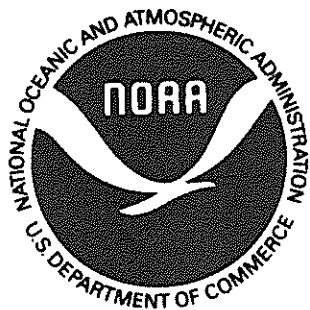




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JULY 1998 NUMBER 647 - Part I

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Data for May, June 1998 and Late Data

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Boulder, Colorado

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Number 647

(Issued in Two Parts)

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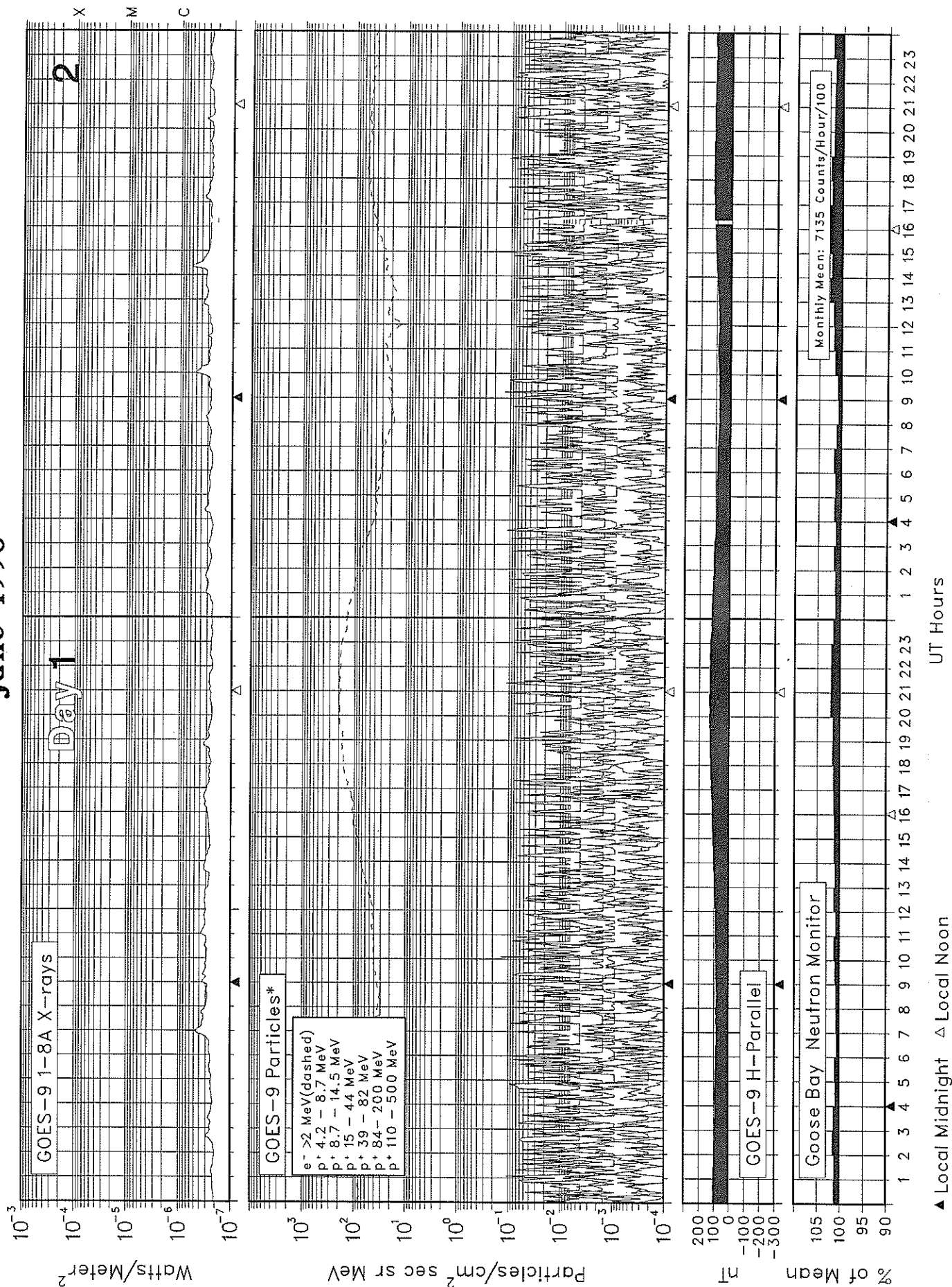
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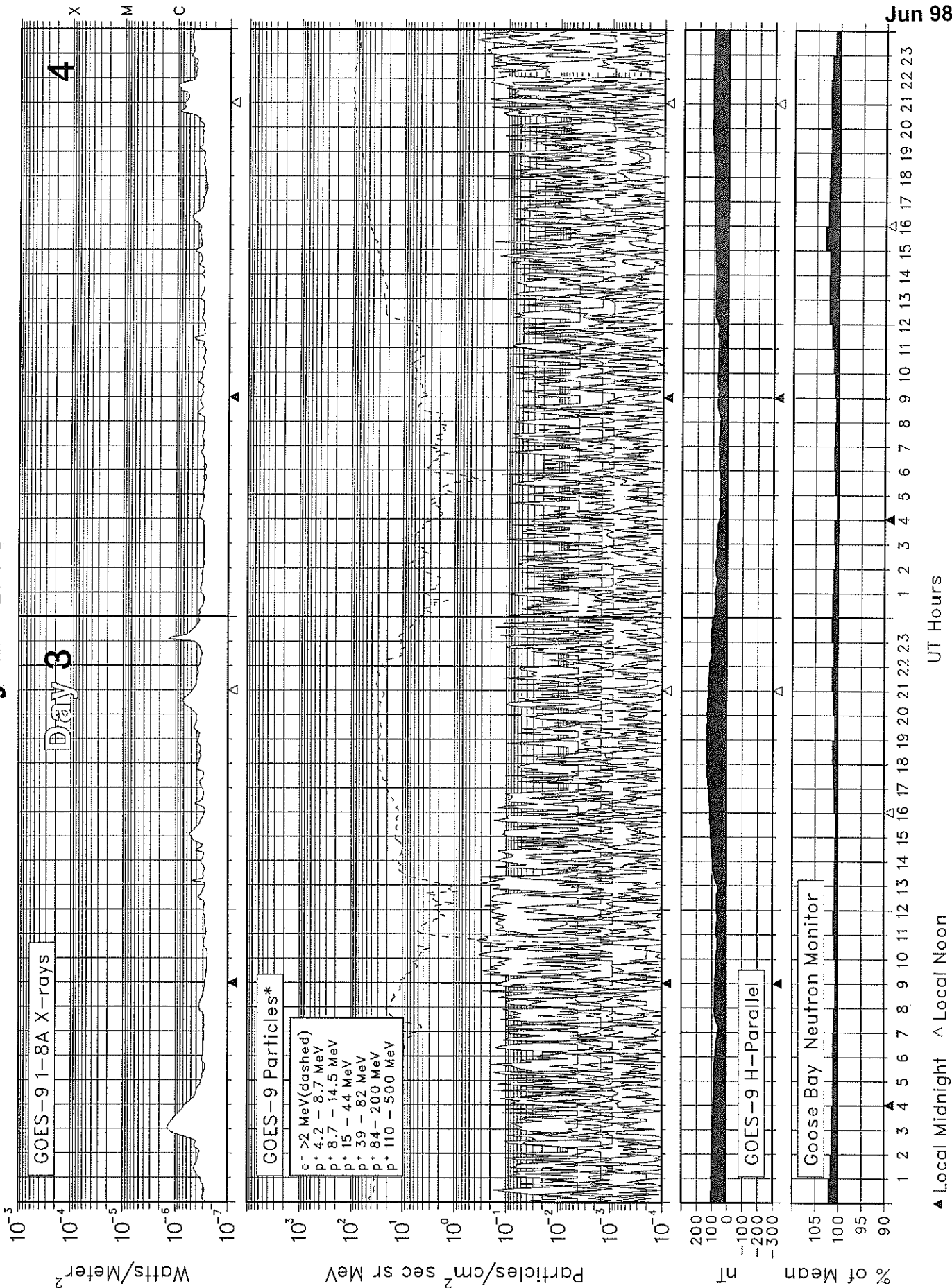
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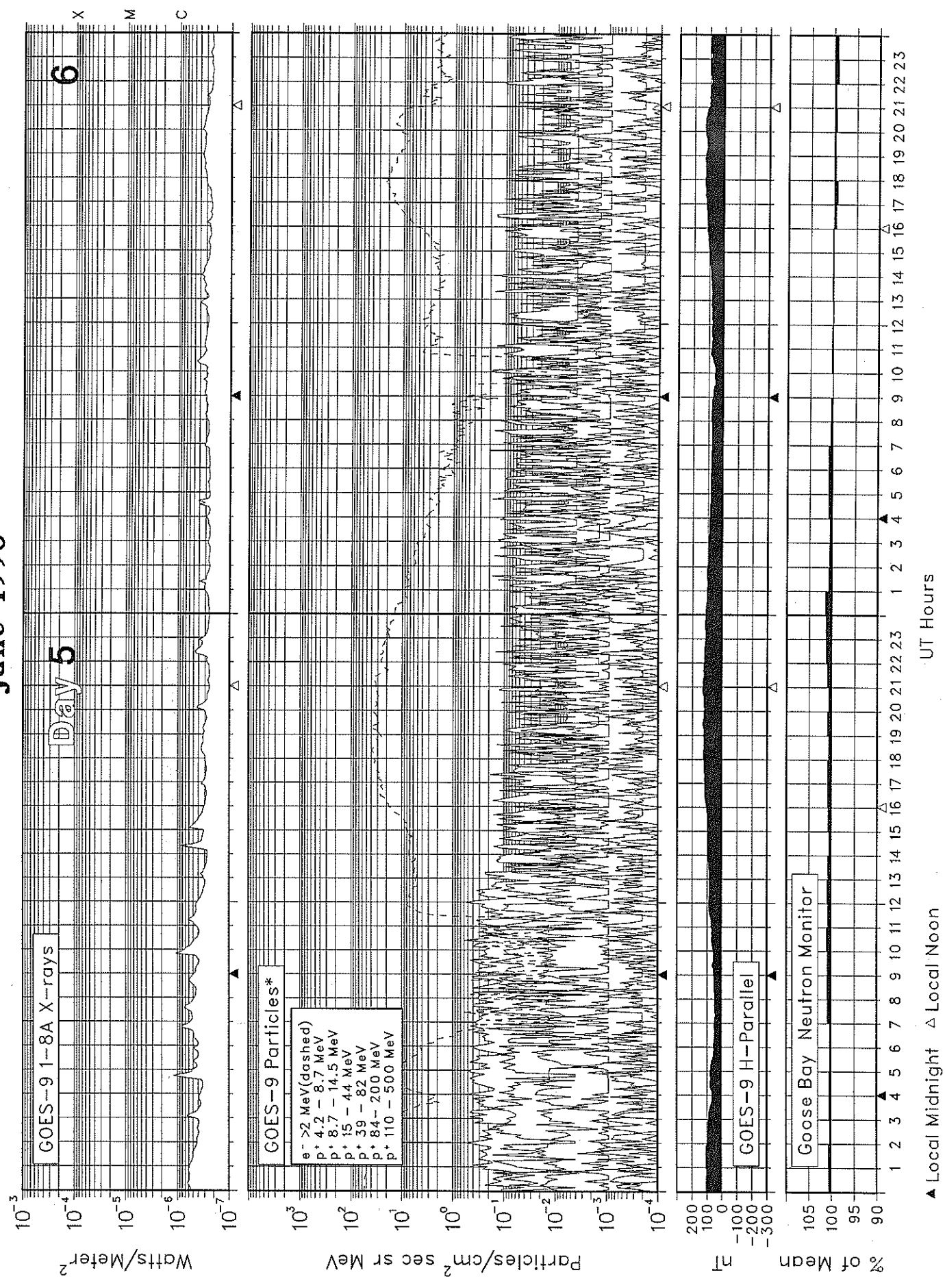
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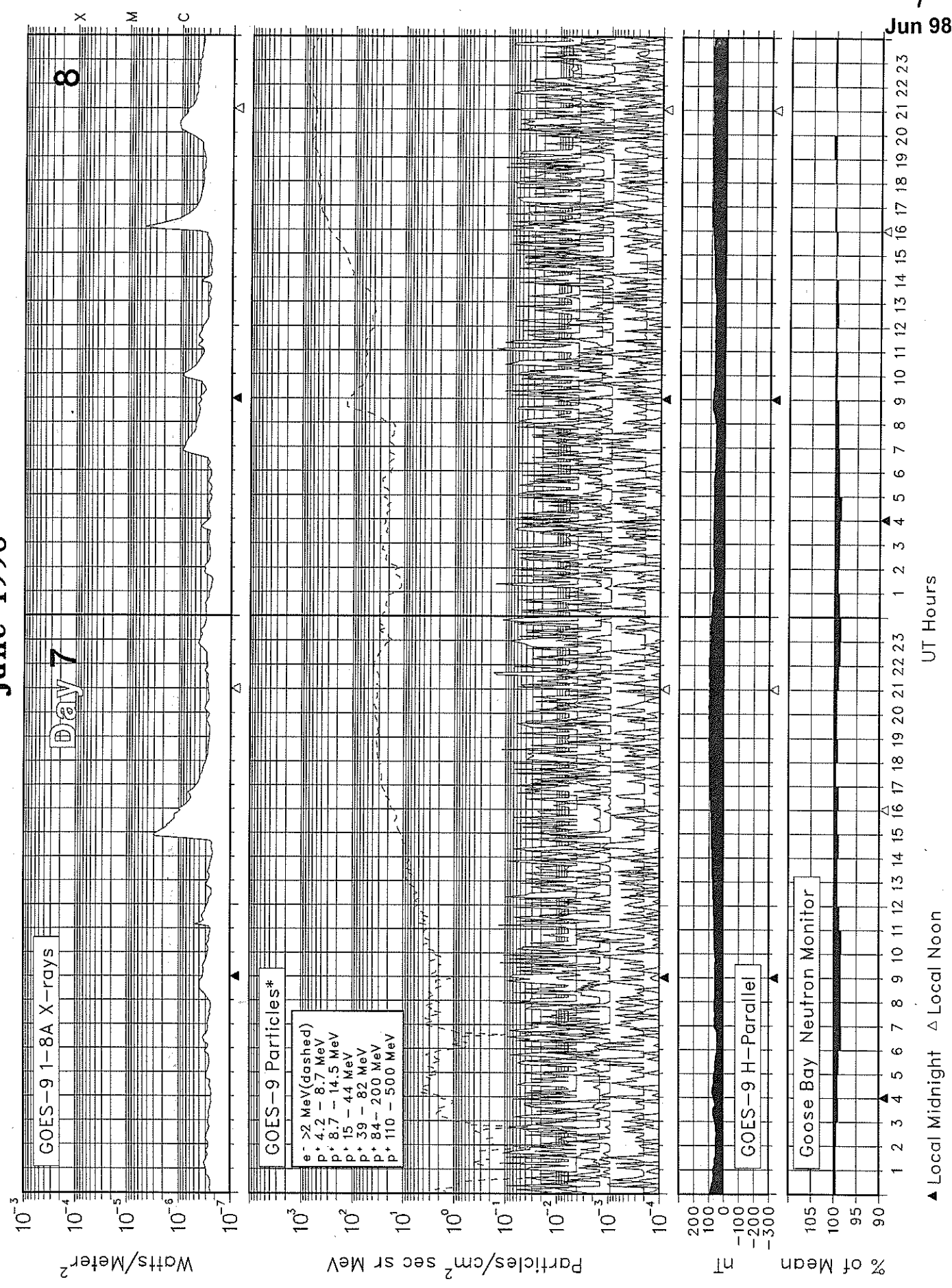
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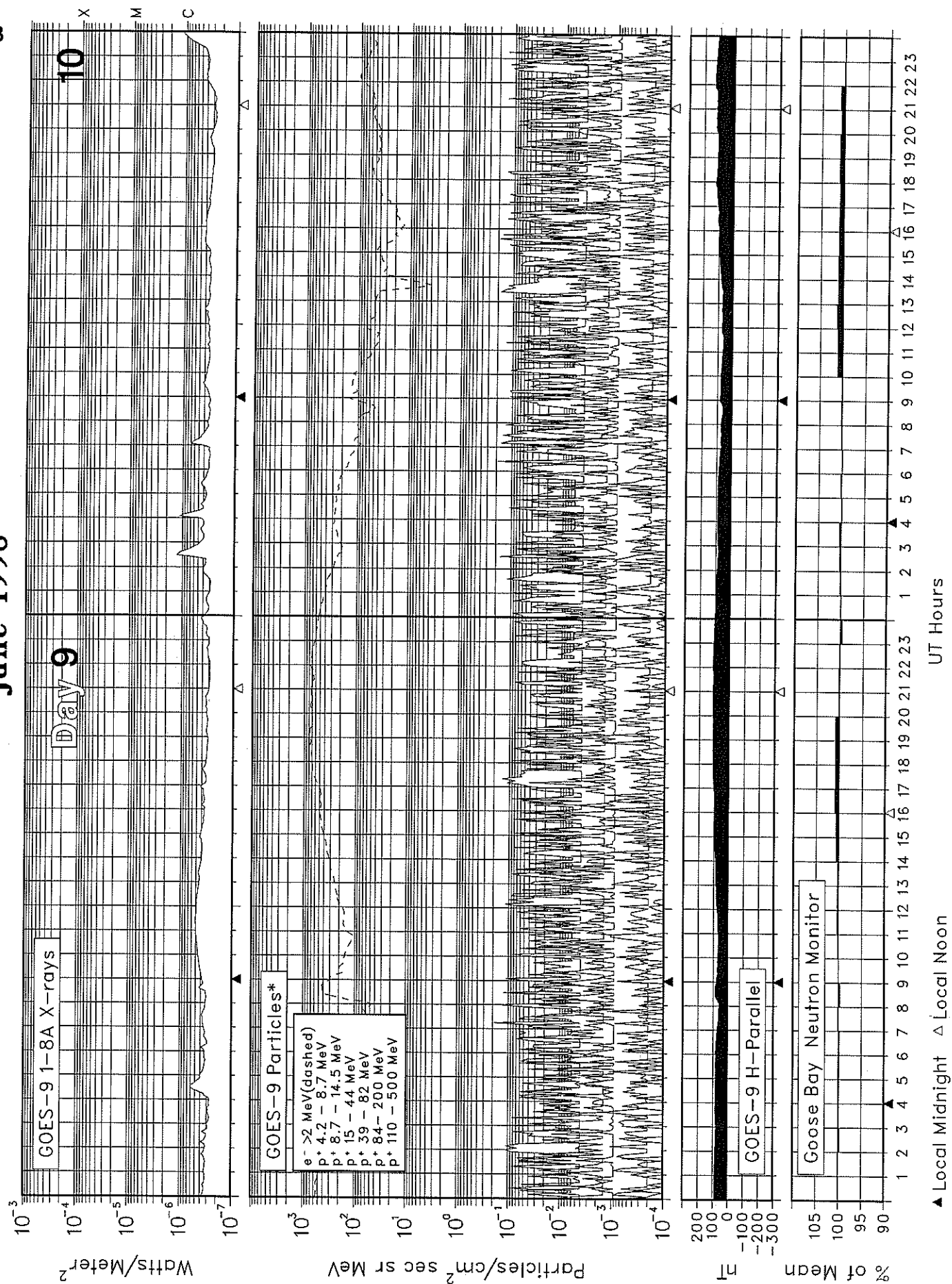


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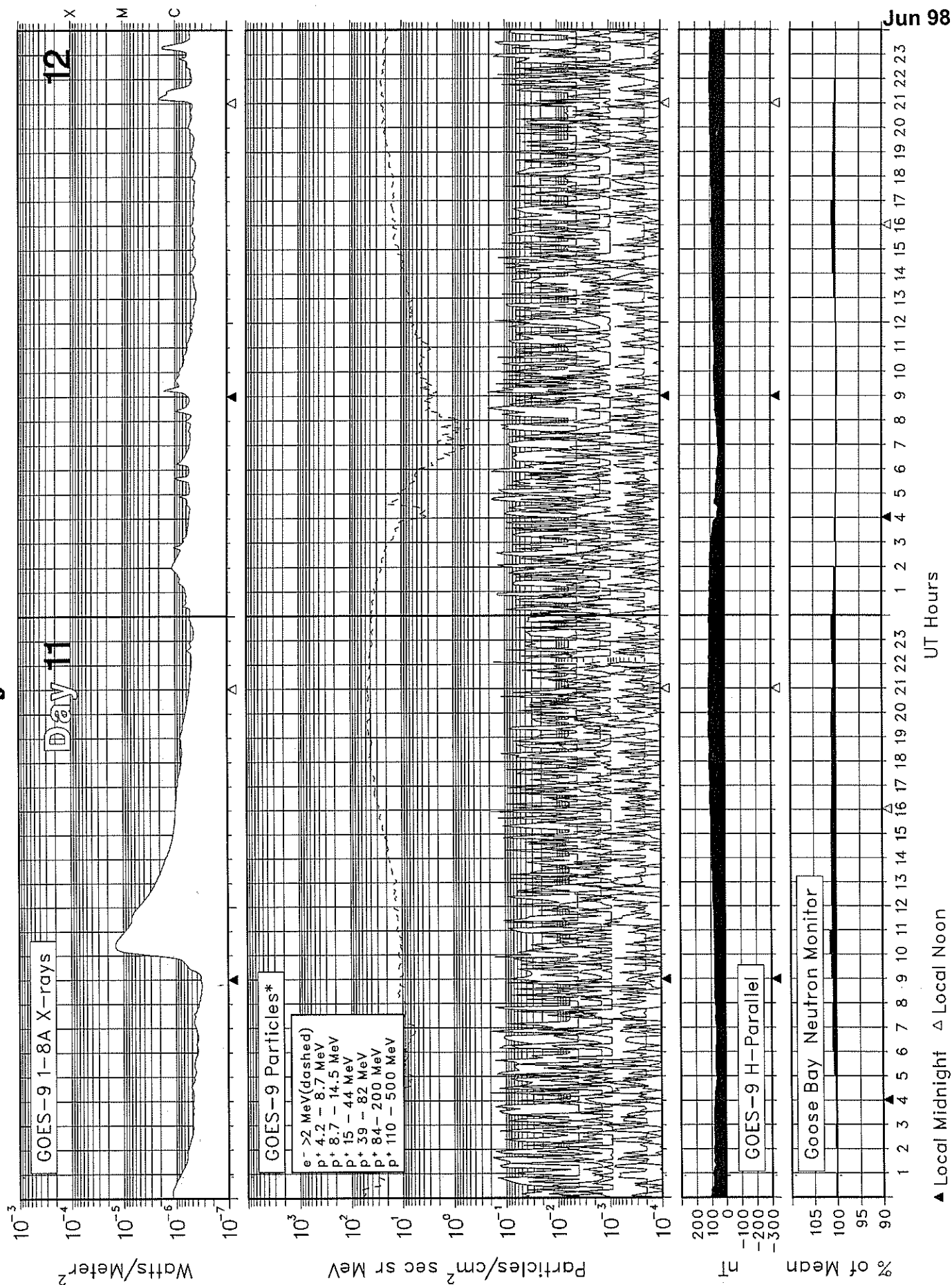


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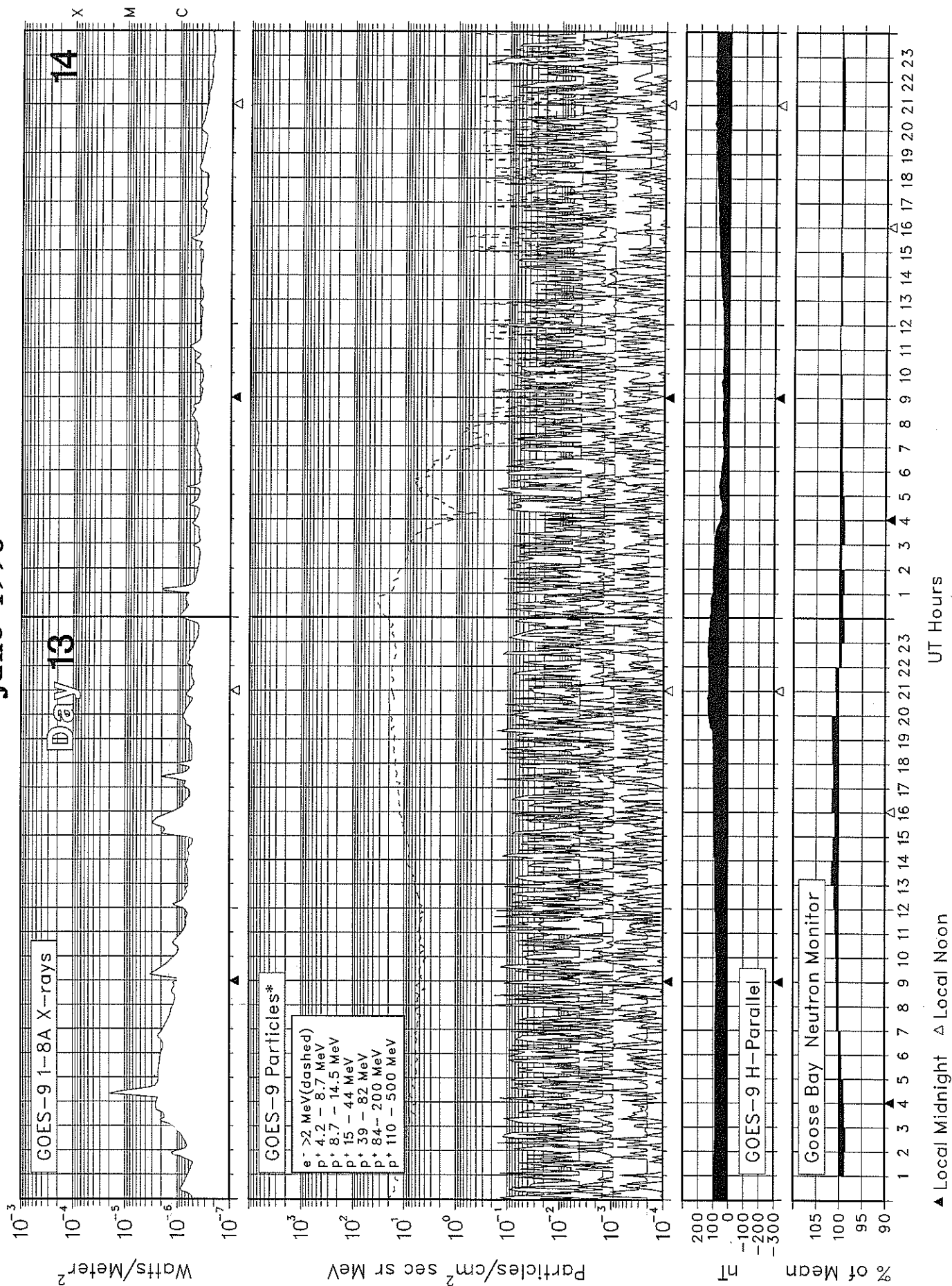
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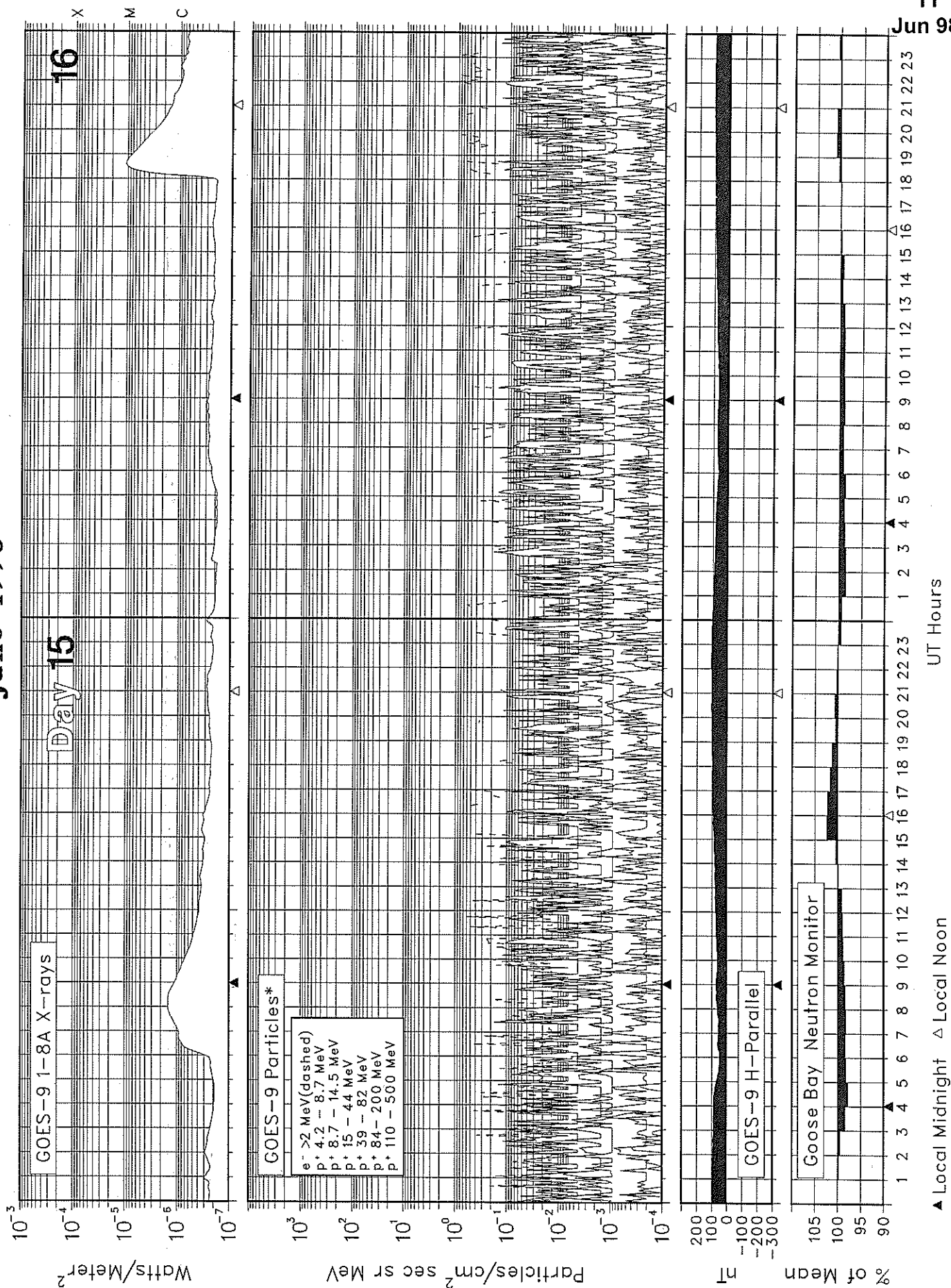
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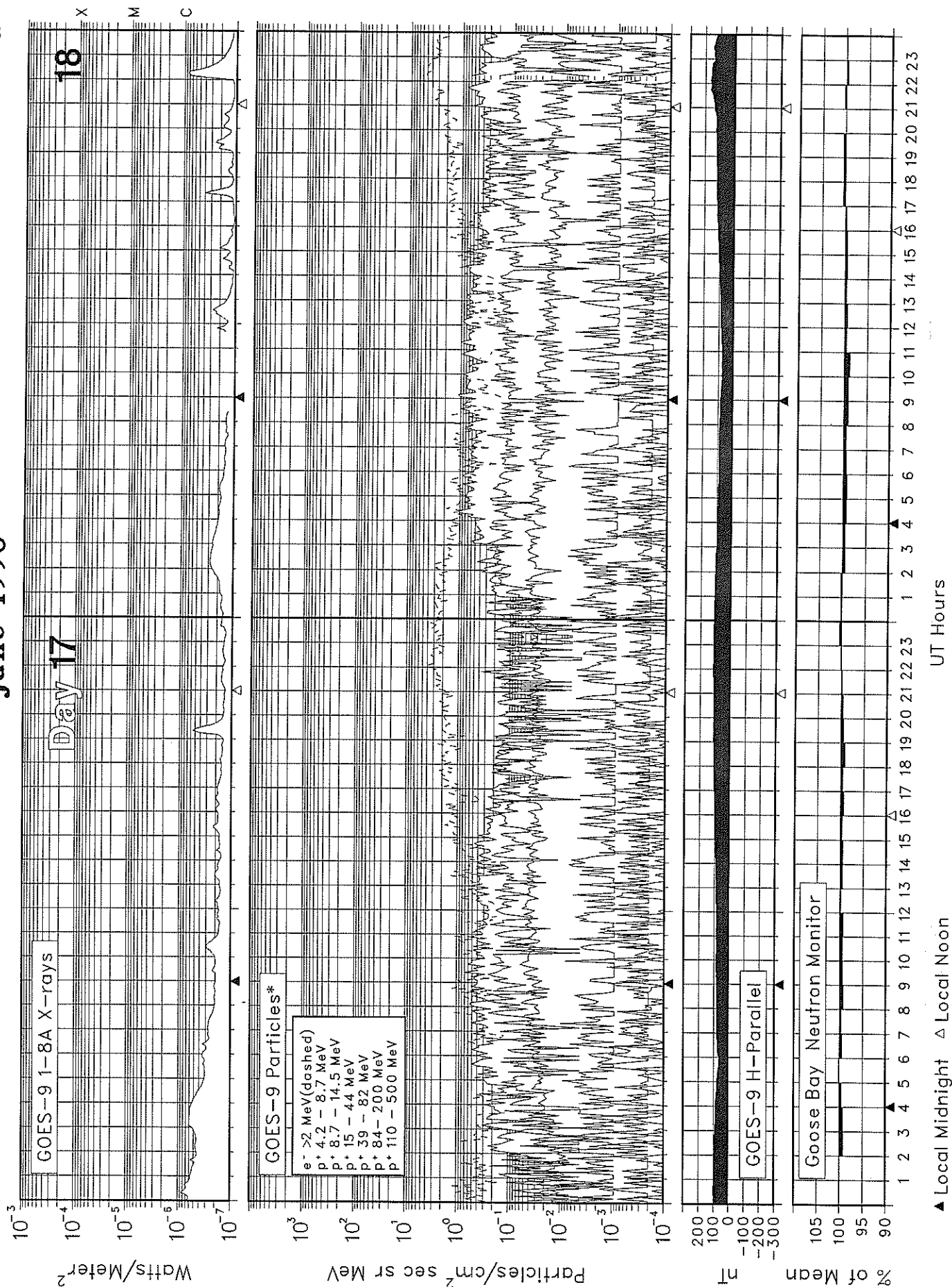
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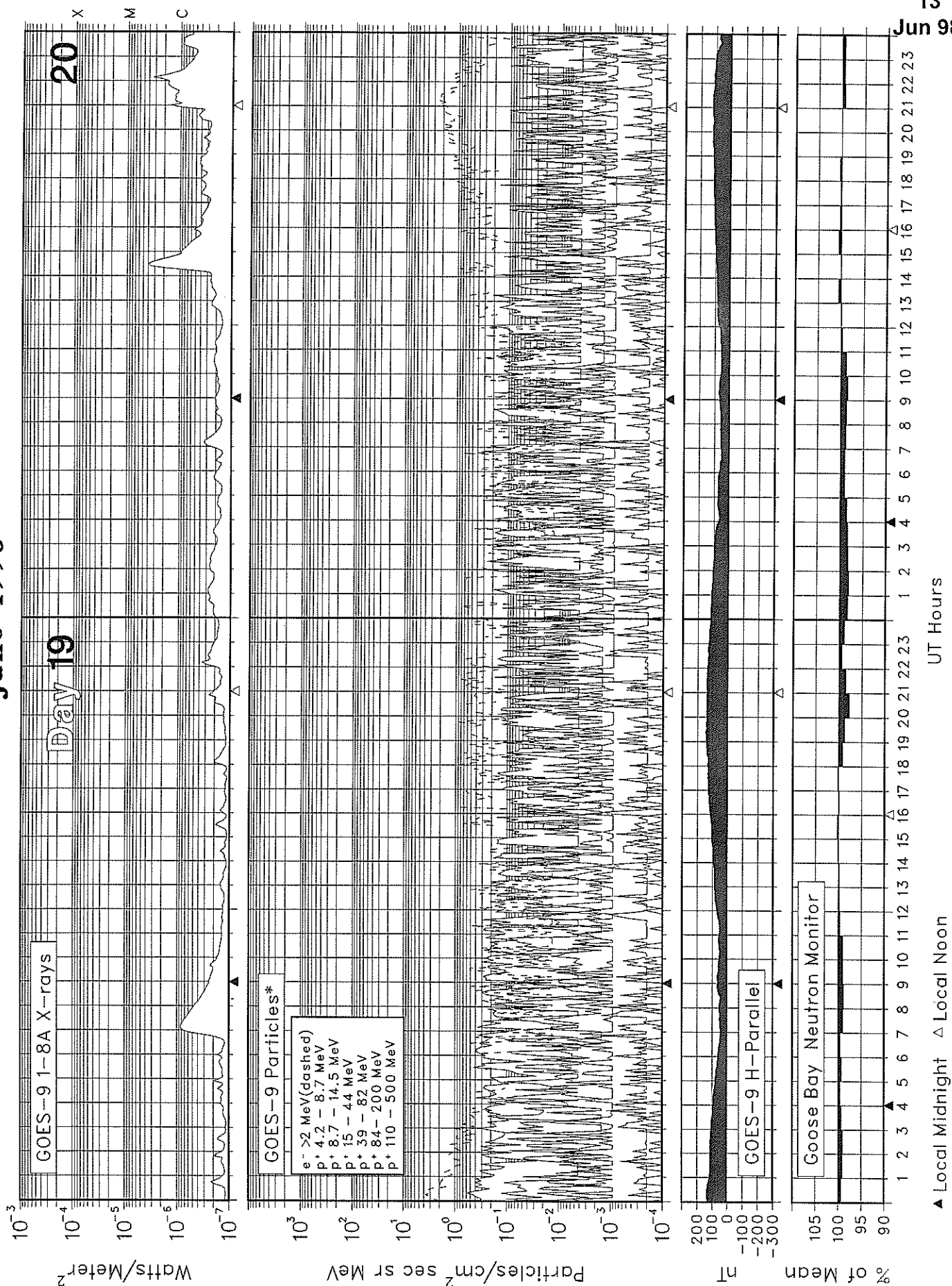
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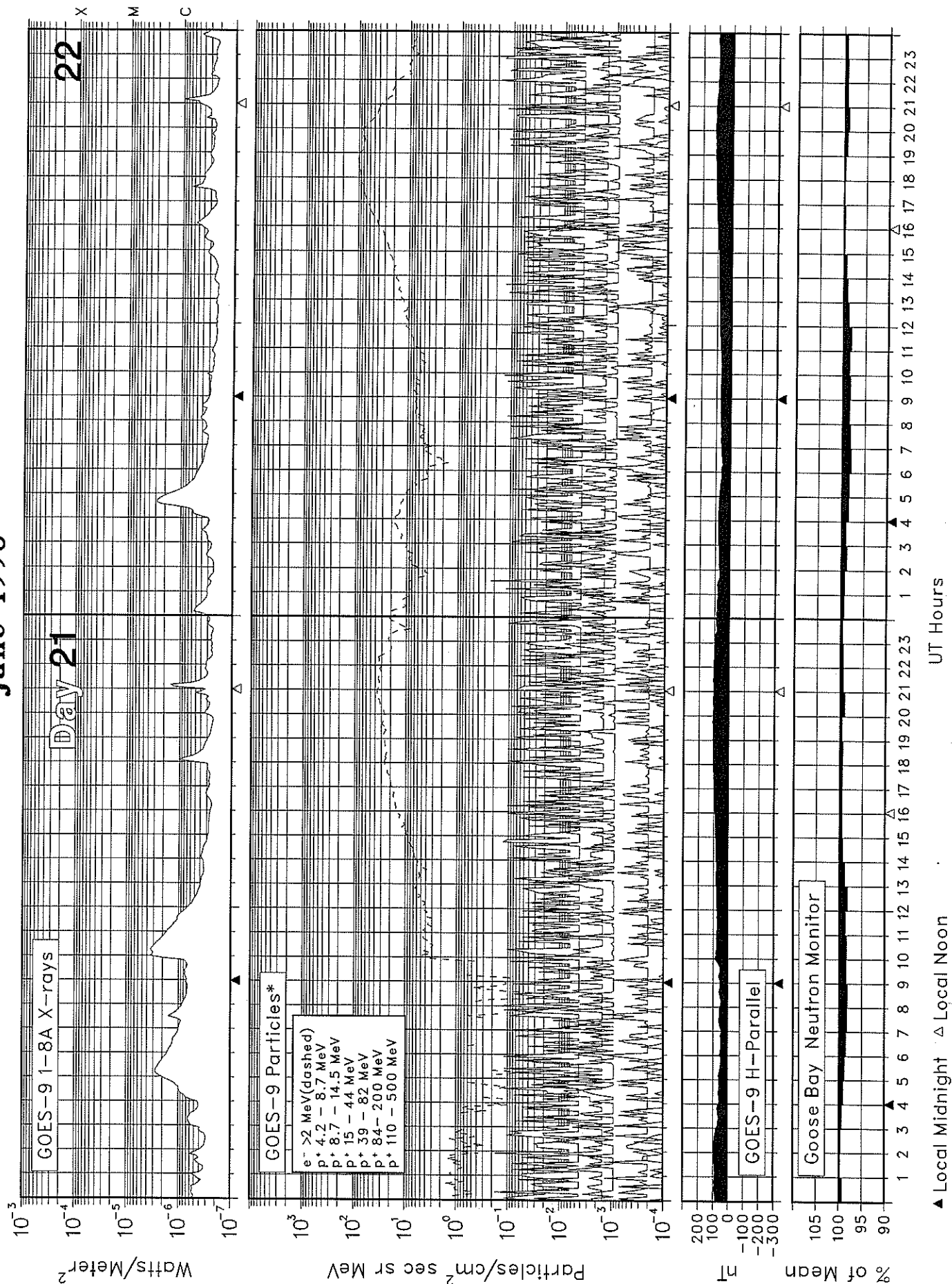
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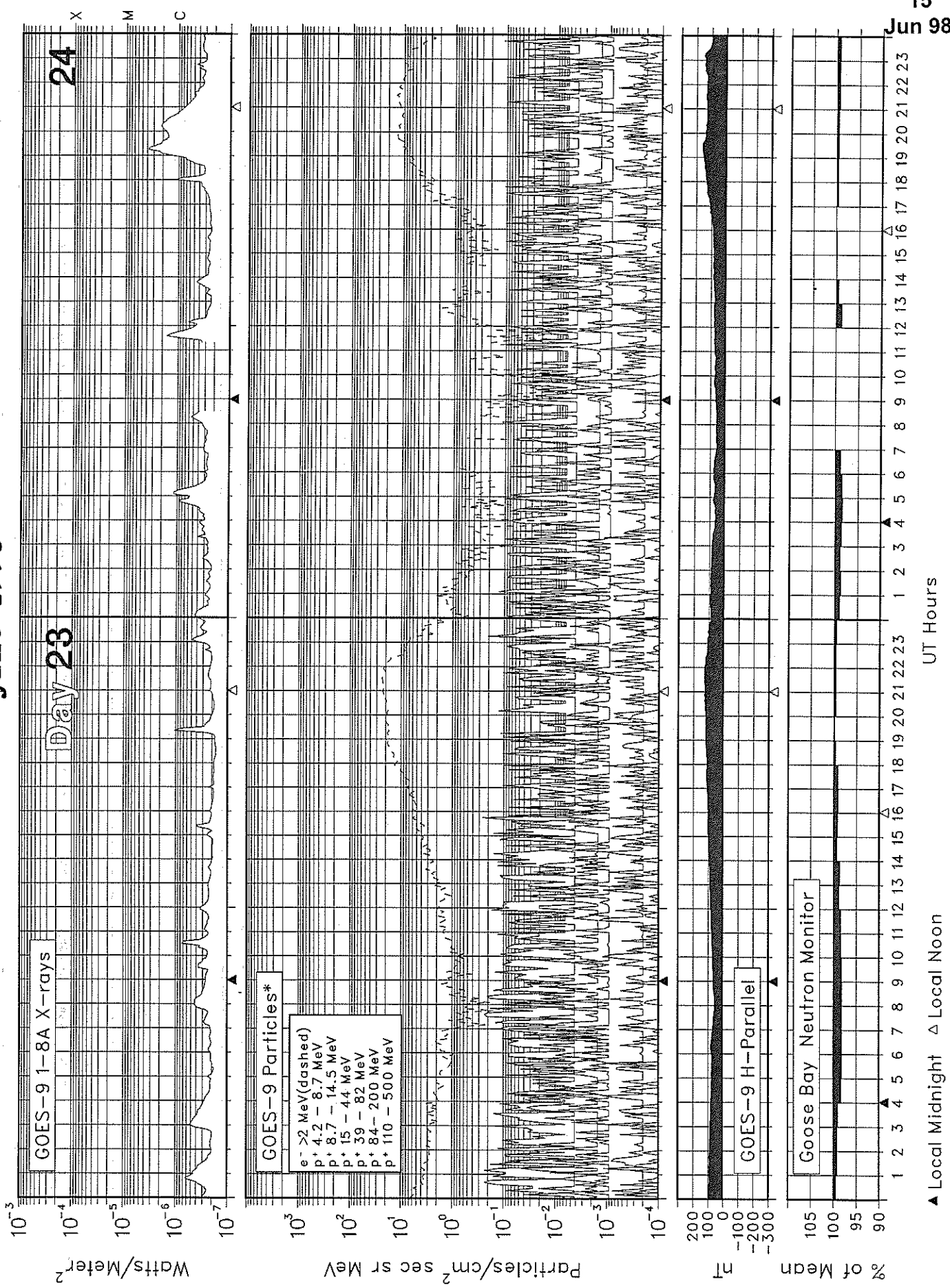
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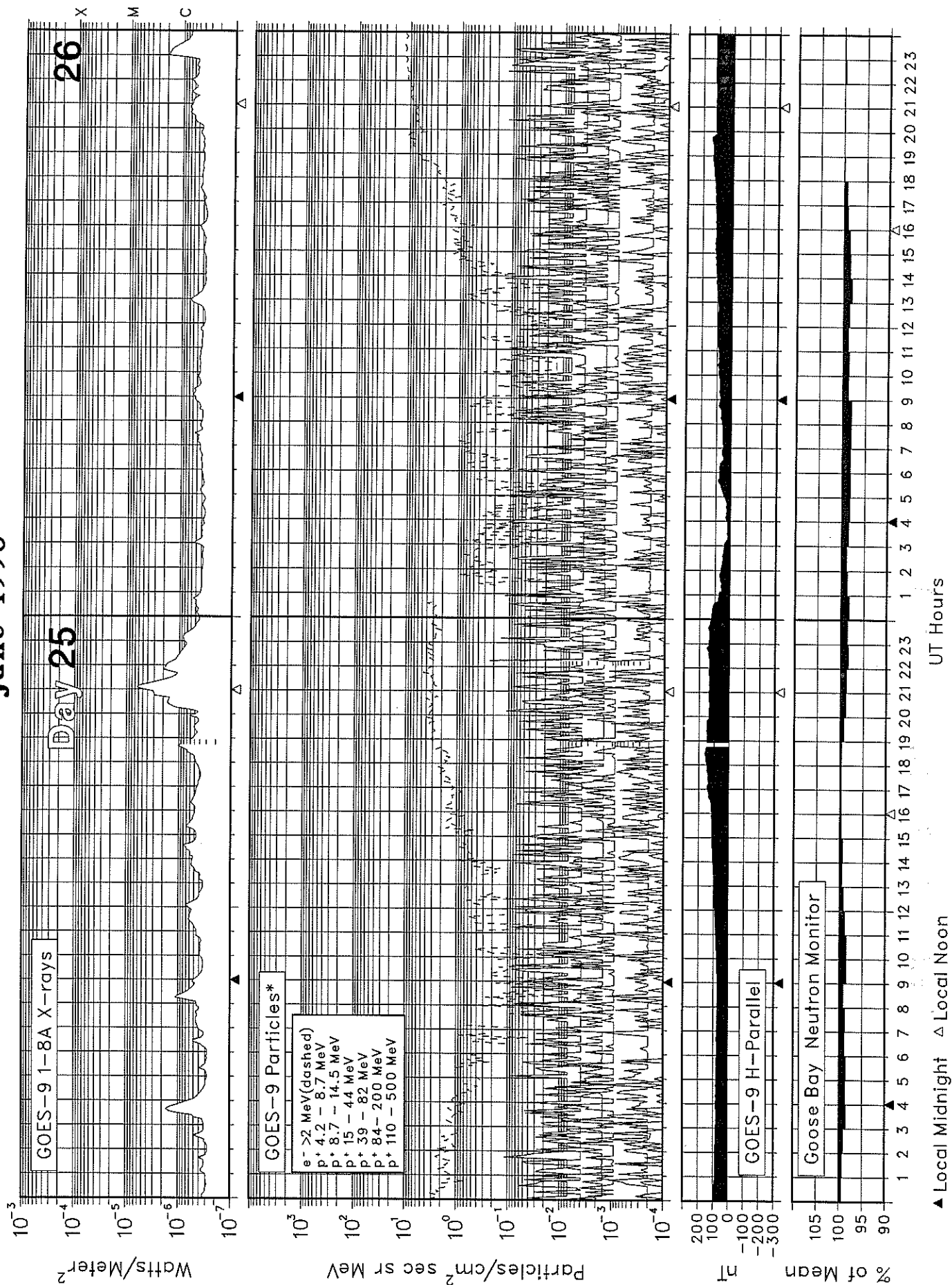
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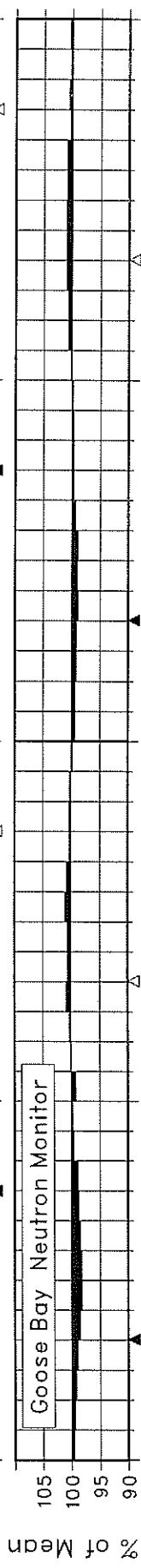
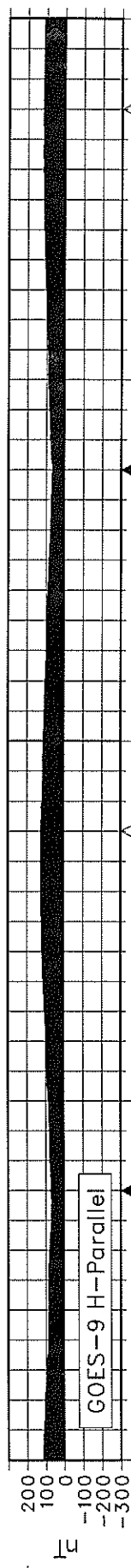
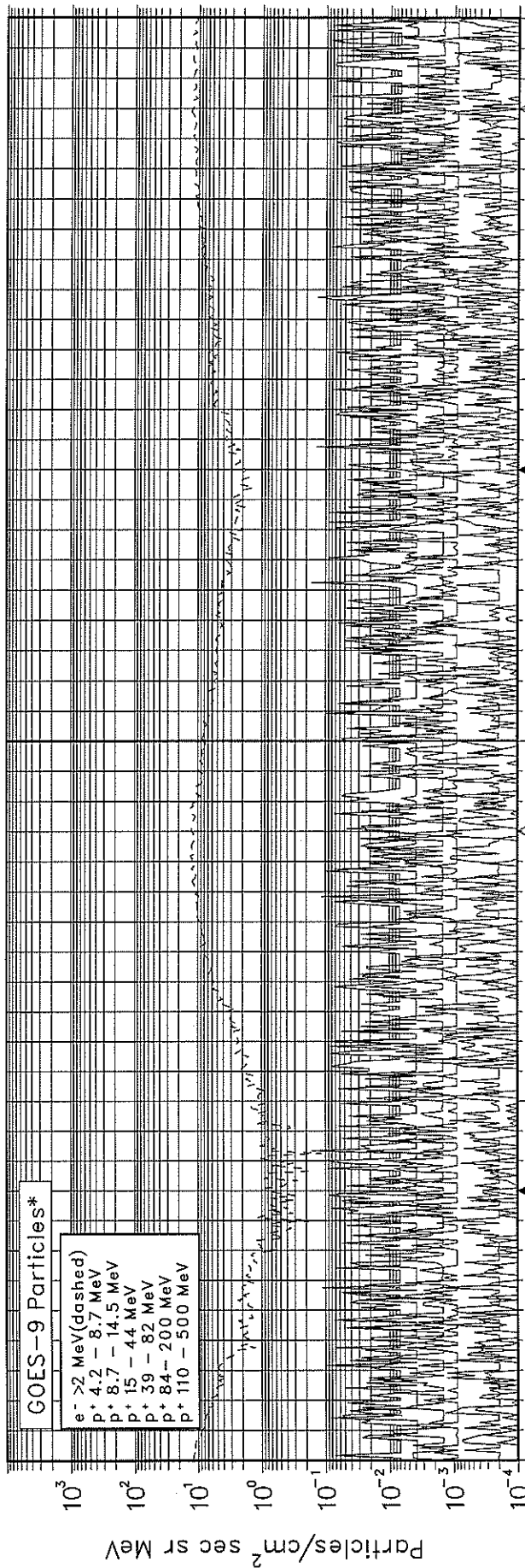
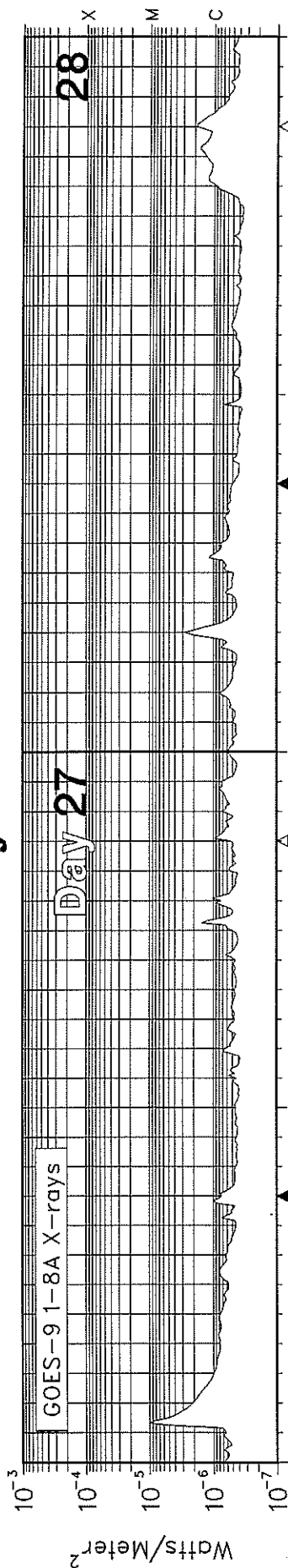
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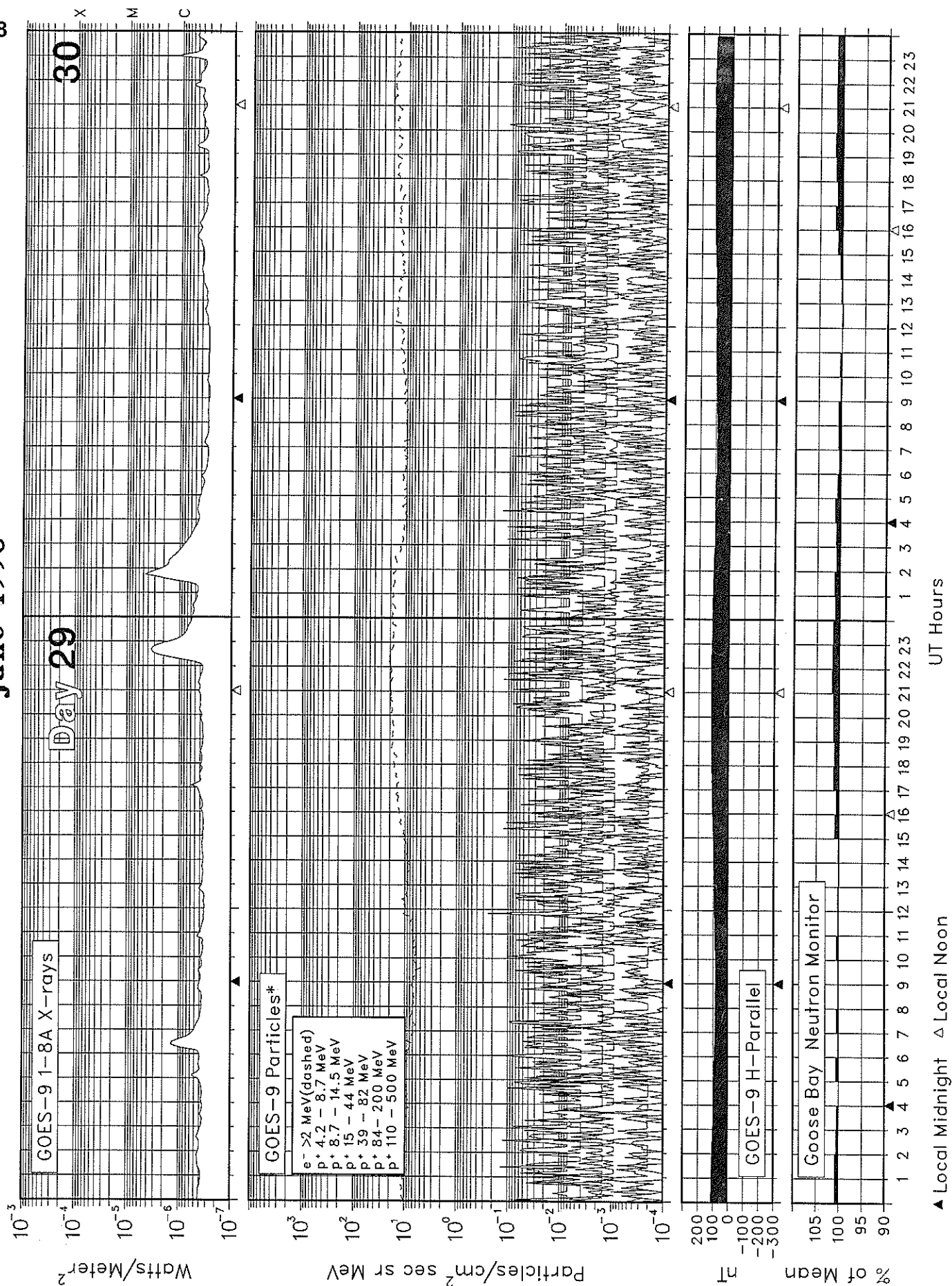
UT Hours

▲ Local Midnight Δ Local Noon

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A L E R T P E R I O D S The International Space Environment Service

JUNE 1998

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Location		Flares			Date of Forecast	Region Forecast(1)	Geoadvice(1)
						Lat	Long	Optical	M	X			
152	01	31	62	94	5	N26	W04	0	0	0	01	Q	SOL: Eruptive MAG: Quiet PRO: Quiet
						S22	W38	0	0	0	01	Q	
						S20	E48	1	0	0	01	E	
						S23	E17	0	0	0	01	Q	
153	02	01	57	100	4	N25	W17	1	0	0	02	Q	SOL: Quiet MAG: Quiet PRO: Quiet
						S23	W52	0	0	0	02	Q	
						S20	E35	0	0	0	02	Q	
154	03	02	71	105	7	N26	W30	1	0	0	03	Q	SOL: Eruptive MAG: Quiet PRO: Quiet
						S22	W65	0	0	0	03	Q	
						S19	E23	0	0	0	03	Q	
						S19	E73	0	0	0	03	Q	
155	04	03	65	113	11	N27	W43	0	0	0	04	Q	SOL: Eruptive MAG: Quiet PRO: Quiet
						S20	E09	0	0	0	04	Q	
						S19	E62	2	0	0	04	Q	
						N28	E63	7	0	0	04	Q	
156	05	04	92	112	10	N26	W56	0	0	0	05	Q	SOL: Eruptive MAG: Quiet PRO: Quiet
						S21	W04	0	0	0	05	Q	
						S19	E49	6	0	0	05	E	
						N28	E48	0	0	0	05	Q	
						N16	E65	0	0	0	05	Q	
157	06	05	99	115	12	N26	W69	0	0	0	06	Q	SOL: Eruptive MAG: Quiet PRO: Quiet
						S20	W16	0	0	0	06	Q	
						S18	E33	5	0	0	06	E	
						N28	E35	2	0	0	06	Q	
						N16	E52	0	0	0	06	Q	
158	07	06	110	115	13	N25	W80	0	0	0	07	Q	SOL: Eruptive MAG: Quiet PRO: Quiet
						S21	W30	0	0	0	07	Q	
						S19	E19	1	0	0	07	E	
						N28	E20	0	0	0	07	Q	
						N16	E37	0	0	0	07	Q	
						N20	W33	0	0	0	07	Q	
						N21	W10	0	0	0	07	Q	
159	08	07	96	113	13	S21	W42	0	0	0	08	Q	SOL: Eruptive MAG: Quiet PRO: Quiet
						S20	E09	3	0	0	08	E	
						N31	E10	0	0	0	08	Q	
						N16	E21	0	0	0	08	Q	
						N21	W23	1	0	0	08	Q	
						S24	E69	0	0	0	08	Q	
160	09	08	104	117	12	S21	W57	0	0	0	09	Q	SOL: Eruptive MAG: Quiet PRO: Quiet
						S22	W03	2	0	0	09	E	
						N29	W01	0	0	0	09	Q	
						N21	W37	0	0	0	09	Q	
						S24	E55	0	0	0	09	Q	
						S19	E06	0	0	0	09	Q	
						N21	E59	0	0	0	09	Q	
161	10	09	101	112	8	S18	W74	0	0	0	10	Q	SOL: Eruptive MAG: Quiet PRO: Quiet
						S21	W18	0	0	0	10	E	
						N28	W15	0	0	0	10	Q	
						N21	W51	0	0	0	10	Q	
						S25	E43	0	0	0	10	Q	
						S24	W44	0	0	0	10	Q	
						S27	E17	0	0	0	10	Q	
162	11	10	103	112	12	S19	W89	0	0	0	11	Q	SOL: Eruptive MAG: Quiet PRO: Quiet
						S22	W31	0	0	0	11	Q	
						N20	W66	0	0	0	11	Q	
						S25	E35	0	0	0	11	Q	
						S25	W55	0	0	0	11	Q	

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Jun 98

A L E R T P E R I O D S The International Space Environment Service

JUNE 1998

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A- index	Location		Flares			Date of Forecast	Region Forecast(1)	Geoadvice(1)
						Lat	Long	Optical	M	X			
						S26	E03	0	0	0	11	Q	
163	12	11	95	112	6	S21	W42	0	0	0	12	Q	SOL: Eruptive
						N21	W82	0	0	0	12	Q	MAG: Quiet
						N19	E15	0	0	0	12	Q	PRO: Quiet
						S24	W71	2	0	0	12	Q	
						S27	W10	0	0	0	12	Q	
						S20	E70	0	0	0	12	Q	
164	13	12	122	112	7	S21	W59	0	0	0	13	Q	SOL: Eruptive
						S20	E05	0	0	0	13	Q	MAG: Quiet
						N19	E01	1	0	0	13	Q	PRO: Quiet
						N25	E14	0	0	0	13	Q	
						S24	W82	6	0	0	13	E	
						S26	W26	0	0	0	13	Q	
						S22	E55	3	0	0	13	Q	
						N18	E75	0	0	0	13	Q	
						N34	E40	0	0	0	13	Q	
165	14	13	148	111	4	S21	W72	1	0	0	14	Q	SOL: Eruptive
						N13	W47	0	0	0	14	Q	MAG: Quiet
						S25	W07	3	0	0	14	Q	PRO: Quiet
						N25	E03	0	0	0	14	Q	
						S24	W94	1	0	0	14	Q	
						S26	W38	0	0	0	14	Q	
						S22	E43	6	1	0	14	E	
						N18	E65	0	0	0	14	Q	
						N34	E27	0	0	0	14	Q	
						S29	E15	0	0	0	14	Q	
						N14	W48	0	0	0	14	Q	
						S22	E31	0	0	0	14	Q	
166	15	14	104	102	15	S21	W84	0	0	0	15	Q	SOL: Eruptive
						S21	E28	3	0	0	15	E	MAG: Quiet
						N18	E51	3	0	0	15	Q	PRO: Quiet
						N32	E14	0	0	0	15	Q	
						S29	E03	1	0	0	15	Q	
						N13	W62	0	0	0	15	Q	
						S23	E17	0	0	0	15	Q	
						N21	E02	0	0	0	15	Q	
167	16	15	79	100	6	S26	W31	0	0	0	16	Q	SOL: Eruptive
						S21	E16	0	0	0	16	E	MAG: Quiet
						N17	E39	0	0	0	16	E	PRO: Quiet
						N34	E03	1	0	0	16	Q	
						S30	W08	0	0	0	16	Q	
						S27	E74	0	0	0	16	Q	
168	17	16	71	104	7	S21	E03	0	0	0	17	Q	SOL: Eruptive
						N18	E25	0	0	0	17	Q	MAG: Quiet
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						S30	W08	0	0	0	17	Q	
						S25	E62	0	0	0	17	Q	
169	18	17	94	101	3	S22	W10	0	0	0	18	Q	SOL: Eruptive
						N18	E12	0	0	0	18	Q	MAG: Quiet
						N35	W22	0	0	0	18	Q	PRO: Quiet
						S28	E49	0	0	0	18	Q	
						S26	E03	0	0	0	18	Q	
170	19	18	68	100	6	S23	W23	0	0	0	19	Q	SOL: Quiet
						N17	W01	0	0	0	19	Q	MAG: Quiet
						N34	W35	0	0	0	19	Q	PRO: Quiet
						S28	E36	0	0	0	19	Q	
						S25	W09	0	0	0	19	Q	
171	20	19	67	99	13	S22	W39	0	0	0	20	Q	SOL: Quiet

A L E R T P E R I O D S The International Space Environment Service

JUNE 1998

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A- index	Location		Flares			Date of Forecast	Region Forecast(1)	Geoadvice(1)
						Lat	Long	Optical	M	X			
						N18	W16	0	0	0	20	Q	MAG: Quiet
						N35	W49	0	0	0	20	Q	PRO: Quiet
						S27	E22	0	0	0	20	Q	
						N16	W24	0	0	0	20	Q	
172	21	20	80	101	11	N18	W25	2	0	0	21	E	SOL: Eruptive
						N35	W62	0	0	0	21	Q	MAG: Quiet
						S27	E10	0	0	0	21	Q	PRO: Quiet
						N16	W39	0	0	0	21	Q	
						S29	W03	0	0	0	21	Q	
173	22	21	87	102	16	S20	W61	0	0	0	22	Q	SOL: Eruptive
						N17	W38	0	0	0	22	E	MAG: Quiet
						S27	W03	0	0	0	22	Q	PRO: Quiet
						N16	W53	0	0	0	22	Q	
						S29	W16	0	0	0	22	Q	
174	23	22	64	101	7	N17	W51	0	0	0	23	E	SOL: Eruptive
						S28	W15	0	0	0	23	Q	MAG: Quiet
						N15	W66	0	0	0	23	Q	PRO: Quiet
						N18	E76	0	0	0	23	Q	
175	24	23	59	96	12	N16	W66	0	0	0	24	Q	SOL: Eruptive
						S28	W28	0	0	0	24	Q	MAG: Quiet
						N15	W83	0	0	0	24	Q	PRO: Quiet
						N18	E66	0	0	0	24	Q	
176	25	24	64	105	17	N17	W80	0	0	0	25	Q	SOL: Eruptive
						S28	W41	0	0	0	25	Q	MAG: Quiet
						N18	E54	0	0	0	25	E	PRO: Quiet
						N22	W54	0	0	0	25	Q	
						S22	E64	0	0	0	25	Q	
177	26	25	84	106	9	N17	W91	0	0	0	26	Q	SOL: Eruptive
						S27	W55	0	0	0	26	Q	MAG: Quiet
						N18	E39	0	0	0	26	E	PRO: Quiet
						N23	W67	0	0	0	26	Q	
						S23	E51	0	0	0	26	Q	
						S26	E68	0	0	0	26	Q	
178	27	26	99	109	34	S28	W68	0	0	0	27	Q	SOL: Eruptive
						N17	E26	0	0	0	27	Q	MAG: Quiet
						S22	E39	0	0	0	27	Q	PRO: Quiet
						S25	E58	0	0	0	27	Q	
						N29	W19	0	0	0	27	Q	
						S14	E64	0	0	0	27	Q	
179	28	27	125	115	4	S28	W80	0	0	0	28	Q	SOL: Eruptive
						N17	E12	1	1	0	28	E	MAG: Quiet
						S22	E26	0	0	0	28	Q	PRO: Quiet
						S25	E46	0	0	0	28	Q	
						N29	W32	0	0	0	28	Q	
						S16	E54	0	0	0	28	Q	
						N25	E73	0	0	0	28	Q	
						S21	E74	0	0	0	28	Q	
180	29	28	133	122	3	N18	W01	1	0	0	29	E	SOL: Eruptive
						S22	E13	0	0	0	29	Q	MAG: Quiet
						S24	E33	0	0	0	29	Q	PRO: Quiet
						N29	W46	0	0	0	29	Q	
						S14	E39	0	0	0	29	Q	
						N27	E63	0	0	0	29	Q	
						S22	E64	0	0	0	29	Q	
						N32	E16	0	0	0	29	Q	
181	30	29	137	119	2	N18	W15	0	0	0	30	E	SOL: Eruptive
						S22	W03	0	0	0	30	Q	MAG: Quiet

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A L E R T P E R I O D S
The International Space Environment Service

JUNE 1998

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A- index	Location		Flares			Date of Forecast	Region Forecast(1)	Geoadvice(1)
						Lat	Long	Optical	M	X			
						S24	E20	1	0	0	30	Q	PRO: Quiet
						N29	W59	0	0	0	30	Q	
						S14	E24	0	0	0	30	Q	
						N27	E52	0	0	0	30	Q	
						S20	E56	0	0	0	30	E	
						N18	E04	0	0	0	30	Q	

(1) Region Forecast and Flare (SOL) Advice

Q = Quiet (<50% probability of C-class flares)
E = Eruptive (C-class flares expected, probability >=50%)
A = Active (M-class flares expected, probability >=50%)
M = Major (X-class flares expected, probability >=50%)
P = Proton (Proton flares expected, probability >=50%)
W = Warning (activity levels are expected to increase, but no numerical forecast given)
/ = No forecast available

Magnetic (MAG) Geoadvice

'Quiet'
'Active' conditions expected (A>=20 or K=4)
'Minor' storm expected (A>=30 or K=5)
'Major' storm expected (A>=50 or K>=6)
'Severe' storm expected (A>=100 or K>=7)
'IP' magstorm in progress (A>=30 or K>=4)
'Warning' (activity levels are expected to increase, but no numerical forecast given)
'/' no forecast available

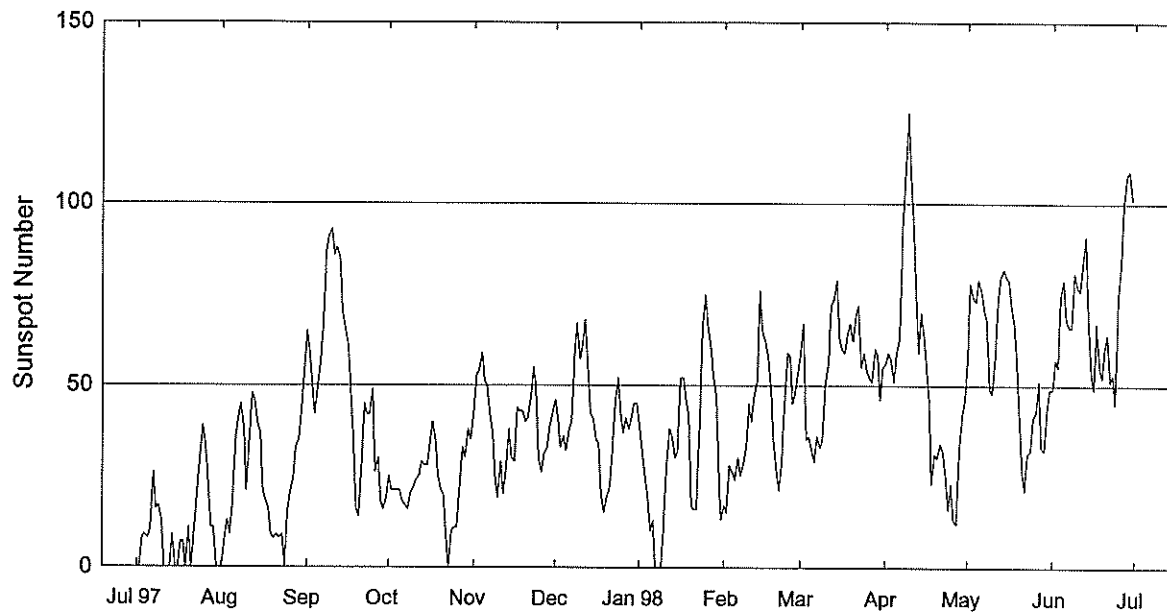
Proton (PRO) Geoadvice

'Quiet'
'Proton' event expected (10pfu at >10MeV)
'Major' proton event expected (100pfu at >100 MeV)
'IP' proton event in progress (>10 MeV)
'Warning' (activity levels are expected to increase, but no numerical forecast given)
'/' no forecast available

STRATWARM ALERTS - NONE

International Relative Sunspot Numbers Jul 1997 - Jun 1998

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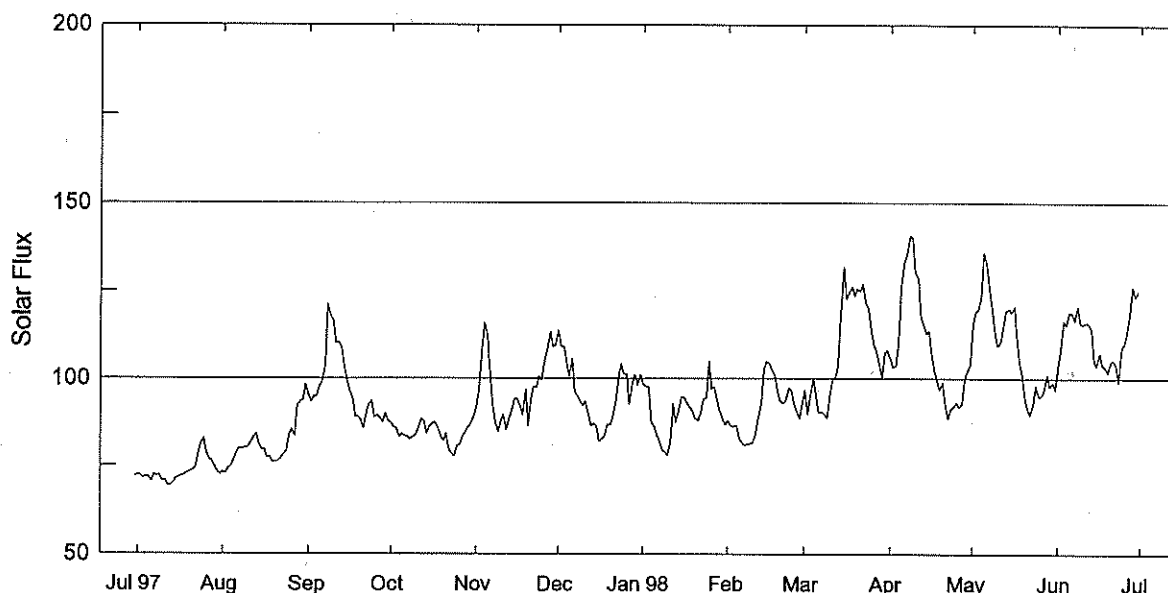


Day	Jul 97	Aug	Sep	Oct	Nov	Dec	Jan 98*	Feb*	Mar*	Apr*	May*	Jun*
1	0	0	65	25	43	46	39	17	59	56	57	49
2	0	8	59	21	53	41	31	15	67	59	78	57
3	8	13	48	21	54	33	25	28	35	57	74	55
4	9	9	42	21	59	36	20	26	36	51	73	74
5	8	17	50	21	51	32	10	24	32	59	79	79
6	10	36	56	18	50	38	13	30	29	63	76	68
7	26	41	68	17	43	40	0	25	36	93	71	66
8	16	45	87	16	37	58	0	28	33	106	68	66
9	17	38	91	20	25	67	0	33	35	125	49	81
10	13	21	93	22	19	57	10	45	50	108	48	77
11	0	36	86	24	29	61	27	40	56	96	58	76
12	0	48	88	25	20	68	38	47	72	75	73	83
13	0	46	85	29	26	53	36	51	74	59	80	91
14	9	39	70	28	38	42	30	76	79	70	82	69
15	0	37	65	28	30	41	32	65	63	63	80	53
16	0	21	61	34	29	35	52	62	60	54	79	49
17	7	18	49	40	44	34	52	58	59	46	71	67
18	7	16	33	35	43	20	46	49	64	23	67	55
19	0	9	16	25	43	15	42	35	67	31	56	52
20	11	8	14	21	40	19	17	28	62	30	43	60
21	0	9	26	20	41	22	16	21	69	34	26	64
22	11	8	45	9	47	32	16	28	72	32	21	51
23	20	9	42	0	55	45	40	44	55	26	31	53
24	29	0	42	10	49	52	66	59	59	16	32	45
25	39	15	49	11	30	42	75	58	54	23	41	75
26	34	21	26	11	26	37	67	45	52	13	43	83
27	25	24	30	23	31	41	61	48	51	12	51	100
28	11	33	18	33	33	38	53	54	60	32	33	108
29	11	35	16	30	39	41	47		58	42	32	109
30	0	43	19	38	42	45	28		46	46	43	101
31	0	53		35		45	13		55		49	
Mean	10.4	24.4	51.3	22.8	39.0	41.2	32.3	40.7	54.8	53.3	56.9	70.5

* = Provisional.

Penticton 2800 MHz (10.7cm) Solar Flux Jul 97 - Jun 98

Adjusted to 1 AU



Day	Jul 97	Aug	Sep	Oct	Nov	Dec	Jan 98	Feb	Mar	Apr	May	Jun
1	72.4	73.2	95.1	87.3	91.6	113.7	98.3	88.1	96.5	105.6	115.1	103.0
2	72.4	72.9	93.3	86.0	96.2	109.0	97.6	86.5	89.9*	103.4	118.8	107.7
3	71.4	74.3	94.7	85.8	108.0	109.0	97.7	86.3	95.0	103.6	119.3	116.4
4	72.0	74.9	94.6	83.4	115.9	104.2	87.7	86.6	100.0	110.2	123.2	115.0
5	72.0	76.9	97.6	84.3	111.9	100.7	86.3	83.1	95.1	126.4	135.7	118.4
6	70.6	79.0	99.1	83.6	103.5	105.6	84.1	81.8	90.3	133.7	132.4	118.5
7	72.6	80.1	103.6	83.4	92.7	96.0	82.1	80.8	90.5	135.5	125.6	116.4
8	72.1	79.9	121.1	82.7	87.9	95.1	79.5	81.3	89.9	141.0	120.2	120.5
9	72.3	80.3	117.7	83.3	84.8	93.8	78.9	81.5	88.7	140.2	112.8	115.7
10	70.8	80.4	116.4	84.0	87.6	92.2	78.0	81.5	95.0	130.2	109.3	115.3
11	70.9	81.6	110.0	85.8	89.6	93.4	82.0	84.0	99.4	128.8	110.2	115.8
12	69.6	83.0	110.3	88.3	85.4	89.6	92.7	88.3	100.3	117.6	114.4	115.7
13	69.3	84.2	108.9	87.8	88.2	86.5	87.5	92.3	103.7	115.5	119.1	113.9
14	70.3	81.6	103.7	84.3	91.0	87.1	90.8	102.3	118.2	112.6	119.8	105.1
15	71.5	79.6	99.1	86.4	94.1	86.3	94.6	104.7	131.6	113.5	118.6	103.6
16	71.9	79.8	96.4	86.9	94.1	82.0	94.4	104.2	122.6	107.2	120.4	107.3
17	72.2	77.4	94.0	87.5	92.0	82.9	92.8	102.4	124.3	102.1	113.0	103.9
18	72.3	77.7	89.0	85.9	89.4	83.5	92.0	100.9	125.9	99.4	104.6	103.3
19	72.8	76.1	89.1	84.0	96.8	86.8	90.5	96.3	123.5	96.7	101.5	101.8
20	73.5	76.3	88.4	82.1	86.5	86.7	88.5	93.6	125.5	98.7	94.1	104.4
21	73.6	76.3	85.8	84.2	93.6	89.0	88.0	92.8	124.9	92.9	91.2	105.4
22	74.5	77.2	89.6	79.9	97.7	93.8	90.1	93.5	126.8	88.5	89.6	103.8
23	78.1	78.2	92.3	78.8	97.3	100.7	93.9	97.3	121.3	91.3	92.6	98.9
24	81.2	79.4	93.5	77.7	100.6	104.3	94.5	96.6	119.9	91.7	98.0	108.8
25	83.0	83.7	88.9	80.5	99.4	101.3	105.0	92.9	114.4	93.0	94.7	109.7
26	79.0	85.5	89.5	81.0	105.2	101.3	96.9	90.9	109.5	91.8	94.9	112.8
27	76.8	83.5	88.8	83.3	108.2	92.7	97.7	88.6	107.7	92.6	96.6	119.1
28	76.5	92.3	87.5	84.4	113.2	98.7	93.7	92.3	103.6	99.8	101.1	126.1
29	75.0	93.3	90.0	86.0	109.0	101.0	90.9		100.0	102.0	97.6	123.3
30	73.2	93.8	87.9	86.9	109.3	98.0	88.4		107.2	104.1	98.8	125.0
31	72.5	98.2		89.2		101.1	86.8		107.9		96.8	
Mean	73.4	81.0	97.2	84.3	97.4	95.7	90.4	91.1	108.0	109.0	109.0	111.8

NOTE: *=1700UT reading, snow on antenna at 2000UT.

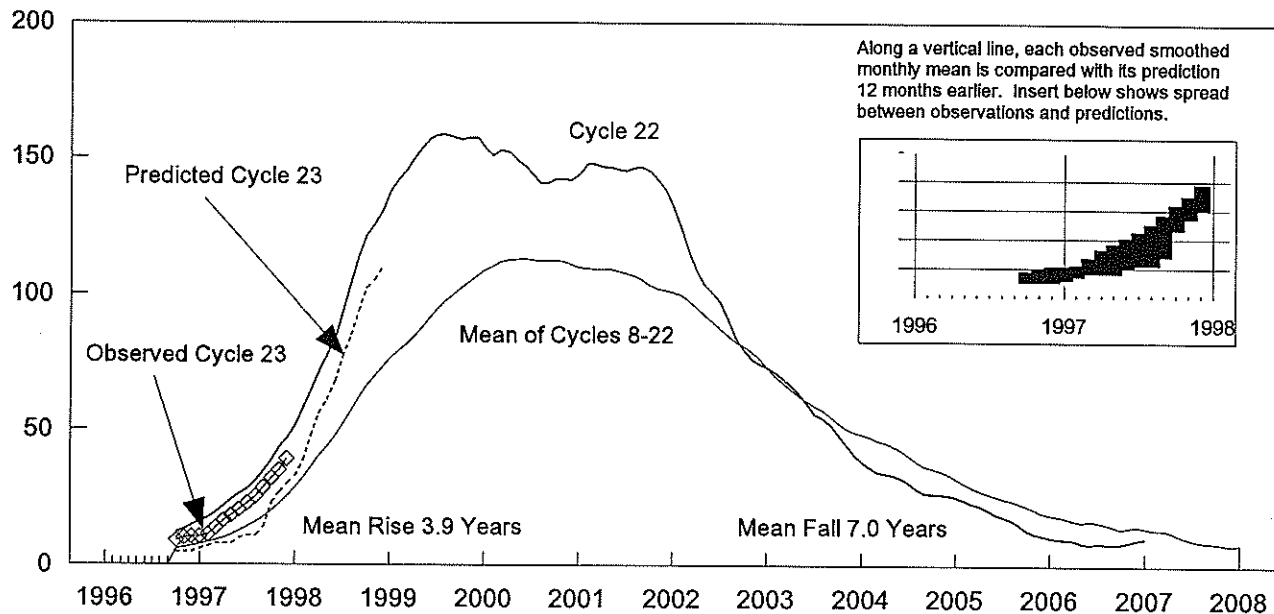
DAILY SOLAR INDICES
June 1998

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Day	Day of Year	Bartels Cycle Day	Sunspot Numbers		Obs Flux Penticton (2800)	Solar Flux Adjusted to 1 Astronomical Unit								
			Int	Amer		LEAR (15400)	LEAR (8800)	LEAR (4995)	Pentic (2800)	LEAR (2695)	LEAR (1415)	LEAR (610)	LEAR (410)	LEAR (245)
1	152	22	49	51	100.1	546	228	137	103.0	96	73	43	33	14
2	153	23	57	54	104.7	556	236	145	107.7	103	76	44	34	16
3	154	24	55	59	113.1	529	231	150	116.4	107	82	48	37	15
4	155	25	74	75	111.7	538	233	152	115.0	113	85	50	37	15
5	156	26	79	83	115.0	558	240	156	118.4	117	90	50	37	22
6	157	27	68	73	115.1	557	242	154	118.5	114	90	52	40	35
7	158	1	66	68	113.0	550	245	156	116.4	112	90	51	36	15
8	159	2	66	75	116.9	550	240	155	120.5	113	88	51	38	17
9	160	3	81	86	112.3	556	245	153	115.7	113	88	51	38	18
10	161	4	77	85	111.8	417	215	143	115.3	111	86	40	35	15
11	162	5	76	72	112.4	536	237	153	115.8	114	87	52	37	16
12	163	6	83	88	112.2	543	239	153	115.7	114	87	51	37	36
13	164	7	91	84	110.5	--	--	--	113.9	--	--	--	--	--
14	165	8	69	63	101.9	548	238	148	105.1	105	83	48	36	16
15	166	9	53	57	100.4	546	239	142	103.6	98	79	48	34	14
16	167	10	49	54	104.0	--	239	143	107.3	100	80	--	--	--
17	168	11	67	68	100.6	540	237	148	103.9	103	81	48	34	14
18	169	12	55	56	100.1	547	240	143	103.3	100	80	49	35	14
19	170	13	52	60	98.6	545	235	140	101.8	98	75	45	33	13
20	171	14	60	65	101.1	542	237	142	104.4	99	76	47	34	13
21	172	15	64	58	102.0	553	243	148	105.4	103	77	46	34	38
22	173	16	51	57	100.5	552	242	147	103.8	102	76	45	32	14
23	174	17	53	51	95.7	546	245	144	98.9	99	73	45	32	14
24	175	18	45	50	105.3	547	245	145	108.8	97	70	43	31	12
25	176	19	75	71	106.2	550	248	153	109.7	101	73	43	32	12
26	177	20	83	91	109.2	531	242	152	112.8	105	76	44	32	12
27	178	21	100	113	115.2	555	249	156	119.1	114	83	47	33	13
28	179	22	108	114	122.0	563	247	157	126.1	112	84	47	33	14
29	180	23	109	117	119.3	559	246	156	123.3	118	88	52	43	42
30	181	24	101	120	120.9	--	--	--	125.0	--	--	--	--	--
MEAN			70.5	73.9	108.4	542	239	148	111.8	106	81	47	35	18

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

Cycle 23 Smoothed Sunspot Numbers: Observed and Predicted



Smoothed Sunspot Numbers (observed and Predicted) for Parts of Solar Cycles 22 and 23

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
1992	124	115	108	103	100	97	91	84	80	76	74	73	94
1993	71	69	67	64	60	56	55	52	48	45	41	38	56
1994	37	35	34	34	33	31	29	27	27	27	26	26	31
1995	24	23	22	21	19	18	17	15	13	12	11	11	17
1996	10	10	10	9	8*	9	8	8	8	9**	10	10	8
1997	11	11	14	17	18	20	23	25	28	32	35	39	23
1998	44	50	55	61	66	72	79	86	93	100	105	110	77
()	(2)	(4)	(6)	(9)	(12)	(14)	(16)	(19)	(22)	(25)	(28)	(31)	(16)
1999	114	118	123	129	134	139	143	146	148	152	155	157	138
()	(34)	(34)	(33)	(33)	(33)	(34)	(35)	(37)	(39)	(42)	(43)	(45)	(37)

Solar Cycle 22
 Solar Cycle 23
 Min, Max, and Predictions

* May 1996 marks Cycle 22's mathematical minimum. ** October 1996 marks the consensus minimum NGDC is now using.

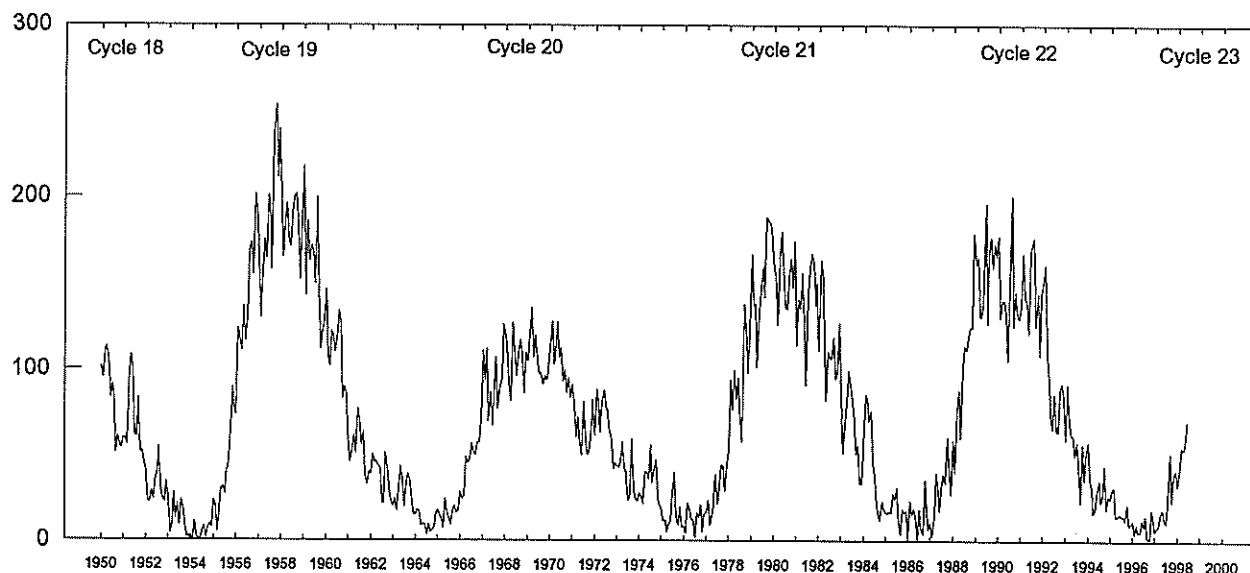
Observed and Predicted Numbers. For the end of Cycle 22, and the rise and decline of Cycle 23, the table above lists observed smoothed sunspot numbers up to the one that includes the most recent monthly mean. We based these smoothed values on final monthly means through Dec 1997 and on provisional numbers 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 December 1998 prediction. There exists a 90% chance that in December 1998, the actual smoothed number will fall somewhere between 79 and 141.

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 15 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 consensus minimum value of 8.8 that occurred in October 1996.

Note: Please visit <http://www.sec.noaa.gov> for solar minimum and Cycle 23 discussions.

Mean Monthly Sunspot Numbers Jan 1950 - Jun 1998

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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	122.3
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	62.2	61.3	49.8	57.9	42.2	22.4	56.4	35.6	48.9	54.6
1994	57.8	35.5	31.7	16.1	17.8	28.0	35.1	22.5	25.7	44.0	18.0	26.2	29.9
1995	24.2	29.9	31.1	14.0	14.5	15.6	14.5	14.3	11.8	21.1	9.0	10.0	17.5
1996	11.5	4.4	9.2	4.8	5.5	11.8	8.2	14.4	1.6	0.9	17.9	13.3	8.6 m
1997	5.7	7.6	8.7	15.5	18.5	12.7	10.4	24.4	51.3	22.8	39.0	41.2	21.5
1998	32.3	40.7	54.8	53.3	56.9	70.5							51.4

Values are preliminary after Dec 97. For the yearly means, each 'M' marks a sunspot cycle maximum and each 'm' a minimum.

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H α SOLAR FLARES

JUNE 1998

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	(Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
															Time (UT)	Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)	
SVTO	01	0657	0700	0721	N22	W08	8227	05	31.7	24	SF		3	E		16		
SVTO	02	1252	1253	1300	N30	W22	8227	05	31.8	8	SF		3	E		22		
GOES		1418	1423	1428						10		B 7.7						3.6E-04
GOES	03	0234	0303	0357						83		C 1.4						5.0E-03
GOES		1307	1310	1314	N27	E65	8233			7	SF	B 5.3						1.8E-04
RAMY		1310	1311	1315	N29	E64	8233	06	8.6	5	SF		3	E		26		H
SVTO		1311	1311	1318	N27	E65	8233	06	8.6	7	SF		3	E		53		H
HOLL		1354	1355	1401	N27	E65	8233	06	8.6	7	SF		3	E		30		
SVTO		1355	1355	1401	N27	E64	8233	06	8.6	6	SF		3	E		18		H
SVTO		1416	1417	1420	N27	E64	8233	06	8.6	4	SF		3	E		15		H
HOLL		1416	1417	1420	N27	E65	8233	06	8.6	4	SF		3	E		16		
GOES		1424	1428	1432			8233			8		B 4.7						2.0E-04
HOLL		1427	1428	1432	N27	E65	8233	06	8.7	5	SF		3	E		50		
SVTO		1427	1428	1434	N26	E64	8233	06	8.6	7	SF		3	E		12		H
HOLL		1504	1509	1511	S21	E67	8232	06	8.8	7	SF		3	E		38		
HOLL		1508	1509	1519	N26	E65	8233	06	8.7	11	SF		3	E		38		
SVTO		1509	1512	1515	N27	E63	8233	06	8.5	6	SF		3	E		29		H
SVTO		1550	1551	1553	N25	E64	8233	06	8.6	3	SF		3	E		10		
SVTO		1612	1619	1640	N25	E64	8233	06	8.6	28	SF		3	E		27		F
HOLL		1615	1621	1636	N27	E62	8233	06	8.5	21	SF		3	E		31		
GOES		1617	1621	1625			8233			8		B 4.0						1.7E-04
RAMY		1619	1619	1626	N28	E64	8233	06	8.7	7	SF		3	E		12		
HOLL		1922	1925	1931	S22	E66	8232	06	8.9	9	SF		3	E		25		
GOES		2301	2308	2313						12		C 1.6						7.8E-04
SVTO	04	0821	0822	0825	S25	E52	8232	06	8.4	4	SF		3	E		24		
GOES		1120	1124	1127	S23	E49	8232			7	SF	B 7.0						2.1E-04
SVTO		1122	1125	1128	S23	E49	8232	06	8.2	6	SF		3	E		37		FH
SVTO		1459	1459	1502	S22	E52	8232	06	8.6	3	SF		3	E		10		F
HOLL		1459	1459	1504	S23	E47	8232	06	8.2	5	SF		3	E		21		
HOLL		1614	1615	1621	S25	E55	8232	06	8.9	7	SF		3	E		29		
SVTO		1615	1615	1621	S24	E54	8232	06	8.8	6	SF		3	E		13		F
GOES		2034	2039	2046	S27	E51	8232			12	SF	C 1.0						6.1E-04
HOLL		2038	2039	2043	S27	E51	8232	06	8.8	5	SF		3	E		73		
GOES		2128	2143	2149	S25	E49	8232			21	SF	C 1.0						1.2E-03
HOLL		2137	2144	2152	S25	E49	8232	06	8.7	15	SF		3	E		32		
HOLL	05	0029	0031	0036	N27	E45	8233	06	8.5	7	SF		3	E		16		
GOES		0302	0308	0313						11		B 6.7						4.0E-04
GOES		0439	0445	0451	S26	E43	8232			12	SF	C 1.4						6.8E-04
LEAR		0444	0444	0450	S26	E43	8232	06	8.5	6	SF		3	E		29		
GOES		0643	0648	0654	S25	E45	8232			11	SF	B 9.0						5.2E-04
SVTO		0647	0648U	0655D	S25	E45	8232	06	8.8	8D	SF		3	E		11		F
SVTO		0837	0838	0900	N26	E40	8233	06	8.5	23	SF		3	E		21		
GOES		0947	0953	0957	S23	E43	8232			10	SF	C 1.2						5.5E-04
SVTO		0950	0951	0958	S23	E43	8232	06	8.7	8	SF		3	E		34		F
GOES		1415	1420	1423	S24	E41	8232			8	SF	C 1.1						3.5E-04
RAMY		1419	1419	1423	S23	E43	8232	06	8.9	4	SF		3	E		27		
HOLL		1419	1419	1425	S24	E42	8232	06	8.8	6	SF		3	E		68		
SVTO		1419	1419	1427	S24	E41	8232	06	8.8	8	SF		3	E		54		F
GOES		1503	1508	1514						11		B 6.8						3.6E-04
HOLL		2254	2254	2257	S23	E37	8232	06	8.8	3	SF		3	E		15		
SVTO	06	0658	0659	0706	S18	E31	8232	06	8.6	8	SF		3	E		11		F
GOES	07	1107	1112	1117	N21	W16	8236			10	SF	B 5.2						2.5E-04
SVTO		1112	1115	1121	N21	W16	8236	06	6.2	9	SF		3	E		20		F
GOES		1443	1454	1516	S23	E12	8232			33	1F	C 3.2						4.3E-03
HOLL		1446	1453	1528	S23	E12	8232	06	8.5	42	1F		3	E		208		F
SVTO		1447	1451U	1512	S26	E11	8232	06	8.5	25	1F		3	E		131		F
RAMY		1448	1453	1516	S26	E11	8232	06	8.5	28	1F		3	E		126		
SVTO		1538	1546	1555	S19	E14	8232	06	8.7	17	SF		3	E		16		F
HOLL		1613	1613	1618	S26	E13	8232	06	8.7	5	SF		3	E		13		F
GOES	08	0335	0340	0349						14		B 4.1						3.1E-04
GOES		0639	0651	0806						87		B 9.1						3.4E-03

H α SOLAR FLARES

JUNE 1998

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
GOES	08	0945	0957	1031						46	B	9.0						1.8E-03
GOES		1349	1353	1358						9	B	4.3						2.1E-04
GOES		1556	1607	1614	S18	W03	8232			18	2N	C	5.2					3.4E-03
HOLL		1558	1603	1700	S18	W03	8232	06	8.4	62	2N			3	E	353		FH
GOES		1945	2009	2056	S30	W08				71	SF	C	1.0					3.7E-03
HOLL		1956	2004	2008	S30	W08	8232	06	8.2	12	SF			3	E	19		F
GOES	09	0425	0432	0441						16	B	6.1						5.6E-04
GOES		0835	0839	0846						11	B	4.0						2.4E-04
GOES		1610	1613	1615						5	B	4.3						1.1E-04
GOES	10	0224	0232	0244						20	C	1.3						1.2E-03
GOES		0402	0408	0413						11	C	1.2						6.3E-04
GOES		0700	0707	0717						17	B	7.2						6.1E-04
GOES		2311	2414	2520						129	C	1.1						6.9E-03T
SVTO	11	0606	0607	0609	S22	W61	8240	06	6.6	3	SF		2	E		20		
GOES		0957	1027	1118						81	M	1.4						5.0E-02
HOLL		2249	2254	2302	S20	W68	8240	06	6.7	13	SF		3	E		70		
GOES	12	0023	0027	0031						8	B	6.7						2.9E-04
GOES		0032	0202	0248						136	C	1.1						6.7E-03
GOES		0249	0252	0254	S19	W70	8240			5	SF	C	1.2					3.2E-04
LEAR		0251	0252	0256	S19	W70	8240	06	6.8	5	SF		3	E		29		
GOES		0452	0456	0459	N18	E11	8238			7	SF	B	9.3					3.2E-04
SVTO		0455	0456	0501	N18	E11	8239	06	13.0	6	SF		3	E		22		
SVTO		0536	0540	0545D	S22	W73	8240	06	6.6	9D	SF		3	E		50		
GOES		0537	0540	0542	S22	W74	8240			5	SF	C	1.4					3.4E-04
LEAR		0539	0540	0544	S22	W74	8240	06	6.5	5	SF		3	E		21		
GOES		0613	0617	0621						8	C	1.0						4.2E-04
SVTO		0803	0804	0808	S22	W76	8240	06	6.5	5	SF		3	E		30		
LEAR		0803	0805	0807	S22	W75	8240	06	6.6	4	SF		3	E		28		
GOES		0820	0827	0831						11	C	1.1						5.5E-04
GOES		0914	0919	0921	S22	W77	8240			7	1F	C	3.1					6.9E-04
SVTO		0916	0919	0925D	S22	W77	8240	06	6.5	9D	1F		3	E		140		
HOLL		1404	1408	1414	S19	W77	8240	06	6.7	10	SF		3	E		47		
HOLL		1558	1603	1605	S19	W77	8240	06	6.8	7	SF		3	E		19		
GOES		2106	2113	2129	S25	E54	8242			23	SF	C	2.1					2.1E-03
HOLL		2110	2110	2148	S25	E54	8242	06	17.1	38	SF		3	E		92		
HOLL		2219	2233	2244	S23	E54	8242	06	17.1	25	SF		3	E		23		
GOES		2247	2250	2253						6	B	9.0						2.8E-04
HOLL		2304	2319	2333	S24	E53	8242	06	17.0	29	SF		3	E		49		
GOES		2311	2318	2327	S24	E53	8242			16	C	1.8						1.4E-03
GOES	13	0149	0155	0200						11	C	1.4						8.2E-04
GOES		0215	0357	0621						246	C	2.6						T
LEAR		0309	0311	0315	S22	E54	8242	06	17.3	6	SF		3	E		16		
GOES		0415	0420	0428	S27	E54	8242			13	1N	M	1.9					1.1E-02
LEAR		0418	0419	0439	S27	E54	8242	06	17.4	21	1N		3	E		128		FH
SVTO		0623	0625	0630	S24	W59	8232	06	8.7	7	SF		3	E		36		
SVTO		0635E	0637U	0647D	S21	W89	8240	06	6.4	12D	SF		2	E		39		
GOES		0909	0917	0932						23	C	3.4						3.6E-03
GOES		1203	1210	1215						12	C	1.3						8.1E-04
HOLL		1423	1423	1426	S26	E46	8242	06	17.2	3	SF		3	E		16		
GOES		1458	1532	1554			8237			56	C	2.9						7.1E-03
HOLL		1524	1532	1555	S25	W04	8237	06	13.3	31	1F		3	E		123		UF
SVTO		1527E	1527U	1540D	S28	W12	8237	06	12.7	13D	SF		2	E		89		UF
RAMY		1527	1527	1545	S27	W01	8237	06	13.6	18	SF		4	E		25		UH
HOLL		1555	1556	1613	S28	W12	8237	06	12.7	18	SF		3	E		60		
GOES		1719	1728	1732	S23	E43	8242			13	SF	C	2.4					1.2E-03
SVTO		1721	1728	1740	S24	E44	8242	06	17.1	19	SF		3	E		78		FH
HOLL		1721	1728	1741	S23	E43	8242	06	17.0	20	SF		3	E		93		H
GOES		1755	1759	1802	S20	E45	8242			7	SF	C	1.3					4.3E-04
HOLL		1757	1758	1807	S22	E43	8242	06	17.0	10	SF		3	E		55		
RAMY		1757	1759	1803	S20	E45	8242	06	17.2	6	SF		4	E		19		
HOLL		2206	2210	2214	S23	E40	8242	06	17.0	8	SF		3	E		20		
GOES		2349	2403	2420						31	B	9.4						
GOES	14	0103	0109	0113						10	C	3.0						1.1E-03

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H α SOLAR FLARES

JUNE 1998

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/	CMP	Dur	Imp	Obs	Time	Area Measurement		Corr	Remarks	
							USAF						Region	Mo			Day	(Min)	Opt	Xray	See	Type	(UT)	(10-6 Disk)	(Sq Deg)
HOLL	14	0105	0109	0119	S25	E46	8242	06	17.6	14	1N		3	E		111	
LEAR		0106	0109	0115	S22	E42	8242	06	17.3	9	SF		3	E		52	
LEAR		0257	0257	0300	S22	E41	8242	06	17.3	3	SF		3	E		14	
GOES		0432	0436	0442	S31	E12	8245			10	SF B 6.5						3.5E-04
SVTO		0434	0438	0443	S31	E12	8245	06	15.1	9	SF		3	E		24	F
GOES		0517	0521	0524	S22	E35	8242			7	SF B 8.1						2.7E-04
LEAR		0519	0521	0527	S22	E35	8242	06	16.9	8	SF		3	E		16	
SVTO		0521E	0521U	0531	S21	E38	8242	06	17.1	100	SF		3	E		37	F
SVTO		0739	0739	0744	N15	E62	8243	06	19.0	5	SF		3	E		15	
GOES		0836	0839	0842	N15	E62	8243			6	SF B 6.6						2.1E-04
SVTO		0838	0841	0844	N15	E62	8243	06	19.0	6	SF		3	E		11	
LEAR		0839	0839	0843	N13	E60	8243	06	18.9	4	SF		3	E		12	
GOES		1525	1529	1536	N14	E59	8243			11	SF B 6.5						3.7E-04
HOLL		1528	1529	1540	N14	E59	8243	06	19.1	12	SF		3	E		53	
SVTO		1528	1530	1542	N15	E59	8243	06	19.1	14	SF		3	E		32	F
GOES	15	0600	0750	0937			8232			217	C 1.4						1.4E-02T
HOLL		1325	1328	1330	N34	E10	8244	06	16.3	5	SF		3	E		16	
GOES	16	1803	1842	1928						85	M 1.0						3.7E-02
GOES	17	1912	1920	1933	N18	E20	8243			21	SF B 5.5						5.4E-04
HOLL		1915	1921	1941	N18	E20	8243	06	19.3	26	SF		3	E		31	FH
GOES	18	1147	1151	1155						8	B 2.4						1.0E-04
GOES		1225	1228	1232						7	B 2.4						9.2E-05
GOES		1436	1440	1444						8	B 1.8						7.8E-05
GOES		1502	1508	1513						11	B 1.9						1.1E-04
GOES		1716	1721	1729						13	B 4.2						2.4E-04
GOES		1906	1915	1922	N20	E07	8243			16	SF B 2.3						1.9E-04
HOLL		1909	1910	1917	N20	E07	8243	06	19.3	8	SF		3	E		12	
GOES		1924	1928	1932	N21	E06	8243			8	SF B 2.9						1.2E-04
HOLL		1930	1931	1937	N21	E06	8243	06	19.3	7	SF		3	E		12	
GOES		2203	2219	2228						25	B 9.1						9.8E-04
GOES	19	0041	0045	0050	N15	E02	8243			9	SF B 2.3						1.2E-04
HOLL		0043	0045	0050	N15	E02	8243	06	19.2	7	SF		3	E		14	
GOES		0149	0153	0157						8	B 2.2						9.1E-05
GOES		0229	0230	0241						12	B 1.6						1.2E-04
GOES		0435	0436	0440						5	B 1.7						5.0E-05
GOES		0453	0457	0459						6	B 2.2						6.7E-05
GOES		0648	0711	0753	S32	E36	8249			65	SF B 8.5						2.6E-03
SVTO		0649	0700U	0717D	S29	E36	8249	06	22.1	28D	SF		1	E		49	
LEAR		0652	0656	0728	S32	E36	8249	06	22.1	36	SF		4	E		29	EH
GOES		2048	2051	2054						6	B 2.8						8.7E-05
GOES		2201	2210	2217						16	B 3.8						2.8E-04
HOLL	20	1255E	1427	1532D	N16	W23	8243	06	18.8	157D	2N		3	E		274	FH
GOES		1412	1430	1444	N13	W23	8243			32	1N C 4.0						4.9E-03
SVTO		1419	1426	1456	N13	W23	8243	06	18.9	37	1N		3	E		111	H
RAMY		1422	1423	1442	N13	W24	8243	06	18.8	20	SF		3	E		34	
GOES		2025	2038	2044	N16	W21	8243			19	SF B 5.0						4.8E-04
HOLL		2028	2028	2033	N16	W21	8243	06	19.3	5	SF		3	E		26	F
GOES		2054	2100	2104	N16	W21	8243			10	1F C 1.9						7.4E-04
HOLL		2057	2100	2131	N16	W21	8243	06	19.3	34	1F		3	E		104	F
HOLL		2148	2151	2158	N19	W22	8243	06	19.2	10	SF		3	E		24	F
HOLL		2201	2210	2228	N17	W23	8243	06	19.2	27	SF		3	E		97	F
GOES		2205	2210	2214	N17	W23	8243			9	C 3.9						1.6E-03
HOLL		2329	2337	2342	N16	W23	8243	06	19.2	13	SF		3	E		13	
HOLL	21	0031	0032	0036	N16	W24	8243	06	19.2	5	SF		3	E		11	
GOES		0058	0102	0104	N17	W23	8243			6	SF B 6.8						2.0E-04
HOLL		0101	0102	0106	N17	W23	8243	06	19.3	5	SF		3	E		17	
GOES		0439	0512	0551	N17	W25	8243			72	SF C 2.7						9.0E-03
LEAR		0459	0515	0519	N17	W25	8243	06	19.3	20	SF		3	E		18	
SVTO		0506	0507	0521	N15	W27	8243	06	19.2	15	SF		3	E		25	F
GOES		0726	0733	0739						13	C 1.6						1.1E-03
GOES		0953	1002	1047						54	C 3.4						9.1E-03

H α SOLAR FLARES

JUNE 1998

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Region	NOAA/ USAF	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Area Measurement			Remarks
																Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
GOES	21	1800	1808	1813	N16	W38	8243				13	SF	C 1.2						6.4E-04
HOLL		1802	1808	1814	N16	W38	8243		06	18.9	12	SF		3	E		37		2.3E-04
GOES		2046	2051	2055							9		B 5.4						8.0E-04
GOES		2103	2109	2113	N16	W39	8243				10	SF	C 2.1						
HOLL		2106	2109	2116	N16	W39	8243		06	18.9	10	SF		3	E		32		
GOES	22	0008	0014	0025							17		B 5.8						5.2E-04
SVTO		0422E	0437	0512	N15	W39	8243		06	19.2	50D	SF		2	E		75		
GOES		0427	0443	0501	N16	W46	8243				34	SF	C 2.9						4.5E-03
LEAR		0432	0433	0442	N16	W46	8243		06	18.7	10	SF		4	E		20		FE
GOES		0834	0837	0843							9		B 4.0						1.9E-04
GOES		0953	0956	0958							5		B 4.0						9.7E-05
HOLL		1457	1458	1502	N37	W78	8244		06	16.3	5	SF		3	E		34		
SVTO		1458	1459	1502	N36	W81	8244		06	16.1	4	SF		2	E		21		
SVTO		1605	1606	1612	N16	W61	8251		06	18.0	7	SF		3	E		15		F
GOES		1731	1735	1743							12		B 6.8						3.9E-04
GOES		2024	2027	2030	N17	E80	8253				6	SF	B 4.2						1.3E-04
HOLL		2025	2027	2030	N17	E80	8253		06	28.9	5	SF		3	E		11		
HOLL		2032	2036	2044	N18	E82	8253		06	29.1	12	SF		3	E		36		
GOES		2110	2113	2115							5		C 1.4						3.2E-04
HOLL		2247	2247	2254	N16	W52	8243		06	19.0	7	SF		3	E		11		
GOES		2345	2350	2355	S26	W18	8249				10	SF	B 4.7						2.6E-04
HOLL		2349	2350	2356	S26	W18	8249		06	21.6	7	SF		3	E		11		
HOLL	23	0102	0117	0153	N17	E76	8253		06	28.8	51	SF		3	E		42		
GOES		0254	0304	0324							30		B 5.2						8.3E-04
SVTO		0527	0529	0548	N16	E76	8253		06	29.0	21	SF		2	E		39		H
GOES		0928	0935	0946	N17	E73	8253				18	SF	B 3.9						3.8E-04
SVTO		0931	0932	0944	N17	E73	8253		06	28.9	13	SF		3	E		23		F
GOES		1030	1033	1037	N16	E72	8253				7	SF	C 1.3						3.6E-04
SVTO		1031	1033	1041	N16	E72	8253		06	28.9	10	SF		3	E		58		FH
GOES		1516	1519	1521	N14	E70	8253				5	SF	B 3.0						7.2E-05
SVTO		1518	1519	1524	N15	E69	8253		06	28.9	6	SF		3	E		30		
HOLL		1518	1519	1527	N14	E70	8253		06	28.9	9	SF		3	E		36		
GOES		1521	1524	1527			8253				6		B 7.1						1.7E-04
GOES		1657	1700	1702							5		B 2.6						6.8E-05
GOES		1915	1923	1927	N15	E68	8253				12	SF	C 1.9						5.9E-04
HOLL		1918	1922	1930	N15	E68	8253		06	28.9	12	SF		3	E		94		
GOES		2239	2242	2245							6		B 2.5						8.5E-05
HOLL		2302	2303	2308	N16	W68	8249		06	18.8	6	SF		3	E		13		
GOES	24	0225	0228	0232							7		B 3.7						1.3E-04
GOES		0318	0321	0324							6		B 4.9						1.4E-04
GOES		0352	0355	0357							5		B 4.8						1.2E-04
GOES		0441	0451	0454	N16	E60	8253				13	SF	C 1.0						6.5E-04
SVTO		0450	0451	0454	N16	E62	8253		06	28.9	4	SF		3	E		23		
LEAR		0451	0451	0455	N16	E60	8253		06	28.7	4	SF		3	E		17		
GOES		0502	0508	0518							16		C 1.2						1.0E-03
GOES		0902	0906	0908	N16	E58	8253				6	SF	C 1.3						2.2E-04
LEAR		0905	0906	0910	N16	E58	8253		06	28.8	5	SF		3	E		21		
SVTO		0905	0907	0910	N16	E58	8253		06	28.8	5	SF		3	E		27		
GOES		0942	0946	0950							8		B 4.3						1.8E-04
GOES		1025	1033	1039							14		B 7.6						5.3E-04
GOES		1108	1113	1117							9		B 4.1						2.0E-04
GOES		1128	1138	1147	N15	E62	8253				19	SF	C 1.6						1.4E-03
SVTO		1131	1136	1151	N15	E62	8253		06	29.2	20	SF		3	E		37		F
GOES		1211	1214	1216	N19	E61	8253				5	SF	B 8.3						2.1E-04
SVTO		1212	1213	1216	N19	E61	8253		06	29.2	4	SF		3	E		20		
HOLL		1353	1358	1405	N16	E63	8253		06	29.3	12	SF		3	E		10		
HOLL		1747	1802	1823	N19	E57	8253		06	29.1	36	SF		3	E		67		F
GOES		1758	1803	1806	N19	E57					8		C 1.6						5.0E-04
HOLL		1841	1852	1900	N19	E56	8253		06	29.0	19	SF		3	E		27		F
GOES		1850	1854	1856	N19	E56	8253				6		B 9.7						2.8E-04
GOES		1901	1904	1910							9		C 2.7						1.1E-03
GOES		1911	1918	1928							17		C 3.8						3.4E-03
HOLL		2014	2033	2038	N16	E57	8253		06	29.2	24	SF		3	E		23		
GOES		2234	2238	2240							6		B 4.7						1.4E-04
GOES		2243	2247	2249							6		B 5.3						1.5E-04

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Jun 98

H α SOLAR FLARES

JUNE 1998

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Time (UT)	Area Measurement		Remarks
																Apparent (10-6 Disk)	Corr (Sq Deg)	
GOES	25	0137	0140	0143						6		B 4.6						1.4E-04
GOES		0231	0237	0240						9		B 5.8						2.5E-04
GOES		0318	0340	0354						36		C 1.6						2.3E-03
GOES		0519	0522	0526						7		B 4.0						1.6E-04
GOES		0625	0630	0633						8		B 5.2						2.3E-04
GOES		0810	0817	0827						17		C 1.1						9.6E-04
GOES		1432	1435	1438						6		B 9.5						3.0E-04
GOES		1517	1522	1533						16		B 7.2						6.3E-04
HOLL		1834	1839	1855	N18	E42	8253	06	29.0	21	SF		3	E		43		
GOES		1836	1839	1849	N18	E42	8253			13		C 1.0						6.9E-04
GOES		1953	1956	2000						7		B 6.8						2.5E-04
GOES		2010	2107	2119	N16	E41	8253			69	SF	C 6.5						1.2E-02
HOLL		2038	2047	2221	N16	E41	8253	06	29.0	103	SF		3	E		69		F
GOES		2145	2151	2209						24		C 2.0						2.6E-03
HOLL	26	2149	2201	2211	N17	E28	8253	06	29.0	22	SF		3	E		20		
GOES		2255	2302	2327						32		C 2.1						3.1E-03
GOES	27	0112	0121	0131	N18	E26				19	1N	M 1.0						7.7E-03
HOLL		0115	0119	0146D	N19	E25	8253	06	28.9	31D	1N		3	E		166		Z
LEAR		0116	0119	0151	N18	E26	8253	06	29.0	35	1N		4	E		133		FE
GOES		0814	0817	0821						7		B 8.7						3.0E-04
GOES		0844	0848	0857	N18	E24	8253			13	SF	C 1.1						7.3E-04
LEAR		0847	0847	0900	N18	E24	8253	06	29.2	13	SF		3	E		18		
HOLL		1302	1307	1348	N16	E18	8253	06	28.9	46	SF		3	E		59		
GOES		1304	1307	1309	N16	E18	8253			5		B 6.8						1.7E-04
HOLL		1304	1441	1509	N29	W26	8257	06	25.5	125	SF		3	E		27		
RAMY		1305	1305	1309	N18	E20	8253	06	29.1	4	SF		3	E		10		
SVTO		1306	1307	1310	N17	E21	8253	06	29.1	4	SF		3	E		16		
HOLL		1349	1355	1412	N16	E18	8253	06	28.9	23	SF		3	E		28		
GOES		1350	1355	1405	N16	E18				15		B 7.6						5.8E-04
SVTO		1411	1412	1416	N22	E84		07	4.0	5	SF		3	E		16		H
HOLL		1813	1816	1831	N20	E18	8253	06	29.1	18	SF		3	E		45		
GOES		1813	1818	1822	N20	E18				9	SF	C 1.7						7.4E-04
HOLL		1847	1857	1925	N18	E19	8253	06	29.2	38	SF		3	E		60		
GOES		1849	1857	1900	N18	E19	8253			11		B 9.2						4.8E-04
GOES		1904	1907	1910						6		C 1.1						3.6E-04
HOLL		2002	2003	2012	N18	E18	8253	06	29.2	10	SF		3	E		15		
HOLL		2022	2024	2035	N17	E17	8253	06	29.1	13	SF		3	E		19		
GOES		2102	2108	2118						16		C 1.0						7.9E-04
HOLL		2244	2248	2253	N17	E14	8253	06	29.0	9	SF		3	E		24		
GOES	28	0347	0401	0410	N18	E12	8253			23	1F	C 2.9						2.6E-03
LEAR		0353E	0401	0422	N18	E12	8253	06	29.1	29D	1F		4	E		105		EH
SVTO		0405E	0405U	0422	N17	E07	8253	06	28.7	17D	SF		1	E		41		F
GOES		0604	0608	0617						13		B 7.2						5.0E-04
GOES		0628	0633	0640						12		C 1.2						7.8E-04
GOES		1138	1142	1145	N16	E06	8253			7	SF	B 8.8						2.6E-04
SVTO		1141	1142	1145	N16	E06	8253	06	28.9	4	SF		3	E		25		F
SVTO		1425	1425	1429	S23	E72	8260	07	4.1	4	SF		3	E		16		
HOLL		1425	1426	1431	S22	E72	8260	07	4.1	6	SF		3	E		21		F
GOES		1837	1913	1935	N18	E03	8253			58	SF	C 1.2						3.2E-03
HOLL		1912	1916	1918	N18	E03	8253	06	29.0	6	SF		3	E		13		
GOES		1949	2015	2029	N18	E02	8253			40	SF	C 1.6						3.4E-03
HOLL		1958	2003	2007	N18	E02	8253	06	29.0	9	SF		3	E		15		
GOES		2056	2100	2114	N19	E02	8253			18	SF	C 1.8						1.9E-03
HOLL		2059	2059	2112	N19	E02	8253	06	29.0	13	SF		3	E		12		
GOES	29	0614	0627	0640	N19	W03	8253			26	SF	C 1.4						1.8E-03
SVTO		0617	0626	0651	N19	W04	8253	06	28.9	34	SF		3	E		58		F
LEAR		0617	0633	0648	N19	W03	8253	06	29.0	31	SF		3	E		28		F
SVTO		0930	0930	0933	S13	E31	8258	07	1.7	3	SF		3	E		12		
GOES		1703	1706	1710	S14	E26	8258			7	SF	B 6.2						2.3E-04
HOLL		1710	1711	1715	S14	E26	8258	07	1.7	5	SF		3	E		16		
HOLL		2216	2245	2323	S23	E21	8256	07	1.5	67	1F		3	E		154		
GOES		2220	2241	2256	S23	E21				36		C 3.4						6.1E-03
GOES	30	0126	0148	0158	N16	W15	8253			32	1F	C 5.0						5.1E-03

H α SOLAR FLARES

JUNE 1998

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	(Min)	Imp Opt	Xray	See	Obs Type	Time (UT)	Area Measurement		Remarks
																Apparent (10-6 Disk)	Corr (Sq Deg)	
LHOLL	30	0140	0147	0205	N16	W15	8253	06	28.9	25	1F		3	E		111		
GOES		1803	1806	1810	N19	W22	8253			7	SF	B 5.2						1.9E-04
RAMY		1806E	1807U	1814	N19	W22	8253	06	29.1	8D	SF		2	E		12		
GOES		2144	2149	2155						11		B 6.6						3.8E-04
GOES		2255	2301	2307	N19	W26	8253			12	SF	C 1.3						6.7E-04
HOLL		2258	2300	2314	N19	W26	8253	06	29.0	16	SF		3	E		37		

"Remarks"

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

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

NOTE: Beginning July 1997, the times of all GOES X-ray events are now included in this table.

Jun 98

SOLAR RADIO EMISSION

Selected Fixed Frequency Events

JUNE 1998

Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak Mean (10 -22 W/m 2 Hz)	Int	Remarks
07	8800 SVTO	8 S	1449.0	1449.0	1.0	23.0		QL=2 ST=2 TYP=3
08	2695 SVTO	8 S	1559.0	1600.0	1.0	25.0		QL=4 ST=2 TYP=3
	8800 SGMR	4 S/F	1602.0	1603.0	6.0	31.0		QL=4 ST=2 TYP=3
	2695 SGMR	4 S/F	1602.0	1603.0	6.0	57.0		QL=4 ST=2 TYP=3
	8800 SVTO	8 S	1602.0	1602.0	2.0	41.0		QL=2 ST=2 TYP=3
11	2695 SVTO	20 GRF	1128.0	1134.0	13.0	42.0		QL=4 ST=2 TYP=2
	2695 SGMR	20 GRF	1128.0	1134.0	20.0	44.0		QL=4 ST=2 TYP=2
12	2695 PALE	8 S	2109.0	2109.0	1.0	98.0		QL=4 ST=2 TYP=3
	8800 PALE	8 S	2109.0	2109.0	1.0	30.0		QL=4 ST=2 TYP=3
	2695 SGMR	8 S	2109.0	2109.0	1.0	46.0		QL=4 ST=2 TYP=3
13	2695 LEAR	4 S/F	0416.0	0418.0	4.0	42.0		QL=4 ST=2 TYP=3
	8800 LEAR	4 S/F	0416.0	0418.0	6.0	94.0		QL=4 ST=2 TYP=3
	8800 SVTO	8 S	0418.0	0418.0	1.0	50.0		QL=2 ST=2 TYP=3
	2695 SVTO	8 S	0418.0	0418.0	1.0	45.0		QL=2 ST=2 TYP=3
20	2695 SGMR	4 S/F	1457.0	1459.0	3.0	59.0		QL=4 ST=3 TYP=3
	2695 SGMR	4 S/F	1458.0	1459.0	4.0	59.0		QL=4 ST=2 TYP=3
21	2695 LEAR	8 S	0507.0	0507.0	1.0	25.0		QL=4 ST=2 TYP=3
22	2695 LEAR	20 GRF	0429.0	0434.0	8.0	24.0		QL=4 ST=2 TYP=2
	2695 SVTO	20 GRF	0430.0	0434.0	5.0	20.0		QL=4 ST=3 TYP=2
25	8800 SGMR	8 S	2047.0	2047.0	1.0	57.0		QL=2 ST=2 TYP=3
27	2695 LEAR	4 S/F	0115.0	0116.0	10.0	41.0		QL=4 ST=2 TYP=3
	2695 PALE	8 S	0116.0	0116.0	1.0	40.0		QL=4 ST=2 TYP=3
	8800 LEAR	4 S/F	0118.0	0123.0	18.0	33.0		QL=4 ST=2 TYP=3
28	8800 SGMR	8 S	1141.0	1141.0	U	90.0		QL=4 ST=2 TYP=3
	8800 SVTO	8 S	1141.0	1141.0	U	130.0		QL=2 ST=2 TYP=3

Reports are received routinely from the following observatories:

LEAR = Learmonth

PALE = Palehua

SGMR = Sagamore Hill

SVTO = San Vito

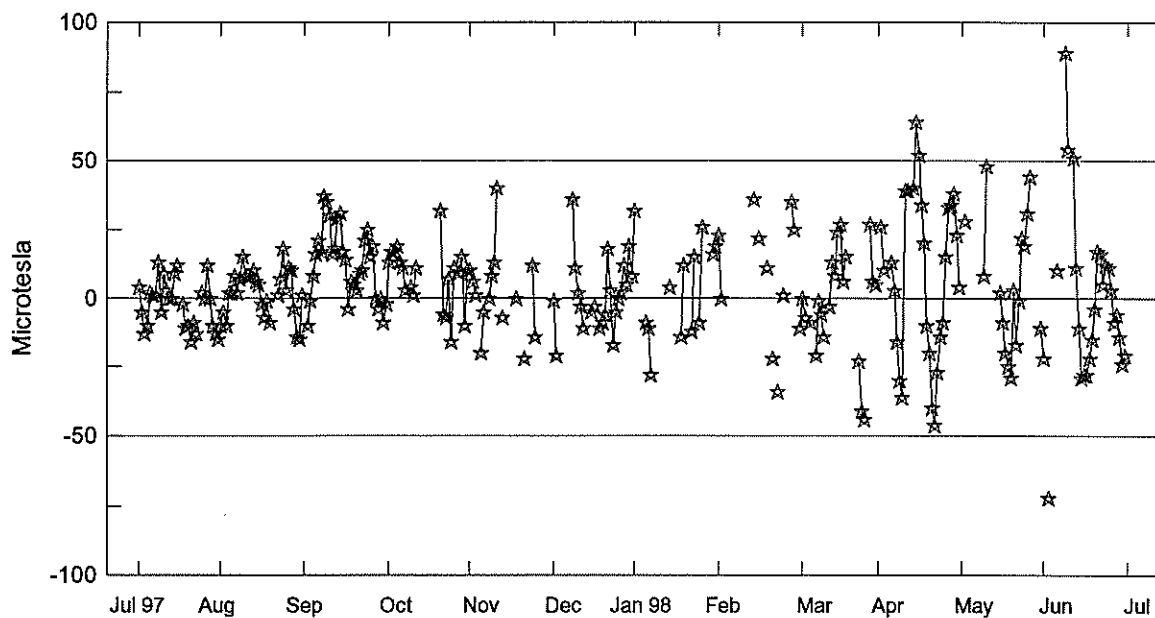
Explanation of Type Code:

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 Precursor	41 Group of Bursts	47 Great Burst
6 Minor	23 Simple 3AF	29 Post Burst Increase	42 Series of Bursts	48 Major
1A Simple 1A	4A Simple 2AF	24PF Post Rise F	27F Rise and Fall F	
3A Simple 2A	40 Rise Only	16A Fall A	27AF Rise and Fall AF	
21A Simple 3A GRF	40F Rise Only F	260 Fall Only	31A Post Burst Decrease A	
2A Simple 1AF	4P Post Rise	26F Fall F	32A Absorption A	

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

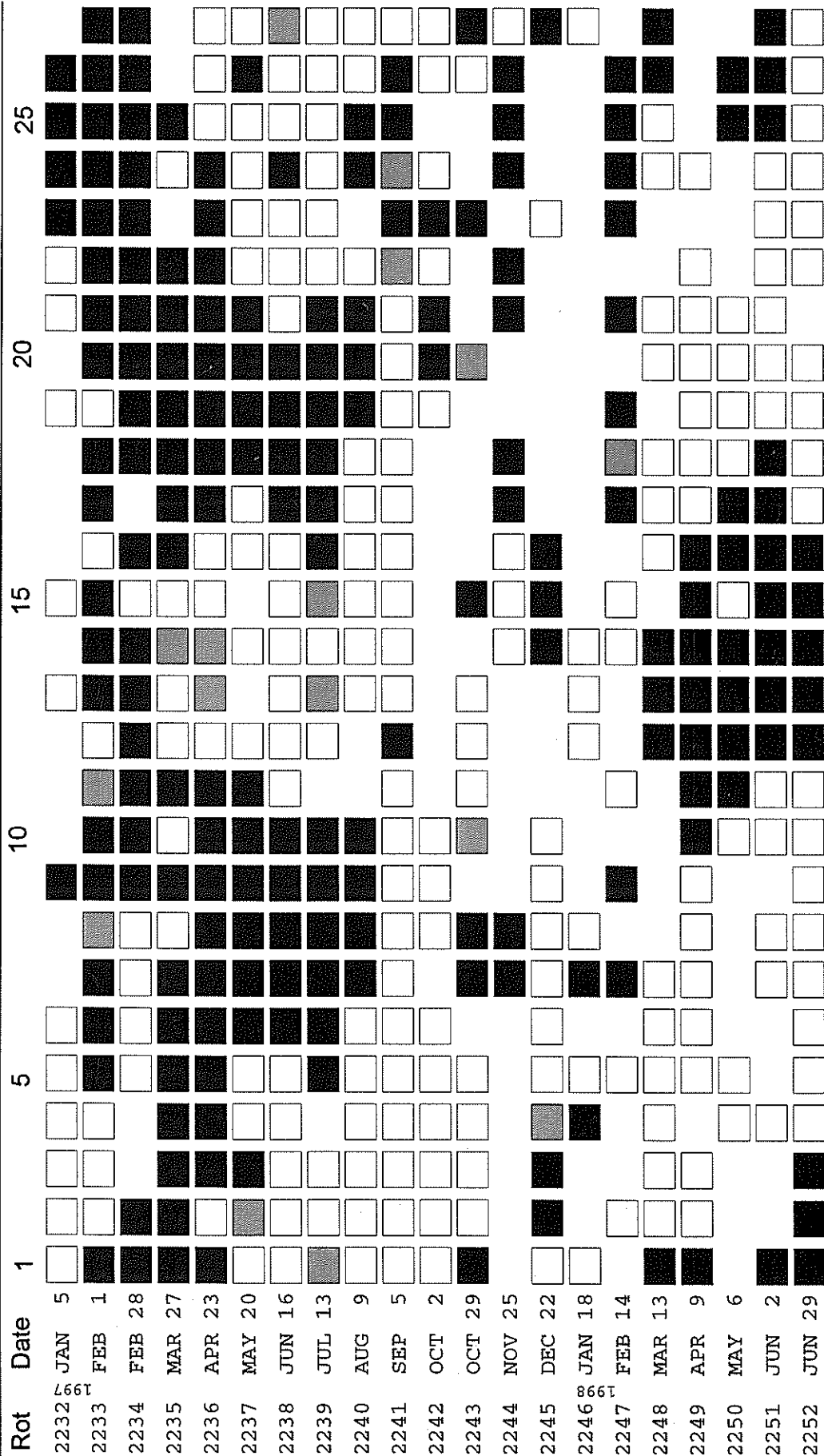
Stanford Mean Solar Magnetic Field (Microtesla) "Sun-As-A-Star"

35
Jun 98



Day	Jul 97	Aug	Sep	Oct	Nov	Dec	Jan 98	Feb	Mar	Apr	May	Jun
1	4	-5	-10	13	6	-1	---	---	---	26	28	---
2	-5	-10	-1	17	1	-21	---	---	-11	10	---	-72
3	-13	2	8	17	---	---	---	---	0	---	---	---
4	-10	2	16	19	-20	---	-9	---	-7	---	---	---
5	-2	8	21	13	-5	---	-11	---	---	13	---	10
6	1	2	17	11	---	---	-28	---	-9	3	---	---
7	1	7	37	3	0	---	---	---	---	-16	---	---
8	13	15	35	---	8	36	---	---	-21	-30	---	89
9	-5	8	30	4	13	11	---	---	-1	-36	8	54
10	9	8	16	1	40	2	---	---	-6	39	48	---
11	3	8	18	11	---	-3	---	---	-14	39	---	51
12	0	10	29	---	-7	-11	---	---	---	---	---	11
13	0	6	31	---	---	---	4	36	-3	40	---	-11
14	9	5	17	---	---	---	---	---	13	64	---	-29
15	12	-2	14	---	---	-5	---	22	8	52	2	-28
16	---	-7	-4	---	---	-3	---	---	24	34	-9	-28
17	-2	-1	6	---	0	---	-14	---	27	20	-20	-22
18	-11	-9	5	---	---	-11	12	11	6	-10	-25	-15
19	-10	---	3	---	---	-9	---	---	15	-20	-29	-4
20	-16	---	9	32	-22	-6	---	-22	---	-40	3	17
21	-9	1	10	-6	---	18	-12	---	---	-46	-17	16
22	-13	7	21	-7	---	3	15	-34	---	-27	-1	5
23	---	18	25	7	12	-17	---	---	---	-14	22	12
24	2	3	15	-16	-14	-5	-9	1	-23	-9	19	11
25	0	11	19	11	---	0	26	---	-41	15	31	3
26	12	10	0	---	---	2	---	---	-44	33	44	-9
27	0	-4	-4	9	---	12	---	35	---	34	---	-6
28	-10	-14	0	15	---	5	---	25	27	38	---	-14
29	-13	-15	-9	-10	---	19	16	---	6	23	---	-24
30	-15	1	-2	10	---	8	19	---	5	4	-11	-21
31	-10	---	---	10	---	32	23	---	---	---	-22	---

STANFORD MEAN SOLAR MAGNETIC FIELD



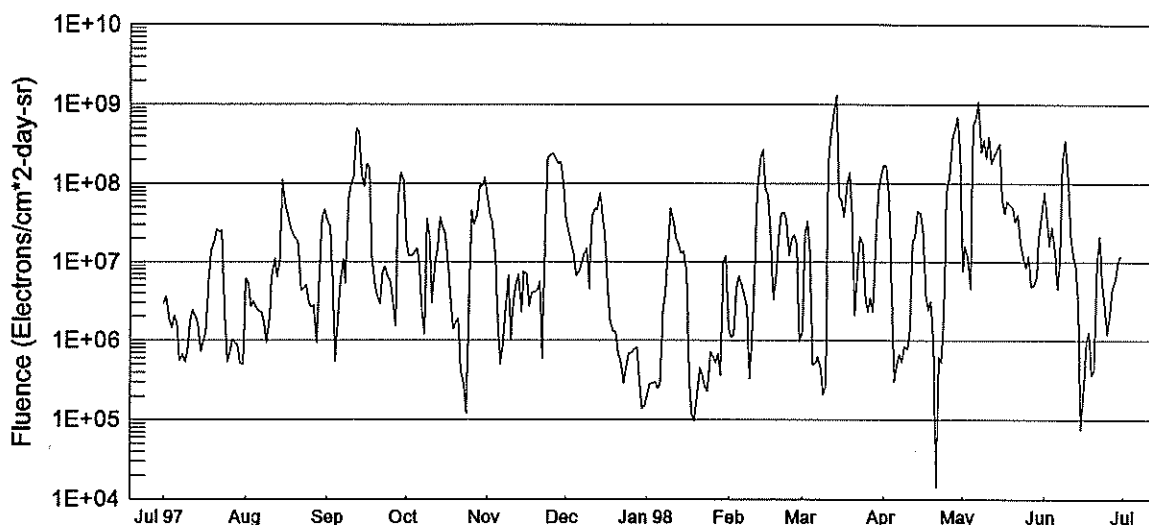
Mean Solar Magnetic Field Polarity: = field > 2 microT; = -2 microT ≤ field ≤ 2 microT

= 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.

GOES Daily Electron Fluence Jul 97 - Jun 98

37
Jun 98



Day	Jul 97	Aug	Sep	Oct	Nov	Dec	Jan 98	Feb	Mar	Apr	May	Jun
1	2.9E+06	6.1E+06	3.5E+07	1.9E+07	6.9E+07	3.8E+07	2.0E+05	1.4E+06	1.3E+06	1.7E+08	7.6E+06	7.8E+07
2	3.6E+06	5.4E+06	2.8E+07	1.2E+07	3.8E+07	2.4E+07	2.8E+05	1.1E+06	2.3E+07	1.7E+08	1.6E+07	3.9E+07
3	1.8E+06	2.6E+06	5.5E+06	1.2E+07	3.3E+07	1.7E+07	2.9E+05	1.2E+06	3.3E+07	6.2E+07	1.1E+07	1.6E+07
4	1.4E+06	3.1E+06	5.4E+05	1.3E+07	1.2E+07	1.3E+07	3.0E+05	4.6E+06	1.3E+07	7.3E+06	4.5E+06	2.8E+07
5	2.0E+06	2.5E+06	1.7E+06	1.5E+07	1.8E+06	6.7E+06	2.5E+05	6.6E+06	4.9E+05	3.0E+05	5.7E+08	1.4E+07
6	1.6E+06	2.3E+06	5.4E+06	1.1E+07	5.0E+05	7.4E+06	2.8E+05	4.9E+06	5.2E+05	4.9E+05	6.4E+08	4.5E+06
7	5.5E+05	2.2E+06	1.1E+07	2.4E+06	8.7E+05	9.8E+06	2.2E+06	3.9E+06	6.3E+05	6.7E+05	1.1E+09	1.1E+07
8	6.6E+05	1.7E+06	5.3E+06	1.2E+06	2.2E+06	1.3E+07	4.0E+06	2.6E+06	4.5E+05	5.3E+05	2.5E+08	2.0E+08
9	5.2E+05	9.3E+05	6.6E+07	3.6E+07	6.7E+06	1.5E+07	1.7E+07	3.3E+05	2.1E+05	8.5E+05	3.6E+08	3.5E+08
10	7.6E+05	1.9E+06	1.0E+08	2.2E+07	1.0E+06	4.5E+06	4.9E+07	1.1E+06	2.7E+05	7.8E+05	2.1E+08	1.1E+08
11	1.7E+06	6.3E+06	1.2E+08	3.0E+06	3.2E+06	3.7E+07	3.4E+07	6.9E+06	1.8E+08	1.4E+06	3.9E+08	2.1E+07
12	2.4E+06	1.0E+07	5.0E+08	9.9E+06	5.2E+06	4.8E+07	2.0E+07	7.6E+07	4.4E+08	1.8E+07	1.8E+08	1.2E+07
13	1.9E+06	6.4E+06	4.6E+08	1.5E+07	7.0E+06	4.6E+07	1.7E+07	2.1E+08	8.5E+08	2.1E+07	2.3E+08	9.0E+06
14	1.6E+06	1.0E+07	1.3E+08	3.7E+07	2.3E+06	7.6E+07	1.3E+07	2.7E+08	1.3E+09	4.4E+07	2.7E+08	2.6E+06
15	7.2E+05	1.1E+08	9.1E+07	2.8E+07	7.5E+06	3.9E+07	1.4E+07	8.5E+07	6.7E+07	4.2E+07	3.2E+08	7.5E+04
16	1.0E+06	5.7E+07	1.8E+08	2.3E+07	7.1E+06	2.1E+07	7.5E+06	7.4E+07	6.1E+07	2.3E+07	6.5E+07	2.7E+05
17	1.3E+06	3.8E+07	1.6E+08	9.3E+06	2.7E+06	5.0E+06	3.7E+05	2.7E+07	3.7E+07	3.9E+06	4.2E+07	9.6E+05
18	5.4E+06	2.7E+07	1.2E+07	3.0E+06	4.0E+06	1.8E+06	1.2E+05	3.3E+06	1.0E+08	2.4E+06	5.9E+07	1.3E+06
19	1.3E+07	2.2E+07	5.1E+06	1.4E+06	4.1E+06	1.3E+06	9.7E+04	6.2E+06	1.4E+08	3.2E+06	5.3E+07	3.7E+05
20	1.8E+07	2.0E+07	3.6E+06	1.7E+06	4.3E+06	1.3E+06	1.8E+05	1.9E+07	3.8E+07	1.0E+06	4.9E+07	4.2E+05
21	2.6E+07	1.8E+07	2.9E+06	1.9E+06	5.6E+06	6.7E+05	4.5E+05	4.1E+07	2.1E+06	1.4E+04	3.2E+07	1.0E+07
22	2.4E+07	4.2E+06	7.3E+06	4.2E+05	5.9E+05	5.5E+05	3.6E+05	4.3E+07	6.6E+06	6.3E+05	4.0E+07	2.1E+07
23	2.5E+07	4.5E+06	8.9E+06	2.9E+05	1.6E+07	2.9E+05	2.6E+05	3.6E+07	2.1E+07	5.3E+05	1.8E+07	5.2E+06
24	2.9E+06	4.9E+06	6.7E+06	1.2E+05	2.1E+08	4.8E+05	2.3E+05	1.2E+07	1.7E+07	2.2E+06	1.1E+07	2.7E+06
25	5.4E+05	2.9E+06	5.6E+06	2.9E+06	2.3E+08	6.9E+05	7.1E+05	2.0E+07	3.6E+06	7.8E+07	8.5E+06	1.2E+06
26	7.2E+05	2.6E+06	3.0E+06	4.6E+07	2.4E+08	7.0E+05	6.5E+05	2.2E+07	2.3E+06	1.3E+08	1.2E+07	2.4E+06
27	1.0E+06	2.7E+06	1.5E+06	3.0E+07	2.1E+08	7.7E+05	5.2E+05	1.7E+07	3.5E+06	3.8E+08	4.8E+06	4.6E+06
28	9.3E+05	9.4E+05	6.6E+07	4.1E+07	1.8E+08	8.3E+05	6.9E+05	9.7E+05	2.3E+06	4.9E+08	4.9E+06	6.0E+06
29	8.7E+05	6.9E+06	1.4E+08	9.5E+07	1.9E+08	3.8E+05	3.6E+05		2.2E+07	6.9E+08	6.5E+06	1.0E+07
30	5.1E+05	3.6E+07	1.1E+08	9.3E+07	9.3E+07	1.4E+05	1.0E+07		8.3E+07	2.7E+08	2.0E+07	1.2E+07
31	5.0E+05	4.6E+07		1.2E+08		1.5E+05	1.2E+07		1.3E+08		4.1E+07	

NOTE: The electron detector responds significantly to protons above 32 MeV; therefore, electron data are contaminated when a proton event is in progress. These days are indicated with '-999' in the table and are not plotted. '-' indicates data not available. GOES9 data began April, 1996.

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Prompt Reports

Number 647 Part I

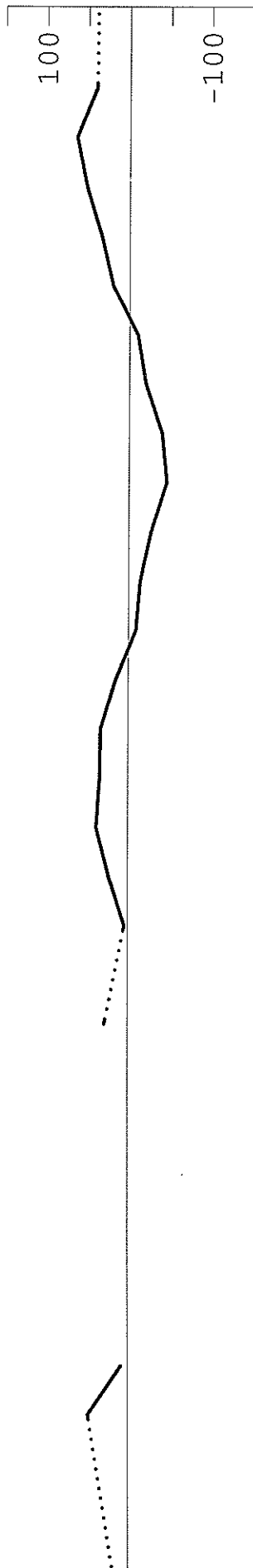
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SOLAR MAGNETIC FIELD SYNOPTIC CHART
CARRINGTON ROTATION NUMBER 1935
(14 April to 11 May 1998)

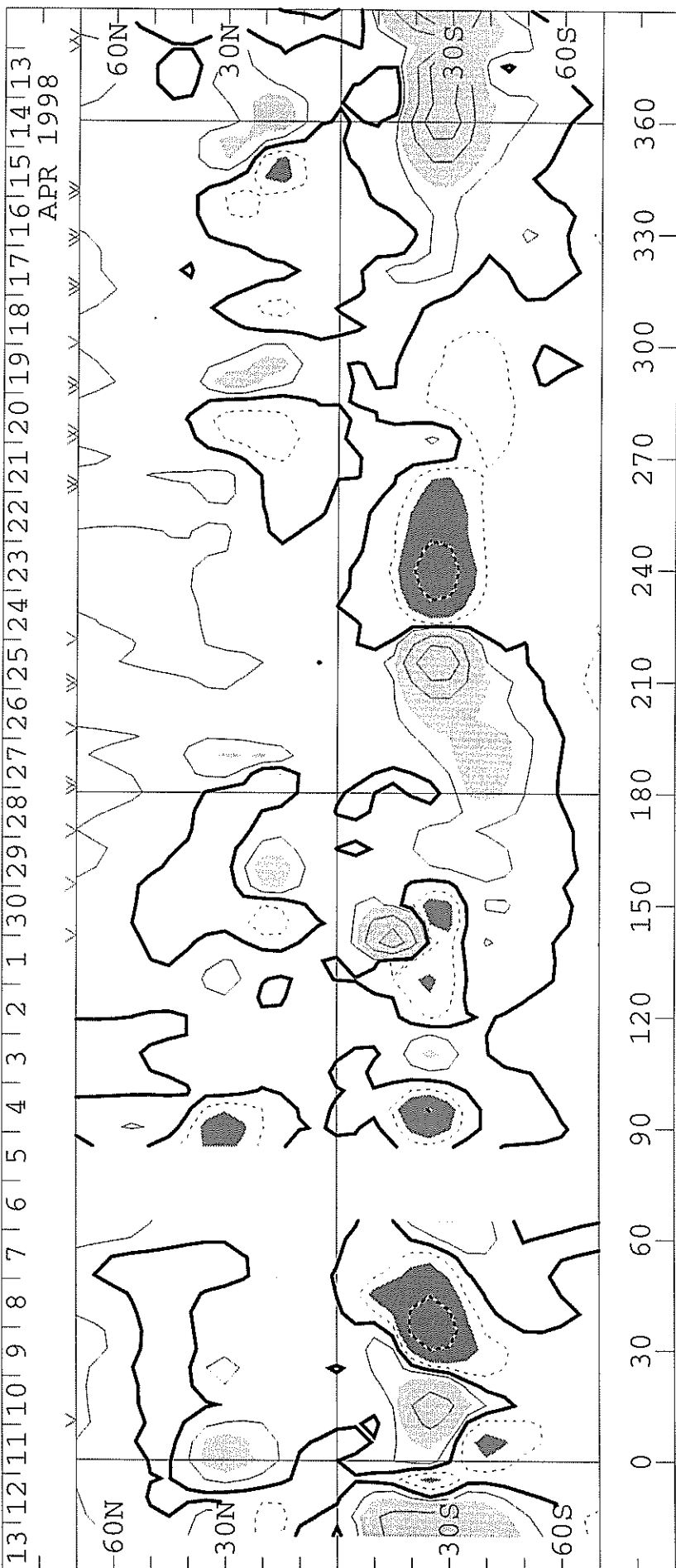
WILCOX SOLAR OBSERVATORY

Mean Field



0, ± 100 , 500, 1000, 2000 MicroTesla

Photospheric Magnetic Field



Heliographic Longitude

1935

SOLAR MAGNETIC FIELD SYNOPSIS CHART

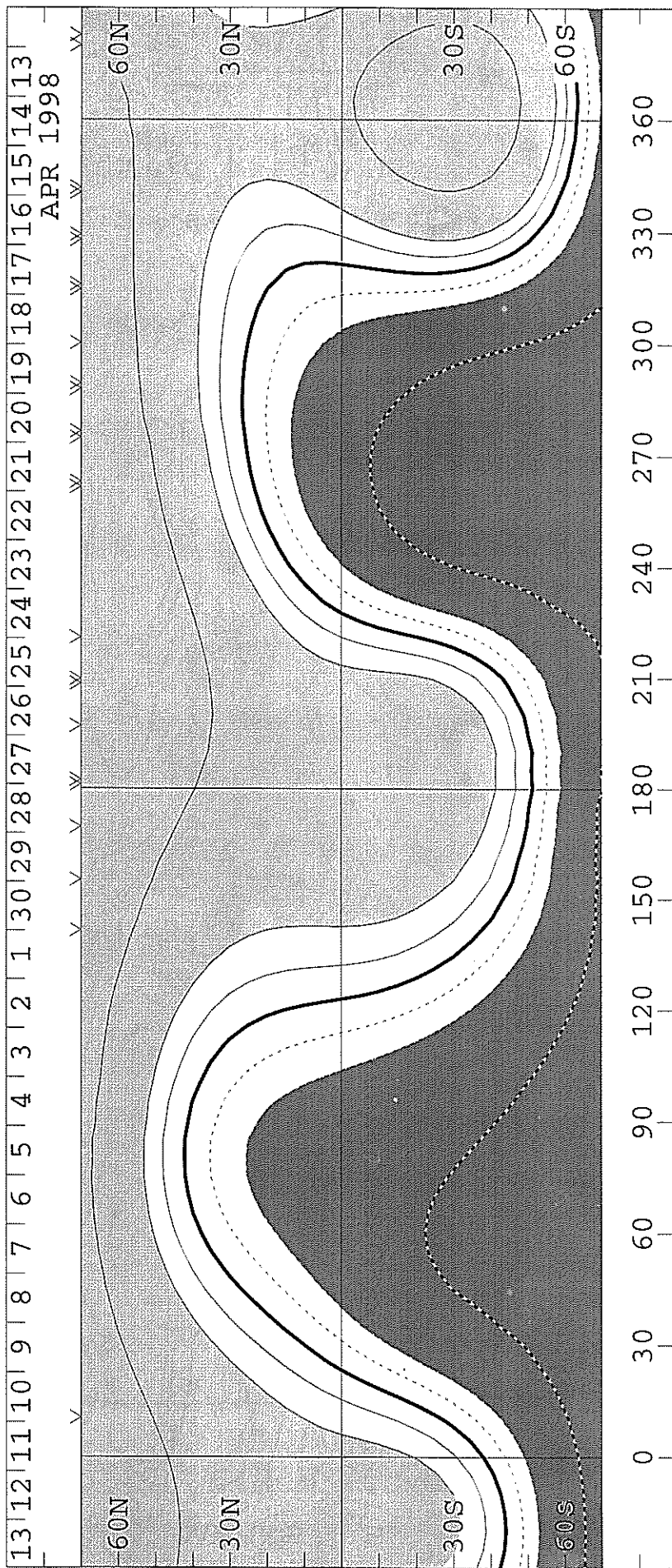
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 1935

(14 April to 11 May 1998)

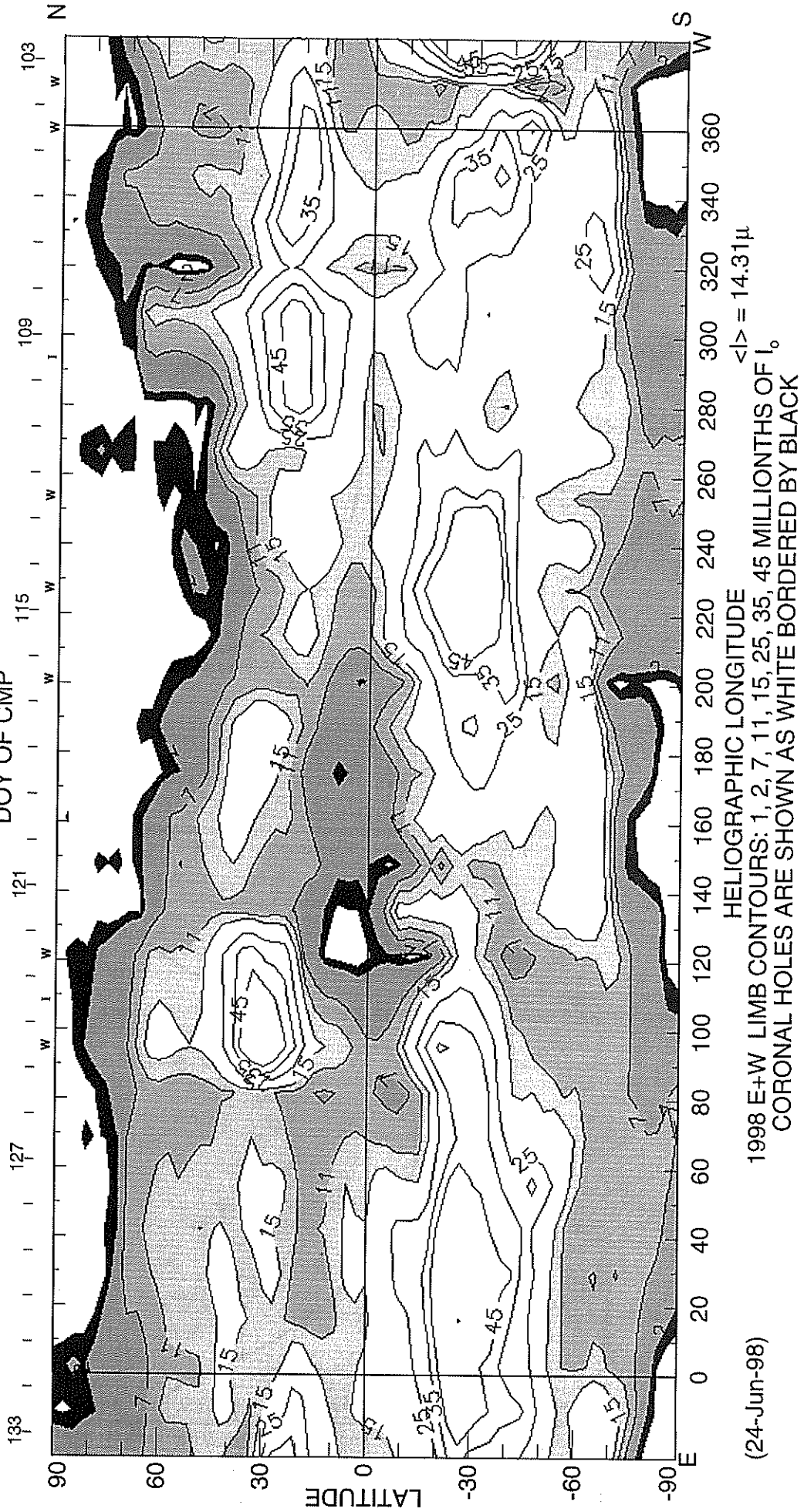
Wilcox Solar Observatory

0, ± 1 , 2, 5, 10, 20 microTesla

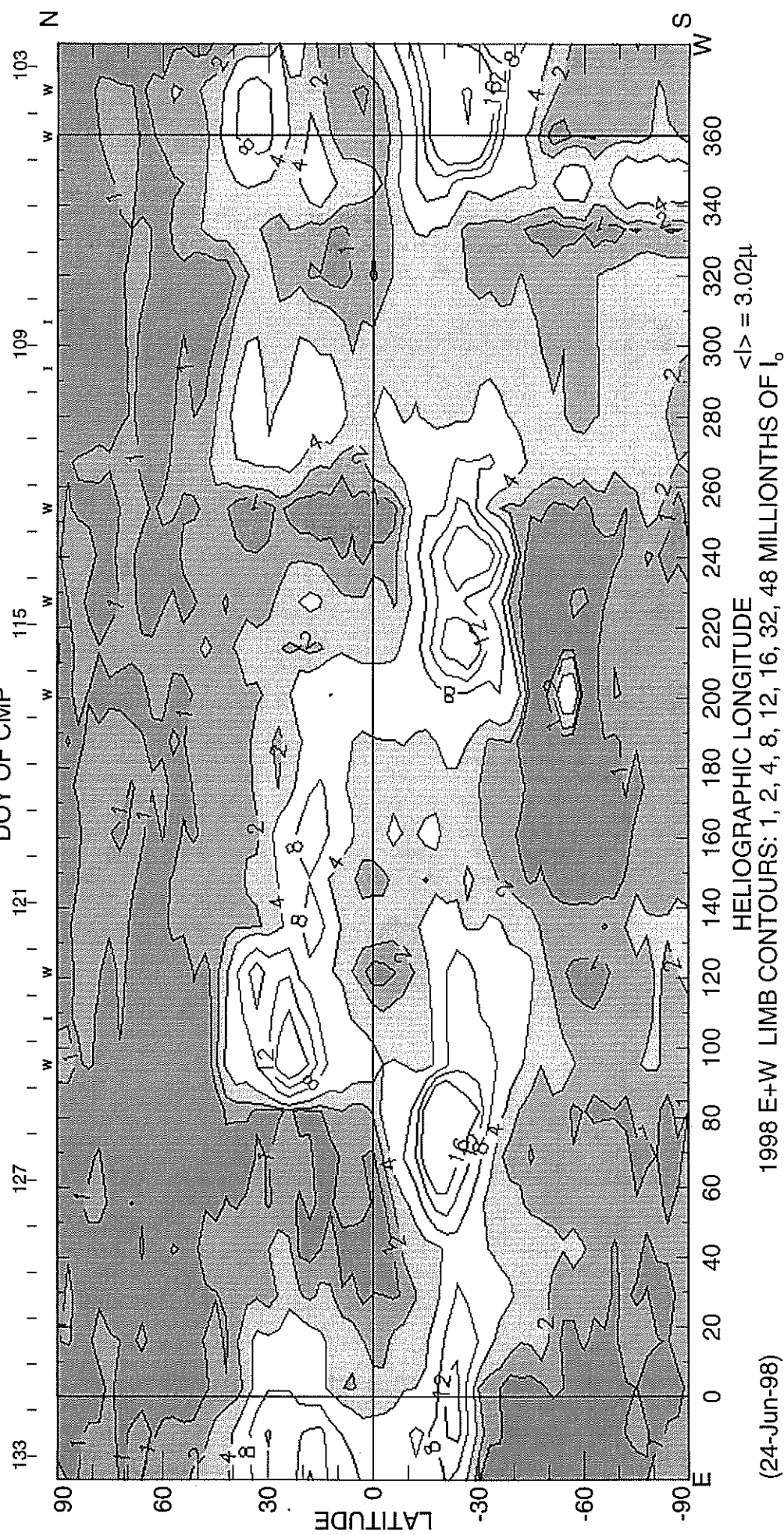


Heliographic Longitude

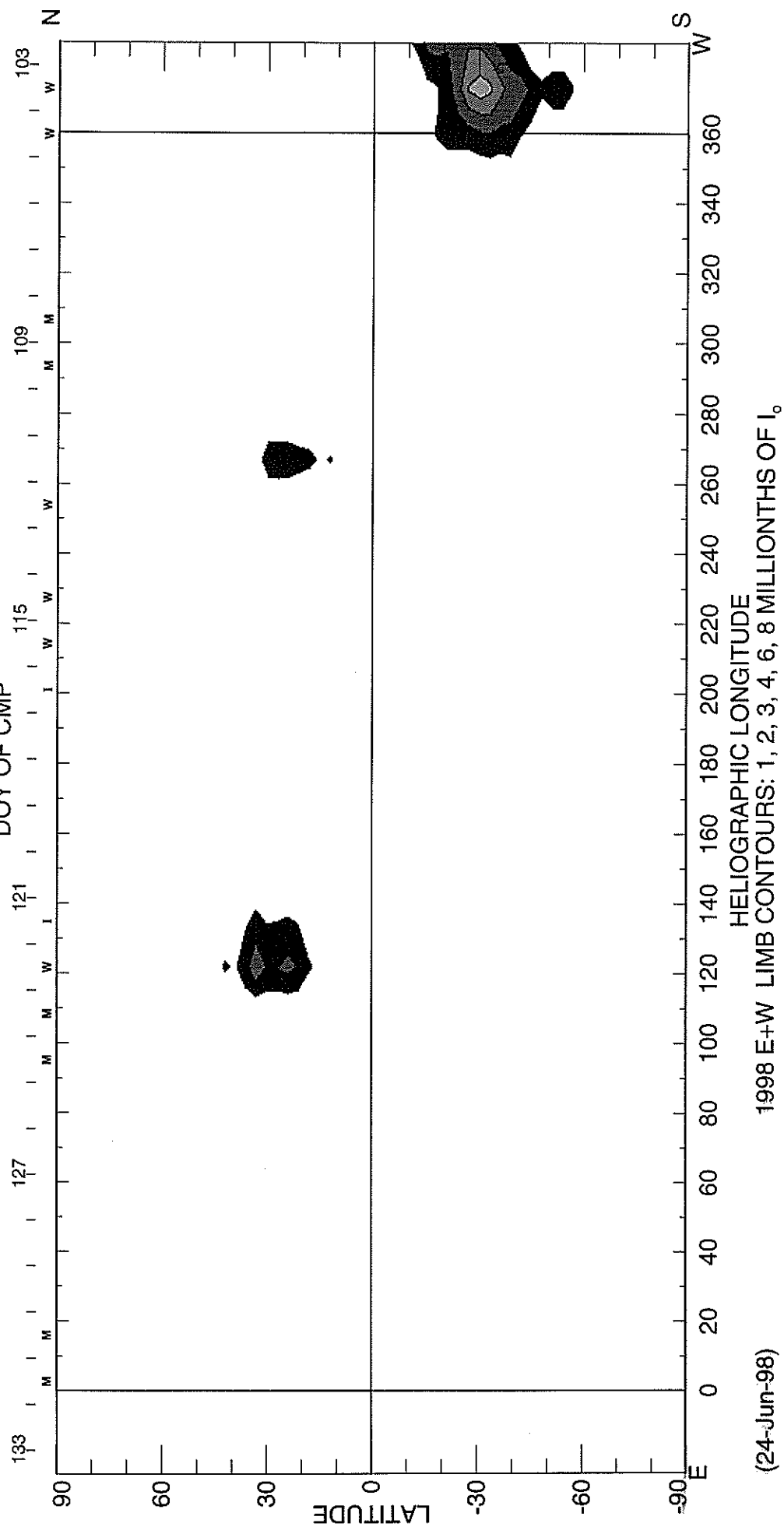
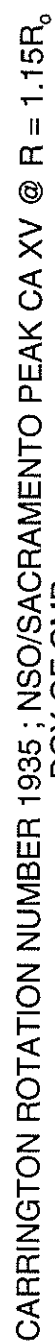
CARRINGTON ROTATION NUMBER 1935 ; NSO/SACRAMENTO PEAK FE XIV @ $R = 1.15R_{\odot}$
DOY OF CMP



CARRINGTON ROTATION NUMBER 1935 ; NSO/SACRAMENTO PEAK FE X @ $R = 1.15R_{\odot}$
DOY OF CMP



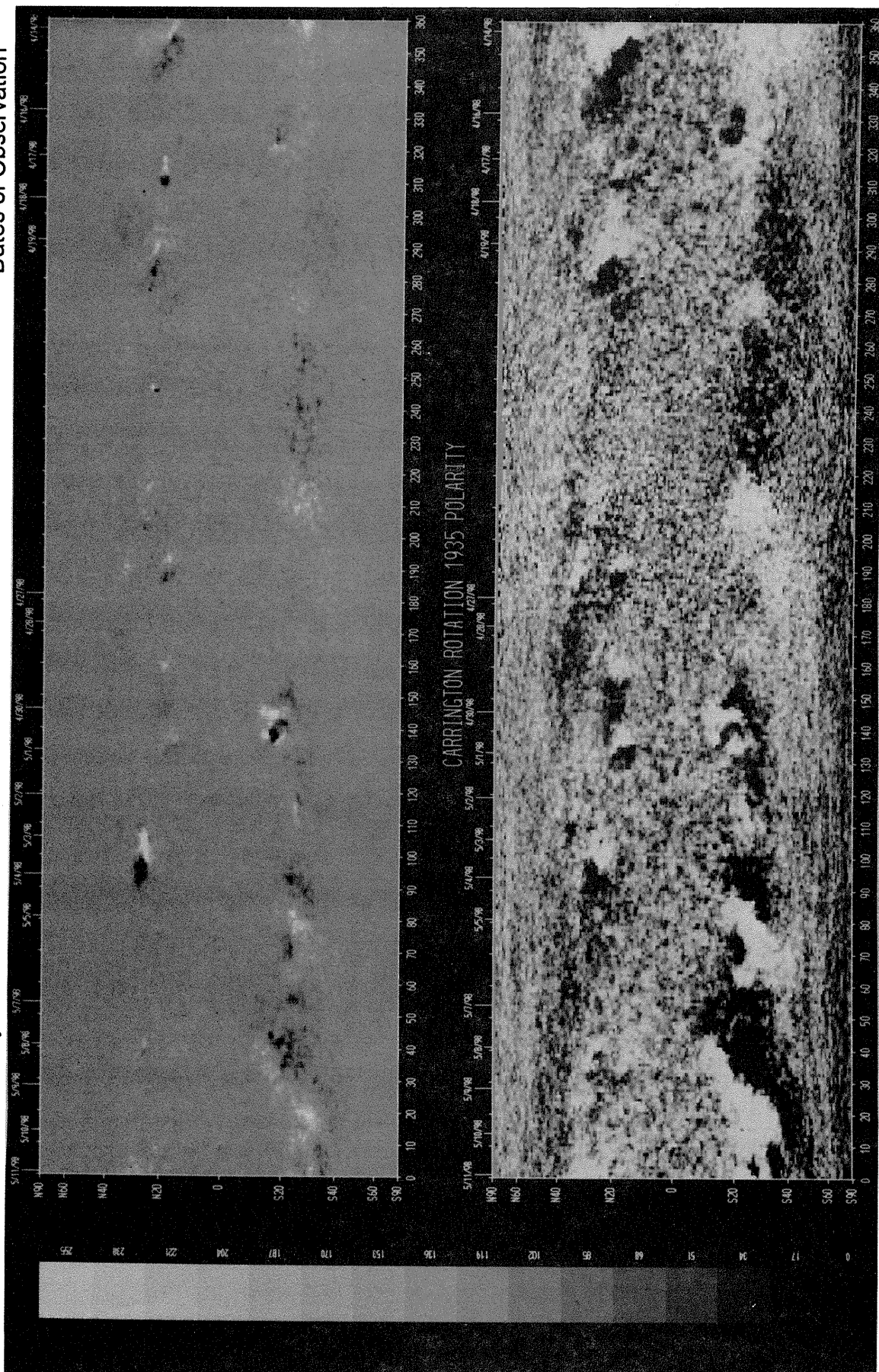
(24-Jun-98)



SOLAR MAGNETIC FIELD SYNOPSIS CHART
CARRINGTON ROTATION NUMBER 1935
(14 April to 11 May 1998)

National Solar Observatory/Kitt Peak

Dates of Observation

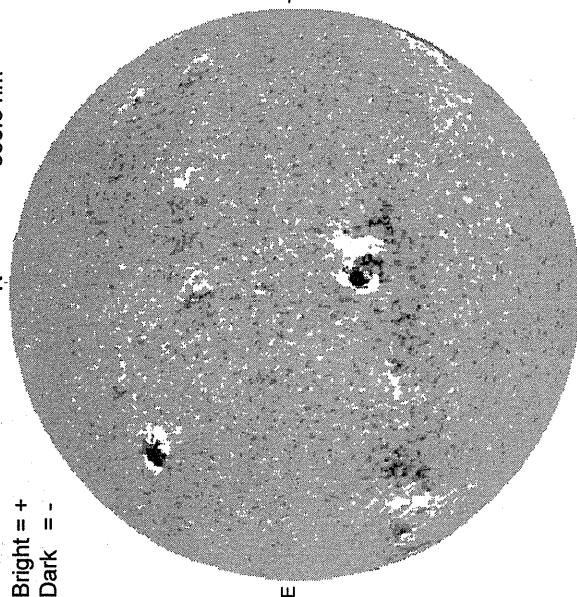


MAY 1, 1998 (P = -24.19, Bo = -4.18, Lo = 141.49)

KITT PEAK MAGNETOGRAM

868.8 nm

N

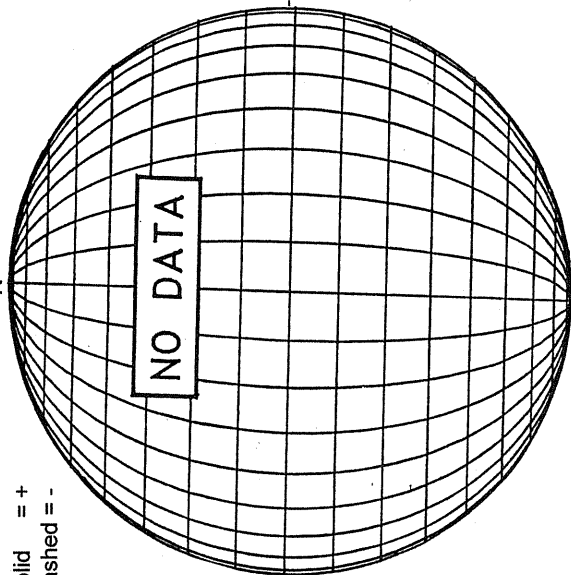


Bright = +
Dark = -

1545 UT

STANFORD MAGNETOGRAM

N

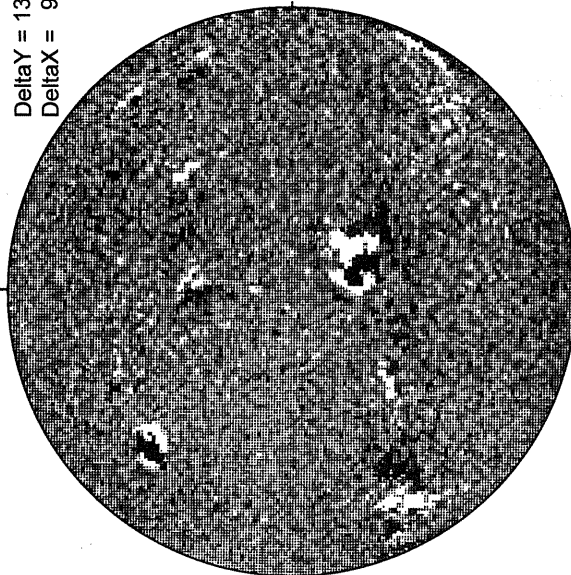


Solid = +
Dashed = -

16.49 -
17.42 UT

MT. WILSON MAGNETOGRAM

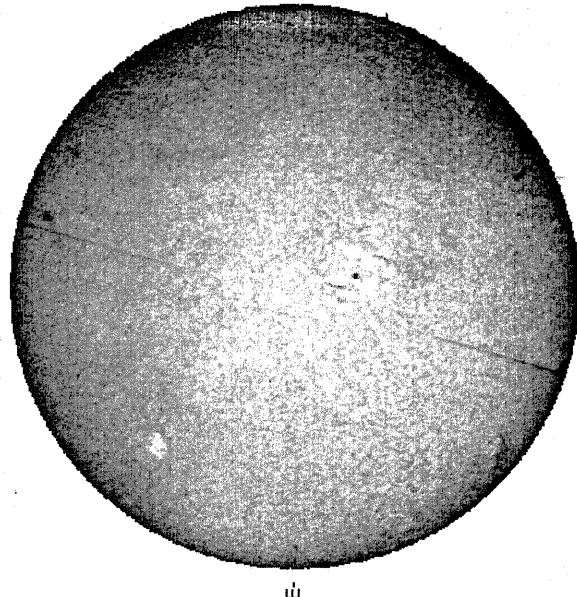
N



DeltaY = 13.1
DeltaX = 9.6

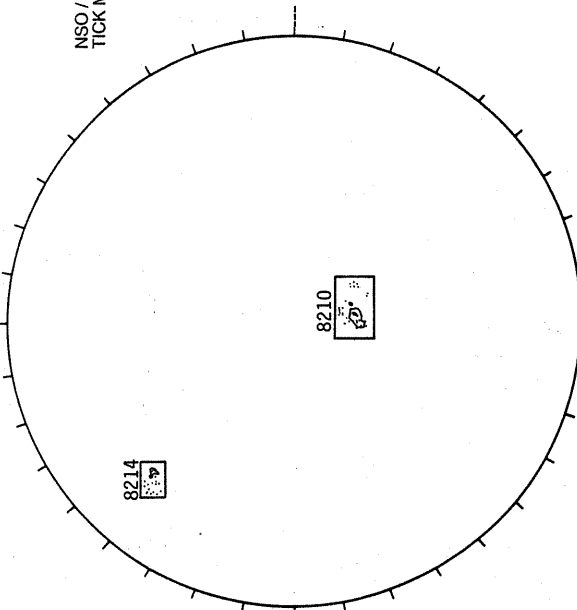
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



1329 UT

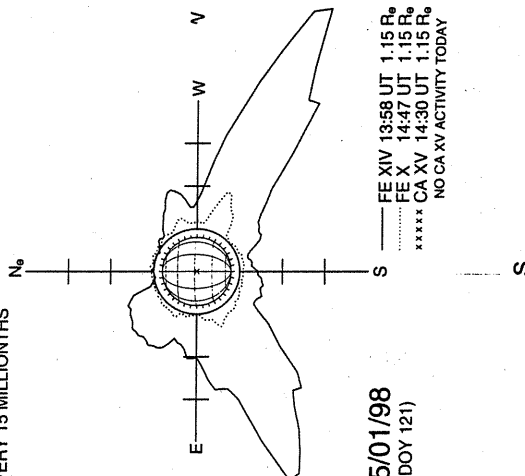
RAMEY SUNSPOT



1227 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

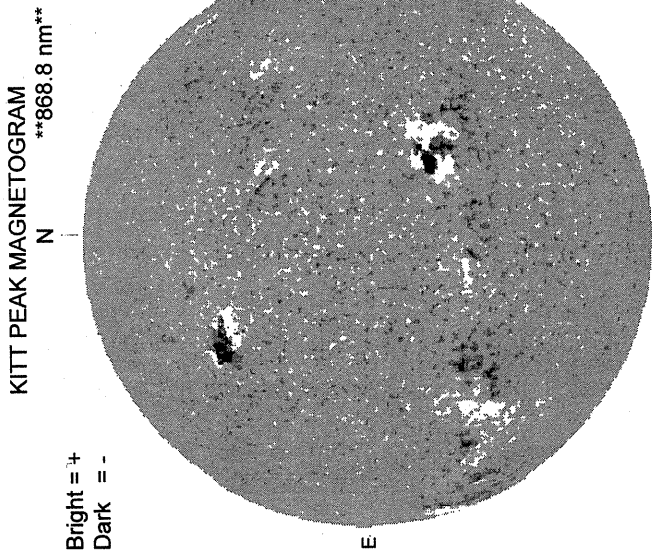
NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 15 MILLIONTHS



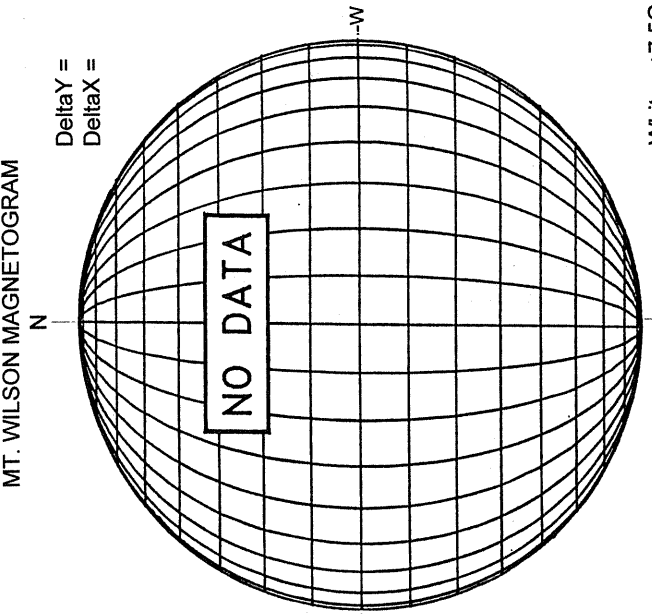
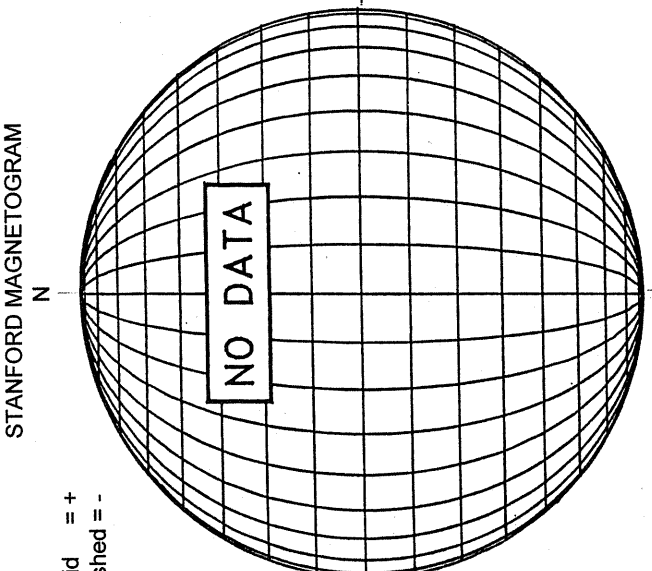
05/01/98
(DOY 121)

— FE XIV 13:58 UT 1.15 R_o
--- FE X 14:47 UT 1.15 R_o
***** CA XV 14:30 UT 1.15 R_o
NO CA XV ACTIVITY TODAY

MAY 2, 1998 (P= -24.01 , Bo = -4.08 , Lo = 128.27)



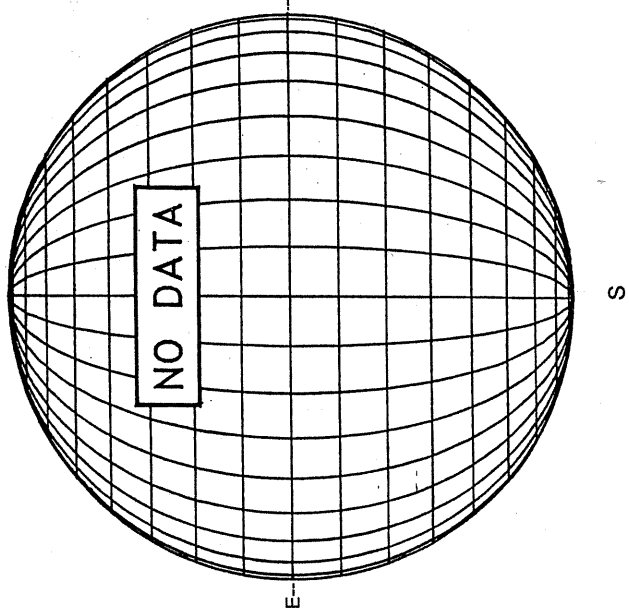
Solid = +
Dashed = -



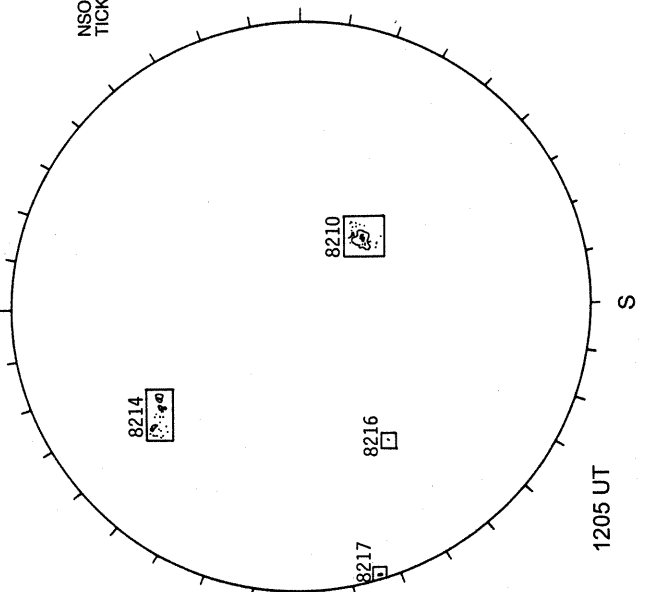
White = +7.5G
Black = -7.5G

1621 UT

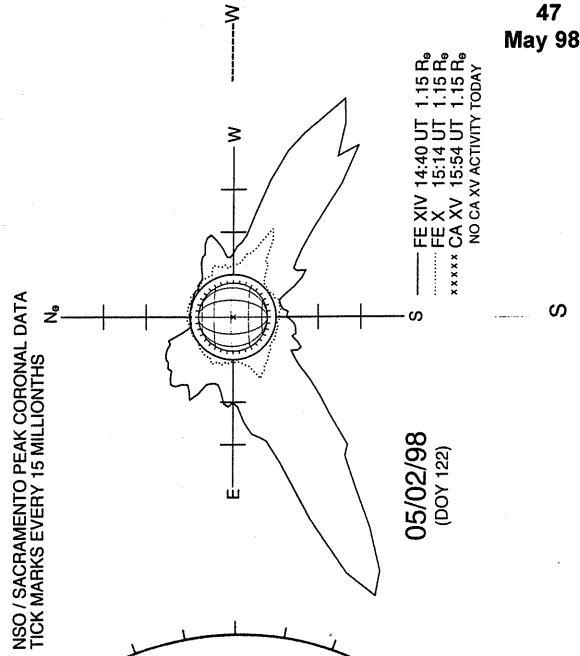
MEUDON H-ALPHA



RAMEY SUNSPOT



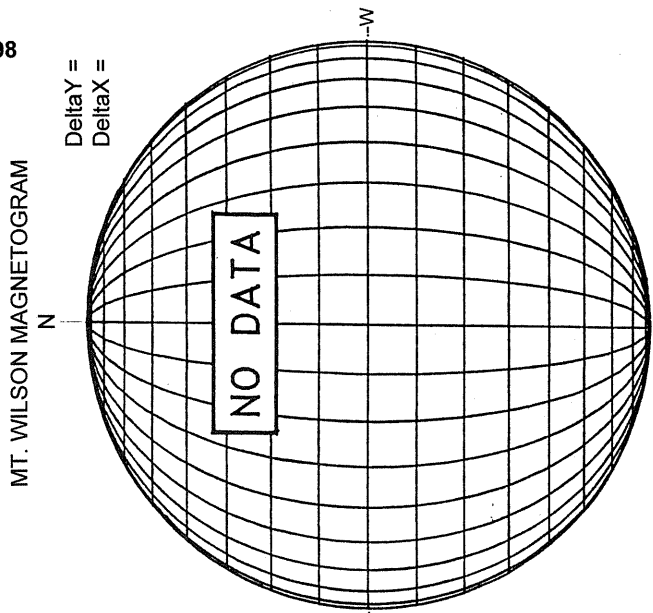
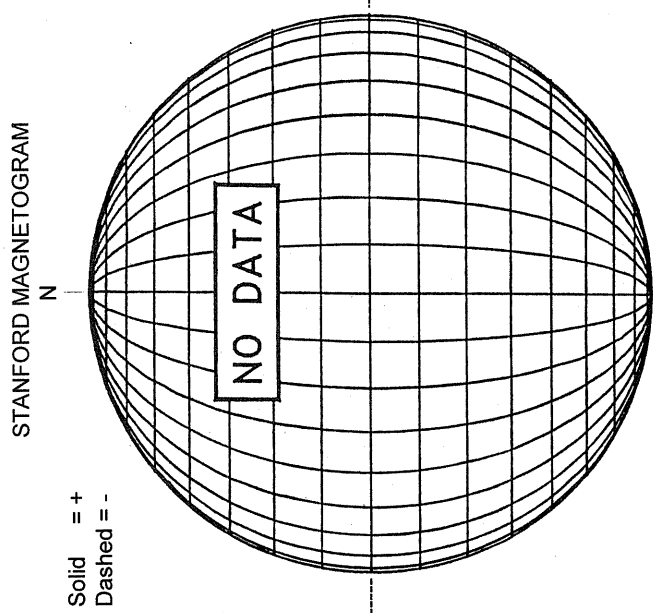
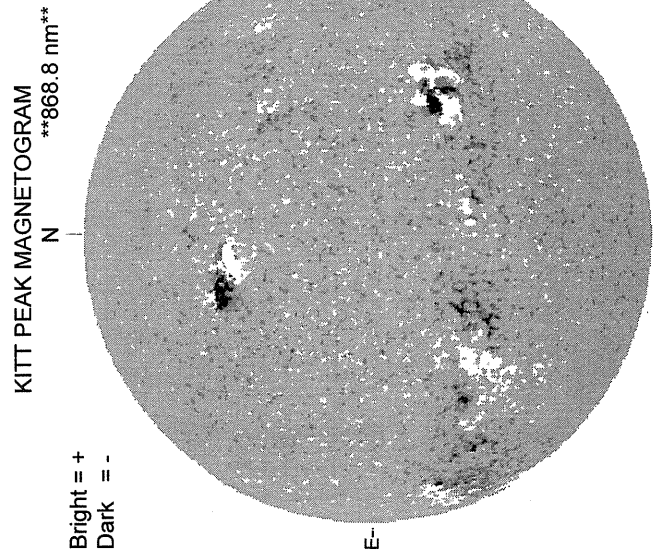
SACRAMENTO PEAK CORONA (1.15 Radii)----



05/02/98
(DOY 122)

FE XIV 14:40 UT 1.15 R_o
FE X 15:14 UT 1.15 R_o
CA XV 15:54 UT 1.15 R_o
NO CA XV ACTIVITY TODAY

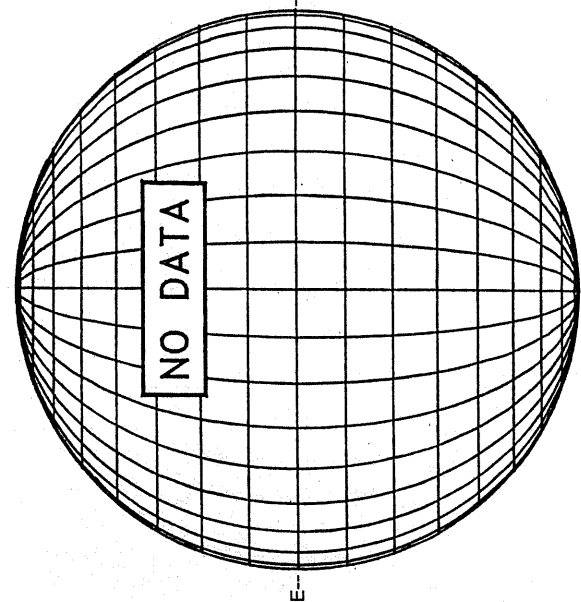
MAY 3, 1998 (P = -23.82 , Bo = -3.98 , Lo = 115.06)



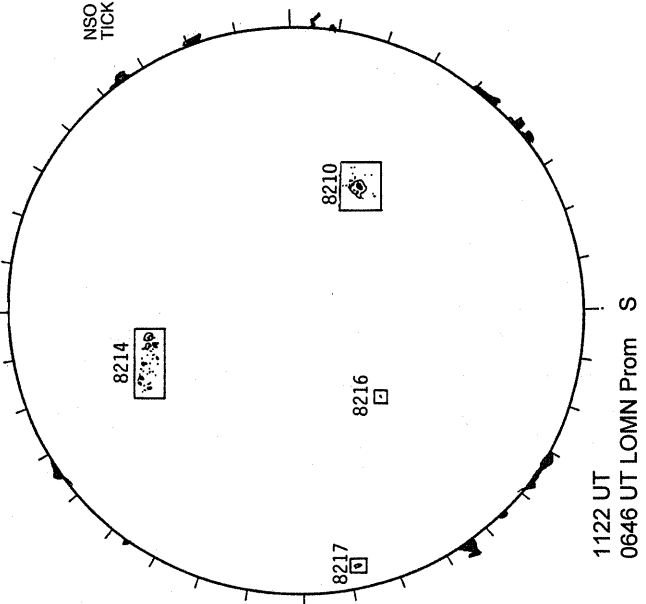
White = +7.5G
Black = -7.5G

1613 UT

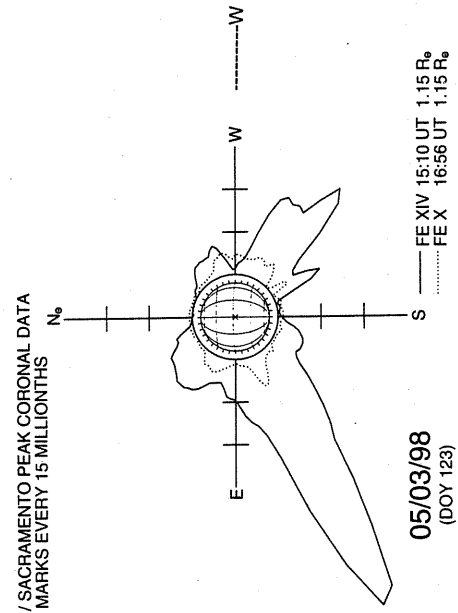
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)----

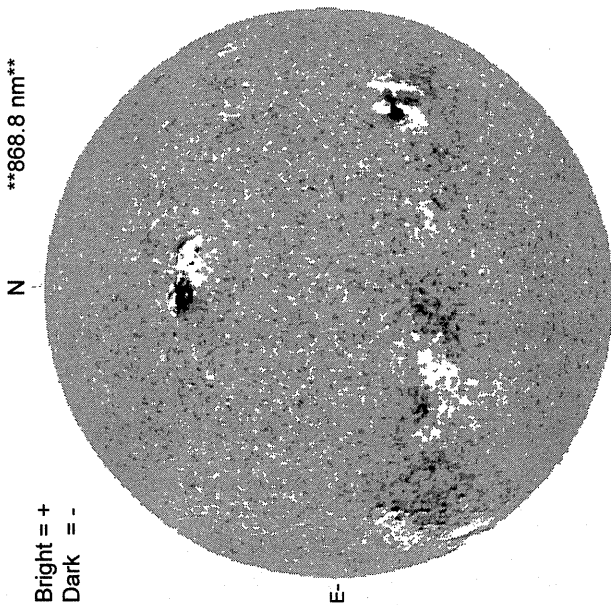


MAY 4, 1998 (P = -23.63 , Bo = -3.88 , Lo = 101.84)

KITT PEAK MAGNETOGRAM

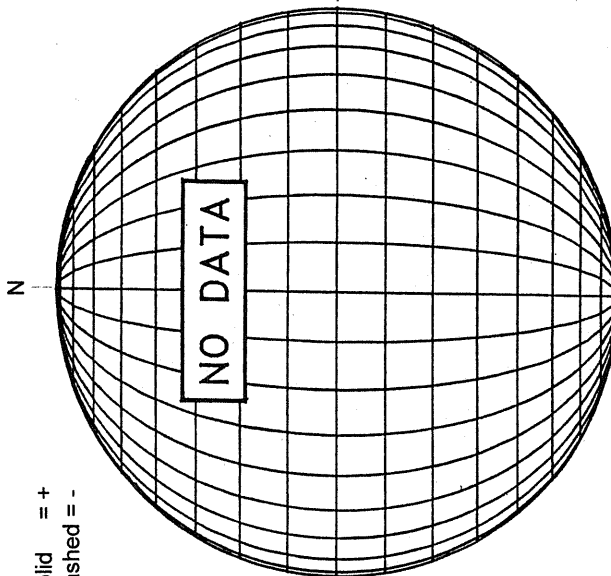
868.8 nm

Bright = +
Dark = -



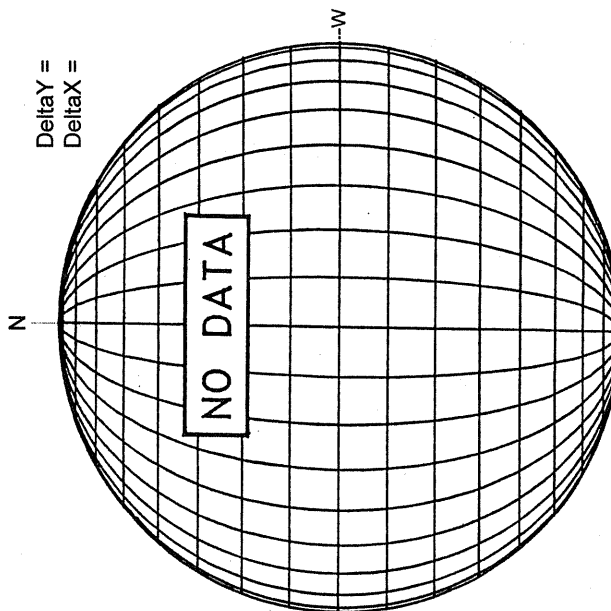
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

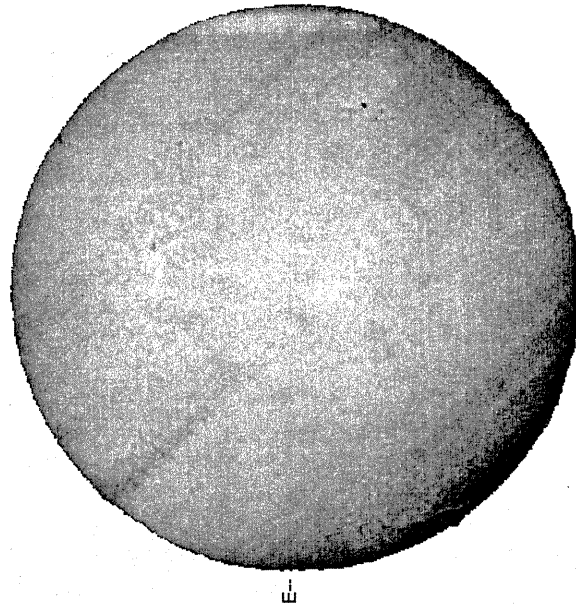
Delta Y =
Delta X =



White = +7.5G
Black = -7.5G

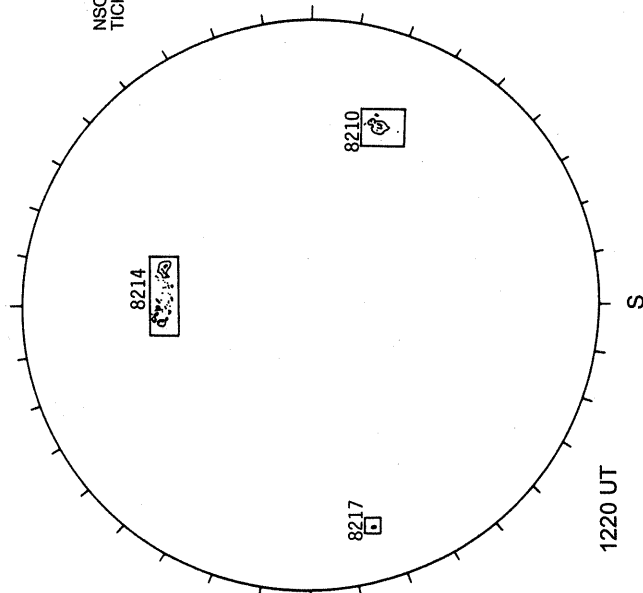
1409 UT

SACRAMENTO PEAK H-ALPHA



1534 UT

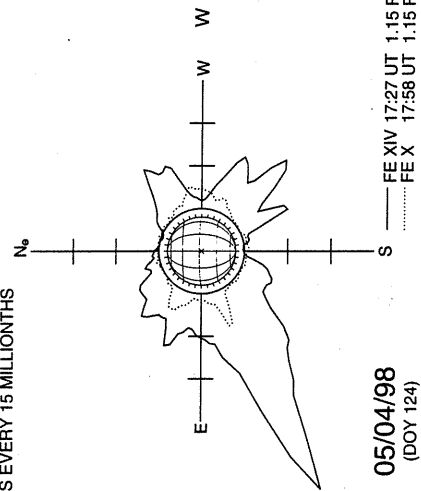
RAMEY SUNSPOT



1220 UT

SACRAMENTO PEAK CORONA (1.15 Radii)---

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 15 MILLIONTHS



05/04/98
(DOY 124)

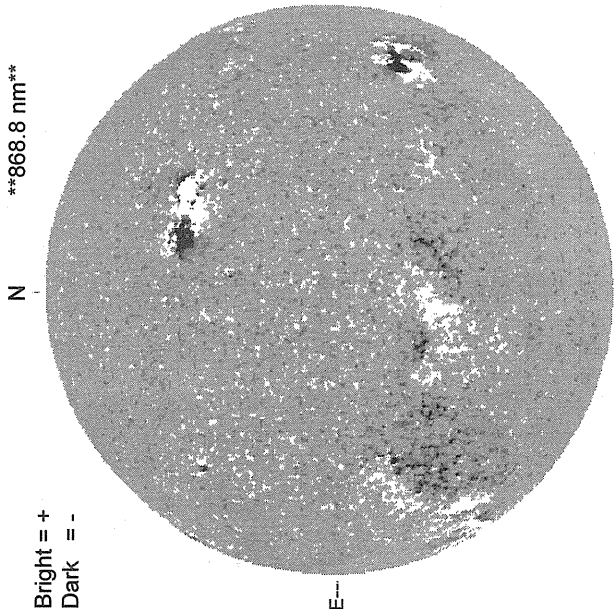
FE XIV 17:27 UT 1.15 R_o
FE X 17:58 UT 1.15 R_o

MAY 5, 1998 (P= -23.43 , Bo = -3.77 , Lo = 88.62)

KITT PEAK MAGNETOGRAM

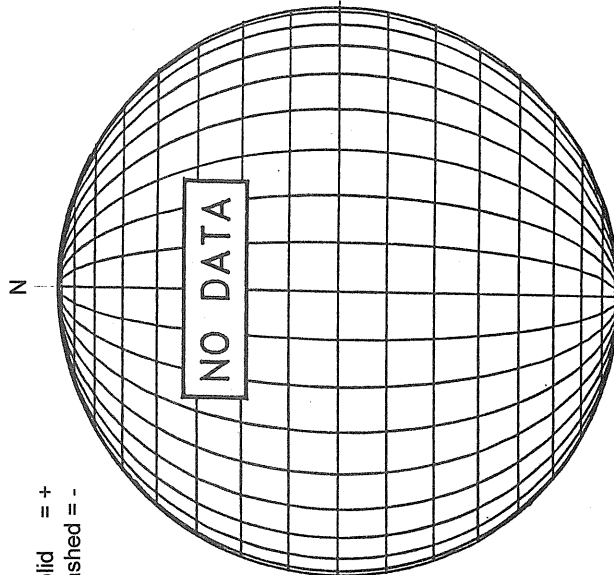
868.8 nm

Bright = +
Dark = -



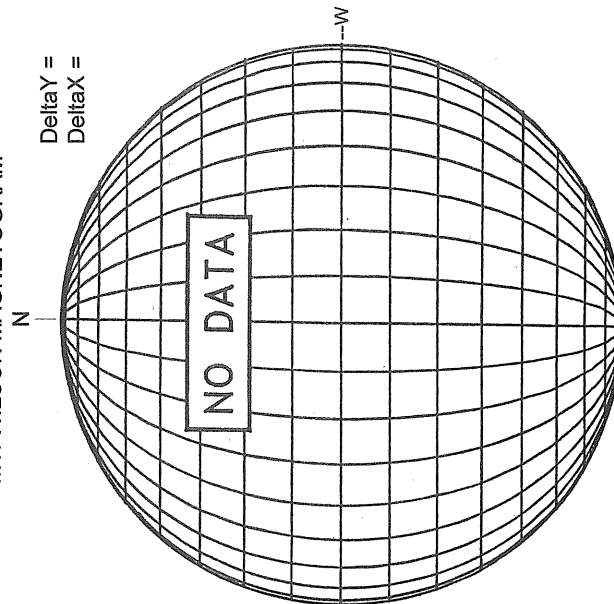
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

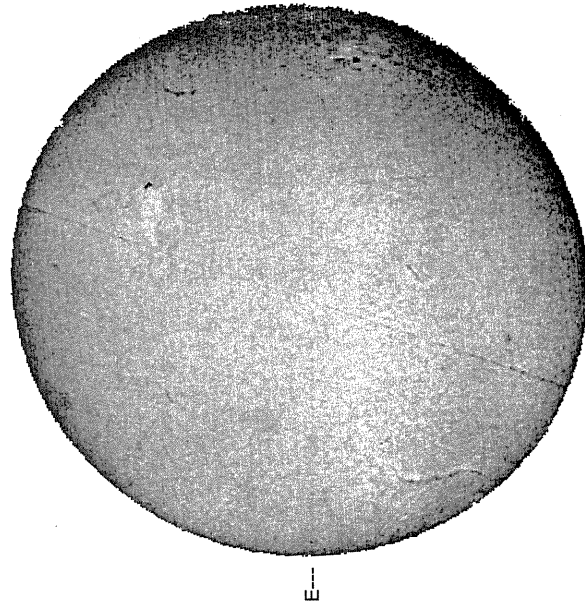
Delta Y =
Delta X =



White = +7.5G
Black = -7.5G

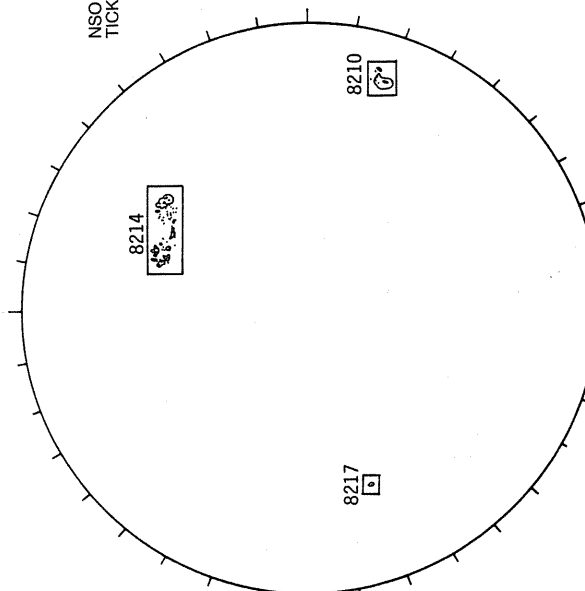
1410 UT

SACRAMENTO PEAK H-ALPHA



1352 UT

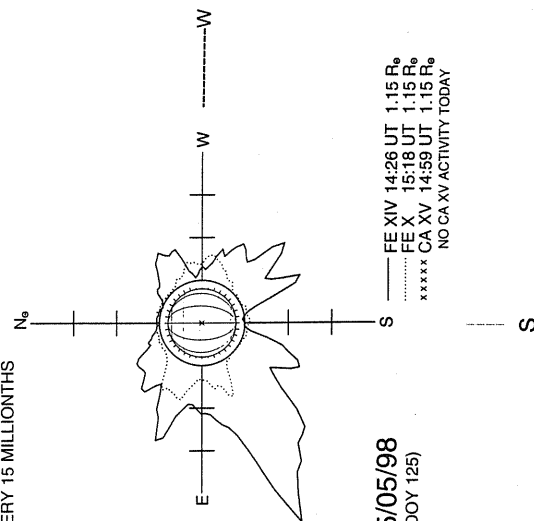
RAMEY SUNSPOT



1351 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 15 MILLIONTHS



05/05/98
(DOY 125)

— FE XIV 14:26 UT 1.15 R_o
..... FE X 15:18 UT 1.15 R_o
xxxxx CA XV 14:59 UT 1.15 R_o
NO CA XV ACTIVITY TODAY

MAY 6, 1998 (P= -23.22 , Bo = -3.67 , Lo = 75.40)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -

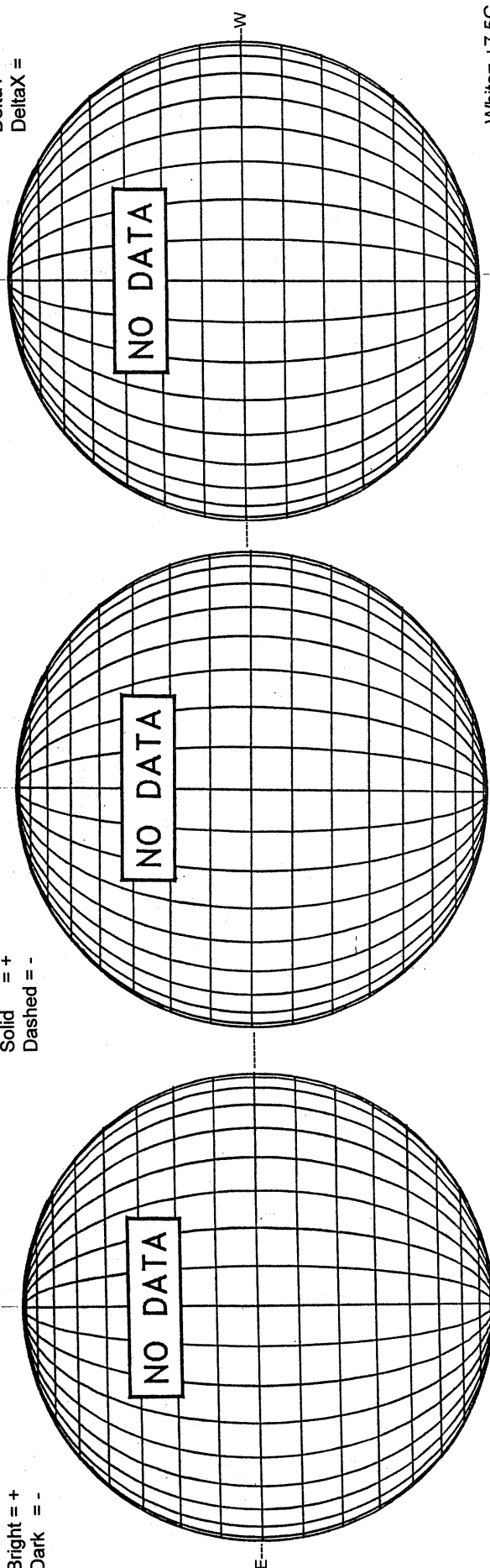
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

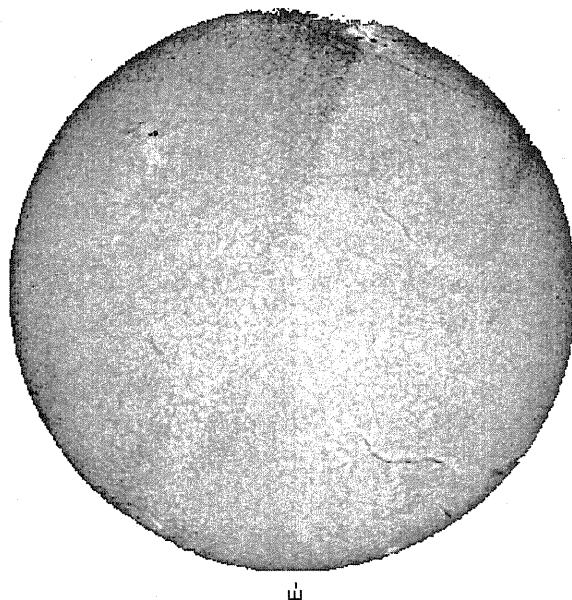
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =

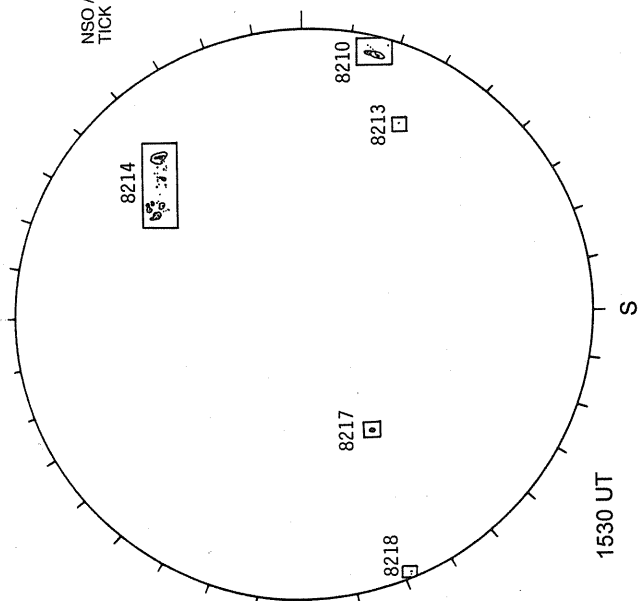
White= +7.5G
Black = -7.5G



SACRAMENTO PEAK H-ALPHA

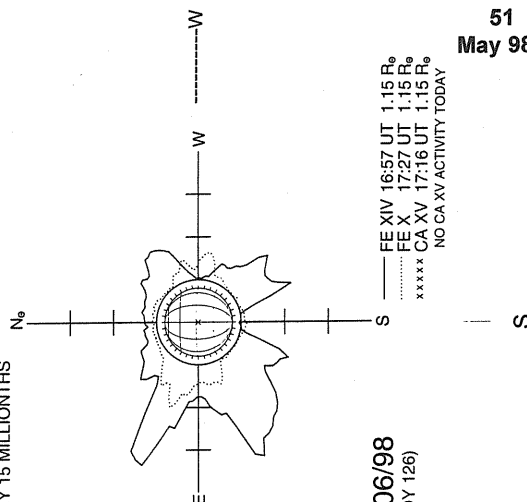


HOLLOMAN SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 15 MILLIONTHS



05/06/98
(DOY 126)

FE XIV 16:57 UT 1.15 R_o
FE X 17:27 UT 1.15 R_o
xxxxx CA XV 17:16 UT 1.15 R_o
NO CA XV ACTIVITY TODAY

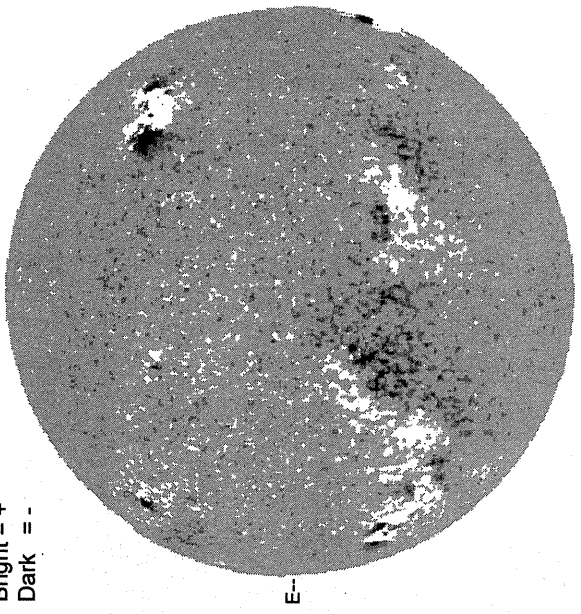
51
May 98

MAY 7, 1998 (P= -23.01 , Bo = -3.56 , Lo = 62.18)

KITT PEAK MAGNETOGRAM

868.8 nm

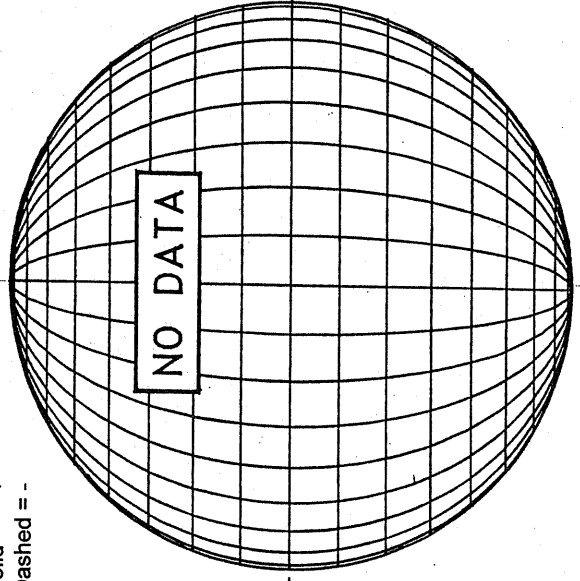
Bright = +
Dark = -



1522 UT

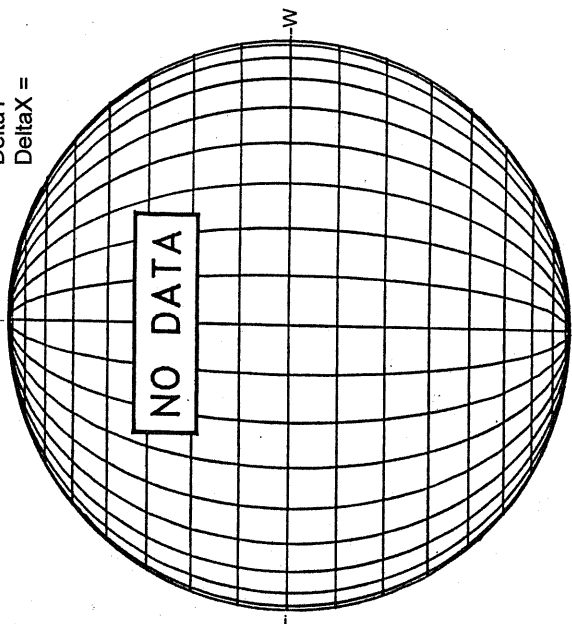
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =

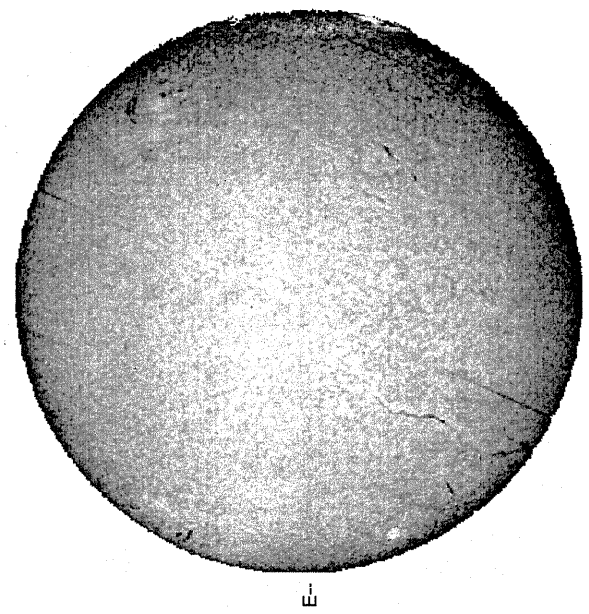


White = +7.5G
Black = -7.5G

NO DATA

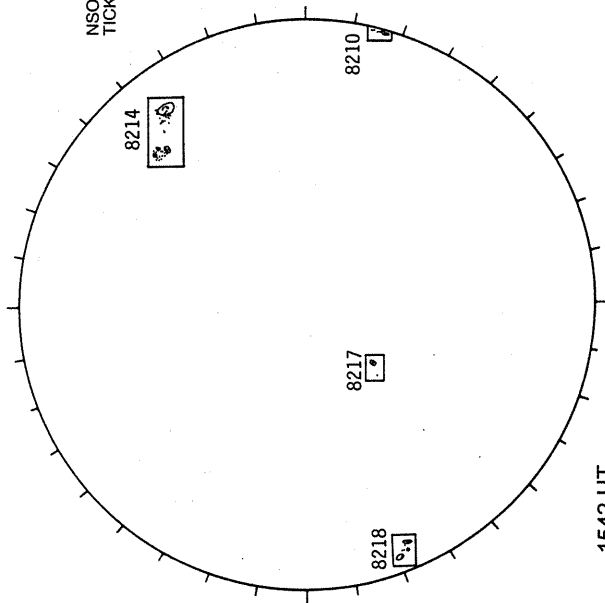
NO DATA

SACRAMENTO PEAK H-ALPHA



1357 UT

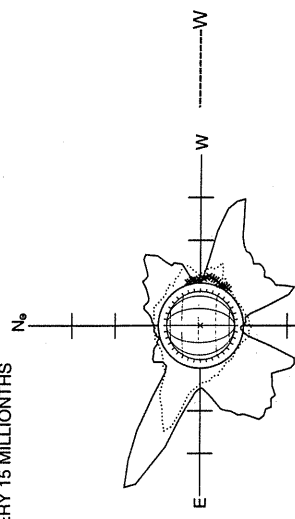
HOLLOMAN SUNSPOT



1542 UT

SACRAMENTO PEAK CORONA (1.15 Radii)---

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 15 MILLIONTHS



05/07/98
(DOY 127)

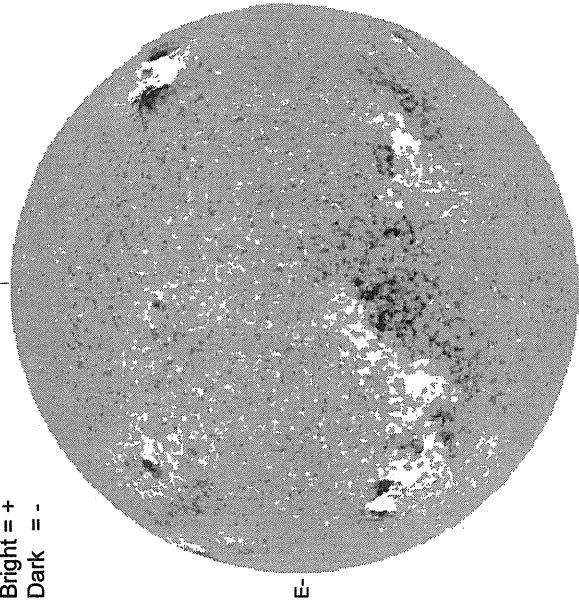
--- FE XIV 14:48 UT 1.15 R_o
..... FE X 15:18 UT 1.15 R_o
xxxxx CA XV 15:00 UT 1.15 R_o

MAT 6, 1996 (19:22:13; DOY = 136; EQ = 46.33)

KITT PEAK MAGNETOGRAM

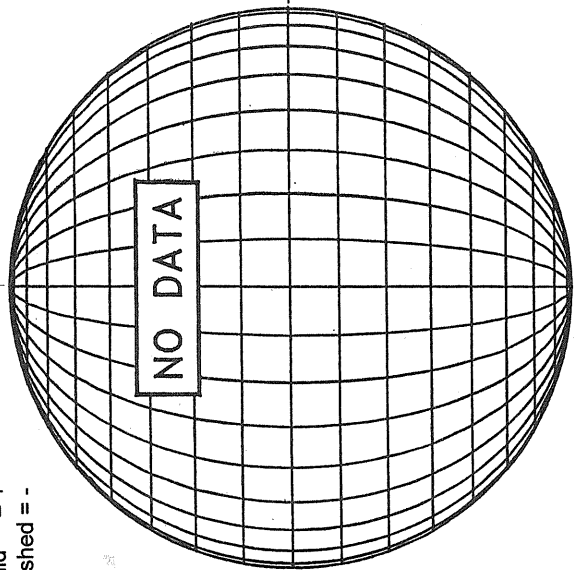
868.8 nm

Bright = +
Dark = -



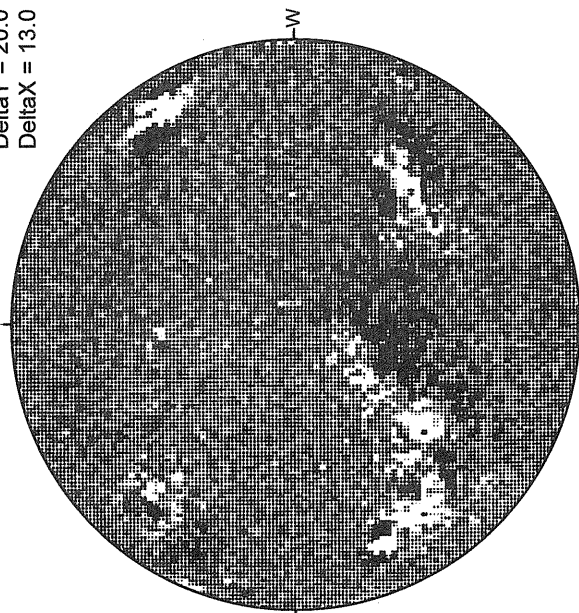
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



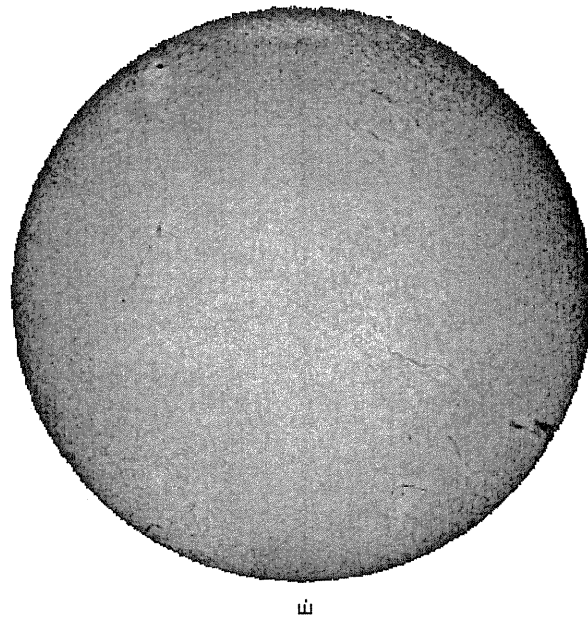
MT. WILSON MAGNETOGRAM

DeltaY = 20.0
DeltaX = 13.0

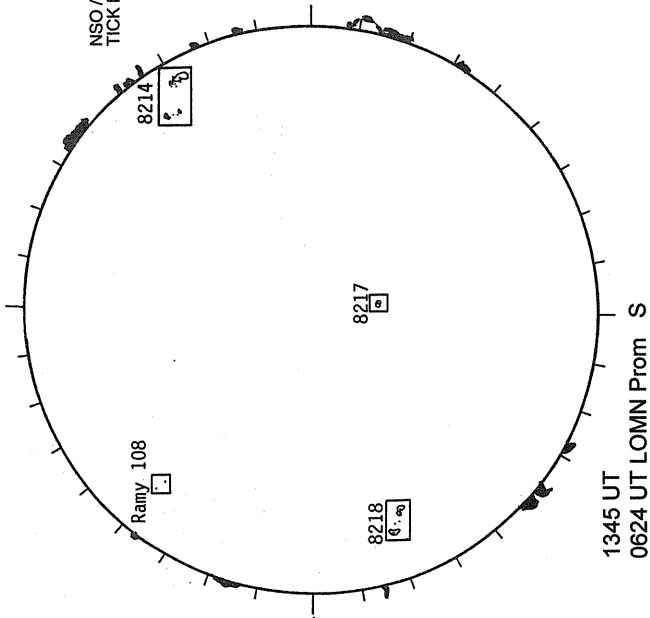


White = +7.5G
Black = -7.5G

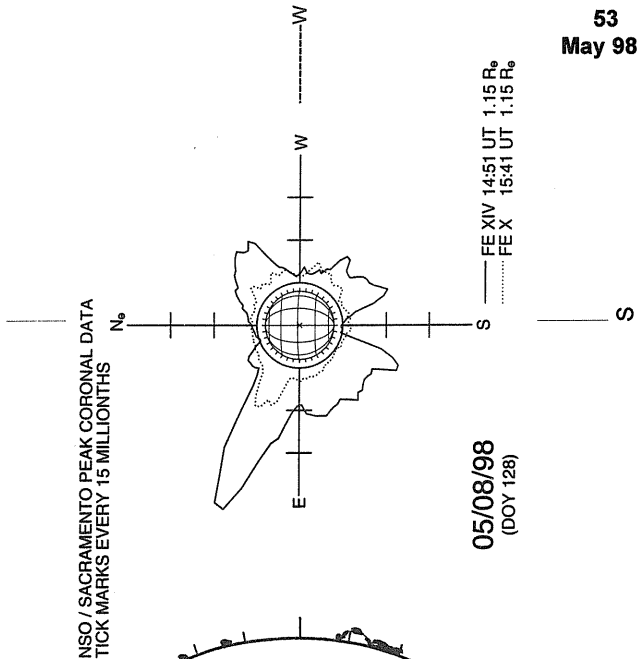
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)----



NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 15 MILLIONTHS

05/08/98
(DOY 128)

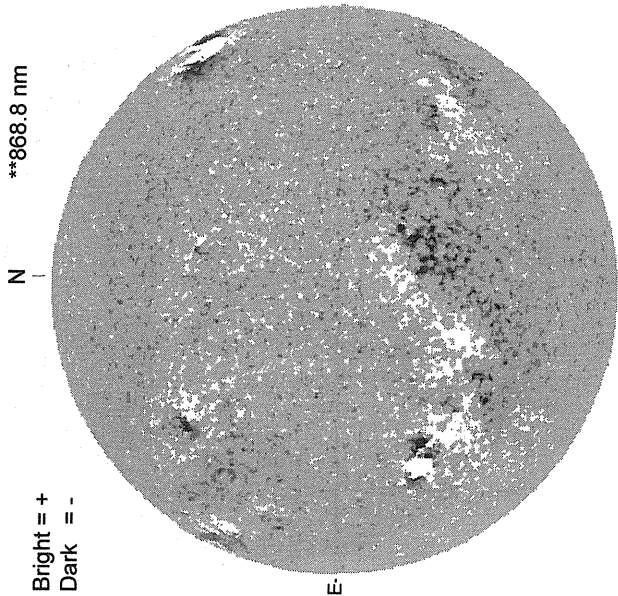
FE XIV 14:51 UT 1.15 R₀
FE X 15:41 UT 1.15 R₀

MAY 9, 1998 (P= -22.56 , Bo = -3.35 , Lo = 35.74)

KITT PEAK MAGNETOGRAM

**868.8 nm

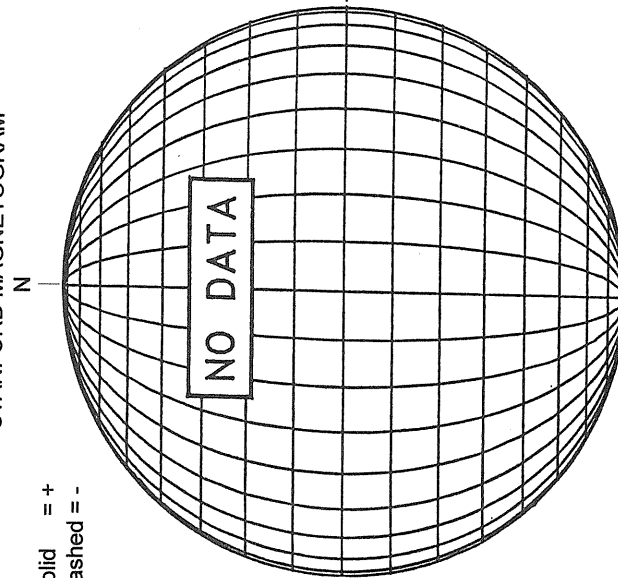
Bright = +
Dark = -



1410 UT

STANFORD MAGNETOGRAM

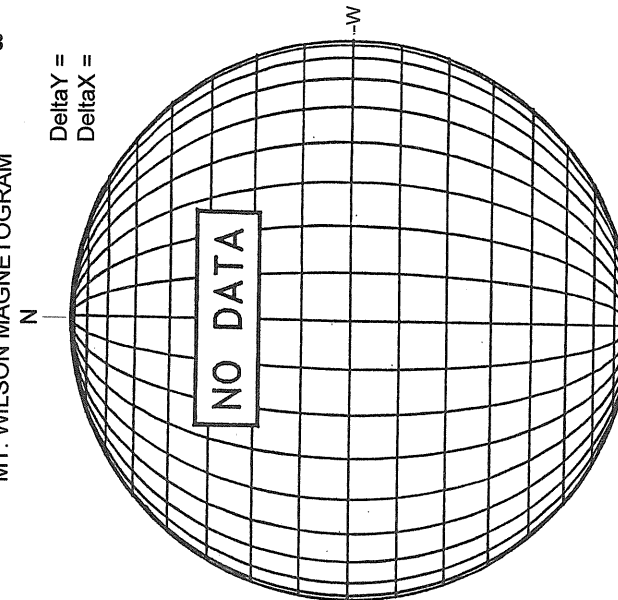
Solid = +
Dashed = -



1410 UT

MT. WILSON MAGNETOGRAM

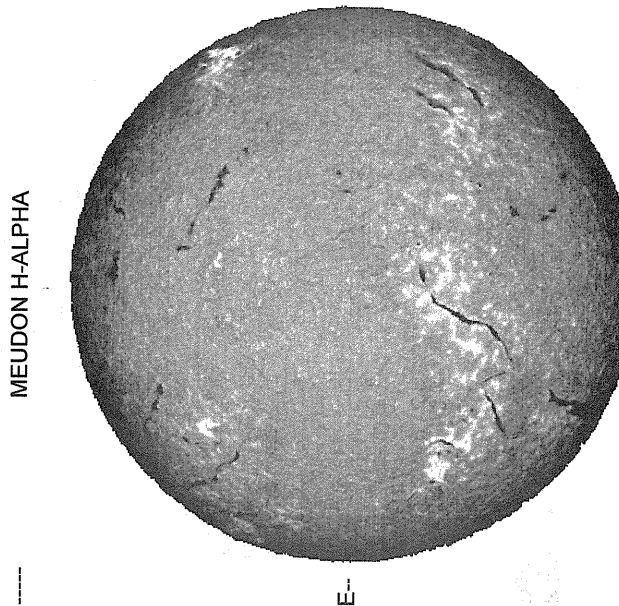
Delta Y =
Delta X =



1410 UT

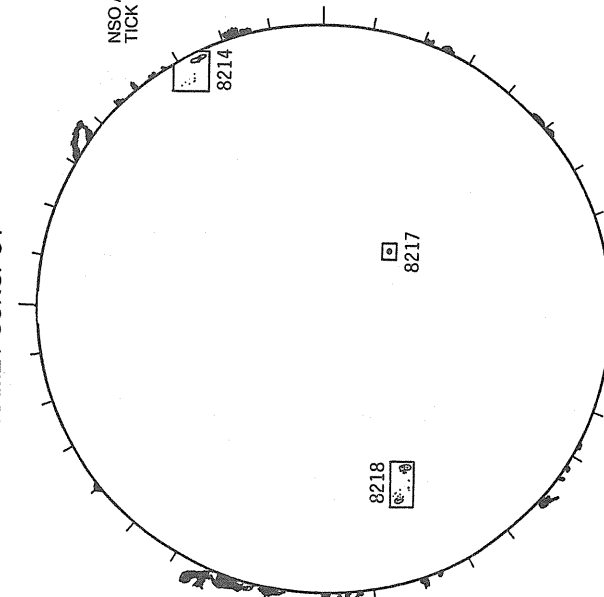
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



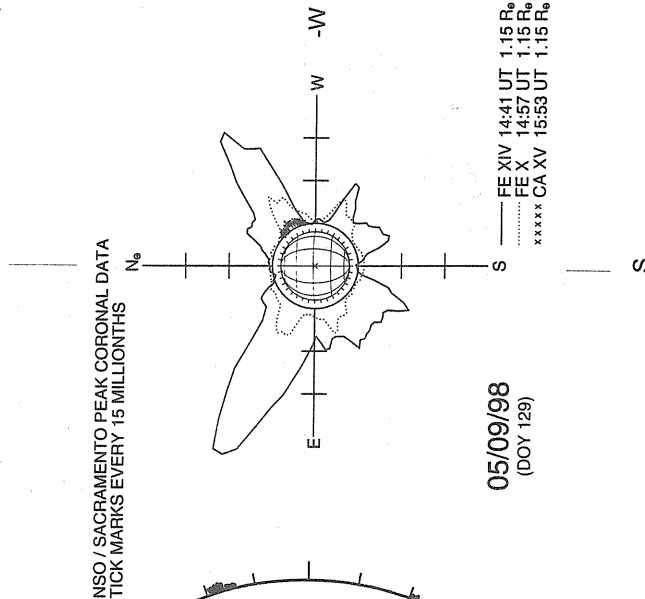
0710 UT

RAMEY SUNSPOT



1223 UT
1443 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

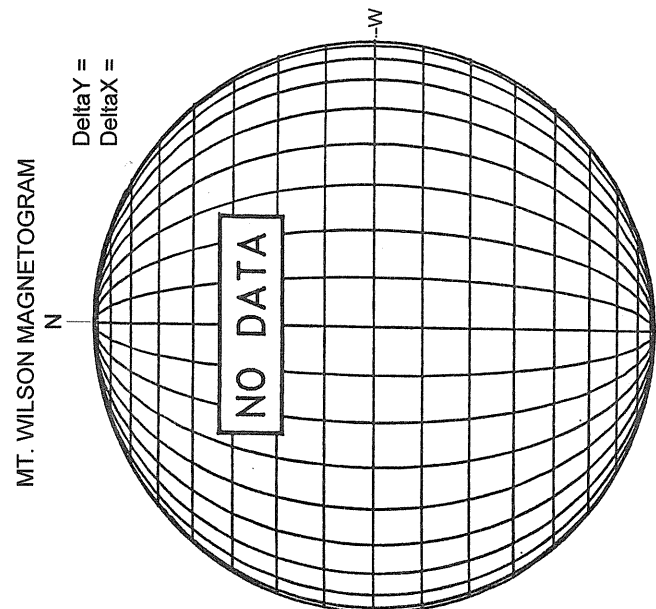
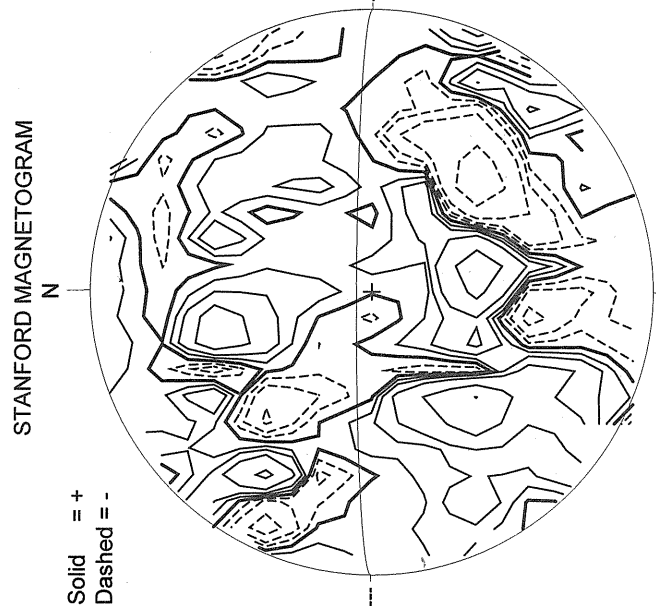
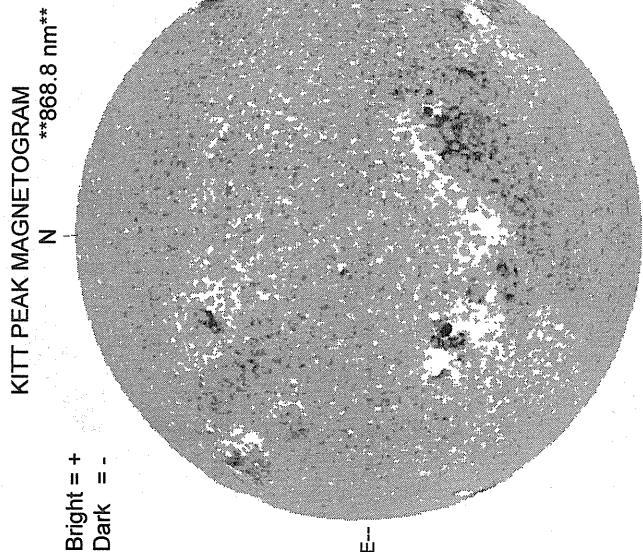


05/09/98
(DOY 129)

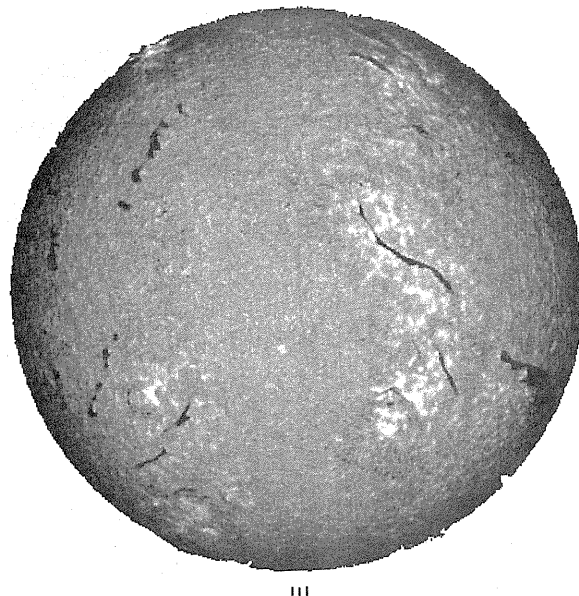
NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 15 MILLIONTHS

--- EE XIV 14:41 UT 1.15 R_o
..... EE X 14:57 UT 1.15 R_o
***** CA XV 15:53 UT 1.15 R_o

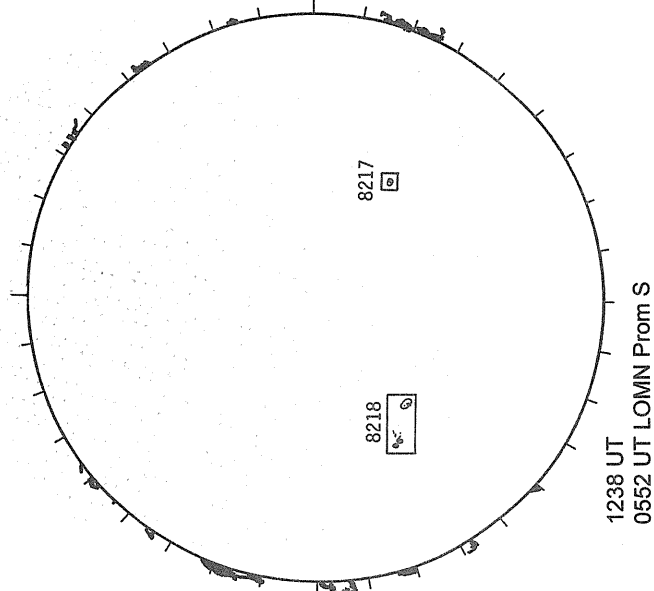
MAY 10, 1998 (P = -22.32, Bo = -3.24, Lo = 22.51)



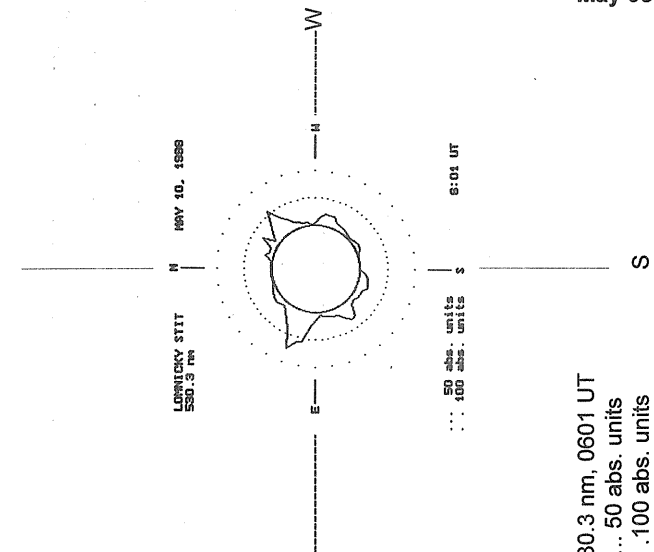
MEUDON H-ALPHA



RAMEY SUNSPOT



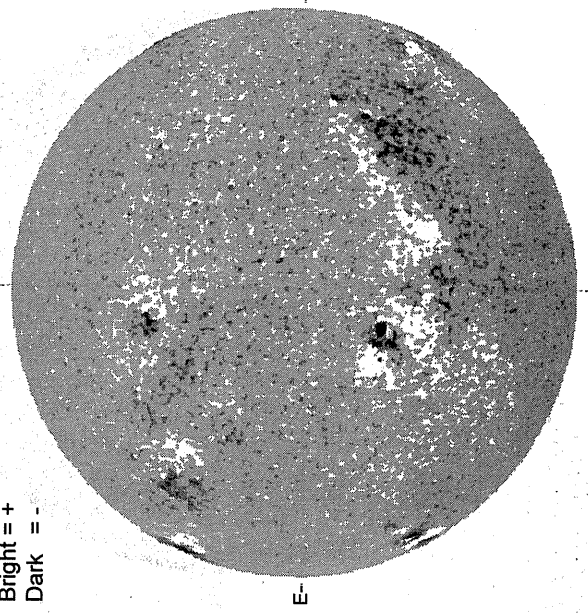
LOMNICKY PEAK CORONA (1.04 Radii)----



MAY 11, 1998 (P = -22.08, Bo = -3.13, Lo = 9.29)

KITT PEAK MAGNETOGRAM
868.8 nm

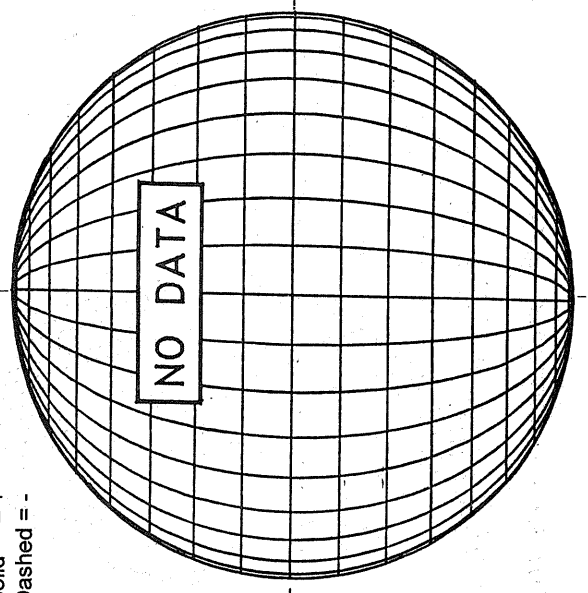
Bright = +
Dark = -



1543 UT

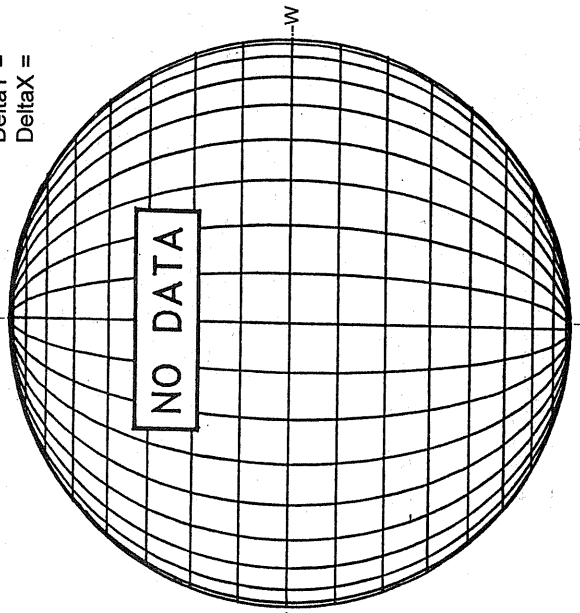
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



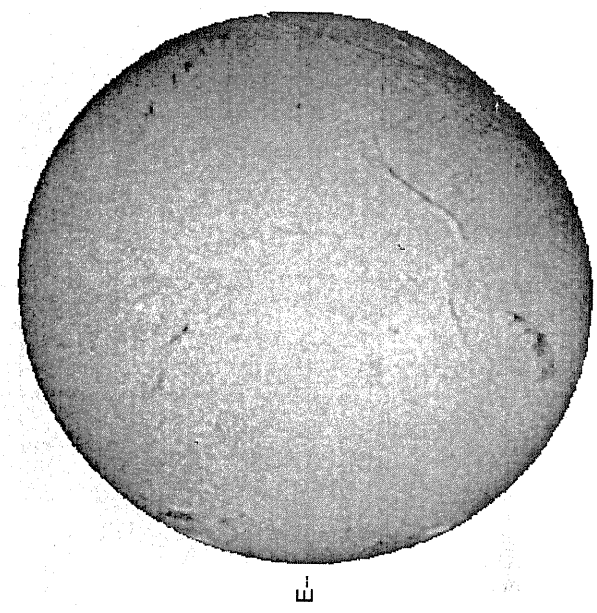
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



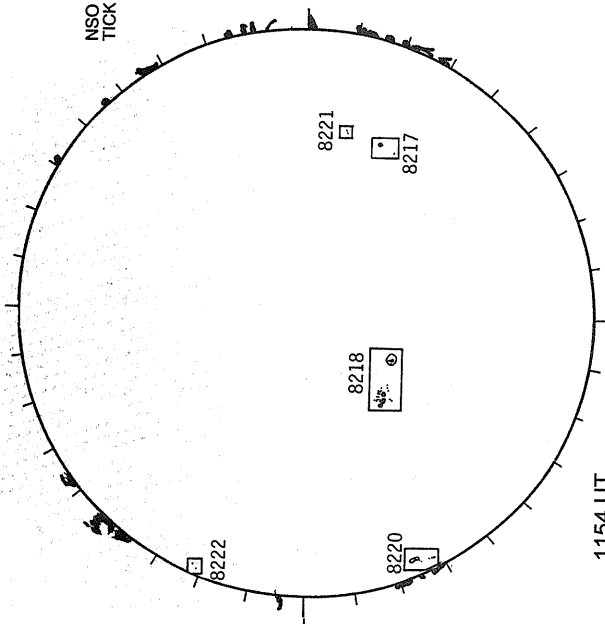
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



1326 UT

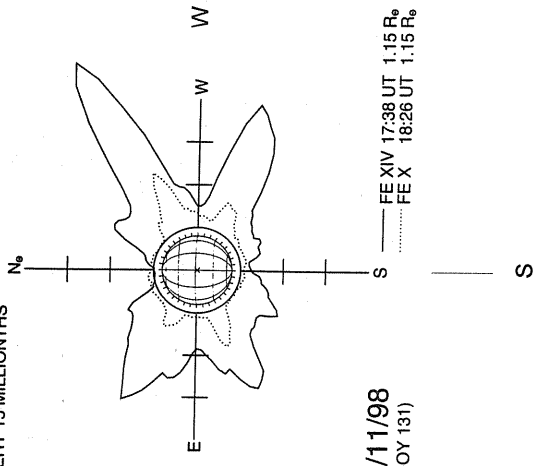
RAMEY SUNSPOT



1154 UT
0546 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 15 MILLIONTHS



05/11/98
(DOY 131)

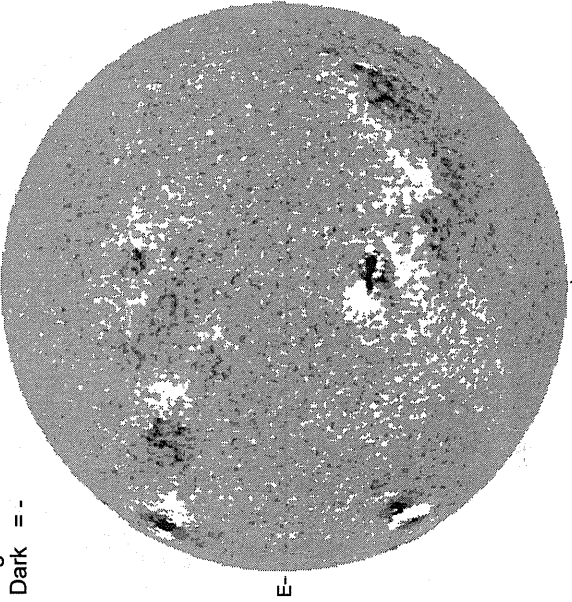
FE XIV 17:38 UT 1.15 R_o
FE X 18:26 UT 1.15 R_o

MAY 12, 1998 (P= -21.83 , Bo = -3.02 , Lo = 356.07)

KITT PEAK MAGNETOGRAM

868.8 nm

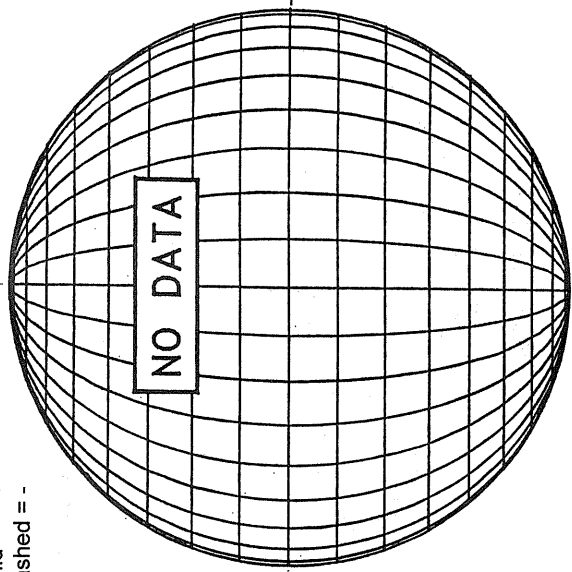
Bright = +
Dark = -



1604 UT

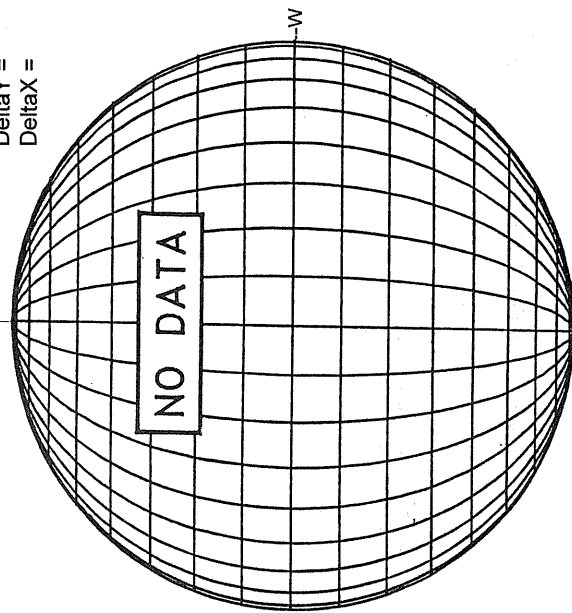
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



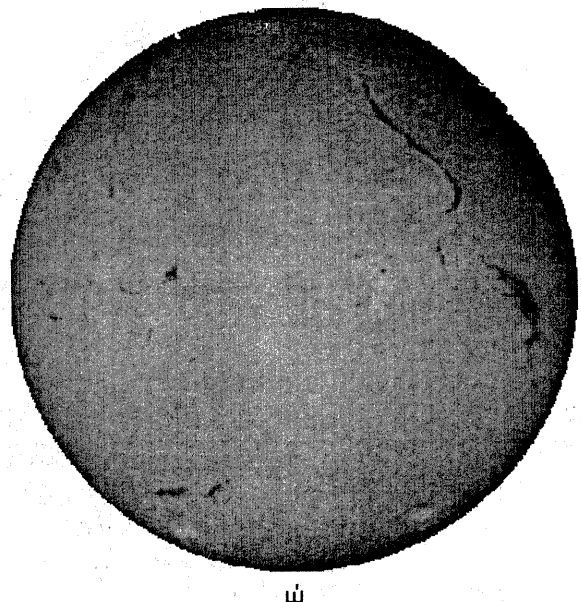
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



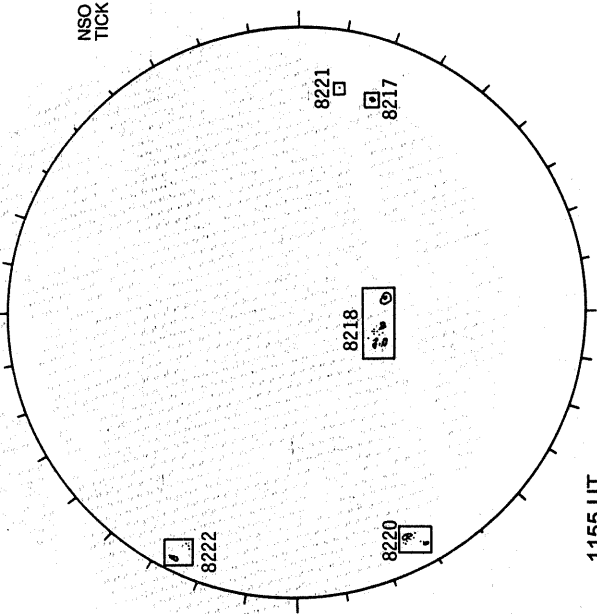
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



1326 UT

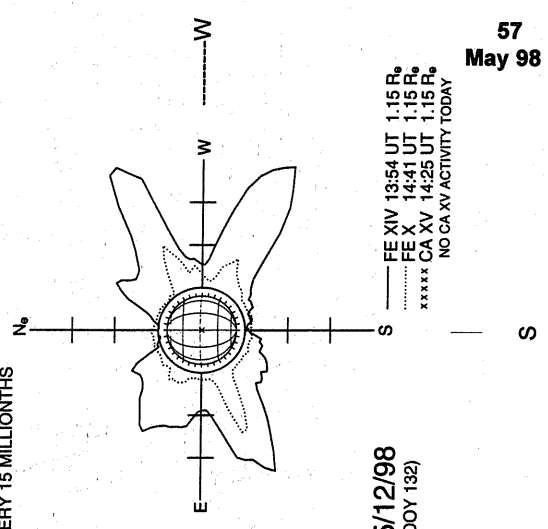
RAMEY SUNSPOT



1155 UT

SACRAMENTO PEAK CORONA (1.15 Radii)---

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 15 MILLIONTHS



05/12/98
(DOY 132)

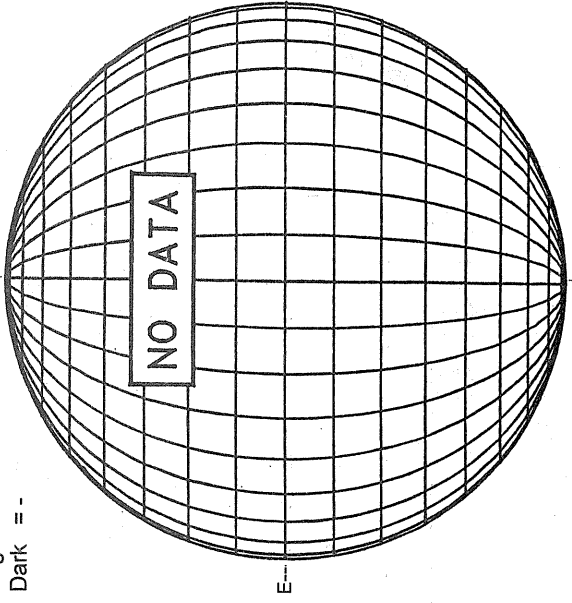
— FE XIV 13:54 UT 1.15 R_o
..... FE X 14:41 UT 1.15 R_o
xxxxx CA XV 14:25 UT 1.15 R_o
NO CA XV ACTIVITY TODAY

MAY 13, 1998 (P = -21.57 , Bo = -2.91 , Lo = 342.84)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



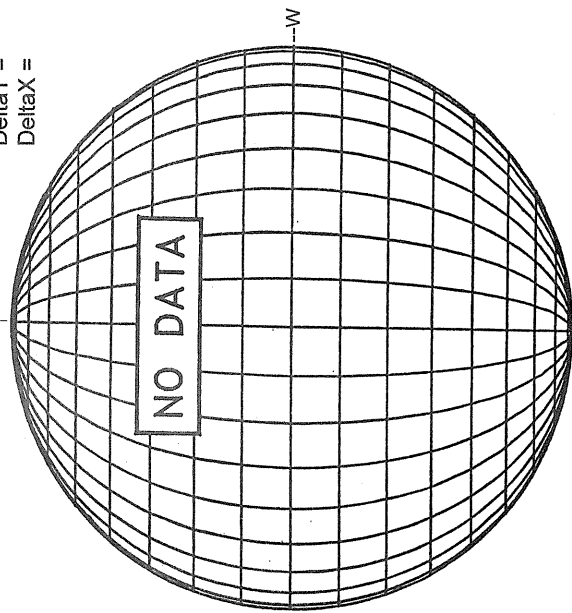
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

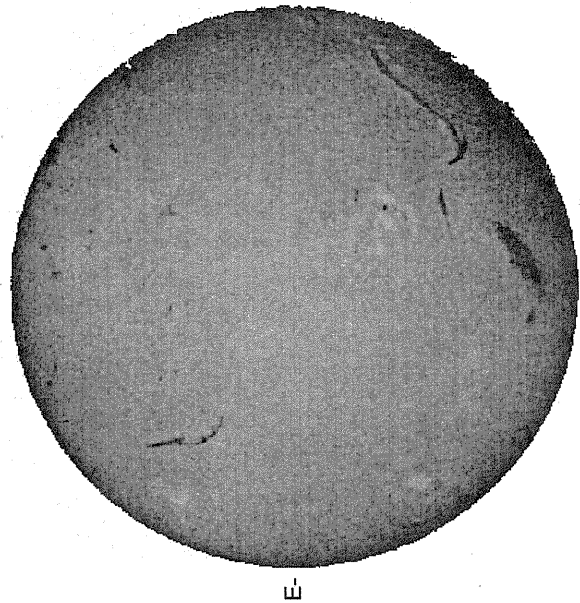
Delta Y =
Delta X =



White = +7.5G
Black = -7.5G

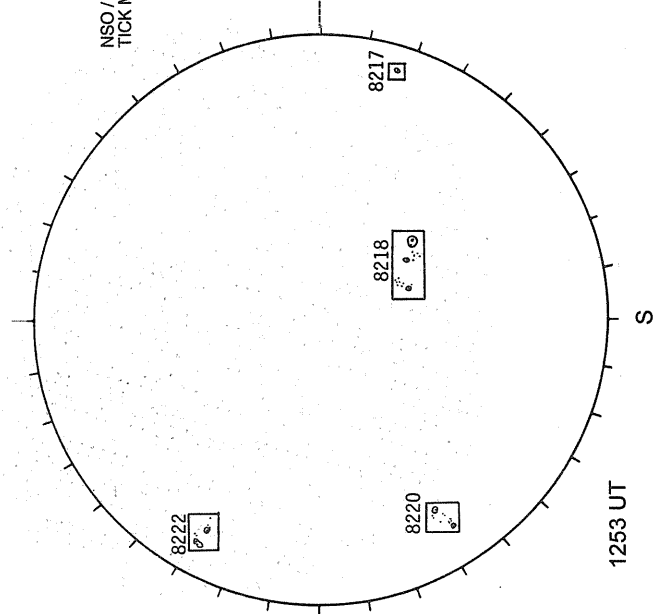
0032 UT
May 14

SACRAMENTO PEAK H-ALPHA



1327 UT

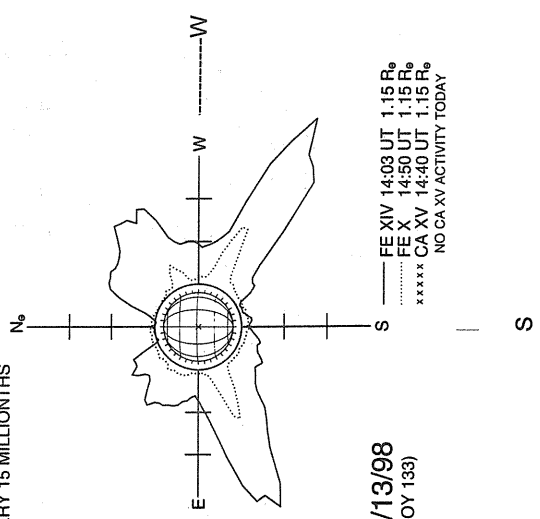
RAMEY SUNSPOT



1253 UT

SACRAMENTO PEAK CORONA (1.15 Radii)---

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 15 MILLIONTHS

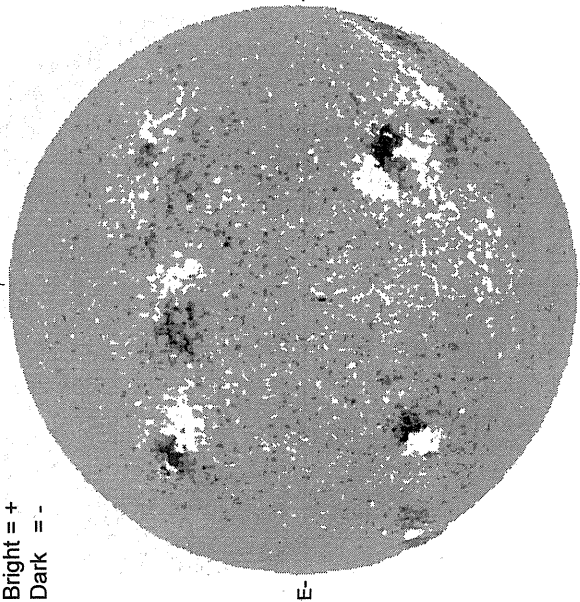


05/13/98
(DOY 133)

FE XIV 14:03 UT 1.15 R_o
FE X 14:50 UT 1.15 R_o
xxxxx CA XV 14:40 UT 1.15 R_o
NO CA XV ACTIVITY TODAY

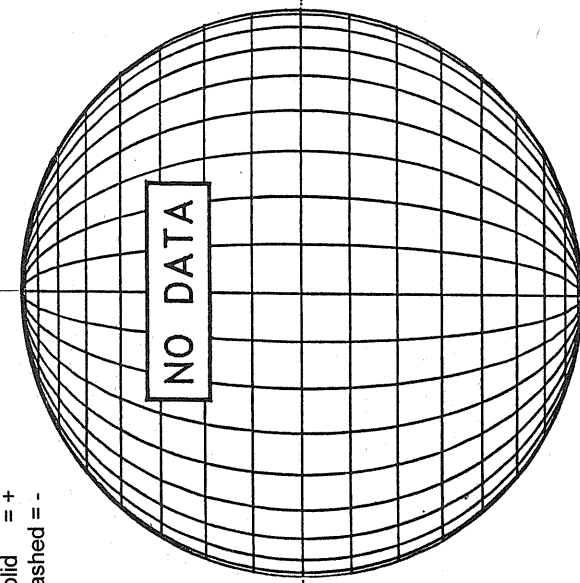
MAY 14, 1998 (P= -21.31 , Bo = -2.80 , Lo= 329.62)

KITT PEAK MAGNETOGRAM
N
Bright = +
Dark = -
868.8 nm

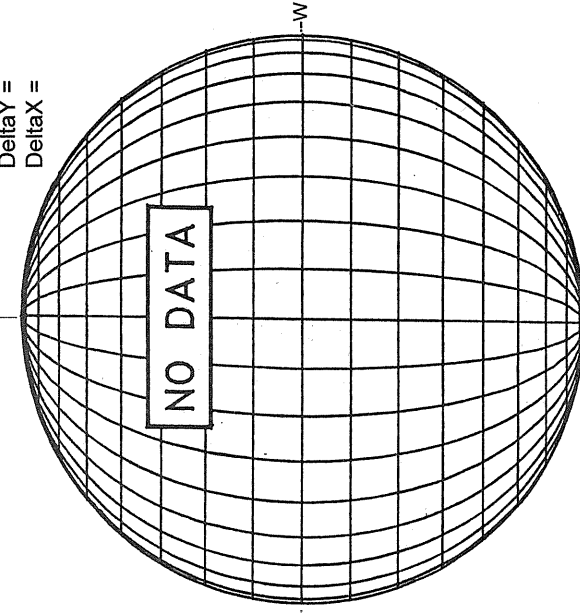


1832 UT

STANFORD MAGNETOGRAM
N
Solid = +
Dashed = -

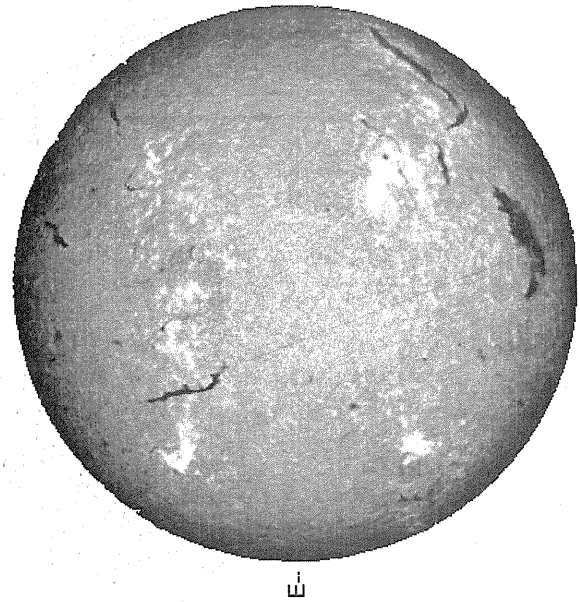


MT. WILSON MAGNETOGRAM
N
Delta Y =
Delta X =



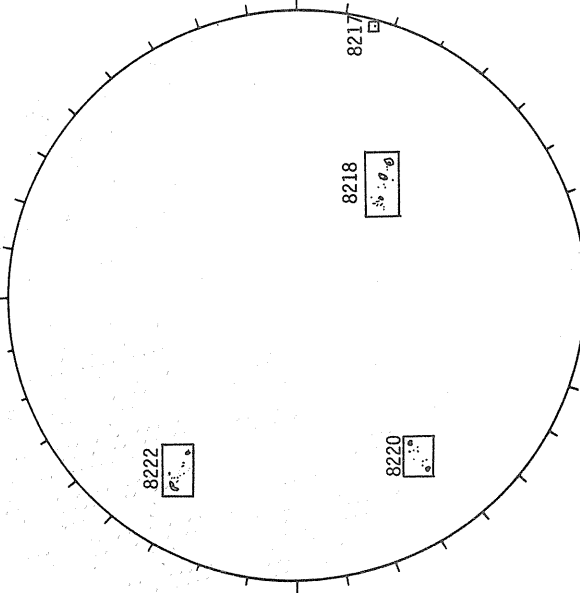
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



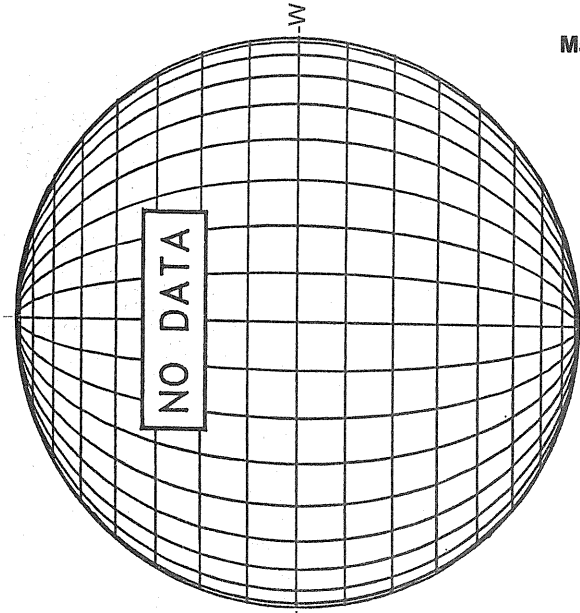
0913 UT

RAMEY SUNSPOT



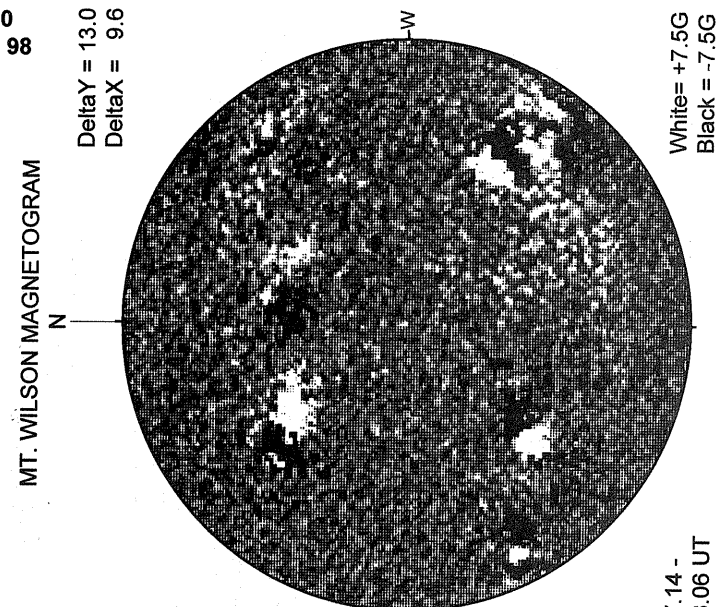
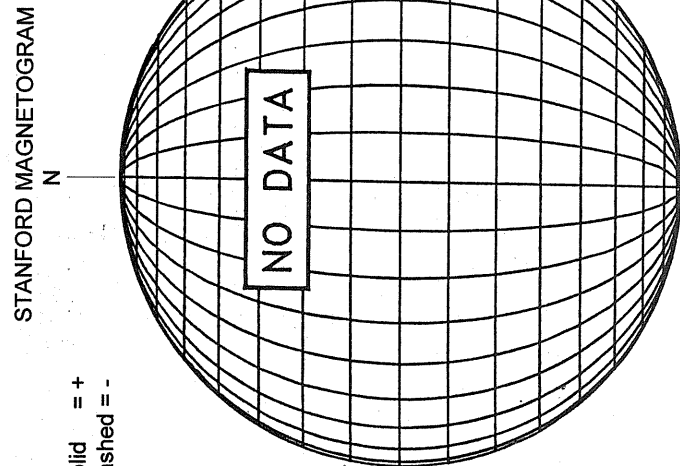
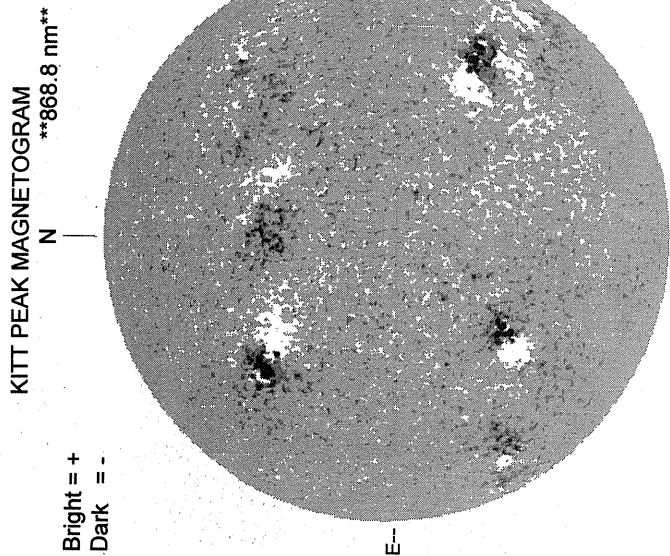
1155 UT

SACRAMENTO PEAK CORONA (1.15 Radii)--

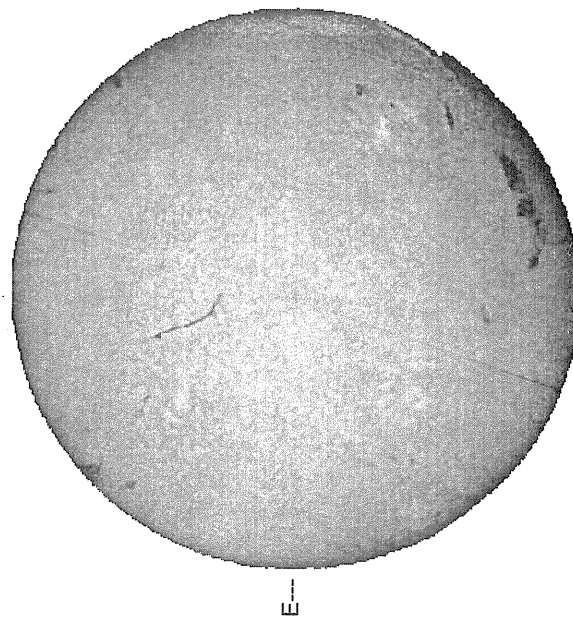


MAY 15, 1998 (P= -21.04 , Bo = -2.68 , Lo = 316.39)

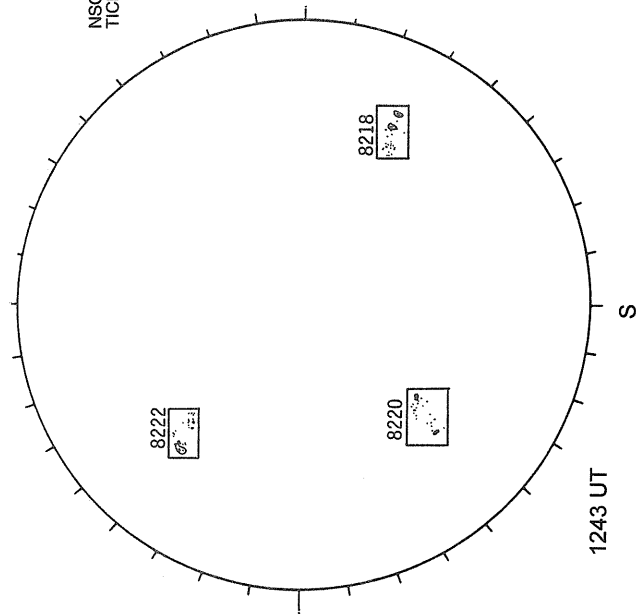
60
May 98



SACRAMENTO PEAK H-ALPHA

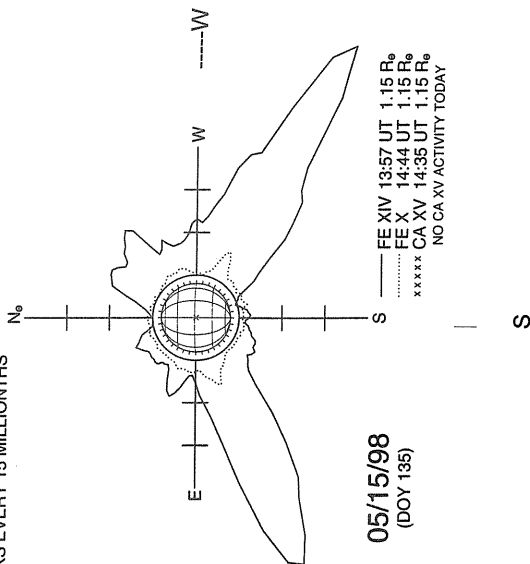


RAMEY SUNSPOT



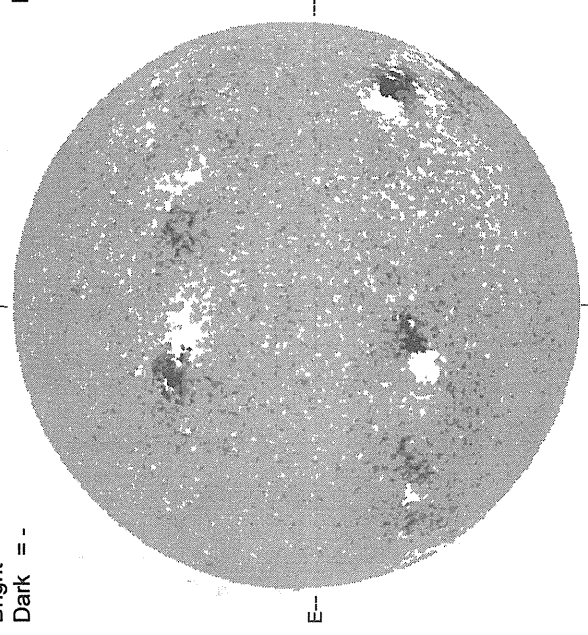
SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 15 MILLIONTHS

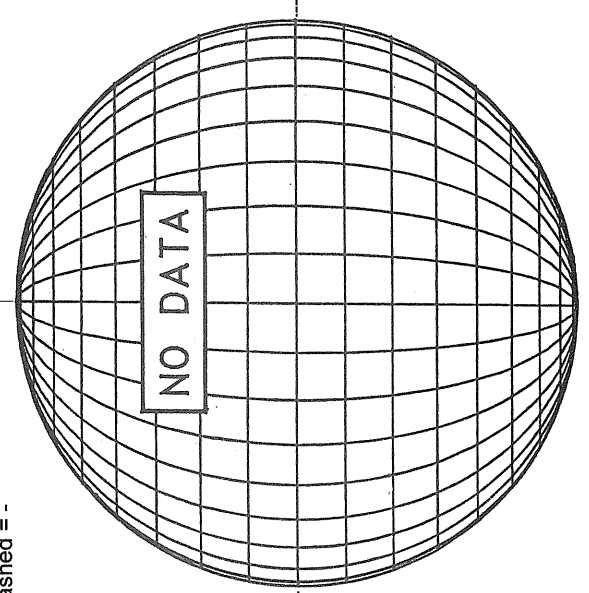


MAY 16, 1998 (P = -20.77 , Bo = -2.57 , Lo = 303.17)

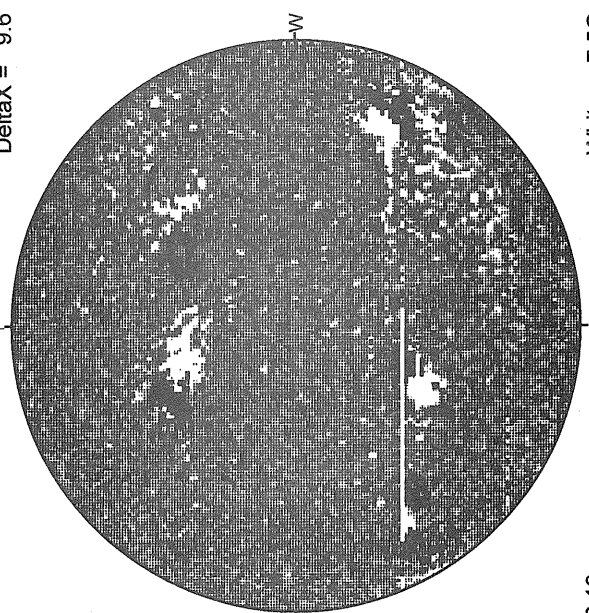
KITT PEAK MAGNETOGRAM
868.8 nm
Bright = +
Dark = -



STANFORD MAGNETOGRAM
Solid = +
Dashed = -

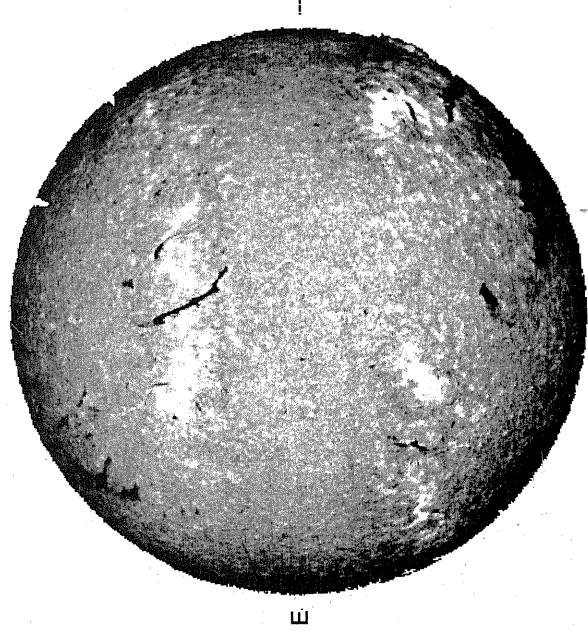


MT. WILSON MAGNETOGRAM
Delta Y = 13.0
Delta X = 9.6

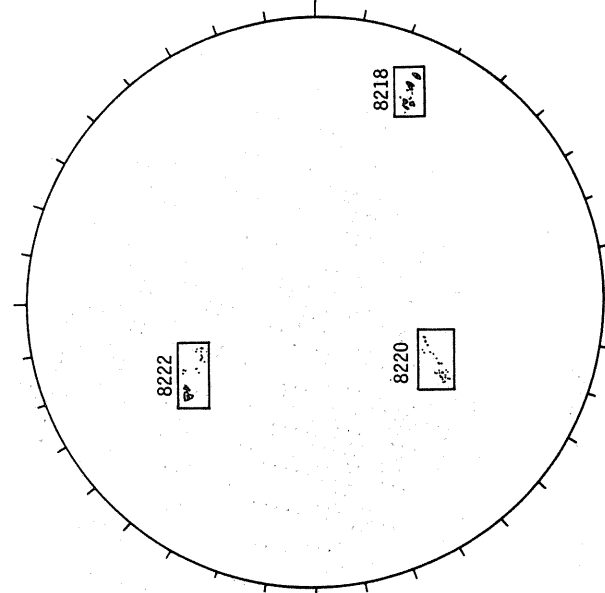


White = +7.5G
Black = -7.5G

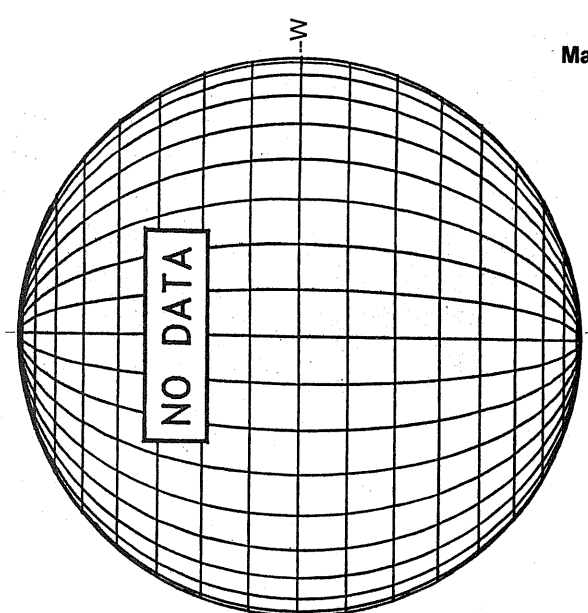
MEUDON H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)---

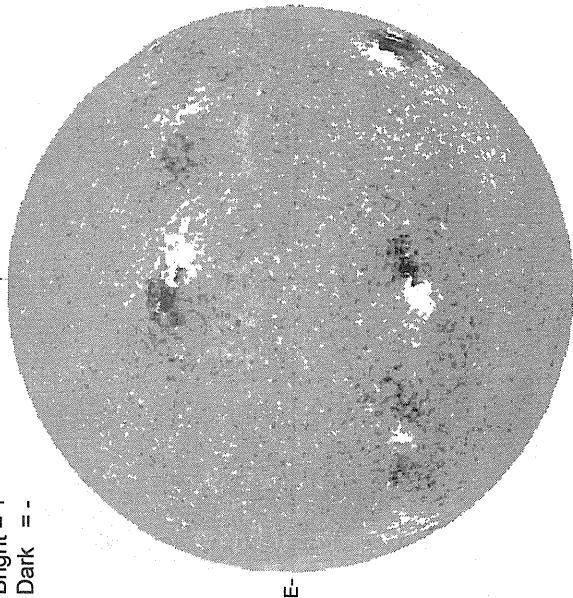


MAY 17, 1998 (P= -20.48 , Bo = -2.45 , Lo = 289.94)

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May 98

KITT PEAK MAGNETOGRAM
868.8 nm

Bright = +
Dark = -



1717 UT

STANFORD MAGNETOGRAM

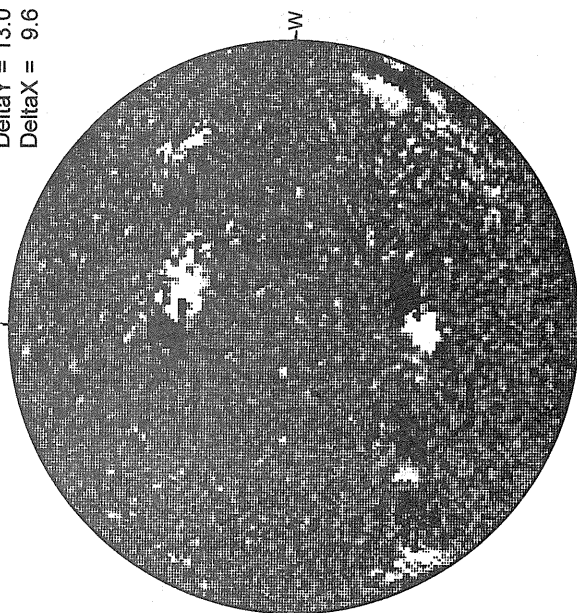
Solid = +
Dashed = -



1926 UT

MT. WILSON MAGNETOGRAM

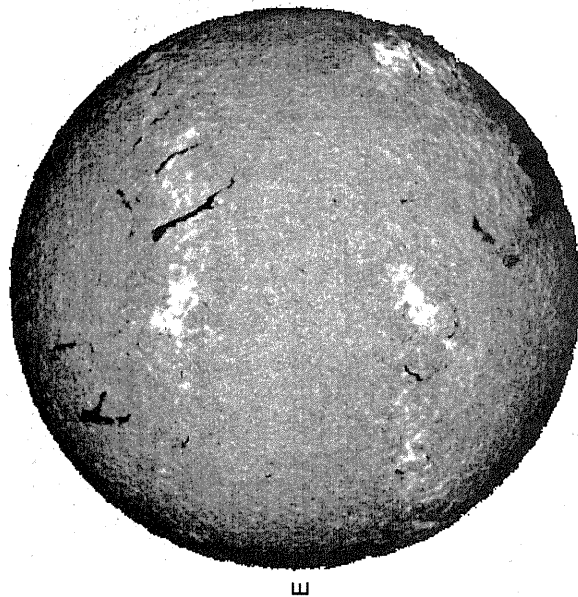
Delta Y = 13.0
Delta X = 9.6



20.28 -
21.21 UT

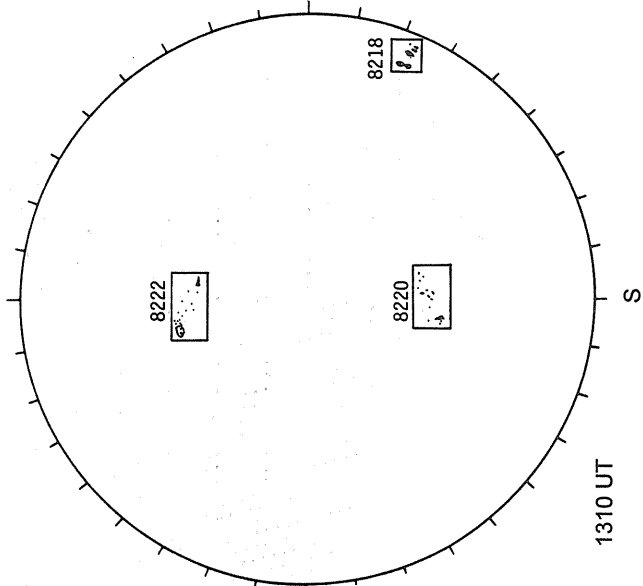
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



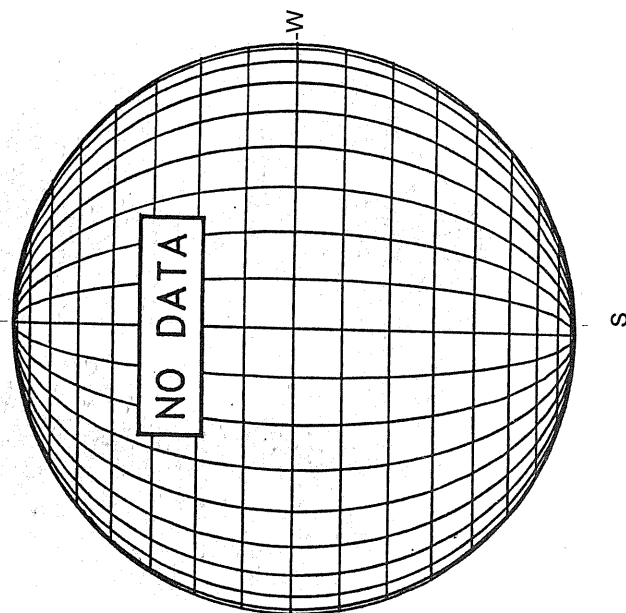
0721 UT

RAMEY SUNSPOT



1310 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

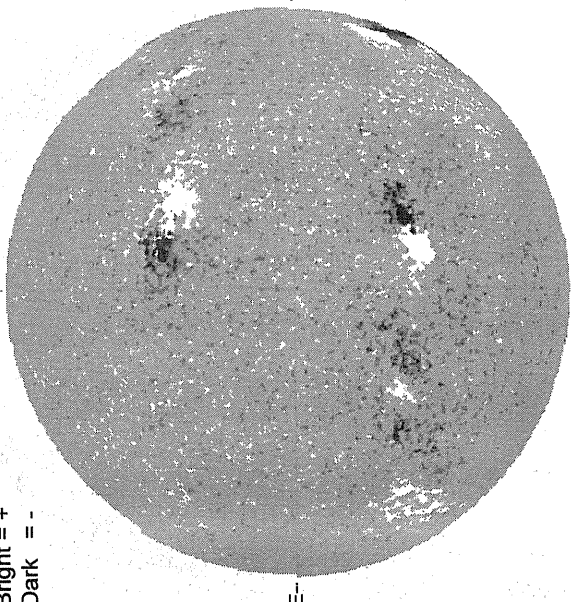


MAY 18, 1998 (P= -20.19 , Bo = -2.34 , Lo = 276.71)

KITT PEAK MAGNETOGRAM

868.8 nm

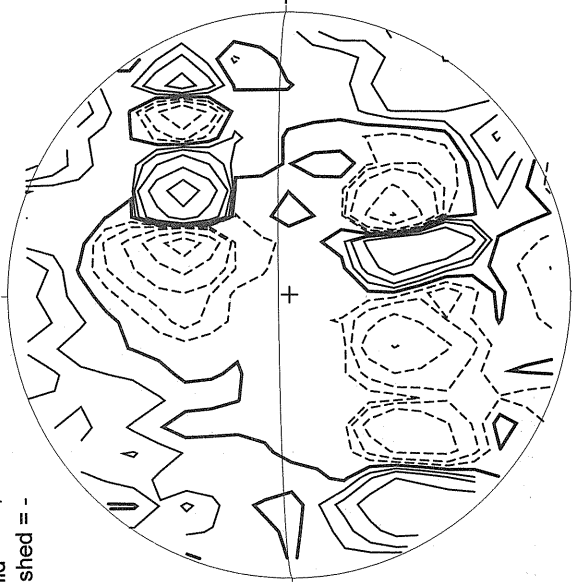
Bright = +
Dark = -



1547 UT

STANFORD MAGNETOGRAM

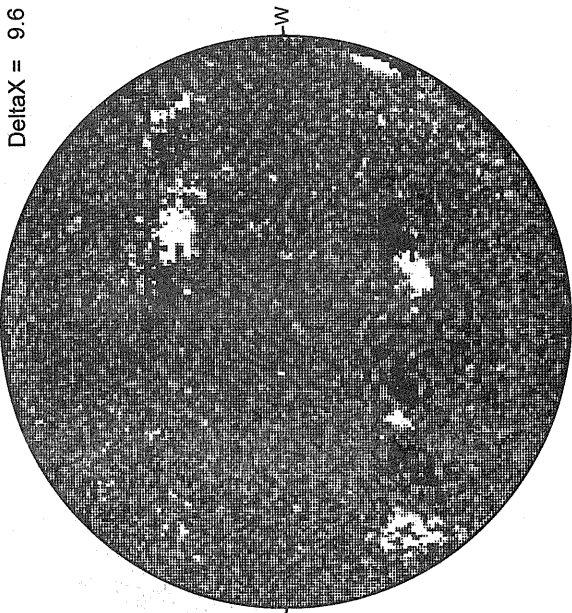
Solid = +
Dashed = -



1927 UT

MT. WILSON MAGNETOGRAM

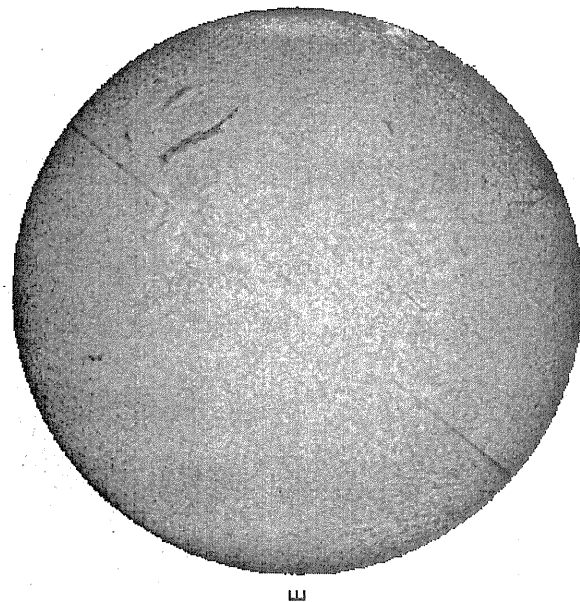
Delta Y = 13.0
Delta X = 9.6



18.34 -
19.27 UT

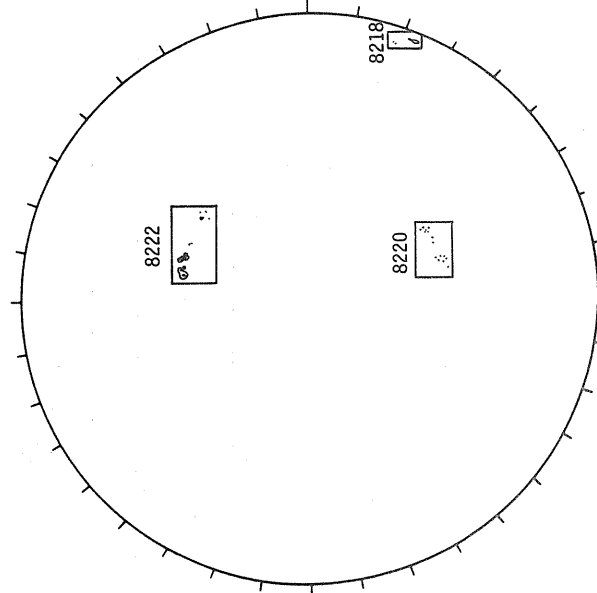
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



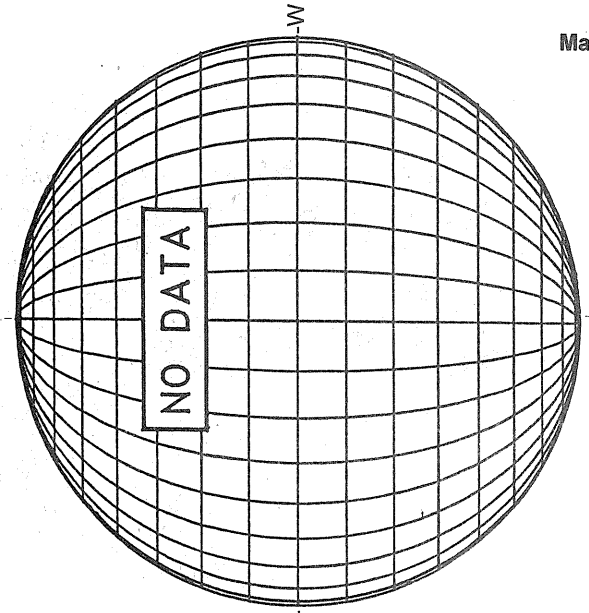
1443 UT

RAMEY SUNSPOT



1504 UT

SACRAMENTO PEAK CORONA (1.15 Radii)---



MAY 19, 1998 (P= -19.90 , Bo = -2.22 , Lo = 263.49)

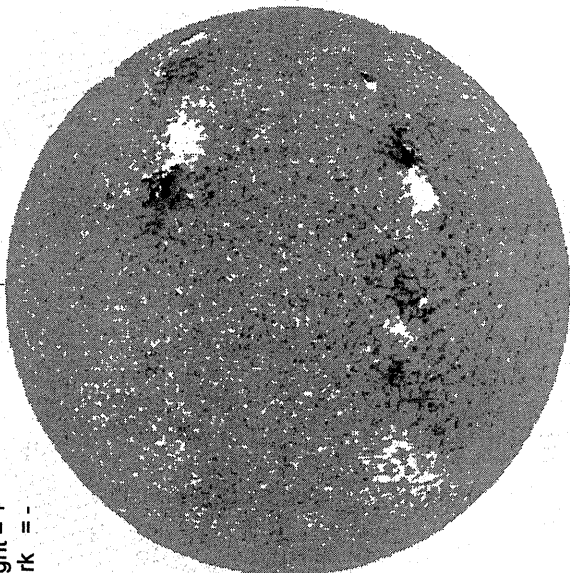
64
May 98

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -

N



1915 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

N

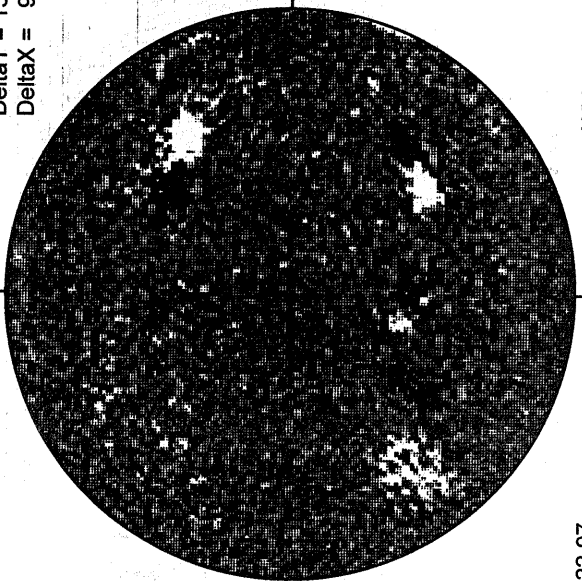


0044 UT
May 20

MT. WILSON MAGNETOGRAM

Delta Y = 13.0
Delta X = 9.6

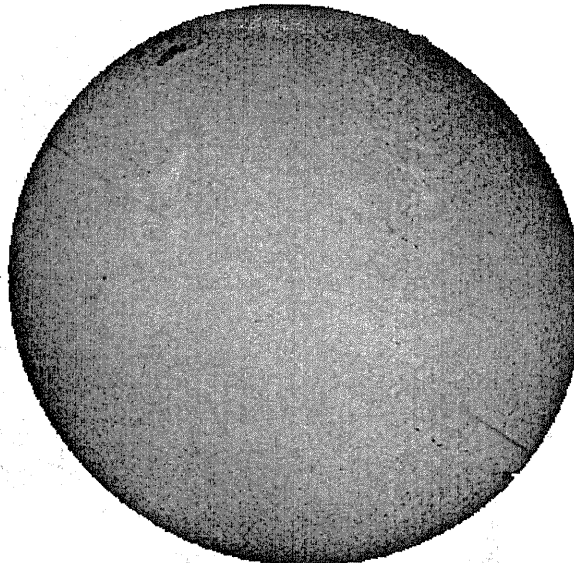
N



22.97 -
23.89 UT

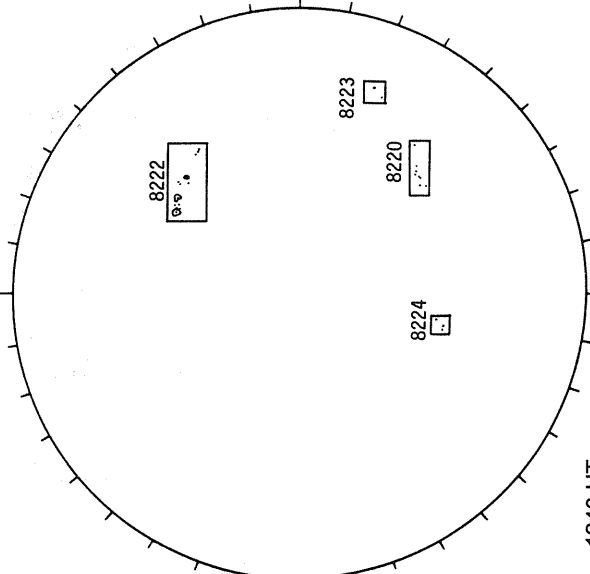
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



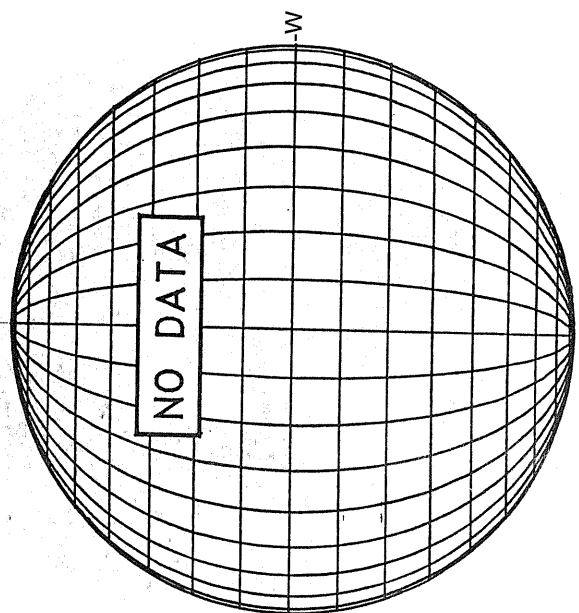
1418 UT

RAMEY SUNSPOT



1243 UT

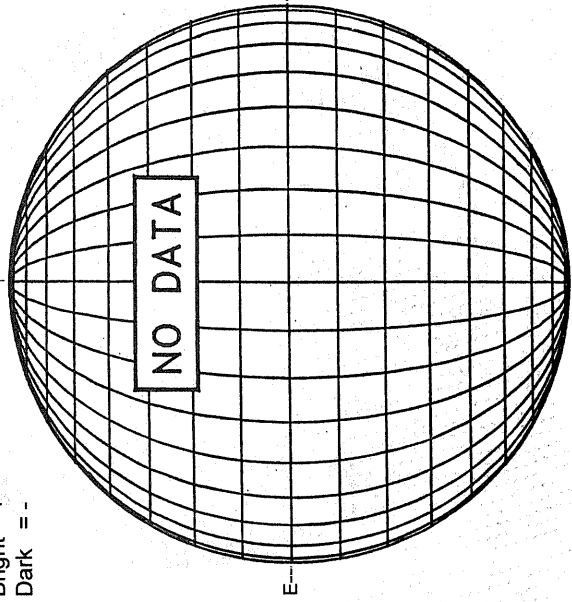
SACRAMENTO PEAK CORONA (1.15 Radii)---



S

MAY 20, 1998 (P= -19.60 , Bo = -2.11 , Lo = 250.26)

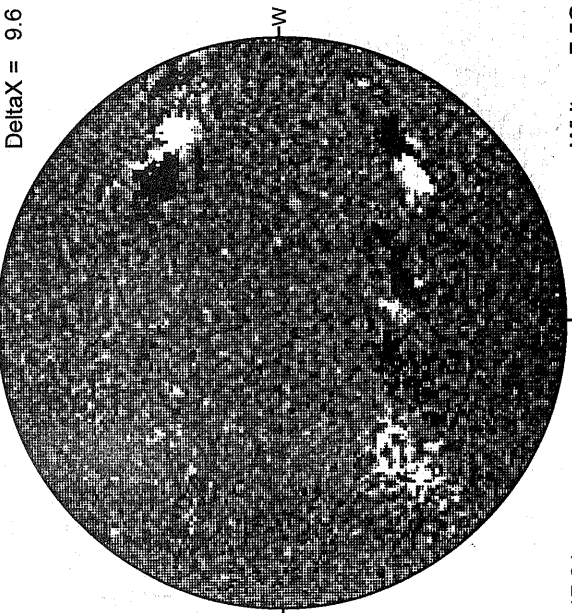
KITT PEAK MAGNETOGRAM
868.8 nm
Bright = +
Dark = -



STANFORD MAGNETOGRAM
Solid = +
Dashed = -



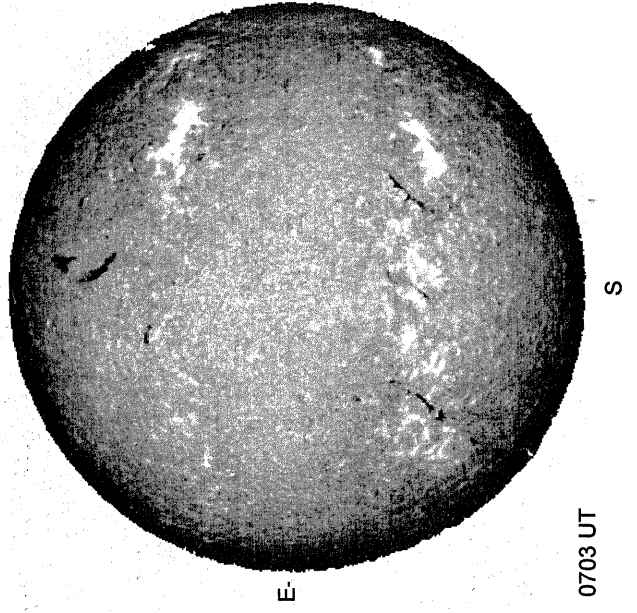
MT. WILSON MAGNETOGRAM
DeltaY = 13.0
DeltaX = 9.6



17.21 -
18.14 UT

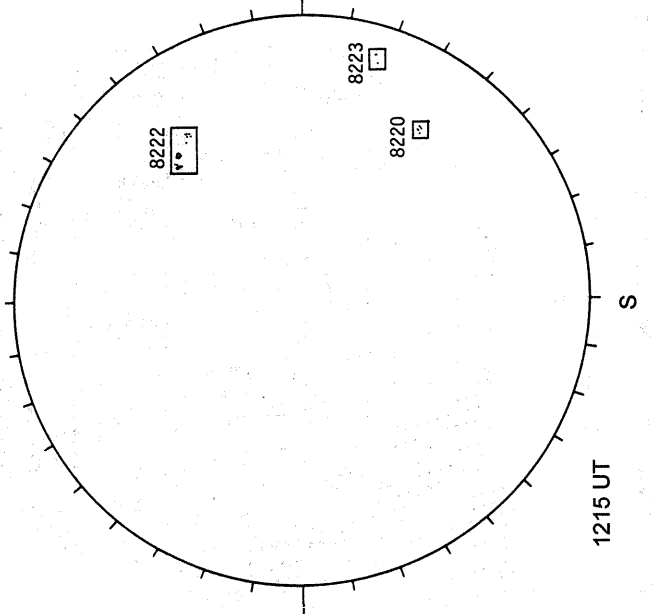
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



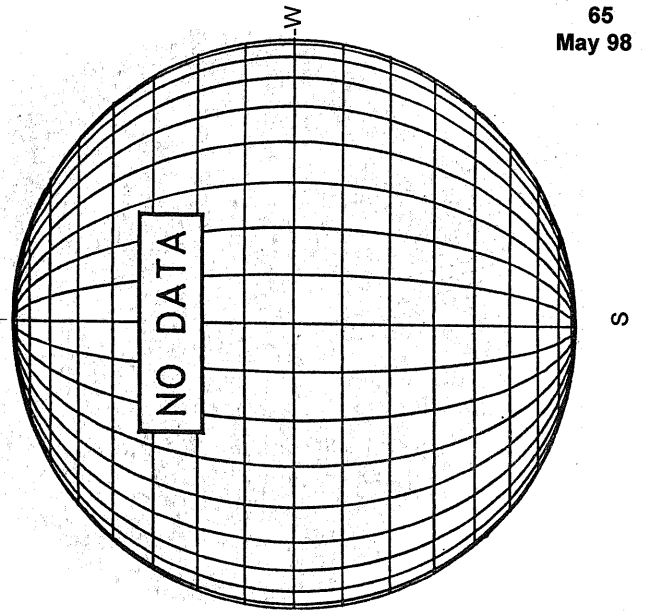
0703 UT

RAMEY SUNSPOT



1215 UT

SACRAMENTO PEAK CORONA (1.15 Radii)---

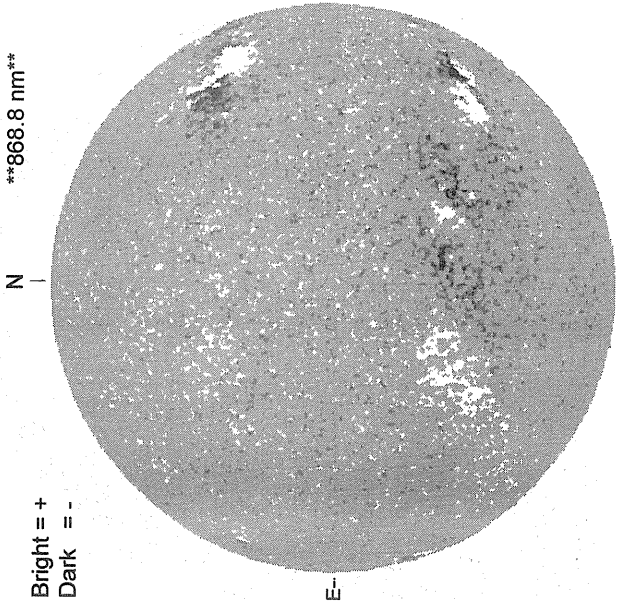


MAY 21, 1998 (P= -19.29 , Bo = -1.99 , Lo = 237.03)

KITT PEAK MAGNETOGRAM

868.8 nm

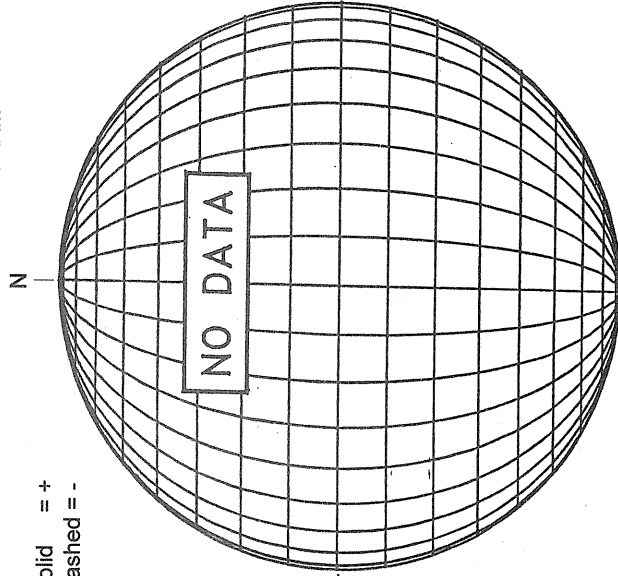
Bright = +
Dark = -



1717 UT

STANFORD MAGNETOGRAM

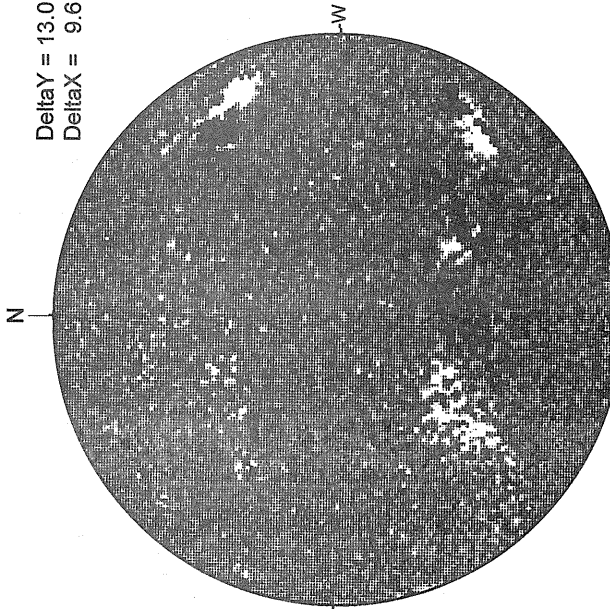
Solid = +
Dashed = -



17.05 -
17.98 UT

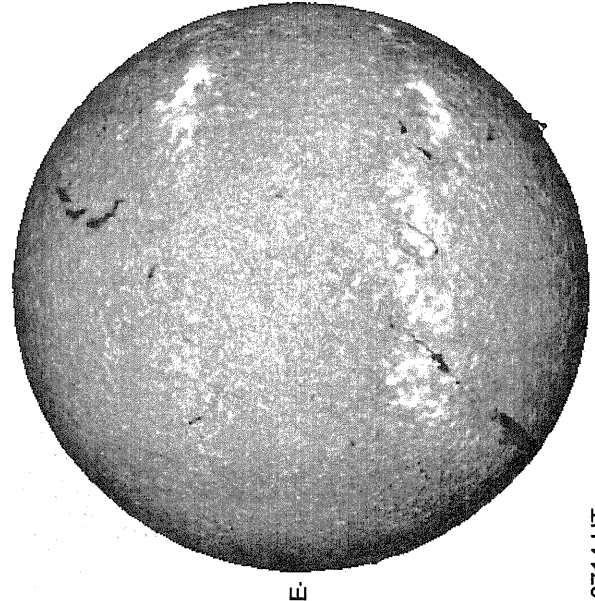
MT. WILSON MAGNETOGRAM

Delta Y = 13.0
Delta X = 9.6



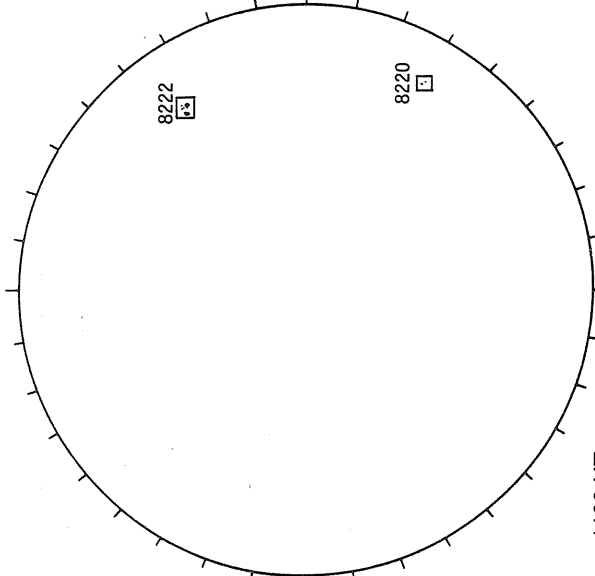
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



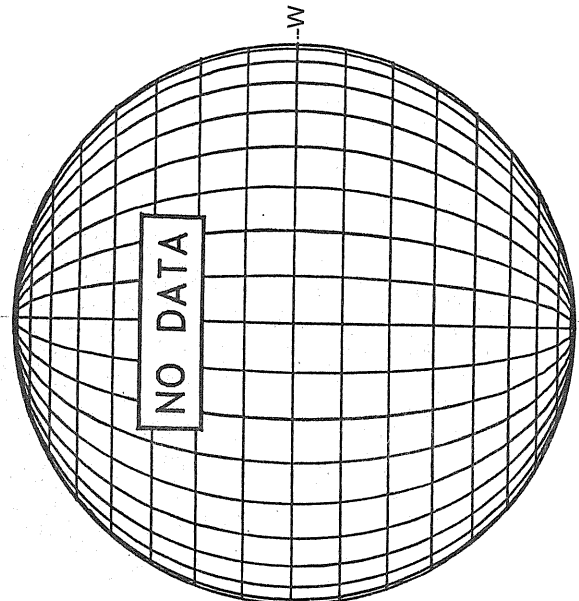
0714 UT

RAMEY SUNSPOT



1133 UT

SACRAMENTO PEAK CORONA (1.15 Radii)-----



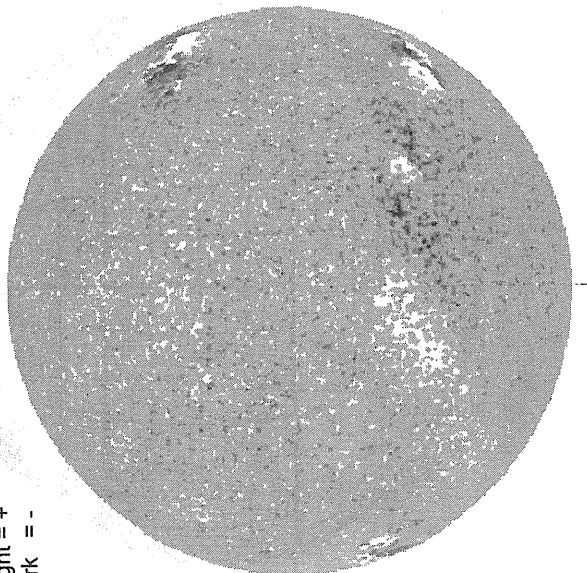
NO DATA

MAY 22, 1998 (P= -18.98 , Bo = -1.87 , Lo = 223.80)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



1445 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -



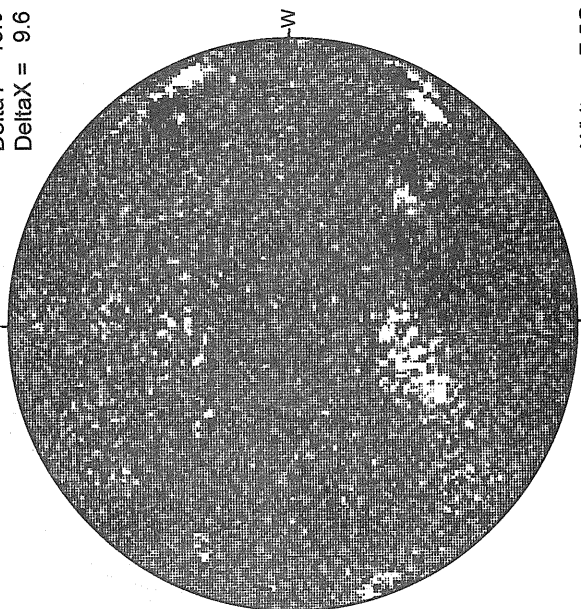
1952 UT

MT. WILSON MAGNETOGRAM

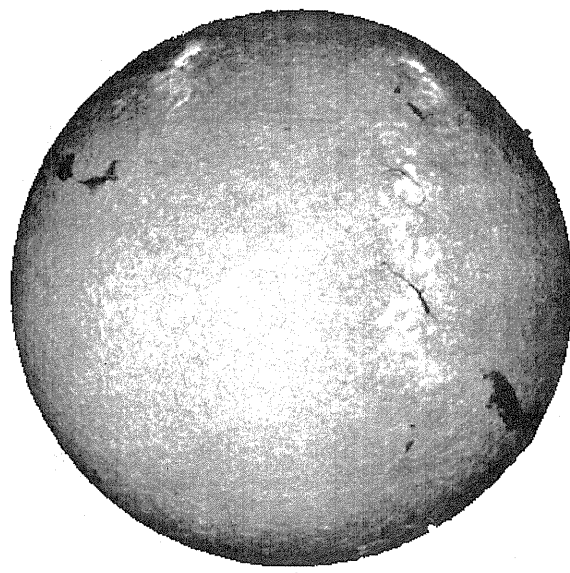
DeltaY = 13.0
DeltaX = 9.6

White = +7.5G
Black = -7.5G

15.92 -
16.84 UT

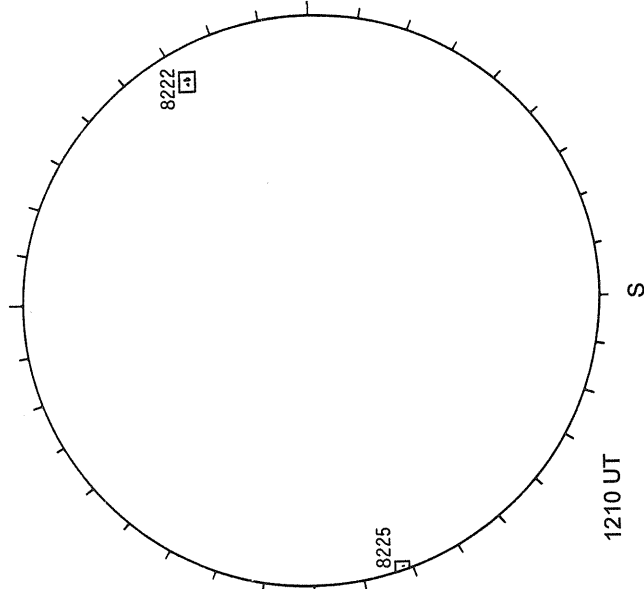


MEUDON H-ALPHA



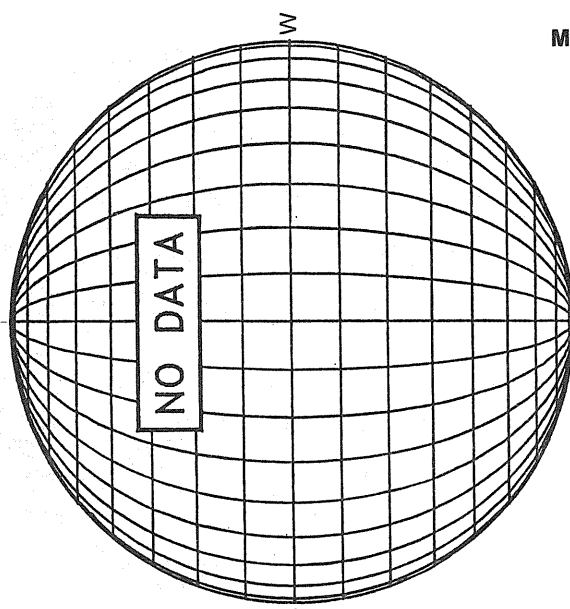
0700 UT

RAMEY SUNSPOT



1210 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



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May 98

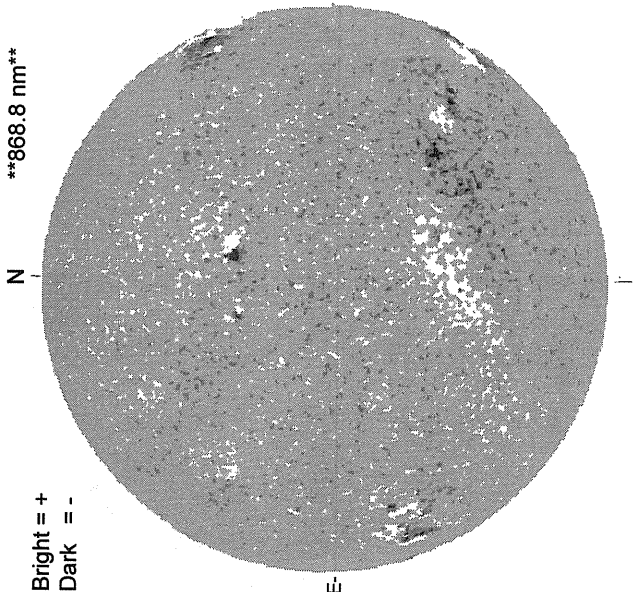
68
May 98

MAY 23, 1998 (P= -18.66 , Bo = -1.76 , Lo = 210.57)

KITT PEAK MAGNETOGRAM

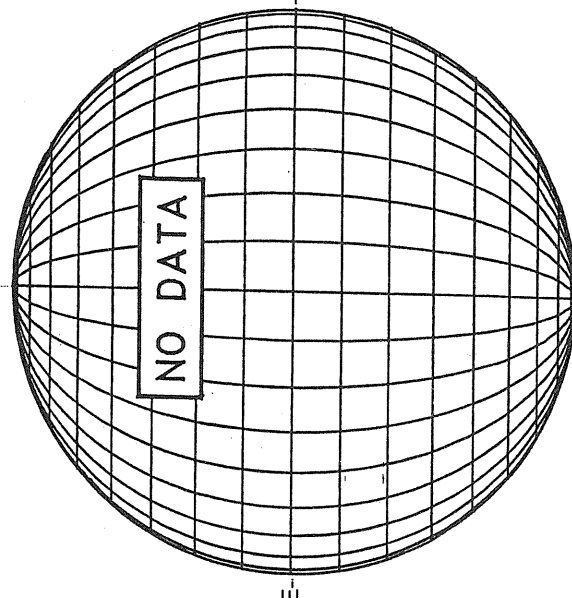
868.8 nm

Bright = +
Dark = -



1605 UT

MENDON H-ALPHA



0608 UT

STANFORD MAGNETOGRAM

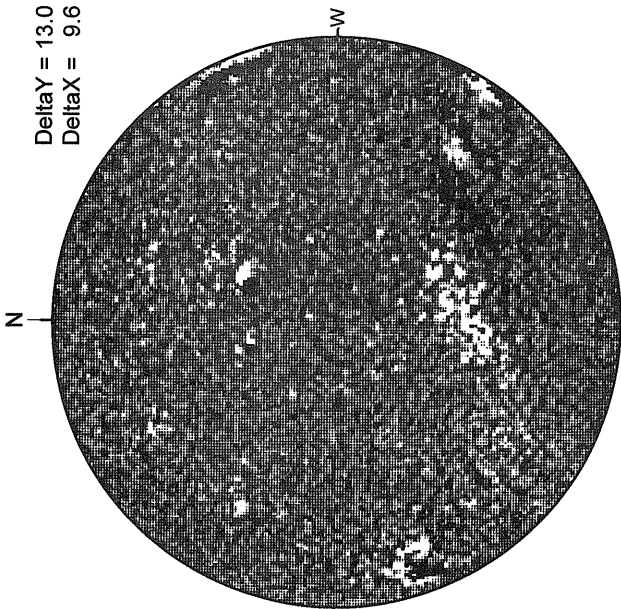
Solid = +
Dashed = -



2246 UT

MT. WILSON MAGNETOGRAM

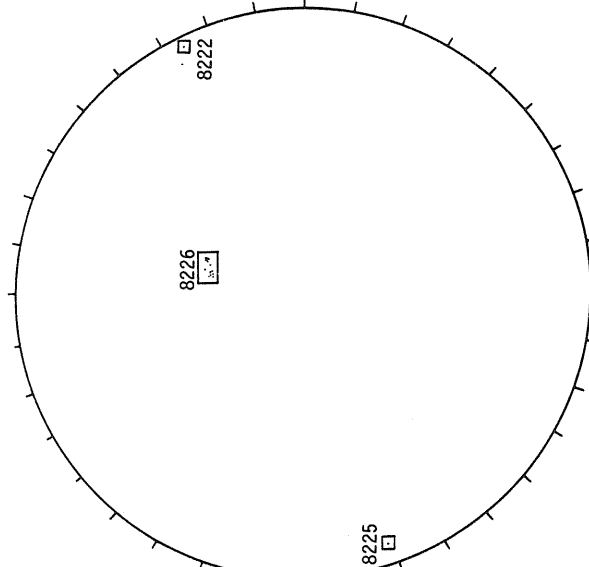
DeltaY = 13.0
DeltaX = 9.6



17.55 -
18.48 UT

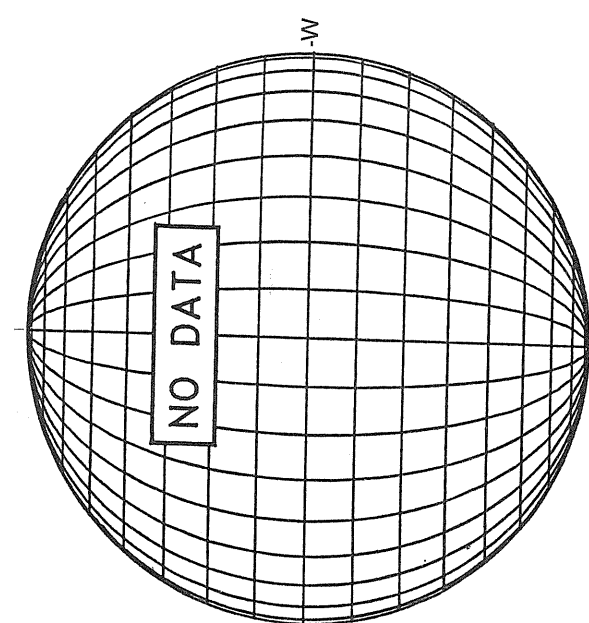
White = +7.5G
Black = -7.5G

RAMEY SUNSPOT



1154 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



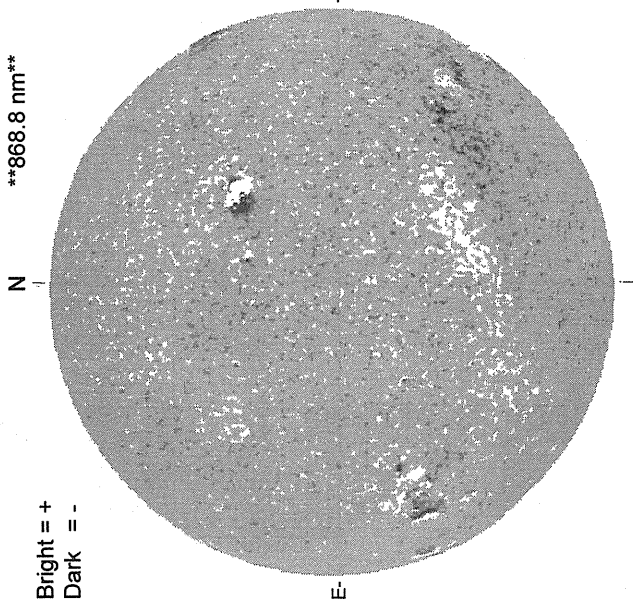
S

MAY 24, 1998 (P= -18.33 , Bo = -1.64 , Lo = 197.34)

KITT PEAK MAGNETOGRAM

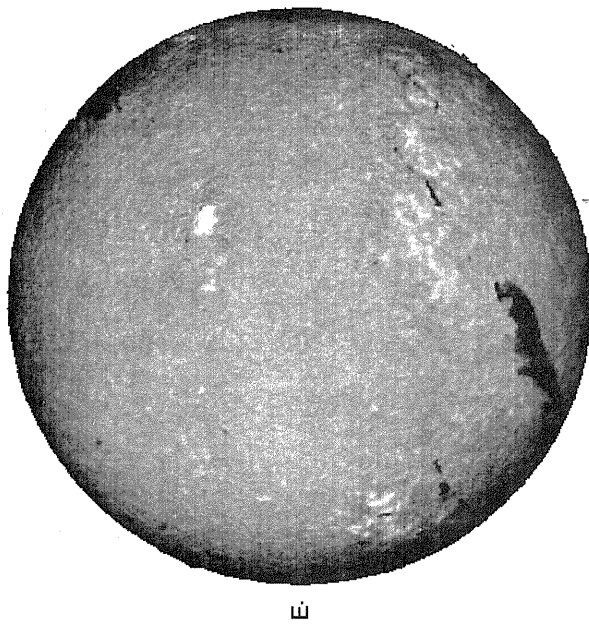
868.8 nm

Bright = +
Dark = -



1415 UT

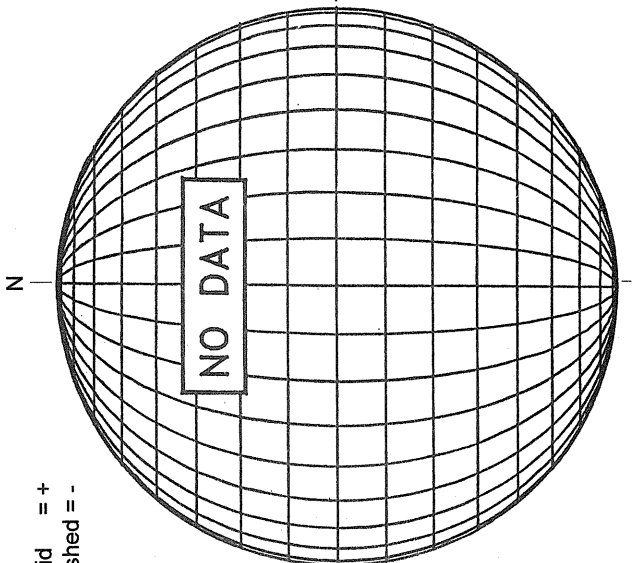
MEUDON H-ALPHA



0625 UT

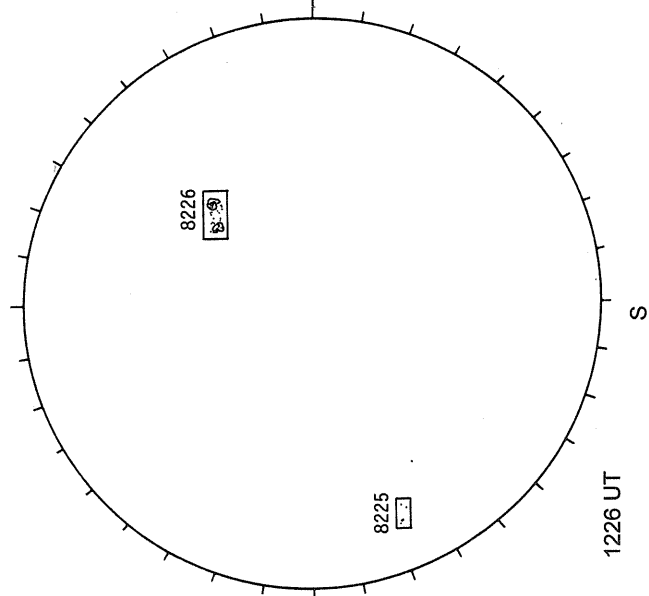
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



16.99 -
17.91 UT

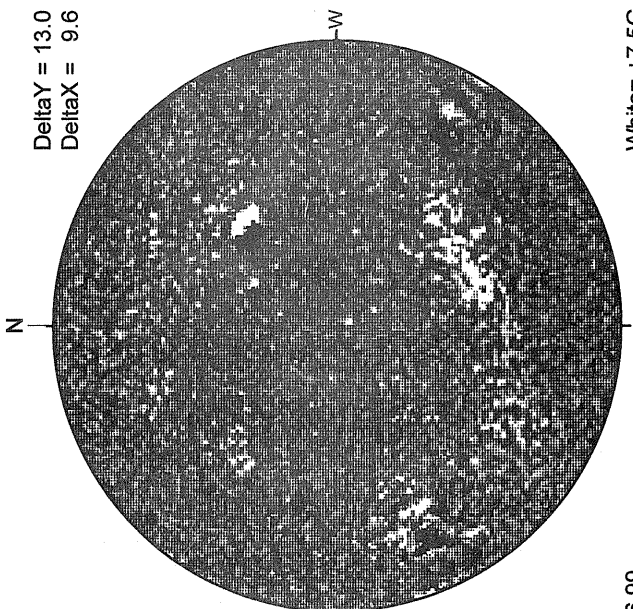
RAMEY SUNSPOT



1226 UT

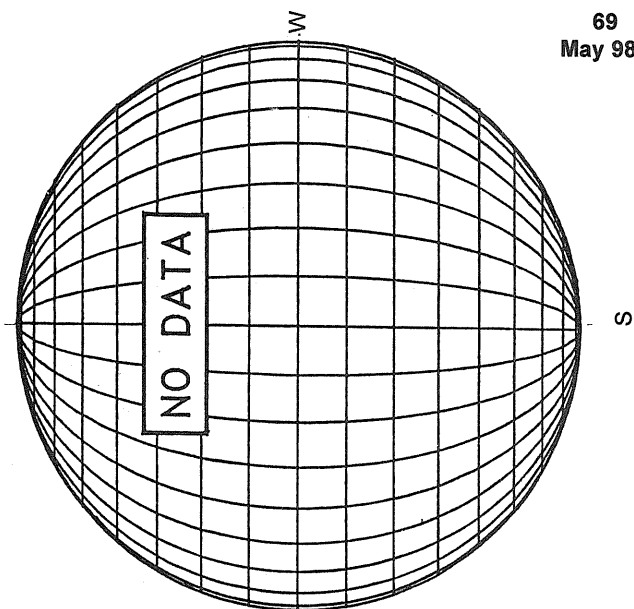
MT. WILSON MAGNETOGRAM

DeltaY = 13.0
DeltaX = 9.6



White= +7.5G
Black = -7.5G

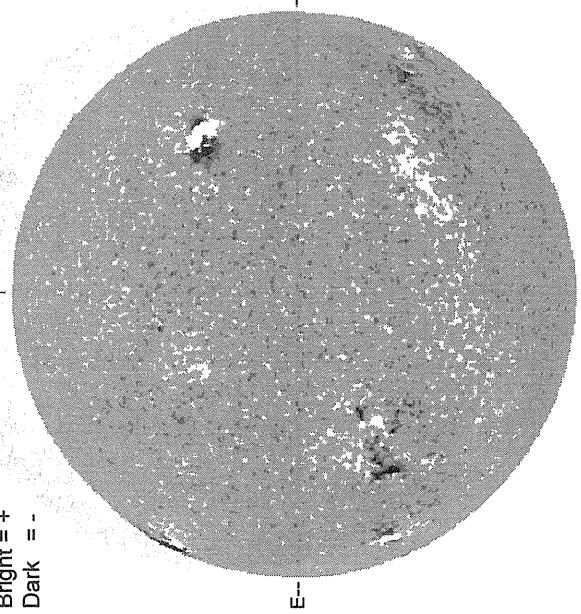
SACRAMENTO PEAK CORONA (1.15 Radii)----



KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



1555 UT

STANFORD MAGNETOGRAM

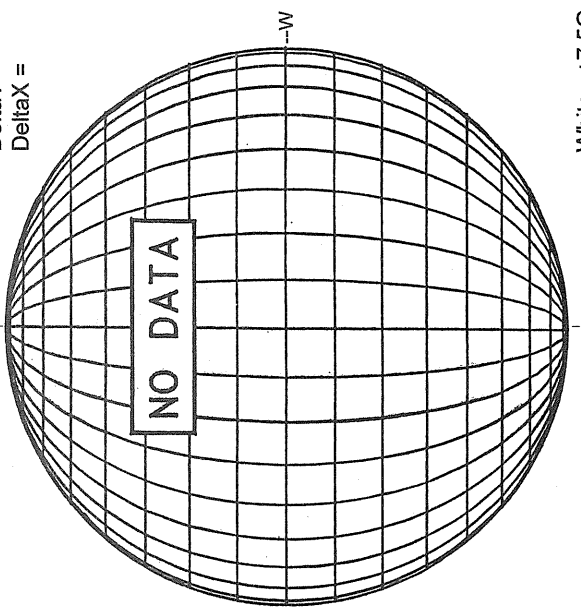
Solid = +
Dashed = -



1945 UT

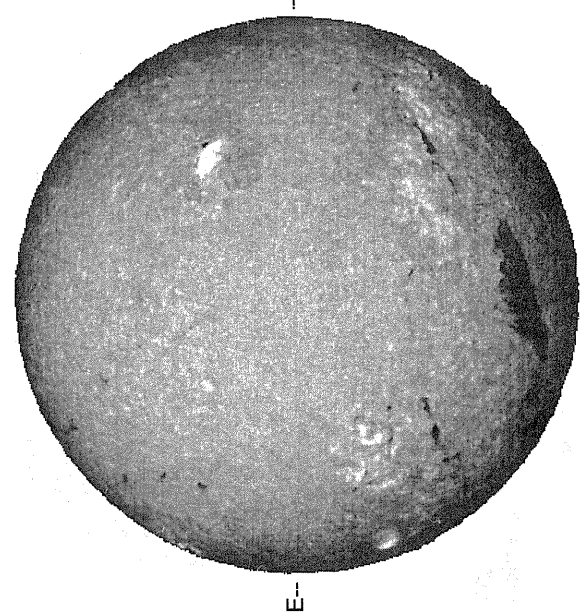
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



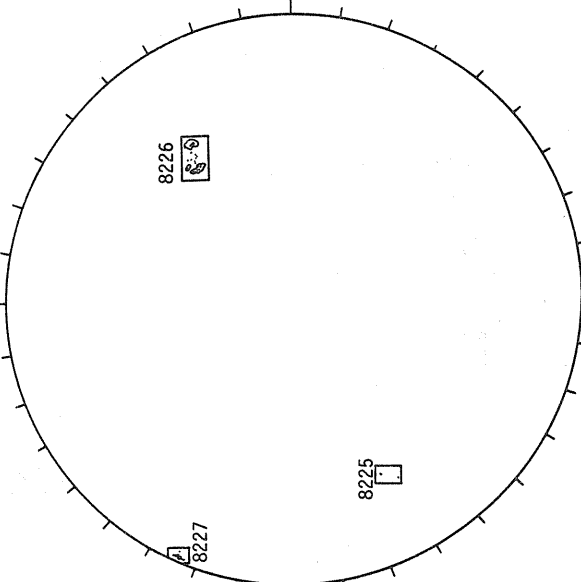
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



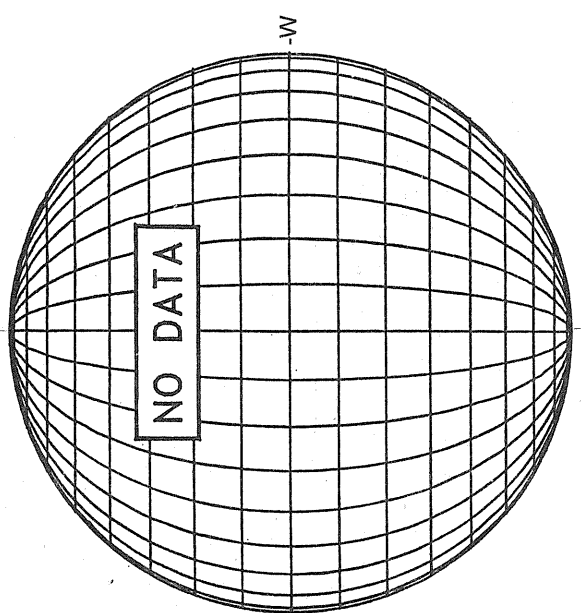
0852 UT

RAMEY SUNSPOT



1155 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



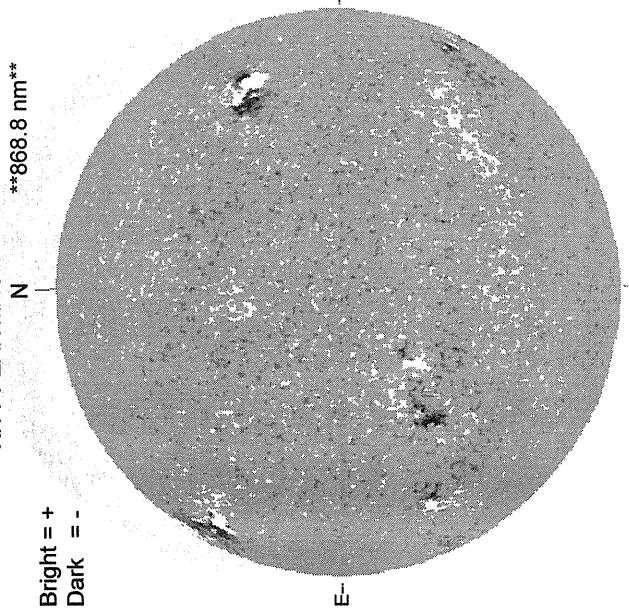
S

MAY 26, 1998 (P= -17.66 , Bo = -1.40 , Lo = 170.88)

KITT PEAK MAGNETOGRAM

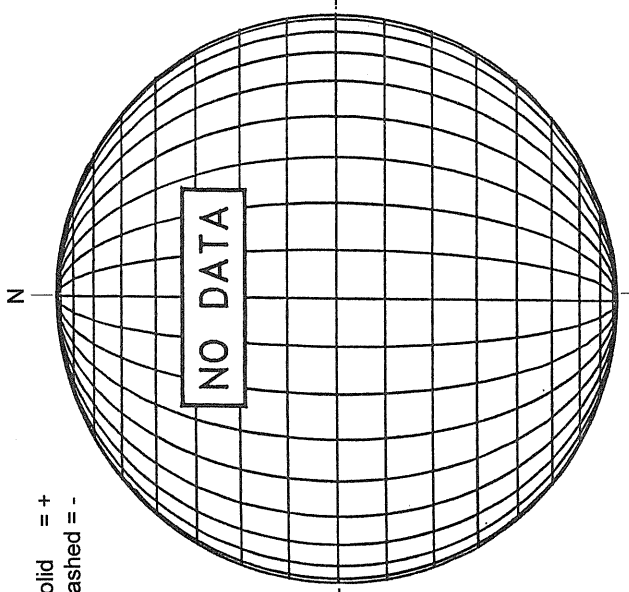
868.8 nm

Bright = +
Dark = -



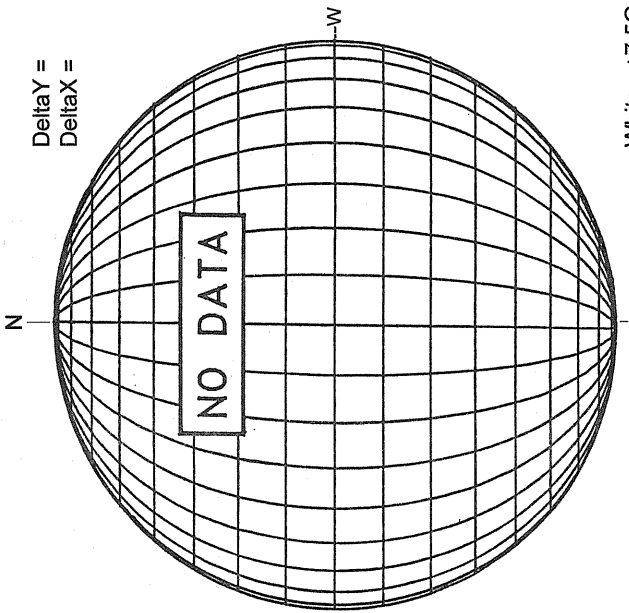
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

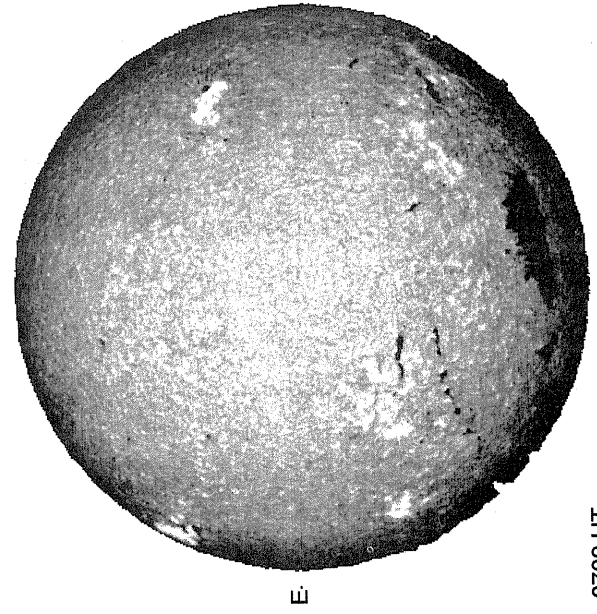
Delta Y =
Delta X =



White= +7.5G
Black = -7.5G

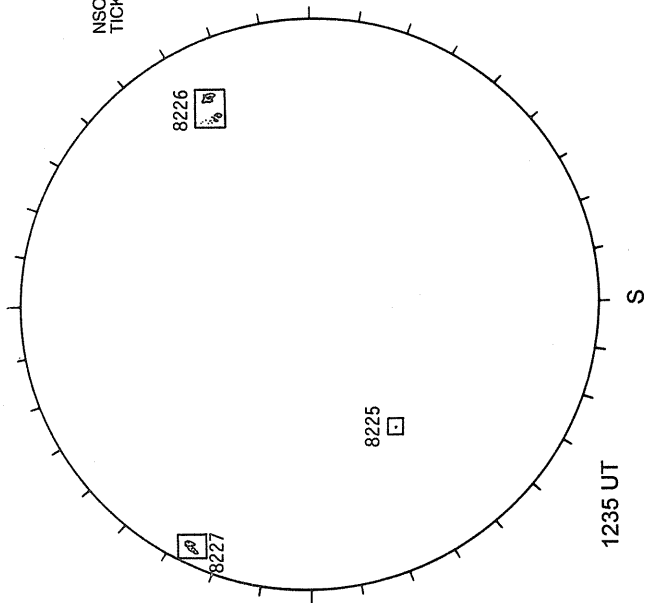
1501 UT

MEUDON H-ALPHA



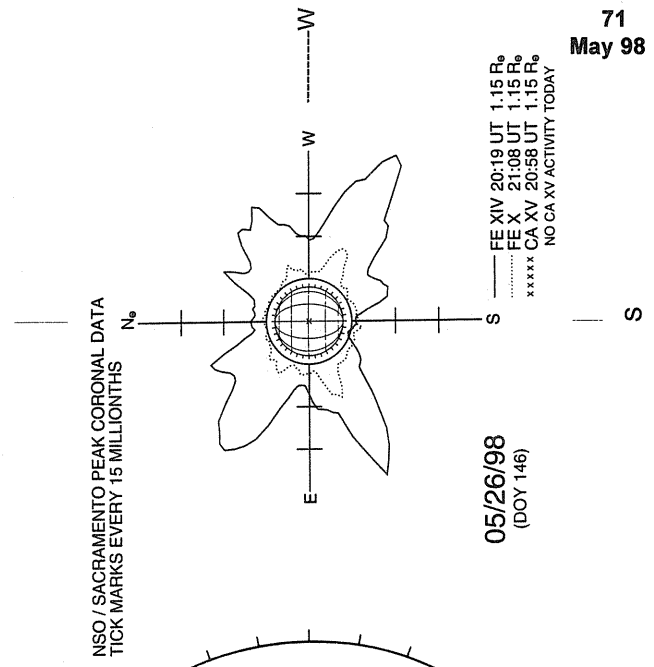
0709 UT

RAMEY SUNSPOT



1235 UT

SACRAMENTO PEAK CORONA (1.15 Radii)---

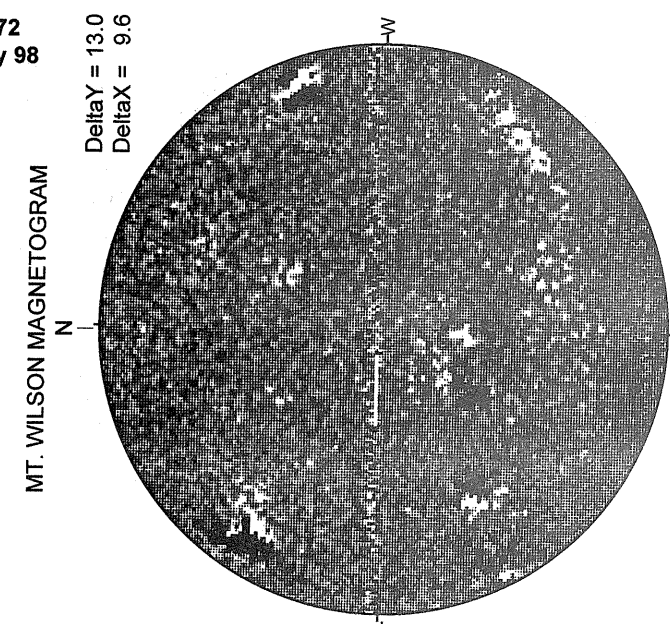
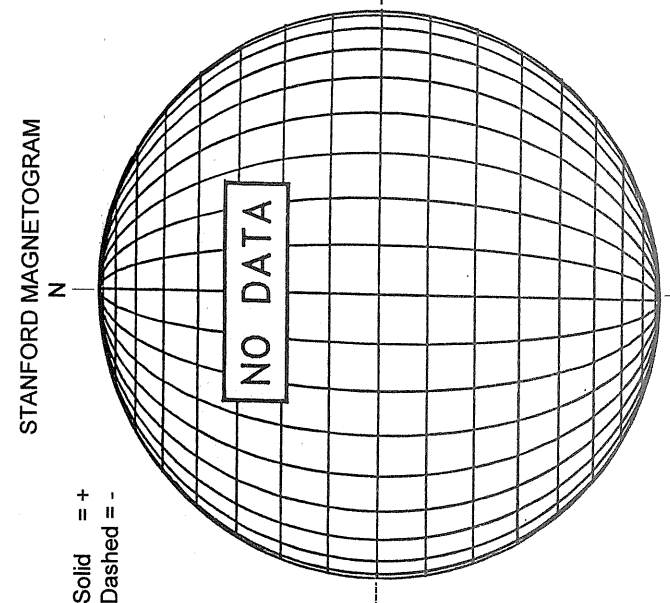
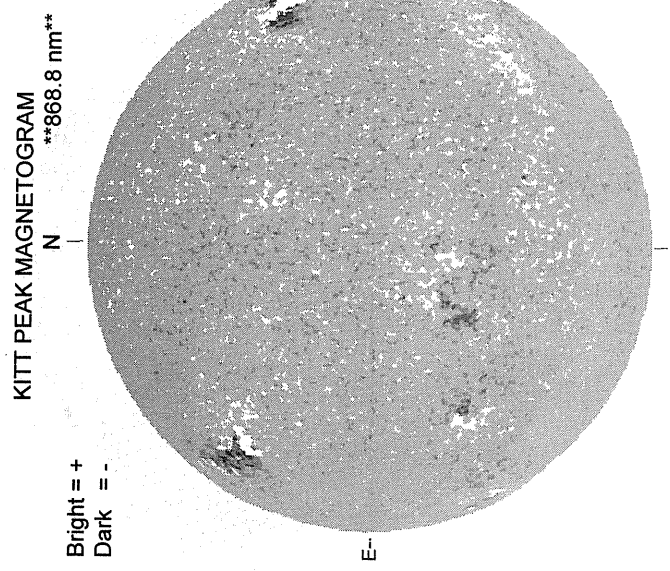


05/26/98
(DOY 146)

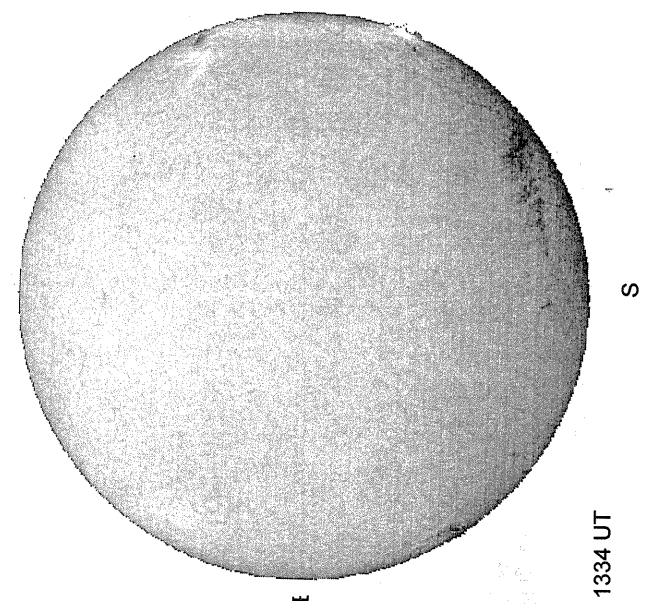
FE XIV 20:19 UT 1.15 R_o
FE X 21:08 UT 1.15 R_o
***** CA XV 20:58 UT 1.15 R_o
NO CA XV ACTIVITY TODAY

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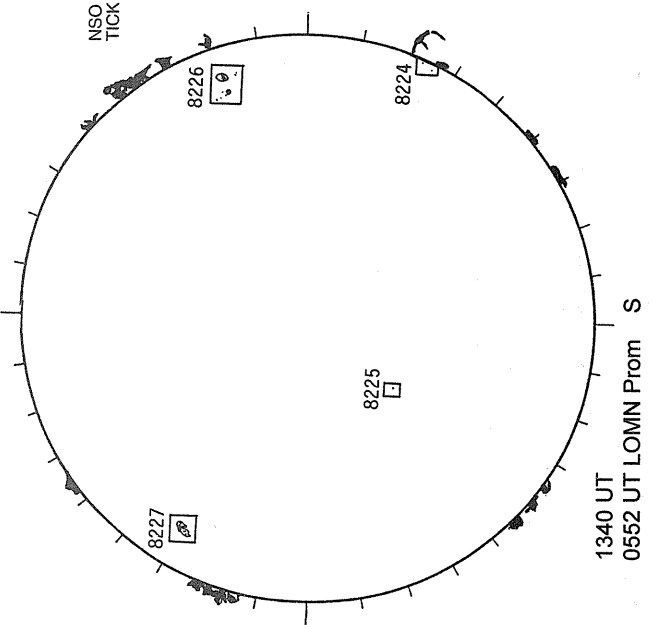
MAY 27, 1998 (P= -17.32 , Bo = -1.28 , Lo = 157.65)



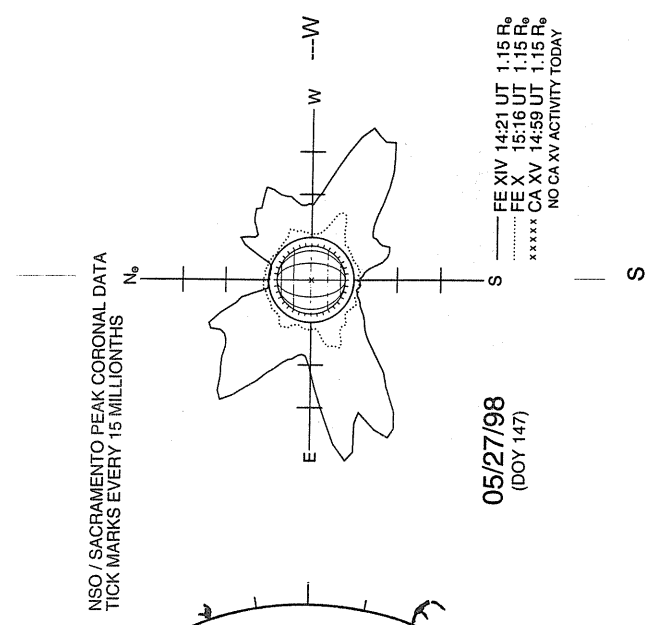
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)----

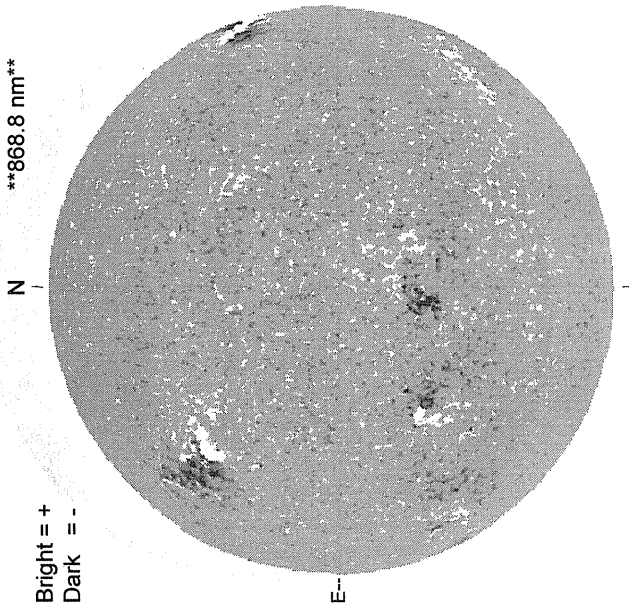


MAY 28, 1998 (P= -16.97 , Bo = -1.16 , Lo = 144.42)

KITT PEAK MAGNETOGRAM

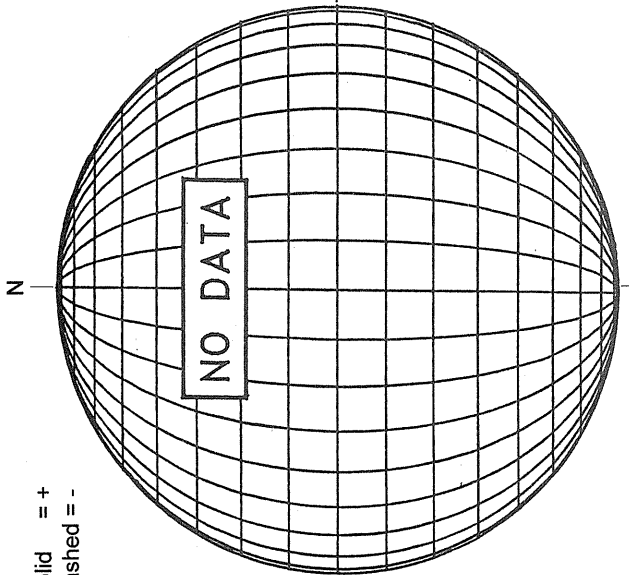
868.8 nm

Bright = +
Dark = -



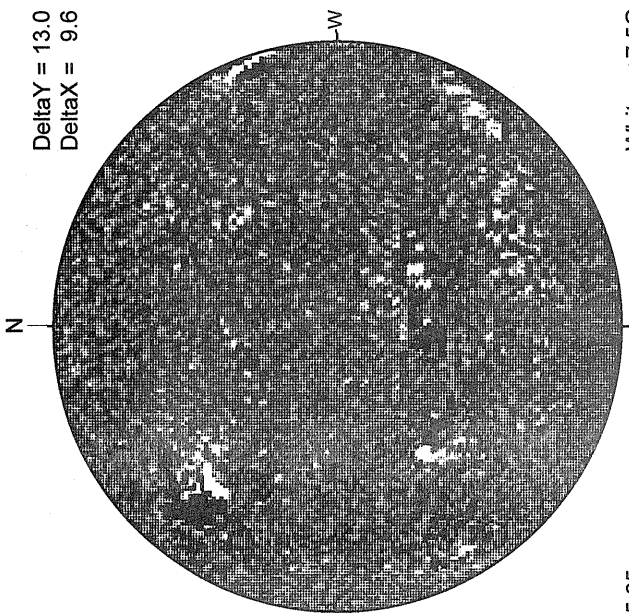
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

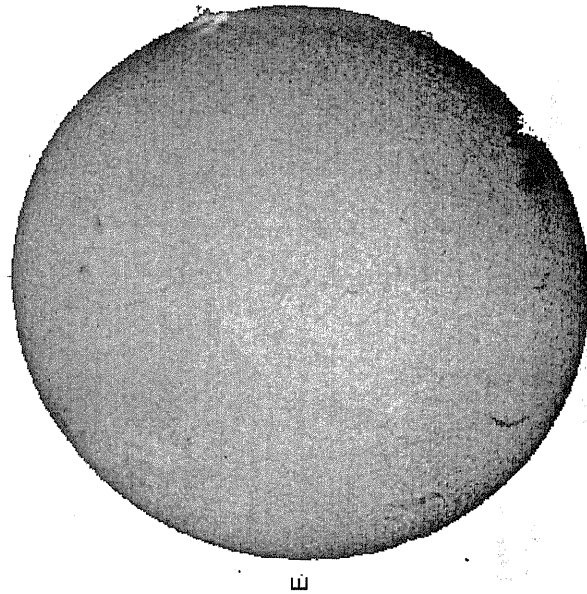
Delta Y = 13.0
Delta X = 9.6



15.85 -
16.77 UT

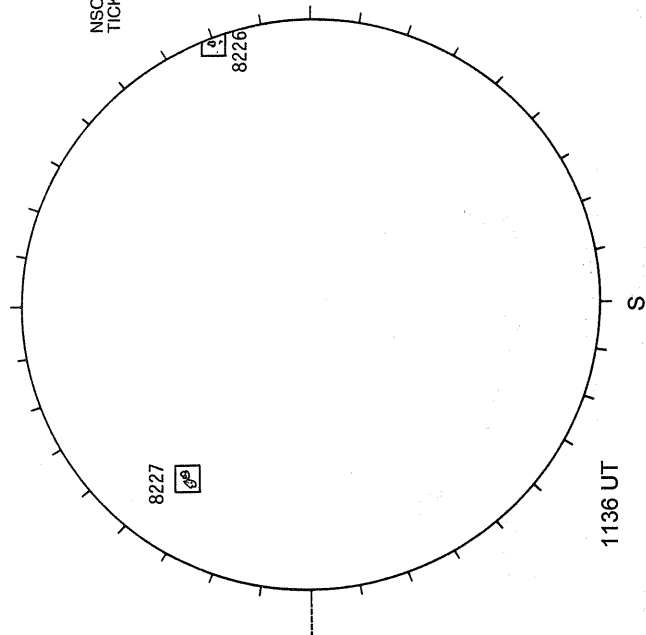
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



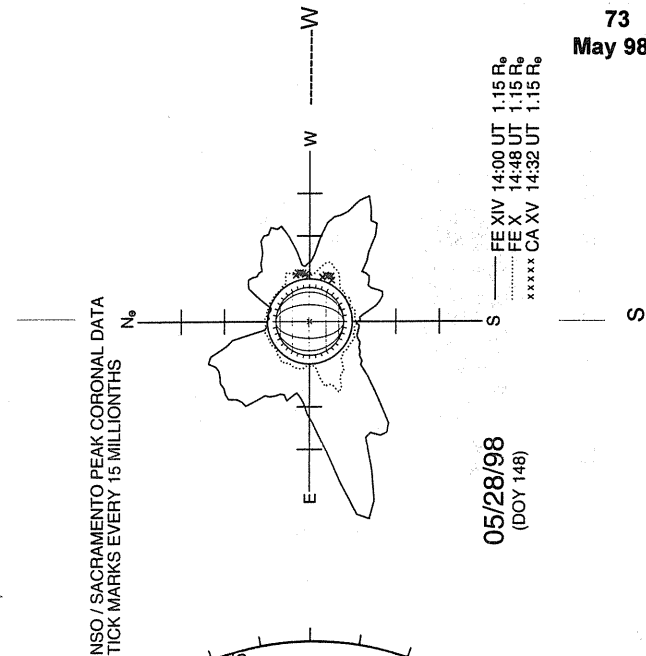
1310 UT

RAMEY SUNSPOT



1136 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



05/28/98
(DOY 148)

----- FE XIV 14:00 UT 1.15 R_o
..... FE X 14:48 UT 1.15 R_o
xxxxx CA XV 14:32 UT 1.15 R_o

73
May 98

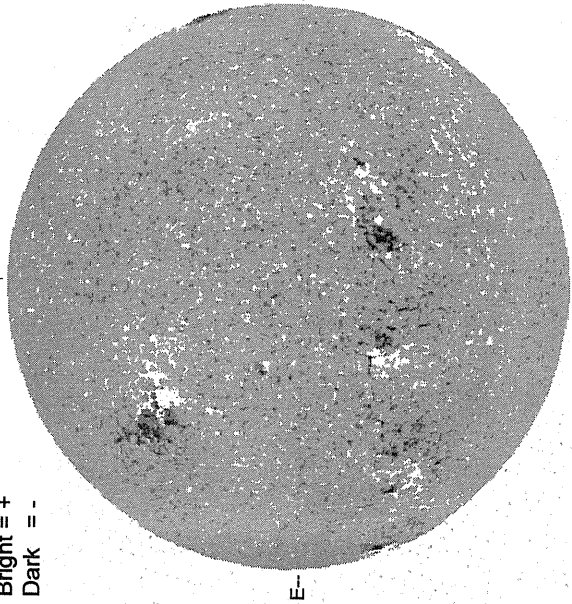
MAY 29, 1998 (P= -16.62 , Bo = -1.04 , Lo = 131.19)

74
May 98

KITT PEAK MAGNETOGRAM

868.8 nm

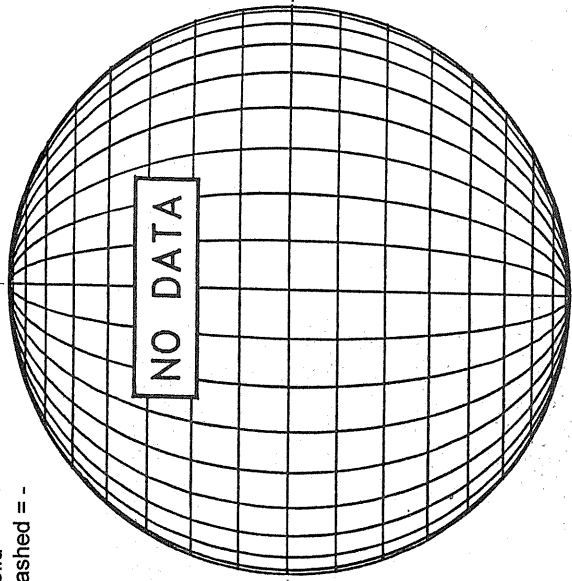
Bright = +
Dark = -



1341 UT

STANFORD MAGNETOGRAM

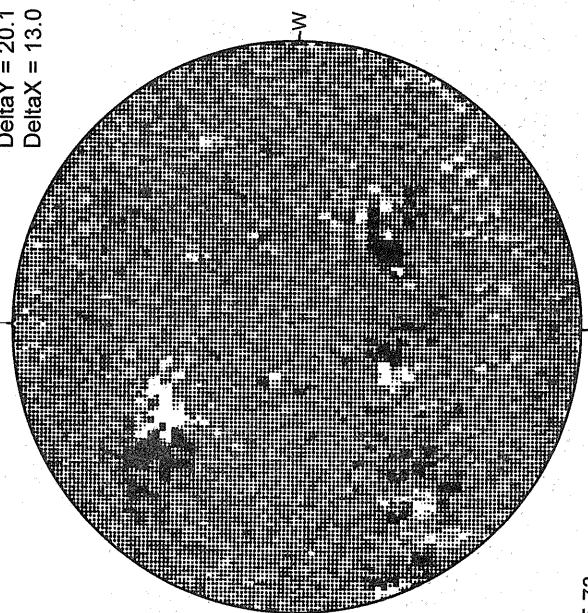
Solid = +
Dashed = -



1234 UT

MT. WILSON MAGNETOGRAM

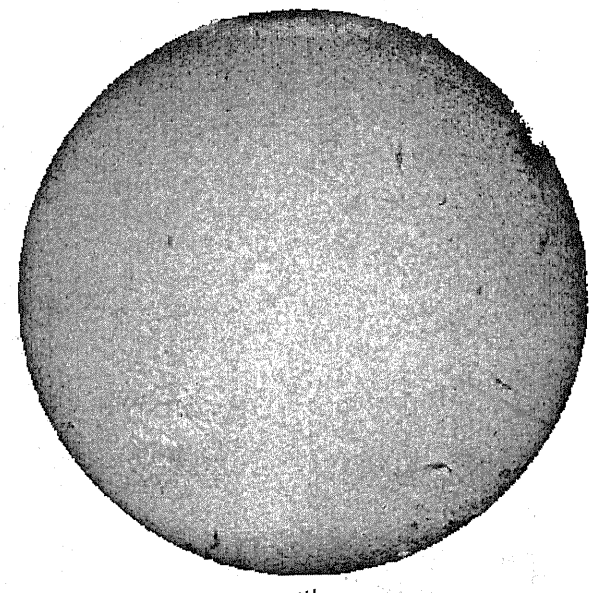
Delta Y = 20.1
Delta X = 13.0



25.73 -
26.14 UT

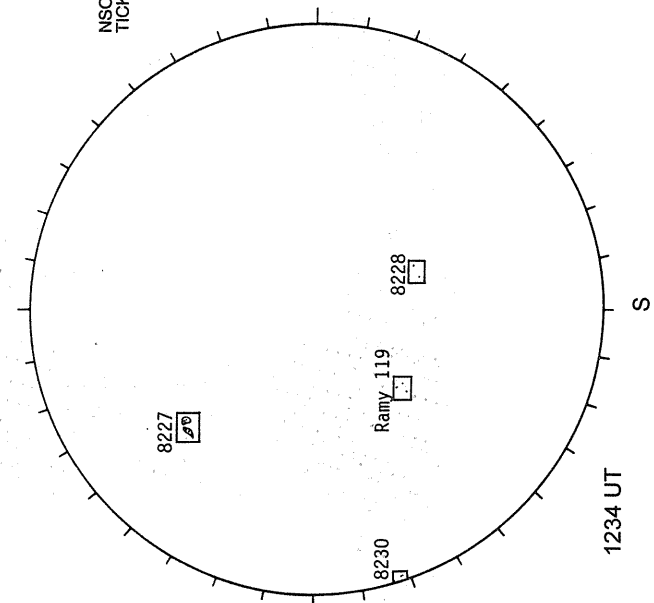
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



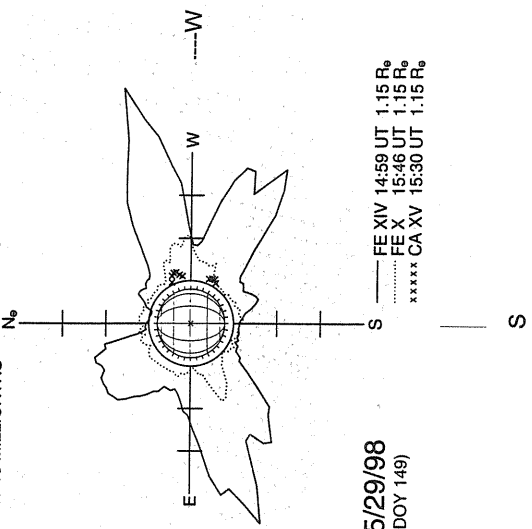
1347 UT

RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)---

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 15 MILLIONTHS



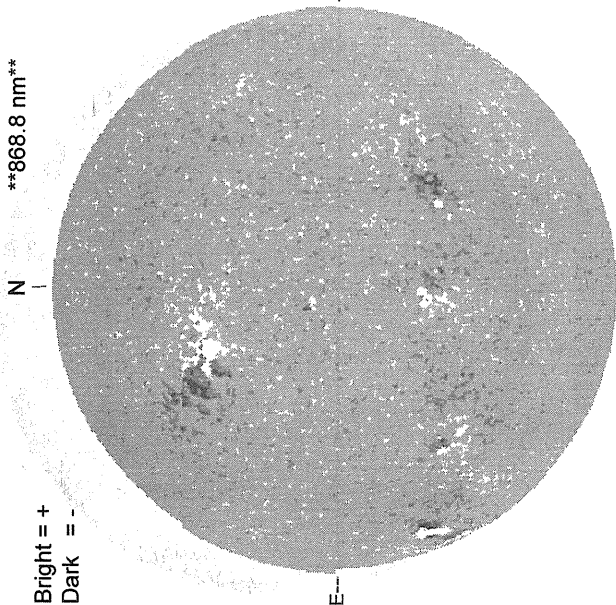
05/29/98
(DOY 149)

MAY 30, 1998 (P = -16.26, Bo = -0.92, Lo = 117.95)

KITT PEAK MAGNETOGRAM

868.8 nm

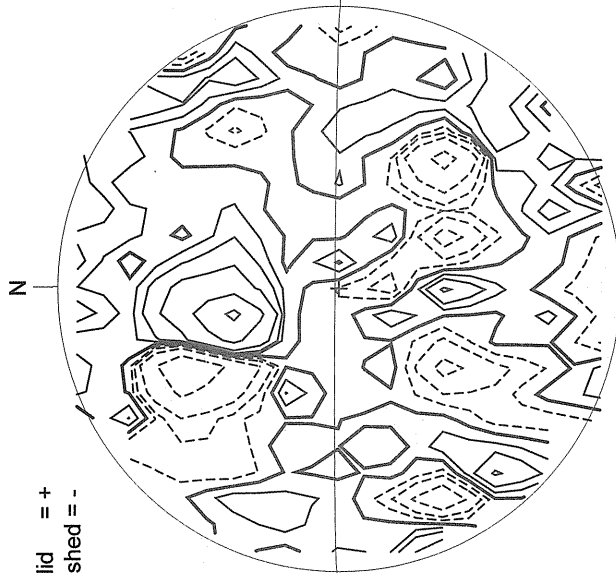
Bright = +
Dark = -



1341 UT

STANFORD MAGNETOGRAM

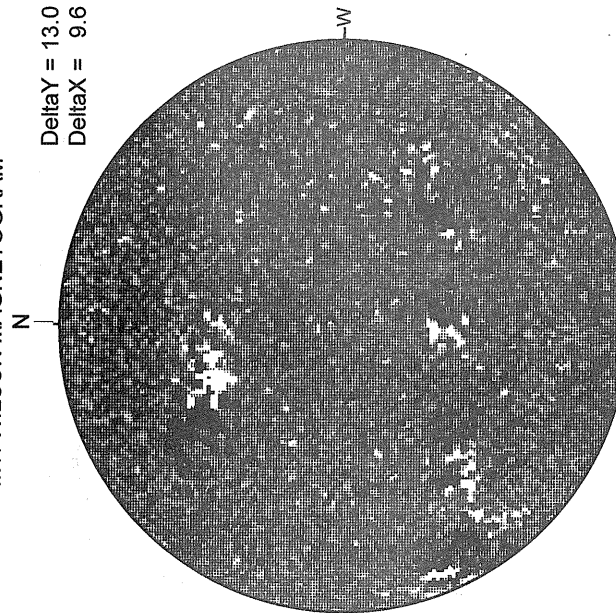
Solid = +
Dashed = -



2202 UT

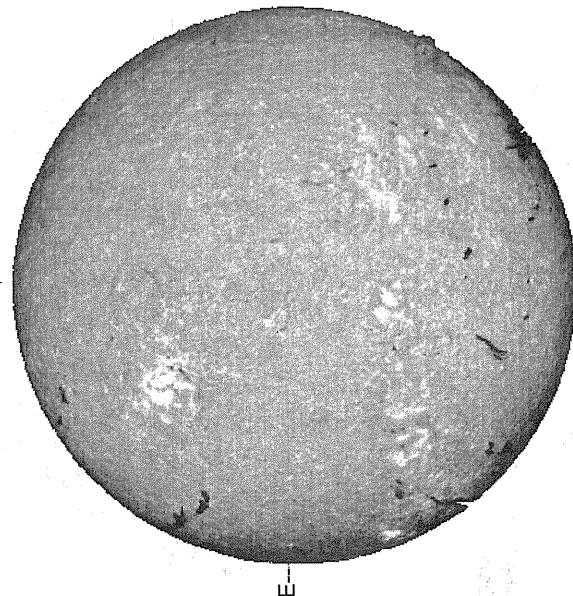
MT. WILSON MAGNETOGRAM

Delta Y = 13.0
Delta X = 9.6



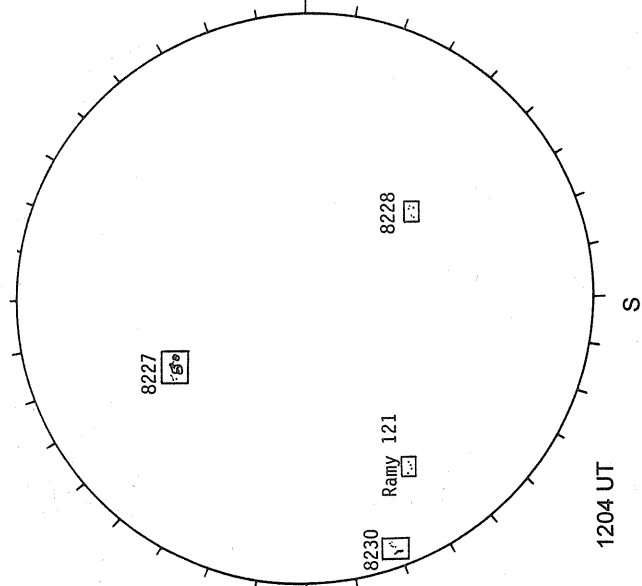
17.11 -
18.03 UT

MEUDON H-ALPHA



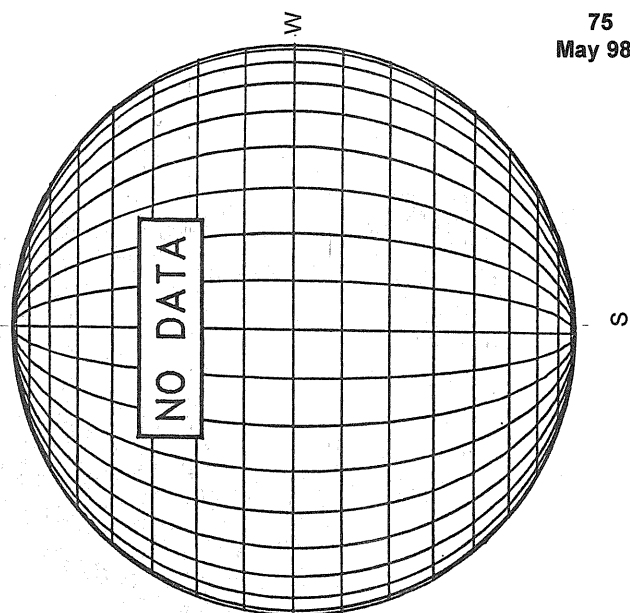
0642 UT

RAMEY SUNSPOT



1204 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



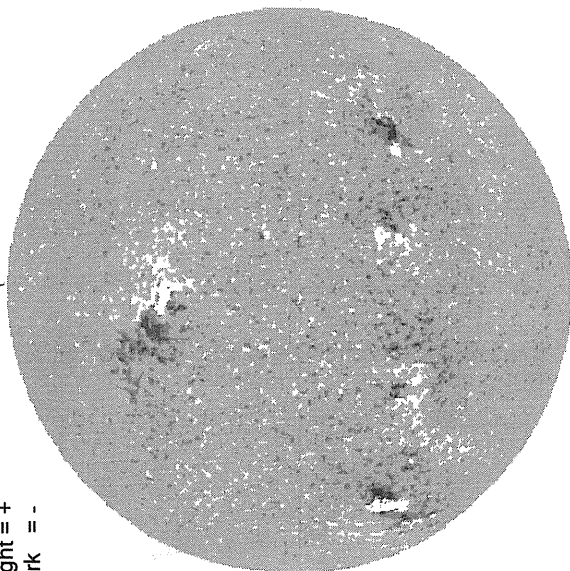
75
May 98

MAY 31, 1998 (P = -15.89, B₀ = -0.80, L₀ = 104.72)

KITT PEAK MAGNETOGRAM

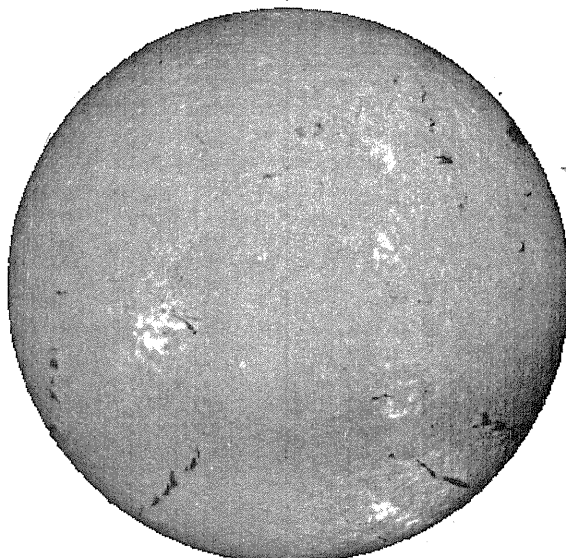
868.8 nm

Bright = +
Dark = -



1538 UT

MEUDON H-ALPHA



0642 UT

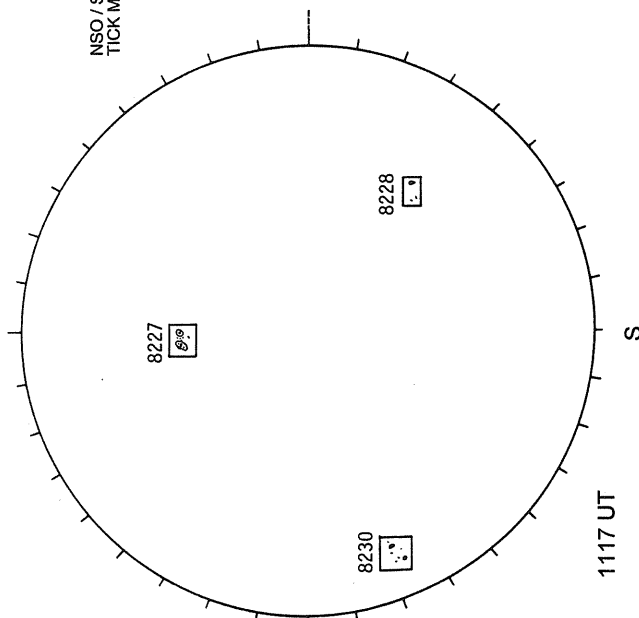
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



1949 UT

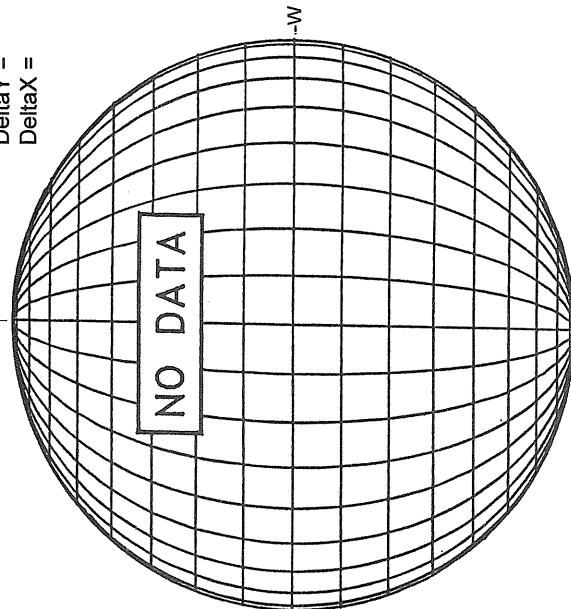
RAMEY SUNSPOT



1117 UT

MT. WILSON MAGNETOGRAM

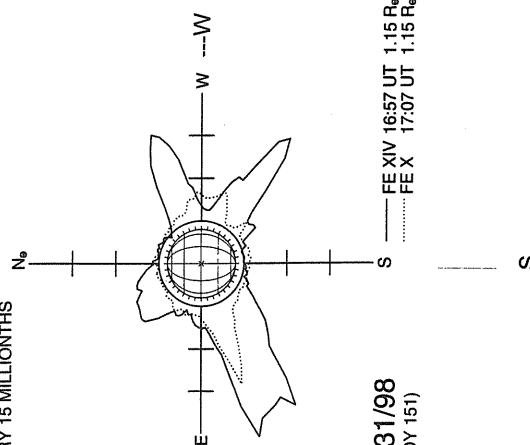
Delta Y =
Delta X =



White = +7.5G
Black = -7.5G

SACRAMENTO PEAK CORONA (1.15 Radii)----

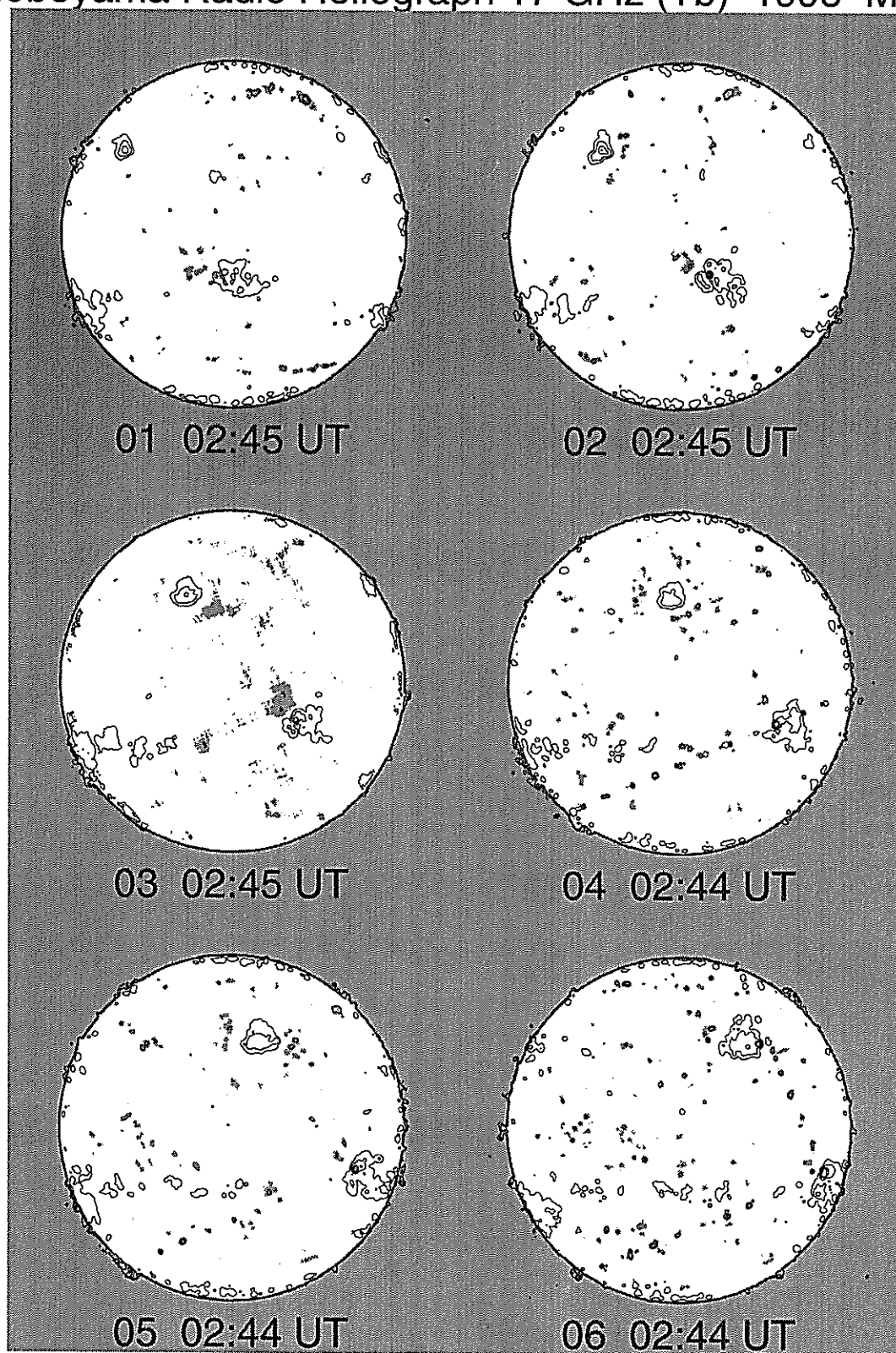
NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 15 MILLIONTHS



05/31/98
(DOY 151)

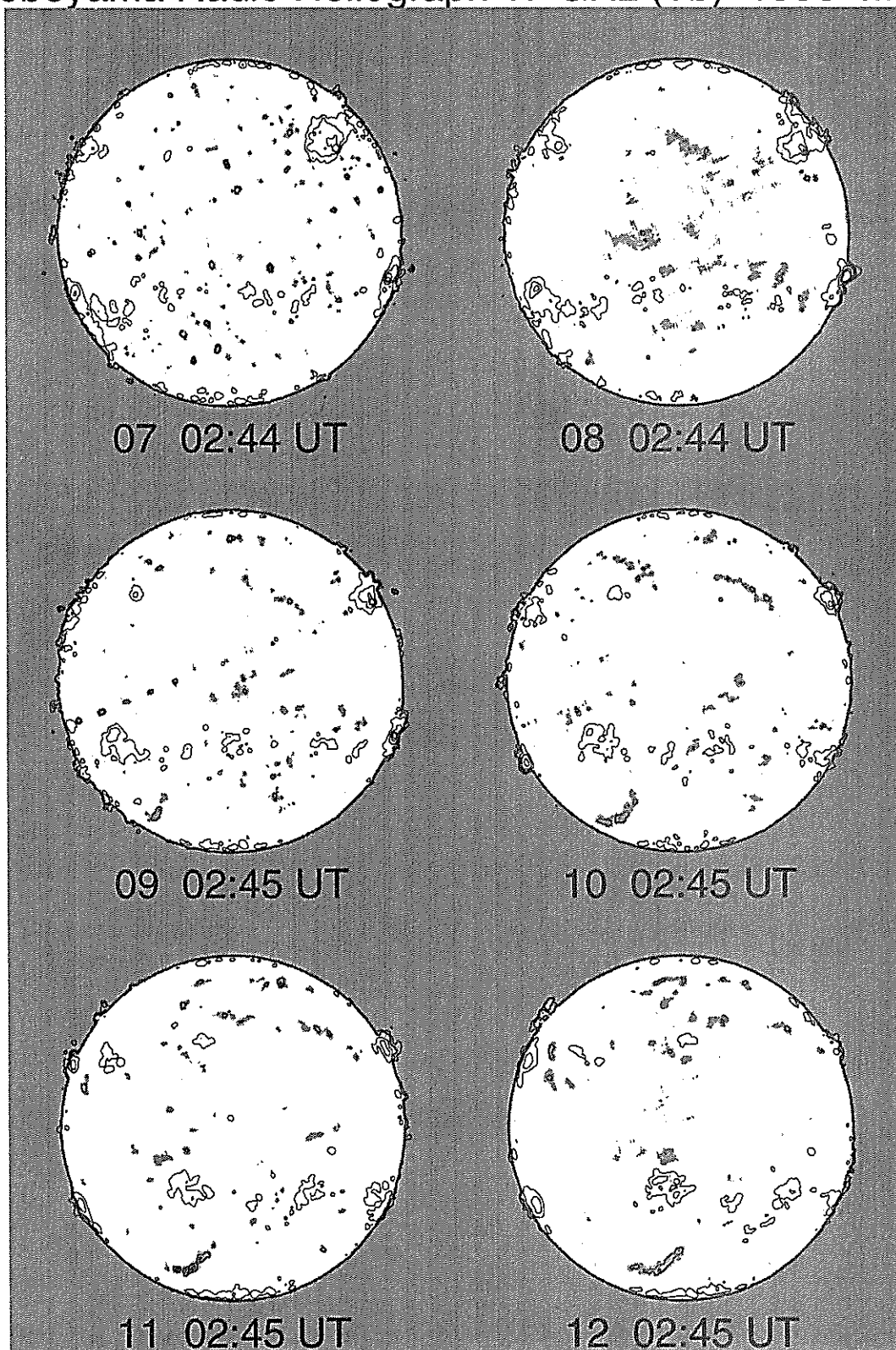
FE XIV 16:57 UT 1.15 R₀
FE X 17:07 UT 1.15 R₀

Nobeyama Radio Heliograph 17 GHz (Tb) 1998 May



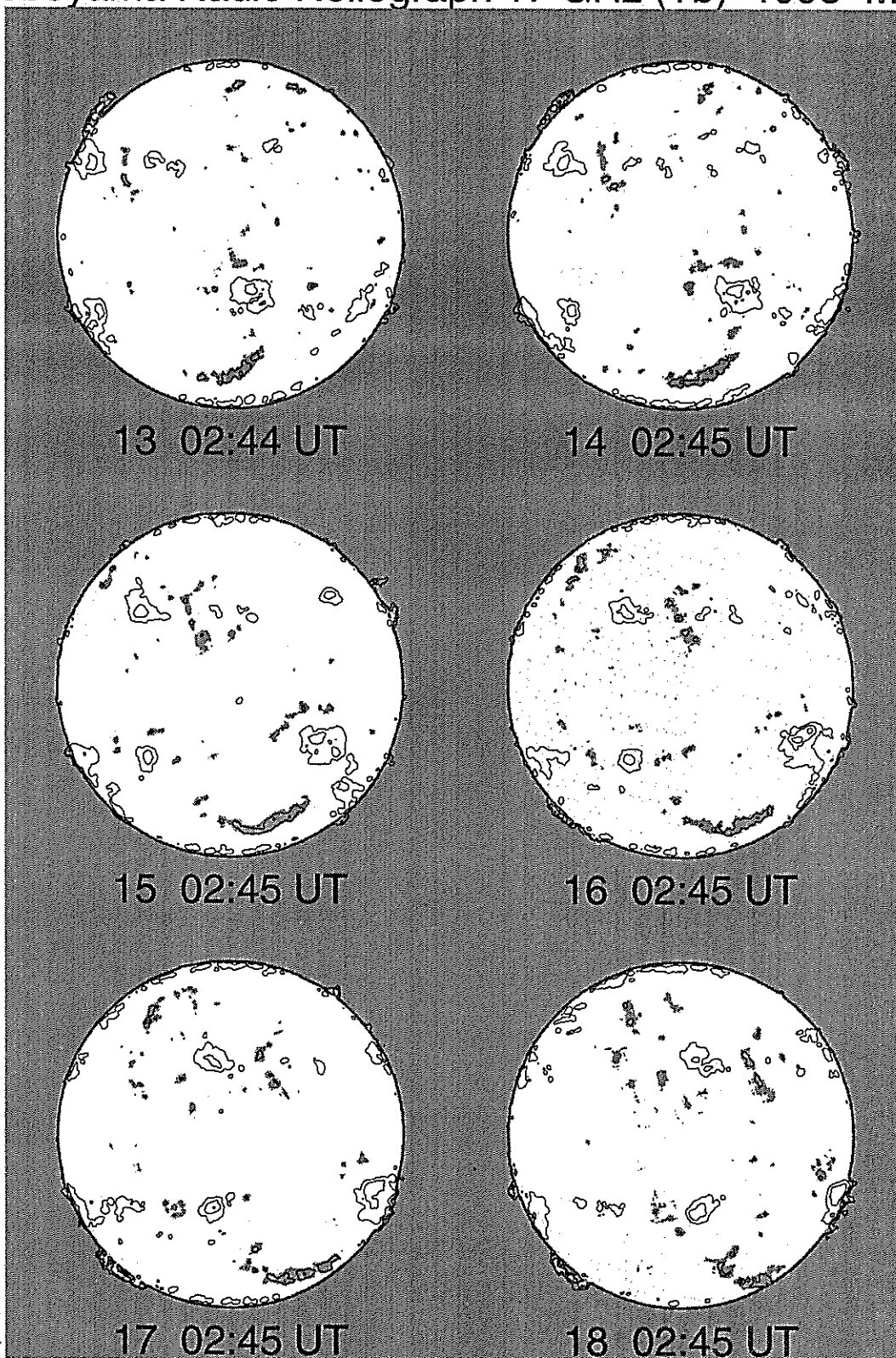
Contour Levels Tb=[5,8,12,20,50,100] x 10³ K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 1998 May



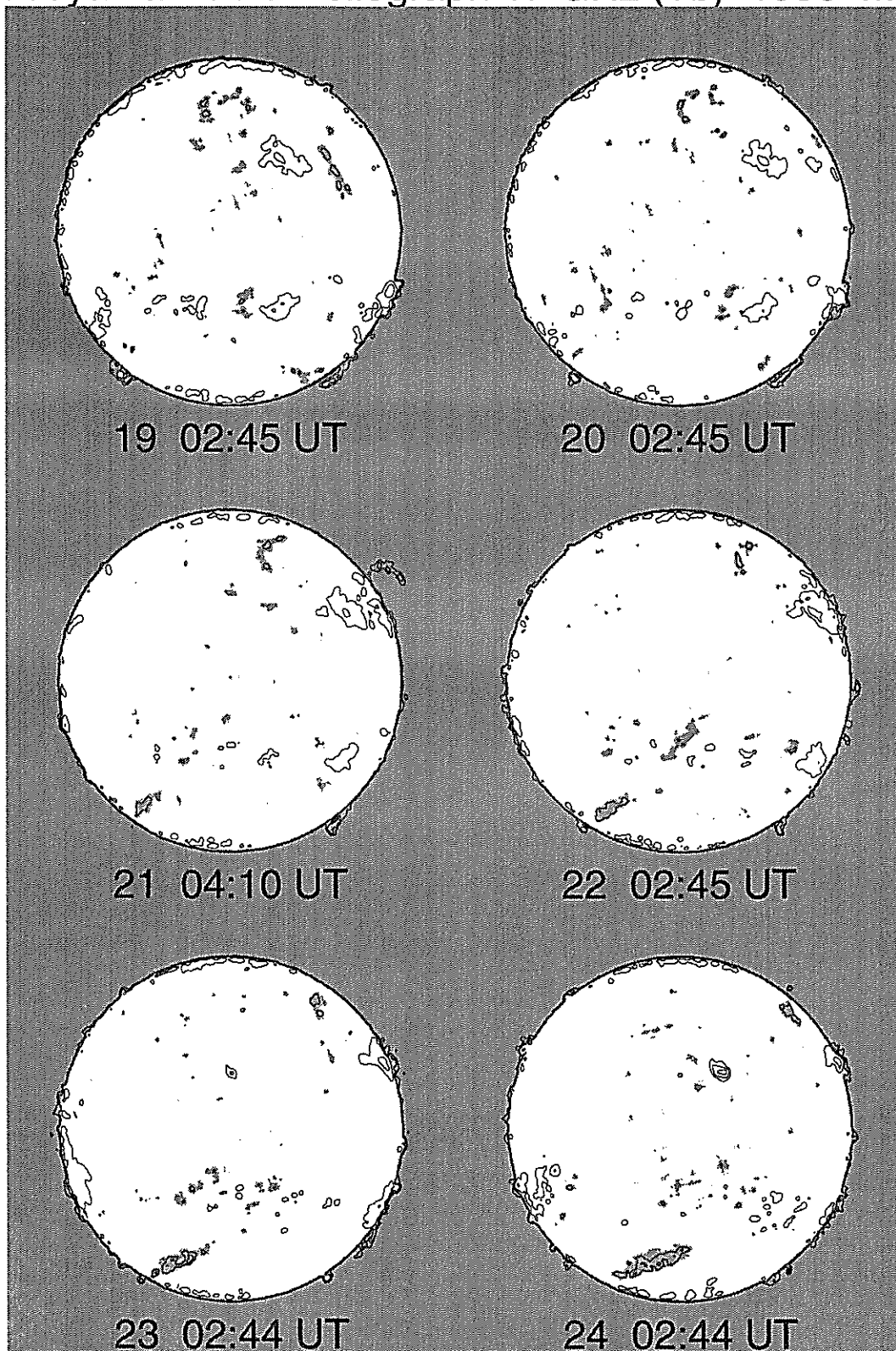
Contour Levels Tb=[5,8,12,20,50,100] x 10³ K
Grey level Tb ≤ 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 1998 May



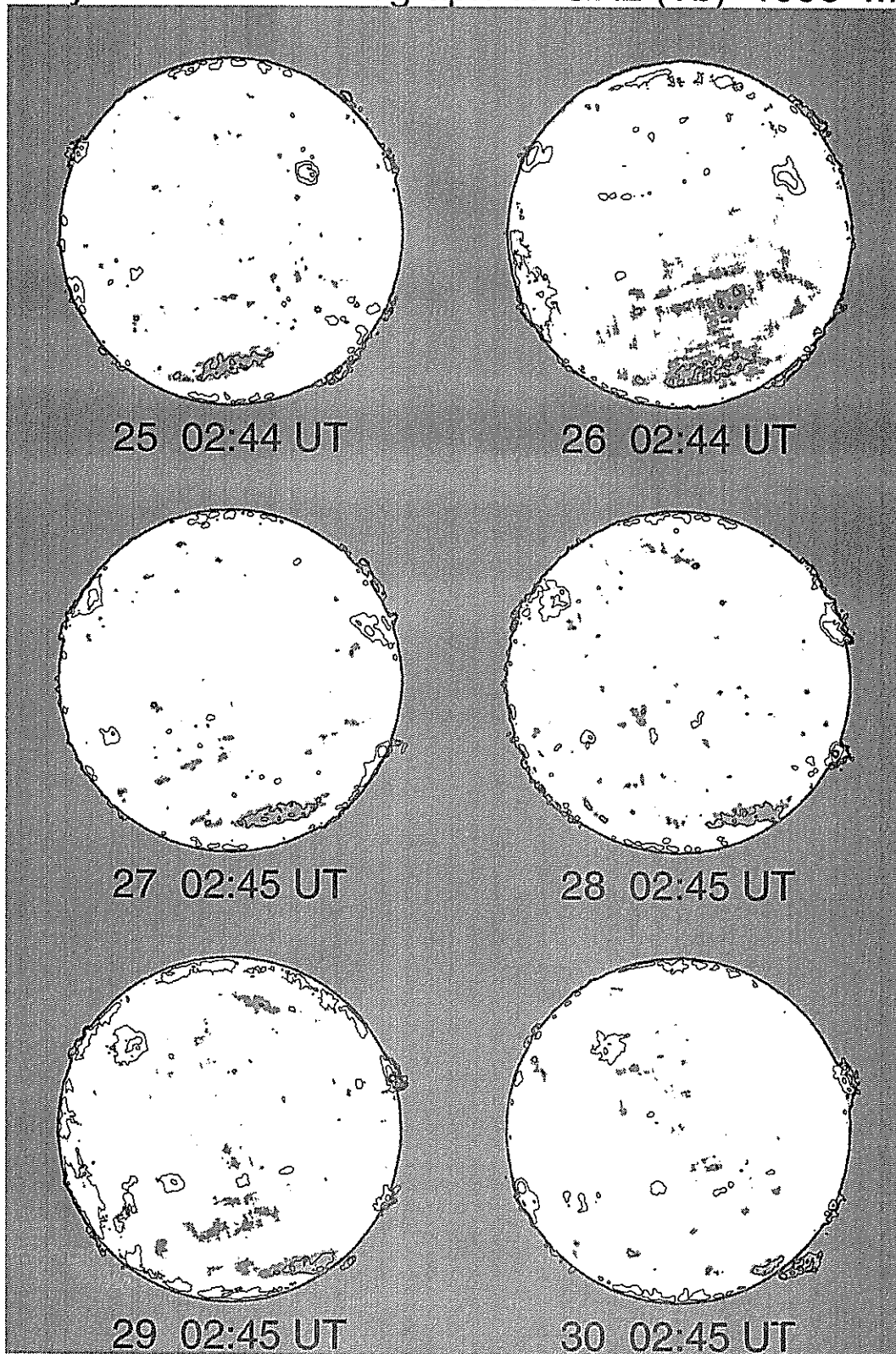
Contour Levels Tb=[5,8,12,20,50,100] x 10³ K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 1998 May



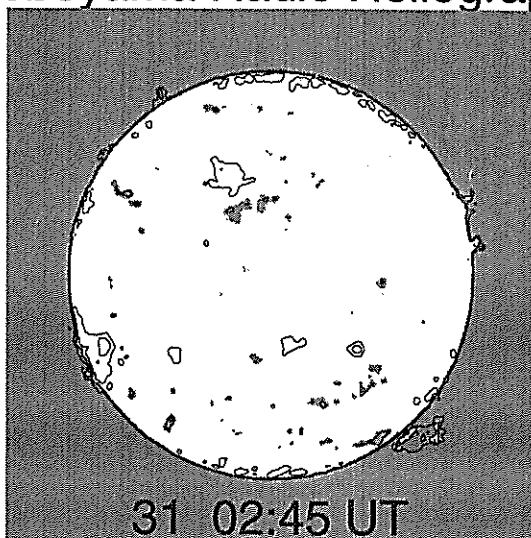
Contour Levels Tb=[5,8,12,20,50,100] x 10³ K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 1998 May



Contour Levels $T_b = [5, 8, 12, 20, 50, 100] \times 10^3 \text{ K}$
Grey level $T_b \leq 9,500 \text{ K}$

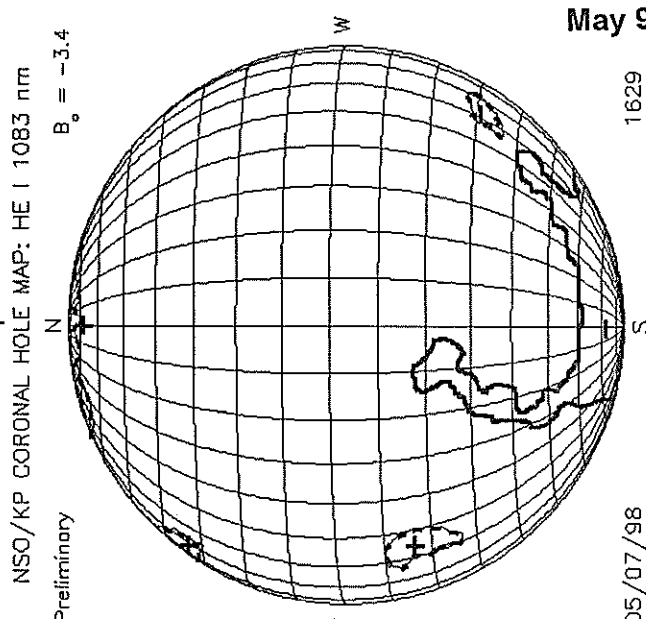
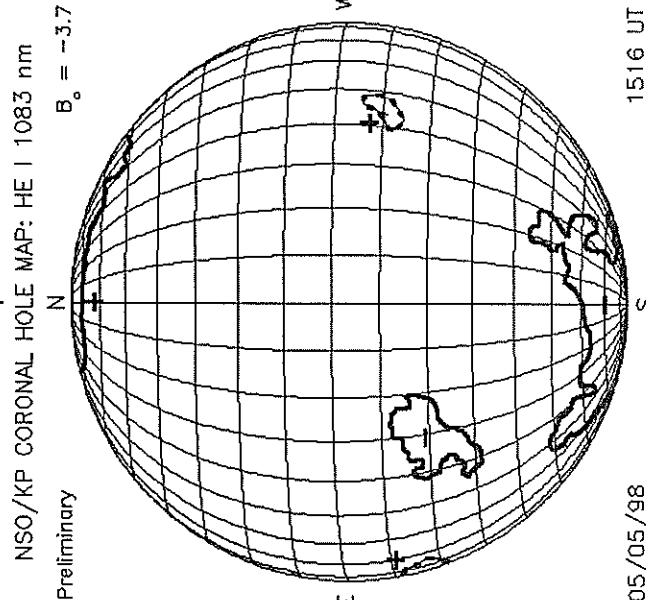
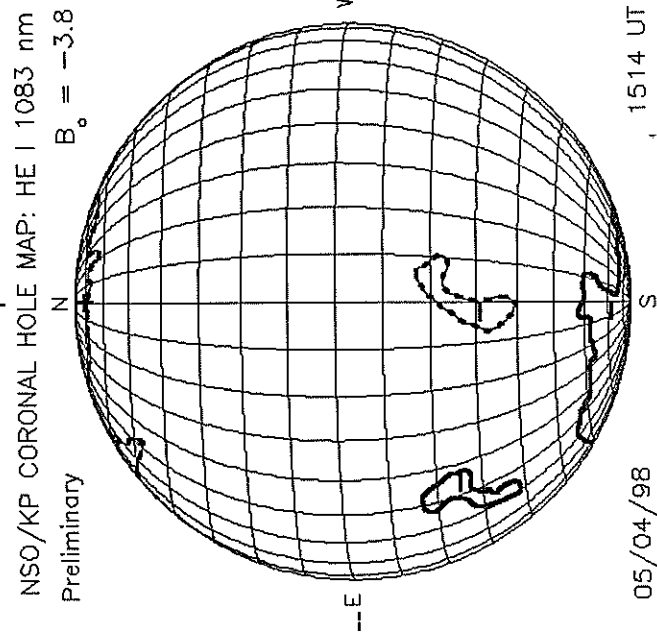
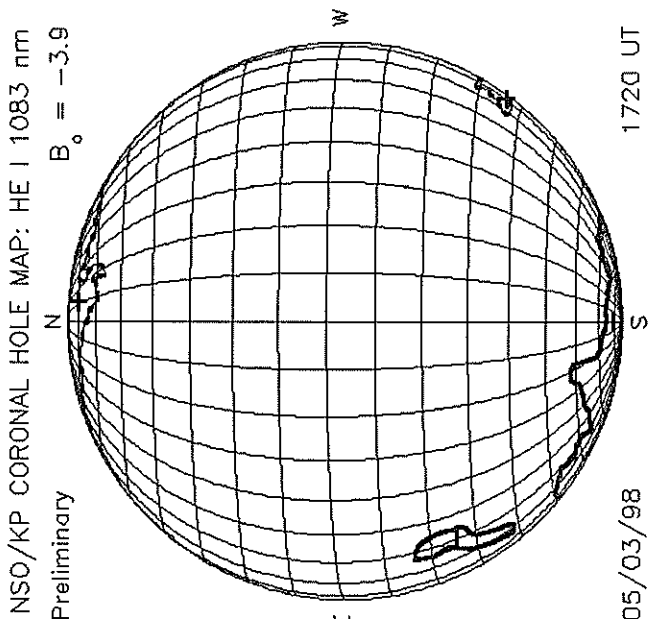
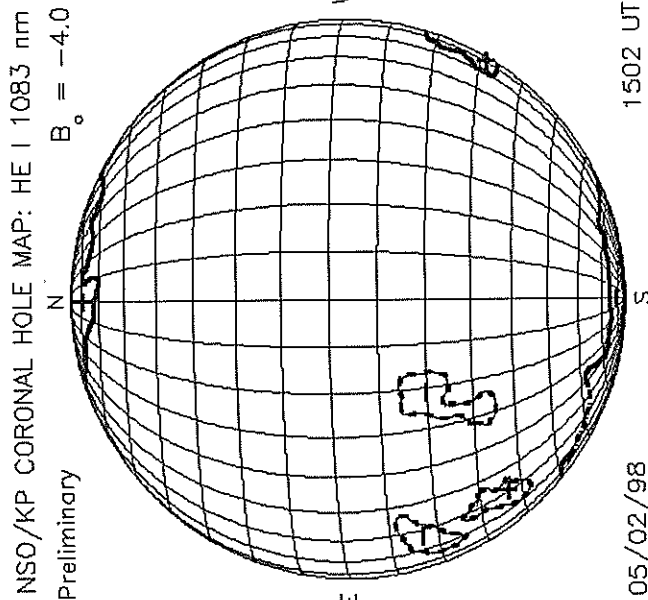
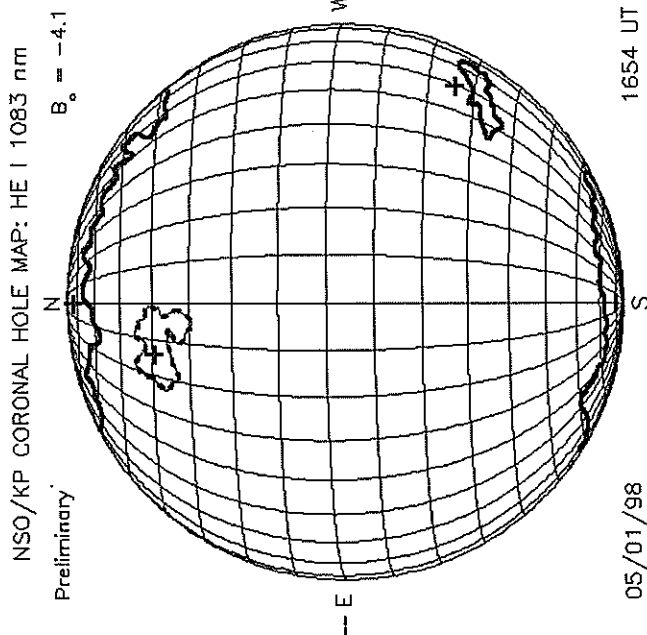
Nobeyama Radio Heliograph 17 GHz (Tb) 1998 May



Contour Levels $T_b = [5, 8, 12, 20, 50, 100] \times 10^3 \text{ K}$
Grey level $T_b \leq 9,500 \text{ K}$

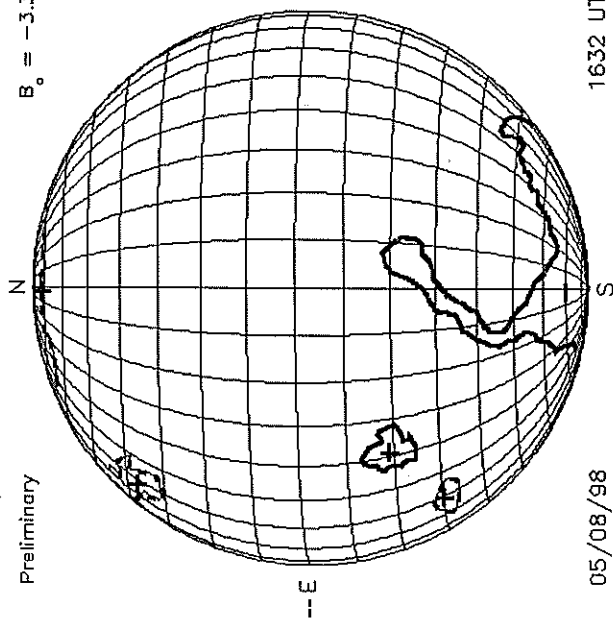
KITT PEAK CORONAL HOLE MAPS HE I 1083 nm

May 1998



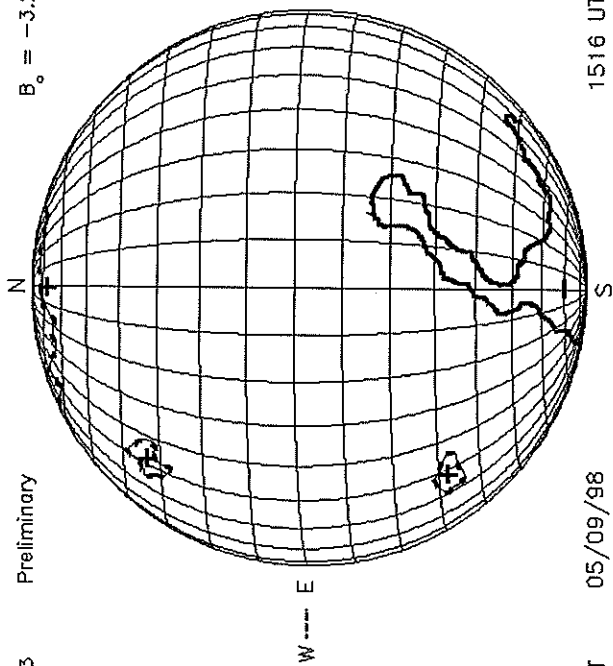
KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
May 1998

NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_o = -3.3$



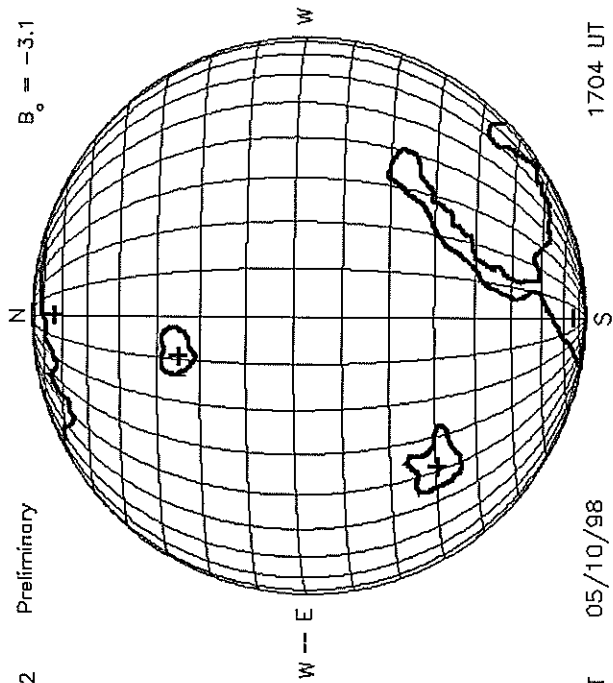
05/08/98 1632 UT

NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_o = -3.2$



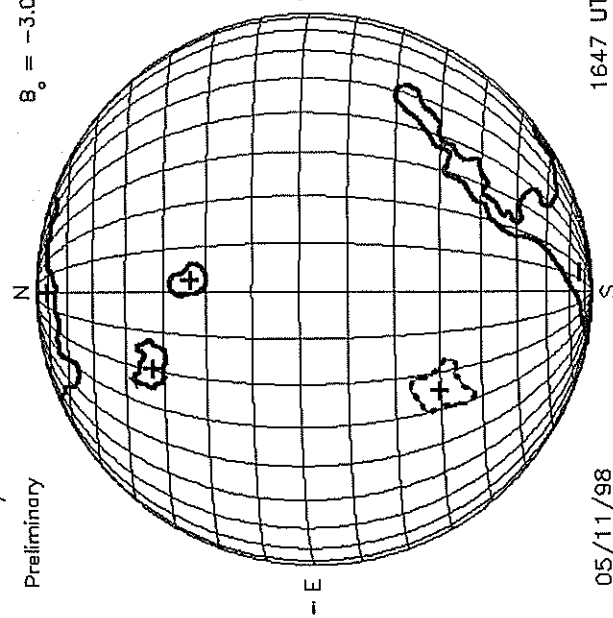
05/09/98 1516 UT

NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_o = -3.1$



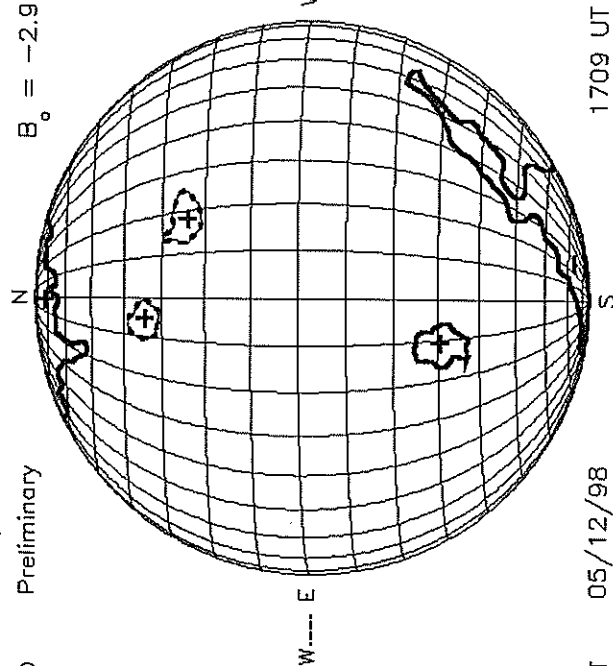
05/10/98 1704 UT

NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_o = -3.0$



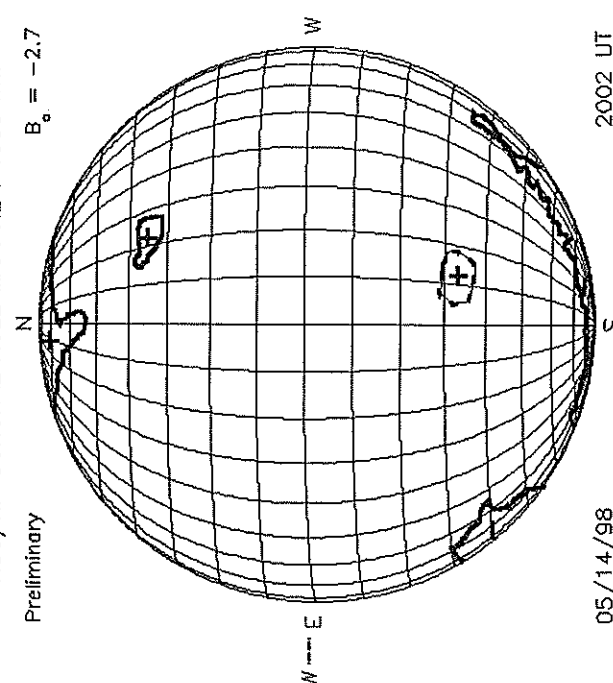
05/11/98 1647 UT

NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_o = -2.9$



05/12/98 1709 UT

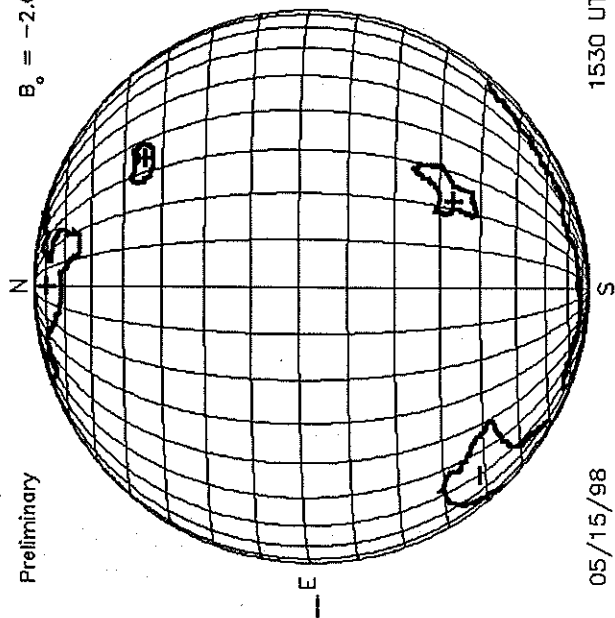
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_o = -2.7$



05/14/98 2002 UT

KITT PEAK CORONAL HOLE MAPS HE I 1083 nm May 1998

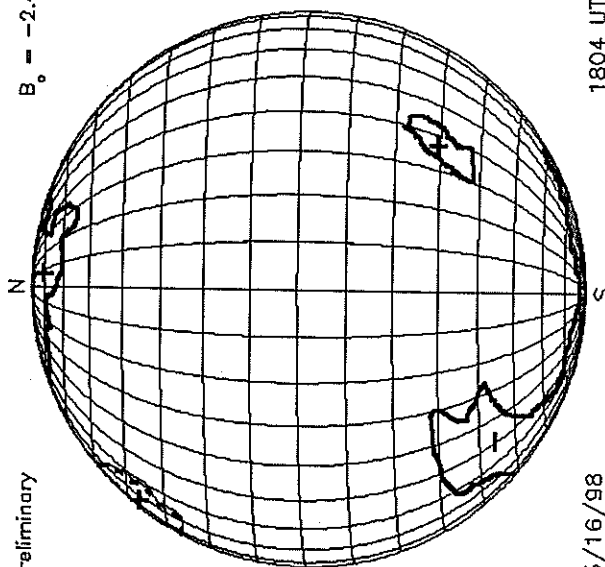
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -2.6$



05/15/98

1530 UT

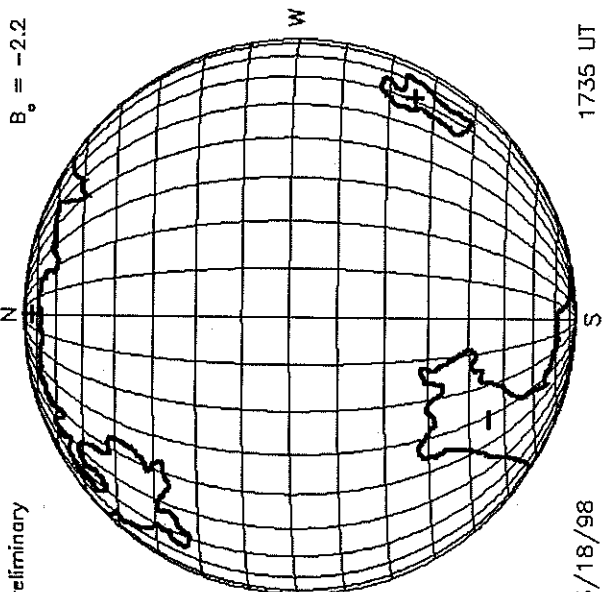
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -2.4$



05/16/98

1804 UT

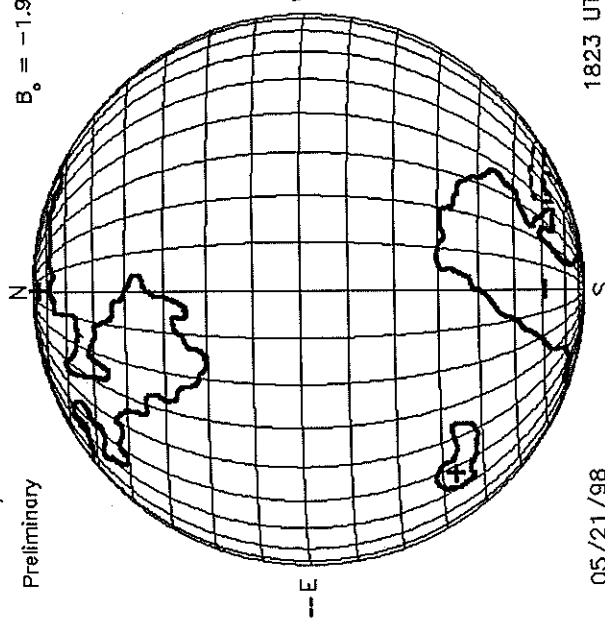
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -2.2$



05/18/98

1735 UT

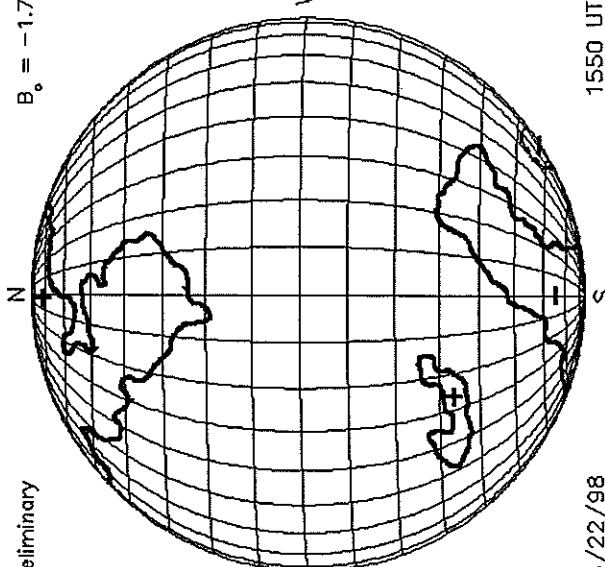
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -1.9$



05/21/98

1823 UT

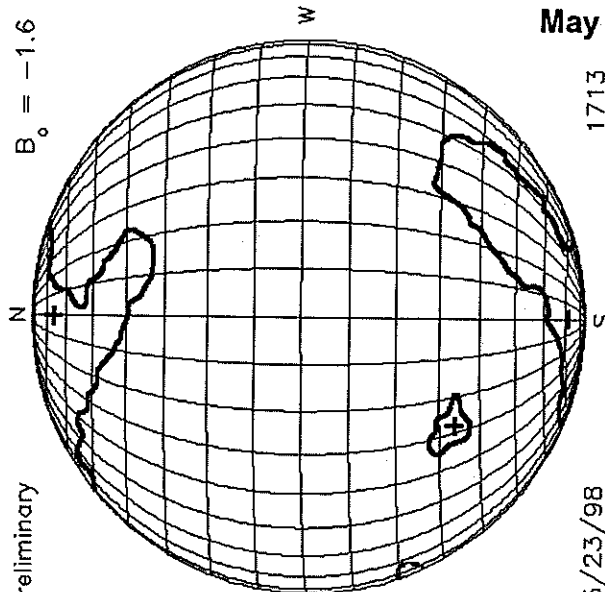
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -1.7$



05/22/98

1550 UT

NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -1.6$



05/23/98

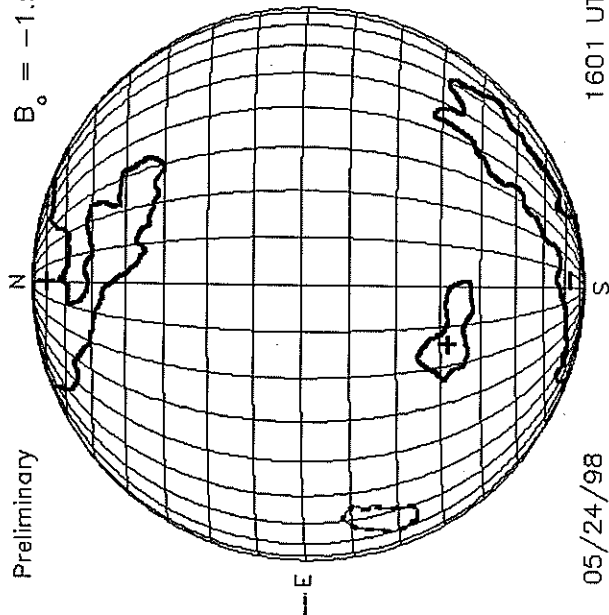
1713

May 98

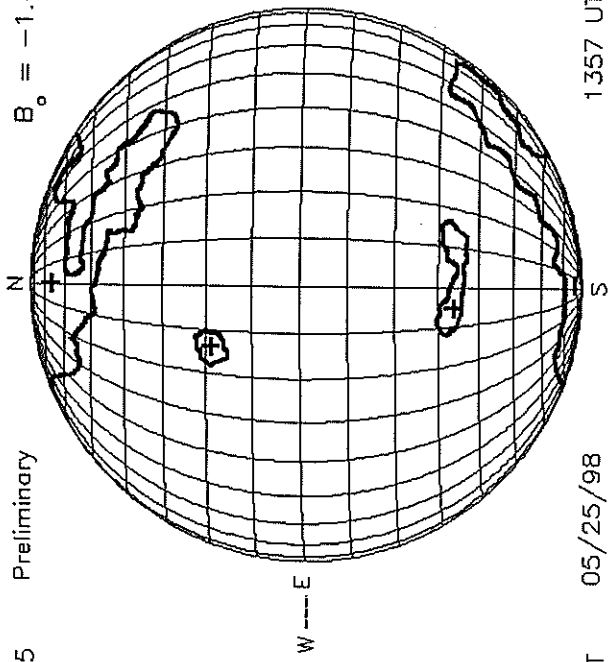
KITT PEAK CORONAL HOLE MAPS HE I 1083 nm

May 1998

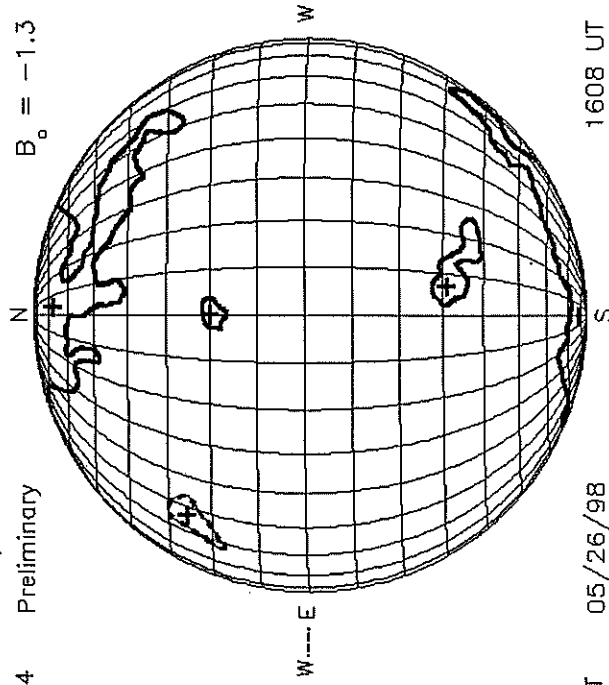
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_o = -1.5$



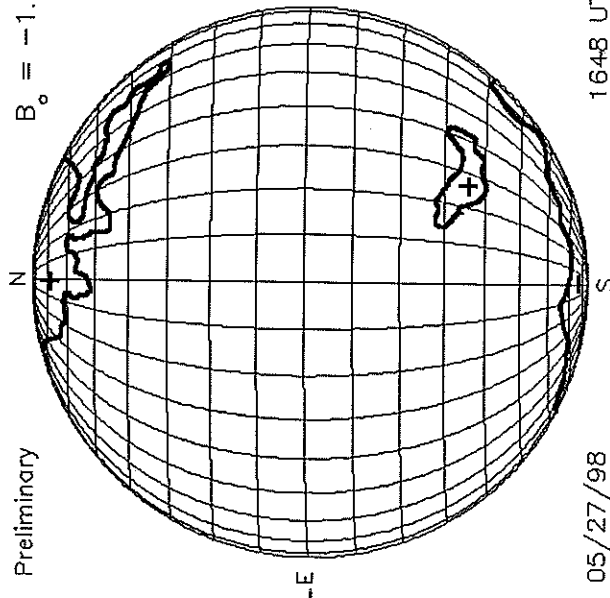
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_o = -1.4$



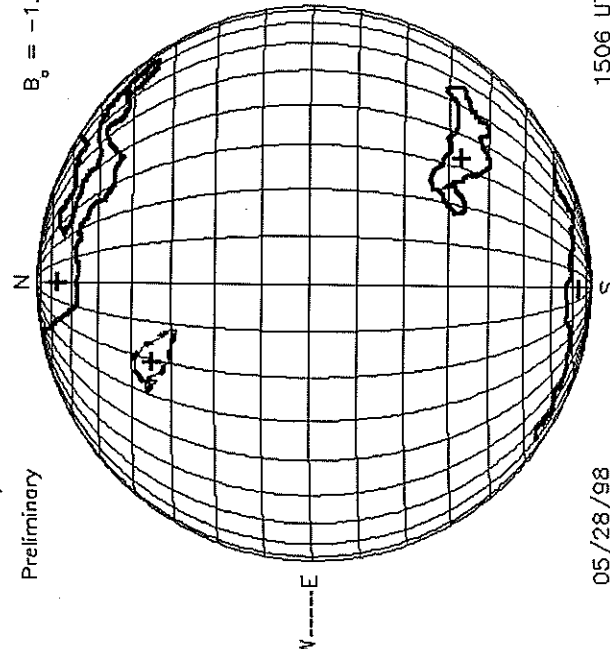
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_o = -1.3$



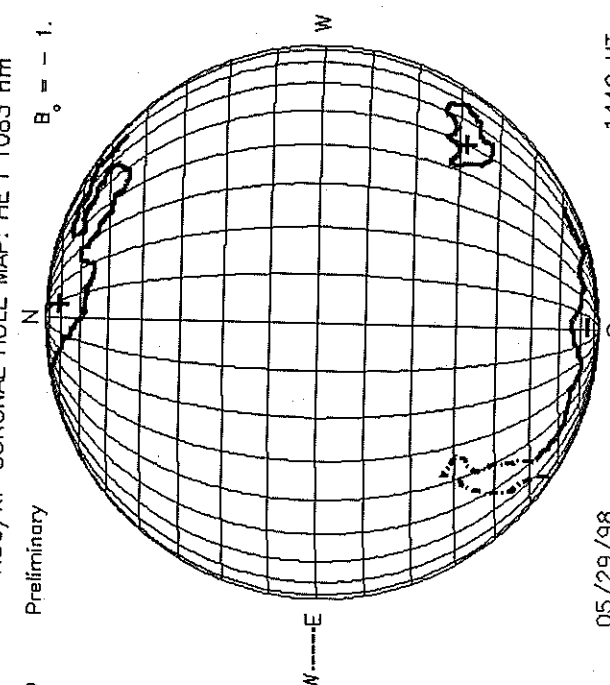
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_o = -1.1$



NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_o = -1.0$

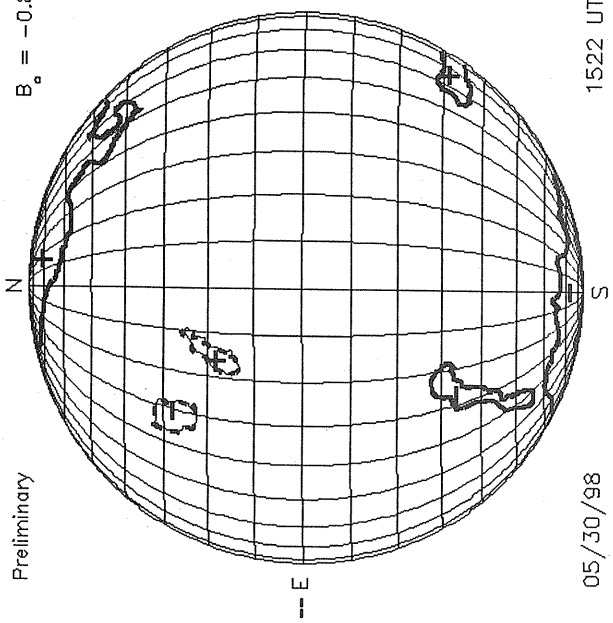


NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_o = -1.$

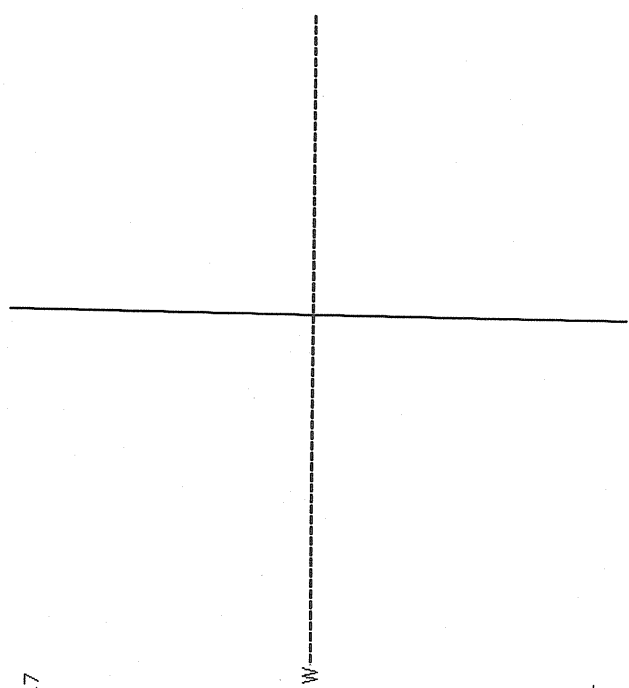
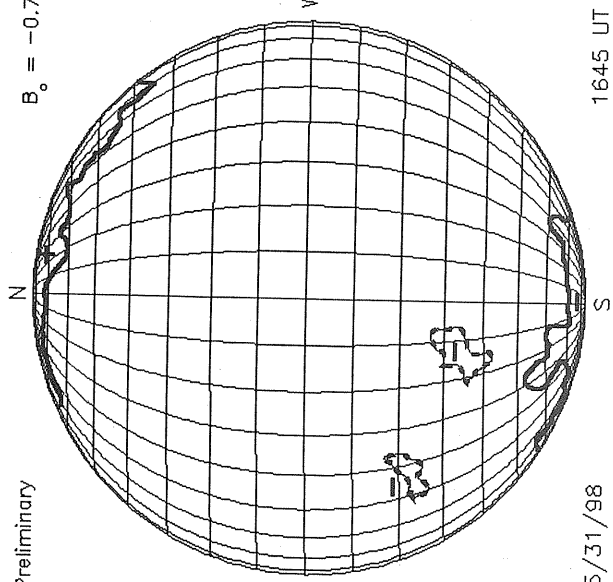


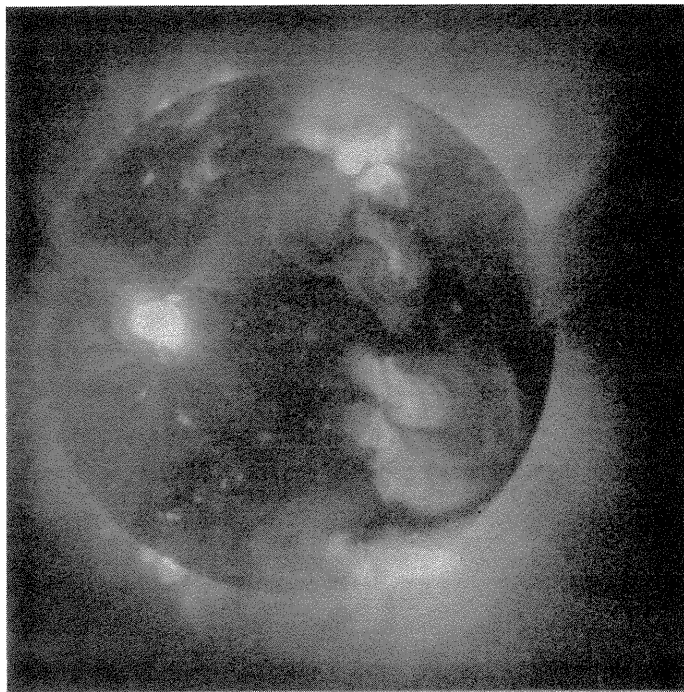
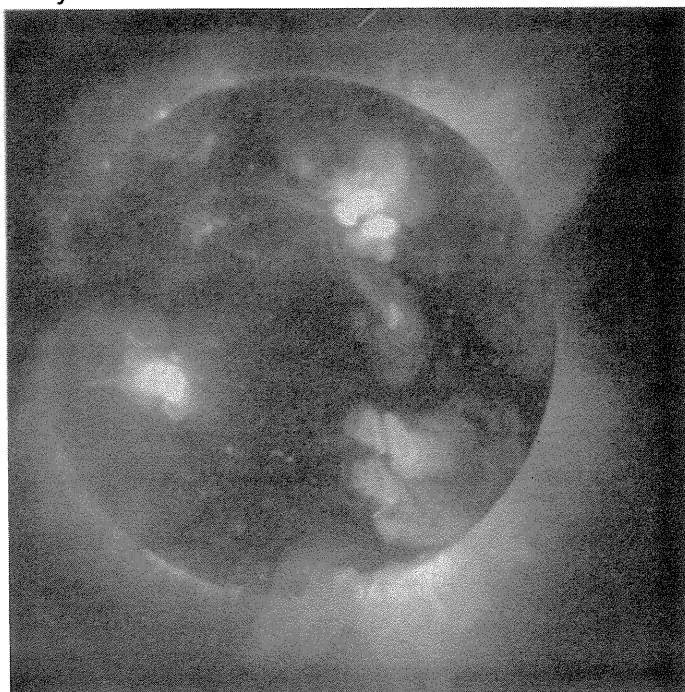
KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
May 1998

NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_o = -0.8$



NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_o = -0.7$

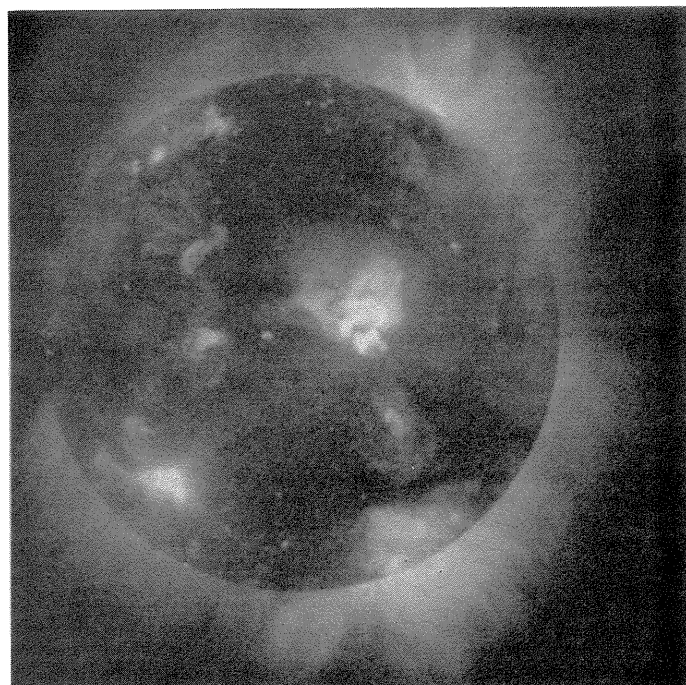




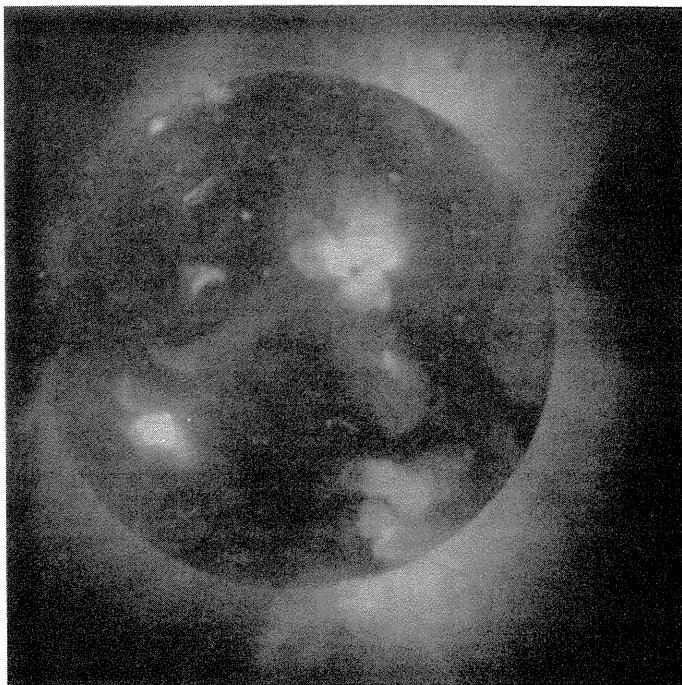
YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

May
1998

Day 1 Day 3
11:41:31 UT 13:03:02 UT



Day 2 Day 4
11:54:48 UT 11:52:12 UT

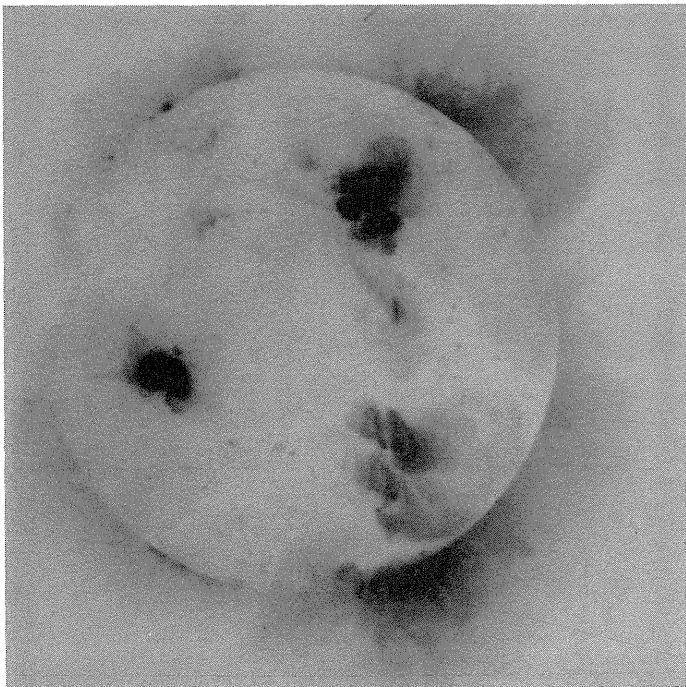
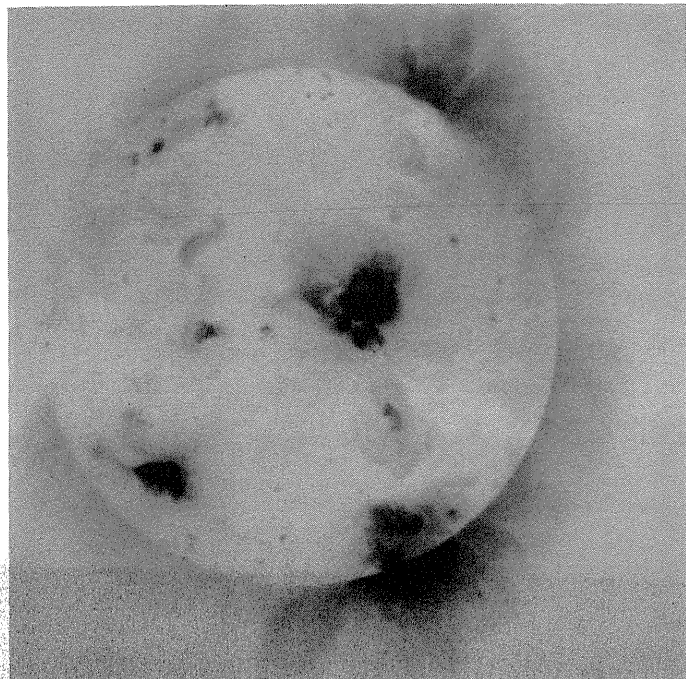


YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

May
1998

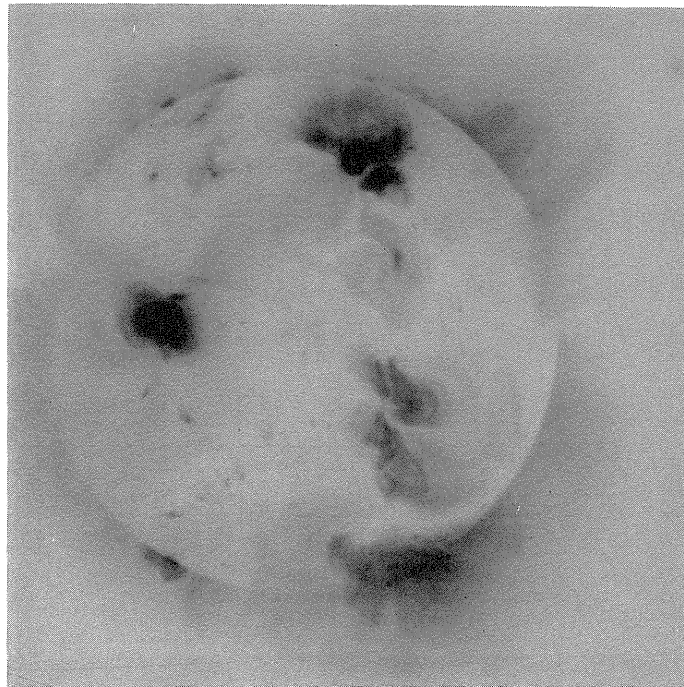
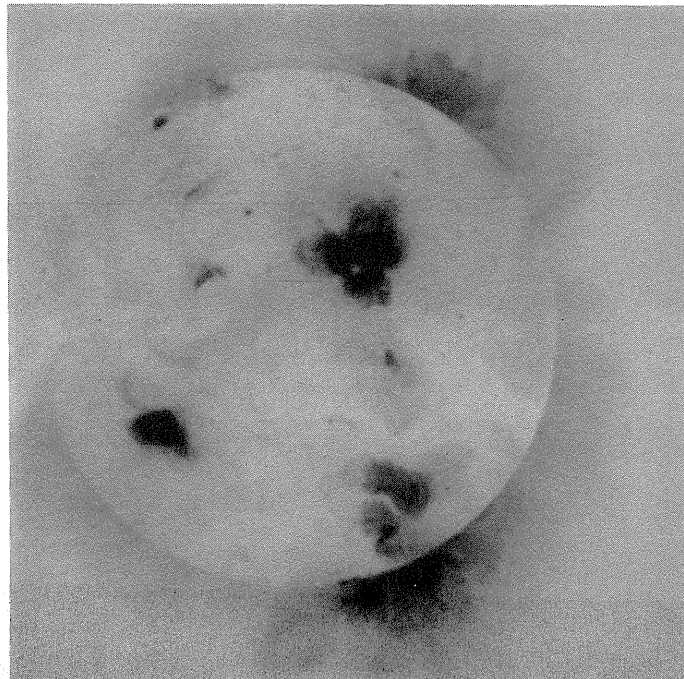
Day 1
11:41:31 UT

Day 3
13:03:02 UT



Day 2
11:54:48 UT

Day 4
11:52:12 UT



YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

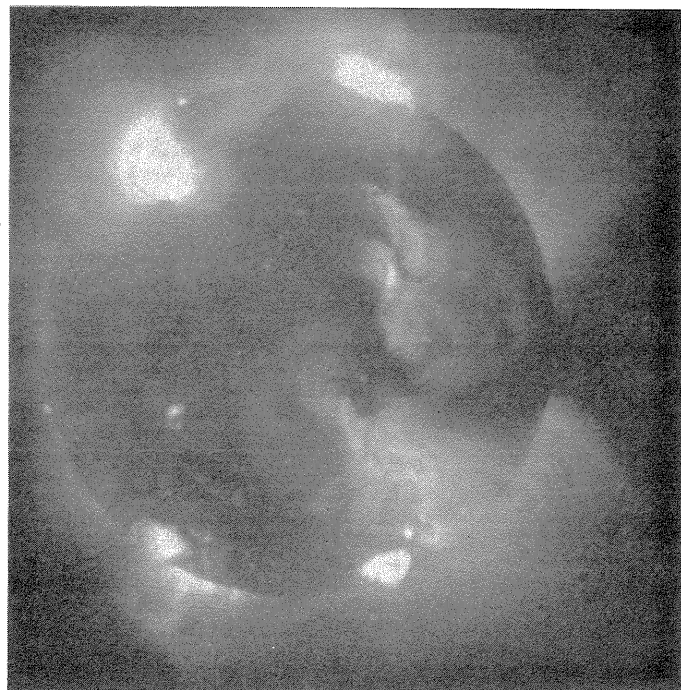
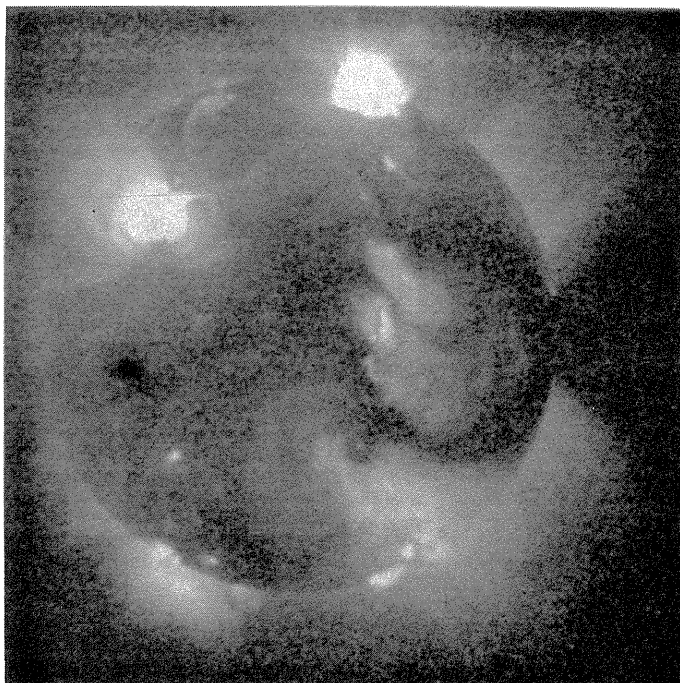
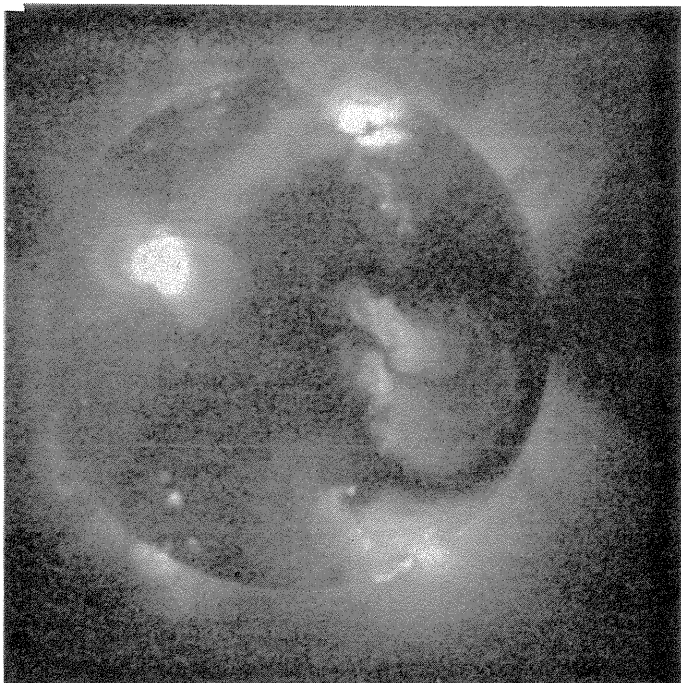
May
1998

Day 5
12:11:14 UT

Day 7
11:00:01 UT

Day 6
12:11:32 UT

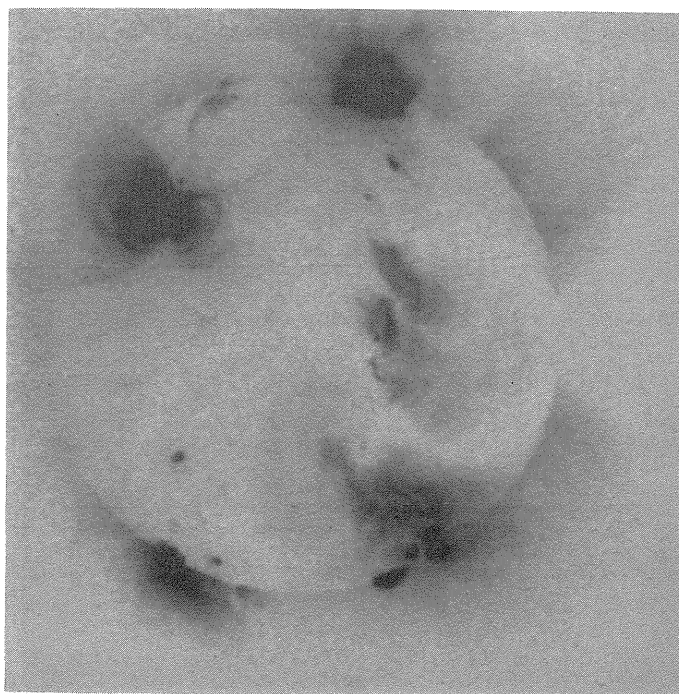
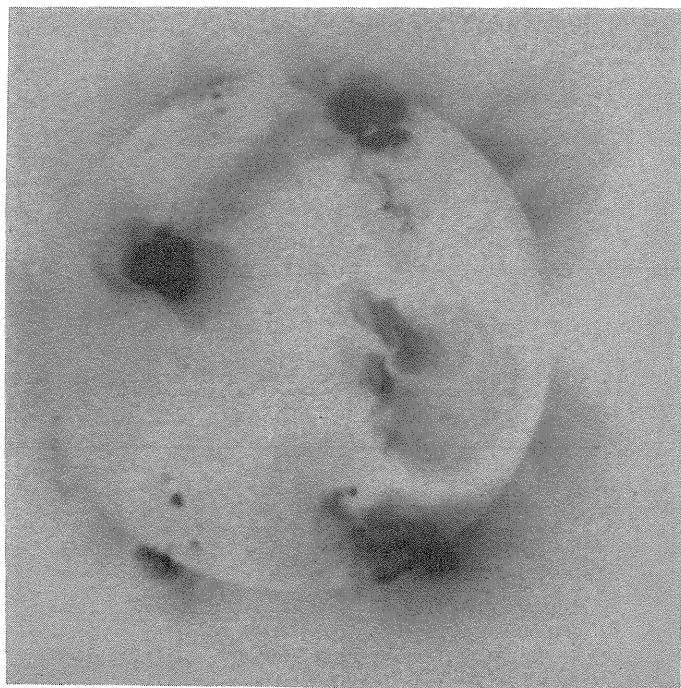
Day 8
12:02:13 UT



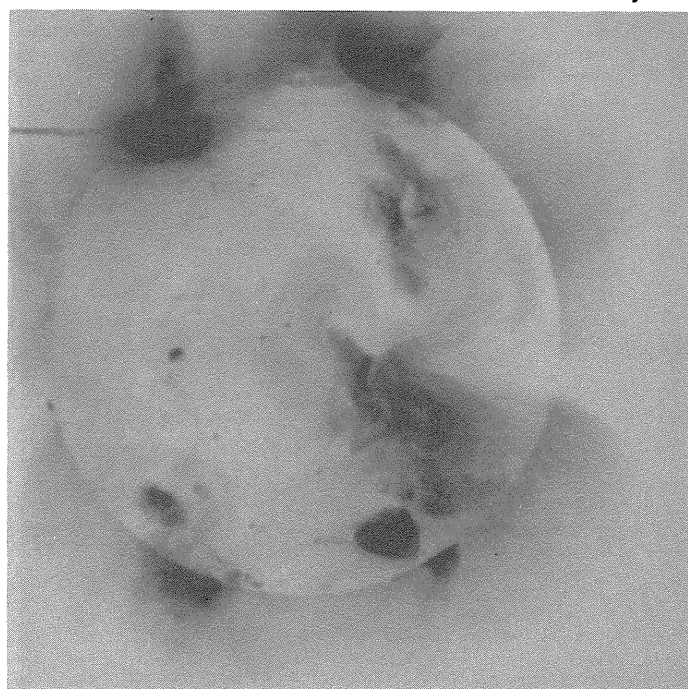
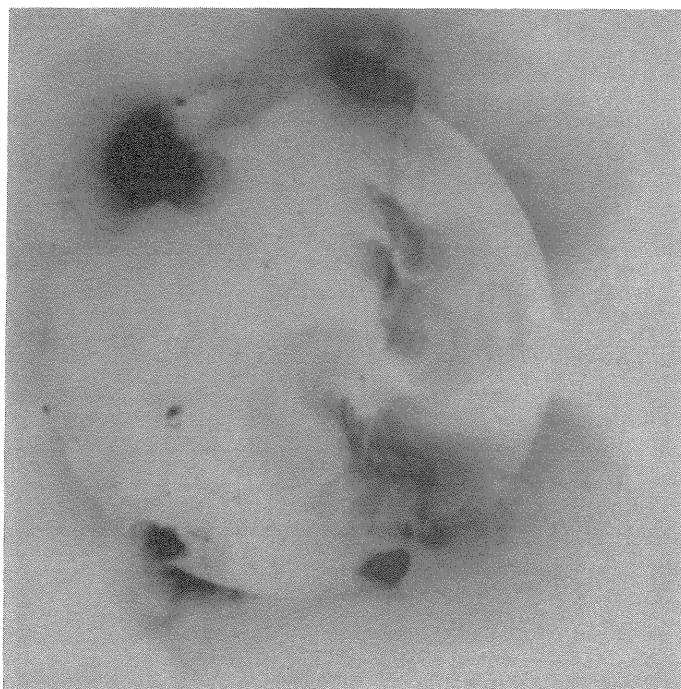
YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

May
1998

Day 5 Day 7
12:11:14 UT 11:00:01 UT



Day 6 Day 8
12:11:32 UT 12:02:13 UT



YOHKOH
SOFT X-RAY
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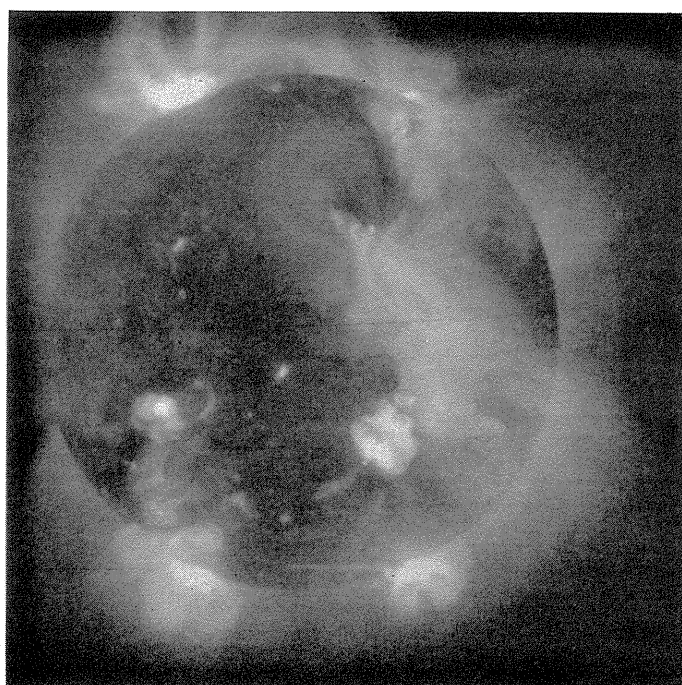
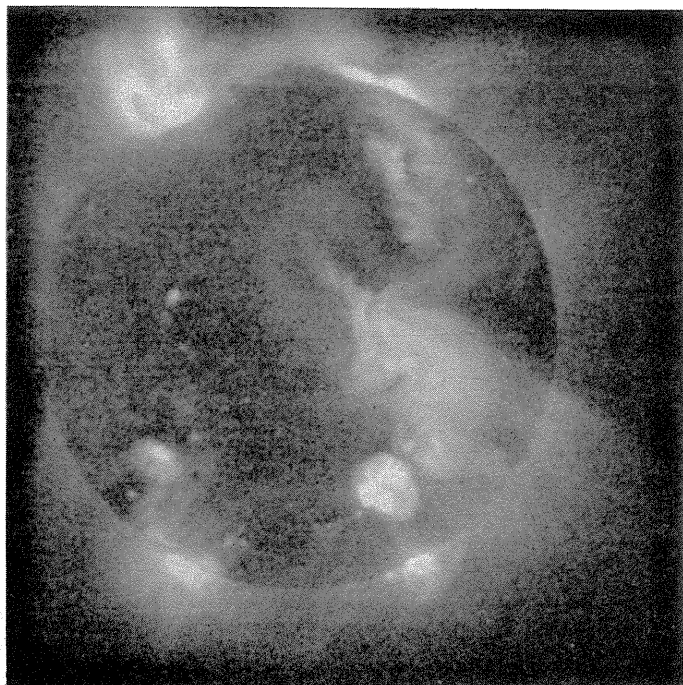
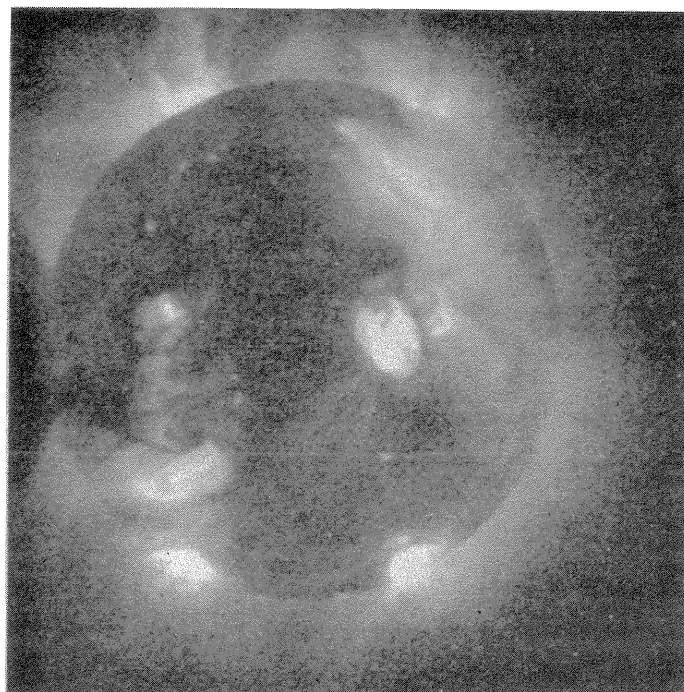
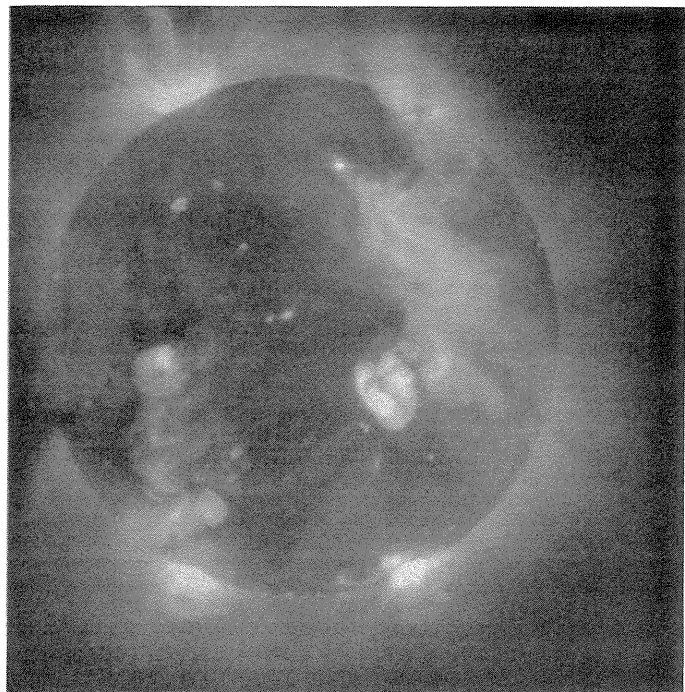
May
1998

Day 9
12:13:27 UT

Day 11
12:02:26 UT

Day 10
12:31:37 UT

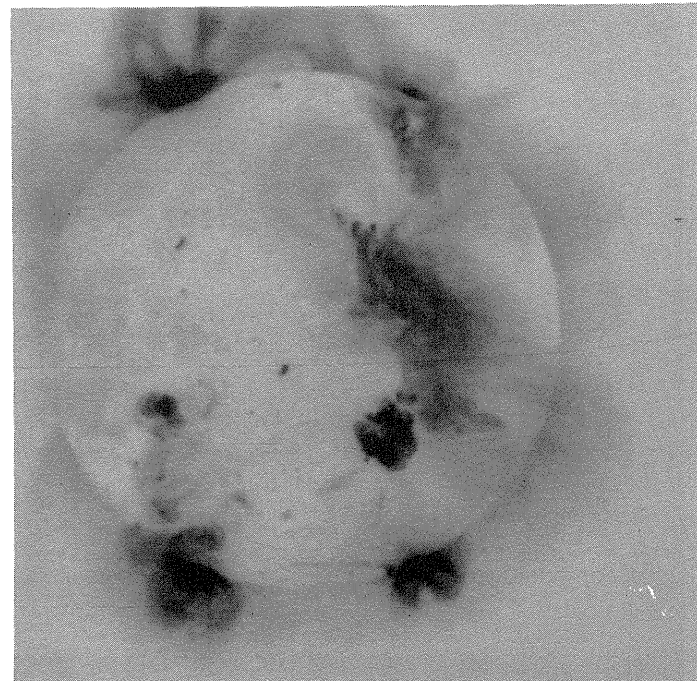
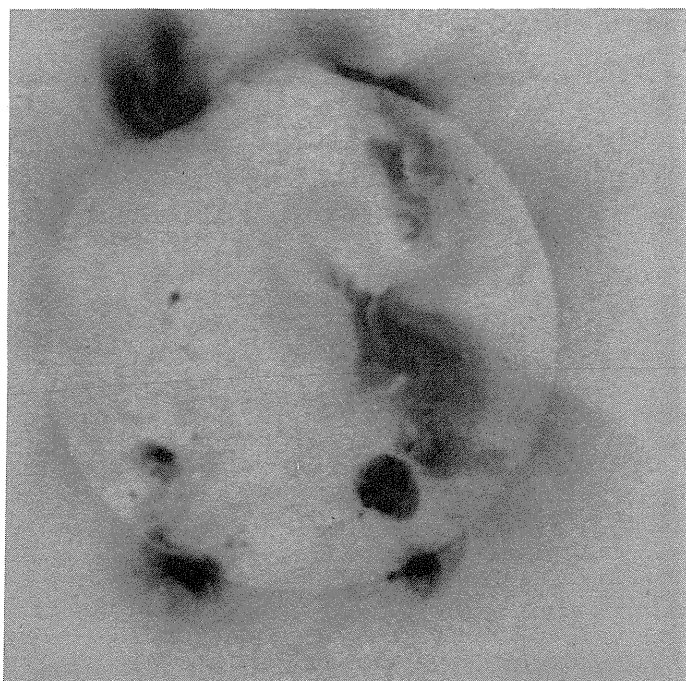
Day 12
12:19:02 UT



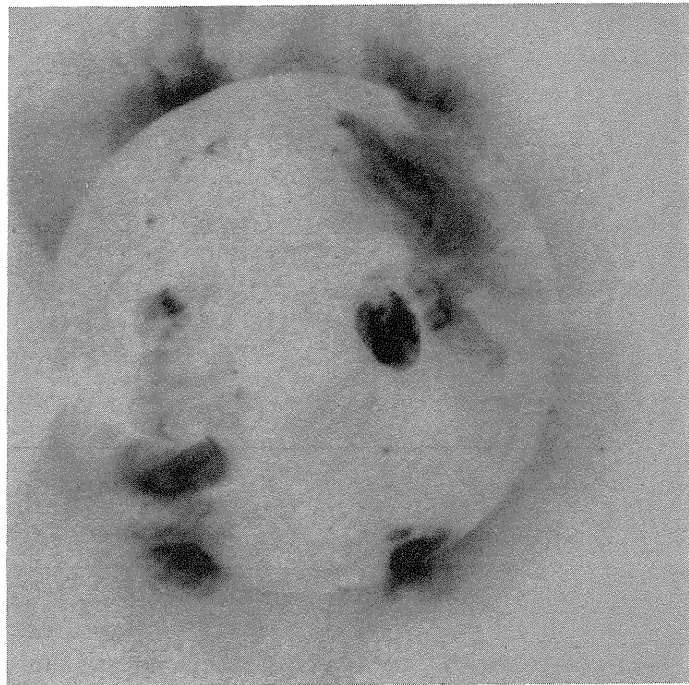
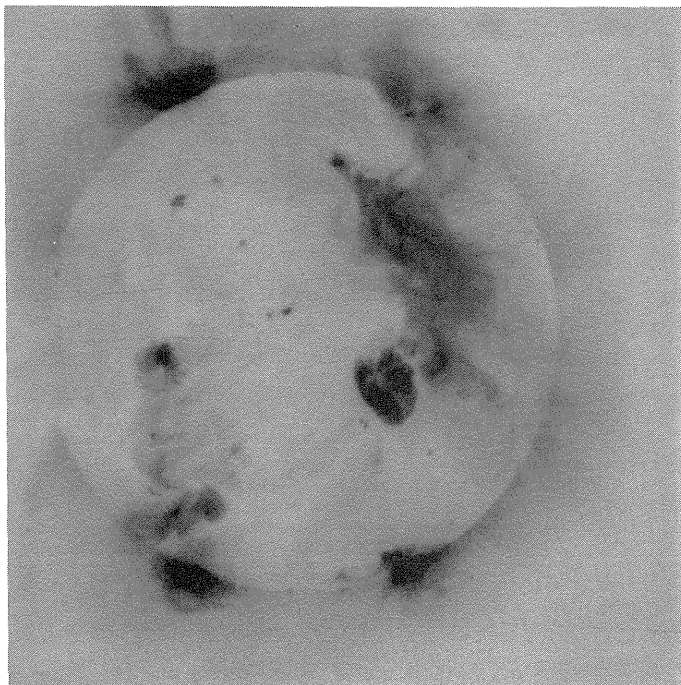
YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

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1998

Day 9 Day 11
12:13:27 UT 12:02:26 UT



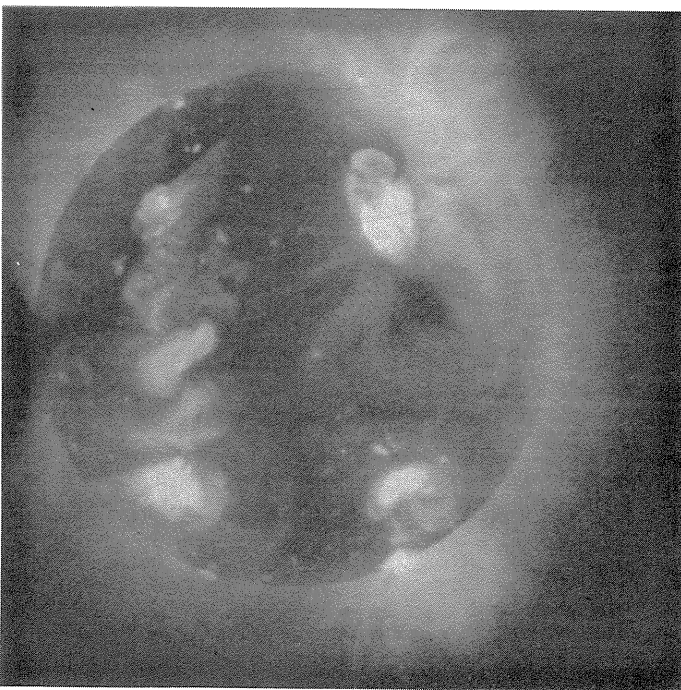
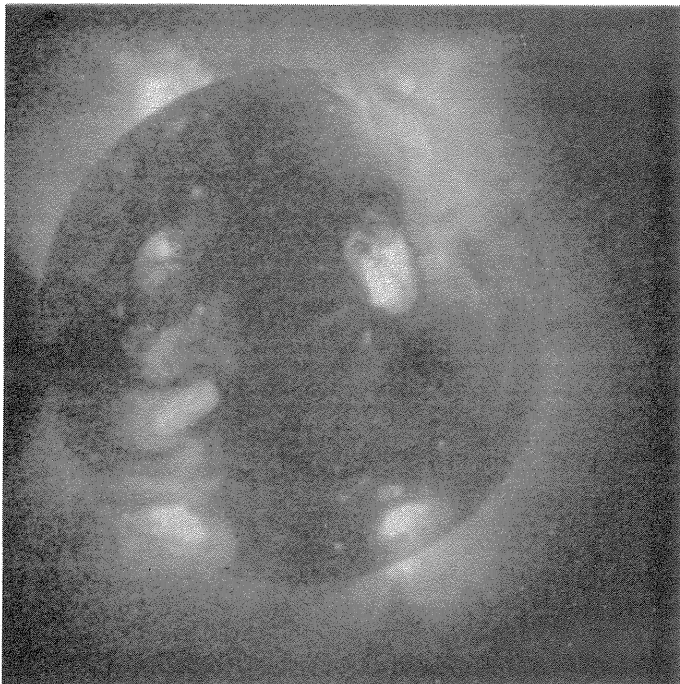
Day 10 Day 12
12:31:37 UT 12:19:02 UT



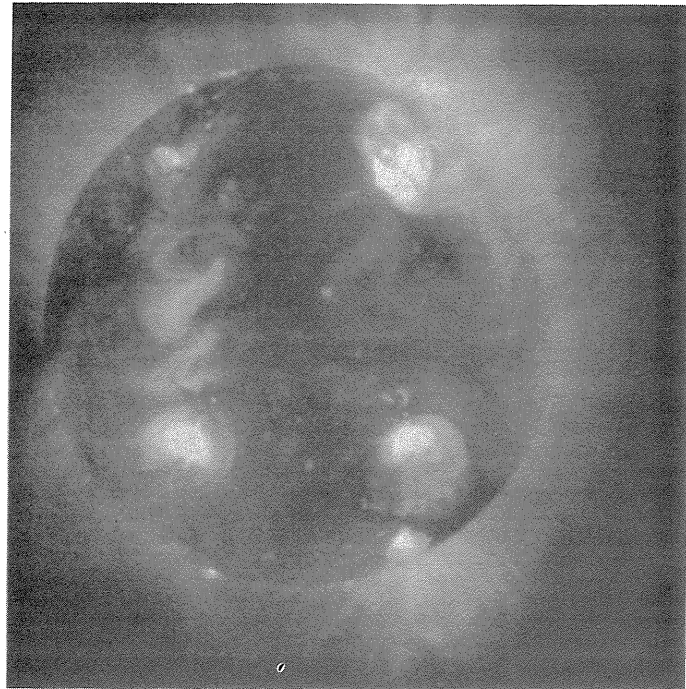
YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

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Day 13 Day 15
11:51:50 UT 10:47:06 UT



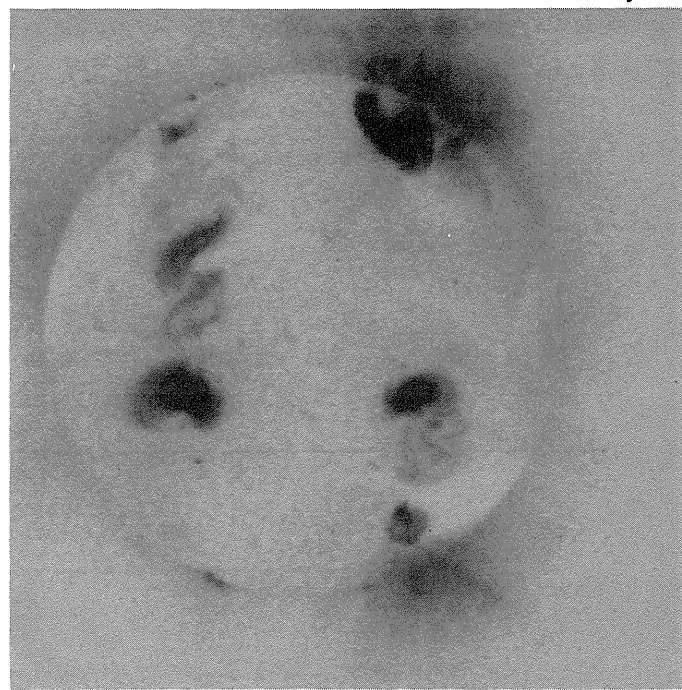
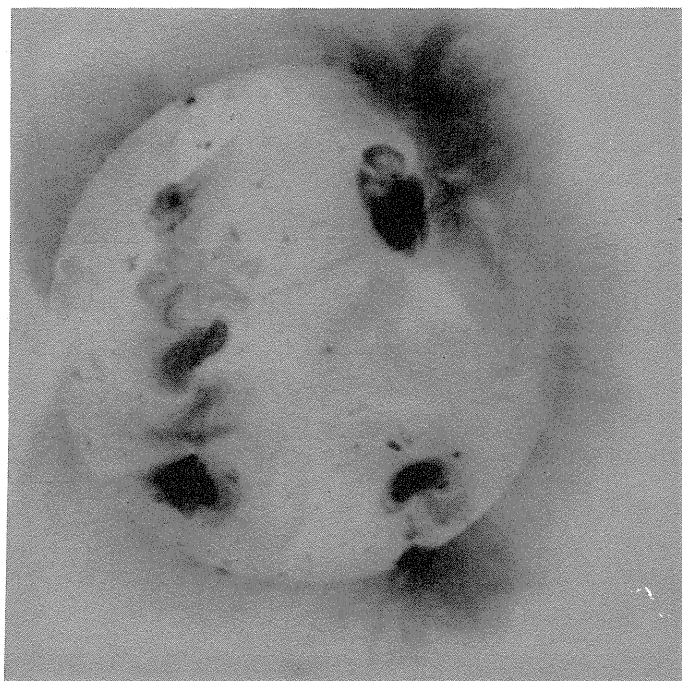
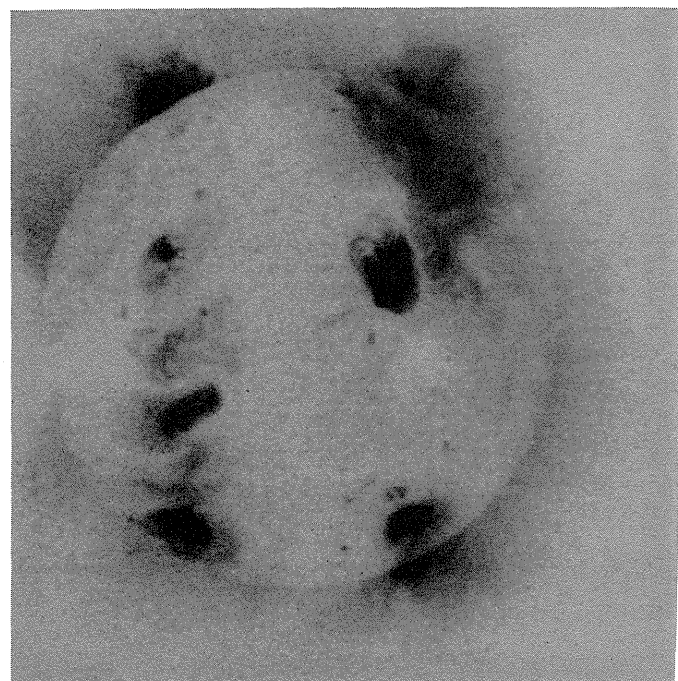
Day 14 Day 16
11:59:26 UT 11:53:25 UT



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SOFT X-RAY
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Day 13 Day 15
11:51:50 UT 10:47:06 UT

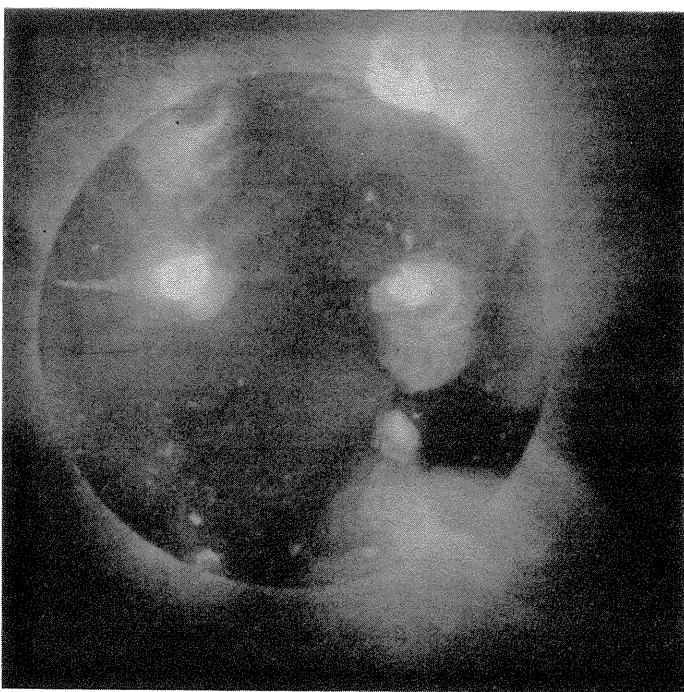
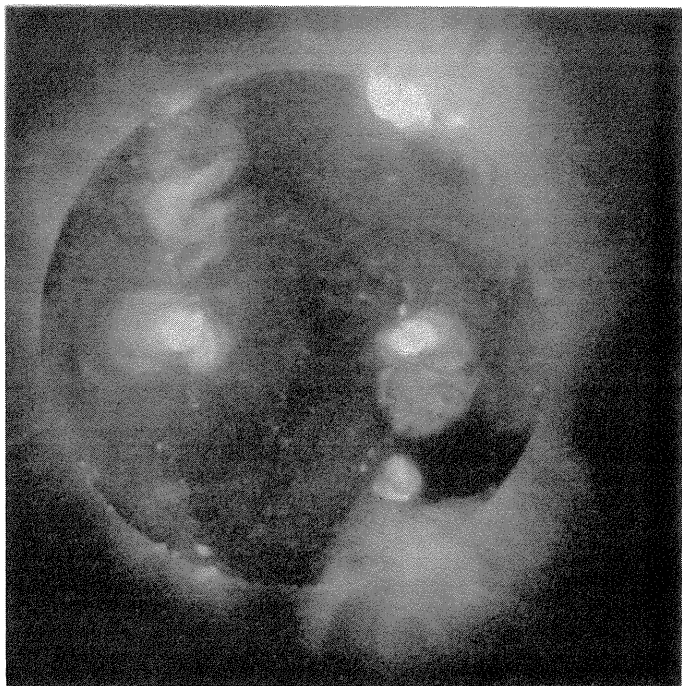


Day 14 Day 16
11:59:26 UT 11:53:25 UT

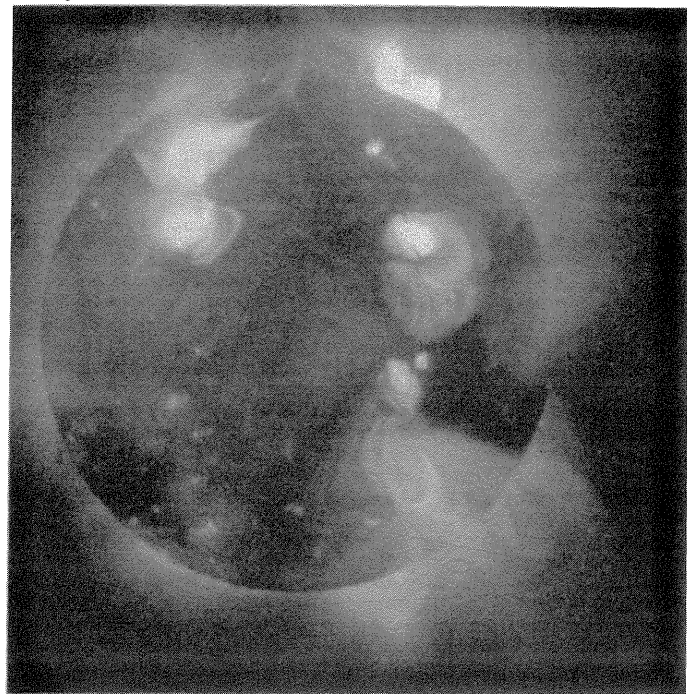
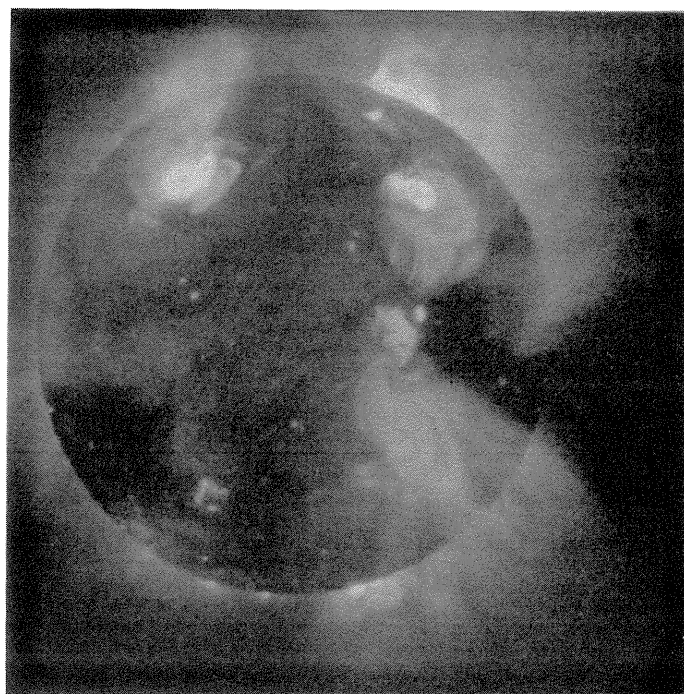
YOHKOH
SOFT X-RAY
TELESCOPE
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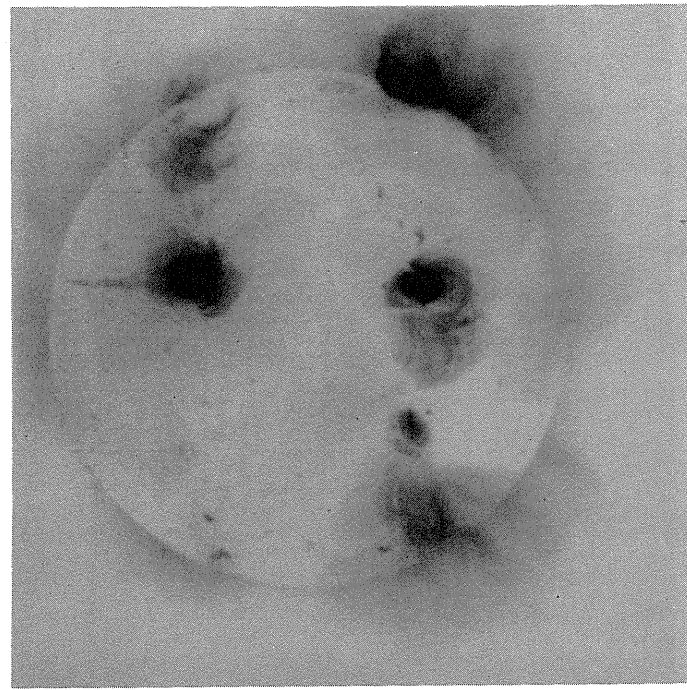
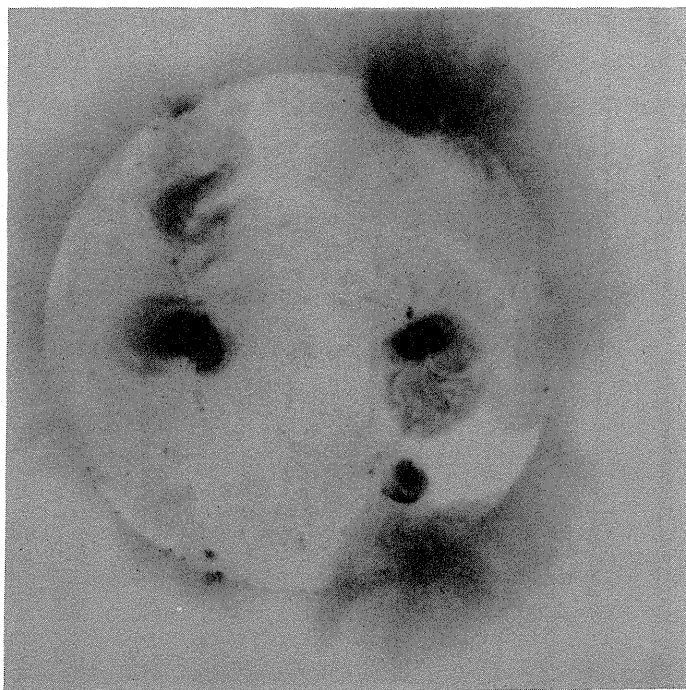
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Day 17 11:26:23 UT
Day 19 12:03:03 UT



Day 18 11:35:23 UT
Day 20 12:02:43 UT





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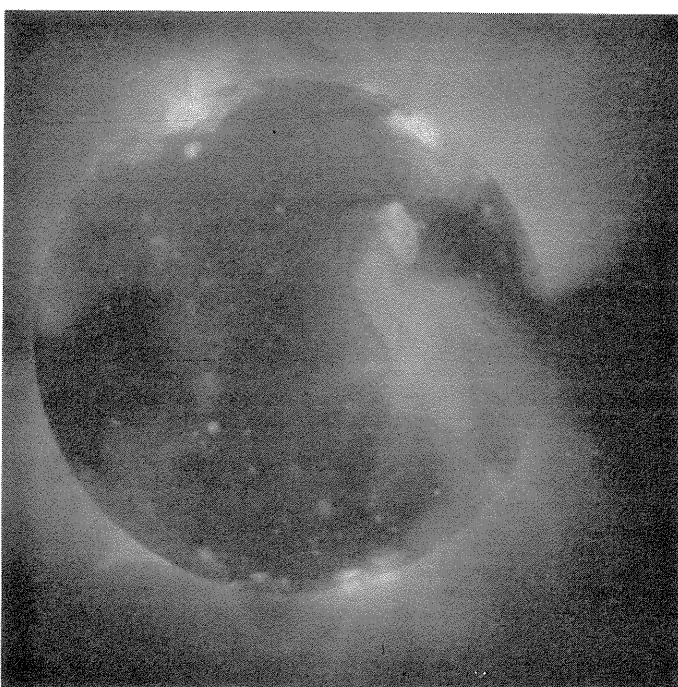
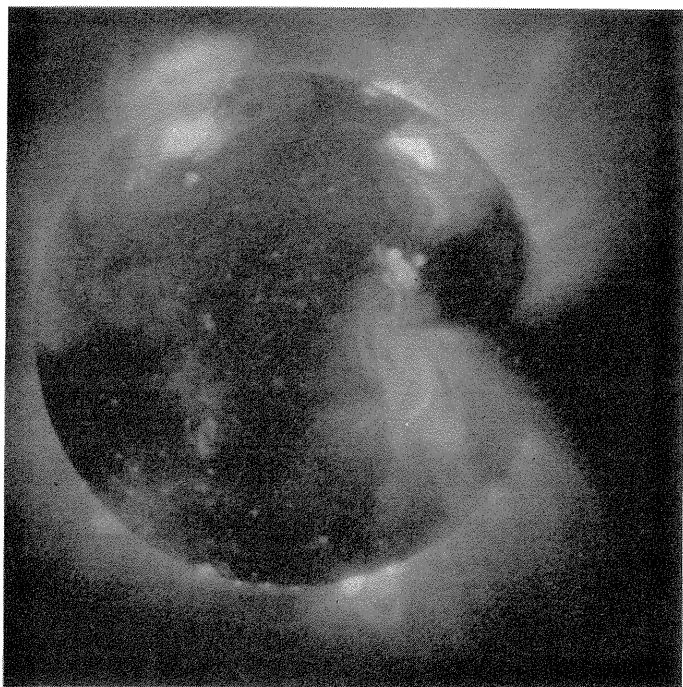
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11:26:23 UT 12:03:03 UT

Day 18 Day 20
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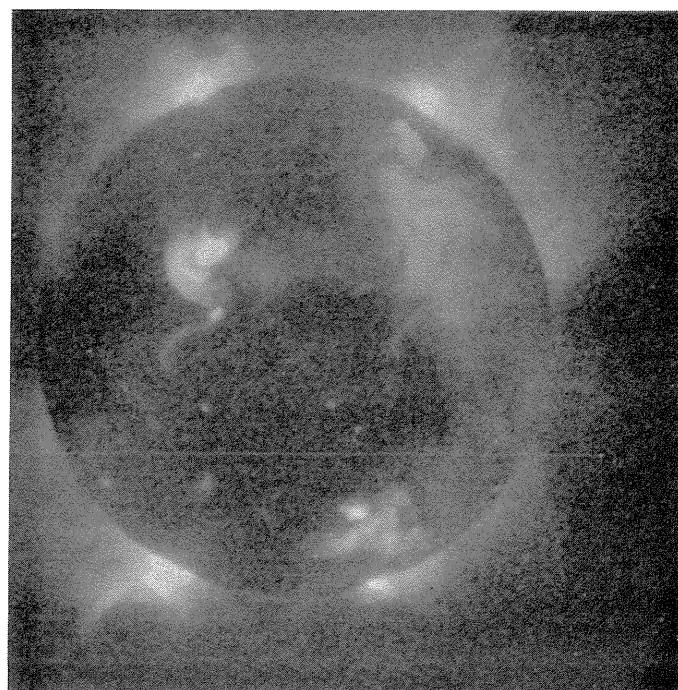
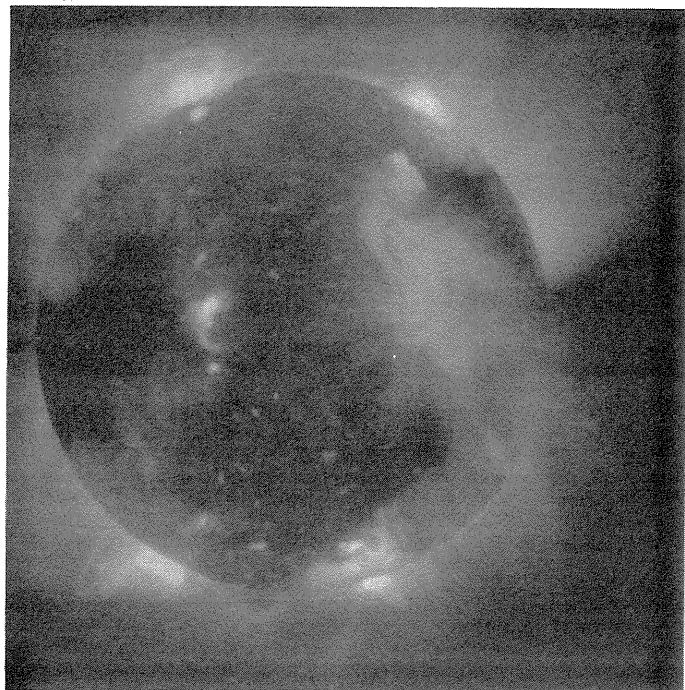
YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

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Day 21 Day 23
12:16:06 UT 11:30:58 UT



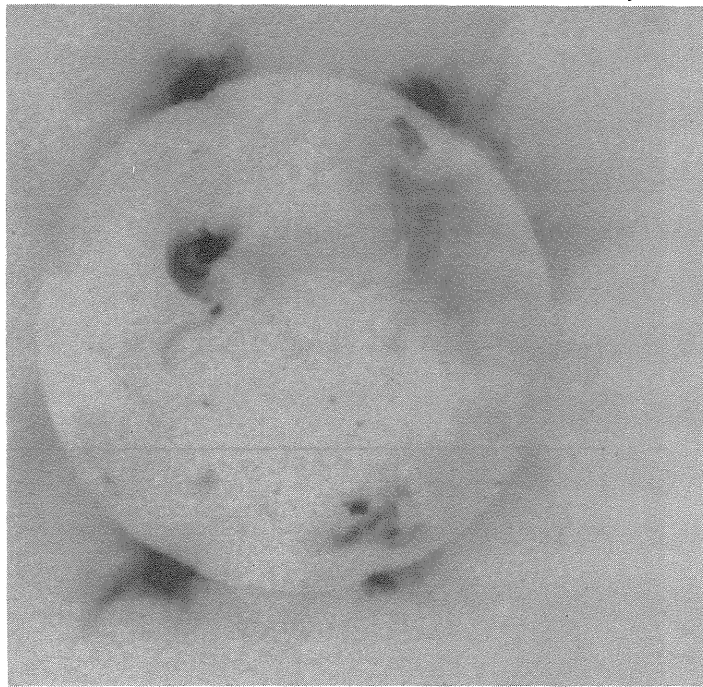
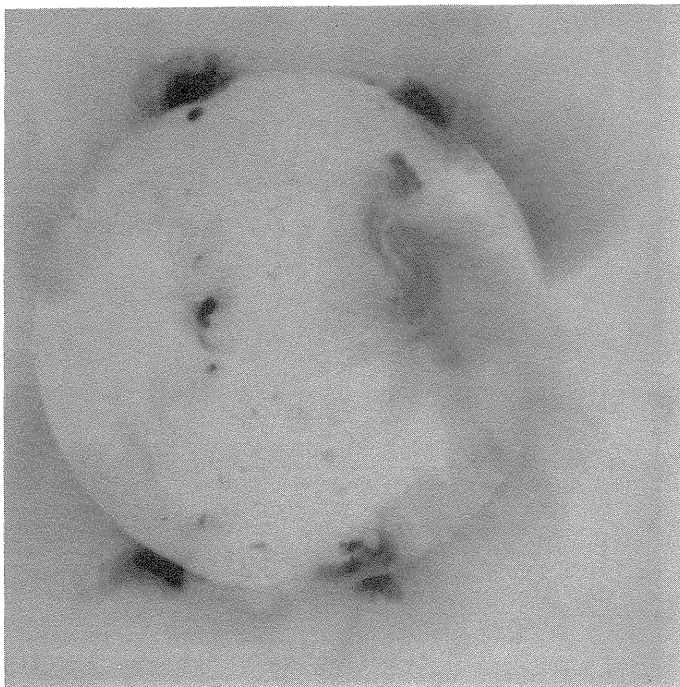
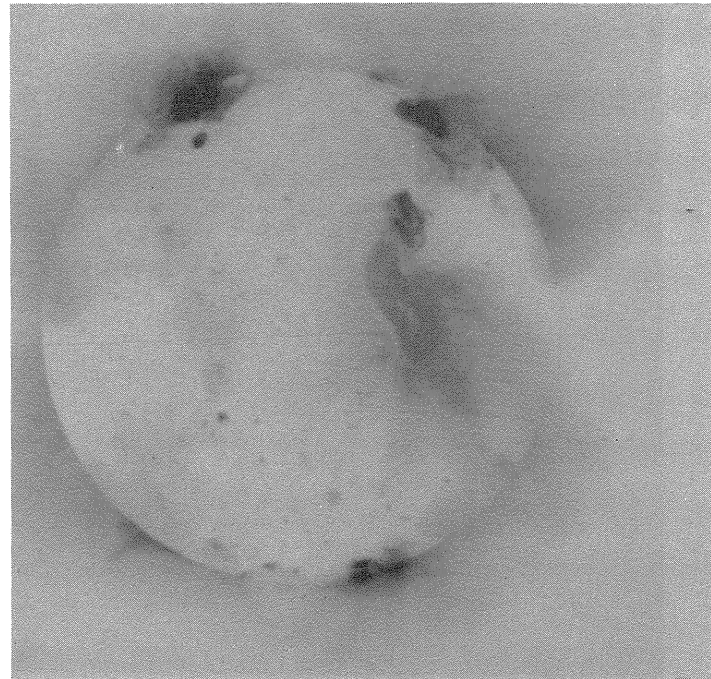
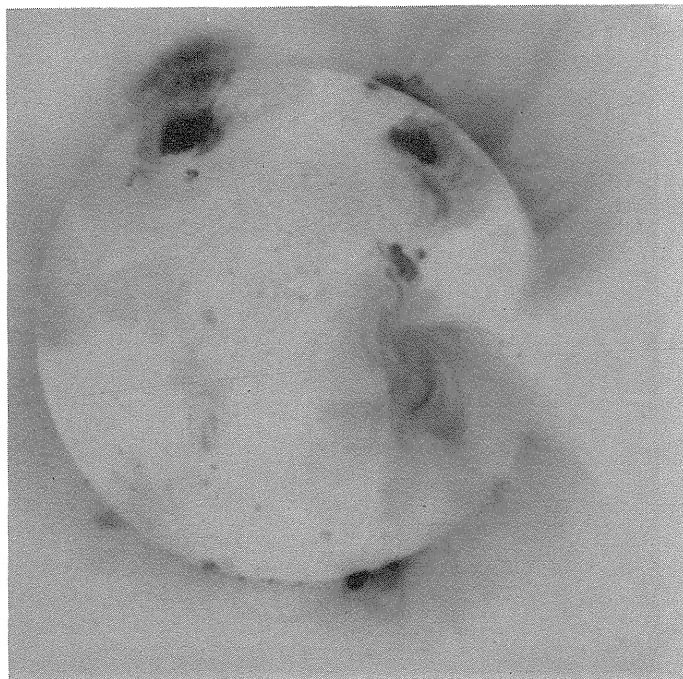
Day 22 Day 24
11:58:50 UT 11:51:16 UT



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SOFT X-RAY
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Day 21 Day 23
12:16:06 UT 11:30:58 UT



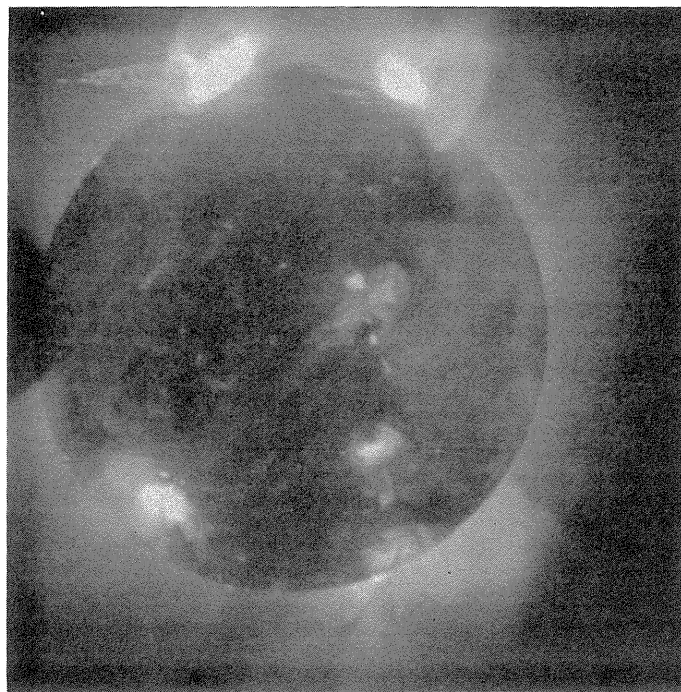
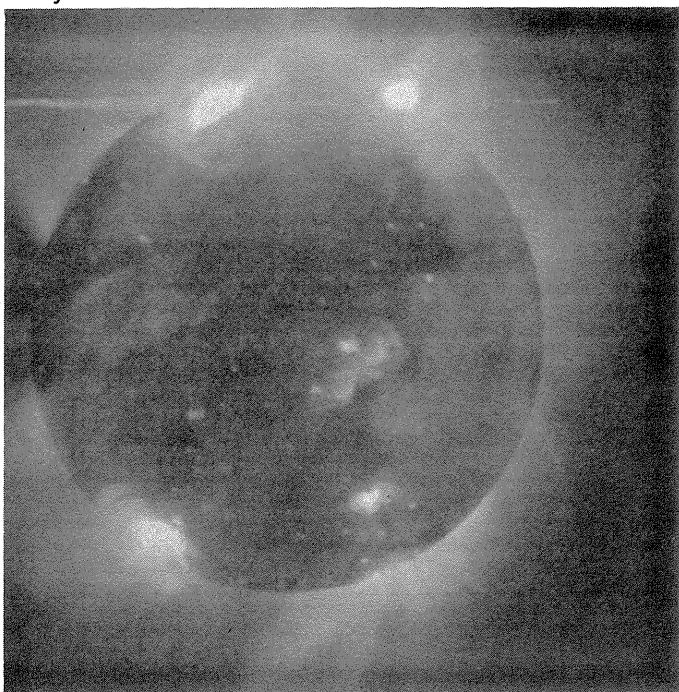
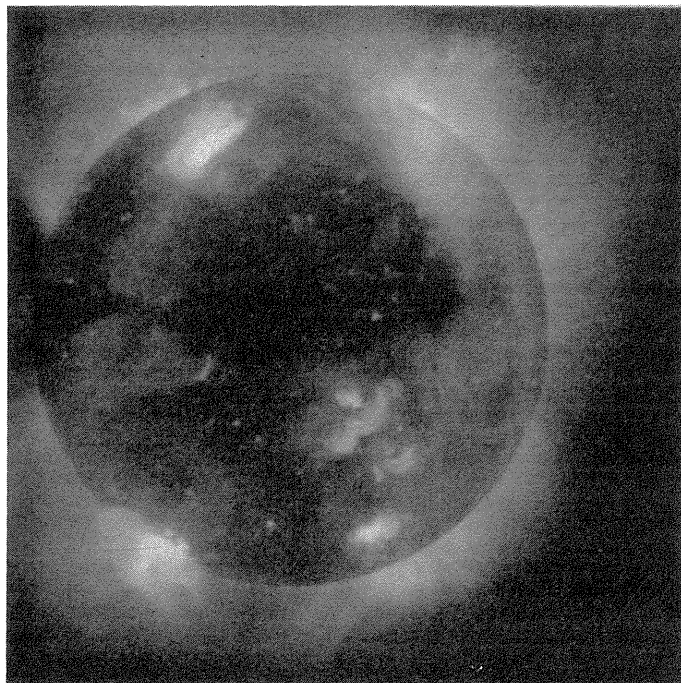
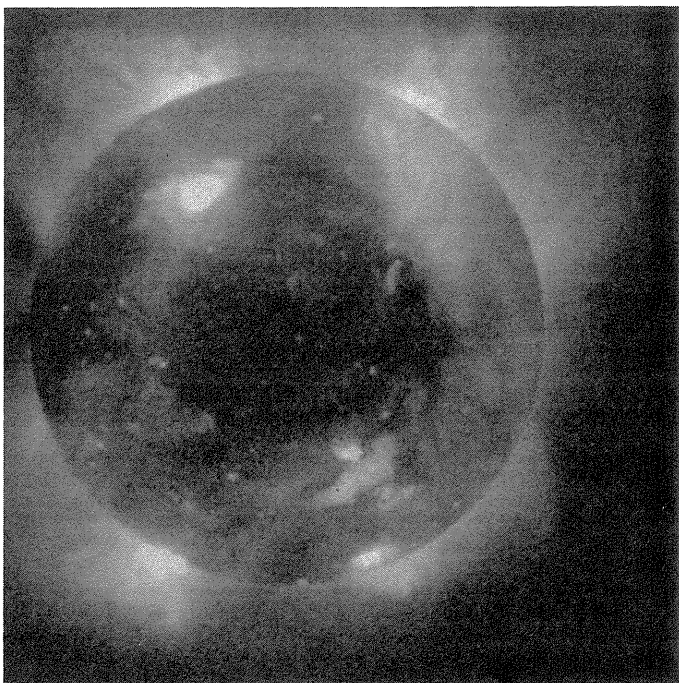
Day 22 Day 24
11:58:50 UT 11:51:16 UT

YOHKOH
SOFT X-RAY
TELESCOPE
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Day 25 Day 27
11:55:12 UT 12:20:05 UT

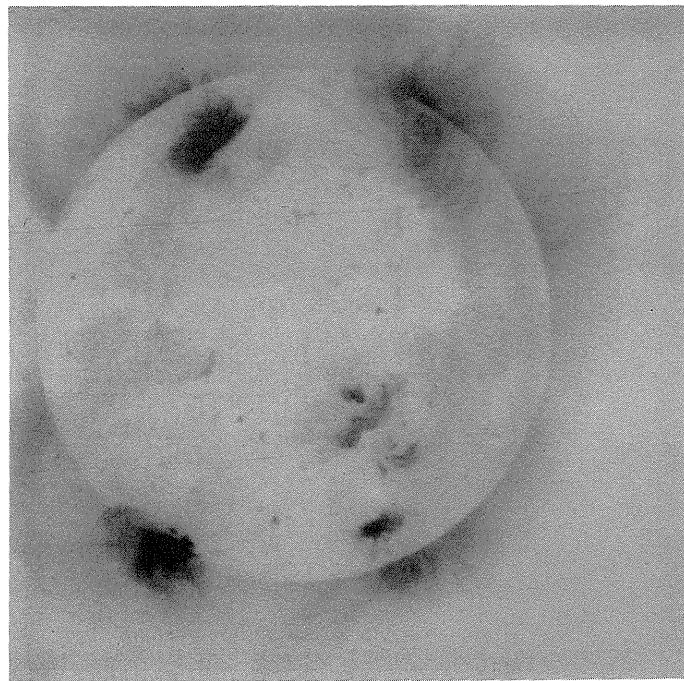
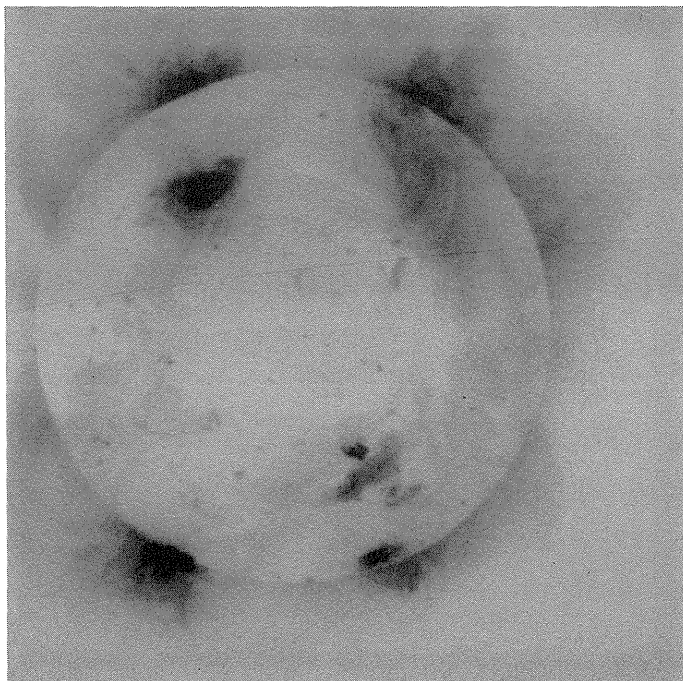
Day 26 Day 28
11:58:59 UT 12:36:13 UT



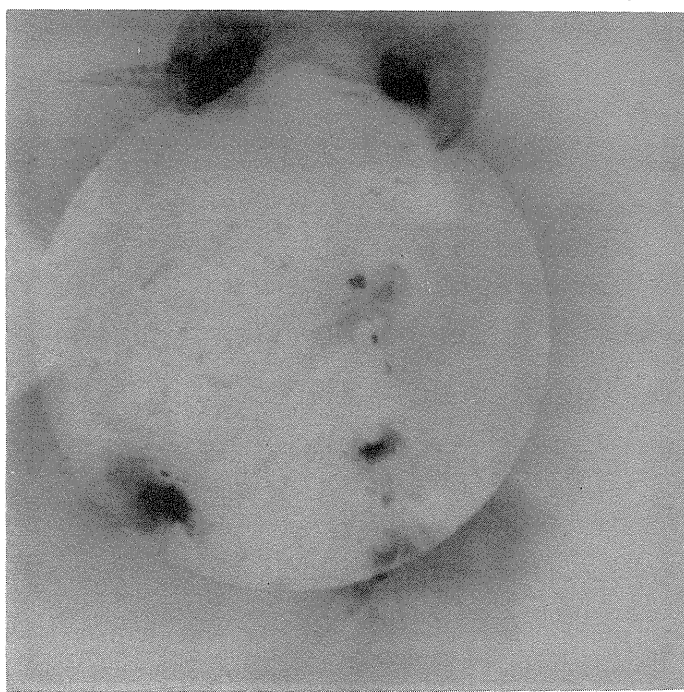
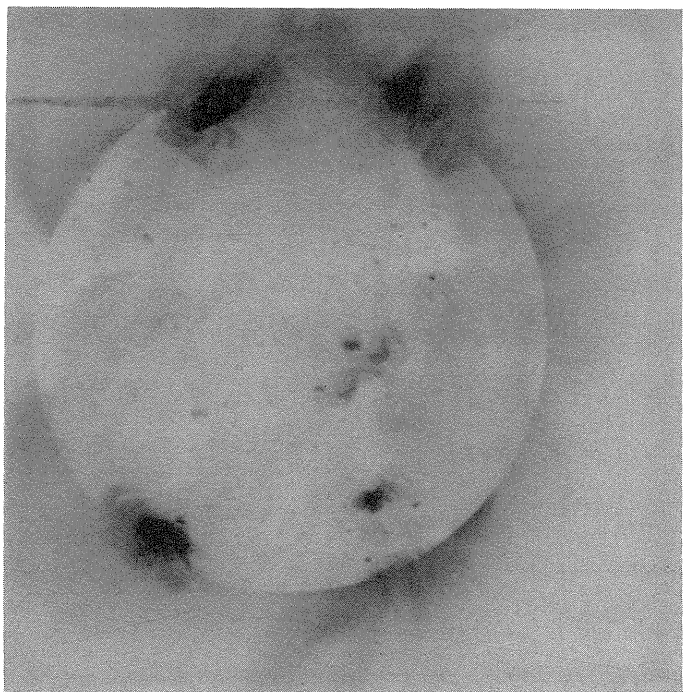
YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

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Day 25 Day 27
11:55:12 UT 12:20:05 UT



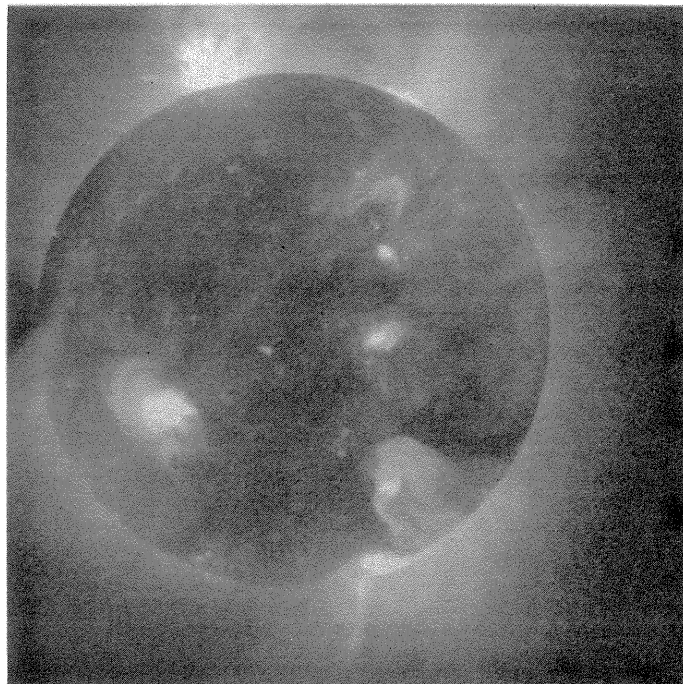
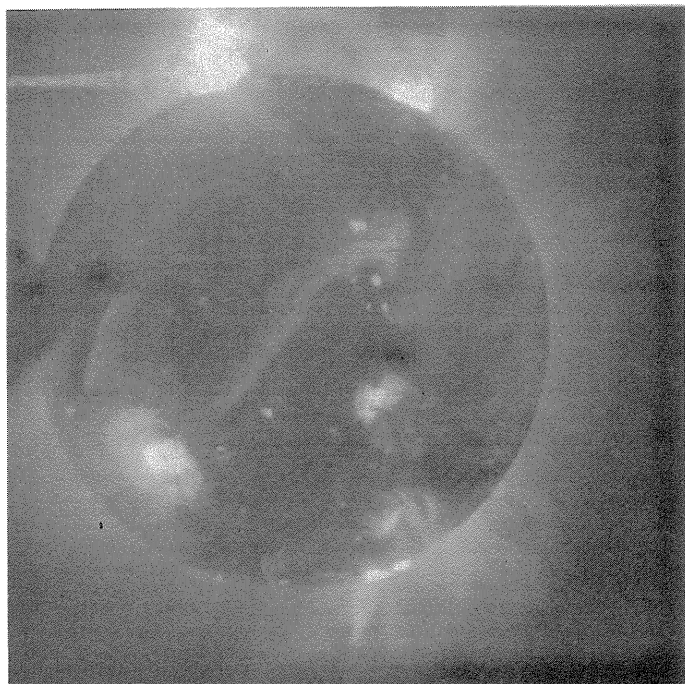
Day 26 Day 28
11:58:59 UT 12:36:13 UT



YOHKOH
SOFT X-RAY
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Day 29 11:33:59 UT Day 31 12:02:42 UT

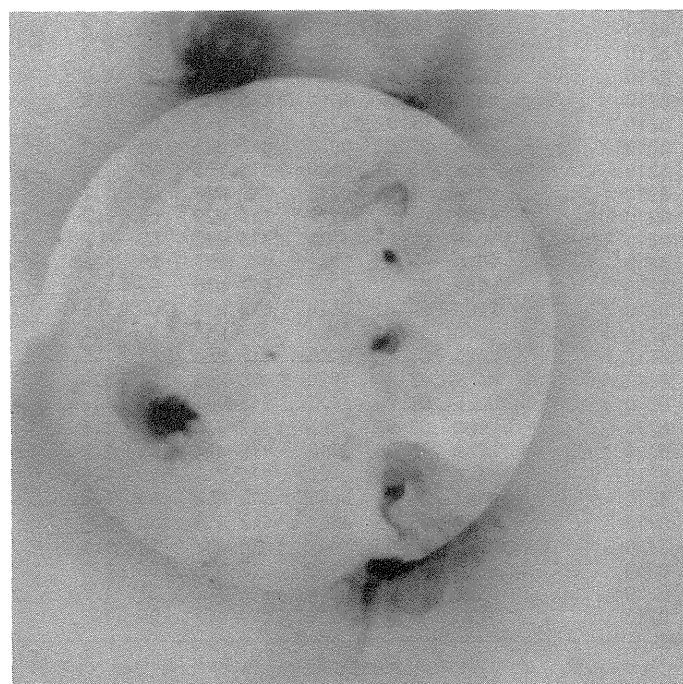
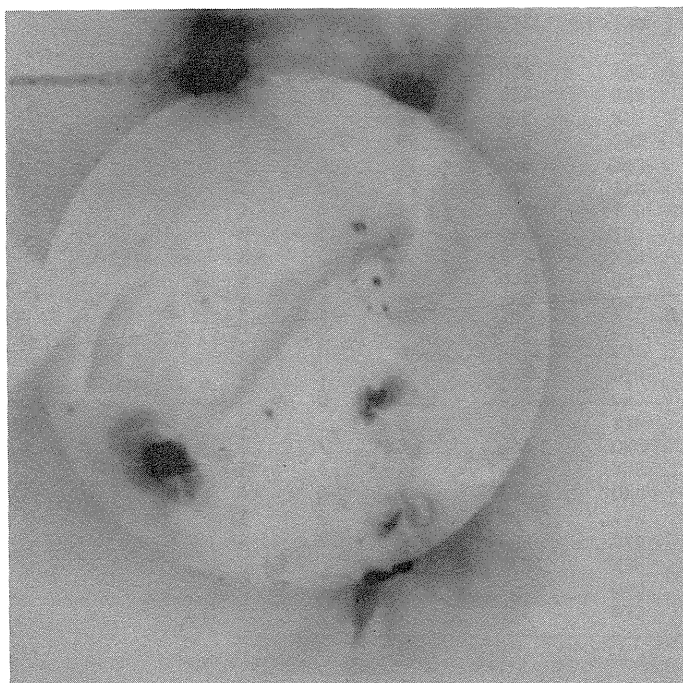


Day 30 11:53:50 UT

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SOFT X-RAY
TELESCOPE
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Day 29 11:33:59 UT Day 31 12:02:42 UT



Day 30 11:53:50 UT

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

MAY 1998

NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10 ⁻⁶ Hemi)	Spot Count	Long. Extent (Deg)	Qual
8210		VORO	04	24	2138	S14	E85	05	1.3			HRX	70	1		2
8210		LEAR	04	25	0015	S15	E81	05	1.1		B	CSO	180	3	8	3
8210		SVTO	04	25	1033	S17	E80	05	1.5		B	CAO	170	5	13	1
8210		RAMY	04	25	1356	S15	E73	05	1.1		B	DSO	180	5	9	2
8210	28632	MWIL	04	25	1445	S16	E75	05	1.3	4	(B)					
8210		HOLL	04	25	1540	S18	E72	05	1.1		B	DSO	340	5	5	3
8210		VORO	04	25	2215	S17	E71	05	1.3			HRX	196	1		2
8210		LEAR	04	26	0039	S18	E68	05	1.2		B	CKO	140	13	9	4
8210		SVTO	04	26	0519	S15	E65	05	1.1		B	DAO	170	4	9	3
8210	28632	MWIL	04	26	1445	S16	E62	05	1.3	5	(BF)					
8210		HOLL	04	26	1532	S17	E60	05	1.2		B	CSO	220	7	9	3
8210		RAMY	04	26	1715	S17	E60	05	1.3		B	CKO	200	9	9	2
8210		LEAR	04	27	0016	S17	E54	05	1.1		B	CKO	140	9	10	5
8210		SVTO	04	27	0510	S18	E53	05	1.2		B	CAO	200	8	7	4
8210		TACH	04	27	0616	S17	E54	05	1.4			HHX	400	4	3	3
8210		RAMY	04	27	1224	S17	E48	05	1.2		BD	CKO	270	9	7	4
8210	28632	MWIL	04	27	1430	S16	E50	05	1.4	5	(BF)					
8210		LEAR	04	28	0030	S17	E42	05	1.2		B	CKO	260	7	6	3
8210		SVTO	04	28	0706	S17	E40	05	1.3		BG	CKO	200	10	8	3
8210		TACH	04	28	0718	S18	E38	05	1.2			CHX	462	9	5	3
8210		RAMY	04	28	1121	S16	E36	05	1.2		BGD	DKC	270	12	8	4
8210	28632	MWIL	04	28	1430	S16	E36	05	1.3	5	(BG)					
8210		HOLL	04	28	1454	S18	E35	05	1.3		BGD	CKO	310	13	9	4
8210		VORO	04	28	2154	S17	E33	05	1.4			HKX	372	13		3
8210		LEAR	04	29	0454	S16	E26	05	1.2		B	CSO	140	14	8	2
8210		TACH	04	29	0512	S16	E27	05	1.3			CAX	437	12	4	3
8210		SVTO	04	29	0630	S18	E27	05	1.3		BG	CKO	310	20	8	3
8210		KAND	04	29	0730	S16	E27	05	1.4			BKO		11	9	4
8210		RAMY	04	29	1158	S16	E24	05	1.3		BG	DHO	220	14	8	3
8210	28632	MWIL	04	29	1445	S17	E23	05	1.4	5	(BG)					
8210		VORO	04	29	2157	S17	E20	05	1.4			HKX	354	7		2
8210		LEAR	04	30	0145	S16	E14	05	1.1		B	CKO	150	15	12	4
8210		SVTO	04	30	0540	S17	E10	05	1.0		BG	CKO	310	16	10	3
8210		KAND	04	30	0800	S17	E11	05	1.2			DKO		16	9	4
8210		RAMY	04	30	1216	S16	E08	05	1.1		BG	DHI	300	27	10	4
8210	28632	MWIL	04	30	1430	S16	E09	05	1.3	6	(BG)					
8210		HOLL	04	30	1532	S17	E07	05	1.2		BG	CHO	270	27	9	4
8210		KAND	05	01	0605	S17	W01	05	1.2			EK1		26	11	5
8210		RAMY	05	01	1227	S17	W04	05	1.2		BGD	DK1	340	27	10	4
8210		SVTO	05	01	1340	S17	W05	05	1.2		BGD	DK1	290	22	10	3
8210		HOLL	05	01	1439	S17	W06	05	1.1		BGD	CKO	390	41	12	3
8210	28632	MWIL	05	01	1500	S16	W04	05	1.3	5	(D)					
8210		LEAR	05	02	0200	S17	W11	05	1.2		BG	EKO	440	27	11	4
8210		SVTO	05	02	0555	S18	W12	05	1.3		GD	DK1	370	34	10	3
8210		KAND	05	02	0945	S17	W13	05	1.4			EK1		38	8	3
8210		RAMY	05	02	1205	S16	W15	05	1.4		BGD	DK1	430	22	9	4
8210		HOLL	05	02	1440	S16	W18	05	1.2		BG	EKC	430	40	12	4
8210		VORO	05	02	2147	S17	W19	05	1.5			HKX	503	12		3
8210		LEAR	05	03	0027	S17	W23	05	1.3		BG	CK1	390	35	10	5
8210		TACH	05	03	0409	S16	W23	05	1.4			CHX	622	11	4	3
8210		SVTO	05	03	0715	S17	W28	05	1.2		BG	DKO	480	25	10	3
8210		RAMY	05	03	1122	S17	W29	05	1.3		BGD	DK1	380	21	10	4
8210		HOLL	05	03	1430	S16	W32	05	1.2		BG	CK1	410	37	11	3
8210		VORO	05	03	2228	S17	W33	05	1.4			HKX	567	5		3
8210		LEAR	05	04	0227	S17	W36	05	1.4		B	CKO	410	11	6	3
8210		TACH	05	04	0626	S18	W36	05	1.5			CHO	924	12	5	3
8210		SVTO	05	04	0730	S17	W38	05	1.4		BG	DKO	420	12	6	2
8210		KAND	05	04	0900	S17	W38	05	1.5			DKO		14	6	3
8210		RAMY	05	04	1220	S18	W41	05	1.4		BD	CKO	450	13	7	4
8210		HOLL	05	04	1623	S16	W45	05	1.3		B	CHO	440	18	8	3
8210		VORO	05	04	2205	S17	W46	05	1.4			HKX	617	5		3
8210		LEAR	05	05	0112	S19	W46	05	1.5		B	DHO	360	8	7	3
8210		TACH	05	05	0428	S15	W50	05	1.4			HHX	766	15	4	3
8210		KAND	05	05	0645	S16	W52	05	1.3			DKO		7	8	4
8210		RAMY	05	05	1351	S17	W56	05	1.3		BG	DK1	600	9	8	3
8210		HOLL	05	05	1549	S16	W57	05	1.3		B	DKO	480	13	7	4
8210		VORO	05	05	2130	S17	W60	05	1.3			HKX	852	5		3
8210		KAND	05	06	0845	S16	W62	05	1.7			DAO		11	10	3
8210		SVTO	05	06	1110	S15	W71	05	1.1		B	CKO	350	6	9	2

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

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MAY 1998

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time			Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8210		HOLL	05	06	1530	S15	W70	05	1.3		BG	CKO	350	9	6	3
8210		LEAR	05	07	0037	S16	W73	05	1.5		BG	DAI	340	4	5	4
8210		TACH	05	07	0412	S16	W75	05	1.5			HRO	155	3	2	4
8210		SVTO	05	07	0727	S15	W77	05	1.5		A	HK	300	2	4	2
8210		KAND	05	07	0730	S17	W80	05	1.2			DAO		2	4	5
8210	28632	MWIL	05	07	1430	S16	W82	05	1.4	4	AP					
8210		HOLL	05	07	1542	S15	W80	05	1.6		B	CAO	150	6	4	3
8210A		SVTO	04	27	0510	N18	E59	05	1.7		A	AX		1		4
8213		SVTO	04	28	0706	S25	E66	05	3.4		A	AX		2	1	3
8213		TACH	04	28	0718	S25	E63	05	3.2			AXX	3	1	1	3
8213	28635	RAMY	04	28	1121	S24	E60	05	3.1		B	BXO	10	4	2	4
8213		MWIL	04	28	1430	S24	E59	05	3.2	3	(B)					
8213		HOLL	04	28	1454	S25	E57	05	3.0		B	BXO	20	5	3	4
8213		TACH	04	29	0512	S24	E49	05	3.0			AXX	8	2	1	3
8213		SVTO	04	29	0630	S25	E50	05	3.1		B	BXO	20	7	4	3
8213		RAMY	04	29	1158	S22	E45	05	2.9		B	BXO	20	6	5	3
8213	28635	MWIL	04	29	1445	S24	E44	05	3.0	3	(B)					
8213		SVTO	04	30	0540	S25	E40	05	3.3		A	AX		1		3
8213		HOLL	05	06	1530	S21	W45	05	3.2		A	AX	10	1		3
8213	28642	MWIL	05	08	1415	S22	W73	05	3.0	3	(AF)					
8214		RAMY	04	29	1158	N28	E64	05	4.5		A	AX		1		3
8214	28637	MWIL	04	29	1445	N27	E65	05	4.7	4	(B)					
8214		LEAR	04	30	0145	N26	E59	05	4.6		B	BXO	10	4	4	4
8214		SVTO	04	30	0540	N26	E57	05	4.7		B	CRO	30	3	4	3
8214		KAND	04	30	0800	N25	E54	05	4.5			BXO		6	5	4
8214		RAMY	04	30	1216	N27	E51	05	4.5		B	CRO	40	9	6	4
8214	28637	MWIL	04	30	1430	N26	E52	05	4.6	4	(B)					
8214		HOLL	04	30	1532	N26	E53	05	4.8		B	CRO	50	9	5	4
8214		KAND	05	01	0605	N25	E43	05	4.6			DAI		17	7	5
8214		RAMY	05	01	1227	N27	E38	05	4.5		B	CAI	90	22	9	4
8214		SVTO	05	01	1340	N26	E39	05	4.6		B	CAI	110	17	9	3
8214		HOLL	05	01	1439	N26	E37	05	4.5		B	DSO	140	28	9	3
8214	28637	MWIL	05	01	1500	N26	E38	05	4.6	5	(BG)					
8214		LEAR	05	02	0200	N27	E30	05	4.4		B	CAO	170	29	11	4
8214		SVTO	05	02	0555	N26	E28	05	4.4		B	DSI	170	32	10	3
8214		KAND	05	02	0945	N25	E25	05	4.3			DAI		29	11	3
8214		RAMY	05	02	1205	N26	E25	05	4.4		B	EAI	180	22	11	4
8214		HOLL	05	02	1440	N27	E24	05	4.5		B	ESC	260	28	11	4
8214		VORO	05	02	2147	N26	E20	05	4.5			DAI	374	17	11	3
8214		LEAR	05	03	0027	N27	E18	05	4.4		B	ESI	180	52	13	5
8214		TACH	05	03	0409	N27	E16	05	4.4			CAI	262	19	7	3
8214		SVTO	05	03	0715	N26	E13	05	4.3		B	ESI	300	37	13	3
8214		RAMY	05	03	1122	N28	E12	05	4.4		B	DSC	330	47	14	4
8214		HOLL	05	03	1430	N26	E11	05	4.4		B	ESC	320	57	13	3
8214		VORO	05	03	2228	N27	E06	05	4.4			DAI	501	19	12	3
8214		LEAR	05	04	0227	N27	E03	05	4.3		B	EKI	400	44	14	3
8214		TACH	05	04	0626	N27	E05	05	4.6			DAI	604	42	8	3
8214		SVTO	05	04	0730	N26	E01	05	4.4		B	EKI	530	42	14	2
8214		KAND	05	04	0900	N26	W01	05	4.3			EKI		43	15	3
8214		RAMY	05	04	1220	N27	W02	05	4.3		B	DKC	510	51	14	4
8214		HOLL	05	04	1623	N26	W05	05	4.3		B	ESC	590	68	14	3
8214		VORO	05	04	2205	N27	W07	05	4.4			DAI	586	17	13	3
8214		LEAR	05	05	0112	N26	W12	05	4.1		B	EHI	480	34	15	3
8214		TACH	05	05	0428	N26	W10	05	4.4			DAI	934	48	14	3
8214		KAND	05	05	0645	N27	W13	05	4.3			FKC		35	18	4
8214		RAMY	05	05	1351	N27	W17	05	4.2		BG	FKC	740	63	18	3
8214		HOLL	05	05	1549	N27	W18	05	4.2		BG	FKC	720	56	17	4
8214		VORO	05	05	2130	N26	W21	05	4.3			DAI	573	12	15	3
8214		KAND	05	06	0845	N27	W28	05	4.2			FKC		32	17	3
8214		SVTO	05	06	1110	N26	W27	05	4.4		B	FKI	520	49	17	2
8214		HOLL	05	06	1530	N28	W31	05	4.2		BG	FHC	690	38	18	3
8214		LEAR	05	07	0037	N26	W35	05	4.3			FKC	520	28	18	4
8214		TACH	05	07	0412	N28	W38	05	4.2			DHI	814	30	15	4
8214		SVTO	05	07	0727	N28	W39	05	4.3		B	FKI	760	23	19	2
8214		KAND	05	07	0730	N27	W39	05	4.3			FKC		22	19	5
8214	28637	MWIL	05	07	1430	N27	W45	05	4.1	5	B					

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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
8214		HOLL	05 07 1542	N27 W44	05 4.2		B	FHC	670	39	17	3
8214		VORO	05 07 2131	N28 W47	05 4.2			DAI	527	10	15	3
8214		LEAR	05 08 0330	N28 W51	05 4.1		B	FHI	320	30	18	4
8214		SVTO	05 08 0550	N28 W51	05 4.2		BG	FKI	440	20	18	4
8214		TACH	05 08 0615	N28 W49	05 4.4			CAI	550	16	15	3
8214		KAND	05 08 0700	N26 W54	05 4.1			FKI		18	19	3
8214		RAMY	05 08 1345	N27 W56	05 4.2		B	FKI	380	11	19	3
8214	28637	MWIL	05 08 1415	N27 W57	05 4.1	5	(B)					
8214		VORO	05 08 2210	N27 W61	05 4.2			DAI	714	10	20	3
8214		TACH	05 09 0616	N28 W62	05 4.4			CSO	296	8	12	2
8214		KAND	05 09 0840	N26 W66	05 4.2			EHO		7	18	3
8214		RAMY	05 09 1223	N27 W66	05 4.4		B	CKO	260	7	17	3
8214		HOLL	05 09 1642	N27 W71	05 4.2		B	CHO	230	5	15	4
8214		VORO	05 09 2215	N27 W74	05 4.2			HAX	434	1		3
8214		LEAR	05 10 0042	N26 W72	05 4.4		B	CSO	90	5	13	3
8216	28638	MWIL	04 29 1445	S21 E69	05 4.9	3	(AP)					
8216		LEAR	04 30 0145	S22 E63	05 4.9		A	AX		1		4
8216		SVTO	04 30 0540	S22 E61	05 4.9		A	AX		1		3
8216		KAND	04 30 0800	S22 E59	05 4.9			AX		2	1	4
8216		RAMY	04 30 1216	S20 E56	05 4.8		A	AX		1		4
8216	28638	MWIL	04 30 1430	S21 E56	05 4.9	4	(AP)					
8216		HOLL	04 30 1532	S22 E56	05 4.9		A	AX		1		4
8216		SVTO	05 01 1340	S22 E43	05 4.9		A	AX		1		3
8216		HOLL	05 01 1439	S22 E42	05 4.8		A	AX	10	1		3
8216	28638	MWIL	05 01 1500	S21 E43	05 4.9	4	(AP)					
8216		LEAR	05 02 0200	S21 E36	05 4.8		A	AX		1		4
8216		SVTO	05 02 0555	S22 E35	05 4.9		A	AX		2	1	3
8216		RAMY	05 02 1205	S21 E31	05 4.9		A	AX		1		4
8216		HOLL	05 02 1440	S22 E29	05 4.8		A	AX	10	1		4
8216		RAMY	05 03 1122	S22 E18	05 4.8		A	AX		2	1	4
8216		LEAR	05 04 0227	S22 E11	05 4.9		A	AX		2	1	3
8216		LEAR	05 05 0112	S22 W01	05 5.0		A	AX		2	1	3
8216A		LEAR	05 04 0227	N21 E26	05 6.1		A	AX		1		3
8221		LEAR	05 11 0510	S10 W36	05 8.5		A	AX	10	2	1	2
8221		SVTO	05 11 0525	S09 W38	05 8.4		B	BXO	10	2	3	3
8221		RAMY	05 11 1154	S09 W40	05 8.5		B	BXO	10	2	1	4
8221		HOLL	05 11 1510	S09 W42	05 8.5		A	AX	10	1		4
8221		LEAR	05 12 0135	S09 W47	05 8.5		A	AX		1		3
8221		SVTO	05 12 0450	S08 W51	05 8.4		A	AX		2	1	3
8221		RAMY	05 12 1155	S10 W52	05 8.6		A	AX		1		3
8217		SVTO	05 02 0555	S17 E85	05 8.7		A	AX	10	3	2	3
8217		KAND	05 02 0945	S17 E80	05 8.5			HS		1	1	3
8217		RAMY	05 02 1205	S17 E79	05 8.5		A	HS	30	1	1	4
8217		HOLL	05 02 1440	S17 E78	05 8.5		A	HS	60	1	1	4
8217		VORO	05 02 2147	S16 E75	05 8.6			HAX	116	1		3
8217		LEAR	05 03 0027	S17 E72	05 8.5		A	HA	50	1	2	5
8217		TACH	05 03 0409	S16 E71	05 8.5			HRX	40	1	1	3
8217		SVTO	05 03 0715	S16 E70	05 8.6		A	HS	100	1	2	3
8217		RAMY	05 03 1122	S15 E67	05 8.5		A	HS	40	1	1	4
8217		HOLL	05 03 1430	S16 E65	05 8.5		A	HS	50	1	2	3
8217		VORO	05 03 2228	S16 E61	05 8.6			HAX	63	1		3
8217		LEAR	05 04 0227	S16 E58	05 8.5		A	HR	30	1	2	3
8217		TACH	05 04 0626	S15 E57	05 8.6			HRX	50	1	1	3
8217		SVTO	05 04 0730	S16 E57	05 8.6		A	HS	40	1	1	2
8217		KAND	05 04 0900	S16 E56	05 8.6			HS		1	1	3
8217		RAMY	05 04 1220	S16 E53	05 8.5		A	HS	30	1	1	4
8217		HOLL	05 04 1623	S17 E50	05 8.5		A	HS	60	1	2	3
8217		VORO	05 04 2205	S16 E49	05 8.6			HAX	47	1		3
8217		LEAR	05 05 0112	S13 E47	05 8.6		A	HS	30	1	1	3
8217		TACH	05 05 0428	S16 E45	05 8.6			HSX	60	1	2	3
8217		KAND	05 05 0645	S16 E43	05 8.5			HS		1	1	4
8217		RAMY	05 05 1351	S15 E39	05 8.5		A	HS	30	1	1	3
8217		HOLL	05 05 1549	S17 E38	05 8.5		A	HS	60	1	2	4
8217		VORO	05 05 2130	S16 E35	05 8.5			HAX	57	1		3
8217		KAND	05 06 0845	S16 E29	05 8.6			HS		1	1	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP		Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8217		SVTO	05	06	1110	S18 E27	05	8.5		A	HS	40	1	2	2
8217		HOLL	05	06	1530	S16 E25	05	8.5		A	HS	40	1	1	3
8217		LEAR	05	07	0037	S17 E21	05	8.6		A	HS	60	1	2	4
8217		TACH	05	07	0412	S16 E18	05	8.5			HSX	70	1	2	4
8217		SVTO	05	07	0727	S18 E16	05	8.5		A	HS	40	1	2	2
8217		KAND	05	07	0730	S17 E16	05	8.5			HS		1	1	5
8217	28640	MWIL	05	07	1430	S17 E13	05	8.6	4	BP					
8217		HOLL	05	07	1542	S17 E13	05	8.6		B	CSO	50	2	4	3
8217		VORO	05	07	2131	S17 E09	05	8.6			HAX	31	1		3
8217		LEAR	05	08	0330	S16 E06	05	8.6		A	HS	30	1	1	4
8217		SVTO	05	08	0550	S16 E04	05	8.5		A	HS	40	1	2	4
8217		TACH	05	08	0615	S15 E03	05	8.5			HSX	100	1	2	3
8217		KAND	05	08	0700	S17 E04	05	8.6			HS		1	1	3
8217		RAMY	05	08	1345	S16 W01	05	8.5		A	HS	40	1	1	3
8217	28640	MWIL	05	08	1415	S16 W00	05	8.6	5	(AP)					
8217		VORO	05	08	2210	S16 W04	05	8.6			HAX	31	1		3
8217		TACH	05	09	0616	S16 W08	05	8.6			HXX	100	1	2	2
8217		KAND	05	09	0840	S17 W09	05	8.7			HS		1	1	3
8217		RAMY	05	09	1223	S17 W12	05	8.6		A	HS	20	1	1	3
8217		HOLL	05	09	1642	S16 W15	05	8.5		A	HS	40	1	2	4
8217		VORO	05	09	2215	S17 W17	05	8.6			HAX	32	1		3
8217		LEAR	05	10	0042	S16 W19	05	8.6		A	HS	40	1	1	3
8217		SVTO	05	10	0710	S16 W22	05	8.6		A	HS	20	1	1	2
8217		KAND	05	10	1130	S17 W24	05	8.6			HS		1	1	3
8217		RAMY	05	10	1238	S17 W25	05	8.6		A	HS	20	1	1	4
8217	28640	MWIL	05	10	1345	S17 W26	05	8.6	4	(AP)					
8217		HOLL	05	10	1536	S16 W27	05	8.6		A	HS	20	1	2	3
8217		VORO	05	10	2158	S17 W31	05	8.5			HAX	57	1		3
8217		LEAR	05	11	0510	S16 W34	05	8.6		A	HS	30	1	1	2
8217		SVTO	05	11	0525	S16 W35	05	8.6		A	HS	40	1	1	3
8217		TACH	05	11	0623	S13 W35	05	8.6			CRO	67	3	2	3
8217		RAMY	05	11	1154	S18 W37	05	8.7		A	AX	30	2	4	4
8217		HOLL	05	11	1510	S17 W40	05	8.6		A	HS	60	1	1	4
8217		LEAR	05	12	0135	S17 W45	05	8.6		A	HA	60	1	1	3
8217		SVTO	05	12	0450	S16 W48	05	8.6		A	HS	30	1	1	3
8217		RAMY	05	12	1155	S17 W51	05	8.6		A	HS	20	1	1	3
8217		HOLL	05	12	1445	S17 W53	05	8.6		A	HS	60	1	1	4
8217		LEAR	05	13	0027	S16 W58	05	8.6		A	HS	20	1	1	3
8217		VORO	05	13	0040	S16 W61	05	8.4			HAX	50	1		3
8217		TACH	05	13	0440	S14 W61	05	8.6			HXX	45	1	2	3
8217		SVTO	05	13	0533	S16 W63	05	8.4		A	HS	20	1	1	3
8217		RAMY	05	13	1253	S17 W65	05	8.6		A	HS	60	1	2	4
8217		HOLL	05	13	1444	S15 W66	05	8.6		A	HS	40	1	2	3
8217		VORO	05	13	2155	S16 W71	05	8.5			HRX	37	1		3
8217		TACH	05	14	0410	S15 W76	05	8.4			HRX	25	1	1	3
8217		SVTO	05	14	0505	S16 W78	05	8.3		A	HS	30	1	2	2
8217		KAND	05	14	0705	S16 W75	05	8.6			HS		1	1	4
8217		RAMY	05	14	1155	S17 W78	05	8.6		A	AX	20	1	1	3
8217	28640	MWIL	05	14	1430	S17 W80	05	8.5	2	AP					
8221A		HOLL	05	05	1549	N23 E43	05	9.0		A	AX	20	1	3	4
8221B		SVTO	05	06	1110	N27 E75	05	12.3		A	AX	10	2	2	2
8221B		VORO	05	07	2131	N29 E55	05	12.2			HAX	48	1		3
8221B		LEAR	05	08	0330	N29 E50	05	12.1		B	BXO	10	4	2	4
8221B		SVTO	05	08	0550	N27 E51	05	12.2		B	BXO	10	4	4	4
8221B		TACH	05	08	0615	N28 E52	05	12.3			AXX	6	2	1	3
8221B		KAND	05	08	0700	N28 E49	05	12.1			BXO		4	3	3
8221B		RAMY	05	08	1345	N29 E46	05	12.2		B	BXO	10	2	4	3
8221B	28643	MWIL	05	08	1415	N29 E46	05	12.2	4	(B)					
8218		SVTO	05	06	1110	S25 E80	05	12.7		A	AX		1		2
8218		HOLL	05	06	1530	S22 E79	05	12.7		A	AX	40	2	3	3
8218		LEAR	05	07	0037	S22 E73	05	12.6		B	DAO	120	2	8	4
8218		TACH	05	07	0412	S20 E73	05	12.7			CRO	60	2	5	4
8218		SVTO	05	07	0727	S22 E70	05	12.7		B	CSO	130	6	8	2
8218		KAND	05	07	0730	S21 E70	05	12.7			DAO		7	9	5
8218	28641	MWIL	05	07	1430	S21 E66	05	12.7	4	B					
8218		HOLL	05	07	1542	S21 E66	05	12.7		B	DSO	240	8	9	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
8218		VORO	05 07 2131	S20	E64	05 12.8			DAI	284	4	9	3
8218		LEAR	05 08 0330	S19	E58	05 12.6		B	DAI	150	18	9	4
8218		SVTO	05 08 0550	S22	E58	05 12.7		B	DAO	210	21	10	4
8218		TACH	05 08 0615	S21	E56	05 12.5			DAI	277	8	8	3
8218		KAND	05 08 0700	S20	E53	05 12.3			DAO		11	11	3
8218	28641	RAMY	05 08 1345	S19	E54	05 12.7		B	DKI	200	7	10	3
8218		MWIL	05 08 1415	S20	E54	05 12.7	5	(B)					
8218		VORO	05 08 2210	S20	E49	05 12.7			DAI	191	4	9	3
8218		TACH	05 09 0616	S20	E44	05 12.6			DAI	422	14	8	2
8218		KAND	05 09 0840	S20	E44	05 12.7			DAO		15	11	3
8218		RAMY	05 09 1223	S19	E41	05 12.6		B	DAO	200	19	10	3
8218		HOLL	05 09 1642	S19	E38	05 12.6		B	EAI	300	19	13	4
8218		VORO	05 09 2215	S20	E36	05 12.7			DAI	245	8	10	3
8218		LEAR	05 10 0042	S19	E33	05 12.5		B	EAI	250	17	11	3
8218		SVTO	05 10 0710	S22	E31	05 12.7		B	ESO	310	16	11	2
8218		KAND	05 10 1130	S20	E28	05 12.6			EAO		13	11	3
8218		RAMY	05 10 1238	S20	E28	05 12.7		B	ESO	150	9	11	4
8218	28641	MWIL	05 10 1345	S20	E26	05 12.6	5	(B)					
8218		HOLL	05 10 1536	S21	E25	05 12.6		B	ESO	240	18	11	3
8218		VORO	05 10 2158	S20	E23	05 12.7			DAI	303	5	10	3
8218		LEAR	05 11 0510	S20	E19	05 12.7		B	ESO	160	11	11	2
8218		SVTO	05 11 0525	S20	E18	05 12.6		B	EAO	280	12	11	3
8218		TACH	05 11 0623	S19	E18	05 12.6			DAO	435	12	10	3
8218		RAMY	05 11 1154	S20	E15	05 12.6		B	ESO	210	27	12	4
8218		HOLL	05 11 1510	S20	E13	05 12.6		B	ESI	270	15	13	4
8218		LEAR	05 12 0135	S20	E07	05 12.6		B	EAI	180	27	11	3
8218		SVTO	05 12 0450	S21	E04	05 12.5		B	EAO	180	19	12	3
8218		RAMY	05 12 1155	S20	E02	05 12.6		B	DSI	250	24	12	3
8218		HOLL	05 12 1445	S20	E01	05 12.7		BG	EHC	240	25	13	4
8218		LEAR	05 13 0027	S20	W05	05 12.6		BG	ESI	180	25	12	3
8218		VORO	05 13 0040	S21	W06	05 12.6			DAI	214	6	9	3
8218		TACH	05 13 0440	S20	W08	05 12.6			DAI	502	16	10	3
8218		SVTO	05 13 0533	S21	W08	05 12.6		BG	ESI	310	40	15	3
8218		RAMY	05 13 1253	S21	W12	05 12.6		B	ESI	180	17	12	4
8218		HOLL	05 13 1444	S19	W14	05 12.5		B	ESC	190	25	13	3
8218		VORO	05 13 2155	S20	W17	05 12.6			DAI	208	5	12	3
8218		TACH	05 14 0410	S20	W21	05 12.6			DAI	266	15	11	3
8218		SVTO	05 14 0505	S21	W22	05 12.5		BG	ESI	230	28	13	2
8218		KAND	05 14 0705	S20	W22	05 12.6			EAO		19	11	4
8218		RAMY	05 14 1155	S21	W24	05 12.6		B	ESC	150	21	12	3
8218	28641	MWIL	05 14 1430	S20	W27	05 12.5	5	(B)					
8218		HOLL	05 14 2125	S21	W28	05 12.7		B	ESC	300	26	13	2
8218		LEAR	05 15 0342	S20	W34	05 12.5		B	EAC	230	28	13	3
8218		SVTO	05 15 0701	S22	W36	05 12.5		B	ESI	180	18	13	2
8218		KAND	05 15 0735	S21	W36	05 12.5			EAI		18	13	2
8218		RAMY	05 15 1243	S21	W39	05 12.5		B	ESI	180	26	14	3
8218	28641	MWIL	05 15 1400	S20	W39	05 12.6	5	(B)					
8218		HOLL	05 15 1543	S25	W37	05 12.8		B	ESC	290	18	15	2
8218		VORO	05 15 2210	S21	W44	05 12.5			DAI	417	9	16	3
8218		LEAR	05 16 0520	S20	W47	05 12.6		B	ESC	340	22	15	3
8218		SVTO	05 16 0915	S22	W51	05 12.5		B	EAO	200	11	12	2
8218		RAMY	05 16 1147	S21	W51	05 12.6		B	EAC	240	19	14	3
8218	28641	MWIL	05 16 1445	S20	W53	05 12.6	5	(B)					
8218		LEAR	05 17 0128	S20	W58	05 12.6		B	EAC	380	23	12	4
8218		SVTO	05 17 0640	S19	W62	05 12.5		B	ESO	420	12	14	4
8218		TACH	05 17 0650	S17	W60	05 12.7			DAO	445	8	8	2
8218		RAMY	05 17 1310	S21	W65	05 12.6		B	ESC	220	10	15	3
8218	28641	MWIL	05 17 1430	S20	W66	05 12.5	5	(B)					
8218		LEAR	05 18 0115	S20	W70	05 12.7		B	EAC	280	16	15	4
8218		KAND	05 18 0900	S20	W75	05 12.6			DAO		4	11	4
8218	28641	MWIL	05 18 1445	S19	W77	05 12.7	5	(B)					
8218		RAMY	05 18 1504	S20	W75	05 12.9		B	DSO	80	2	8	2
8218		HOLL	05 18 1935	S21	W74	05 13.1		A	AX	20	2	1	1
8218		VORO	05 18 2208	S18	W79	05 12.9			HAX	71	1		2
8218		LEAR	05 19 0058	S18	W78	05 13.1		A	AX	10	2	2	4
8223		LEAR	05 19 0058	S17	W40	05 16.0		B	BXO	10	3	3	4
8223		TACH	05 19 0616	S15	W43	05 16.0			ARO	18	2	2	3
8223		SVTO	05 19 0855	S16	W46	05 15.9		B	BXO	10	2	4	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual	
8223	28646	RAMY	05 19	1243	S14	W47	05 16.0		B	BXO	10	2	5	4	
8223		MWIL	05 19	1430	S17	W49	05 15.9	5	(B)						
8223		HOLL	05 19	1700	S17	W52	05 15.7		A	AX	10	1	1	1	
8223		LEAR	05 20	0345	S16	W57	05 15.8		A	AX		1		2	
8223		TACH	05 20	0438	S16	W58	05 15.8			AXX	10	1	1	2	
8223		SVTO	05 20	0528	S15	W59	05 15.8		A	AX		1		3	
8223	28646	RAMY	05 20	1215	S16	W61	05 15.9		B	BXO	10	2	5	3	
8223		MWIL	05 20	1400	S16	W64	05 15.7	3	(AP)						
8220	28644	LEAR	05 11	0510	S25	E79	05 17.3		A	HS	60	1	1	2	
8220		SVTO	05 11	0525	S26	E77	05 17.2		B	CSO	120	3	3	3	
8220		TACH	05 11	0623	S28	E79	05 17.4			HSX	120	1	5	3	
8220		RAMY	05 11	1154	S26	E74	05 17.2		B	DSO	90	5	8	4	
8220		HOLL	05 11	1510	S27	E73	05 17.3		B	DSO	160	5	5	4	
8220		LEAR	05 12	0135	S28	E68	05 17.4		B	DSO	100	6	8	3	
8220		SVTO	05 12	0450	S28	E68	05 17.5		B	DSO	100	8	9	3	
8220		RAMY	05 12	1155	S26	E62	05 17.3		B	DSO	120	12	11	3	
8220		HOLL	05 12	1445	S27	E64	05 17.6		B	DAO	160	9	8	4	
8220		LEAR	05 13	0027	S27	E59	05 17.6		B	CAO	80	7	10	3	
8220		VORO	05 13	0040	S27	E57	05 17.5			DAI	178	3	6	3	
8220		TACH	05 13	0440	S28	E57	05 17.6			DAO	145	4	9	3	
8220		SVTO	05 13	0533	S29	E55	05 17.5		B	EAO	170	17	11	3	
8220		RAMY	05 13	1253	S28	E52	05 17.6		B	ESI	100	10	12	4	
8220		HOLL	05 13	1444	S27	E50	05 17.5		B	DAO	120	18	9	3	
8220		VORO	05 13	2155	S27	E47	05 17.6			DAI	89	2	9	3	
8220		TACH	05 14	0410	S28	E43	05 17.5			CAI	158	8	9	3	
8220		SVTO	05 14	0505	S27	E43	05 17.6		B	ESO	110	14	11	2	
8220		KAND	05 14	0705	S28	E42	05 17.6			DAO		13	9	4	
8220		RAMY	05 14	1155	S27	E40	05 17.6		B	ESO	70	11	11	3	
8220		28644	MWIL	05 14	1430	S27	E38	05 17.6	5	(B)					
8220			HOLL	05 14	2125	S26	E35	05 17.6		B	EAO	100	14	12	2
8220			LEAR	05 15	0342	S27	E30	05 17.5		B	EAO	60	21	12	3
8220			SVTO	05 15	0701	S27	E30	05 17.6		B	ESO	50	13	11	2
8220		KAND	05 15	0735	S27	E29	05 17.6			DAO		18	11	2	
8220		28644	RAMY	05 15	1243	S28	E25	05 17.5		B	ESO	60	25	11	3
8220			MWIL	05 15	1400	S27	E26	05 17.6	4	(B)					
8220			HOLL	05 15	1543	S24	E27	05 17.7		B	ESI	190	20	12	2
8220			VORO	05 15	2210	S28	E21	05 17.6			DAI	154	8	10	3
8220		28644	LEAR	05 16	0520	S27	E17	05 17.5		B	ESI	60	23	12	3
8220			SVTO	05 16	0915	S28	E14	05 17.5		B	ERI	40	21	12	2
8220			RAMY	05 16	1147	S28	E13	05 17.5		B	CRO	40	25	12	3
8220			MWIL	05 16	1445	S27	E12	05 17.5	5	(B)					
8220		28644	LEAR	05 17	0128	S26	E05	05 17.4		B	EAC	80	27	13	4
8220			SVTO	05 17	0640	S27	E02	05 17.4		B	CRO	90	30	14	4
8220			TACH	05 17	0650	S27	E03	05 17.5			BRO	132	11	10	2
8220			RAMY	05 17	1310	S27	W02	05 17.4		B	CRO	40	16	12	3
8220		28644	MWIL	05 17	1430	S27	W01	05 17.5	4	(BG)					
8220			LEAR	05 18	0115	S27	W06	05 17.6		B	ESI	50	31	12	4
8220			KAND	05 18	0900	S27	W08	05 17.7			CSI		23	10	4
8220			MWIL	05 18	1445	S27	W13	05 17.6	5	(B)					
8220		28644	RAMY	05 18	1504	S27	W13	05 17.6		B	BXO	30	15	8	2
8220			HOLL	05 18	1935	S24	W15	05 17.6		B	BXO	50	21	10	1
8220			VORO	05 18	2208	S27	W17	05 17.6			CAI	46	3	8	2
8220			LEAR	05 19	0058	S28	W18	05 17.6		B	BXI	30	24	11	4
8220		28644	TACH	05 19	0616	S25	W22	05 17.5			CRO	100	2	8	3
8220			SVTO	05 19	0855	S28	W24	05 17.5		B	BXO	30	10	9	3
8220			RAMY	05 19	1243	S23	W27	05 17.4		B	BXO	20	10	16	4
8220	MWIL		05 19	1430	S27	W27	05 17.5	4	(BP)						
8220	28644	HOLL	05 19	1700	S28	W27	05 17.6		B	BXO	70	9	10	1	
8220		LEAR	05 20	0345	S25	W37	05 17.3		B	BXO	10	6	6	2	
8220		TACH	05 20	0438	S24	W36	05 17.4			AXX	5	1	1	2	
8220		SVTO	05 20	0528	S25	W38	05 17.3		B	BXO	10	14	4	3	
8220	28644	RAMY	05 20	1215	S26	W41	05 17.3		B	BXO	10	5	3	3	
8220		MWIL	05 20	1400	S26	W42	05 17.3	4	(AP)						
8220		HOLL	05 20	1505	S26	W42	05 17.4		B	BXO	40	5	4	2	
8220		TACH	05 21	0624	S26	W51	05 17.3			AXX	5	1	1	2	
8220	28644	SVTO	05 21	0740	S27	W52	05 17.3		A	AX	10	2	2	3	
8220		RAMY	05 21	1133	S26	W54	05 17.3		A	AX	10	2	2	4	
8220		MWIL	05 21	1445	S26	W56	05 17.3	4	(AP)						

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
8220		LEAR	05 22 0035	S24	W60	05 17.4		A	AX		1		2
8222		RAMY	05 11 1154	N21	E73	05 17.1		B	BXO	10	2	2	4
8222		HOLL	05 11 1510	N19	E73	05 17.2		A	AX	30	2	1	4
8222		LEAR	05 12 0135	N22	E71	05 17.5		B	BXO	30	5	11	3
8222		SVTO	05 12 0450	N20	E71	05 17.6		B	DAO	60	4	9	3
8222		RAMY	05 12 1155	N22	E65	05 17.5		B	CAO	60	7	13	3
8222		HOLL	05 12 1445	N21	E68	05 17.8		B	CSO	150	9	9	4
8222		LEAR	05 13 0027	N22	E60	05 17.6		B	ESO	40	6	12	3
8222		VORO	05 13 0040	N24	E66	05 18.1			HAX	181	1		3
8222		TACH	05 13 0440	N21	E59	05 17.7			CRO	150	4	9	3
8222		SVTO	05 13 0533	N20	E59	05 17.7		B	EAO	210	14	11	3
8222		RAMY	05 13 1253	N22	E52	05 17.5		B	EAO	120	9	12	4
8222		HOLL	05 13 1444	N22	E54	05 17.8		B	CAO	130	12	12	3
8222		VORO	05 13 2155	N22	E51	05 17.8			DAI	198	3	6	3
8222		TACH	05 14 0410	N21	E45	05 17.6			CAI	202	9	11	3
8222		SVTO	05 14 0505	N23	E44	05 17.6		BG	CAO	190	18	13	2
8222		KAND	05 14 0705	N21	E43	05 17.6			EAI		13	13	4
8222		RAMY	05 14 1155	N22	E41	05 17.6		B	EAI	130	16	12	3
8222	28645	MWIL	05 14 1430	N23	E42	05 17.8	5	(B)					
8222		HOLL	05 14 2125	N22	E36	05 17.6		B	EAI	240	25	14	2
8222		LEAR	05 15 0342	N22	E32	05 17.6		B	FKI	130	29	16	3
8222		SVTO	05 15 0701	N23	E31	05 17.7		B	DAO	140	20	10	2
8222		KAND	05 15 0735	N22	E31	05 17.7			EAO		19	11	2
8222		RAMY	05 15 1243	N21	E29	05 17.7		B	EAO	150	26	10	3
8222	28645	MWIL	05 15 1400	N23	E28	05 17.7	4	(B)					
8222		HOLL	05 15 1543	N26	E22	05 17.4		B	EAI	170	10	11	2
8222		VORO	05 15 2210	N23	E23	05 17.7			DAI	238	7	11	3
8222		LEAR	05 16 0520	N23	E19	05 17.7		B	EAI	240	22	12	3
8222		SVTO	05 16 0915	N22	E17	05 17.7		B	DAO	190	19	10	2
8222		RAMY	05 16 1147	N22	E15	05 17.6		B	EAO	120	20	12	3
8222	28645	MWIL	05 16 1445	N23	E15	05 17.8	5	(B)					
8222		LEAR	05 17 0128	N23	E07	05 17.6		B	EAI	140	23	12	4
8222		SVTO	05 17 0640	N24	E05	05 17.7		B	EAO	150	17	12	4
8222		TACH	05 17 0650	N22	E05	05 17.7			CAI	267	10	10	2
8222		RAMY	05 17 1310	N23	E01	05 17.6		B	ESO	100	16	13	3
8222	28645	MWIL	05 17 1430	N23	E02	05 17.7	5	(BG)					
8222		LEAR	05 18 0115	N23	W05	05 17.7		B	FAI	120	33	16	4
8222		KAND	05 18 0900	N22	W10	05 17.6			EAO		16	14	4
8222	28645	MWIL	05 18 1445	N23	W12	05 17.7	5	(B)					
8222		RAMY	05 18 1504	N22	W12	05 17.7		B	EAO	170	12	14	2
8222		HOLL	05 18 1935	N21	W17	05 17.5		B	FSC	150	26	16	1
8222		VORO	05 18 2208	N22	W16	05 17.7			DAI	278	5	13	2
8222		LEAR	05 19 0058	N23	W18	05 17.6		B	CAC	140	19	15	4
8222		TACH	05 19 0616	N23	W19	05 17.8			CAO	290	5	13	3
8222		SVTO	05 19 0855	N23	W23	05 17.6		B	CSO	130	21	14	3
8222		RAMY	05 19 1243	N26	W25	05 17.6		B	FAI	130	14	16	4
8222	28645	MWIL	05 19 1430	N23	W24	05 17.7	5	(B)					
8222		HOLL	05 19 1700	N22	W28	05 17.5		B	CSO	250	14	15	1
8222		VORO	05 19 2200	N23	W27	05 17.8			DAI	241	4	8	2
8222		LEAR	05 20 0345	N23	W30	05 17.8		B	CAI	80	9	10	2
8222		SVTO	05 20 0528	N26	W31	05 17.8		B	CAO	120	5	15	3
8222		RAMY	05 20 1215	N24	W35	05 17.8		B	DAI	50	12	10	3
8222	28645	MWIL	05 20 1400	N23	W35	05 17.9	5	(BF)					
8222		HOLL	05 20 1505	N23	W38	05 17.7		B	CAO	120	9	9	2
8222		VORO	05 20 2214	N23	W41	05 17.8			DAI	174	6	8	3
8222		TACH	05 21 0624	N23	W42	05 18.0			HSX	171	3	3	2
8222		SVTO	05 21 0740	N23	W43	05 18.0		B	DAO	70	5	4	3
8222		RAMY	05 21 1133	N23	W46	05 17.9		B	DSO	60	8	10	4
8222	28645	MWIL	05 21 1445	N23	W48	05 17.9	4	(BF)					
8222		VORO	05 21 2156	N24	W51	05 18.0			HAX	160	2	3	2
8222		LEAR	05 22 0035	N23	W52	05 18.0		B	CAO	90	5	5	2
8222		TACH	05 22 0450	N24	W55	05 17.9			HRX	70	2	2	3
8222		SVTO	05 22 0458	N25	W56	05 17.9		B	DAO	80	6	4	3
8222		KAND	05 22 0810	N23	W56	05 18.0			CAO		3	3	2
8222		RAMY	05 22 1210	N24	W57	05 18.1		B	CAO	40	6	4	4
8222		HOLL	05 22 1401	N23	W59	05 18.0		B	BXO	40	3	5	2
8222	28645	MWIL	05 22 1445	N23	W60	05 18.0	4	(AF)					
8222		VORO	05 22 2250	N24	W65	05 17.9			HAX	39	1		2

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8222		LEAR	05 23	0120	N23	W65	05 18.0		B	CRO	30	3	2	3
8222		SVTO	05 23	0432	N23	W69	05 17.9		B	BXO	30	4	3	3
8222		TACH	05 23	0654	N22	W67	05 18.1			AXX	10	1	1	3
8222		RAMY	05 23	1210	N25	W70	05 18.1		A	AX	10	1		4
8222	28645	MWIL	05 23	1430	N23	W72	05 18.0	4	(AF)					
8222		HOLL	05 23	1455	N23	W73	05 18.0		A	AX		1		3
8222A	28648	MWIL	05 20	1400	N29	W37	05 17.7	4	(B)					
8224		SVTO	05 19	0855	S32	E09	05 20.1		B	BXO	10	3	3	3
8224		RAMY	05 19	1243	S35	E07	05 20.1		B	BXO	10	3	3	4
8224	28647	MWIL	05 19	1430	S31	E06	05 20.1	4	(B)					
8224		HOLL	05 19	1700	S31	E04	05 20.0		A	AX	10	1	1	1
8224	28647	MWIL	05 20	1400	S31	W05	05 20.2	4	(AP)					
8224		HOLL	05 20	1505	S31	W06	05 20.1		A	AX	10	1		2
8224A		TACH	05 27	0346	S24	W77	05 21.2			AXX	10	1	1	3
8224A		KAND	05 27	0555	S24	W73	05 21.6			BXO		2	3	3
8224A	28652	MWIL	05 27	1430	S23	W83	05 21.2	2	X					
8226		SVTO	05 23	0432	N16	W02	05 23.0		B	CRO	20	4	3	3
8226		TACH	05 23	0654	N16	W03	05 23.1			ARO	46	8	4	3
8226		RAMY	05 23	1210	N17	W06	05 23.0		B	BXO	20	13	4	4
8226	28650	MWIL	05 23	1430	N17	W07	05 23.1	5	(B)					
8226		HOLL	05 23	1455	N17	W08	05 23.0		B	CSO	50	17	5	3
8226		LEAR	05 24	0025	N18	W19	05 22.6		B	DAI	80	21	6	4
8226		KAND	05 24	0710	N16	W16	05 23.1			DAI		16	7	3
8226	28650	MWIL	05 24	1430	N17	W20	05 23.1	5	(BG)					
8226		VORO	05 24	2205	N18	W25	05 23.0			DKI	257	4	6	2
8226		TACH	05 25	0344	N18	W27	05 23.1			DHI	747	22	6	3
8226		KAND	05 25	0605	N17	W28	05 23.1			DAI		19	9	3
8226		VORO	05 25	2153	N18	W38	05 23.0			DKI	430	5	8	2
8226		TACH	05 26	0946	N17	W44	05 23.1			DAO	431	12	7	3
8226		VORO	05 26	2242	N17	W52	05 23.0			DKI	424	3	8	2
8226		TACH	05 27	0346	N19	W54	05 23.0			DAI	297	9	9	3
8226		KAND	05 27	0555	N17	W53	05 23.2			DAO		10	11	3
8226	28650	MWIL	05 27	1430	N18	W62	05 22.9	5	(D)					
8226		VORO	05 28	0126	N17	W68	05 22.9			CAO	199	3	4	2
8226		TACH	05 28	0428	N19	W71	05 22.8			CAO	105	4	10	2
8226		KAND	05 28	0800	N17	W70	05 23.0			CSO		6	11	4
8226	28650	MWIL	05 28	1400	N18	W78	05 22.6	4	(BG)					
8226A	28651	MWIL	05 24	1430	S15	E40	05 27.6	3	(AP)					
8225		RAMY	05 22	1210	S18	E80	05 28.6		A	AX		1		4
8225	28649	MWIL	05 22	1445	S17	E82	05 28.8	2	AP					
8225		LEAR	05 23	0120	S17	E73	05 28.6		A	AX		1		3
8225		SVTO	05 23	0432	S18	E73	05 28.7		A	AX		1		3
8225		TACH	05 23	0654	S18	E71	05 28.7			AXX	10	1	1	3
8225		RAMY	05 23	1210	S18	E67	05 28.6		A	AX		1		4
8225	28649	MWIL	05 23	1430	S17	E67	05 28.7	4	(AP)					
8225		HOLL	05 23	1455	S17	E67	05 28.7		A	AX	10	1		3
8225		LEAR	05 24	0025	S18	E61	05 28.7		A	AX		1		4
8225		KAND	05 24	0710	S18	E59	05 28.8			AX		1		3
8225	28649	MWIL	05 24	1430	S18	E54	05 28.7	4	(AP)					
8225		VORO	05 24	2205	S19	E50	05 28.7			AXX	20	1		2
8225		TACH	05 25	0344	S18	E47	05 28.7			AXX	15	1	1	3
8225		KAND	05 25	0605	S18	E45	05 28.7			AX		1		3
8225		VORO	05 25	2153	S18	E36	05 28.6			AXX	17	1		2
8225		TACH	05 26	0946	S20	E29	05 28.6			BHX	12	2	2	3
8225		VORO	05 26	2242	S21	E23	05 28.7			AXX	11	1		2
8225		TACH	05 27	0346	S20	E20	05 28.7			BXO	7	2	2	3
8225		KAND	05 27	0555	S19	E21	05 28.8			BXO		3	4	3
8225	28649	MWIL	05 27	1430	S18	E13	05 28.6	4	(AP)					
8225	28649	MWIL	05 28	1400	S19	E01	05 28.6	3	(AP)					
8225	28649	MWIL	05 29	2530	S22	W15	05 28.9	3	(BP)					
8225		TACH	05 30	0424	S21	W17	05 28.9			BRO	7	3	2	3
8225	28649	MWIL	05 30	1345	S22	W20	05 29.0	4	(BP)					
8225		KAND	05 31	0505	S22	W28	05 29.0			BXO		5	4	3

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SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

MAY 1998

NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8225		TACH	05	31	0606	S21	W29	05	29.0							
8225	28649	MWIL	05	31	1815	S22	W36	05	29.0	4	(B)	BXO	17	5	3	2
8225A	28655	MWIL	05	30	1345	S19	W24	05	28.7	3	(BP)					
8228		VORO	06	01	0023	S22	W42	05	28.9			AXX	17	1		2
8228		LEAR	06	01	0115	S22	W40	05	29.1		B	CAO	10	3	5	4
8228		SVTO	06	01	0710	S22	W45	05	28.9		B	BXO	10	3	6	2
8228		KAND	06	01	0750	S21	W43	05	29.1			DXO		2	5	4
8228		RAMY	06	01	1241	S24	W46	05	29.1		B	BXO	10	3	6	4
8228	28649	MWIL	06	01	1430	S22	W47	05	29.1	4	(BF)					
8228		HOLL	06	01	1625	S23	W48	05	29.1		B	BXO	10	3	5	3
8228		KAND	06	02	0700	S21	W56	05	29.1			BXO		2	4	4
8228		SVTO	06	02	0732	S20	W58	05	29.0		B	BXO	10	3	4	2
8228		RAMY	06	02	1153	S22	W60	05	29.0		B	BXO		2	3	4
8228		HOLL	06	02	1420	S23	W58	05	29.2		A	AX	10	1		4
8228	28649	MWIL	06	02	1430	S22	W59	05	29.2	4	(AF)					
8225B		KAND	05	29	0710	S19	E21	05	30.9			BXO		4	2	2
8225C		TACH	05	26	0946	N25	E69	05	31.7			HRD	265	11	6	3
8225C		TACH	05	27	0346	N25	E58	05	31.6			HHX	300	5	6	3
8225C		KAND	05	27	0555	N26	E58	05	31.7			DAO		6	6	3
8225C	28653	MWIL	05	27	1430	N25	E53	05	31.7	5	(AP)					
8225C		TACH	05	28	0428	N25	E45	05	31.7			HAO	205	5	5	2
8225C		KAND	05	28	0800	N25	E43	05	31.7			DAO		9	6	4
8225C	28653	MWIL	05	28	1400	N25	E40	05	31.7	5	(AP)					
8225C		KAND	05	29	0710	N25	E30	05	31.6			DAO		7	6	2
8225C	28653	MWIL	05	29	2530	N25	E21	05	31.7	5	(AP)					
8225C	28653	MWIL	05	30	1345	N25	E15	05	31.7	5	(AP)					
8225C		KAND	05	31	0505	N25	E07	05	31.7			DAI		8	5	3
8225C		TACH	05	31	0606	N25	E05	05	31.6			DAI	203	7	3	2
8225C	28653	MWIL	05	31	1815	N25	W01	05	31.7	4	(AP)					
8227		VORO	05	25	2153	N25	E74	05	31.6			HAX	302	1		2
8227		VORO	05	26	2242	N25	E61	05	31.7			HAX	287	1		2
8227		KAND	05	27	0555	N26	E58	05	31.7			DAO		6	6	3
8227		VORO	05	28	0126	N25	E48	05	31.8			HKX	257	4		2
8227		KAND	05	28	0800	N25	E43	05	31.7			DAO		9	6	4
8227		VORO	05	28	2147	N25	E35	05	31.6			HKX	212	4	2	2
8227		KAND	05	29	0710	N25	E30	05	31.6			DAO		7	6	2
8227		VORO	05	29	2149	N26	E22	05	31.6			HKX	217	3	3	2
8227		VORO	05	30	2207	N26	E10	05	31.7			CAO	146	3	2	2
8227		KAND	05	31	0505	N25	E07	05	31.7			DAI		8	5	3
8227		VORO	06	01	0023	N26	W05	05	31.6			DAI	172	4	2	2
8227		LEAR	06	01	0115	N25	W04	05	31.7		B	DSO	130	12	6	4
8227		SVTO	06	01	0710	N26	W06	05	31.8		B	DAO	150	9	5	2
8227		KAND	06	01	0750	N26	W08	05	31.7			DSO		11	6	4
8227	28653	RAMY	06	01	1241	N25	W12	05	31.6		B	DAO	80	6	4	4
8227		MWIL	06	01	1430	N25	W12	05	31.7	5	(BG)					
8227		HOLL	06	01	1625	N26	W13	05	31.7		B	DSO	130	11	6	3
8227		KAND	06	02	0700	N27	W19	05	31.8			DAO		8	6	4
8227		SVTO	06	02	0732	N26	W21	05	31.7		B	DAO	100	6	4	2
8227		RAMY	06	02	1153	N27	W24	05	31.6		A	HA	60	7	4	4
8227		HOLL	06	02	1420	N26	W24	05	31.7		B	CSO	180	12	15	4
8227	28653	MWIL	06	02	1430	N25	W22	05	31.9	5	(BP)					
8227		SVTO	06	03	0505	N28	W33	05	31.6		B	CAO	140	10	7	4
8227		KAND	06	03	0700	N26	W35	05	31.6			DAO		3	6	3
8227		RAMY	06	03	1150	N26	W37	05	31.6		A	HA	60	7	4	2
8227	28653	MWIL	06	03	1430	N26	W37	05	31.7	5	(AP)					
8227		HOLL	06	03	1625	N25	W39	05	31.7		A	HS	110	2	4	3
8227		VORO	06	03	2212	N26	W42	05	31.7			DAI	104	2	3	2
8227		SVTO	06	04	0500	N27	W47	05	31.5		B	CSO	70	5	5	3
8227		KAND	06	04	0705	N26	W48	05	31.6			DAO		3	4	4
8227		RAMY	06	04	1159	N25	W50	05	31.6		A	HA	30	4	3	4
8227	28653	MWIL	06	04	1430	N25	W51	05	31.6	5	(AP)					
8227		HOLL	06	04	1545	N25	W52	05	31.6		A	HS	30	2	4	2
8227		VORO	06	04	2230	N25	W55	05	31.7			DAO	72	2	3	3
8227		LEAR	06	05	0200	N26	W58	05	31.6		B	DRO	30	2	4	3

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

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MAY 1998

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8227		SVTO	06 05	0735	N27	W61	05 31.6		A	HR	40	4	4	2
8227		KAND	06 05	0900	N25	W60	05 31.7			AX		4	4	4
8227		RAMY	06 05	1157	N25	W62	05 31.7		A	HR	20	3	5	4
8227	28653	MWIL	06 05	1430	N25	W64	05 31.6	4	(AP)					
8227		HOLL	06 05	1505	N26	W65	05 31.6		B	CSO	30	3	5	3
8227		LEAR	06 06	0132	N27	W68	05 31.8		B	BXO	10	2	4	3
8227		KAND	06 06	0715	N24	W74	05 31.6			BXO		3	4	4
8227		RAMY	06 06	1105	N24	W73	05 31.8		B	BXO	10	2	4	4

Stations reporting:

HOLL = Holloman
KAND = Kandilli
LEAR = Learmonth

MWIL = Mt. Wilson
PALE = Palehua
RAMY = Ramey

SVTO = San Vito
TACH = Tashkent
VORO = Voroshilov

SUDDEN IONOSPHERIC DISTURBANCES

MAY 1998

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF- SPA	SES			
01	0755	0804	0823	1	1		1				No flare		
01	0845	0851U	0945	1	1		1				0857	B9.4	8214
01	1201	1212	1220	1	5					4	1158	C1.9	8210
01	1220	1223	1312	2+	1					1	1254	M1.1	8214
01	1255	1304	1334	2	5	1	2	1		6	1254	M1.1	8214
01	1403	1408	1425	1	1		1				No flare		
01	1448	1456	1519	1+	5		1			5	1441	C1.7	8210
01	1617	1633	1658	1	1		1				No flare		
01	1733	1743	1820	2-	5					4	1731	C2.1	8214
01	2011	2015	2031	1-	3					3	2008	C2.8	8210
01	2027	2028	2100	1+	3					2	2008	C2.8	8210
01	2145	2148	2226	2	1					1	2140	C2.6	8210
01	2233	2246	0007	3	1					1	2236	M1.2	8214
01	2248	2300	2335U	2+	1					1	2236	M1.2	8214
02	0453	0509	0621	1	3		1			1	0448	C5.4	8210
02	1204	1207	1252	1	1		1				No flare		
02	1300	1302	1505	3	1					1	1247		8210
02	1333	1340	1451	2+	5					4	1331	X1.1	8210
02	1336	1354	1416	3	5	1	2	1		5	1331	X1.1	8210
02	1523	1528	1604	1	1		1				1545		8210
02	2037	2050	2203	3-	3					3	2037	C5.6	8210
03	0953	1021	1104	1	3		1			2	1002	C2.5	8210
03	1557	1559	1659	1	1		1				1558	C1.0	8214
03	1827	1833	1913	2-	5					5	1823	C4.0	8210
03	2040	2048	2130	2+	1					1	*		
03	2118	2125	2254	2+	3					4	2112	M1.4	8210
04	1147	1159U	1249	1	1		1				*		
04	1257	1309	1326	1	1		1				No flare		
04	1344	1429	1503	1	1		1				No flare		
04	1710	1720	1725	1-	1					1	1709	C2.9	8214
04	1825	1830	1840	1-	1					1	1824	C1.1	
04	2358	0007	0100	2+	3					2	2358	B3.0	
05	0440	0453	0458	1-	1	1	1				0438	C1.1	
05	0530	0533	0613	1	1					1	0527	C1.5	8210
05	0800	0816U	0852	1	1		1				0755		8214
05	1033	1037	1105	1-	1					1	1028	C2.2	
05	1158	1204	1235	2	5	1	2	1		2	1156	C7.7	
05	1319	1335	1356	1	1		1				1319		8214
05	1623	1627	1701	1+	5		1			2	1622	C3.6	
05	1845	1853	1905	1	5					3	1844	C3.5	8214
05	1919	1927	2013	2	1					1	1927	C7.3	
05	1945	1957	2028	1	5					3	No flare		
05	2052	2054	2145	2+	1					1	2047	C2.6	8214
05	2213	2216	2300	2+	3					2	2210	C2.3	8214
05	2305	2307	2328	1	3					2	2302	C2.4	8210
05	2328	2340	0102	3	3					2	2327	M2.5	8210
06	0440	0444	0451	1+	3		1			1	0411	C4.0	8210
06	0452	0456	0459	1	3	1	2			1	0453	C8.4	
06	0713	0728	0754	3-	5	1	2	1		2	0710	M2.9	8210
06	0800	0812	1107	3-	5	1		1		2	0758	X2.7	8210
06	0800	1007	1150	1	1		1				0758	X2.7	8210
06	1334	1339	1400	2	5	1	2	1		4	1332	C6.8	8210
06	1405	1419	1509	1	1		1				No flare		
06	1630	1637	1646	1	1		1				1640		8210
06	1836	1845	1908	1+	5					2	1835	C2.9	8214
07	0533	0543	0627	1+	1					1	No flare		
07	0736	0749	0807	1	5	1	2	1		2	0735	C4.8	8218
07	1106	1113	1201	3	5	1	2	1		5	1105	M2.9	8214
07	1341	1354	1437	2+	5	1	2	1		6	1331	M1.3	8218
07	1450	1454	1522	1+	5					2	1446	C3.7	8214

* = no flare patrol.

MAY 1998

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF- SPA	SES			
07	1622	1625	1700	2	3					2	1616		
07	2011	2015	2037	1+	3					2	No flare	C2.0	8214
07	2228	2229	2245	1-	3					2	2224	C1.8	
07	2252	2258	2330	2	3					2	2242	C2.9	
08	0557	0607	0718	2-	5	1	2	1		1	0553	M1.4	
08	1235	1243	1353	1	1		1				1154	C5.4	8214
08	1302	1306	1335	1+	5					3	1154	C5.4	8214
08	1351	1410	1503	2	5	1	2	1		6	1350	M1.8	
08	1615	1620	1630	1-	1					1	1615		8214
08	2122	2130	2222	2+	1					1	2117	C3.5	
08	2249	2300	2330	2	1					1	2251	C2.7	8214
08	2337	2343	2359	1	3					2	2340	C3.2	
09	0323	0340	0410	1+	1					1	0304	M7.7	
09	0536	0542	0615	1	1		1				0534	C6.2	
09	0703	0722U	0823	1	1		1				No flare		
09	0956	1000	1040	2-	1			1			No flare		
09	1033	1040	1051	1-	3					2	1030	C2.9	8214
09	1102	1113	1140	2	5	1	2	1		2	1059	C4.7	8214
09	1301	1309	1405	2-	5		1			1	1305	C6.6	
09	1309	1319	1335	2	5	1	1	1		3	1305	C6.6	
09	1411	1430	1537	3-	3					2	1426	C1.9	
09	1730	1733	1822	2-	3					2	1726	C4.5	
09	2030	2033	2118	2+	1					1	2027	C3.9	
09	2130	2133	2200	1+	1					1	2127	C2.7	
10	0525	0530	0605	1	1					1	0523	C2.9	
10	0636	0703U	0726	1	1		1				0640	C1.4	
10	0747	0804	0819	1	1		1				No flare		
10	0819	0835	0901	3	5	1	2	1		3	0815	M1.6	
10	0946	0951	1034	1	3		1			3	0944	C2.1	
10	1055	1100	1100	1-	1					1	1055	C1.1	
10	1140	1145	1155	1-	1					1	1140	C1.5	
10	1317	1318	1352	2	5	1	2	1		7	1313	M3.9	
10	1505	1510	1515	1-	1					1	1508	C1.0	8220
10	1645	1649	1708	1	1		1				No flare		
10	1927	1930	1947	1	5					3	1925	C1.6	
11	1255	1323	1347	1	1		1				1254	B8.4	
11	1410	1422	1530	1	1		1				No flare		
11	2140	2155	2329	3-	3					2	2148	B6.6	
12	1840	1845	1850	1-	1					1	1842	C1.0	
13	1137	1148	1239	2	1		1				No flare		
13	1450	1455	1455	1-	1					1	1450	C1.1	8218
13	1608	1611	1648	1	1		1				No flare		
14	1025	1035	1035	1-	1					1	1026	C1.5	8218
14	1107	1130	1214	1	1		1				No flare		
14	1346	1351	1415	1	5		1			5	1344	C2.4	8220
14	1655	1705	1710	1-	1					1	1655	C1.2	
14	1716	1728	1752	1	1		1				No flare		
15	1001	1012	1030	1-	3					2	1002	C1.7	
15	1657	1707	1756	1+	1			1			No flare		
16	1551	1555	1607	1-	5					2	1549	C1.1	
17	0733	0748U	0950	1	1		1				No flare		
17	1540	1547	1605	1	1		1				*		
18	1141	1153	1219	1	1		1				*		
18	2000	2003	2035	2	1					1	*		

* = no flare patrol.

May 98

SUDDEN IONOSPHERIC DISTURBANCES

MAY 1998

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF- SPA	SES			
19	0717	0724	0754	1	1		1				No flare		
19	0800	0804	0927	2-	3		1			1	0756	C4.4	
19	1548	1604	1653	2	5		1			2	1541	C3.0	8218
19	1700	1704	1722	1	1		1				No flare		
20	0645	0705U	0828	3	1		1				No flare		
20	0849	0915	1000	1	1		1				No flare		
20	1545	1600	1718	1	1		1				No flare		
22	0521	0608U	0718	3	1		1				0546	B2.1	
22	1616	1628	1700	1	1		1				No flare		
23	1600	1609	1630	1	1		1				No flare		
23	1642	1647	1730	1	1		1				No flare		
24	0630	0635	0701	1	1		1				0618	B6.8	8226
24	1218	1235	1259	1	1		1				1223	B6.9	
24	1313	1327	1414	1	1		1				No flare		
24	1645	1655	1726	1	1		1				No flare		
25	0530	0538	0554	1	1		1				*		
25	0557	0609	0701	1	1		1				*		
26	0540	0548	0654	1	1		1				*		
27	0815	0830	0840	1	1					1	0816	C1.6	
27	0915	0935	0940	1	1					1	0914	C1.5	8224
27	1110	1117	1212	2	5	1	1	1		4	1106	C5.8	8224
27	1215	1220	1220	1-	1					1	1213	C1.8	
27	1319	1338	1505	2+	5					3	1330	C7.5	8226
27	1328	1347	1511	1	3		1			1	1330	C7.5	8226
27	1816	1820	1833	1	5					3	1814	C5.0	8224
27	1836	1838	1945	2+	1					1	1833	C3.8	8224
27	2230	2232	2330	2+	1					1	2225	C5.4	
28	0436	0440	0507	1+	1					1	0433	C3.1	8226
28	0705	0710U	0951	1	1		1				0721	C1.2	
28	0805	0810	0820	1-	1					1	0806	C1.9	
28	0849	0856	0921	1	3					3	0847	C2.8	
28	0920	0925	0930	1-	1					1	0921	C1.0	
28	1032	1041	1125	1	3					2	1035	C3.2	
28	1115	1125	1145	1	1					1	1113	C2.3	8227
28	1250	1255	1300	1-	1					1	1250	C2.6	8226
28	1315	1330	1550	3+	1					1	1343	M1.1	8226
28	1348	1355	1441	2-	5	1	2	1		6	1343	M1.1	8226
28	1650	1655	1700	1-	1					1	1652	C1.5	
28	1855	1910	1954	2	5					5	1859	C8.7	8226
28	2027	2030	2040	1-	5					3	2024	C2.2	8226
28	2116	2118	2152	2-	1					1	2113	C2.4	
29	0058	0059	0137	2	3					2	0051	M6.7	
29	0658	0708	0741	1+	5	1	2	1		1	0655	C4.9	
29	0837	0853	0908	1	1		1				*		
29	0912	0922	0944	1	3		1			1	*		
29	1104	1116	1140	1	5	1	2	1		2	1100	C4.3	
29	1239	1243	1250	1-	1					1	1232	C1.9	
29	1347	1358	1422	1+	5		1			2	1347	C2.0	
29	1643	1650	1732	1	1		1				No flare		
29	1759	1816	1855	2	1		1				1828	C1.9	
31	1157	1205	1233	1	1		1				No flare		
31	1338	1350	1442	1	1		1				No flare		

* = no flare patrol.

OBSERVATORIES REPORTING FOR MAY 1998

Cambridge, England, UK	SES	Panska Ves, Czech Republic	SES, SEA, SWF
Columbia City, Indiana, USA	SES	Rimavska Sobota, Slovakia	SEA
Edenvale, Rep of S. Africa	SES	Rochester, New Hampshire, USA	SES
Houston, Texas, USA	SES	Sofia, Bulgaria	SES
Hudson, Ohio, USA	SES	Sun City Center, FL, USA	SES
Koniz, Switzerland	SES	Tucson, Arizona, USA	SES
Marlboro, Massachusetts, USA	SES	Upice, Czech Republic	SEA
Nerja, Spain	SES	Ziar nad Hronom, Slovakia	SEA
New Milford, New York, USA	SES	Zilina, Slovakia	SEA

Observations are not necessarily continuous.

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May 98

SOLAR RADIO EMISSION Spectral Observations

MAY 1998

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start End (UT) (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
01	0000 0710	CULG	0000.0E	0710.0D	III	S	1	20	170	
		CULG	0000.0E	0710.0D	IV	FS	1	20	170	
	0000 0931	CULG	0100.0	0116.0	III	GG	3	18X	110	
		HIRA	0111.0	0116.5	III	G	2	25X	100	
		HIRA	0233.9	0235.2	III	G	1	25X	50	
		CULG	0242.0	0244.0	III	G	2	20	170	
		HIRA	0243.6	0246.5	III	G	1	25X	200	
		CULG	0321.0	0346.0	III	N	3	18	300	
		HIRA	0322.3	0333.1	III	GG	2	25X	300	
		HIRA	0340.5	0346.2	III	G	2	25X	320	
		POTS	0414 E	1732 U	III	N	1	40X	90U	
		POTS	0414 E	1732 U	III	N	1	110U	170U	
	0414 1732	POTS	0414 E	1732 U	III	N	2	40X	90U	
		POTS	0414 E	1732 U	III	N	2	110U	170U	
		POTS	0414 E	1732 U	I	S,C,DC	3	40X	450	
		POTS	0429.6	0434.3	III	GG	3	40X	90U	
		SVTO	0502.0	1722.0	IV		3	35	85	
		CULG	0508.0	0508.0	III	G	2	20	80	
		POTS	0508.2	0508.8	III	G	3	40X	70	
		HIRA	0508.3	0508.6	III	B	1	30	70	
		POTS	0519.9	0520.0	III	B	3	40X	90U	
	0600 1200	IZMI	0600.0E	1200.0D	III	N	2	45	140	
		IZMI	0600.0E	1200.0D	I	S, C	2	45	270	
		HIRA	0608.0	0608.1	III	B	1	80	220	
		POTS	0608.0	0608.4	III	G	3	40X	150	
		IZMI	0608.1	0608.6	III	G	2	45X	230	
		POTS	0616.6	0621.2	III	GG,C	3	40X	800X	
		IZMI	0617.4	0621.3	III	GG	2	45X	270	
		CULG	0618.0	0620.0	III	G	3	24U	900	
		HIRA	0618.5	0620.8	III	G	2	25X	740	
		CULG	0630.0	0633.0	III	G	3	24U	600	
	0449 1705	POTS	0630.4	0631.7	DCIM		2	200U	450	
		IZMI	0630.8	0633.2	III	G	2	45X	270X	
		POTS	0633.1	0633.2	DCIM		1	550	700	
		POTS	0633.1	0633.4	III	G	3	40X	140	
		IZMI	0726.2	0731.1	II	UE	1	105	135	
		POTS	0750.1	0750.4	III	G	3	40X	90U	
		POTS	0811.3	0812.7	III	G	3	40X	90U	
		POTS	0907.3	0911.8	III	GG	3	40X	90U	
		SGMR	0959.0	2320.0	IV		2	30	80	
		POTS	1131.3	1134.7	III	GG	3	40X	90U	
	0449 1705	IZMI	1131.4	1134.5	III	GG	2	45X	150	
		POTS	1156.1	1157.7	III	GG	3	40X	65	
		POTS	1219.1	1243.5	III	GG	3	40X	300	
		POTS	1219.5	1247.8	DCIM		2	200U	800X	
		SGMR	1222.0	1223.0	III		2	30	80	
		ONDR	1239.3	1244.4	DCIM	G	1	800X	1565	
		SGMR	1240.0	1242.0	III		2	30	80	
		ONDR	1257.4	1258.0	DCIM		1	2645	4365X	
		POTS	1317.7	1325.4	III	GG	3	40X	130	
		POTS	1404.7	1411.9	III	GG	3	40X	90U	
	1943 2400	ONDR	1421.3	1427.4	DCIM	G	1	800	1740	
		POTS	1421.5	1421.9	III	G	3	40X	80	
		POTS	1424.5	1428.9	III	GG	3	40X	90U	
		SGMR	1442.0	1445.0	III		2	30	80	
		POTS	1442.4	1457.2	III	GG	3	40X	275	
		ONDR	1450.5	1459.3	DCIM	GG	1	800	1725	
		POTS	1502.0	1502.4	III	G	3	40X	90U	
		POTS	1514.0	1514.2	III	B	3	120	325	
		POTS	1525.4	1525.6	III	B	3	40X	250	
		POTS		1717.3	1731.4	III	GG	3	40X	350
	2040 2400	HIRA	2003.6	2003.7	III	B	1	25X	50	
		HIRA	2022.4	2028.1	III	G	1	25X	220	
	2040 2400	CULG	2040.0E	2400.0D	III	S	1	20	180	
		CULG	2040.0E	2400.0D	I	S	2	80	170	
		HIRA	2102.1	2102.4	III	B	1	25X	210	
		CULG	2132.0	2135.0	III	G	2	20	300	
		HIRA	2132.8	2136.0	III	G	2	25X	200	
		HIRA	2230.0	2307.2	III	GG	2	25X	300	

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

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MAY 1998

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start End (UT) (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
01		CULG	2233.0	2255.0	III	N	3	18X	1000	
		CULG	2256.0	2307.0	III	G	3	100	300	
		LEAR	2256.0	0942.0	CONT		3	30	80	
02	0000 0710	CULG	0000.0E	0710.0D	III	S	1	20	180	
		CULG	0000.0E	0710.0D	I	S	2	60	150	
		CULG	0109.0	0111.0	III	G	2	18X	350	
	0000 0932	PALE	0308.0	0315.0	III		1	30	70	
		HIRA	0351.6	0353.9	III	G	2	130	210	
		CULG	0400.0	0402.0	III	G	3	18X	250	
		LEAR	0402.0	0402.0	III		3	30	80	
		HIRA	0402.4	0402.6	III	B	1	25X	400	
		CULG	0405.0	0410.0	III	G	3	18X	90	
		HIRA	0406.0	0410.6	III	G	1	25X	240	
		POTS	0414 E	1732 U	III	N	1	40X	90U	
		POTS	0414 E	1732 U	III	N	2	40X	90U	
		POTS	0414 E	1732 U	III	N	3	40X	90U	
	0414 1732	POTS	0414 E	1732 U	IV		3	40X	800X	
		SVTO	0435.0	1338.0	CONT		3	35	85	
		HIRA	0440.8	0506.5	III	GG	3	25X	160	
		CULG	0446.0	0448.0	III	G	2	18X	800	
		CULG	0453.0	0510.0	III	G	2	18X	900	
		ONDR	0505.4	0550.5	DCIM	GG,SP	3	800X	2000X	
		HIRA	0514.9	0519.0	III	G	2	90	140	
		CULG	0517.0	0518.0	III	G	3	60	300	
		HIRA	0520.6	0525.5	III	G	2	25X	200	
		CULG	0525.0	0525.0	III	B	2	18X	1100	
	0550 0614	IZMI	0550.0E	0614.0D	III	S	2	45X	160	
		IZMI	0550.0E	0614.0D	I	S, C	2	45	270	
		IZMI	0555.1U	0609.2	UNCLF	FS	2	160	270	
		IZMI	0655.0E	1200.0D	I	S, C	2	45	270	
		IZMI	0655.0E	1200.0D	III	S	2	45X	160	
	0655 1200	IZMI	0800.5	0802.2	III	GG	2	45X	270X	
		POTS	0800.5	0801.2	III	G	3	40X	300	
		IZMI	0800.6	0801.1	V	G	2	45X	100U	
		IZMI	1017.2U	1017.3	III	G	2	160	270X	
		ONDR	1308.0	1318.2	DCIM	GG,SP	2	960	1385	
		ONDR	1334.3	1355.4	DCIM	GG,FS,SP	3	800X	2000X	
		ONDR	1336.5	1348.0	DCIM	GG,FS	3	2000X	4395X	
		SGMR	1338.0	2321.0	IV		2	30	80	
		SVTO	1338.0	1723.0	IV		3	35	85	
		ONDR	1359.5	1446.2	DCIM	GG,FS,SP	3	800X	2000X	
	0448 1708	ONDR	1404.2	1406.5	DCIM		1	2000X	3415	
		ONDR	1418.0	1444.3	DCIM	GG,FS	3	2000X	4215	
		PALE	1730.0	0417.0	IV		2	25	75	
	2040 2400	CULG	2040.0E	2400.0D	IV	FS	3	25	300	
	1942 2400	HIRA	2043.7	2048.6	III	GG	2	25X	50X	
		CULG	2249.0	2400.0D	I	S	1	20	60	
03	0000 0400	CULG	0000.0E	0400.0D	III	S	1	20	60	
		CULG	0000.0E	0400.0D	IV	FS	3	55	180	
		LEAR	0124.0	0124.0	III		2	30	80	
		PALE	0124.0	0124.0	III		2	25	75	
		CULG	0147.0	0148.0	III	G	2	18X	80	
	0000 0933	LEAR	0147.0	0149.0	III		2	30	80	
		HIRA	0148.0	0148.8	III	G	1	25X	50X	
		CULG	0309.0	0353.0	III	GG	2	20	120	
		HIRA	0322.1	0334.1	III	GG	2	25X	50X	
		POTS	0414 E	1732 U	III	N	1	40X	90U	
	0414 1732	POTS	0414 E	1732 U	III	N	2	40X	90U	
		POTS	0414 E	1732 U	III	N	3	40X	90U	
		POTS	0414 E	1732 U	IV		3	40X	800X	
		SVTO	0439.0	1724.0	CONT		3	35	85	
		IZMI	0600.0E	1200.0D	III	N	2	45X	90	
	0600 1200	IZMI	0600.0E	1200.0D	I	S, C	2	45	270	
		IZMI	0654.2	0658.5	III	GG	2	45X	270X	
		LEAR	0655.0	0658.0	III		3	30	80	
		POTS	0655.0	0655.6	III	G	3	40X	350	
		SVTO	0655.0	0658.0	III		3	35	85	

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

MAY 1998

OBSERVATION			Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
03			HIRA	0655.2	0655.5	III	B	2	25X	50X	
			POTS	0656.9	0657.0	III	B	2	160	700	
			IZMI	0657.0U	1200.0U	III	N	2	160	270X	
	0446	1708	IZMI	0908.7	0908.8	III	B	2	45X	215	
			ONDR	0952.3	1028.4	DCIM	GG,FS	3	800X	2000X	
			SGMR	0957.0	2117.0	CONT		2	30	80	
			ONDR	1002.2	1013.5	DCIM	GG,FS	3	2000X	4395	
			IZMI	1006.3	1009.4	CONT		2	200	260	
			IZMI	1007.6	1015.0U	III	S	2	45X	270X	
			SVTO	1024.0	1025.0	III		3	35	85	
			IZMI	1024.4	1025.0	III	GG	2	45X	270X	
			IZMI	1024.6	1025.1	V	G	2	45X	90	
			ONDR	1031.2	1052.1	DCIM	GG,FS	3	800X	2000X	
			IZMI	1155.1	1155.6	III	G	2	45	260	
			POTS	1235.2	1236.1	III	G	3	40X	300	
			POTS	1327.7	1328.0	III	G	3	40X	350	
			POTS	1334.1	1336.3	III	G	3	40X	170U	
			POTS	1546.6	1548.5	III	G	3	40X	250	
			POTS	1549.9	1550.1	III	G	3	40X	275	
			POTS	1551.7	1552.0	III	G	3	40X	275	
			POTS	1645.3	1646.7	III	G	3	40X	600	
			POTS	1705.0	1705.4	III	G	3	40X	170U	
	1941	2400	PALE	1933.0	2117.0	III	N	3	25	75	
			HIRA	1943.1	1943.3	III	B	1	25X	50X	
			PALE	2117.0	0441.0	IV		3	25	75	
	2300	2400	SGMR	2117.0	2250.0	IV		3	30	80	
			CULG	2300.0E	2400.0D	I	S	2	70	180	
			LEAR	2302.0	0940.0	CONT		1	30	55	
04	0000	0934	HIRA								
	0000	0710	CULG	0000.0E	0710.0D	I	S	2	70	160	
			CULG	0012.0	0710.0D	III	S	2	20	180	
			POTS	0414 E	1732 U	III	N	1	40X	90U	
			POTS	0414 E	1732 U	III	N	2	40X	90U	
	0414	1732	POTS	0414 E	1732 U	IV		3	40X	450	
			SVTO	0414.0	1725.0	CONT		2	35	85	
	0445	1709	ONDR								
			IZMI	0600.0E	1200.0D	III	N	1	45	90	
	0600	1200	IZMI	0600.0E	1200.0D	I	S, C	2	45	270X	
			IZMI	0837.1	0837.4	III	G	2	160	220	
			IZMI	1043.9	1043.9	III	G,HARM	2	105	230	
			SGMR	1129.0	1129.0	III		1	35	57	
			SVTO	1129.0	1129.0	III		2	35	64	
			IZMI	1129.2	1129.6	III	G	2	45X	270X	
			POTS	1129.2	1129.6	III	G	3	40X	275	
			SGMR	1301.0	1301.0	III		1	35	58	
			SGMR	1327.0	1328.0	V		1	30	80	
			SVTO	1327.0	1328.0	III		2	35	85	
			POTS	1327.6	1328.4	III	G	3	40X	300	
			SGMR	1358.0	1403.0	III		1	30	72	
			SGMR	1358.0	1403.0	IV		1	30	72	
			POTS	1403.2	1403.5	III	G	3	40X	375	
			SGMR	1529.0	2002.0	CONT		1	30	42	
	1939	2400	HIRA								
			CULG	2040.0E	2400.0D	III	S	1	22	180	
	2040	2400	CULG	2040.0E	2400.0D	I	S	2	70	160	
			PALE	2131.0	0306.0	CONT		1	25	60	
			SGMR	2133.0	2211.0	III	N	1	35	80	
			LEAR	2320.0	0940.0	CONT		1	30	80	
05	0000	0935	HIRA								
			CULG	0000.0	0705.0	III	S	1	20	180	
	0000	0705	CULG	0000.0E	0705.0D	I	S	1	70	160	
			POTS	0414 E	1732 U	III	N	1	40X	90U	
			POTS	0414 E	1732 U	III	N	2	40X	90U	
	0414	1732	POTS	0414 E	1732 U	I	S,C	3	40X	300	
			SVTO	0447.0	1726.0	CONT		2	35	85	
			IZMI	0550.0E	0632.0D	III	N	1	45X	90	
	0550	0632	IZMI	0550.0E	0632.0D	I	S, C	2	45	270X	

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MAY 1998

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day (UT)	Start End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
05	0755 1200	IZMI	0555.7	0557.5	III	GG	2	45	95	
		IZMI	0755.0E	1200.0D	I	S, C	2	45	270X	
		IZMI	0755.0E	1200.0D	III	N	1	45X	90	
		IZMI	0817.6	0817.7	III	G	2	180	270X	
		IZMI	0841.0U	0904.0	III	S	2	45X	120	
	0443 1711	ONDR	0935.5	0936.2	DCIM	GG	2	800X	1585	
		ONDR	0935.5	0936.2	DCIM		1	2000	4385	
		POTS	0935.8	0936.8	DCIM	P	2	200U	750	
		IZMI	0935.9	0936.5	III	G	2	85	270X	
		IZMI	0947.4	0947.5	III	B	2	55	95	
		IZMI	1006.1	1006.2	III	G	1	200	265	
		SGMR	1013.0	1013.0	III		1	43	56	
		IZMI	1013.4	1013.9	III	GG	2	45X	245	
		IZMI	1013.4	1014.0	V	G	2	45X	90	
		POTS	1013.4	1014.0	III	G	3	40X	350	
		POTS	1024.7	1024.8	III	B	3	50	220	
		IZMI	1059.5	1059.7	III	G	2	50	125	
		ONDR	1214.4	1215.4	DCIM		1	2920	4385	
		POTS	1350.3	1350.4	III	B	3	110U	170U	
		SGMR	1408.0	1409.0	V		2	30	80	
		SVTO	1408.0	1409.0	III		3	35	85	
		POTS	1408.4	1409.1	III	G	3	40X	90U	
		SGMR	1503.0	1948.0	CONT		1	30	40	
		SGMR	1503.0	1948.0	I		1	30	40	
		SGMR	1556.0	1557.0	III		1	30	58	
		POTS	1556.4	1557.8	III	G	3	40X	60	
	2045 2400	CULG	2045.0E	2400.0D	I	S	1	75	170	
		PALE	2303.0	2305.0	V		2	25	70	
		CULG	2304.0	2305.0	III	G	2	18X	600	
		CULG	2330.0	2337.0	III	G	2	20	1000	
		CULG	2338.0	2348.0	II	UE	3	45	100	FLA
		CULG	2338.0	2400.0D	IV		2	60	180	
		PALE	2342.0	2346.0	II		2	45	65	ESS 0600
		PALE	2345.0	0442.0	IV		2	35	70	
		CULG	2346.0	2351.0	III	G	2	18X	100	
		HIRA	2346.2	2350.2	III	G	2	25X	50X	
06	0000 0146	CULG	0000.0E	0146.0D	IV		1	20	500	
		CULG	0000.0E	0146.0D	I	S	1	75	170	
		CULG	0024.0	0024.0	III	B	3	28	250	
	0000 0935	HIRA	0024.2	0024.4	III	B	1	25X	260	
		CULG	0035.0	0146.0D	III	S	1	20	100	
		CULG	0045.0	0046.0	III	G	3	22	180	
	0000 0710	HIRA	0045.0	0045.2	III	B	1	25X	150	
		CULG	0337.0E	0710.0D	I	S	1	75	170	
		POTS	0414 E	1732 U	III	N	1	40X	90U	
	0414 1732	POTS	0414 E	1732 U	III	N	2	40X	90U	
		POTS	0414 E	0800.5	I	S,C	3	40X	350	
		POTS	0414.9	0415.8	DCIM		2	300	800	
		CULG	0419.0	0419.0	III	B	1	40	100	
		LEAR	0454.0	0457.0	V		2	30	80	
		SVTO	0454.0	1727.0	IV		3	35	85	
		POTS	0454.9	0456.1	III	G,C	3	40X	90U	
		CULG	0455.0	0458.0	III	G	2	18X	280	
		HIRA	0455.0	0455.5	III	G	1	25X	240	
		LEAR	0509.0	0510.0	III		1	30	40	
		CULG	0510.0	0710.0D	III	N	1	20	150	
		IZMI	0550.0E	0705.5	III	N	1	45X	90	
	0550 1200	IZMI	0550.0E	1200.0D	I	S, C	2	90	270X	
		LEAR	0559.0	0600.0	III		1	30	43	
		IZMI	0559.2	0559.5	III	G	2	45X	100	
		IZMI	0704.4	0704.6	III	B, FS	2	45X	125	
		IZMI	0705.5	1200.0D	III	N	2	45X	270X	
	0442 1712	LEAR	0709.0	0733.0	III	N	2	30	80	
		ONDR	0715.1	0718.5	DCIM	G	1	1020	2000X	
		ONDR	0715.8	0718.5	DCIM	G	1	2000X	4385X	
		POTS	0728.5	0735.7	III	GG	3	40X	350	
		LEAR	0735.0	0735.0	III		2	30	80	
		SVTO	0735.0	0735.0	III		3	35	85	

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OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Start	End				Spectral	Event		Lower	Upper	
Day (UT)	(UT)		(UT)	(UT)	Class	Remarks		(MHz)	(MHz)	
06		IZMI	0735.1	0735.5	III	GG	2	45X	270	
		IZMI	0735.2	0735.7	V	G	2	45X	150	
		HIRA	0735.4	0735.5	III	B	1	25X	250	
		LEAR	0744.0	0749.0	III		1	30	43	
		LEAR	0749.0	0801.0	III	N	2	30	50	
		ONDR	0800.3	0821.2	DCIM	GG,FS,SP	3	800X	2000X	
		POTS	0800.5	1732 U	IV	P	3	40X	800X	
		LEAR	0801.0	0939.0	IV		3	30	80	
		ONDR	0801.0	0828.0	DCIM	GG,FS	3	2000X	4395X	
		IZMI	0801.5	0802.6	CONT		2	45	65	
		HIRA	0801.6	0804.9	III	G	3	25X	160	
		POTS	0802.5	0809 U	III	GG,RS	3	40X	700	
		IZMI	0802.8	0805.5	III	GG	2	45X	270X	
		POTS	0803.3	0804	II	F	2	130	150	
		POTS	0803.3	0804	II	SH	2	250	300	
		POTS	0805.6	0819 U	II	UE	3	40X	280	
		IZMI	0805.7	0819.2	II	HARM	3	45X	270X	
		HIRA	0805.9	0813.3	III	G	3	40	280	
		HIRA	0810.0	0817.4	IV		2	300	1100	
		HIRA	0810.6	0816.5	II		3	25X	110	
		ONDR	0825.5	0848.4	DCIM	GG	3	800X	2000X	
		ONDR	0836.0	0902.1	DCIM	G	1	2000X	4395X	
		IZMI	0846.2	0859.6	III	GG	2	45X	270X	
		ONDR	0854.5	0940.4	DCIM	GG	2	800X	2000X	
		ONDR	0907.0	0947.0	DCIM	G	1	2000X	2955	
		IZMI	0943.7	0943.9	III	G	2	205	270X	
		IZMI	0948.2	0948.4	CONT		2	55	70	
		POTS	1209.5	1213.2	DCIM		2	275	800X	
		SGMR	1212.0	1359.0	CONT		1	30	80	
		SGMR	1337.0	1340.0	III		1	30	80	
		POTS	1337.8	1338.8	DCIM		2	400	700	
		POTS	1337.8	1340.1	III	GG	3	40X	170U	
		POTS	1347.9	1348.1	III	G	3	40X	160	
		SGMR	1433.0	1434.0	III		1	30	80	
		SVTO	1433.0	1434.0	III		3	35	85	
		POTS	1433.8	1434.5	III	G,C	3	40X	350	
		SGMR	1446.0	1506.0	III	N	1	30	60	
		POTS	1502.3	1503.1	III	G	3	40X	300	
		ONDR	1510.0	1513.1	DCIM	G	1	2000X	4385	
		ONDR	1510.4	1512.5	DCIM	GG,SP	3	800X	2000X	
		SGMR	1521.0	1605.0	III	N	1	30	80	
		POTS	1521.7	1522.4	III	G	3	40X	170U	
		POTS	1539.3	1539.6	III	B	3	40X	90U	
		POTS	1604.8	1605.5	III	G	3	40X	250	
		POTS	1631.5	1631.6	III	B	3	50	325	
		POTS	1710.5	1712.8	DCIM		2	650	800X	
		SGMR	1726.0	1728.0	III		1	30	55	
		PALE	1728.0	1730.0	III		1	25	70	
		PALE	1828.0	1830.0	III		1	25	70	
		SGMR	1828.0	1855.0	III	N	1	30	80	
		PALE	1855.0	1855.0	III		1	25	65	
	2045 2400	CULG	2045.0E	2400.0D	I	S	2	80	170	
		CULG	2120.0	2121.0	III	G	3	25	200	
		PALE	2120.0	2245.0	III	N	1	25	70	
	1937 2400	HIRA	2120.5	2121.3	III	G	2	25X	230	
		CULG	2145.0	2222.0	III	N	1	20	90	
		CULG	2159.0	2159.0	III	B	2	30	200	
		LEAR	2333.0	0835.0	CONT		1	30	80	
		LEAR	2339.0	2349.0	II		2	50	80	ESS 0600
		PALE	2345.0	0442.0	CONT		2	25	75	
		LEAR	2349.0	0430.0	IV		1	30	80	
07	0000 0705	CULG	0000.0	0705.0D	I	S	1	80	170	
		CULG	0013.0	0705.0D	III	S	1	20	180	
		CULG	0105.0	0111.0	III	G	1	400	1800	
	0000 0936	HIRA	0107.3	0110.6	III	G	2	500	2200	
		POTS	0414 E	1732 U	III	N	1	40X	90U	
		POTS	0414 E	1732 U	III	N	1	110U	170U	
		POTS	0414 E	1732 U	III	N	2	40X	90U	

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OBSERVATION			Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks			
Day	Start (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)				
07	0414 1732		POTS	0414	E	1732	U	I	S,C,DC	3	40X	450		
			SVTO	0427.0		1630.0		CONT		2	35	85		
			POTS	0532.1		0532.8		DCIM		2	200U	800X		
			0555 1200	IZMI	0555.0E	1200.0D	I	S, C	2	55	270			
							III	N	2	45X	135			
			POTS	0744.9		0745.5		III	G	2	40X	170U		
			POTS	0817.2		0817.7		DCIM		1	650	800X		
			IZMI	0938.8		0938.9		III	G	2	135	265		
			IZMI	1017.8		1110.0U		III	N	2	45X	150		
			POTS	1019.6		1026.8		III	GG	2	40X	375		
	0440 1713		IZMI	1037.8		1037.9		III	G	2	200	270		
			POTS	1047.9		1048.0		III	B	2	70	150		
			ONDR	1107.4		1115.1		DCIM		1	2000X	4375X		
			ONDR	1108.5		1116.0		DCIM	G	1	965	2000X		
			SGMR	1126.0		1722.0		CONT		1	30	60		
			SGMR	1237.0		1243.0		III		1	30	80		
			POTS	1237.5		1242.5		III	G	3	40X	170U		
			ONDR	1334.1		1347.4		DCIM	G	1	2000X	4385X		
			SGMR	1345.0		1404.0		III	N	1	30	70		
			SVTO	1345.0		1345.0		III		2	35	61		
			POTS	1345.1		1345.6		III	G	3	40X	90U		
			ONDR	1345.4		1350.3		DCIM	G,SP	1	800X	2000X		
			POTS	1401.9		1404.1		III	G	3	40X	90U		
			SVTO	1402.0		1404.0		III		2	35	81		
			POTS	1440.7		1440.9		DCIM		1	500	600		
			ONDR	1447.2		1449.0		DCIM	G	1	2000X	4375		
			SVTO	1500.0		1501.0		III		2	35	85		
			POTS	1500.5		1501.0		DCIM		2	200U	700		
			POTS	1633.3		1634.3		III	G,RS	3	120	325		
			SGMR	1804.0		1805.0		III		1	30	45		
			SGMR	1927.0		2118.0		III	N	1	30	80		
			PALE	1931.0		1935.0		III		1	28	70		
			PALE	2227.0		2233.0		III		1	27	56		
	2050 2400		CULG	2227.0		2237.0		III	G	1	20	260		
	1936 2400		HIRA	2236.8		2236.9		III	B	1	80	240		
			CULG	2358.0		2400.0		III	G	2	18	180		
	08	0000 0705		CULG	0114.0		0117.0		III	G	1	35	140	
				CULG	0151.0		0153.0		III	G	1	100	200	
				LEAR	0156.0		0200.0		V		2	30	80	
				PALE	0156.0		0200.0		III		2	30	60	
CULG				0157.0		0203.0		III	G	2	18X	260		
0000 0937			HIRA	0157.0		0158.1		III	G	2	60	260		
			CULG	0200.0		0210.0		II	FN	3	35	140		
			CULG	0200.0		0210.0		II	SH	3	65	260	ESS 600	
			HIRA	0204.6		0210.0		II	SH	3	80	160	ESS 600	
			LEAR	0205.0		0215.0		II		2	33	80	ESS 1600	
			PALE	0205.0		0214.0		II		2	35	75	ESS 1200	
			HIRA	0205.4		0209.3		II	FN	2	40	70	ESS 600	
			CULG	0210.0		0216.0		II	FN	3	30	75		
			CULG	0210.0		0216.0		II	SH	3	50	160	ESS 1300	
			HIRA	0210.0		0215.2		II		3	40	140		
			CULG	0221.0		0221.0		III	B	1	30	95		
			CULG	0222.0		0519.0		I	S	1	75	170		
0414 1732			CULG	0303.0		0303.0		III	B	1	35	130		
			POTS	0414	E	1732	U	I	S,C	2	110U	400		
			CULG	0457.0		0458.0		III	B	1	25	80		
			POTS	0508		1732	U	III	N	1	40X	90U		
			POTS	0508		1732	U	III	N	2	40X	90U		
			CULG	0515.0		0516.0		III	B	1	23	170		
			POTS	0515.5		0515.8		III	G	2	40X	325		
			CULG	0535.0		0535.0		III	B	1	30	50		
0439 1716			ONDR	0555.1		0607.4		DCIM	GG	3	800X	2000X		
			POTS	0555.5		0605	U	DCIM	P	2	200U	800X		
			CULG	0558.0		0604.0		III	GG	3	20	270		
			IZMI	0558.0E		1135.0D		I	S, C	1	85	220		
			POTS	0558.0		0601.2		III	GG	3	40X	170U		
0558 1135			SVTO	0558.0		0604.0		V		3	35	85		
			IZMI	0558.0E		0606.9		CONT		2	45	85		

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OBSERVATION			EVENT			FREQUENCY			Remarks			
Start Day (UT)	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)		Upper (MHz)		
08		HIRA	0558.5	0601.8	III	G		2	25X	1000		
		IZMI	0558.5	0603.9	III	GG		3	45X	270X		
		CULG	0601.0	0604.0	II	FN,H		3	50	90	ESS 900	
		CULG	0601.0	0604.0	II	SH,H		3	100	170		
		POTS	0601.2	0610 U	II	SH		3	40X	270		
		IZMI	0601.3	0603.7	II	HARM		3	45X	180		
		POTS	0601.4	0610 U	II	F		3	40X	90U		
		HIRA	0601.5	0604.0	II	FN		3	50	80	ESS 900	
		HIRA	0601.5	0604.0	II	SH		3	90	160	ESS 900	
		LEAR	0604.0	0706.0	IV			1	30	80		
		SVTO	0604.0	0609.0	II			2	40	85	ESS 1000	
		SVTO	0604.0	0609.0	II			3	40	85	ESS 1000	
		IZMI	0604.4	0800.0U	III	N		1	45	150		
		CULG	0606.0	0616.0	II	FN		2	25	55	ESS 600	
		CULG	0608.0	0705.0D	IV			2	25	180		
		SVTO	0609.0	0706.0	IV			3	35	85		
		CULG	0610.0	0615.0	III	G		3	22	150		
		IZMI	0610.5	0620.8	II	HARM		3	45	150		
		POTS	0610.5	0615.2U	II	F		3	40X	90U		
		POTS	0610.5	0615.3U	II	SH		3	70	160		
		HIRA	0610.8	0615.0	III	G		2	25X	130		
		POTS	0623.3	0630.1	III	GG		3	40X	450		
		LEAR	0624.0	0625.0	III			2	30	80		
		CULG	0625.0	0630.0	III	G		2	22	290		
		IZMI	0625.4	0927.3	III	G		2	145	270X		
		HIRA	0625.5	0626.0	III	G		1	25X	330		
		POTS	0925.6	0926.1	DCIM			1	200U	350		
		POTS	0927.0	0927.3	DCIM			3	135	350		
		IZMI	0927.1	0927.3	III	G		2	145	270X		
		POTS	0938.8	0938.9	III	B		2	110U	150		
		IZMI	1004.0	1004.2	III	B		2	45X	125		
		POTS	1004.0	1004.3	III	G		2	40X	250		
		SVTO	1004.0	1004.0	III			1	37	60		
		IZMI	1045.4	1045.6	III	B		1	55	95		
		POTS	1144.5	1144.6	III	B		2	200U	275		
		POTS	1224.0	1224.6	III	G		2	40X	160		
		SGMR	1325.0	1329.0	III			1	30	55		
		SVTO	1325.0	1329.0	III			2	35	52		
		POTS	1339.2	1339.7	DCIM			2	200U	450		
		ONDR	1353.0	1354.1	DCIM			1	3160	4375		
		SGMR	1358.0	1459.0	CONT			2	30	80		
		SVTO	1358.0	1459.0	CONT			2	35U	81U		
		POTS	1358.1	1358.4	III	G		3	40X	400		
		POTS	1414.4	1414.7	DCIM			2	150	350		
		POTS	1423.7	1424.3	III	G		3	40X	140		
		POTS	1424.3	1424.6	V			3	40X	60		
		ONDR	1611.5	1612.4	DCIM			1	2000	4365X		
		POTS	1621.4	1621.5	III	B		2	130	270		
		PALE	1821.0	1821.0	III			2	27	56		
		SGMR	1821.0	1821.0	V			1	30	80		
	2050 2400		CULG	2050.0E	2400.0D	I	S		1	90	170	
			CULG	2050.0E	2400.0D	III	S		1	23	180	
			PALE	2055.0	2325.0	CONT			1	30	55	
			PALE	2117.0	2120.0	III			1	27	55	
			SGMR	2117.0	2120.0	III			1	30	80	
			LEAR	2340.0	2341.0	III			1	51	75	
		1935 2400		PALE	2340.0	2341.0	III		1	50	70	
				HIRA	2340.9	2341.5	III	G	2	50	400	
				CULG	2341.0	2342.0	III	G	3	40	430	
		09	0000 0705		CULG	0000.0E	0320.0	I	S	1	90	170
	CULG			0000.0E	0032.0	III	S	1	20	180		
	CULG			0105.0	0221.0	III	N	1	20	150		
	LEAR			0152.0	0214.0	III	N	1	30	46		
	PALE			0152.0	0221.0	III	N	1	30	55		
	CULG			0241.0	0445.0	III	N	1	18X	230		
	LEAR			0307.0	0308.0	III		1	30	40		
	LEAR			0314.0	0331.0	III		3	30	80		
	PALE			0320.0	0348.0	III	N	2	25	75		

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OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Start	End				Spectral	Event		Lower	Upper	
Day (UT)	(UT)		(UT)	(UT)	Class	Remarks		(MHz)	(MHz)	
09	0000 0938	CULG	0322.0	0328.0	III	G	2	18X	310	
		HIRA	0322.4	0328.8	III	G	2	25X	310	
		CULG	0323.0	0350.0	IV		2	200	1100	
		HIRA	0323.1	0350.0	IV		2	200	1000	
		CULG	0326.0	0329.0	II	FN	3	23	75	ESS 1500
		CULG	0326.0	0329.0	II	SH	3	50	150	
		HIRA	0326.0	0328.8	II	FN	2	25X	70	
		HIRA	0326.0	0328.8	II	SH	2	60	130	
		CULG	0331.0	0341.0	II	FN	3	20	75	
		CULG	0331.0	0342.0	II	SH	3	40	150	ESS 1000
		LEAR	0331.0	0413.0	IV		3	30	80	
		HIRA	0331.6	0340.0	II		2	25X	130	
		CULG	0349.0	0705.00	I	S	1	100	180	
		POTS	0414 E	1732 U	III	N	1	40X	90U	
		POTS	0414 E	1732 U	III	N	2	40X	90U	
	0414 1732	POTS	0414 E	1732 U	I	S,C	3	40X	400	
		POTS	0415.8	0423.1	DCIM		1	200U	650	
		CULG	0535.0	0705.00	III	S	1	30	90	
	0605 1200	I2MI	0605.0E	1200.00	I	S, C	1	85	270	
		I2MI	0719.6	0719.8	III	B	1	45X	110	
		POTS	0751.0	0751.3	III	G	3	110U	170U	
		I2MI	0847.6	0847.8	III	G, U	2	45	270X	
		POTS	0847.6	0848.0	III	G	2	40X	375	
		POTS	0916.0	0916.1	III	B	2	110U	170U	
		POTS	0955.8	0956.2	III	G	2	110U	170U	
		POTS	1030.1	1030.8	III	G	2	40X	170U	
		I2MI	1030.6	1030.7	III	B	1	50	90	
		ONDR	1101.1	1102.0	DCIM	GG,SP	3	800X	1950	
		ONDR	1101.4	1102.1	DCIM		1	2000X	4355X	
		I2MI	1118.5	1119.6	III	G	1	80	95	
		SVTO	1230.0	1410.0	CONT		2	35	85	
		SGMR	1234.0	1833.0	CONT		1	30	80	
		ONDR	1306.5	1307.3	DCIM	SP	2	1090	1165	
	0438 1717	ONDR	1307.0	1311.0	DCIM	G	1	2555	4355X	
		POTS	1329.8	1330.3	III	G	2	40X	350	
		SVTO	1422.0	1426.0	III		2	35	85	
		POTS	1422.9	1426.9	III	GG	2	40X	250	
		POTS	1428.1	1428.5	DCIM		1	550	700	
		SVTO	1436.0	1730.0	CONT		2	35	85	
		POTS	1446.7	1447.1	III	B	2	40X	220	
		POTS	1519.1	1520.1	III	GG	3	40X	170U	
		POTS	1557.1	1557.4	DCIM		2	200U	300	
		PALE	1657.0	1845.0	CONT		1	35	56	
		PALE	1708.0	1715.0	III		2	25	70	
		SGMR	1708.0	1708.0	III		2	30	80	
		SVTO	1708.0	1708.0	III		3	35	55	
		SVTO	1708.0	1708.0	III		3	35	85	
		POTS	1708.4	1709.0	III	G	3	40X	275	
	1935 2400	HIRA	1957.2	2008.0	III	G	2	25X	170	
	2050 2400	CULG	2153.0	2154.0	III	B	2	20	40	
		CULG	2208.0	2209.0	III	B	1	20	45	
		CULG	2213.0	2215.0	III	G	2	40	220	
		PALE	2213.0	2213.0	III		1	44	56	
		HIRA	2213.1	2213.4	III	B	2	40	220	
		CULG	2251.0	2251.0	III	B	1	25	80	
		CULG	2319.0	2320.0	III	B	1	65	180	
		CULG	2328.0	2400.00	I	S	1	100	160	
		CULG	2354.0	2355.0	III	B	1	30	70	
10	0000 0705	CULG	0000.0E	0058.0	I	S	1	120	160	
		CULG	0029.0	0030.0	III	G	1	25	130	
		CULG	0241.0	0705.00	III	S	1	20	90	
		CULG	0248.0	0705.00	I	S	1	65	170	
		POTS	0414 E	1732 U	III	N,RSG	1	40X	90U	
	0414 1732	POTS	0414 E	1732 U	I	S,C	2	40X	350	
		LEAR	0424.0	0652.0	CONT		1	30	45	
		I2MI	0555.0E	1200.00	I	S, C	1	95	260	
	0555 1200	CULG	0647.0	0648.0	III	G	2	25	180	
		LEAR	0647.0	0648.0	III		2	30	70	

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OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Time				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
10	0000 0939	POTS	0647.0	0648.0	III	G	3	40X	300	
		SVTO	0647.0	0648.0	III		2	35	85	
		IZMI	0647.6	0647.8	V	HARM	2	50	85	
		IZMI	0647.6	0648.0	III	GG	2	45	270X	
		HIRA	0647.7	0647.8	III	B	1	40	250	
	0436 1716	IZMI	0822.4	0822.9	III	G	2	220	270X	
		POTS	0822.4	0823.0	DCIM		2	200U	375	
		SVTO	0824.0	1731.0	CONT		2	35	85	
		ONDR	0949.1	0949.4	DCIM		1	2265	4365	
		IZMI	0953.7	0954.0	III	G	1	65	165	
		POTS	0953.7	0954.0	III	G	2	40X	170U	
		SGMR	1200.0	2330.0	CONT		2	30	80	
		ONDR	1317.2	1321.5	DCIM	FS	3	2000X	4355X	
		ONDR	1318.3	1320.2	DCIM	FS	3	1140	2000X	
		POTS	1328.5	1328.9	III	B	3	40X	170U	
		PALE	1755.0	0423.0	CONT		1	30	55	
	1934 2400	HIRA								
		CULG	2050.0E	2400.0D	I	S	1	85	180	
	2050 2400	CULG	2050.0E	2400.0D	III	S	2	20	90	
		LEAR	2318.0	0936.0	CONT		2	30	80	
11	0000 0940	HIRA								
		CULG	0000.0E	0705.0D	I	S	1	80	180	
	0000 0705	CULG	0000.0E	0705.0D	III	S	2	18	95	
		POTS	0356 E	1748 U	III	N,RSG	1	40X	90U	
		POTS	0356 E	1748 U	III	N,RSG	2	40X	90U	
	0356 1748	POTS	0356 E	1748 U	I	S,C	3	40X	350	
		SVTO	0434.0	1732.0	CONT		2	35	85	
	0435 1718	ONDR								
		IZMI	0600.0E	1200.0D	III	S	1	45X	90	
	0600 1200	IZMI	0600.0E	1200.0D	I	S, C	2	90	270X	
		IZMI	0955.0	0957.0	III	G	1	45	90	
		SGMR	1041.0	2331.0	CONT		2	30	80	
		POTS	1113.9	1114.0	III	B	3	40X	90U	
		PALE	1742.0	0350.0	CONT		1	25	58	
	1933 2400	HIRA								
		CULG	2055.0E	2400.0D	I	S	1	100	180	
	2055 2400	CULG	2055.0E	2400.0D	III	S	1	20	100	
		CULG	2128.0	2153.0	III	N	2	24	110	
		PALE	2128.0	2128.0	V		2	30	70	
		SGMR	2128.0	2130.0	V		2	30	80	
12	0000 0941	HIRA								
		CULG	0000.0E	0700.0D	I	S	1	100	180	
	0000 0700	CULG	0000.0E	0700.0D	III	S	1	20	100	
		LEAR	0001.0	0830.0	CONT		2	30	71	
		POTS	0356 E	1748 U	III	N	1	40X	90U	
		POTS	0356 E	1748 U	III	N	2	40X	90U	
	0356 1748	POTS	0356 E	1748 U	I	S,C	2	40X	350	
	0434 1719	ONDR								
		SVTO	0450.0	1733.0	CONT		2	35	85	
		IZMI	0600.0E	1200.0D	III	N	1	45	90	
	0600 1200	IZMI	0600.0E	1200.0D	I	S, C	2	60	240	
		IZMI	0903.6	0903.8	III	B	2	45X	95	
		POTS	0903.6	0903.9	III	B	3	40X	90U	
		SGMR	0946.0	2332.0	CONT		1	30	57	
		IZMI	1046.2	1046.4	III	B	2	45X	75	
		POTS	1046.2	1046.5	III	G	3	40X	90U	
		POTS	1645.1	1645.7	DCIM		1	200U	375	
		PALE	1751.0	0248.0	CONT		1	25	55	
	1932 2400	HIRA								
		CULG	2055.0E	2400.0D	I	S	2	60	170	
	2055 2400	CULG	2055.0E	2400.0D	III	S	1	20	100	
13	0000 0941	HIRA								
		CULG	0000.0E	0700.0D	I	S	1	80	170	
	0000 0700	CULG	0000.0E	0700.0D	III	S	1	20	100	
		LEAR	0044.0	0712.0	CONT		1	30	80	
		POTS	0356 E	1748 U	III	N	1	40X	90U	

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OBSERVATION			EVENT					FREQUENCY			Remarks	
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)	Upper (MHz)		
13	0356	1748	POTS	0356	E	1748	U	I	S,C	2	110U	300
	0432	1719	ONDR									
	0605	1200	IZMI	0605.0E	1200.0D	I		S, C	2	85	220	
			CULG	0618.0	0619.0	III		G	3	22	170	
			LEAR	0618.0	0619.0	III			2	30	80	
			SVTO	0618.0	0621.0	III			3	35	85	
			IZMI	0618.1	0619.7	III		G	2	45X	170	
			POTS	0618.1	0619.8	III		G	3	40X	220	
			SVTO	0621.0	0826.0	CONT			2	35	85	
			SGMR	1741.0	1743.0	III			1	30	50	
	1931	2400	HIRA									
	2055	2400	CULG	2055.0E	2235.0	I		S	1	110	170	
			CULG	2136.0	2306.0	III		N	1	20	60	
14	0000	0942	HIRA									
	0000	0700	CULG	0021.0	0022.0	III		G	1	21	120	
			CULG	0134.0	0134.0	III		B	1	35	95	
			CULG	0145.0	0146.0	III		G	1	30	170	
			LEAR	0145.0	0146.0	III			1	30	48	
			PALE	0145.0	0146.0	III			1	27	55	
			CULG	0237.0	0238.0	III		G	2	55	140	
			LEAR	0237.0	0238.0	III			1	58	76	
			PALE	0237.0	0238.0	III			1	53	70	
			CULG	0322.0	0323.0	III		B	1	75	140	
			CULG	0324.0	0334.0	II		UE	1	60	170	
	0356	1748	POTS	0356	E	1748	U	I	S,W	1	110U	170U
	0600	1200	IZMI									
			POTS	0940.5	0940.6	III		B	1	110U	145	
			POTS	1019.3	1028.2	III		G	1	110U	220	
			POTS	1325.1	1325.9	III		G	2	110U	375	
			POTS	1618.0	1618.1	III		B	1	110U	170U	
			POTS	1643.8	1644.4	III		G	2	110U	170U	
	0431	1723	ONDR	1657.2	1658.0	DCIM		G	2	1255	2000X	
	2055	2400	CULG	2210.0	2212.0	III		G	1	30	250	
	1930	2400	HIRA	2210.8	2211.1	III		B	1	80	250	
			CULG	2324.0	2325.0	III		B	1	20	160	
			CULG	2328.0	2328.0	III		B	1	25	95	
			CULG	2340.0	2341.0	III		G	1	40	180	
	15	0000	0700	CULG	0012.0	0013.0	III		B	1	28	130
				CULG	0040.0	0044.0	III		G	2	20	280
				LEAR	0040.0	0044.0	III			2	30	80
			PALE	0040.0	0045.0	III			2	25	75	
0000		0943	HIRA	0043.1	0043.9	III		G	1	25X	330	
			CULG	0142.0	0142.0	III		B	1	20	95	
			LEAR	0142.0	0142.0	III			1	30	50	
			PALE	0142.0	0156.0	III		N	1	25	55	
			CULG	0145.0	0146.0	III		B	2	35	260	
			HIRA	0145.4	0145.5	III		B	1	50	410	
			CULG	0153.0	0157.0	III		G	1	20	150	
			LEAR	0154.0	0156.0	III			1	30	55	
			CULG	0240.0	0241.0	III		G	1	30	90	
			CULG	0248.0	0248.0	III		B	1	35	90	
			CULG	0344.0	0345.0	III		G	1	25	170	
			LEAR	0344.0	0344.0	III			1	30	70	
			PALE	0344.0	0344.0	III			1	40	55	
			LEAR	0402.0	0903.0	CONT			1	30	45	
			CULG	0404.0	0405.0	III		B	1	19	70	
0356		1748	POTS	0426.4	0428.9	III		G	3	40X	340	
			CULG	0429.0	0429.0	III		B	1	65	180	
0430		1724	ONDR									
			POTS	0435.9	0439.3	III		GG,RS	3	40X	170U	
			CULG	0436.0	0520.0	III		N	1	18X	180	
			POTS	0437	1748	U	I	S	1	110U	170U	
			LEAR	0437.0	0447.0	III			2	30	80	
			SVTO	0437.0	0446.0	III			3	35	85	
		HIRA	0446.5	0446.7	III		B	1	25X	240		
		POTS	0446.5	0446.9	III		G	3	40X	275		
		CULG	0447.0	0447.0	III		B	2	18X	180		

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OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start End (UT) (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
15		POTS	0506.6	0506.9	III	G	2	40X	140	
		LEAR	0514.0	0515.0	III		2	30	43	
		POTS	0514.6	0520.0	III	GG	2	40X	170U	
		POTS	0530.7	0531.3	III	G	2	110U	270	
		POTS	0558.2	0600.1	III	G	2	110U	170U	
		POTS	0605.8	0606.3	III	G	2	40X	65	
		CULG	0606.0	0606.0	III	G	1	25	90	
		POTS	0608.9	0609.0	III	B	1	110U	170U	
		POTS	0642.5	0642.6	III	B	1	110U	170U	
		POTS	0654.5	0700.7	III	G	2	40X	150	
		LEAR	0655.0	0700.0	III		2	30	45	
		SVTO	0655.0	0714.0	III	N	2	35	85	
0614	1200	IZMI	0655.6	0700.7	III	GG	2	45X	120	
		CULG	0656.0	0657.0	III	G	1	25	90	
		POTS	0711.5	0714.3	III	GG	3	40X	170U	
		HIRA	0711.6	0714.1	III	G	1	50	130	
		IZMI	0711.6	0714.0	III	GG	2	45X	150	
		IZMI	0714.0	0724.7	III	N	1	45	90	
		POTS	0721	1748 U	III	N	1	40X	90U	
		POTS	0853.9	0854.0	III	B	2	40X	80	
		SVTO	0901.0	0901.0	III		2	35	61	
		POTS	0901.4	0901.8	III	G	2	40X	250	
		POTS	0945.7	0946.4	III	G,P	2	40X	170U	
		IZMI	0946.0	0946.4	III	G	2	45X	145	
		SVTO	0946.0	0946.0	III		2	35	58	
		POTS	1021.8	1025.6	III	GG	3	40X	170U	
		IZMI	1022.6	1025.4	III	GG	2	45X	135	
		SVTO	1023.0	1025.0	III		2	35	82	
		SGMR	1024.0	1024.0	III		1	30	60	
		POTS	1130.4	1130.8	III	G	1	110U	170U	
		POTS	1200.3	1200.5	III	G	2	40X	170U	
		SGMR	1228.0	1229.0	III		1	30	60	
		POTS	1228.9	1229.2	III	G	3	40X	170U	
		SVTO	1229.0	1229.0	III		2	36	70	
		SVTO	1241.0	1242.0	III		3	36	78	
		POTS	1241.1	1241.7	III	G	3	40X	170U	
		SVTO	1356.0	1357.0	III		2	40	85	
		POTS	1356.7	1357.1	III	G	3	40X	350	
		POTS	1403.1	1403.5	III	G	1	110U	170U	
		POTS	1404.5	1404.6	III	G	2	40X	170U	
		SVTO	1446.0	1449.0	III		3	35	85	
		POTS	1446.2	1455.2	III	GG	3	40X	350	
		SGMR	1455.0	1455.0	III		1	30	65	
		PALE	1941.0	1951.0	III		2	25	70	
		SGMR	1941.0	1951.0	III	N	3	30	80	
1929	2400	HIRA	1942.6	1942.9	III	B	2	25X	240	
		HIRA	1944.9	1951.1	III	G	1	25X	50	
		PALE	2114.0	2115.0	III		2	25	70	
		SGMR	2114.0	2114.0	V		1	30	80	
2055	2400	CULG	2114.0	2115.0	III	G	2	18	180	
		HIRA	2114.6	2114.7	III	B	2	25X	160	
		CULG	2222.0	2226.0	III	G	2	18X	280	
		PALE	2222.0	2225.0	V		2	25	70	
		SGMR	2224.0	2224.0	III		2	30	80	
		HIRA	2224.4	2224.6	III	B	2	25X	250	
		HIRA	2319.6	2319.8	III	B	2	25X	150	
		CULG	2320.0	2320.0	III	B	2	18X	180	
		CULG	2342.0	2342.0	III	B	1	20	70	
16	0000 0700	CULG	0007.0	0014.0	III	G	1	20	90	
		CULG	0023.0	0038.0	III	G	2	18X	180	
		LEAR	0026.0	0026.0	III		2	30	43	
		PALE	0026.0	0038.0	III	N	2	25	70	
		LEAR	0032.0	0032.0	V		2	30	75	
0000	0944	HIRA	0032.0	0032.2	III	B	1	25X	80	
		LEAR	0038.0	0038.0	III		2	30	55	
		CULG	0116.0	0116.0	III	B	1	20	80	
		LEAR	0116.0	0116.0	III		2	30	40	
		PALE	0116.0	0116.0	III		1	30	60	

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

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OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start End (UT) (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
16	0356 1748	CULG	0144.0	0146.0	III	G	1	23	180	
		LEAR	0144.0	0145.0	III		2	30	50	
		PALE	0144.0	0231.0	III	N	2	25	75	
		LEAR	0157.0	0820.0	CONT		1	30	50	
		CULG	0205.0	0212.0	III	GG	2	18X	180	
		LEAR	0205.0	0239.0	III	N	2	30	80	
		HIRA	0205.4	0209.5	III	G	1	25X	180	
		CULG	0231.0	0231.0	III	B	1	23	180	
		CULG	0239.0	0239.0	III	B	2	23	180	
		HIRA	0239.0	0239.1	III	B	1	25X	180	
		POTS	0356 E	1748 U	III	N	1	40X	90U	
		POTS	0356 E	1748 U	I	S	1	110U	170U	
		0429 1725	ONDR							
		POTS	0535.6	0535.7	UNCLF		1	40X	50	
		POTS	0625.3	0625.5	UNCLF		1	40X	50	
		POTS	0936.7	0941.8	III	GG,P	2	40X	170U	
	0603 1200	SVTO	0941.0	0941.0	III		2	37	57	
		IZMI	0941.2	0941.7	III	GG	1	45X	125	
		POTS	1104.9	1107.3	III	G,RS	2	40X	220	
		POTS	1212.2	1212.3	III	B	2	40X	70	
		POTS	1254.6	1254.8	III	B	1	40X	60	
		SGMR	1321.0	1321.0	III		1	30	60	
		SVTO	1321.0	1321.0	III		2	35	63	
		POTS	1321.3	1321.7	III	G	2	40X	170U	
		POTS	1334.5	1334.6	III	B	1	110U	170U	
		SVTO	1401.0	1404.0	III		2	35	85	
		POTS	1404.0	1405.1	III	GG	3	40X	170U	
		SGMR	1404.0	1404.0	III		1	30	73	
		SVTO	1404.0	1432.0	III		2	35	85	
		SVTO	1404.0	1432.0	III	N	2	35	85	
		POTS	1430.7	1433.0	III	G	3	40X	360	
	1928 2400	SGMR	1431.0	1432.0	V		1	30	70	
		SGMR	1522.0	1528.0	V		1	30	60	
		SVTO	1522.0	1522.0	III		2	35	85	
		POTS	1522.3	1528.4	III	G	2	40X	170U	
		POTS	1558.4	1558.5	III	B	1	110U	170U	
		SGMR	1607.0	1608.0	III		1	30	55	
		SGMR	1607.0	1624.0	III	N	1	30	55	
		SVTO	1607.0	1608.0	III		2	37	56	
		POTS	1607.1	1608.7	III	G	3	40X	170U	
		POTS	1623.8	1624.0	III	B	2	40X	70	
		SGMR	1709.0	1724.0	III	N	2	30	60	
		POTS	1709.8	1710.0	III	G	2	40X	160	
		PALE	1719.0	1721.0	III		1	30	55	
		POTS	1719.8	1723.7	III	GG	3	40X	370	
		POTS	1729.6	1729.8	III	G	2	40X	80	
	2055 2400	POTS	1737.7	1738.8	III	G	1	40X	90U	
		SGMR	1811.0	1913.0	III	N	1	30	75	
		PALE	1906.0	1913.0	III		2	25	55	
		PALE	2001.0	2003.0	V		3	25	70	
		SGMR	2001.0	2003.0	V		2	30U	80U	
		HIRA	2001.4	2003.3	III	G	3	25X	320	
		PALE	2021.0	2022.0	III		1	25	55	
		SGMR	2022.0	2203.0	III	N	1	30	80	
		PALE	2036.0	0227.0	III	N	1	25	70	
		HIRA	2050.0	2050.5	III	G	2	25X	240	
		SGMR	2050.0	2050.0	III		2	30	80	
		CULG	2057.0	2059.0	III	G	1	30	170	
		HIRA	2057.4	2058.8	III	G	1	25X	140	
		CULG	2105.0	2108.0	III	G	1	40	180	
		CULG		2128.0	2129.0	III	G	2	20	180
		HIRA		2128.0	2128.5	III	G	1	25X	200
		CULG		2156.0	2204.0	III	G	2	20	180
		HIRA		2159.8	2201.5	III	G	1	25X	220
		CULG		2333.0	2347.0	III	N	2	20	180
		HIRA	2333.3	2333.6	III	B	1	40	150	
		HIRA	2340.6	2340.8	III	B	1	100	180	
17		LEAR	0035.0	0035.0	III		1	30	35	

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MAY 1998

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Start Day (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
17	0000 0700	CULG	0035.0	0039.0	III	G	2	20	180	
		CULG	0054.0	0055.0	III	G	1	30	120	
		CULG	0133.0	0133.0	III	B	1	30	180	
		CULG	0158.0	0234.0	III	N	1	20	180	
		LEAR	0203.0	0809.0	CONT		1	30	45	
		LEAR	0212.0	0212.0	III		2	30	43	
		CULG	0336.0	0400.0	III	N	1	18	90	
		SVTO	0352.0	0707.0	CONT		2	35	56	
		POTS	0356 E	1748 U	III	N	1	40X	90U	
		POTS	0356 E	1748 U	I	S,W	1	110U	170U	
	0356 1748	POTS	0358.2	0400.3	III	G	2	40X	170U	
		LEAR	0400.0	0400.0	III		2	30	46	
		PALE	0400.0	0400.0	III		1	35	55	
		ONDR								
	0428 1726	POTS	0434.8	0450.1	III	GG	3	40X	450	
		CULG	0439.0	0450.0	III	GG	3	18X	250	
		LEAR	0439.0	0448.0	V		2	30	80	
		SVTO	0439.0	0447.0	III		3	35	85	
	0000 0945	HIRA	0440.0	0447.3	III	G	2	25X	260	
		CULG	0449.0	0449.0	III	B	1	18	90	
		POTS	0459.3	0459.6	III	G	2	40X	170U	
		POTS	0509.5	0509.6	III	G	2	110U	250	
		POTS	0517.3	0518.4	III	G	2	40X	170U	
		CULG	0518.0	0518.0	III	B	1	35	180	
		POTS	0531.0	0531.8	III	G	2	40X	170U	
		POTS	0548.6	0551.4	III	GG,RS	2	110U	170U	
		CULG	0549.0	0551.0	III	G	1	30	160	
		POTS	0648.8	0649.5	III	G	2	40X	170U	
	0603 1200	CULG	0649.0	0649.0	III	B	1	25	180	
		IZMI	0649.0	0949.2	III	B	2	45X	135	
		POTS	0658.3	0700.2	III	G,RS	2	40X	170U	
		IZMI	0659.0	0659.2	III	B	1	45X	120	
		POTS	0819.9	0820.0	III	B	1	110U	170U	
		IZMI	0828.4	0828.5	III	G	1	50	140	
		POTS	0828.4	0828.6	III	G	2	40X	170U	
		POTS	0909.8	0927.5	III	GG	3	40X	170U	
		IZMI	0918.4	0919.2	III	GG	2	45X	165	
		POTS	0938.0	0938.1	III	B	2	40X	170U	
		POTS	1000.0	1008.6	III	GG,C	3	40X	360	
		SVTO	1000.0	1000.0	III		2	35	77	
		IZMI	1006.0	1008.5	III	GG	2	45X	245	
		SVTO	1006.0	1008.0	V		2	35	85	
		POTS	1040.0	1045.6	III	G	3	40X	250	
		SVTO	1043.0	1043.0	III		2	35	64	
		SVTO	1043.0	1110.0	III	N	2	35	64	
		SVTO	1043.0	1131.0	III	N	2	35	74	
		IZMI	1043.1	1043.3	III	G	2	45X	135	
		IZMI	1058.3	1058.5	III	B	1	45	85	
		POTS	1058.3	1058.6	III	G	2	40X	170U	
		IZMI	1110.0	1110.8	III	G	2	45	180	
		POTS	1110.0	1114.9	III	GG	3	40X	250	
		SGMR	1110.0	1110.0	III		1	30	60	
		SGMR	1130.0	1131.0	III		1	30	80	
		IZMI	1130.7	1131.7	III	G	2	45X	160	
		POTS	1130.7	1131.8	III	G	3	40X	170U	
		SGMR	1211.0	1216.0	V		2	30	80	
		SVTO	1211.0	1216.0	III		3	35	80	
		POTS	1211.3	1217.6	III	GG	3	40X	250	
		POTS	1333.4	1334.3	III	G	2	130	170U	
		POTS	1450.9	1451.0	III	B	1	130	170U	
		POTS		1503.6	1504.0	III	G	2	110U	250
		POTS		1521.9	1522.6	III	G	2	40X	170U
		POTS		1627.6	1628.1	DCIM		1	275	400
	1927 2400	HIRA								
	2055 2400	CULG	2148.0	2148.0	III	B	1	20	180	
18	0000 0700	CULG								
	0000 0946	HIRA								
	0427 1727	ONDR								

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MAY 1998

OBSERVATION			Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
18	0623	1200	IZMI								
	0356	1748	POTS	0730.1	0730.2	III	B	1	110U	250	
			POTS	0938.7	0938.8	III	G	2	40X	300	
			POTS	1055.9	1056.0	III	B	1	110U	150	
			POTS	1105.9	1107.2	III	GG	2	40X	170U	
			POTS	1205.4	1205.5	III	B	1	110U	170U	
	2000	2400	HIRA								
	2055	2400	CULG								
19	0426	1729	ONDR								
	0000	0700	CULG	0552.0	0552.0	III	B	1	27	50	
	0600	1200	IZMI								
	0526	1750	POTS	0641	1750 U	I	S	1	110U	300	
			POTS	0758.2	0802.0	DCIM		2	200U	600	
			POTS	0758.3	0759.0	III	G,C,U	2	40X	170U	
	0000	0947	HIRA	0758.3	0758.6	III	B	1	80	140	
			SVTO	0951.0	1015.0	II		3	35	85	ESS 2000
			POTS	0951.4	1007 U	II	UE,H	3	40X	90U	
			POTS	0951.7	0951.8	III	B	1	110U	130	
			SGMR	0953.0	1002.0	II		1	30	70	ESS 1000
			POTS	0959.7	1000.2	III	G	2	110U	170U	
			POTS	1009.6	1011.0	UNCLF		3	40X	60	
	1926	2400	HIRA								
	2055	2400	CULG								
20	0000	0947	HIRA								
	0425	1728	ONDR								
	0000	0700	CULG	0553.0	0554.0	III	G	1	30	80	
	0356	1748	POTS	0553.4	0556.8	III	G	1	110U	170U	
	0600	0952	IZMI								
			POTS	0930.6	0931.0	III	G	1	130	170U	
	1002	1200	IZMI								
	1925	2400	HIRA								
	2055	2400	CULG								
21	0000	0700	CULG								
	0000	0948	HIRA								
	0424	1730	ONDR								
	0345	1800	POTS	0425.6	0425.8	UNCLF		1	200U	325	
	0707	1200	IZMI								
			POTS	1318.3	1318.4	III	B	1	110U	250	
			POTS	1346.0	1348.0	III	G	2	40X	170U	
			SGMR	1347.0	1347.0	III		1	30	80	
			SVTO	1347.0	1347.0	III		2	40	80	
			POTS	1423.7	1423.8	UNCLF		1	130	170	
	1925	2400	HIRA								
	2055	2400	CULG								
22	0000	0700	CULG								
	0000	0949	HIRA								
	0423	1730	ONDR								
	0345	1800	POTS	0530.0	0530.3	III	G	2	110U	170U	
			POTS	0530.7	0530.8	DCIM		1	300	375	
	0600	1200	IZMI								
			POTS	0724.6	0724.8	UNCLF		1	130	160	
			POTS	1014.9	1015.0	I		1	135	145	
			POTS	1124.6	1128.3	III	G	2	40X	170U	
			POTS	1226.0	1226.1	III	B	1	145	170U	
			SGMR	1235.0	1236.0	III		1	30	80	
			SVTO	1235.0	1236.0	III		2	35	77	
			POTS	1235.9	1236.2	III	G	2	40X	170U	
			POTS	1300.5	1300.6	III	B	1	40X	55	
			POTS	1557.0	1557.2	III	B	1	80	170U	
			POTS	1613.3	1613.4	III	B	1	110U	170U	
			POTS	1630.4	1630.8	III	G	2	75	230	
	2055	2400	CULG	2116.0	2132.0	III	N	1	30	480	
	1924	2400	HIRA	2127.0	2131.5	III	G	1	60	420	
			CULG	2201.0	2202.0	III	B	1	35	95	
			CULG	2206.0	2206.0	III	B	1	35	130	

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MAY 1998

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Start	End				Spectral	Event		Lower	Upper	
Day (UT)	(UT)		(UT)	(UT)	Class	Remarks		(MHz)	(MHz)	
22		PALE	2343.0	2343.0	III		2	30	65	
23	0000 0700	CULG	0055.0	0055.0	III	B	1	130	170	
		CULG	0103.0	0107.0	III	G	1	130	170	
		CULG	0112.0	0117.0	III	G	2	30	170	
	0000 0950	HIRA	0113.7	0114.6	III	G	1	60	320	
		CULG	0122.0	0123.0	III	G	2	55	320	
		HIRA	0122.8	0122.9	III	B	1	80	400	
		CULG	0215.0	0215.0	III	B	1	70	160	
		HIRA	0322.9	0325.9	III	G	1	140	250	
0345 1800		POTS	0405.1	0405.2	III	B	2	110U	150	
0422 1733		ONDR								
		POTS	0440.2	0440.7	III	G	2	110U	170U	
		POTS	0504	1800 U	I	S	1	110U	250	
		POTS	0522.2	0542.3	III	GG	2	110U	350	
0600 0712		IZMI								
		POTS	0616.7	0616.8	III	B	1	110U	170U	
		CULG	0647.0	0648.0	III	B	1	50	95	
0737 1200		IZMI								
		POTS	1018.8	1019.0	III	B	1	80	170U	
		POTS	1021.5	1021.6	III	B	1	250	400	
		POTS	1222.3	1222.9	DCIM		2	130	350	
		POTS	1440.9	1441.2	III	G	2	110U	250	
		POTS	1458.0	1504.0	III	G	2	110U	300	
		POTS	1608.1	1608.2	III	G	1	110U	170U	
		POTS	1634.8	1634.9	III	B	1	140	170U	
		POTS	1645.6	1645.7	III	G	1	110U	170U	
		POTS	1656.4	1701.6	III	G	2	40X	170U	
		SGMR	1701.0	1701.0	III		1	30	57	
		POTS	1714.0	1714.5	III	G	2	40X	170U	
1923 2400		HIRA	2004.2	2005.2	III	G	2	25X	320	
		HIRA	2011.0	2011.1	III	B	2	90	320	
2055 2400		CULG	2318.0	2318.0	III	B	1	70	160	
24	0000 0950	HIRA								
0000 0700		CULG	0048.0	0049.0	III	B	1	20	85	
		LEAR	0050.0	0051.0	III		1	30	40	
		CULG	0115.0	0117.0	III	G	1	30	160	
		CULG	0217.0	0700.00	I	S	1	120	170	
		CULG	0247.0	0248.0	III	B	2	18X	140	
		LEAR	0247.0	0247.0	III		1	30	50	
		PALE	0247.0	0247.0	III		1	28	70	
0345 1800		POTS	0345 E	1800 U	I	S,C	2	110U	400	
0421 1732		ONDR								
		POTS	0421.3	0421.5	III	B	2	130	170U	
		CULG	0439.0	0440.0	III	B	1	20	85	
		CULG	0527.0	0528.0	III	B	1	30	90	
		POTS	0527.5	0527.6	III	B	1	40X	60	
0600 0752		IZMI	0600.0E	0752.00	I	N	1	200	270	
		CULG	0638.0	0638.0	III	B	1	30	120	
		IZMI	0638.0	0638.3	III	G,HARM	1	45	110	
		POTS	0638.0	0638.4	III	G	2	40X	170U	
		SVTO	0638.0	0638.0	III		2	36U	81U	
0819 1200		IZMI	0819.0E	1200.00	I	N	1	200	270	
		IZMI	0820.7	0822.5	III	GG	2	45X	270X	
		POTS	0820.7	0821.9	III	G	3	40X	325	
		LEAR	0821.0	0823.0	III		2	30	45	
		SVTO	0821.0	0823.0	V		2	35	61	
		POTS	0821.9	0822.9	UNCLF		3	40X	50	
		IZMI	0829.5	0831.2	III	GG	2	50	270	
		POTS	0830.0	0830.2	III	B	1	40X	90U	
		POTS	0830.8	0831.3	III	G,C	2	40X	350	
		POTS	0949.2	0949.3	III	B	2	130	300	
		IZMI	1151.9	1152.0	III	B	1	60	105	
		POTS	1151.9	1152.1	III	B	2	55	150U	
		POTS	1325.8	1325.9	III	B	2	130	250	
		POTS	1424.0	1424.2	III	B	2	60	170U	
		POTS	1602.5	1606.2	III	G	2	140	400	
		POTS	1614.4	1614.5	III	B	2	110U	170U	

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MAY 1998

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Start Day (UT)	End Day (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
24	2055 2400	POTS	1614.9	1615.7	DCIM		2	145	350	
		POTS	1647.1	1647.2	III	B	1	40X	60	
		POTS	1649.6	1649.9	III	G	2	40X	170U	
		CULG	2055.0E	2400.0D	I	S	1	80	170	
		CULG	2118.0	2119.0	III	G	2	35	180	
		PALE	2118.0	2119.0	III		1	35	55	
		SGMR	2118.0	2123.0	V		1	30	80	
		CULG	2121.0	2124.0	III	G	2	30	180	
		PALE	2121.0	2123.0	III		1	30	70	
		SGMR	2138.0	2138.0	III		1	30	57	
	2234 2400	CULG	2147.0	2147.0	III	B	1	40	85	
		CULG	2152.0	2154.0	III	G	1	30	180	
		PALE	2152.0	2153.0	III		1	35	65	
		SGMR	2153.0	2153.0	III		1	30	57	
		HIRA								
		CULG	2321.0	2332.0	III	N	1	60	95	
25	0000 0455	CULG	0000.0E	0455.0D	I	S	1	90	170	
		CULG	0122.0	0212.0	III	N	1	35	90	
		CULG	0329.0	0329.0	III	B	1	25	45	
	0345 1800	POTS	0345 E	1800 U	I	S,C	3	110U	400	
		CULG	0347.0	0347.0	III	B	1	35	70	
		CULG	0443.0	0444.0	III	B	1	20	45	
	0000 0951	POTS	0537.3	0538.3	III	G	3	120	400	
		HIRA	0537.3	0537.5	III	B	1	120	310	
		POTS	0612.8	0613.2	III	G	1	40X	70	
	0600 0710	POTS	0622.9	0623.3	III	B	2	40X	170U	
		IZMI	0622.9	0623.2	III	G	1	50	90	
		SVTO	0623.0	0638.0	III	N	2	39	84	
		IZMI	0638.4	0638.5	III	B	2	45X	95	
		POTS	0638.4	0638.7	III	B	3	40X	160	
	0710 1200	IZMI	0638.5	0638.7	V		2	50	80	
		IZMI	0710.0E	1200.0D	I	S,C	2	110U	270X	
		IZMI	0849.8	0851.7	III	GG,HARM	2	45X	270X	
		POTS	0849.8	0852.3	III	GG,C	3	40X	700	
		HIRA	0850.0	0851.8	III	G	2	100	420	
	0420 1734	LEAR	0850.0	0852.0	III		1	30	80	
		SVTO	0850.0	0852.0	III		2	35	85	
		ONDR	0850.1	0851.5	DCIM	G	1	800	1545	
		IZMI	0850.2	0852.0	V	G	2	45	165	
		HIRA	0858.3	0858.5	III	B	1	100	500	
		POTS	0952.7	0953.0	III	B	2	40X	90U	
		POTS	1220.3	1220.5	III	B	2	40X	70	
		POTS	1243.7	1249.7	III	G	2	130	400	
		POTS	1404.5	1404.7	III	B	2	40X	70	
		POTS	1424.0	1425.0	III	G	2	40X	170U	
		SGMR	1424.0	1425.0	III		1	30	57	
		SVTO	1424.0	1425.0	III		2	37U	49U	
		SGMR	1511.0	1512.0	V		1	30	55	
		SVTO	1511.0	1511.0	III		2	36	56	
		POTS	1511.2	1511.5	III	G	2	40X	170U	
	2055 2400	POTS	1555.1	1606.2	III	G	3	110U	300	
		POTS	1629.3	1629.6	III	G	2	140	325	
		POTS	1755.7	1755.8	III	G	2	110U	170U	
		SGMR	1936.0	1947.0	III	N	1	30	65	
		PALE	2043.0	2135.0	III	N	1	28	55	
		SGMR	2043.0	2045.0	III		1	30	57	
		CULG	2055.0E	2400.0D	I	S	1	100	170	
		CULG	2104.0	2104.0	III	B	1	30	140	
		CULG	2132.0	2132.0	III	B	1	30	55	
		CULG	2133.0	2134.0	III	B	1	35	350	
1922 2400		HIRA	2133.1	2133.4	III	B	1	80	350	
		CULG	2135.0	2135.0	III	B	1	25	80	
		CULG	2207.0	2207.0	III	B	1	20	45	
		CULG	2253.0	2254.0	III	G	1	20	85	
		CULG	2310.0	2312.0	III	G	1	20	150	
		CULG	2336.0	2341.0	III	G	1	20	170	
		PALE	2337.0	2338.0	III		1	27	65	
		LEAR	2338.0	2338.0	III		1	30	40	

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Spectral Observations

MAY 1998

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Time				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
25		CULG	2354.0	2358.0	III	G	2	18	140	
		LEAR	2354.0	2355.0	III		1	30	47	
		PALE	2354.0	2355.0	V		1	27	55	
26	0000 0700	CULG	0000.0E	0700.0D	I	S	1	120	170	
		CULG	0040.0	0041.0	III	B	1	20	80	
		CULG	0153.0	0153.0	III	B	1	20	90	
		CULG	0225.0	0226.0	III	B	1	30	85	
		PALE	0240.0	0241.0	III		2	29	75	
	0000 0952	HIRA	0240.6	0240.8	III	B	1	25X	120	
		CULG	0241.0	0241.0	III	B	3	18	160	
		CULG	0254.0	0254.0	III	B	1	25	80	
	0345 1800	POTS	0345 E	1800 U	I	S,C	2	110U	450	
		POTS	0346.3	0346.4	III	B	2	130	250	
	0419 1736	ONDR								
	0600 1200	IZMI	0600.0E	0923.0U	I	N	1	200	270	
		IZMI	0610.3	0610.4	III	G	1	165	270	
		POTS	0610.3	0624.8	III	G,U	2	110U	450	
		IZMI	0624.6	0624.8	III	G	1	60	270X	
		POTS	0825.6	0825.7	III	B	1	110U	170U	
		POTS	0826	1800 U	III	N	1	40X	90U	
		POTS	0906.8	0912.1	III	G	1	110U	150	
		IZMI	0923.0	1200.0D	I	S, C	2	105	270X	
		POTS	1005.6	1005.7	III	B	2	110U	170U	
		IZMI	1045.1	1045.5	III	G	1	80	160	
		POTS	1045.1	1045.6	III	G	2	40X	170U	
		POTS	1144.4	1146.0	III	G	2	110U	250	
		POTS	1328.2	1328.6	III	G	2	130	270	
		POTS	1425.7	1434.0	III	GG	3	110U	300	
		POTS	1622.2	1622.4	III	B	3	120	280	
		PALE	1919.0	1919.0	III		1	40	55	
		SGMR	1919.0	1919.0	III		1	30	53	
	2100 2400	CULG	2100.0E	2400.0D	I	S	1	120	170	
		CULG	2124.0	2221.0	III	N	1	20	260	
		PALE	2124.0	2124.0	III		1	28	60	
		SGMR	2124.0	2132.0	V		1	30	55	
		PALE	2132.0	2133.0	III		1	35	52	
		CULG	2228.0	2230.0	III	G	2	20	90	
		PALE	2228.0	2230.0	V		2	27	70	
		SGMR	2228.0	2229.0	V		1	30	65	
	1922 2400	HIRA	2228.8	2229.8	III	G	2	25X	50X	
		CULG	2232.0	2233.0	III	B	2	22	170	
		CULG	2321.0	2323.0	III	G	1	20	95	
		PALE	2321.0	2322.0	V		1	27	55	
27	0000 0700	CULG	0000.0E	0700.0D	I	S	1	65	170	
		CULG	0019.0	0023.0	III	G	2	20	250	
		LEAR	0019.0	0023.0	V		2	30	60	
		PALE	0019.0	0020.0	V		2	27	68	
	0000 0953	HIRA	0019.8	0020.0	III	B	2	25X	50X	
		PALE	0022.0	0023.0	III		1	28	56	
		LEAR	0040.0	0051.0	III	N	2	30	67	
		PALE	0040.0	0042.0	V		2	27	68	
		CULG	0041.0	0043.0	III	G	2	20	170	
		HIRA	0041.5	0041.6	III	B	2	25X	50X	
		CULG	0051.0	0052.0	III	B	1	25	170	
		PALE	0051.0	0051.0	III		1	30	55	
		CULG	0143.0	0145.0	III	G	2	18	95	
		LEAR	0143.0	0144.0	III		2	30	50	
		PALE	0143.0	0144.0	III		1	29	56	
		CULG	0217.0	0220.0	III	G	1	65	130	
		CULG	0312.0	0317.0	III	G	1	65	260	
		HIRA	0312.4	0313.3	III	G	1	100	250	
		CULG	0321.0	0325.0	III	G	1	20	150	
		LEAR	0321.0	0324.0	III		2	30	50	
	0345 1800	POTS	0345 E	1800 U	I	S,C	2	80	450	
		POTS	0407.9	0408.2	III	G	3	40X	90U	
		CULG	0408.0	0408.0	III	B	1	21	95	
		LEAR	0408.0	0408.0	III		1	30	70	

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OBSERVATION			EVENT		FREQUENCY		Int	Remarks	
Start	End	Sta	Start	End	Spectral	Event		Lower	Upper
Day (UT)	(UT)		(UT)	(UT)	Class	Remarks	(1-3)	(MHz)	(MHz)
27									
		CULG	0500.0	0501.0	III	G	2	420	820
		HIRA	0500.3	0501.0	III	G	1	410	580
		POTS	0500.4	0501.2	DCIM		2	380	600
		CULG	0551.0	0551.0	III	B	1	25	50
	0600 1203	IZMI	0600.0E	1203.0D	I	S, C	2	45	270X
		POTS	0604	1800 U	III	N	1	40X	90U
		CULG	0604.0	0605.0	III	B	1	20	90
		LEAR	0604.0	0604.0	III		1	30	45
		SVTO	0604.0	0604.0	III		1	35	44
		POTS	0700.0	0704.1	DCIM		1	200U	600
		SVTO	0707.0	0722.0	III	N	2	35	55
		IZMI	0714.6	0715.8	III	G	1	45X	120
		LEAR	0716.0	0716.0	III		1	30	47
		IZMI	0719.0U	1203.0D	III	N	1	45X	90
		LEAR	0721.0	0722.0	III		1	30	37
		LEAR	0755.0	0756.0	III		1	30	50
		SVTO	0755.0	0755.0	III		2	35	68
		IZMI	0755.6	0755.8	III	B	2	45X	120
		POTS	0755.6	0755.8	III	B	3	40X	90U
		IZMI	0817.3	0817.9	III	GG	2	130	270X
		POTS	0817.4	0817.9	III	G	3	125	400
		HIRA	0817.5	0817.8	III	B	1	120	260
		POTS	1048.6	1048.9	III	B	2	40X	90U
		IZMI	1102.1	1103.6	III	GG	2	105	270X
		POTS	1102.2	1103.6	III	GG	3	110U	650
		POTS	1108.7	1108.9	DCIM		1	500	750
	0419 1735	ONDR	1110.5	1117.4	DCIM	G	1	2000X	4385X
		IZMI	1111.0	1112.4	III	G	2	45X	135
		ONDR	1111.0	1117.4	DCIM	G	1	830	2000X
		POTS	1111.0	1111.8	III	G	3	40X	375
		SVTO	1111.0	1111.0	III		2	37	78
		SGMR	1202.0	1202.0	V		1	30	60
		SVTO	1202.0	1202.0	III		2	36	57
		IZMI	1202.2	1202.5	III	B	2	45X	95
		POTS	1202.3	1202.6	III	B	3	40X	90U
		SVTO	1211.0	1543.0	CONT		2	35	85
		SVTO	1233.0	1236.0	III		3	35	82
		SGMR	1234.0	1236.0	V		2	30	80
		POTS	1234.2	1235.2	III	G	3	40X	150
		SGMR	1240.0	1450.0	CONT		2	30	80
		POTS	1302.3	1302.6	III	B	3	40X	170U
		POTS	1306.5	1332 U	IV	P	2	40X	800X
		ONDR	1308.3	1343.3	CONT	FS	3	800X	2000X
		ONDR	1314.0	1342.3	CONT	FS	3	2000X	4385X
		POTS	1332.0	1336.3	III	GG,C	3	40X	750
		POTS	1342.9	1343.2	III	G	3	40X	300
		POTS	1351.1	1352.3	III	G	3	40X	325
		POTS	1353.9	1354.5	III	G	2	120	170U
		POTS	1403.5	1404.3	UNCLF		2	40X	120
		POTS	1428.6	1428.7	III	B	1	150	325
		SGMR	1504.0	1505.0	III		1	30	55
		SVTO	1504.0	1505.0	III		2	36	85
		POTS	1505.0	1505.7	III	G	2	40X	160
		SGMR	1546.0	1642.0	III	N	2	30	80
		POTS	1603.9	1604.0	III	G	2	110U	150
		POTS	1611.5	1619.1	III	G,U,RS	3	40X	400
		SVTO	1612.0	1625.0	III	N	2	35	85
		POTS	1625.0	1627.7	III	G	2	40X	400
		POTS	1640.1	1642.7	III	G	3	40X	400
		PALE	1641.0	1641.0	III		1	40	55
		SVTO	1641.0	1641.0	III		2	36U	69U
		POTS	1641.1	1641.2	DCIM		2	500	600
		SGMR	1705.0	1706.0	V		1	30	70
		POTS	1705.6	1706.1	III	G	3	40X	370
		SGMR	1734.0	1826.0	III	N	2	30	60
		POTS	1734.5	1738.8	III	G	3	40X	170U
		PALE	1738.0	1739.0	V		1	25	68
		PALE	1806.0	1807.0	V		1	27	56
		PALE	1826.0	1826.0	III		1	30	55

SOLAR RADIO EMISSION

Spectral Observations

MAY 1998

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start End (UT) (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
27		PALE	1935.0	2050.0	III	N	3	25	75	
		SGMR	1944.0	1947.0	V		3	30	80	
	1921 2400	HIRA	1946.2	1946.5	III	B	3	25X	240	
		SGMR	2032.0	2049.0	III	N	2	30	80	
		HIRA	2032.3	2033.1	III	G	1	50	500	
		HIRA	2040.8	2049.0	III	G	1	25X	220	
	2100 2400	CULG	2119.0	2126.0	III	N	1	30	280	
		CULG	2204.0	2242.0	III	N	1	20	260	
		CULG	2302.0	2314.0	III	N	2	18	220	
		HIRA	2303.4	2306.0	III	G	2	25X	120	
		PALE	2304.0	2308.0	V		2	25	70	
		SGMR	2304.0	2306.0	V		1	30	53	
28	0000 0700	CULG	0003.0	0004.0	III	G	1	22	120	
		CULG	0022.0	0023.0	III	B	1	22	110	
		CULG	0026.0	0026.0	III	B	1	24	90	
		CULG	0054.0	0057.0	III	G	3	20	170	
		LEAR	0054.0	0056.0	III		2	30	80	
		PALE	0054.0	0244.0	III	N	2	25	75	
	0000 0953	HIRA	0054.7	0055.9	III	G	3	25X	150	
		CULG	0104.0	0129.0	III	N	1	20	160	
		LEAR	0114.0	0213.0	III	N	2	30	80	
		CULG	0130.0	0131.0	III	B	2	18X	160	
		HIRA	0130.3	0130.6	III	B	1	25X	120	
		CULG	0156.0	0221.0	III	N	1	18	110	
		CULG	0236.0	0245.0	III	N	1	35	150	
		POTS	0345 E	1800 U	III	N	1	40X	90U	
		POTS	0345 E	1800 U	III	N	1	110U	170U	
	0345 1800	POTS	0345 E	1800 U	I	S,C	2	110U	250	
		CULG	0346.0	0411.0	III	N	1	18	150	
		POTS	0346.1	0346.3	III	B	2	40X	90U	
		POTS	0352.1	0408.7	III	GG	2	40X	170U	
		HIRA	0405.0	0405.2	III	B	1	50	130	
		CULG	0433.0	0442.0	III	G	3	18X	180	
		LEAR	0433.0	0442.0	III		3	30	80	
		PALE	0433.0	0438.0	III		2	25	70	
		SVTO	0433.0	0438.0	III		2	35	85	
		HIRA	0433.6	0439.1	III	G	2	25X	200	
		POTS	0433.6	0442.3	III	GG	3	40X	300	
		POTS	0509.1	0512.4	III	GG	2	110U	325	
		CULG	0511.0	0521.0	III	N	1	20	130	
		LEAR	0514.0	0514.0	III		1	30	42	
		CULG	0546.0	0648.0	III	N	1	20	170	
		LEAR	0548.0	0602.0	III	N	2	30	45	
	0555 0734	IZMI	0555.0E	0734.0D	III	N	1	45X	90	
		SVTO	0556.0	0556.0	III		2	36	67	
		IZMI	0556.2	0557.8	III	G	1	45X	145	
		POTS	0556.3	0557.8	III	G	2	40X	170U	
		POTS	0605.7	0605.9	DCIM		1	250	350	
		POTS	0612.9	0647.6	III	GG	3	40X	750	
		LEAR	0613.0	0613.0	III		1	30	43	
		SVTO	0618.0	0635.0	III	N	3	35	85	
		IZMI	0618.8	0620.8	III	G	2	45X	255	
		CULG	0619.0	0624.0	III	GG	3	20	250	
		LEAR	0619.0	0627.0	III		2	30	80	
		HIRA	0619.5	0623.6	III	G	2	25X	260	
		IZMI	0621.4	0623.7	III	GG	2	45X	270	
		IZMI	0621.6	0623.9	V	G	2	45X	135	
		IZMI	0624.9	0627.2	III	G	2	45X	160	
		IZMI	0627.2	0627.7	V	G	2	45	75	
		LEAR	0633.0	0635.0	III		2	30	80	
		IZMI	0633.8	0635.0	III	G	2	45X	260	
		CULG	0634.0	0635.0	III	G	3	20	240	
		HIRA	0634.0	0635.0	III	G	2	40	250	
		IZMI	0647.3	0647.6	III	G	1	45	130	
		LEAR	0709.0	0710.0	III		1	30	45	
		SVTO	0709.0	0710.0	III		2	36	82	
		HIRA	0709.1	0709.8	III	G	2	200	470	
		IZMI	0709.1	0709.9	III	G	2	45X	270X	

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Spectral Observations

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MAY 1998

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT Spectral Class	Event Remarks	Int (1-3)	FREQUENCY		Remarks
Start Day (UT)	End (UT)							Lower (MHz)	Upper (MHz)	
28		POTS	0709.1	0710.2	III	GG	2	40X	500	
		POTS	0723.0	0737.7	III	GG	2	40X	600	
		SVTO	0723.0	0724.0	III		2	36	85	
		LEAR	0724.0	0725.0	III		2	30	50	
		IZMI	0724.5	0732.4	III	G	2	45X	270X	
		HIRA	0726.7	0728.5	III	G	1	100	300	
		LEAR	0727.0	0737.0	III	N	2	30	47	
		SVTO	0727.0	0737.0	III	N	2	35	82	
	0747 1200	IZMI	0747.0E	1200.0D	III	N	1	45	135	
		LEAR	0756.0	0757.0	III		2	30	45	
		SVTO	0756.0	0802.0	III		2	35	64	
		IZMI	0756.8	0757.3	III	G	2	45X	90	
		POTS	0756.8	0757.4	III	G	3	40X	170U	
		SVTO	0810.0	0817.0	III		3	35	85	
		POTS	0810.7	0837.9	III	GG	3	40X	375	
		IZMI	0810.9	0818.4	III	GG	2	45X	240	
		LEAR	0811.0	0817.0	III		2	30	80	
		HIRA	0812.8	0814.1	III	G	1	25X	240	
		LEAR	0833.0	0837.0	III		1	30	42	
		SVTO	0833.0	0854.0	III	N	3	35	85	
		HIRA	0833.3	0833.9	III	G	1	230	360	
		IZMI	0833.3	0833.6	III	G	2	245	270X	
		POTS	0844.0	0854.5	III	GG,C	3	40X	400	
		IZMI	0848.0	0854.2	III	GG	3	45X	240	
		HIRA	0848.1	0852.4	III	GG	2	25X	220	
		LEAR	0849.0	0852.0	III		2	30	80	
		POTS	0925.1	0927.6	III	G	2	40X	170U	
		POTS	1002.0	1002.2	III	B	2	40X	130	
		POTS	1009.5	1027.1	III	G	2	40X	250	
		SVTO	1013.0	1013.0	III		2	35U	56U	
		IZMI	1013.3	1013.5	III	B	2	45X	125	
		SGMR	1022.0	1054.0	III	N	2	30	65	
		SVTO	1022.0	1023.0	III		2	37	77	
		IZMI	1022.5	1022.8	III	G	2	45X	150	
		IZMI	1037.9	1039.5	III	G	2	45X	240	
		POTS	1037.9	1040.3	III	G	3	40X	250	
		SVTO	1038.0	1039.0	III		3	36	85	
		POTS	1050.8	1054.7	III	G	3	40X	250	
		SVTO	1054.0	1054.0	III		2	35	58	
		IZMI	1054.3	1054.6	III	B	2	45X	160	
		IZMI	1125.0	1125.8	III	GG	2	90	270X	
		POTS	1125.1	1125.9	III	G,U	2	110U	400	
		SGMR	1146.0	1151.0	V		1	30	70	
		SVTO	1146.0	1151.0	III		2	35	73	
		IZMI	1146.4	1146.7	III	G	2	45X	150	
		POTS	1146.5	1207.6	III	G	3	40X	300	
		IZMI	1150.9	1151.3	III	G	2	45X	245	
		SVTO	1207.0	1207.0	III		2	36	57	
		POTS	1218.8	1219.0	III	B	2	110U	250	
		POTS	1227.6	1227.7	III	B	2	110U	250	
		POTS	1237.1	1254.4	III	GG	3	40X	400	
		SGMR	1245.0	1254.0	V		2	30	80	
		SVTO	1245.0	1254.0	III		3	35	85	
		ONDR	1345.3	1349.1	DCIM	G,SP	1	800	2000X	
	0418 1738	ONDR	1346.5	1352.4	DCIM	G	1	2000X	4385X	
		SGMR	1347.0	1349.0	V		1	30	65	
		SVTO	1348.0	1349.0	III		2	35	47	
		SGMR	1425.0	1524.0	III	N	2	30	80	
		SVTO	1425.0	1425.0	III		2	38	85	
		POTS	1425.1	1425.6	III	G	3	40X	400	
		SVTO	1431.0	1432.0	III		2	35	57	
		POTS	1445.0	1450.8	III	G	3	40X	300	
		SVTO	1445.0	1445.0	III		3	36	85	
		SVTO	1450.0	1523.0	III	N	3	35	85	
		POTS	1501.5	1502.0	III	G	3	40X	250	
		POTS	1518.4	1523.4	III	G	3	40X	250	
		POTS	1544.1	1544.3	DCIM	U	2	375	700	
		POTS	1602.3	1609.1	III	G	2	110U	275	
		POTS	1701.3	1714.0	III	G,RS	2	40X	400	

May 98

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

Spectral Observations

MAY 1998

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Start Day (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
28		SGMR	1705.0	1713.0	III		1	30	80	
		PALE	1713.0	1713.0	III		1	30	60	
		POTS	1734.5	1747.3	III	G	3	40X	325	
		PALE	1745.0	1753.0	III		1	30	60	
		SGMR	1745.0	1753.0	III		1	30	57	
		POTS	1753.5	1753.8	III	B	3	40X	170U	
		POTS	1759.4	1800.1	III	G	3	110U	400	
		PALE	1901.0	1904.0	III		2	25	70	
		SGMR	1901.0	1904.0	III		2	30	80	
		SGMR	1901.0	1904.0	V		2	30	80	
		SGMR	2011.0	2014.0	V		3	30	80	
		PALE	2012.0	2014.0	V		3	25U	75U	
1921	2400	HIRA	2012.3	2013.1	III	G	3	25X	250	
2100	2400	CULG	2100.0E	2400.0D	I	S	1	60	160	
		CULG	2104.0	2137.0	III	N	1	20	180	
		PALE	2104.0	2134.0	III	N	2	25	70	
		SGMR	2104.0	2134.0	III	N	1	30	80	
		HIRA	2104.7	2105.9	III	G	1	25X	240	
		HIRA	2118.6	2119.1	III	G	1	25X	320	
		CULG	2127.0	2128.0	III	G	3	20	240	
		HIRA	2127.2	2127.5	III	G	3	25X	240	
		SGMR	2128.0	2129.0	III		3	30	80	
		HIRA	2129.0	2129.1	III	B	1	25X	240	
		HIRA	2133.9	2134.1	III	B	2	25X	220	
		CULG	2134.0	2134.0	III	B	3	20	180	
		CULG	2203.0	2205.0	III	G	1	21	40	
		CULG	2306.0	2311.0	III	G	1	28	180	
		CULG	2336.0	2337.0	III	G	1	60	170	
		CULG	2353.0	2354.0	III	B	2	20	180	
		LEAR	2353.0	2353.0	III		1	30	70	
		PALE	2353.0	2354.0	III		1	27	68	
		HIRA	2353.1	2353.3	III	B	1	40	210	
		CULG	2357.0	2357.0	III	B	1	45	170	
29	0000 0700	CULG	0000.0E	0145.0	I	S	1	60	160	
		CULG	0017.0	0019.0	III	G	2	20	180	
		LEAR	0017.0	0027.0	III		2	30	80	
		PALE	0017.0	0027.0	III		2	27	70	
0000	0954	HIRA	0017.7	0017.8	III	B	1	40	210	
		CULG	0056.0	0056.0	III	B	1	440	1200	
		CULG	0056.0	0058.0	III	U	1	380	870	
		HIRA	0056.2	0056.4	III	B	1	420	1100	
		HIRA	0056.8	0057.1	III	B	1	360	630	
		CULG	0057.0	0100.0	III	G	1	20	95	
		HIRA	0057.8	0111.6	II	FN	3	40	140	ESS 500
		CULG	0058.0	0113.0	II	FN, H	3	35	170	
		CULG	0058.0	0120.0	II	SH, H	3	40	270	ESS 550
		PALE	0058.0	0100.0	III		2	25	75	
		HIRA	0058.1	0112.0	II	SH	3	60	250	ESS 500
		CULG	0100.0	0101.0	III	B	2	18X	150	
		LEAR	0100.0	0100.0	III		2	30	80	
		LEAR	0104.0	0112.0	II		1	30	80	ESS 1000
		PALE	0106.0	0112.0	II		2	36	75	ESS 1000
		LEAR	0107.0	0107.0	III		1	30	48	
		LEAR	0110.0	0130.0	IV		1	40	80	
		PALE	0112.0	0127.0	IV		2	39	57	
		CULG	0121.0	0124.0	III	G	1	25	170	
		CULG	0139.0	0140.0	III	B	1	18X	160	
		LEAR	0139.0	0139.0	III		1	30	50	
		PALE	0139.0	0139.0	III		1	28	58	
		CULG	0153.0	0154.0	III	B	1	20	170	
		LEAR	0153.0	0153.0	III		1	30	45	
		LEAR	0243.0	0247.0	III		1	30	43	
		CULG	0244.0	0244.0	III	B	1	24	50	
		CULG	0247.0	0248.0	III	B	1	20	95	
		CULG	0334.0	0339.0	III	G	1	20	100	
		LEAR	0334.0	0339.0	III		2	30	80	
		PALE	0334.0	0338.0	III		1	30	70	
		CULG	0337.0	0338.0	III	G	3	20	160	

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Spectral Observations

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MAY 1998

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start End (UT) (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
29	0345 1800	HIRA	0337.0	0337.7	III	G	2	25X	140	
		POTS	0345 E	1800 U	I	S	1	110U	300	
		POTS	0410.9	0411.5	III	G	2	40X	70	
		CULG	0411.0	0433.0	III	N	1	20	180	
		POTS	0412.6	0414.2	III	G	2	110U	400	
	0417 1738	ONDR								
		POTS	0423.5	0432.8	III	GG	3	40X	375	
		LEAR	0424.0	0432.0	III		2	30	65	
		HIRA	0432.1	0432.3	III	B	1	50	240	
		POTS	0441.0	0441.5	III	G	2	40X	275	
		POTS	0530.6	0530.7	III	B	2	110U	150	
		CULG	0531.0	0532.0	III	G	1	20	50	
		POTS	0531.0	0531.4	III	G	2	40X	50	
		CULG	0559.0	0603.0	III	G	1	20	80	
		POTS	0559.5	0559.7	III	B	2	40X	80	
		IZMI	0601.0E	0726.0D	I	N	1	80	135	
		IZMI	0631.9	0632.3	III	G	2	45X	180	
	0601 0726	POTS	0631.9	0632.5	III	G	3	40X	225	
		CULG	0632.0	0632.0	III	G	1	40	180	
		HIRA	0632.0	0632.1	III	B	1	50	150	
		SVTO	0632.0	0712.0	III	N	2	35	85	
		LEAR	0659.0	0712.0	III	N	2	30	47	
		IZMI	0659.3	0659.5	III	B	1	45X	85	
		POTS	0659.4	0712.0	III	G	2	40X	275	
		IZMI	0711.7	0711.9	III	B	1	45X	125	
		POTS	0716.1	0716.3	III	G	1	250	800X	
	0830 0949	IZMI								
		POTS	0917.9	0918.1	III	B	2	130	300	
		SGMR	1053.0	1053.0	III		1	40	55	
		SVTO	1053.0	1053.0	III		2	35U	63U	
		POTS	1053.3	1053.7	III	B	3	40X	170U	
	1045 1200	IZMI	1053.3	1053.6	III	B	2	45X	135	
		POTS	1225.7	1227.3	UNCLF		2	40X	90U	
		POTS	1345.5	1346.1	III	G	2	110U	170U	
		SGMR	1533.0	1534.0	III		1	30	40	
		SVTO	1533.0	1533.0	III		2	74	85	
		POTS	1533.6	1533.9	III	G	2	70	170U	
		POTS	1558.3	1558.4	III	B	2	130	170U	
		POTS	1730.1	1730.9	III	G	2	40X	90U	
		PALE	1918.0	1918.0	III		1	25	60	
		SGMR	1918.0	1918.0	III		1	30	55	
		PALE	2043.0	2043.0	III		1	25	55	
		SGMR	2043.0	2043.0	III		1	30	55	
		SGMR	2104.0	2134.0	III	N	1	30	80	
	2100 2400	CULG	2104.0	2104.0	III	B	1	30	90	
		CULG	2309.0	2310.0	III	G	2	18X	780	
		PALE	2309.0	2310.0	V		1	28	55	
	1920 2400	HIRA	2309.1	2309.3	III	B	2	25X	50	
		LEAR	2344.0	2346.0	III		1	30	45	
		PALE	2344.0	2347.0	V		2	25	56	
		HIRA	2344.9	2346.4	III	G	2	25X	80	
		CULG	2345.0	2348.0	III	G	3	20	170	
30	0000 0954	HIRA								
	0000 0700	CULG	0000.0	0006.0	III	B	1	20	50	
		PALE	0034.0	0036.0	III		1	40	55	
		CULG	0035.0	0039.0	III	G	1	35	160	
		LEAR	0113.0	0135.0	CONT		1	33	46	
		CULG	0343.0	0344.0	III	G	1	20	180	
		LEAR	0343.0	0344.0	III		1	30	42	
	0345 1800	POTS	0413	1800 U	I	S,W	1	110U	300	
	0416 1530	ONDR								
	0510 0820	IZMI	0545.2	0545.3	III	B	1	50	95	
		IZMI	0647.2	0647.3	III	B	1	90	160	
		POTS	0647.2	0647.3	III	B	2	110U	170U	
		IZMI	0723.0	0723.1	III	B	1	110	160	
		POTS	0723.0	0723.2	III	G	2	110U	325	
		IZMI	0812.8	0813.0	III	B	2	45X	85	
		POTS	0812.9	0813.2	III	B	2	40X	70	

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SOLAR RADIO EMISSION Spectral Observations

MAY 1998

OBSERVATION			EVENT				FREQUENCY			Remarks
Start Day	End Day	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)	Upper (MHz)	
30		SVTO	0813.0	0813.0	III		2	36	57	
		POTS	0818.0	0818.3	UNCLF		2	40X	60	
		POTS	0828.2	0828.5	UNCLF		2	40X	60	
		POTS	0910.6	0910.7	III	G	1	110U	160	
		SVTO	0916.0	0916.0	III		2	37	62	
		POTS	0916.4	0916.8	III	G	3	40X	140	
0848	1200	IZMI	0916.4	0916.7	III	G	2	45X	130	
		POTS	0943.7	0943.8	III	B	2	120	170U	
		IZMI	0945.2	0945.4	III	B	2	45X	75	
		POTS	0945.2	0945.4	III	G	2	40X	60	
		SVTO	1001.0	1003.0	III		2	35	85	
		POTS	1001.6	1004.4	III	G	3	40X	170U	
		IZMI	1001.7	1003.9	III	GG	2	45X	125	
		SVTO	1127.0	1127.0	III		2	35	62	
		POTS	1127.4	1128.1	III	G	2	40X	65	
		SGMR	1207.0	1208.0	V		1	30	57	
		SVTO	1207.0	1208.0	III		2	36	59	
		POTS	1207.5	1208.5	III	G	3	40X	150	
		POTS	1428.2	1428.7	III	G	1	120	275	
		SGMR	1535.0	1536.0	V		1	30	65	
		SVTO	1535.0	1536.0	III		2	36	85	
		POTS	1535.8	1536.1U	III	G	2	40X	150	
		SGMR	1730.0	1730.0	III		1	30	43	
		CULG	2248.0	2256.0	II	FN	2	30	130	
2100	2400	CULG	2248.0	2256.0	II	SH	2	60	340	ESS 700
1920	2400	HIRA	2248.3	2253.4	II		2	80	240	ESS 700
		CULG	2250.0	2254.0	III	G	3	18X	130	
		PALE	2250.0	2256.0	V		2	30	70	
		CULG	2251.0	2306.0	II	SH,H	2	60	260	ESS 400
		SGMR	2251.0	2252.0	V		2	30	70	
		HIRA	2251.6	2252.1	III	G	2	40	130	
		HIRA	2251.6	2305.7	II		2	80	240	ESS 450
		CULG	2257.0	2300.0	II	FN,H	2	60	120	
31	0000 0700	CULG	0002.0	0006.0	III	G	1	20	60	
		LEAR	0036.0	0037.0	III		1	30	45	
	0000 0955	HIRA	0208.8	0211.1	III	G	1	120	260	
	0345 1800	POTS	0408.9	0409.3	UNCLF		2	55	65	
	0416 1738	ONDR								
		LEAR	0427.0	0509.0	CONT		1	30	50	
		POTS	0450	1800 U	I	S,W	1	120	300	
		POTS	0547.4	0547.5	III	B	2	140	170U	
		POTS	0613.5	0616.2	III	G	2	120	250	
0603	1200	IZMI	0616.1	0626.2	CONT		2	200	230	
		POTS	0809.1	0809.2	III	G	1	130	250	
		POTS	0926.0	0926.1	III	B	2	110U	170U	
		POTS	0936.9	0944.0	III	G	2	110U	250	
		IZMI	0937.0	0937.5	III	G	2	105	160	
		IZMI	0943.6	0943.9	III	G	2	110	180	
		POTS	1014.3	1025.2	III	GG,U	3	40X	275	
		IZMI	1018.2	1018.7	III	G	1	105	170	
		IZMI	1024.9	1025.0	III	G,HARM	2	45	245	
		POTS	1051.9	1052.0	III	B	2	125	170U	
		POTS	1101.2	1101.7	III	G	1	130	170U	
		POTS	1133.7	1133.9	III	B	1	140	170U	
		POTS	1141.0	1144.0	III	GG,U,RS	3	50	300	
		IZMI	1141.6	1143.8	III	G,HARM	2	55	245	
		IZMI	1143.3	1143.4	V		2	130	165	
		POTS	1207.7	1207.8	III	B	2	130	170U	
		POTS	1237.3	1241.7	III	G	2	55	275	
		POTS	1256.6	1256.7	III	B	2	110U	170U	
		POTS	1305.9	1308.4	III	GG	2	60	400	
		POTS	1421.1	1421.4	III	G	2	110U	250	
		SGMR	1431.0	1432.0	III		1	30	43	
		POTS	1500.8	1501.1	III	G	2	110U	250	
		POTS	1524.8	1525.0	III	G	2	110U	170U	
		POTS	1556.3	1558.6	III	G	3	110U	170U	
		POTS	1615.9	1616.1	III	G	2	110U	170U	
		POTS	1639.3	1643.6	III	G	3	40X	400	

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

Spectral Observations

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May 98

MAY 1998

OBSERVATION			Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Start	End					Spectral	Event		Lower	Upper	
Day (UT)	(UT)					Class	Remarks		(MHz)	(MHz)	
31			SVTO	1643.0	1643.0	III		2	57U	82U	
			POTS	1724.8	1725.0	III	G	2	110U	275	
			PALE	2024.0	2025.0	III		2	25	70	
			SGMR	2024.0	2025.0	III		2	38	80	
	1919	2400	HIRA	2024.9	2025.2	III	B	3	40	230	
			HIRA	2026.0	2030.6	III	G	1	90	210	
	2100	2400	CULG								
			HIRA	2244.2	2244.3	III	B	1	100	150	

Event Remarks:

B = Single burst C = Underlying continuum (particularly with Type I) DC = Drifting chains DP = Drifting pairs FN = Fundamental emission (Type II) FS = Fine structures (Type IV) (includes fiber, pulsations, zebra) G = Small group of bursts (<10) GG = Large group of bursts (>10) H = Herringbone HARM = Harmonic	N = Intermittent activity in this period MOV = Moving (Type IV) MWB = Meter wave burst RS = Reverse slope burst S = Storm in the sense of intermittent but apparently connected actively SH = Secondary harmonic emission STA = Stationary (Type IV) U = U-shaped burst of Type III UE = Uncertain emission (Type II) W = Weak
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Frequency qualifiers:

X = Extends beyond instrument range	U = Uncertain frequency
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Remarks:

SWF = Associated short wave fade observed	ESS = Estimated shock speed in km/s (Type II)
FLA = Associated flare observed (class optional)	

Stations Reporting: CULG = Culgoora HIRA = Hiraiso IZMI = Izmiran LEAR = Learmonth
ONDR = Ondrejov PALE = Palehua POTS = Potsdam SGMR = Sagamore Hill SVTO = San Vito

**SOLAR RADIO NOISE STORM AT 164 MHZ
FROM NANCAY RADIOHELIOGRAPH
MAY 1998**

	HELIOGRAPHICS POSITIONS MEAN VALUES ¹		IMP ²	OBSERVING TIME ³	
DAY	E-W	S-N		START(UT)	END(UT)
01/05/98	-0.03	-0.34	V	8H55 E	15H32 D
02/05/98	+0.09	-0.32	V	8H10 E	15H32 D
03/05/98	+0.31	-0.32	V	8H07 E	15H32 D
04/04/98	-0.14	+0.79	V	8H20 E	15H32 D
04/05/98	+0.64	-0.24	IV	8H20 E	15H32 D
05/05/98	-0.06	+0.61	IV	8H20 E	15H32 D
05/05/98	+0.55	+0.53	IV	8H20 E	15H32 D
05/05/98	+0.72	-0.26	IV	8H20 E	15H32 D
06/05/98	+0.19	+0.58	III	8H30 E	15H32 D
06/05/98	+0.70	+0.16	III	8H30 E	15H32 D
06/05/98	+0.80	+0.47	III	8H30 E	15H32 D
06/05/98	+0.95	-0.21	II	8H30 E	11h30
07/05/98	+1.00	+0.79	III	8H45 E	15H32 D
07/05/98	+1.10	-0.26	III	8H45 E	15H32 D
08/05/98	+1.35	-0.16	III	8H03 E	15H32 D
09/05/98	-0.84	-0.37	III	8H03 E	15H32 D
09/05/98	+1.30	+0.11	II	8H03 E	15H32 D
09/05/98	+1.30	+0.42	II	8H03 E	15H32 D
10/05/98	-0.55	-0.37	III	8H03 E	15H32 D
11/05/98	-0.16	-0.26	IV	8H03 E	15H32 D
12/05/98	-0.03	-0.37	V	8H14 E	15H32 D
13/05/98	+0.14	-0.21	III	8H13 E	15H32 D
15/05/98	-0.64	-0.61	I	8H10 E	15H32 D
16/05/98	-0.16	-0.42	I	8H17 E	15H32 D
19/05/98	+0.44	-0.47	I	8H19 E	15H32 D
23/05/98	-1.30	-0.16	I	8H03 E	10H00
25/05/98	+0.91	+0.21	IV	8H22 E	15H32 D
26/05/98	+1.10	+0.11	III	8H19 E	15H32 D
27/05/98	+1.50	+0.32	III	8H13 E	15H32 D
28/05/98	+1.50	+0.08	III	8H24 E	15H32 D
30/05/98	-0.27	+0.47	I	8H04 E	15H33 D
31/05/98	+0.04	+0.53	I	8H12 E	15H33 D

¹ POSITIVE E-W AND S-N COORDINATES CORRESPOND TO THE N-W QUADRANT

² IMP1: FLUX < 5 SFU IMP2: 5 < FLUX < 20 SFU IMP3: 20 < FLUX < 100 SFU
IMP4: 100 < FLUX < 300 SFU IMP5 > 300 SFU

³ E NOISE STORM IN PROGRESS AT THE BEGINNING OF THE NANCAY OBSERVATIONS
D NOISE STORM IN PROGRESS AT THE END OF THE NANCAY OBSERVATIONS

**SOLAR RADIO NOISE STORM AT 327 MHZ
FROM NANCAY RADIOHELIOGRAPH
MAY 1998**

DAY	HELIOGRAPHICS POSITIONS MEAN VALUES ¹		IMP ²	OBSERVING TIME ³	
	E-W	S-N		START(UT)	END(UT)
01/05/98	+0.02	-0.26	III	8H55 E	15H32 D
02/05/98	+0.23	-0.21	III	8H10 E	15H32 D
03/05/98	-0.31	+0.53	I	8H07 E	15H32 D
03/05/98	+0.01	+0.34	II	8H07 E	15H32 D
03/05/98	+0.33	-0.26	I	8H07 E	15H32 D
03/05/98	+0.44	-0.26	I	8H07 E	15H32 D
04/05/98	+0.25	+0.61	IV	8H20 E	15H32 D
04/05/98	+0.66	-0.24	III	8H20 E	15H32 D
05/05/98	+0.38	+0.38	II	8H20 E	15H32 D
05/05/98	+0.53	+0.53	II	8H20 E	15H32 D
05/05/98	+0.78	-0.26	IV	8H20 E	15H32 D
06/05/98	+0.39	+0.47	III	8H30 E	15H32 D
06/05/98	+0.72	+0.47	III	8H30 E	15H32 D
06/05/98	+0.98	-0.26	II	8H30 E	12H00
07/05/98	+1.00	-0.16	IV	8H45 E	15H32 D
08/05/98	+1.20	-0.11	II	8H03 E	15H32 D
09/05/98	-0.64	-0.26	I	8H03 E	15H32 D
09/05/98	+0.97	+0.26	I	8H03 E	11H30
09/05/98	+1.10	+0.58	I	8H03 E	11H30
10/05/98	-0.45	-0.26	II	8H03 E	15H32 D
11/05/98	-0.22	-0.37	II	8H03 E	15H32 D
12/05/98	-0.07	-0.34	II	8H14 E	15H32 D
13/05/98	+0.12	-0.29	I	8H13 E	15H32 D
23/05/98	-1.00	+0.08	I	8H03 E	15H32 D
25/05/98	+0.77	+0.42	III	8H22 E	15H32 D
26/05/98	+0.95	+0.34	III	8H19 E	15H32 D
27/05/98	+1.30	+0.29	V	8H13 E	15H32 D
30/05/98	-0.22	+0.53	I	8H04 E	15H32 D
31/05/98	+0.04	+0.42	I	8H12 E	15H32 D

24 MAY 1998: NO DATA

OTHERS DAYS: NO DETECTABLE NOISE STORM

COSMIC RAY INDICES
(Neutron Monitor)

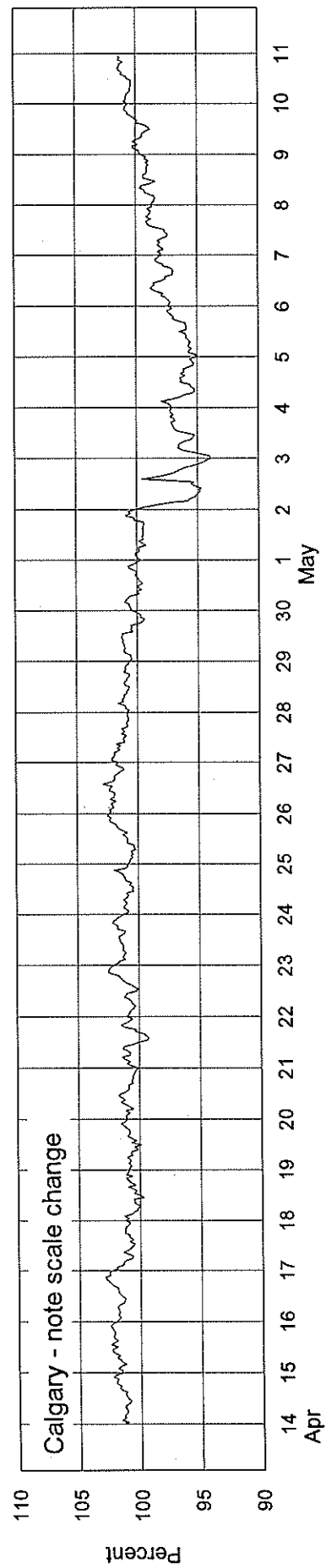
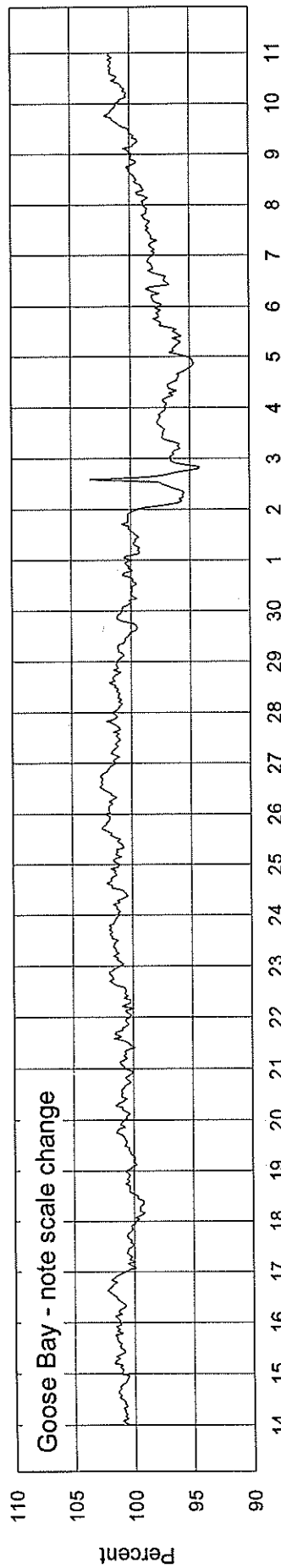
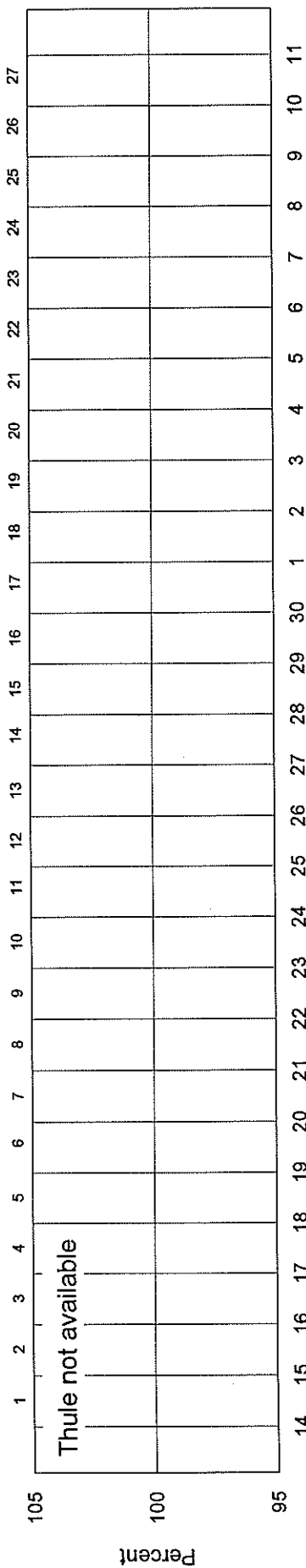
MAY 1998

Day	THULE Average (cts/h)/100	GOOSE BAY Average (cts/h)/100	CALGARY Average (cts/h)/300	KIEL Average (cts/h)/100	MOSCOW Average (cts/h)/64	CLIMAX Average (cts/h)/100	BEIJING Average (cts/h)/256	HALEAKALA Average (cts/h)/1000
1	No data	7040.3	3824.8	6032.4	8886.9	4051.8	1960.3	3510.9
2	at time of	6821.1	3693.2	5824.0	8598.0	3900.4	1940.9	3468.2
3	publication	6833.4	3686.2	5880.2	8676.2	3938.8	1942.9	3487.1
4	---	6775.3	3683.5	5876.8	8683.2	3953.9	1962.9	3504.8
5	---	6815.2	3683.0	5912.0	8707.4	3944.7	1944.5	3495.0
6	---	6895.5	3747.2	5960.5	8803.5	3991.8	1951.3	3516.5
7	---	6932.6	3767.3	5959.0	8837.7	4012.7	1960.8	3518.8
8	---	7006.9	3793.7	6020.5	8931.0	4059.1	1969.3	3529.8
9	---	7085.5	3829.7	6064.8	8978.2	4099.2	1976.4	3545.8
10	---	7127.7	3865.8	6087.1	9031.8	4126.7	1983.9	3557.3
11	---	7189.3	3897.5 (8)	6129.5	9088.0	4157.7	1991.0	3569.2
12	---	7192.7	3907.0	6139.5	9101.1	4176.5	1990.6	3572.7
13	---	7203.9	3912.0	6151.5	9128.8	4182.5	1984.3	3570.5
14	---	7231.8	3931.3	6189.6	9186.0	4200.5	1988.9	3576.0
15	---	7242.5	3924.7	6185.0	9171.6	4194.3	1981.9	3578.0
16	---	7151.7	3869.2	6116.3	9035.3	4097.7	1968.5	3548.7
17	---	7135.0	3870.7	6078.7	9005.9	4108.7	1967.8	3552.5
18	---	7109.6	3833.0	6086.7	9039.8	4092.6	1962.0	3556.6
19	---	7118.8	3840.8	6077.5	9000.1	4084.5	1959.3	3553.8
20	---	7101.7	3810.7	6068.0	8985.3	4056.1 (30)	1940.8	3525.9
21	---	7085.8	3814.2	6074.5	8970.8 (23)	4070.3	1941.8	3533.8
22	---	7077.2	3783.7	6079.8	8997.1	4080.8	1945.3	3527.8
23	---	7079.9	3793.7	6086.1	9017.2	4097.7	1951.8	3535.2
24	---	7089.4	3827.3	6101.4	9063.0	4092.7	1957.8	3534.3
25	---	7130.1	3838.8	6126.4	9076.1	4109.3	1958.4	3535.0
26	---	7182.0	3866.3	6142.0	9080.1	4142.6	1959.4	3546.4
27	---	7172.3 (16)	3870.0	6143.2	9057.7	4145.3	1958.4	3550.5
28	---	---	3883.2	6154.7	9091.5	4156.4	1969.1	3558.2
29	---	7134.0 (7)	3862.0	6129.7	9062.8	4113.0	1961.9	3541.8
30	---	7151.5	3856.0	6112.1	9027.9	4123.4	1954.4	3549.4
31	---	7188.0	3876.3	6144.2	9094.6 (23)	4129.5	1952.8	3552.2
Mean	---	7076.7	3827.2	6068.8	8981.1	4087.4	1962.6	3538.8

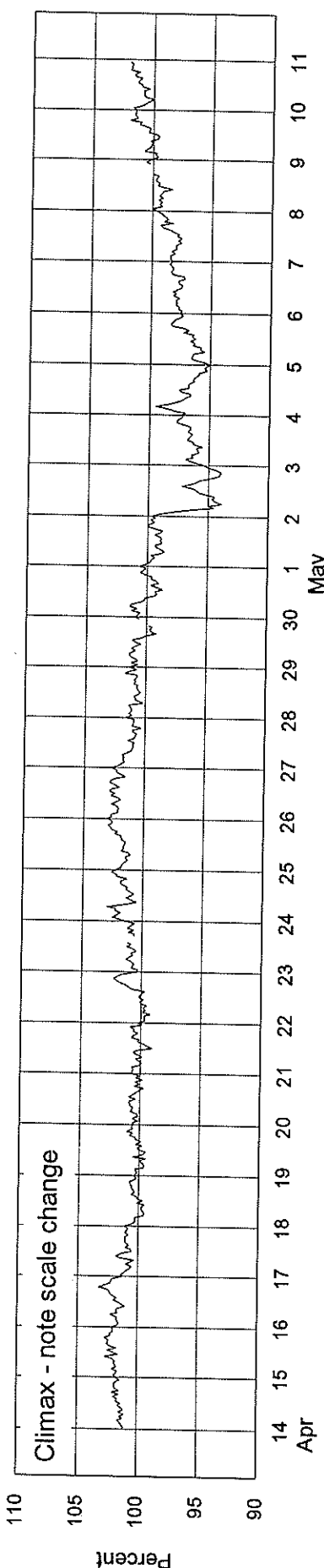
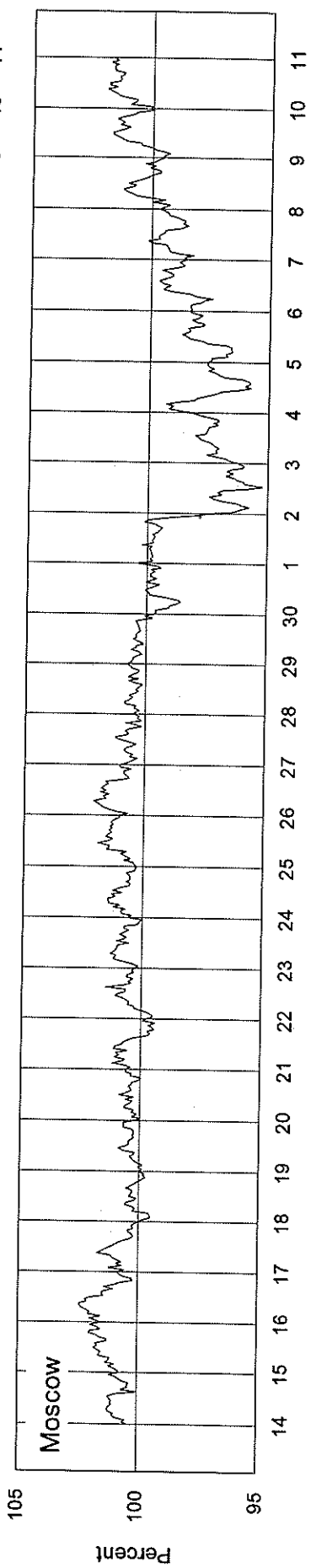
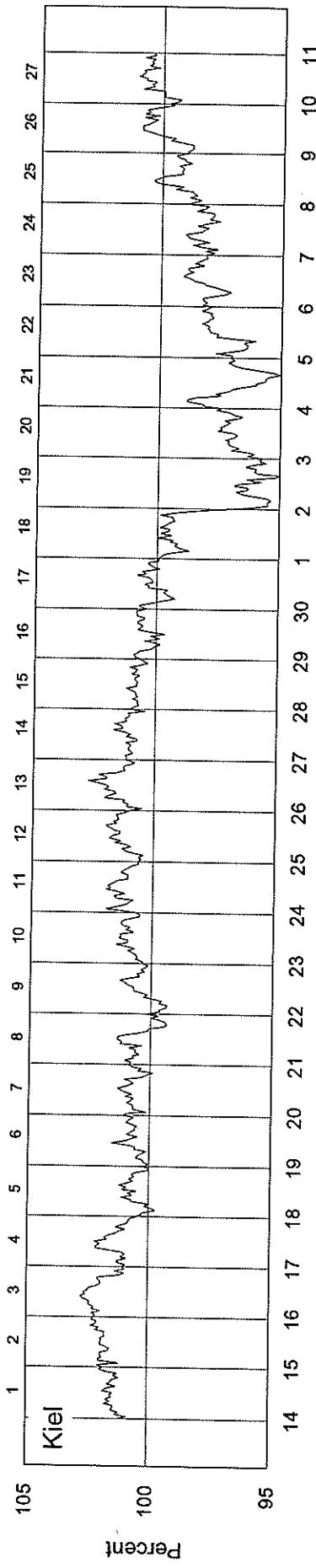
For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours, and for Haleakala, whenever the sum of all three sections falls below 60 hours.

COSMIC RAY INDICES (Neutron Monitor)

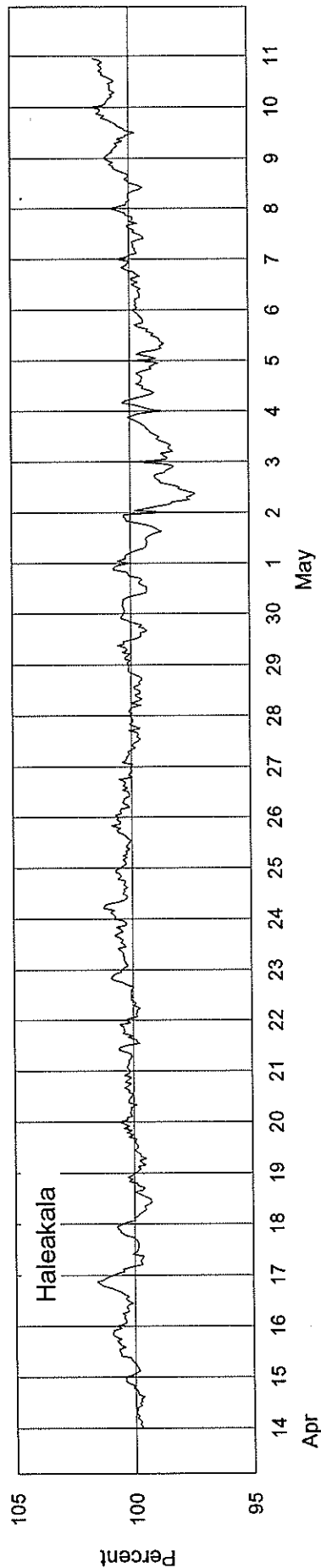
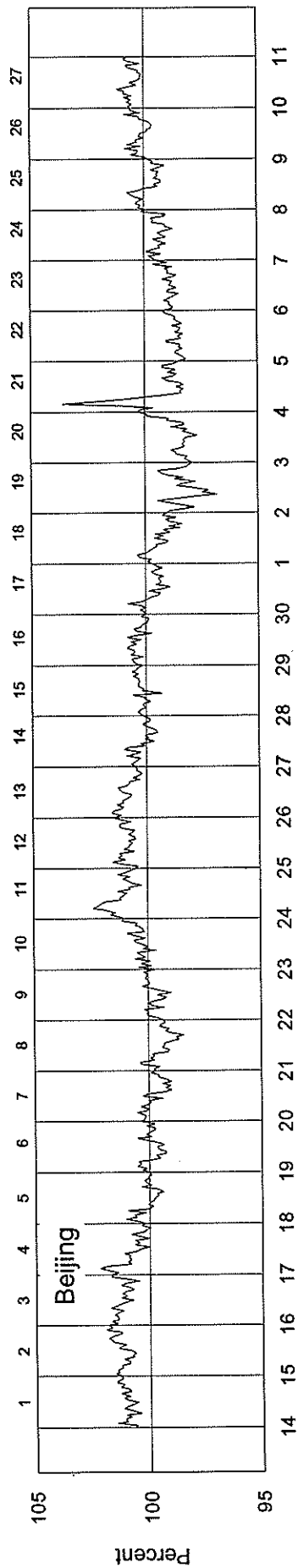
Bartels Rotation 2249 - Beginning 14 Apr 98



COSMIC RAY INDICES (Neutron Monitor) Bartels Rotation 2249 - Beginning 14 Apr 98



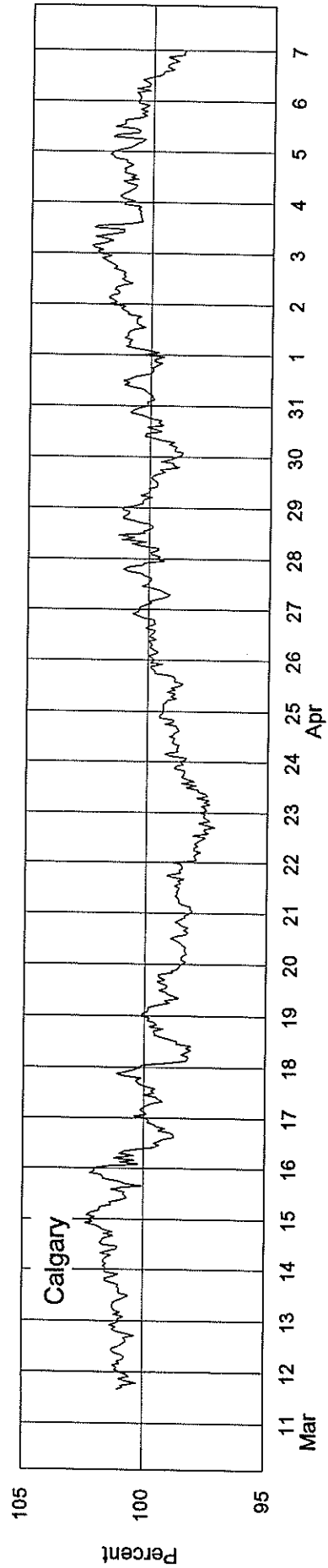
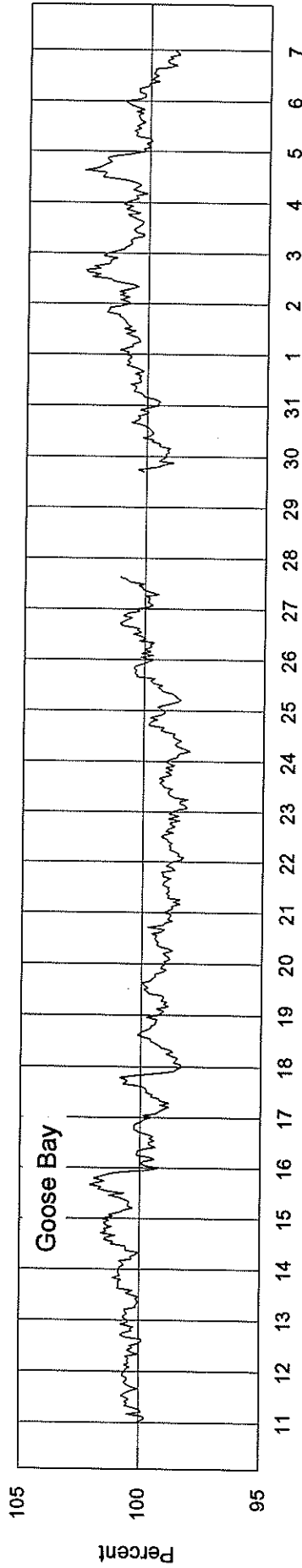
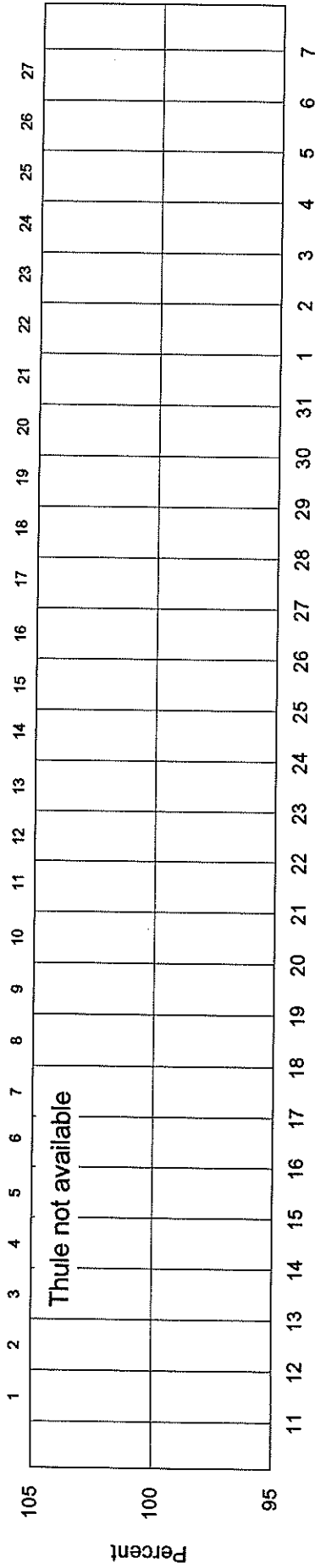
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2249 - Beginning 14 Apr 98



COSMIC RAY INDICES

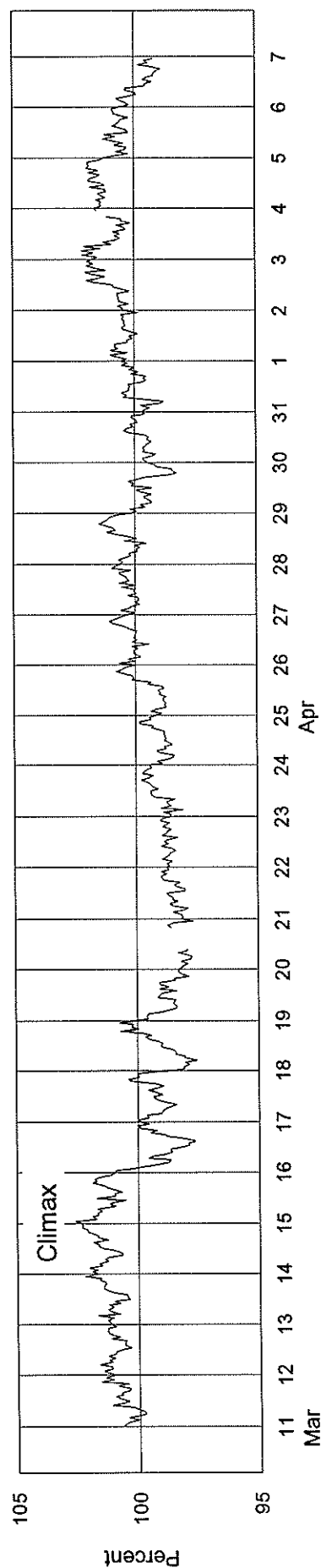
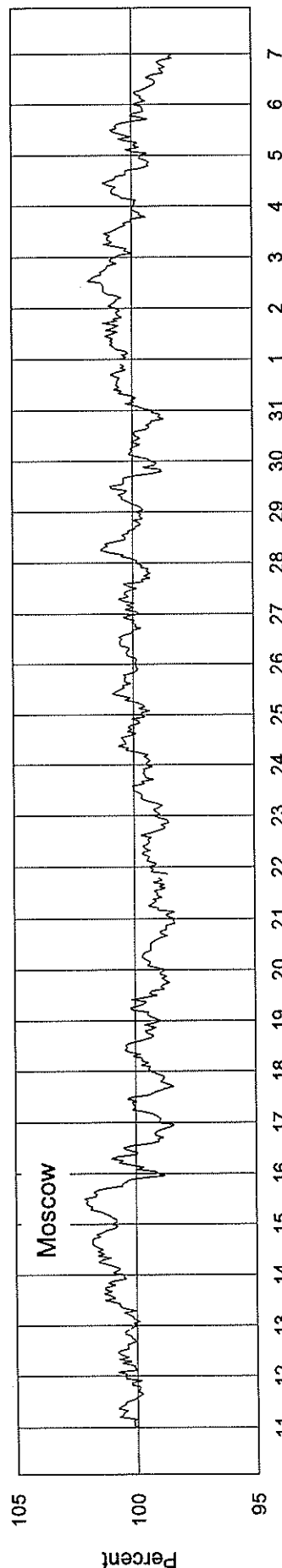
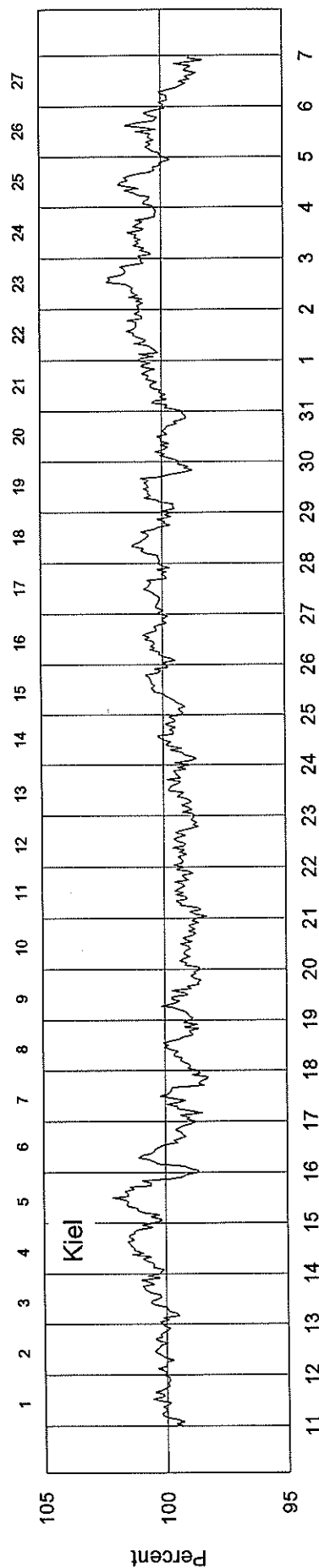
(Neutron Monitor)

Bartels Rotation 2250 - Beginning 11 May 98



COSMIC RAY INDICES (Neutron Monitor)

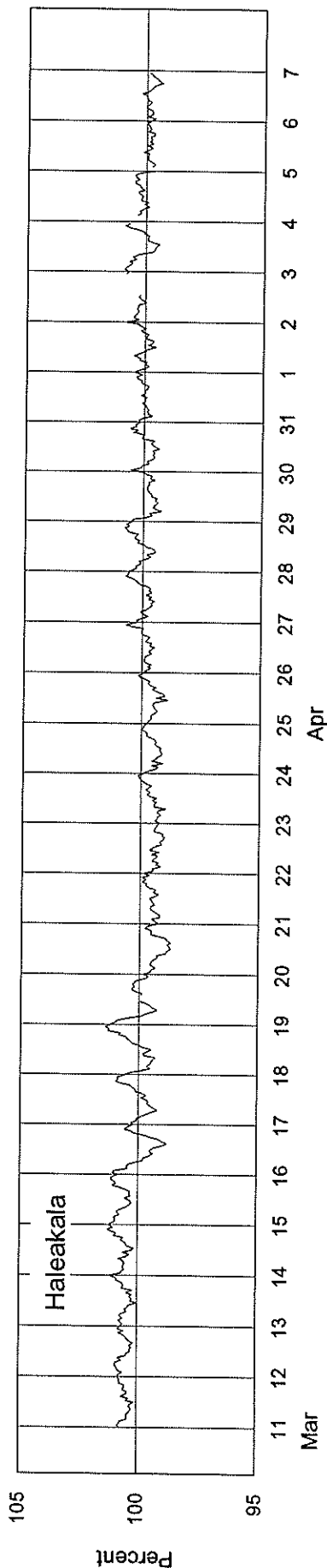
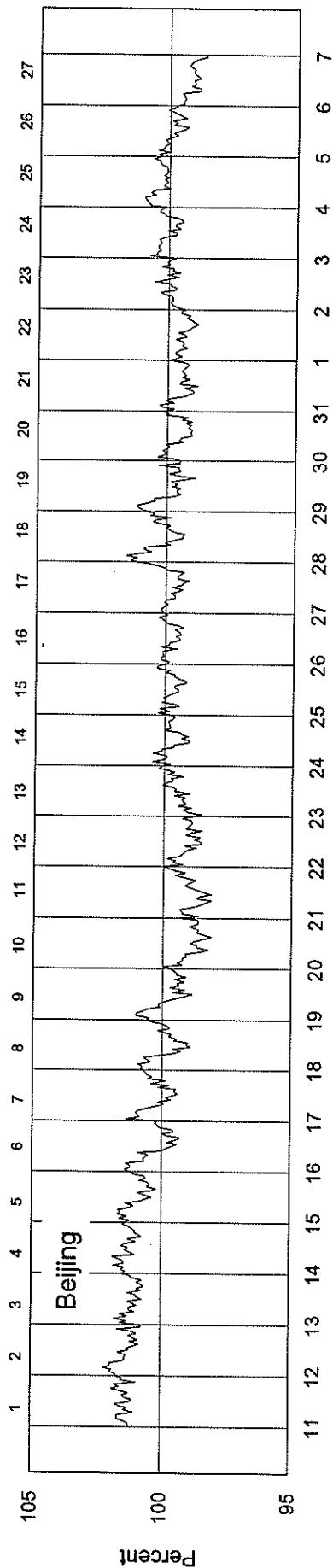
Bartels Rotation 2250 - Beginning 11 May 98



COSMIC RAY INDICES

(Neutron Monitor)

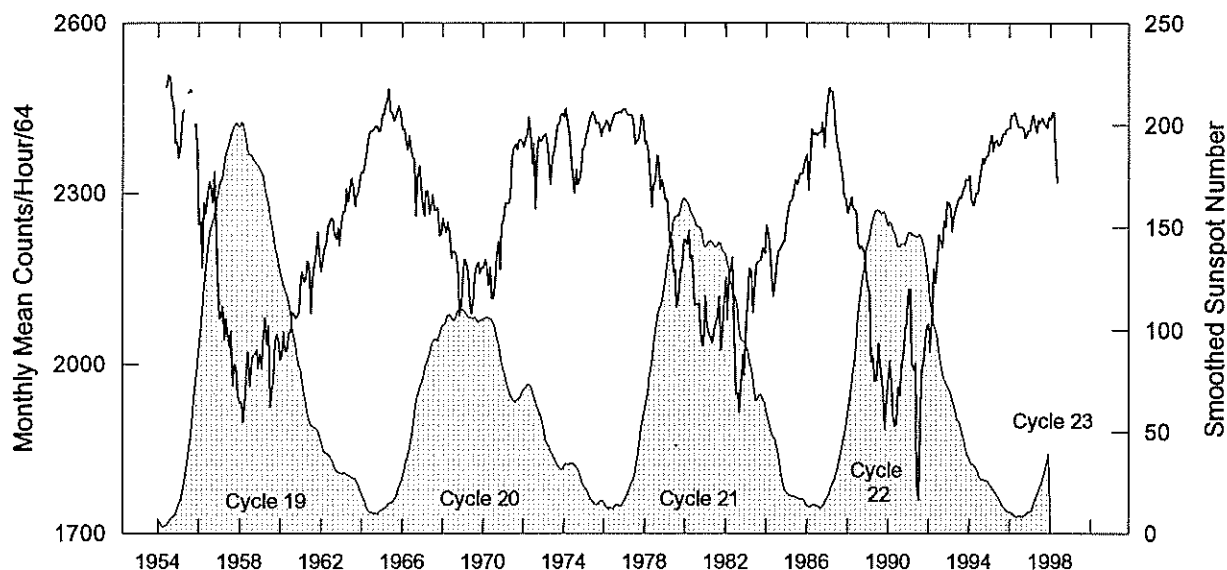
Bartels Rotation 2250 - Beginning 11 May 98



Mt. Washington Neutron Monitor Pressure-Corrected Values

Jan 1954 - May 1998

151
May 98



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1954	—	—	—	—	—	2485	2508	2505	2465	2459	2388	2389	2457
1955	2361	2382	2434	2448	—	—	2475	2483	2477	—	2422	2372	2428
1956	2245	2250	2170	2283	2264	2295	2320	2313	2282	2337	2261	2152	2264
1957	2081	2082	2101	2042	2081	2054	2029	2058	1961	2000	1990	1943	2035
1958	1932	1932	1896	1927	2000	2021	1960	2004	2015	2017	2025	1992	1977
1959	2018	1992	2054	2082	2034	2068	1923	1950	1979	2043	2053	2040	2020
1960	2007	2019	2057	2024	2022	2055	2057	2092	2089	2081	2085	2091	2057
1961	2153	2162	2145	2151	2181	2175	2090	2147	2173	2194	2233	2197	2167
1962	2162	2183	2202	2210	2243	2247	2257	2253	2229	2220	2239	2209	2221
1963	2247	2269	2268	2307	2285	2313	2327	2310	2277	2295	2301	2329	2294
1964	2338	2337	2357	2372	2399	2409	2407	2413	2417	2417	2409	2409	2390
1965	2439	2436	2453	2465	2484	2443	2441	2427	2433	2445	2452	2442	2447
1966	2412	2415	2396	2375	2401	2379	2362	2359	2260	2329	2349	2323	2363
1967	2280	2261	2305	2304	2263	2279	2298	2271	2270	2276	2226	2228	2272
1968	2257	2242	2231	2250	2234	2186	2199	2199	2190	2157	2086	2106	2195
1969	2167	2184	2176	2159	2110	2090	2115	2155	2174	2179	2159	2169	2153
1970	2170	2185	2176	2138	2172	2117	2117	2146	2189	2217	2167	2245	2170
1971	2252	2284	2284	2281	2294	2360	2379	2386	2377	2392	2393	2391	2339
1972	2381	2394	2405	2434	2407	2350	2388	2272	2377	2399	2390	2397	2383
1973	2402	2404	2383	2345	2315	2363	2376	2393	2420	2423	2436	2441	2392
1974	2432	2449	2426	2405	2360	2335	2300	2341	2315	2320	2342	2377	2367
1975	2381	2405	2408	2428	2437	2443	2435	2422	2425	2421	2400	2417	2419
1976	2417	2427	2423	2409	2422	2431	2439	2440	2440	2444	2441	2447	2432
1977	2449	2442	2438	2438	2439	2427	2386	2390	2395	2411	2438	2431	2424
1978	2386	2391	2372	2342	2275	2314	2320	2366	2364	2307	2323	2312	2339
1979	2290	2290	2262	2207	2219	2162	2167	2101	2116	2159	2173	2220	2197
1980	2220	2211	2234	2185	2191	2118	2104	2107	2107	2067	2035	2031	2134
1981	2120	2067	2053	2048	2037	2061	2075	2080	2118	2025	2047	2112	2070
1982	2152	2078	2158	2163	2187	2051	1947	1950	1913	1962	2017	1979	2046
1983	2071	2118	2169	2165	2091	2129	2175	2181	2182	2186	2204	2195	2155
1984	2244	2232	2199	2161	2119	2144	2171	2199	2203	2207	2217	2216	2193
1985	2250	2272	2283	2289	2300	2323	2316	2324	2337	2333	2345	2362	2311
1986	2368	2305	2366	2413	2402	2407	2401	2408	2405	2425	2380	2423	2392
1987	2460	2486	2480	2480	2442	2406	2383	2373	2347	2330	2294	2291	2398
1988	2264	2276	2294	2294	2271	2266	2215	2203	2208	2203	2195	2164	2238
1989	2137	2124	2003	2015	1970	1971	2037	2002	1979	1942	1885	1937	2000
1990	1975	2005	1967	1909	1890	1893	1959	1944	1997	2018	2067	2070	1975
1991	2132	2132	2005	1988	2001	1787	1759	1888	1988	2005	2036	2068	1982
1992	2072	2020	2096	2168	2142	2190	2227	2217	2204	2252	2240	2285	2176
1993	2283	2272	2233	2261	2272	2282	2294	2289	2304	2312	2325	2323	2288
1994	2331	2294	2279	2279	2301	2298	2319	2341	2362	2351	2364	2366	2324
1995	2388	2402	2374	2391	2393	2385	2385	2391	2406	2403	2411	2414	2395
1996	2415	2439	2436	2442	2427	2417	2416	2417	2414	2397	2402	2412	2419
1997	2410	2434	2437	2419	2407	2428	2423	2433	2423	2418	2415	2435	2423
1998	2429	2442	2442	2372	2317	—	—	—	—	—	—	—	2400

Multiply table entries by 64 to obtain hourly counting rate. Mt. Washington, NH: N44, W71, Alt=1909 m, Cutoff Rigidity=1.38GV.

NOTE: Sunspot numbers are preliminary after Jun 97.

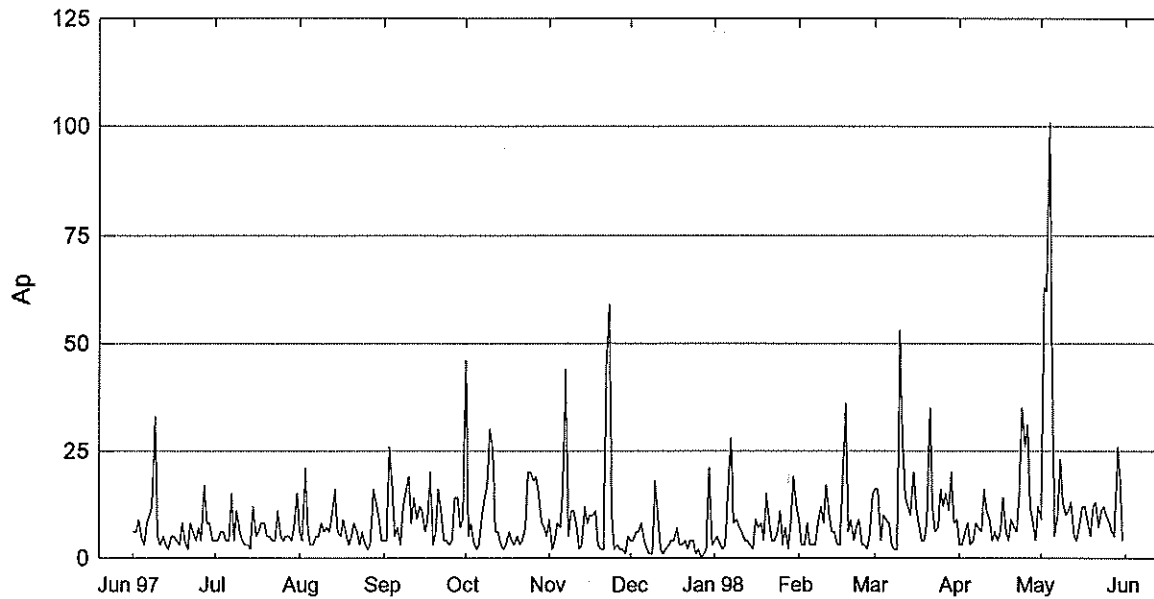
Geomagnetic Activity Indices May 1998

Day		Kp Three-Hourly Indices								Sum	Ap	Cp	Km Three-Hourly Indices								Am	aa Provisional				
		1	2	3	4	5	6	7	8				1	2	3	4	5	6	7	8		N	S	M		
1		1+	2-	2-	1	2	1+	2-	4+	15	9	0.5	2-	2-	2+	1+	2-	1o	2-	4-	15	17	12	9	20	
2	D3	3+	5	5-	6	7-	6	5	6	43-	63	1.7	3o	5-	5-	5+	5+	4+	4+	5-	75	71	69	69	72	
3	D2	6	6	5+	4+	5	5-	6	6	43+	62	1.7	5+	5+	5o	5o	4+	4o	5o	5+	91	93	78	78	94	
4	D1	6	9-	8+	6-	6	4-	2+	3	44-	101	1.9	6-	8+	8-	5o	5-	3+	2o	3-	151	116	96	165	47	
5	D4	3+	7-	5-	3-	5+	6-	4	2	34+	42	1.5	3o	5+	5-	3-	4o	4-	3+	2o	50	59	54	56	56	
6	Q5	1+	1+	1	1	2	1+	1-	2+	11	5	0.2	1o	1+	1+	1+	2-	1+	1-	2+	10	16	8	8	16	C
7		3-	3-	1	3	2	2	2	3	19-	10	0.6	3-	2+	1+	3o	3-	2o	2o	3o	20	25	19	20	24	
8		4	3+	3+	4	4+	4+	3+	2+	29	23	1.1	4-	3+	4-	4-	4-	3+	2+	3+	40	45	41	42	43	
9		1+	3+	3+	1+	2	3+	4-	2+	21-	13	0.7	1+	4-	3+	2o	2+	3o	3+	2+	26	25	30	27	28	
10		1+	1	3-	3	3	2+	3-	2+	18+	10	0.6	1+	1+	3-	3-	3-	2+	3-	2+	19	22	21	17	25	
11		2+	2+	2+	2+	2-	2+	3	4-	20	11	0.6	2+	2+	3-	3-	2-	2o	3-	4-	22	22	20	16	26	
12		4-	3+	3	3-	2+	2+	3	1+	22-	13	0.8	3+	3+	3+	3o	3o	2+	3-	2+	29	23	34	32	26	
13	Q3	2-	1+	2-	1-	1+	1	1-	1-	10-	5	0.2	2-	1+	2-	1-	1+	1-	1-	2-	9	11	9	10	11	CK
14	Q1	1-	1	1+	1-	1+	0+	1-	1	7	4	0.1	0+	1+	1+	1+	1+	0+	1-	1o	6	8	7	7	8	CC
15	Q8A	1	0+	0+	0+	3	3	2+	2+	13-	7	0.4	1o	0+	0+	0+	3-	3-	2+	2+	12	21	9	5	25	K
16		2-	2	1	1+	2	3+	4	4-	19	12	0.7	1+	2+	2-	1+	2o	3-	3+	3o	19	26	16	13	30	
17		5	2-	1	1	2	2+	1+	3	17+	12	0.7	4+	2o	1+	1+	2-	2o	1+	3-	20	25	22	27	20	
18		2	1+	1+	1+	3	2+	3	3-	17	9	0.5	2o	1+	1+	2-	3+	2+	2+	3-	18	21	19	10	30	
19	Q6	2-	2+	1+	2+	1	2-	0+	0	11-	5	0.2	2-	2+	2-	3-	1+	2-	1-	0o	11	15	9	16	8	K
20		1	1-	1+	2	3+	4-	4+	2-	18	12	0.7	1-	0+	2o	2+	3-	3+	3+	2o	20	29	20	9	40	
21		3	3+	3	2+	3-	1+	3	3+	22	13	0.8	3o	3+	3o	3o	3-	2o	3o	3+	29	34	27	32	30	
22	Q9A	3+	1	1	2-	2	3-	1	1	14-	7	0.4	3+	1+	2-	2-	1+	3-	1+	1+	15	19	9	15	13	
23		2+	2+	3-	2-	2	2	3	3+	20-	11	0.6	2+	3-	3o	3-	2o	2o	3o	3+	24	25	20	17	28	
24		3	3-	4-	2	3-	3-	2+	2	21	12	0.7	3o	3+	4+	2+	2+	3o	2+	2-	28	22	25	27	20	
25		1+	1+	3	2	2	3	3-	3-	18	10	0.5	1+	2-	3+	3-	2o	3o	2+	3-	21	21	26	21	27	
26	Q10A	3	1-	1-	0+	2-	3-	3	2+	14+	8	0.4	3o	1+	1+	1o	2-	3-	3-	2+	17	23	13	11	26	
27	Q7	2	2	1	2-	1+	1+	1	2	12+	6	0.3	2o	2+	2-	2+	1+	1+	1+	2-	13	15	8	11	12	C
28	Q4K	1-	1+	1-	0+	1	1-	2-	3	9+	5	0.2	1o	2o	1o	0+	1-	1+	1+	3-	10	12	5	7	11	CC
29	D5	2+	3-	2	2	4-	7-	3+	3+	26	26	1.2	2+	2+	2o	2+	3o	5+	3o	3o	34	50	29	16	63	
30		5-	4	4-	3-	2+	3+	2-	2+	25-	18	1.0	5o	4o	4+	3o	2+	3o	2-	2o	39	32	27	40	19	
31	Q2	2	1	1-	1	1-	0+	2-	1	8+	4	0.1	2-	1+	1+	1+	1o	0o	1+	1+	8	8	6	9	5	CK

Day	Kn Three-Hourly Indices								An	Ks Three-Hourly Indices								As	Sa	Prov			
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			Ri	Ra	Rs	IMF
1	1+	2-	2+	2-	2-	1o	2+	4o	18	2-	2-	2+	1-	2-	1-	1o	3o	13	115.1	57	64	62	
2	3o	5-	5-	5+	5+	4+	4o	4+	76	3-	4o	4+	6-	5+	4+	4+	5o	76	118.8	78	68	66	
3	6-	6-	5+	5-	5-	4+	5o	5+	103	5o	4+	5o	5o	4o	3+	5o	5+	80	119.3	74	80	67	
4	5+	8o	8-	5o	5+	3+	2o	3o	148	6o	8+	8o	5-	4+	3o	2o	3-	155	123.2	73	86	71	
5	3o	6-	5-	3o	4o	4+	3+	2+	55	3o	5-	5-	3-	4o	3+	3o	2o	45	135.7	79	86	85	
6	1+	1+	1o	1+	2o	2-	1o	2+	11	1o	2-	1+	1o	1+	1+	1-	2+	9	132.4	76	74	81	
7	3-	3-	1+	3o	2+	2+	2+	3o	21	3-	2+	1o	3o	3-	1+	1+	3+	19	125.6	71	80	74	
8	4-	4-	4-	4o	4o	4o	3+	2o	42	4-	3o	3+	4-	4-	3+	4-	3-	38	120.2	68	67	68	
9	1+	4-	3+	2-	2+	3o	4-	3-	28	1+	4-	4-	2o	2+	3o	3o	2-	25	112.8	49	56	60	
10	1+	1+	2+	3o	3o	2+	3-	3-	20	1+	1+	3-	3-	3-	2+	3-	2-	19	109.3	48	42	56	
11	2+	2+	2+	3-	2-	2+	3-	3+	22	2+	2+	3-	3-	2-	2-	2+	4-	22	110.2	58	59	57	
12	3+	4-	3+	3o	3-	2+	3-	2-	27	4-	3+	4-	3o	3o	2+	3-	3-	31	114.4	73	73	62	
13	2-	1+	2-	1o	2-	1-	1o	2-	10	2-	2-	2-	1-	1-	1-	0+	2-	8	119.1	80	84	67	
14	0+	1+	1+	1+	2-	0o	0+	1+	7	0+	1+	1+	1+	1o	1-	1o	1-	6	119.8	82	87	67	
15	1o	0+	0+	0o	3+	3o	3-	3-	16	1+	0+	0+	1-	2-	2o	2-	2-	8	118.6	80	85	66	
16	2-	2+	2o	2-	2+	3o	4-	3o	23	1+	2o	1+	1+	1+	2o	3-	3o	15	120.4	79	89	68	
17	4+	2-	1+	1+	2o	3-	2-	3o	22	5-	2o	2-	1o	1o	1+	1o	3-	19	113.0	71	78	60	
18	2o	1+	1+	2-	4-	3-	3-	3-	20	2o	1o	2-	2o	3o	2o	2o	3-	16	104.6	67	69	51	
19	2o	3-	2-	3-	2-	2+	1-	0o	13	2-	2o	2-	3-	1-	1o	1-	0o	10	101.5	56	54	48	
20	1o	1-	2+	3-	3+	3+	4-	2+	23	0+	0o	2-	2-	2+	3+	3+	2-	16	94.1	43	35	40	
21	3-	3+	3o	3o	3-	2o	3o	3o	27	3+	3+	3+	3o	3o	2+	3o	4-	32	91.2	26	22	36	
22	3o	1o	1+	2-	2-	3o	2o	1+	16	4o	2-	2o	2-	1o	2o	0+	1+	15	89.6	21	17	35	
23	3-	2+	3o	3-	2+	2+	3o	3+	24	2+	3o	3o	2+	2-	2-	3o	4-	24	92.6	31	35	38	
24	3-	3+	4o	2+	3-	3-	2+	2o	26	3o	3+	5-	2+	2+	3o	2+	1+	30	98.0	32	38	44	
25	2-	2+	3+	3o	2+	3o	3-	3-	24	1o	1o	3+	2+	2-	3+	2o	3-	19	94.7	41	49	40	
26	3o	1+	1+	1o	2-	3o	3o	3-	18	3+	1+	1+	1o	2-	2+	2+	2+	15	94.9	43	47	40	
27	2o	2+	2+	2+	2-	2-	1+	2o	15	2-	2+	1+	2o	1+	1o	1+	1+	10	96.6	51	44	42	
28	1o	2-	1+	1-	1+	2-	2-	3o	12	1+	2o	1o	0o	0+	1-	1o	2o	7	101.1	33	38	47	
29	3-	2+	2o	2+	3-	6-	3+	3o	38	2o	2+	2-	2o	3-	5o	3-	3+	30	97.6	32	28	43	
30	5-	4+	4+	3o	3-	3+	2o	2+	40	5+	4o	4+	3o	2o	2+	1+	2-	38	98.8	43	47	45	
31	2-	1+	1+	1+	1o	0o	2-	1+	9	1+	1+	1+	1+	1-	0o	0+	1+	6	96.8	49	54	43	
Mean									30.8									27.6	109.0	56.9	59.3	55.7	

Daily Average Indices Ap Jun 1997 - May 1998

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May 98

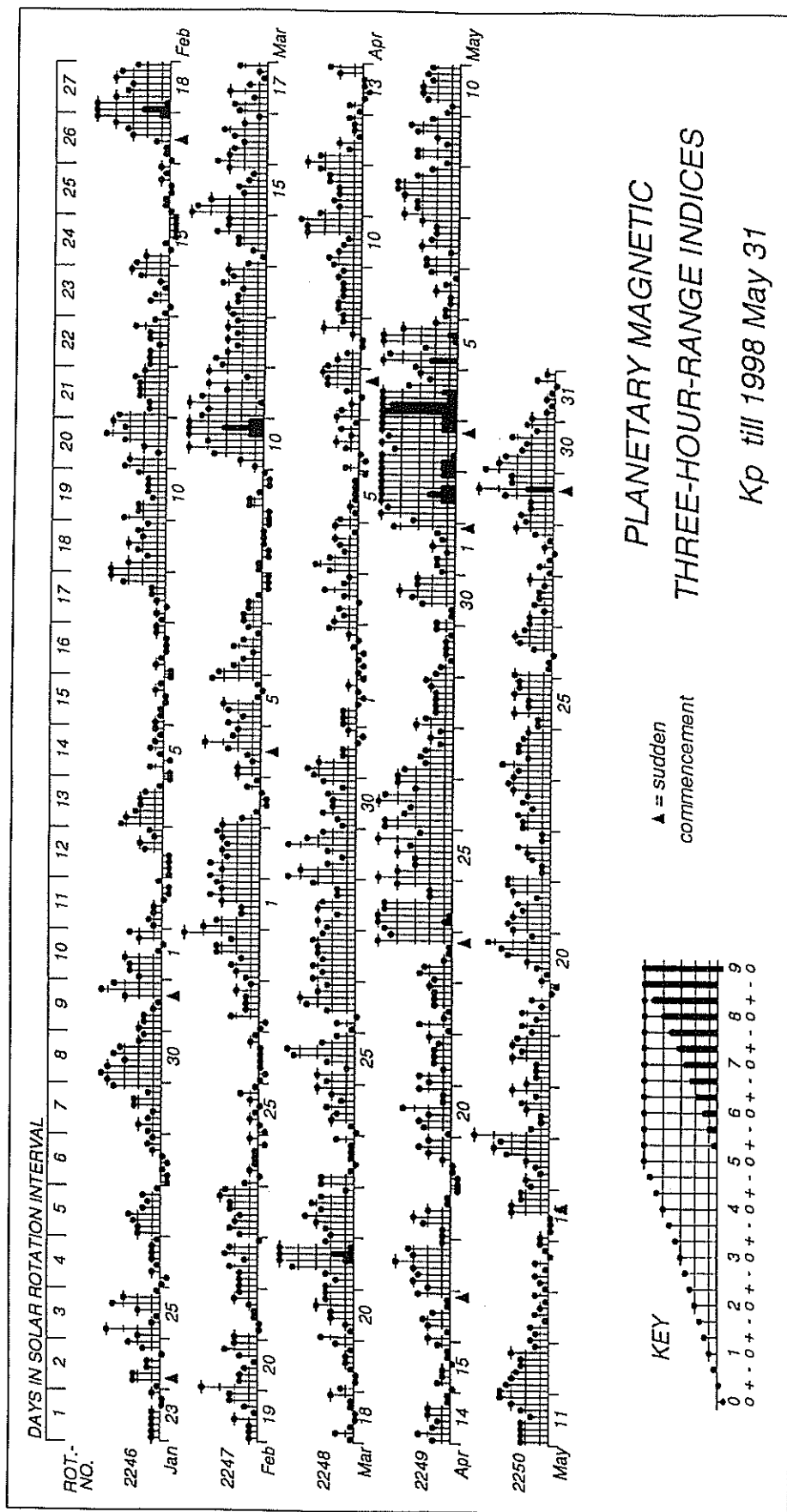


Day	Jun 97	Jul	Aug	Sep	Oct	Nov	Dec	Jan 98	Feb	Mar	Apr	May
1	6	4	6	4	46	9	4	4	9	16	3	9
2	6	4	4	4	5	2	4	5	3	16	3	63
3	9	6	21	26	8	4	6	3	3	4	6	62
4	5	6	6	16	4	8	6	2	8	10	8	101
5	3	4	3	5	2	7	8	3	3	9	3	42
6	8	4	3	7	3	17	4	18	3	8	4	5
7	10	15	5	3	9	44	2	28	3	3	8	10
8	12	4	5	12	14	5	1	8	8	2	7	23
9	33	11	8	15	17	11	1	9	12	2	6	13
10	5	6	6	19	30	11	18	7	8	53	16	10
11	3	4	7	8	25	7	11	6	17	28	11	11
12	5	3	6	14	6	2	2	4	10	14	9	13
13	3	3	11	9	6	3	1	4	6	12	4	5
14	2	2	16	12	3	12	2	3	6	10	6	4
15	5	12	6	11	2	8	3	2	3	20	4	7
16	5	5	5	6	3	10	4	9	3	12	6	12
17	4	6	9	9	6	10	4	7	18	8	14	12
18	3	8	6	20	4	11	7	8	36	4	6	9
19	8	8	3	3	3	3	3	4	6	4	4	5
20	4	5	5	6	5	2	3	15	9	8	9	12
21	2	5	8	16	3	2	4	8	4	35	7	13
22	8	4	6	10	4	44	2	4	7	12	6	7
23	6	4	3	4	7	59	4	4	9	6	15	11
24	4	11	6	4	20	10	4	6	3	7	35	12
25	7	5	3	3	20	2	1	11	3	16	26	10
26	4	4	2	4	18	3	2	3	2	12	31	8
27	17	5	3	14	19	2	0	7	5	15	12	6
28	8	5	16	14	15	2	1	2	15	11	8	5
29	8	4	13	7	8	1	2	8		20	4	26
30	4	7	10	9	7	5	21	19		8	12	18
31		15	4		5		3	12		9		4
Mean	7	6	7	10	10	11	4	8	8	13	10	18

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

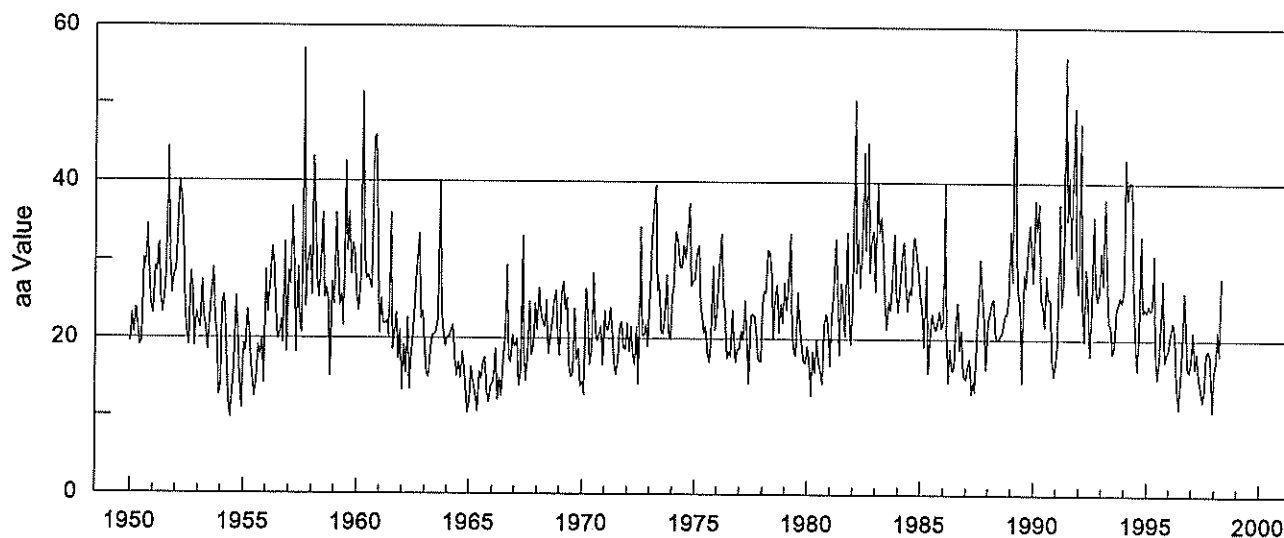
GeoForschungsZentrum Potsdam

Kp through May 31, 1998



Monthly Mean aa Index Jan 1950 - May 1998

155
May 98



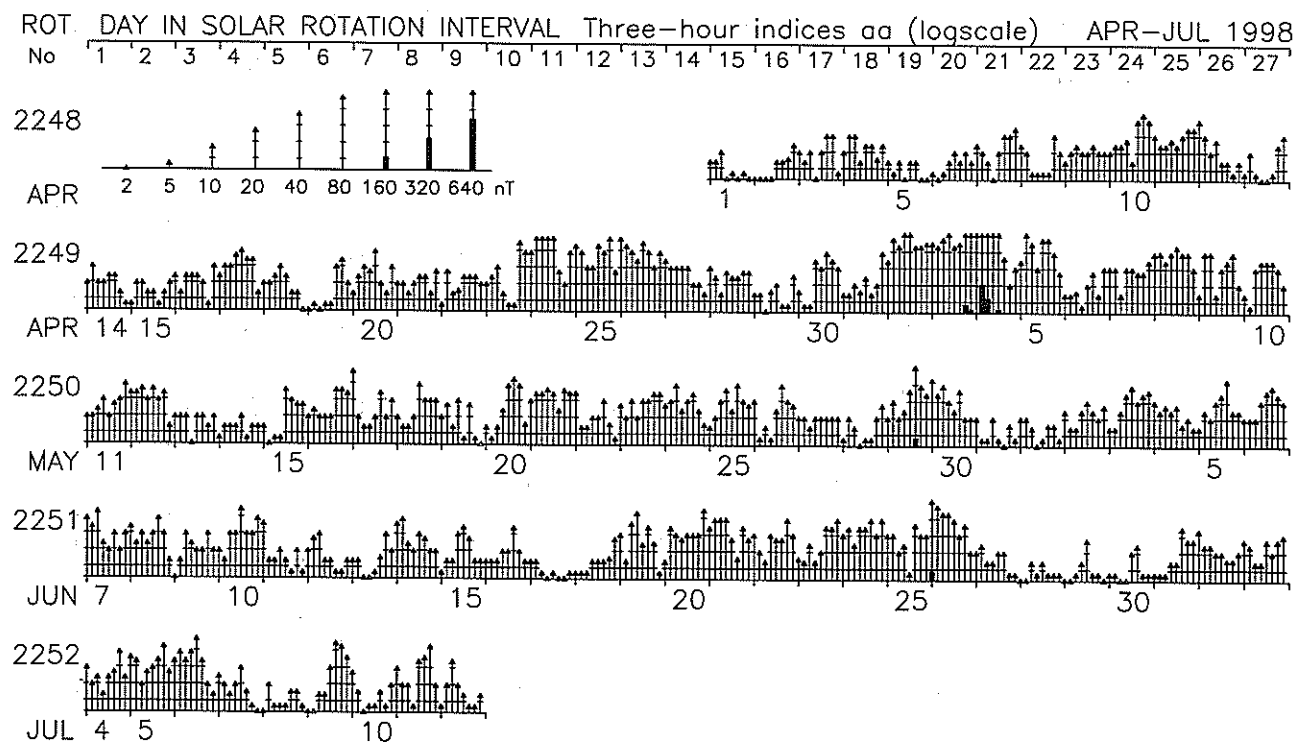
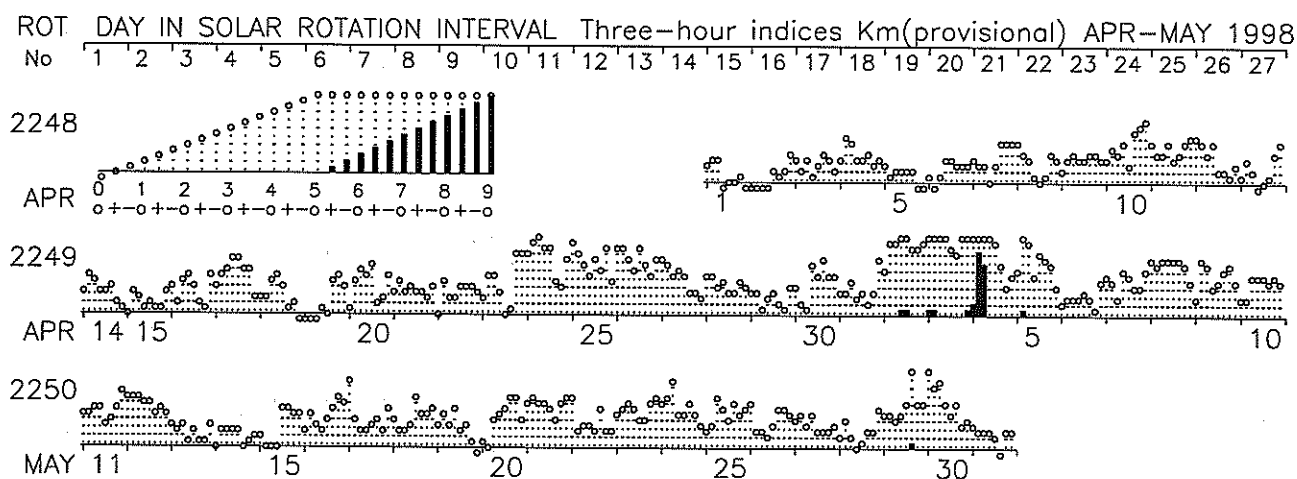
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4	22.5	26.1	29.0	22.4	20.2	12.6	22.2
1954	13.9	24.5	25.5	20.6	12.0	9.7	13.1	16.5	25.4	21.1	14.5	10.9	17.3
1955	19.3	18.2	23.6	21.1	16.7	15.1	12.3	14.3	19.1	17.8	19.9	14.1	17.6
1956	28.7	23.3	27.6	31.7	29.3	23.5	19.8	20.7	22.4	19.3	32.3	18.2	24.7
1957	28.7	26.8	36.7	28.8	18.1	29.1	21.7	20.7	57.0	24.0	29.5	31.7	29.4
1958	25.5	43.2	36.1	27.6	25.2	29.7	36.0	25.1	26.5	24.7	15.0	27.2	28.5
1959	24.3	35.9	29.9	24.2	25.7	21.6	42.5	31.2	36.1	28.2	32.1	30.8	30.2
1960	25.2	23.5	27.6	51.5	31.6	27.6	28.1	27.2	26.4	45.6	45.9	34.5	32.9
1961	20.6	25.1	22.0	21.8	22.3	20.1	36.0	18.5	20.7	23.3	17.3	21.1	22.4
1962	13.2	19.2	15.5	22.6	13.4	18.1	21.0	26.2	29.8	33.3	22.5	23.5	21.5
1963	19.3	15.3	14.9	18.2	20.4	20.5	20.8	22.5	40.2	23.5	20.7	18.9	21.3
1964	20.1	20.1	21.0	21.7	17.5	15.1	16.9	14.8	18.2	16.9	13.8	10.3	17.2
1965	11.8	16.3	14.3	12.6	10.5	15.7	14.7	16.8	17.5	13.1	11.7	13.8	14.1
1966	14.2	14.8	18.6	12.0	14.8	12.5	17.1	20.0	29.4	17.5	16.8	20.5	17.3
1967	18.9	19.8	13.8	15.5	33.1	18.6	14.4	17.5	24.7	17.8	18.9	24.5	19.8
1968	21.1	26.5	23.3	22.2	21.4	24.9	18.0	20.1	22.0	24.8	26.2	20.3	22.6
1969	17.8	25.8	27.3	23.6	25.2	16.7	15.0	15.3	23.8	17.2	18.7	13.8	20.0
1970	14.4	12.7	26.4	23.1	16.6	18.3	28.4	21.0	19.7	20.6	21.6	16.5	19.9
1971	23.5	21.2	21.1	23.9	21.1	17.0	15.2	17.1	21.4	22.2	18.8	18.6	20.1
1972	21.9	18.3	21.5	18.1	16.6	21.5	14.0	34.2	20.4	20.4	21.8	18.9	20.6
1973	26.1	32.7	36.9	39.6	26.1	27.3	20.9	20.6	22.8	28.2	20.7	19.9	26.8
1974	25.8	26.4	33.7	32.9	29.2	29.2	32.0	30.2	33.7	37.3	26.8	27.5	30.4
1975	27.6	31.1	32.0	24.3	22.7	20.7	21.7	18.1	16.9	20.2	29.3	21.1	23.8
1976	23.3	28.5	33.4	25.4	23.7	17.5	18.4	17.7	23.7	20.4	16.9	18.6	22.3
1977	18.7	21.0	19.9	24.9	20.1	14.2	22.9	23.2	23.0	20.9	17.3	17.0	20.3
1978	24.6	26.2	25.9	31.3	31.2	28.3	19.9	25.6	27.0	20.8	24.6	22.0	25.6
1979	27.3	23.7	26.9	33.5	21.0	18.3	17.9	26.0	22.0	19.3	17.1	16.8	22.5
1980	19.0	17.3	12.7	18.4	15.6	20.0	17.0	15.9	14.2	21.9	23.3	21.7	18.1
1981	16.5	23.1	26.6	32.8	26.9	18.0	27.2	24.0	20.4	33.7	24.1	19.3	24.4
1982	24.2	50.6	28.5	32.9	26.7	32.1	43.9	31.4	45.1	28.5	33.0	33.8	34.2
1983	26.2	40.0	33.6	35.7	31.6	24.9	21.3	24.9	23.7	28.3	33.5	26.0	29.1
1984	23.5	26.7	30.7	32.5	27.2	23.7	26.4	25.8	32.6	33.1	31.0	29.0	28.5
1985	25.7	24.1	19.0	29.5	15.6	19.9	23.4	22.0	21.2	22.2	23.7	21.4	22.3
1986	22.4	40.0	21.1	14.3	18.8	15.9	16.3	22.3	24.7	18.6	21.2	15.3	20.9
1987	14.8	16.6	17.6	12.9	14.7	13.2	19.3	24.3	30.3	25.8	22.4	16.0	19.0
1988	22.4	23.4	24.8	25.2	20.5	20.0	20.2	20.6	21.4	23.2	23.3	25.5	22.5
1989	33.9	27.5	60.1	32.8	25.7	24.9	14.4	28.4	26.7	31.4	34.7	31.4	31.0
1990	27.4	37.8	33.9	37.4	25.1	24.6	21.6	28.2	25.1	25.1	17.4	15.2	26.6
1991	17.2	20.1	37.3	24.3	27.3	56.2	35.2	40.8	30.7	44.1	49.7	28.0	34.2
1992	25.9	47.7	24.5	19.8	29.1	24.8	17.9	24.1	35.8	27.0	25.0	26.1	27.3
1993	31.2	27.1	37.9	29.2	22.1	21.8	18.2	19.2	23.8	24.6	25.5	24.8	25.5
1994	26.5	43.2	37.9	40.2	40.2	27.2	20.6	16.0	20.2	33.3	23.6	24.1	29.4
1995	23.6	24.5	23.8	24.2	30.9	19.1	14.9	17.0	22.2	27.9	17.2	18.2	22.0
1996	18.8	20.8	22.3	20.5	14.0	11.1	14.7	18.8	26.2	23.5	16.3	15.9	18.6
1997	17.4	21.0	16.3	18.4	15.1	13.7	12.1	13.7	18.4	18.7	18.0	10.8	16.1
1998	16.8	16.4	21.2	18.0	28.1								20.1

PLANETARY GEOMAGNETIC ACTIVITY

3-HOUR-RANGE INDICES Km AND aa BY 27-DAY SOLAR ROTATION INTERVAL

ISGI PUBLICATION OFFICE — EMail : ISGI.PUBOFF@cetp.ipsl.fr

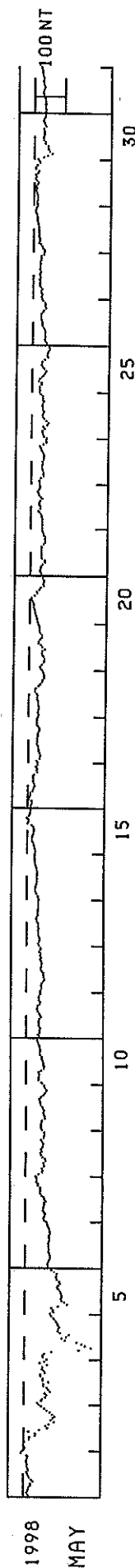
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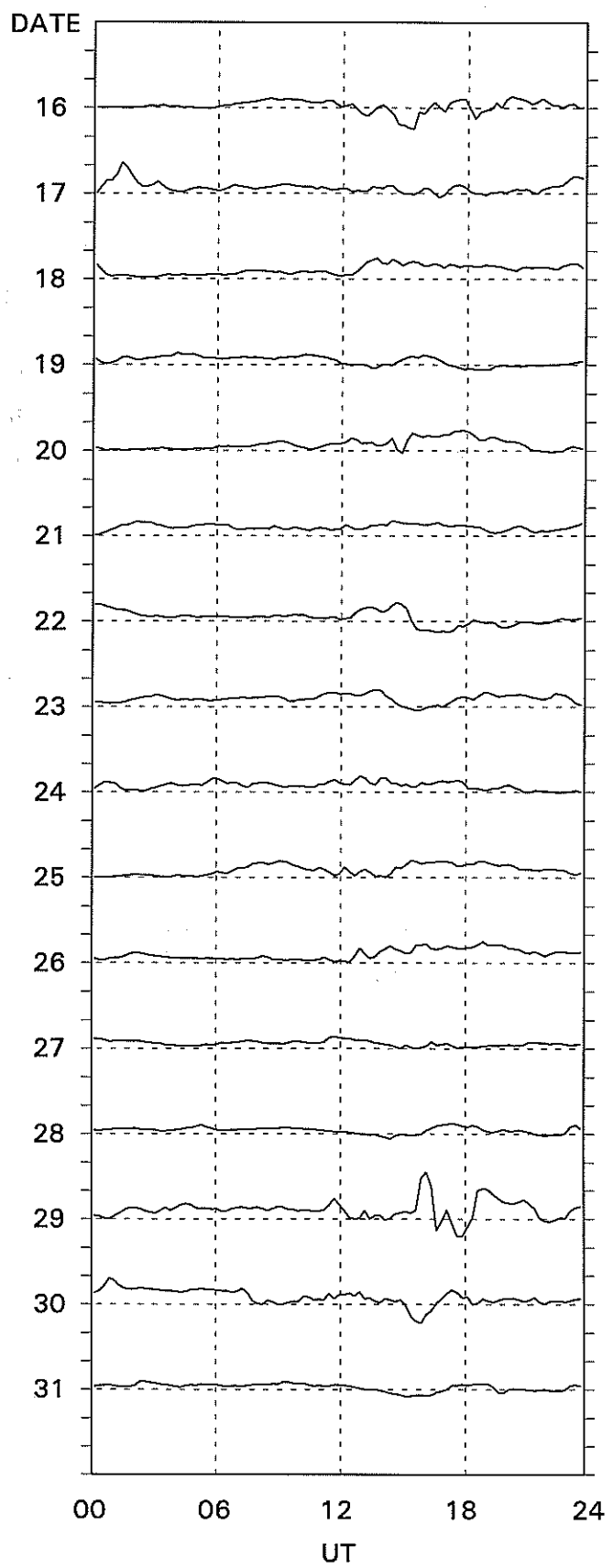
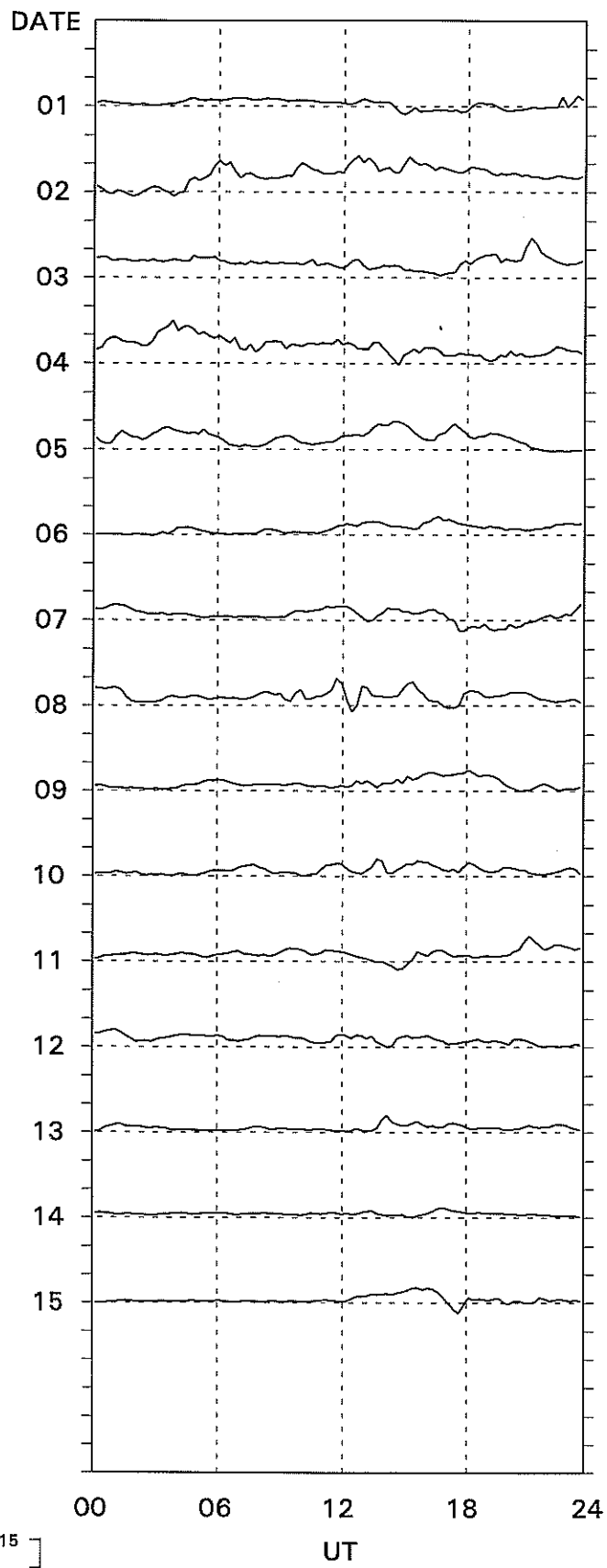


HOURLY EQUATORIAL DST VALUES (PROVISIONAL)

MAY 1998

DAY	UNIT=NT																								U.T.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1	-16	-10	-14	-16	-17	-22	-23	-30	-25	-19	-15	-13	-11	-16	-14	-11	-13	-11	-9	-13	-14	-11	-11	8	5
2	-3	-3	2	0	-4	-17	-19	-38	-37	-16	-51	-76	-71	-81	-98	-89	-95	-100	-92	-85	-74	-66	-57	-50	
3	-44	-57	-59	-69	-73	-68	-85	-80	-75	-63	-63	-80	-62	-62	-55	-53	-68	-65	-58	-60	-74	-51	-66	-73	
4	-61	-59	-65	-89	-177	-216	-197	-187	-170	-132	-123	-136	-144	-115	-109	-111	-114	-109	-106	-102	-97	-94	-87	-83	
5	-93	-91	-87	-108	-138	-129	-120	-118	-120	-119	-117	-114	-109	-105	-109	-114	-112	-103	-101	-101	-103	-95	-86	-77	
6	-74	-73	-75	-79	-82	-81	-80	-79	-76	-78	-77	-76	-75	-78	-80	-79	-78	-81	-80	-78	-76	-73	-71	-68	
7	-62	-60	-63	-65	-61	-58	-58	-60	-62	-62	-66	-62	-60	-52	-48	-47	-49	-48	-41	-41	-36	-35	-35	-32	
8	-43	-55	-56	-52	-60	-59	-58	-64	-63	-54	-49	-48	-52	-50	-55	-56	-57	-52	-50	-58	-59	-62	-59	-53	
9	-50	-49	-50	-51	-52	-61	-62	-58	-57	-59	-56	-52	-47	-46	-46	-43	-49	-57	-61	-67	-67	-62	-60	-53	
10	-49	-41	-41	-42	-42	-40	-50	-58	-59	-57	-56	-52	-51	-51	-45	-44	-45	-46	-44	-44	-39	-38	-36	-39	
11	-42	-39	-44	-43	-45	-42	-40	-40	-41	-42	-47	-45	-42	-38	-35	-36	-38	-44	-45	-40	-41	-41	-45	-44	
12	-46	-50	-50	-47	-51	-57	-60	-57	-55	-54	-49	-46	-48	-49	-49	-47	-44	-47	-44	-45	-41	-45	-46	-40	
13	-38	-40	-42	-42	-39	-37	-37	-37	-39	-37	-37	-35	-33	-31	-32	-35	-36	-35	-35	-37	-38	-38	-37	-39	
14	-37	-35	-31	-28	-28	-27	-29	-31	-32	-33	-33	-33	-34	-34	-32	-30	-29	-28	-26	-25	-26	-24	-25	-26	
15	-27	-25	-24	-23	-20	-18	-15	-15	-18	-19	-21	-22	-22	-19	-14	-1	-3	-4	1	-5	-9	-8	-10	-9	
16	-10	-13	-14	-12	-5	-7	-8	-8	-16	-19	-21	-22	-21	-18	-18	-18	-17	-20	-31	-28	-30	-25	-30	-31	
17	-28	-37	-38	-40	-37	-34	-34	-33	-30	-28	-29	-29	-29	-30	-31	-33	-35	-35	-32	-28	-28	-27	-28	-30	
18	-33	-31	-31	-32	-34	-31	-31	-30	-27	-27	-29	-25	-21	-21	-24	-30	-38	-43	-44	-50	-50	-47	-46	-43	
19	-37	-35	-40	-48	-50	-49	-46	-42	-41	-43	-51	-43	-38	-30	-31	-35	-40	-41	-35	-32	-32	-32	-30	-28	
20	-26	-24	-23	-20	-18	-18	-15	-12	-14	-12	-8	-5	-6	-15	-24	-23	-31	-36	-44	-43	-45	-44	-41	-37	
21	-36	-32	-33	-34	-36	-41	-48	-45	-38	-36	-36	-35	-35	-35	-36	-43	-47	-48	-46	-47	-43	-40	-37	-38	
22	-38	-38	-37	-37	-37	-35	-35	-33	-27	-24	-30	-31	-28	-28	-31	-37	-33	-27	-24	-23	-27	-31	-29	-27	
23	-27	-27	-33	-40	-39	-40	-37	-36	-34	-36	-37	-38	-41	-40	-42	-39	-36	-33	-31	-28	-39	-50	-48	-49	
24	-40	-37	-35	-35	-43	-38	-49	-55	-47	-40	-36	-35	-37	-40	-36	-36	-34	-35	-39	-35	-35	-35	-29	-24	
25	-25	-24	-26	-31	-30	-23	-26	-33	-37	-43	-45	-39	-34	-30	-30	-33	-41	-51	-48	-50	-52	-56	-54	-50	
26	-46	-43	-39	-41	-41	-41	-41	-39	-36	-32	-31	-31	-28	-27	-27	-27	-32	-36	-42	-39	-40	-39	-33	-29	
27	-27	-30	-28	-25	-29	-24	-22	-22	-23	-21	-24	-22	-23	-25	-23	-22	-23	-24	-23	-25	-26	-26	-34	-35	
28	-35	-30	-29	-24	-18	-21	-21	-18	-19	-18	-17	-17	-17	-16	-16	-13	-12	-12	-11	-9	-5	-7	-8	-12	
29	-13	-11	-13	-12	-13	-11	-8	-7	-8	-7	-11	-14	-8	-4	-7	-6	-13	-15	-6	-6	-11	-19	-18	-12	
30	-30	-43	-58	-50	-45	-44	-44	-36	-35	-31	-29	-31	-32	-32	-30	-30	-37	-34	-32	-29	-31	-34	-35	-35	
31	-36	-37	-35	-35	-36	-36	-36	-34	-31	-29	-28	-30	-32	-32	-29	-29	-29	-30	-28	-27	-25	-25	-23	-23	





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

MAY 1998

Sta	Geomag Lat	Commencement Time		Type	SC Amplitudes			Maximum 3-Hour K Index Day(3-Hour Periods)	Ranges			End Hour	
		Day	(UT)		D (Min)	H (Gamma)	Z (Gamma)		D (Min)	H (Gamma)	Z (Gamma)	Day	(UT)
BJI	28.8N	01	2156	SC	1.9	27	2	02(4)	6	17	162	--	--
KRC	16.4N	01	2200	SC	- 2	50	26	02(4)	7	11	214	03	06
UJJ	13.6N	01	2155	SC	- 0.2	35	- 7		-	11	266	04	15
NGP	11.3N	01	2155	SC	0.4	31	- 4		-	10	--	04	15
ABG	09.4N	01	2155	SC	- 0.3	27	- 2	04(2)	8	10	300	04	15
HYB	07.6N	01	2156	SC	- 0.1	27	- 1	02(4,5)	6	9	232	03	16
PND	02.0N	01	2155	SC	- 0.1	24	22		-	8	357	04	15
ETT	00.7S	01	2156	SC	0.2	20	22		-	--	--	--	--
TRD	01.1S	01	2155	SC	0.2	24	- 35		-	7	495	147	04 15
HER	33.6S	01	2156	SC	3	20	18	04(2)	8	94	214	218	04 16
BJI	28.8N	03	1742	SC	0.4	38	2	04(2)	8	26	319	04	21
KRC	16.4N	03	0736	SC	- 6	71	45	04(3)	8	18	342	05	03
HYB	07.6N	03	1744	SC	- 0.3	29	- 1	04(2)	8	7	275	04	21
ETT	00.7S	03	1744	SC	0	20	22		-	--	465	243	05 21
HYB	07.6N	04	0257	SC	1	44	- 10		-	--	--	--	--
HER	33.6S	05	01--	..	..	..	..	05(2)	6	40	99	107	05 22
HYB	07.6N	08	0951	SC	- 0.7	15	- 1		-	--	--	--	--
ETT	00.7S	08	0956	SC	- 0.5	20	16		-	--	--	--	--
HYB	07.6N	15	1452	SC	- 0.4	23	- 1	15(5) 16(3)	4	6	95	29	17 04
ETT	00.7S	15	1452	SC	- 0.2	19	17		-	--	150	44	17 12
KRC	16.4N	29	0347	..	..	..	..	29(6) 30(1)	5	8	86	27	30 08
UJJ	13.6N	29	1200	..	..	..	..		-	7	51	25	30 19
NGP	11.3N	29	1200	..	..	..	..		-	6	60	17	30 19
ABG	09.4N	29	1200	..	..	..	..	30(1)	5	6	55	54	30 19
HYB	07.6N	29	1539	SC	- 0.2	21	- 2	30(1)	5	6	52	18	30 23
PND	02.0N	29	1200	..	..	..	..		-	5	108	49	30 19
ETT	00.7S	29	1539	SC	0	17	16		-	--	89	40	30 18
TRD	01.1S	29	1200	..	..	..	..		-	4	99	63	30 19
HER	33.6S	29	12--	..	..	..	..	29(6) 30(1)	5	15	91	88	30 19

Stations:

ABG = ALIBAG
AMS = MARTIN DE VIVIES
ANN = ANNAMALAINAGAR
BJI = BEIJING
CAN = CANBERRA
CMO = COLLEGE

CZT = PORT ALFRED
DRV = DUMONT D'URVILLE
ETT = ETAIYAPURAM
GNA = GNANGARA
GUA = GUAM
HER = HERMANUS

HON = HONOLULU
HYB = HYDERABAD
JAI = JAIPUR
KRC = KARACHI
NGP = NAGPUR
PAF = PORT AUX FRANCAIS

PMG = PORT MORESBY
PND = PONDICHERRY
SHL = SHILLONG
SIT = SITKA
TRD = TRIVANDRUM
UJJ = UJJAIN

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

MAY 1998

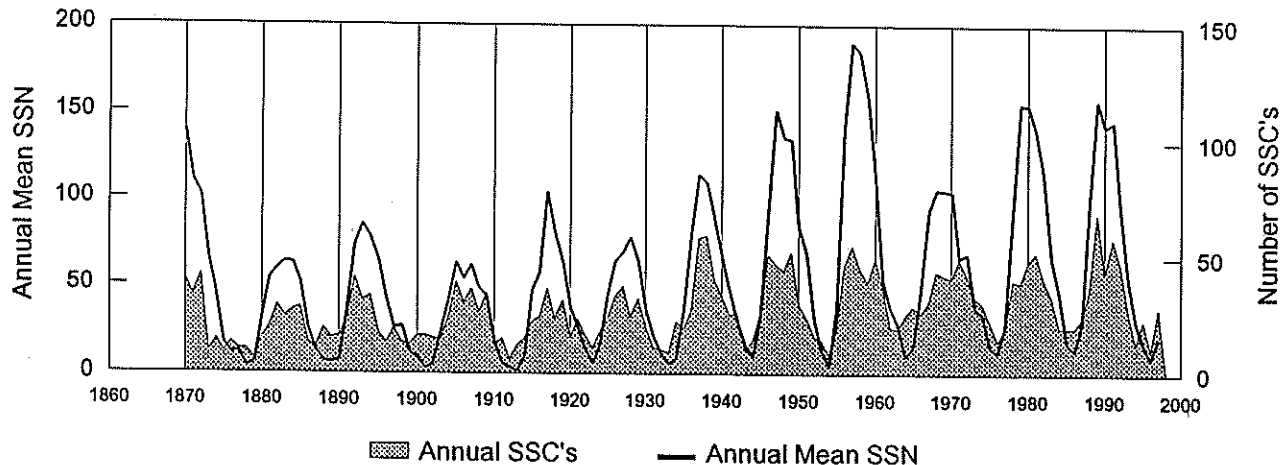
Storm Sudden Commencements (SSC)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
01	2156	A: VAL DOU* HRB* NAG COI BJI SPT* PEN TEN HYB HER B: WNG* BDV* CLF MMB* EBR* KAK* HTY* KNY* LNP ETT CNB*	03	0803-0838	SPT
			06	0801-0840	WNG NGK DOU BDV+ CLF EBR HYB ETT (ssc:BJI)
		C: NGK	08	0952-1016	TEN (see SSC)
03	1743	A: WNG* DOU* HRB NAG MMB COI BJI HTY KNY HYB B: CLF EBR* KAK ETT C: NGK VAL* si: SPT PEN QUE	10	1317-1328	BDV+ TEN
			24	1438-1445	NAG
			28	1347-1413	BDV+
			29	0055-0110	MMB+
08	0952	A: BJI B: HRB* HYB ETT C: QUE sfe: TEN	29	0102-0109	LNP
15	1451	A: WNG DOU HRB NAG* COI BJI LNP B: BDV EBR* HYB ETT C: NGK VAL CLF QUE			
29	1536	A: DOU* HRB COI* BJI LNP B: WNG* VAL* HYB ETT C: NGK CLF* QUE si: EBR			

REPORTING OBSERVATORIES (up to the 2nd of July 1998):

DOB NUR WNG NGK VAL DOU BDV CLF HRB NAG MMB EBR COI BJI SPT PEN KAK HTY KNY QUE TEN
LNP HYB ETT HER CNB

Three-letter codes identify each observatory. Reporting stations have been grouped by the character of the observed event. The letter A means very remarkable; B means fair, but unmistakable; C means very poor, doubtful; and - means no quality figure given. The * means that the SSC, at least in one component, was preceded by a small reversed impulse. SSCs are given only when five or more stations report the event. SFEs include all reports. If an SFE is confirmed by solar or ionospheric events, the name of the station is identified with a plus sign (+).

Storm Sudden Commencements (SSC) and Sunspot Numbers (SSN)





WORLD DATA CENTER A

FOR

SOLAR-TERRESTRIAL PHYSICS



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

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