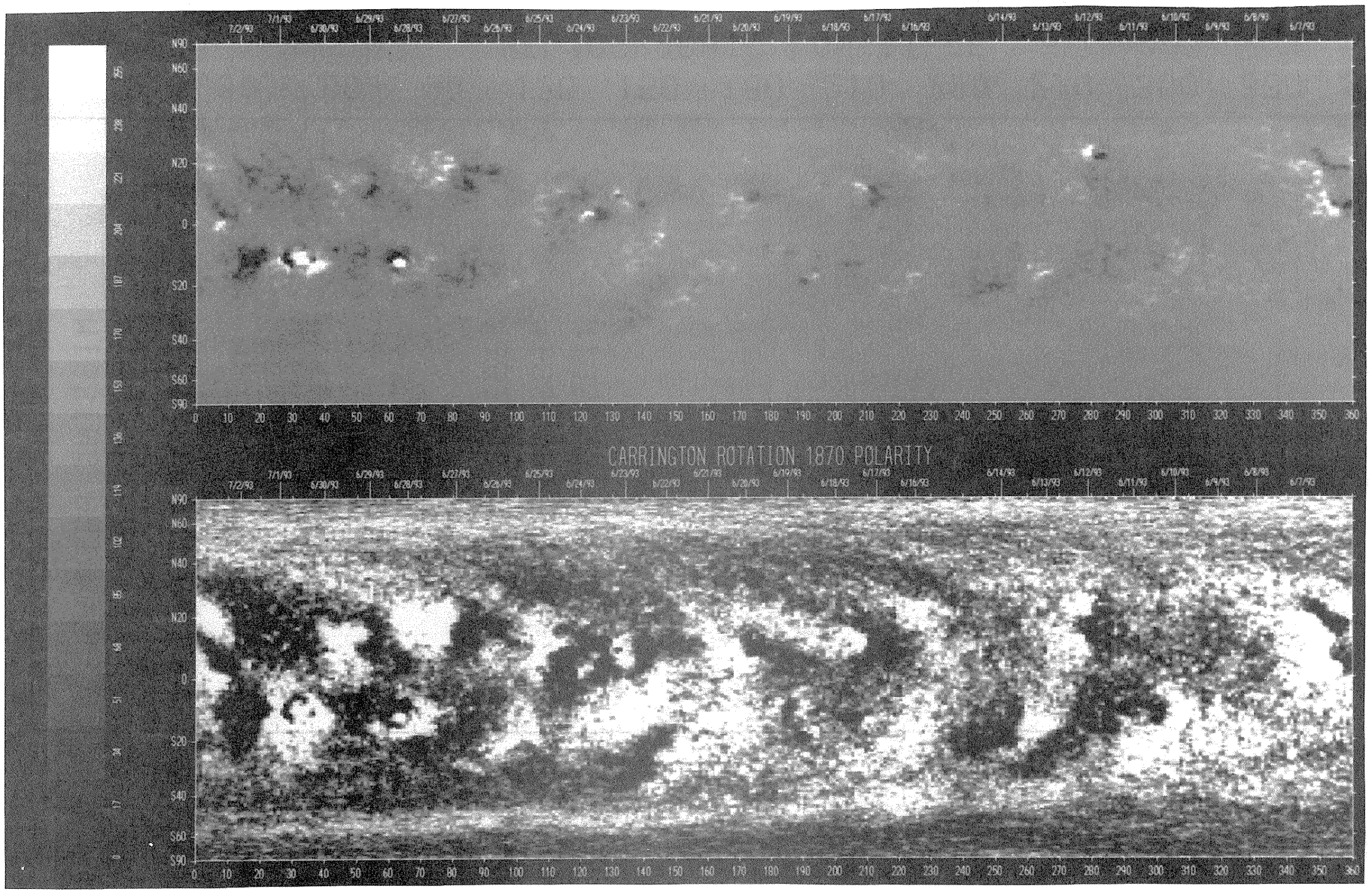
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1870

(6 June to 3 July 1993)

National Solar Observatory/Kitt Peak

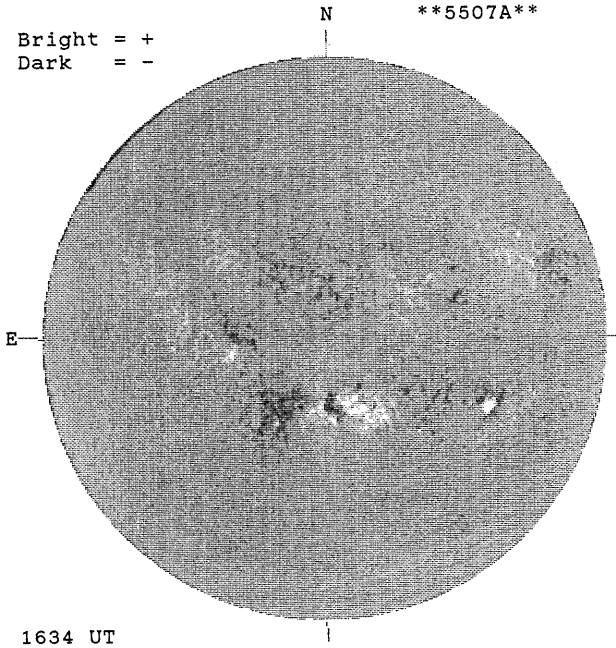
Dates of Observation



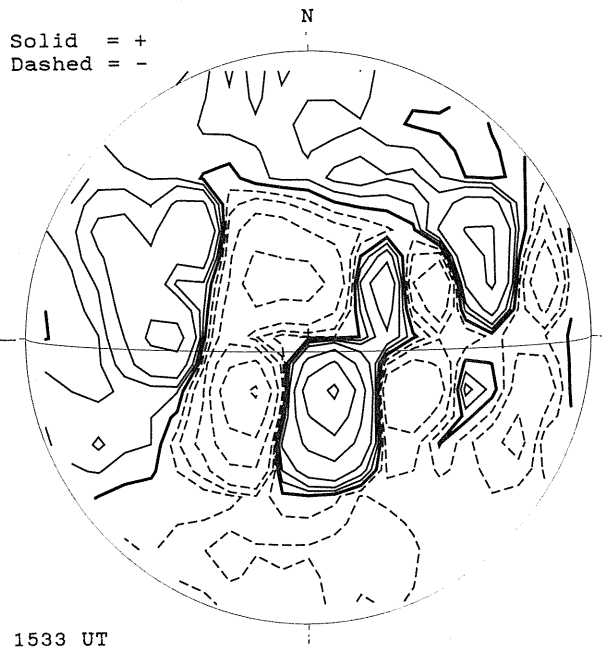
Heliographic Longitude

JULY 1, 1993 (P= -2.68, B_o = 2.88, L_o = 35.39)

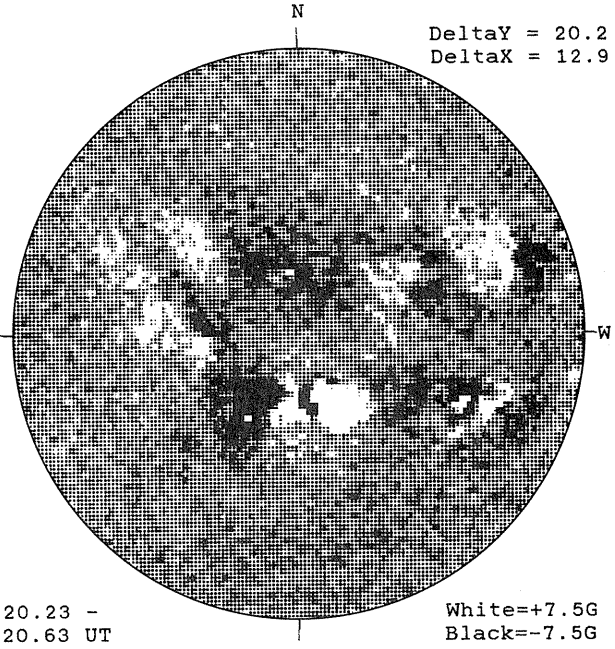
KITT PEAK MAGNETOGRAM



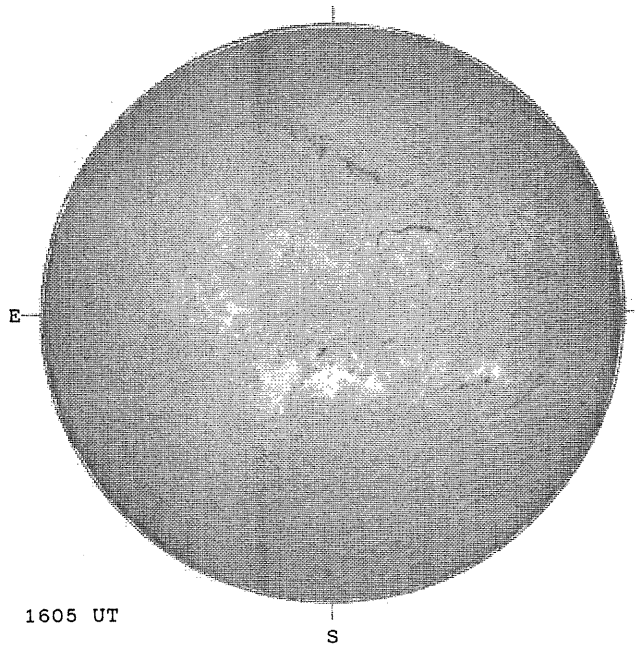
STANFORD MAGNETOGRAM



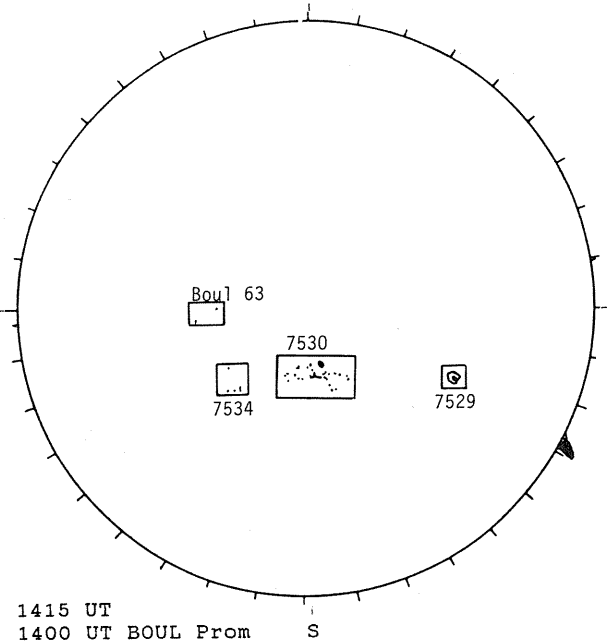
MT. WILSON MAGNETOGRAM



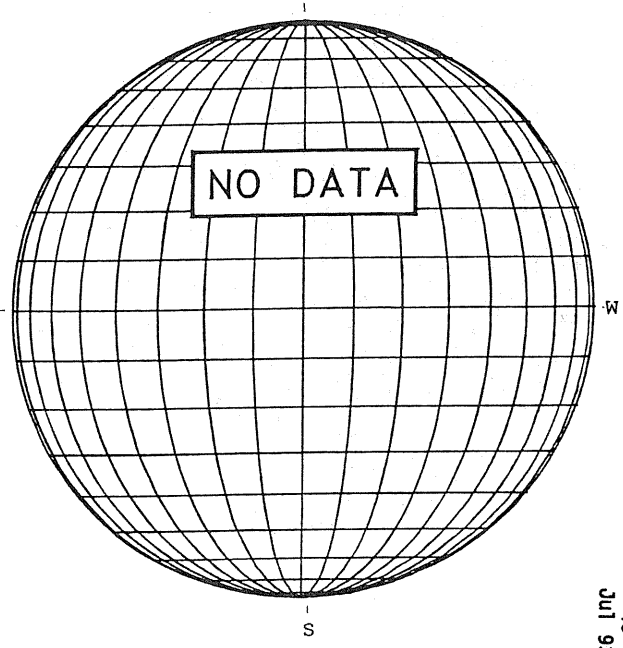
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)

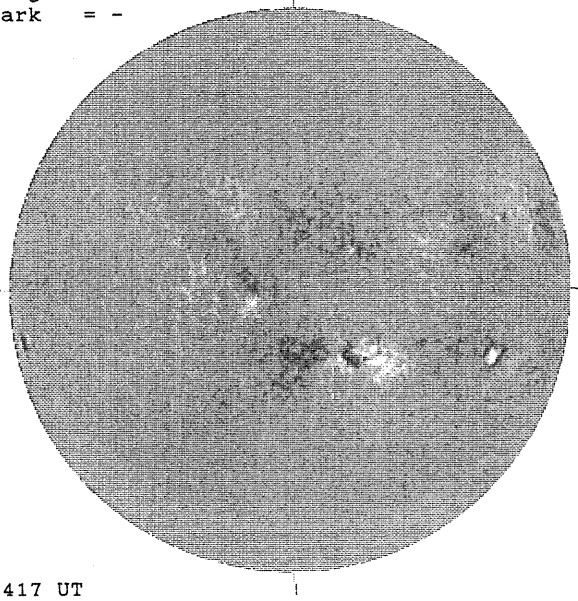


JULY 2, 1993 (P= -2.23, B_o = 2.99, L_o = 22.16)

KITT PEAK MAGNETOGRAM

N **5507A**

Bright = +
Dark = -



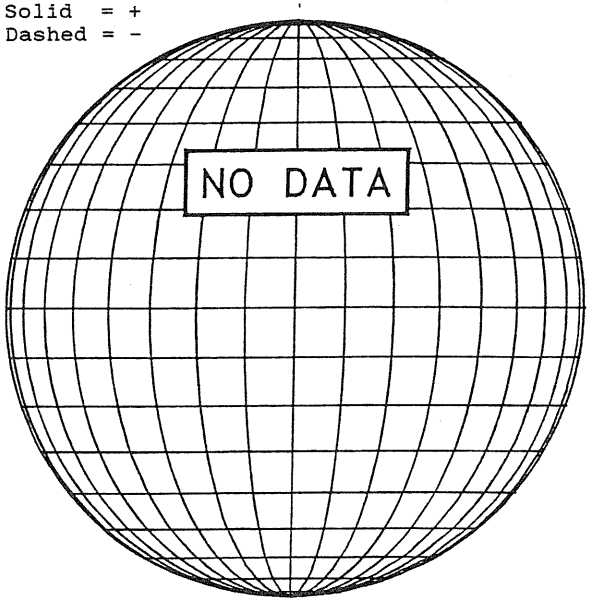
E

1417 UT

STANFORD MAGNETOGRAM

N

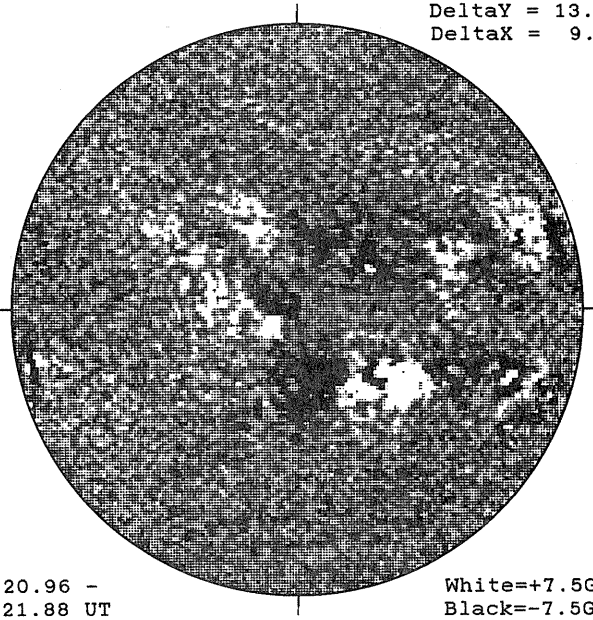
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.0
DeltaX = 9.6

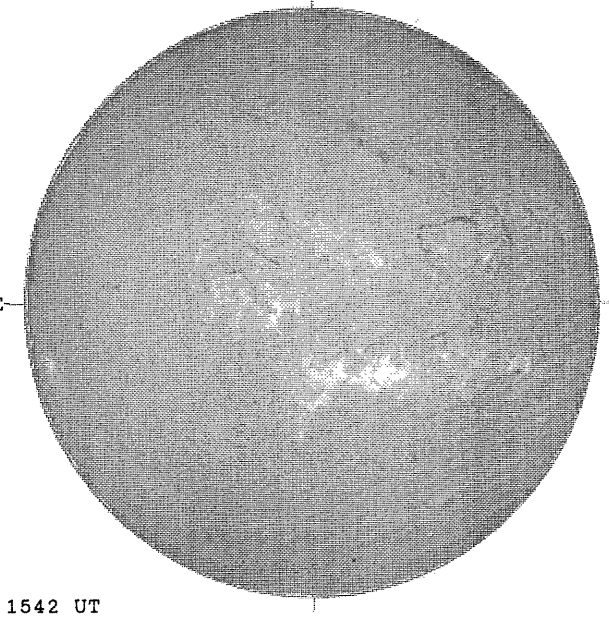


W

20.96 -
21.88 UT

White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA

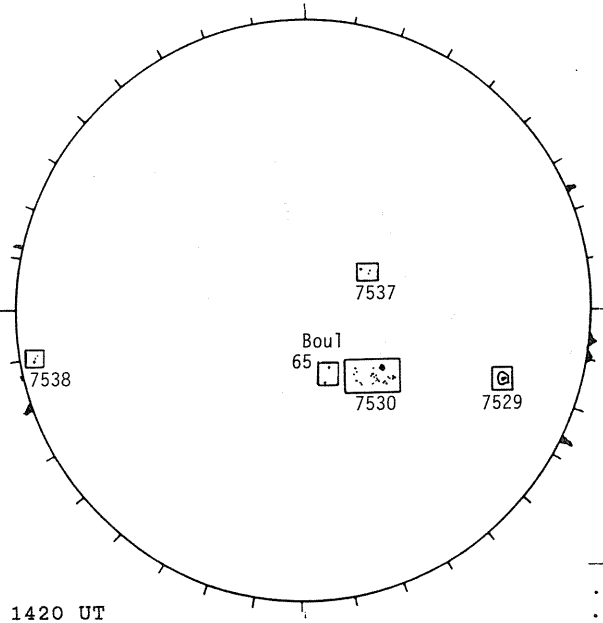


E

1542 UT

S

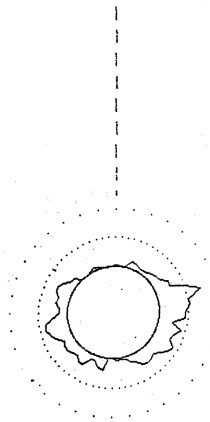
BOULDER SUNSPOT



1420 UT
1405 UT BOUL Prom

S

LOMNICKY PEAK CORONA (1.15 Radii)



W

—— 5303A, 0653 UT
... 50 abs units
. . 100 abs units

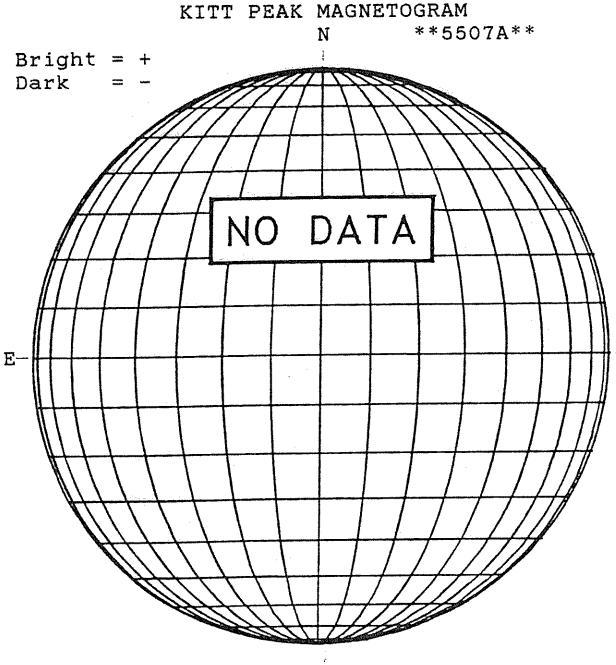
S

JULY 3, 1993 (P= -1.77, B_o = 3.10, L_o = 8.92)

KITT PEAK MAGNETOGRAM

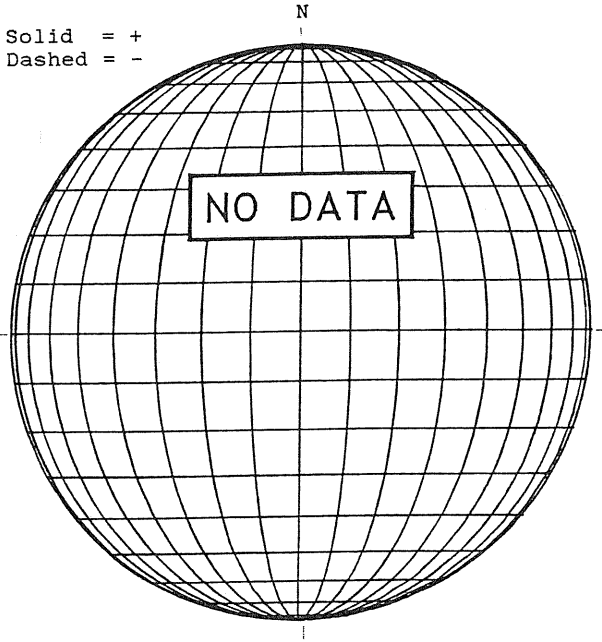
5507A

Bright = +
Dark = -



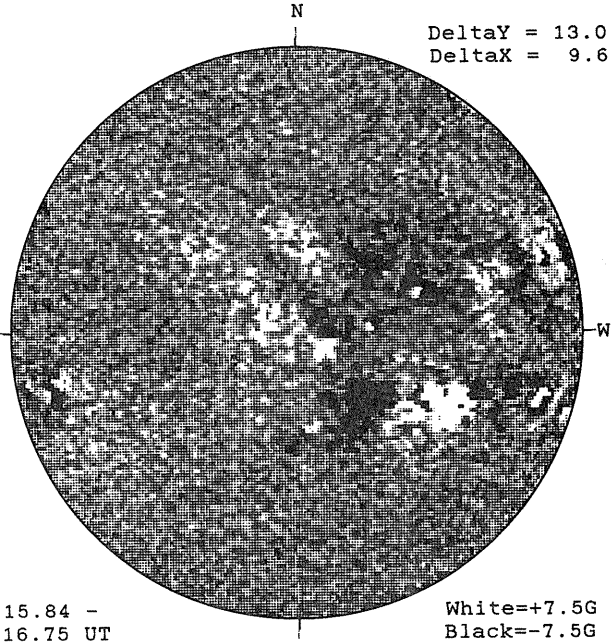
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

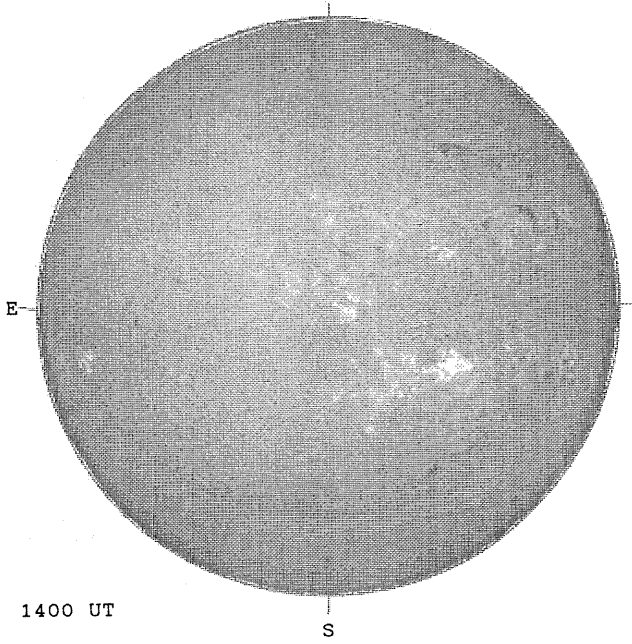
DeltaY = 13.0
DeltaX = 9.6



15.84 -
16.75 UT

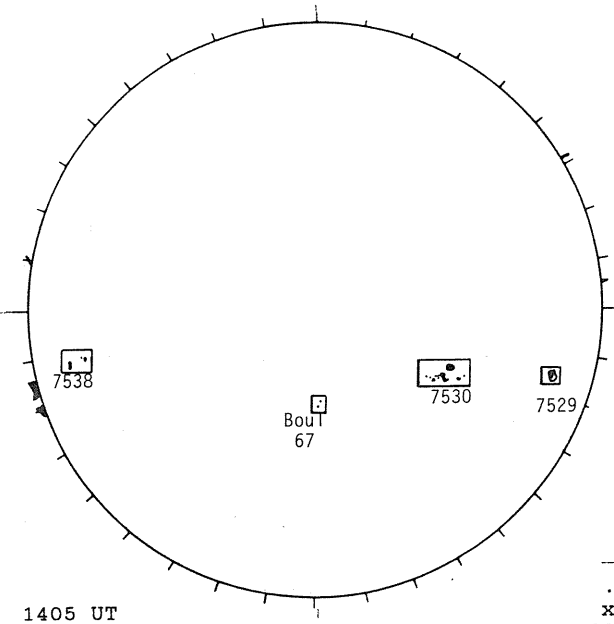
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



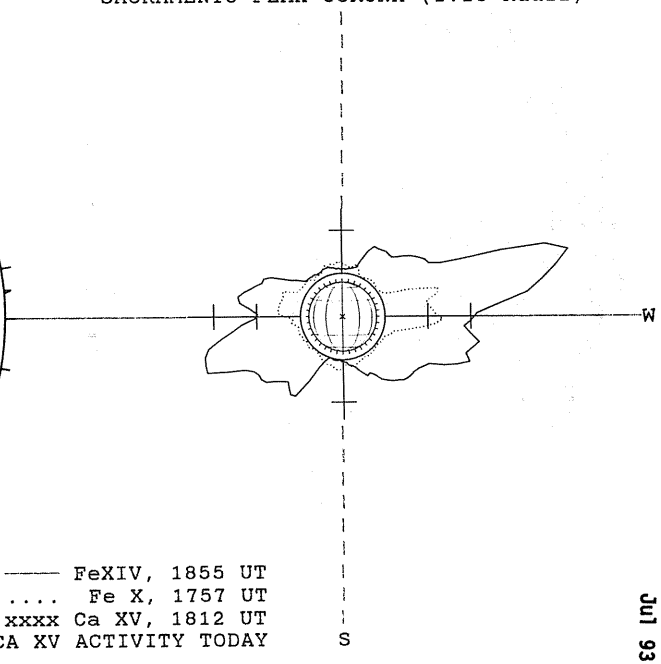
1400 UT

BOULDER SUNSPOT



1405 UT
1350 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



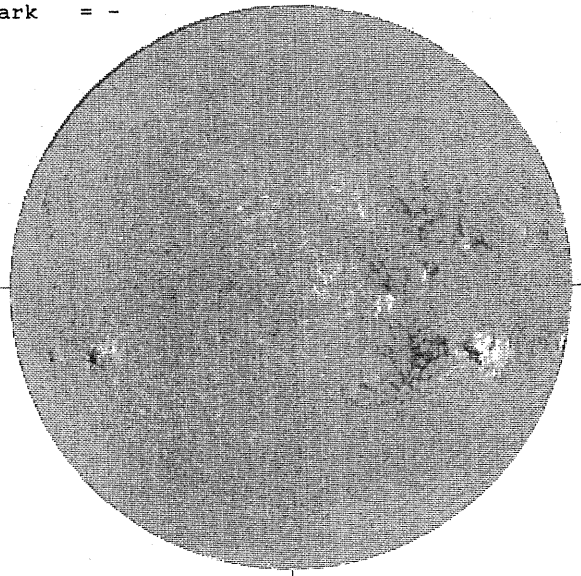
—— FeXIV, 1855 UT
.... Fe X, 1757 UT
xxxx Ca XV, 1812 UT
NO CA XV ACTIVITY TODAY

JULY 4, 1993 (P= -1.32, B_o = 3.20, L_o = 355.69)

KITT PEAK MAGNETOGRAM

N **5507A**

Bright = +
Dark = -



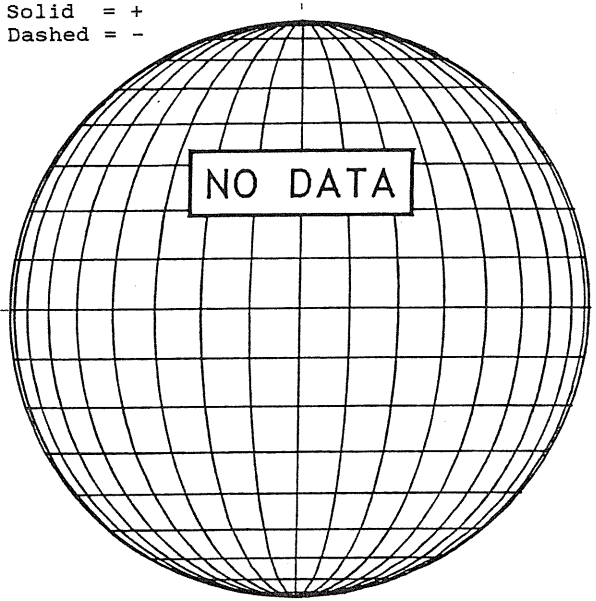
E

1411 UT

STANFORD MAGNETOGRAM

N

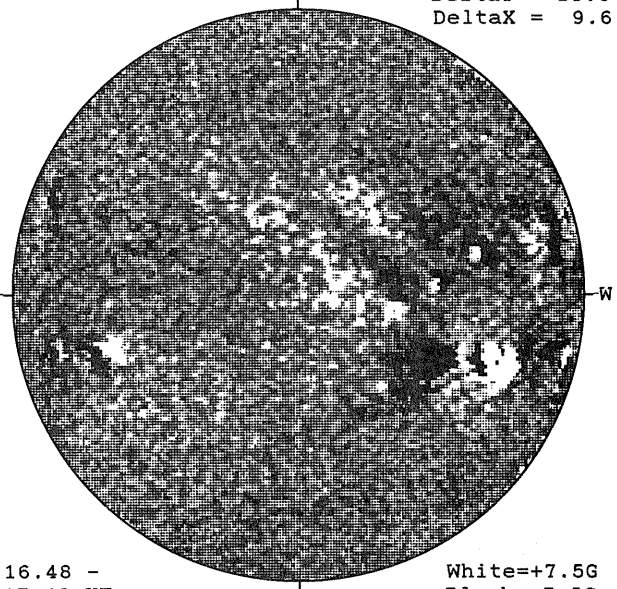
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.0
DeltaX = 9.6

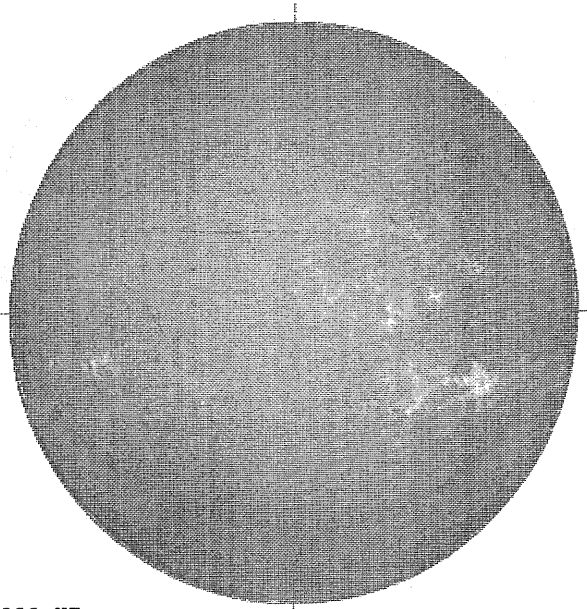


W

16.48 -
17.40 UT

White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA

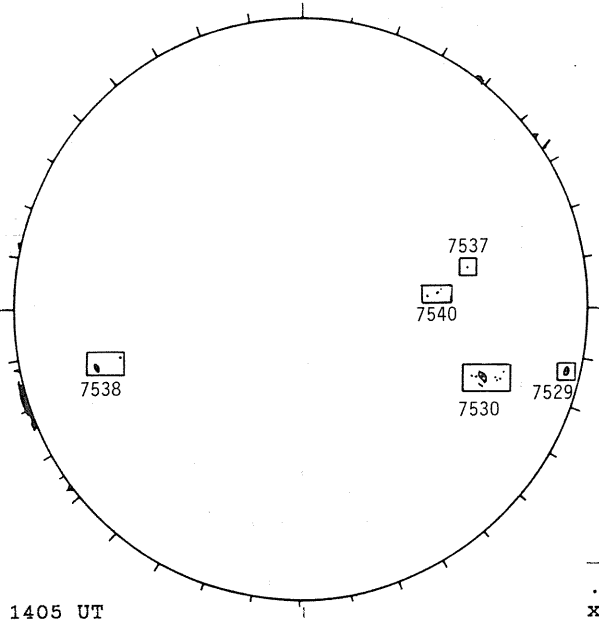


E

1555 UT

S

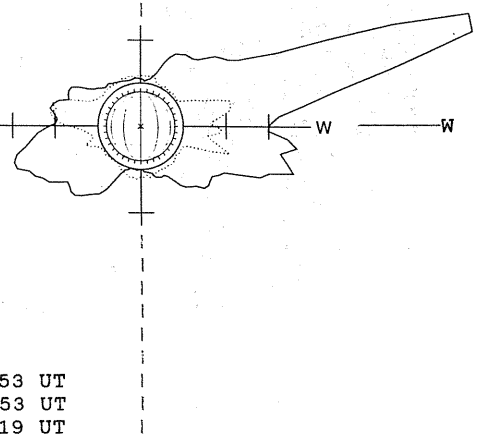
BOULDER SUNSPOT



1405 UT
1350 UT BOUL Prom

S

SACRAMENTO PEAK CORONA (1.15 Radii)



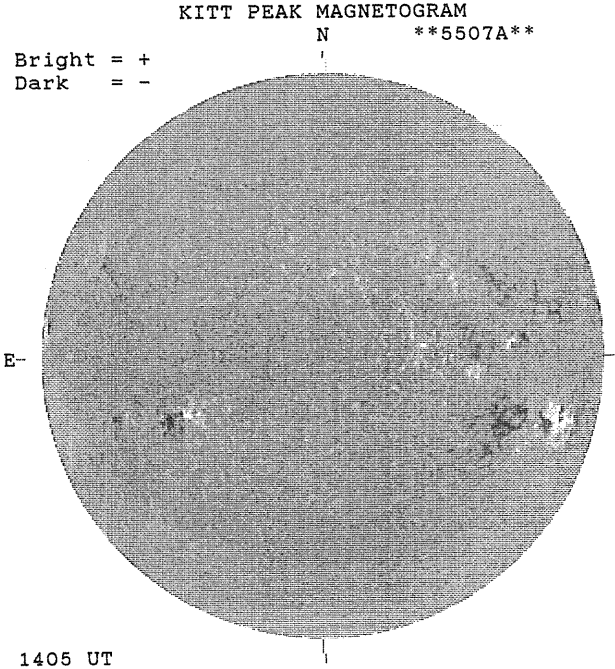
W W

—— FeXIV, 1453 UT
.... Fe X, 1553 UT
xxxx Ca XV, 1519 UT
NO CA XV ACTIVITY TODAY

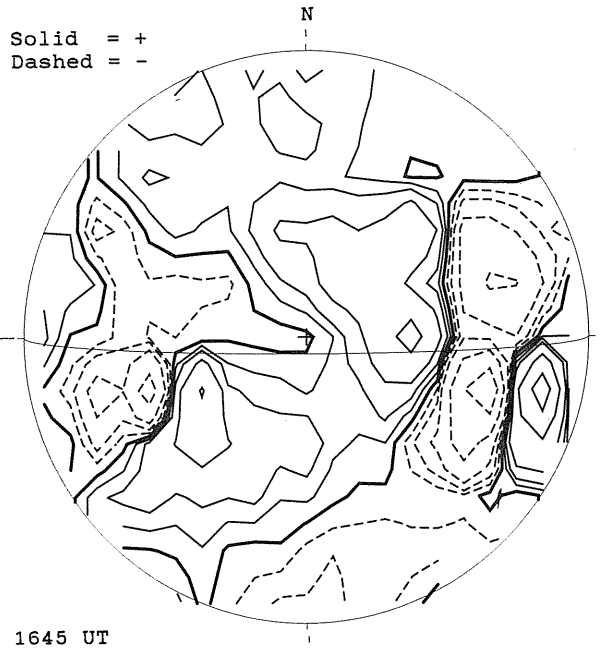
S

JULY 5, 1993 (P= -0.87, B_o = 3.31, L_o = 342.45)

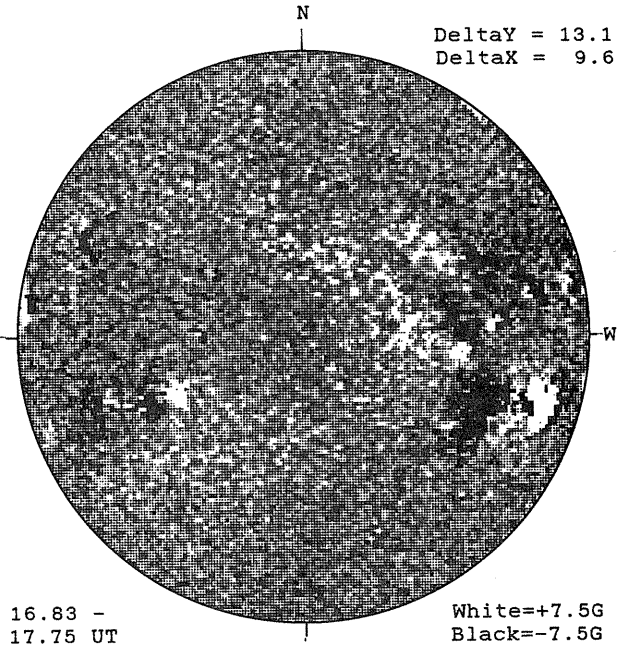
KITT PEAK MAGNETOGRAM



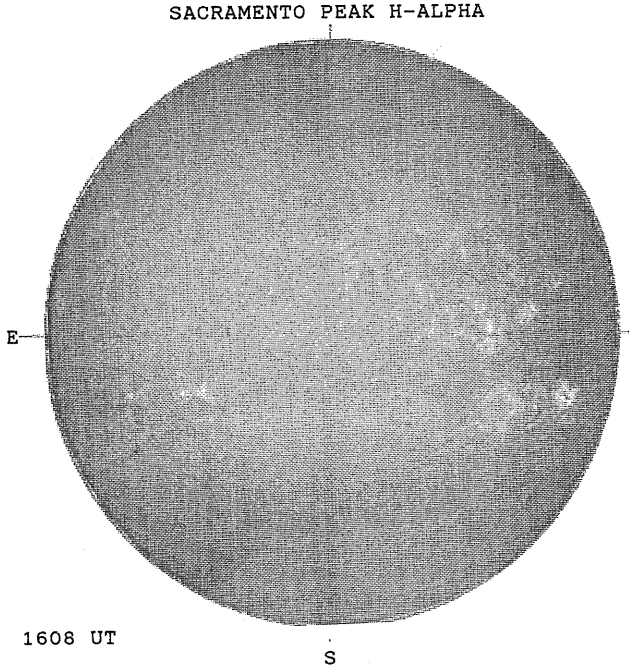
STANFORD MAGNETOGRAM



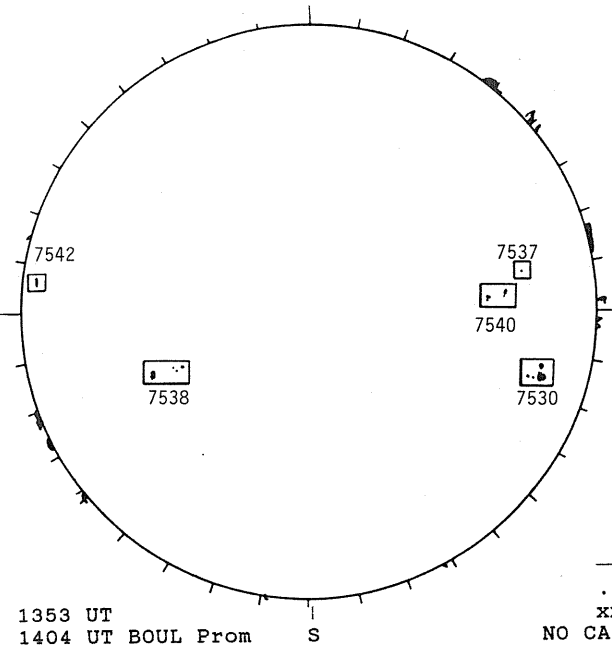
MT. WILSON MAGNETOGRAM



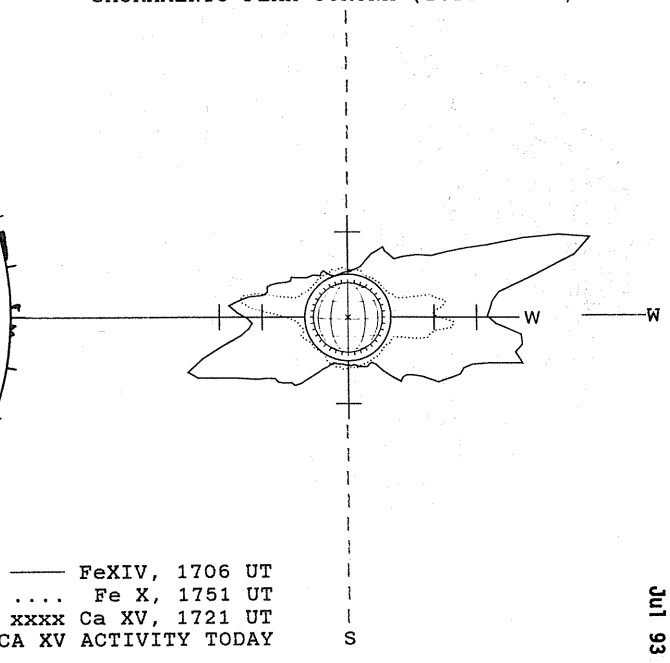
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT

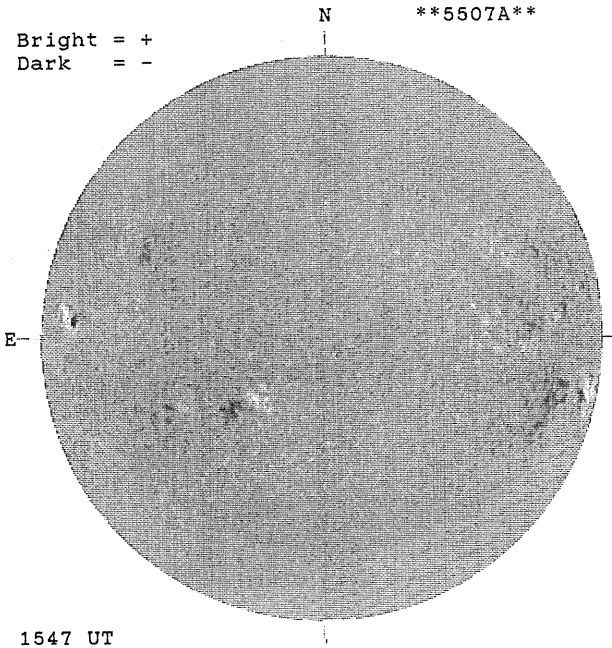


SACRAMENTO PEAK CORONA (1.15 Radii)

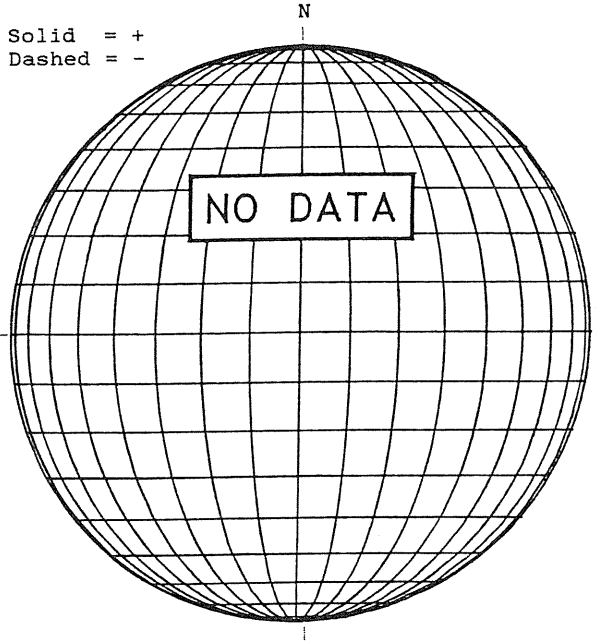


JULY 6, 1993 (P= -0.41, B_o = 3.42, L_o = 329.21)

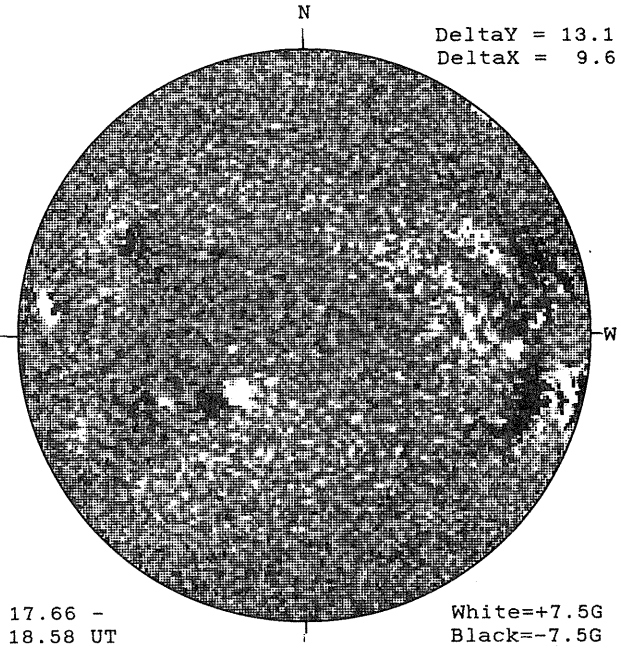
KITT PEAK MAGNETOGRAM



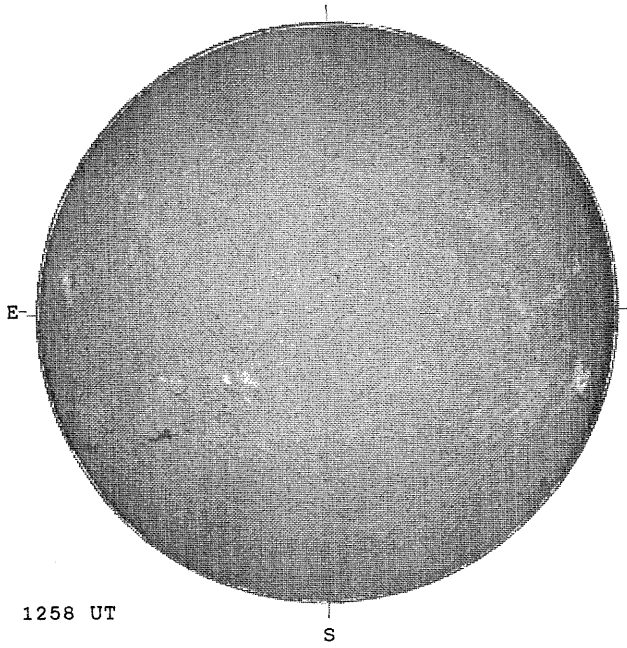
STANFORD MAGNETOGRAM



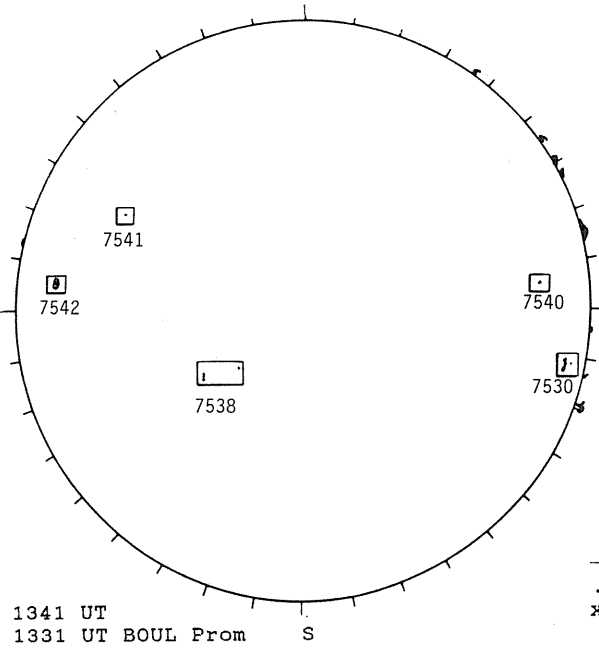
MT. WILSON MAGNETOGRAM



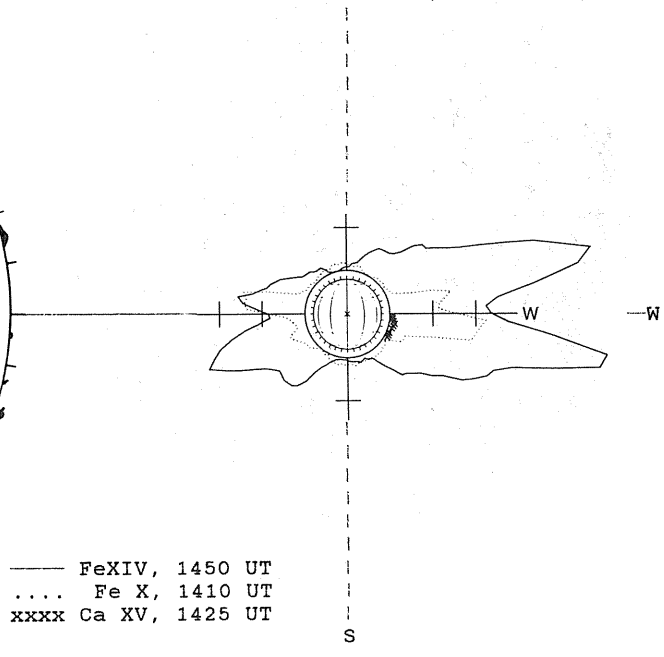
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT

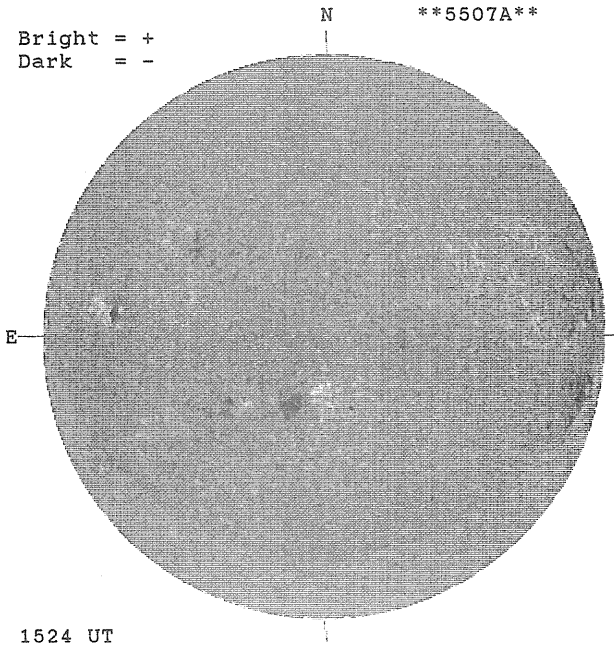


SACRAMENTO PEAK CORONA (1.15 Radii)

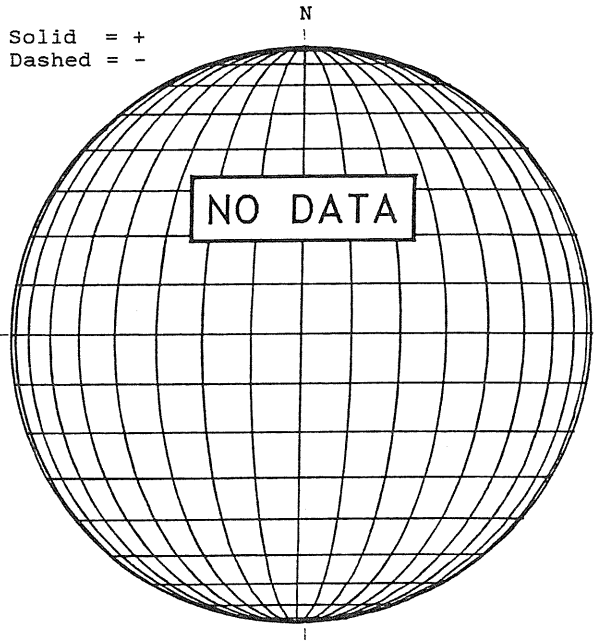


JULY 7, 1993 (P= 0.04 B_o = 3.52, L_o = 315.98)

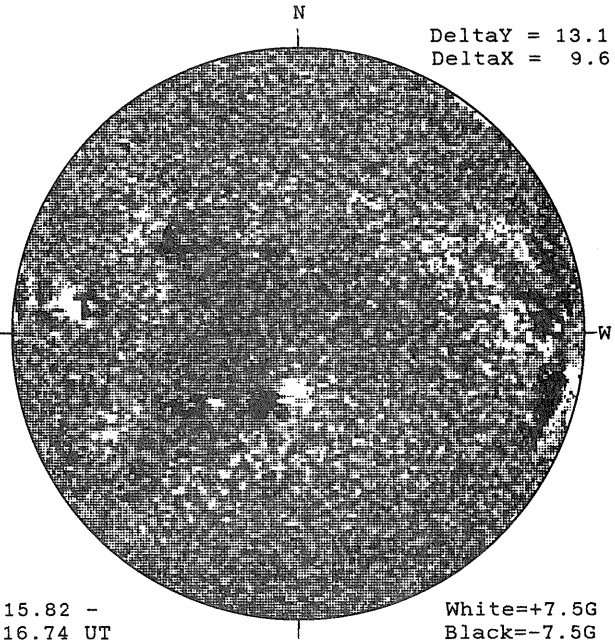
KITT PEAK MAGNETOGRAM



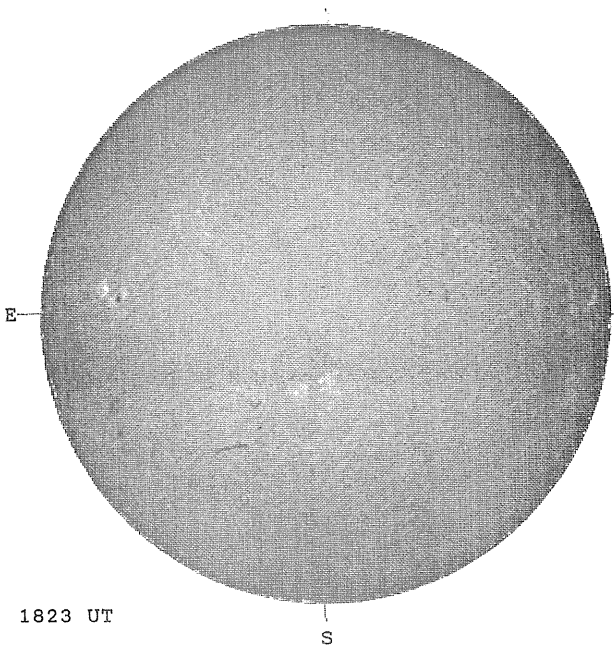
STANFORD MAGNETOGRAM



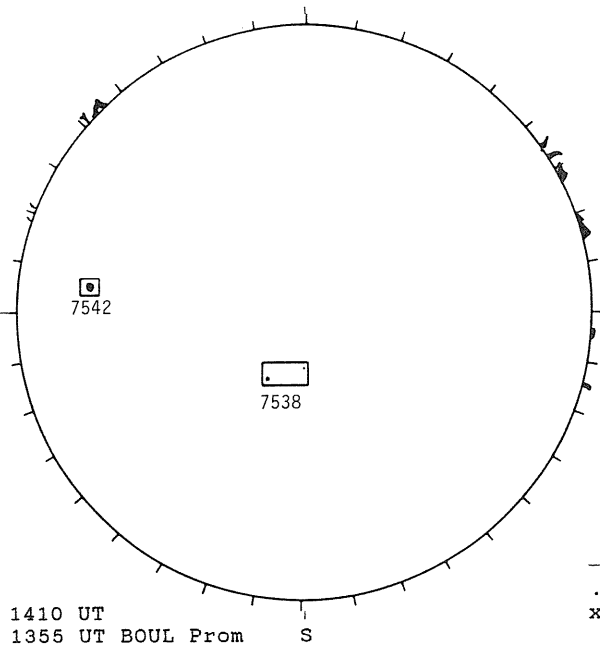
MT. WILSON MAGNETOGRAM



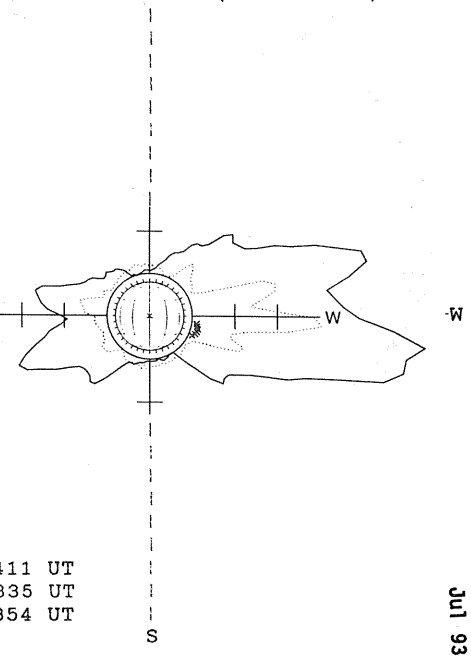
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)

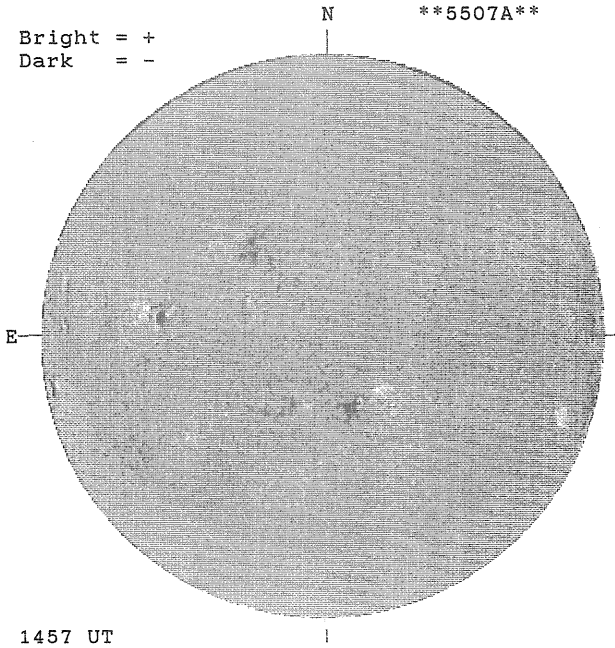


—— FeXIV, 1411 UT
.... Fe X, 1335 UT
xxxx Ca XV, 1354 UT

49
Jul 93

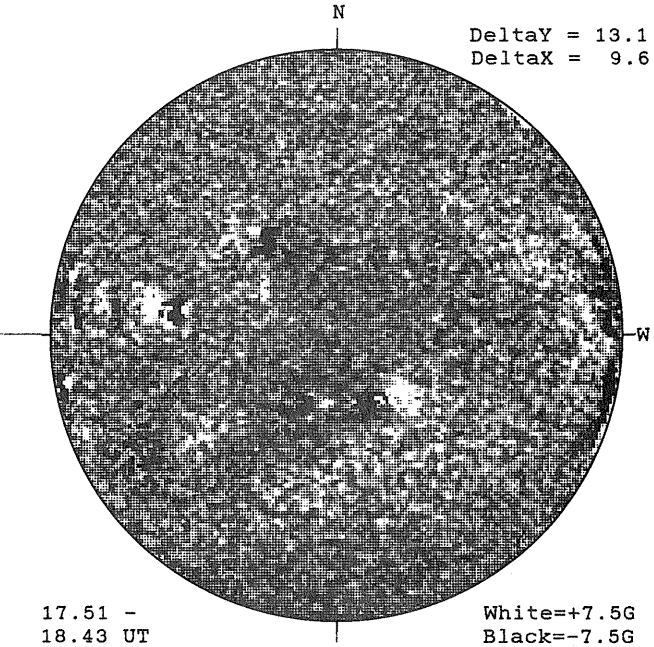
JULY 8, 1993 (P= 0.49, B_o = 3.63, L_o = 302.74)

KITT PEAK MAGNETOGRAM

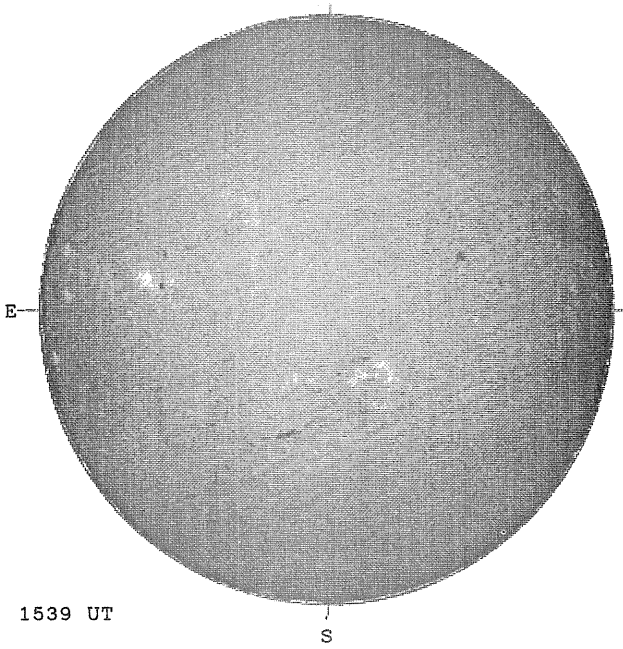


STANFORD MAGNETOGRAM

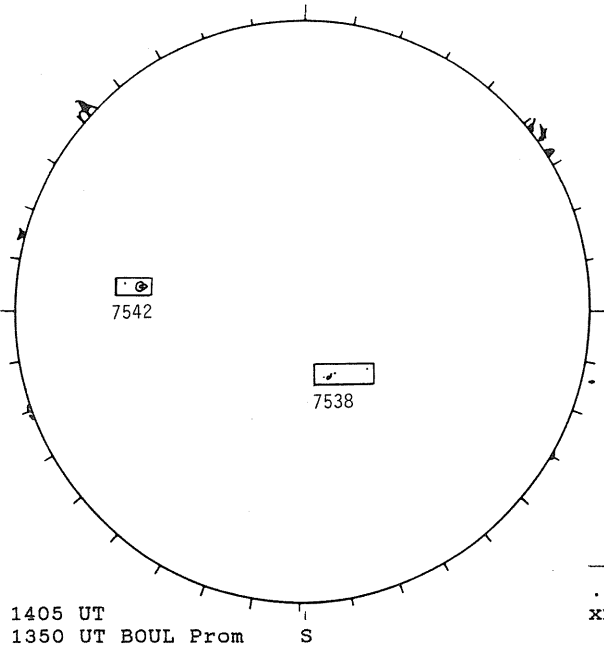
MT. WILSON MAGNETOGRAM



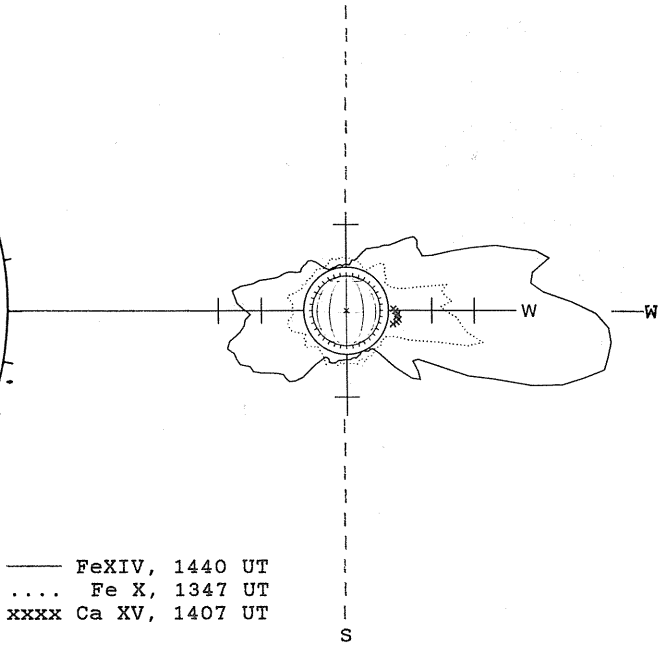
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)

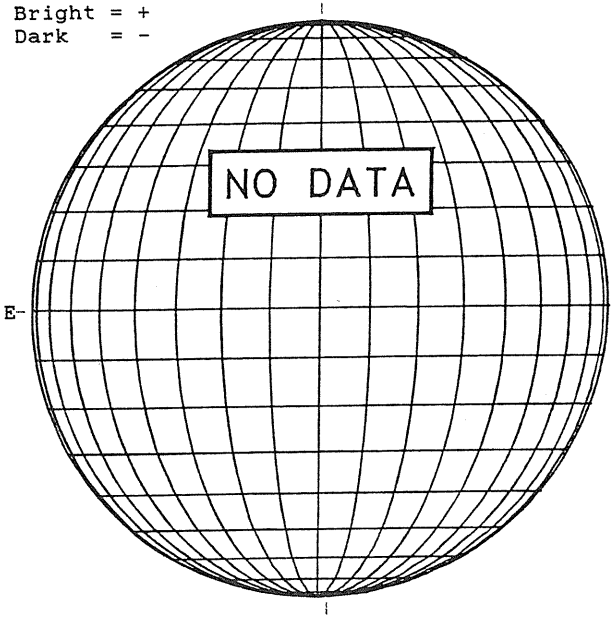


JULY 9, 1993 (P= 0.94 B_o = 3.73, L_o = 289.51)

KITT PEAK MAGNETOGRAM

N **5507A**

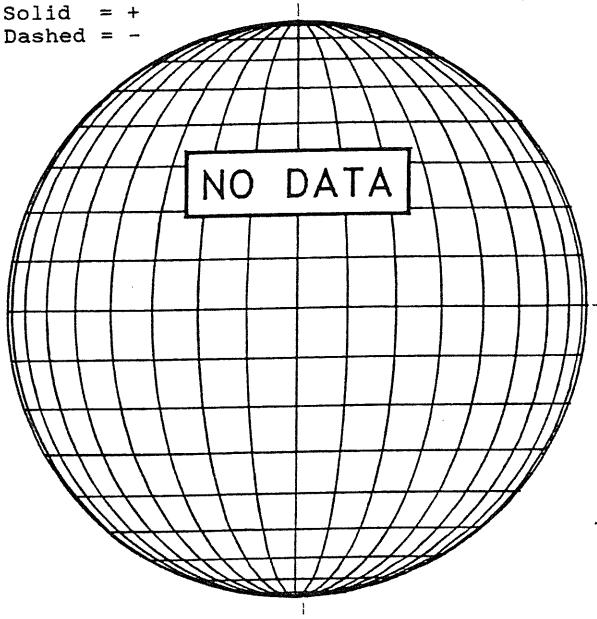
Bright = +
Dark = -



STANFORD MAGNETOGRAM

N

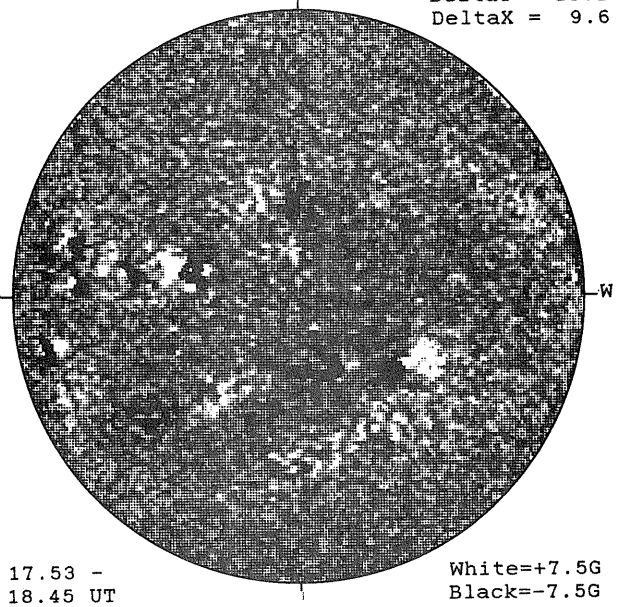
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

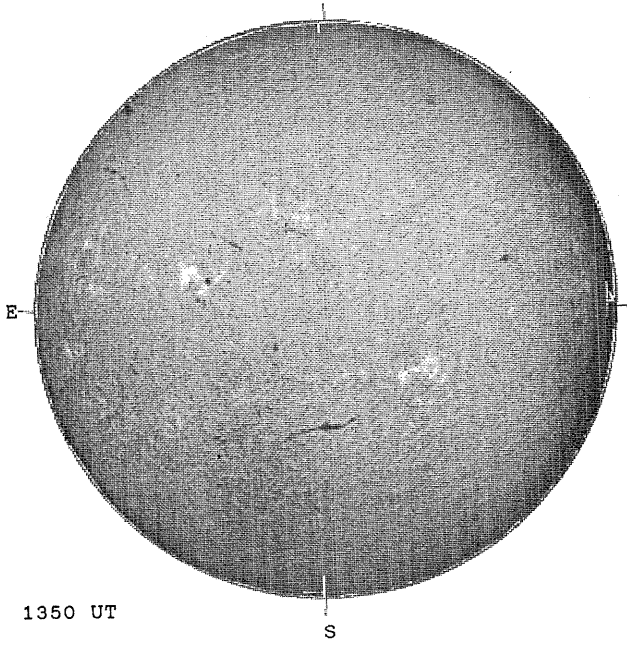
DeltaY = 13.1
DeltaX = 9.6



17.53 -
18.45 UT

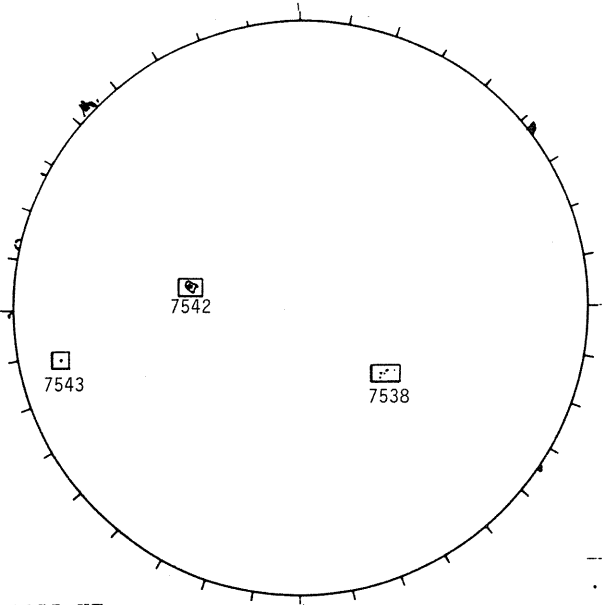
White=+7.5G
Black=-7.5G

BOULDER H-ALPHA



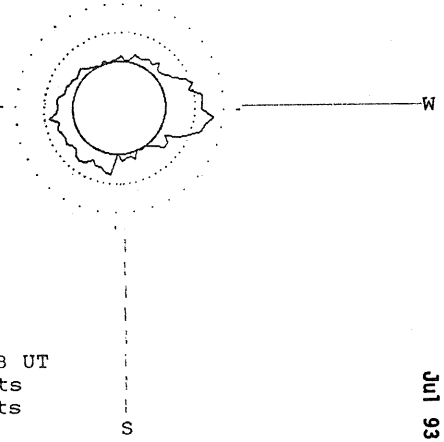
1350 UT

BOULDER SUNSPOT



1355 UT
1350 UT BOUL Prom

LOMNICKY PEAK CORONA (1.15 Radii)



—— 5303A, 0443 UT
... 50 abs units
. . 100 abs units

JULY 10, 1993 (P= 1.39, B_o = 3.83, L_o = 276.27)

KITT PEAK MAGNETOGRAM

N **5507A**

Bright = +
Dark = -

NO DATA

E

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

1845 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

W

17.54 -
18.45 UT

White=+7.5G
Black=-7.5G

BOULDER H-ALPHA

E

1320 UT

S

BOULDER SUNSPOT

7542
7544
7543

1330 UT
1320 UT BOUL Prom

S

LOMNICKY PEAK CORONA (1.15 Radii)

W

—— 5303A, 0424 UT
... 50 abs units
. . 100 abs units

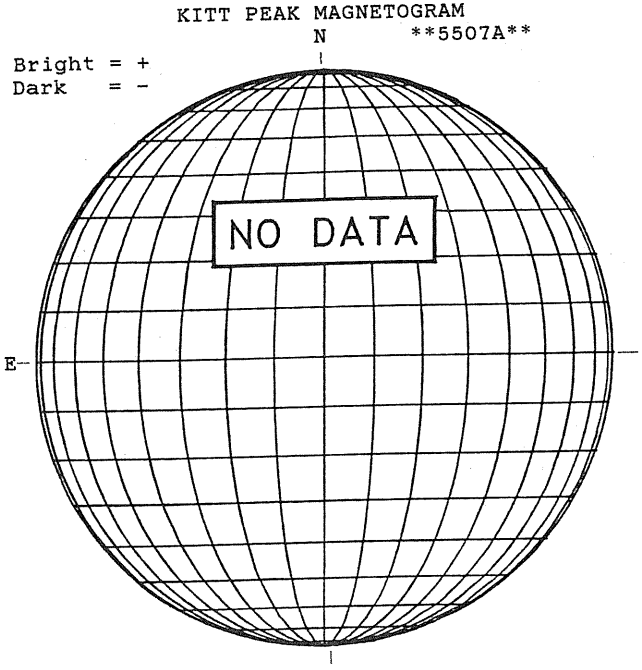
S

JULY 11, 1993 (P= 1.84, B_o = 3.93, L_o = 263.04)

KITT PEAK MAGNETOGRAM

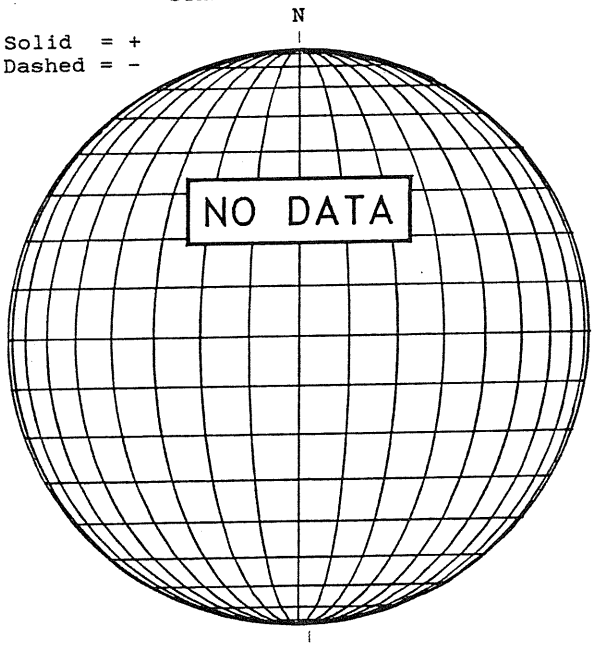
5507A

Bright = +
Dark = -



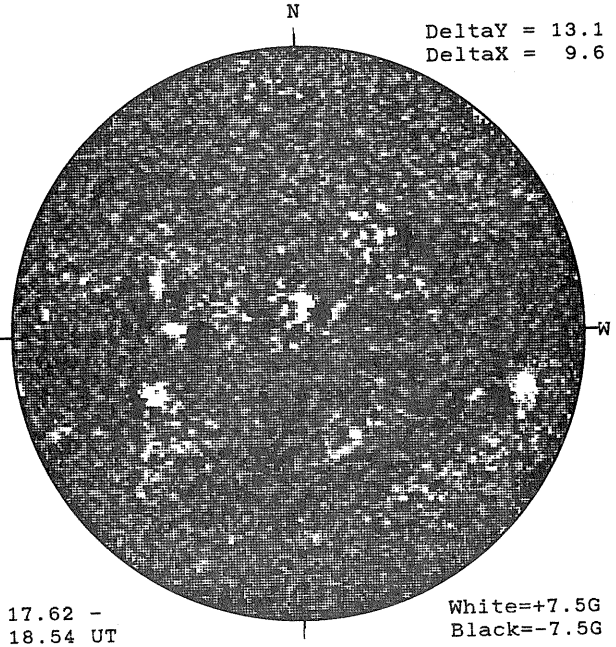
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

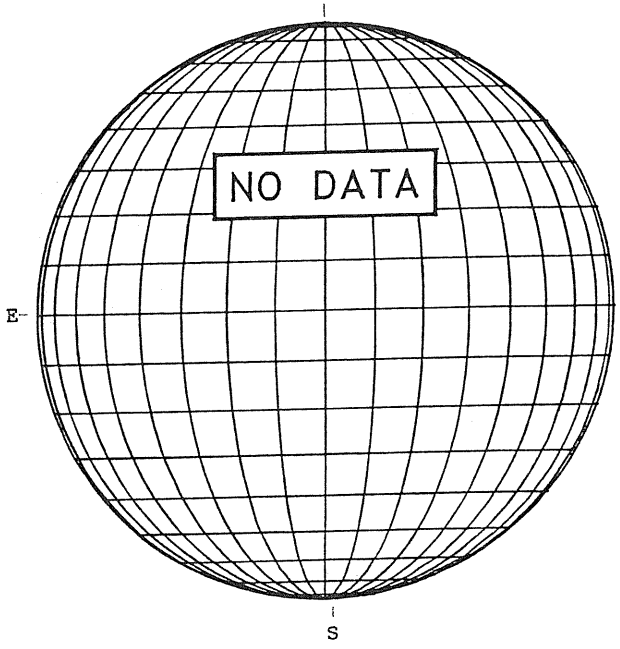
DeltaY = 13.1
DeltaX = 9.6



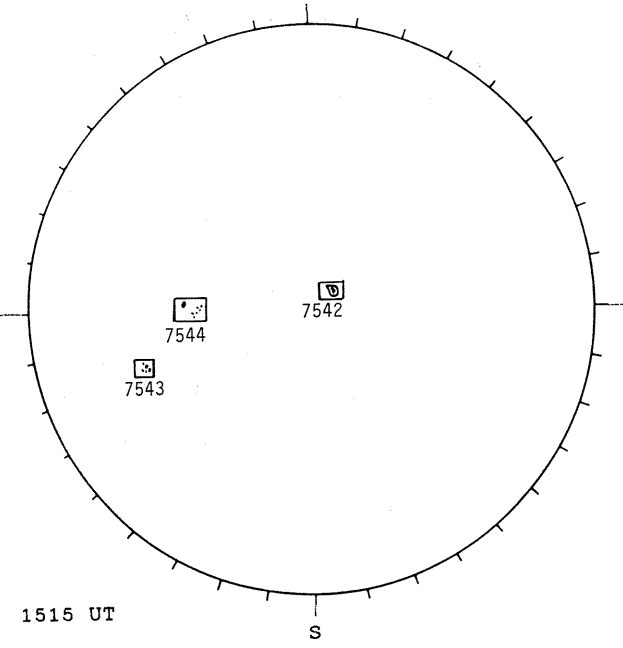
17.62 -
18.54 UT

White=+7.5G
Black=-7.5G

BOULDER H-ALPHA

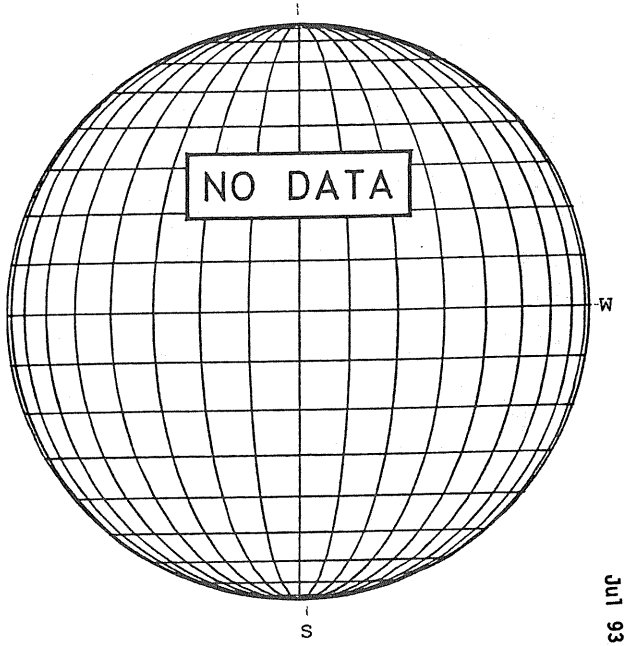


HOLLOMAN SUNSPOT



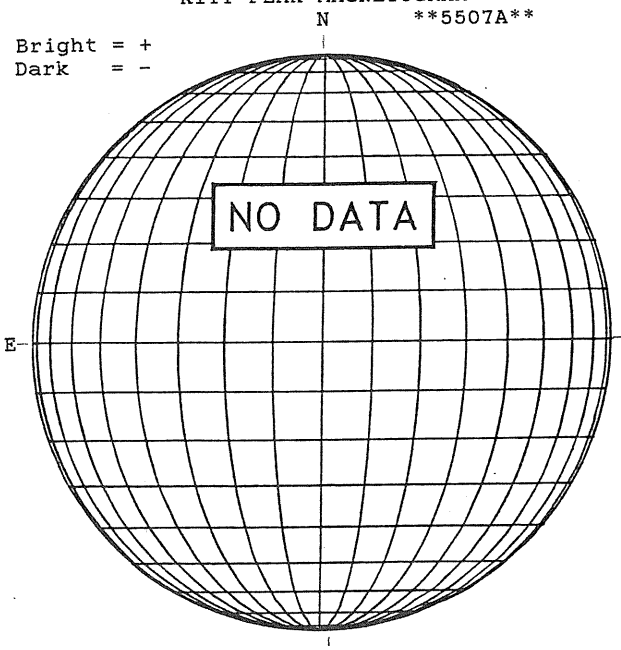
1515 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

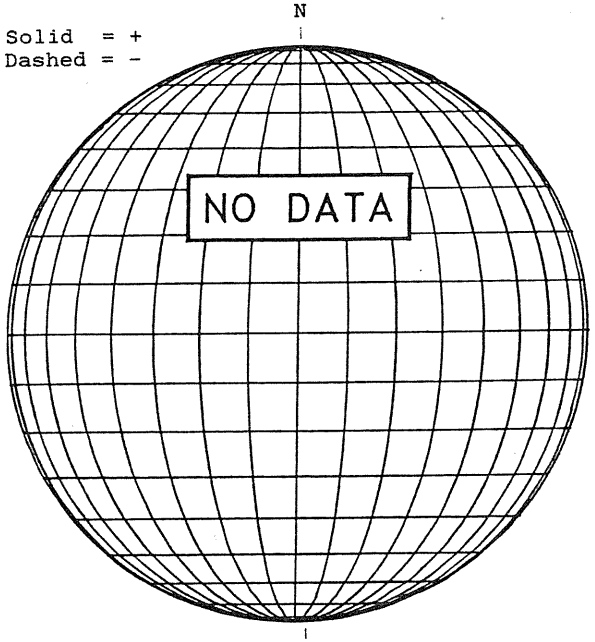


JULY 12, 1993 (P= 2.29, B_o = 4.03, L_o = 249.81)

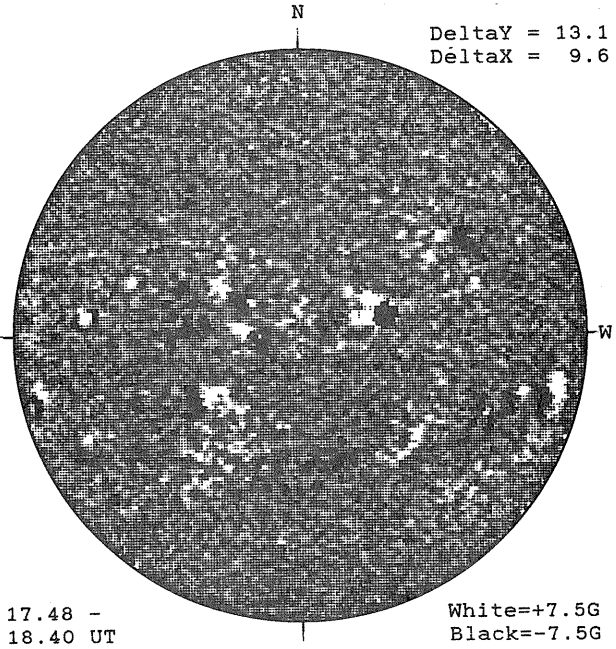
KITT PEAK MAGNETOGRAM
5507A



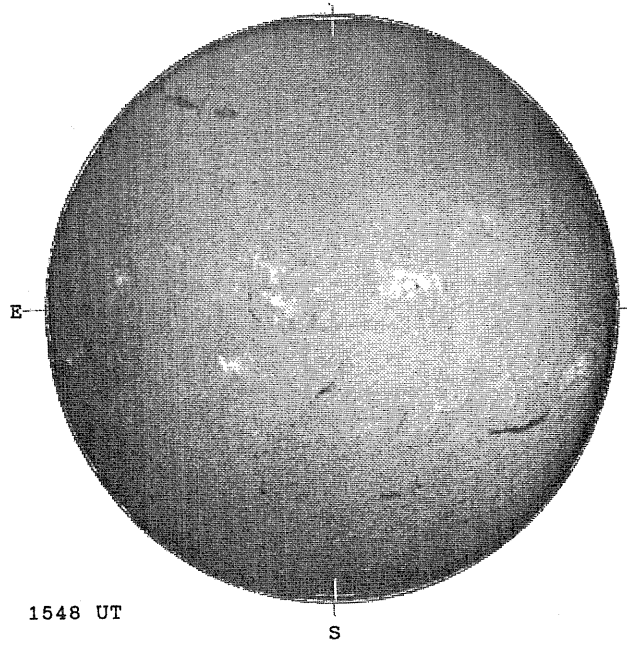
STANFORD MAGNETOGRAM



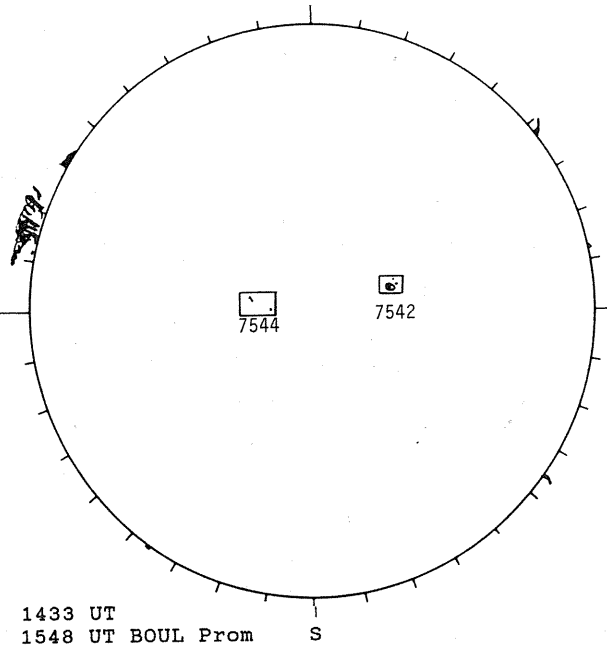
MT. WILSON MAGNETOGRAM



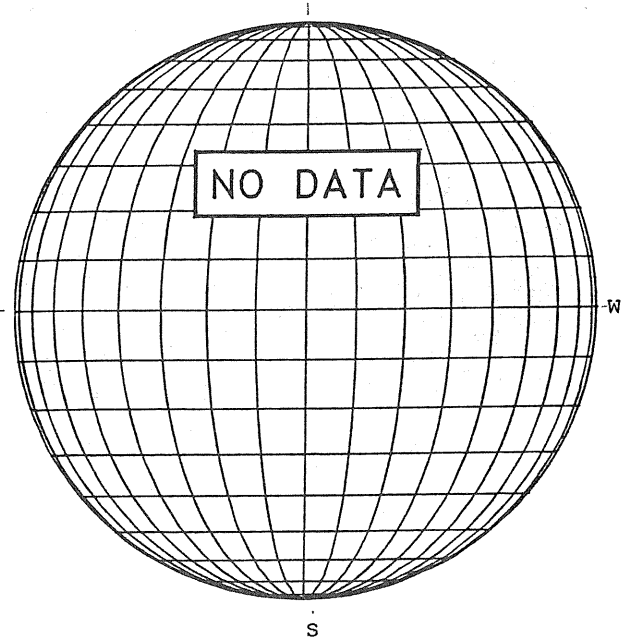
BOULDER H-ALPHA



BOULDER SUNSPOT

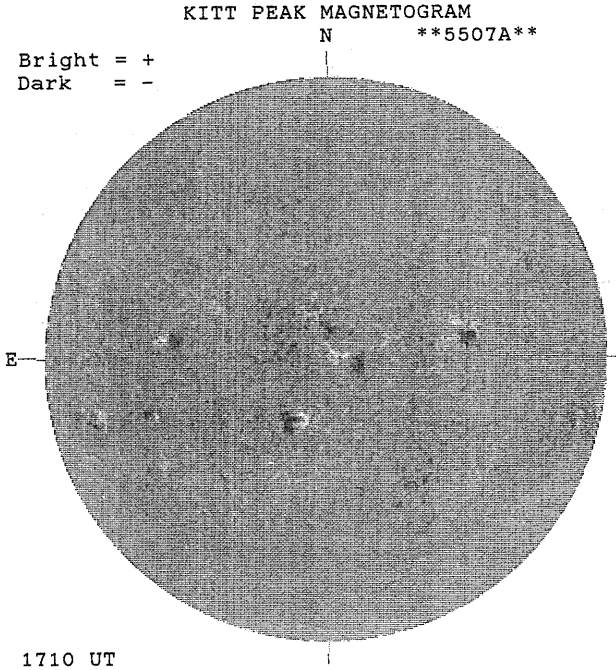


SACRAMENTO PEAK CORONA (1.15 Radii)

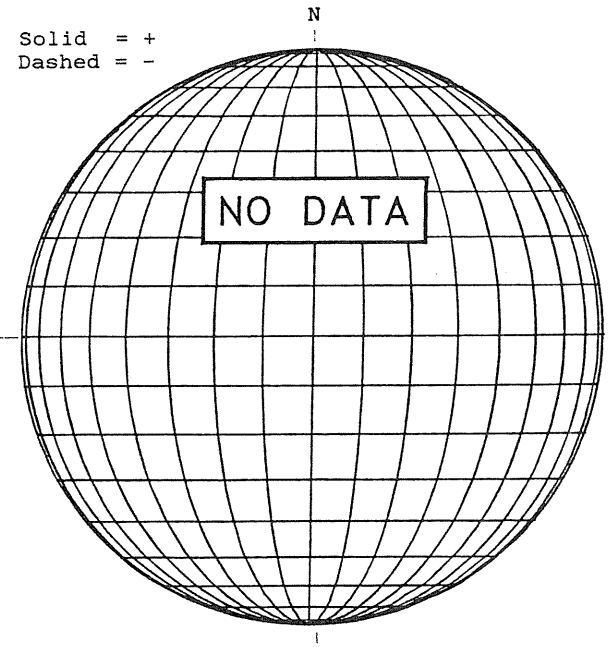


JULY 13, 1993 (P= 2.74, B_o = 4.13, L_o = 236.57)

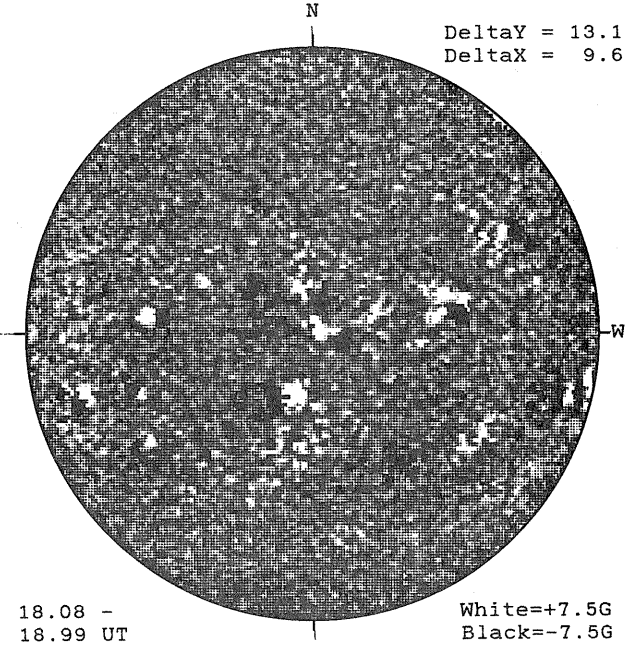
KITT PEAK MAGNETOGRAM



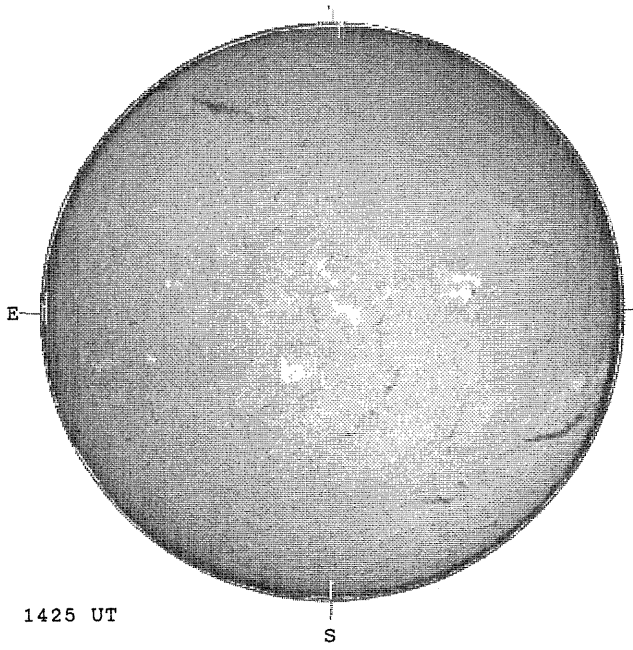
STANFORD MAGNETOGRAM



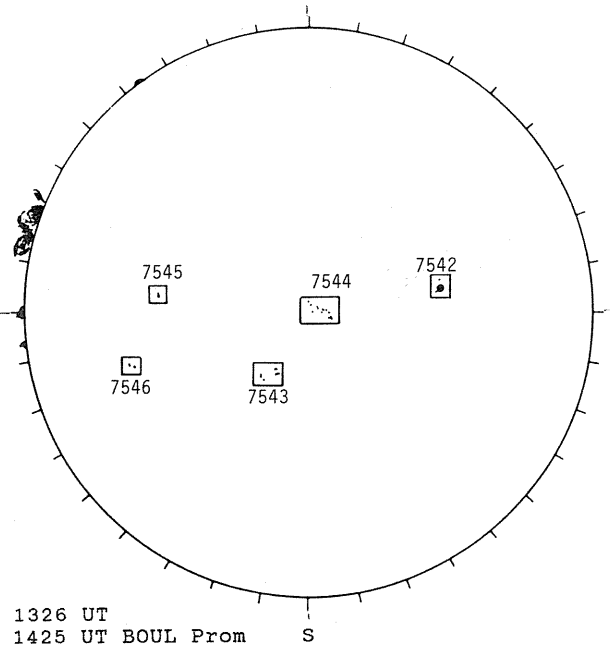
MT. WILSON MAGNETOGRAM



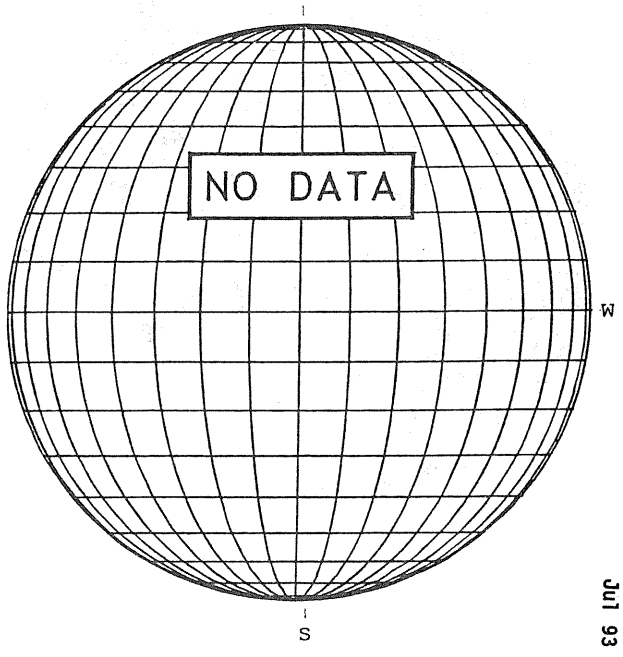
BOULDER H-ALPHA



BOULDER SUNSPOT



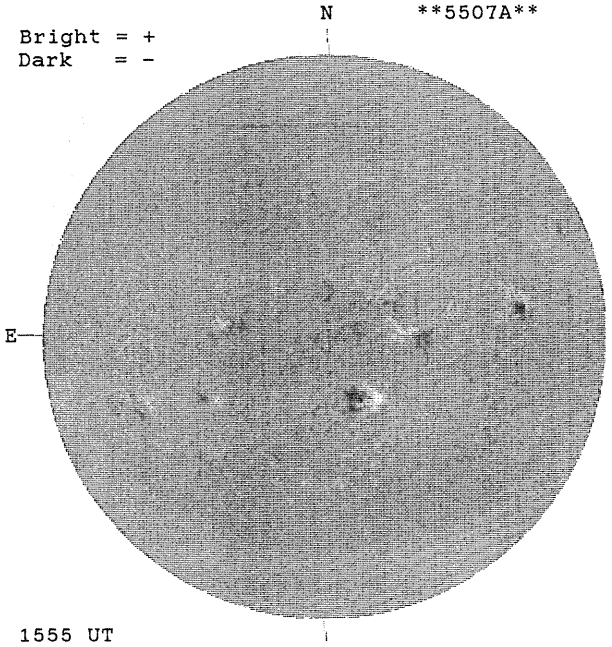
SACRAMENTO PEAK CORONA (1.15 Radii)



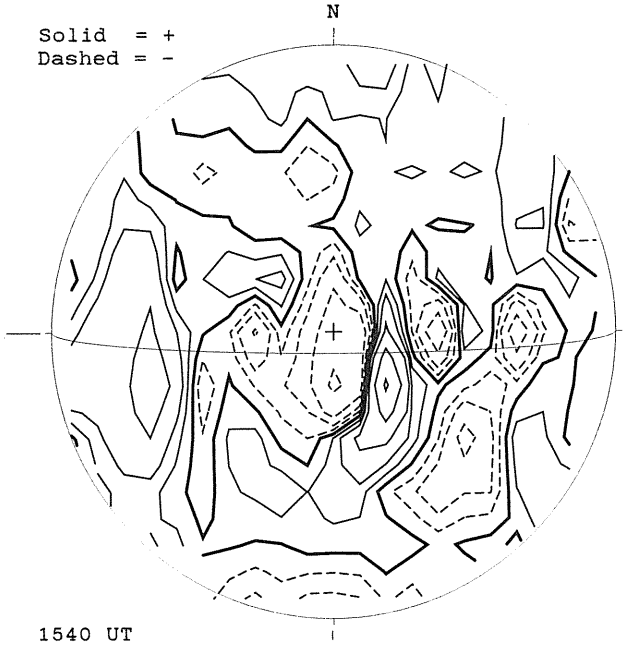
55
Jul 93

JULY 14, 1993 (P= 3.19, B_o = 4.23, L_o = 223.34)

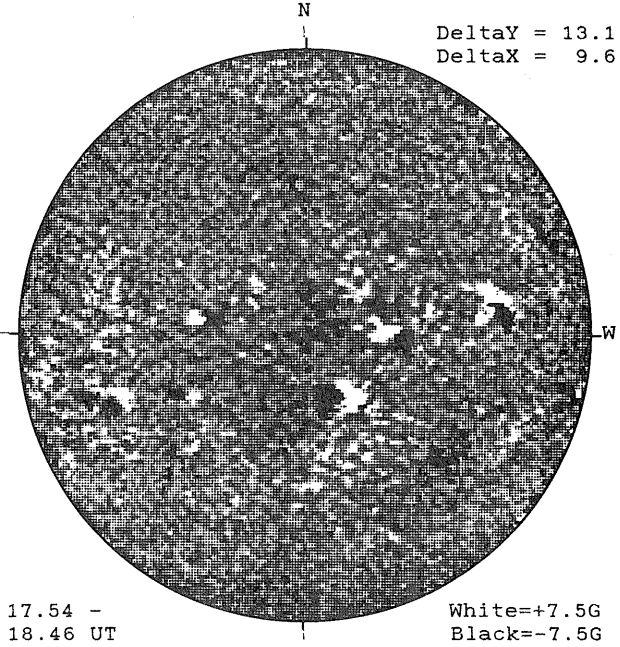
KITT PEAK MAGNETOGRAM



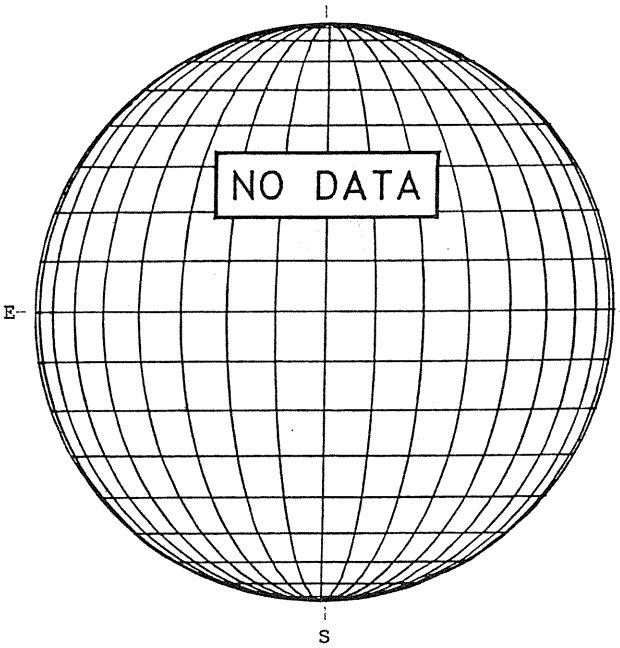
STANFORD MAGNETOGRAM



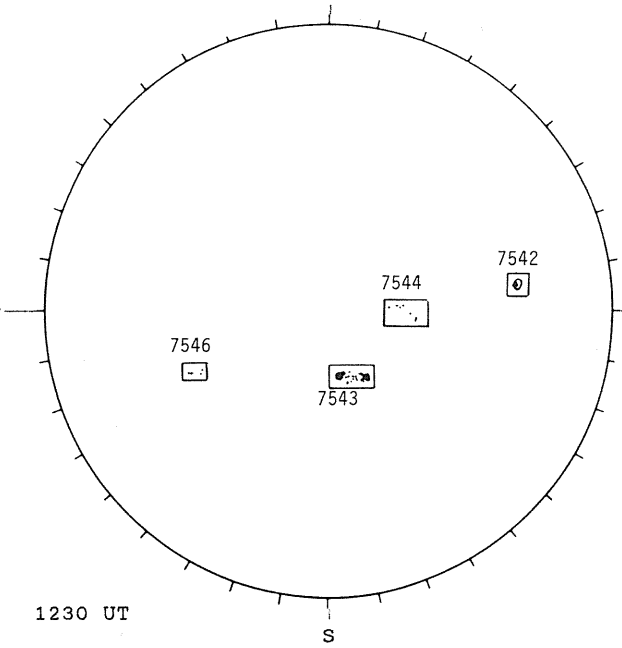
MT. WILSON MAGNETOGRAM



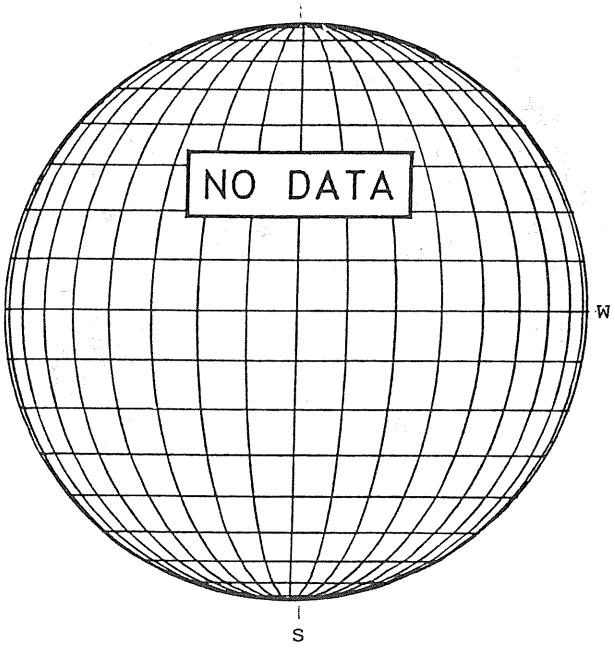
BOULDER H-ALPHA



RAMEY SUNSPOT

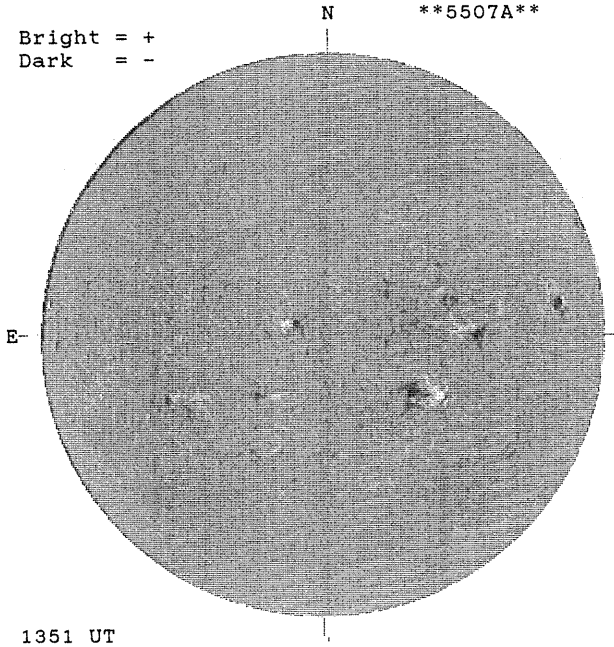


SACRAMENTO PEAK CORONA (1.15 Radii)

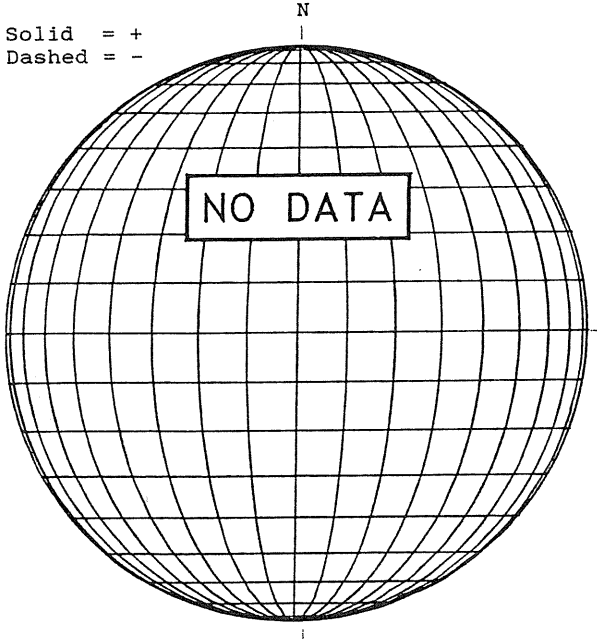


JULY 15, 1993 (P= 3.63, B_o = 4.33 L_o = 210.11)

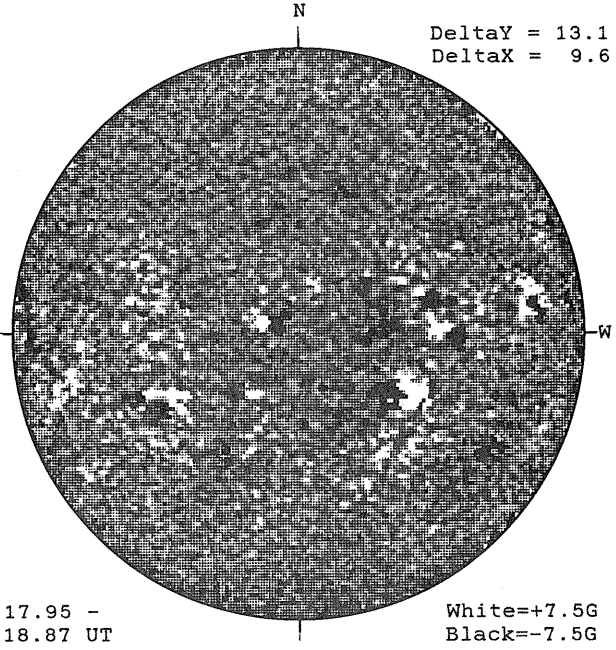
KITT PEAK MAGNETOGRAM



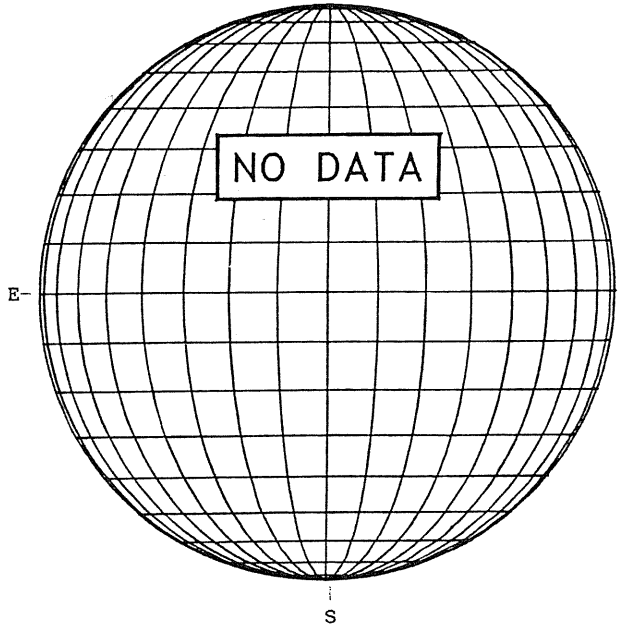
STANFORD MAGNETOGRAM



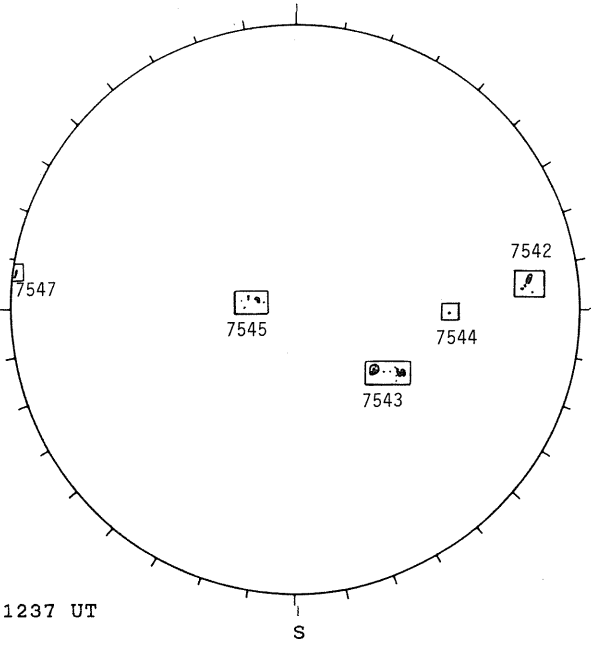
MT. WILSON MAGNETOGRAM



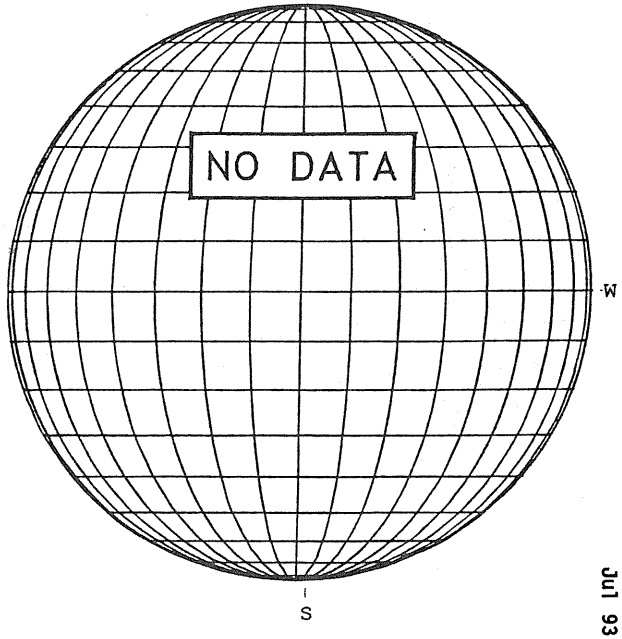
LARISSA H-ALPHA



RAMEY SUNSPOT

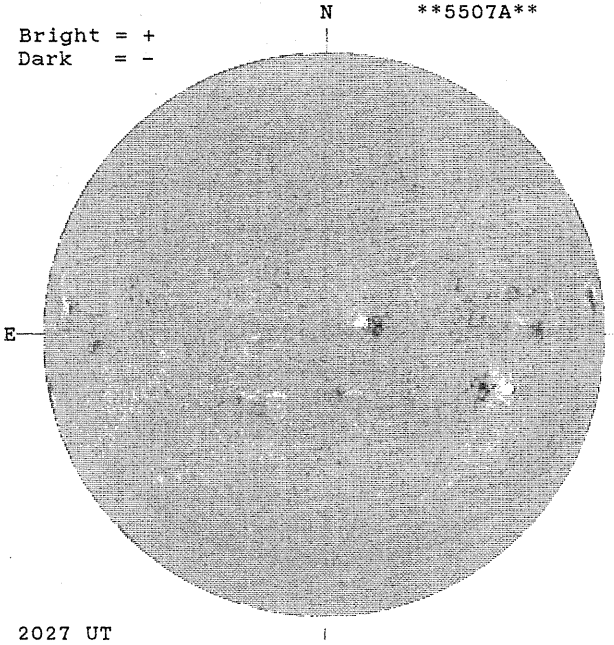


SACRAMENTO PEAK CORONA (1.15 Radii)

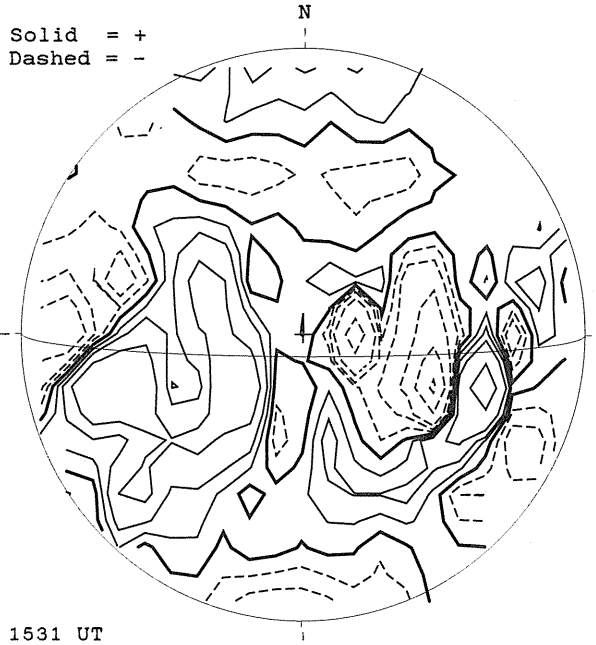


JULY 16, 1993 (P= 4.07, B_o = 4.43, L_o = 196.87)

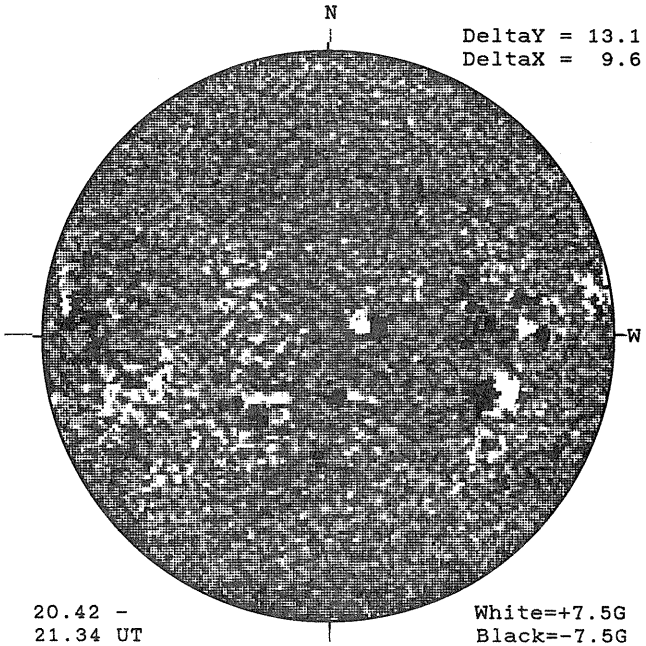
KITT PEAK MAGNETOGRAM



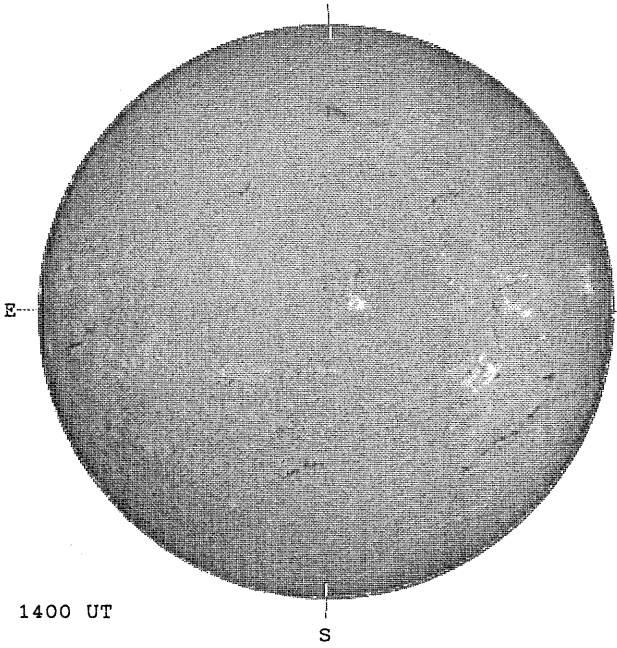
STANFORD MAGNETOGRAM



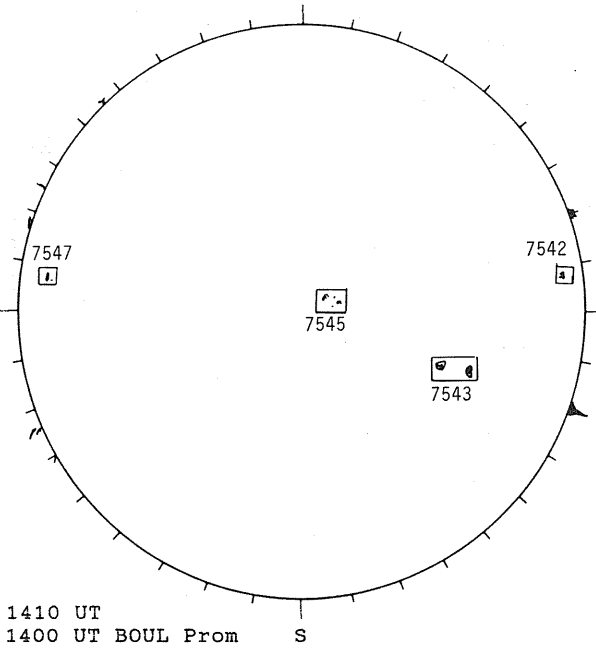
MT. WILSON MAGNETOGRAM



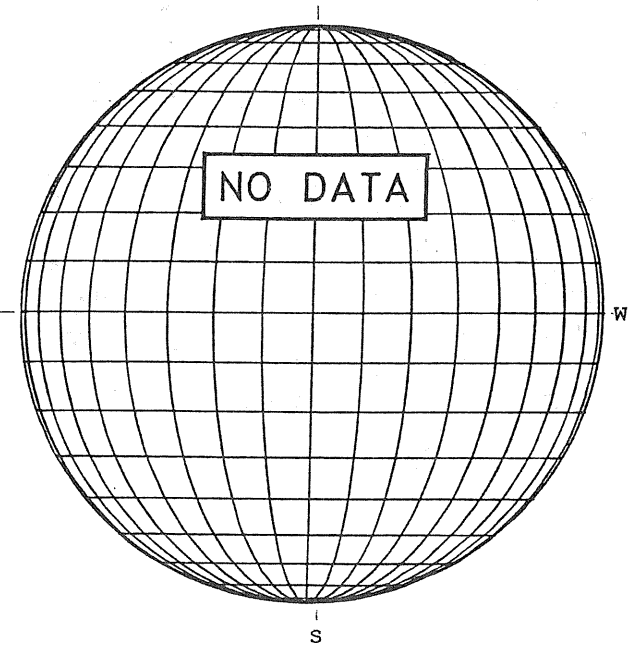
BOULDER H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)

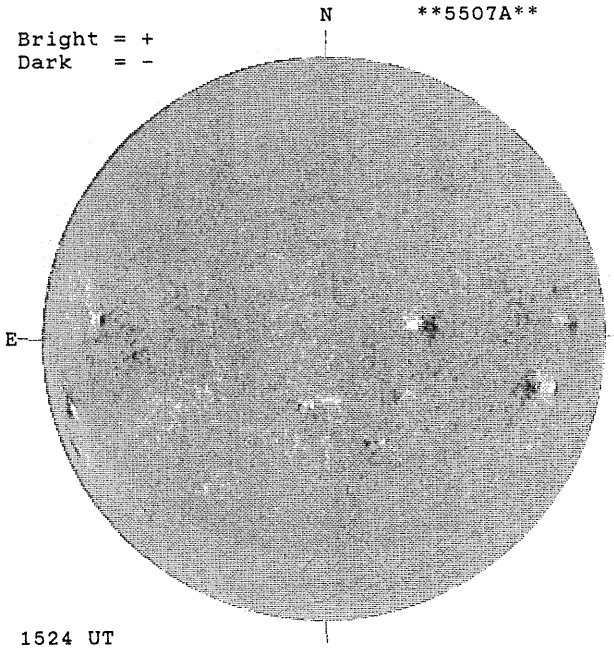


JULY 17, 1993 (P= 4.51, B_o = 4.52, L_o = 183.64)

KITT PEAK MAGNETOGRAM

5507A

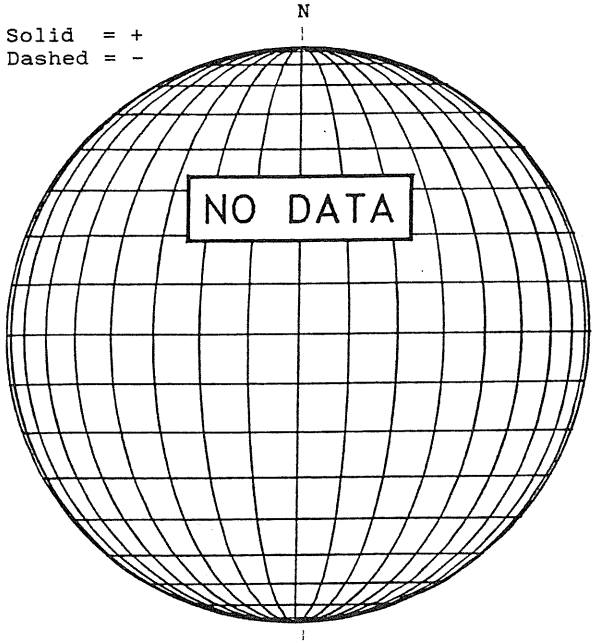
Bright = +
Dark = -



1524 UT

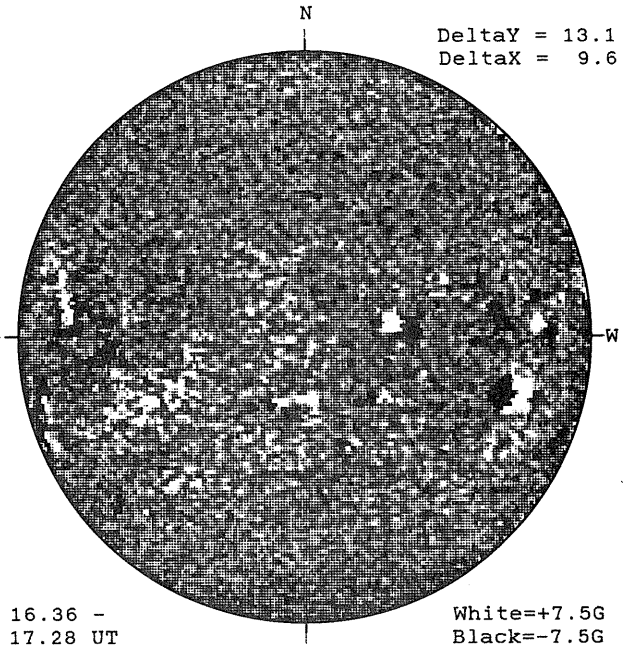
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

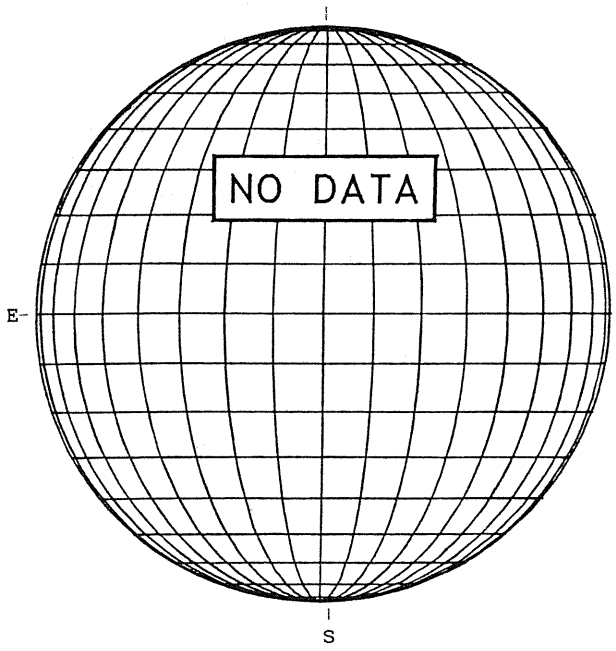
DeltaY = 13.1
DeltaX = 9.6



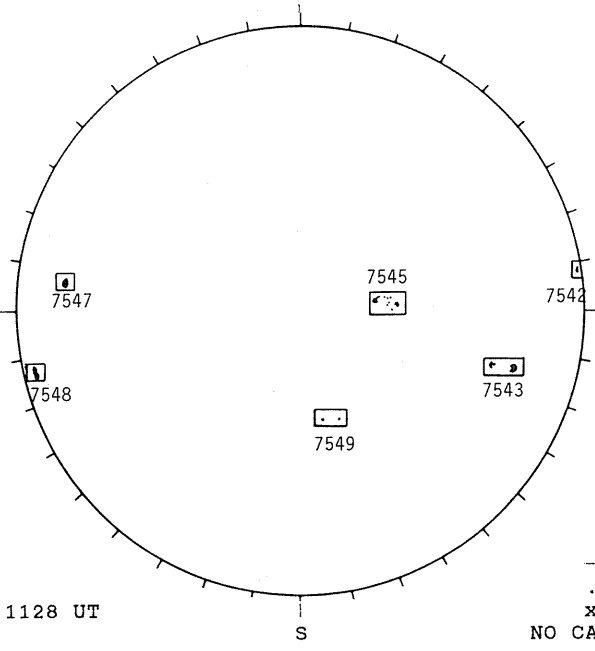
16.36 -
17.28 UT

White=+7.5G
Black=-7.5G

LARISSA H-ALPHA

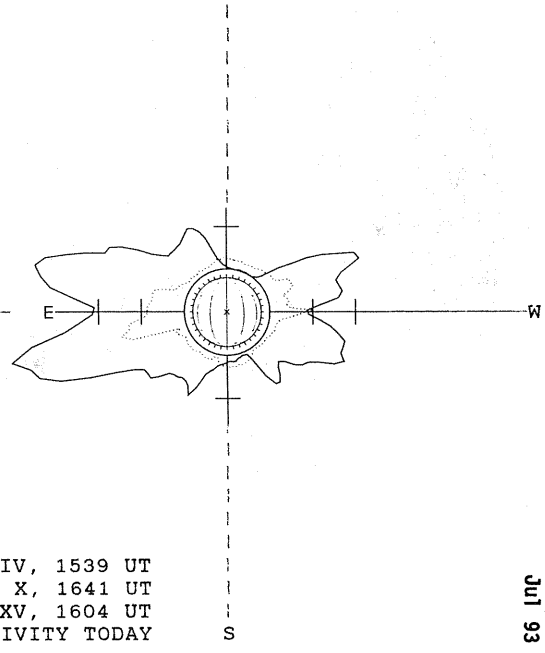


RAMEY SUNSPOT



1128 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



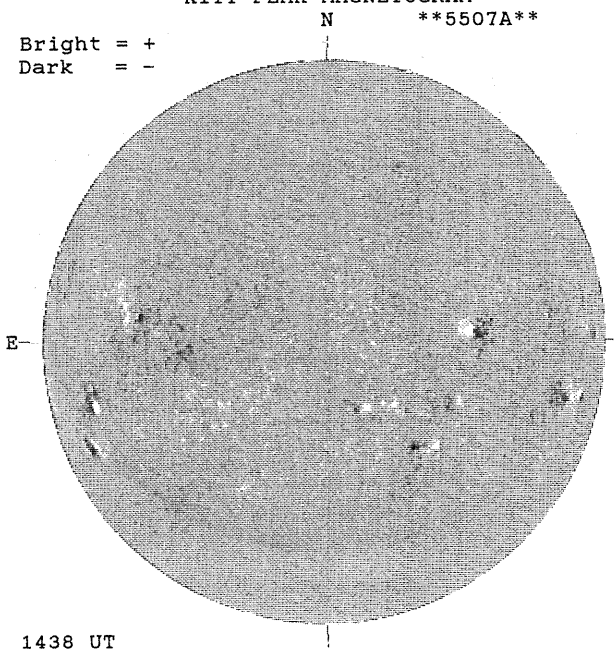
—— FeXIV, 1539 UT
.... Fe X, 1641 UT
xxxx Ca XV, 1604 UT
NO CA XV ACTIVITY TODAY

59
Jul 93

JULY 18, 1993 (P= 4.95, B_o = 4.61, L_o = 170.41)

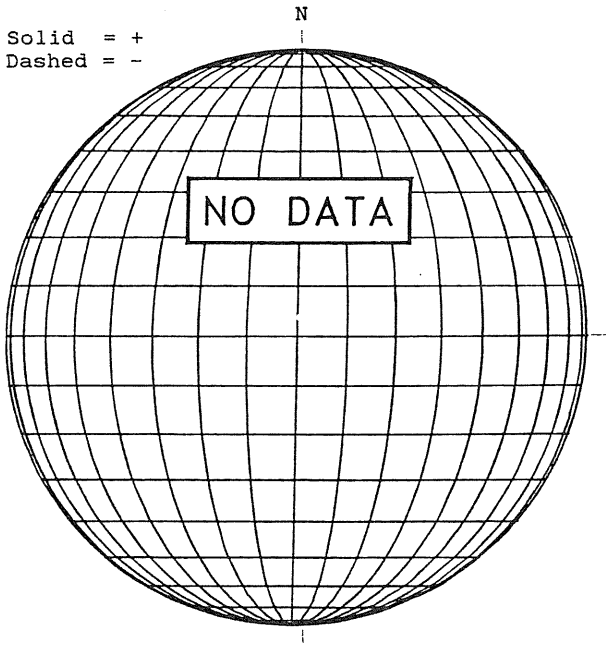
KITT PEAK MAGNETOGRAM

Bright = +
Dark = −



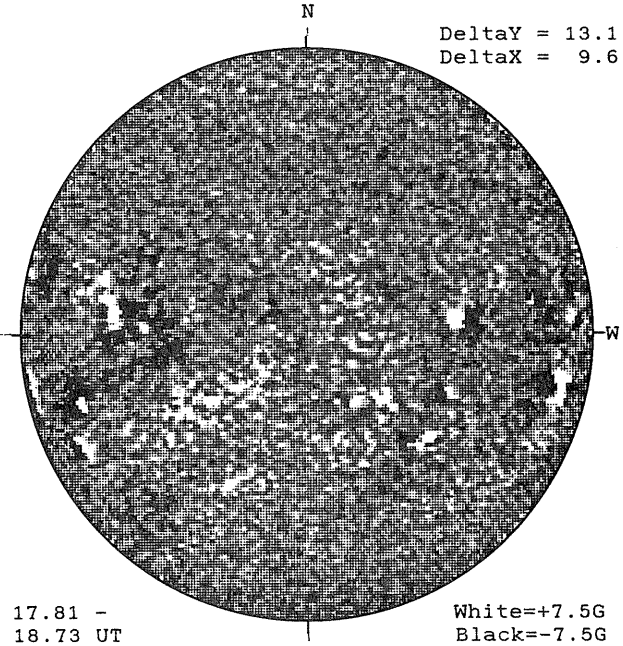
STANFORD MAGNETOGRAM

Solid = +
Dashed = −



MT. WILSON MAGNETOGRAM

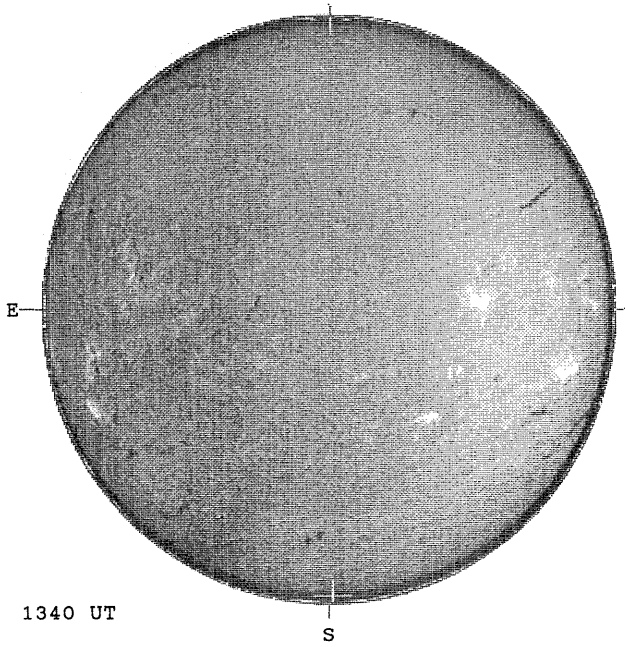
DeltaY = 13.1
DeltaX = 9.6



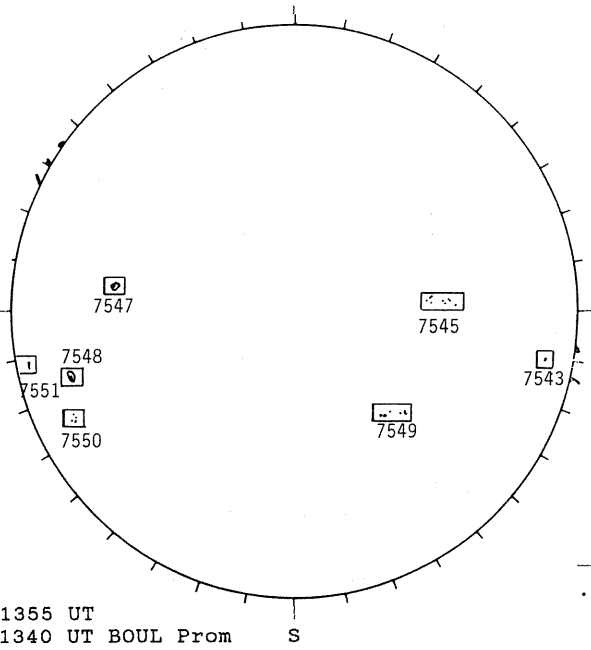
17.81 −
18.73 UT

White=+7.5G
Black=−7.5G

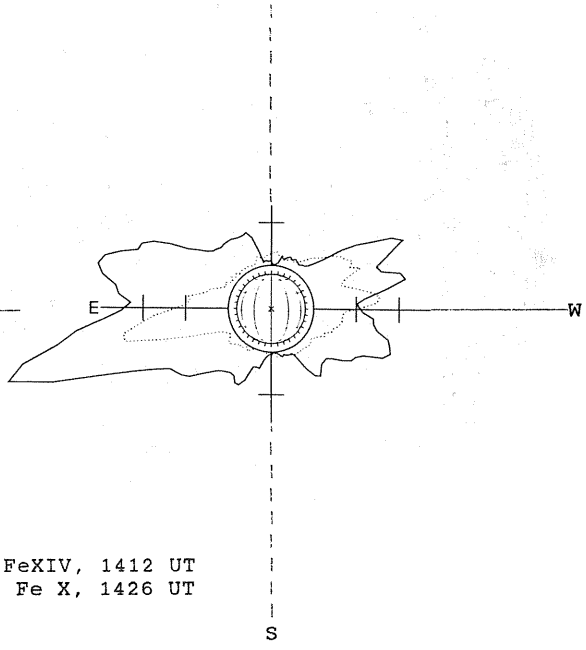
BOULDER H-ALPHA



BOULDER SUNSPOT



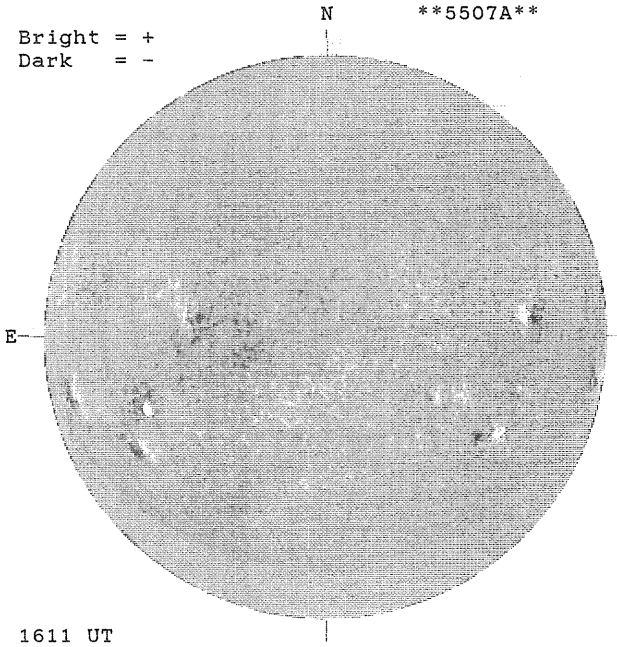
SACRAMENTO PEAK CORONA (1.15 Radii)



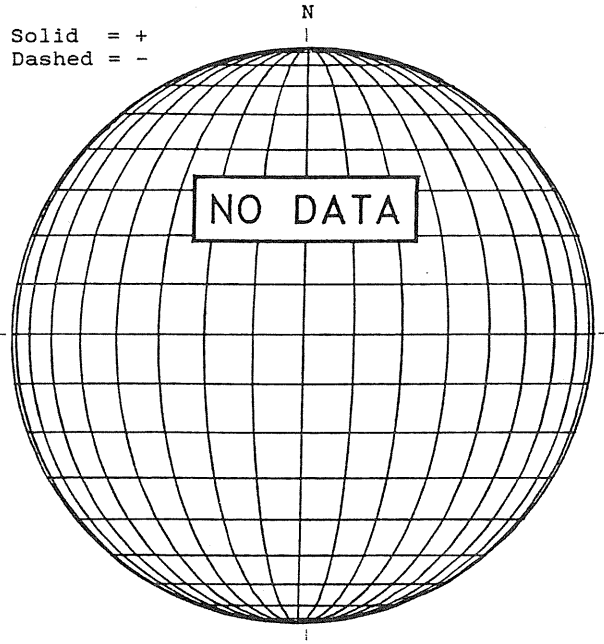
—— FeXIV, 1412 UT
.... Fe X, 1426 UT

JULY 19, 1993 (P= 5.39, B_o = 4.71, L_o = 157.18)

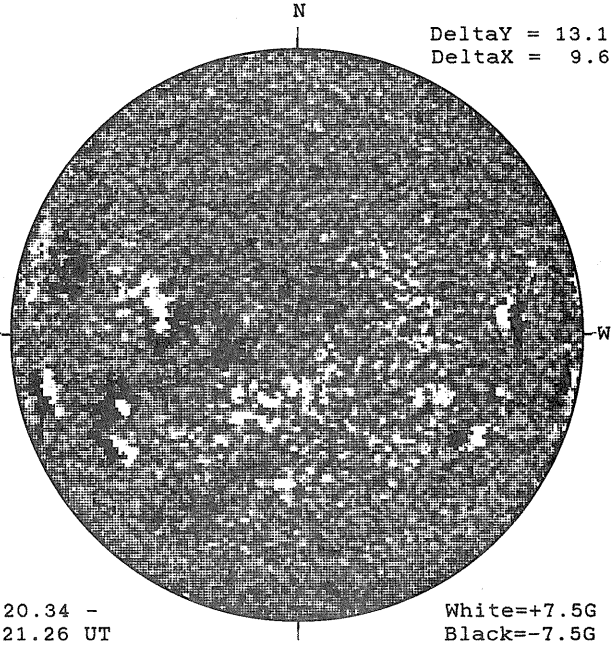
KITT PEAK MAGNETOGRAM



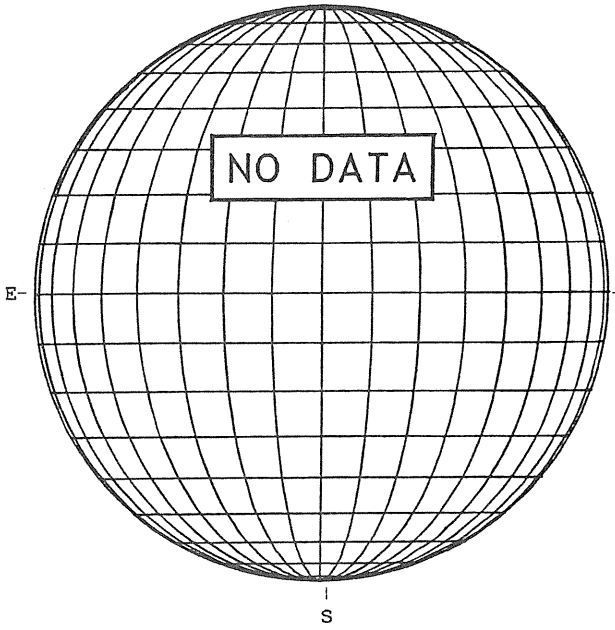
STANFORD MAGNETOGRAM



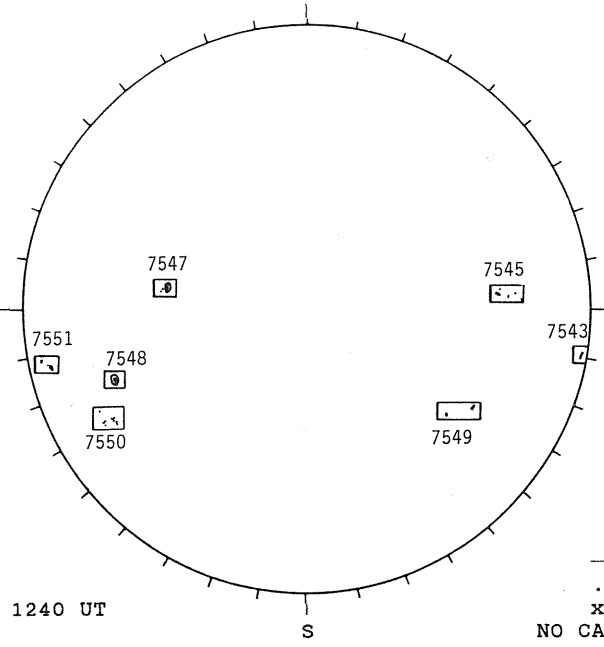
MT. WILSON MAGNETOGRAM



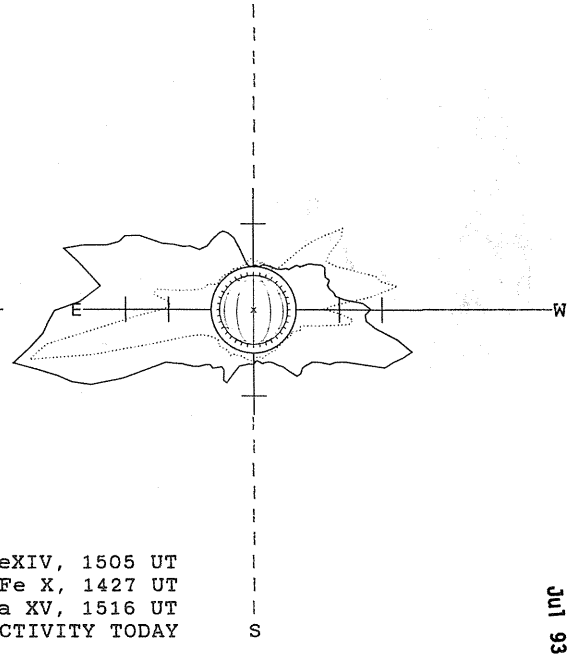
LARISSA H-ALPHA



RAMEY SUNSPOT



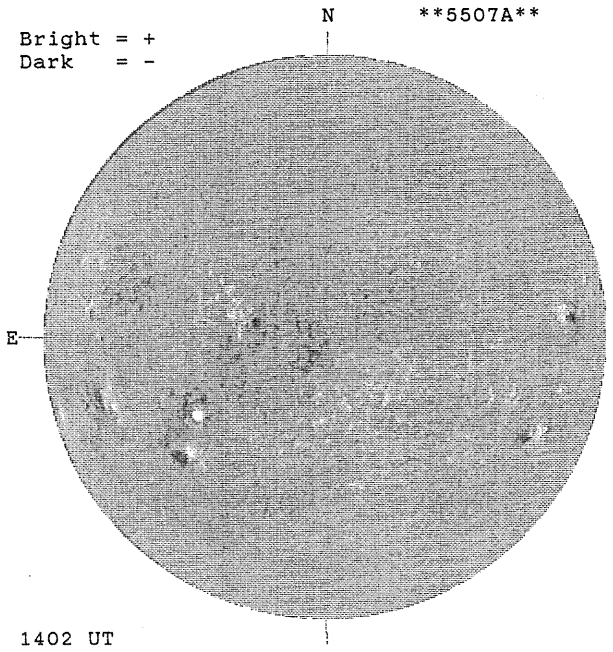
SACRAMENTO PEAK CORONA (1.15 Radii)



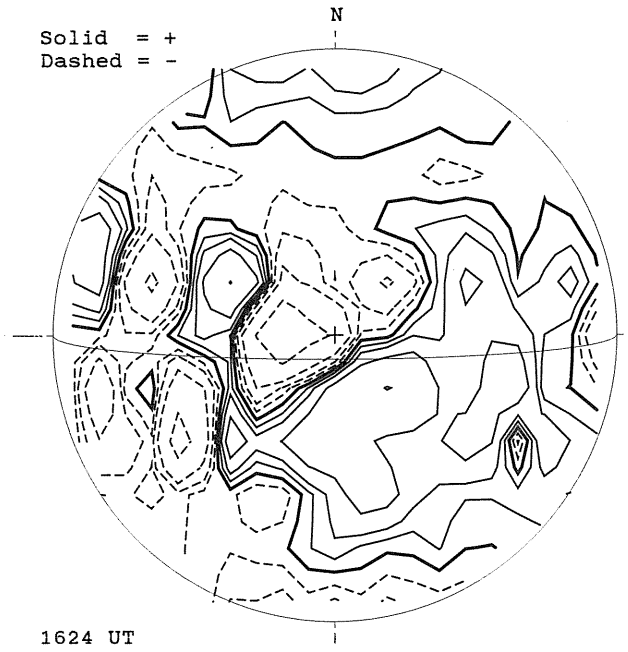
—— FeXIV, 1505 UT
.... Fe X, 1427 UT
xxxx Ca XV, 1516 UT
NO CA XV ACTIVITY TODAY

JULY 20, 1993 (P= 5.83, B_o = 4.80, L_o = 143.95)

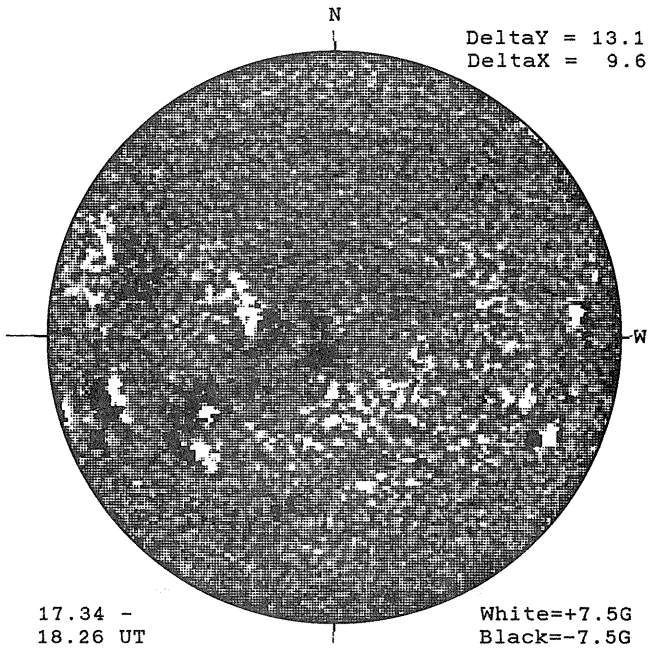
KITT PEAK MAGNETOGRAM



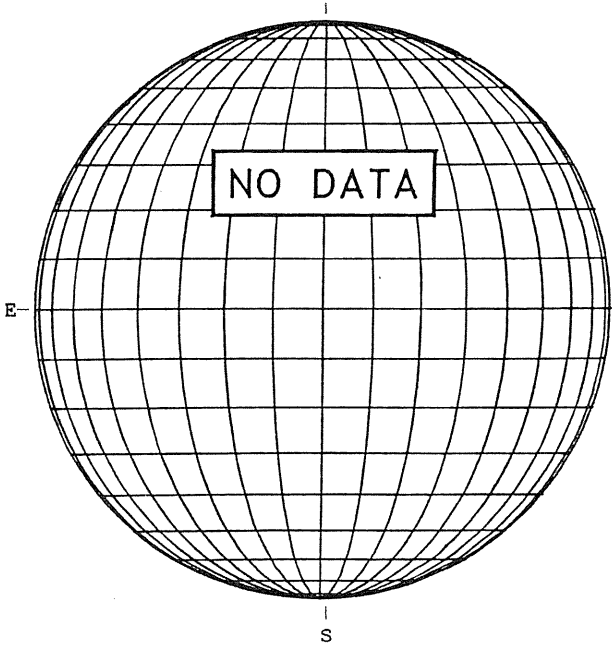
STANFORD MAGNETOGRAM



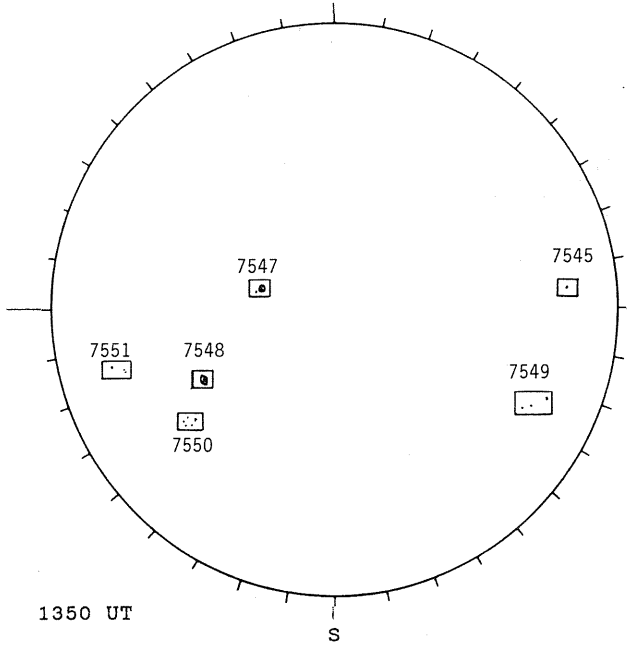
MT. WILSON MAGNETOGRAM



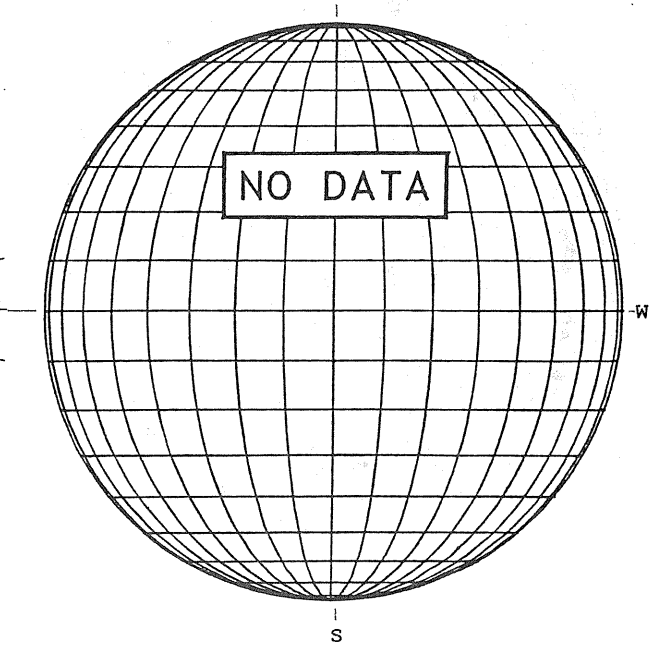
LARISSA H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)

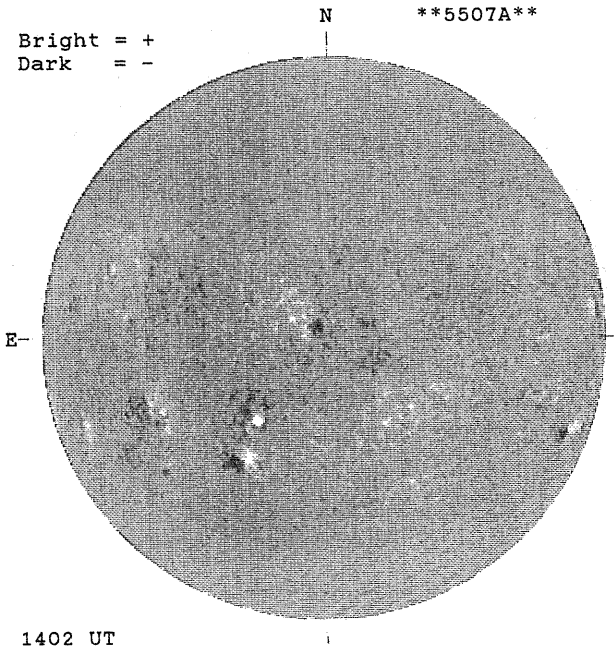


JULY 21, 1993 (P= 6.26, B_o = 4.89 L_o = 130.72)

KITT PEAK MAGNETOGRAM

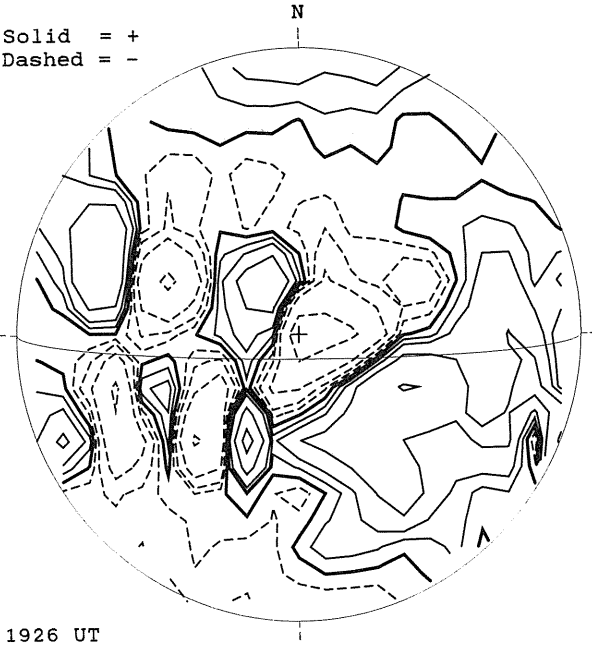
5507A

Bright = +
Dark = -



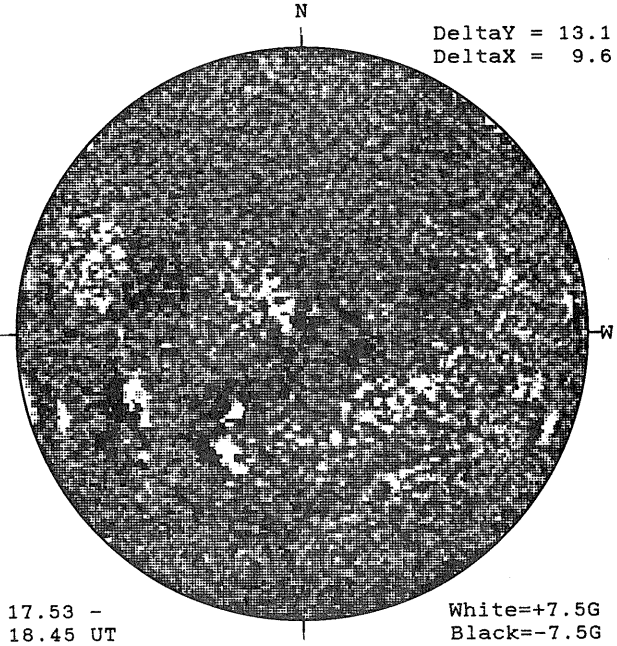
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

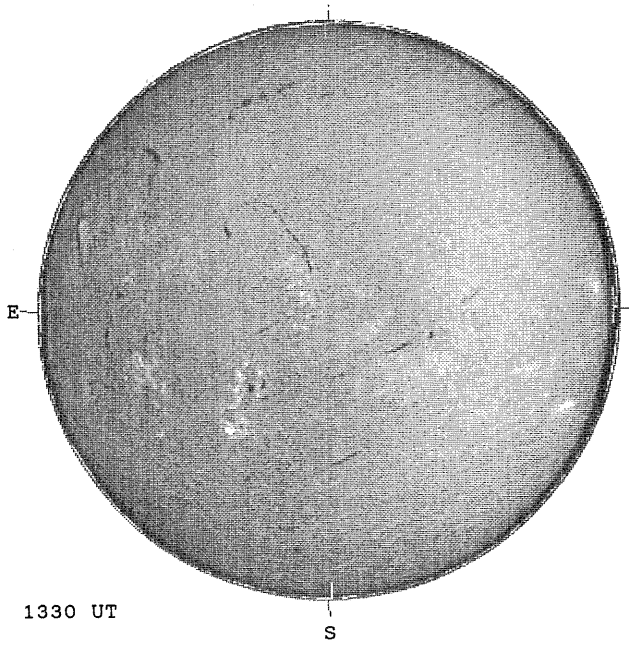


MT. WILSON MAGNETOGRAM

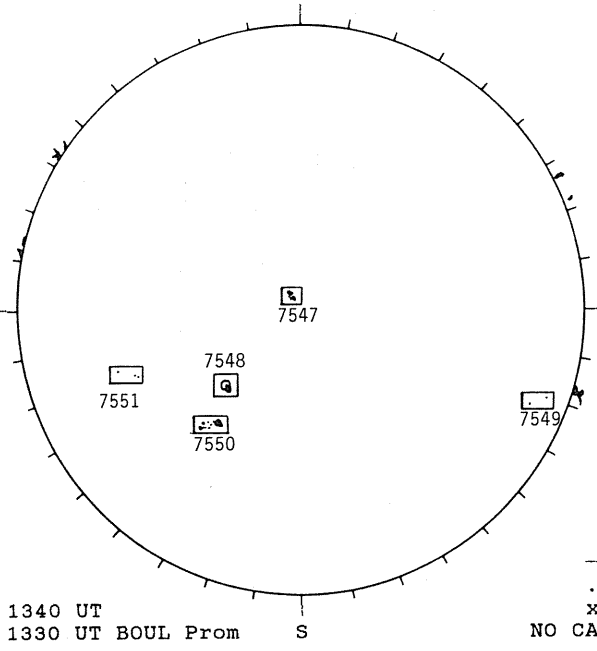
DeltaY = 13.1
DeltaX = 9.6



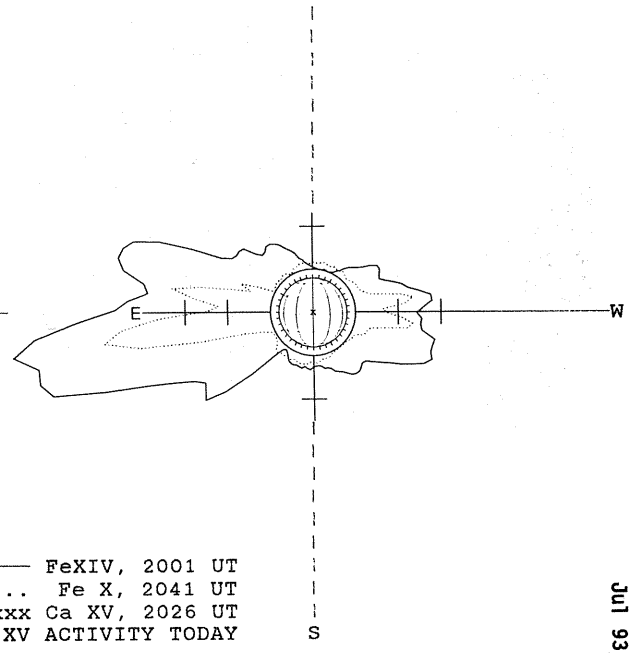
BOULDER H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)

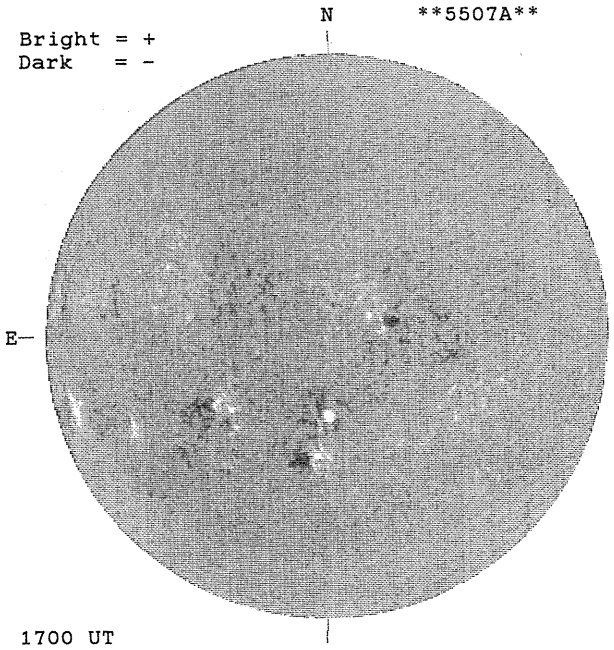


—— FeXIV, 2001 UT
.... Fe X, 2041 UT
xxxx Ca XV, 2026 UT
NO CA XV ACTIVITY TODAY

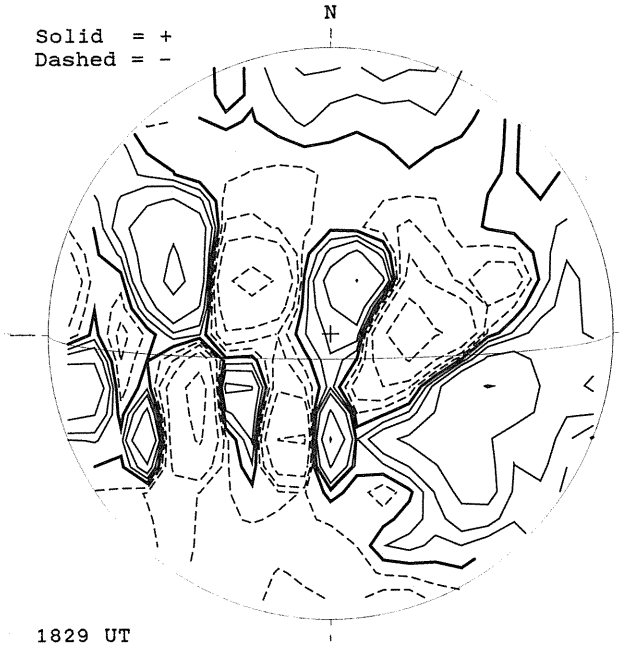
63
Jul 93

JULY 22, 1993 (P= 6.69, B_o = 4.97, L_o = 117.49)

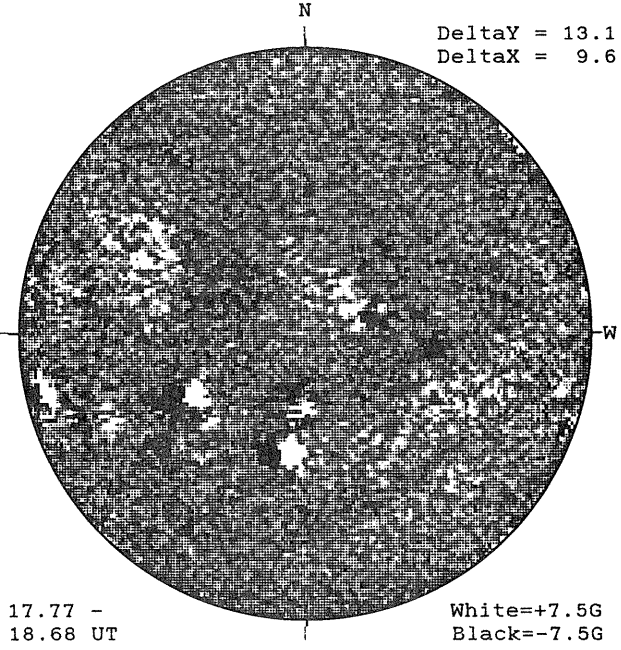
KITT PEAK MAGNETOGRAM



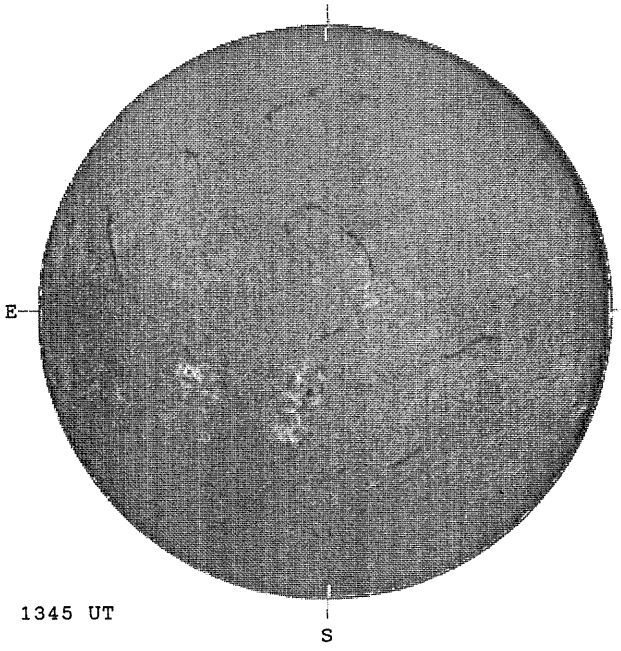
STANFORD MAGNETOGRAM



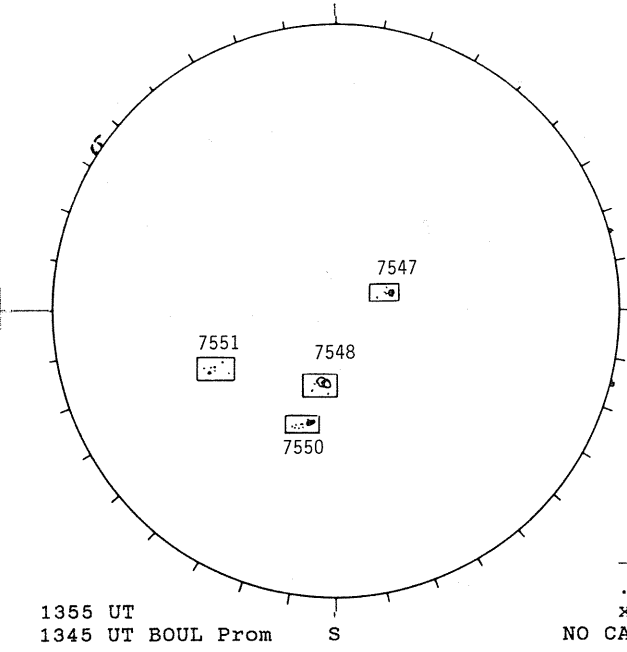
MT. WILSON MAGNETOGRAM



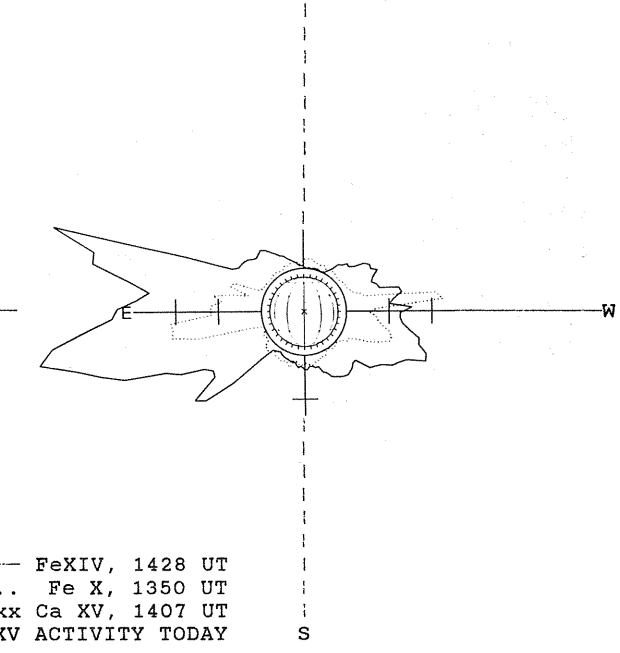
BOULDER H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)

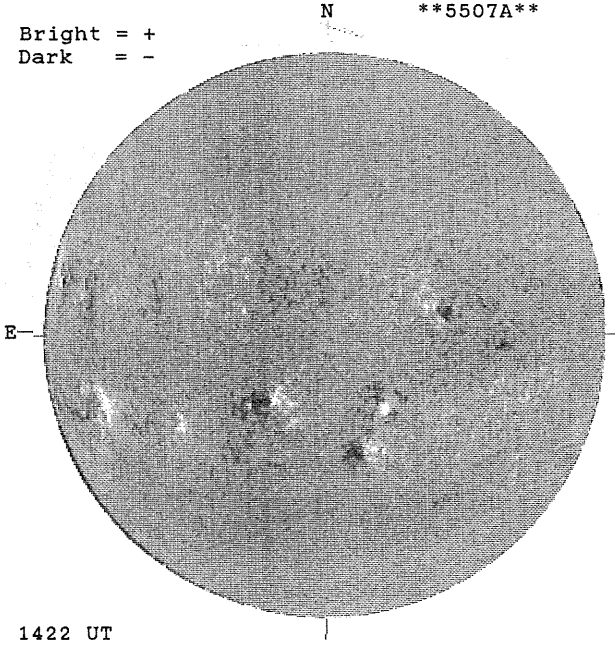


JULY 23, 1993 (P= 7.11, B_o = 5.06, L_o = 104.26)

KITT PEAK MAGNETOGRAM

N **5507A**

Bright = +
Dark = -

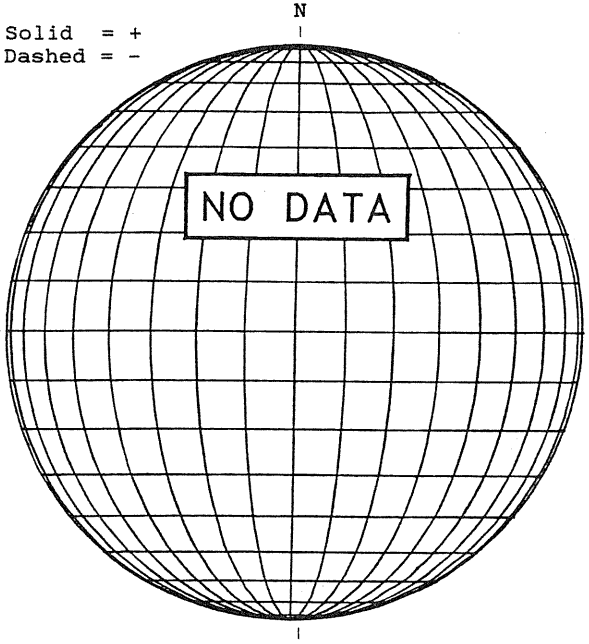


1422 UT

STANFORD MAGNETOGRAM

N

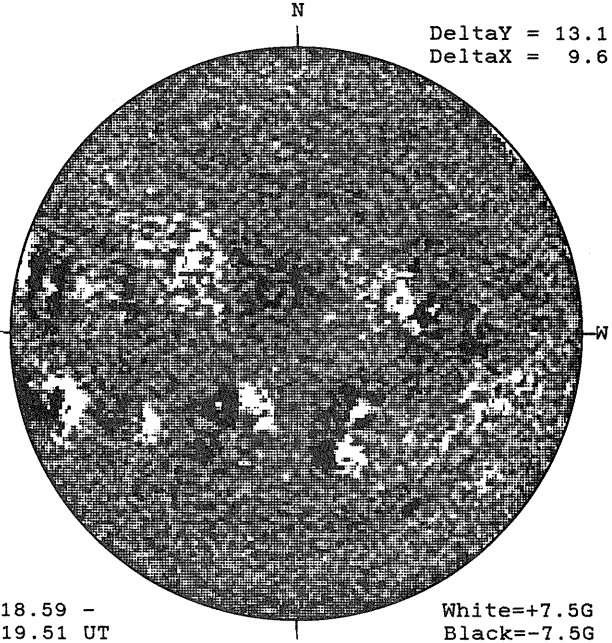
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

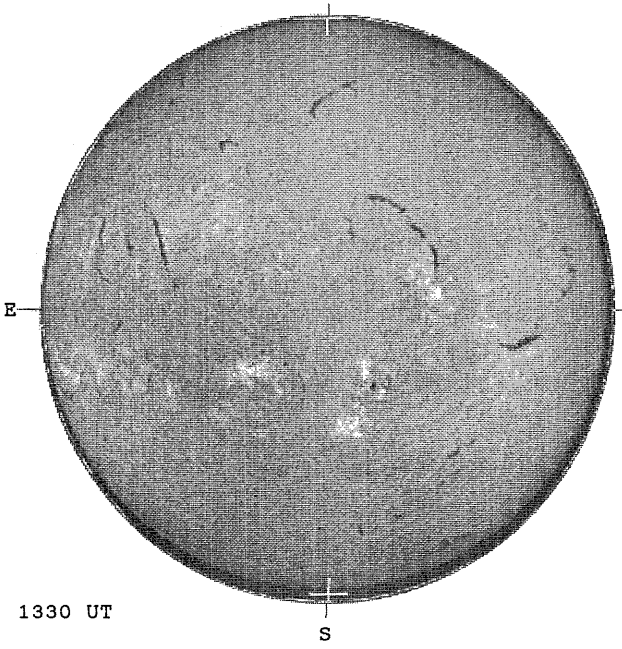
DeltaY = 13.1
DeltaX = 9.6



18.59 -
19.51 UT

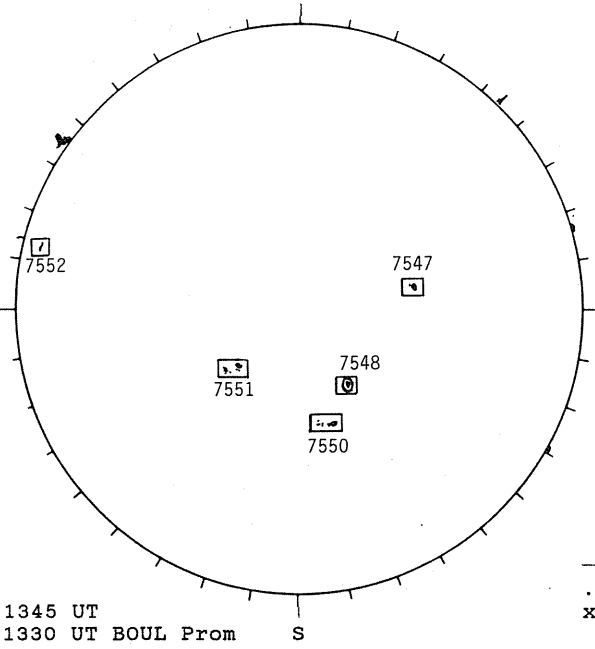
White=+7.5G
Black=-7.5G

BOULDER H-ALPHA



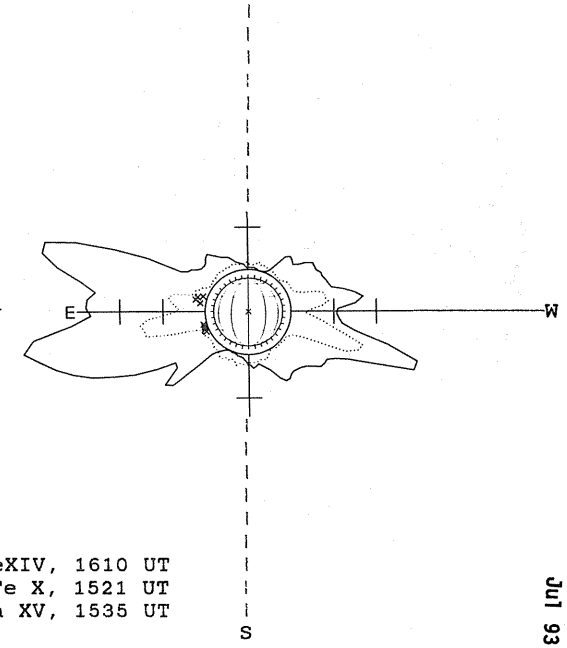
1330 UT

BOULDER SUNSPOT



1345 UT
1330 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

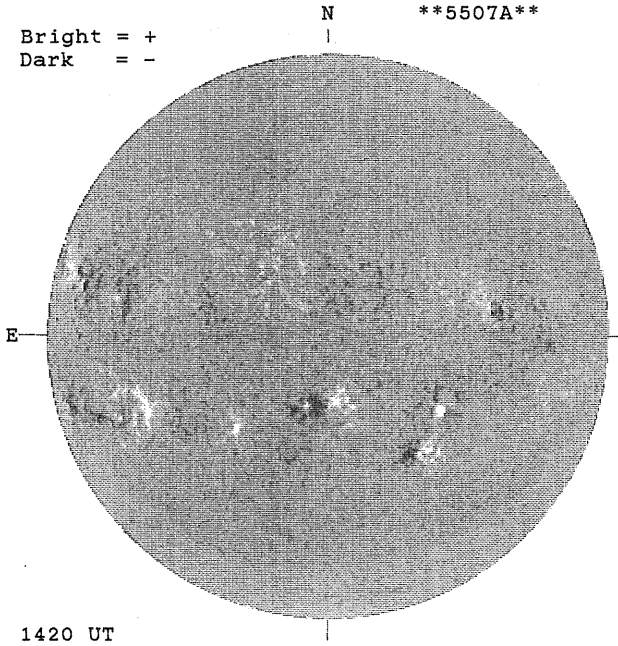


—— FeXIV, 1610 UT
.... Fe X, 1521 UT
xxxx Ca XV, 1535 UT

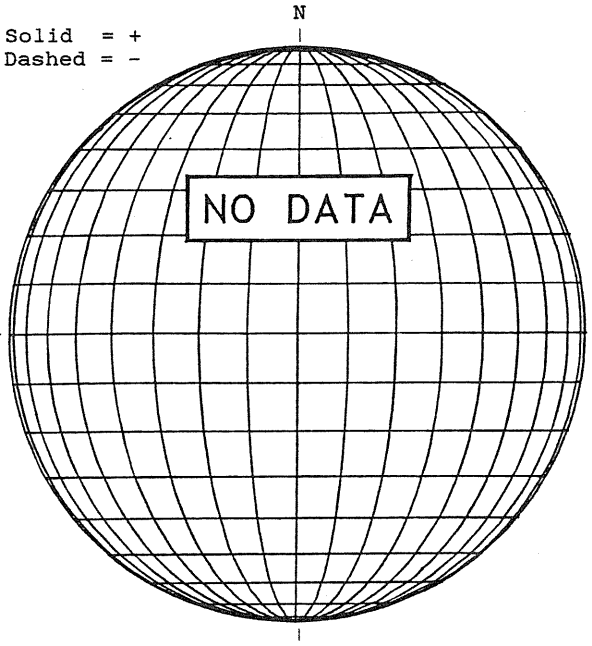
Jul 93

JULY 24, 1993 (P= 7.54 B_o = 5.15, L_o = 91.03)

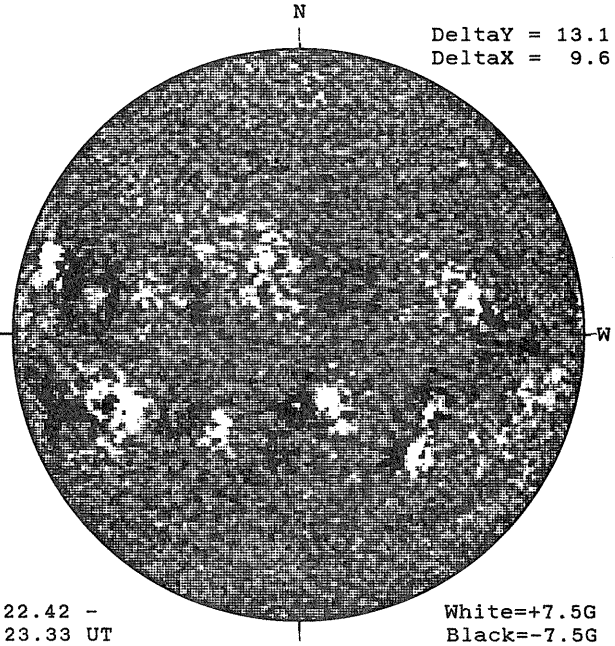
KITT PEAK MAGNETOGRAM



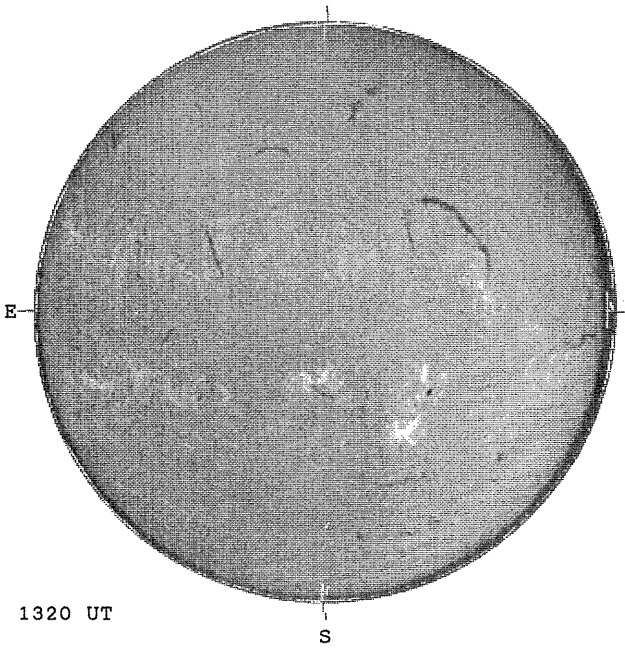
STANFORD MAGNETOGRAM



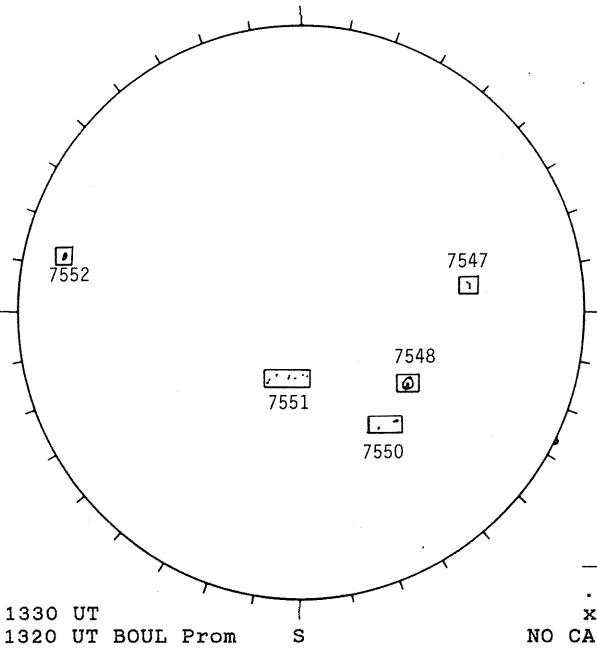
MT. WILSON MAGNETOGRAM



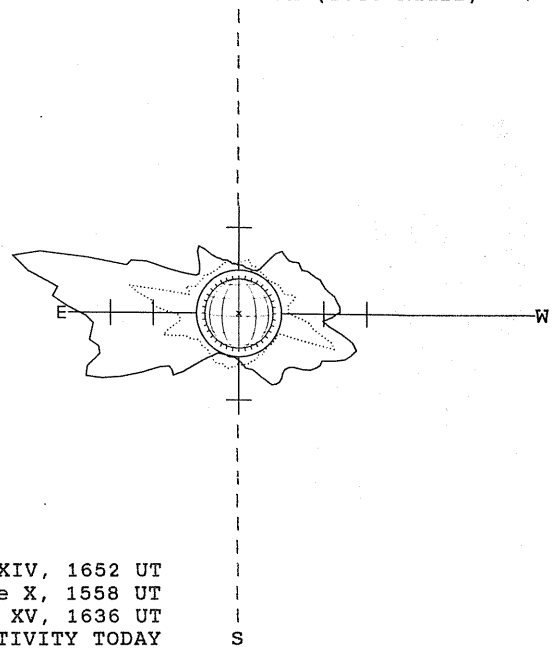
BOULDER H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)

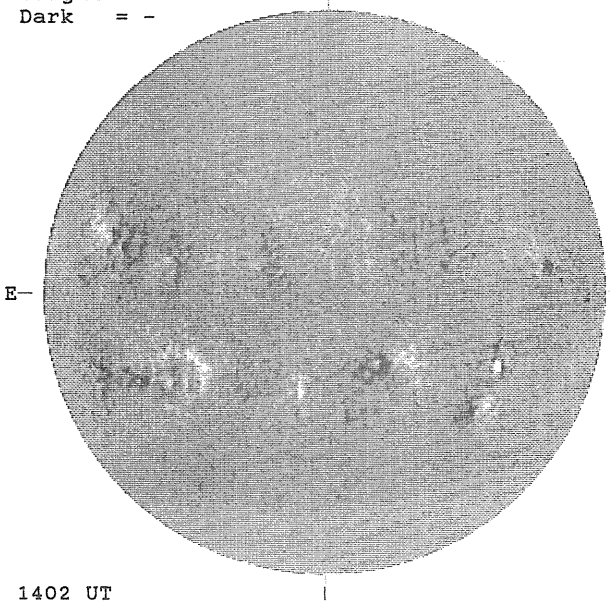


JULY 25, 1993 (P= 7.96 B_o = 5.23, L_o = 77.80)

KITT PEAK MAGNETOGRAM

N **5507A**

Bright = +
Dark = -



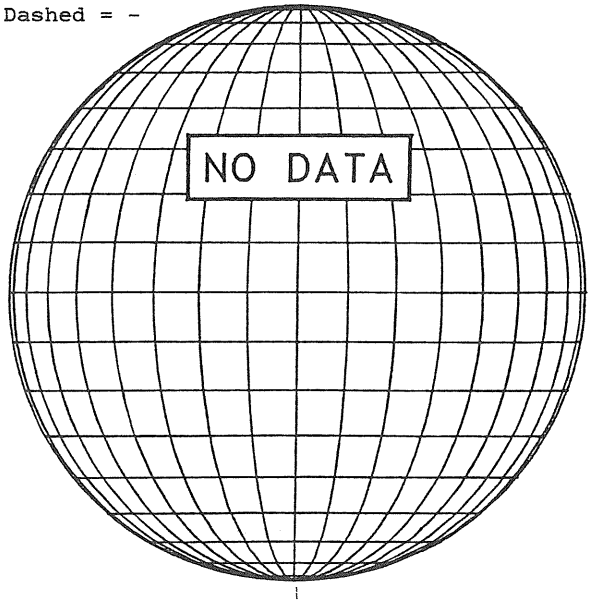
E

1402 UT

STANFORD MAGNETOGRAM

N

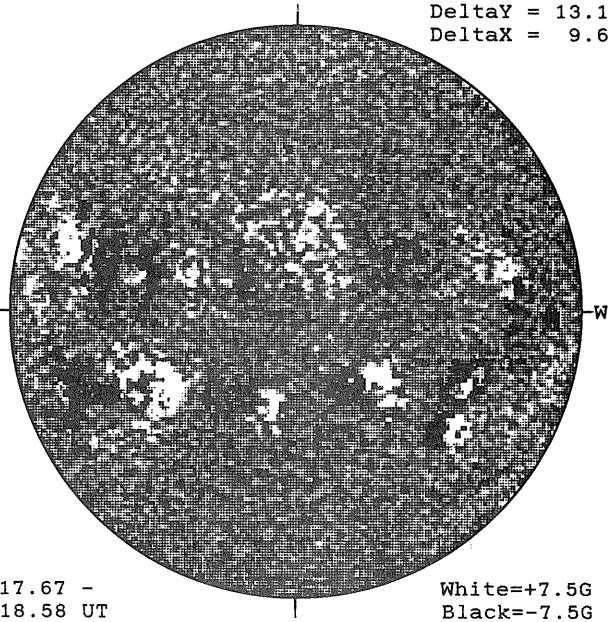
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

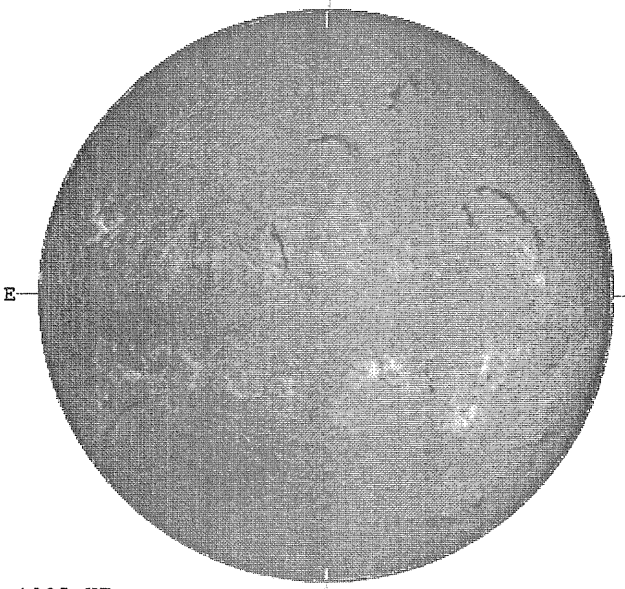


W

17.67 -
18.58 UT

White=+7.5G
Black=-7.5G

BOULDER H-ALPHA

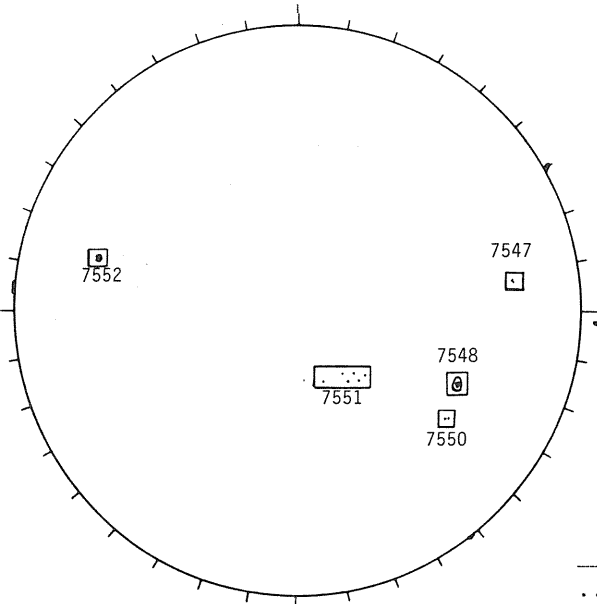


E

1335 UT

S

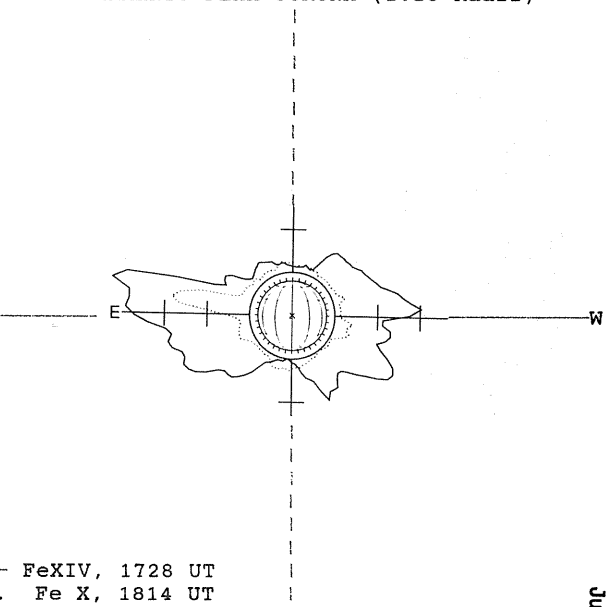
BOULDER SUNSPOT



1340 UT
1335 UT BOUL Prom

S

SACRAMENTO PEAK CORONA (1.15 Radii)



E

W

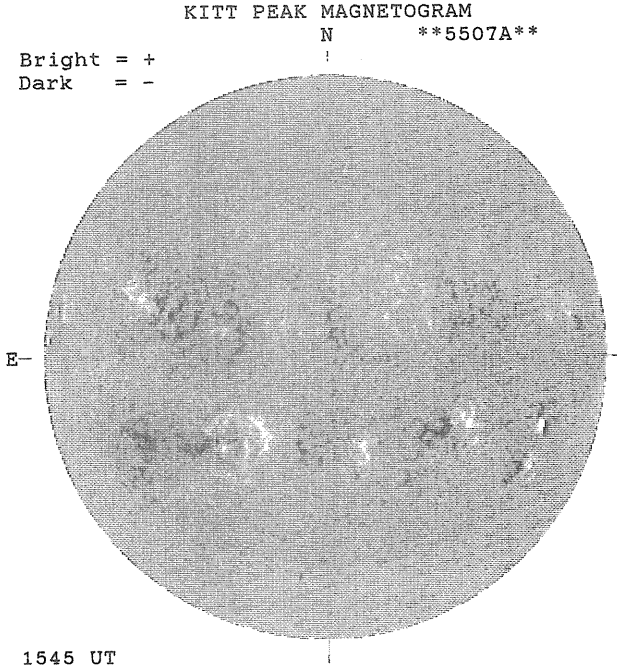
S

—— FeXIV, 1728 UT
.... Fe X, 1814 UT
xxxx Ca XV, 1754 UT
NO CA XV ACTIVITY TODAY

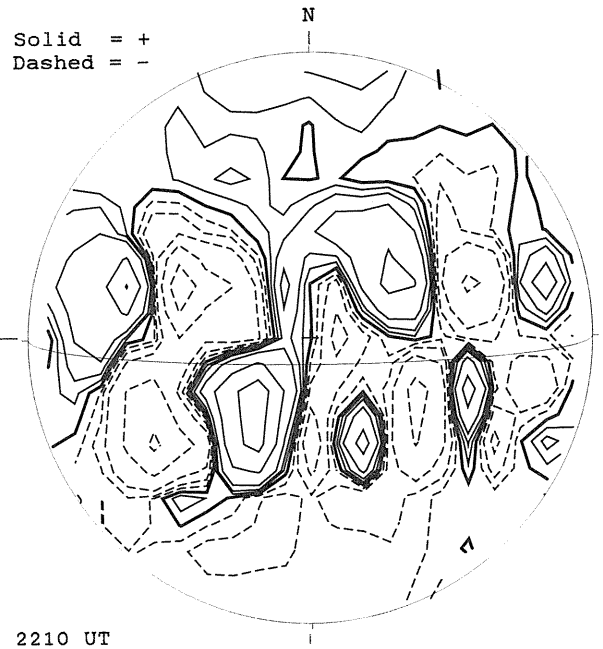
67
Jul 93

JULY 26, 1993 (P= 8.38, B_o = 5.31, L_o = 64.57)

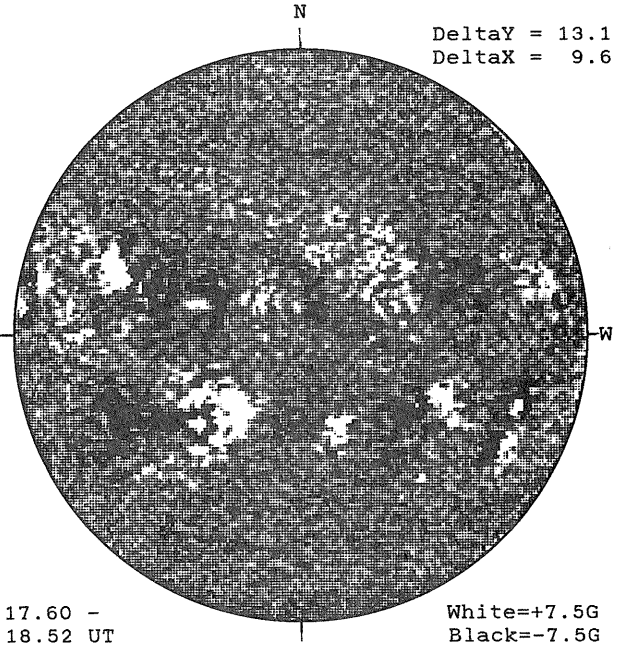
KITT PEAK MAGNETOGRAM



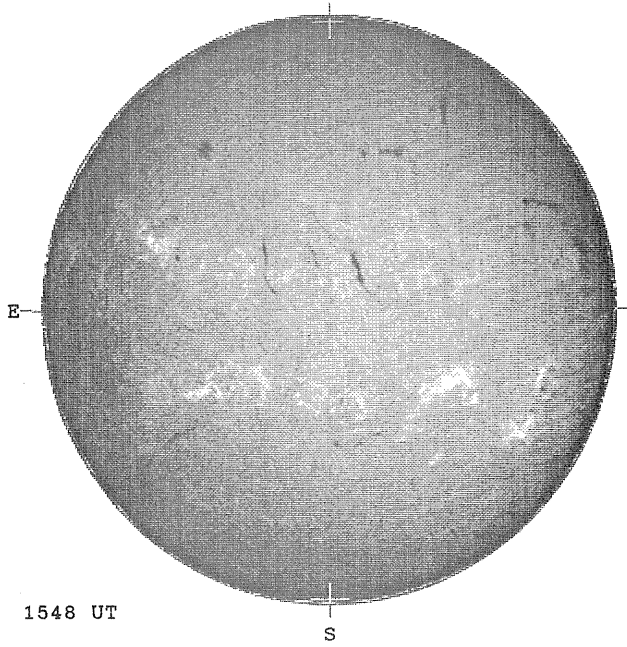
STANFORD MAGNETOGRAM



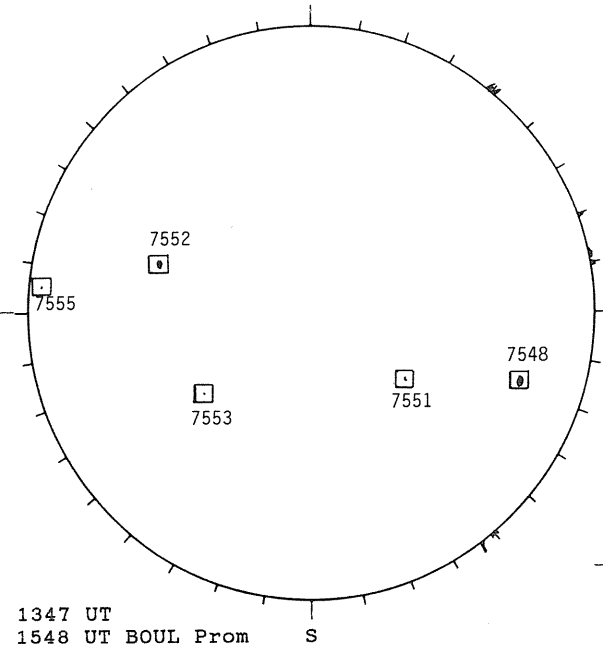
MT. WILSON MAGNETOGRAM



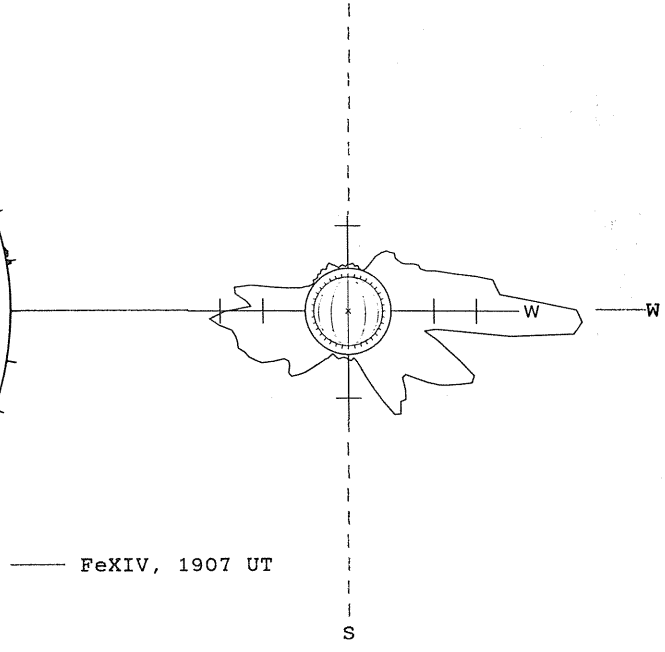
BOULDER H-ALPHA



BOULDER SUNSPOT

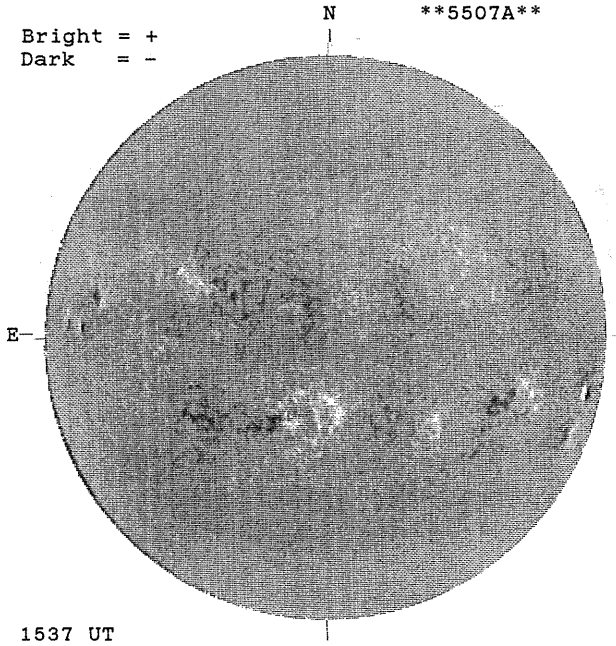


SACRAMENTO PEAK CORONA (1.15 Radii)

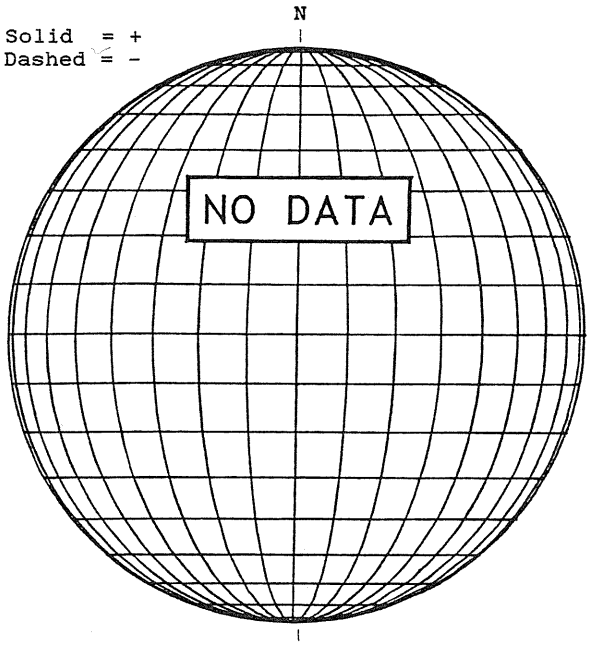


JULY 27, 1993 (P= 8.80, B_o = 5.39, L_o = 51.34)

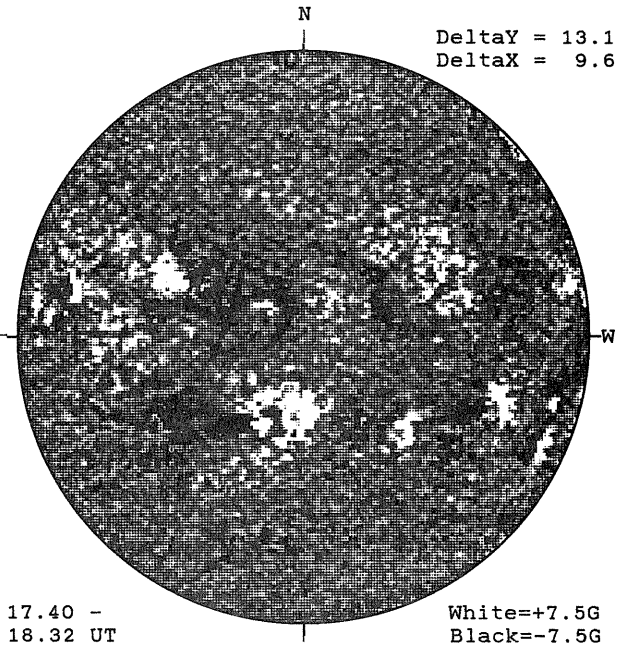
KITT PEAK MAGNETOGRAM



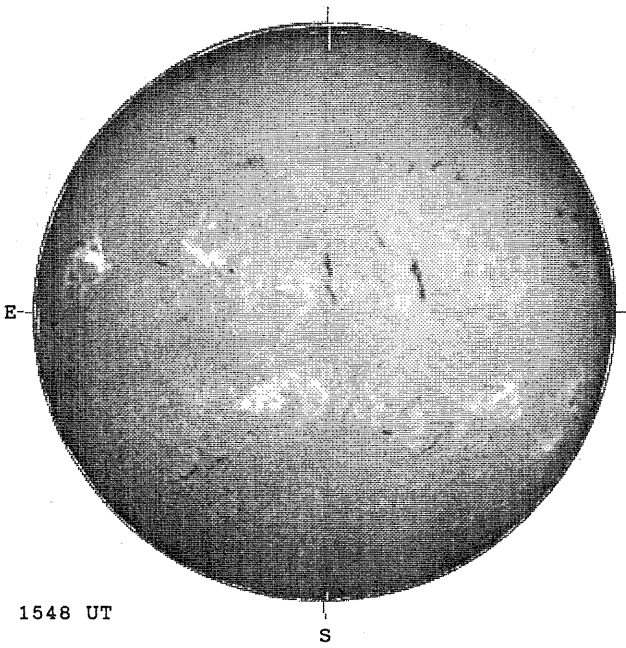
STANFORD MAGNETOGRAM



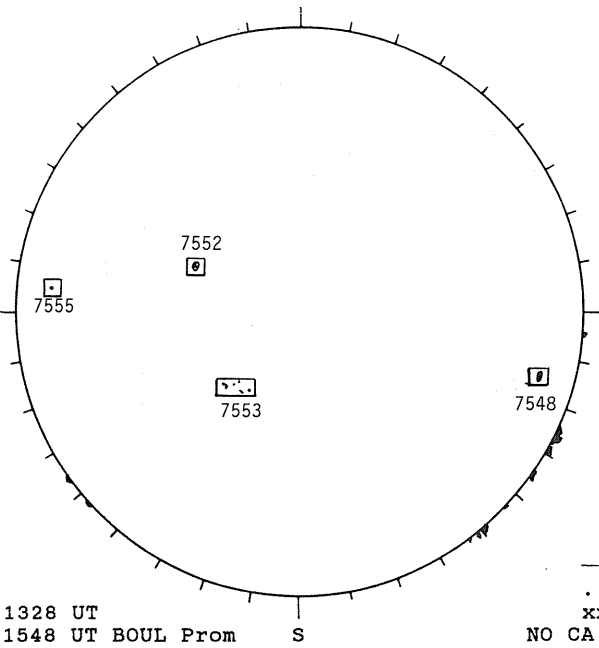
MT. WILSON MAGNETOGRAM



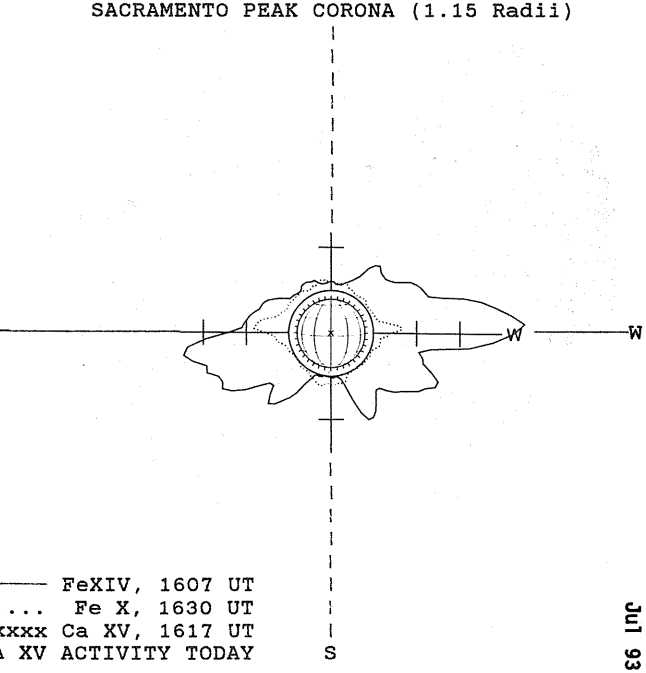
BOULDER H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)



69
Jul 93

JULY 28, 1993 (P= 9.21 B_o = 5.47, L_o = 38.12)

KITT PEAK MAGNETOGRAM

N **5507A**

Bright = +
Dark = -

NO DATA

E

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

0140 UT
JULY 29

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

W

17.62 -
18.54 UT

White=+7.5G
Black=-7.5G

BOULDER H-ALPHA

E

1345 UT

S

BOULDER SUNSPOT

7552
7555
7553
Boul
85
7548

1355 UT
1345 UT BOUL Prom

S

SACRAMENTO PEAK CORONA (1.15 Radii)

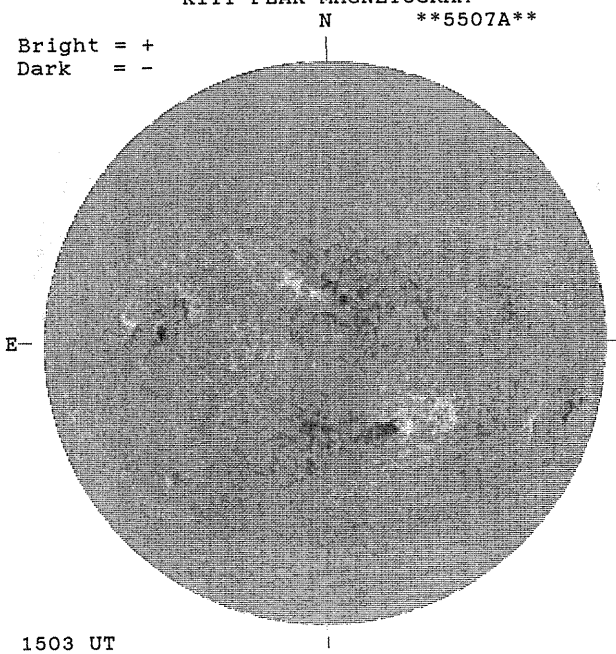
W

—— FeXIV, 1510 UT
.... Fe X, 1631 UT
xxxx Ca XV, 1536 UT
NO CA XV ACTIVITY TODAY

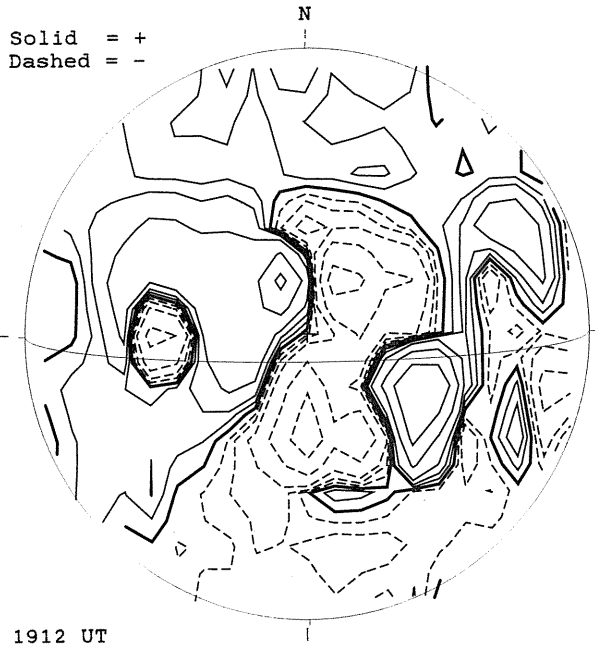
S

JULY 29, 1993 (P= 9.62, B_o = 5.55, L_o = 24.89)

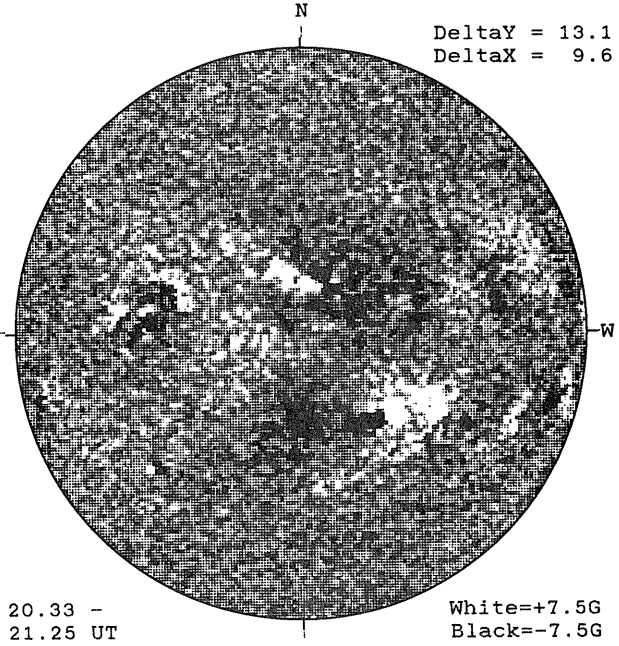
KITT PEAK MAGNETOGRAM



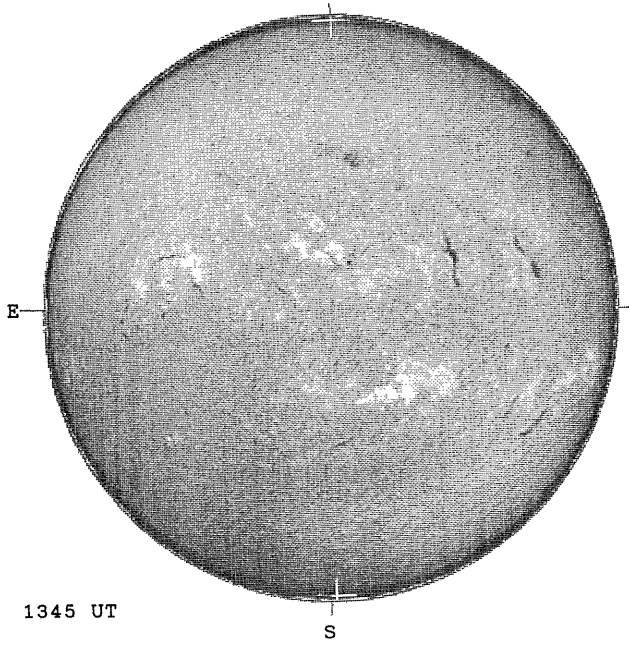
STANFORD MAGNETOGRAM



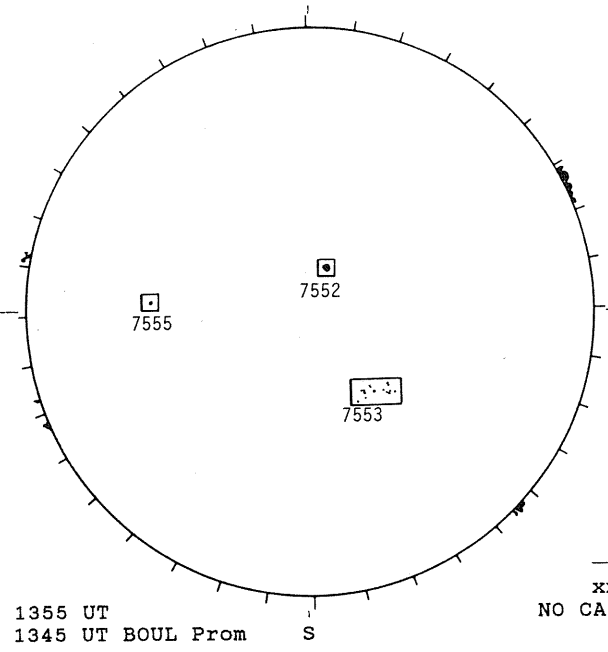
MT. WILSON MAGNETOGRAM



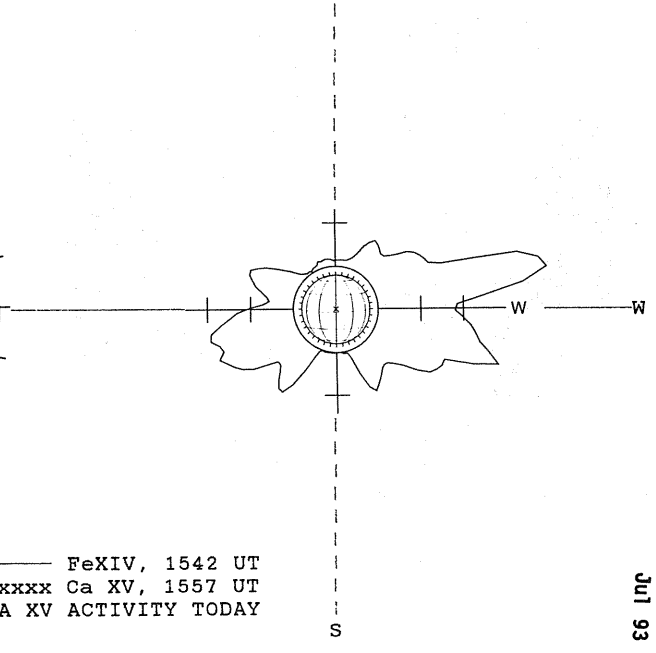
BOULDER H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)



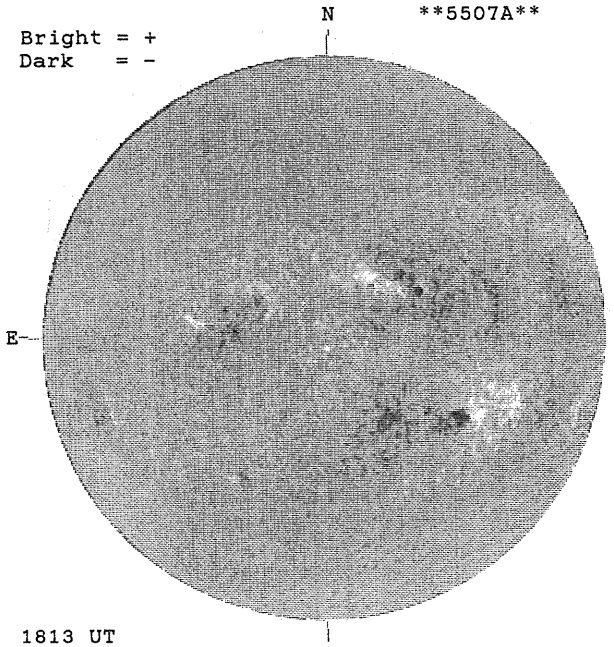
—— FeXIV, 1542 UT
xxxx Ca XV, 1557 UT
NO CA XV ACTIVITY TODAY

71
Jul 93

JULY 30, 1993 (P= 10.02, B_o = 5.63, L_o = 11.66)

KITT PEAK MAGNETOGRAM

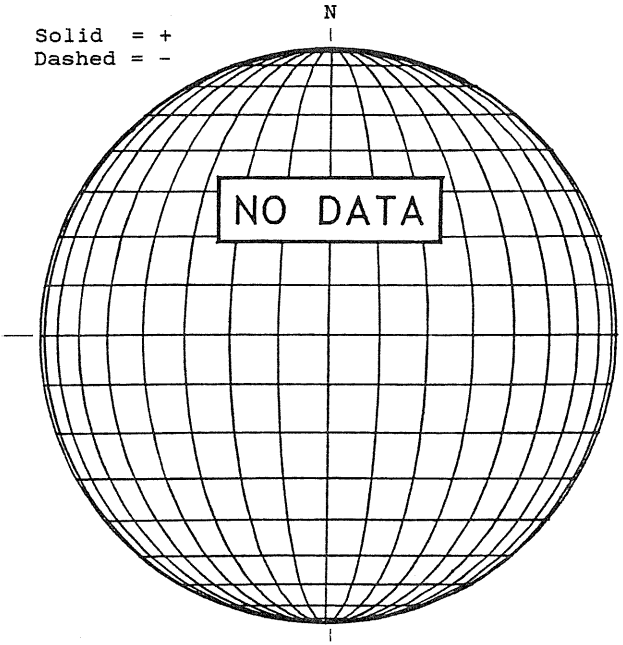
Bright = +
Dark = -



1813 UT

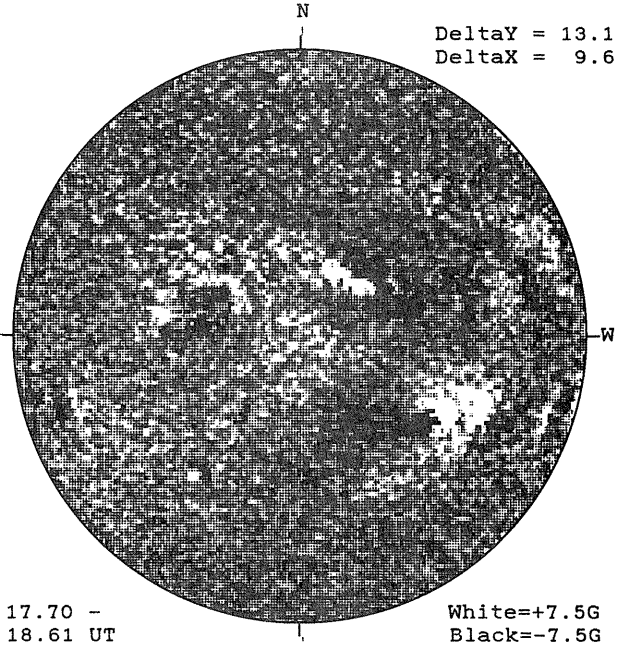
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

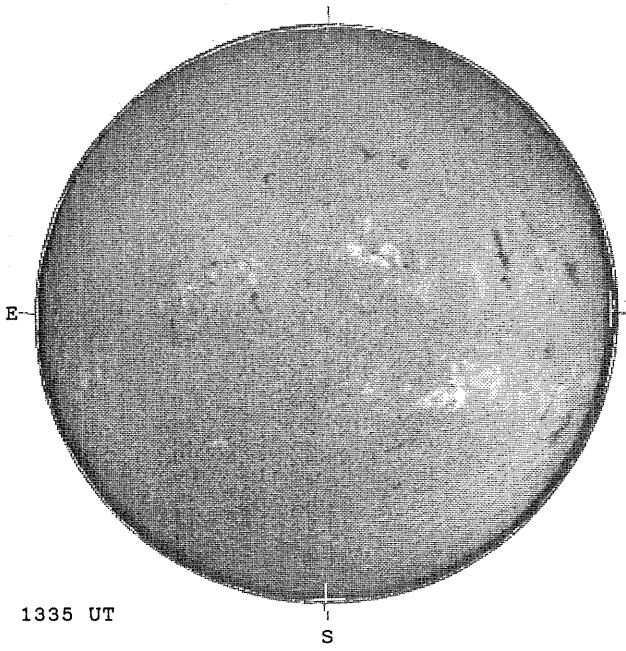
DeltaY = 13.1
DeltaX = 9.6



17.70 -
18.61 UT

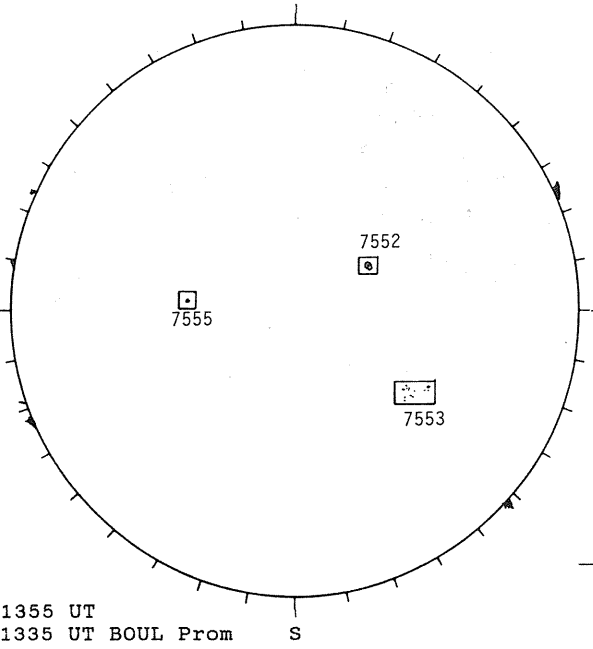
White=+7.5G
Black=-7.5G

BOULDER H-ALPHA



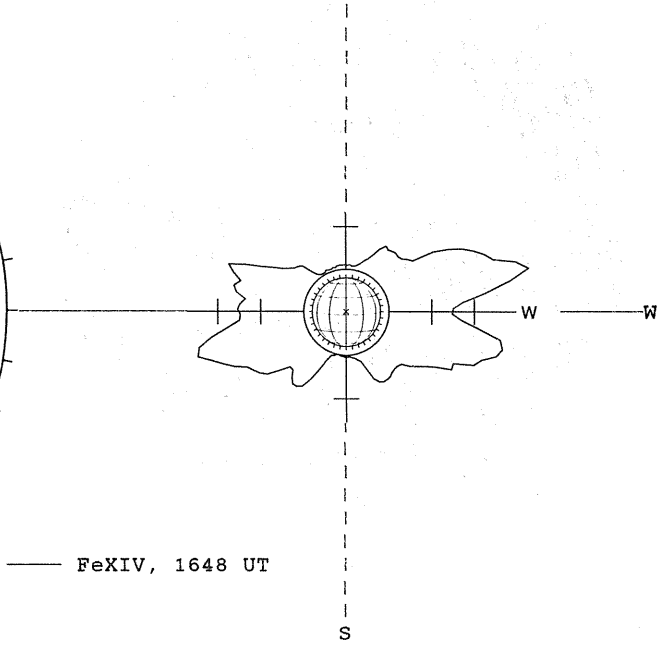
1335 UT

BOULDER SUNSPOT



1355 UT
1335 UT BOUL Prom

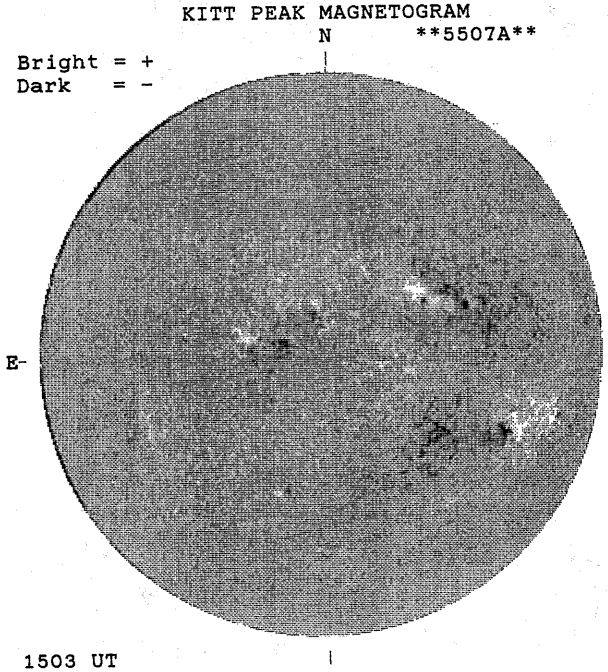
SACRAMENTO PEAK CORONA (1.15 Radii)



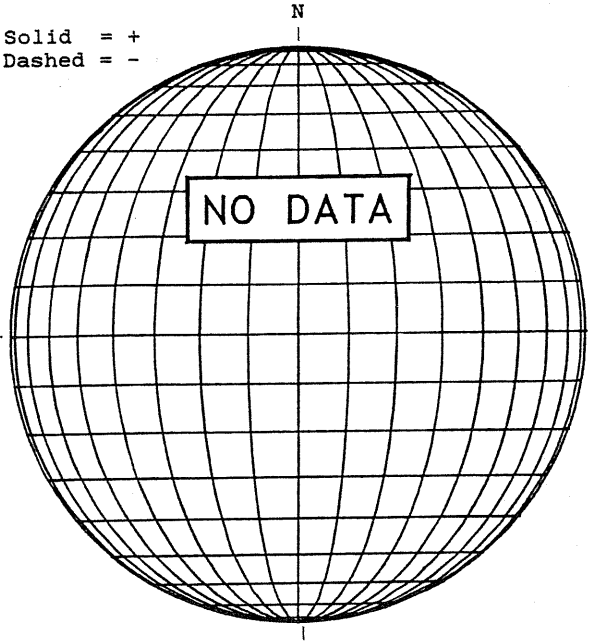
—— FeXIV, 1648 UT

JULY 31, 1993 (P= 10.43, B_o = 5.70 L_o = 358.44)

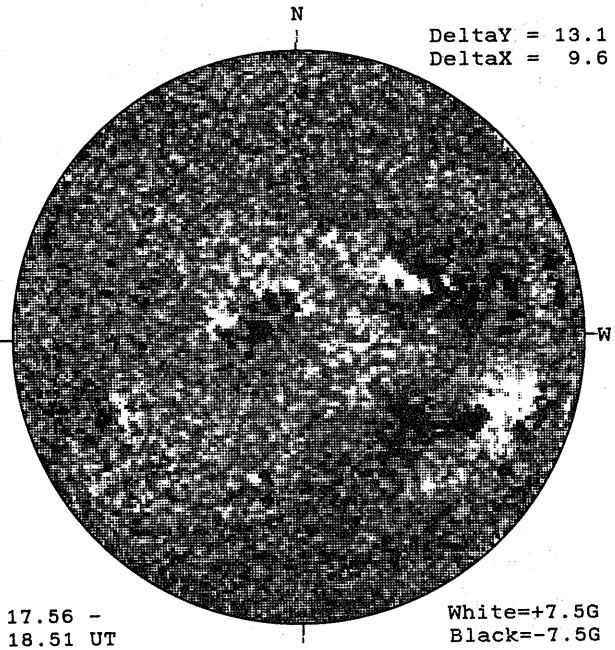
KITT PEAK MAGNETOGRAM



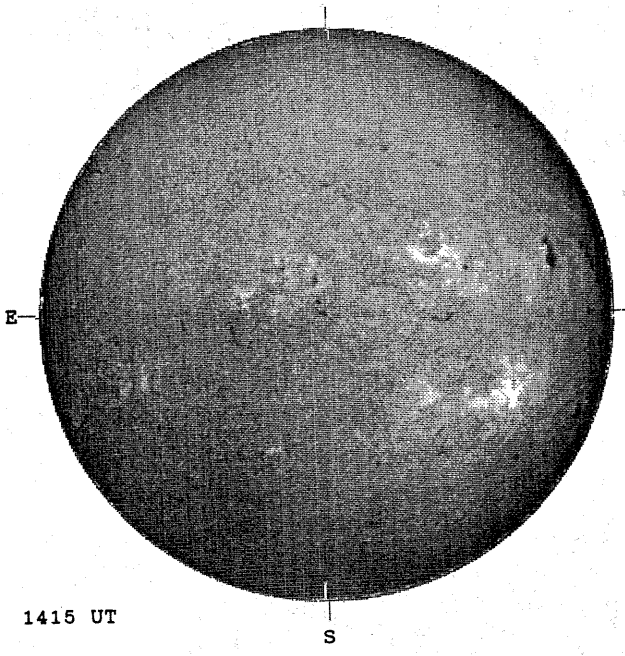
STANFORD MAGNETOGRAM



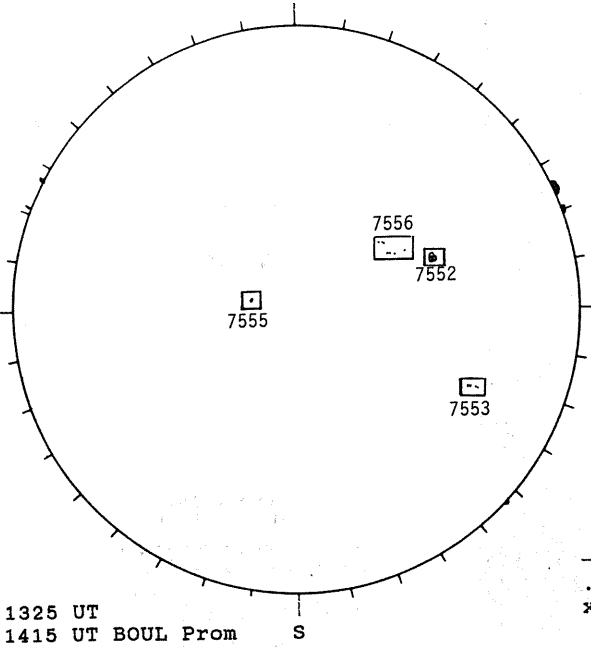
MT. WILSON MAGNETOGRAM



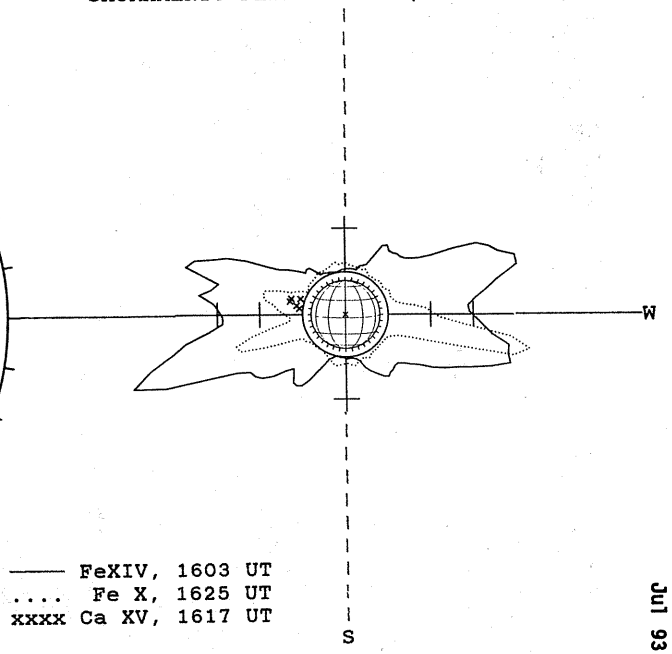
BOULDER H-ALPHA



RAMEY SUNSPOT



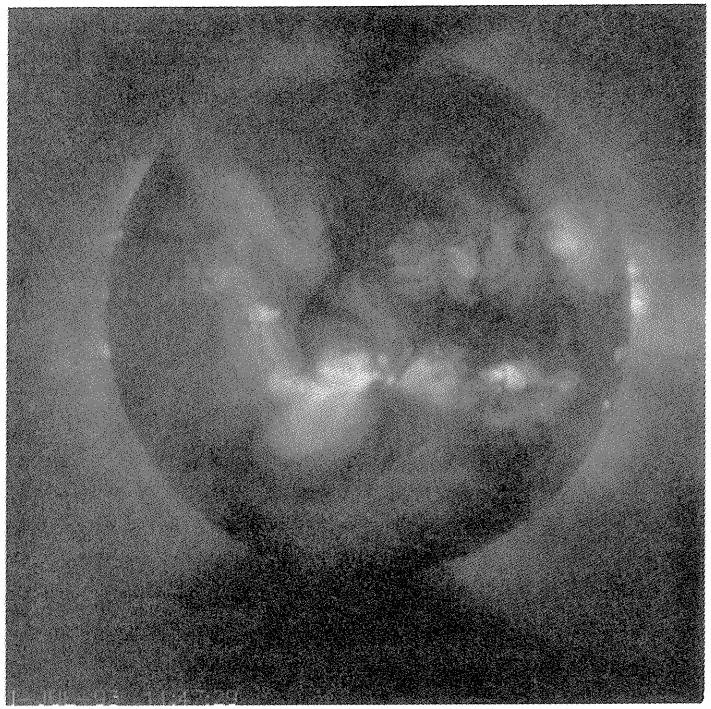
SACRAMENTO PEAK CORONA (1.15 Radii)



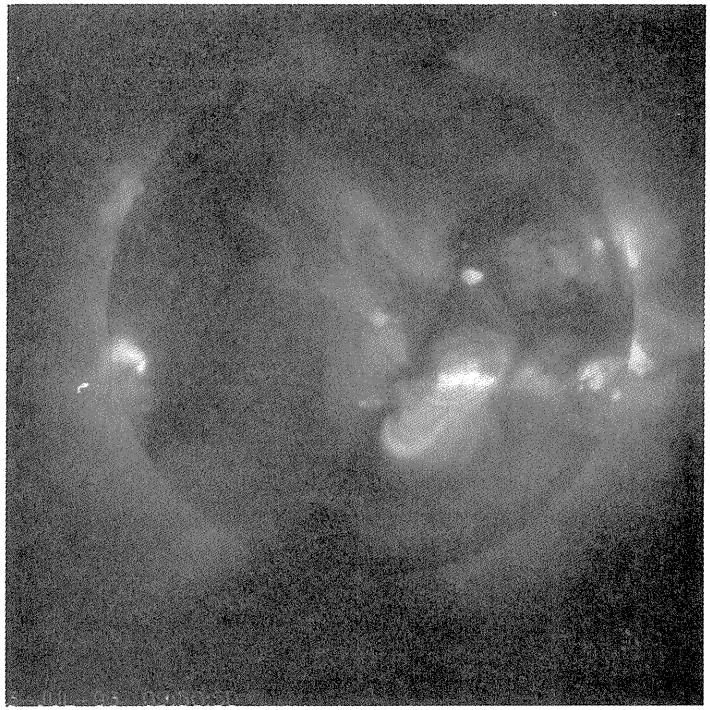
73
Jul 93

YOHKOH SOFT X-RAY TELESCOPE IMAGES

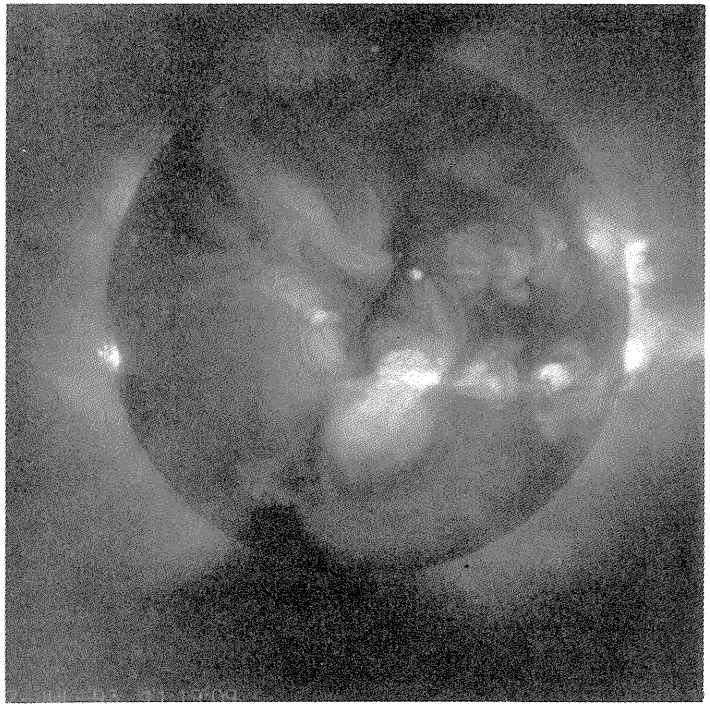
July 1993



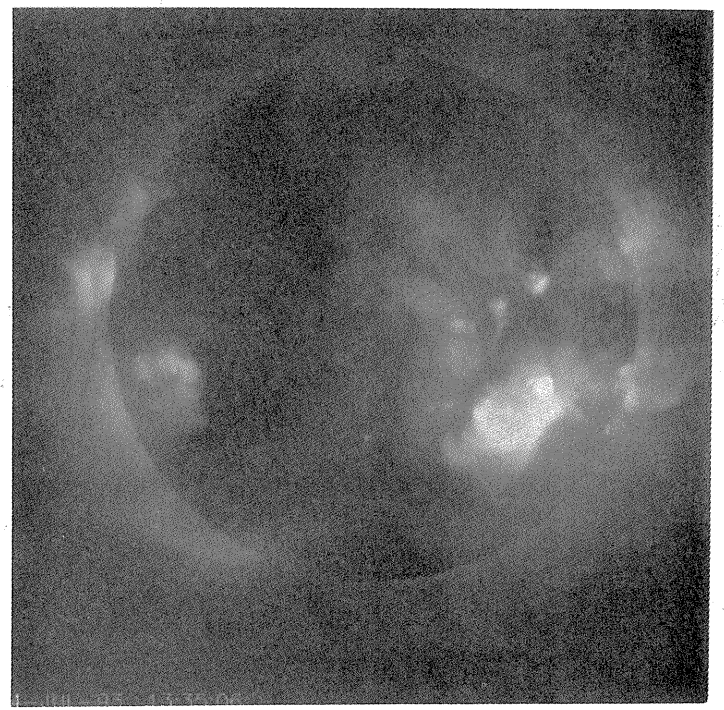
Day 1
11:47:29 UT



Day 3
09:50:50 UT



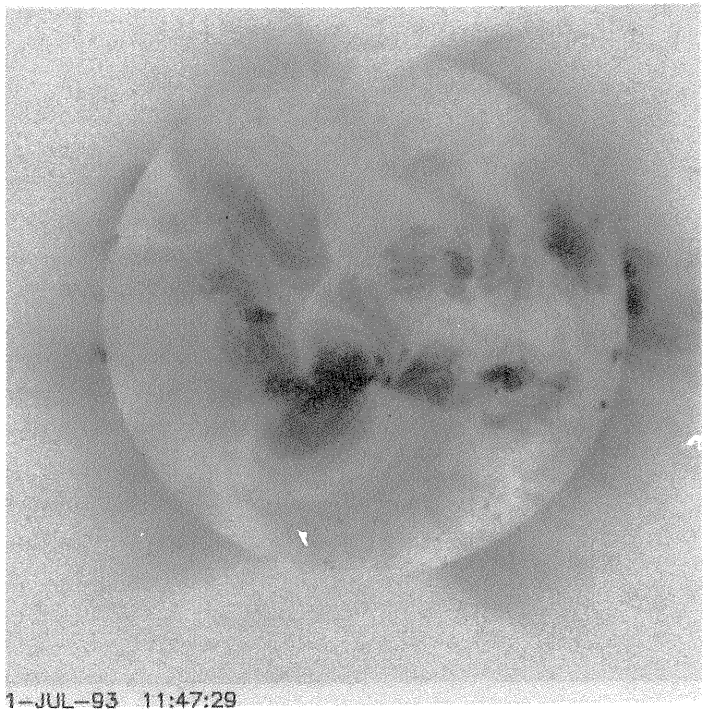
Day 2
11:19:09 UT



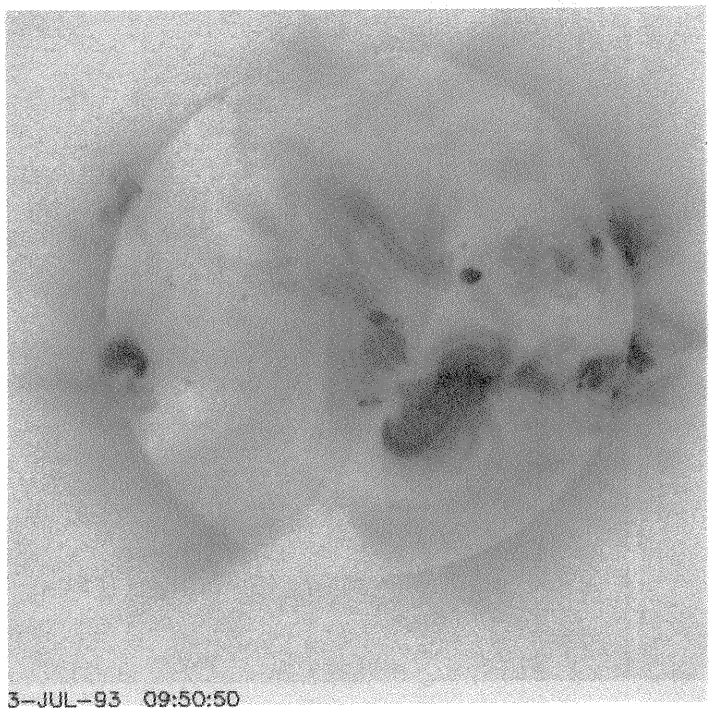
Day 4
13:35:06 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

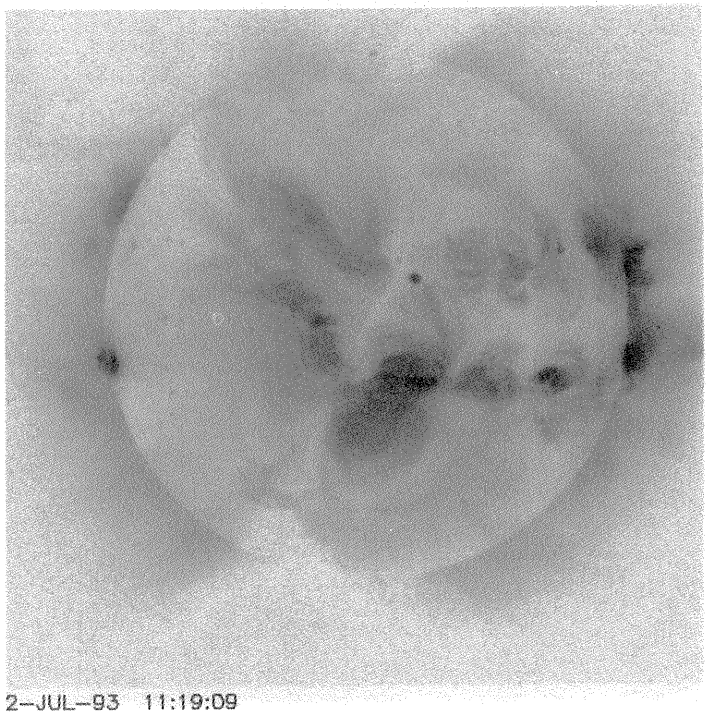
July 1993



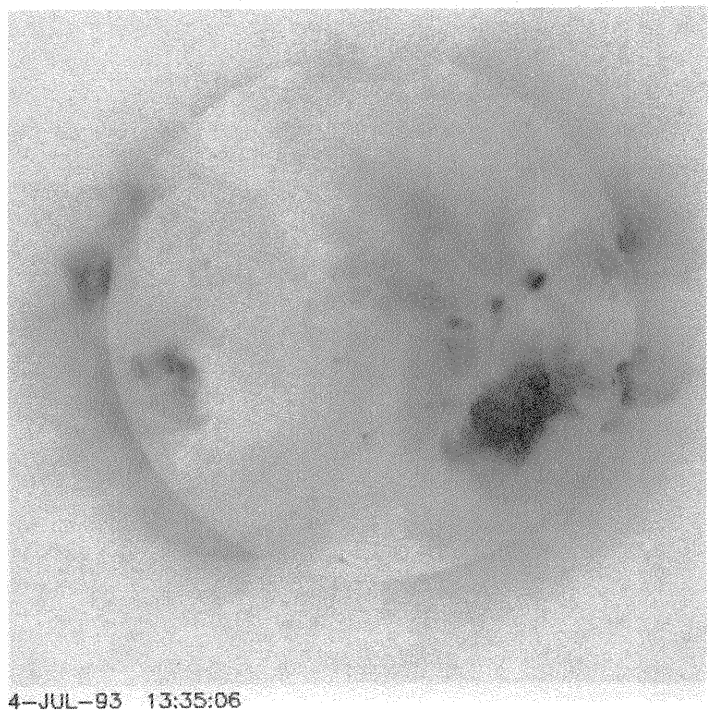
Day 1
11:47:29 UT



Day 3
09:50:50 UT



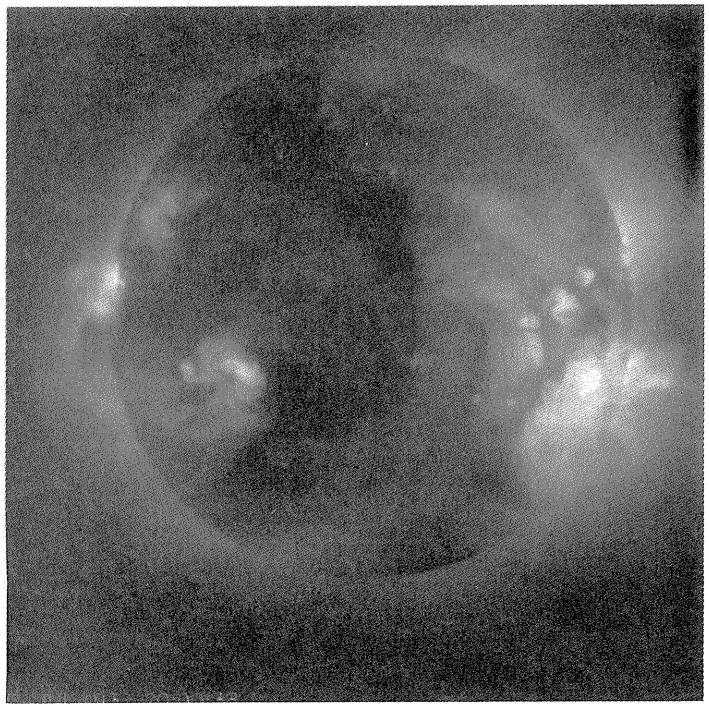
Day 2
11:19:09 UT



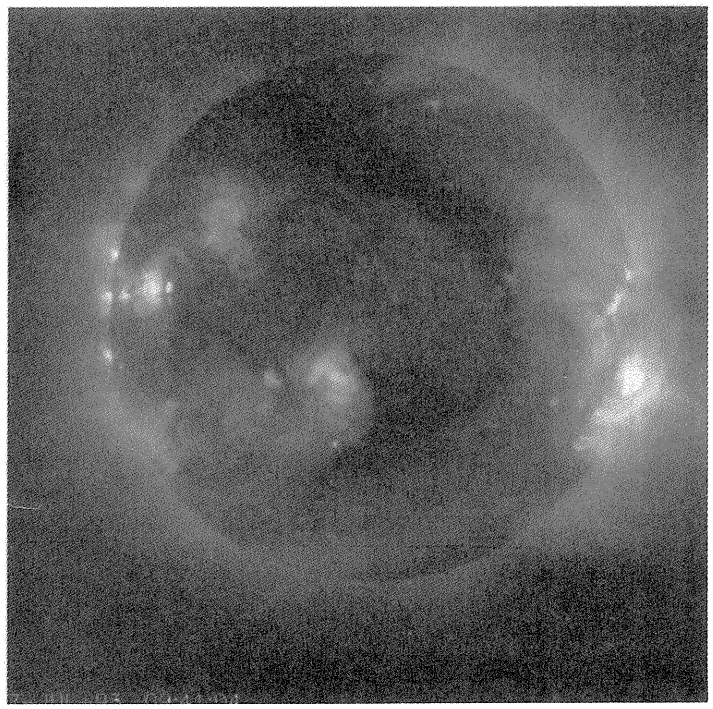
Day 4
13:35:06 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

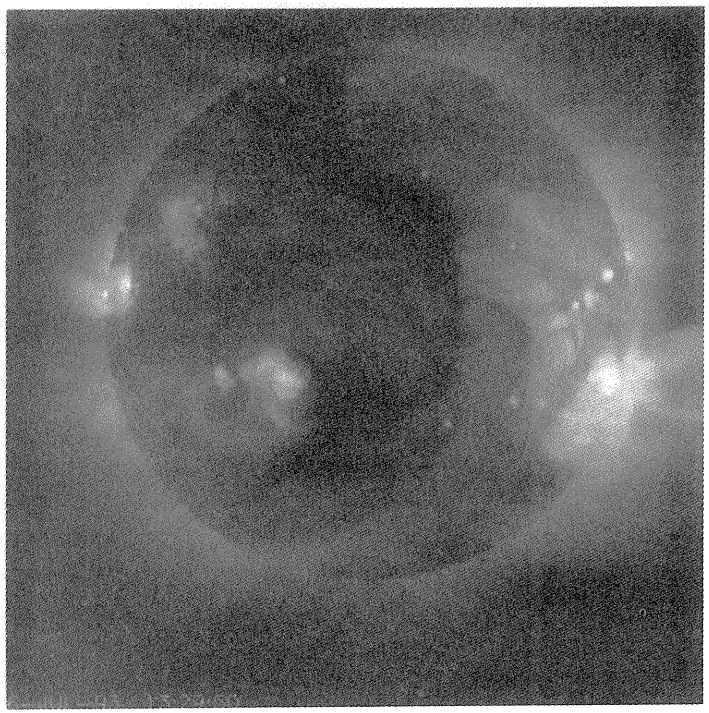
July 1993



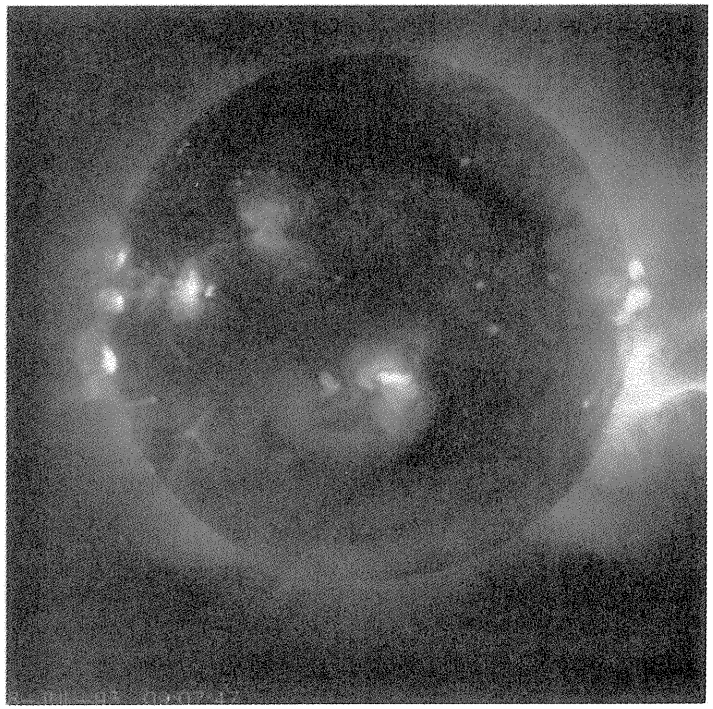
Day 5
20:00:38 UT



Day 7
09:41:04 UT



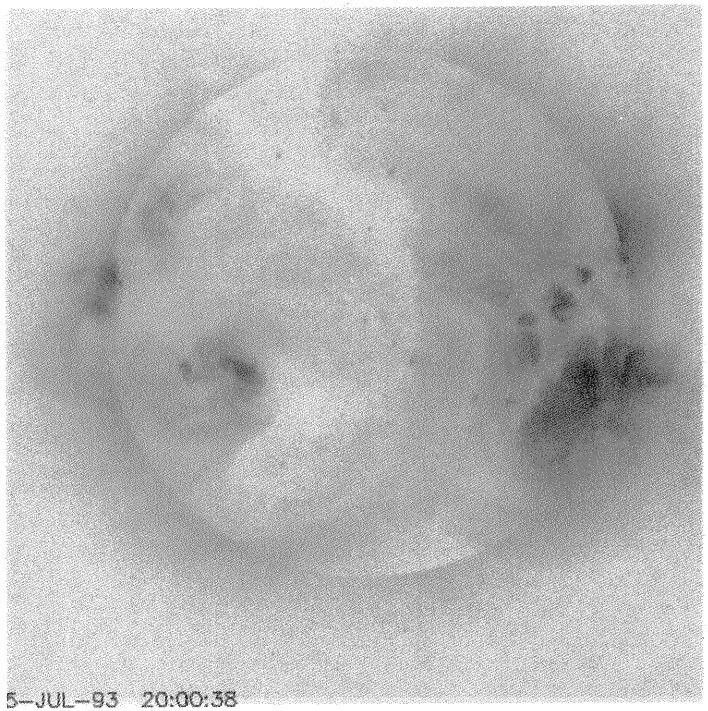
Day 6
13:29:50 UT



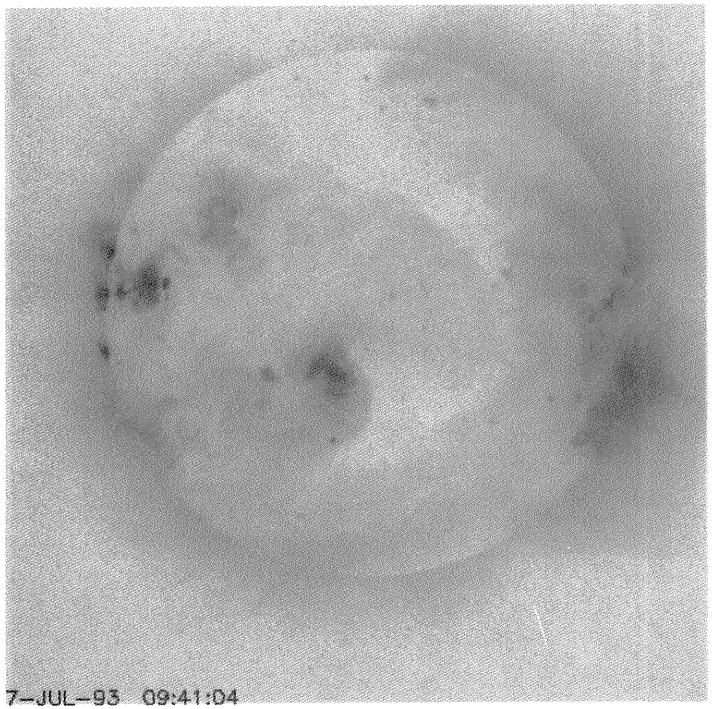
Day 8
09:07:47 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

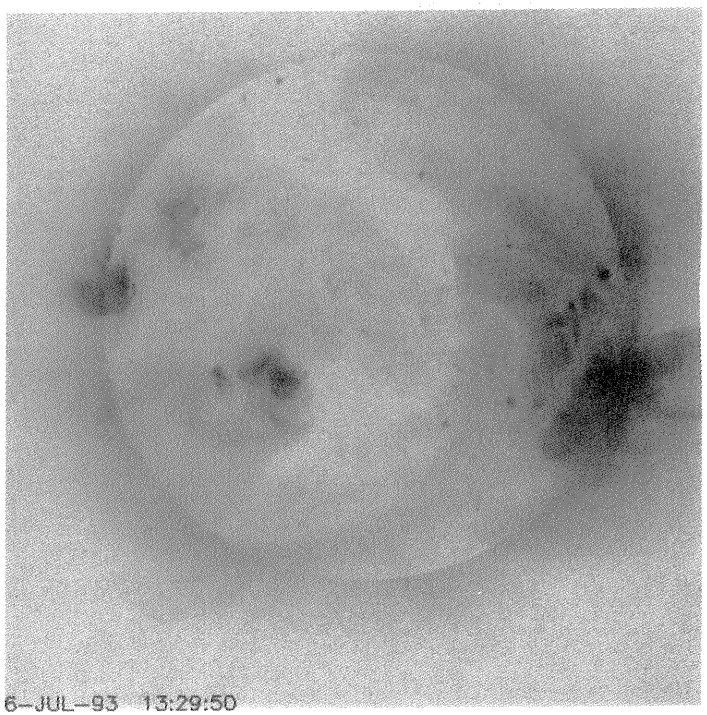
July 1993



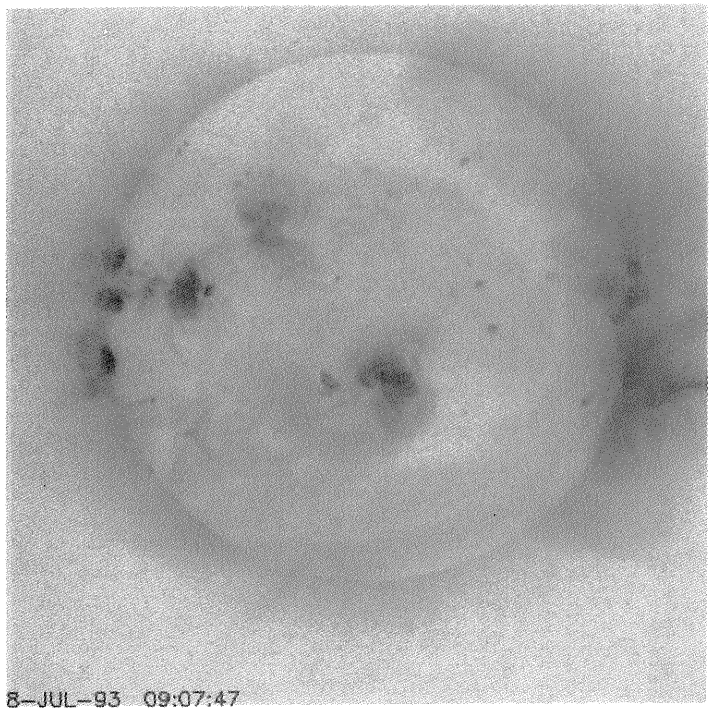
Day 5
20:00:38 UT



Day 7
09:41:04 UT



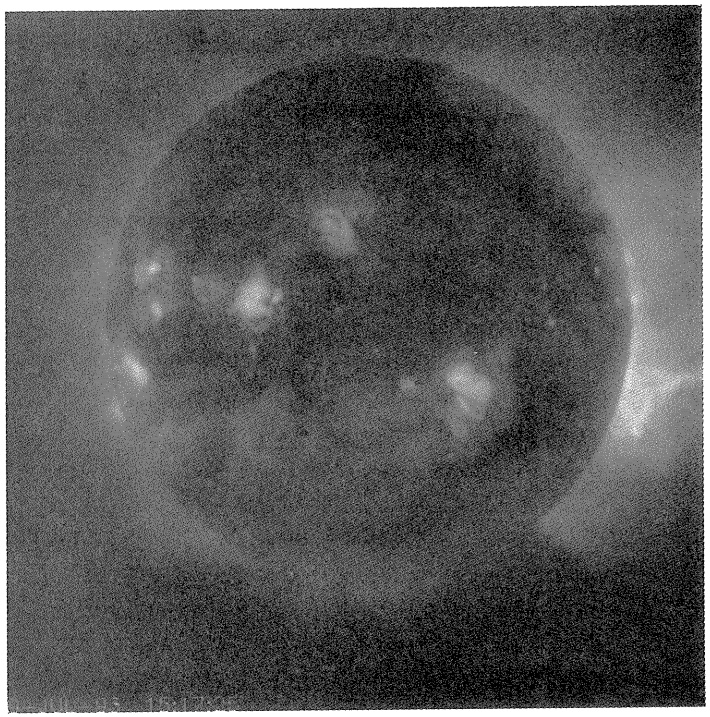
Day 6
13:29:50 UT



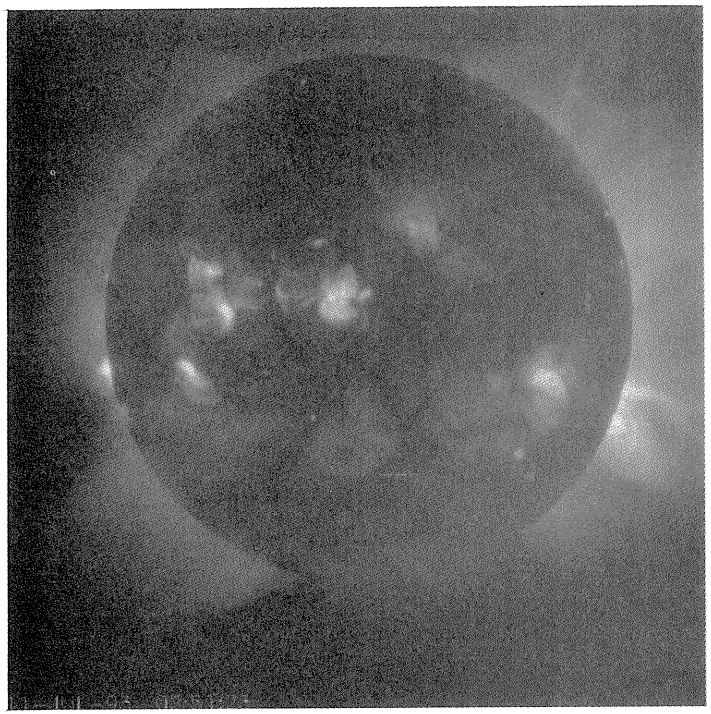
Day 8
09:07:47 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

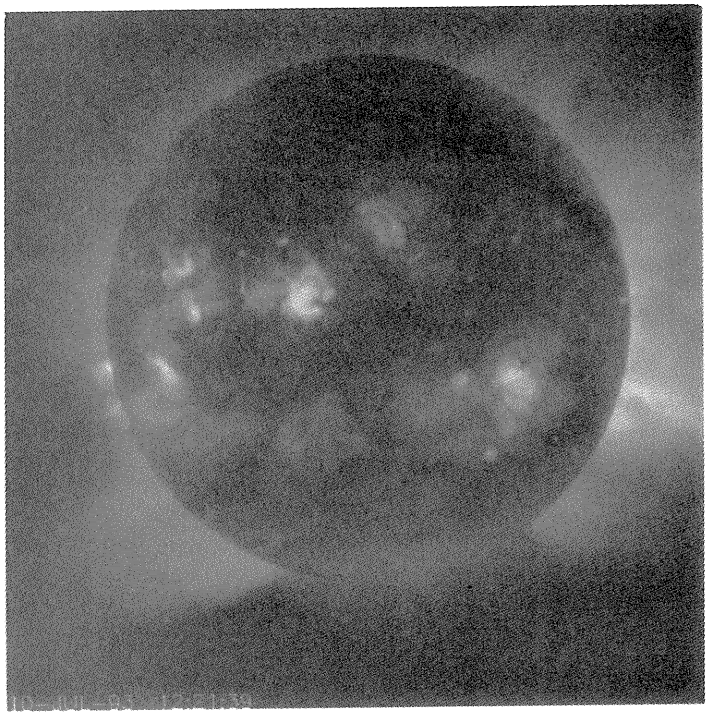
July 1993



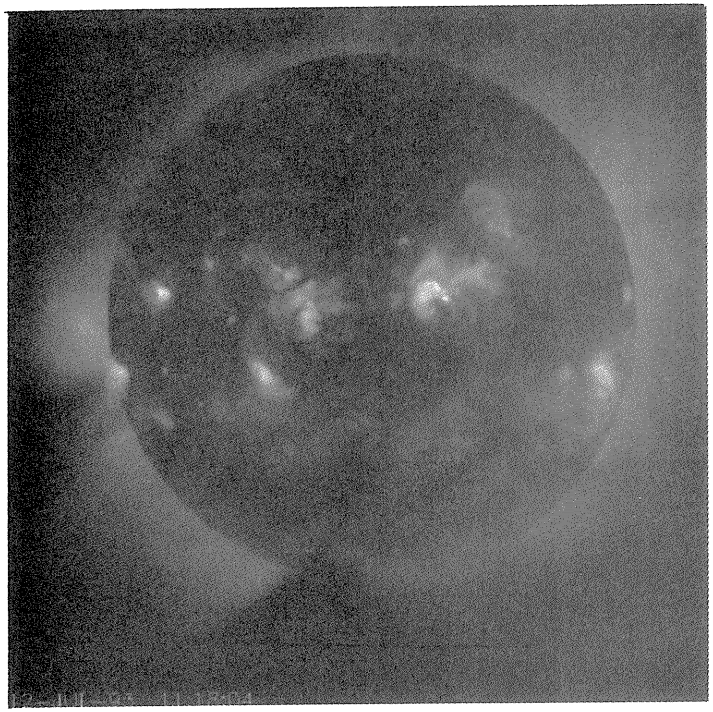
Day 9
15:17:25 UT



Day 11
02:51:23 UT



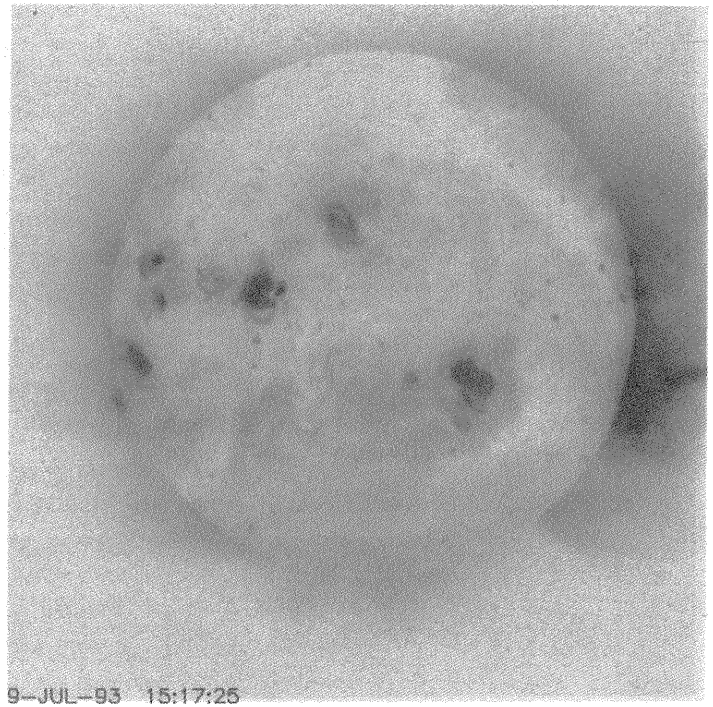
Day 10
12:21:39 UT



Day 12
11:18:04 UT

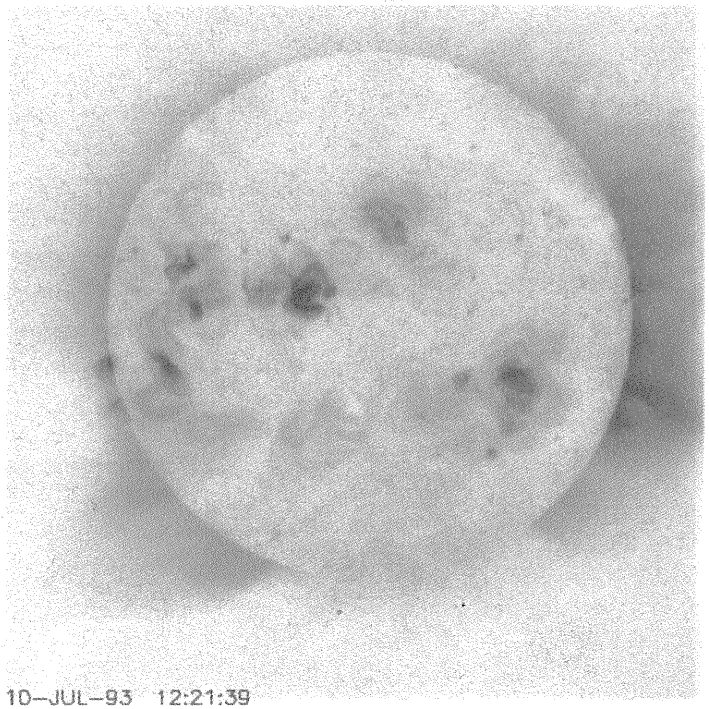
YOHKOH SOFT X-RAY TELESCOPE IMAGES

July 1993

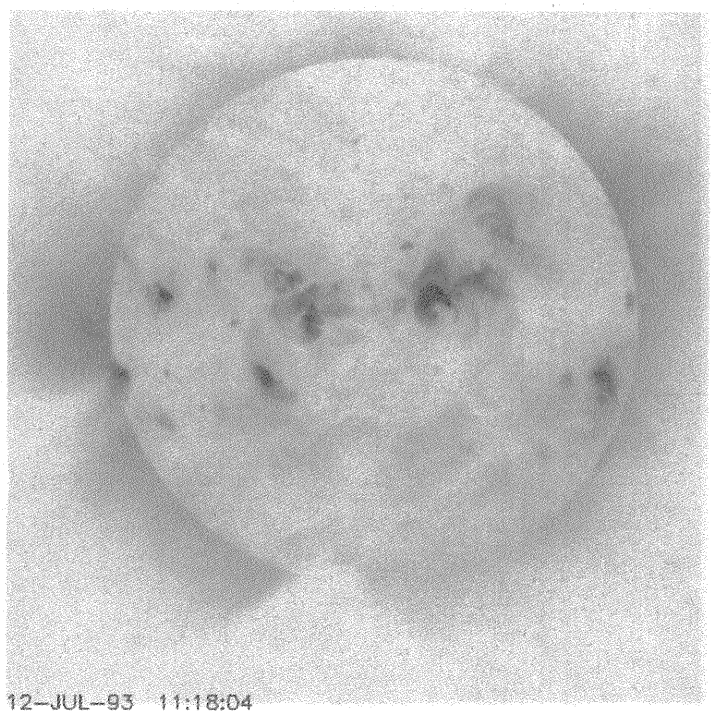


Day 9
15:17:25 UT

Day 11
02:51:23 UT



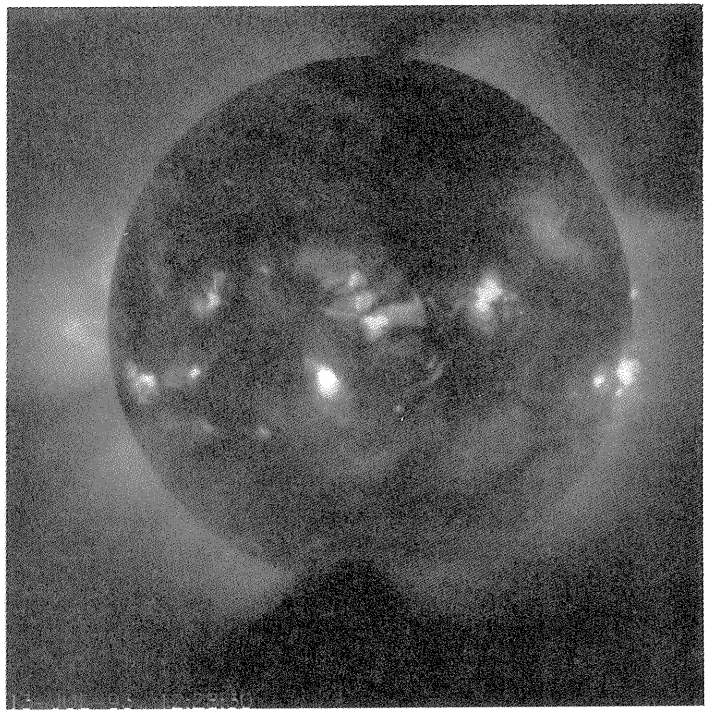
Day 10
12:21:39 UT



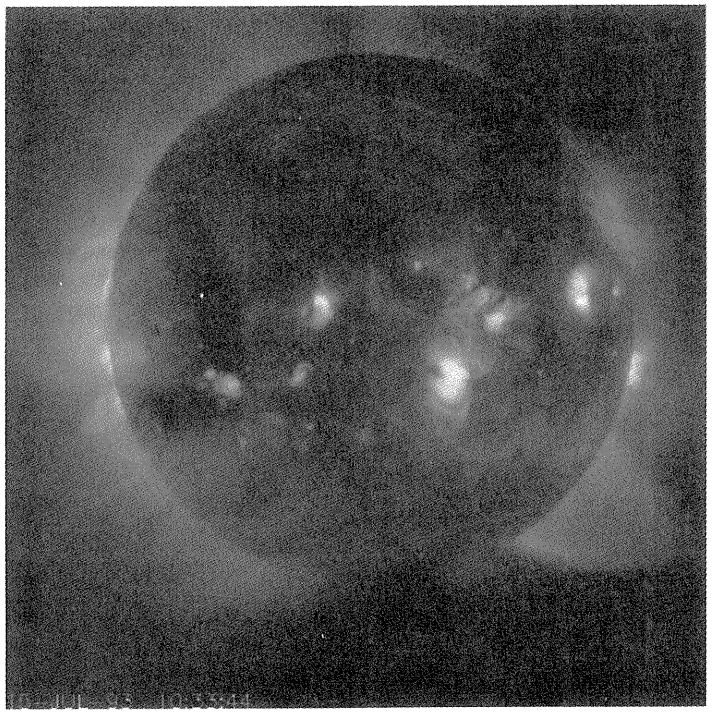
Day 12
11:18:04 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

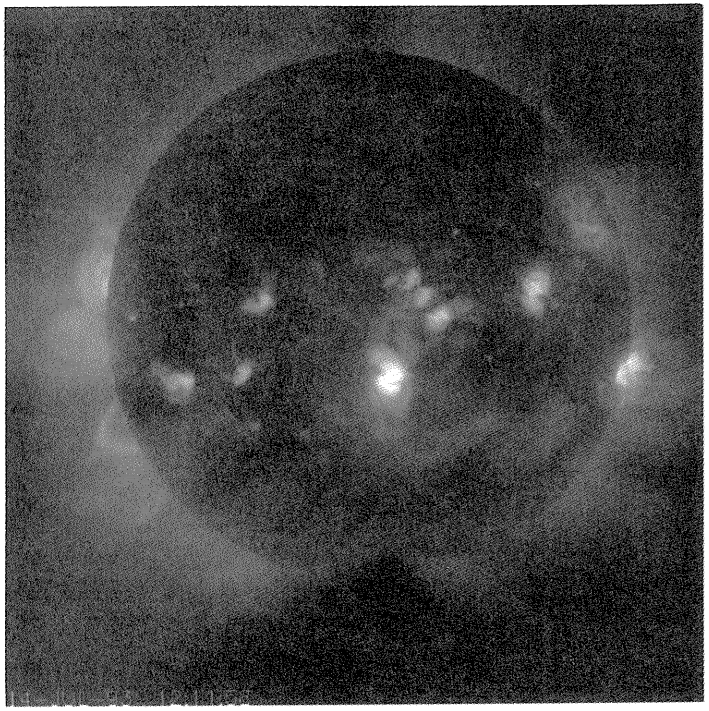
July 1993



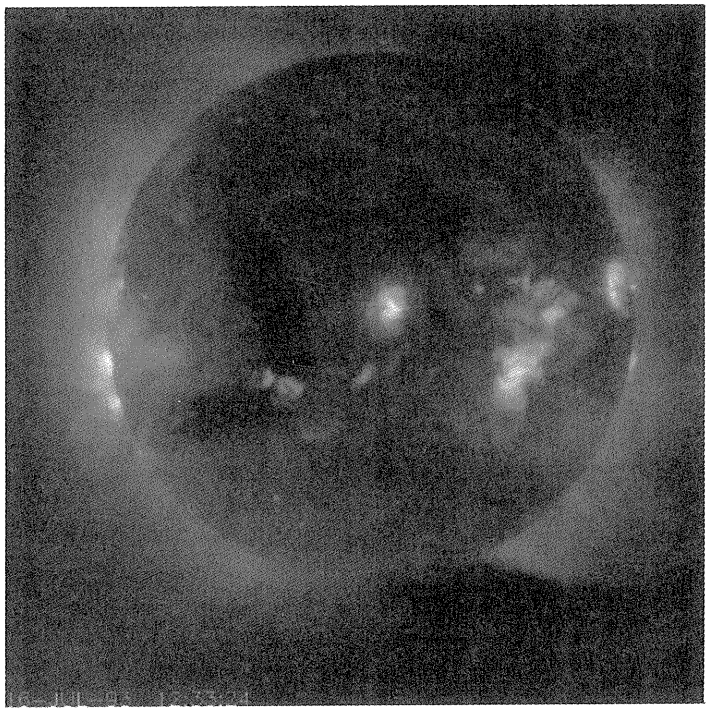
Day 13
12:28:30 UT



Day 15
10:33:44 UT



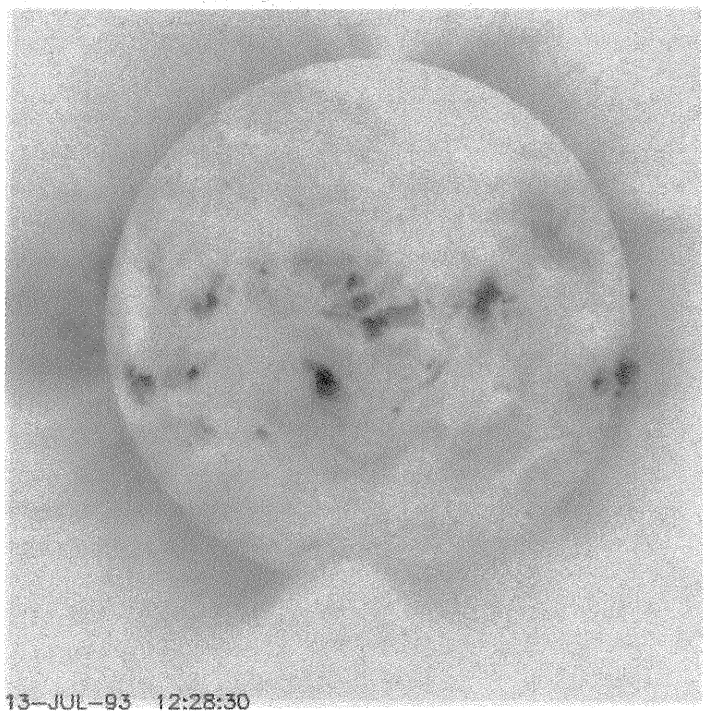
Day 14
12:11:58 UT



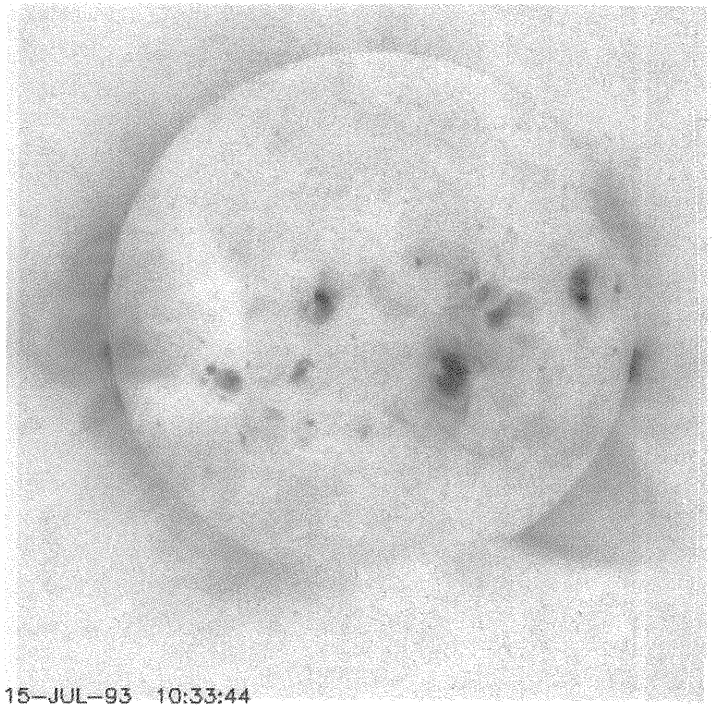
Day 16
12:33:24 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

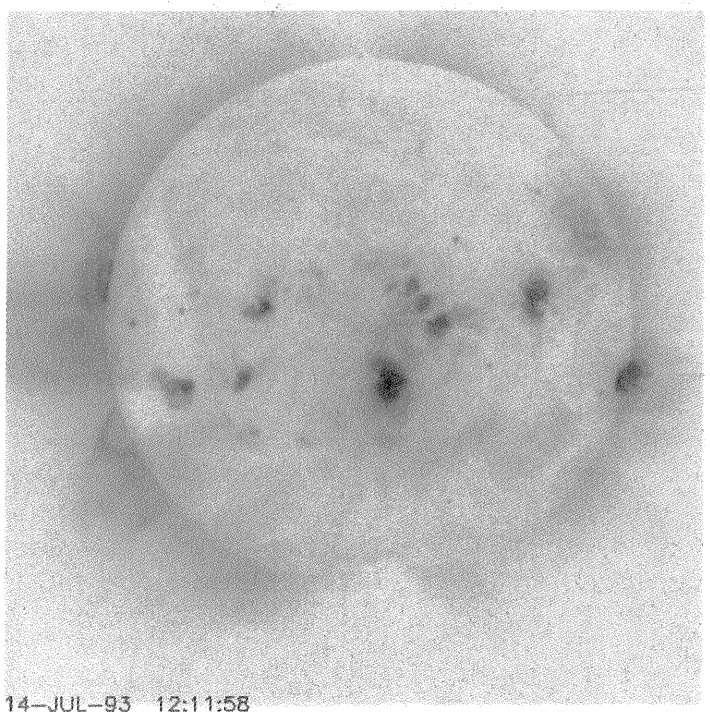
July 1993



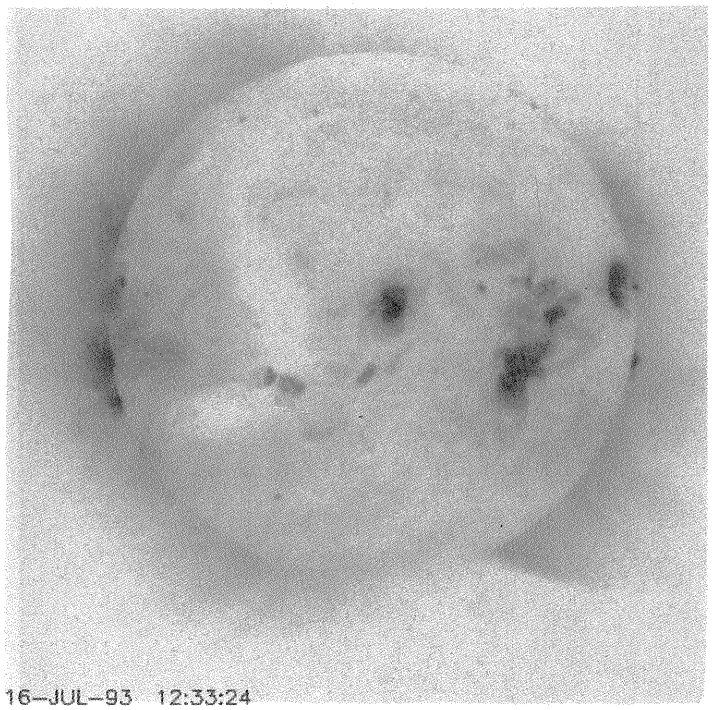
Day 13
12:28:30 UT



Day 15
10:33:44 UT



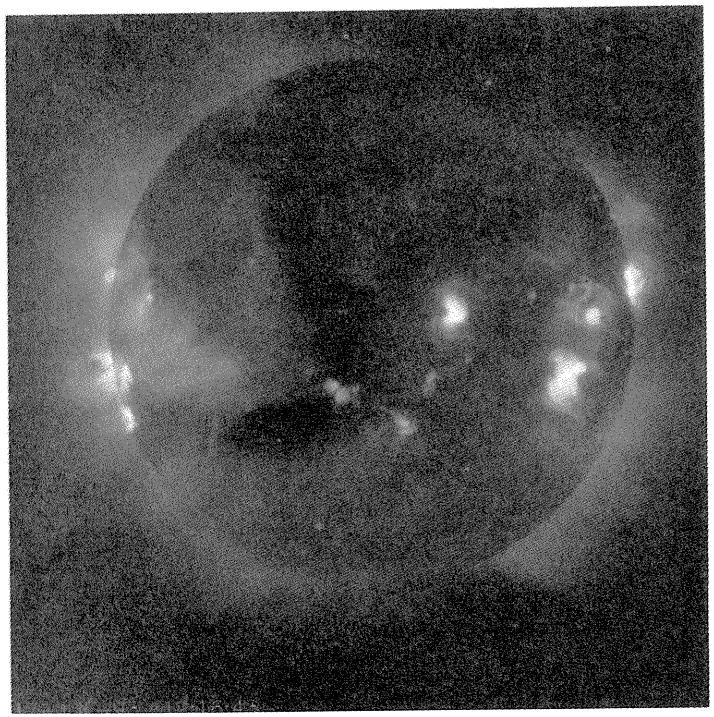
Day 14
12:11:58 UT



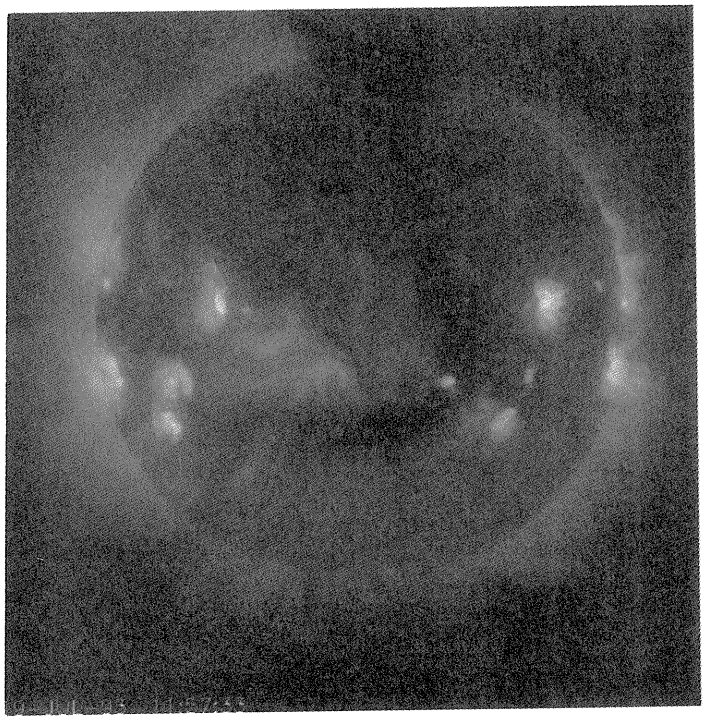
Day 16
12:33:24 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

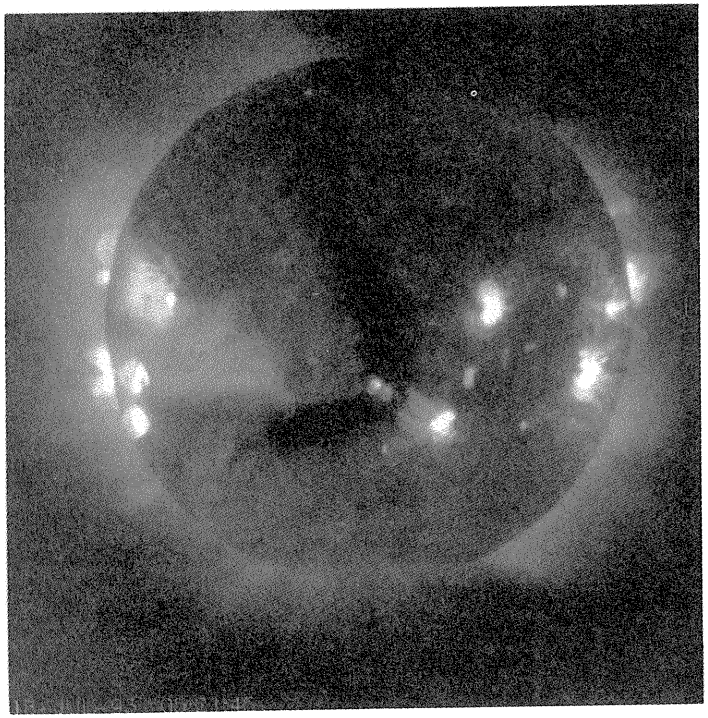
July 1993



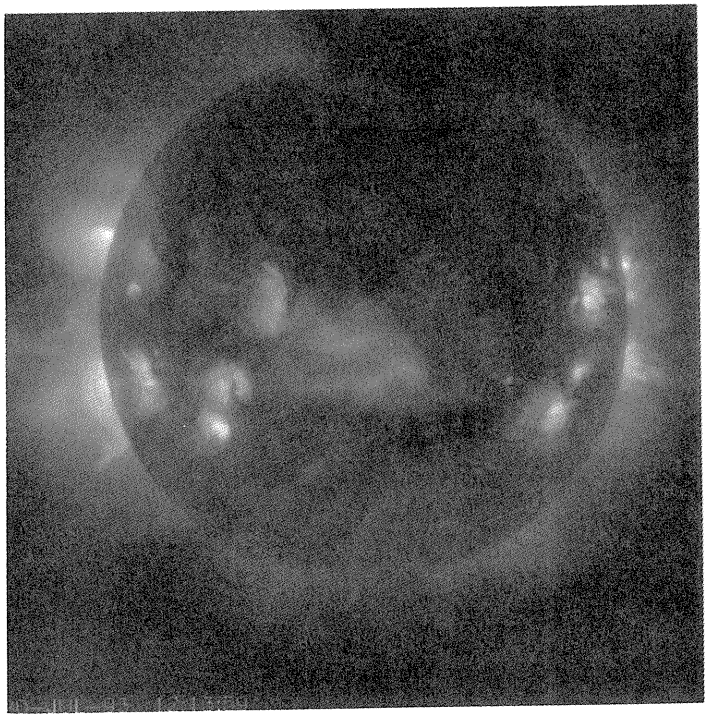
Day 17
12:16:43 UT



Day 19
11:57:33 UT



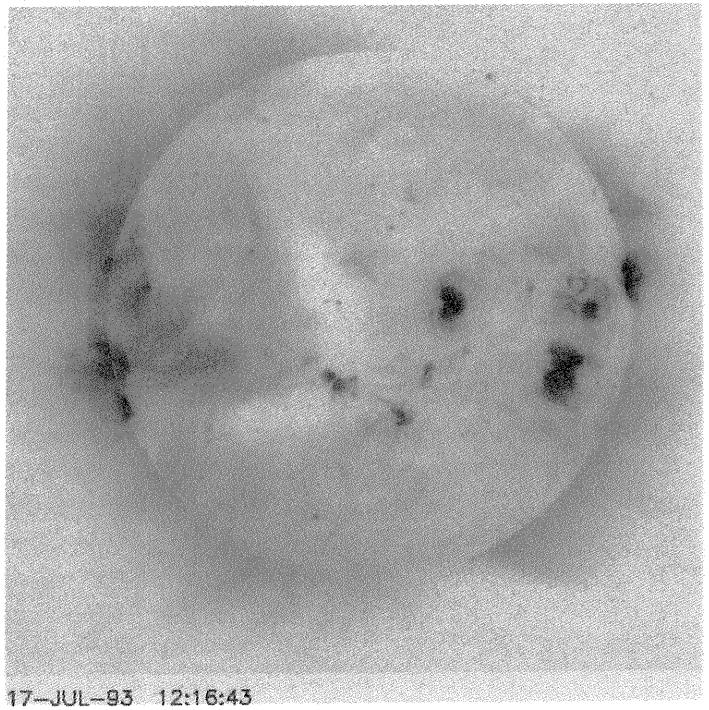
Day 18
05:21:45 UT



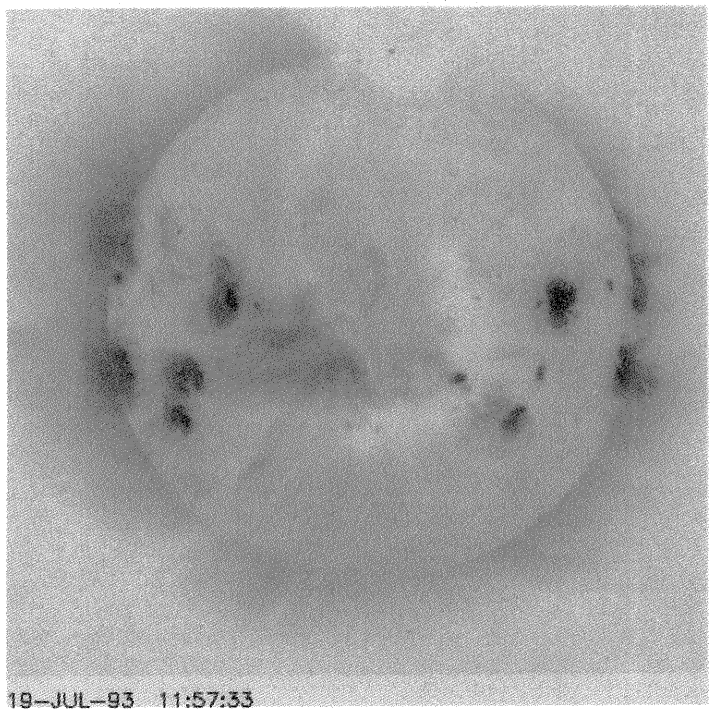
Day 20
12:13:59 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

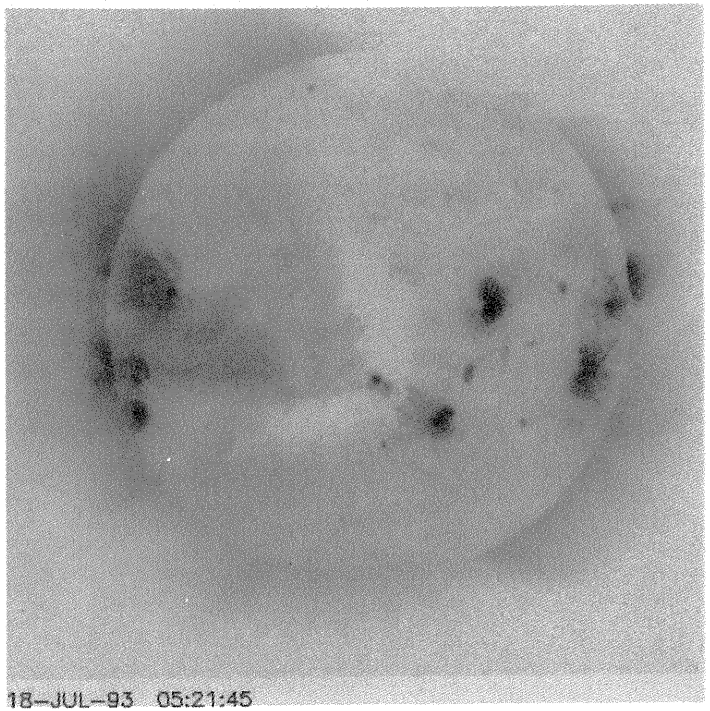
July 1993



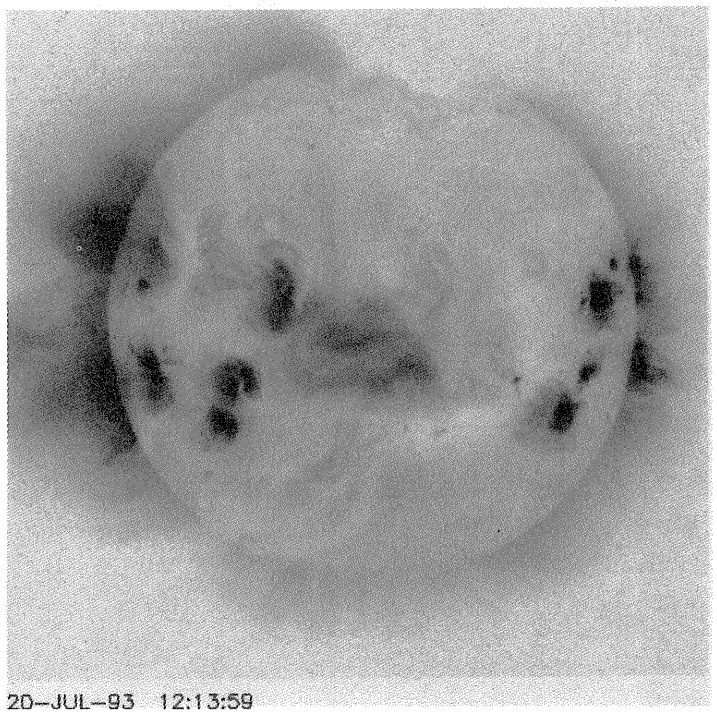
Day 17
12:16:43 UT



Day 19
11:57:33 UT



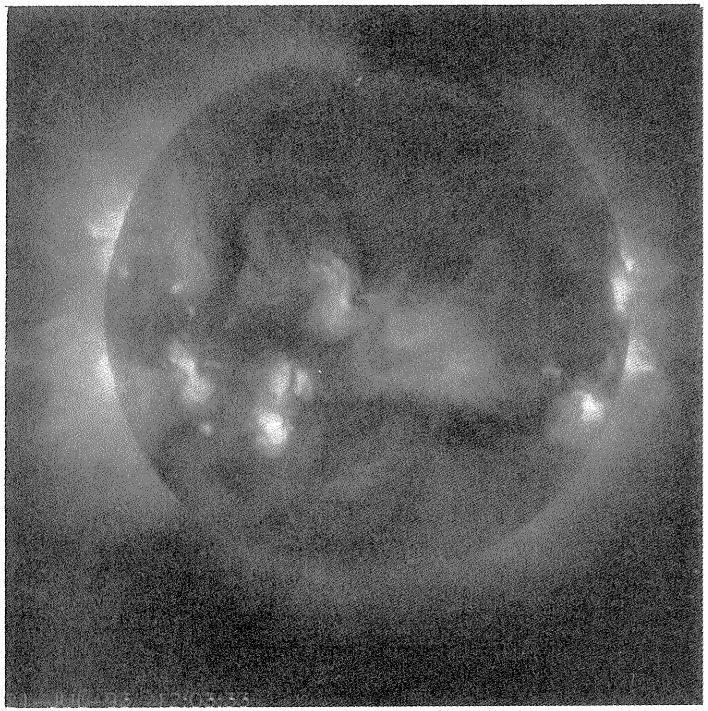
Day 18
05:21:45 UT



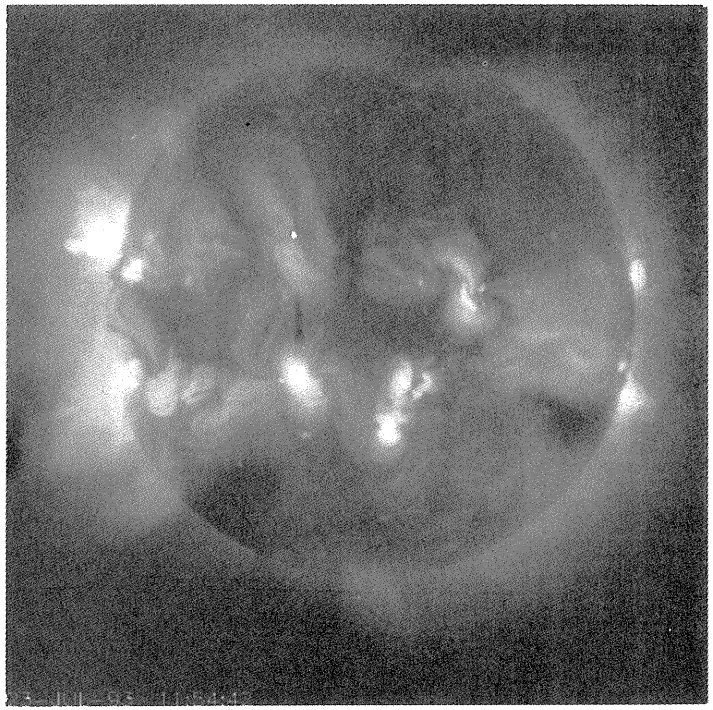
Day 20
12:13:59 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

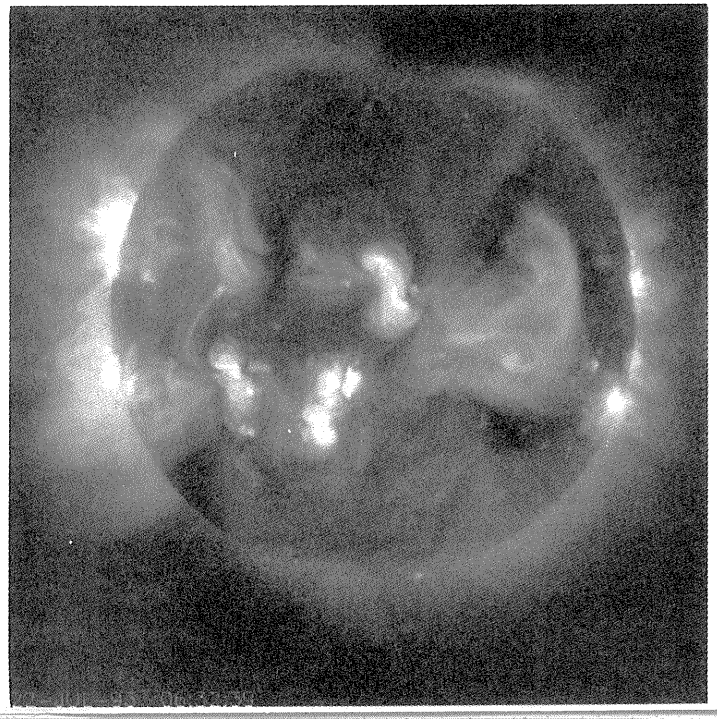
July 1993



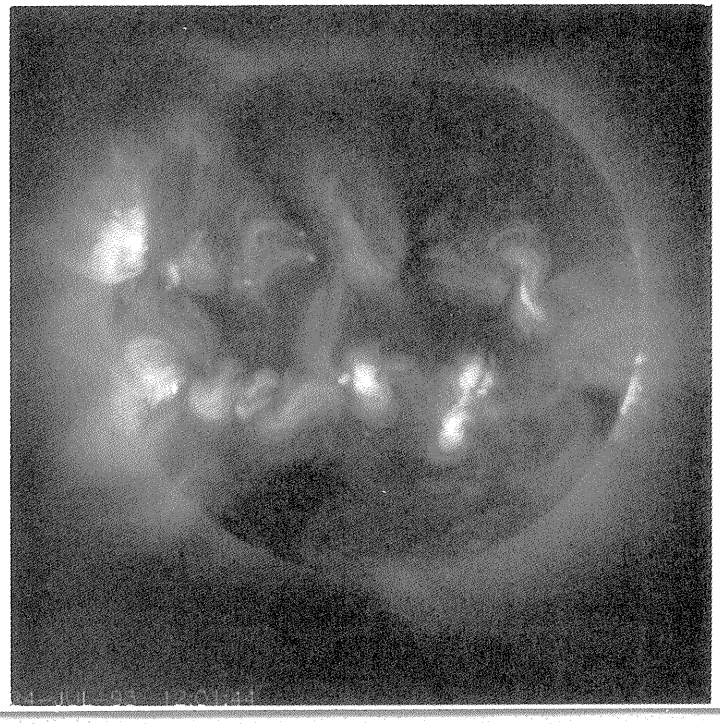
Day 21
12:03:33 UT



Day 23
11:54:42 UT



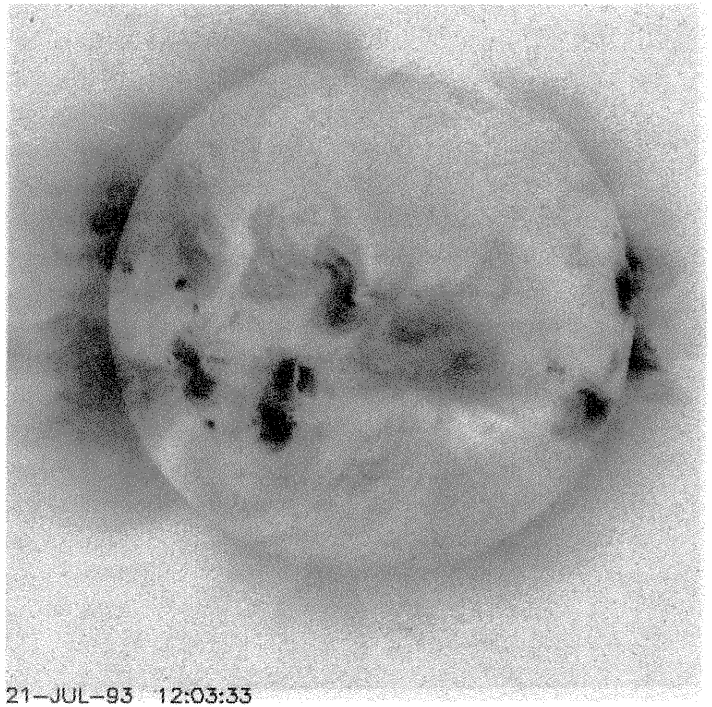
Day 22
06:32:39 UT



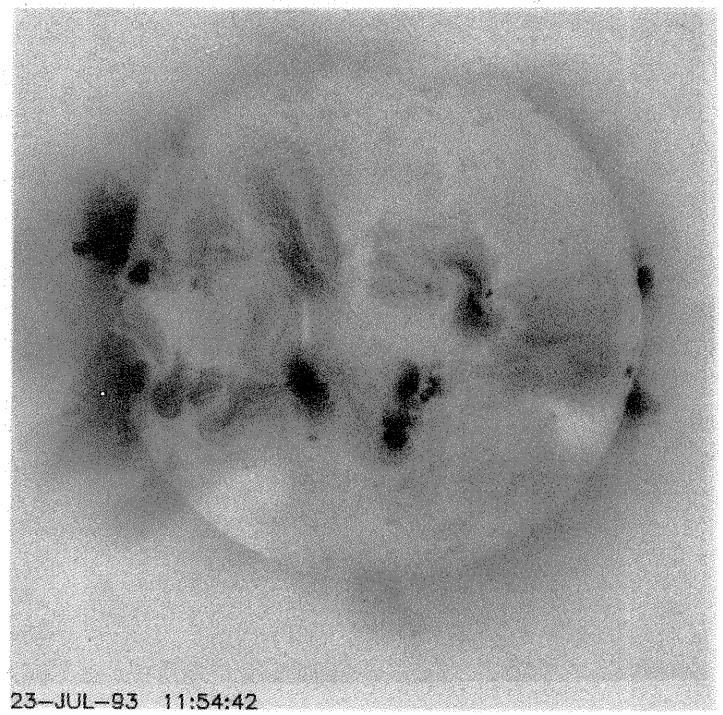
Day 24
12:01:44 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

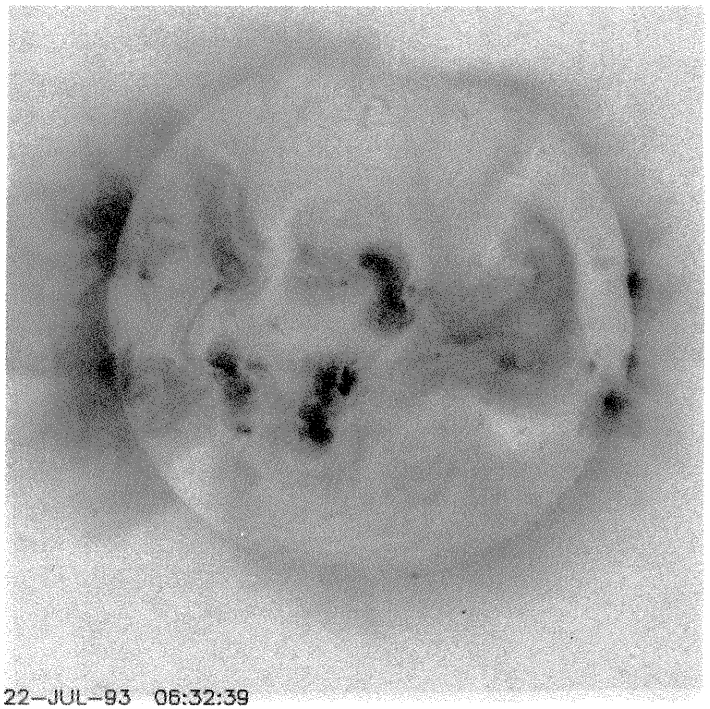
July 1993



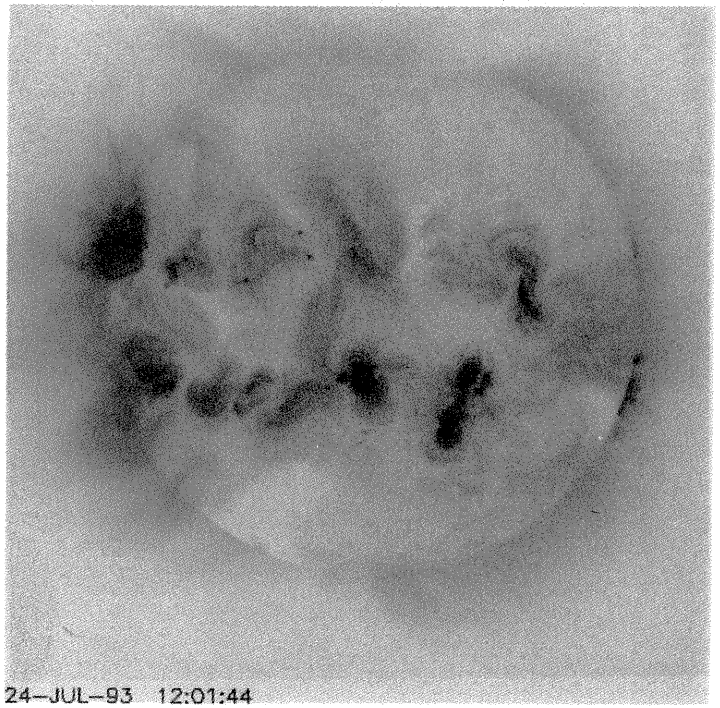
Day 21
12:03:33 UT



Day 23
11:54:42 UT



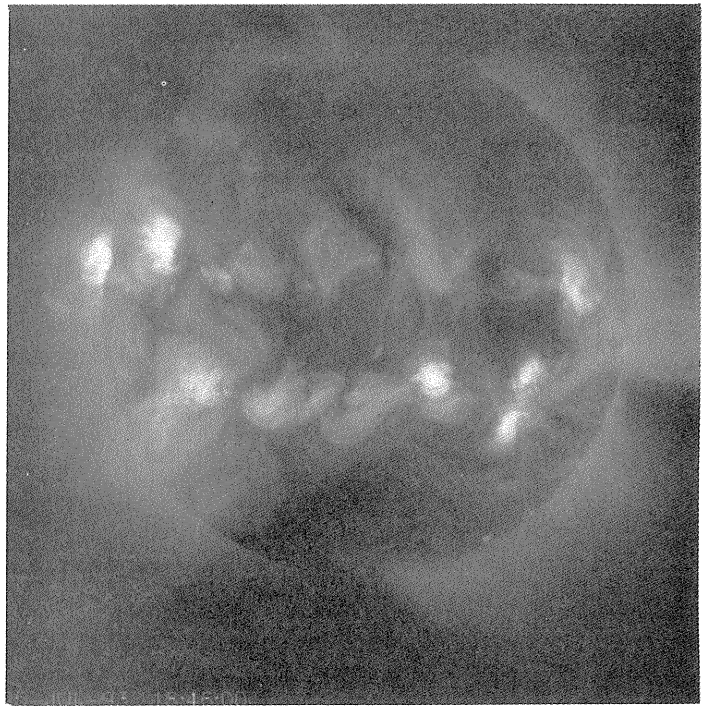
Day 22
06:32:39 UT



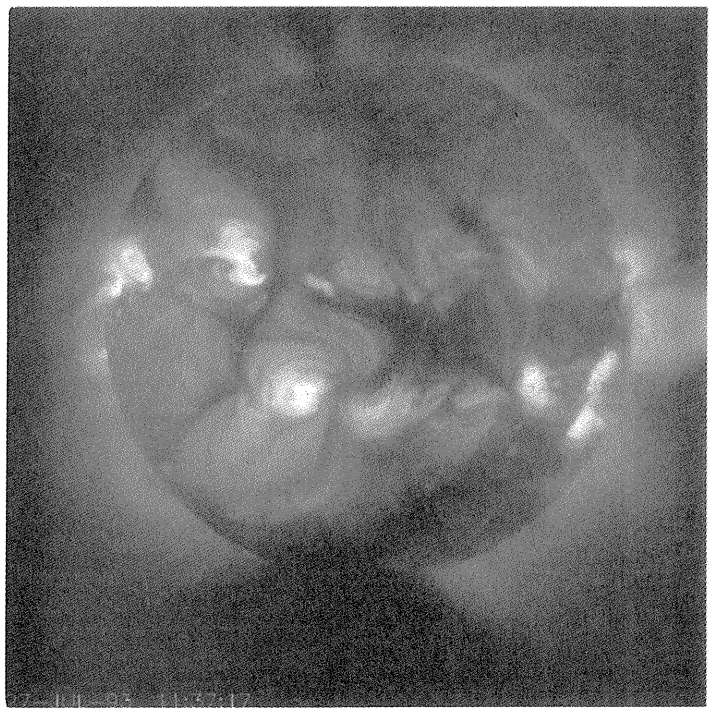
Day 24
12:01:44 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

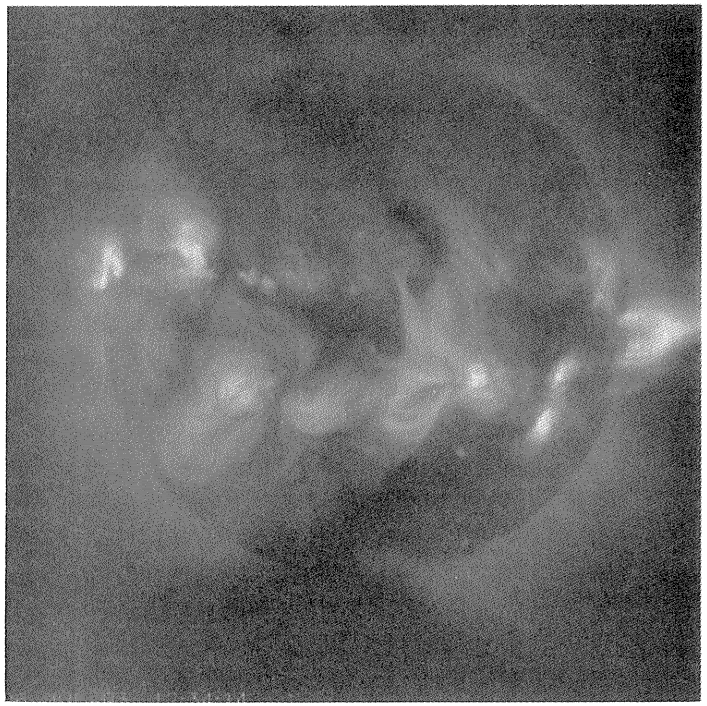
July 1993



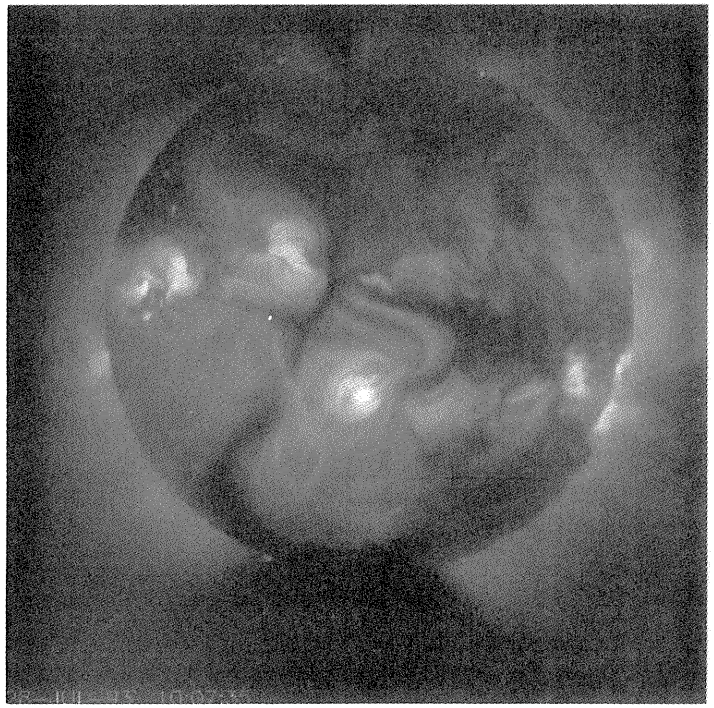
Day 25
18:46:00 UT



Day 27
11:37:17 UT



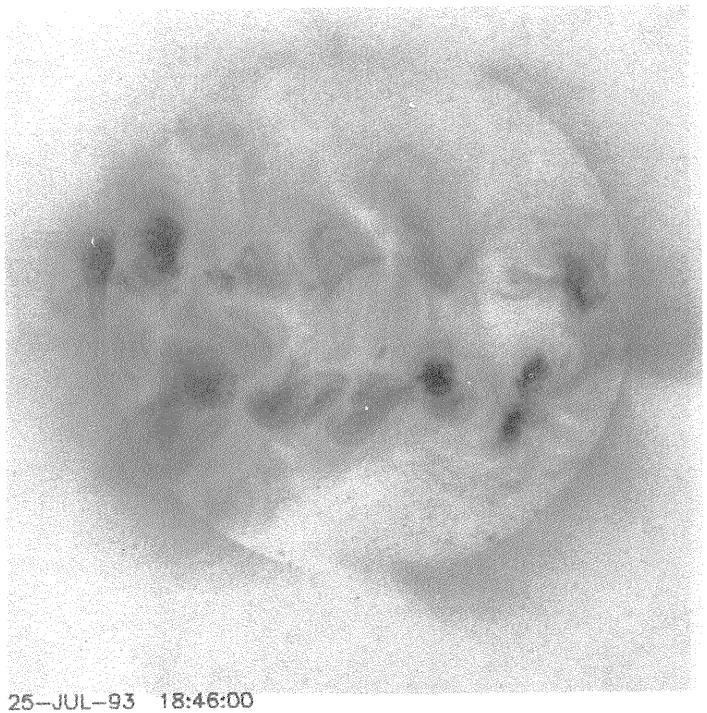
Day 26
12:34:14 UT



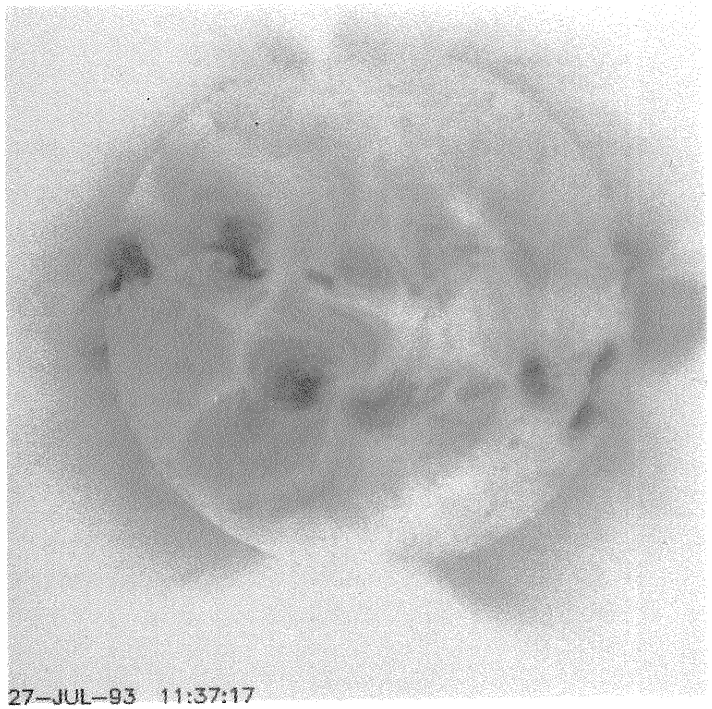
Day 28
10:07:35 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

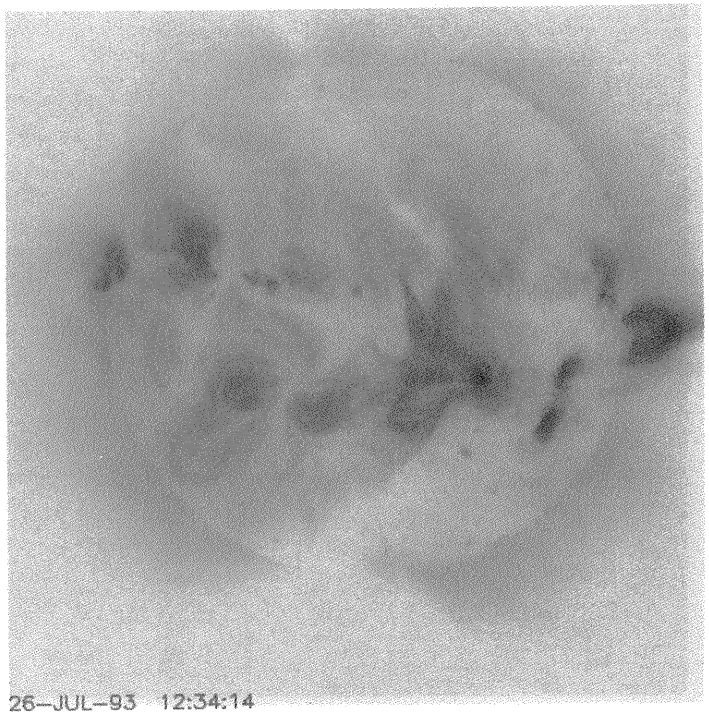
July 1993



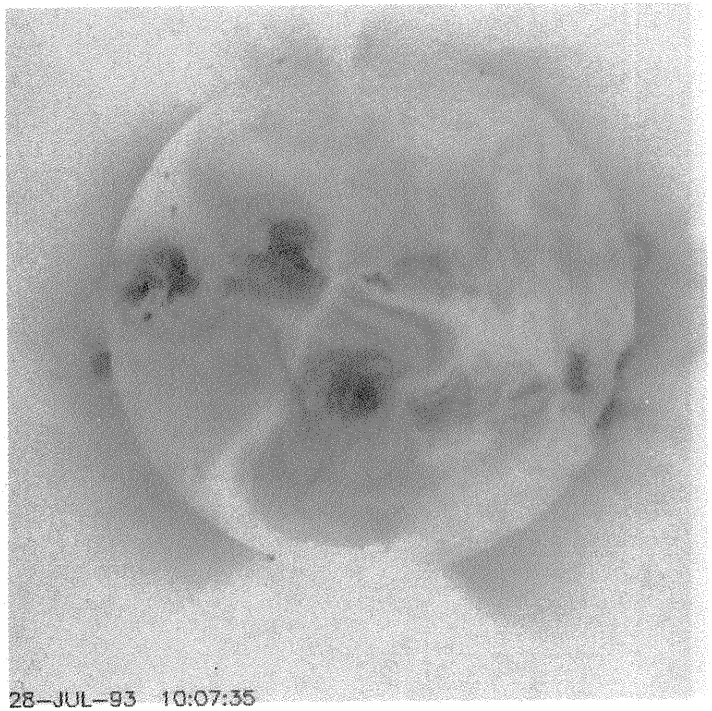
Day 25
18:46:00 UT



Day 27
11:37:17 UT



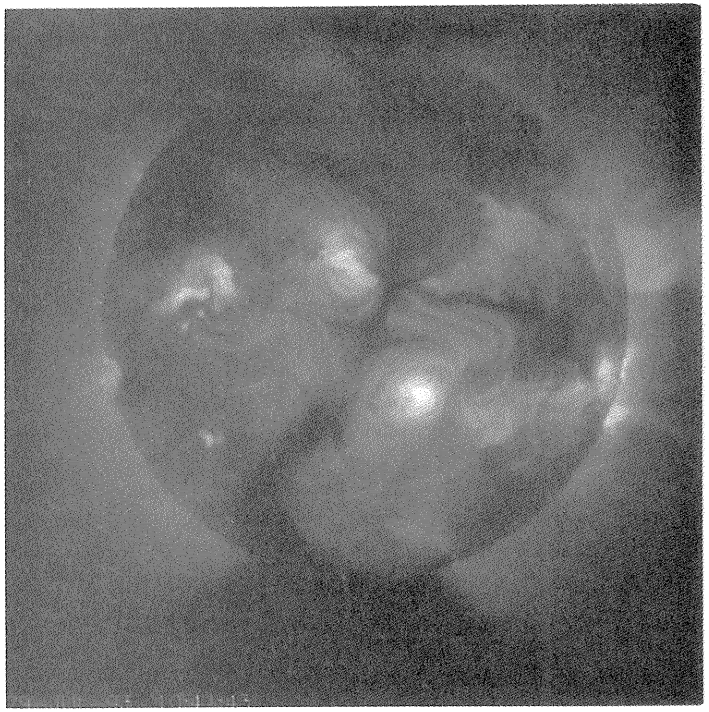
Day 26
12:34:14 UT



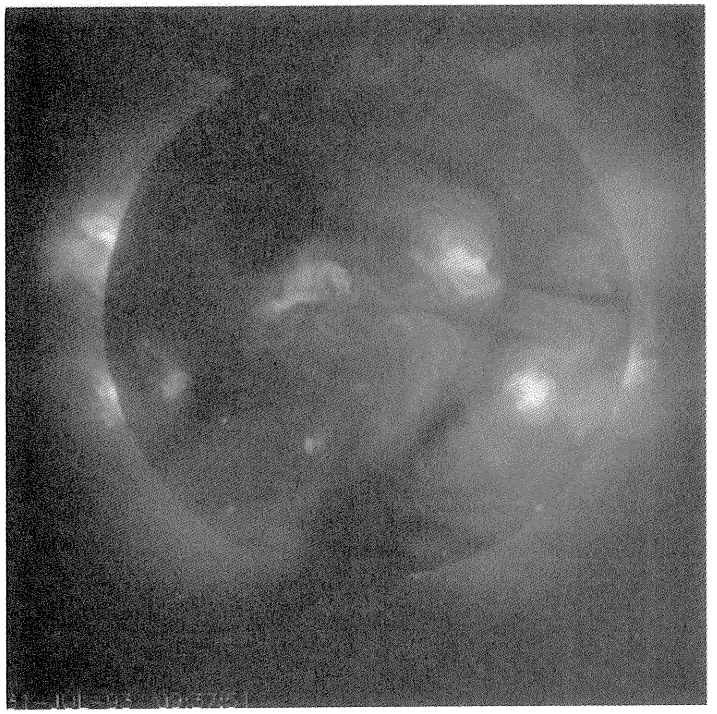
Day 28
10:07:35 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

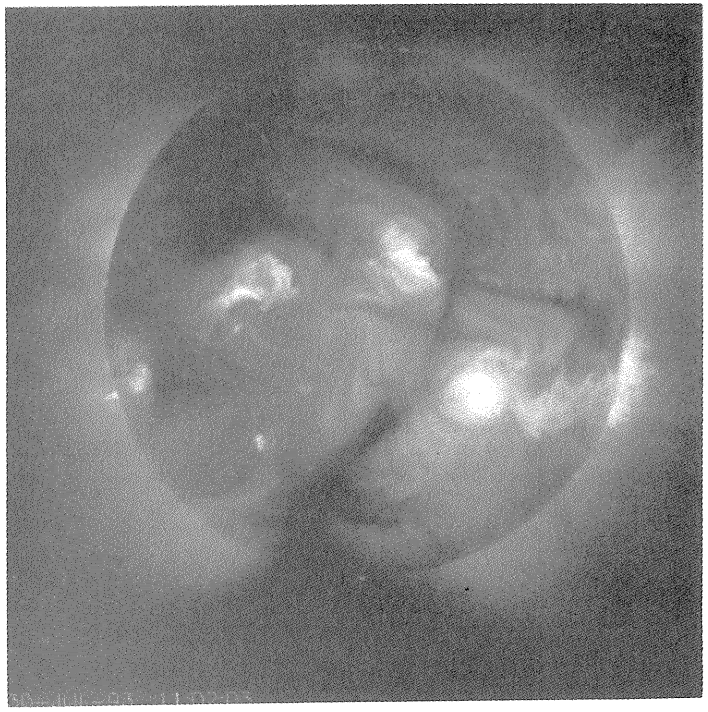
July 1993



Day 29
10:41:43 UT



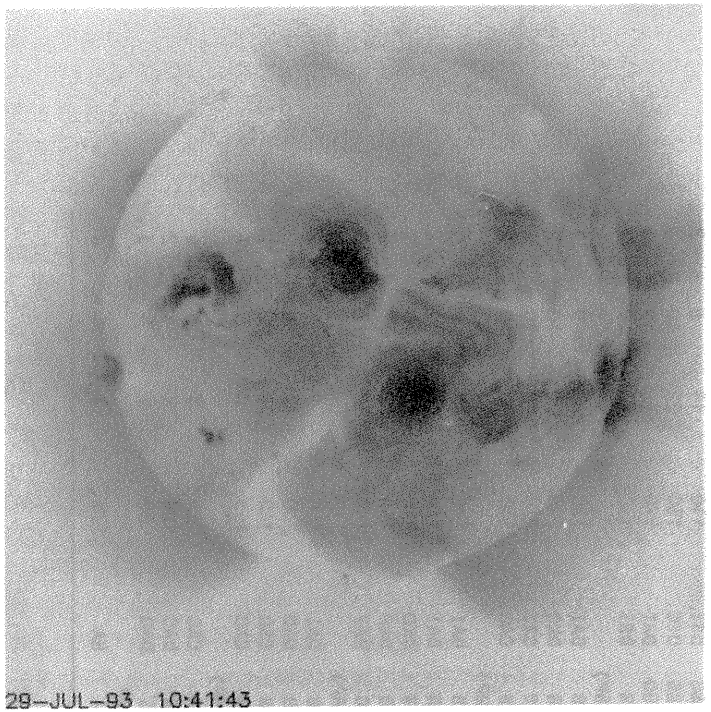
Day 31
09:37:51 UT



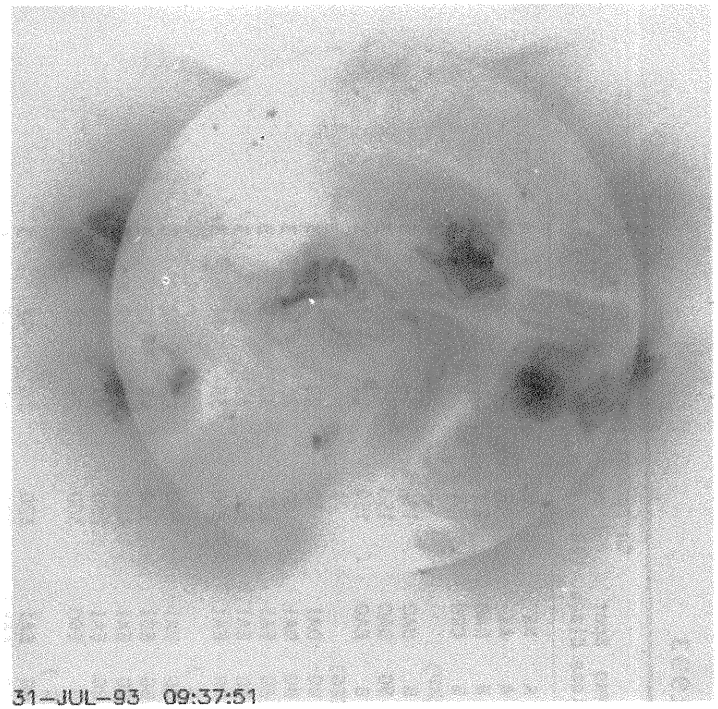
Day 30
11:02:03 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

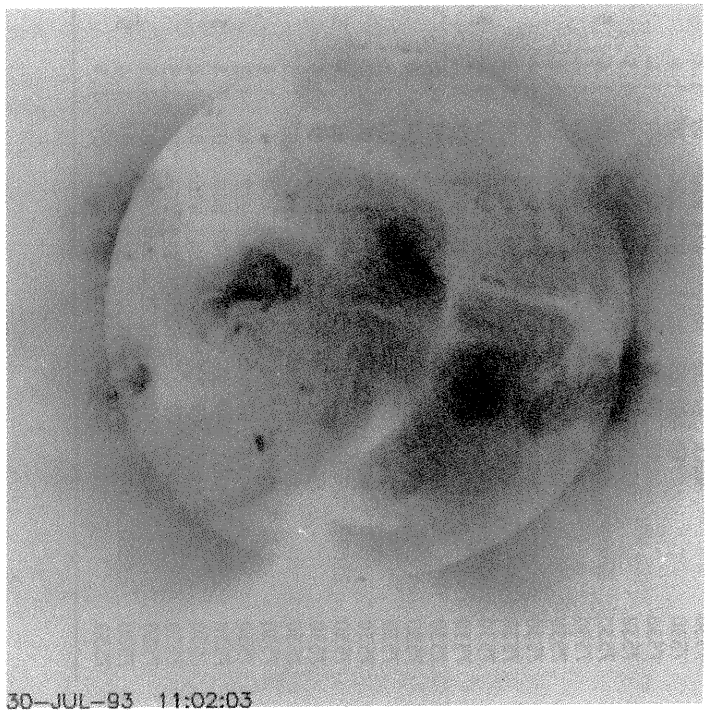
July 1993



Day 29
10:41:43 UT



Day 31
09:37:51 UT



Day 30
11:02:03 UT

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JULY 1993

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
7530		LEAR	06	25	0625	S10	E80	07	1.3		A	HS	30	1	2	4
7530		SVTO	06	25	0723	S09	E80	07	1.3		A	AX	30	1	2	3
7530		RAMY	06	25	1351	S11	E77	07	1.4		B	DAO	130	8	10	3
7530		BOUL	06	25	1400	S09	E73	07	1.1		B	CRO	70	3	4	3
7530	27890	MWIL	06	25	1430	S11	E78	07	1.5	4	(AP)					
7530		LEAR	06	26	0035	S10	E68	07	1.1		B	DAO	110	14	7	3
7530		RAMY	06	26	1322	S11	E64	07	1.4		BG	DAO	150	21	10	3
7530		BOUL	06	26	1355	S11	E60	07	1.1		B	EAO	150	21	11	4
7530	27890	MWIL	06	26	1430	S11	E64	07	1.4	5	(BG)					
7530		HOLL	06	26	1730	S12	E62	07	1.4		BG	DAI	180	22	12	3
7530		LEAR	06	27	0030	S10	E56	07	1.2		BG	DAI	180	26	10	3
7530		SVTO	06	27	0715	S12	E53	07	1.3		BG	EAI	430	33	15	3
7530		RAMY	06	27	1218	S12	E50	07	1.3		BG	EAI	260	35	13	3
7530		HOLL	06	27	1357	S14	E50	07	1.4		BG	EAI	210	33	11	3
7530	27890	MWIL	06	27	1430	S11	E49	07	1.3	5	(G)					
7530		LEAR	06	28	0320	S11	E44	07	1.4		BG	EAI	290	43	12	3
7530		SVTO	06	28	0740	S13	E40	07	1.3		BG	ESI	300	47	12	3
7530		RAMY	06	28	1323	S12	E38	07	1.4		BG	EAI	400	46	12	3
7530		HOLL	06	28	1418	S11	E36	07	1.3		BG	EAI	280	39	14	3
7530		BOUL	06	28	1500	S10	E34	07	1.2		B	ESO	300	24	11	2
7530	27890	MWIL	06	28	1500	S11	E36	07	1.3	5	(G)					
7530		LEAR	06	29	0200	S09	E31	07	1.4		BG	EAI	320	36	12	3
7530		SVTO	06	29	0740	S10	E26	07	1.3		BG	FAI	330	43	17	4
7530		RAMY	06	29	1145	S11	E25	07	1.4		BG	EAI	400	57	15	4
7530		HOLL	06	29	1315	S11	E22	07	1.2		BG	EAI	220	50	15	4
7530		BOUL	06	29	1438	S10	E22	07	1.3		B	ESI	330	49	14	3
7530	27890	MWIL	06	29	1445	S11	E24	07	1.4	5	(G)					
7530		LEAR	06	30	0016	S11	E18	07	1.4		BG	EAI	290	39	14	3
7530		SVTO	06	30	0825	S11	E13	07	1.3		BG	EAI	280	40	14	4
7530		RAMY	06	30	1117	S11	E11	07	1.3		BG	EAI	300	40	14	4
7530		BOUL	06	30	1400	S10	E11	07	1.4		B	EAI	230	41	14	3
7530	27890	MWIL	06	30	1445	S11	E11	07	1.4	5	(BG)					
7530		HOLL	06	30	1915	S11	E08	07	1.4		BG	EAI	220	40	14	2
7530		LEAR	07	01	0157	S11	E06	07	1.5		BG	EAO	220	25	13	3
7530		SVTO	07	01	0740	S11	E03	07	1.5		BG	EKI	300	47	13	2
7530		RAMY	07	01	1120	S12	W02	07	1.3		BG	DAI	260	48	14	4
7530		BOUL	07	01	1415	S11	W03	07	1.4		B	EAI	120	33	13	3
7530	27890	MWIL	07	01	1500	S11	W02	07	1.5	5	(BG)					
7530		HOLL	07	01	1655	S12	W05	07	1.3		BG	ESI	150	53	14	3
7530		RAMY	07	02	1258	S11	W15	07	1.4		BD	EAI	160	26	11	3
7530		BOUL	07	02	1420	S10	W15	07	1.5		B	DSI	100	28	9	3
7530	27890	MWIL	07	02	1500	S11	W16	07	1.4	5	(BG)					
7530		HOLL	07	02	1810	S12	W20	07	1.2		BG	DSI	110	19	6	2
7530		SVTO	07	03	0838	S12	W26	07	1.4		BG	DSO	130	22	10	2
7530		RAMY	07	03	1240	S12	W28	07	1.4		BG	DAI	170	30	10	3
7530		BOUL	07	03	1405	S11	W28	07	1.5		B	DSI	130	13	9	3
7530	27890	MWIL	07	03	1500	S11	W29	07	1.4	5	(BP)					
7530		HOLL	07	03	1555	S13	W30	07	1.4		B	DAI	220	23	9	3
7530		SVTO	07	04	0547	S12	W37	07	1.4		B	DKO	190	22	10	2
7530		RAMY	07	04	1316	S12	W42	07	1.4		B	DAI	270	18	10	4
7530		BOUL	07	04	1405	S11	W41	07	1.5		B	CAO	110	10	9	2
7530	27890	MWIL	07	04	1500	S12	W43	07	1.4	5	(BP)					
7530		HOLL	07	04	1508	S12	W43	07	1.4		B	DAI	270	16	9	3
7530		LEAR	07	05	0410	S11	W48	07	1.6		B	DAI	170	16	9	2
7530		SVTO	07	05	0801	S12	W52	07	1.4		B	DKO	250	23	10	2
7530		BOUL	07	05	1353	S11	W53	07	1.6		B	DAO	150	7	7	2
7530		HOLL	07	05	1400	S11	W55	07	1.4		B	DAI	140	8	7	4
7530	27890	MWIL	07	05	1500	S12	W56	07	1.4	5	(BP)					
7530		LEAR	07	06	0008	S11	W60	07	1.5		B	DAI	190	9	4	2
7530		SVTO	07	06	0910	S11	W65	07	1.5		B	DAO	280	12	6	2
7530		BOUL	07	06	1341	S11	W68	0	1.4		B	CSO	140	4	4	2
7530		HOLL	07	06	1405	S12	W72	07	1.2		B	CAO	160	6	8	4
7530	27890	MWIL	07	06	1445	S11	W69	07	1.4	5	(BP)					
7530		LEAR	07	07	0158	S11	W76	07	1.4		B	CAO	120	3	8	4
7530		SVTO	07	07	1025	S11	W79	07	1.5		B	DAO	120	5	4	2
7530		RAMY	07	07	1230	S10	W80	07	1.5		B	DAO	60	5	5	3
7530	27890	MWIL	07	07	1430	S11	W82	07	1.4	5	AP					
7530		HOLL	07	07	1455	S12	W87	07	1.1		A	HA	120	2	4	4

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
7537	27898	MWIL	07	01	1500	N11	W01	07	1.5	4	(AP)					
7537		RAMY	07	02	1258	N11	W12	07	1.6		B	CAO	20	4	2	3
7537		BOUL	07	02	1420	N11	W13	07	1.6		A	AX	10	3	2	3
7537	27898	MWIL	07	02	1500	N11	W13	07	1.6	4	(B)					
7537		HOLL	07	02	1810	N11	W15	07	1.6		A	AX	10	3	2	2
7537		SVTO	07	03	0838	N11	W23	07	1.6		B	BXO	20	4	4	2
7537		RAMY	07	03	1240	N11	W26	07	1.6		B	CAO	10	5	3	3
7537	27898	MWIL	07	03	1500	N11	W26	07	1.7	5	(B)					
7537		HOLL	07	03	1555	N11	W26	07	1.7		A	AX	10	3	2	3
7537		SVTO	07	04	0547	N11	W34	07	1.7		B	BXO	10	2	5	2
7537		RAMY	07	04	1316	N10	W39	07	1.6		B	CRO	10	3	3	4
7537		BOUL	07	04	1405	N10	W37	07	1.8		A	AX		1		2
7537	27898	MWIL	07	04	1500	N11	W39	07	1.7	4	(B)					
7537		HOLL	07	04	1508	N10	W38	07	1.8		A	AX	10	3	1	3
7537		LEAR	07	05	0410	N10	W44	07	1.9		A	AX	10	1	1	2
7537		SVTO	07	05	0801	N11	W46	07	1.9		A	AX	10	1	1	2
7537		BOUL	07	05	1353	N10	W49	07	1.9		A	AX		1		2
7537		HOLL	07	05	1400	N10	W51	07	1.7		A	AX		1		4
7537	27898	MWIL	07	05	1500	N11	W51	07	1.8	4	(B)					
7537		LEAR	07	06	0008	N11	W58	07	1.6		A	AX	10	1	1	2
7537		HOLL	07	06	1405	N10	W68	07	1.5		A	AX		1		4
7537A	27901	MWIL	07	02	1500	S13	W08	07	2.0	3	(AP)					
7537B	27902	MWIL	07	02	1500	S08	W06	07	2.2	4	(AF)					
7540	27899	MWIL	07	01	1500	N01	E12	07	2.5	3	(AP)					
7540		HOLL	07	03	1920	N04	W17	07	2.5		A	AX	10	3	1	4
7540		SVTO	07	04	0547	N04	W23	07	2.5		B	HXO		2	2	2
7540		RAMY	07	04	1316	N06	W28	07	2.4		B	CAO	20	3	3	4
7540		BOUL	07	04	1405	N06	W28	07	2.5		B	BXO	10	3	4	2
7540	27907	MWIL	07	04	1500	N05	W28	07	2.5	5	(B)					
7540		HOLL	07	04	1508	N05	W29	07	2.5		B	CAO	20	5	4	3
7540		LEAR	07	05	0410	N07	W36	07	2.5		B	DAO	40	6	5	2
7540		SVTO	07	05	0801	N06	W35	07	2.7		B	DRO	50	8	6	2
7540		BOUL	07	05	1353	N05	W40	07	2.6		B	BXO	30	4	5	2
7540		HOLL	07	05	1400	N05	W42	07	2.4		B	DRO	30	5	6	4
7540	27907	MWIL	07	05	1500	N05	W43	07	2.4	4	(B)					
7540		LEAR	07	06	0008	N06	W47	07	2.5		B	BXO	20	6	5	2
7540		SVTO	07	06	0910	N06	W55	07	2.3		B	BXO	20	4	5	2
7540		BOUL	07	06	1341	N07	W56	07	2.4		A	AX	10	2		2
7540		HOLL	07	06	1405	N06	W58	07	2.2		B	BXO	20	5	6	4
7540	27907	MWIL	07	06	1445	N06	W57	07	2.3	4	(B)					
7540		LEAR	07	07	0158	N07	W64	07	2.3		A	AX	20	2	2	4
7540		SVTO	07	07	1025	N03	W62	07	2.8		A	AX		1		2
7534		SVTO	06	28	0740	S15	E58	07	2.7		B	BXO	10	4	3	3
7534		RAMY	06	28	1323	S15	E56	07	2.8		B	CAO	20	3	2	3
7534		HOLL	06	28	1418	S15	E55	07	2.7		B	BXO	20	3	3	3
7534		BOUL	06	28	1500	S13	E51	07	2.5		B	BXO	10	2	3	2
7534	27893	MWIL	06	28	1500	S15	E54	07	2.7	4	(AF)					
7534		LEAR	06	29	0200	S12	E48	07	2.7		B	BXO	20	3	3	3
7534		RAMY	06	29	1145	S13	E42	07	2.6		A	AX	10	2	1	4
7534		HOLL	06	29	1315	S15	E42	07	2.7		A	HS	10	1		4
7534		BOUL	06	29	1438	S13	E40	07	2.6		A	AX		2		3
7534	27893	MWIL	06	29	1445	S14	E41	07	2.7	4	(AF)					
7534		LEAR	06	30	0016	S16	E37	07	2.8		A	AX	10	1	1	3
7534		RAMY	06	30	1117	S13	E30	07	2.7		B	BXO	10	4	2	4
7534		BOUL	06	30	1400	S13	E27	07	2.6		A	AX	10	3	2	3
7534	27893	MWIL	06	30	1445	S14	E27	07	2.6	4	(B)					
7534		HOLL	06	30	1915	S13	E25	07	2.7		B	BXO	10	4	4	2
7534		LEAR	07	01	0157	S16	E22	07	2.7		B	BXO	20	4	4	3
7534		SVTO	07	01	0740	S15	E18	07	2.7		B	BXO	10	4	4	2
7534		RAMY	07	01	1120	S13	E17	07	2.7		B	CAO	20	7	6	4
7534		BOUL	07	01	1415	S12	E14	07	2.6		B	BXO		5	3	3
7534	27893	MWIL	07	01	1500	S14	E14	07	2.7	4	(B)					
7534		HOLL	07	01	1655	S14	E12	07	2.6		B	BXO	20	9	5	3
7534		RAMY	07	03	1240	S17	W13	07	2.5		A	AX		2	2	3
7534	27893	MWIL	07	03	1500	S16	W14	07	2.6	4	(AF)					

SUNSPOT GROUPS
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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
7534		HOLL	07	03	1920	S17	W15	07	2.7		A	AX		1		4
7534		SVTO	07	04	0547	S17	W17	07	2.9		A	AX	10	2	1	2
7534		RAMY	07	04	1316	S17	W22	07	2.9		A	AX		2	1	4
7534	27893	MWIL	07	04	1500	S17	W23	07	2.9	4	(AF)					
7534		HOLL	07	04	1508	S17	W23	07	2.9		A	AX		2	1	3
7534	27893	MWIL	07	05	1500	S18	W38	07	2.7	4	(AF)					
7534A	27897	MWIL	06	30	1445	S10	E25	07	2.5	4	(AF)					
7534A	27897	MWIL	07	01	1500	S10	E15	07	2.7	4	(AF)					
7534A	27897	MWIL	07	02	1500	S11	E06	07	3.1	4	(AF)					
7534A		SVTO	07	04	0547	S07	W19	07	2.8		A	AX		1		2
7534A		SVTO	07	05	0801	S08	W32	07	2.9		A	AX	10	1	1	2
7535		SVTO	06	27	0715	N01	E78	07	3.1		A	AX	30	2	2	3
7535		LEAR	06	28	0320	N01	E66	07	3.1		A	AX	10	2	1	3
7535		SVTO	06	28	0740	N01	E64	07	3.1		A	AX	10	2	2	3
7535		RAMY	06	28	1323	N02	E62	07	3.2		A	AX	10	2	1	3
7535		HOLL	06	28	1418	N02	E61	07	3.1		A	AX	10	1	1	3
7535	27894	MWIL	06	28	1500	N02	E61	07	3.2	4	(AF)					
7535		BOUL	06	28	1500	N03	E59	07	3.0		A	AX		2		2
7535		LEAR	06	29	0200	N04	E55	07	3.2		A	AX	20	2	1	3
7535		SVTO	06	29	0740	N03	E50	07	3.0		A	AX	10	1	1	4
7535		RAMY	06	29	1145	N02	E49	07	3.1		A	AX	10	2	1	4
7535		HOLL	06	29	1315	N02	E48	07	3.1		A	AX		2	1	4
7535	27894	MWIL	06	29	1445	N03	E47	07	3.1	4	(AF)					
7535		RAMY	07	01	1120	N01	E23	07	3.2		A	AX	10	4	2	4
7535		BOUL	07	01	1415	N02	E19	07	3.0		B	BXO	10	2	5	3
7535	27894	MWIL	07	01	1500	N02	E19	07	3.0	4	(B)					
7535		HOLL	07	01	1655	N01	E21	07	3.3		A	AX	10	2	1	3
7535		SVTO	07	04	0547	N02	W12	07	3.3		A	AX	10	1		2
7539		SVTO	07	03	0838	S17	E03	07	3.6		A	AX	10	1		2
7539		BOUL	07	03	1405	S15	W01	07	3.5		A	AX		2	1	3
7539	27904	MWIL	07	03	1500	S17	W01	07	3.5	5	(B)					
7539		HOLL	07	03	1920	S17	W04	07	3.5		B	BXO	10	2	2	4
7539		SVTO	07	04	0547	S17	W09	07	3.5		A	AX		1		2
7538		RAMY	07	02	1258	S09	E73	07	8.0		B	DRO	30	3	3	3
7538		BOUL	07	02	1420	S08	E68	07	7.7		A	AX	30	3	2	3
7538	27903	MWIL	07	02	1500	S08	E71	07	7.9	4	(B					
7538		HOLL	07	02	1810	S09	E71	07	8.1		B	CSO	50	5	5	2
7538		SVTO	07	03	0838	S10	E59	07	7.8		B	CAO	110	10	6	2
7538		RAMY	07	03	1240	S09	E58	07	7.9		B	DAO	80	8	6	3
7538		BOUL	07	03	1405	S08	E55	07	7.7		B	DAO	60	3	6	3
7538	27903	MWIL	07	03	1500	S09	E58	07	8.0	5	(B)					
7538		HOLL	07	03	1555	S08	E56	07	7.9		B	DAO	90	4	6	3
7538		SVTO	07	04	0547	S10	E48	07	7.8		B	DAO	110	2	7	2
7538		RAMY	07	04	1316	S09	E45	07	7.9		B	DAO	100	11	9	4
7538		BOUL	07	04	1405	S09	E42	07	7.7		B	CAO	60	3	8	2
7538	27903	MWIL	07	04	1500	S09	E44	07	7.9	5	(BF)					
7538		HOLL	07	04	1508	S09	E42	07	7.8		B	DAO	80	5	8	3
7538		LEAR	07	05	0410	S09	E35	07	7.8		B	DAO	90	4	8	2
7538		SVTO	07	05	0801	S09	E37	07	8.1		B	DAO	90	11	9	2
7538		BOUL	07	05	1353	S09	E30	07	7.8		B	CSO	50	6	7	2
7538		HOLL	07	05	1400	S09	E31	07	7.9		B	DAO	70	6	8	4
7538	27903	MWIL	07	05	1500	S10	E32	07	8.0	5	(BF)					
7538		LEAR	07	06	0008	S10	E25	07	7.9		B	DAO	80	3	7	2
7538		SVTO	07	06	0910	S11	E21	07	8.0		B	CAO	80	9	9	2
7538		BOUL	07	06	1341	S09	E17	07	7.8		B	BXO	30	4	8	2
7538		HOLL	07	06	1405	S10	E18	07	7.9		B	CAO	40	5	11	4
7538	27903	MWIL	07	06	1445	S10	E17	07	7.9	5	(BF)					
7538		LEAR	07	07	0158	S10	E09	07	7.7		B	CRO	50	5	8	4
7538		SVTO	07	07	1025	S09	E07	07	7.9		B	DAO	40	6	10	2
7538		RAMY	07	07	1230	S08	E05	07	7.9		B	DAO	20	5	7	3
7538		BOUL	07	07	1410	S08	E03	07	7.8		B	CSO	10	2	7	2
7538	27903	MWIL	07	07	1430	S09	E04	07	7.9	4	(B)					
7538		HOLL	07	07	1455	S10	E03	07	7.8		B	CRO	20	4	9	4
7538		LEAR	07	08	0020	S09	W02	07	7.9		B	CRO	20	4	8	3
7538		SVTO	07	08	0805	S09	W06	07	7.9		B	DAO	40	10	10	3

S U N S P O T G R O U P S
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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo Day	Time (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
7538		RAMY	07 08	1125	S08 W08	07 7.9		B	DAO	30	7	9	4
7538		HOLL	07 08	1400	S10 W09	07 7.9		B	CAO	40	9	9	3
7538		BOUL	07 08	1405	S08 W10	07 7.8		B	CSO	20	5	9	2
7538	27903	MWIL	07 08	1430	S09 W09	07 7.9	4	(BF)					
7538		LEAR	07 09	0025	S09 W14	07 8.0		B	CRO	30	9	9	3
7538		SVTO	07 09	0720	S10 W15	07 8.2		B	CAO	30	8	6	3
7538		RAMY	07 09	1109	S09 W20	07 8.0		B	CAO	30	7	9	4
7538		BOUL	07 09	1355	S09 W18	07 8.2		B	CSO	20	5	4	3
7538	27903	MWIL	07 09	1430	S10 W20	07 8.1	4	(B)					
7538		HOLL	07 09	1617	S11 W22	07 8.0		B	BXO	10	2	3	3
7538		LEAR	07 10	0032	S10 W24	07 8.2		A	AX	10	2	1	2
7538		SVTO	07 10	0630	S10 W27	07 8.2		B	BXO	20	2	2	3
7538		RAMY	07 10	1330	S08 W35	07 7.9		B	BXO	10	2	6	3
7538	27903	MWIL	07 10	1430	S07 W37	07 7.8	4	(AP)					
7538		HOLL	07 10	1440	S07 W37	07 7.8		A	AX		1		3
7538A		RAMY	07 03	1240	S09 E71	07 8.8		A	AX		1	1	3
7538A	27905	MWIL	07 03	1500	S10 E71	07 8.9	3	(AP)					
7538A		HOLL	07 03	1920	S10 E69	07 9.0		A	AX		1		4
7538A		SVTO	07 04	0547	S11 E60	07 8.7		A	AX	10	2	2	2
7541	27906	MWIL	07 03	1500	N22 E83	07 10.0	4	AP					
7541		HOLL	07 03	1920	N22 E78	07 9.8		A	AX	10	2		4
7541		SVTO	07 04	0547	N22 E73	07 9.8		A	AX	10	1		2
7541		RAMY	07 04	1316	N22 E69	07 9.8		A	HR	30	2	1	4
7541	27906	MWIL	07 04	1500	N22 E69	07 9.9	4	(AP)					
7541		HOLL	07 04	1508	N22 E68	07 9.8		A	AX	30	2	1	3
7541		LEAR	07 05	0410	N22 E61	07 9.9		A	AX	20	1	1	2
7541		SVTO	07 05	0801	N23 E62	07 10.1		A	AX	10	1	1	2
7541		HOLL	07 05	1400	N22 E56	07 9.9		A	AX	10	1		4
7541	27906	MWIL	07 05	1500	N22 E55	07 9.8	4	(AP)					
7541		LEAR	07 06	0008	N21 E49	07 9.8		A	AX	10	1	1	2
7541		SVTO	07 06	0910	N22 E47	07 10.0		A	AX	10	1	1	2
7541		BOUL	07 06	1341	N22 E41	07 9.7		A	HS		1		2
7541		HOLL	07 06	1405	N22 E43	07 9.9		A	AX		1		4
7541	27906	MWIL	07 06	1445	N22 E43	07 9.9	4	(AP)					
7541		LEAR	07 07	0158	N22 E37	07 9.9		A	AX	10	1	1	4
7541		SVTO	07 07	1025	N23 E32	07 9.9		A	AX	10	1	1	2
7541		RAMY	07 07	1230	N23 E33	07 10.1		B	BXO	20	4	4	3
7541	27906	MWIL	07 07	1430	N22 E30	07 9.9	4	(AP)					
7541		HOLL	07 07	1455	N22 E29	07 9.8		A	AX		1		4
7541		LEAR	07 08	0020	N22 E24	07 9.8		A	AX	10	1	1	3
7541		SVTO	07 08	0805	N22 E20	07 9.9		A	HA	10	1	1	3
7541		RAMY	07 08	1125	N22 E18	07 9.8		A	AX		1		4
7541		HOLL	07 08	1400	N22 E17	07 9.9		A	AX		1	1	3
7541	27906	MWIL	07 08	1430	N22 E17	07 9.9	3	(AP)					
7541		LEAR	07 09	0025	N22 E12	07 9.9		A	AX	10	1	1	3
7541		SVTO	07 09	0720	N21 E08	07 9.9		B	BXO	20	2	2	3
7541		RAMY	07 09	1109	N22 E06	07 9.9		A	AX		1		4
7542		LEAR	07 05	0410	N08 E78	07 11.0		A	HS	120	1	2	2
7542		SVTO	07 05	0801	N07 E82	07 11.5		A	HS	210	3	3	2
7542		BOUL	07 05	1353	N07 E72	07 11.0		A	HS	120	1	1	2
7542		HOLL	07 05	1400	N08 E77	07 11.3		A	HS	180	1	2	4
7542	27908	MWIL	07 05	1500	N07 E77	07 11.4	5	(AP)					
7542		LEAR	07 06	0008	N07 E67	07 11.0		A	HS	100	1	2	2
7542		SVTO	07 06	0910	N08 E67	07 11.4		A	HS	180	1	2	2
7542		BOUL	07 06	1341	N07 E59	07 11.0		A	HS	170	1	2	2
7542		HOLL	07 06	1405	N08 E64	07 11.4		A	HS	160	1	2	4
7542	27908	MWIL	07 06	1445	N07 E63	07 11.3	5	(AP)					
7542		LEAR	07 07	0158	N08 E57	07 11.3		B	CSO	190	3	3	4
7542		SVTO	07 07	1025	N08 E52	07 11.3		A	HH	160	1	3	2
7542		RAMY	07 07	1230	N08 E51	07 11.3		A	HK	180	1	3	3
7542		BOUL	07 07	1410	N08 E48	07 11.2		A	HS	90	1	2	2
7542	27908	MWIL	07 07	1430	N08 E50	07 11.3	6	(AP)					
7542		HOLL	07 07	1455	N07 E49	07 11.3		A	HS	150	1	2	4
7542		LEAR	07 08	0020	N08 E44	07 11.3		A	HS	160	1	3	3
7542		SVTO	07 08	0805	N08 E39	07 11.3		A	HA	160	1	2	3
7542		RAMY	07 08	1125	N07 E39	07 11.4		B	CAO	170	2	4	4

S U N S P O T G R O U P S
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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo Day	Time (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
7542		HOLL	07 08	1400	N08 E39	07 11.5		B	CSO	130	5	5	3
7542		BOUL	07 08	1405	N08 E35	07 11.2		B	CSO	130	2	6	2
7542	27908	MWIL	07 08	1430	N08 E37	07 11.4	5	(BP)					
7542		LEAR	07 09	0025	N08 E31	07 11.3		A	HS	140	1	3	3
7542		SVTO	07 09	0720	N08 E28	07 11.4		B	CAO	160	2	3	3
7542		RAMY	07 09	1109	N07 E25	07 11.3		B	CAO	170	2	3	4
7542		BOUL	07 09	1355	N08 E22	07 11.2		A	HS	120	2	3	3
7542	27908	MWIL	07 09	1430	N08 E23	07 11.3	5	(AP)					
7542		HOLL	07 09	1617	N08 E23	07 11.4		A	HS	170	1	2	3
7542		LEAR	07 10	0032	N08 E19	07 11.4		B	CAO	150	2	3	2
7542		SVTO	07 10	0630	N08 E14	07 11.3		B	CAO	170	2	2	3
7542		BOUL	07 10	1330	N08 E09	07 11.2		A	HS	110	1	2	3
7542		RAMY	07 10	1330	N08 E11	07 11.4		A	HA	110	2	2	3
7542	27908	MWIL	07 10	1430	N08 E10	07 11.3	5	(AP)					
7542		HOLL	07 10	1440	N08 E10	07 11.4		A	HS	150	1	2	3
7542		LEAR	07 11	0055	N08 E06	07 11.5		B	CSO	160	6	7	3
7542		SVTO	07 11	0800	N08 E03	07 11.5		B	CAO	120	2	6	2
7542	27908	MWIL	07 11	1430	N08 W02	07 11.4	5	(BP)					
7542		HOLL	07 11	1515	N08 W05	07 11.3		A	HS	200	1	2	3
7542		LEAR	07 12	0104	N08 W08	07 11.4		B	CSO	80	4	3	2
7542		SVTO	07 12	0555	N08 W12	07 11.3		B	CSO	150	2	3	3
7542	27908	MWIL	07 12	1430	N08 W16	07 11.4	5	(BG)					
7542		BOUL	07 12	1433	N09 W16	07 11.4		B	CSO	110	4	3	1
7542		RAMY	07 12	1635	N09 W18	07 11.3		B	CAO	120	5	3	3
7542		HOLL	07 12	2120	N09 W21	07 11.3		B	CAO	170	7	3	3
7542		LEAR	07 13	0004	N08 W22	07 11.3		B	CSO	80	4	3	3
7542		SVTO	07 13	0755	N08 W24	07 11.5		B	CSO	120	10	5	3
7542		RAMY	07 13	1135	N08 W27	07 11.4		B	CAO	110	8	6	4
7542		BOUL	07 13	1326	N09 W28	07 11.4		A	HS	90	3	2	3
7542	27908	MWIL	07 13	1430	N08 W29	07 11.4	5	(BP)					
7542		HOLL	07 13	1555	N07 W30	07 11.4		B	DAO	1520	8	4	4
7542		LEAR	07 14	0017	N08 W35	07 11.4		B	CAO	100	5	3	4
7542		SVTO	07 14	0550	N08 W38	07 11.4		A	HS	100	2	2	3
7542		RAMY	07 14	1230	N08 W42	07 11.4		A	HA	110	3	2	3
7542	27908	MWIL	07 14	1545	N08 W43	07 11.4	5	(AP)					
7542		HOLL	07 14	1729	N12 W44	07 11.4		B	CSO	80	4	5	2
7542		LEAR	07 15	0006	N07 W47	07 11.5		B	CAO	90	9	4	4
7542		SVTO	07 15	0530	N07 W51	07 11.4		B	DSO	140	8	5	3
7542		RAMY	07 15	1237	N08 W54	07 11.5		B	DAO	120	7	6	3
7542	27908	MWIL	07 15	1445	N08 W56	07 11.4	5	(BP)					
7542		HOLL	07 15	1811	N06 W59	07 11.3		B	CAO	210	6	4	3
7542		LEAR	07 16	0145	N06 W59	07 11.6		B	CAO	100	6	4	3
7542		SVTO	07 16	0605	N07 W63	07 11.5		B	CSO	90	7	6	4
7542		RAMY	07 16	1142	N08 W67	07 11.5		A	HS	1300	3	2	3
7542		BOUL	07 16	1410	N09 W68	07 11.5		A	HS	60	3	1	2
7542	27908	MWIL	07 16	1430	N08 W69	07 11.4	5	(AP)					
7542		HOLL	07 16	1945	N09 W72	07 11.4		A	HS	60	1	2	2
7542		LEAR	07 17	0320	N07 W73	07 11.7		A	HS	80	1	2	3
7542		SVTO	07 17	0537	N08 W78	07 11.4		B	CAO	90	3	2	5
7542		RAMY	07 17	1128	N09 W81	07 11.4		A	HS	50	1	2	4
7542		HOLL	07 17	1420	N08 W88	07 11.0		A	HA	30	1	2	3
7542	27908	MWIL	07 17	1500	N08 W82	07 11.5	5	AP					
7544		RAMY	07 08	1125	N03 E67	07 13.5		A	AX		1		4
7544		HOLL	07 08	1400	N04 E70	07 13.8		A	AX		1	1	3
7544	27909	MWIL	07 08	1430	N04 E66	07 13.5	3	(AP)					
7544		SVTO	07 09	0720	N04 E55	07 13.4		B	BXO	30	2	2	3
7544		RAMY	07 09	1109	N04 E52	07 13.3		A	AX		1		4
7544		RAMY	07 10	1330	N04 E39	07 13.5		B	CRO	10	3	2	3
7544		BOUL	07 10	1330	N05 E37	07 13.3		A	AX	10	2	2	3
7544	27909	MWIL	07 10	1430	N04 E39	07 13.5	4	(B)					
7544		HOLL	07 10	1440	N04 E39	07 13.5		B	BXO	10	3	3	3
7544		LEAR	07 11	0055	N04 E33	07 13.5		B	CAO	40	5	4	3
7544		SVTO	07 11	0800	N04 E28	07 13.4		B	CRO	20	4	4	2
7544	27909	MWIL	07 11	1430	N04 E25	07 13.5	4	(B)					
7544		HOLL	07 11	1515	N06 E25	07 13.5		B	CSO	80	7	7	3
7544		LEAR	07 12	0104	N04 E18	07 13.4		B	CSO	20	1	1	2
7544		SVTO	07 12	0555	N05 E16	07 13.4		B	CR	30	8	7	3
7544	27909	MWIL	07 12	1430	N04 E12	07 13.5	4	(B)					

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JULY 1993

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
7544		BOUL	07 12 1433	N05 E11	07 13.4		B	BXO	20	3	4	1
7544		RAMY	07 12 1635	N05 E10	07 13.4		B	CAO	20	7	6	3
7544		HOLL	07 12 2120	N04 E07	07 13.4		B	BXO	30	10	7	3
7544		LEAR	07 13 0004	N04 E06	07 13.4		B	BXO	10	9	6	3
7544		SVTO	07 13 0755	N04 E02	07 13.5		B	CAO	60	10	7	3
7544		RAMY	07 13 1135	N04 W01	07 13.4		B	CAO	20	5	7	4
7544		BOUL	07 13 1326	N05 W02	07 13.4		B	BXI	20	10	5	3
7544	27909	MWIL	07 13 1430	N04 W03	07 13.4	5	(B)					
7544		HOLL	07 13 1555	N04 W04	07 13.4		BG	CRO	580	17	7	4
7544		LEAR	07 14 0017	N04 W08	07 13.4		B	BXO	20	9	7	4
7544		SVTO	07 14 0550	N05 W11	07 13.4		B	CRO	30	7	7	3
7544		RAMY	07 14 1230	N04 W17	07 13.2		B	CAO	20	6	6	3
7544	27909	MWIL	07 14 1545	N04 W17	07 13.4	5	(B)					
7544		HOLL	07 14 1729	N07 W19	07 13.3		B	BXO	20	6	8	2
7544		LEAR	07 15 0006	N04 W22	07 13.3		B	DAO	10	7	7	4
7544		SVTO	07 15 0530	N03 W27	07 13.2		B	BXO	10	2	3	2
7544		RAMY	07 15 1237	N03 W32	07 13.1		A	AX		1		3
7544	27909	MWIL	07 15 1445	N03 W33	07 13.1	4	(AP)					
7544		HOLL	07 15 1811	N03 W36	07 13.1		A	AX	10	1		3
7544		RAMY	07 16 1142	N03 W45	07 13.1		A	AX		1		3
7544	27909	MWIL	07 16 1430	N03 W47	07 13.1	4	(AP)					
7544		SVTO	07 18 0542	N03 W67	07 13.2		B	BXO	20	2	3	5
7543		RAMY	07 08 1125	S08 E73	07 13.9		A	HR	30	1	1	4
7543		HOLL	07 08 1400	S08 E75	07 14.2		A	AX		1	1	3
7543	27910	MWIL	07 08 1430	S09 E76	07 14.3	4	X					
7543		LEAR	07 09 0025	S08 E67	07 14.0		A	HR	20	3	2	3
7543		SVTO	07 09 0720	S09 E62	07 13.9		B	BXO	60	8	6	3
7543		RAMY	07 09 1109	S08 E63	07 14.2		B	DAO	50	10	7	4
7543		BOUL	07 09 1355	S08 E56	07 13.8		A	AX	10	1		3
7543	27910	MWIL	07 09 1430	S09 E62	07 14.2	4	(BG)					
7543		HOLL	07 09 1617	S09 E62	07 14.3		B	BXO	60	7	8	3
7543		LEAR	07 10 0032	S08 E55	07 14.1		B	CRO	50	4	7	2
7543		SVTO	07 10 0630	S09 E51	07 14.1		B	BXO	30	5	6	3
7543		BOUL	07 10 1330	S08 E45	07 13.9		B	BXO	10	2	7	3
7543		RAMY	07 10 1330	S09 E48	07 14.2		B	BXO	10	5	6	3
7543	27910	MWIL	07 10 1430	S08 E48	07 14.2	4	(B)					
7543		HOLL	07 10 1440	S09 E48	07 14.2		B	BXO		2	8	3
7543		LEAR	07 11 0055	S09 E39	07 14.0		A	AX	10	1	1	3
7543		SVTO	07 11 0800	S09 E40	07 14.3		B	BXO	30	5	2	2
7543	27910	MWIL	07 11 1430	S09 E37	07 14.4	4	(AP)					
7543		HOLL	07 11 1515	S08 E36	07 14.3		B	BXO	30	5	3	3
7543		LEAR	07 12 0104	S09 E31	07 14.4		A	HS	20	5	5	2
7543		SVTO	07 12 0555	S09 E28	07 14.3		B	BXO	30	7	2	3
7543	27910	MWIL	07 12 1430	S09 E22	07 14.2	4	(B)					
7543		RAMY	07 12 1635	S08 E22	07 14.3		B	BXO	10	5	3	3
7543		HOLL	07 12 2120	S09 E18	07 14.2		B	BXO	20	6	3	3
7543		LEAR	07 13 0004	S10 E17	07 14.3		B	BXO	20	5	3	3
7543		SVTO	07 13 0755	S09 E13	07 14.3		B	CSO	30	4	4	3
7543		RAMY	07 13 1135	S09 E10	07 14.2		B	CAO	30	10	5	4
7543		BOUL	07 13 1326	S09 E08	07 14.2		B	BXO	20	6	4	3
7543	27910	MWIL	07 13 1430	S09 E08	07 14.2	5	(B)					
7543		HOLL	07 13 1555	S09 E08	07 14.3		B	CRO	740	19	5	4
7543		LEAR	07 14 0017	S09 E03	07 14.2		B	DAO	70	26	6	4
7543		SVTO	07 14 0550	S09 W01	07 14.2		B	DAI	170	22	6	3
7543		RAMY	07 14 1230	S09 W05	07 14.1		B	DAI	160	34	7	3
7543	27910	MWIL	07 14 1545	S08 W06	07 14.2	5	(B)					
7543		HOLL	07 14 1729	S08 W10	07 14.0		B	DAI	190	16	7	2
7543		LEAR	07 15 0006	S09 W12	07 14.1		B	BXO	200	25	7	4
7543		SVTO	07 15 0530	S09 W15	07 14.1		B	DSO	200	13	8	2
7543		RAMY	07 15 1237	S08 W19	07 14.1		B	DAO	220	17	8	3
7543	27910	MWIL	07 15 1445	S08 W20	07 14.1	5	(B)					
7543		HOLL	07 15 1811	S09 W23	07 14.0		B	DAO	380	15	10	3
7543		LEAR	07 16 0145	S11 W25	07 14.2		B	DAO	190	11	8	3
7543		SVTO	07 16 0605	S08 W29	07 14.1		B	DAO	240	12	8	4
7543		RAMY	07 16 1142	S08 W32	07 14.1		B	DAO	300	6	9	3
7543		BOUL	07 16 1410	S08 W33	07 14.1		B	DAO	180	6	9	2
7543	27910	MWIL	07 16 1430	S08 W34	07 14.0	5	(B)					
7543		HOLL	07 16 1945	S10 W37	07 14.0		B	DAO	170	6	10	2

SUNSPOT GROUPS
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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
7543		LEAR	07 17 0320	S11 W42	07 14.0		B	DAO	150	5	9	3
7543		SVTO	07 17 0537	S07 W43	07 14.0		B	DAO	170	8	9	5
7543		RAMY	07 17 1128	S08 W46	07 14.0		B	DAO	120	8	9	4
7543		HOLL	07 17 1420	S08 W49	07 13.9		B	DAO	110	6	10	3
7543	27910	MWIL	07 17 1500	S08 W48	07 14.0	5	(BP)					
7543		LEAR	07 18 0050	S08 W53	07 14.1		B	CSO	110	7	9	4
7543		SVTO	07 18 0542	S07 W56	07 14.0		B	CAO	100	7	10	5
7543		RAMY	07 18 1250	S07 W61	07 14.0		B	CSO	60	5	6	3
7543		BOUL	07 18 1355	S08 W63	07 13.8		A	AX	20	1	1	3
7543	27910	MWIL	07 18 1445	S08 W65	07 13.7	5	(BP)					
7543		HOLL	07 18 1457	S09 W63	07 13.9		B	CAO	40	5	2	3
7543		LEAR	07 19 0040	S09 W68	07 13.9		A	HS	60	1	2	2
7543		SVTO	07 19 0545	S09 W75	07 13.6		A	HS	70	1	2	3
7543		RAMY	07 19 1240	S08 W77	07 13.7		A	HS	30	1	2	3
7543		HOLL	07 19 1355	S09 W80	07 13.6		A	HS	60	1	2	4
7543	27910	MWIL	07 19 1500	S08 W79	07 13.7	5	(AP)					
7543A	27911	MWIL	07 12 1430	N14 E29	07 14.8	3	(AP)					
7543A	27913	MWIL	07 13 1430	N13 E16	07 14.8	4	(AF)					
7543A		LEAR	07 14 0017	N12 E08	07 14.6		A	AX		3	2	4
7543A		SVTO	07 14 0550	N13 E06	07 14.7		A	AX		2	1	3
7545		RAMY	07 09 1109	N07 E88	07 16.0		A	AX		1		4
7545	27912	MWIL	07 12 1430	N07 E49	07 16.3	4	(B)					
7545		RAMY	07 12 1635	N08 E48	07 16.3		B	BXO	10	3	3	3
7545		HOLL	07 12 2120	N07 E44	07 16.2		A	AX	10	4	2	3
7545		LEAR	07 13 0004	N07 E42	07 16.1		B	DSO	20	2	2	3
7545		SVTO	07 13 0755	N08 E38	07 16.2		B	BXO	10	2	1	3
7545		RAMY	07 13 1135	N07 E36	07 16.2		A	AX	10	3	2	4
7545		BOUL	07 13 1326	N07 E31	07 15.9		A	AX		2		3
7545	27912	MWIL	07 13 1430	N07 E33	07 16.1	4	(AP)					
7545		HOLL	07 13 1555	N07 E33	07 16.1		B	BXO	60	2	1	4
7545		LEAR	07 14 0017	N07 E27	07 16.0		A	AX		1	1	4
7545		SVTO	07 14 0550	N07 E27	07 16.3		B	CRO	10	2	6	3
7545	27912	MWIL	07 14 1545	N07 E21	07 16.2	3	(AP)					
7545		LEAR	07 15 0006	N07 E15	07 16.1		A	AX		3	1	4
7545		SVTO	07 15 0530	N06 E13	07 16.2		B	CSO	30	6	3	2
7545		RAMY	07 15 1237	N06 E09	07 16.2		B	DAO	30	9	3	3
7545	27912	MWIL	07 15 1445	N06 E07	07 16.1	5	(BP)					
7545		HOLL	07 15 1811	N06 E06	07 16.2		B	CRO	60	6	3	3
7545		LEAR	07 16 0145	N04 E02	07 16.2		B	DAO	40	9	3	3
7545		SVTO	07 16 0605	N05 W02	07 16.1		B	CAO	50	12	5	4
7545		RAMY	07 16 1142	N06 W04	07 16.2		B	DAO	80	8	5	3
7545		BOUL	07 16 1410	N07 W06	07 16.1		B	BXO	30	9	4	2
7545	27912	MWIL	07 16 1430	N05 W06	07 16.1	5	(B)					
7545		HOLL	07 16 1945	N06 W09	07 16.1		B	DAO	80	15	6	2
7545		LEAR	07 17 0320	N05 W12	07 16.2		B	DAO	70	10	5	3
7545		SVTO	07 17 0537	N07 W14	07 16.2		B	DAO	80	14	6	5
7545		RAMY	07 17 1128	N07 W17	07 16.2		B	DAO	80	18	6	4
7545		HOLL	07 17 1420	N07 W19	07 16.2		B	DAI	80	15	7	3
7545	27912	MWIL	07 17 1500	N06 W18	07 16.3	5	(B)					
7545		LEAR	07 18 0050	N07 W25	07 16.2		B	DSO	90	13	6	4
7545		SVTO	07 18 0542	N07 W27	07 16.2		B	CRO	50	18	6	5
7545		RAMY	07 18 1250	N07 W32	07 16.1		B	DAI	60	15	6	3
7545		BOUL	07 18 1355	N07 W31	07 16.2		B	BXO	30	9	7	3
7545	27912	MWIL	07 18 1445	N06 W33	07 16.1	5	(B)					
7545		HOLL	07 18 1457	N06 W33	07 16.1		B	DAI	40	8	6	3
7545		LEAR	07 19 0040	N07 W37	07 16.2		B	CAO	60	7	5	2
7545		SVTO	07 19 0545	N07 W40	07 16.2		B	CRO	50	10	7	3
7545		RAMY	07 19 1240	N07 W44	07 16.2		B	DAO	30	7	5	3
7545		HOLL	07 19 1355	N07 W47	07 16.0		B	CAO	40	7	5	4
7545	27912	MWIL	07 19 1500	N06 W46	07 16.2	5	(B)					
7545		LEAR	07 20 0030	N07 W50	07 16.3		B	BXO	30	6	5	3
7545		SVTO	07 20 1023	N06 W56	07 16.2		B	BXO	50	10	6	4
7545		RAMY	07 20 1245	N06 W57	07 16.3		B	BXO	10	3	4	4
7545		BOUL	07 20 1350	N06 W56	07 16.4		A	AX		1		2
7545	27912	MWIL	07 20 1445	N06 W59	07 16.2	4	(B)					
7545		LEAR	07 21 0025	N07 W63	07 16.3		A	AX	10	1	1	3

S U N S P O T G R O U P S
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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
7546		SVTO	07	13	0755	S07	E45	07	16.7		A	AX	10	1		3
7546		RAMY	07	13	1135	S09	E43	07	16.7		B	BX	10	2	3	4
7546		BOUL	07	13	1326	S07	E38	07	16.4		A	AX	10	2	2	3
7546	27914	MWIL	07	13	1430	S08	E40	07	16.6	4	(B)					
7546		HOLL	07	13	1555	S08	E40	07	16.7		B	BXO	230	5	3	4
7546		LEAR	07	14	0017	S08	E35	07	16.6		B	BXO	100	4	3	4
7546		SVTO	07	14	0550	S08	E32	07	16.6		B	CAO	30	6	4	3
7546		RAMY	07	14	1230	S09	E27	07	16.5		B	CRO	10	4	3	3
7546	27914	MWIL	07	14	1545	S08	E26	07	16.6	4	(B)					
7546		HOLL	07	14	1729	S11	E22	07	16.4		B	BXO	20	3	3	2
7546		LEAR	07	15	0006	S08	E21	07	16.6		B	BXO		4	4	4
7546		SVTO	07	15	0530	S08	E17	07	16.5		B	BXO		2	3	2
7546		HOLL	07	15	1811	S09	E09	07	16.4		A	AX		1		3
7546		SVTO	07	16	0605	S08	E03	07	16.5		A	AX	10	1	1	4
7549		RAMY	07	17	1128	S17	W07	07	16.9		B	BXO	10	4	4	4
7549		HOLL	07	17	1420	S18	W09	07	16.9		B	BXO	10	3	4	3
7549	27917	MWIL	07	17	1500	S17	W08	07	17.0	4	(B)					
7549		LEAR	07	18	0050	S17	W14	07	17.0		B	CRO	160	8	5	4
7549		SVTO	07	18	0542	S16	W17	07	16.9		B	CRO	50	10	6	5
7549		RAMY	07	18	1250	S17	W21	07	16.9		B	DAO	50	13	6	3
7549		BOUL	07	18	1355	S17	W21	07	17.0		B	BXO	40	6	6	3
7549	27917	MWIL	07	18	1445	S17	W22	07	16.9	5	(B)					
7549		HOLL	07	18	1457	S18	W22	07	16.9		B	DAO	60	8	6	3
7549		LEAR	07	19	0040	S18	W26	07	17.0		B	DSO	60	4	7	2
7549		SVTO	07	19	0545	S17	W31	07	16.9		B	CRO	50	6	7	3
7549		RAMY	07	19	1240	S16	W35	07	16.9		B	DAO	30	5	8	3
7549		HOLL	07	19	1355	S18	W36	07	16.8		B	DAO	30	6	8	4
7549	27917	MWIL	07	19	1500	S17	W35	07	17.0	5	(B)					
7549		LEAR	07	20	0030	S18	W40	07	17.0		B	CRO	30	4	8	3
7549		SVTO	07	20	1023	S17	W46	07	16.9		B	BXO	50	9	10	4
7549		RAMY	07	20	1245	S17	W47	07	16.9		B	DAO	40	7	7	4
7549		BOUL	07	20	1350	S16	W47	07	17.0		B	BXO	20	3	5	2
7549	27917	MWIL	07	20	1445	S17	W48	07	17.0	5	(B)					
7549		LEAR	07	21	0025	S17	W53	07	17.0		B	CRO	40	6	8	3
7549		SVTO	07	21	0710	S16	W59	07	16.8		B	CRO	40	5	9	3
7549		RAMY	07	21	1215	S17	W62	07	16.8		B	CRO	50	6	9	4
7549		BOUL	07	21	1340	S15	W59	07	17.1		B	BXO	10	2	7	2
7549	27917	MWIL	07	21	1545	S17	W62	07	16.9	4	(B)					
7549		HOLL	07	21	1655	S17	W65	07	16.8		B	BXO	10	2	8	3
7549		PALE	07	21	1850	S16	W66	07	16.8		B	BXO	20	2	8	4
7549A		LEAR	07	16	0145	S10	E29	07	18.2		A	AX	10	1	2	3
7549A		SVTO	07	16	0605	S08	E26	07	18.2		B	BXO	10	2	2	4
7549A		SVTO	07	18	0542	S08	W03	07	18.0		A	AX	10	1	1	5
7547		SVTO	07	15	0530	N08	E85	07	21.6		A	AX	40	1	2	2
7547		RAMY	07	15	1237	N08	E80	07	21.5		A	HS	40	1	2	3
7547	27915	MWIL	07	15	1445	N08	E80	07	21.6	5	AP					
7547		HOLL	07	15	1811	N08	E80	07	21.7		A	HA	120	1	2	3
7547		LEAR	07	16	0145	N08	E71	07	21.4		A	HS	120	1	1	3
7547		SVTO	07	16	0605	N07	E70	07	21.5		B	CSO	70	3	3	4
7547		RAMY	07	16	1142	N08	E68	07	21.6		A	HS	100	1	2	3
7547		BOUL	07	16	1410	N09	E66	07	21.5		A	HS	50	1	1	2
7547	27915	MWIL	07	16	1430	N07	E67	07	21.6	5	(AP)					
7547		HOLL	07	16	1945	N09	E66	07	21.8		A	HS	90	1	2	2
7547		LEAR	07	17	0320	N08	E60	07	21.6		A	HS	80	1	2	3
7547		SVTO	07	17	0537	N08	E59	07	21.6		A	HS	120	1	2	5
7547		RAMY	07	17	1128	N08	E58	07	21.8		B	CAO	90	2	4	4
7547		HOLL	07	17	1420	N08	E55	07	21.7		A	HA	70	2	2	3
7547	27915	MWIL	07	17	1500	N08	E54	07	21.7	5	(AP)					
7547		LEAR	07	18	0050	N08	E49	07	21.7		A	HS	30	1	2	4
7547		SVTO	07	18	0542	N08	E46	07	21.7		B	CAO	120	3	3	5
7547		RAMY	07	18	1250	N08	E40	07	21.5		B	CSO	110	2	6	3
7547		BOUL	07	18	1355	N09	E40	07	21.6		A	HS	60	1	2	3
7547	27915	MWIL	07	18	1445	N08	E41	07	21.7	6	(AP)					
7547		HOLL	07	18	1457	N09	E42	07	21.8		A	HA	50	1	2	3
7547		LEAR	07	19	0040	N08	E36	07	21.7		A	HS	90	1	2	2
7547		SVTO	07	19	0545	N08	E34	07	21.8		B	CSO	120	4	3	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
7547		RAMY	07	19	1240	N09	E30	07	21.8		A	HA	70	3	2	3
7547		HOLL	07	19	1355	N10	E30	07	21.8		B	CSO	80	4	4	4
7547	27915	MWIL	07	19	1500	N08	E28	07	21.7	5	(BP)					
7547		LEAR	07	20	0030	N08	E23	07	21.7		B	CSO	60	2	3	3
7547		SVTO	07	20	1023	N09	E17	07	21.7		B	CAO	120	4	2	4
7547		RAMY	07	20	1245	N08	E17	07	21.8		B	CAO	110	2	3	4
7547		BOUL	07	20	1350	N09	E15	07	21.7		B	CSO	80	3	3	2
7547	27915	MWIL	07	20	1445	N08	E15	07	21.7	5	(AP)					
7547		LEAR	07	21	0025	N08	E10	07	21.8		A	HS	80	3	2	3
7547		SVTO	07	21	0710	N08	E06	07	21.7		B	CAO	60	4	2	3
7547		RAMY	07	21	1215	N08	E04	07	21.8		B	CAO	60	6	4	4
7547		BOUL	07	21	1340	N10	E02	07	21.7		A	HS	30	5	2	2
7547	27915	MWIL	07	21	1545	N08	E02	07	21.8	5	(BP)					
7547		HOLL	07	21	1655	N09	E00	07	21.7		A	HS	70	3	2	3
7547		PALE	07	21	1850	N08	W01	07	21.7		B	DSO	50	7	3	4
7547		SVTO	07	22	0850	N09	W09	07	21.7		B	DRO	90	12	3	1
7547		RAMY	07	22	1225	N09	W11	07	21.7		A	HA	70	6	2	3
7547		BOUL	07	22	1355	N10	W10	07	21.8		B	CAO	50	5	3	3
7547	27915	MWIL	07	22	1430	N08	W11	07	21.8	5	(BP)					
7547		HOLL	07	22	1620	N08	W12	07	21.8		B	DAO	80	8	4	3
7547		LEAR	07	23	0210	N07	W16	07	21.9		B	DAO	70	8	7	3
7547		SVTO	07	23	0624	N08	W19	07	21.8		B	CAO	50	8	5	3
7547		BOUL	07	23	1345	N09	W24	07	21.8		A	HA	20	3	2	3
7547		HOLL	07	23	1417	N08	W26	07	21.6		A	HA	30	4	2	3
7547	27915	MWIL	07	23	1430	N09	W25	07	21.7	4	(AP)					
7547		LEAR	07	24	0030	N08	W29	07	21.8		B	CSO	40	3	4	3
7547		SVTO	07	24	0700	N09	W35	07	21.7		B	DSO	40	2	2	3
7547		BOUL	07	24	1330	N09	W37	07	21.8		A	AX	10	3	1	2
7547		HOLL	07	24	1416	N08	W38	07	21.7		A	HS	40	3	2	3
7547	27915	MWIL	07	24	1430	N09	W38	07	21.7	4	(AP)					
7547		RAMY	07	24	1542	N09	W39	07	21.7		A	HA	20	2	1	4
7547		LEAR	07	25	0025	N08	W43	07	21.8		A	HR	30	3	2	3
7547		SVTO	07	25	0610	N09	W47	07	21.7		B	DAO	30	5	3	4
7547		RAMY	07	25	1300	N09	W51	07	21.7		A	AX	10	3	2	4
7547		BOUL	07	25	1340	N09	W50	07	21.8		A	AX	10	2		2
7547		HOLL	07	25	1415	N08	W51	07	21.8		A	AX	10	3	2	4
7547	27915	MWIL	07	25	1430	N09	W51	07	21.8	4	(AP)					
7547		SVTO	07	27	0635	N10	W76	07	21.6		A	AX	20	2	2	3
7548		RAMY	07	16	1142	S11	E80	07	22.5		A	HS	60	1	2	3
7548	27916	MWIL	07	16	1430	S11	E81	07	22.7	5	AP					
7548		HOLL	07	16	1945	S11	E79	07	22.8		A	HS	180	1	2	2
7548		LEAR	07	17	0320	S12	E75	07	22.8		A	HS	150	1	1	3
7548		SVTO	07	17	0537	S11	E73	07	22.7		A	HA	180	1	3	5
7548		RAMY	07	17	1128	S11	E71	07	22.8		A	HS	180	1	2	4
7548		HOLL	07	17	1420	S11	E69	07	22.8		A	HA	110	2	2	3
7548	27916	MWIL	07	17	1500	S11	E68	07	22.7	5	(AP)					
7548		LEAR	07	18	0050	S10	E63	07	22.8		A	HS	90	1	3	4
7548		SVTO	07	18	0542	S11	E59	07	22.7		A	HA	160	1	3	5
7548		RAMY	07	18	1250	S12	E56	07	22.7		A	HS	140	1	2	3
7548		BOUL	07	18	1355	S10	E54	07	22.6		A	HS	140	1	3	3
7548	27916	MWIL	07	18	1445	S11	E55	07	22.7	6	(AP)					
7548		HOLL	07	18	1457	S10	E55	07	22.7		A	HS	140	2	2	3
7548		LEAR	07	19	0040	S10	E49	07	22.7		A	HS	150	1	3	2
7548		SVTO	07	19	0545	S11	E47	07	22.8		A	HK	110	1	3	3
7548		RAMY	07	19	1240	S11	E42	07	22.7		A	HS	140	1	2	3
7548		HOLL	07	19	1355	S11	E42	07	22.7		A	HS	190	1	2	4
7548	27916	MWIL	07	19	1500	S11	E42	07	22.8	6	(AP)					
7548		LEAR	07	20	0030	S11	E37	07	22.8		B	CSO	100	3	4	3
7548		SVTO	07	20	1023	S12	E31	07	22.8		B	CAO	180	3	3	4
7548		RAMY	07	20	1245	S11	E29	07	22.7		A	HA	190	1	2	4
7548		BOUL	07	20	1350	S10	E28	07	22.7		A	HS	130	1	2	2
7548	27916	MWIL	07	20	1445	S11	E28	07	22.7	6	(AP)					
7548		LEAR	07	21	0025	S11	E24	07	22.8		B	CSO	140	2	4	3
7548		SVTO	07	21	0710	S12	E19	07	22.7		B	CSO	190	1	2	3
7548		RAMY	07	21	1215	S10	E18	07	22.9		B	CAO	170	3	4	4
7548		BOUL	07	21	1340	S09	E16	07	22.8		A	HS	160	1	2	2
7548	27916	MWIL	07	21	1545	S11	E15	07	22.8	6	(BP)					
7548		HOLL	07	21	1655	S10	E14	07	22.7		A	HS	150	1	2	3

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7548		PALE	07 21 1850	S12 E13	07 22.8		A	HS	150	1	2	4
7548		SVTO	07 22 0850	S12 E04	07 22.7		B	CAO	200	2	2	1
7548		RAMY	07 22 1225	S11 E04	07 22.8		B	CAO	190	7	4	3
7548		BOUL	07 22 1355	S08 E03	07 22.8		B	CSO	170	4	4	3
7548	27916	MWIL	07 22 1430	S11 E03	07 22.8	5	(BG)					
7548		HOLL	07 22 1620	S12 E03	07 22.9		A	HS	210	7	4	3
7548		LEAR	07 23 0210	S12 W04	07 22.8		A	HS	140	1	2	3
7548		SVTO	07 23 0624	S12 W06	07 22.8		B	CSO	110	8	4	3
7548		BOUL	07 23 1345	S11 W10	07 22.8		A	HS	100	1	2	3
7548		HOLL	07 23 1417	S12 W11	07 22.8		A	HA	120	5	3	3
7548	27916	MWIL	07 23 1430	S11 W10	07 22.8	6	(AP)					
7548		LEAR	07 24 0030	S12 W16	07 22.8		A	HS	150	1	2	3
7548		SVTO	07 24 0700	S11 W19	07 22.9		B	CSO	220	9	5	3
7548		BOUL	07 24 1330	S10 W22	07 22.9		A	HS	170	1	2	2
7548		HOLL	07 24 1416	S12 W23	07 22.9		A	HS	100	4	3	3
7548	27916	MWIL	07 24 1430	S11 W23	07 22.9	5	(AP)					
7548		RAMY	07 24 1542	S11 W24	07 22.8		A	HA	180	1	2	4
7548		LEAR	07 25 0025	S12 W28	07 22.9		A	HS	110	1	2	3
7548		SVTO	07 25 0610	S12 W32	07 22.8		A	HS	120	1	3	4
7548		RAMY	07 25 1300	S12 W36	07 22.8		A	HA	140	1	2	4
7548		BOUL	07 25 1340	S11 W35	07 22.9		A	HA	130	1	2	2
7548		HOLL	07 25 1415	S13 W36	07 22.9		A	HS	180	2	2	4
7548	27916	MWIL	07 25 1430	S12 W37	07 22.8	6	(AP)					
7548		LEAR	07 26 0125	S12 W42	07 22.9		A	HS	140	1	2	3
7548		RAMY	07 26 1243	S11 W48	07 22.9		A	HS	150	1	2	3
7548		BOUL	07 26 1347	S11 W49	07 22.9		A	HA	130	1	2	1
7548		HOLL	07 26 1405	S12 W50	07 22.8		A	HS	120	1	2	4
7548	27916	MWIL	07 26 1430	S12 W50	07 22.8	5	(AP)					
7548		LEAR	07 27 0133	S11 W57	07 22.8		A	HS	90	1	2	3
7548		SVTO	07 27 0635	S11 W59	07 22.8		A	HA	200	1	2	3
7548		RAMY	07 27 1234	S11 W62	07 22.8		A	HS	160	1	2	3
7548		BOUL	07 27 1328	S11 W60	07 23.0		A	HS	170	1	2	1
7548		HOLL	07 27 1405	S13 W63	07 22.8		A	HS	180	1	2	4
7548	27916	MWIL	07 27 1445	S12 W64	07 22.8	6	(AP)					
7548		LEAR	07 28 0115	S12 W68	07 22.9		A	HS	210	1	2	3
7548		SVTO	07 28 0710	S11 W71	07 22.9		A	HS	160	1	4	3
7548		RAMY	07 28 1220	S12 W75	07 22.9		A	HS	140	1	2	4
7548		BOUL	07 28 1355	S12 W75	07 22.9		A	HS	120	1	2	3
7548	27916	MWIL	07 28 1500	S12 W76	07 22.9	5	(AP)					
7548		HOLL	07 28 1812	S11 W77	07 23.0		A	HS	60	1	2	3
7548		SVTO	07 29 0730	S11 W85	07 22.9		A	AX	60	1	2	3
7550	27918	MWIL	07 17 1500	S19 E73	07 23.2	4	X					
7550		LEAR	07 18 0050	S18 E66	07 23.1		A	AX	10	1	1	4
7550		SVTO	07 18 0542	S20 E62	07 23.0		B	BXO	40	4	3	5
7550		RAMY	07 18 1250	S21 E59	07 23.0		B	CAO	40	7	3	3
7550		BOUL	07 18 1355	S19 E56	07 22.8		A	AX	20	4	2	3
7550	27918	MWIL	07 18 1445	S19 E57	07 23.0	5	(B)					
7550		HOLL	07 18 1457	S19 E58	07 23.0		A	AX	20	5	2	3
7550		LEAR	07 19 0040	S19 E52	07 23.0		B	CRO	30	6	4	2
7550		SVTO	07 19 0545	S22 E50	07 23.1		B	BXO	30	11	4	3
7550		RAMY	07 19 1240	S19 E48	07 23.2		B	BXO	30	10	5	3
7550		HOLL	07 19 1355	S19 E46	07 23.1		B	BXO	10	7	4	4
7550	27918	MWIL	07 19 1500	S20 E44	07 23.0	5	(B)					
7550		LEAR	07 20 0030	S19 E40	07 23.1		B	BXO	20	7	4	3
7550		SVTO	07 20 1023	S21 E35	07 23.1		B	BXO	50	13	6	4
7550		RAMY	07 20 1245	S19 E35	07 23.2		B	BXO	40	14	6	4
7550		BOUL	07 20 1350	S19 E32	07 23.0		B	BXI	10	7	4	2
7550	27918	MWIL	07 20 1445	S20 E33	07 23.1	5	(B)					
7550		LEAR	07 21 0025	S19 E28	07 23.1		B	DAO	60	17	5	3
7550		SVTO	07 21 0710	S20 E23	07 23.0		B	CAO	140	14	6	3
7550		RAMY	07 21 1215	S20 E22	07 23.2		B	DAO	130	15	6	4
7550		BOUL	07 21 1340	S17 E19	07 23.0		B	DSO	90	9	5	2
7550	27918	MWIL	07 21 1545	S20 E20	07 23.2	5	(B)					
7550		HOLL	07 21 1655	S19 E19	07 23.1		B	DAI	180	16	5	3
7550		PALE	07 21 1850	S19 E21	07 23.4		B	DSO	110	11	5	4
7550		SVTO	07 22 0850	S20 E08	07 23.0		B	DAO	120	14	6	1
7550		RAMY	07 22 1225	S20 E08	07 23.1		B	DAO	110	20	5	3
7550		BOUL	07 22 1355	S17 E07	07 23.1		B	CAO	70	15	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
7550	27918	MWIL	07 22 1430	S20 E07	07 23.1	5	(B)					
7550		HOLL	07 22 1620	S19 E06	07 23.1		B	DAO	100	14	5	3
7550		LEAR	07 23 0210	S21 E01	07 23.2		B	CAO	50	9	6	3
7550		SVTO	07 23 0624	S21 W02	07 23.1		B	DAO	80	15	6	3
7550		BOUL	07 23 1345	S19 W07	07 23.0		B	CAO	40	11	4	3
7550		HOLL	07 23 1417	S20 W05	07 23.2		B	DAO	70	11	5	3
7550	27918	MWIL	07 23 1430	S20 W07	07 23.1	4	(BP)					
7550		LEAR	07 24 0030	S20 W12	07 23.1		B	DAO	50	9	7	3
7550		SVTO	07 24 0700	S20 W14	07 23.2		B	DAO	80	17	8	3
7550		BOUL	07 24 1330	S19 W19	07 23.1		B	CSO	20	3	4	2
7550		HOLL	07 24 1416	S22 W19	07 23.1		B	CAO	30	9	5	3
7550	27918	MWIL	07 24 1430	S20 W21	07 23.0	4	(BP)					
7550		RAMY	07 24 1542	S20 W20	07 23.1		B	DAO	40	4	5	4
7550		LEAR	07 25 0025	S20 W25	07 23.1		B	CRO	30	4	5	3
7550		SVTO	07 25 0610	S19 W31	07 22.9		A	HA	20	2	2	4
7550		RAMY	07 25 1300	S20 W31	07 23.2		B	CAO	20	1	1	4
7550		BOUL	07 25 1340	S19 W33	07 23.0		A	AX	10	2	1	2
7550		HOLL	07 25 1415	S21 W32	07 23.1		B	CRO	10	3	6	4
7550	27918	MWIL	07 25 1430	S20 W35	07 22.9	4	(B)					
7550		LEAR	07 26 0125	S19 W40	07 23.0		A	AX	30	2	2	3
7550		RAMY	07 26 1243	S18 W47	07 22.9		A	AX	10	2	2	3
7550		HOLL	07 26 1405	S21 W48	07 22.9		A	AX		1		4
7550	27918	MWIL	07 26 1430	S20 W48	07 22.9	4	(AP)					
7550		SVTO	07 27 0635	S20 W58	07 22.8		A	AX	10	2	2	3
7550A		RAMY	07 21 1215	S20 E38	07 24.4		A	AX		1		4
7551		SVTO	07 18 0542	S09 E80	07 24.2		A	HS	60	1	4	5
7551		RAMY	07 18 1250	S11 E78	07 24.4		A	HS	20	1	1	3
7551		BOUL	07 18 1355	S09 E72	07 24.0		A	HS	30	1	1	3
7551	27919	MWIL	07 18 1445	S08 E79	07 24.5	4	B					
7551		HOLL	07 18 1457	S08 E76	07 24.3		A	AX		2	1	3
7551		LEAR	07 19 0040	S09 E71	07 24.3		B	CSO	70	3	4	2
7551		SVTO	07 19 0545	S10 E69	07 24.4		B	CRO	40	4	5	3
7551		RAMY	07 19 1240	S09 E66	07 24.5		B	DAO	80	4	6	3
7551		HOLL	07 19 1355	S09 E66	07 24.5		B	DAO	60	4	7	4
7551	27919	MWIL	07 19 1500	S09 E66	07 24.6	5	(B)					
7551		LEAR	07 20 0030	S09 E60	07 24.5		B	DRO	40	5	6	3
7551		SVTO	07 20 1023	S11 E56	07 24.6		B	BXO	60	6	10	4
7551		RAMY	07 20 1245	S09 E53	07 24.5		B	DAO	50	5	7	4
7551		BOUL	07 20 1350	S09 E51	07 24.4		B	BXO	20	3	4	2
7551	27919	MWIL	07 20 1445	S09 E53	07 24.6	5	(B)					
7551		LEAR	07 21 0025	S09 E47	07 24.5		B	CRO	40	4	6	3
7551		SVTO	07 21 0710	S11 E43	07 24.5		B	BXO	40	3	6	3
7551		RAMY	07 21 1215	S09 E40	07 24.5		B	CAO	20	3	6	4
7551		BOUL	07 21 1340	S07 E37	07 24.3		B	BXO	10	3	5	2
7551	27919	MWIL	07 21 1545	S09 E38	07 24.5	5	(B)					
7551		HOLL	07 21 1655	S09 E38	07 24.5		B	BXO	10	3	6	3
7551		PALE	07 21 1850	S09 E37	07 24.6		B	BXO	20	3	6	4
7551		SVTO	07 22 0850	S10 E28	07 24.5		B	BXO	10	4	6	1
7551		RAMY	07 22 1225	S09 E27	07 24.5		B	CRO	10	8	8	3
7551		BOUL	07 22 1355	S05 E25	07 24.4		B	CSO	30	7	6	3
7551	27919	MWIL	07 22 1430	S09 E25	07 24.5	4	(B)					
7551		HOLL	07 22 1620	S08 E26	07 24.6		B	DSO	40	9	7	3
7551		LEAR	07 23 0210	S10 E19	07 24.5		B	CRO	30	10	7	3
7551		SVTO	07 23 0624	S09 E18	07 24.6		B	DRO	40	16	7	3
7551		BOUL	07 23 1345	S07 E13	07 24.5		B	CAO	30	14	4	3
7551		HOLL	07 23 1417	S09 E16	07 24.8		B	DAI	60	12	6	3
7551	27919	MWIL	07 23 1430	S09 E14	07 24.6	4	(BG)					
7551		LEAR	07 24 0030	S09 E10	07 24.8		B	DAO	70	11	8	3
7551		SVTO	07 24 0700	S10 E07	07 24.8		B	DAO	80	15	10	3
7551		BOUL	07 24 1330	S08 E02	07 24.7		B	BXO	10	8	8	2
7551		HOLL	07 24 1416	S09 E03	07 24.8		B	ESI	40	9	11	3
7551	27919	MWIL	07 24 1430	S09 E02	07 24.7	4	(BG)					
7551		RAMY	07 24 1542	S09 E01	07 24.7		B	DAO	40	10	9	4
7551		LEAR	07 25 0025	S09 W03	07 24.8		B	BXO	40	11	9	3
7551		SVTO	07 25 0610	S09 W07	07 24.7		B	BXO	20	15	10	4
7551		RAMY	07 25 1300	S09 W10	07 24.8		B	CRO	10	5	10	4
7551		BOUL	07 25 1340	S08 W10	07 24.8		B	BXO	10	6	9	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
7551		HOLL	07 25 1415	S11 W10	07 24.8		B	BXO	10	9	11	4
7551	27919	MWIL	07 25 1430	S10 W11	07 24.8	4	(BG)					
7551		LEAR	07 26 0125	S09 W18	07 24.7		B	BX	10	4	7	3
7551		RAMY	07 26 1243	S09 W19	07 25.1		A	AX	10	4	2	3
7551		BOUL	07 26 1347	S08 W19	07 25.1		A	AX		3		1
7551		HOLL	07 26 1405	S11 W19	07 25.1		A	AX		2	1	4
7551	27919	MWIL	07 26 1430	S11 W21	07 25.0	4	(B)					
7551		LEAR	07 27 0133	S11 W26	07 25.1		A	AX	10	2	1	3
7551		SVTO	07 27 0635	S08 W27	07 25.2		B	CRO	20	4	6	3
7551		RAMY	07 27 1234	S10 W32	07 25.1		A	AX		1		3
7550B	27920	MWIL	07 23 1430	N09 E18	07 24.9	3	(AF)					
7551A		SVTO	07 24 0700	N16 E17	07 25.6		B	BXO	10	3	3	3
7551A		SVTO	07 25 0610	N14 E04	07 25.5		B	BXO	10	2	3	4
7551A		SVTO	07 27 0635	N16 W22	07 25.6		A	AX		2	2	3
7554		SVTO	07 25 0610	S09 E32	07 27.6		A	AX		1		4
7554	27923	MWIL	07 25 1430	S13 E28	07 27.7	4	(AP)					
7554		LEAR	07 26 0125	S07 E23	07 27.8		B	BX	10	5	4	3
7554		RAMY	07 26 1243	S07 E17	07 27.8		A	AX		3	2	3
7554		HOLL	07 26 1405	S08 E16	07 27.8		A	AX	10	3	2	4
7554	27924	MWIL	07 26 1430	S07 E16	07 27.8	4	(AP)					
7554	27923	MWIL	07 26 1430	S12 E13	07 27.6	4	(AP)					
7554		LEAR	07 27 0133	S07 E09	07 27.7		A	AX	10	2	1	3
7554		SVTO	07 27 0635	S09 E06	07 27.7		B	BXO	10	5	8	3
7554		RAMY	07 27 1234	S08 E02	07 27.7		A	AX	10	5	3	3
7554		HOLL	07 27 1405	S09 E01	07 27.7		B	BXO	10	5	4	4
7554	27923	MWIL	07 27 1445	S11 E01	07 27.7	4	(AP)					
7554		SVTO	07 28 0710	S11 W09	07 27.6		A	AX		1		3
7554		RAMY	07 28 1220	S10 W12	07 27.6		A	AX		2	1	4
7554		BOUL	07 28 1355	S09 W13	07 27.6		A	AX		1		3
7554	27923	MWIL	07 28 1500	S09 W12	07 27.7	4	(AP)					
7554		SVTO	07 29 0730	S07 W22	07 27.7		A	AX	10	5	2	3
7554	27923	MWIL	07 29 1500	S09 W27	07 27.6	4	(AP)					
7553		SVTO	07 23 0624	S13 E69	07 28.5		A	AX	10	1	1	3
7553		HOLL	07 23 1417	S12 E65	07 28.5		A	AX		1		3
7553	27921	MWIL	07 23 1430	S13 E64	07 28.4	4	(AP)					
7553		LEAR	07 24 0030	S13 E58	07 28.4		A	AX	10	1	1	3
7553		SVTO	07 24 0700	S14 E55	07 28.4		B	BXO	20	5	6	3
7553		HOLL	07 24 1416	S12 E50	07 28.4		A	AX		2		3
7553	27921	MWIL	07 24 1430	S13 E49	07 28.3	4	(AP)					
7553		RAMY	07 24 1542	S13 E48	07 28.3		B	CRO	20	4	3	4
7553		LEAR	07 25 0025	S13 E44	07 28.3		A	AX	10	2	2	3
7553		SVTO	07 25 0610	S13 E40	07 28.3		B	BXO	10	2	3	4
7553		RAMY	07 25 1300	S13 E33	07 28.0		B	BXO	10	3	8	4
7553		HOLL	07 25 1415	S13 E37	07 28.4		A	AX		1		4
7553	27921	MWIL	07 25 1430	S14 E39	07 28.5	3	(B)					
7553		LEAR	07 26 0125	S13 E30	07 28.3		A	AX	10	1	1	3
7553		RAMY	07 26 1243	S13 E24	07 28.3		A	AX		2	1	3
7553		BOUL	07 26 1347	S12 E22	07 28.2		A	AX		1		1
7553		HOLL	07 26 1405	S12 E24	07 28.4		A	AX	10	1	1	4
7553	27921	MWIL	07 26 1430	S13 E23	07 28.3	4	(AP)					
7553		LEAR	07 27 0133	S13 E19	07 28.5		B	CRO	30	12	5	3
7553		SVTO	07 27 0635	S12 E16	07 28.5		B	DRO	90	22	6	3
7553		RAMY	07 27 1234	S12 E13	07 28.5		B	DAI	50	17	6	3
7553		BOUL	07 27 1328	S10 E12	07 28.5		B	BXI	50	9	5	1
7553		HOLL	07 27 1405	S11 E13	07 28.6		BG	DSI	30	13	7	4
7553	27921	MWIL	07 27 1445	S12 E12	07 28.5	5	(B)					
7553		LEAR	07 28 0115	S13 E06	07 28.5		B	DAI	60	18	8	3
7553		SVTO	07 28 0710	S12 E03	07 28.5		B	DAO	110	20	8	3
7553		RAMY	07 28 1220	S12 E00	07 28.5		B	DAO	70	17	7	4
7553		BOUL	07 28 1355	S10 W02	07 28.4		B	CSO	40	13	8	3
7553	27921	MWIL	07 28 1500	S12 W01	07 28.5	5	(B)					
7553		HOLL	07 28 1812	S12 W04	07 28.4		B	CSO	80	17	7	3
7553		SVTO	07 29 0730	S12 W11	07 28.5		B	DAO	100	26	7	3
7553		LEAR	07 29 0805	S13 W12	07 28.4		B	DAO	90	15	7	3
7553		RAMY	07 29 1220	S13 W12	07 28.6		B	DAI	70	19	8	4

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
7553		BOUL	07 29 1355	S10 W14	07 28.5		B	CAO	60	16	8	3
7553		HOLL	07 29 1415	S12 W15	07 28.5		B	CAI	100	21	9	3
7553	27921	MWIL	07 29 1500	S12 W14	07 28.6	5	(B)					
7553		LEAR	07 30 0020	S12 W19	07 28.6		B	DSO	60	16	7	3
7553		SVTO	07 30 0618	S12 W23	07 28.5		B	BXI	50	20	7	3
7553		RAMY	07 30 1237	S12 W26	07 28.6		B	DAI	60	21	8	3
7553		BOUL	07 30 1355	S11 W27	07 28.5		B	DRO	40	17	7	3
7553		HOLL	07 30 1411	S12 W26	07 28.6		B	DSI	60	22	7	3
7553	27921	MWIL	07 30 1445	S12 W27	07 28.6	5	(B)					
7553		LEAR	07 31 0015	S12 W33	07 28.5		B	CAO	50	8	7	2
7553		RAMY	07 31 1325	S12 W38	07 28.7		B	CAO	10	4	3	4
7553		SVTO	07 31 1352	S12 W38	07 28.7		B	CRO	20	5	3	4
7553		BOUL	07 31 1430	S11 W38	07 28.7		B	CRO	10	3	3	3
7553		HOLL	07 31 1433	S11 W39	07 28.7		B	DAO	30	4	4	3
7553	27921	MWIL	07 31 1445	S12 W39	07 28.7	5	(AF)					
7553		LEAR	08 01 0025	S12 W45	07 28.7		B	BXO	20	3	4	3
7553		RAMY	08 01 1244	S13 W52	07 28.7		B	BXO	10	2	2	3
7553		HOLL	08 01 1315	S11 W52	07 28.7		B	BXO	10	3	3	2
7553	27921	MWIL	08 01 1415	S12 W53	07 28.7	4	(AF)					
7553		BOUL	08 01 1612	S11 W53	07 28.8		A	AX	10	1		2
7553		LEAR	08 02 0025	S12 W57	07 28.8		A	AX	10	2	1	3
7553A		RAMY	07 28 1220	N17 E06	07 29.0		A	AX		1		4
7553A	27929	MWIL	07 28 1500	N11 E04	07 28.9	4	(AP)					
7553A	27928	MWIL	07 28 1500	N13 E02	07 28.8	4	(AP)					
7553A		SVTO	07 29 0730	N17 W04	07 29.0		A	AX		2	1	3
7552		LEAR	07 23 0210	N14 E79	07 29.1		A	HS	120	1	1	3
7552		SVTO	07 23 0624	N14 E79	07 29.2		A	HS	110	1	2	3
7552		BOUL	07 23 1345	N14 E70	07 28.9		A	HS	60	1	1	3
7552		HOLL	07 23 1417	N15 E75	07 29.3		A	HA	60	1	2	3
7552	27922	MWIL	07 23 1430	N13 E74	07 29.2	4	(AP)					
7552		LEAR	07 24 0030	N14 E67	07 29.1		A	HS	130	1	2	3
7552		SVTO	07 24 0700	N13 E65	07 29.2		B	CAO	120	4	11	3
7552		BOUL	07 24 1330	N13 E59	07 29.0		A	HS	40	1	1	2
7552		HOLL	07 24 1416	N16 E62	07 29.3		B	CAO	100	3	3	3
7552	27922	MWIL	07 24 1430	N14 E60	07 29.1	5	(B)					
7552		RAMY	07 24 1542	N15 E60	07 29.2		B	CAO	100	5	4	4
7552		LEAR	07 25 0025	N14 E55	07 29.2		A	HS	100	1	2	3
7552		SVTO	07 25 0610	N14 E52	07 29.2		A	HS	90	1	2	4
7552		RAMY	07 25 1300	N14 E48	07 29.2		A	HA	70	2	2	4
7552		BOUL	07 25 1340	N14 E47	07 29.1		A	HS	60	1	2	2
7552		HOLL	07 25 1415	N18 E50	07 29.4		B	CSO	90	4	5	4
7552	27922	MWIL	07 25 1430	N13 E48	07 29.2	5	(AP)					
7552		LEAR	07 26 0125	N14 E42	07 29.2		A	HS	80	1	2	3
7552		RAMY	07 26 1243	N14 E36	07 29.2		A	HS	70	1	2	3
7552		BOUL	07 26 1347	N14 E33	07 29.1		A	HS	80	1	1	1
7552		HOLL	07 26 1405	N15 E35	07 29.2		A	HS	70	1	2	4
7552	27925	MWIL	07 26 1430	N13 E35	07 29.2	5	(AP)					
7552		LEAR	07 27 0133	N14 E30	07 29.3		B	CSO	90	2	4	3
7552		SVTO	07 27 0635	N16 E27	07 29.3		B	CSO	100	5	8	3
7552		RAMY	07 27 1234	N14 E23	07 29.3		A	HS	90	1	2	3
7552		BOUL	07 27 1328	N14 E21	07 29.1		A	HS	80	1	1	1
7552		HOLL	07 27 1405	N15 E21	07 29.2		A	HS	70	2	2	4
7552	27925	MWIL	07 27 1445	N14 E22	07 29.3	5	(AP)					
7552		LEAR	07 28 0115	N12 E17	07 29.3		A	HS	90	1	1	3
7552		SVTO	07 28 0710	N17 E19	07 29.7		B	CSO	90	7	15	3
7552		RAMY	07 28 1220	N15 E10	07 29.3		A	HA	120	1	2	4
7552		BOUL	07 28 1355	N13 E07	07 29.1		B	CSO	40	2	5	3
7552	27925	MWIL	07 28 1500	N15 E08	07 29.2	6	(AP)					
7552		HOLL	07 28 1812	N15 E07	07 29.3		A	HS	100	1	2	3
7552		SVTO	07 29 0730	N17 E07	07 29.8		B	CSO	90	8	14	3
7552		LEAR	07 29 0805	N14 E01	07 29.4		B	CSO	80	3	5	3
7552		RAMY	07 29 1220	N16 W02	07 29.4		B	CAO	100	3	5	4
7552		BOUL	07 29 1355	N16 W04	07 29.3		A	HS	40	1	1	3
7552		HOLL	07 29 1415	N17 W01	07 29.5		B	CSO	80	2	10	3
7552	27925	MWIL	07 29 1500	N15 W04	07 29.3	5	(AP)					
7552		LEAR	07 30 0020	N15 W09	07 29.3		A	HS	90	1	2	3
7552		SVTO	07 30 0618	N15 W10	07 29.5		B	CSO	110	9	4	3

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7552		RAMY	07 30 1237	N16 W16	07 29.3		A	HS	80	1	2	3
7552		BOUL	07 30 1355	N15 W16	07 29.4		A	HS	50	1	2	3
7552		HOLL	07 30 1411	N16 W11	07 29.7		B	CSO	80	2	12	3
7552	27925	MWIL	07 30 1445	N15 W17	07 29.3	6	(AP)					
7552		LEAR	07 31 0015	N16 W17	07 29.7		B	CSO	90	3	11	2
7552		RAMY	07 31 1325	N17 W24	07 29.7		B	CAO	100	8	13	4
7552		SVTO	07 31 1352	N17 W24	07 29.7		B	CSO	110	16	14	4
7552		BOUL	07 31 1430	N16 W29	07 29.4		A	HS	70	1	2	3
7552		HOLL	07 31 1433	N15 W25	07 29.7		B	EAO	60	11	12	3
7552	27925	MWIL	07 31 1445	N15 W30	07 29.3	6	(AP)					
7552		LEAR	08 01 0025	N14 W35	07 29.5		A	HS	90	1	2	3
7552		SVTO	08 01 0840	N15 W41	07 29.3		A	HA	70	1	2	3
7552		RAMY	08 01 1244	N15 W43	07 29.4		A	HS	50	1	2	3
7552		HOLL	08 01 1315	N15 W43	07 29.4		A	HS	80	1	2	2
7552	27925	MWIL	08 01 1415	N15 W44	07 29.4	5	(AP)					
7552		BOUL	08 01 1612	N15 W43	07 29.5		A	HS	120	1	1	2
7552		HOLL	08 01 2035	N15 W48	07 29.3		A	HS	110	1	2	2
7552		LEAR	08 02 0025	N15 W48	07 29.5		A	HS	80	1	2	3
7552		SVTO	08 02 0735	N17 W53	07 29.4		A	HS	60	1	2	3
7552		BOUL	08 02 1350	N15 W55	07 29.5		A	HS	40	1	1	2
7552		RAMY	08 02 1409	N15 W57	07 29.4		A	HS	70	1	2	2
7552	27925	MWIL	08 02 1445	N15 W57	07 29.4	5	(AP)					
7552		LEAR	08 03 0005	N15 W61	07 29.5		A	HS	70	1	2	3
7552		SVTO	08 03 0600	N15 W65	07 29.4		A	HS	90	1	2	3
7552		RAMY	08 03 1254	N14 W69	07 29.4		A	HS	100	1	2	3
7552	27925	MWIL	08 03 1445	N16 W70	07 29.4	5	(AP)					
7552		SVTO	08 04 0600	N16 W78	07 29.4		A	HA	50	2	1	3
7552		LEAR	08 04 0618	N19 W76	07 29.6		A	HS	30	1	1	3
7552	27925	MWIL	08 04 1445	N16 W85	07 29.3	4	(AP)					
7556		RAMY	07 27 1234	N19 E35	07 30.2		A	AX	10	3	2	3
7556		HOLL	07 27 1405	N20 E33	07 30.1		A	AX	10	5	2	4
7556	27927	MWIL	07 27 1445	N19 E35	07 30.3	4	(AF)					
7556	27927	MWIL	07 28 1500	N18 E15	07 29.8	4	(B)					
7556	27927	MWIL	07 29 1500	N17 E04	07 29.9	4	(AF)					
7556	27927	MWIL	07 30 1445	N17 W06	07 30.1	4	(AF)					
7556		RAMY	07 31 1325	N18 W20	07 30.0		B	BXO	20	7	5	4
7556		BOUL	07 31 1430	N18 W19	07 30.1		B	BXO	20	8	4	3
7556	27927	MWIL	07 31 1445	N17 W20	07 30.1	4	(BG)					
7556		LEAR	08 01 0025	N17 W25	07 30.2		B	BXO	20	4	4	3
7556		SVTO	08 01 0840	N18 W29	07 30.2		B	CRO	20	2	4	3
7556		RAMY	08 01 1244	N18 W32	07 30.2		B	BXO	10	5	4	3
7556		HOLL	08 01 1315	N18 W32	07 30.2		B	BXO	10	3	3	2
7556	27927	MWIL	08 01 1415	N18 W33	07 30.2	4	(B)					
7556		LEAR	08 02 0025	N17 W38	07 30.2		A	AX	10	1	1	3
7556		RAMY	08 02 1409	N18 W47	07 30.1		A	AX		1		2
7556	27927	MWIL	08 02 1445	N17 W46	07 30.2	4	(AF)					
7556A		SVTO	07 29 0730	S15 E33	07 31.8		B	BXO	10	3	2	3

Stations reporting:

BOUL = Boulder
CULG = Culgoora
HOLL = Holloman
LEAR = Learmonth
MWIL = Mt. Wilson
PALE = Palehua
RAMY = Ramey
SVTO = San Vito

SUDDEN IONOSPHERIC DISTURBANCES

JULY 1993

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
01	0048	0052	0127	1-	5			1		1	0043	C2.1	
01	0253	0303	0333	1-	5			1		1	0230	C2.0	7530
01	1445	1450	1520	2	1					1	1449		7530
01	1643	1646	1658	1-	1					1	1643	B5.1	7530
01	2058	2100	2111	1-	3					3	2057	B4.4	
01	2150	2155	2230	2	3					2	No flare		
02	0648	0649	0701	1-	3					2	0648	B7.4	
02	0827	0834	0849	1	3		1			2	0827	C1.0	7531
02	0905	0928	1050	1	1		1				No flare		
02	1028	1030	1044	1-	1					1	1028	B8.5	
02	1314	1338	1506	2+	5	2	3	1		9	1314	M4.3	7530
02	1628	1640	1730	1	1		1				*		
02	1632	1657	1823	2	1		2				*		
02	1743	1745	1757	1-	3					2	1743	B8.6	
03	1042	1119	1215	2+	5	1	3	1		12	1040	M1.6	7530
03	1228	1237	1246	1	1		1				No flare		
03	1318	1322	1337	1	5					2	1318	B8.0	7530
03	1353	1357	1408	1-	3					2	1353	C1.1	
03	1423	1427	1448	1	1		1				1423	B6.6	
03	1533	1548	1650	2+	1					1	1537		7530
03	1714	1716	1730	1-	1					1	1712	B8.3	
03	1806	1816	1838	1+	3					5	1806	C1.7	
03	2010	2021	2030	1	3					3	2003	B8.8	
04	0724	0731	0743	1	1					1	0721	M1.6	7530
04	0746	0758	0914	3-	5	2	2	1		3	0721	M1.6	7530
04	1018	1020	1030	1-	1					1	1016	B9.8	
04	1116	1213	1328	2	5	1	3	1		12	1101	M1.8	7530
04	1228	1229	1256	1+	1					1	1228E		7530
04	1635	1639	1701	1	3					4	1636	C1.5	7530
05	0707	0713	0724	1-	1					1	0708		7530
05	0930	0933	0948	1-	1					1	0937	B3.8	
05	1130	1132	1140	1-	1					1	1130	B4.6	
05	2326	2332	2354	1-	5			1		3	2322	C1.4	
06	0804	0814	0825	1	1					1	No flare		
06	0957	1007	1040	2	1					1	1004	C1.0	7530
06	1104	1106	1130	1	5					2	1106	C1.1	
06	1139	1150	1202	1	1		1				*		
07	1045	1047	1058	1-	5					2	1045	C1.2	
07	1133	1136	1147	1-	5		1			3	1131	C1.6	7530
07	1232	1235	1247	1-	5					4	1231	C1.3	
07	1329	1334	1345	1-	1					1	1329	B4.7	
07	1359	1400	1407	1-	1					1	1354	B2.6	
07	1508	1520	1537	1	1		1				1505	B4.2	7530
08	1214	1216	1231	1-	1					1	1214	B5.5	
09	0207	0209	0227	1-	1			1			0157	B7.5	
09	1547	1558	1635	2	1					1	1545	B7.2	
09	1847	1853	1930U	2	1					1	1845	B4.9	
10	2253E	2257	2307	1-	1					1	2221	B2.5	
11	0539	0620	0640	1	3		1			2	0603	B1.7	
12	0803	0804	0834	3	1		1				No flare		
12	0814	0822	0900	3	1		1				No flare		
13	1346	1354	1420	2	1					1	1346	B1.6	
14	0655	0659	0715U	1	1					1	0654	B6.0	7543
14	1223	1228	1244	1	1		1				1223	B9.5	7543
14	2035	2039	2048	1-	1					1	2036		7543

* = no flare patrol.

JULY 1993

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
15	1743	1745	1755	1-	1					1	1743	B2.4	
17	0826	0841	0942	1+	5			1		2	0821	C2.3	
17	1620	1624	1645	1	3					2	1617	B2.7	
17	2153	2200	2213	1-	3					4	2156	C1.1	
18	1159	1200	1208	1-	1					1	1159		
18	1412	1415	1421	1-	1					1	1408	B3.3	
18	1544	1545	1559	1-	1					1	1544	B2.1	
18	1800	1807	1815	1-	1					1	1800	B2.6	
18	1825	1833	1846D	1	1					1	No flare		
18	1846	1850	1905	1	3					3	1846	B5.8	
19	1146	1150	1200	1-	1					1	1144	B2.4	
19	1206	1224	1300	1+	3		2				1226	B1.8	
20	0247	0301	0336	1-	1			1			0243	C1.0	
20	1426	1502	1602	1	1		1				No flare		
20	1515	1522	1535	1	1					1	1522	B5.5	7550
20	1542	1556	1641	1+	5		1			1	1553	B3.3	
20	1830E	1832	1900U	1+	1					1	1817	B3.6	
20	2027	2029	2036	1-	1					1	2027		7549
21	1414	1440	1456	1	3		2				No flare		
21	1537	1543	1611	1	1		1				No flare		
21	1540	1551	1632	1+	1		1				No flare		
22	0854	0900	0921	1+	1					1	0824	B8.4	
22	1137	1149	1210	1	1		1				No flare		
22	1600	1611	1618U	1-	1					1	1555E		7551
22	1626	1626	1650	1-	1					1	1618	B5.0	
23	0714	0717	0735	1	1					1	0706	B8.5	
23	1142	1156	1220	1	1		1				1149	B6.3	7551
23	1914	1915	1925U	1-	1					1	1913	B6.3	7548
23	2137	2148	2221	2-	3					4	2138	C1.0	7548
24	1016	1024	1035	1	1		1				No flare		
24	1240	1249	1304	1	1		1				No flare		
25	1110	1206	1224	2	3		2				No flare		
26	1127	1136	1149	1	1					1	No flare		
27	0207	0216	0227	1-	1			1			0206	B9.6	
27	1302	1318	1347	1	1		1				No flare		
27	1531	1544	1649	2+	3					5	1537		7555
27	1540	1600	1645	1	1					1	1537		7555
28	1210	1221	1246	2	1					1	1209	B2.9	
29	1238	1248U	1354	1	1		1				No flare		
30	1019	1125U	1214	1	1		1				No flare		
30	1329	1344U	1504	1	1		1				No flare		
31	1153	1200	1153	2+	5					7	1147	C1.2	
31	1428	1457	1457U	1+	1					1	1428		7553

* = no flare patrol.

OBSERVATORIES REPORTING FOR JULY 1993

Amherst, New Hampshire, USA	SES	Madison, Wisconsin, USA	SES
Athens, Georgia, USA	SES	Manahawkin, New Jersey, USA	SES
Boksburg, Rep of S. Africa	SES	Maui, Hawaii, USA	SWF
Cambridge, England, UK	SES	Nampa, Idaho, USA	SES
Cranford, New Jersey, USA	SES	Nerja, Spain	SES
Durham, New Hampshire, USA	SES	Panska Ves, Czechoslovakia	SES, SEA, SWF
Gettysburg, Pennsylvania, USA	SES	Rimavska Sobota, Czechoslovakia	SEA
Hiraiso, Japan	SWF	Rochester, New Hampshire, USA	SES
Houston, Texas, USA	SES	Tucson, Arizona, USA	SES
Hudson, Ohio, USA	SES	Upice, Slovakia	SEA
Huntsville, Alabama, USA	SES	Wellington, Ohio, USA	SES
Inubo, Japan	SPA	Windsor Locks, Connecticut, USA	SES
LaCrescenta, California, USA	SES	Ziar nad Hronom, Slovakia	SEA
Locust Grove, Georgia, USA	SES	Zilina, Slovakia	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

JULY 1993

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
01			LEAR				0526.0	0527.0	2				III
			SVTO				0526.0	0527.0	2				III
	0534	1752	ONDR				0649.0	1400.0	1				IN
			ONDR	1037.0	1040.9	2	1037.0	1040.9	2				IIIGG,U
	0600	1200	IZMI				1037.2	1038.6	1				IIIG
	0839	1527	POTS				1319.0	1319.5	1				IIIG
			SGMR				1319.0	1319.0	1				III
			SVTO				1319.0	1319.0	2				III
02	0627	1752	ONDR	1313.9	1325.6	2							CONT
	0558	1527	POTS				1318.9	1319.5	1				IIIG
			SGMR				1319.0	1319.0	1				III
			SVTO				1319.0	1319.0	1				III
03			LEAR				0349.0	0356.0	2				V
			PALE				0350.0	0354.0	1				III
	0600	1200	IZMI				0600.0E	1200.0D	2				IS,IIIN,DC
	0634	1752	ONDR										IIIG
			SVTO				1217.0	1220.0	2				III
			SGMR				1220.0	1220.0	1				III
			SGMR				1259.0	1301.0	1				V
			SVTO				1259.0	1301.0	2				V
04			LEAR				0220.0	0221.0	2				III
			PALE				0220.0	0220.0	1				III
	0600	1200	IZMI				0600.0E	1200.0D	1				IN
			SVTO				0729.0	0729.0	1				III
	0739	1750	ONDR				0743.9	0744.8	1				IIIG
			LEAR				0744.0	0745.0	1				III
			SVTO				0744.0	0745.0	3				V
			ONDR										IIIG
			IZMI				0843.3	0845.0	2				IIIG,V
			SGMR				1019.0	1019.0	1				III
			SVTO				1019.0	1020.0	2				III
			IZMI				1019.5	1020.4	2				IIIG
			SGMR				1153.0	1159.0	1				III
			SVTO				1153.0	1215.0	2				III
			SVTO				1153.0	1215.0	2				S
			IZMI				1153.4	1200.7	3				IIIGG,V
			SGMR				1214.0	1215.0	1				III
			SGMR				1643.0	1645.0	1				III
			SVTO				1643.0	1644.0	1				III
			PALE				1647.0	1648.0	1				III
			PALE				2239.0	2239.0	1				III
05	0600	1200	IZMI				0600.0E	1100.0	1				IS
	0559	1527	POTS				0611.0E	1043.0	1				I,S,C,DC
			POTS				0705.5	0705.6	1				IIIB
	0418	1751	ONDR				0920.0	1400.0	1				IN
			POTS				1019.7	1020.0	1				IIIG
			POTS				1105.1	1105.2	1				IIIG
			IZMI				1105.3	1105.4	2				IIIG
			POTS				1131.4	1135.8	2				IIIGG
			IZMI				1131.6	1134.6	2				IIIGG
			POTS				1152.6	1209.0	2				I,IIIG
			SGMR				1153.0	1209.0	1				S
			SVTO				1153.0	1209.0	2				S
			IZMI				1153.6	1153.8	1				IIIG
			POTS				1159.1	1159.1	1				UNCLF
			POTS				1235.6	1313.0U	1				I,S,DC
			POTS				1402.9	1403.2	1				IIIG
			SGMR				1431.0	1432.0	1				III
			SVTO				1431.0	1431.0	2				III
			POTS				1431.4	1431.9U	2				IIIG
			SGMR				1448.0	1455.0	1				S
			SVTO				1448.0	1455.0	2				III
			POTS				1449.6	1449.7	1				UNCLF
			PALE				1738.0	1739.0	2				III
			SGMR				1738.0	1740.0	2				V

SOLAR RADIO EMISSION
Spectral Observations

JULY 1993

Observation Start Day (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
05		SVTO				1738.0	1739.0	2				III
		SGMR				1944.0	2001.0	1				S
		PALE				1958.0	2001.0	1				III
		PALE				2205.0	2206.0	2				III
		SGMR				2205.0	2206.0	2				V
		PALE				2240.0	2242.0	2				III
		SGMR				2240.0	2240.0	1				III
		PALE				2303.0	2315.0	1				S
06		LEAR				0006.0	0007.0	2				III
		PALE				0006.0	0007.0	2				III
		LEAR				0058.0	0058.0	1				III
		LEAR				0122.0	0124.0	1				III
		PALE				0122.0	0133.0	2				S
		LEAR				0132.0	0133.0	2				III
		LEAR				0304.0	0305.0	1				III
		PALE				0305.0	0309.0	1				III
		LEAR				0308.0	0309.0	2				III
	0553 1527	POTS				0553.6	0553.7	2				UNCLF
		POTS				0630.60	9310.U	1				I,S,C,DC
		POTS				0640.0	0711.0	2				IIIGG
		SVTO				0640.0	0741.0	3				S
	0600 1200	IZMI				0640.1	0640.4	3				IIIB
		POTS				0641.2	0641.3	1				U
		LEAR				0649.0	0651.0	2				III
		IZMI				0649.3	0650.7	2				IIIG,V
		LEAR				0700.0	0700.0	2				III
		IZMI				0700.1	0700.7	2				IIIG,V
		POTS				0721.7	0731.6	3				IIIGG,RS,C
		LEAR				0722.0	0726.0	3				III
		IZMI				0722.7	0725.5	2				IIIGG,V
	0418 1749	ONDR	0723.7	0726.0	2							DCIM
		IZMI				0730.0	1200.0	1				IN
		IZMI				0740.9	0741.2	1				IIIG
		POTS				0740.9	0741.0	1				IIIB
		LEAR				0741.0	0741.0	1				III
		POTS				0825.8	0841.9U	2				IIIGG
		IZMI				0835.8	0836.8	2				IIIG
		SVTO				0836.0	0836.0	2				III
		POTS				0856.6	0856.7	1				IIIB
		POTS				0917.3	0918.7	1				IIIG
		IZMI				0917.4	0917.5	2				IIIG
		POTS				0929.0	0929.1	1				IIIB
		POTS				1013.4	1018.4	1				IIIG
		POTS				1055.4	1055.5	1				IIIB
		POTS				1131.8	1131.9	1				IIIB
		POTS				1143.0	1143.1	1				UNCLF
		POTS				1146.9	1147.0	1				I
		POTS				1150.6	1159.0	1				IIIG
		POTS				1211.9	1213.9	3				IIIGG,V
		SGMR				1213.0	1214.0	2				III
		SVTO				1213.0	1214.0	2				III
		POTS				1241.0U	1527.0U	2				I,S,C,DC
		POTS				1256.9	1312.0U	1				IIIGG
		POTS				1322.8	1333.0U	2				IIIGG
		POTS				1343.3	1406.3	1				IIIGG
		POTS				1419.7	1441.7	3				U?,IIIGG
		SVTO				1427.0	1440.0	2				S
		SGMR							1428.0	1440.0	2	S
		ONDR	1439.1	1440.3	1							IIIG
		SGMR				1527.0	1529.0	3				V
		SVTO				1527.0	1528.0	3				III
		SGMR				2022.0	2026.0	1				III
		SGMR				2111.0	2112.0	1				III
		PALE				2112.0	2112.0	1				III
		PALE				2226.0	2227.0	1				III
		PALE				2308.0	2308.0	1				III
07		LEAR				0015.0	0017.0	2				III

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

JULY 1993

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
07			PALE				0015.0	0018.0	2				V
			LEAR				0326.0	0327.0	3				III
			PALE				0326.0	0327.0	2				III
			LEAR				0444.0	0444.0	2				III
			SVTO				0444.0	0444.0	2				III
	0559	1653	POTS				0559.0E	0653.0U	1				I,S
			POTS				0606.2	0606.4	1				IIIG
	0539	1750	ONDR	0617.4	0617.5	1							IIIG
	0910	1750	ONDR										
			POTS				1025.3	1027.3	1				I,IIIB
			POTS				1047.6	1102.3	1				I,IIIG
			POTS				1118.0	1118.1	1				IIIB
			POTS				1123.0U	1351.0U	2				I,S,DC
			POTS				1235.5	1235.6	1				IIIB
			POTS				1247.3	1247.7	1				IIIG
			POTS				1305.3	1306.7	1				IIIG
			POTS				1311.1	1311.2	1				IIIB
			POTS				1342.2	1342.3	1				IIIB
			POTS				1429.0	1429.1	1				IIIB
			POTS				1513.0	1513.1	1				IIIB
08			PALE				0109.0	0109.0	2				III
	0557	1829	POTS				0602.9	0603.1	1				IIIG
	0600	1200	IZMI				0603.0	0603.1	2				IIIB
			POTS				0625.9	0626.0	1				IIIB
			IZMI				0626.0	0626.1	1				IIIB
			POTS				0636.8	0639.0	1				IIIG
			IZMI				0637.0	0637.7	1				IIIG
			POTS				0640.0U	0734.0U	1				I,S
	0420	1750	ONDR				0651.0	0745.0	1				IN
			POTS				0805.1	0805.2	1				IIIB
			POTS				0944.3	0944.4	1				IIIB
			POTS				1128.4	1128.7	1				IIIB,I
			POTS				1148.5	1148.6	1				IIIB
			POTS				1205.5	1205.6	1				IIIB
			POTS				1249.5	1249.6	1				IIIB
			POTS				1700.0U	1829.0U	1				I,S
			POTS				1719.0	1808.6	1				IIIGG
			POTS				1720.4	1720.5	1				RS
09			LEAR				0509.0	0510.0	1				III
			SVTO				0509.0	0510.0	1				III
	0600	1200	IZMI				0634.4	0641.6	3				IIIG,V
	0557	1527	POTS				0637.9	0640.9	2				IIIGG,RS
			LEAR				0639.0	0640.0	2				III
			SVTO				0639.0	0640.0	2				III
			POTS				0727.7	0727.9	1				I
			SVTO				0749.0	0749.0	2				III
			POTS				0749.2	0749.3	1				IIIB
			POTS				0803.0	0803.1	1				IIIG
			POTS				0806.9	0814.7	1				I,RS,IIIG
			POTS				0824.0	0854.0U	1				I,S
			POTS	0906.8	0907.2	2							DCIM
			IZMI				0906.9	0907.1	1				IIIB
			POTS				0906.9	0907.3	1				IIIG
			POTS				0940.9	0941.0	1				IIIB
			POTS				0958.8	1145.0U	1				I,S,DC
	0420	1749	ONDR	1000.4	1005.8	1	1000.4	1005.8	1				IS
			POTS				1009.6	1020.5	2				IIIGG,V,RS
			SVTO				1011.0	1011.0	2				III
			IZMI				1011.6	1013.9	2				IIIG,V
			POTS				1029.2	1029.3	1				IIIB
			ONDR	1038.3	1038.4	2	1038.3	1038.4	2				IIIB
			POTS				1038.3	1047.7	2				IIIGG,RS
			IZMI				1038.4	1038.5	2				IIIG
			IZMI				1046.6	1047.6	2				IIIG
			ONDR	1047.3	1047.5	2	1047.3	1047.5	2				IIIB
			SGMR				1301.0	1302.0	2				V
			SVTO				1301.0	1302.0	2				V

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

JULY 1993

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
09			POTS				1301.1	1302.9	2				IIIG,C,U
			SGMR				1346.0	1347.0	1				III
			SVTO				1346.0	1347.0	2				III
			POTS				1346.7	1346.8	1				IIIB
			SGMR				1546.0	1547.0	2				III
			SVTO				1546.0	1547.0	2				V
			ONDR	1546.5	1548.8	1							IIIG
			SGMR				1808.0	1808.0	1				III
10			PALE				0223.0	0223.0	1				III
			LEAR				0253.0	0253.0	1				III
			PALE				0253.0	0253.0	1				III
			LEAR				0445.0	0446.0	1				III
			SVTO				0445.0	0453.0	2				III
			LEAR				0453.0	0454.0	1				III
	0652	1749	ONDR	0811.2	0811.4	2							IIIB
11	0710	1747	ONDR										
	0550	1829	POTS				1030.6	1030.8	1				I
			POTS				1153.0	1153.5	1				I
12	0551	1547	POTS				0605.1	0607.5	2				I,C,IIIGG
	0600	1200	IZMI				0605.9	0607.0	1				IIIG,V
	0534	1747	ONDR	0606.4	0607.0	1	0606.0	0607.0	1				IIIGG
			POTS				0928.0	0930.2	2				IIIGG
			SVTO				0928.0	0930.0	2				III
			IZMI				0928.1	0930.1	3				IIIG
			POTS				0941.7	0941.9	1				IIIB
			POTS				1008.6	1011.0	1				I
			POTS				1021.2	1021.3	1				IIIB
			POTS				1029.5	1030.0	1				DCIM
			ONDR	1030.0	1030.1	1							IIIB
			POTS				1036.8	1036.9	1				I,RSG
			POTS				1057.2	1057.8	1				U,IIIB
			POTS				1117.0	1117.2	1				IIIG
			POTS				1224.0	1229.0U	1				I,S,W
			POTS				1224.4	1225.6	1				IIIG
			POTS				1227.2	1227.3	2				IIIB
			POTS				1241.9	1242.1	1				IIIG
			POTS				1253.3	1253.4	1				IIIB
			POTS				1335.9	1337.3	1				IIIG
			POTS				1357.1	1357.4	1				UNCLF
			POTS				1429.9	1430.0	1				I
			POTS				1505.2	1505.6	1				IIIG
			POTS				1537.9	1538.0	1				UNCLF
			PALE				1836.0	1837.0	2				III
			SGMR				1836.0	1837.0	2				III
			SGMR				1859.0	1908.0	1				III
			PALE				2244.0	2244.0	1				III
			PALE				2335.0	2337.0	1				III
13	0424	1747	ONDR										
	0616	1735	POTS				0616.5	0616.8	1				IIIB
			POTS				0851.0	0851.3	1				UNCLF
			POTS				1348.0U	1735.U	1				I,S,W
			POTS				1616.6	1620.7	1				IIIG
			SGMR				1857.0	1857.0	1				III
14			LEAR				0103.0	0103.0	1				III
	0425	1745	ONDR										
			POTS				0845.1	0845.3	1				IIIB
15	0426	1746	ONDR										
	0527	1527	POTS				0630.0U	1527.0U	1				I,S,C,DC
			POTS				0714.8	0719.2	1				IIIG,RS
			POTS				0725.0	0725.1	1				IIIB
			POTS				0934.7	0934.9	1				IIIG
16			LEAR				0307.0	0309.0	2				III

SOLAR RADIO EMISSION
Spectral Observations

JULY 1993

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
16			SVTO				0639.0	0640.0	2				III
	0600	1200	IZMI				0639.9	0640.0	2				IIIG
			POTS				0657.0U	0805.0	1				I,S,W
			LEAR				0717.0	0718.0	2				III
			SVTO				0717.0	0717.0	2				V
			POTS				0717.3	0717.5	1				IIIG
			IZMI				0717.4	0717.6	2				IIIB
	0427	1744	ONDR	0729.0	0729.1	2							IIIB
			POTS				1024.1	1027.4	1				IIIG
			POTS				1122.0U	1527.0U	2				I,S,DC
			POTS				1138.6	1138.7	1				IIIB
			SGMR				1303.0	1305.0	1				V
			SVTO				1303.0	1305.0	2				V
			POTS				1303.8	1304.1	1				U
			POTS				1326.9	1327.5	1				IIIG,RS
			SGMR				1344.0	1344.0	1				III
			POTS				1344.2	1344.3	1				IIIB
17	0428	1743	ONDR										
			LEAR				0716.0	0718.0	1				III
			SGMR				1432.0	1433.0	1				III
			SVTO				1432.0	1433.0	1				III
18			LEAR				0324.0	0324.0	1				III
	0428	1743	ONDR										
			SGMR				2009.0	2009.0	1				III
19			LEAR				0301.0	0301.0	1				III
	0555	1527	POTS				0555.0	0555.4	1				IIIB
			POTS				0558.3	0558.4	1				IIIB
			POTS				0705.9	0706.0	1				UNCLF
	0600	1200	IZMI				0755.6	0756.8	2				IIIG
	0429	1741	ONDR	0855.0	0856.5	2	0855.0	0856.5	2				IIIGG
			POTS				0855.0	0901.1	2				IIIGG,C,RS
			POTS				0855.0	0901.1	2				U
			SVTO				0855.0	0856.0	2				III
			POTS				1431.2	1431.6	1				IIIG
			SGMR				1612.0	1613.0	1				III
20	0557	1527	POTS				0748.7	0748.8	1				RS
	0902	1741	ONDR										
			POTS				0915.1	0915.9	1				IIIG
			POTS				0926.0	0926.2	1				UNCLF
			POTS				1405.8	1405.9	1				IIIB
21			LEAR				0127.0	0127.0	1				III
			PALE				0127.0	0127.0	1				III
	0611	1527	POTS				0701.4	0701.5	1				IIIB
			POTS				0729.0U	1527.U	2				I,S,C,DC
			POTS				0741.3	0741.6	1				IIIG
	0431	1741	ONDR				0757.0	1400.0	1				IN
			POTS				0757.9	0759.2	1				IIIG
			POTS				0815.9	0816.0	2				IIIB
			POTS				0852.3	0852.7	2				UNCLF
			POTS				0919.6	0920.3	2				IIIG
			ONDR	0919.7	0919.8	1	0919.7	0919.8	1				IIIG
			POTS				1012.1	1012.3	1				IIIG
			POTS				1013.1	1013.3	1				DCIM
			POTS				1017.3	1018.0	2				IIIG
			POTS				1046.8	1050.5	2				IIIGG,RS
	0600	1200	IZMI				1047.2	1049.5	2				IIIG,V
			ONDR	1048.3	1050.0	2	1048.3	1049.0	1				IIIGG,DCIM
			SGMR				1213.0	1214.0	1				III
			POTS				1213.3	1213.5	1				UNCLF
			POTS				1258.0	1258.1	1				IIIB
			SGMR				1308.0	1313.0	2				III
			SVTO				1308.0	1309.0	2				III
			ONDR	1308.4	1309.2	1	1308.4	1309.2	1				IIIG
			POTS				1308.5	1314.1	2				IIIGG,C,RS

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

JULY 1993

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
21			SGMR				1439.0	1553.0	1				S
			SVTO				1439.0	1521.0	1				S
			POTS				1439.6	1445.1	2				IIIG
			SGMR				1630.0	1631.0	1				III
			SVTO				1630.0	1631.0	1				III
22			PALE				0041.0	0045.0	1				III
			LEAR				0042.0	0044.0	2				III
	0601	1527	POTS				0601.0E	1527.0U	1				I,S,C,DC
	0534	1739	ONDR				0647.0	1402.0	1				IN
			SVTO				0746.0	0749.0	2				III
			ONDR	0748.0	0750.3	2	0748.0	0750.3	2				IIIGG
			POTS				0748.1	0750.7	1				IIIGG
	0600	1200	IZMI				0748.2	0750.6	1				IIIG
			LEAR				0750.0	0751.0	1				III
			ONDR	0804.4	0804.9	1							IIIG
			POTS				0804.4	0805.5	2				IIIG,I
			POTS				0831.3	0831.5	1				IIIG
			IZMI				0846.7	0847.8	1				IIIG
			SVTO				0852.0	0904.0	2			II	1000km/s
			IZMI				0852.1	0903.6	3			II	
			POTS				0852.2	0915.8	3			II	H,HARM
			LEAR				0853.0	0902.0	1			II	800km/s
			POTS				0919.0	0919.1	1				IIIB,RS
			POTS				0925.3	0925.6	1				IIIG
			IZMI				1053.0	1200.0	1				IS
			POTS				1147.1	1223.9	1				IIIGG
			POTS				1254.0	1254.1	1				IIIB
			POTS				1343.9	1345.1	1				IIIG
			POTS				1447.9	1448.1	1				IIIG
23	0433	1737	ONDR				0543.0	1402.0	1				IN
	0600	1200	IZMI				0600.0E	1200.0D	1				IS
	0605	1527	POTS				0605.0E	1527.0U	2				I,S,C,DC
			POTS				0724.5	0725.9	1				IIIG
			POTS				0809.4	0809.5	1				IIIB
			IZMI				0809.5	0809.6	2				III
			POTS				1137.2	1141.0U	1				IIIGG
			POTS				1306.1	1306.8	1				IIIG
			POTS				1347.2	1347.5	1				UNCLF
24			LEAR				0112.0	0113.0	2				III
			PALE				0112.0	0113.0	2				III
			LEAR				0233.0	0307.0	2				S
			PALE				0233.0	0235.0	1				III
			PALE				0307.0	0307.0	1				III
			LEAR				0333.0	0335.0	2				III
			LEAR				0456.0	0522.0	2				S
			SVTO				0522.0	0523.0	1				III
	0555	1738	ONDR	0737.8	0752.0	2	0737.8	0752.0	2				CONT
	0600	1200	IZMI				0754.0	0809.0	1				IS
			SVTO				0759.0	0803.0	2				III
			LEAR				0803.0	0803.0	1				III
			SGMR				1818.0	1818.0	1				III
			PALE				2250.0	2251.0	2				III
25	0436	1738	ONDR	0550.2	0550.5	2	0550.2	0550.5	2				IIIG
			ONDR	0551.0	0642.0	2	0551.0	0642.0	2				IIIGG
	0600	1200	IZMI				0600.0E	0642.0	1				IS
			IZMI				0639.2	0641.4	1				IIIGG
			SVTO				0952.0	0952.0	2				III
			IZMI				0952.1	0952.5	2				IIIG
			ONDR	0952.1	0952.4	3	0952.1	0952.4	3				IIIG
			IZMI				0958.0	1200.0D	1				IS
			IZMI				1015.2	1015.3	1				III
			PALE				1946.0	1950.0	2				III
26			PALE				0234.0	0236.0	2				III
	0437	1736	ONDR										

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

JULY 1993

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1–3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1–3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1–3)	Spectral Type
26			LEAR				0631.0	0631.0	1				III
			SVTO				0631.0	0631.0	1				III
	0607	1527	POTS				0946.5	0946.6	1				IIIG
			POTS				1320.5	1331.6	1				I
			POTS				1409.6	1410.2	1				IIIG
			POTS				1451.1	1451.7	1				I
27			POTS				0946.5	0948.6	1				IIIG,I
			POTS				0948.6	1527.0U	1				I,S
	0530	1730	ONDR	1538.0	1558.0	3							CONT
			SGMR				1540.0	1542.0	1				III
			SVTO				1540.0	1542.0	2				III
			SGMR				1547.0	1602.0	2			II	2000km/s
			SVTO				1547.0	1602.0	2			II	1600km/s
28	0532	1734	ONDR										
	0536	1523	POTS				0540.6	0546.0U	1				I
	0600	1200	IZMI				0714.7	0714.8	1				III
			IZMI				0811.4	0811.5	1				III
29	0456	1729	ONDR										
			SGMR				1814.0	1815.0	1				III
30			LEAR				0212.0	0212.0	1				III
			PALE				0212.0	0212.0	1				III
	0534	1729	ONDR										
	0600	1200	IZMI				1102.3	1102.4	1				III
31	0442	1730	ONDR	1148.9	1149.2	3							IIIG
	0600	1200	IZMI				1151.1	1155.5	3			II	HARM
			ONDR	1152.1	1152.9	3	1151.5	1152.9	3			II	
			LEAR				2340.0	2340.0	2				III

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

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

Stations Reporting:

IZMI = IZMIRAN
LEAR = Learmonth
ONDR = Ondrejov
PALE = Palehua
POTS = Potsdam
SGMR = Sagamore Hill
SVTO = San Vito

SOLAR RADIO NOISE STORMS AT 164 MHZ FROM NANCAY RADIOHELIOGRAPH

JULY 1993

DAY	HELIOGRAPHIC POSITIONS MEAN VALUES*		IMP**	OBSERVING TIME***	
	E-W	S-N		START(UT)	END (UT)
03/07/93	+0.16	-0.32	1	0915E	1545D
05/07/93	-1.25	+0.20	1	0905E	1405D
06/07/93	-1.00	-0.09	1	0745E	1410D
15/07/93	+0.44	-0.38	1	0800E	1545D
16/07/93	+0.72	-0.22	1	1300	1545D
21/07/93	-0.26	+0.13	1	1230	1545D
21/07/93	-0.24	-0.21	2	1230	1545D
22/07/93	+0.13	+0.16	2	0805E	1545D
23/07/93	+0.47	+0.18	2	0755E	1545D

1,2,3,8,10,11,13 JULY : 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

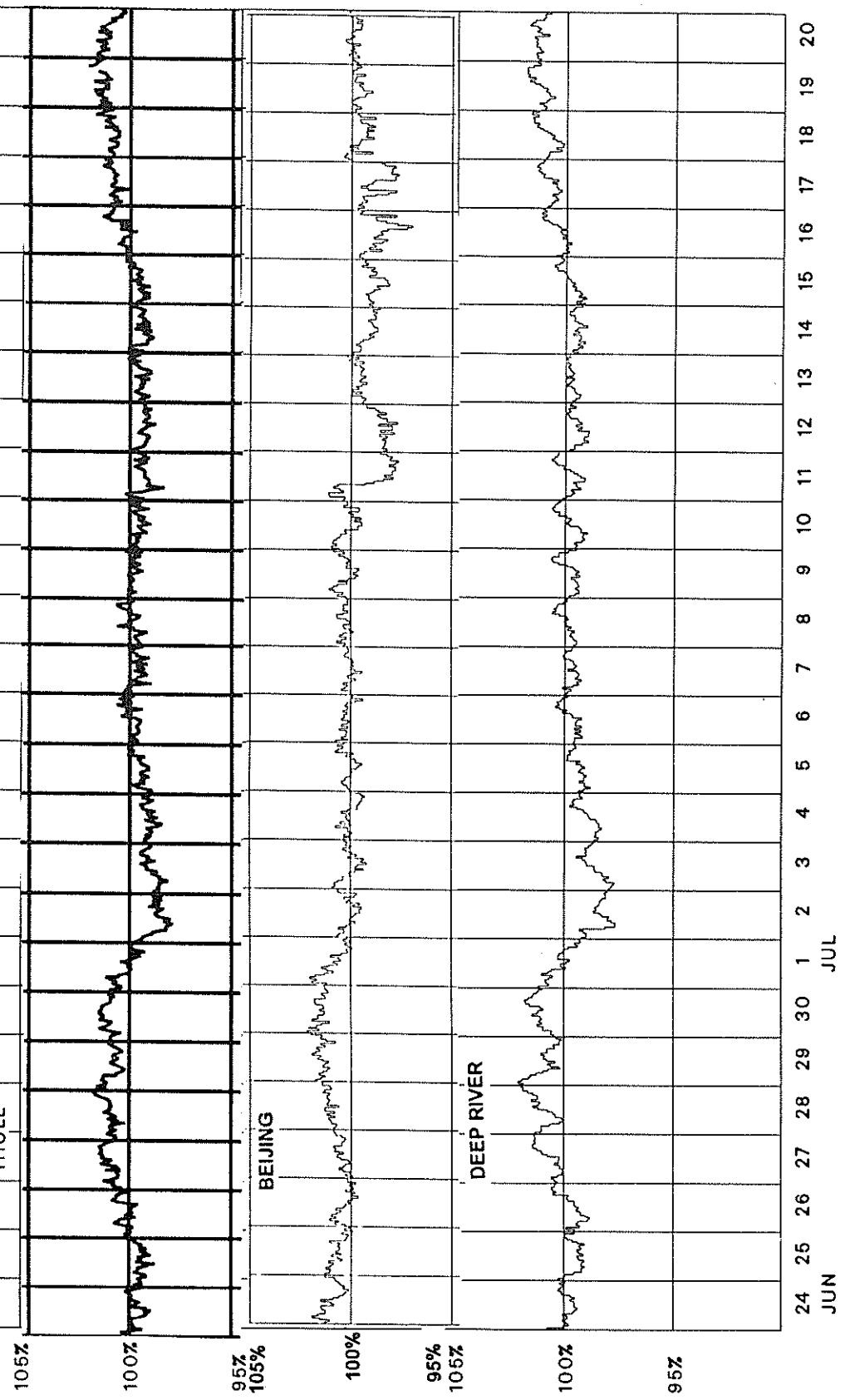
COSMIC RAY INDICES
(Neutron Monitor)
JULY 1993

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	HALEAKALA Average (cts/h)/100
1	4401	6917.1		4016.5	1914.3	3511.4	
2	4332	6791.4		3944.2	1899.9	3492.7	
3	4345	6805.1		3972.8	1899.8	3500.5	
4	4351	6828.5		3986.1	1898.0	3501.9	
5	4371	6857.9		3997.1	1900.7	3513.1	
6	4386	6882.7		4004.2	1902.4	3509.5	
7	4377	6880.7		4002.5	1899.6	3507.9	
8	4387	6898.4		4013.3	1904.5	3505.7	
9	4385	6886.6		4010.2	1904.1	3496.3	
10	4372	6887.2		4001.8	1901.6	3497.0	
11	4363	6893.0		4001.7	1879.7	3498.8	
12	4360	6865.3		3986.2(26)	1868.5	3489.4	
13	4369	6883.4		3998.0(10)	1891.0	3485.6	
14	4366	6866.2		3978.8	1882.6	3481.3	
15	4377	6889.3		3984.0	1877.8	3487.6	
16	4413	6929.8		4005.8	1872.9	3497.3	
17	4429	6956.5		4024.2	1873.8	3498.5	
18	4432	6966.3		4035.0	1889.6	3505.1	
19	4453	6990.3		4056.9	1892.1	3517.4	
20	4440	6991.8		4066.5	1896.0	3517.5	
21	4407	6969.0		4050.9	1896.4	3512.4	
22	4418	6968.9		4045.8	1894.7	3513.6	
23	4440	6984.6		4061.1	1904.8	3513.0	
24	4469	7026.4		4095.5	1919.0	3513.8	
25	4462	7023.8		4087.9	1923.4	3518.8	
26	4521	7057.3		4125.4	1922.3	3519.2	
27	4518	7071.4		4120.9	1920.9	3514.0	
28	4450	6985.0		4055.8	1911.9	3502.9	
29	4451	6991.7		4050.8	1907.7	3501.6	
30	4419	6949.0		4018.1	1898.5	3490.3	
31	4407	6920.1		4000.4	1898.3	3484.1	
Mean	4408.7	6929.5		4027.1	1898.3	3503.2	

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours.
* = A&B includes only hours when both A&B sections are available.

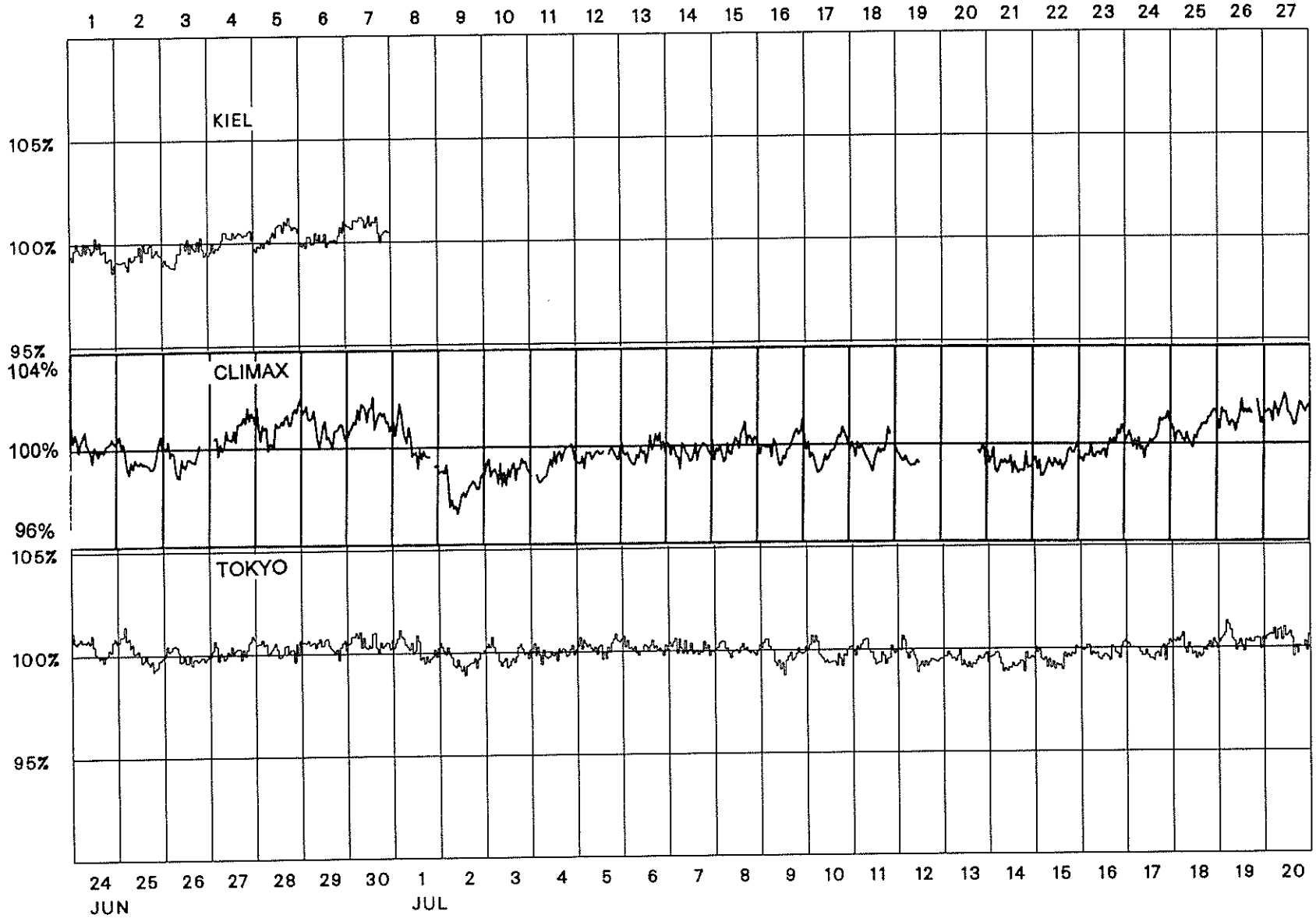
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2184 (June 1993-July 1993)



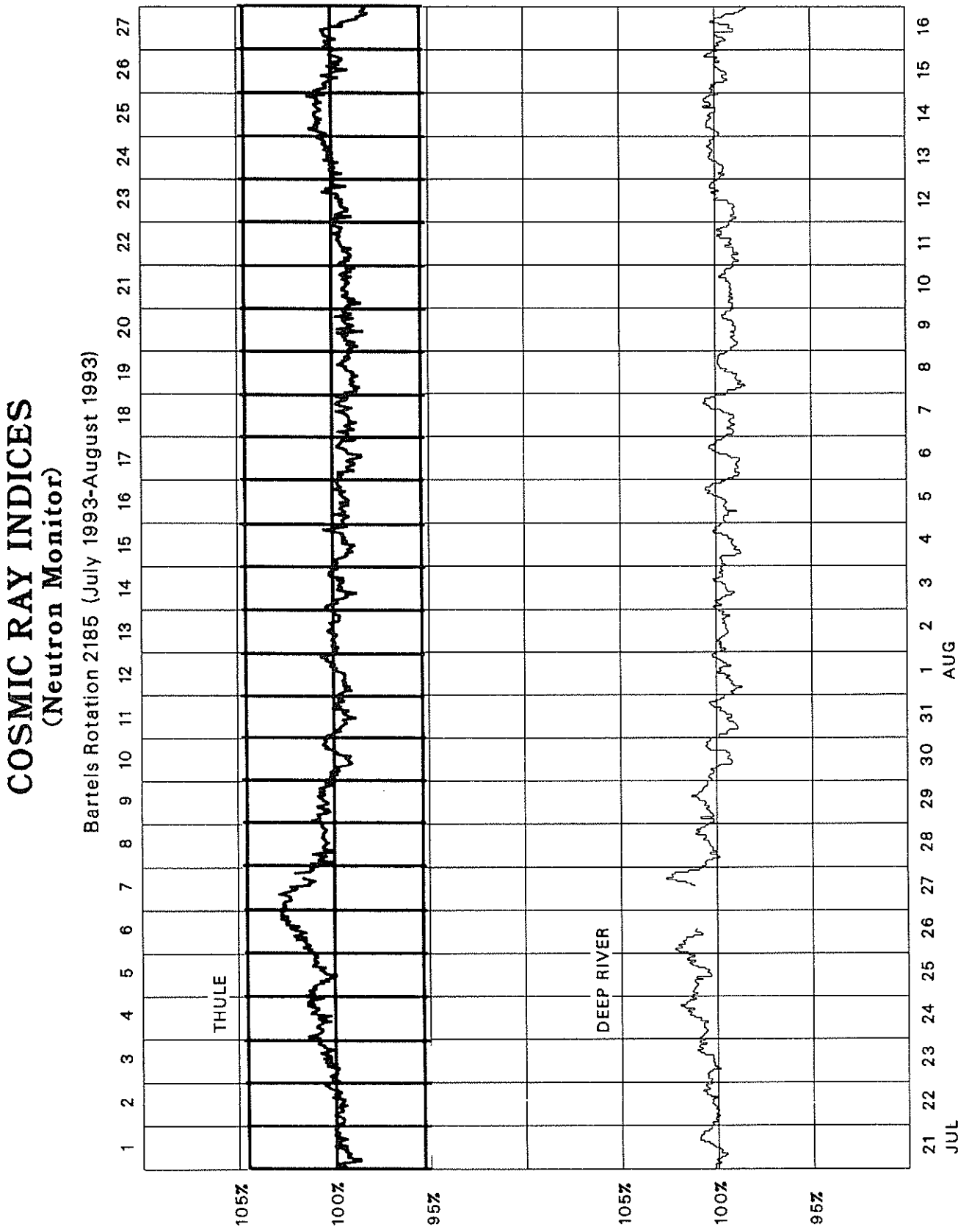
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2184 (June 1993-July 1993)



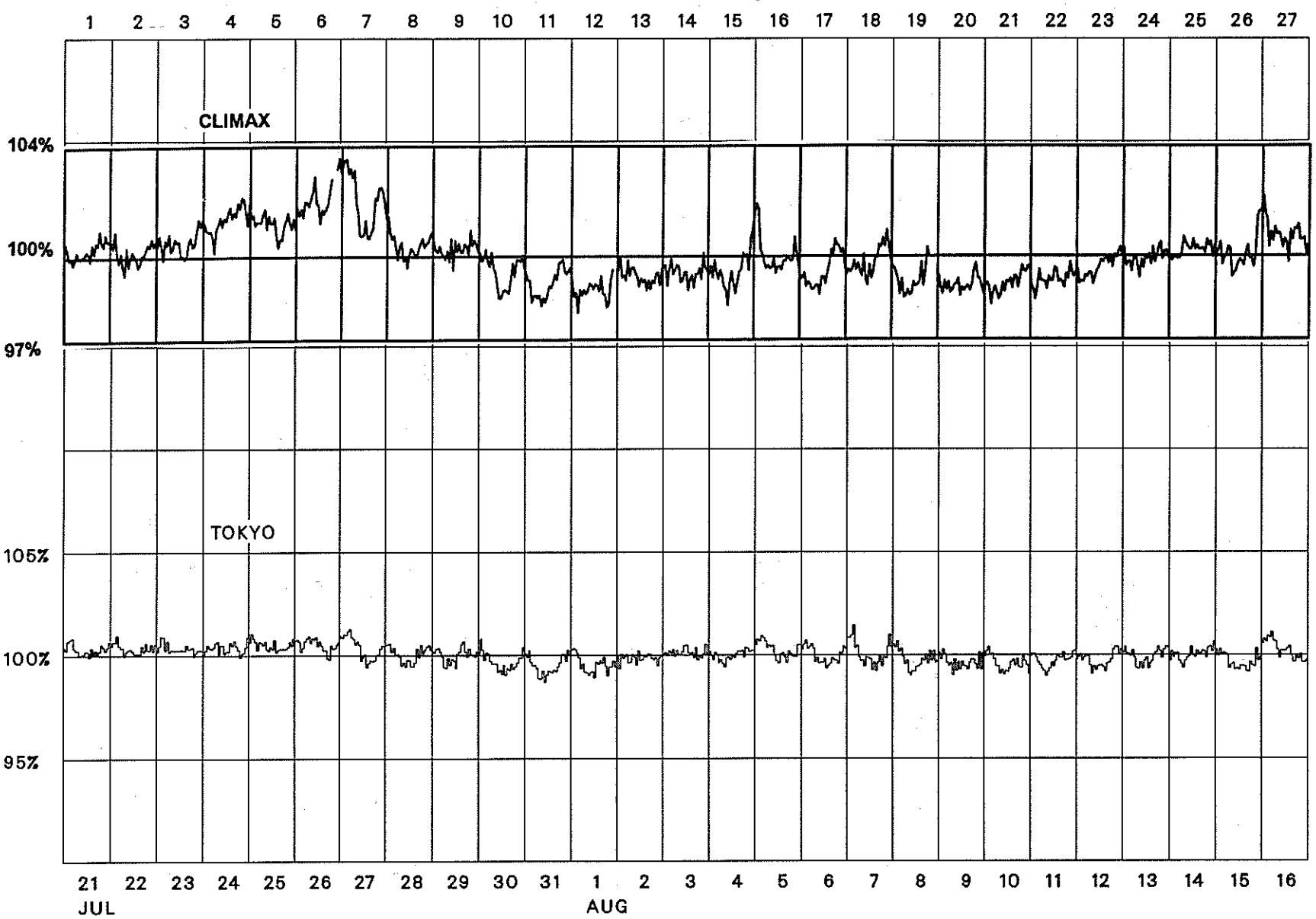
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2185 (July 1993-August 1993)

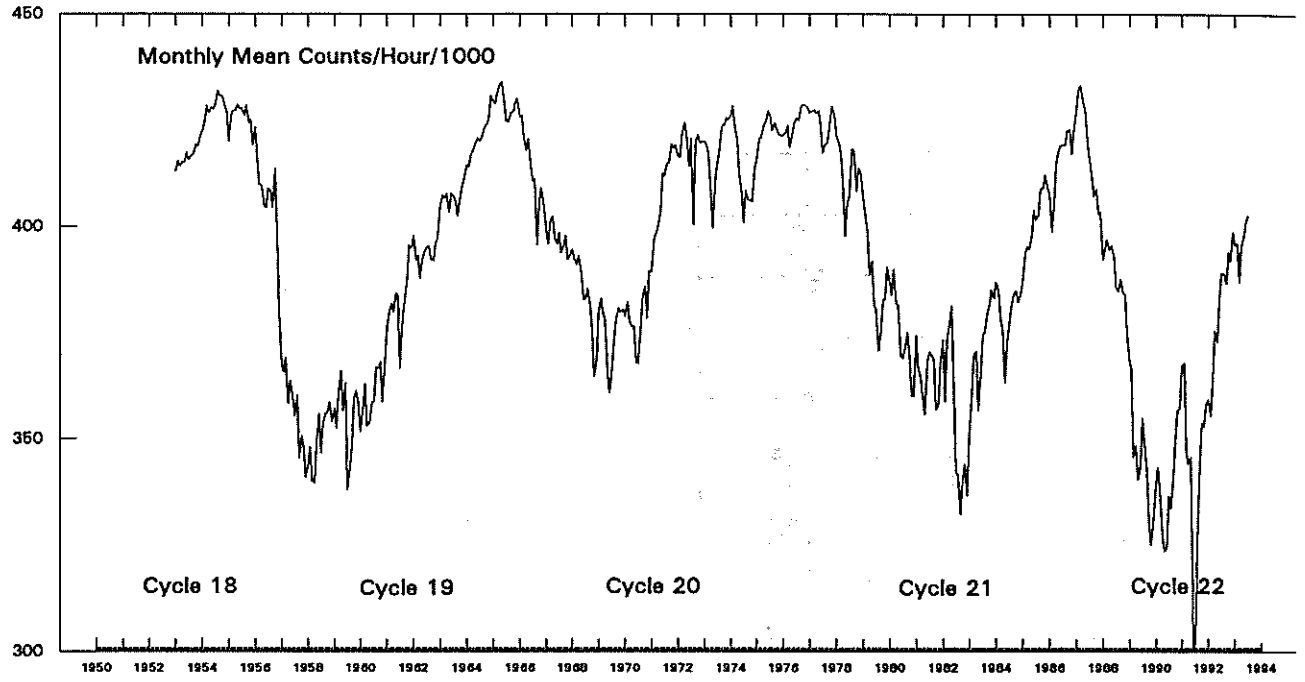


COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2185 (July 1993-August 1993)



Climax Neutron Monitor Pressure-Corrected Values Jan 1953 - Jul 1993



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950													
1951													
1952													
1953	4131	4155	4143	4152	4152	4175	4158	4168	4173	4192	4188	4213	4167
1954	4224	4248	4283	4269	4280	4276	4287	4319	4308	4307	4287	4269	4280
1955	4201	4266	4272	4273	4287	4278	4279	4263	4286	4245	4252	4192	4258
1956	4234	4160	4099	4097	4049	4044	4089	4083	4044	4136	3979	3800	4068
1957	3676	3661	3693	3586	3640	3602	3555	3605	3456	3508	3482	3409	3573
1958	3437	3480	3401	3396	3489	3560	3467	3537	3561	3564	3588	3542	3502
1959	3573	3526	3606	3663	3567	3634	3380	3419	3483	3597	3614	3574	3554
1960	3517	3573	3631	3531	3537	3589	3588	3670	3669	3681	3588	3682	3605
1961	3763	3802	3819	3801	3843	3838	3668	3784	3833	3872	3955	3950	3827
1962	3977	3922	3930	3878	3927	3941	3951	3953	3922	3919	3962	3971	3938
1963	4049	4073	4065	4077	4034	4075	4073	4060	4024	4067	4093	4113	4067
1964	4145	4139	4168	4181	4198	4208	4200	4212	4232	4240	4254	4307	4207
1965	4294	4289	4314	4334	4340	4289	4247	4246	4268	4271	4295	4300	4291
1966	4258	4262	4211	4179	4206	4143	4107	4112	3956	4056	4090	4053	4136
1967	3990	3959	4013	4024	3974	3960	3986	3940	3955	3979	3923	3933	3970
1968	3946	3923	3911	3931	3894	3830	3830	3853	3817	3756	3650	3684	3835
1969	3790	3831	3798	3783	3659	3611	3652	3734	3784	3807	3799	3806	3755
1970	3790	3823	3780	3766	3765	3682	3679	3753	3831	3859	3785	3896	3784
1971	3894	3975	3982	4002	4032	4124	4118	4148	4149	4193	4184	4192	4083
1972	4166	4165	4215	4244	4215	4141	4206	4005	4198	4215	4197	4198	4180
1973	4201	4193	4173	4074	3996	4119	4149	4178	4235	4240	4255	4253	4172
1974	4262	4283	4237	4207	4121	4077	4009	4083	4062	4062	4058	4138	4133
1975	4158	4206	4210	4238	4247	4272	4263	4228	4243	4230	4218	4214	4227
1976	4216	4222	4236	4187	4217	4244	4254	4251	4284	4287	4285	4280	4247
1977	4268	4272	4274	4266	4271	4233	4175	4195	4196	4244	4282	4264	4245
1978	4214	4198	4173	4107	3977	4058	4068	4182	4179	4084	4137	4129	4125
1979	4071	4035	3983	3887	3919	3816	3806	3709	3745	3829	3829	3905	3878
1980	3871	3840	3900	3820	3817	3695	3692	3718	3752	3687	3604	3604	3750
1981	3744	3663	3656	3601	3557	3683	3706	3701	3688	3570	3581	3682	3653
1982	3735	3589	3732	3773	3814	3608	3420	3415	3324	3402	3441	3367	3552
1983	3507	3601	3700	3708	3569	3656	3744	3755	3799	3813	3851	3833	3711
1984	3870	3850	3784	3761	3633	3727	3766	3818	3845	3851	3825	3843	3798
1985	3872	3937	3954	3947	3978	4039	4018	4026	4088	4090	4122	4091	4013
1986	4080	3988	4048	4148	4180	4191	4191	4193	4226	4228	4172	4226	4156
1987	4277	4324	4332	4294	4271	4204	4164	4120	4073	4089	4031	4035	4184
1988	3922	3947	3970	3948	3957	3934	3859	3849	3877	3845	3841	3752	3892
1989	3686	3670	3458	3485	3404	3437	3549	3493	3423	3306	3251	3309	3491
1990	3392	3434	3384	3277	3236	3244	3365	3337	3409	3497	3565	3575	3393
1991	3675	3680	3473	3443	3456	3003	3025	3253	3440	3538	3529	3585	3425
1992	3595	3557	3640	3757	3730	3830	3892	3890	3868	3941	3919	3987	3800
1993	3958	3960	3872	3955	3979	4012	4027						3956

Multiply table entries by 100 to obtain hourly counting rate. Climax, Colorado: N39, W106, Alt=3400 m, Cutoff Rigidity=2.96 GV.

GEOMAGNETIC ACTIVITY INDICES

July 1993

Day		Kp Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	Ap	Cp	Km Three-Hourly Indices 1	2	3	4	5	6	7	8	aa Provisional Am	N	S	M	
1	D3	3	4	3	4	4+	2+	4-	4+	29-	22	1.1	2+	3o	3+	4-	4o	2o	3o	4o	35	44	39	39	45	
2	D1	4-	3-	2+	4	4	3+	5-	6	31-	29	1.3	3+	3o	2+	3+	4-	3-	4o	5o	42	48	40	31	58	
3	D2	5+	4+	4	2-	3-	2+	3-	3	26	21	1.1	4o	4-	4-	2o	2+	2+	2o	2+	29	44	17	38	23	
4		3	3-	2-	2+	1+	2	1	2-	16-	8	0.4	3-	3-	2-	2+	1o	2-	1o	1+	14	18	15	21	12	
5	Q8	2	3-	1-	0+	1-	1	1	1-	9	5	0.2	2o	3-	1-	0+	1-	1+	1+	0+	9	16	7	16	8	KK
6	Q7	0+	1-	1-	3-	1	1-	1+	2-	9	5	0.2	0o	1-	1o	3o	1+	0+	1+	1+	9	12	9	11	10	KK
7		3	3-	2	1	1+	1+	2+	1+	15	8	0.4	2+	2+	2o	1+	1+	1+	2-	1o	12	18	7	14	11	C
8		2+	3	3+	3	3+	4-	3-	2	23+	14	0.8	2-	3+	3+	3-	3-	3+	2o	2-	25	33	28	34	27	
9		3-	3+	2+	2	4	4+	2	2	23-	15	0.8	2+	3o	2-	2o	3-	4-	2o	2-	22	43	15	23	35	
10		2+	2+	2	3-	3	2	3+	3	21-	12	0.7	2o	2-	2o	3+	3-	2-	3o	3-	20	25	19	20	24	
11	D4	4-	5	4+	3+	2	3+	2	1+	25	20	1.0	3+	5-	4+	4-	2+	3+	2-	1o	37	31	43	51	23	
12		2+	2-	2+	2	2	3-	1+	2	16+	8	0.4	1+	1+	3-	2o	2-	2o	1o	2-	13	17	12	15	14	
13		2+	3-	3	2+	3-	2	2-	2-	18+	10	0.5	2o	2+	3+	3-	3-	2+	2o	1+	21	26	22	29	19	
14	Q1	1-	1-	1-	0+	1-	1-	1-	1-	5	3	0.1	1-	1-	0+	0o	1-	0+	1o	1-	4	8	3	5	6	CK
15	Q10	1	2-	1+	1-	2-	1	2-	2	11	5	0.2	1-	1+	1+	1o	1+	1+	2-	2-	9	13	7	8	12	CC
16	Q3	1-	1-	0+	0+	1-	2-	1	1+	7-	4	0.1	1-	1o	0+	0o	1-	1+	1-	1+	5	9	5	6	8	CC
17	Q2	1	1-	1-	1-	1	1-	0+	1-	6-	3	0.1	1o	1o	1o	0+	1-	1-	1-	1o	5	6	4	5	5	CC
18	Q6	1	1-	1+	2-	2	1	1	1+	10	5	0.2	1o	1-	1o	2-	1+	1o	1o	1o	7	11	6	8	10	CC
19		1+	2-	1	2-	1+	1	1+	2	11+	5	0.2	1o	1+	1-	2-	1+	1o	1-	1+	8	14	5	8	11	CK
20		1+	2-	3-	4+	2	3	4+	4-	23	16	0.9	1+	1+	3-	4-	2o	3-	4-	3+	26	35	18	19	34	
21		3-	4-	3-	3-	3+	2+	3-	3-	23-	14	0.8	3-	3+	3-	3-	3+	3-	3-	2+	26	24	25	22	27	
22		3-	2+	3-	3-	2+	2-	2	3-	19	10	0.6	2+	2-	2+	3o	3o	2-	2-	3-	19	22	23	24	22	
23		2+	2+	2-	1+	2-	1	0+	1	12-	6	0.3	2-	2o	1+	1+	2-	1+	0+	1+	10	14	8	11	10	CK
24	Q5	1	0+	1-	1+	1	2	1+	1-	8+	4	0.1	1o	0o	0+	1+	1+	2o	1+	1-	7	13	7	7	13	CC
25	Q9	3-	2	1	1	1-	1-	1-	1-	9+	5	0.2	2-	2-	1-	1-	1-	1-	1-	1-	6	12	4	11	5	CC
26	Q4	1	1+	0+	1	1-	2-	0+	1-	7	4	0.1	1o	1+	0+	1+	1o	2-	1-	1-	7	12	7	9	10	CC
27		2-	1-	1-	2	3	3	3+	2+	17-	10	0.5	1+	1-	1o	2+	3+	3-	3-	2o	16	25	12	10	27	
28		2+	2	2-	1+	1	1+	1+	2	13	6	0.3	2+	2o	2-	1+	1-	1+	1+	2-	11	18	8	16	10	C
29	D5*	2-	1	2	2	4	4+	5	3-	23-	18	1.0	1+	1o	2-	2-	3+	4-	4-	3-	24	41	19	10	51	
30		3	2+	1+	1	1+	1	1+	1	12+	6	0.3	3-	2+	2-	1-	1+	1o	2-	1o	12	13	9	14	7	C
31		2+	2+	1	2-	2-	1-	1+	1+	12+	6	0.3	2o	2o	1+	2-	2-	1-	2-	1+	10	17	8	15	10	CC
Mean											10	0.49									16.1	22.0	14.5	18.2	

Day	Kn Three-Hourly Indices 1	2	3	4	5	6	7	8	An	Ks Three-Hourly Indices 1	2	3	4	5	6	7	8	As	Sa	Prov R1	Ra	Rs	INF
1	3-	4-	3+	4-	4-	2+	3o	4-	37	2o	3-	3+	3+	4o	1+	3o	4+	33	111.8	58	63	59	
2	4o	3o	3-	3+	4-	3o	4o	5o	47	3-	3-	2o	3+	4-	3-	4-	5o	38	113.6	57	61	61	
3	4o	4o	4+	2+	3-	3-	3-	3o	37	4o	3o	3-	1+	2-	2-	1o	1+	21	114.2	66	70	61	
4	3+	3-	2-	2+	1+	2o	1+	2-	17	2o	2+	2-	2+	0+	1-	0+	1o	11	110.1	80	73	57	
5	2+	3o	1o	0+	1o	2-	1+	1-	11	1+	2o	0+	0o	0o	1+	1+	0o	6	103.9	68	71	50	
6	0+	1o	1+	3+	1+	1o	2-	2-	12	0o	0+	0+	3-	1+	0o	1-	1-	6	98.4	58	54	44	
7	3-	3-	2+	2-	2-	2o	3-	2-	17	2o	2o	1+	0+	1-	1-	0+	0o	7	96.5	45	42	42	
8	2o	4-	4-	3o	3o	4-	3-	2+	31	1-	3o	3+	2o	2+	3o	1+	1o	19	96.4	40	45	42	
9	3o	4-	2o	3-	3+	4o	2+	2o	29	1+	3-	1o	1+	2o	3+	2o	1+	15	93.2	38	38	39	
10	2+	2o	2+	3+	3o	2+	3o	3o	24	1+	2-	1+	3o	2o	1-	3o	2+	17	89.0	31	33	34	
11	4-	5-	4o	4-	2+	3o	2o	2-	38	3o	4+	4+	4-	2o	4-	1+	0o	35	85.8	35	34	31	
12	2o	2-	3o	2+	2o	3-	2-	2o	18	1o	1+	3-	2-	1+	1+	0o	1o	9	88.7	35	38	34	
13	2+	3-	3+	3-	3o	2+	2+	2-	23	1+	2+	3+	3o	3-	2+	2-	1+	19	89.5	51	52	35	
14	1o	1o	0+	0o	1o	1-	1o	1+	5	0o	1-	0+	0o	0o	0+	1-	0o	2	95.7	63	62	41	
15	1+	2o	1+	1o	2-	2o	2-	2+	11	0o	0+	1+	1o	1-	1o	1+	1o	6	96.3	66	68	42	
16	1o	1o	0o	0o	1o	2o	1+	1+	7	0o	1-	0+	0o	0o	1-	0+	1o	3	100.3	63	64	46	
17	1o	1+	1+	1-	1+	1o	1o	1+	8	1-	1-	0+	0o	0o	0o	0+	1-	3	102.6	67	65	49	
18	1+	1o	1+	2o	2o	2-	1+	1+	11	0+	0+	1-	1+	1o	0o	0+	1-	4	103.7	80	82	50	
19	2-	2-	1+	2o	2-	2-	1+	2o	12	0o	1-	0+	1+	1-	0o	0+	1o	4	104.1	76	77	50	
20	1+	2o	3o	4o	2+	3o	4-	4o	32	1o	1o	2+	3o	2-	3-	3+	3-	20	105.6	69	69	52	
21	3o	4-	3o	3o	3o	2+	3-	3o	29	2o	3o	2+	2+	4-	3o	2+	2-	23	108.9	64	66	56	
22	3-	2o	3-	3o	3-	2o	2-	2+	20	2o	1+	2-	3o	3o	1+	2-	3-	18	111.2	54	62	58	
23	2+	2+	2-	2-	2o	2-	1-	2-	13	1o	1+	1+	1o	1+	1o	0o	1-	7	113.3	68	65	60	
24	1o	0o	0+	1+	2-	2o	1+	1+	8	1o	0o	0o	1o	1o	2+	1+	0o	6	109.8	66	65	57	
25	2o	2o	1o	1o	1o	1o	1o	1-	8	1+	1o	1-	0+	0+	0o	1-	0+	4	105.1	61	51	52	
26	1o	2-	0+	1o	1o	2+	1o	1o	8	1-	1-	0+	1+	1-	1+	0o	0o	5	106.8	55	58	53	
27	2-	1-	1o	3-	4-	3o	3+	3-	22	1o	0+	1+	2o	3-	2-	2-	1o	11	106.4	66	67	53	
28	3-	2+	2o	2-	1+	2-	1+	2o	14	2-	1+	1+	1o	0o	1o	1o	2-	8	104.6	59	53	51	
29	2-	1+	2o	2o	4-	4o	4o	3-	30	1+	1-	1+	2-	3-	3+	3o	2+	18	103.5	47	46	50	
30	3-	2+	2-	1+	1+	1+	2o	2-	13	3-	3-	1+	0+	1o	1o	1+	1-	10	100.8	45	41	47	
31	2+	3-	2-	2o	2o	1o	2-	2-	14	1+	1+	1o	1+	1o	0o	2-	1-	7	99.1	46	45	45	
Mean									19.5									12.7	102.2	57.3	57.4	48.4	

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

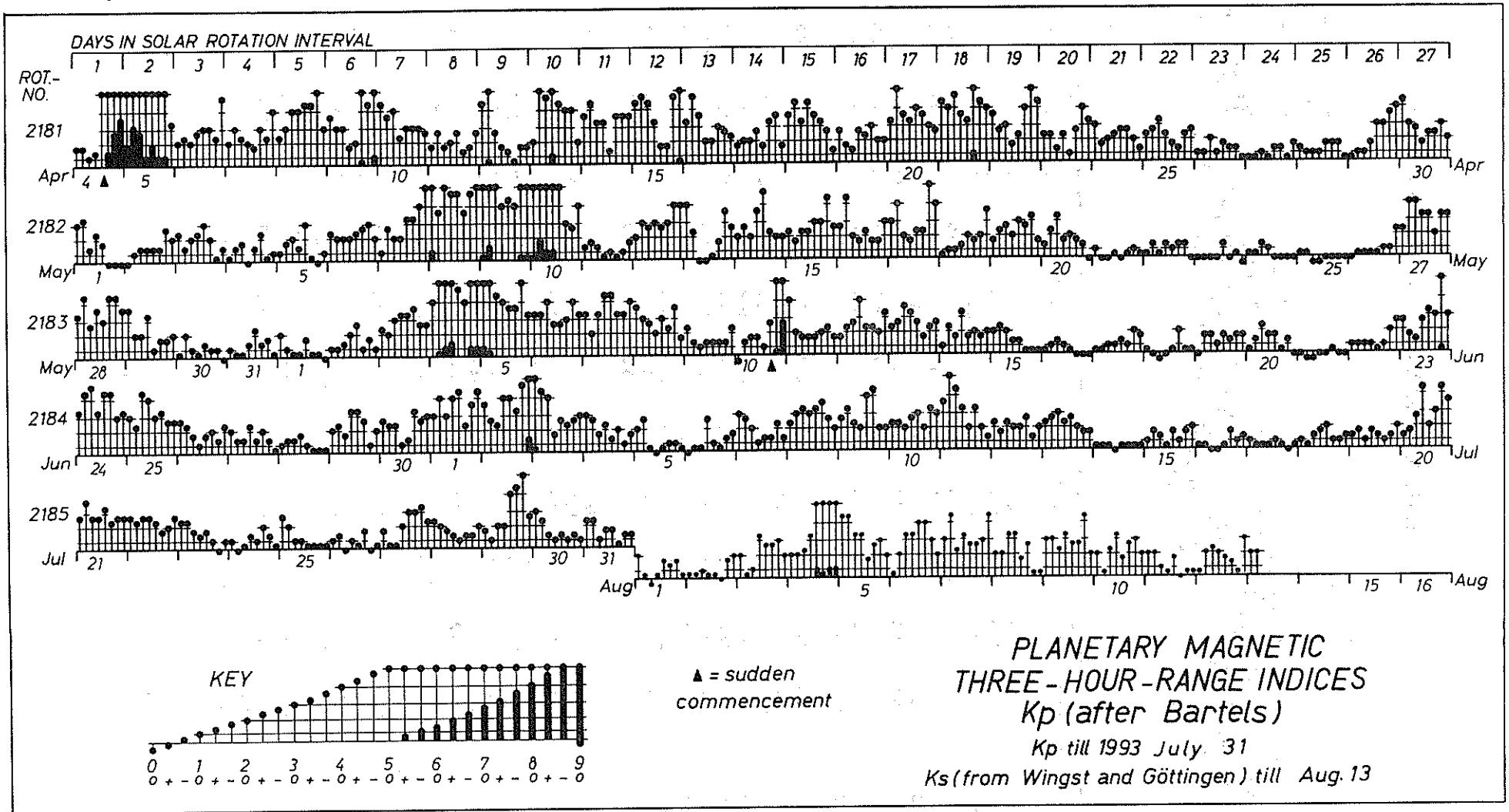
August 1992 to July 1993

DAY	1992 AUG	SEP	OCT	NOV	DEC	1993 JAN	FEB	MAR	APR	MAY	JUN	JUL
1	8	2	26	16	17	10	31	18	8	7	4	22
2	5	23	9	23	9	24	21	24	4	6	6	29
3	4	48	6	17	15	33	10	35	4	8	14	21
4	15	33	7	25	15	31	7	23	58	5	54	8
5	35	28	5	15	7	17	6	7	87	6	36	5
6	16	17	10	14	5	16	5	8	14	9	18	5
7	26	22	8	12	16	23	27	22	12	18	21	8
8	16	18	8	11	26	15	40	29	26	40	14	14
9	12	84	26	42	19	16	28	64	28	48	6	15
10	7	88	10	12	17	25	17	15	18	48	28	12
11	13	32	24	19	10	21	20	50	8	4	9	20
12	6	5	34	16	8	12	11	28	16	16	12	8
13	11	5	23	17	8	12	12	31	32	10	12	10
14	15	8	25	12	10	22	6	23	20	14	8	3
15	8	10	35	19	14	14	4	45	28	13	5	5
16	8	12	22	10	6	11	6	39	16	12	3	4
17	4	93	16	8	25	13	36	23	10	18	4	3
18	6	31	12	7	9	11	13	18	20	7	3	5
19	9	13	16	7	11	22	7	11	9	11	5	5
20	26	8	12	4	13	14	26	21	23	7	5	16
21	20	7	6	7	14	7	27	30	33	3	2	14
22	39	17	9	17	7	7	30	25	21	4	5	10
23	73	9	5	31	8	4	8	12	12	2	17	6
24	10	4	3	12	8	10	6	58	9	3	26	4
25	5	11	7	12	5	25	6	16	10	2	18	5
26	11	8	14	10	4	22	5	8	5	4	7	4
27	14	4	31	5	8	11	4	12	4	18	6	10
28	5	16	19	6	39	7	19	17	5	23	4	6
29	16	62	27	5	42	5		18	12	10	10	18
30	6	35	16	13	10	12		19	13	4	10	6
31	4		10		11	59		10		5		6
MEAN	15	25	15	14	13	17	16	24	19	12	12	10

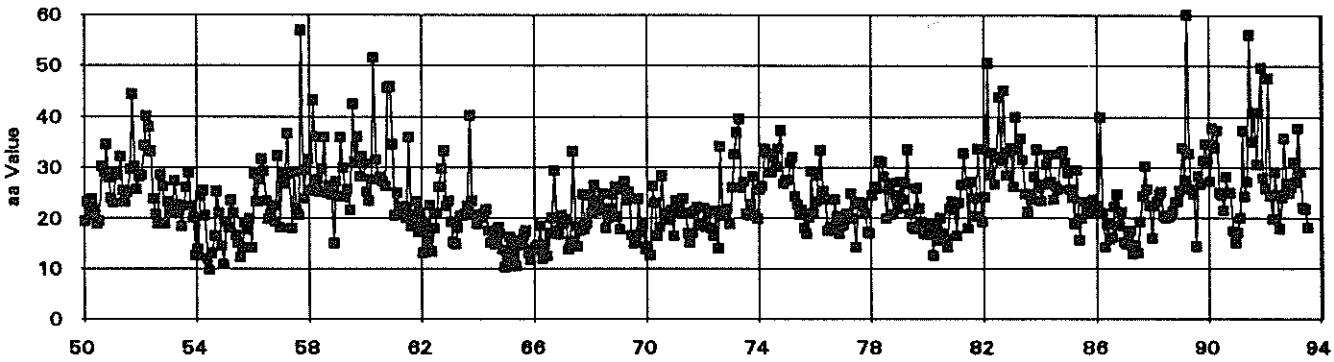
PLANETARY 3-HOUR-RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

University of Gottingen

Kp through July 31, 1993



MONTHLY MEAN aa INDICES 01/50-07/93



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	26.6	36.7	28.8	16.1	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	29.2	22.1	21.8	18.2						26.8

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

JULY 1993

Sta	Geomag Lat	Commencement Time Day	(UT)	Type	SC Amplitudes D (Min)	H (Gamma)	Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	Ranges D (Min)	H (Gamma)	Z (Gamma)	End Day	Hour (UT)
FRD	49.4N	01	18--	..	..	..	..	02(8)	6	21	143	57	03	08
ETT	00.7S	01	0000	..	..	..	..			8	137	53	04	13
BJI	28.8N	02	02--	..	..	..	..	02(8)	5	14	102	27	04	11
HER	33.6S	02	19--	..	..	..	..	02(8)	5	26	82	74	03	08
HYD	07.6N	08	0200	..	..	..	..	11(3)	5	6	141	37	11	13
ETT	00.7S	08	0200	..	..	..	..			6	190	59	11	21
FRD	49.4N	11	02--	..	..	..	..	11(1,2,3)	5	21	86	29	11	10
HER	33.6S	11	02--	..	..	..	..	11(2)	5	20	57	69	11	12
HYD	07.6N	20	0500	..	..	..	..	20(4)	5	6	106	20	22	23
ETT	00.7S	20	0200	..	..	..	..			7	140	47	23	16
HYD	07.6N	29	0400	..	..	..	..	29(6,7)	4	7	78	23	30	23

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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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."