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NOVEMBER 1997 NUMBER 639 - Part I

Solar-Geophysical Data prompt reports

Data for September, October 1997 and Late Data

International Standard Serial Number: 0038-0911
Library of Congress Catalog Number: 79-640375 //r81

NATIONAL GEOPHYSICAL DATA CENTER
Michael S. Loughridge, Director
Boulder, Colorado

Subscription information is on the inside back cover.

SOLAR-GEOPHYSICAL DATA

Number 639

(Issued in Two Parts)

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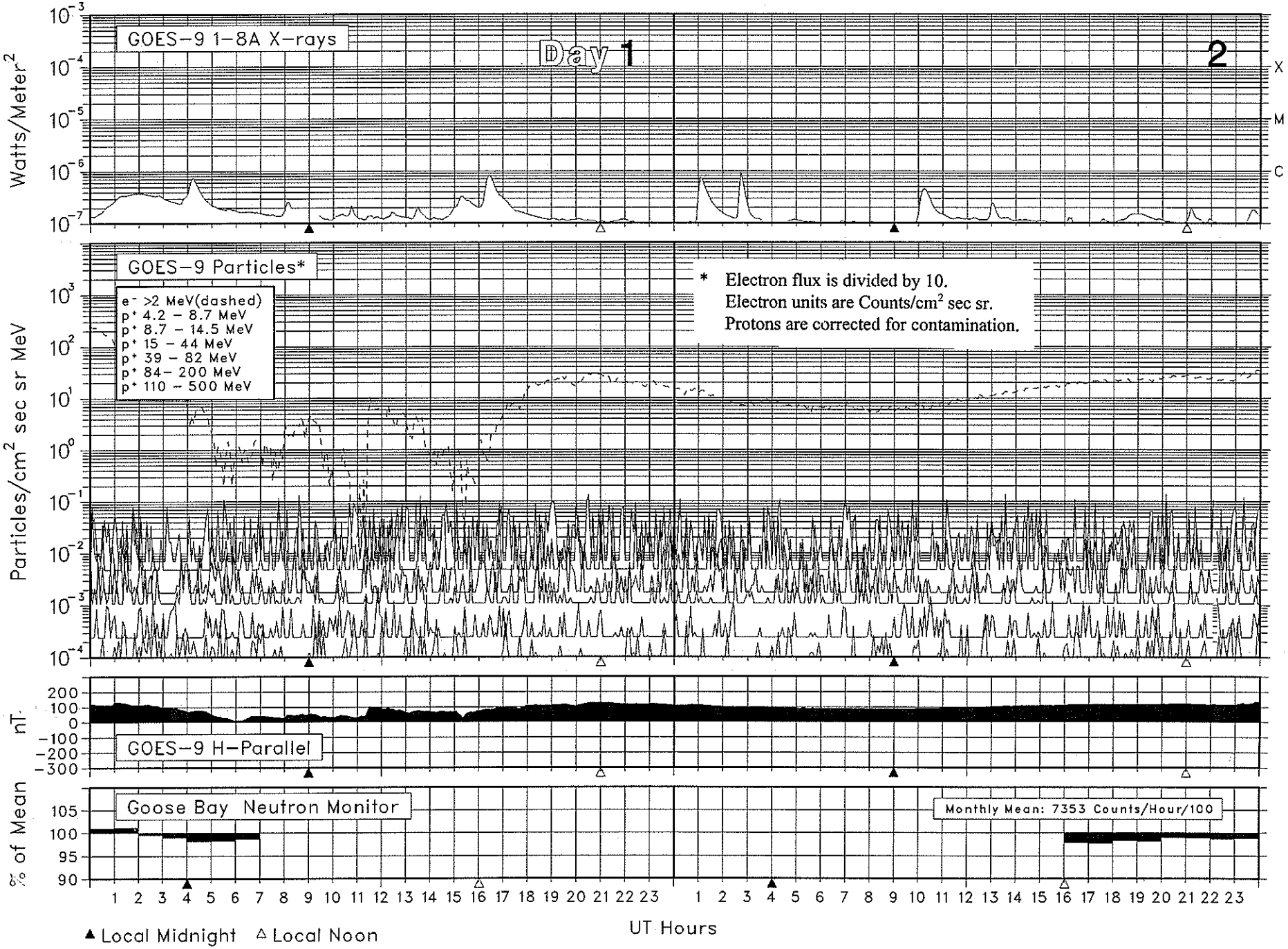

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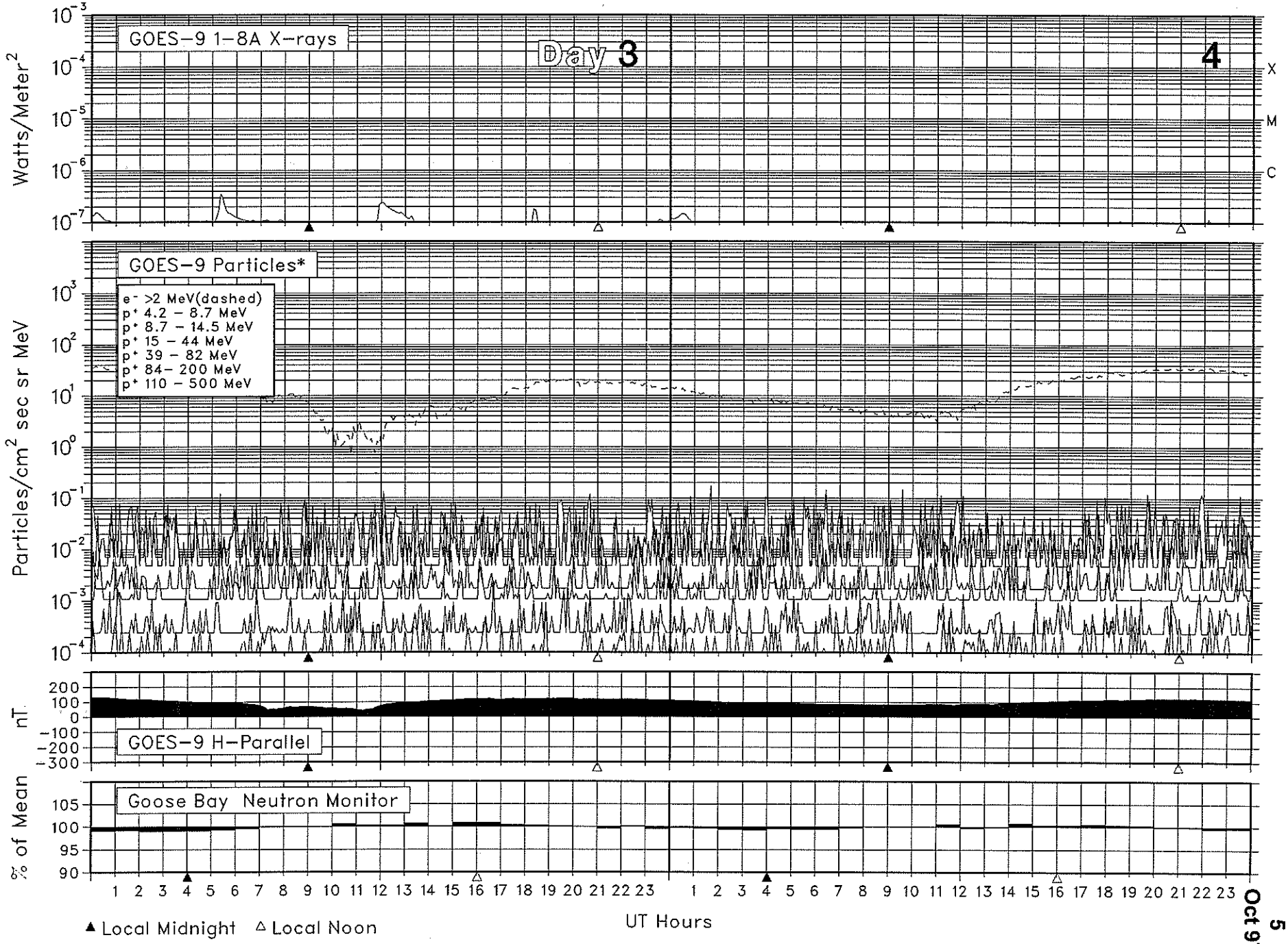

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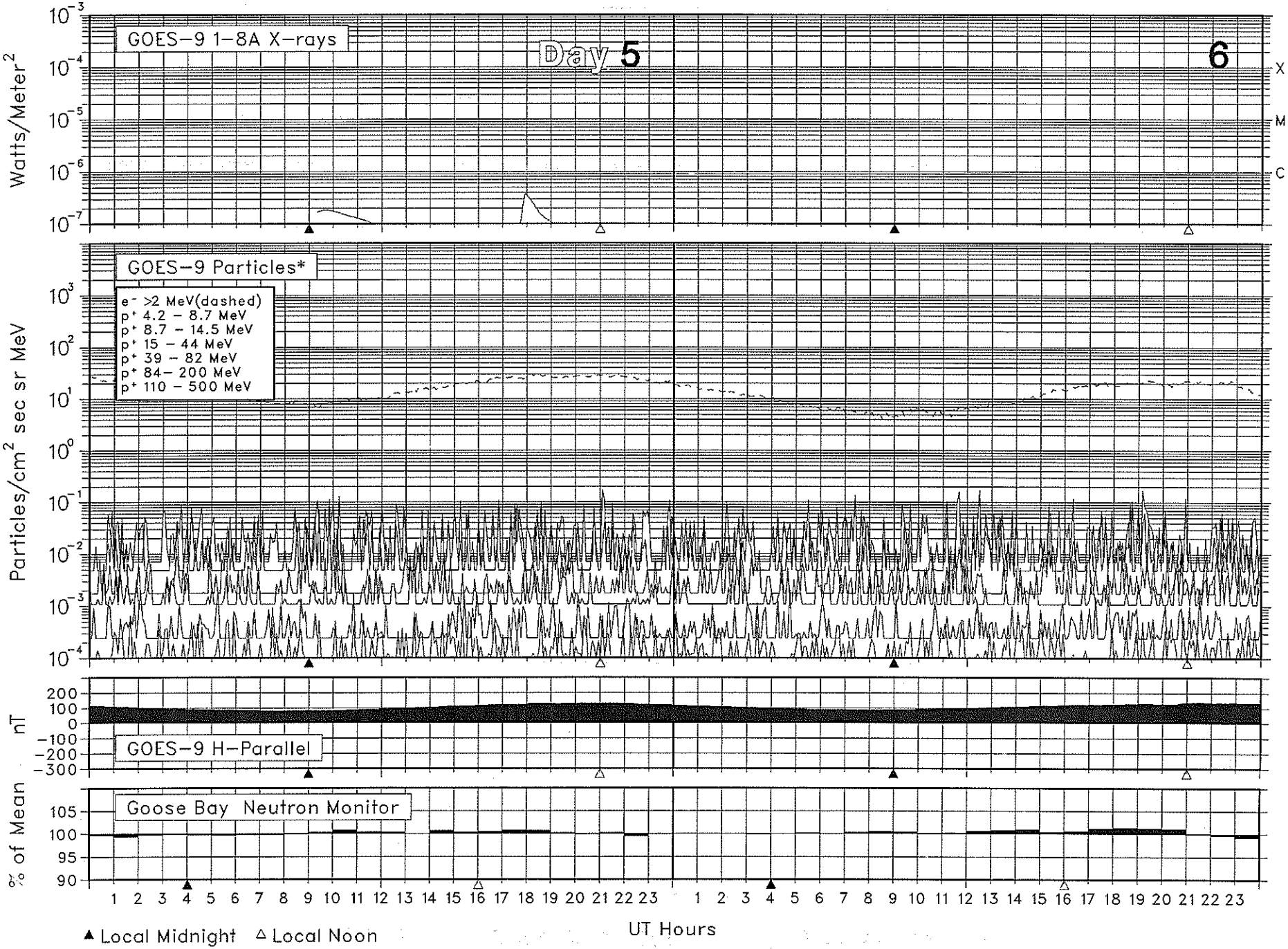

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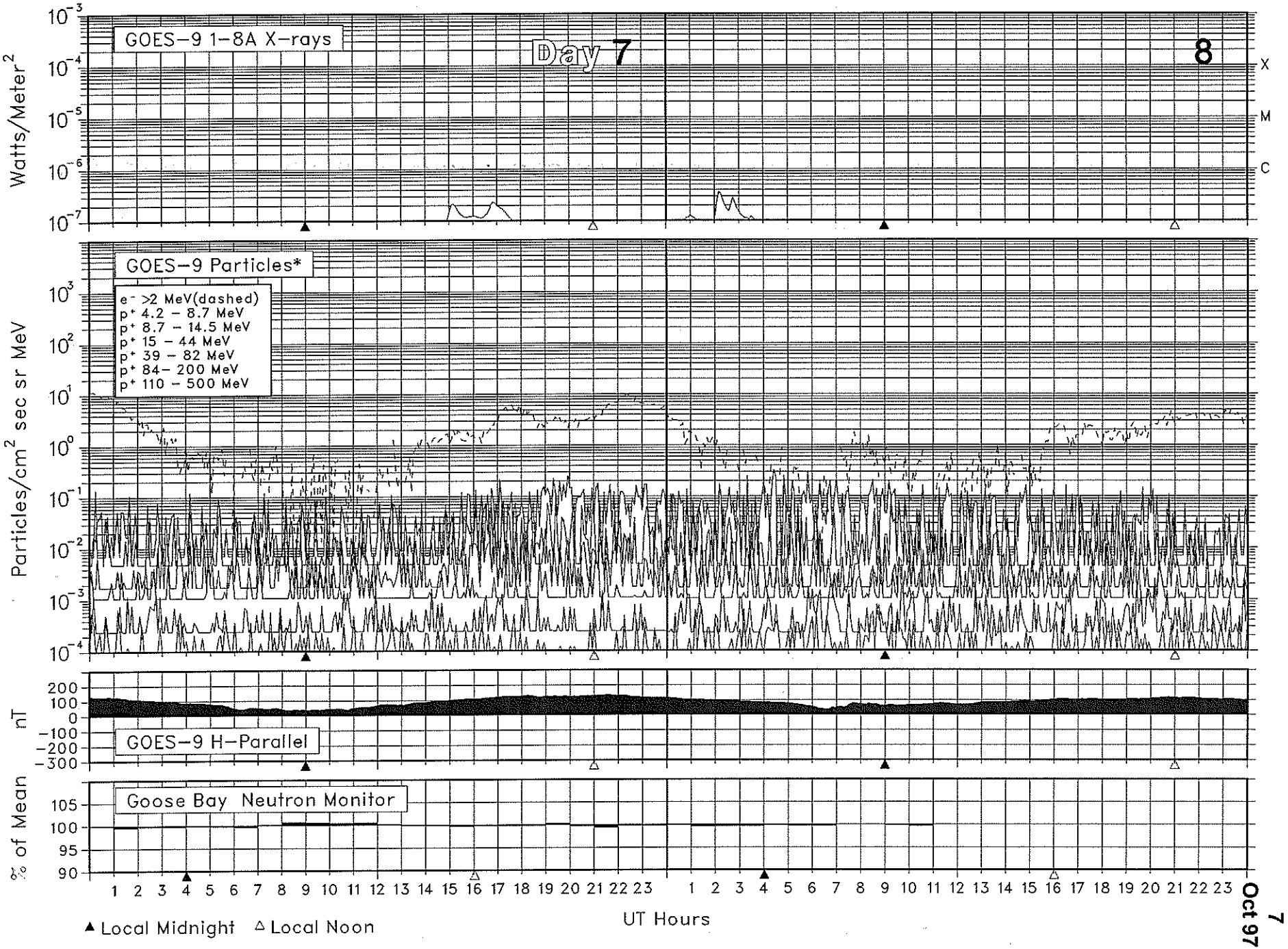

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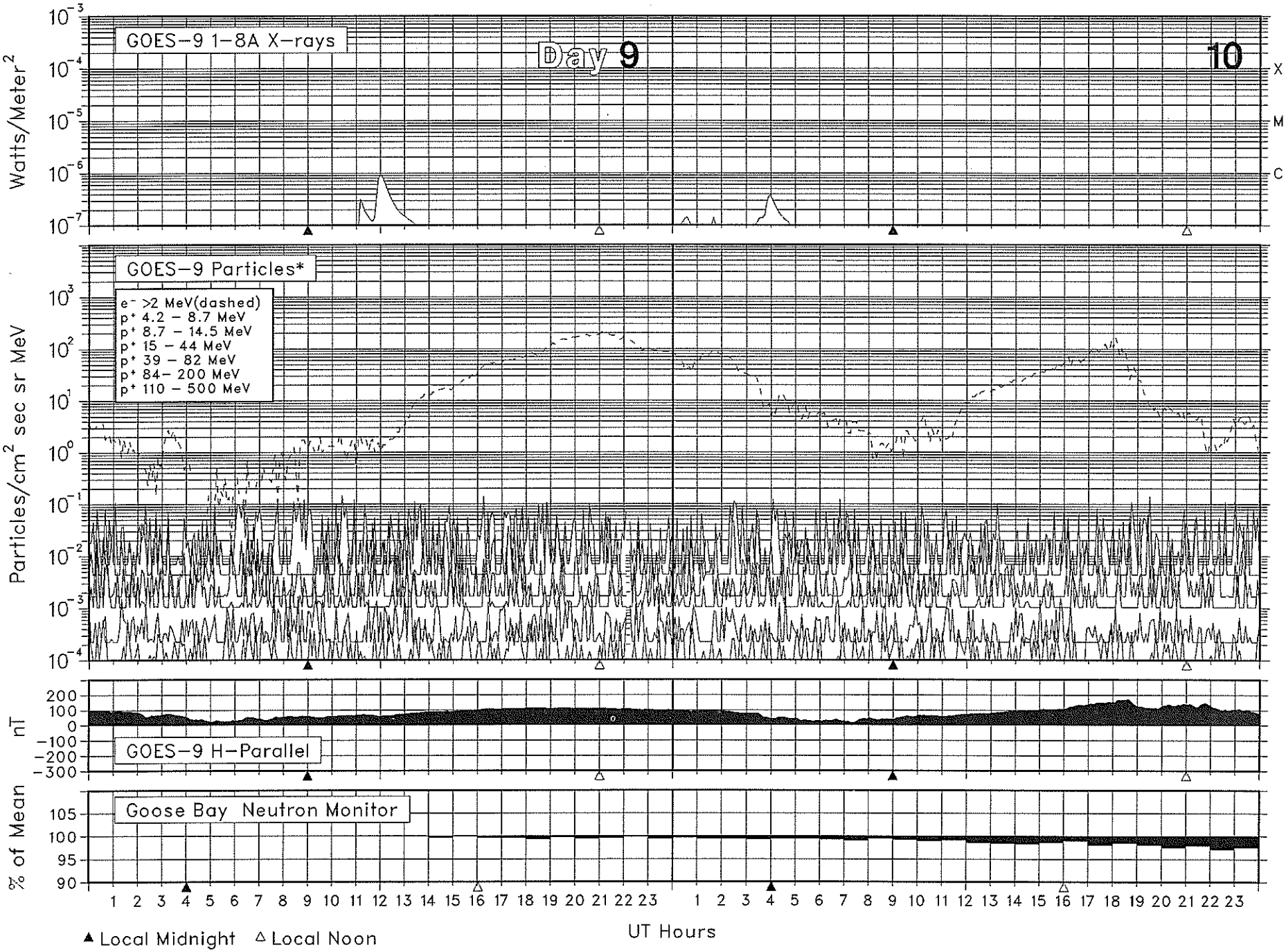

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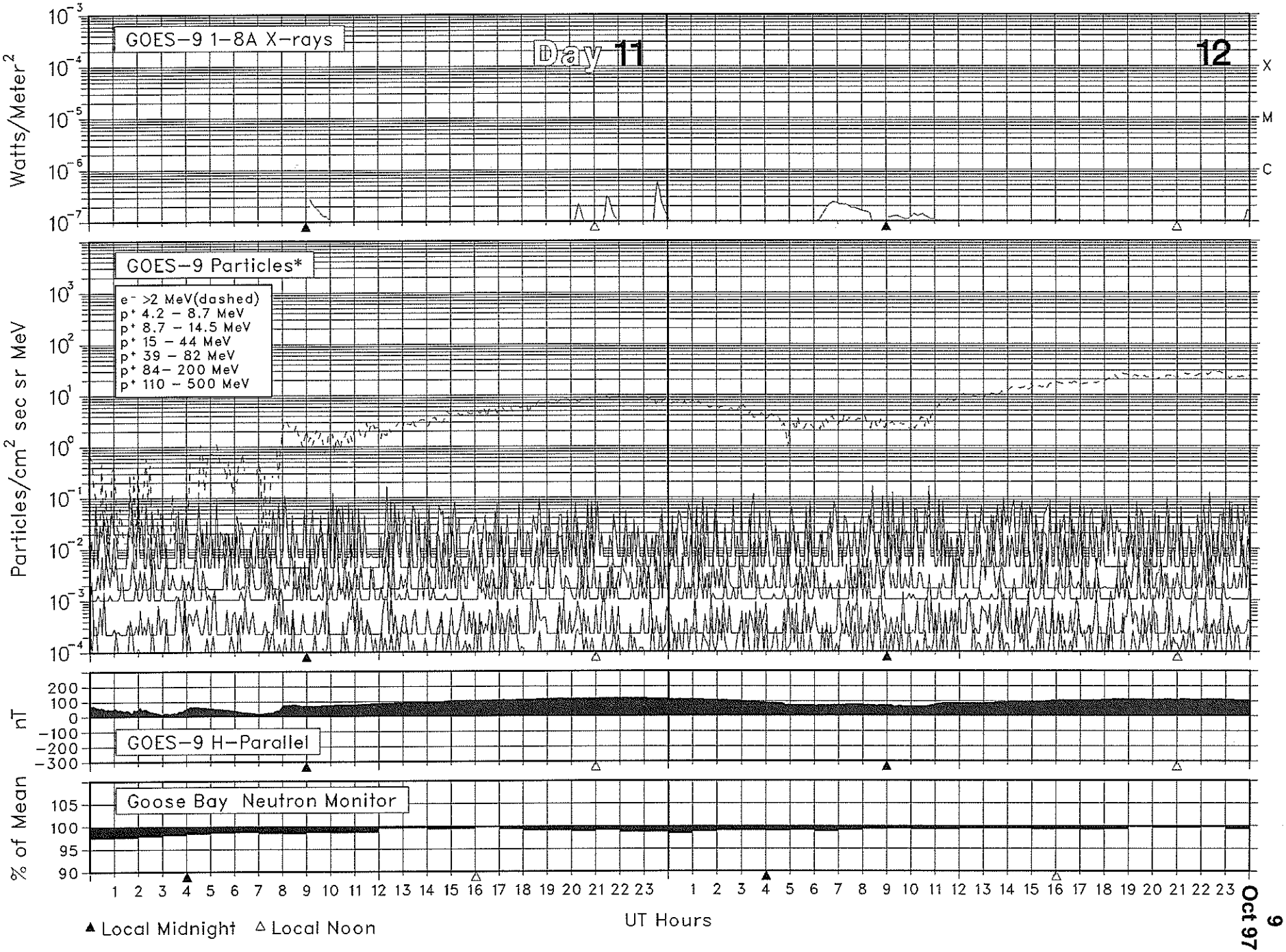

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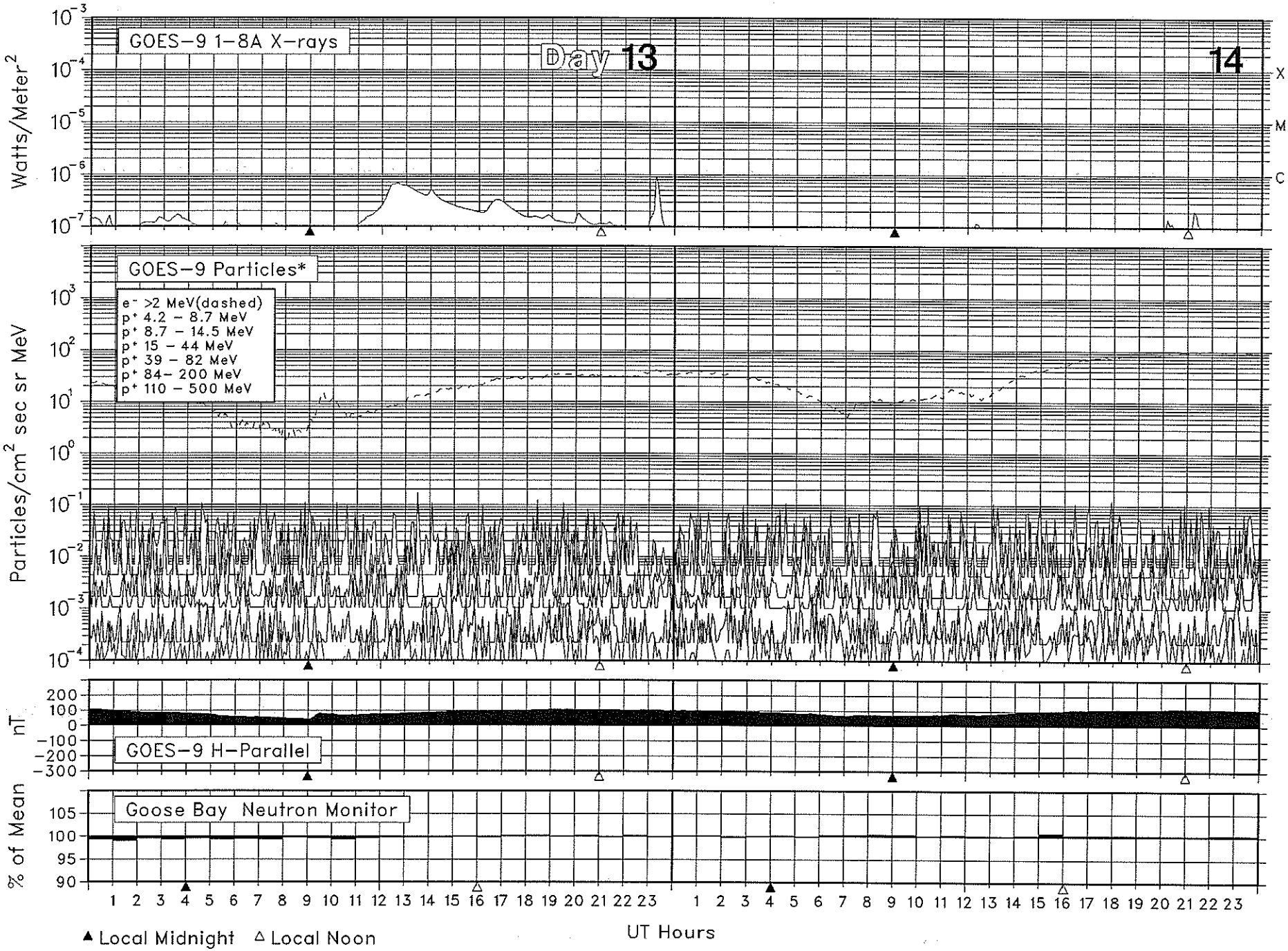

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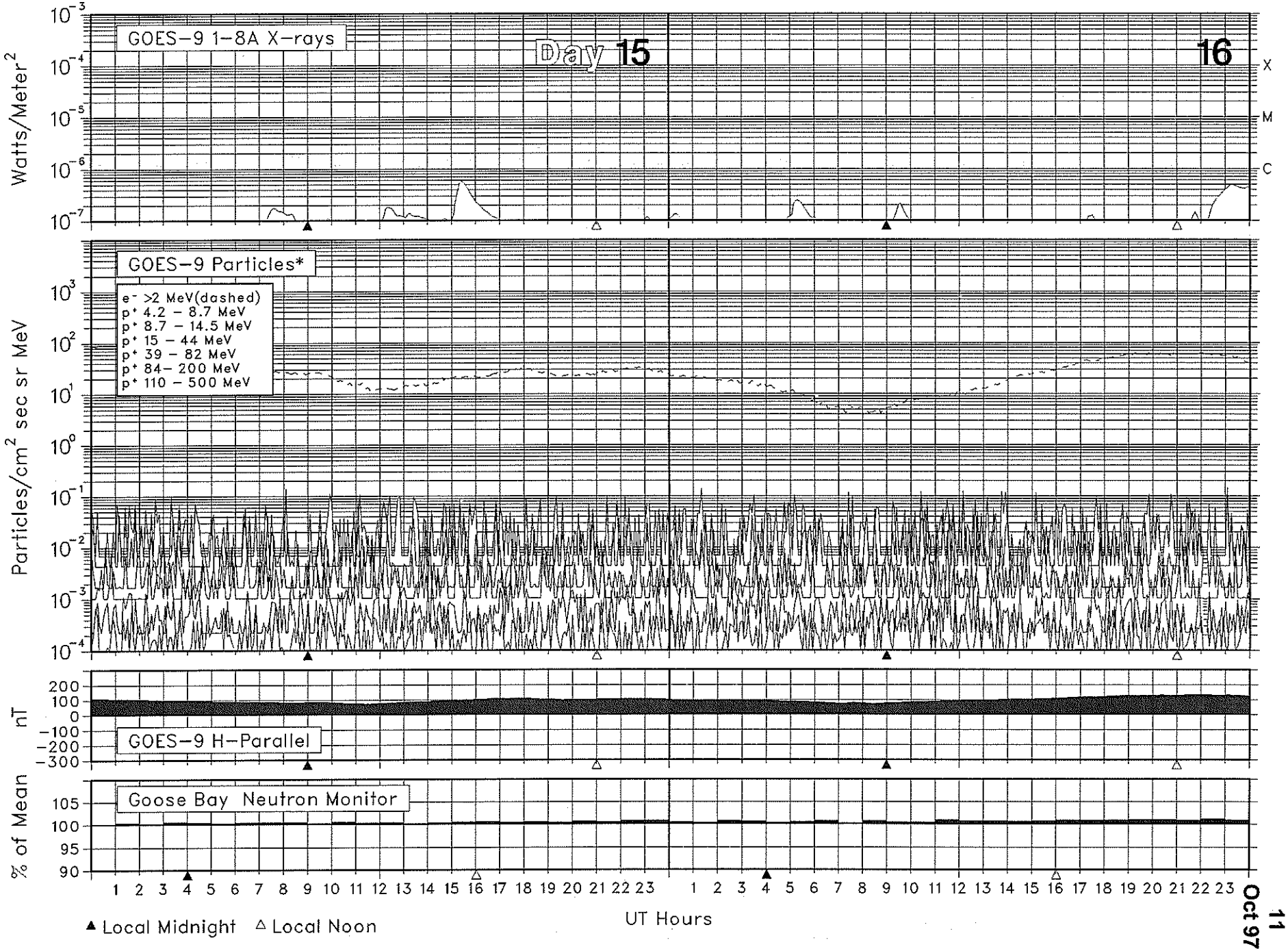

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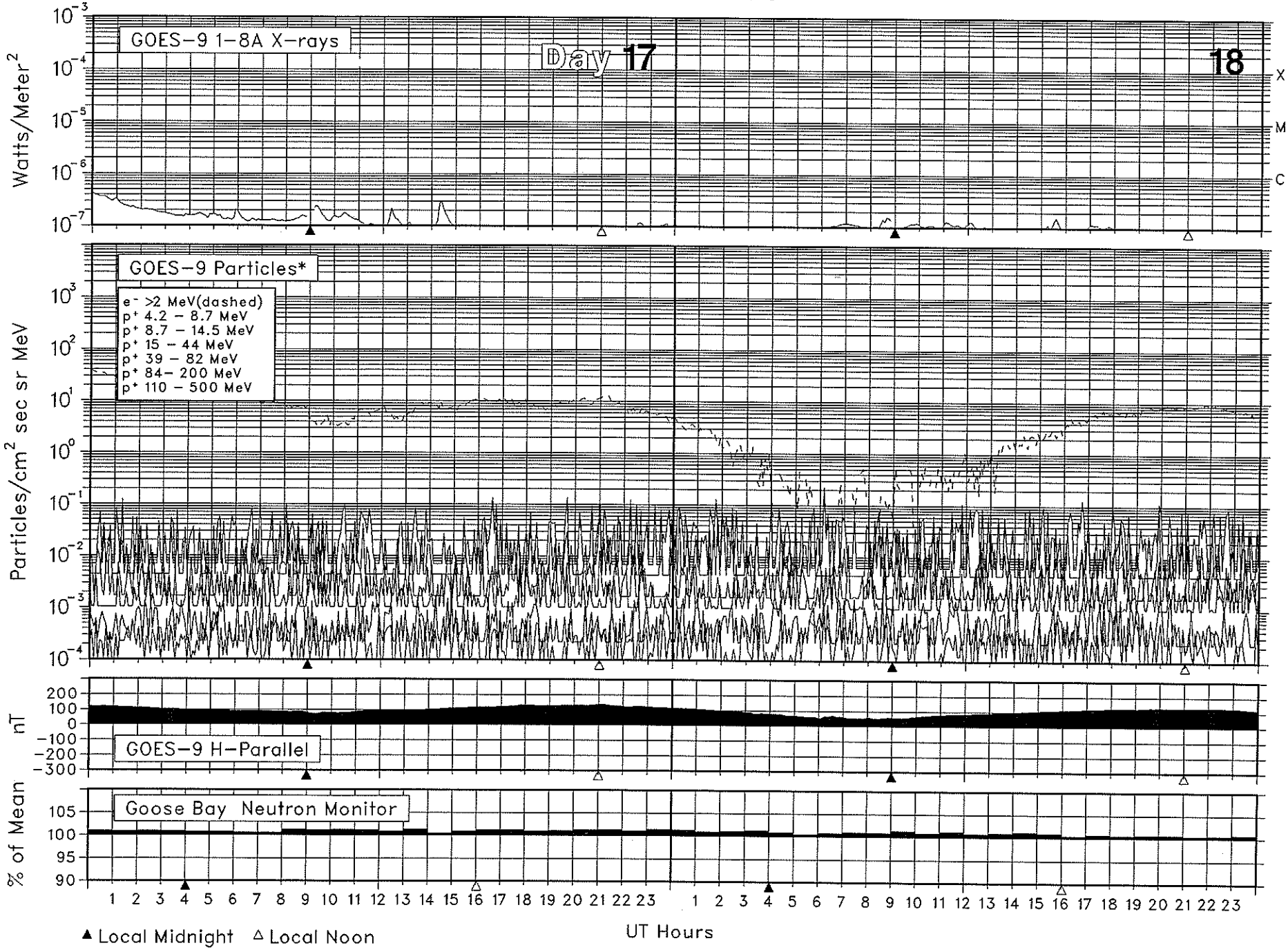

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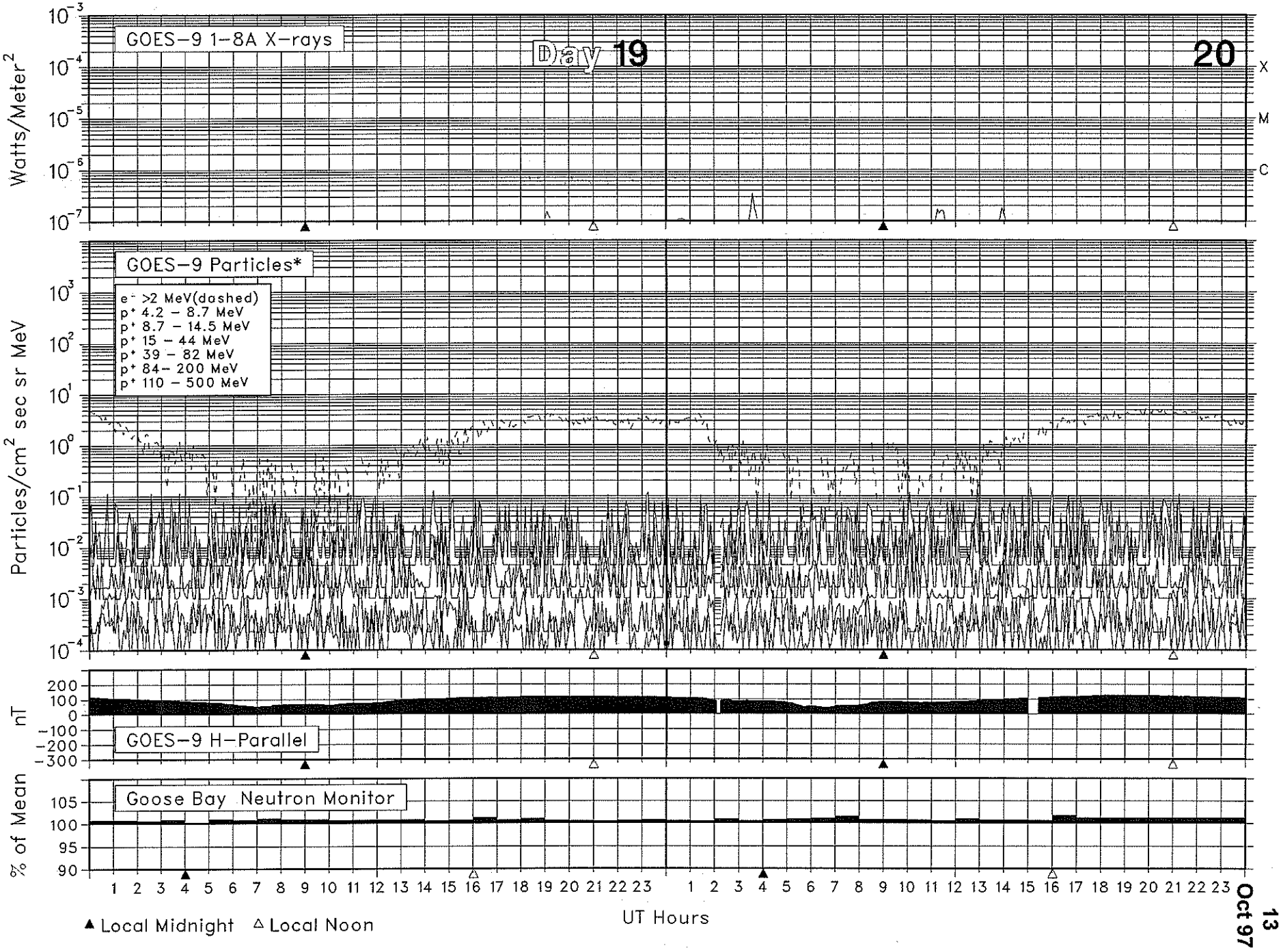

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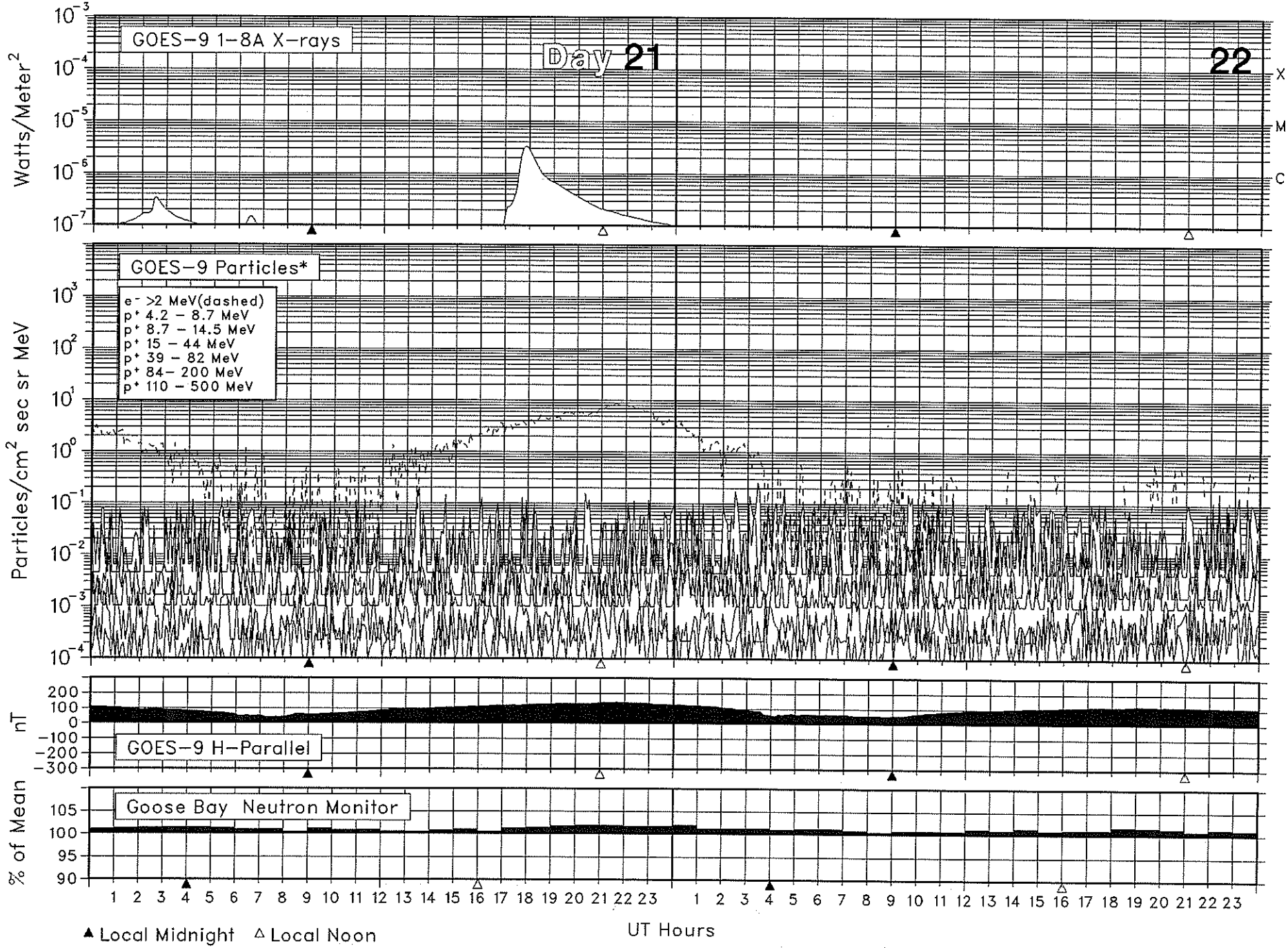

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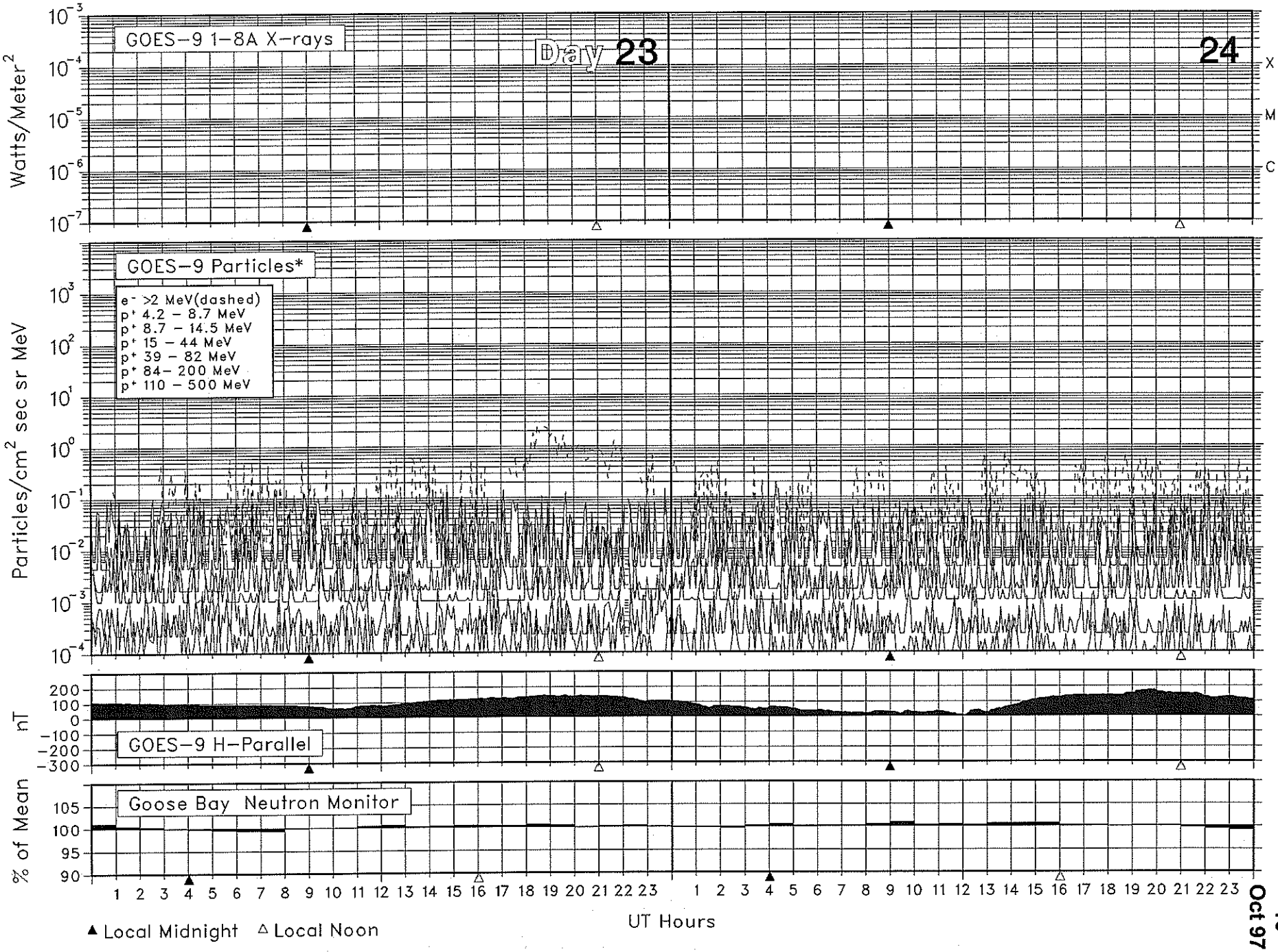

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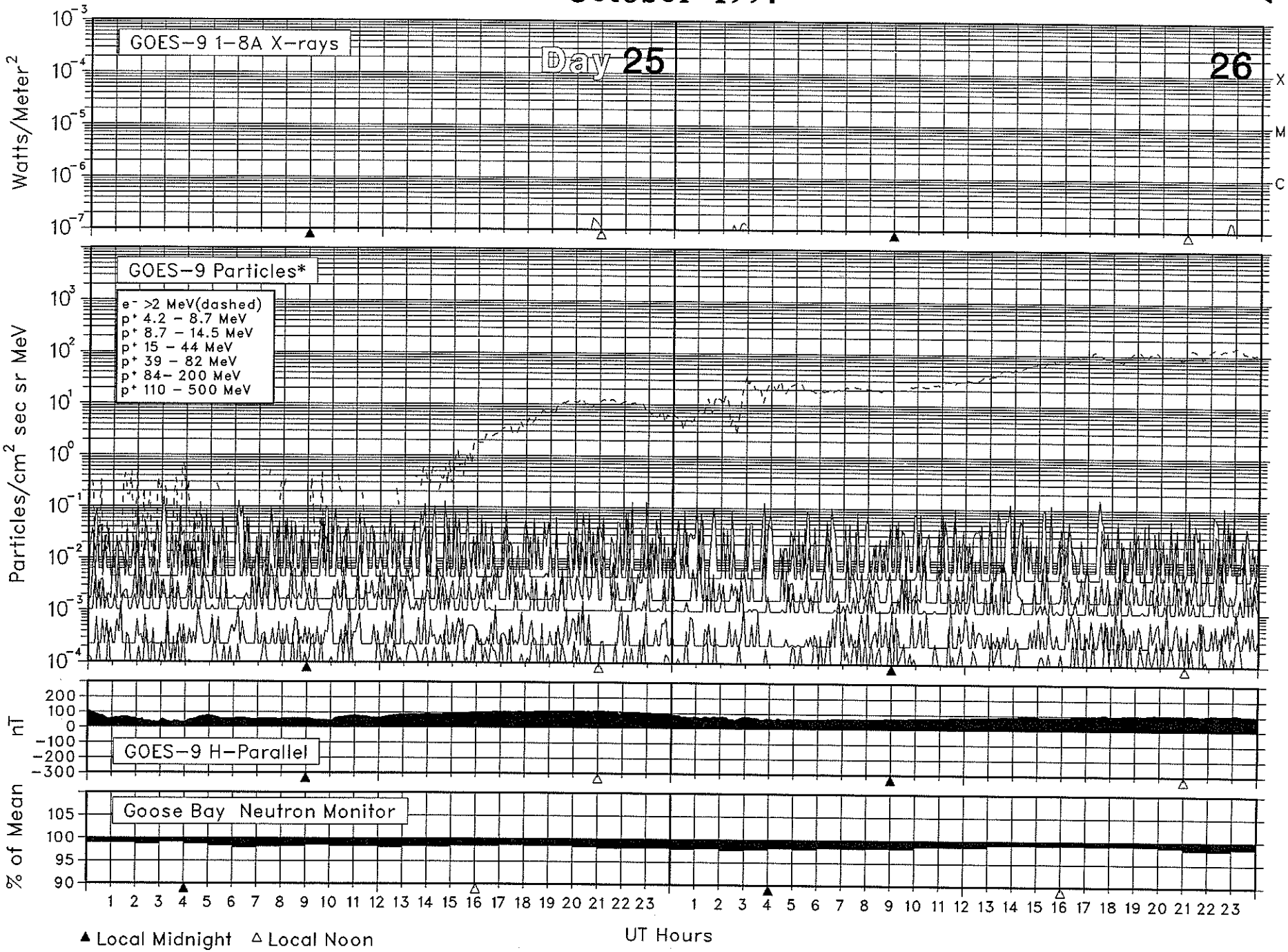

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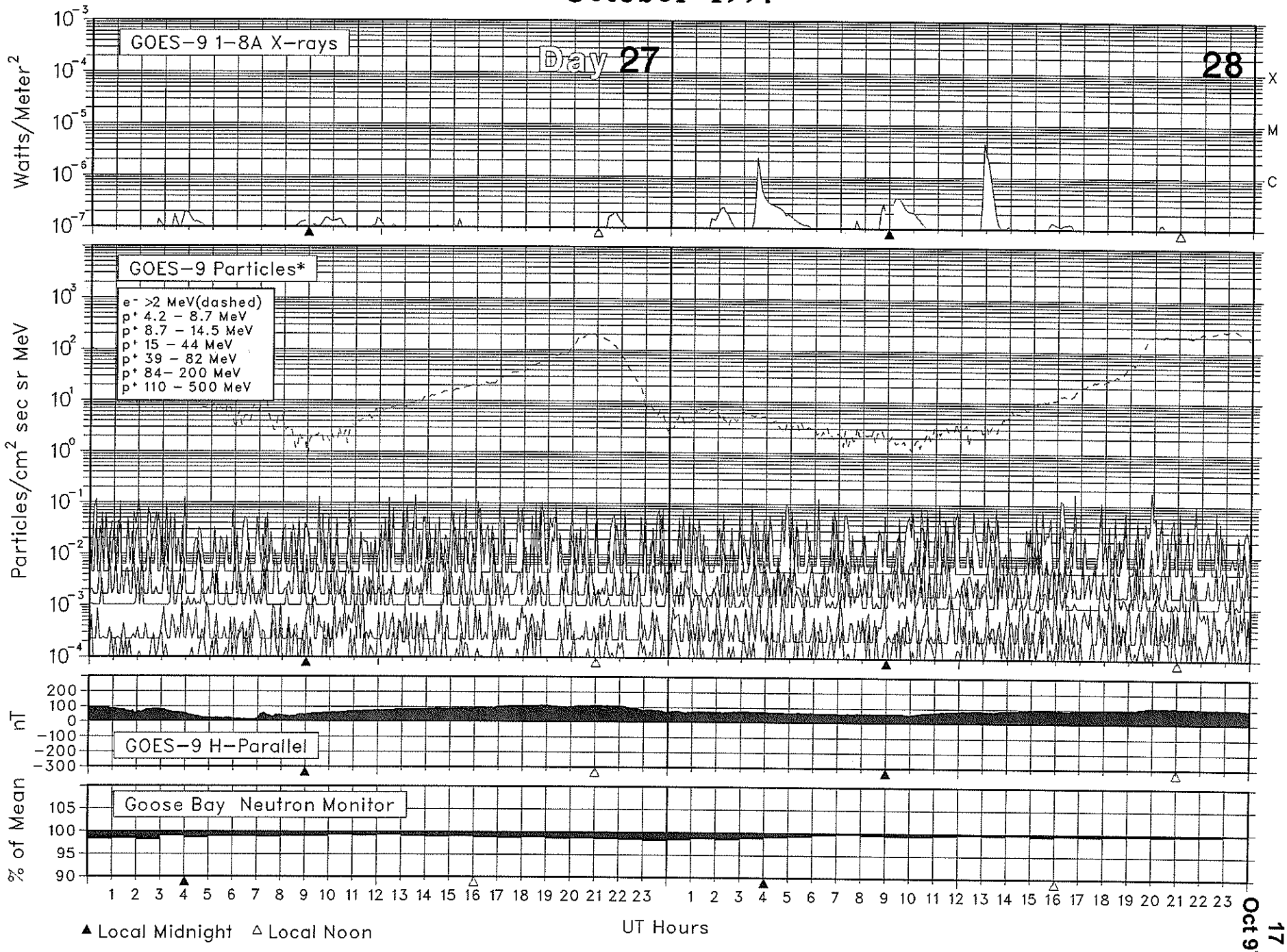

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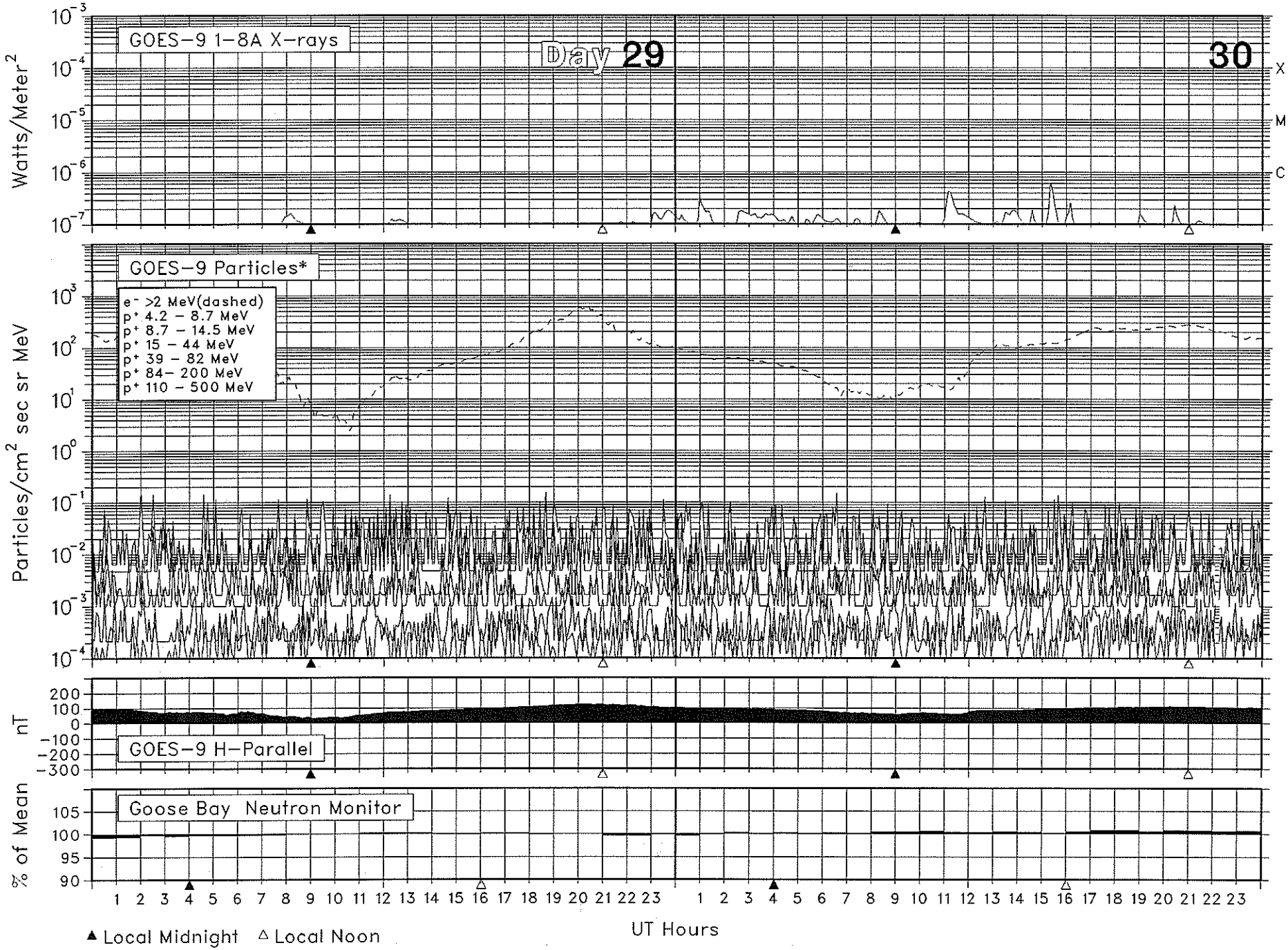

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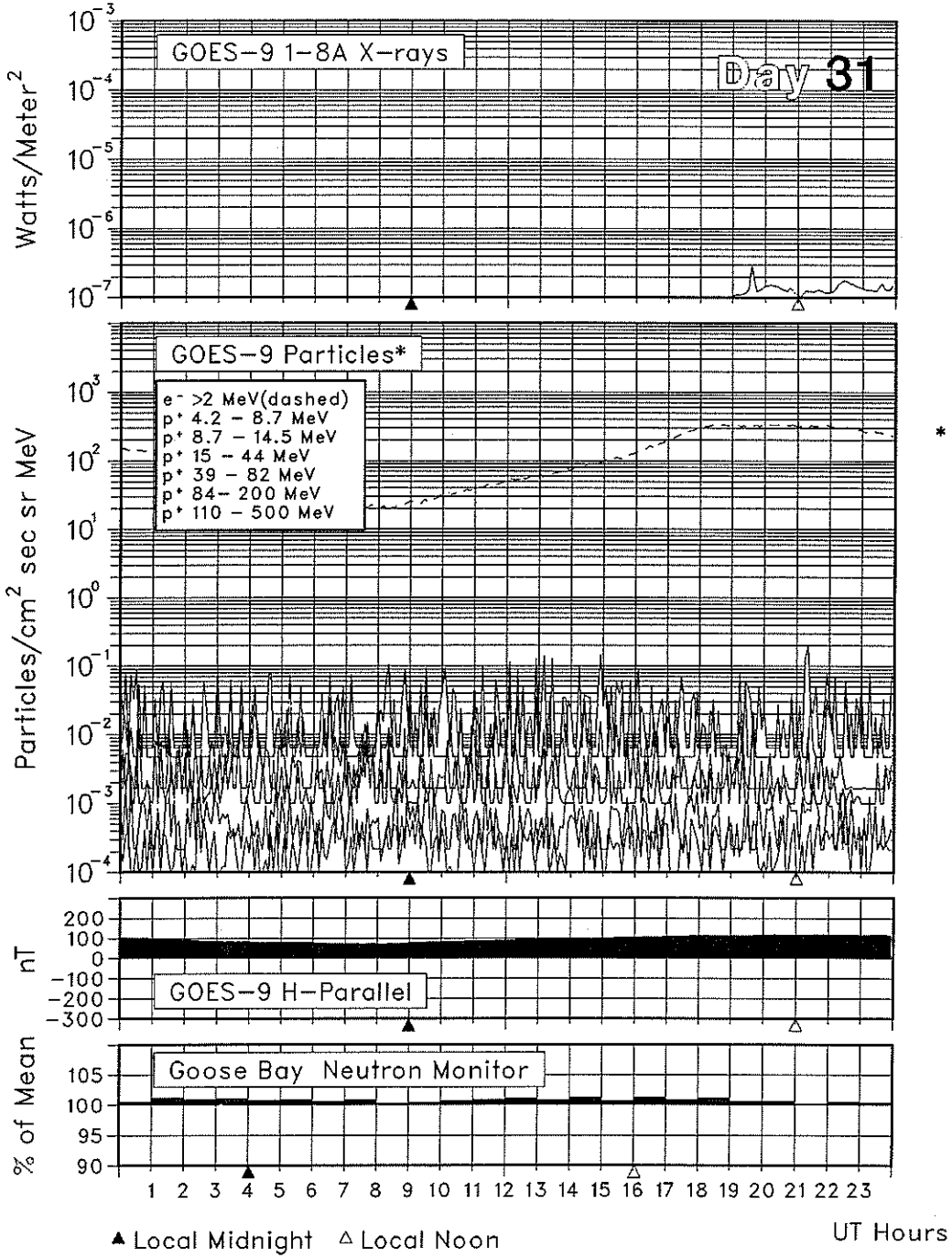
October 1997



* Electron flux is divided by 10.
Electron units are Counts/cm^2 sec sr.
Protons are corrected for contamination.

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

OCTOBER 1997

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			
274	01	30	25	88	6	S29	W67	0	0	0	01	Q	SOL: Quiet
						S27	E69	0	0	0	01	Q	MAG: Quiet
								0	0	0	01		PRO: Quiet
275	02	01	38	87	25	S29	W84	0	0	0	02	Q	SOL: Quiet
						S27	E55	0	0	0	02	Q	MAG: Quiet
						N22	E72	0	0	0	02	E	PRO: Quiet
276	03	02	26	86	3	S27	E41	1	0	0	03	Q	SOL: Eruptive
						N25	E60	1	0	0	03	E	MAG: Quiet
								0	0	0	03		PRO: Quiet
277	04	03	27	86	7	S27	E28	0	0	0	04	Q	SOL: Eruptive
						N25	E47	2	0	0	04	E	MAG: Quiet
								0	0	0	04		PRO: Quiet
278	05	04	26	83	4	S27	E15	0	0	0	05	Q	SOL: Quiet
						N23	E34	0	0	0	05	Q	MAG: Quiet
								0	0	0	05		PRO: Quiet
279	06	05	26	84	1	S28	E03	0	0	0	06	Q	SOL: Quiet
						N23	E21	1	0	0	06	Q	MAG: Active
								0	0	0	06		PRO: Quiet
280	07	06	24	84	3			0	0	0	07		SOL: Quiet
								0	0	0	07		MAG: Quiet
								0	0	0	07		PRO: Quiet
281	08	07	35	84	6	S13	W24	0	0	0	08	Q	SOL: Quiet
						N24	W09	0	0	0	08	Q	MAG: Quiet
						N24	E57	0	0	0	08	Q	PRO: Quiet
282	09	08	17	83	12	N24	E41	0	0	0	09	Q	SOL: Quiet
								0	0	0	09		MAG: Quiet
								0	0	0	09		PRO: Quiet
283	10	09	27	84	19	N25	E28	1	0	0	10	Q	SOL: Quiet
						N32	E41	0	0	0	10	Q	MAG: Quiet
								0	0	0	10		PRO: Quiet
284	11	10	44	84	22	N24	E13	1	0	0	11	Q	SOL: Quiet
						N31	E27	0	0	0	11	Q	MAG: Minor
						N23	W24	0	0	0	11	Q	PRO: Quiet
285	12	11	31	86	25	N31	E14	0	0	0	12	Q	SOL: Quiet
						N21	W37	0	0	0	12	Q	MAG: Quiet
								0	0	0	12		PRO: Quiet
286	13	12	60	89	5	N27	W08	0	0	0	13	Q	SOL: Quiet
						N31	E01	0	0	0	13	Q	MAG: Quiet
						N20	W50	0	0	0	13	Q	PRO: Quiet
						N33	E42	0	0	0	13	Q	
287	14	13	48	88	6	N31	W12	0	0	0	14	Q	SOL: Quiet
						N20	W63	2	0	0	14	Q	MAG: Quiet
						N33	E32	0	0	0	14	Q	PRO: Quiet
288	15	14	44	85	4	N31	W23	0	0	0	15	Q	SOL: Quiet
						N21	W74	0	0	0	15	Q	MAG: Quiet
						N14	E62	1	0	0	15	Q	PRO: Quiet
289	16	15	47	87	2	N30	W37	0	0	0	16	Q	SOL: Quiet
						N15	E47	0	0	0	16	Q	MAG: Quiet
						N18	E77	0	0	0	16	Q	PRO: Quiet
290	17	16	45	88	2	N30	W50	0	0	0	17	Q	SOL: Quiet
						N14	E34	0	0	0	17	Q	MAG: Quiet

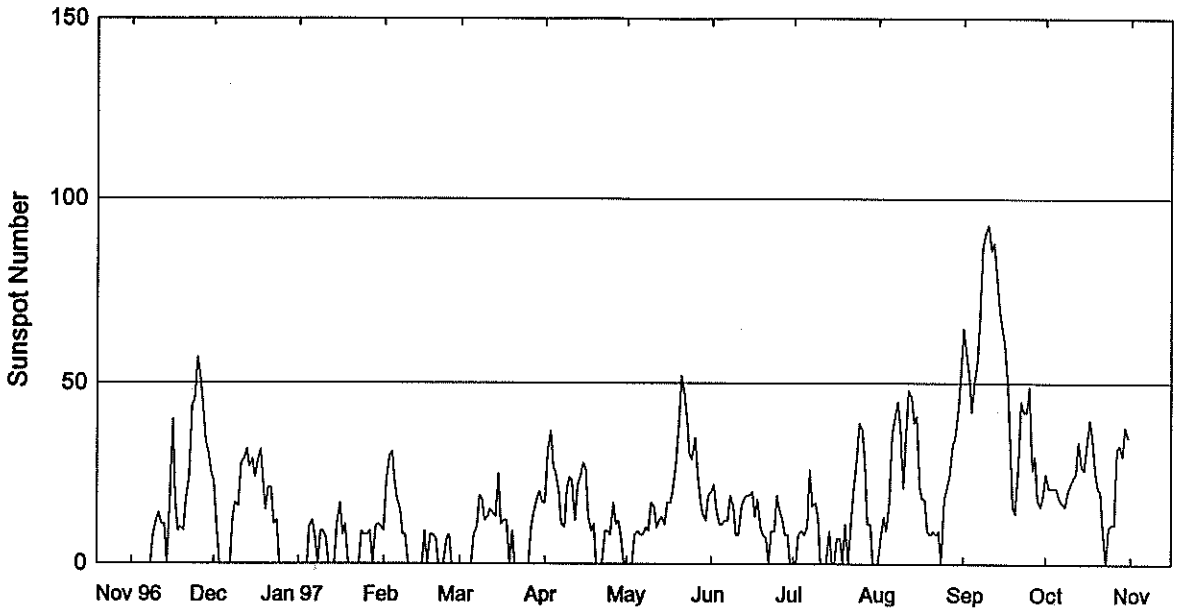
A L E R T P E R I O D S
The International Space Environment Service

OCTOBER 1997

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			
						N16	E69	1	0	0	17	Q	PRO: Quiet
291	18	17	52	88	2	N31	W62	3	0	0	18	Q	SOL: Quiet
						N13	E21	0	0	0	18	Q	MAG: Quiet
						N17	E57	0	0	0	18	Q	PRO: Quiet
292	19	18	45	87	2	N31	W75	0	0	0	19	Q	SOL: Quiet
						N13	E08	0	0	0	19	Q	MAG: Quiet
						N17	E43	0	0	0	19	Q	PRO: Quiet
293	20	19	37	85	1	N27	W91	0	0	0	20	Q	SOL: Quiet
						N13	W03	0	0	0	20	Q	MAG: Quiet
						N17	E26	0	0	0	20	Q	PRO: Quiet
294	21	20	25	83	5	N13	W16	0	0	0	21	Q	SOL: Quiet
						N16	E13	0	0	0	21	Q	MAG: Quiet
								0	0	0	21		PRO: Quiet
295	22	21	27	85	1	N13	W29	0	0	0	22	Q	SOL: Quiet
						N16	W01	1	0	0	22	Q	MAG: Quiet
								0	0	0	22		PRO: Quiet
296	23	22	13	81	3	N16	W14	0	0	0	23	Q	SOL: Quiet
								0	0	0	23		MAG: Quiet
								0	0	0	23		PRO: Quiet
297	24	23	0	80	5			0	0	0	24		SOL: Quiet
								0	0	0	24		MAG: Quiet
								0	0	0	24		PRO: Quiet
298	25	24	11	79	13	S26	W03	0	0	0	25	Q	SOL: Quiet
								0	0	0	25		MAG: Minor
								0	0	0	25		PRO: Quiet
299	26	25	13	81	18	N20	E64	0	0	0	26	Q	SOL: Quiet
								0	0	0	26		MAG: Active
								0	0	0	26		PRO: Quiet
300	27	26	14	82	13	N19	E52	0	0	0	27	Q	SOL: Quiet
								0	0	0	27		MAG: Quiet
								0	0	0	27		PRO: Quiet
301	28	27	44	84	15	S23	W43	0	0	0	28	Q	SOL: Quiet
						N19	E37	1	0	0	28	Q	MAG: Quiet
						S21	E67	0	0	0	28	Q	PRO: Quiet
302	29	28	50	86	9	S23	W57	0	0	0	29	Q	SOL: Quiet
						N19	E23	0	0	0	29	Q	MAG: Quiet
						S20	E55	2	0	0	29	E	PRO: Quiet
303	30	29	41	87	7	N20	E11	0	0	0	30	Q	SOL: Eruptive
						S21	E44	0	0	0	30	E	MAG: Quiet
								0	0	0	30		PRO: Quiet
304	31	30	51	88	6	N20	W03	0	0	0	31	Q	SOL: Eruptive
						S19	E30	2	0	0	31	E	MAG: Quiet
								0	0	0	31		PRO: Quiet

STRATWARM ALERTS - NONE

International Relative Sunspot Numbers
Nov 1996 - Oct 1997

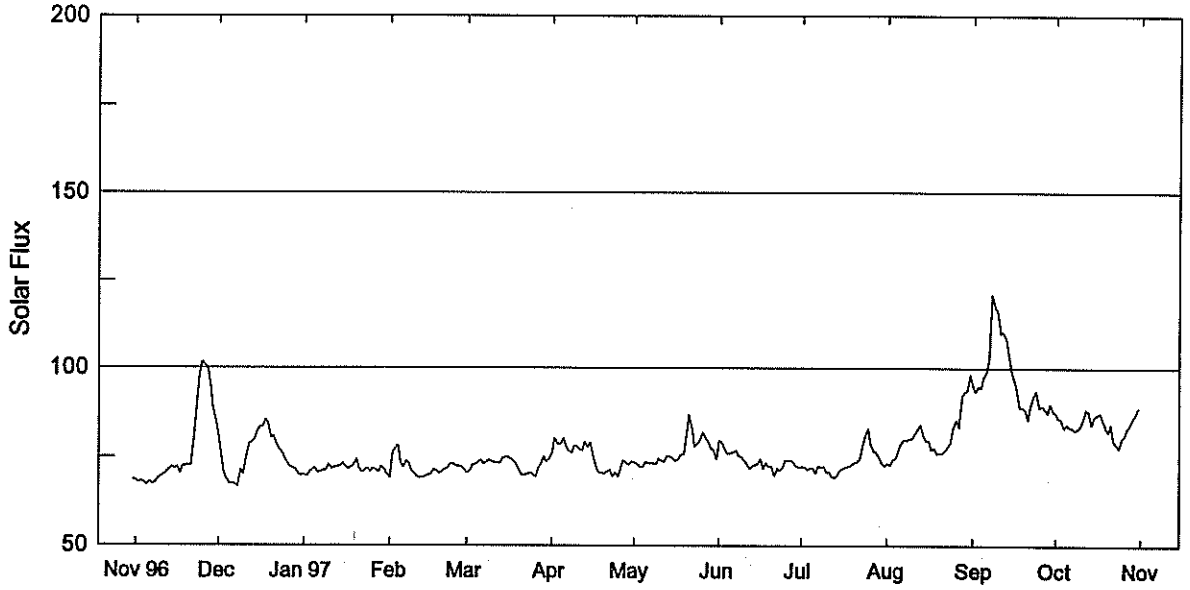


Day	Nov 96	Dec	Jan 97	Feb	Mar	Apr	May	Jun	Jul*	Aug*	Sep*	Oct*
1	0	23	0	9	0	17	0	20	0	0	65	25
2	0	12	0	23	0	31	0	22	0	8	59	21
3	0	0	0	30	0	37	0	15	8	13	52	21
4	0	0	11	31	0	27	8	11	9	9	42	21
5	0	0	10	23	0	25	9	11	8	17	50	21
6	0	0	12	18	8	20	8	12	10	36	56	18
7	0	0	8	15	10	11	8	12	26	41	68	17
8	0	13	0	8	19	10	10	19	16	45	87	16
9	8	17	9	8	18	21	9	16	17	38	91	20
10	12	16	9	0	12	24	17	8	13	21	93	22
11	14	28	7	0	13	23	16	8	0	36	86	24
12	11	29	0	0	15	12	10	16	0	48	88	25
13	11	32	0	0	14	22	12	18	0	46	80	34
14	0	27	0	0	13	24	13	19	9	39	70	27
15	20	29	11	0	25	28	11	19	0	41	65	26
16	40	24	17	9	11	26	17	20	0	21	61	34
17	18	28	8	0	12	13	17	13	7	18	49	40
18	9	32	11	8	12	9	21	18	7	18	33	35
19	10	23	0	8	0	11	27	10	0	9	16	25
20	9	15	0	7	9	0	39	8	11	8	14	21
21	18	21	0	0	0	0	52	7	0	9	28	20
22	24	21	0	0	0	8	48	0	11	8	45	9
23	44	11	0	0	0	9	40	9	20	9	42	0
24	45	12	9	7	0	9	30	9	29	0	42	10
25	57	0	8	8	0	8	29	19	39	18	49	11
26	52	0	8	0	0	17	35	15	37	21	26	11
27	45	0	9	0	10	11	25	12	28	24	30	32
28	34	0	0	0	14	12	17	8	11	33	18	33
29	31	0	10		18	8	14	8	11	35	16	30
30	25	0	11		20	0	12	0	0	43	19	38
31		0	10		17		19		0	53		35
Mean	17.9	13.3	5.7	7.6	8.7	15.5	18.5	12.7	10.5	24.7	51.3	23.3

* = Provisional.

Penticton 2800 MHz (10.7cm) Solar Flux
Nov 96 - Oct 97

Adjusted to 1 AU



Day	Nov 96	Dec	Jan 97	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1	68.5	80.8	70.0	69.2	70.5*	76.2	73.4	79.6	72.4	73.2	95.1	87.3
2	67.9	75.7	69.7	76.2	71.1	80.4	73.3	79.1	72.4	72.9	93.3	86.0
3	68.3	70.7	70.8	77.4	72.8	78.8	72.3	77.4	71.4	74.3	94.7	85.8
4	67.8	68.6	71.4	78.4	72.8	78.6	72.1	76.1	72.0	74.9	94.6	83.4
5	67.1	67.6	71.9	73.3	73.4	80.3	73.6	76.1	72.0	76.9	97.6	84.3
6	68.0	67.6	70.6	72.2	74.2	78.3	73.4	76.4	70.6	79.0	99.1	83.6
7	67.3	67.1	70.9	73.7	73.1	77.0	73.3	76.9	72.6	80.1	103.6	83.4
8	67.8	66.6	71.3	73.2	73.6	76.3	73.3	75.4	72.1	79.9	121.1	82.7
9	68.9	71.5	71.3	71.2	74.1	78.3	73.0	75.3	72.3	80.3	117.7	83.3
10	69.6	70.2	72.9	70.4	73.8	78.0	74.6*	74.2	70.8	80.4	116.4	84.0
11	70.0	75.2	71.6	69.3	73.4	77.4	73.8	73.0	70.9	81.6	110.0	85.8
12	70.7	78.6	72.1	69.1	73.4	76.9	73.7	71.8	69.6	83.0	110.3	88.3
13	71.5	79.2	72.1	69.3	73.3	79.3	75.4	72.3	69.3	84.2	108.9	87.8
14	72.1	80.0	72.4	69.6	74.7	77.9	75.1	72.9	70.3	81.6	103.7	84.3
15	71.9	82.3	73.3	70.1	75.0	79.2	74.7	73.0	71.5	79.6	99.1	86.4
16	72.2	83.5	72.4	70.3	75.0	75.6	73.9	74.4	71.9	79.8	96.4	86.9
17	70.4	83.6	71.7	71.4	74.4	72.3	74.4	71.8	72.2	77.4	94.0	87.5
18	72.4	85.6	72.2	71.2	73.7	70.7	75.8	73.5	72.3	77.7	89.0	85.9
19	72.6	84.6	72.9	70.4	73.1	70.6	76.0	72.4	72.8	76.1	89.1	84.0
20	72.7	80.3	74.3	71.0	71.0	70.4	81.1	72.5	73.5	76.3	88.4	82.1
21	72.6	80.9	71.8	71.6	70.0	70.9	86.9	69.8	73.6	76.3	85.8	84.2
22	80.6	78.9	70.7	71.9	70.1	71.5	83.0	71.8	74.5	77.2	89.6	79.9
23	88.7	76.9	71.1	73.0	70.3	69.7	78.1	71.3	78.1	78.2	92.3	78.8
24	97.3	76.4	71.9	73.1	70.6	70.7	78.9	72.2	81.2	79.4	93.5	77.7
25	101.7	74.7	70.9	72.6	70.2	69.6	80.1	74.1	83.0	83.7	88.9	80.5
26	100.8	73.0	71.9	72.4	69.5	71.8	82.0#	74.2	79.0	85.5	89.5	81.0
27	100.0	72.2	71.3	72.4	71.9	74.1	80.4	74.1	76.8	83.5	88.8	83.3
28	95.4	71.8	70.8	71.5	72.9	73.4	79.5	73.6	76.5	92.3	87.5	84.4
29	88.5	71.4	72.4		75.1	72.9	77.6	72.6	75.0	93.3	90.0	86.0
30	85.1	70.1	71.5		73.8	73.7	77.2	72.1	73.2	93.8	87.9	86.9
31		69.8	70.3		74.6		74.5		72.5	98.2		89.2
Mean	76.9	75.3	71.6	72.0	72.8	75.0	76.3	74.0	73.4	81.0	97.2	84.3

NOTE: *=Average of 1700 and 2300UT readings. #=1900UT reading.

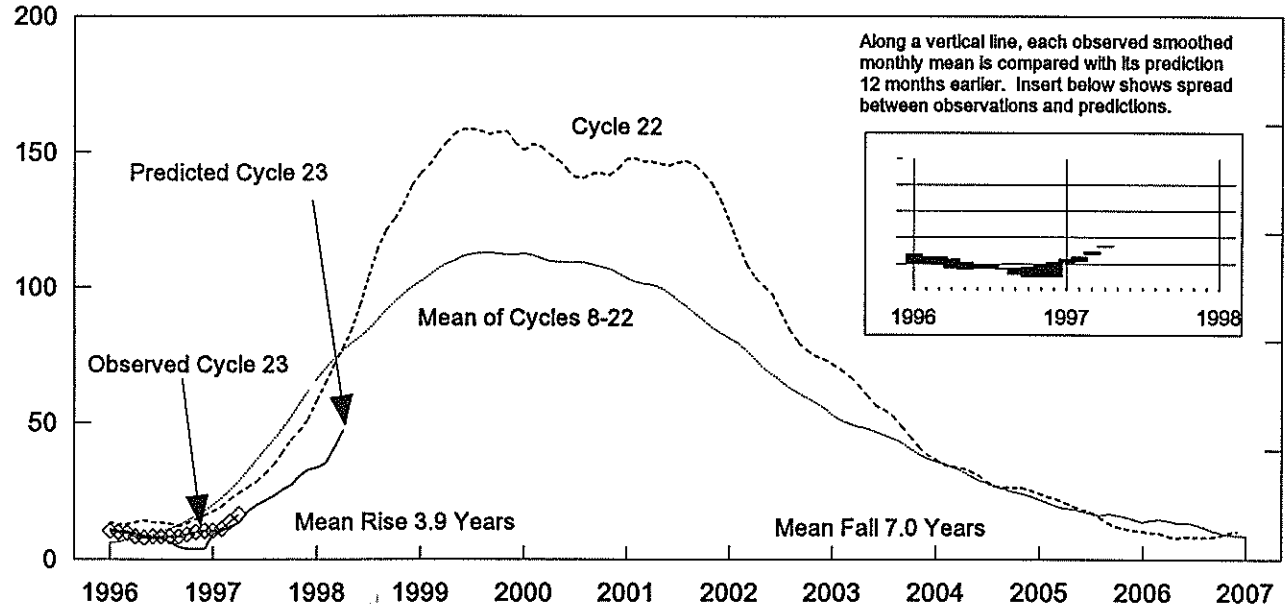
DAILY SOLAR INDICES

October 1997

Day	Day of Year	Bartels Cycle Day	Sunspot Numbers Int	Amer	Obs Flux Penticton (2800)	Solar Flux Adjusted to 1 Astronomical Unit — LEAR (15400)	LEAR (8800)	LEAR (4995)	Pentic (2800)	LEAR (2695)	LEAR (1415)	LEAR (610)	LEAR (410)	LEAR (245)
1	274	22	25	25	87.1	555	214	134	87.3	84	60	37	26	13
2	275	23	21	25	85.9	533	212	130	86.0	81	59	36	22	12
3	276	24	21	27	85.7	550	216	130	85.8	84	60	37	27	12
4	277	25	21	26	83.4	548	216	129	83.4	84	60	37	27	13
5	278	26	21	26	84.4	542	213	128	84.3	79	59	37	--	12
6	279	27	18	21	83.7	540	217	128	83.6	80	60	37	--	--
7	280	1	17	19	83.5	544	214	127	83.4	80	60	39	25	13
8	281	2	16	14	82.9	539	217	129	82.7	81	60	37	30	12
9	282	3	20	23	83.5	609	210	128	83.3	81	63	38	26	11
10	283	4	22	27	84.2	592	215	128	84.0	82	67	42	29	16
11	284	5	24	29	86.1	528	214	128	85.8	82	62	39	27	12
12	285	6	25	33	88.7	523	214	127	88.3	84	61	37	26	13
13	286	7	34	32	88.3	512	217	132	87.8	87	62	37	--	12
14	287	8	27	30	84.8	521	212	128	84.3	85	61	37	27	14
15	288	9	26	35	86.9	520	215	127	86.4	82	60	36	30	15
16	289	10	34	46	87.5	506	216	129	86.9	84	60	35	24	13
17	290	11	40	49	88.2	524	218	132	87.5	85	65	41	--	13
18	291	12	35	37	86.6	520	213	130	85.9	85	63	41	30	13
19	292	13	25	29	84.7	501	217	127	84.0	83	63	42	31	20
20	293	14	21	26	82.8	503	218	128	82.1	81	63	--	--	--
21	294	15	20	24	85.0	521	217	128	84.2	80	63	39	29	11
22	295	16	9	9	80.7	521	216	124	79.9	78	60	38	23	11
23	296	17	0	2	79.7	513	214	124	78.8	78	60	40	26	12
24	297	18	10	1	78.6	518	212	122	77.7	76	58	38	18	11
25	298	19	11	11	81.4	502	212	122	80.5	76	57	38	28	12
26	299	20	11	13	82.0	512	214	124	81.0	79	59	39	29	12
27	300	21	32	28	84.4	516	216	128	83.3	81	60	40	31	14
28	301	22	33	38	85.5	509	218	130	84.4	84	62	39	46	13
29	302	23	30	41	87.2	520	217	129	86.0	83	62	39	33	13
30	303	24	38	50	88.2	518	212	132	86.9	85	63	38	32	11
31	304	25	35	45	90.5	507	206	129	89.2	84	62	39	32	13
MEAN			23.3	27.2	84.9	527	214	128	84.3	81	61	38	28	12

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	93.8
1993	71	69	67	64	60	56	55	52	48	45	41	38	55.5
1994	37	35	34	34	33	31	29	27	27	27	26	26	30.5
1995	24	23	22	21	19	18	17	16	13	12	11	11	17.3
1996	11	10	10	9	8	9	8	8	8	9	10	10	9.2
1997	11	11	14	17	19	21	24	27	30	34	37	41	24
( )					(1)	(3)	(5)	(7)	(9)	(12)	(15)	(17)	(6)
1998	45	50	54	59	63	67	71	74	77	80	84	87	68
( )	(20)	(22)	(25)	(28)	(31)	(34)	(37)	(39)	(40)	(39)	(40)	(40)	(33)

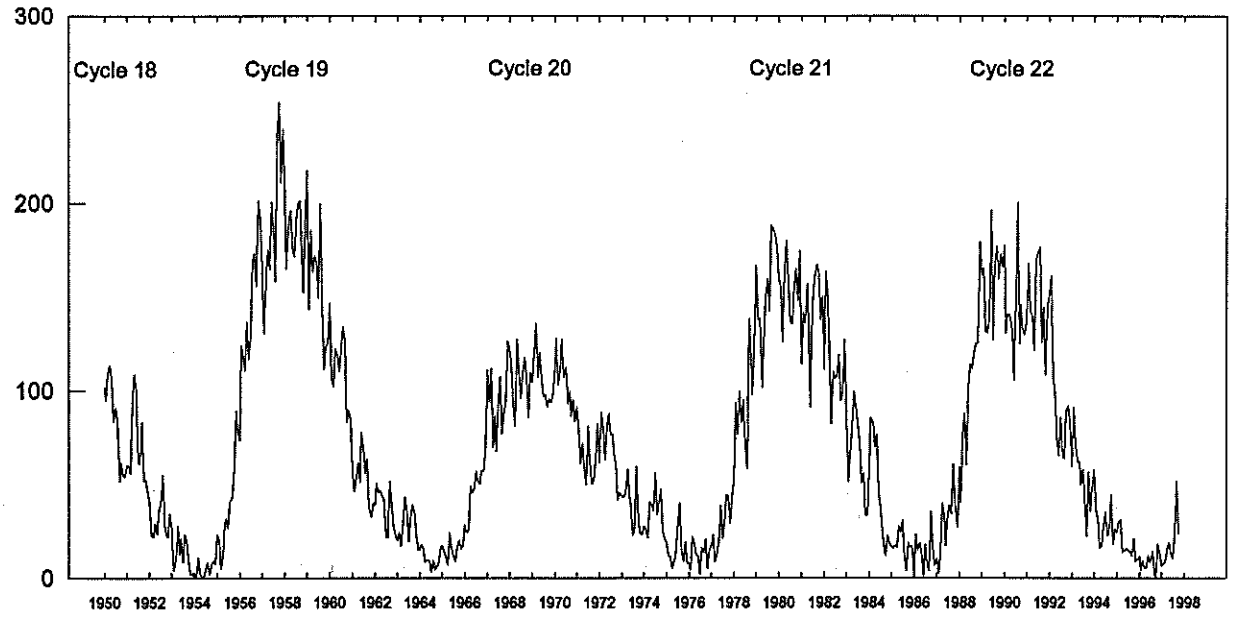
Solar Cycle 22 | Solar Cycle 23 | Min, Max, and Predictions

July 1989 marks the maximum of Solar Cycle 22. May 1996 marks the minimum of Solar Cycle 22 and the onset of Cycle 23.

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 1996 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 April 1998 prediction. There exists a 90% chance that in April 1998, the actual smoothed number will fall somewhere between 31 and 87.

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 minimum value of 8.0 that occurred in May 1996. For next solar maximum discussions, visit http://www.sec.noaa.gov.

Mean Monthly Sunspot Numbers
Jan 1950 - Oct 1997



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	21.2	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	10.5	24.7	51.3	23.3			17.9	

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

Hα SOLAR FLARES

OCTOBER 1997

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	01	1041	1046	1050						9		B 2.2						1.0E-04
GOES		1325	1330	1334						9		B 2.3						1.0E-04
GOES		1616	1626	1638						22		B 8.5						9.2E-04
GOES	02	0057	0108	0121						24		B 7.8						7.7E-04
GOES		0238	0245	0252	S35	E54	8090			14	SF	C 1.0						5.4E-04
LEAR		0242	0245	0256	S35	E54	8090	10	6.4	14	SF		3	E		36		
GOES		0438	0456	0816						218		B 1.1						1.4E-03T
GOES		1000	1017	1031						31		B 4.6						6.5E-04
GOES		1257	1303	1311	N24	E67	8091			14	SF	B 2.6						1.9E-04
RAMY		1300	1300	1306	N24	E67	8091	10	7.7	6	SF		4	E		14		F
GOES		2106	2112	2118						12		B 2.0						1.3E-04
GOES	03	0515	0524	0530	N18	E55	8091			15	SF	B 3.7						2.5E-04
LEAR		0521	0523	0528	N18	E55	8091	10	7.4	7	SF		3	E		24		
GOES		1151	1205	1233	N20	E58	8091			42	SF	B 2.4						5.0E-04
RAMY		1157	1158	1205	N20	E58	8091	10	7.9	8	SF		3	E		14		FH
GOES		1819	1823	1826						7		B 2.9						7.8E-05
GOES	04	1825	1829	1834						9		B 1.2						5.8E-05
GOES		2206	2211	2214						8		B 1.3						5.0E-05
GOES	05	1748	1757	1817	N18	E22	8091			29	SF	B 3.9						5.2E-04
HOLL		1753	1757	1809	N18	E22	8091	10	7.4	16	SF		3	E		28		F
GOES	07	1457	1512	1529						32		B 2.2						3.3E-04
GOES		1822	1825	1827						5		B 1.1						2.8E-05
GOES	08	0201	0214	0224						23		B 3.8						3.7E-04
GOES		0240	0245	0253						13		B 2.9						1.9E-04
GOES	09	1106	1112	1121						15		B 3.5						2.1E-04
GOES		1147	1202	1218	N24	E35	8092			31	SF	B 9.2						1.2E-03
RAMY		1152	1153	1215D	N24	E35	8092	10	12.2	23D	SF		3	E		13		U
GOES	10	0139	0143	0147						8		B 1.8						6.4E-05
GOES		0323	0359	0414	N24	E27	8092			51	SF	B 3.8						6.7E-04
LEAR		0349	0353	0411	N24	E27	8092	10	12.2	22	SF		3	E		27		
GOES	11	0842	0858	0911	N22	E14	8092			29	SF	B 4.8						5.8E-04
LEAR		0850	0856	0914	N22	E14	8092	10	12.4	24	SF		3	E		39		UF
SVTO		0852E	0856U	0917D	N24	E11	8092	10	12.2	25D	SF		2	E		80		F
GOES		2013	2021	2030						17		B 2.3						1.7E-04
GOES		2124	2134	2143						19		B 3.2						2.7E-04
GOES		2329	2335	2344						15		B 6.5						3.7E-04
GOES	12	0602	0654	0842						160		B 2.3						1.5E-03
GOES		1608	1611	1613						5		B 1.3						3.2E-05
GOES		2351	2357	2410						19		B 1.7						1.7E-04
GOES	13	0040	0045	0049	N22	W50	8094			9	SF	B 1.8						8.4E-05
LEAR		0043	0043	0050	N22	W50	8094	10	9.2	7	SF		3	E		22		
GOES		0910	1240	1423						313		B 6.8						5.3E-03T
GOES		2311	2318	2323	N22	W63	8094			12	1F	C 1.0						4.9E-04
LEAR		2314	2316	2340	N28	W63	8094	10	9.0	26	1N		3	E		115		
HOLL		2314	2317	2338	N22	W63	8094	10	9.1	24	1F		3	E		116		
GOES	14	1218	1223	1229						11		B 1.3						7.5E-05
GOES		2007	2011	2014						7		B 1.6						5.4E-05
GOES		2113	2118	2122	N13	E64	8096			9	SF	B 2.6						1.0E-04
HOLL		2115	2117	2125	N13	E64	8096	10	19.7	10	SF		3	E		34		H
GOES	15	1507	1528	1548						41		B 5.9						1.1E-03
GOES	16	0507	0521	0536						29		B 2.4						3.8E-04
GOES		1718	1722	1737	N20	E85	8097			19	SF	B 1.2						1.4E-04
RAMY		1723E	1723U	1731D	N20	E85	8097	10	23.2	8D	SF		3	E		21		
GOES		2139	2147	2151						12		B 1.5						9.4E-05

Hα S O L A R F L A R E S

OCTOBER 1997

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
LEAR	17	0459	0459	0504	N31	W50	8093	10	13.3	5	SF		3	E		10		
LEAR		0541	0542	0547	N31	W50	8093	10	13.3	6	SF		3	E		18		
GOES		0554	0558	0602						8		B 2.2						9.7E-05
GOES		1215	1221	1227						12		B 2.3						1.3E-04
GOES		1416	1424	1433	N32	W56	8093			17	SF	B 3.0						2.5E-04
SVTO		1419	1421	1427	N32	W57	8093	10	13.1	8	SF		3	E		33		F
RAMY		1420	1421	1433	N32	W56	8093	10	13.2	13	SF		4	E		30		F
GOES	18	0826	0830	0838						12		B 1.5						9.7E-05
GOES		1511	1515	1519						8		B 1.2						5.3E-05
GOES	19	1900	1906	1913						13		B 1.5						1.1E-04
GOES	20	0219	0222	0226						7		B 1.2						4.4E-05
GOES		0330	0335	0338						8		B 5.1						1.4E-04
GOES		1110	1117	1132						22		B 1.7						1.9E-04
GOES		1213	1216	1219						6		B 1.2						3.6E-05
GOES		1350	1355	1402						12		B 1.9						1.1E-04
GOES	21	0227	0236	0247						20		B 3.4						3.6E-04
GOES		1700	1754	1816	N16	E07	8097			76	SF	C 3.3						7.0E-03
RAMY		1733	1750	1819	N16	E07	8097	10	22.3	46	SF		4	E		89		F
HOLL		1733	1750	1819	N16	E07	8097	10	22.3	46	SF		3	E		86		US
GOES	25	2035	2041	2058						23		B 1.7						2.0E-04
GOES	26	0221	0227	0232						11		B 1.3						7.6E-05
GOES		2245	2249	2251						6		B 1.9						6.1E-05
GOES	27	0242	0247	0254						12		B 1.5						9.0E-05
GOES		0321	0326	0330						9		B 2.0						8.1E-05
GOES		0345	0357	0408						23		B 1.7						2.2E-04
SVTO		1151	1151	1156	N21	E46	8099	10	31.0	5	SF		3	E		12		F
GOES		1418	1421	1426						8		B 1.2						5.0E-05
GOES		1512	1517	1521						9		B 1.5						7.0E-05
GOES		2122	2142	2157						35		B 2.0						3.6E-04
GOES	28	0138	0207	0224						46		B 2.6						5.3E-04
GOES		0325	0338	0341	S28	E68	8100			16	SN	C 2.8						1.0E-03
LEAR		0334	0337	0347	S28	E68	8100	11	2.5	13	SN		4	E		57		F
GOES		0736	0742	0746						10		B 1.6						7.8E-05
GOES		0838	0846	0853						15		B 3.2						2.2E-04
GOES		1251	1256	1300	S22	E61	8100			9	1F	C 5.9						1.6E-03
RAMY		1255	1258	1316	S22	E61	8100	11	2.2	21	1F		3	E		101		H
GOES		1348	1351	1353						5		B 1.2						3.1E-05
GOES		2009	2014	2023						14		B 1.3						1.0E-04
GOES		2317	2320	2325						8		B 1.0						4.5E-05
GOES	29	0414	0417	0421						7		B 1.0						3.8E-05
GOES		0701	0705	0708						7		B 1.2						4.5E-05
GOES		1021	1025	1027						6		B 1.0						3.2E-05
GOES		2303	2309	2320						17		B 1.7						1.6E-04
GOES	30	0056	0101	0109						13		B 3.5						1.9E-04
GOES		0234	0238	0301						27		B 2.0						2.8E-04
GOES		0441	0444	0446						5		B 1.4						4.1E-05
GOES		0814	0821	0832						18		B 1.9						1.7E-04
GOES		1102	1113	1124						22		B 4.4						4.3E-04
GOES		1329	1333	1335						6		B 2.0						6.2E-05
GOES		1433	1437	1439						6		B 2.5						6.3E-05
GOES		1516	1524	1529	S20	E34	8100			13	SF	B 6.7						3.7E-04
RAMY		1520	1520	1532	S20	E34	8100	11	2.2	12	SF		4	E		29		
HOLL		1528E	1528U	1532	S21	E33	8100	11	2.2	4D	SF		3	E		18		
GOES		1557	1610	1614	S19	E33	8100			17	SF	B 3.3						1.8E-04
RAMY		1609	1609	1614	S19	E33	8100	11	2.2	5	SF		4	E		12		
GOES		1859	1902	1905						6		B 2.3						5.7E-05
GOES		2021	2026	2030						9		B 2.7						1.1E-04
GOES	31	1933	1938	1940	S20	E16	8100			7	SF	B 4.4						1.1E-04

Hα SOLAR FLARES

OCTOBER 1997

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	31	1938	1939	1942	S19	E15	8100	11	2.0	4	SF		3	E		23		
HOLL		1938	1939	1943	S20	E16	8100	11	2.0	5	SF		3	E		23		

"Remarks"

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

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

NOTE: Beginning with the July 1997 data, individual reports of GOES X-ray events are now included in this table. The times with these reports are the X-ray times of start, max and end.

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

OCTOBER 1997

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
28	8800	SVTO	8 S	1254.0	1255.0	1.0	19.0			QL=2 ST=2 TYP=3
	2695	SVTO	4 S/F	1254.0	1255.0	3.0	25.0			QL=4 ST=2 TYP=3

Reports are received routinely from the following observatories:
LEAR = Learmonth PALE = Palehua SGMR = Sagamore Hill SVTO = San Vito

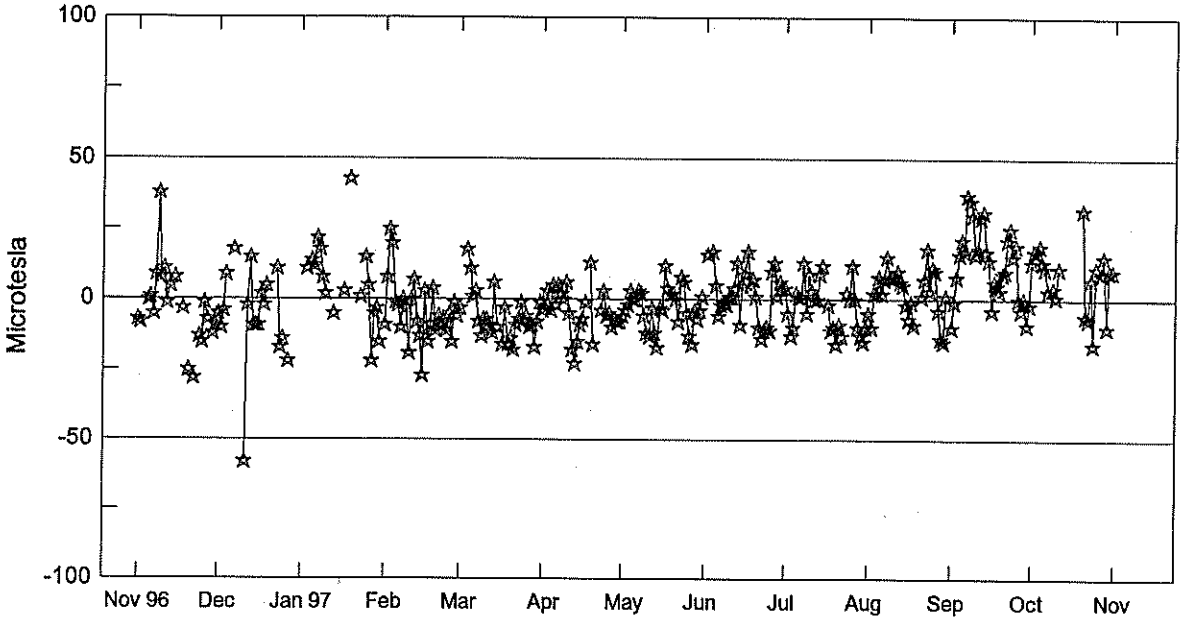
Explanation of Type Code:

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

1A Simple 1A	4A Simple 2AF	24PF Post Rise F	27F Rise and Fall F
3A Simple 2A	40 Rise Only	16A Fall A	27AF Rise and Fall AF
21A Simple 3A GRF	40F Rise Only F	260 Fall Only	31A Post Burst Decrease A
2A Simple 1AF	4P Post Rise	26F Fall F	32A Absorption A

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

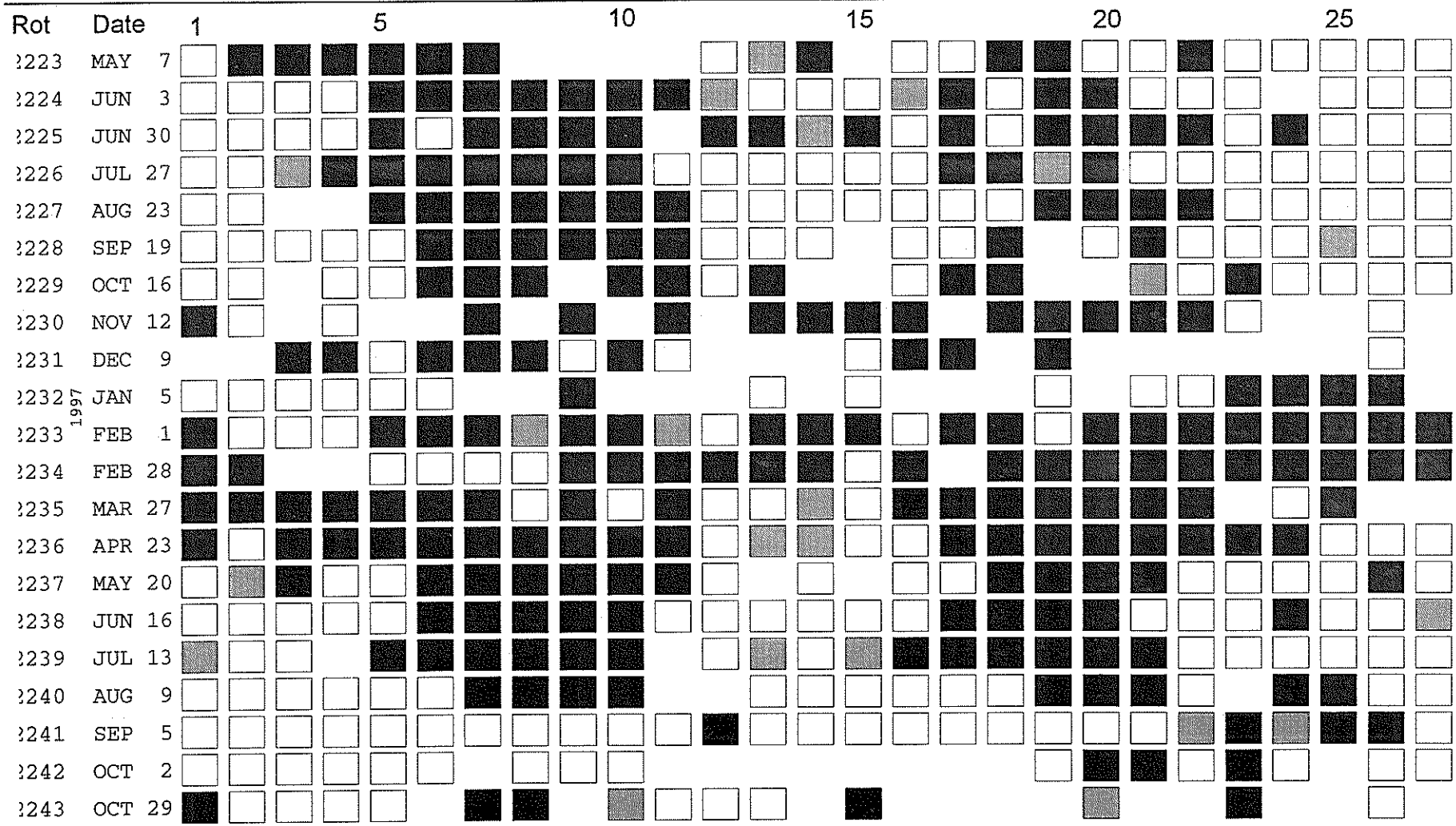
Stanford Mean Solar Magnetic Field (Microtesla)
"Sun-As-A-Star"



Day	Nov 96	Dec	Jan 97	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1	-7	-5	---	-9	-3	-4	-6	---	4	-5	-10	13
2	-8	-10	---	8	---	-3	-4	16	-5	-10	-1	17
3	---	-4	11	25	---	3	-2	---	-13	2	8	17
4	---	9	---	20	18	-4	3	17	-10	2	16	19
5	0	---	14	-1	11	5	0	5	-2	8	21	13
6	1	---	12	-2	1	-2	0	-6	1	2	17	11
7	-5	18	22	-10	3	5	3	-2	1	7	37	3
8	9	---	18	0	-8	2	2	-1	13	15	35	---
9	38	---	8	-3	-13	0	-6	-2	-5	8	30	4
10	8	---	2	-19	-7	6	-12	1	9	8	16	1
11	11	-58	---	0	-7	-5	-13	1	3	8	18	11
12	-1	-2	---	7	-9	-18	-3	4	0	10	29	---
13	5	15	-5	-8	-12	-23	-12	13	0	6	31	---
14	---	-9	---	-13	6	-15	-17	-9	9	5	17	---
15	8	-9	---	-27	-10	-9	-3	5	12	-2	14	---
16	---	-9	---	3	---	-7	-4	9	---	-7	-4	---
17	---	2	3	-15	-16	-1	12	17	-2	-1	6	---
18	-3	-2	---	-9	-3	---	4	5	-11	-9	5	---
19		5	43	4	-16	13	2	7	-10	---	3	---
20	-25	---	---	-11	-14	-16	2	1	-16	---	9	32
21	---	---	---	-6	-18	---	0	-10	-9	1	10	-6
22	-28	---	---	-9	-9	---	-8	-14	-13	7	21	-7
23	---	11	1	-8	-7	-4	8	-11	---	18	25	7
24	-13	-17	---	-11	-1	3	6	-10	2	3	15	-16
25	-15	-14	15	-5	-8	-6	-5	-11	0	11	19	11
26	-1	---	5	-15	-6	-5	-13	10	12	10	0	---
27	-7	-22	-22	-1	-10	-10	-16	13	0	-4	-4	9
28	---	---	-5	-6	-9	-7	-4	1	-10	-14	0	15
29	-12	---	-3		-17	-8	-7	6	-13	-15	-9	-10
30	-9	---	-15		-8	-8	-4	4	-15	1	-2	10
31		---	---		-1		1		-10	---		10

Note: --- Indicates no data available for the day.

STANFORD MEAN SOLAR MAGNETIC FIELD

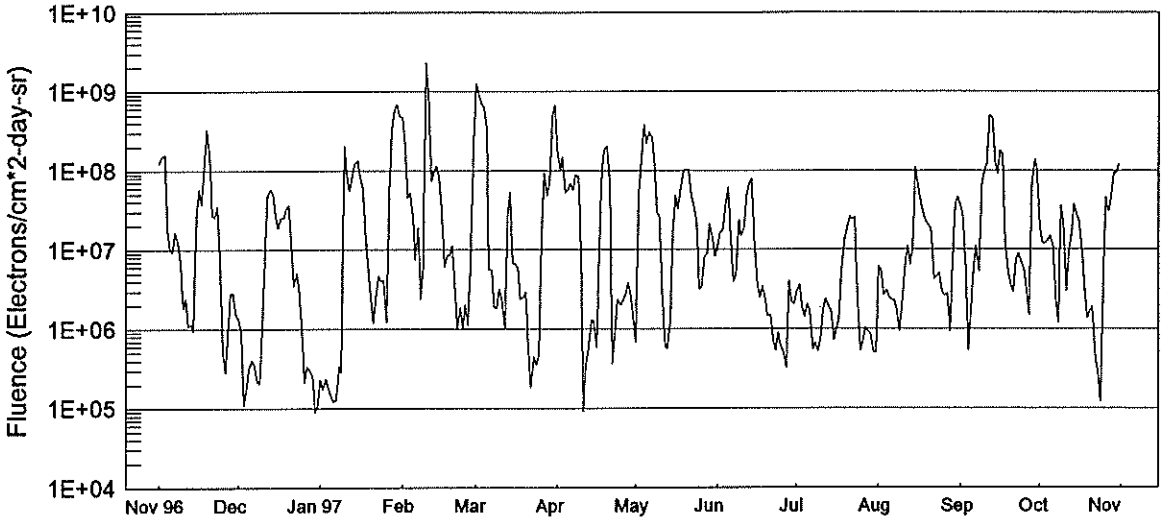


Mean Solar Magnetic Field Polarity: = field > 2 microT; = -2 microT ≤ field ≤ 2 microT

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

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

GOES Daily Electron Fluence
Nov 96 - Oct 97



Day	Nov 96	Dec	Jan 97	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1	1.2E+08	1.3E+06	2.3E+05	4.7E+08	1.2E+09	1.8E+08	6.8E+05	1.0E+07	2.9E+06	6.1E+06	3.5E+07	1.9E+07
2	1.4E+08	8.8E+05	1.7E+05	2.0E+08	9.0E+08	1.0E+08	5.2E+07	1.6E+07	3.6E+06	5.4E+06	2.8E+07	1.2E+07
3	1.5E+08	1.0E+05	2.3E+05	4.5E+07	7.0E+08	1.4E+08	1.3E+08	1.6E+07	1.8E+06	2.6E+06	5.5E+06	1.2E+07
4	1.7E+07	1.7E+05	1.8E+05	5.3E+07	6.3E+08	5.2E+07	3.8E+08	3.7E+07	1.4E+06	3.1E+06	5.4E+05	1.3E+07
5	1.0E+07	3.1E+05	1.4E+05	2.4E+07	3.4E+08	5.6E+07	2.2E+08	6.1E+07	2.0E+06	2.5E+06	1.7E+06	1.5E+07
6	9.2E+06	4.1E+05	1.2E+05	7.5E+06	5.6E+06	6.8E+07	3.1E+08	1.3E+07	1.6E+06	2.3E+06	5.4E+06	1.1E+07
7	1.6E+07	3.4E+05	1.2E+05	1.9E+07	5.5E+06	5.6E+07	2.6E+08	3.9E+06	5.5E+05	2.2E+06	1.1E+07	2.4E+06
8	1.2E+07	2.1E+05	3.4E+05	2.4E+06	1.8E+06	8.7E+07	1.1E+08	4.6E+06	6.6E+05	1.7E+06	5.3E+06	1.2E+06
9	6.8E+06	2.0E+05	2.8E+05	6.0E+06	1.8E+06	8.4E+07	2.9E+07	2.3E+07	5.2E+05	9.3E+05	6.6E+07	3.6E+07
10	1.8E+06	9.7E+05	2.0E+08	2.3E+09	3.2E+06	9.8E+06	2.6E+07	1.4E+07	7.6E+05	1.9E+06	1.0E+08	2.2E+07
11	2.4E+06	1.1E+07	8.6E+07	9.7E+08	2.3E+06	9.1E+04	3.1E+06	1.8E+07	1.7E+06	6.3E+06	1.2E+08	3.0E+06
12	1.0E+06	4.7E+07	5.4E+07	7.4E+07	1.0E+06	3.7E+05	6.1E+05	4.8E+07	2.4E+06	1.0E+07	5.0E+08	9.9E+06
13	1.1E+06	5.8E+07	8.2E+07	9.6E+07	2.6E+07	5.7E+05	5.5E+05	6.8E+07	1.9E+06	6.4E+06	4.6E+08	1.5E+07
14	9.4E+05	5.1E+07	1.2E+08	1.1E+08	5.3E+07	1.2E+06	1.2E+06	7.8E+07	1.6E+06	1.0E+07	1.3E+08	3.7E+07
15	2.6E+07	2.7E+07	1.3E+08	8.2E+07	6.6E+06	1.2E+06	1.6E+07	1.4E+07	7.2E+05	1.1E+08	9.1E+07	2.8E+07
16	5.7E+07	1.8E+07	7.9E+07	3.4E+07	6.6E+06	5.9E+05	4.9E+07	3.7E+06	1.0E+06	5.7E+07	1.8E+08	2.3E+07
17	3.7E+07	2.4E+07	6.2E+07	6.1E+06	5.8E+06	9.7E+06	3.2E+07	2.4E+06	1.3E+06	3.8E+07	1.6E+08	9.3E+06
18	1.0E+08	2.5E+07	1.7E+07	8.3E+06	2.4E+06	1.0E+08	5.5E+07	3.4E+06	5.4E+06	2.7E+07	1.2E+07	3.0E+06
19	3.3E+08	3.2E+07	6.8E+06	8.4E+06	2.4E+06	1.8E+08	9.8E+07	2.5E+06	1.3E+07	2.2E+07	5.1E+06	1.4E+06
20	1.4E+08	3.6E+07	2.4E+06	1.1E+07	2.9E+06	2.0E+08	1.0E+08	1.4E+06	1.8E+07	2.0E+07	3.6E+06	1.7E+06
21	2.7E+07	1.1E+07	1.1E+06	3.7E+06	5.6E+05	6.9E+07	1.0E+08	1.5E+06	2.6E+07	1.8E+07	2.9E+06	1.9E+06
22	2.5E+07	3.4E+06	2.6E+06	9.9E+05	1.8E+05	3.6E+05	5.0E+07	7.3E+05	2.4E+07	4.2E+06	7.3E+06	4.2E+05
23	3.5E+07	5.1E+06	4.6E+06	1.8E+06	4.5E+05	8.4E+05	3.6E+07	5.2E+05	2.5E+07	4.5E+06	8.9E+06	2.9E+05
24	7.9E+06	2.8E+06	3.9E+06	1.0E+06	3.5E+05	2.3E+06	2.1E+07	9.0E+05	2.9E+06	4.9E+06	6.7E+06	1.2E+05
25	5.0E+05	9.5E+05	4.0E+06	2.0E+06	4.8E+05	2.0E+06	3.1E+06	6.1E+05	5.4E+05	2.9E+06	5.6E+06	2.9E+06
26	2.8E+05	2.1E+05	1.2E+06	1.1E+06	1.2E+07	2.3E+06	3.4E+06	5.2E+05	7.2E+05	2.6E+06	3.0E+06	4.6E+07
27	8.9E+05	3.4E+05	5.2E+07	5.7E+06	9.4E+07	2.7E+06	8.0E+06	3.2E+05	1.0E+06	2.7E+06	1.5E+06	3.0E+07
28	2.8E+06	3.0E+05	3.3E+08	2.2E+08	4.7E+07	3.8E+06	8.8E+06	4.0E+06	9.3E+05	9.4E+05	6.6E+07	4.1E+07
29	2.8E+06	2.6E+05	5.7E+08		7.3E+07	2.7E+06	2.1E+07	2.2E+06	8.7E+05	6.9E+06	1.4E+08	9.5E+07
30	1.5E+06	9.0E+04	6.8E+08		4.9E+08	1.2E+06	1.4E+07	2.0E+06	5.1E+05	3.6E+07	1.1E+08	9.3E+07
31		1.0E+05	4.7E+08		6.6E+08		8.2E+06		5.0E+05	4.6E+07		1.2E+08

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.

CONTENTS

Prompt Reports Number 639 Part I

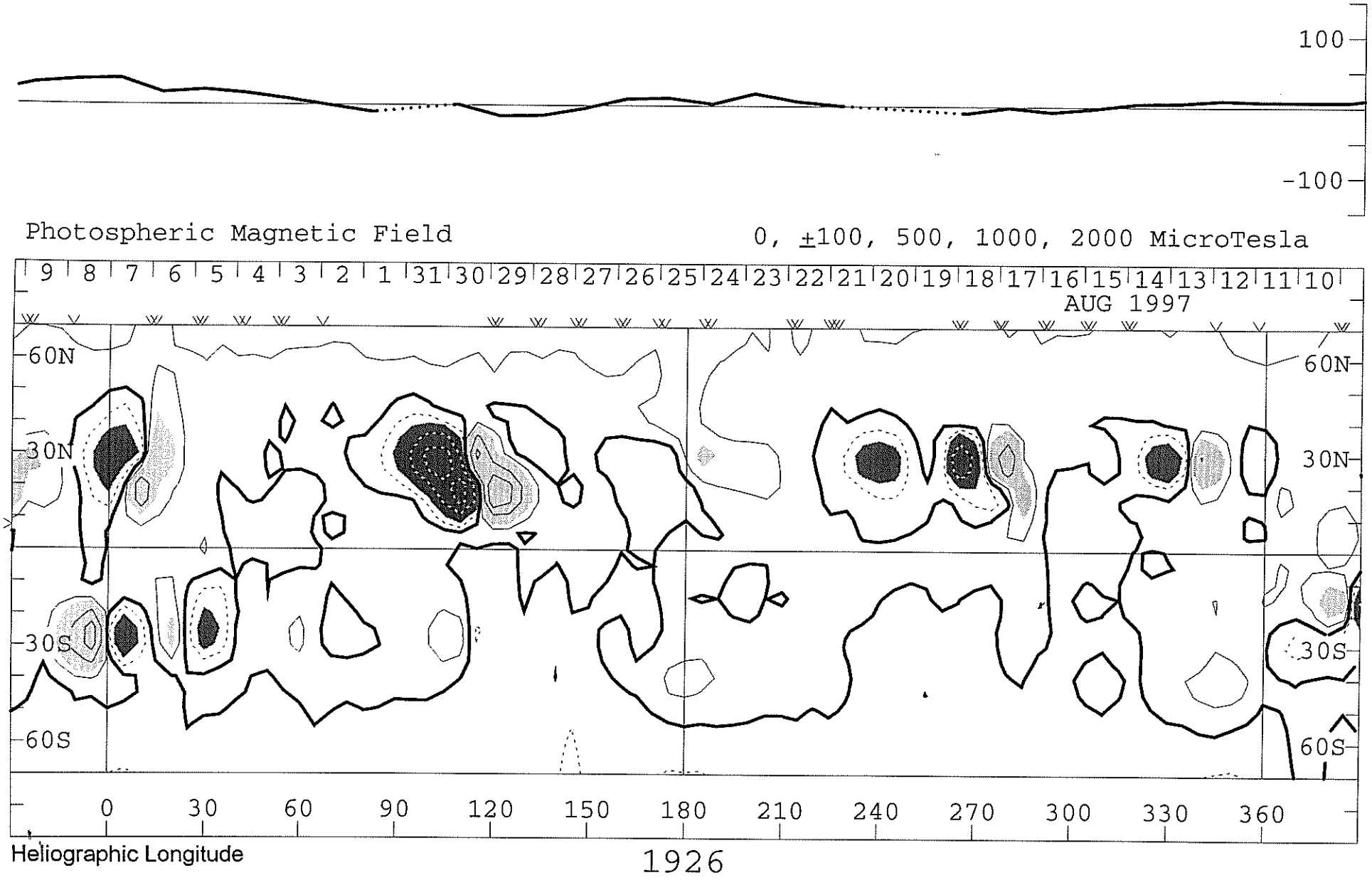
DATA FOR SEPTEMBER 1997

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1926

(11 August to 7 September 1997)

WILCOX SOLAR OBSERVATORY



SOLAR MAGNETIC FIELD SYNOPTIC CHART

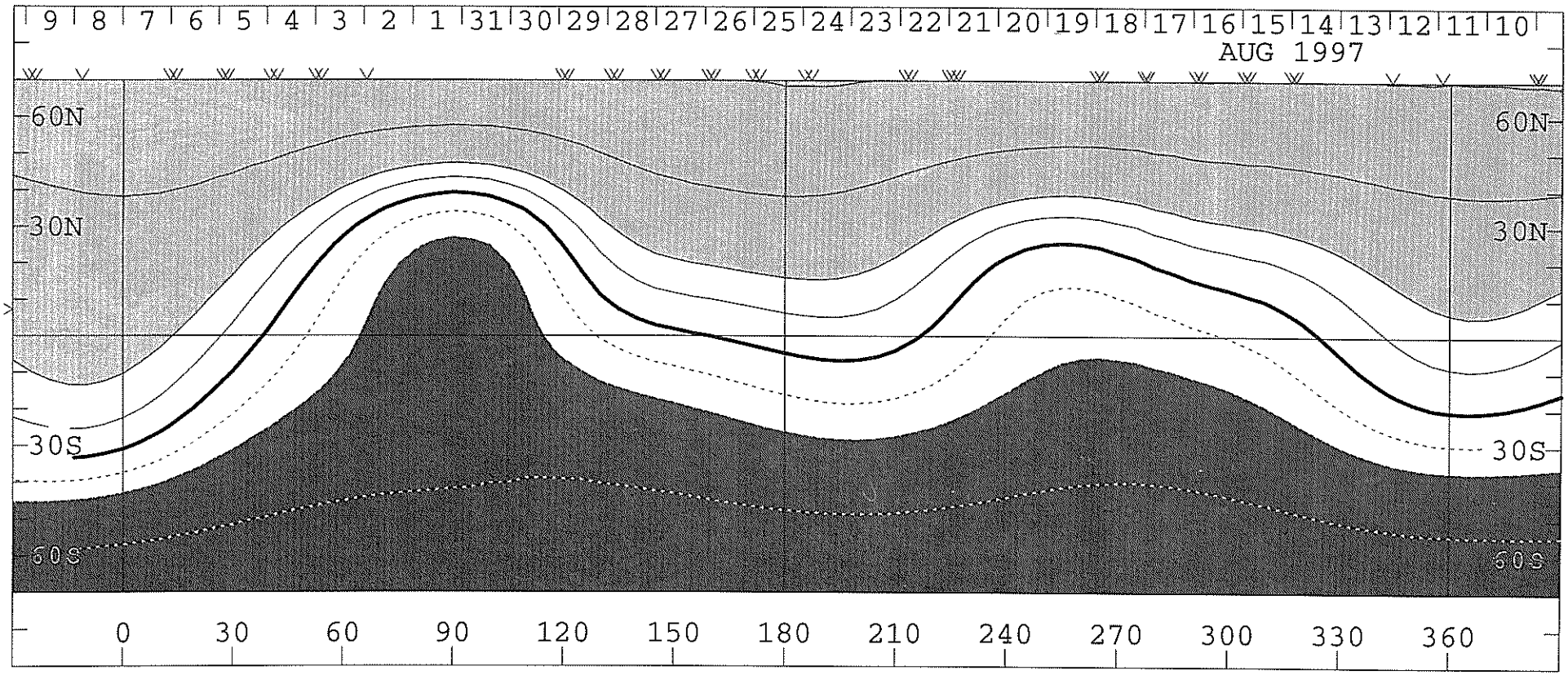
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 1926

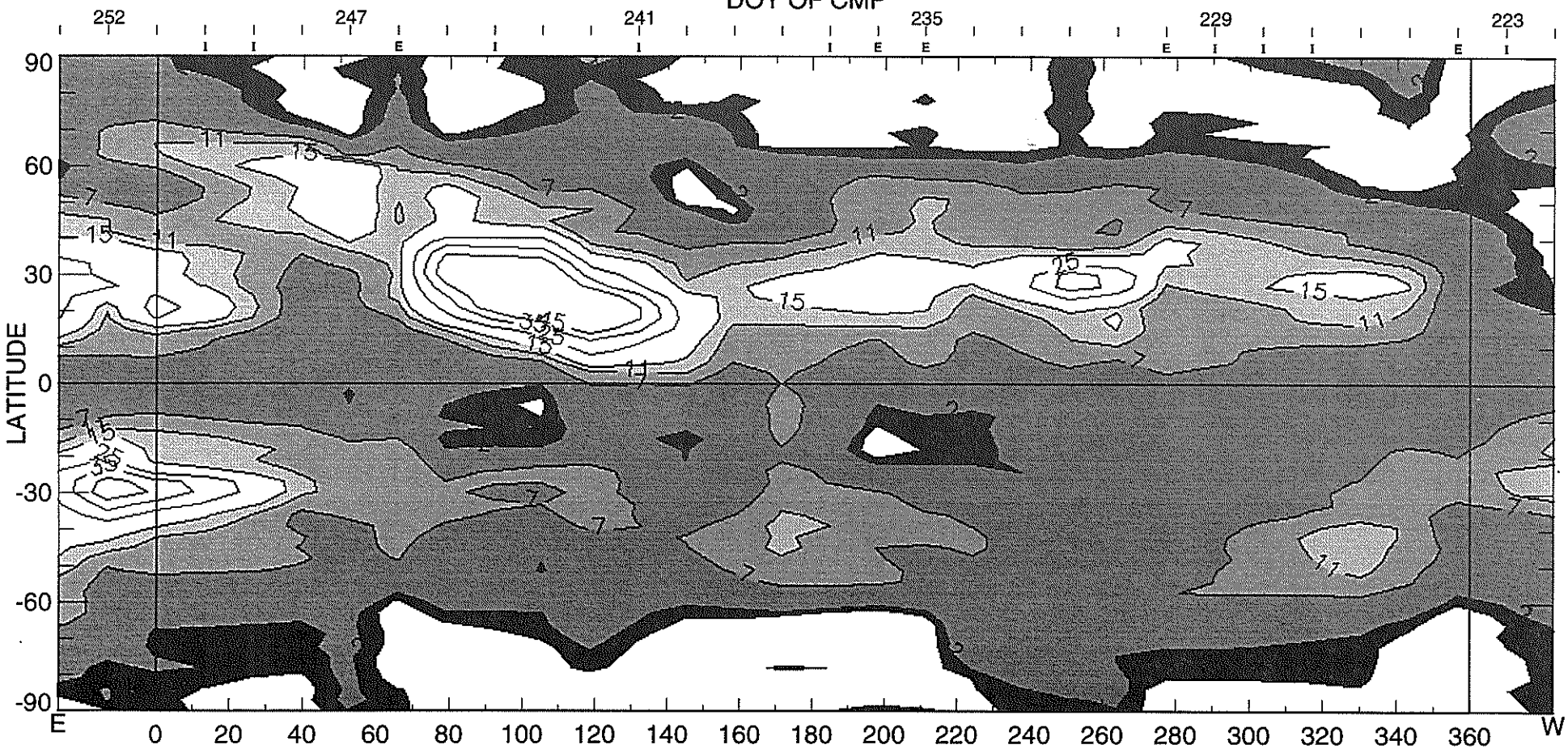
(11 August to 7 September 1997)

Wilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla



CARRINGTON ROTATION NUMBER 1926 ; NSO/SACRAMENTO PEAK FE XIV @ R = 1.15R_o



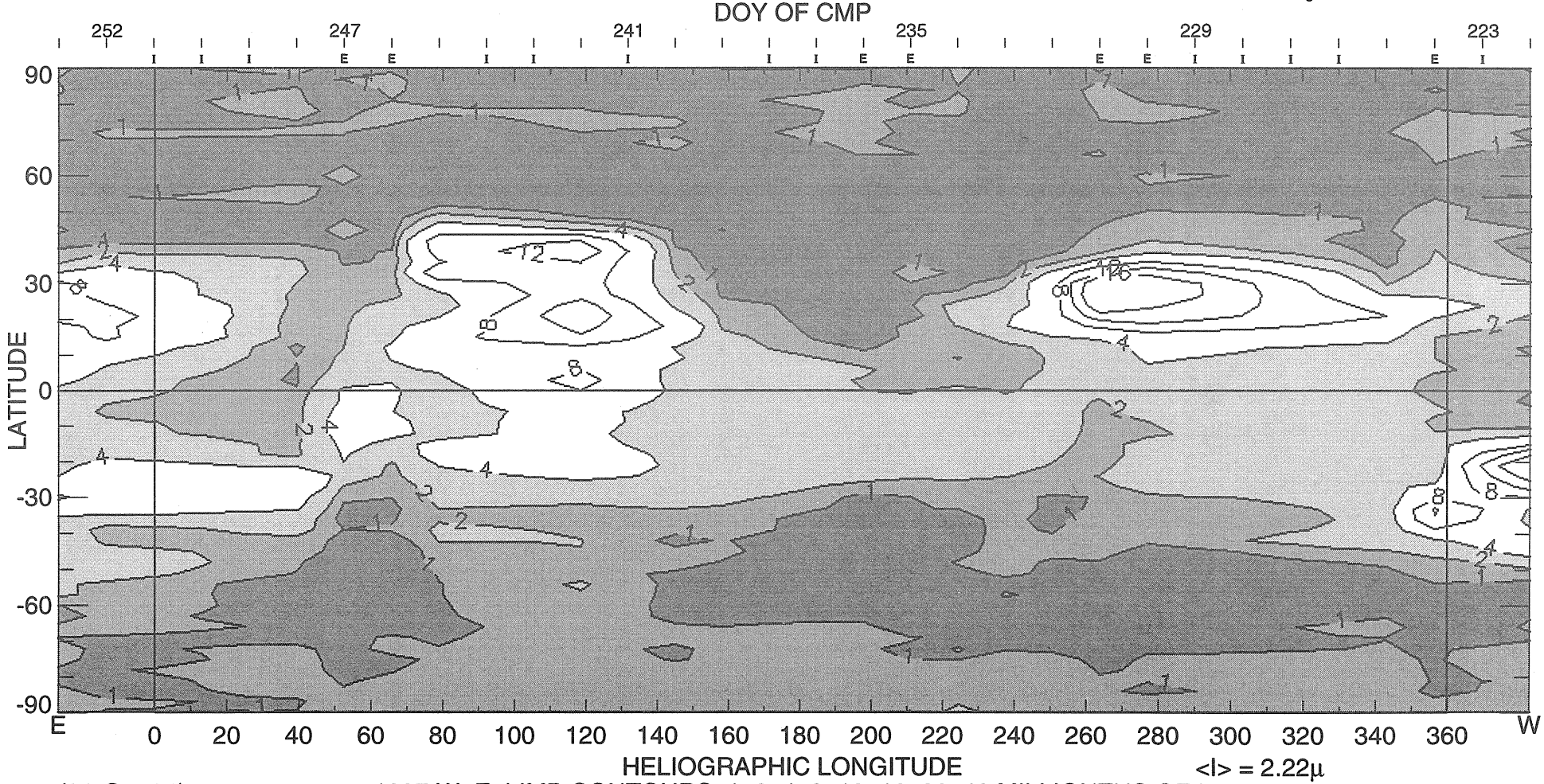
<I> = 6.65μ

(31-Oct-97)

1997 W+E LIMB CONTOURS: 1, 2, 7, 11, 15, 25, 35, 45 MILLIONTHS OF I_o

CORONAL HOLES ARE SHOWN AS WHITE BORDERED BY BLACK

CARRINGTON ROTATION NUMBER 1926 ; NSO/SACRAMENTO PEAK FE X @ R = 1.15R_o



<I> = 2.22μ

(31-Oct-97)

1997 W+E LIMB CONTOURS: 1, 2, 4, 8, 12, 16, 32, 48 MILLIONTHS OF I_o

NOTE: No Ca XV emission observed at Sacramento Peak for rotation 1926.

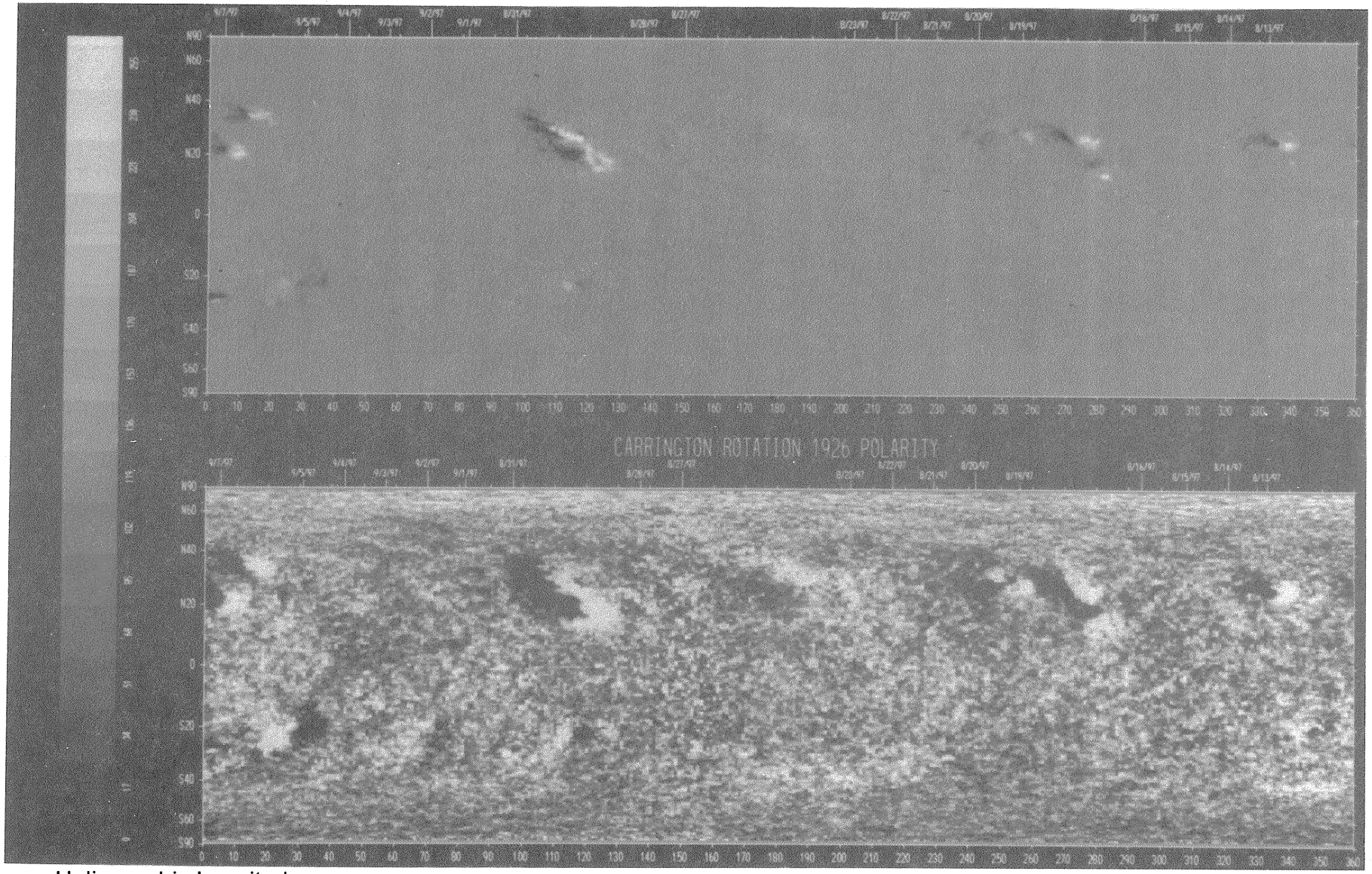
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1926

(11 August to 7 September 1997)

National Solar Observatory/Kitt Peak

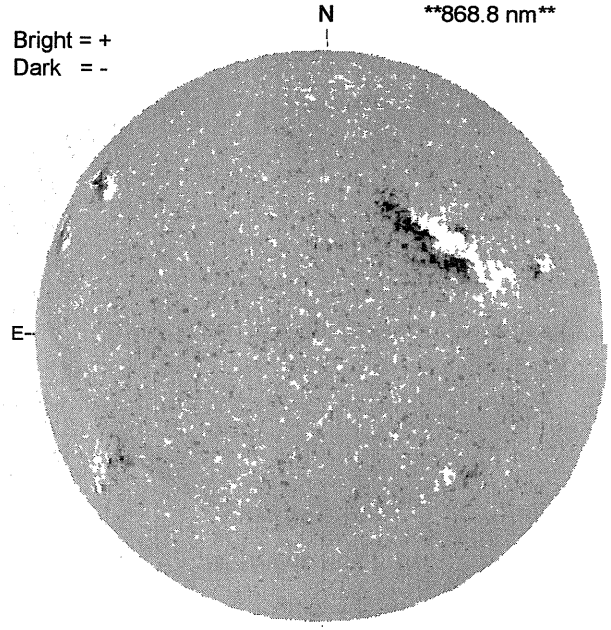
Dates of Observation



Heliographic Longitude

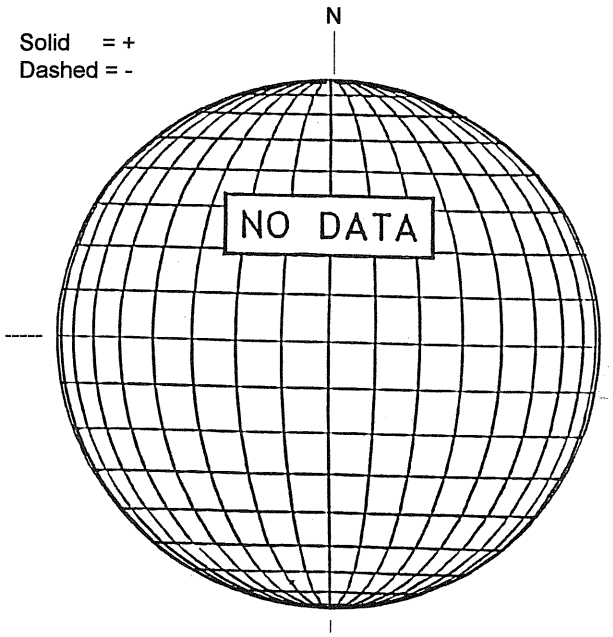
SEPTEMBER 1, 1997 (P= 21.08 , Bo = 7.20 , Lo = 92.02)

KITT PEAK MAGNETOGRAM

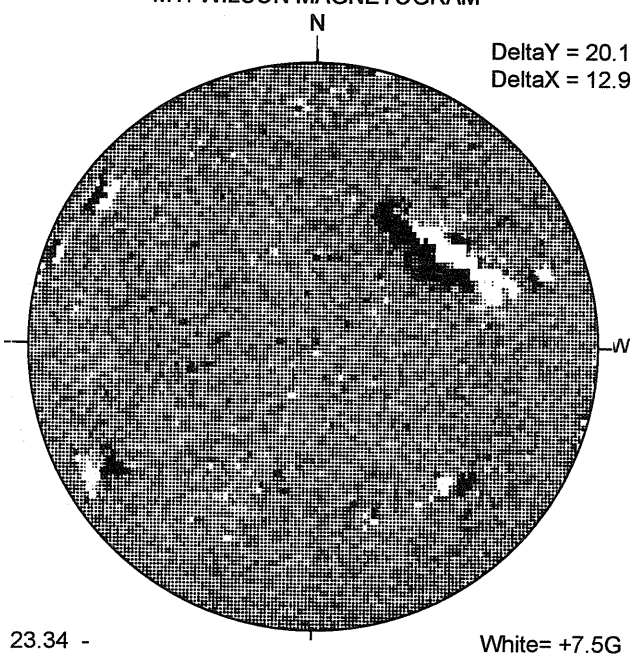


1820 UT

STANFORD MAGNETOGRAM



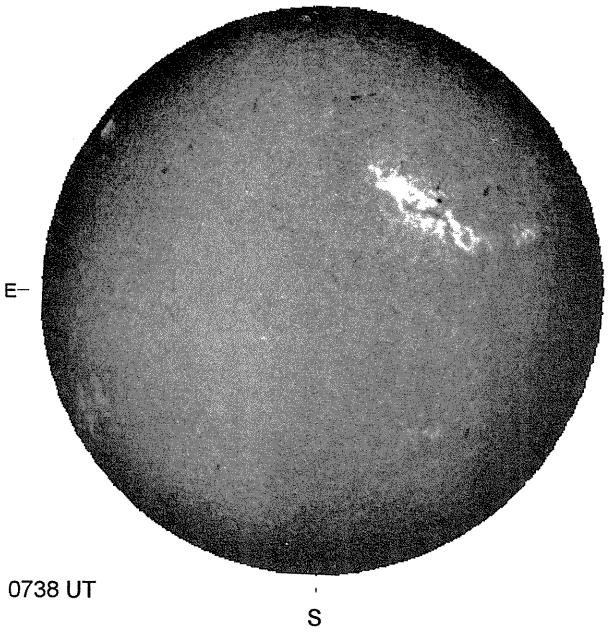
MT. WILSON MAGNETOGRAM



23.34 -
23.75 UT

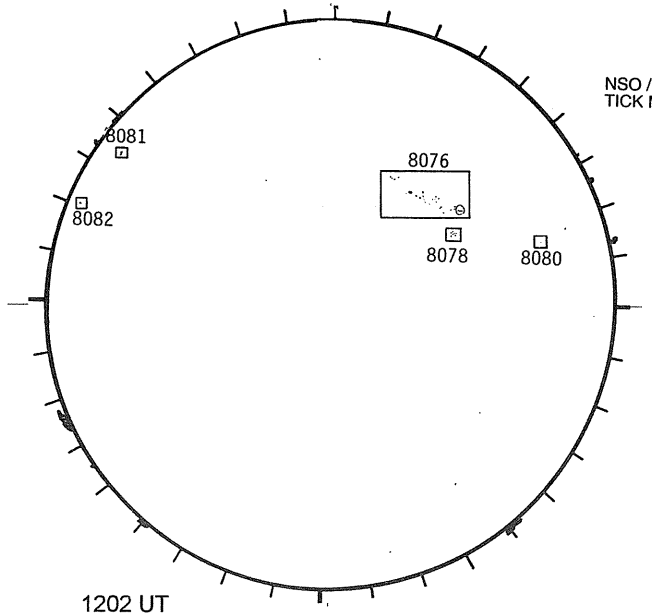
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



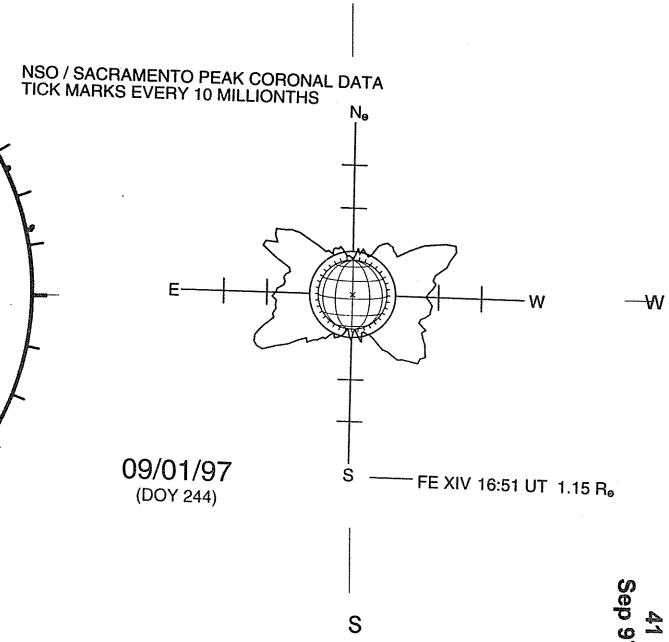
0738 UT

RAMEY SUNSPOT



1202 UT
0705 UT VALA Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

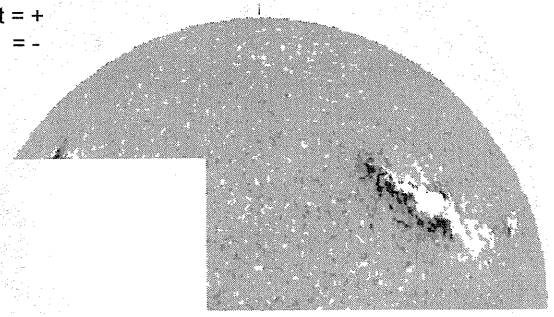
41
Sep 97

SEPTEMBER 2, 1997 (P= 21.33, Bo = 7.21, Lo = 78.81)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



E---

1600 UT

STANFORD MAGNETOGRAM

N

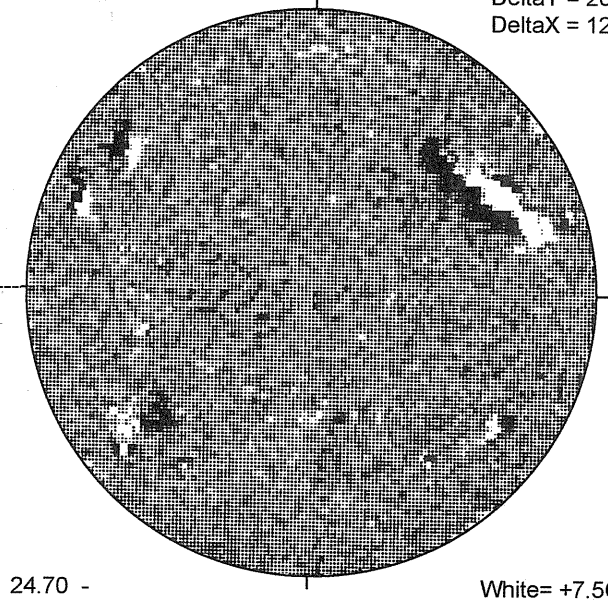
Solid = +
Dashed = -

2241 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 20.1
DeltaX = 12.9



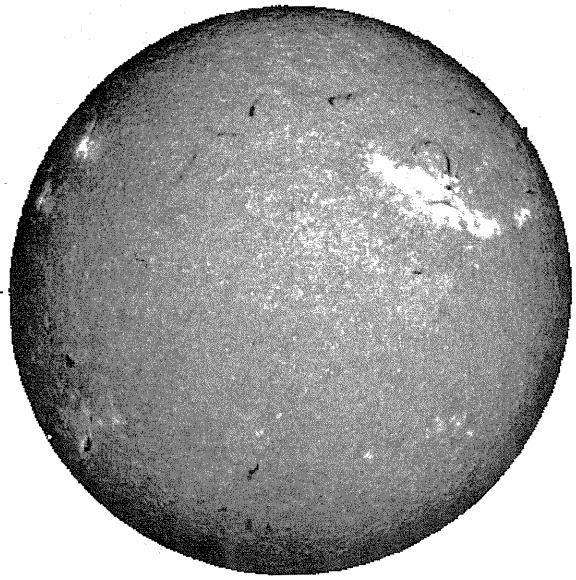
W

24.70 -
25.11 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

----- N

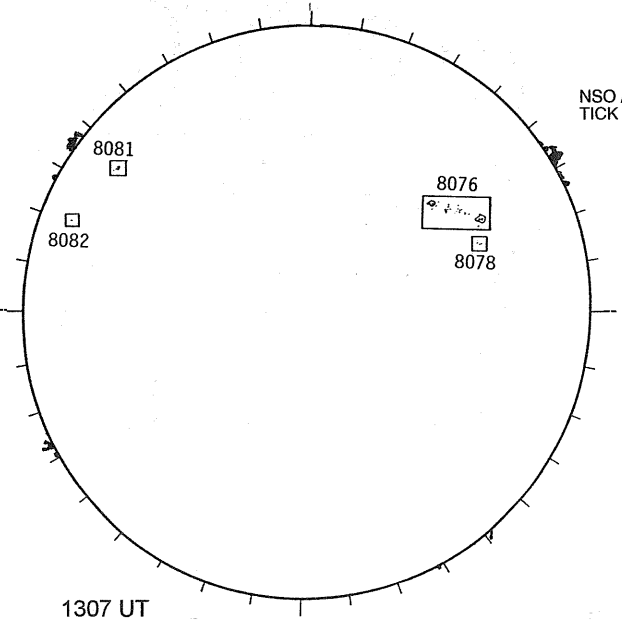


E--

0648 UT

S

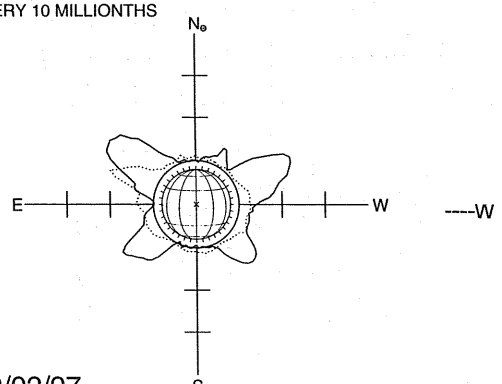
RAMEY SUNSPOT



1307 UT
0454 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



----W

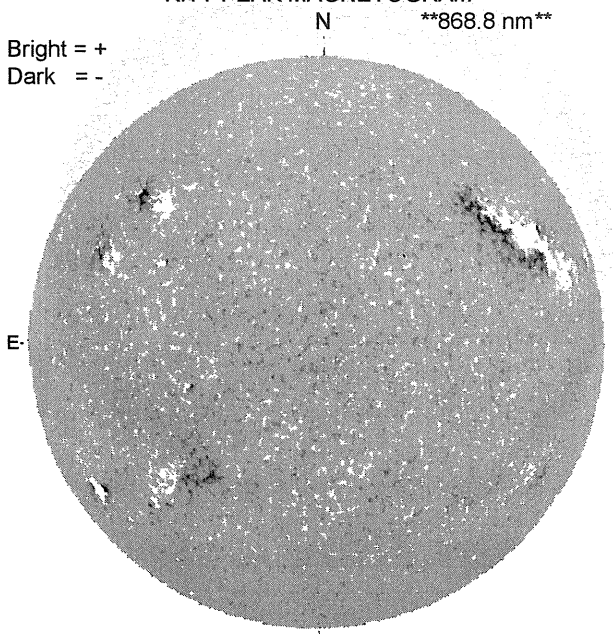
09/02/97
(DOY 245)

S

FE XIV 14:03 UT 1.15 $R_\odot$
FE X 14:56 UT 1.15 $R_\odot$
xxxxx CA XV 14:34 UT 1.15 $R_\odot$
NO CA XV ACTIVITY TODAY

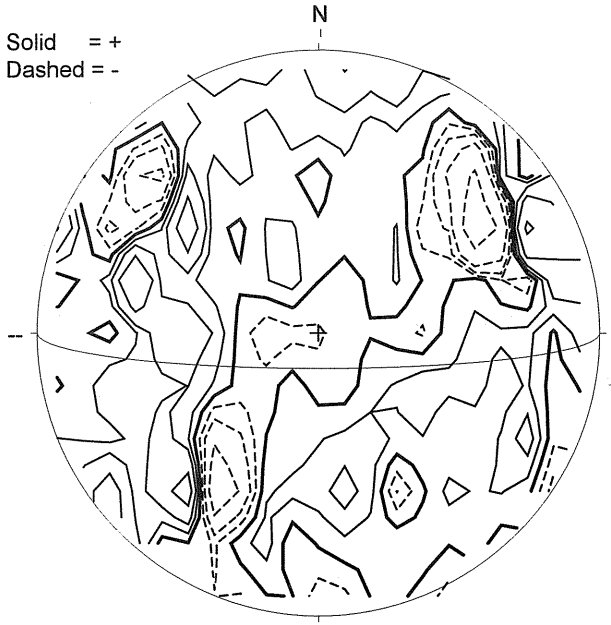
SEPTEMBER 3, 1997 (P= 21.57, Bo = 7.22 , Lo = 65.60)

KITT PEAK MAGNETOGRAM



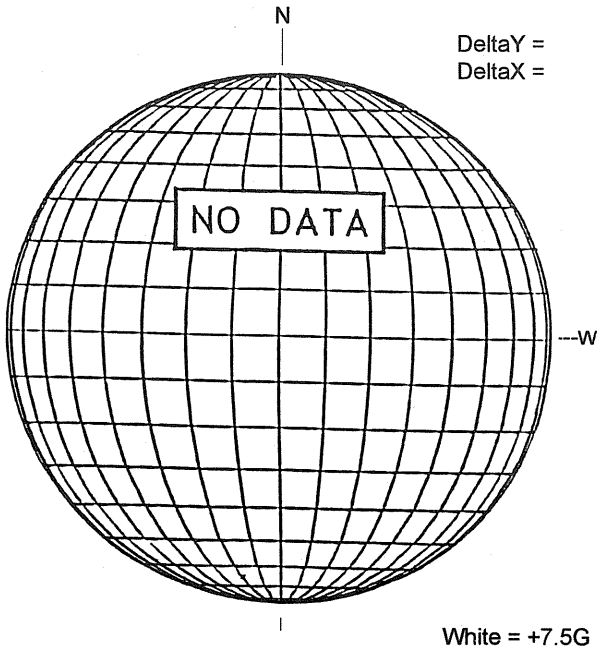
1539 UT

STANFORD MAGNETOGRAM



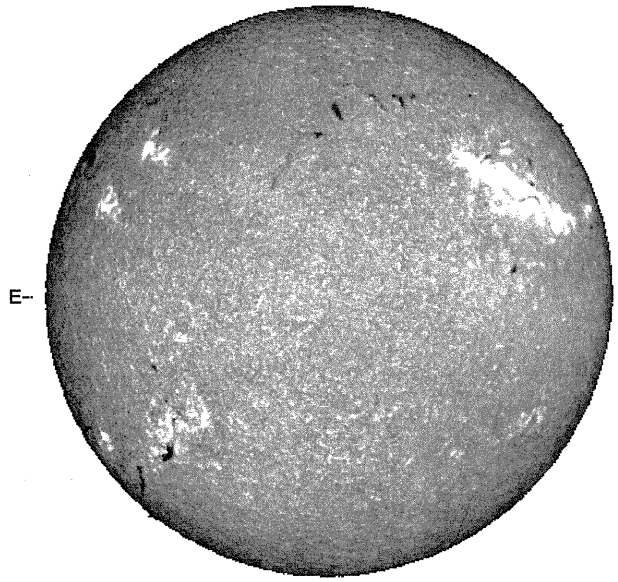
2104 UT

MT. WILSON MAGNETOGRAM



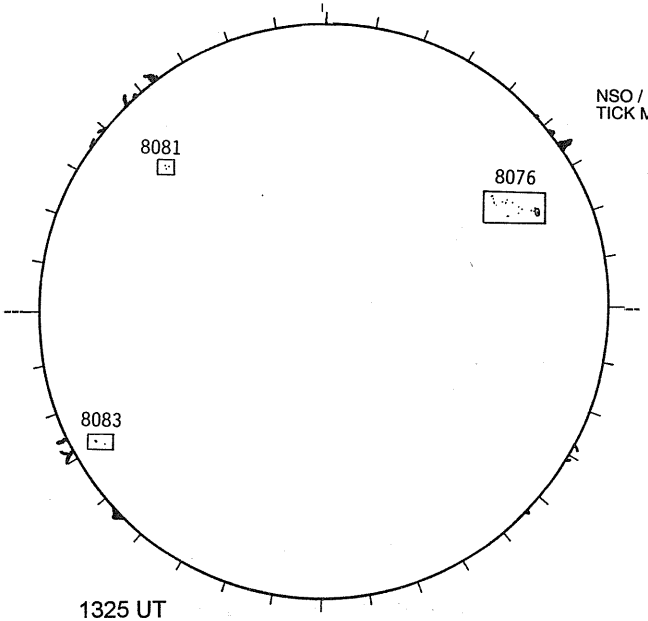
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



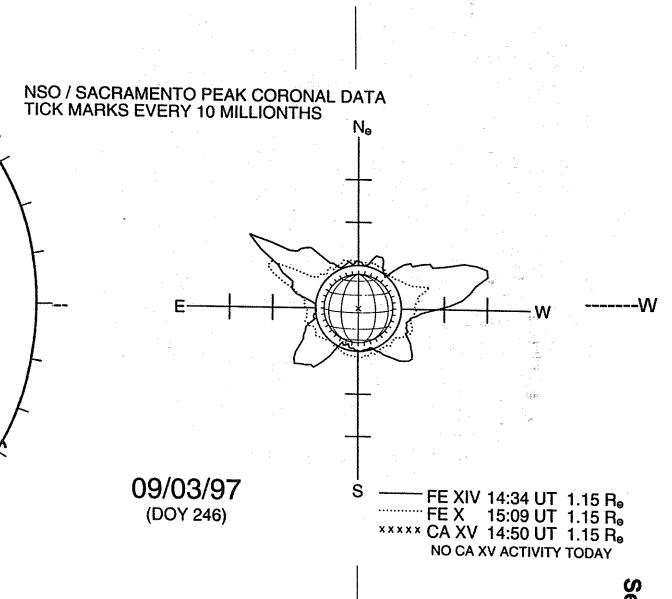
0655 UT

RAMEY SUNSPOT



1325 UT
0457 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



09/03/97
(DOY 246)

FE XIV 14:34 UT 1.15 $R_\odot$
FE X 15:09 UT 1.15 $R_\odot$
xxxxx CA XV 14:50 UT 1.15 $R_\odot$
NO CA XV ACTIVITY TODAY

S

43
Sep 97

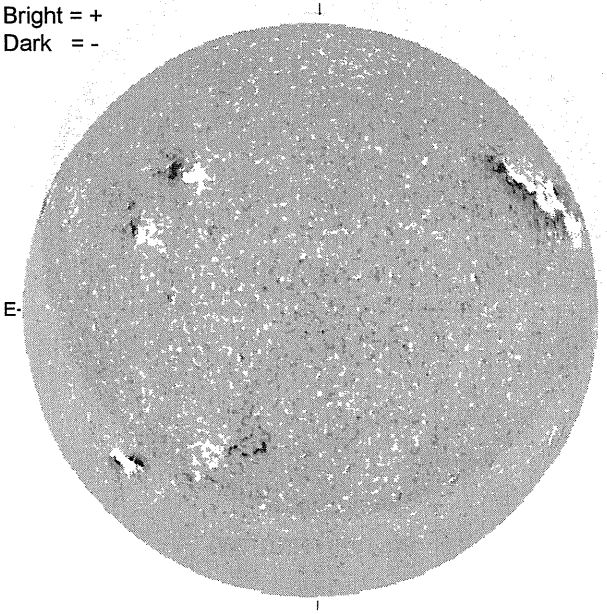
SEPTEMBER 4, 1997 (P= 21.81 , Bo = 7.23 Lo = 52.39)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



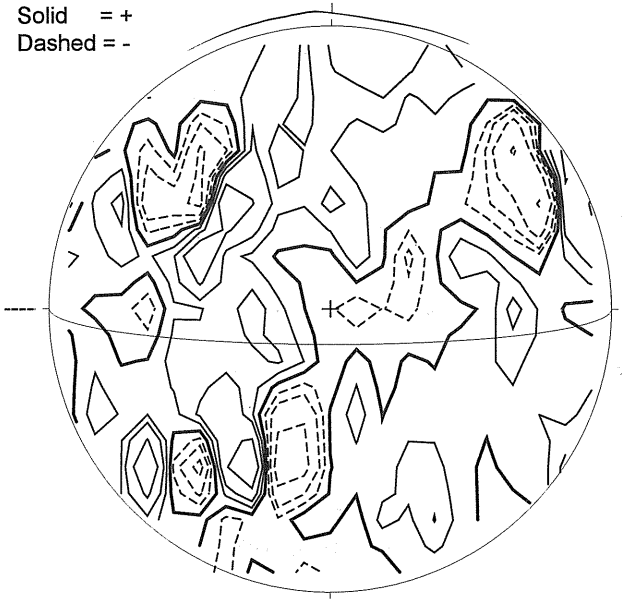
E-

1424 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

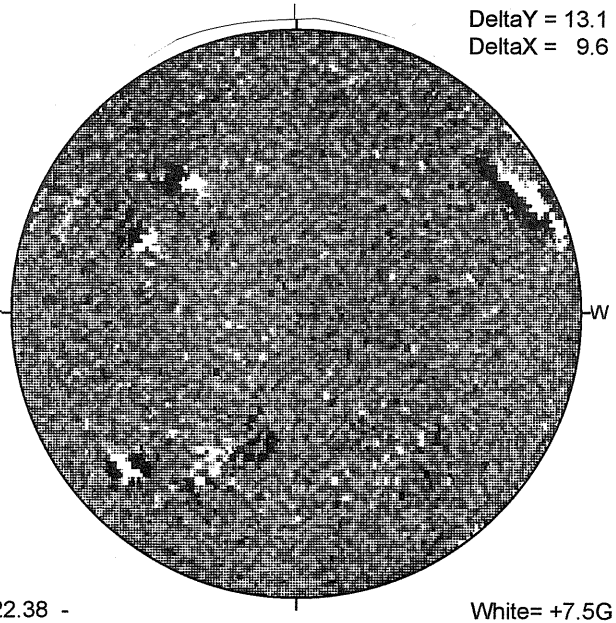


2224 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

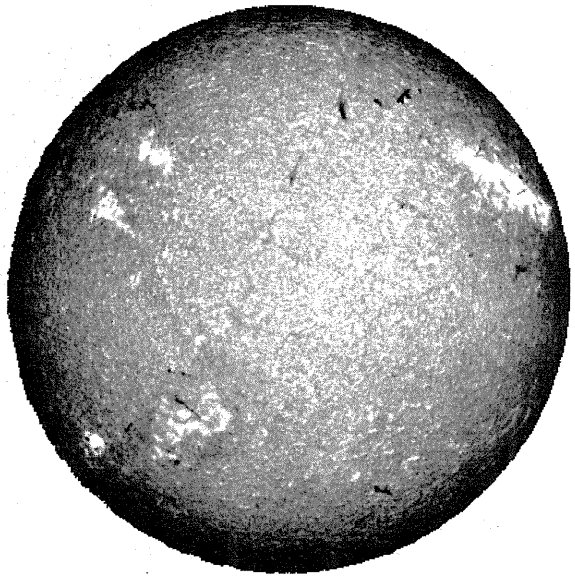


-W

22.38 -
23.31 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

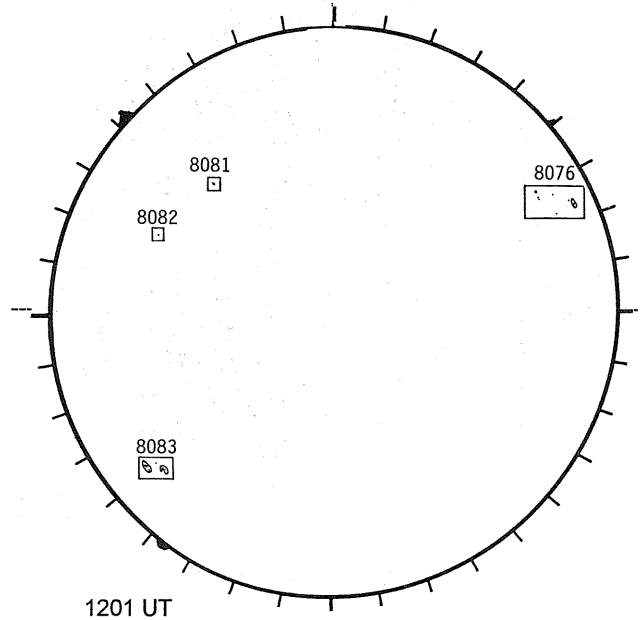


E--

0715 UT

S

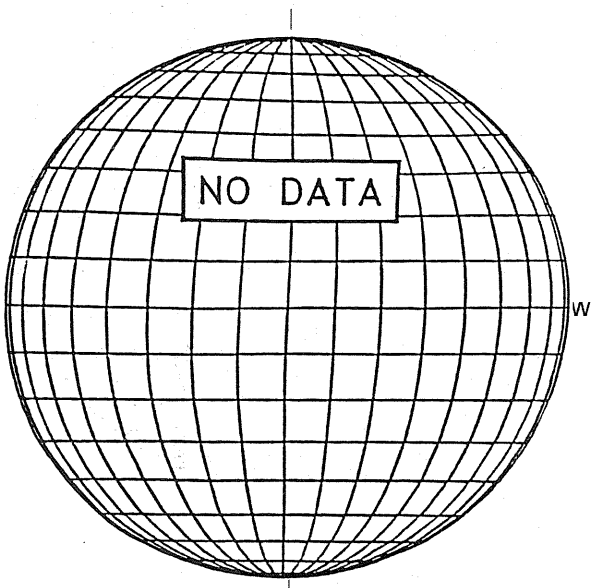
RAMEY SUNSPOT



1201 UT
0617 UT VALA Prom

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

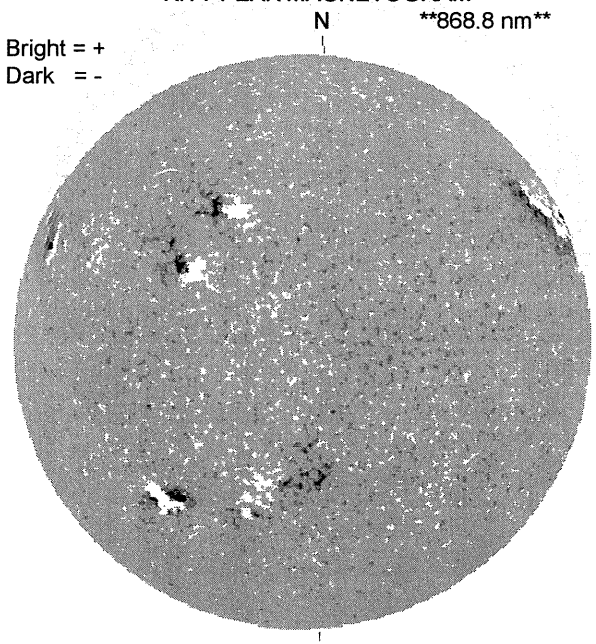


W

S

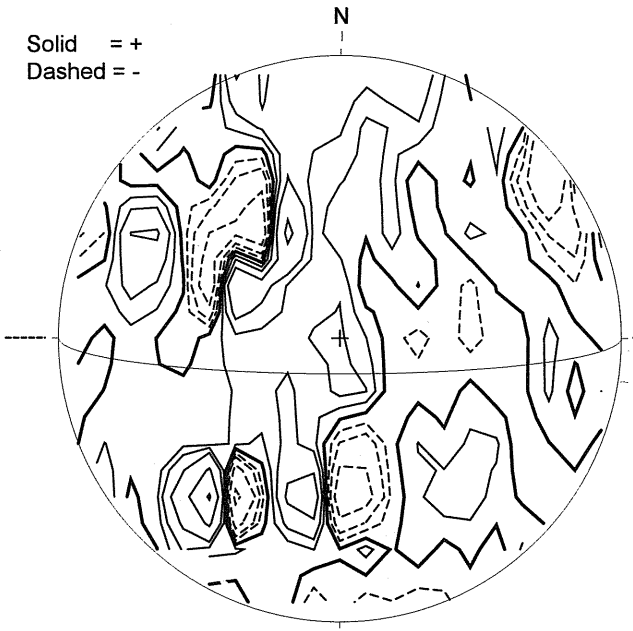
SEPTEMBER 5, 1997 (P= 22.05 , Bo = 7.24 , Lo = 39.18)

KITT PEAK MAGNETOGRAM



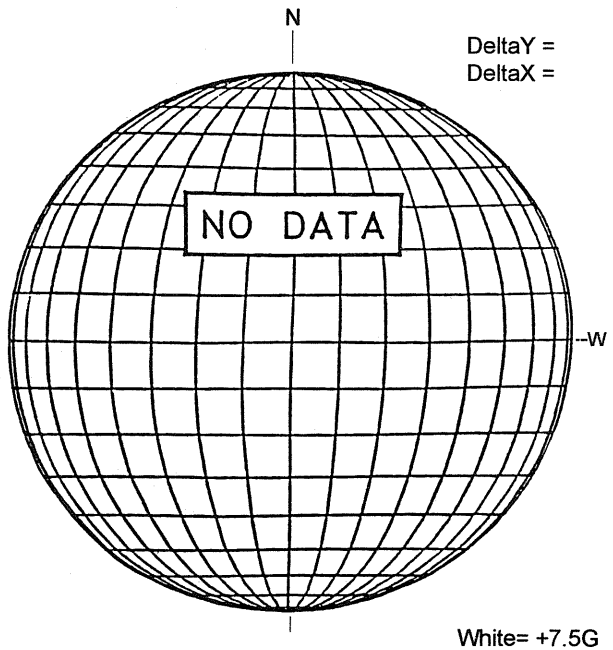
1550 UT

STANFORD MAGNETOGRAM



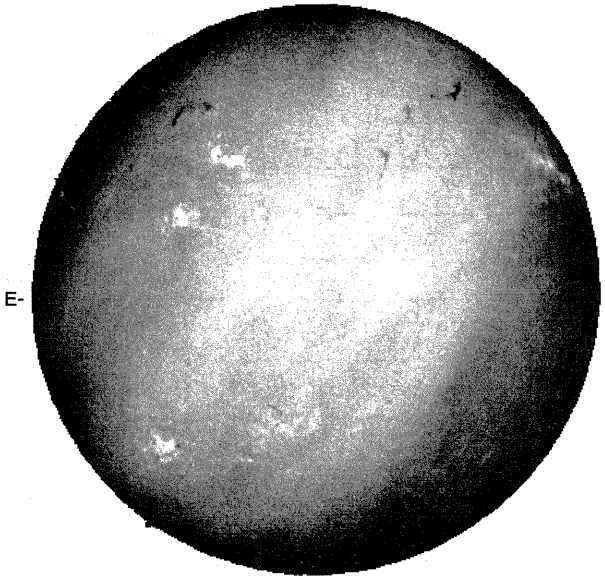
1934 UT

MT. WILSON MAGNETOGRAM



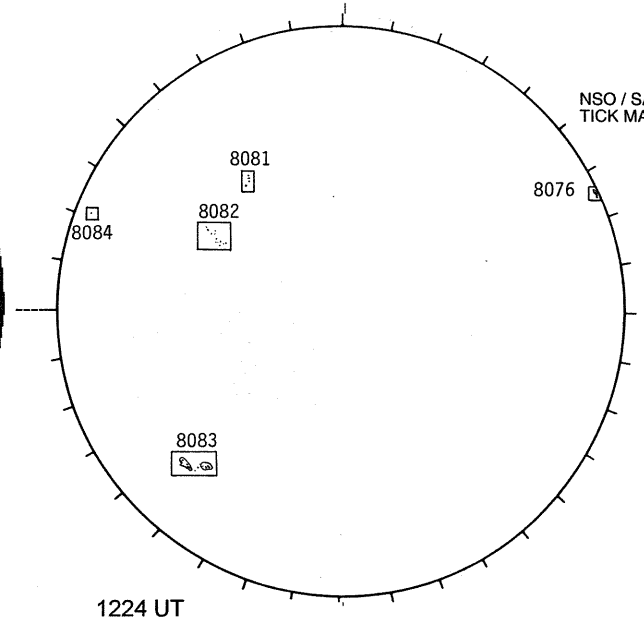
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



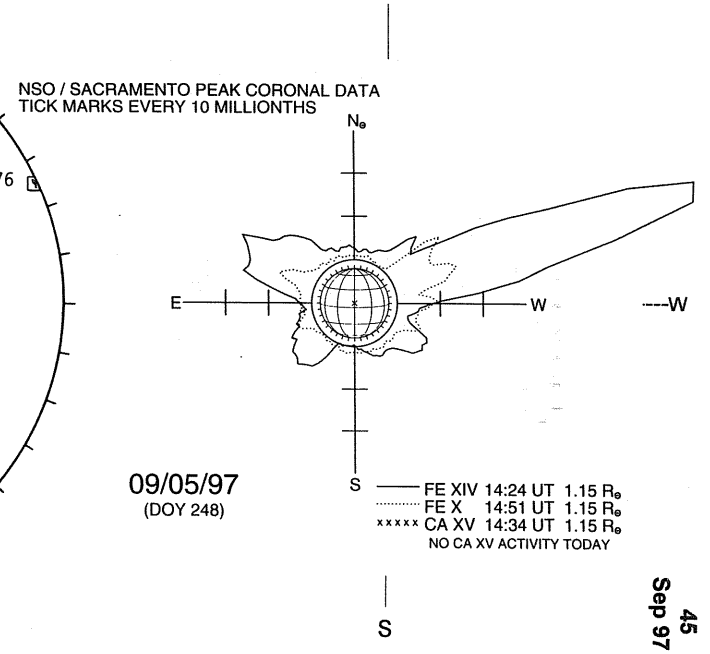
0748 UT

RAMEY SUNSPOT



1224 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



45
Sep 97

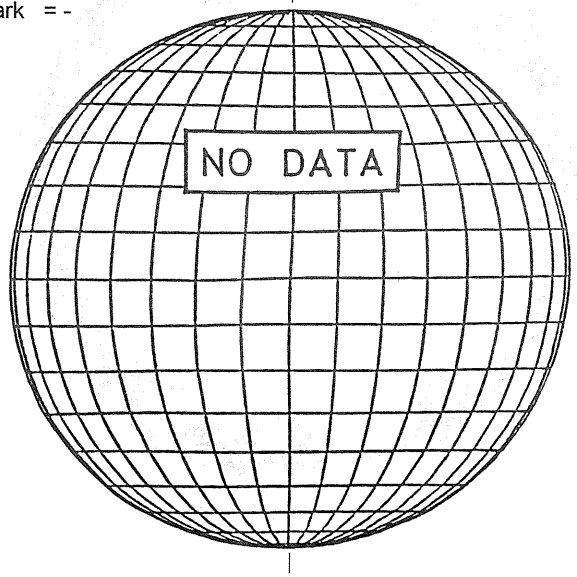
SEPTEMBER 6, 1997 (P= 22.27, Bo = 7.25 , Lo = 25.98)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



E-

STANFORD MAGNETOGRAM

N

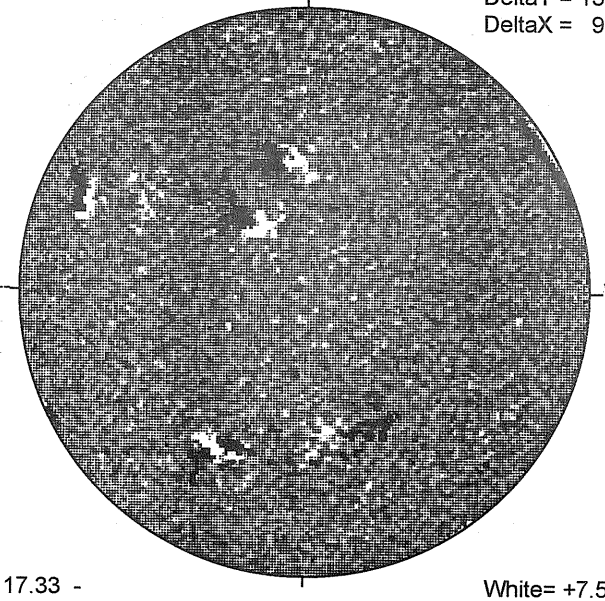
Solid = +
Dashed = -

2128 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

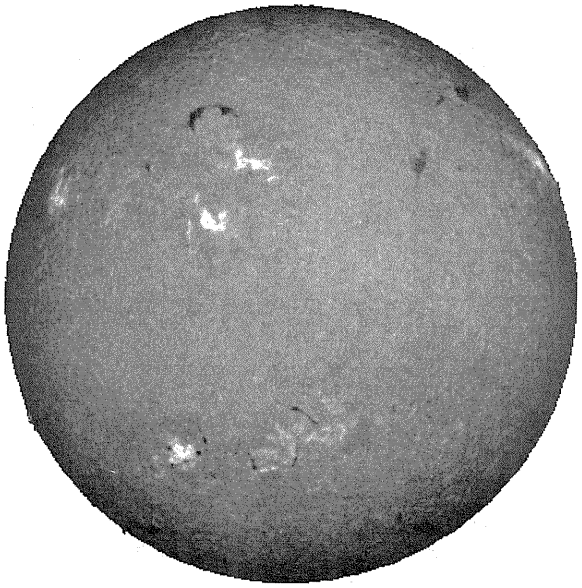


W

17.33 -
18.27 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

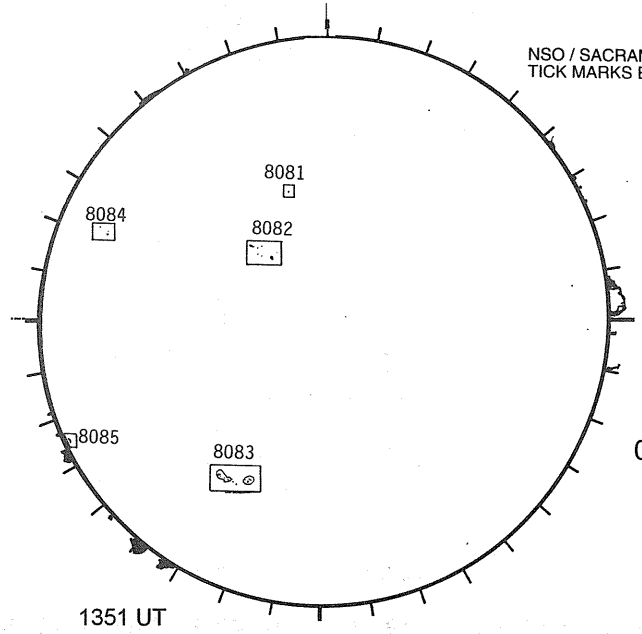


E-

0636 UT

S

RAMEY SUNSPOT

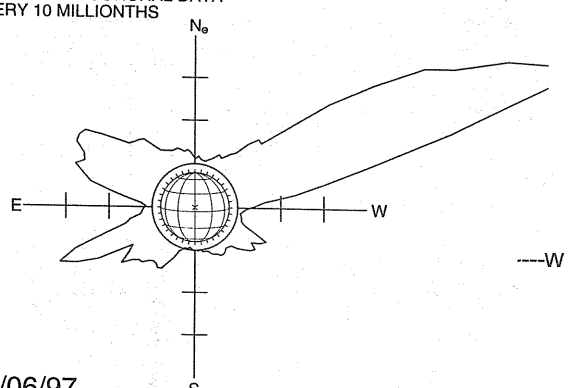


1351 UT
0721 UT VALA Prom

S

SACRAMENTO PEAK CORONA (1.15 Radii)

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



09/06/97
(DOY 249)

FE XIV 14:47 UT 1.15 R$_e$

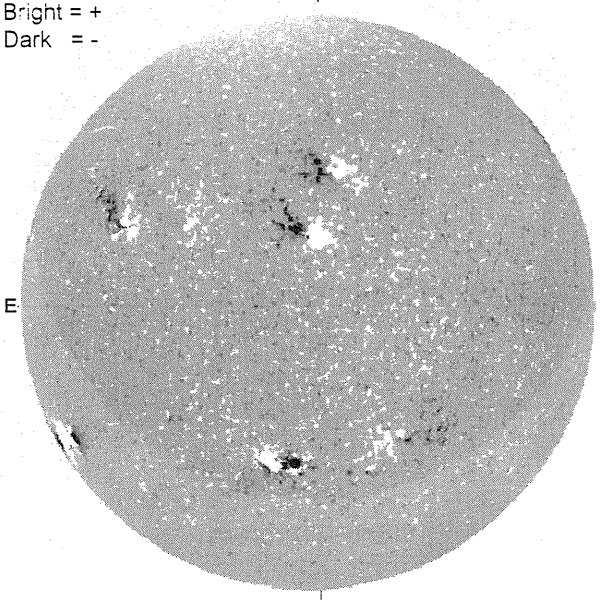
S

SEPTEMBER 7, 1997 (P= 22.50, Bo = 7.25 Lo = 12.77)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



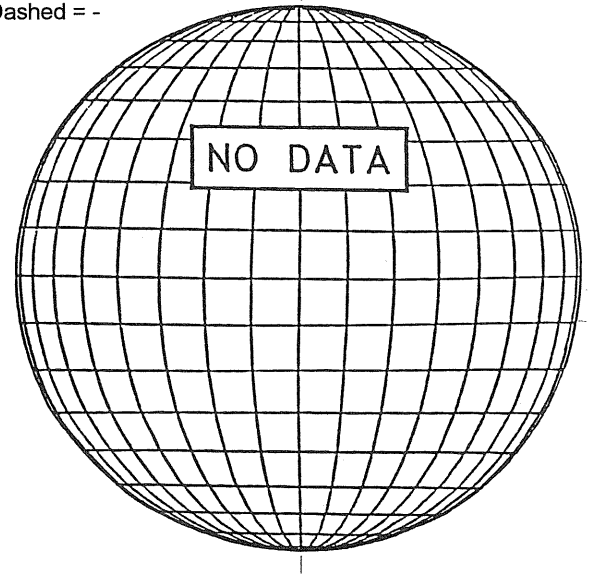
E

1438 UT

STANFORD MAGNETOGRAM

N

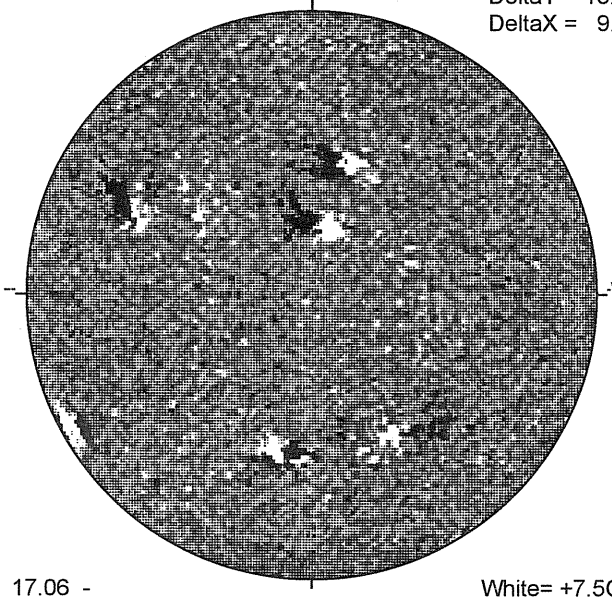
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

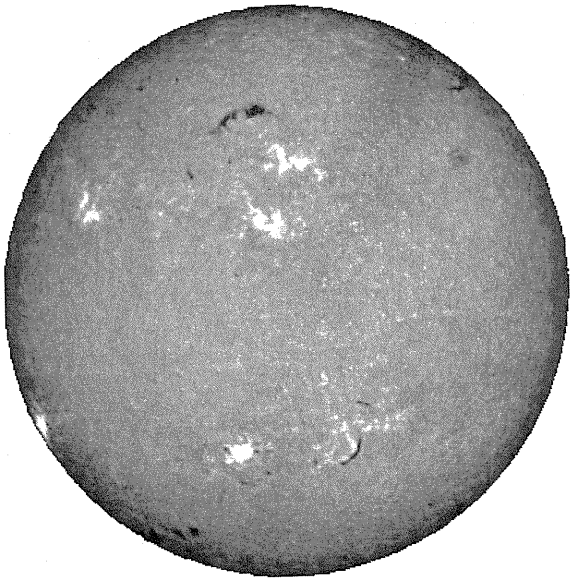


W

17.06 -
18.00 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

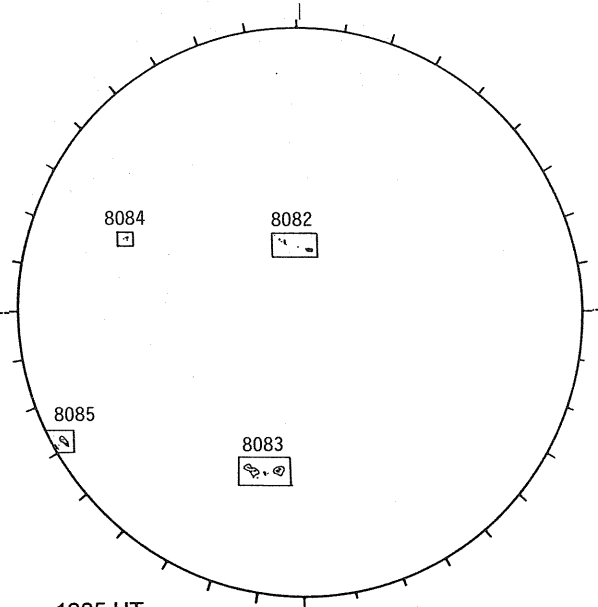


E-

0730 UT

S

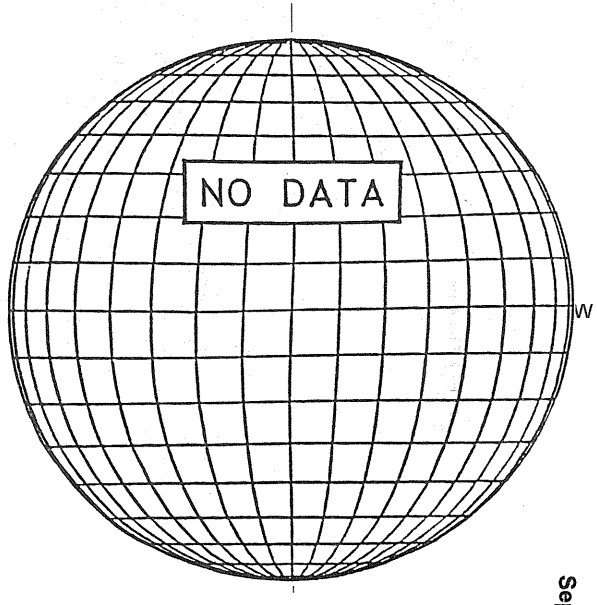
RAMEY SUNSPOT



1305 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



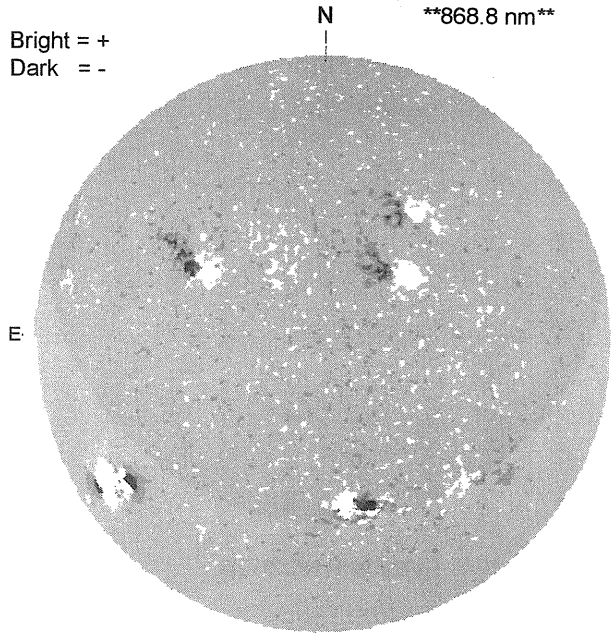
W

S

47
Sep 97

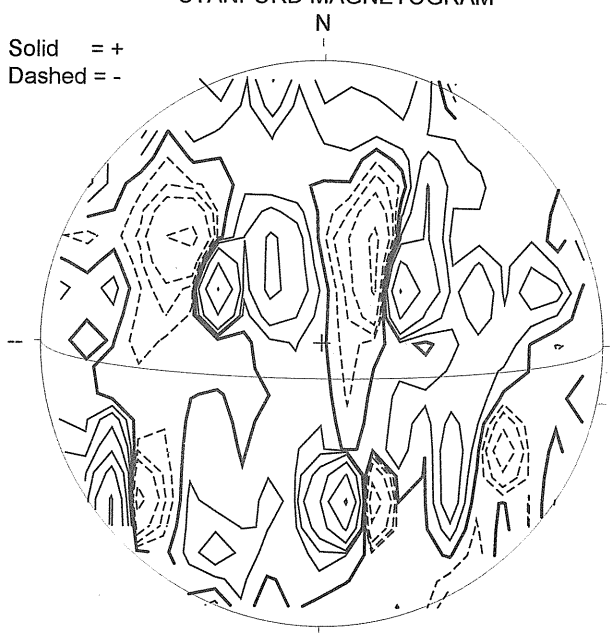
SEPTEMBER 8, 1997 (P= 22.71, Bo = 7.25 , Lo = 359.57)

KITT PEAK MAGNETOGRAM



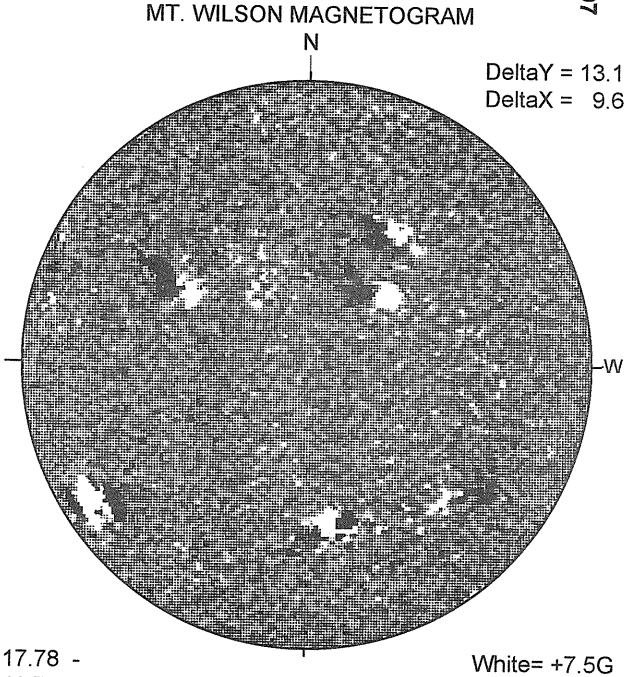
1902 UT

STANFORD MAGNETOGRAM



1959 UT

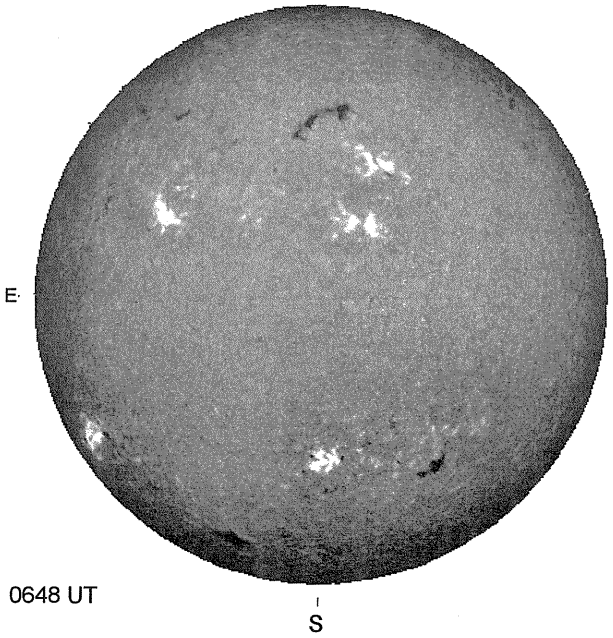
MT. WILSON MAGNETOGRAM



17.78 -
18.71 UT

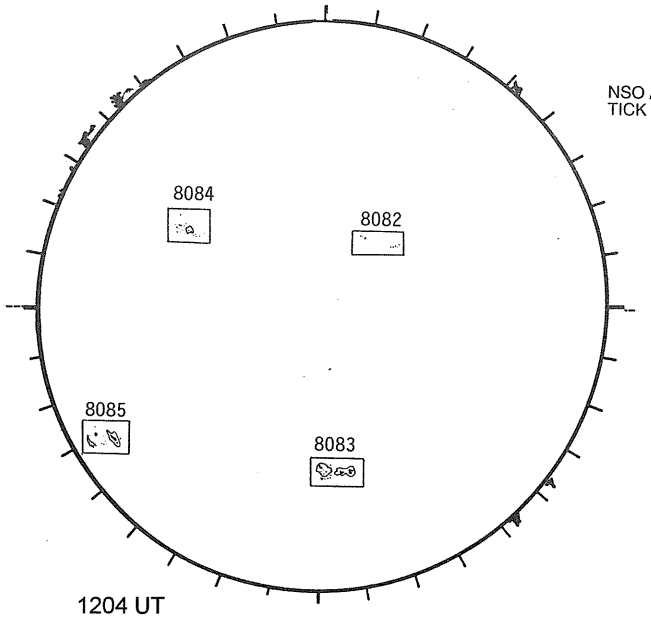
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



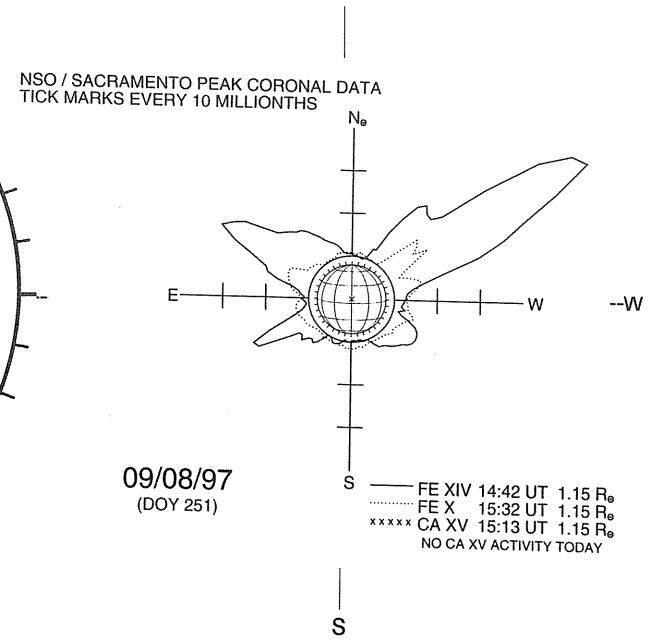
0648 UT

RAMEY SUNSPOT



1204 UT
1007 UT VALA Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

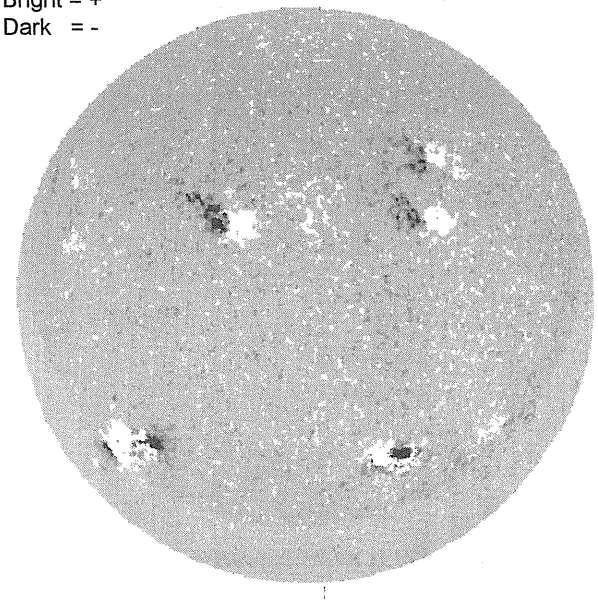


SEPTEMBER 9, 1997 (P= 22.92, Bo = 7.25, Lo = 346.36)

KITT PEAK MAGNETOGRAM

N **868.8 nm

Bright = +
Dark = -



1548 UT

STANFORD MAGNETOGRAM

N

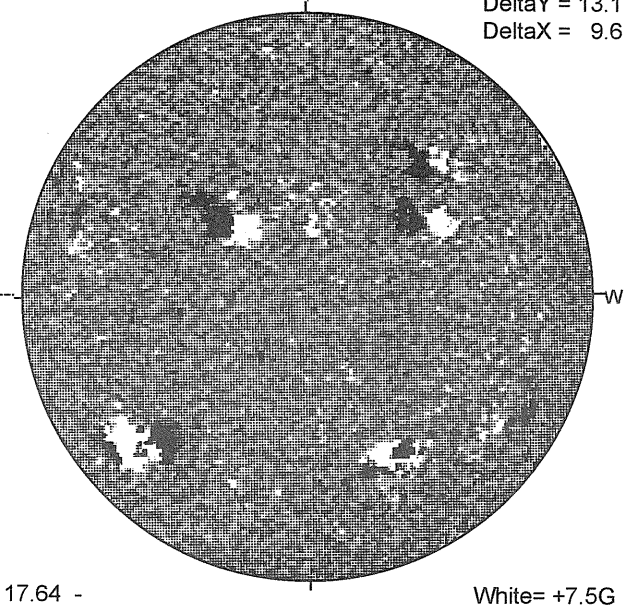
Solid = +
Dashed = -

2212 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

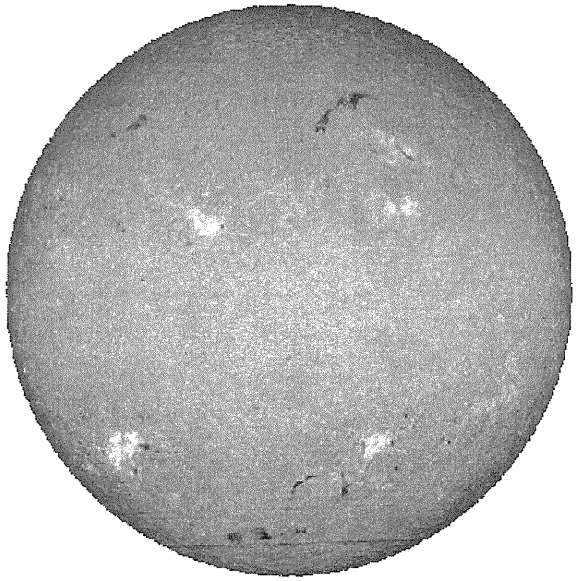


W

17.64 -
18.58 UT

White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA

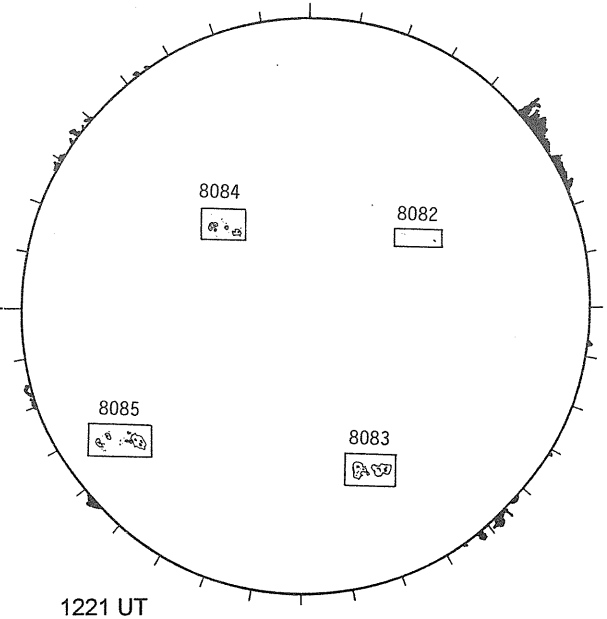


E

1528 UT

S

RAMEY SUNSPOT



1221 UT
0825 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)

W

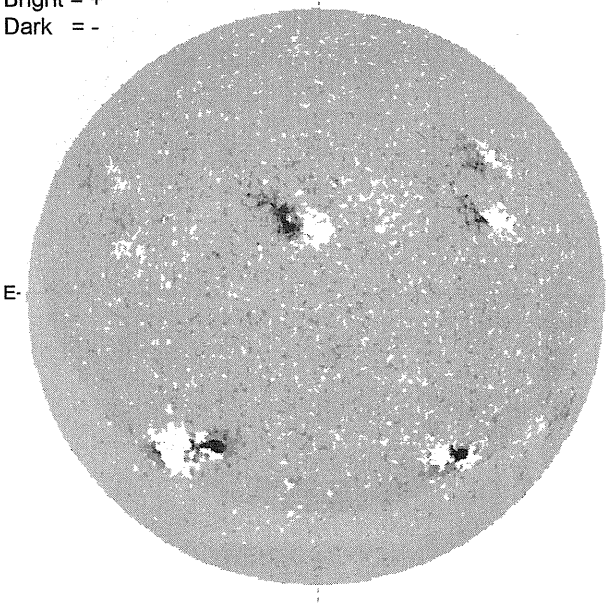
S

SEPTEMBER 10, 1997 (P= 23.13, Bo = 7.25, Lo = 333.16)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -

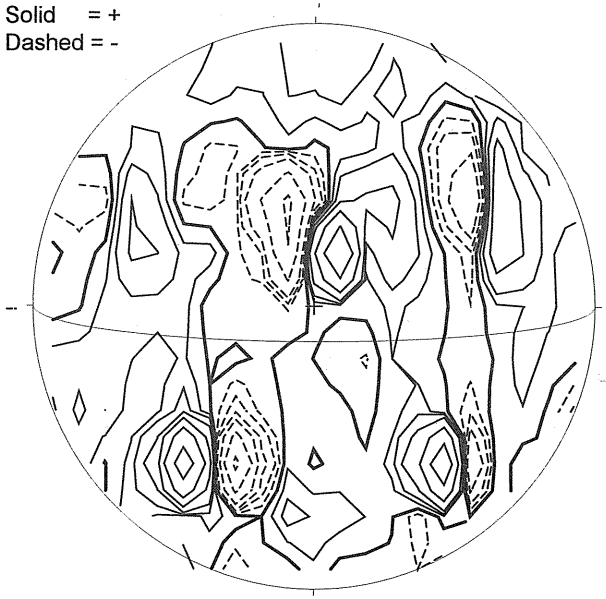


1614 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

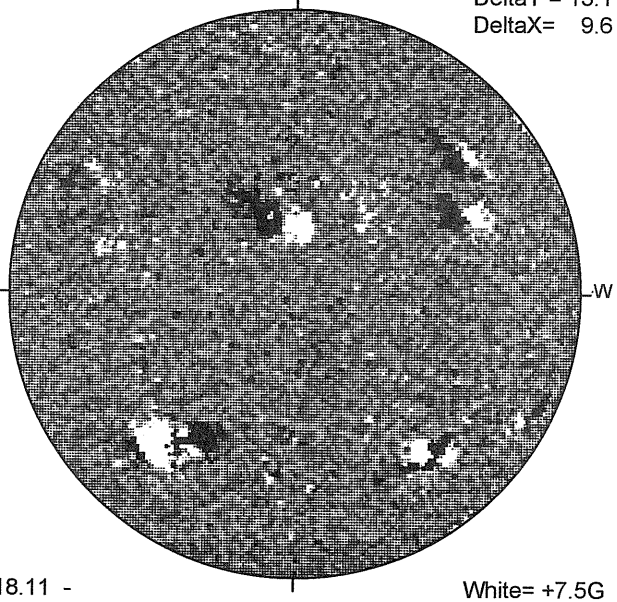


2229 UT

MT. WILSON MAGNETOGRAM

N

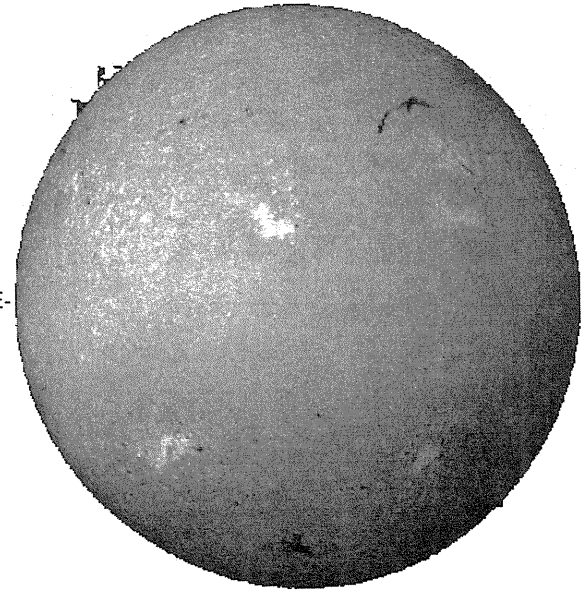
DeltaY = 13.1
DeltaX= 9.6



18.11 -
19.04 UT

White= +7.5G
Black = -7.5G

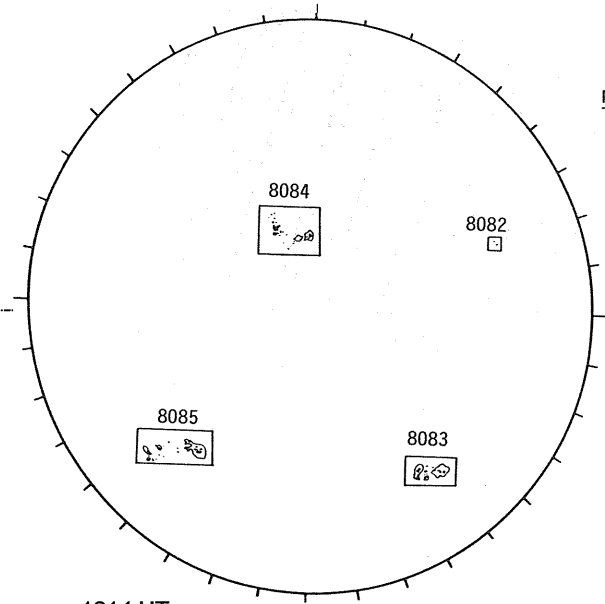
SACRAMENTO PEAK H-ALPHA



1415 UT

S

RAMEY SUNSPOT

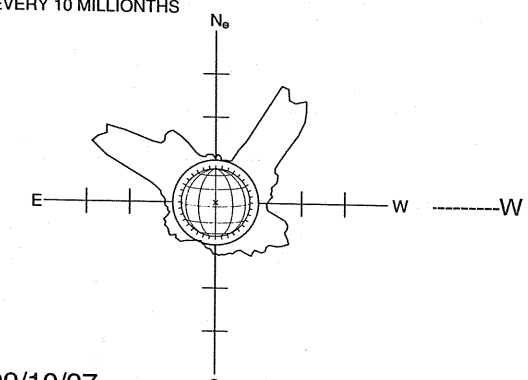


1214 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



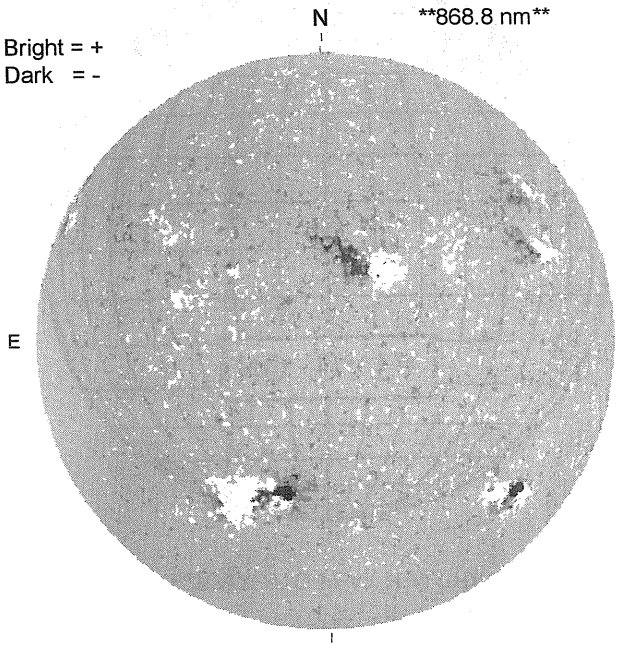
09/10/97
(DOY 253)

FE XIV 15:05 UT 1.15 Re

S

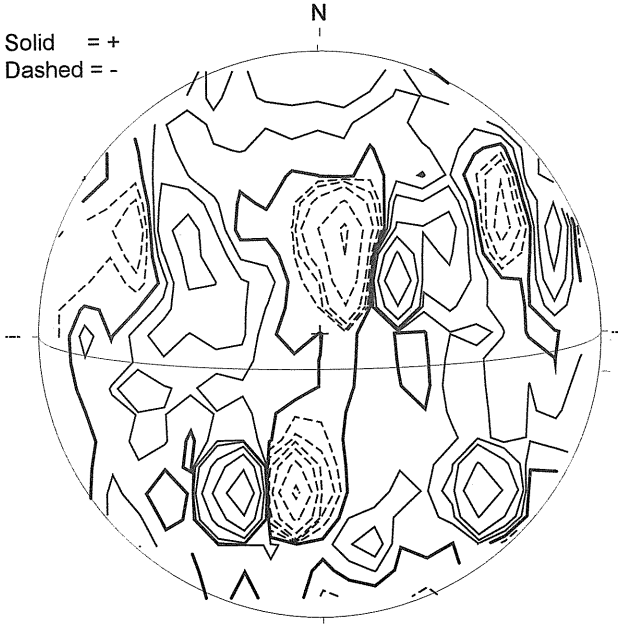
SEPTEMBER 11, 1997 (P= 23.33, Bo = 7.24, Lo = 319.95)

KITT PEAK MAGNETOGRAM



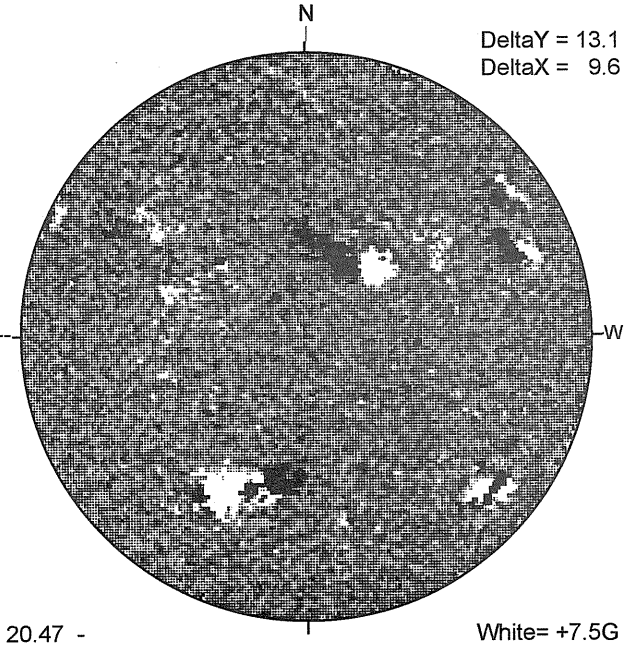
1622 UT

STANFORD MAGNETOGRAM



2107 UT

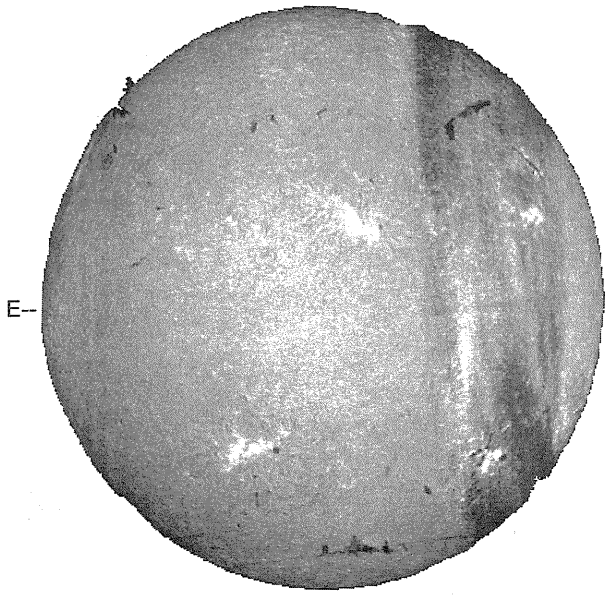
MT. WILSON MAGNETOGRAM



20.47 -
21.41 UT

White= +7.5G
Black = -7.5G

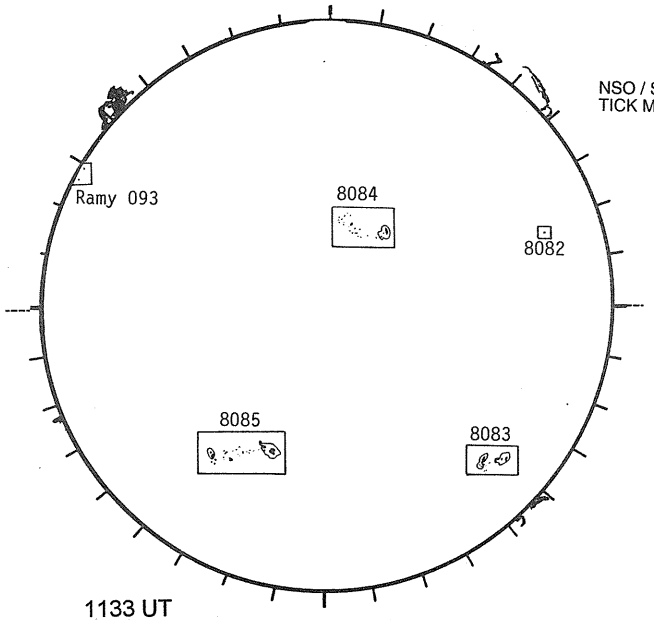
----- SACRAMENTO PEAK H-ALPHA



1442 UT

S

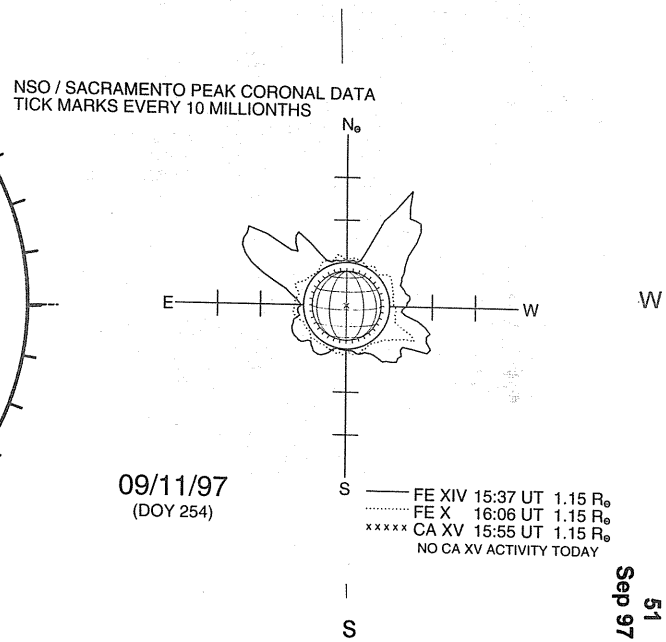
RAMEY SUNSPOT



1133 UT
0757 UT VALA Prom

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

SEPTEMBER 12, 1997 (P= 23.52, Bo = 7.24, Lo = 306.75)

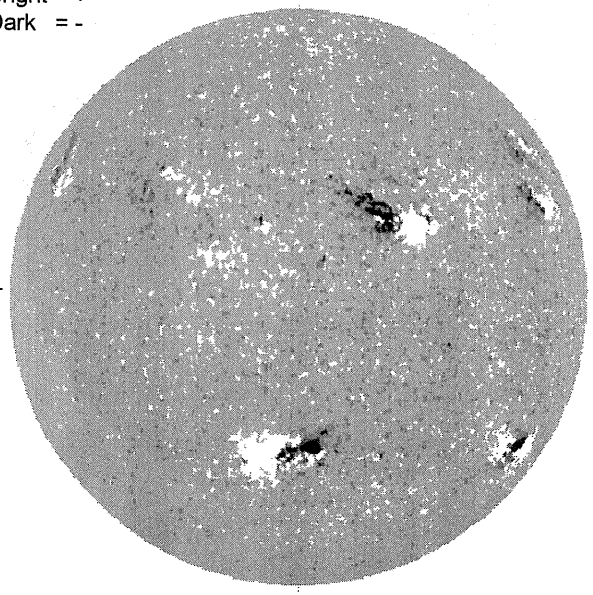
KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -

E-



1541 UT

STANFORD MAGNETOGRAM

N

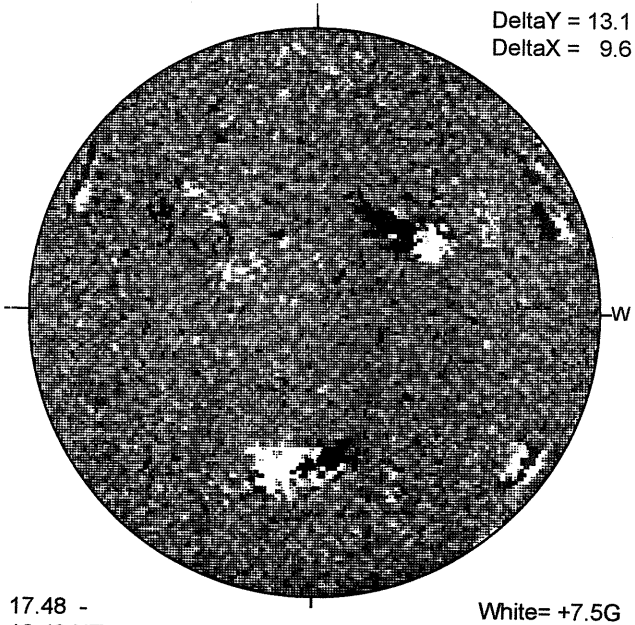
Solid = +
Dashed = -

2300 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

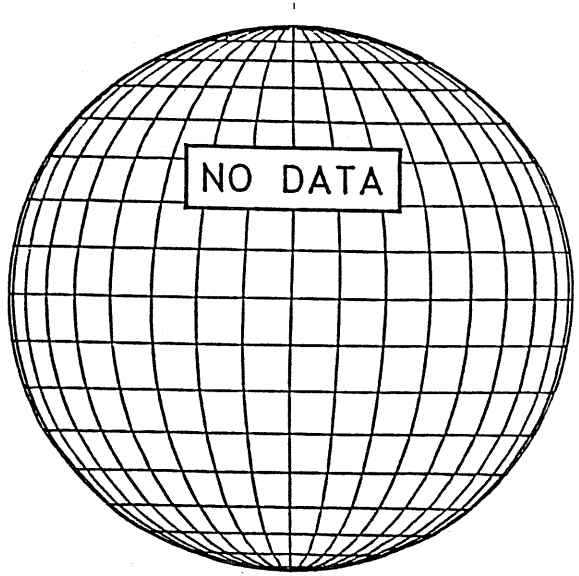


-W

17.48 -
18.42 UT

White= +7.5G
Black = -7.5G

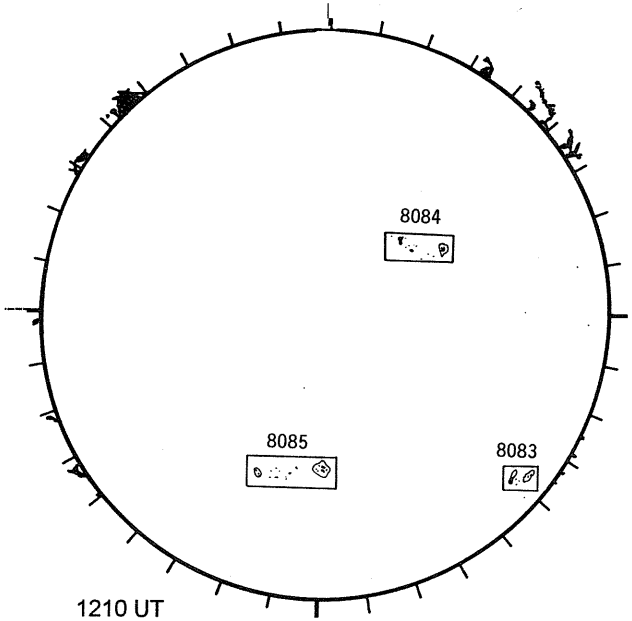
---- SACRAMENTO PEAK H-ALPHA



E-

S

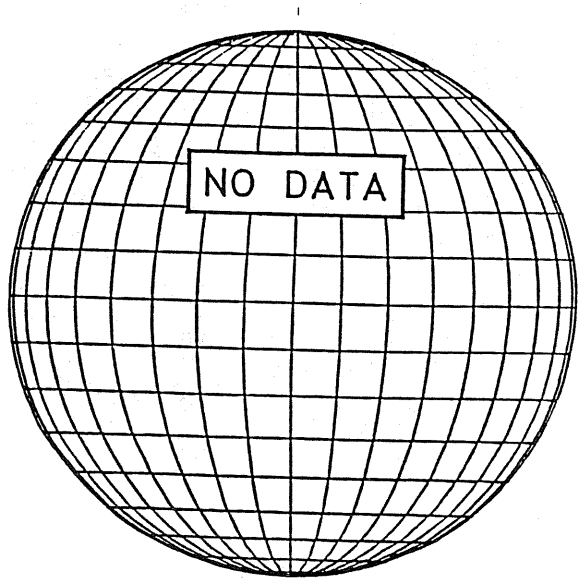
RAMEY SUNSPOT



1210 UT
0900 UT VALA Prom

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

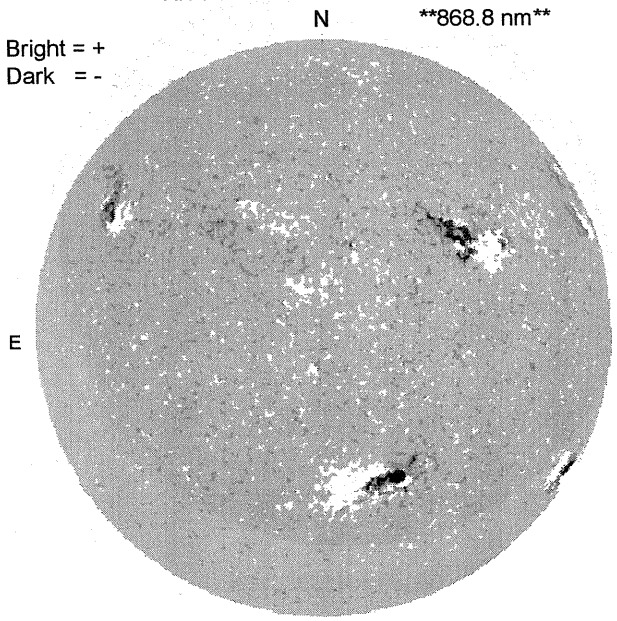


-W

S

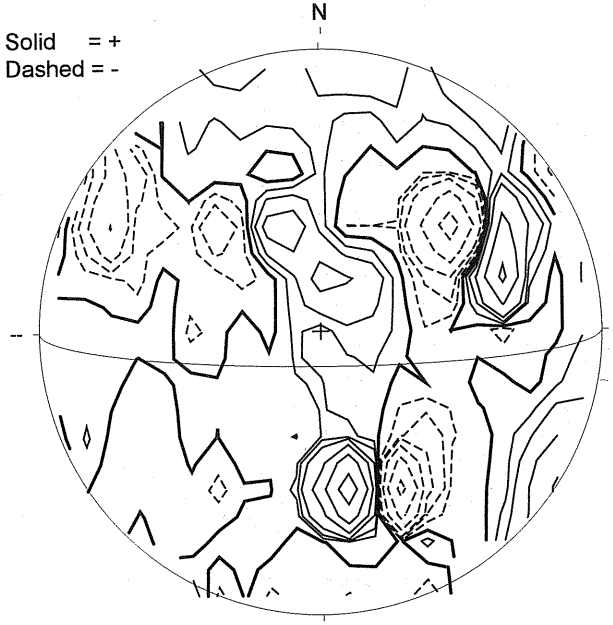
SEPTEMBER 13, 1997 (P= 23.71, Bo = 7.23, Lo = 293.54)

KITT PEAK MAGNETOGRAM



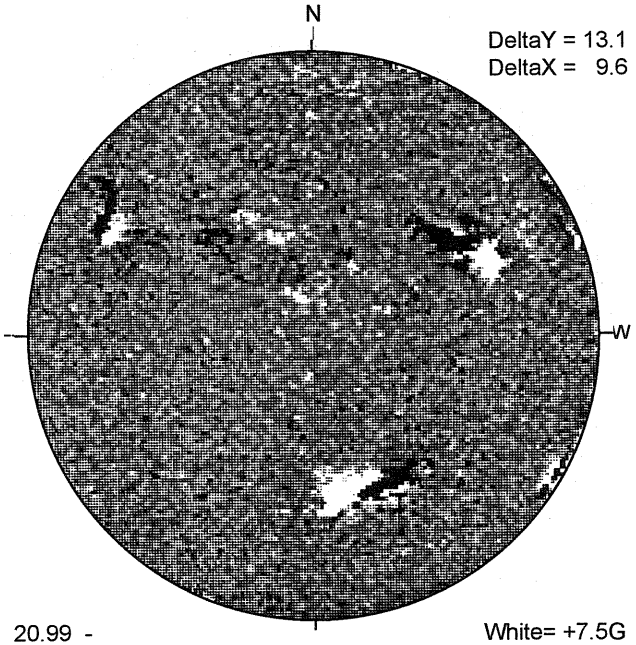
1632 UT

STANFORD MAGNETOGRAM



2118 UT

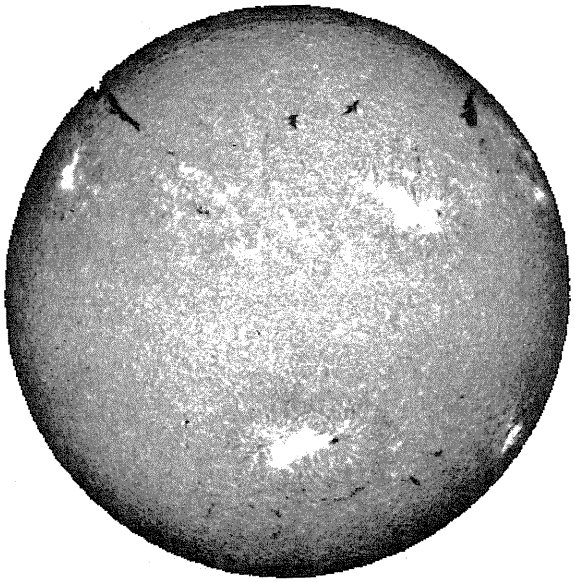
MT. WILSON MAGNETOGRAM



20.99 -
21.93 UT

White= +7.5G
Black = -7.5G

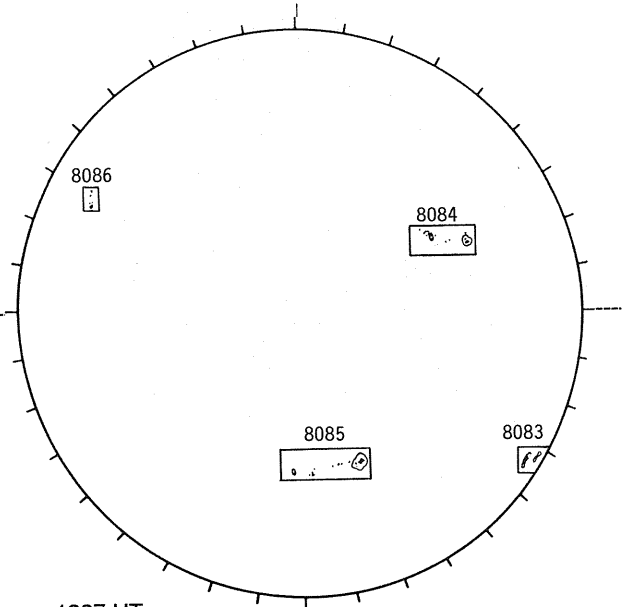
MEUDON H-ALPHA



0645 UT

S

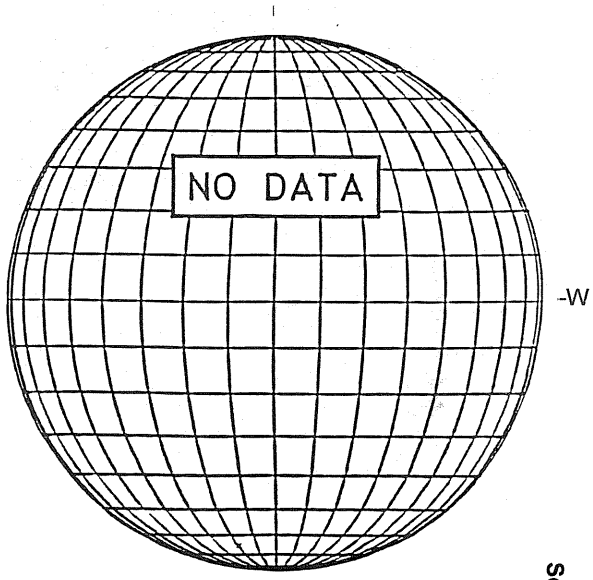
RAMEY SUNSPOT



1207 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

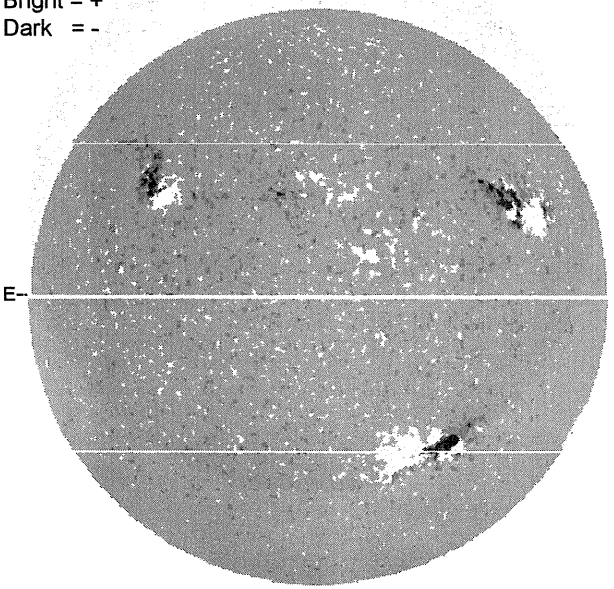
53
Sep 97

SEPTEMBER 14, 1997 (P= 23.89, Bo = 7.22, Lo= 280.34)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



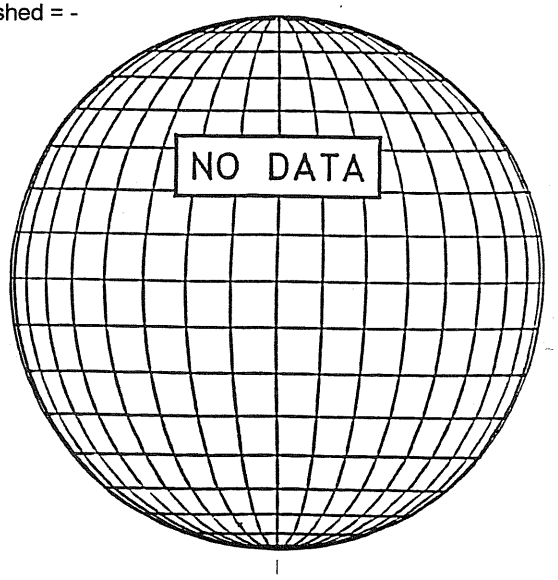
E

2026 UT

STANFORD MAGNETOGRAM

N

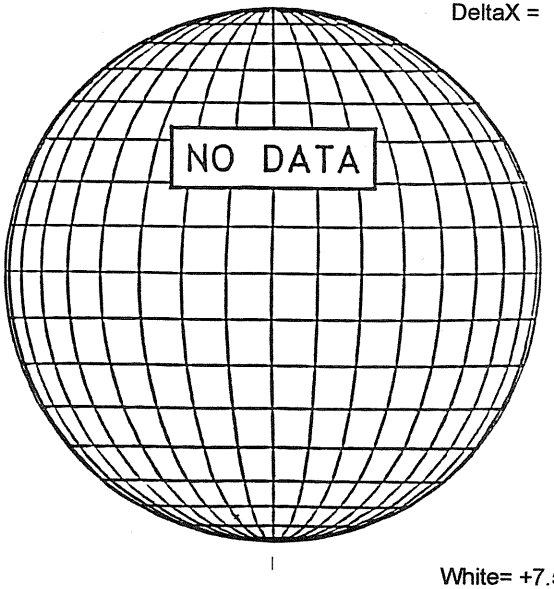
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

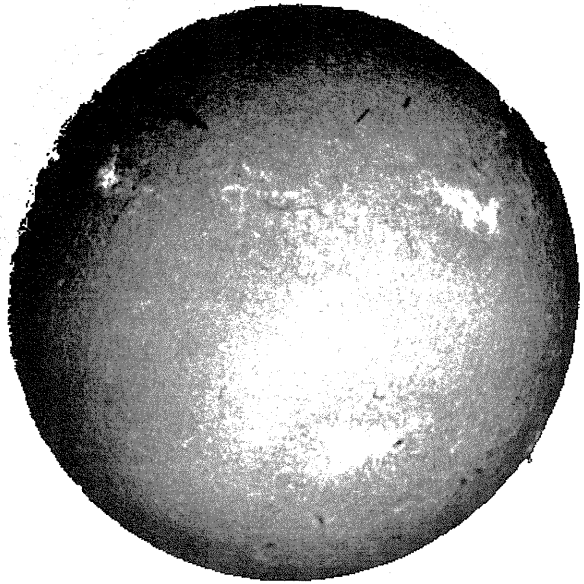
DeltaY =
DeltaX =



W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

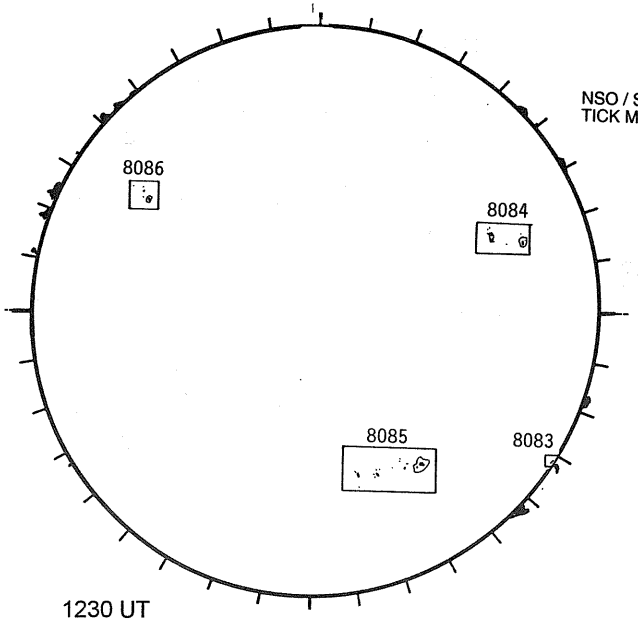


E

0935 UT

S

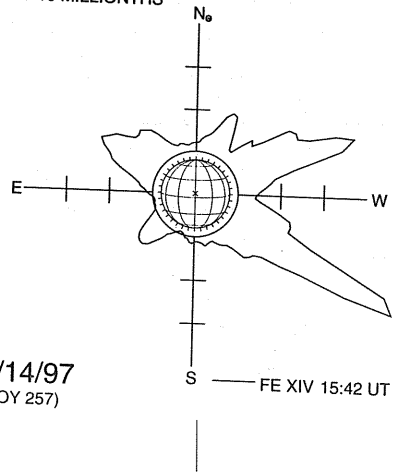
RAMEY SUNSPOT



1230 UT
1003 UT VALA Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



W

09/14/97
(DOY 257)

FE XIV 15:42 UT 1.15 $R_\odot$

S

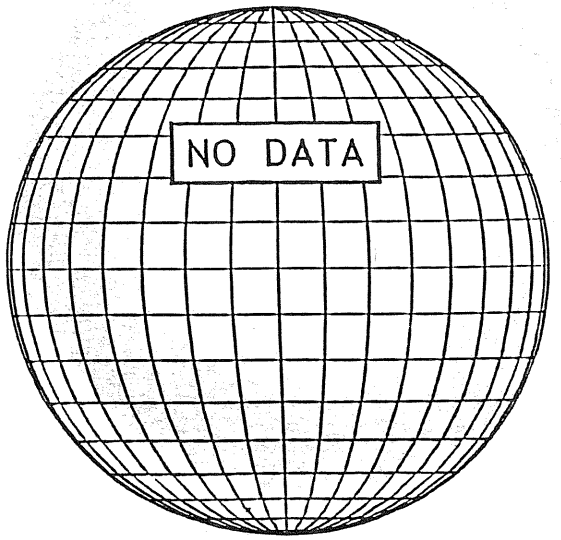
SEPTEMBER 15, 1997 (P= 24.06, BO = 7.21, LO = 267.14)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



E--

STANFORD MAGNETOGRAM

N

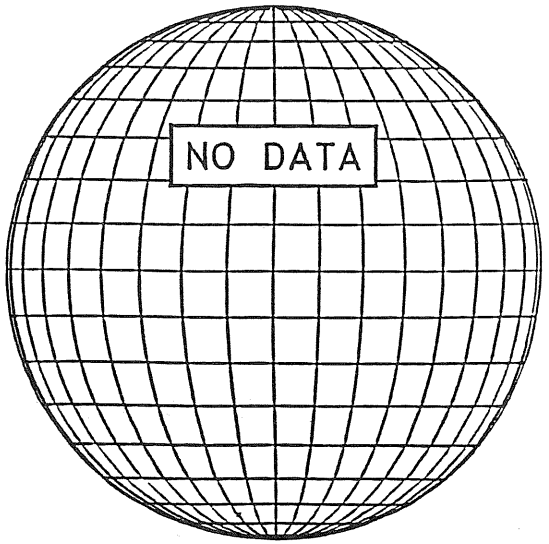
Solid = +
Dashed = -

2057 UT

MT. WILSON MAGNETOGRAM

N

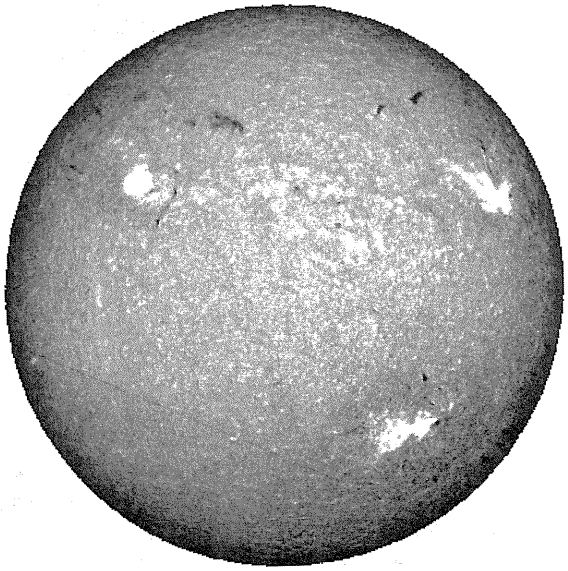
DeltaY =
DeltaX =



---W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

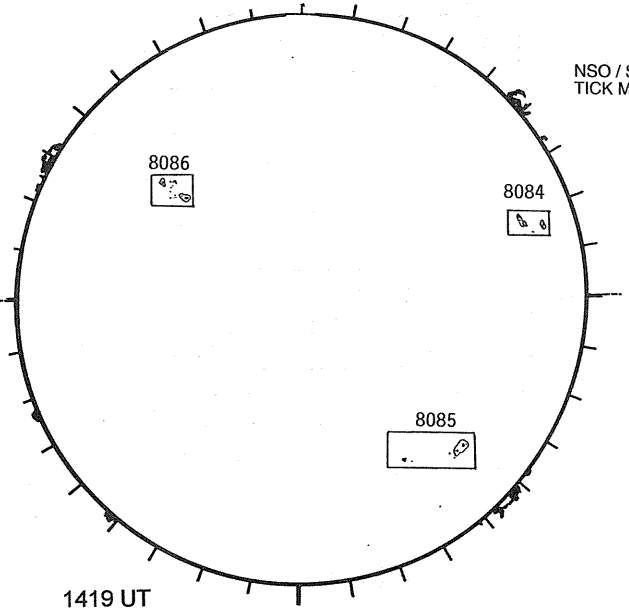


E

0706 UT

S

RAMEY SUNSPOT

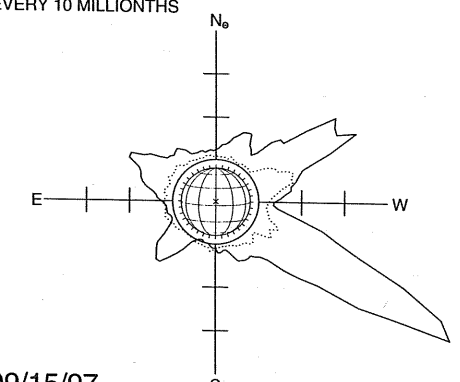


1419 UT
0707 UT VALA Prom

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



09/15/97
(DOY 258)

FE XIV 14:22 UT 1.15 Re
FE X 15:18 UT 1.15 Re
xxxxx CA XV 15:08 UT 1.15 Re
NO CA XV ACTIVITY TODAY

S

Sep 97

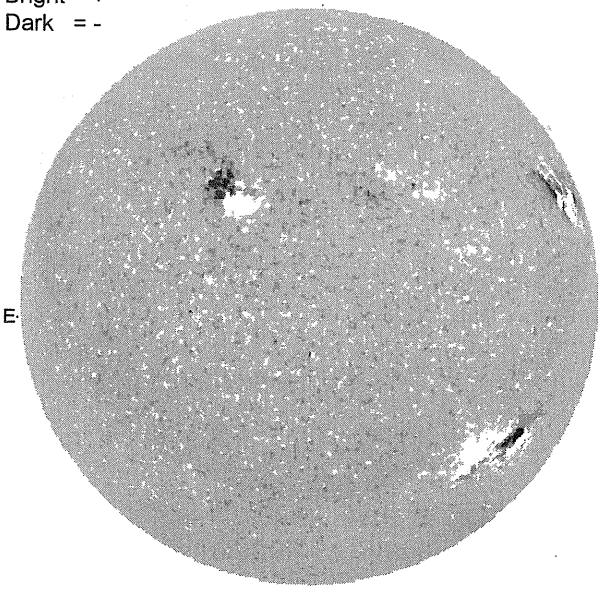
SEPTEMBER 16, 1997 (P= 24.23, Bo = 7.19, Lo = 253.93)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



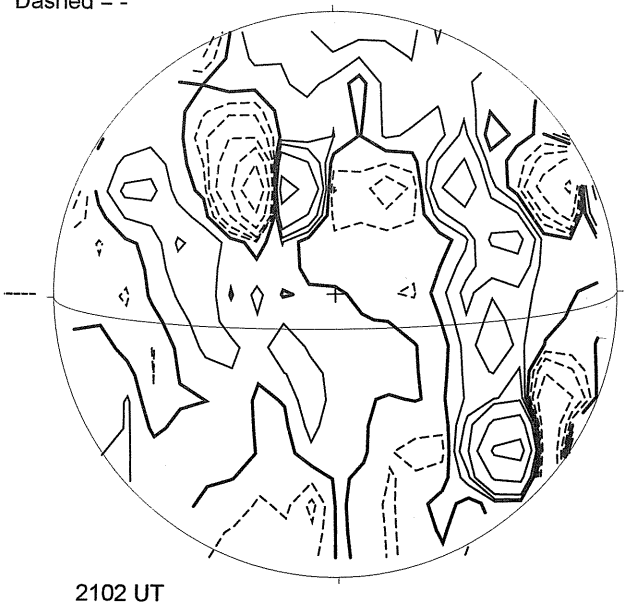
E

1434 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

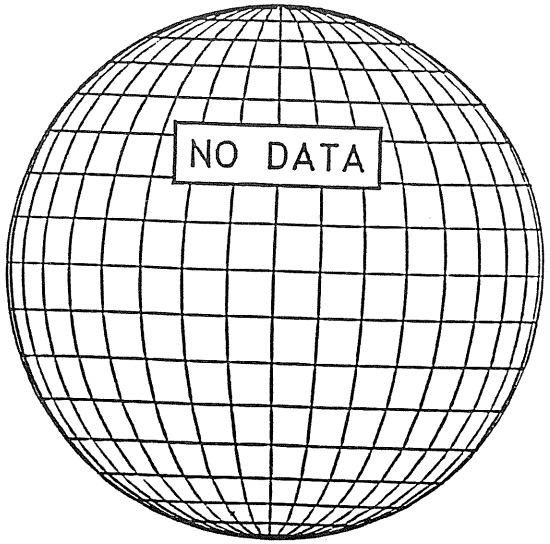


2102 UT

MT. WILSON MAGNETOGRAM

N

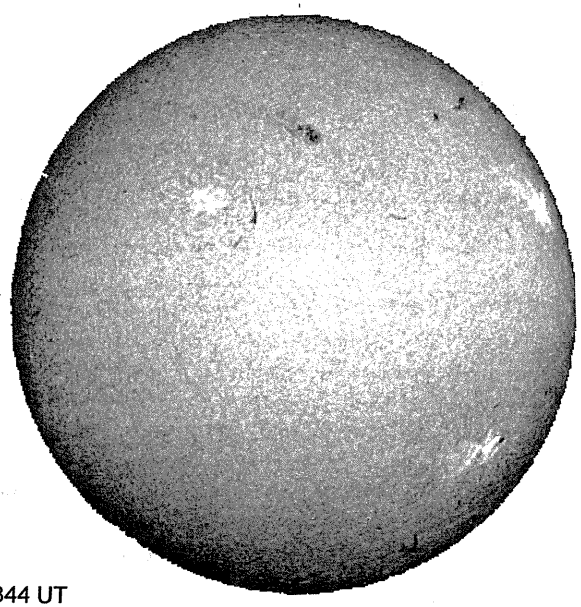
DeltaY =
DeltaX =



W

White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA

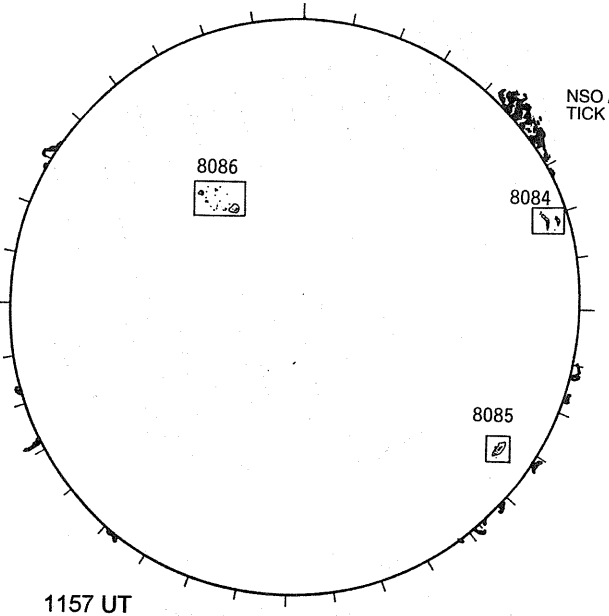


E

1344 UT

S

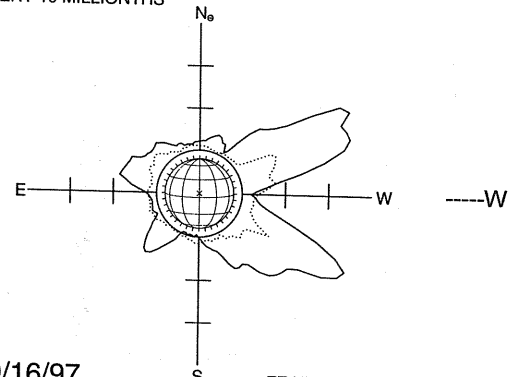
RAMEY SUNSPOT



1157 UT
0629 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



09/16/97
(DOY 259)

FE XIV 15:01 UT 1.15 Re
FE X 15:29 UT 1.15 Re
CA XV 15:11 UT 1.15 Re
NO CA XV ACTIVITY TODAY

W

S

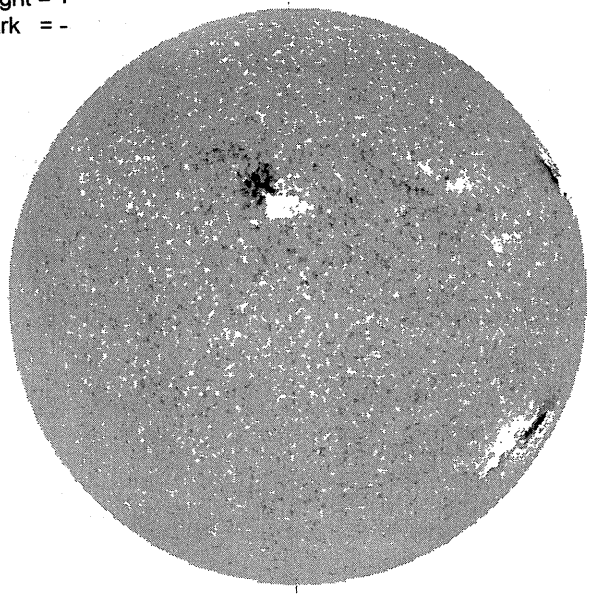
SEPTEMBER 17, 1997 (P= 24.39, Bo = 7.17, Lo = 240.73)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



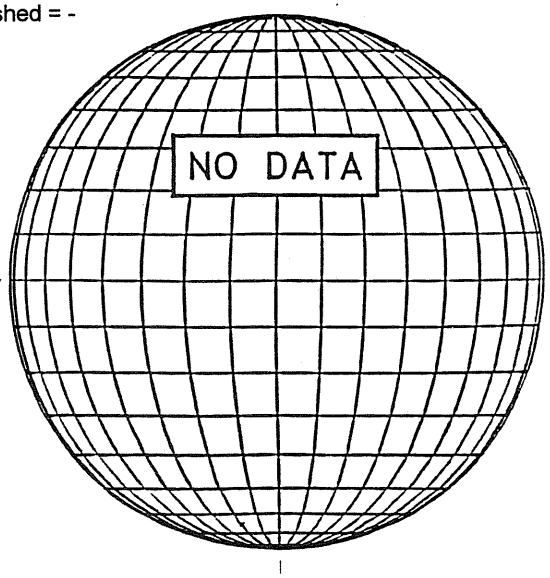
E-

1413 UT

STANFORD MAGNETOGRAM

N

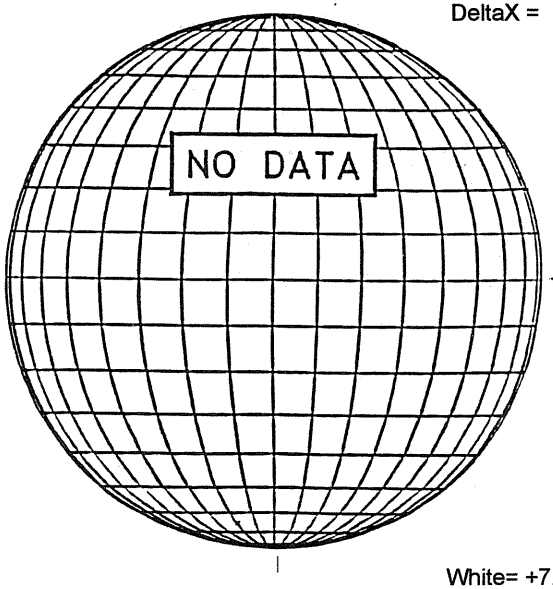
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

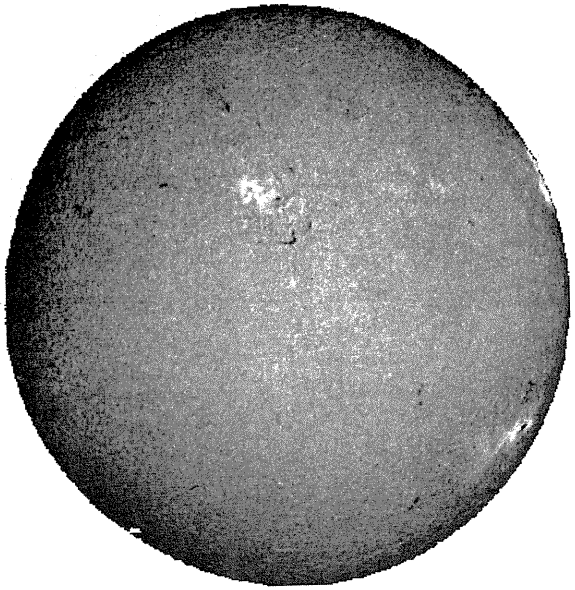
DeltaY =
DeltaX =



---W

White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA

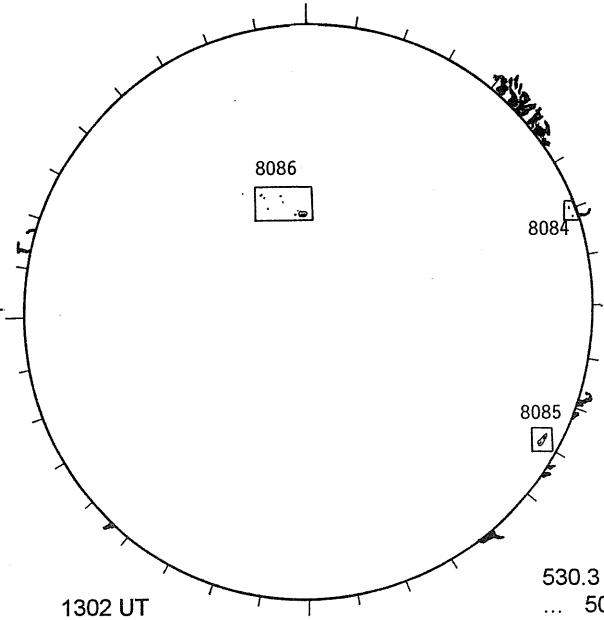


E-

1352 UT

S

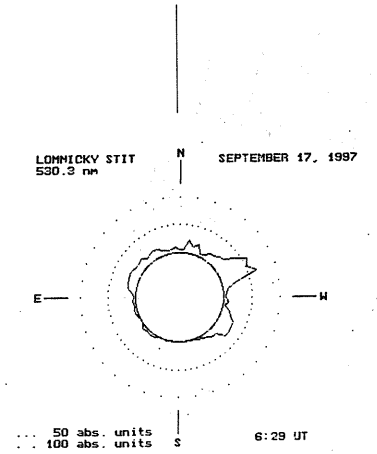
RAMEY SUNSPOT



1302 UT
0621 UT LOMN Prom

S

LOMNICKY PEAK CORONA (1.04 Radii)----



----------W

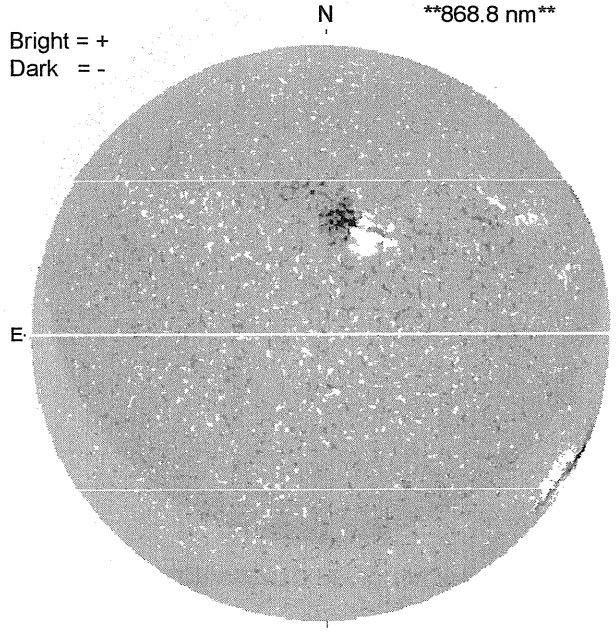
530.3 nm, 0629 UT
... 50 abs. units
. . 100 abs. units

S

57
Sep 97

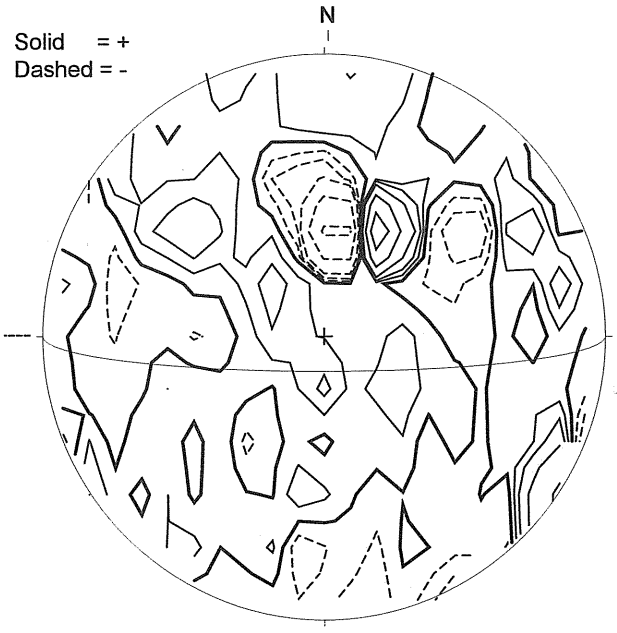
SEPTEMBER 18, 1997 (P= 24.55, Bo = 7.15, Lo = 227.53)

KITT PEAK MAGNETOGRAM



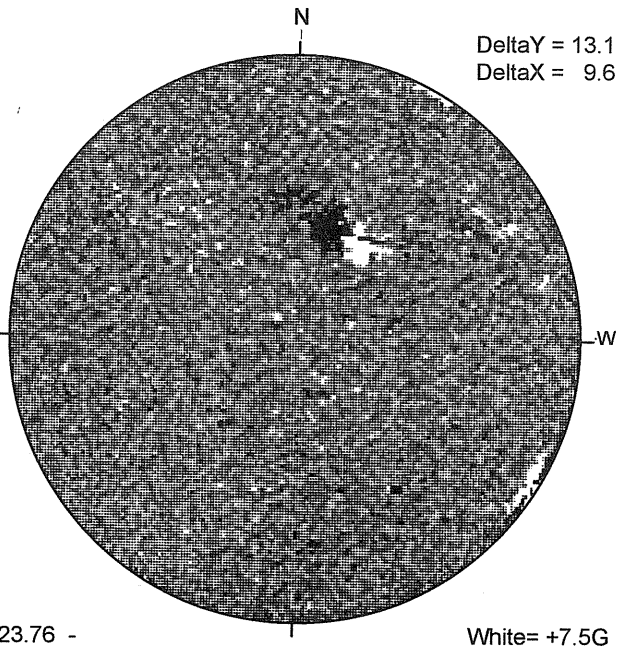
1524 UT

STANFORD MAGNETOGRAM



1756 UT

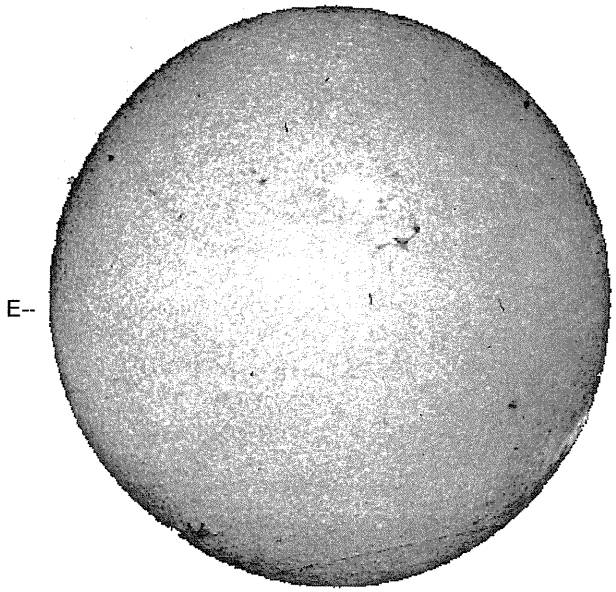
MT. WILSON MAGNETOGRAM



23.76 -
24.70 UT

White= +7.5G
Black = -7.5G

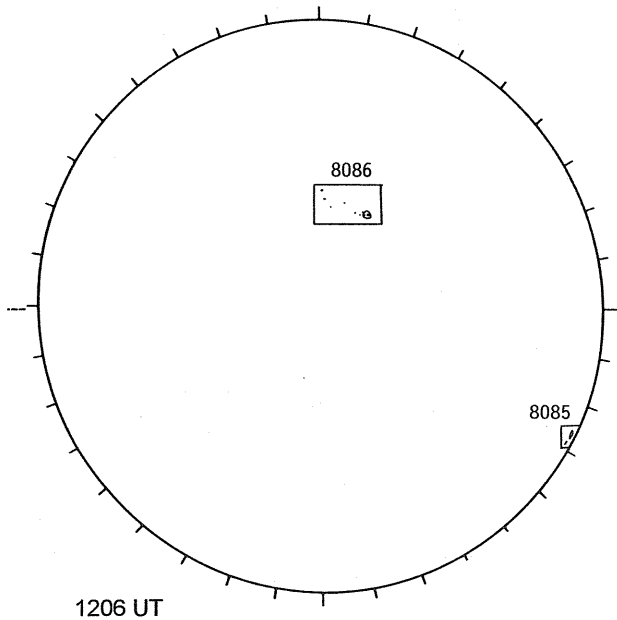
SACRAMENTO PEAK H-ALPHA



1415 UT

S

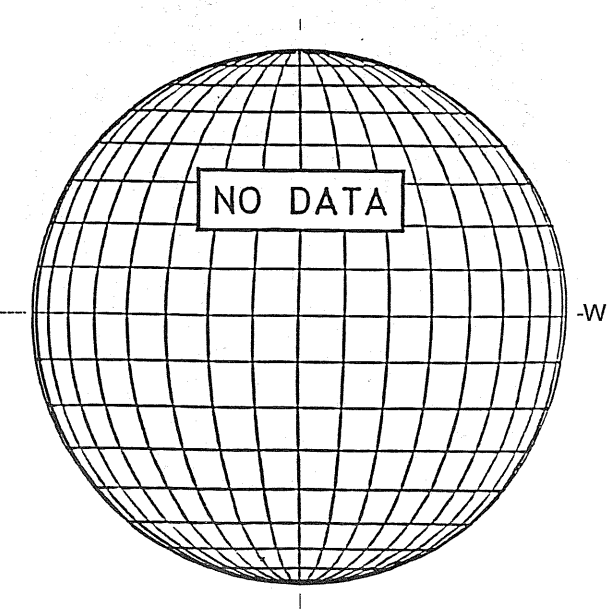
RAMEY SUNSPOT



1206 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)



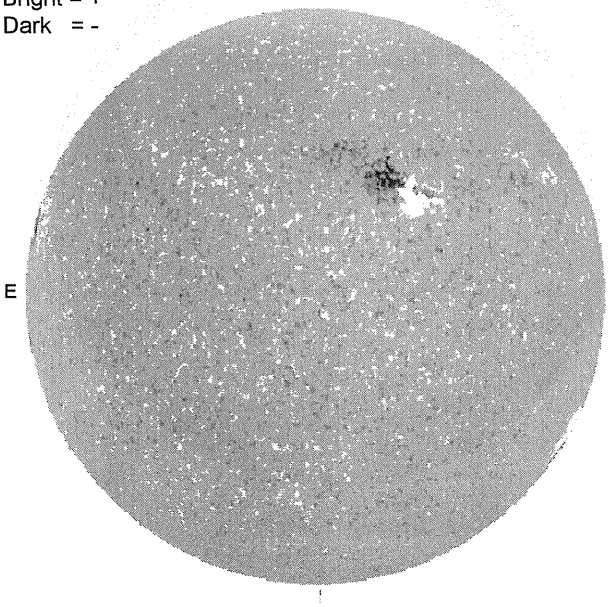
S

SEPTEMBER 19, 1997 (P= 24.70, Bo = 7.13, Lo = 214.33)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



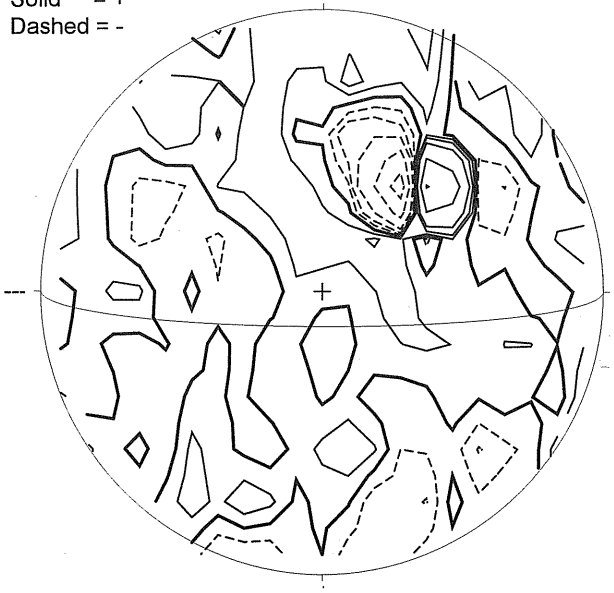
E

1432 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

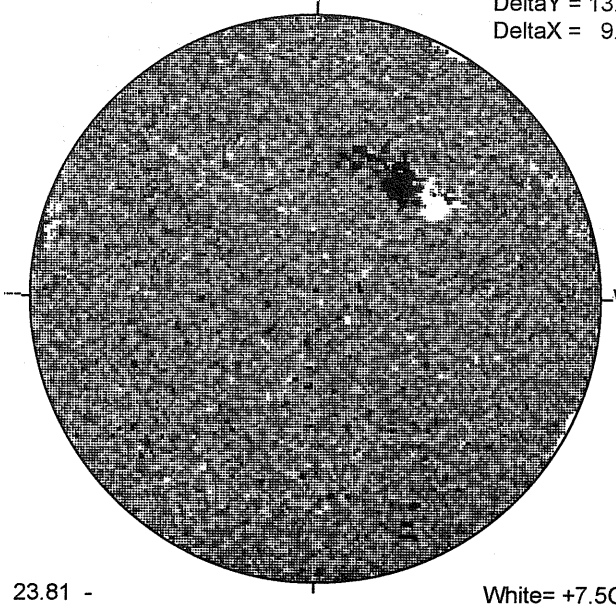


2111 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

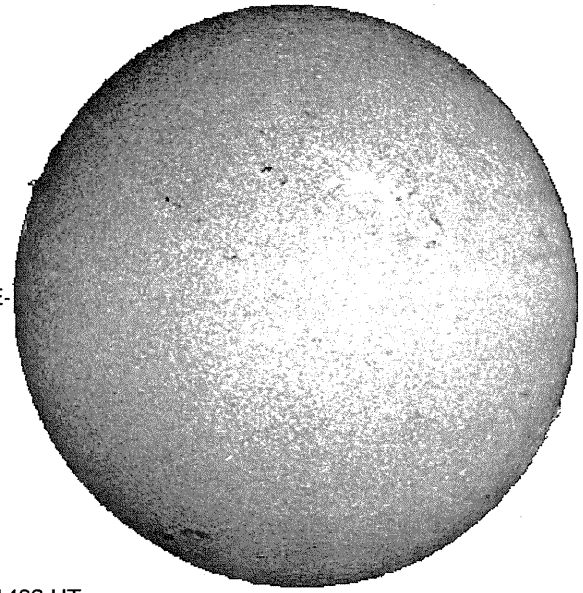


W

23.81 -
24.75 UT

White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA

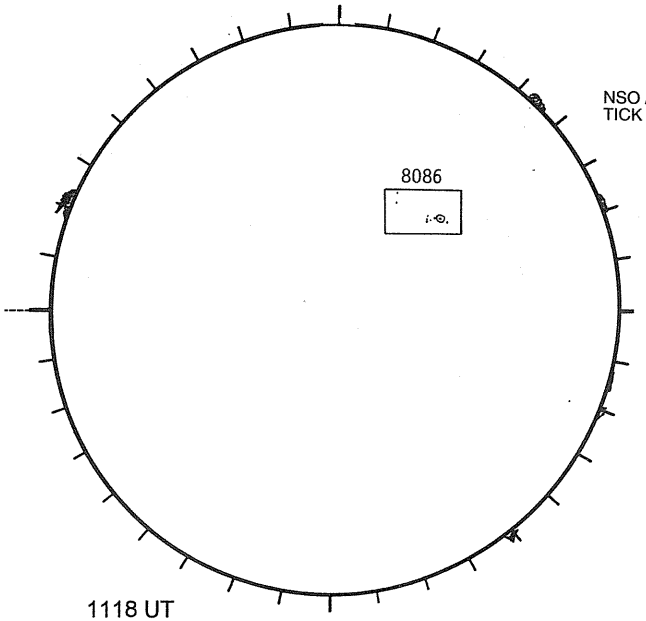


E

1402 UT

S

RAMEY SUNSPOT

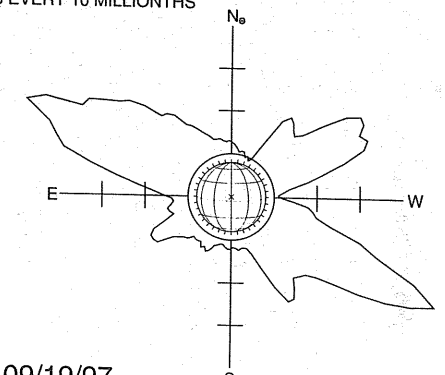


1118 UT
0619 UT VALA Prom

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



09/19/97
(DOY 262)

FE XIV 14:31 UT 1.15 R⊙

W

S

59
Sep 97

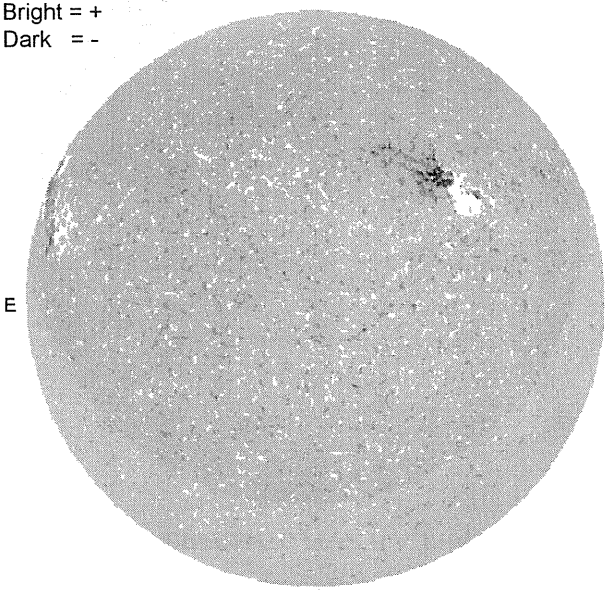
SEPTEMBER 20, 1997 (P= 24.84, Bo = 7.11, Lo = 201.13)

Sep 97
60

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



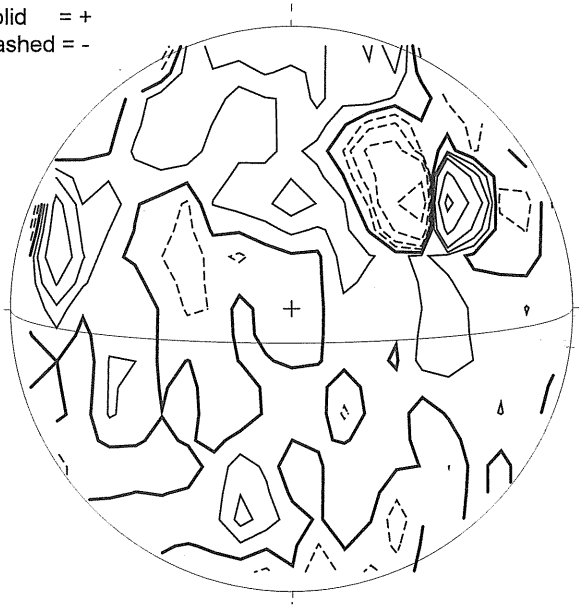
E

1429 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

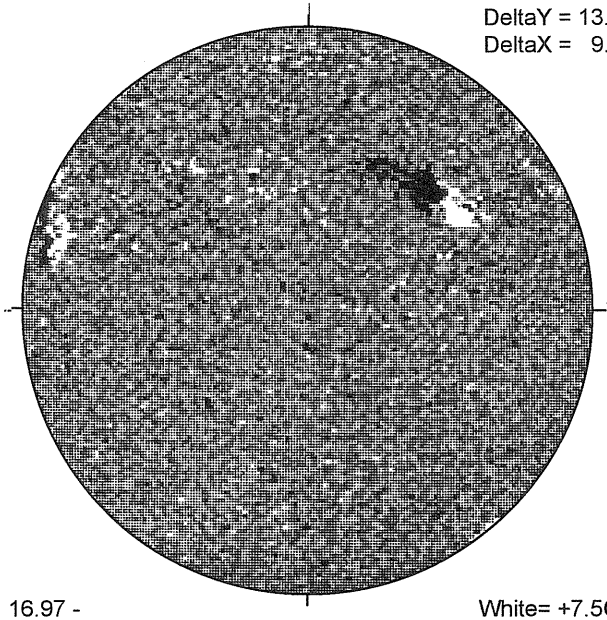


2144 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

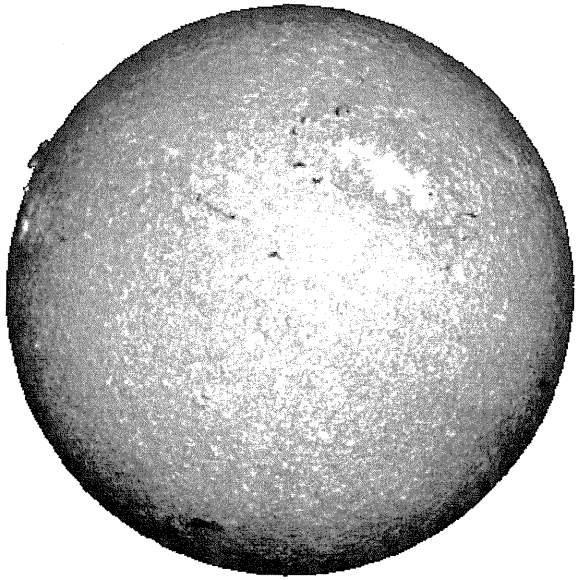


W

16.97 -
17.91 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

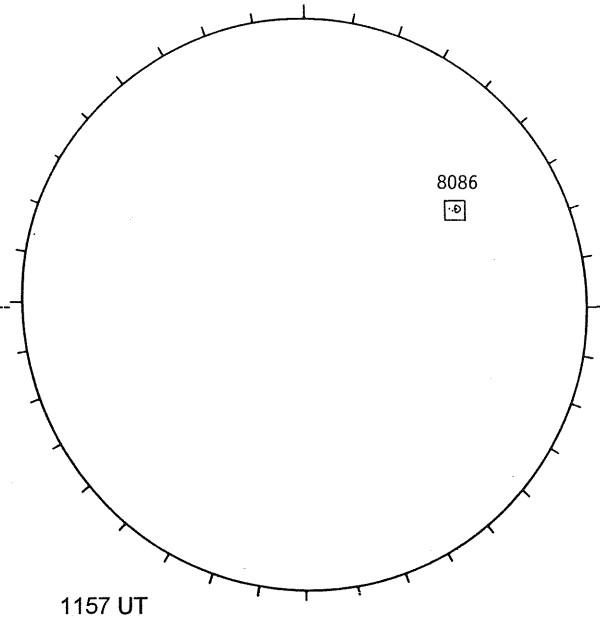


E

0711 UT

S

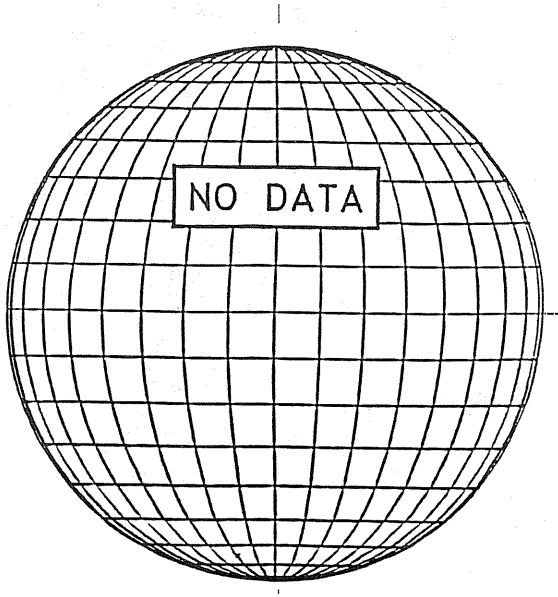
RAMEY SUNSPOT



1157 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)



W

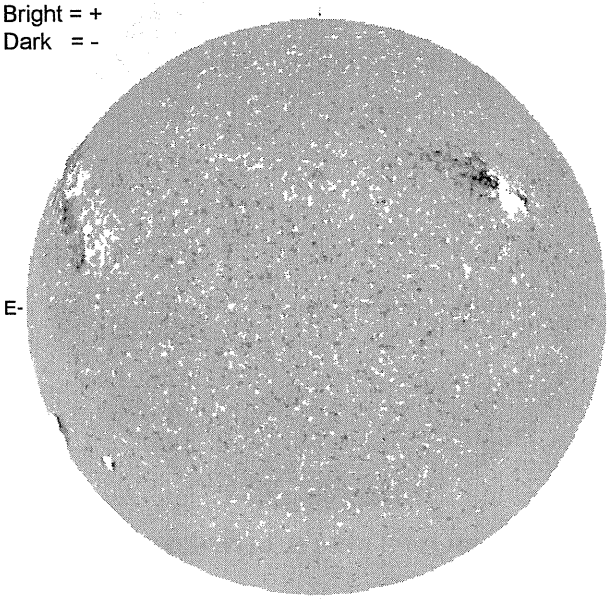
S

SEPTEMBER 21, 1997 (P= 24.98, Bo = 7.08, Lo = 187.93)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



E-

1555 UT

STANFORD MAGNETOGRAM

N

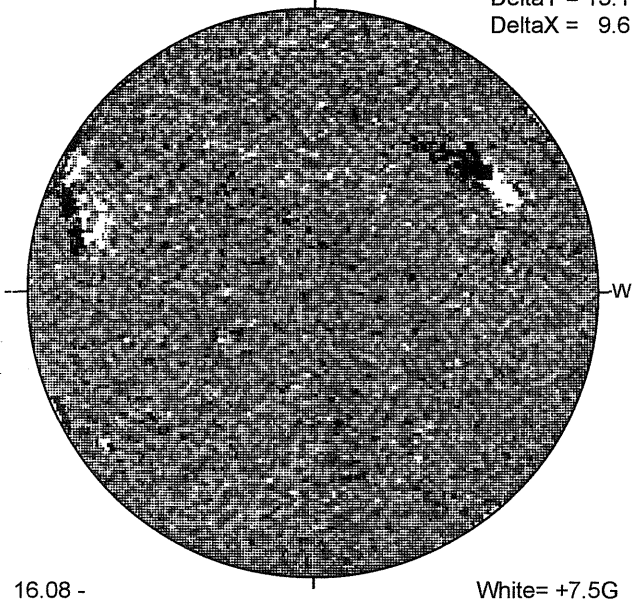
Solid = +
Dashed = -

2111 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

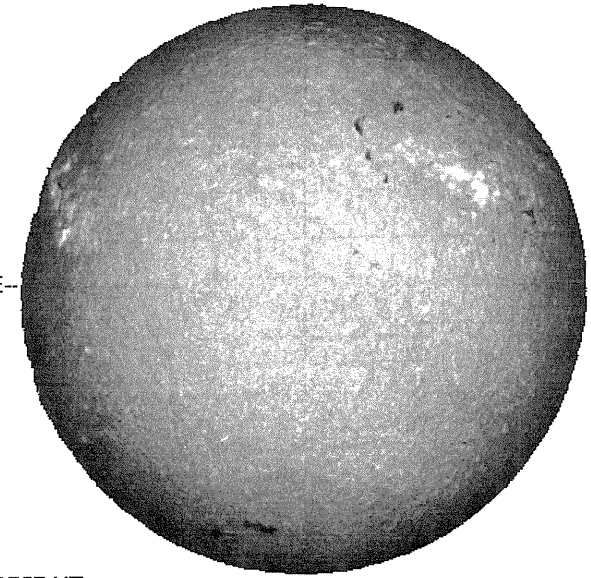


-W

16.08 -
17.02 UT

White= +7.5G
Black = -7.5G

----- MEUDON H-ALPHA

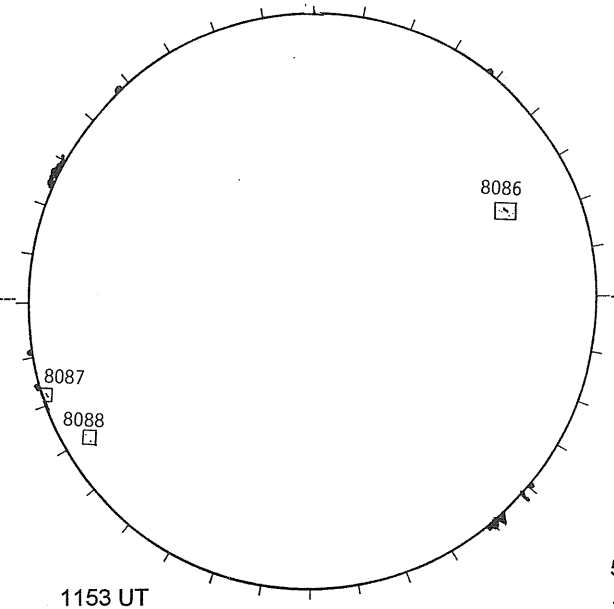


E--

0757 UT

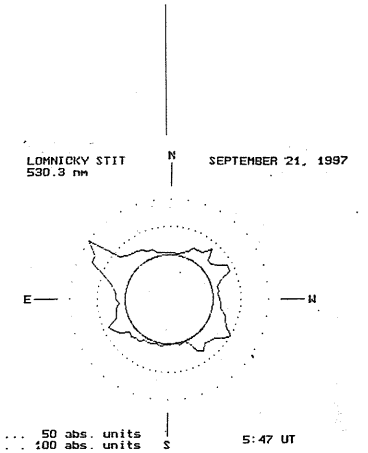
S

RAMEY SUNSPOT



1153 UT
0539 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)-----



---------W

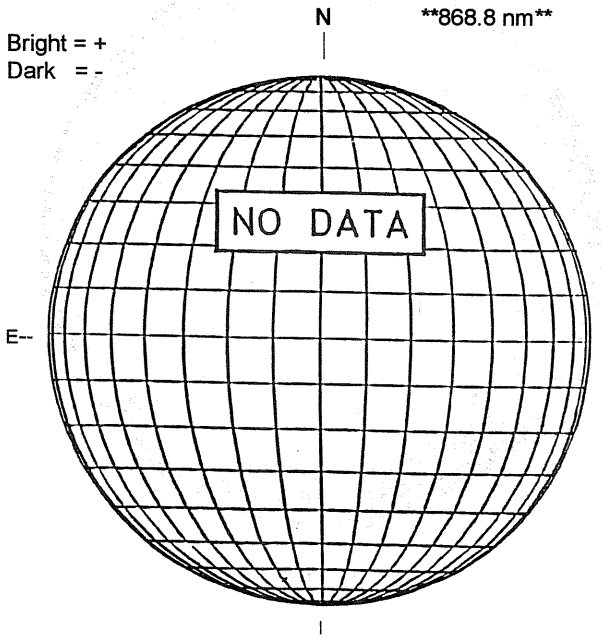
530.3 nm, 0547 UT
... 50 abs. units
. . 100 abs. units

S

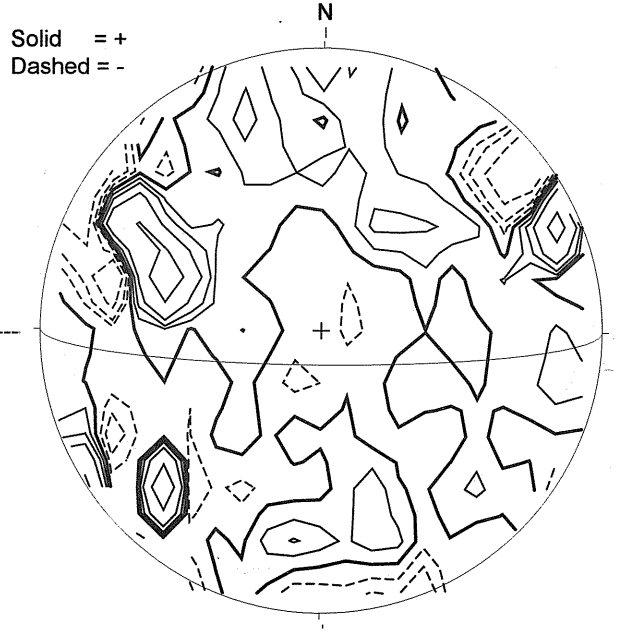
61
Sep 97

SEPTEMBER 22, 1997 (P= 25.11, Bo = 7.06, Lo = 174.73)

KITT PEAK MAGNETOGRAM

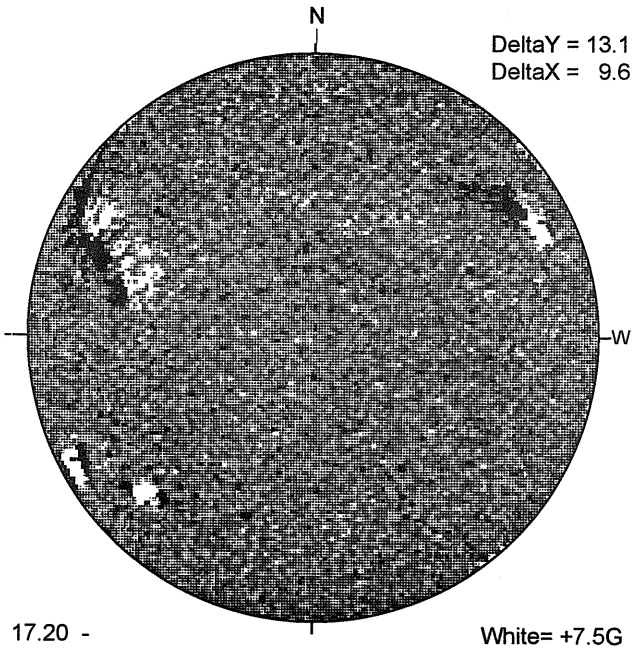


STANFORD MAGNETOGRAM



2131 UT

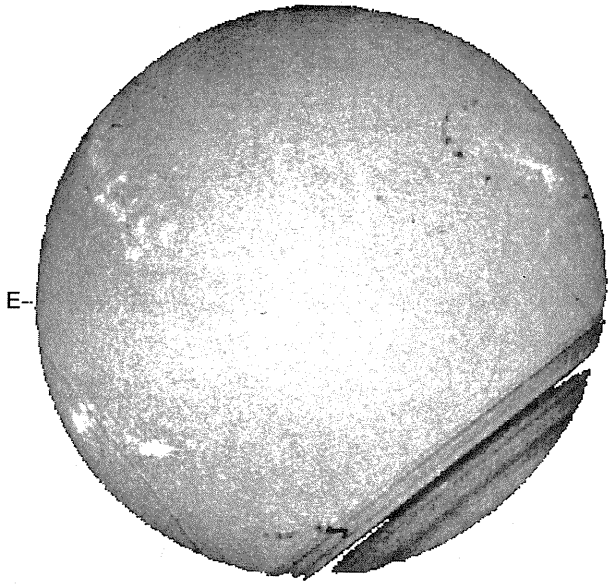
MT. WILSON MAGNETOGRAM



17.20 -
18.14 UT

White= +7.5G
Black = -7.5G

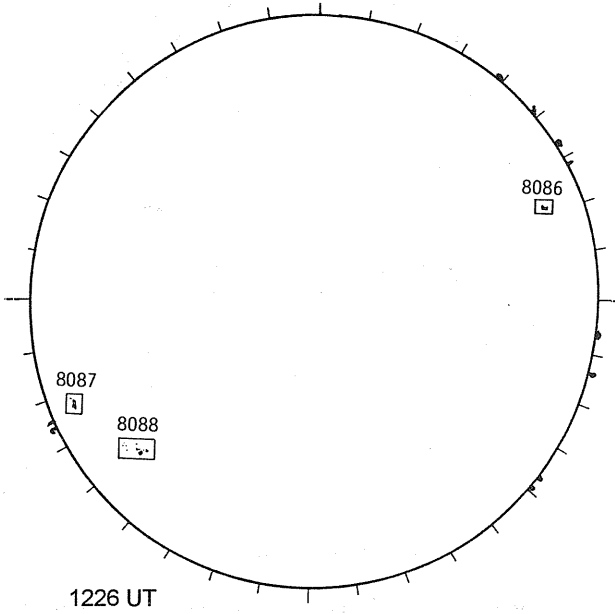
SACRAMENTO PEAK H-ALPHA



1828 UT

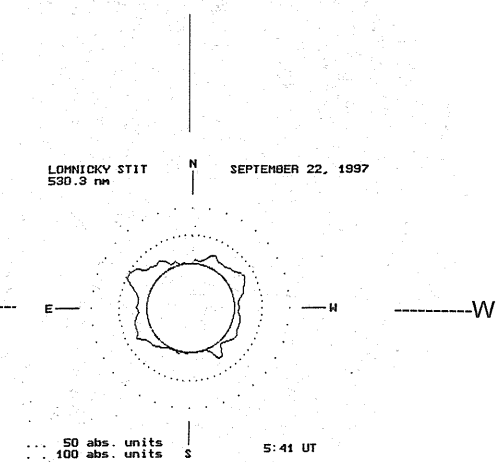
S

RAMEY SUNSPOT



1226 UT
0531 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



530.3 nm, 0541 UT
... 50 abs. units
. . 100 abs. units

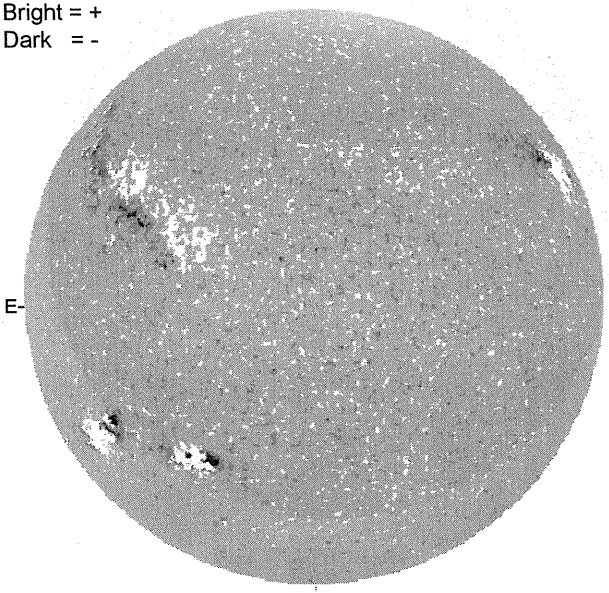
S

SEPTEMBER 23, 1997 (P= 25.23, Bo = 7.03, Lo = 161.53)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



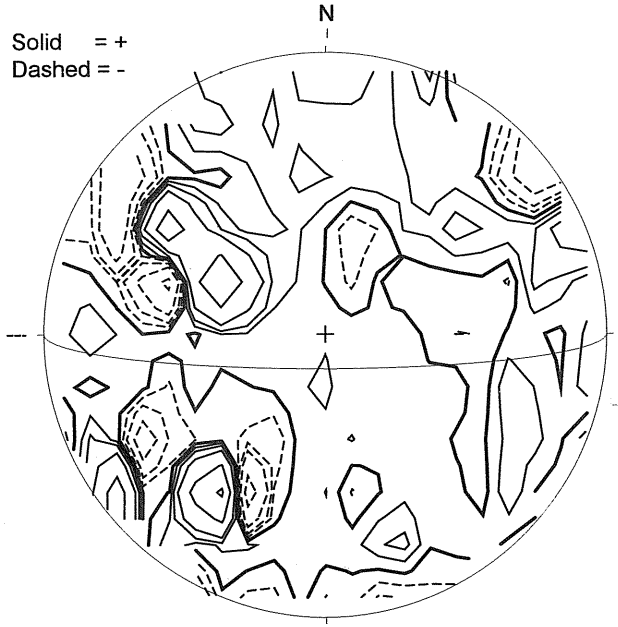
E-

1414 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

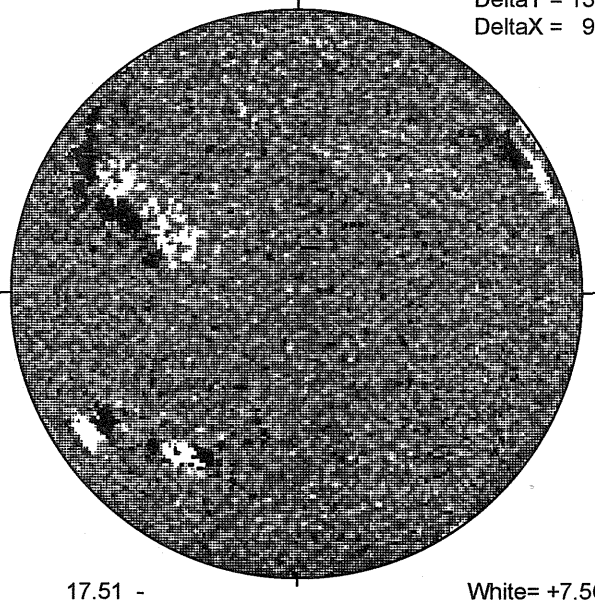


2047 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

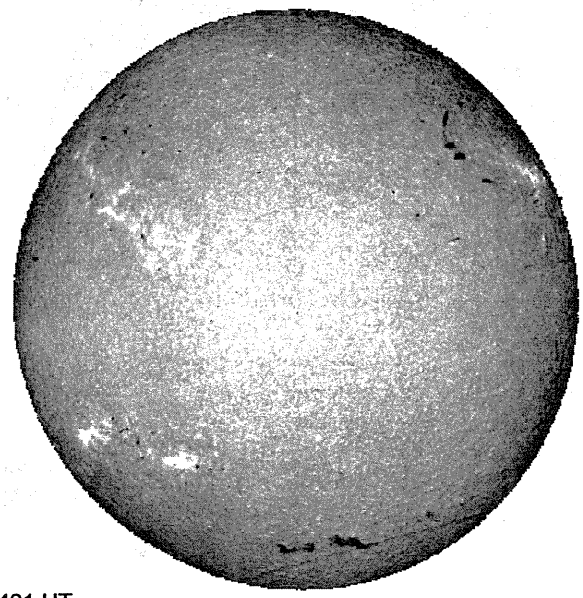


-W

17.51 -
18.45 UT

White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA

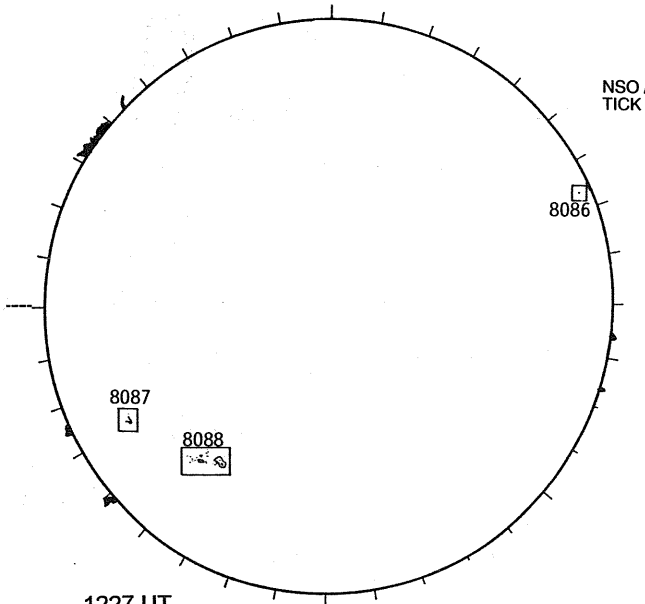


E-

1401 UT

S

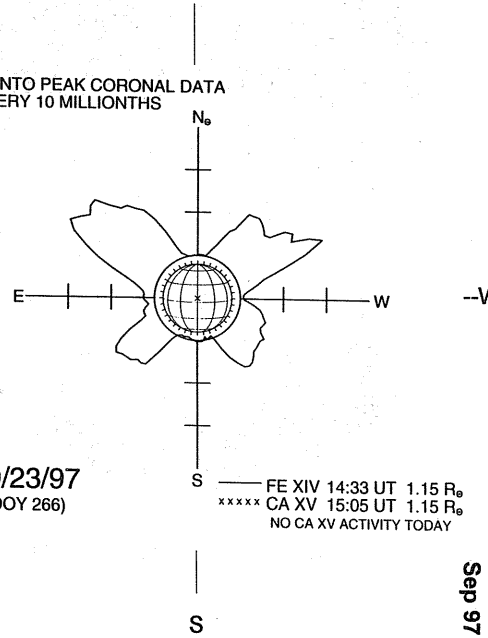
RAMEY SUNSPOT



1227 UT
0555 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



--W

09/23/97
(DOY 266)

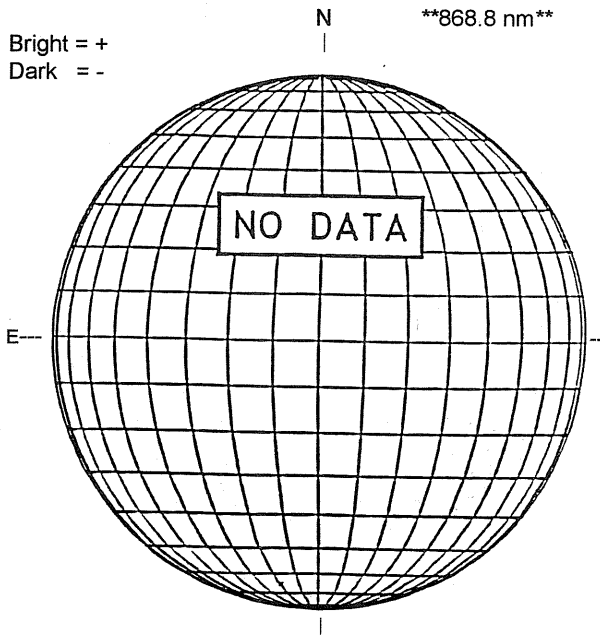
FE XIV 14:33 UT 1.15 R_s
xxxxx CA XV 15:05 UT 1.15 R_s
NO CA XV ACTIVITY TODAY

S

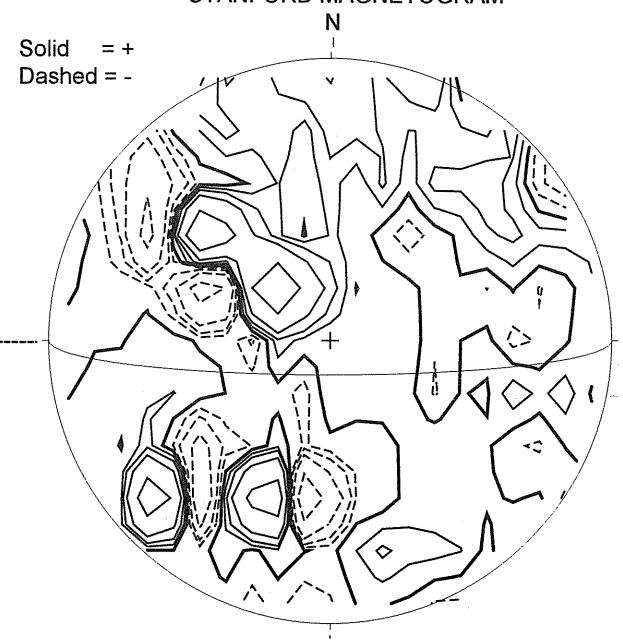
63
Sep 97

SEPTEMBER 24, 1997 (P= 25.35, Bo = 7.00, Lo = 148.33)

KITT PEAK MAGNETOGRAM

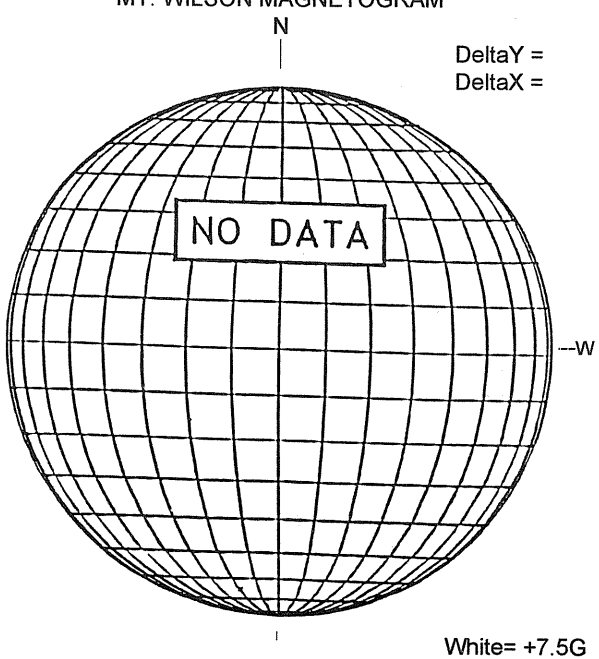


STANFORD MAGNETOGRAM



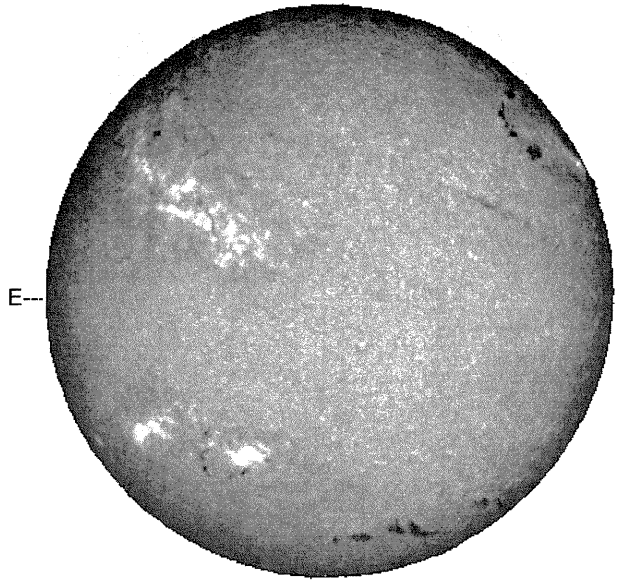
1935 UT

MT. WILSON MAGNETOGRAM



White= +7.5G
Black = -7.5G

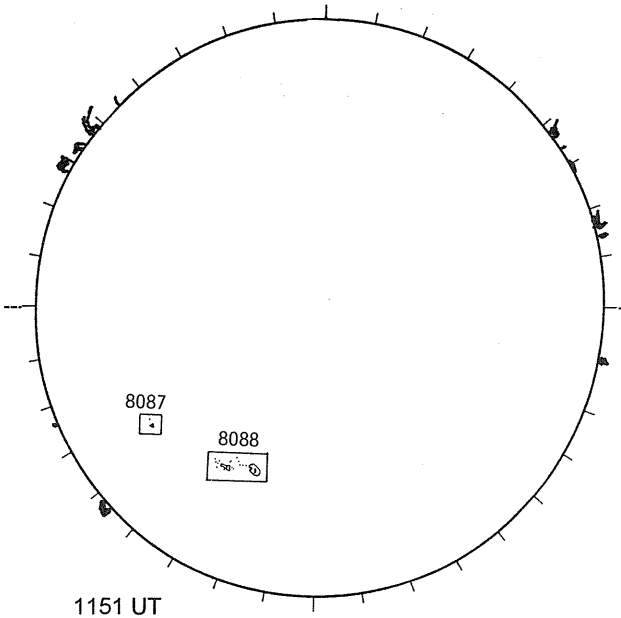
----- MEUDON H-ALPHA



0738 UT

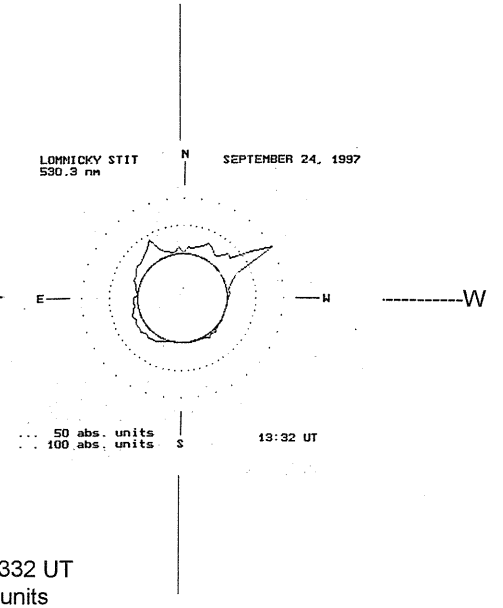
S

RAMEY SUNSPOT



1151 UT
1224 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



530.3 nm, 1332 UT
... 50 abs. units
. . 100 abs. units

S

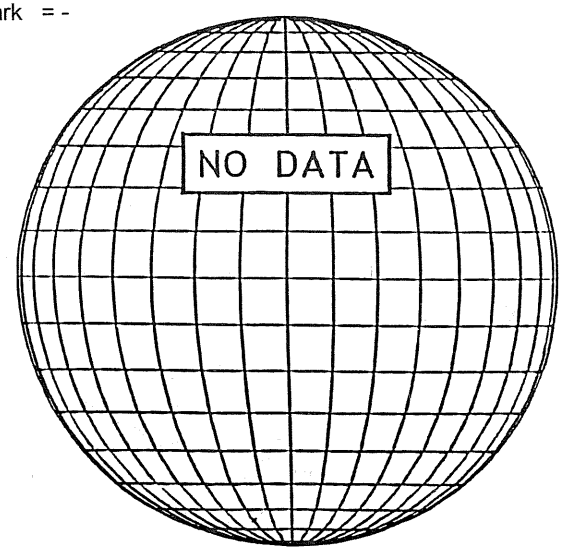
SEPTEMBER 25, 1997 (P= 25.46, Bo = 6.96, Lo = 135.13)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -

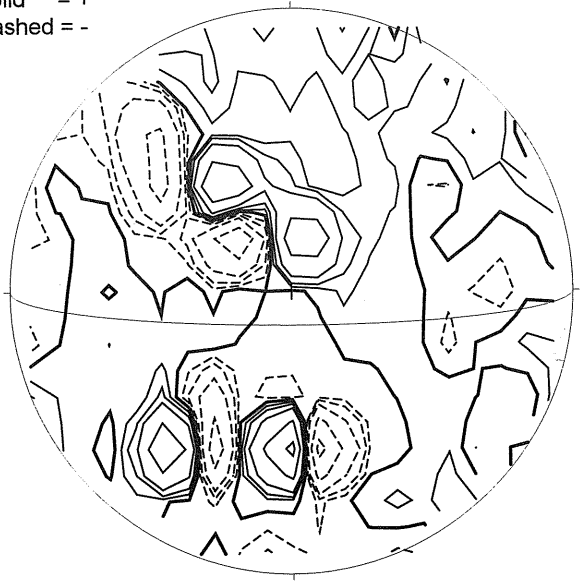


E-

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

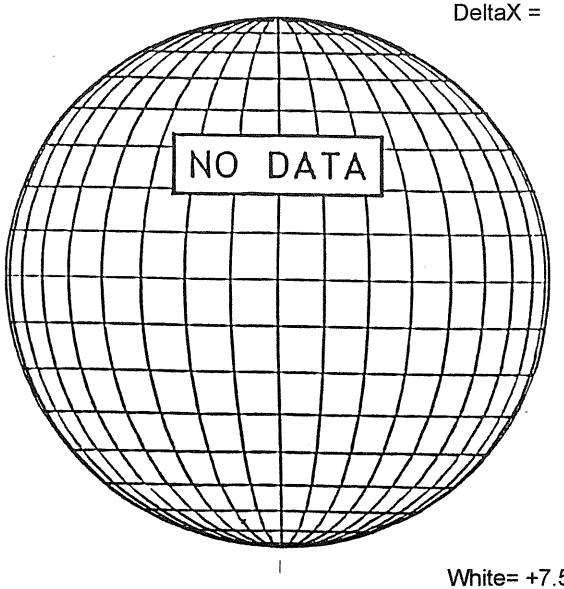


2113 UT

MT. WILSON MAGNETOGRAM

N

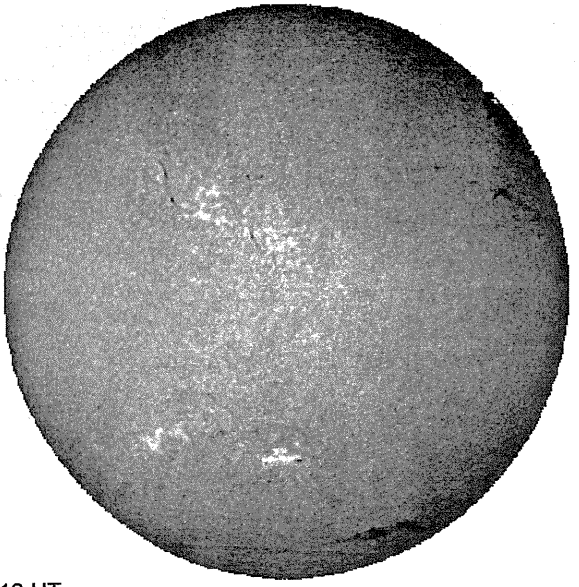
DeltaY =
DeltaX =



-W

White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA

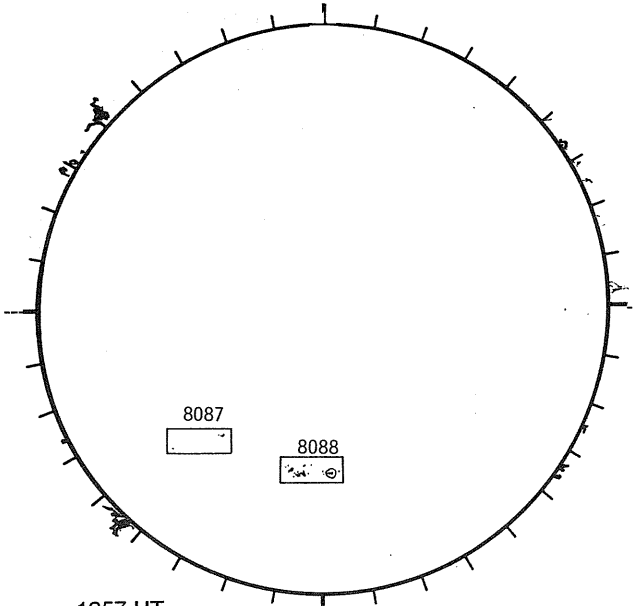


E-

1513 UT

S

RAMEY SUNSPOT



1257 UT
1359 UT VALA Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

-W

S

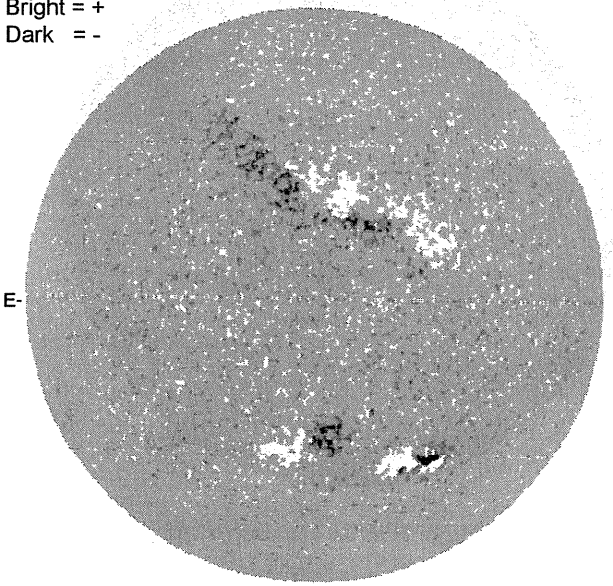
65
Sep 97

SEPTEMBER 26, 1997 (P= 25.57, Bo = 6.93, Lo = 121.94)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



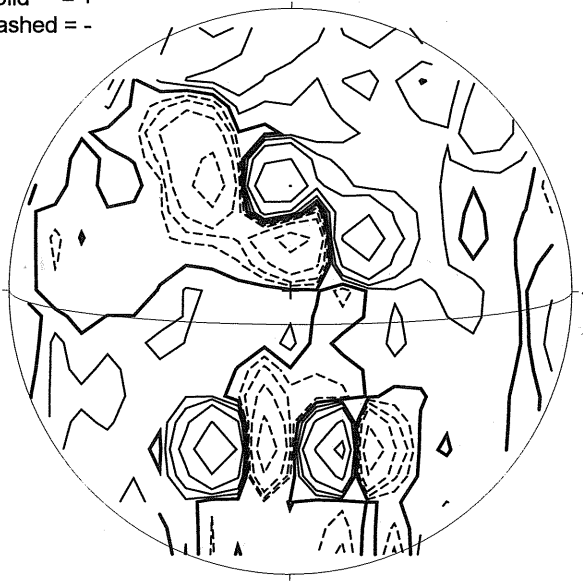
E-

1406 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

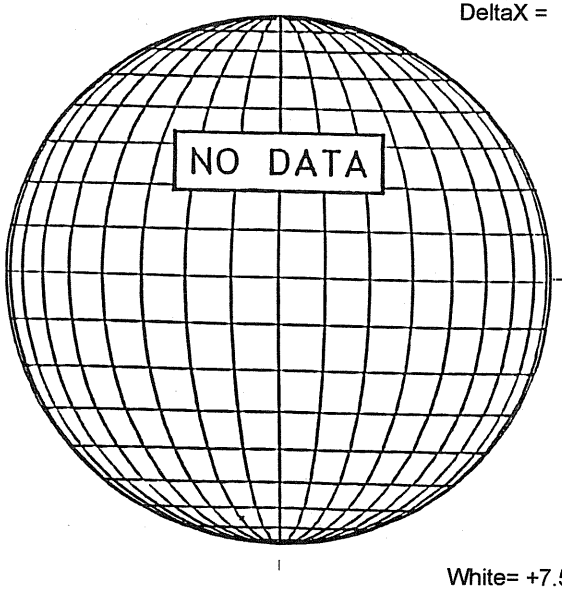


2156 UT

MT. WILSON MAGNETOGRAM

N

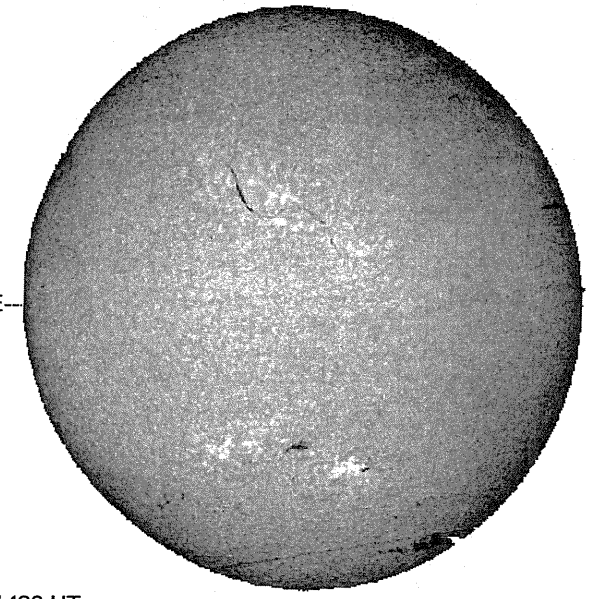
DeltaY =
DeltaX =



W

White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA

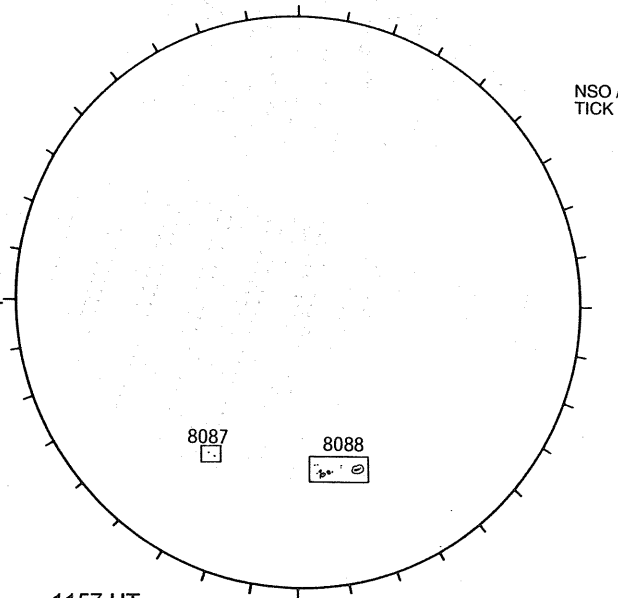


E

1420 UT

S

RAMEY SUNSPOT

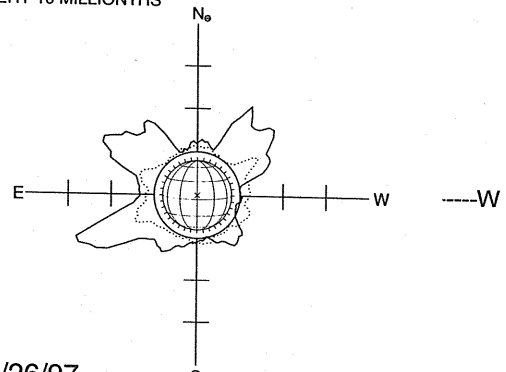


1157 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



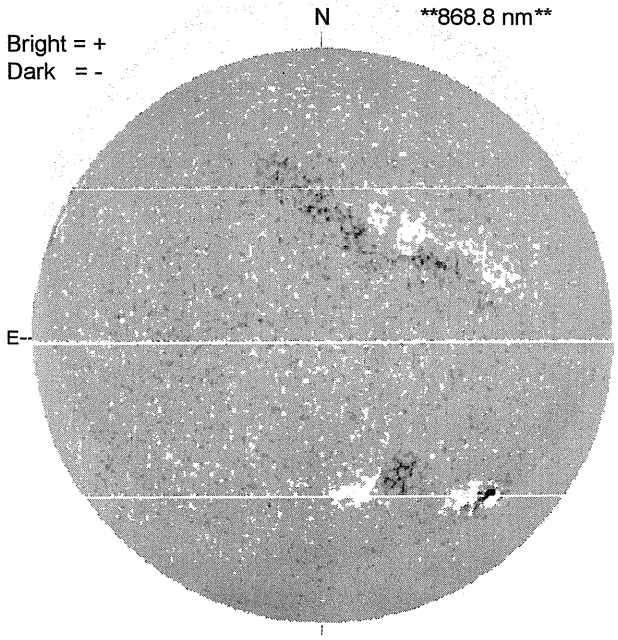
09/26/97
(DOY 269)

FE XIV 21:23 UT 1.15 $R_\odot$
FE X 20:40 UT 1.15 $R_\odot$

S

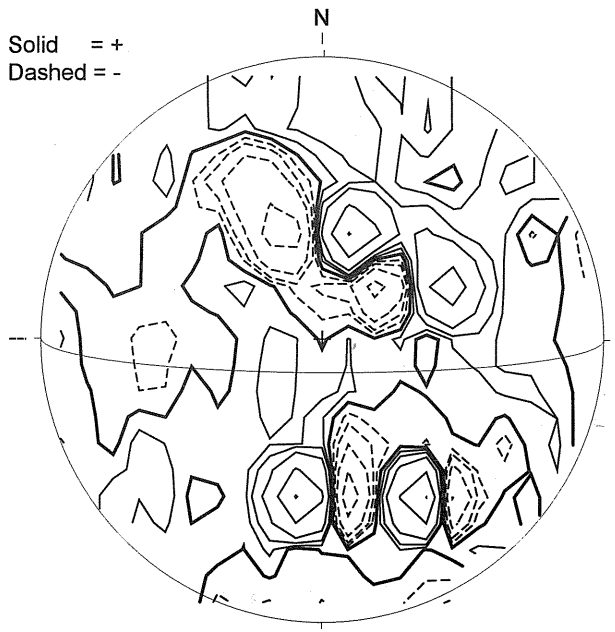
SEPTEMBER 27, 1997 (P= 25.66, Bo = 6.89, Lo = 108.74)

KITT PEAK MAGNETOGRAM



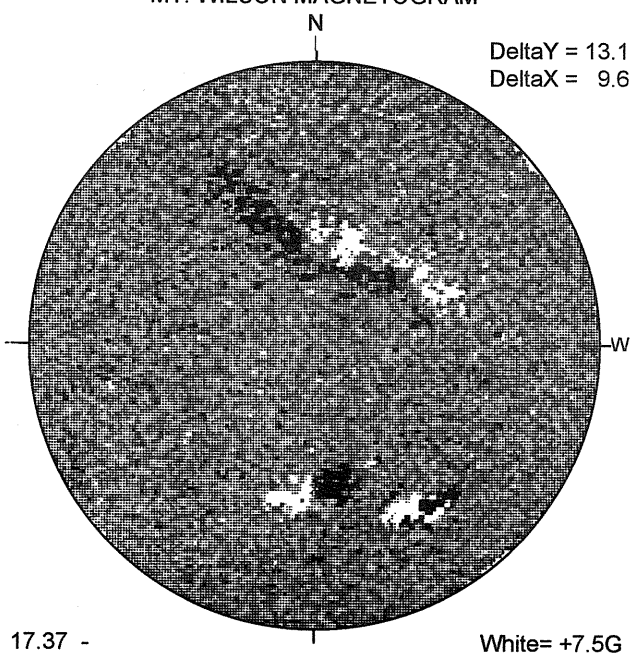
1434 UT

STANFORD MAGNETOGRAM



1854 UT

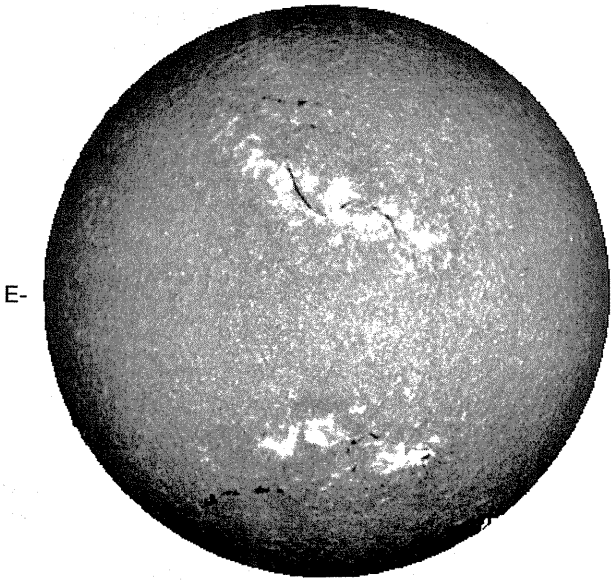
MT. WILSON MAGNETOGRAM



17.37 -
18.31 UT

White= +7.5G
Black = -7.5G

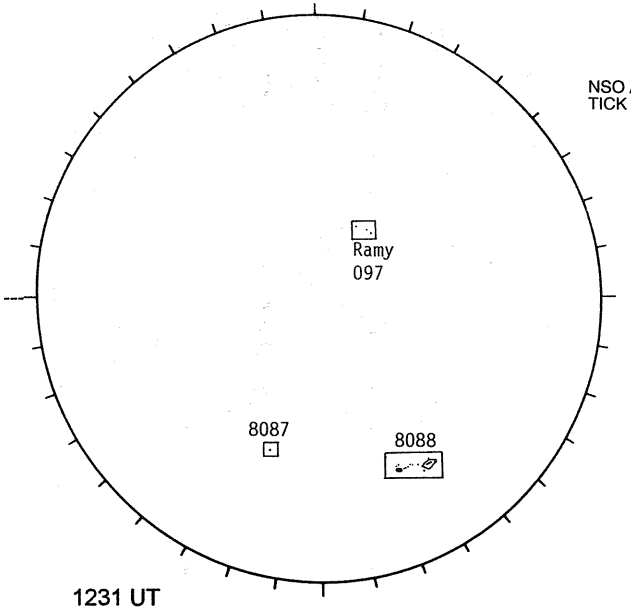
----- MEUDON H-ALPHA



0655 UT

S

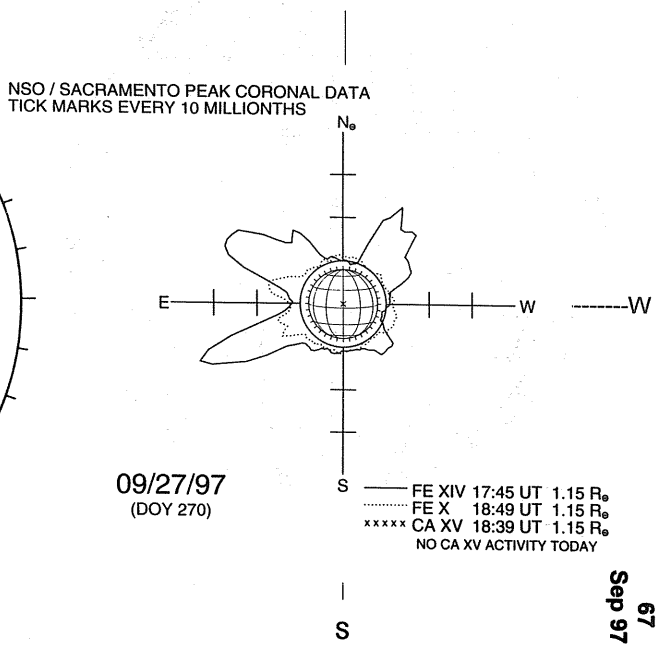
RAMEY SUNSPOT



1231 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

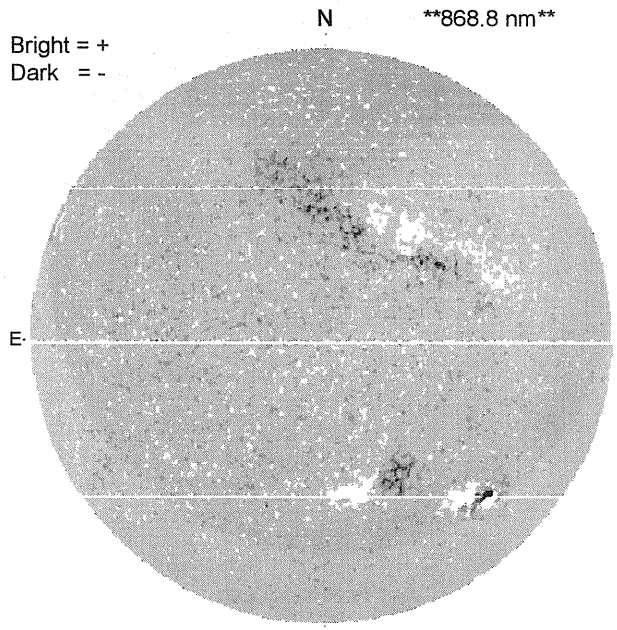


S

Sep 97 67

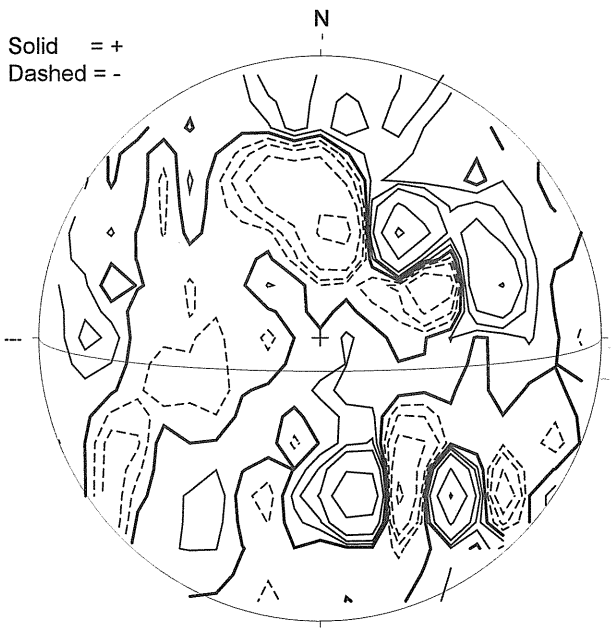
SEPTEMBER 28, 1997 (P= 25.75, Bo = 6.85, Lo = 95.54)

KITT PEAK MAGNETOGRAM



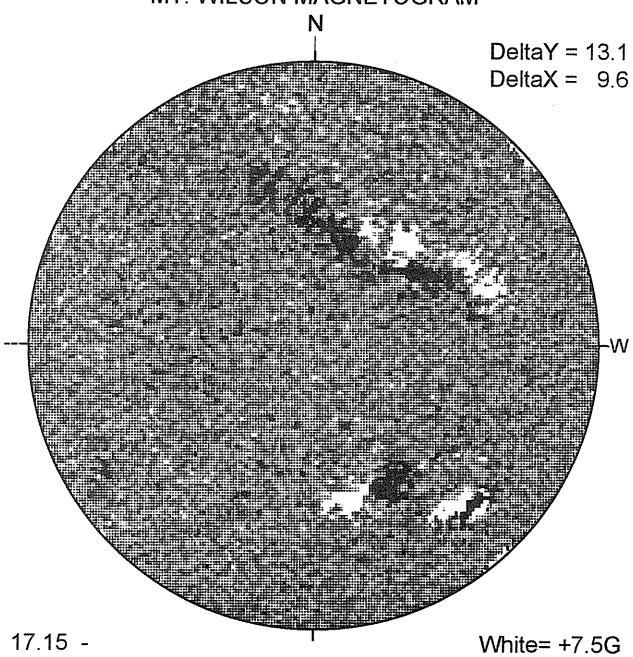
1519 UT

STANFORD MAGNETOGRAM



1821 UT

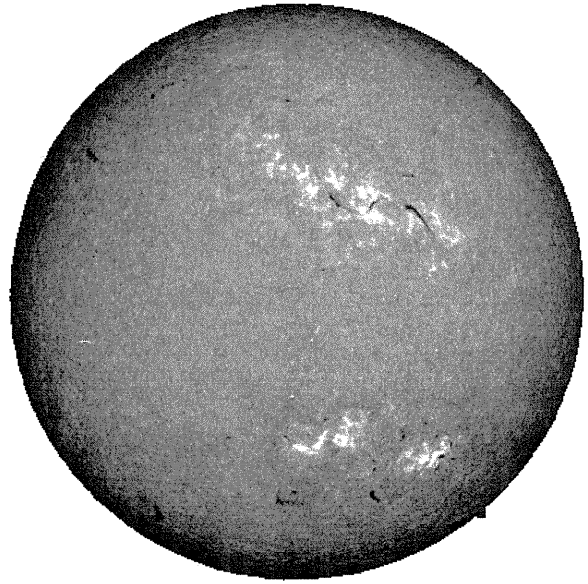
MT. WILSON MAGNETOGRAM



17.15 -
18.09 UT

White= +7.5G
Black = -7.5G

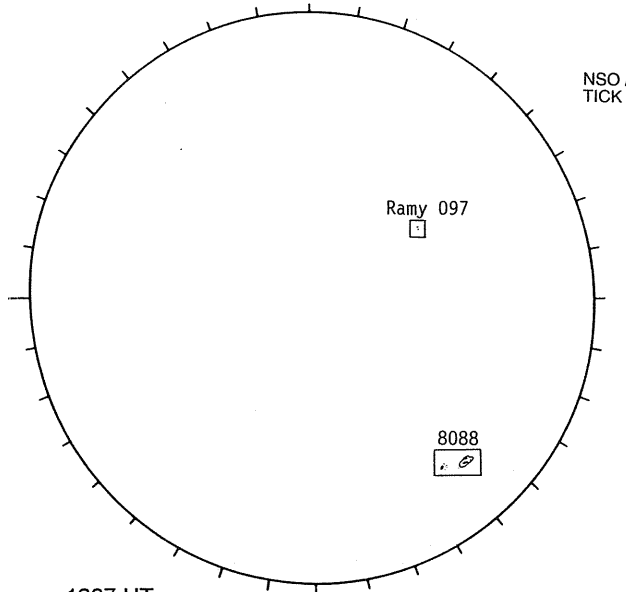
MEUDON H-ALPHA



0718 UT

S

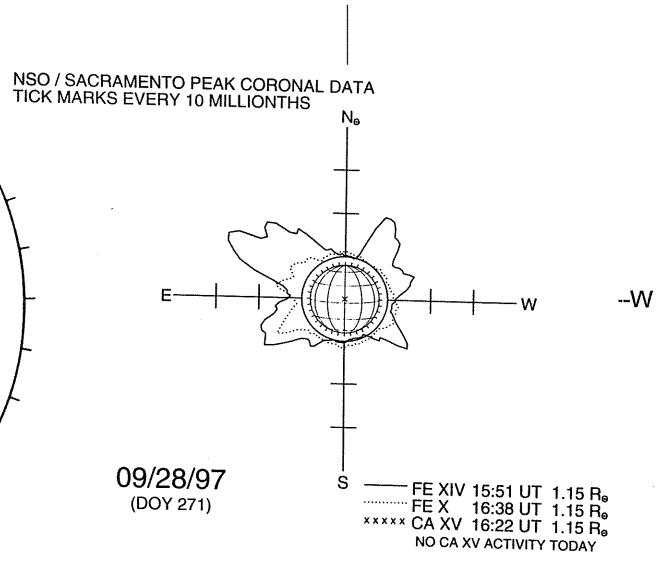
RAMEY SUNSPOT



1207 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)



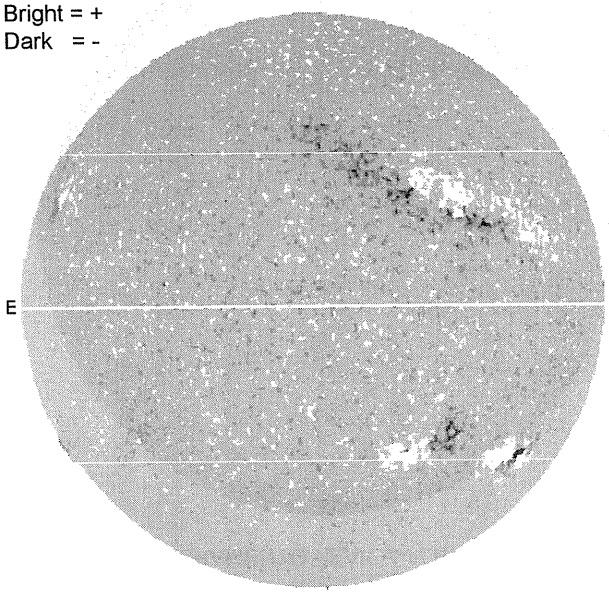
S

SEPTEMBER 29, 1997 (P= 25.84, Bo = 6.81, Lo = 82.35)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -

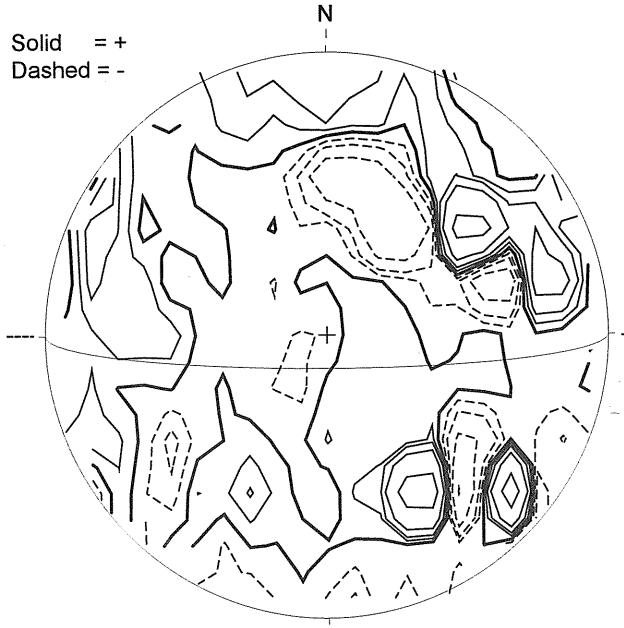


1559 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

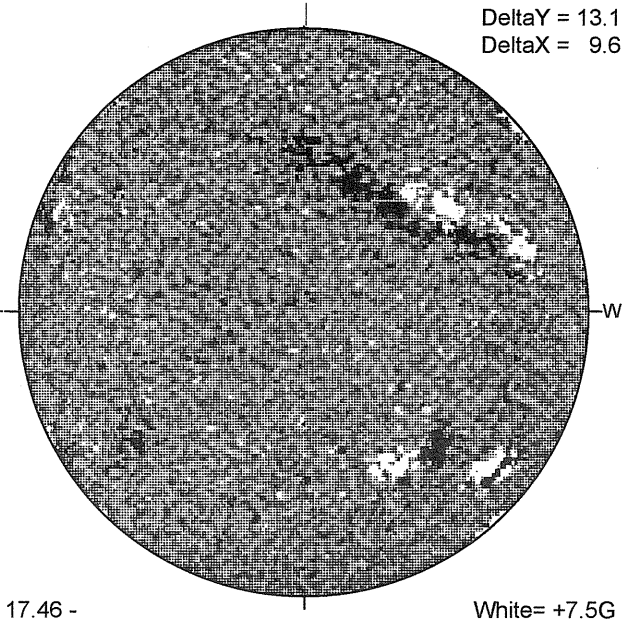


2050 UT

MT. WILSON MAGNETOGRAM

N

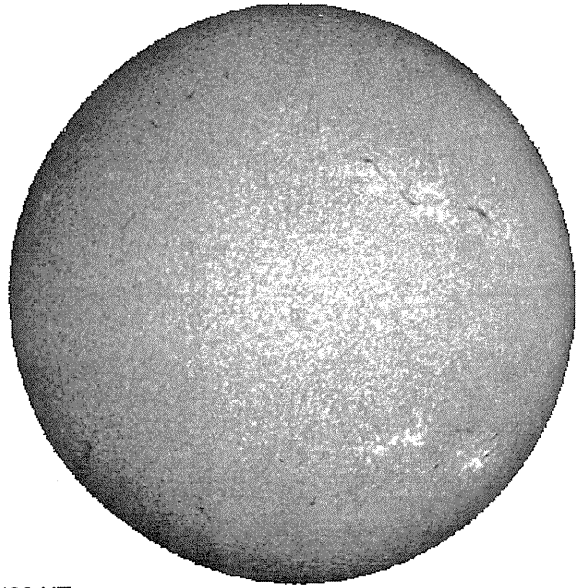
DeltaY = 13.1
DeltaX = 9.6



17.46 -
18.40 UT

White= +7.5G
Black = -7.5G

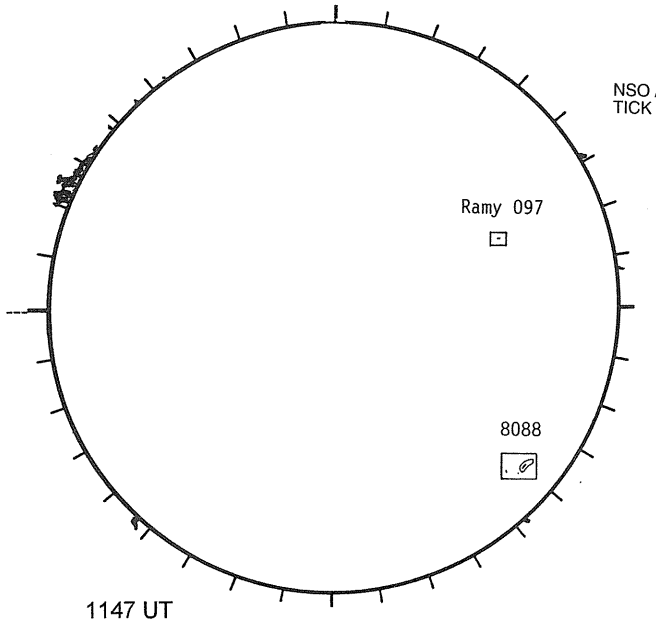
SACRAMENTO PEAK H-ALPHA



1423 UT

S

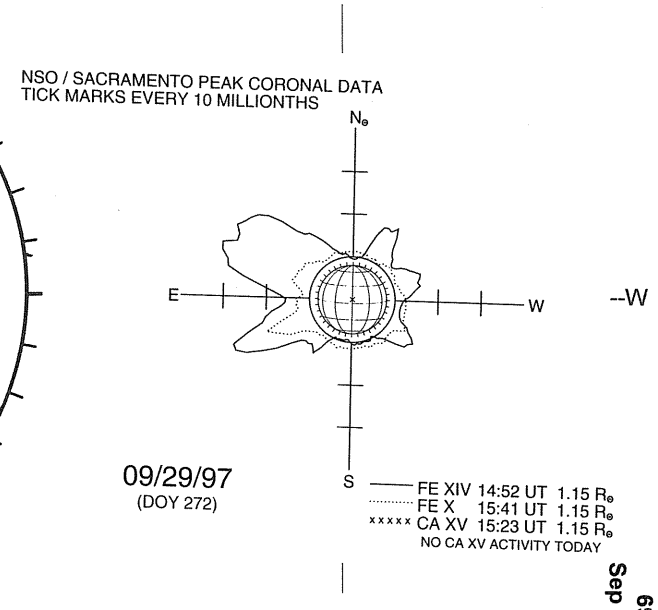
RAMEY SUNSPOT



1147 UT
1113 UT VALA Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



09/29/97
(DOY 272)

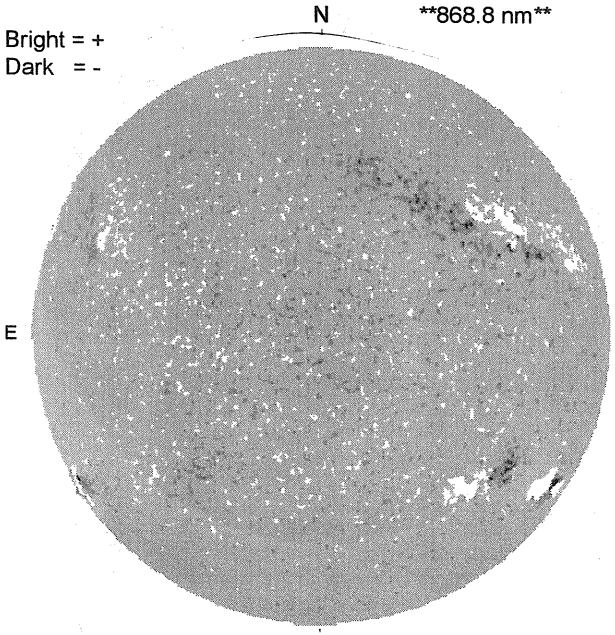
FE XIV 14:52 UT 1.15 $R_\odot$
FE X 15:41 UT 1.15 $R_\odot$
CA XV 15:23 UT 1.15 $R_\odot$
NO CA XV ACTIVITY TODAY

S

Sep 97 69

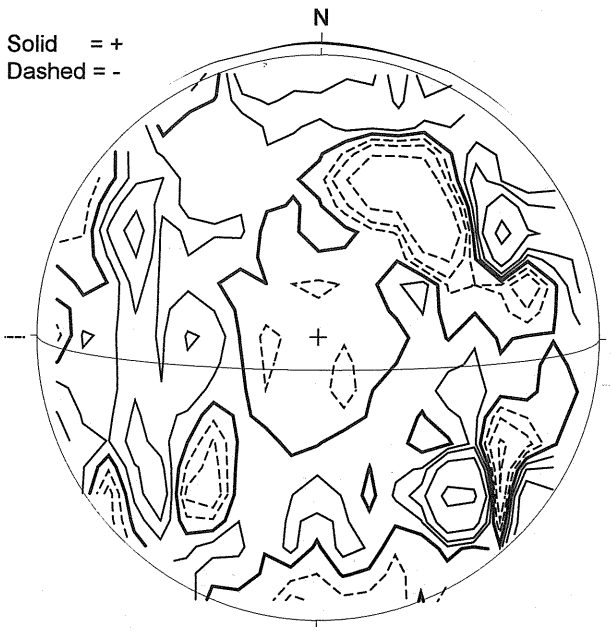
SEPTEMBER 30, 1997 (P= 25.91, Bo = 6.76, Lo = 69.15)

KITT PEAK MAGNETOGRAM



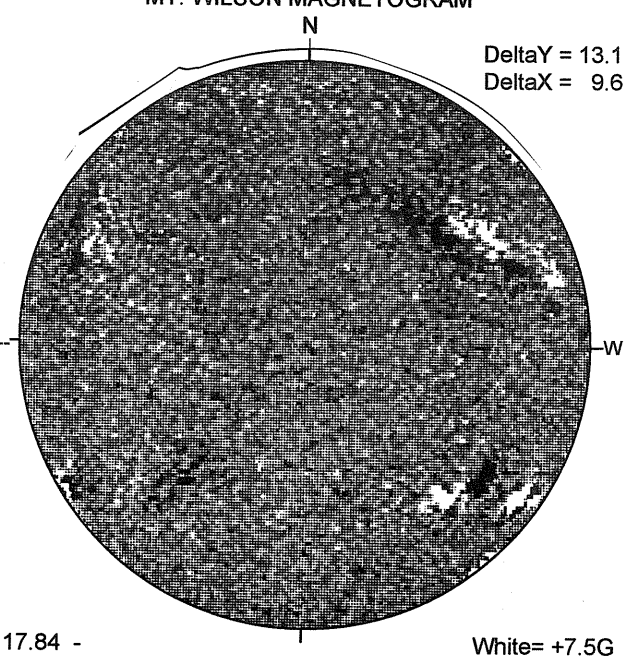
1740 UT

STANFORD MAGNETOGRAM



2126 UT

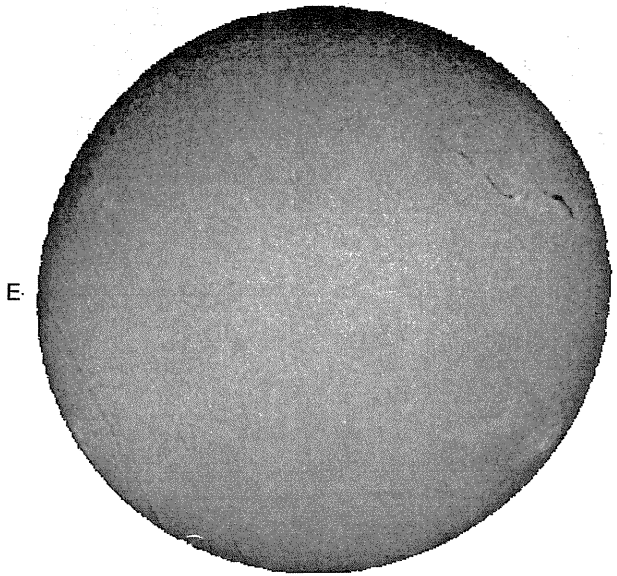
MT. WILSON MAGNETOGRAM



17.84 -
18.78 UT

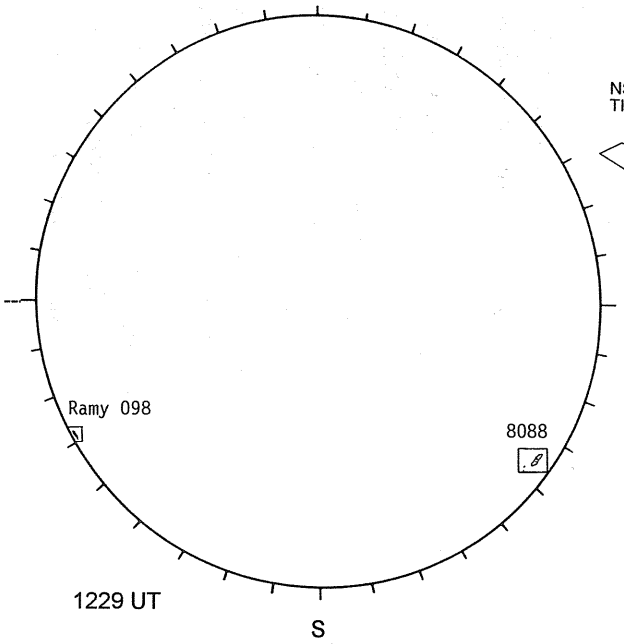
White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



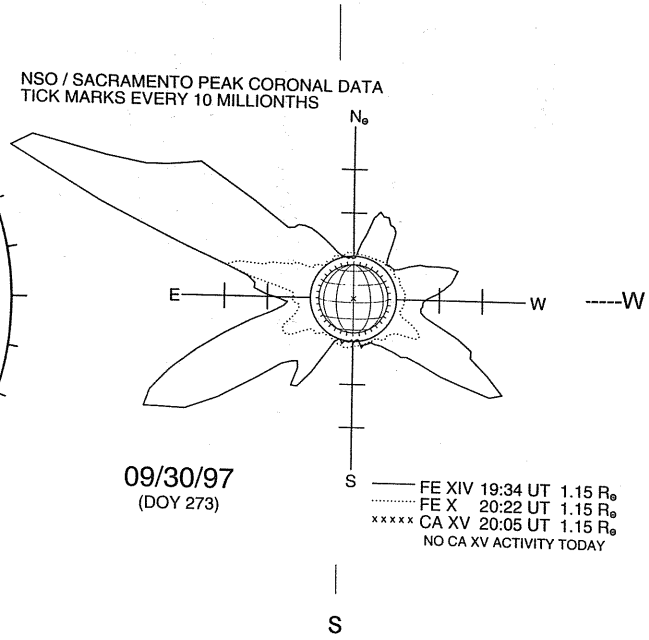
1909 UT

RAMEY SUNSPOT



1229 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



DAILY SOFT X-RAY IMAGES FROM YOHKOH

SXT daily images are on-line via ftp at the Hiraiso Communications Research Laboratory in Japan and at the Solar Data Analysis Center at GSFC. The following document explains everything.

Daily YOHKOH/SXT Images by FTP

This document explains the service which provides access to the daily Yohkoh Soft X-ray Telescope (SXT) full-disk images stored at Hiraiso Solar Terrestrial Research Center, C.R.L. Before using this service, please read this document.

1. Purpose and Rules

This service is provided by CRL under the following agreement with the Yohkoh Team (Project Manager: Yoshiaki Ogawara, ISAS; Project Scientist: Yutaka Uchida, Univ. Tokyo). Those who wish to use the data in a way not explicitly permitted below are requested to contact the Yohkoh Team.

i) The main purpose of this data service is to encourage broad scientific use of the Yohkoh data and observing capability through collaboration with the Yohkoh Team. Both observational and theoretical collaborations are welcome. Scientists outside the Yohkoh Team are requested to obtain specific permission when they write scientific papers based upon data from this service.

ii) Solar images from this service may be published or presented for purposes of illustration without special permission. In such cases the following acknowledgment is appropriate:

The solar X-ray image is from the Yohkoh mission of ISAS, Japan. The X-ray telescope was prepared by the Lockheed Palo Alto Research Laboratory, the National As tronomical Observatory of Japan, and the University of Tokyo with the support of NASA and ISAS.

iii) This data service is also intended to contribute to improving solar activity prediction, to assist other solar observers in their choice of targets, and for public education and information. Use of the images for these purposes is unrestricted.

2. Instrument

A full description of the SXT may be found in the book "The YOHKOH (SOLAR-A) Mission" (Z. Svestka and Y. Uchida, eds.), Kluwer Academic Publishers, 1991; or in the paper, "The Soft X-ray Telescope for the Solar-A Mission" (Tsuneta, et al. Solar Physics, vol. 136, pp. 37-67, 1991.

3. Description of Data

The stored SXT images data are taken through an Al/Mg composite filter with a mean wavelength of about 20 A for normal coronal temperatures. The images are composites of a short and a long exposure with a pixel size of 4.9 arcsec. Background has been removed and all images are normalized to an

exposure time of one second. The 8-bit numbers give the logarithm of the signal byte- scaled so that an actual signal of 10^6 equals 255. To recover the actual signal in data numbers, use the relation

data_number = 10^((6*NN)/255)

where NN is the datum in the stored image. Conversion to intensity depends upon temperature but is of the order of 5 x 10^20 ergs, at the Sun, per data_number.

The file format is the usual FITS format. The file names are in the style

sf_fits930515.151807,

where sf means SXT FFI image ,"930515" means 15-May-93, and "151807" means 15:18:07 UT.

4. How to connect and transfer data

Those who wish to access these data are requested to send an application to the manager of this data service via e-mail. At least, the following items should be included in an application;

* Full name
* Institution
* Postal Address
* e-mail address
* your host machine and OS
* software for SXT data processing and display
* expected frequency of data transfer

The format of the application is free. This information is necessary to deliver additional information and service in future, and helpful to update data service for more convenience. The application should be sent to the following address via e-mail;

akioka@planet.crl.go.jp
or akioka@planet.hi.crl.go.jp.

The data server is the usual anonymous ftp server program of UNIX. The IP address is 133.243.32.7. Therefore, a typical example for data access is ...

```
% ftp 133.243.32.7
name: anonymous
password : (your e-mail address)
ftp> cd sxt
ftp> binary
ftp> get <file name>
%
```

When you have logged in with the anonymous ftp account, you will find a directory named sxt. In this directory, you will find available sxt images and some documents which all users should read.

5. Practical Limitations

The domestic network in Japan is very crowded. Therefore, to assure continuation of this service we request potential users to follow the following limitations;

i) Please avoid to access during office hours in Japan (23:30 - 08:00 UT). Our advice is to access between 13:00 UT and 24:00 UT.

ii) Please do not try to transfer more than two images at once. We request the users not to obtain more than a few images per day. If you need more images, please contact the manager for special arrangements.

If the above rules are consistently violated, there is a possibility that we will have to terminate this service or apply more severe limitations, so please cooperate fully until we have more experience with the effect of this service upon the network.

If you have some request or comment, please feel free to send e-mail to one of the following persons:

Yutaka Uchida, Project Scientist, Yohkoh
Department of Astronomy, University of Tokyo
e-mail: uchida@dept.astron.s.u-tokyo.ac.jp

Maki Akioka, Manager, CRL Data Service
Hiraiso Solar Terrestrial Research Center
Communications Research Laboratory
e-mail: akioka@planet.hi.crl.go.jp

Received Aug. 25, 1993 from acton@sxt4.oscs.montana.edu

Submitted by L. Acton for the Yohkoh Team

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Solar DAC Node Name Changes

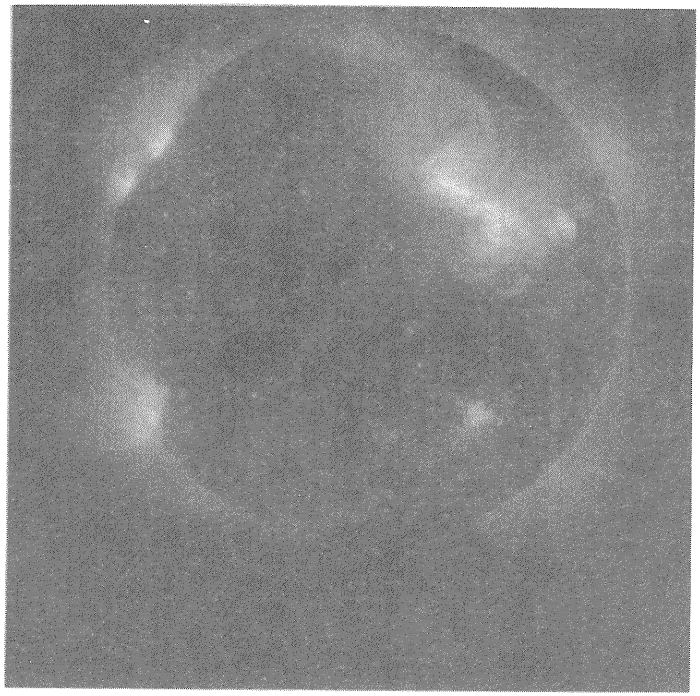
The NASA Goddard Solar Data Analysis Center (SDAC) nodes most familiar to the community will be undergoing some major changes in August and September, 1993. Nodes NEWMAX (newmax.gsfc.nasa.gov) and ISIS (isis.gsfc.nasa.gov) are being retired, and their functions combined on a single server, which will be known as SDAC (sdac.gsfc.nasa.gov). SDAC's IP (Internet) address will be 128.183.57.156, and its NSI/DECnet address will be 15.526.

Users of the BATSE solar flare database and other services of ISIS and NEWMAX should watch for messages warning of the actual changeover dates. (SDAC is a DEC 4000 Model 610 AXP, so users should see noticeable improvements in response.)

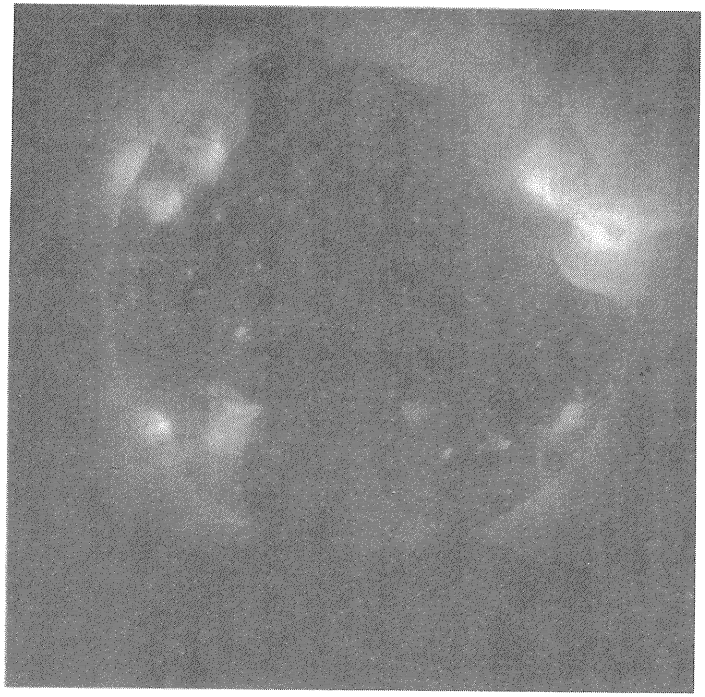
Received Aug. 10, 1993 from gurman@uvsp.gsfc.nasa.gov
--Joe Gurman

YOHKOH SOFT X-RAY TELESCOPE IMAGES

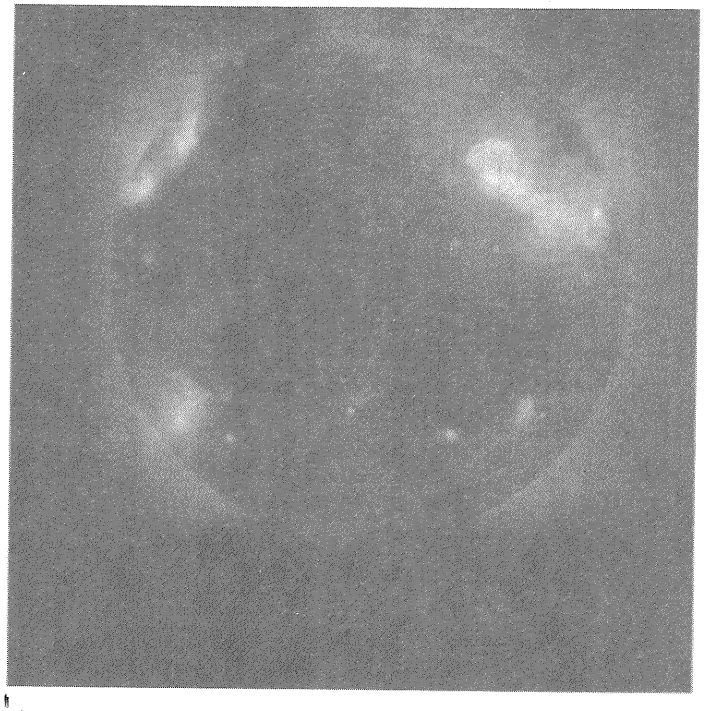
September
1997



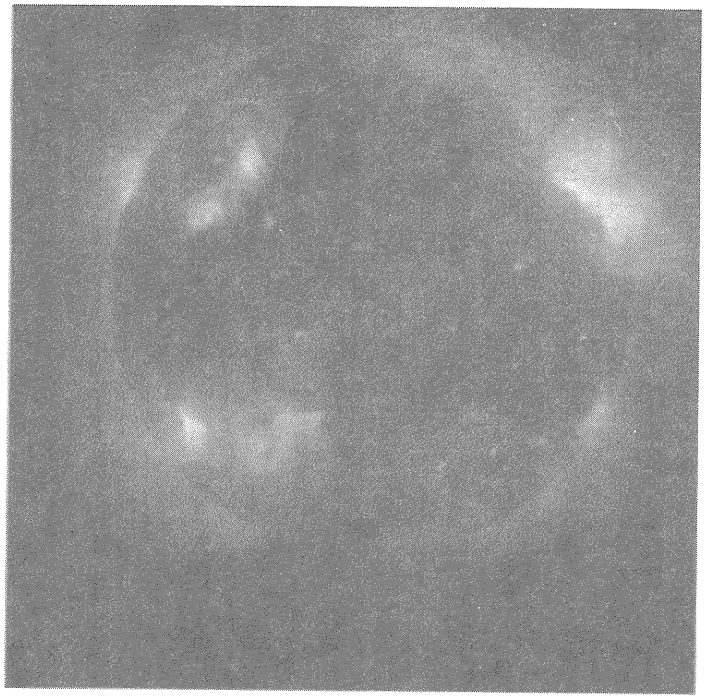
Day 1
11:59:00 UT



Day 3
11:53:15 UT



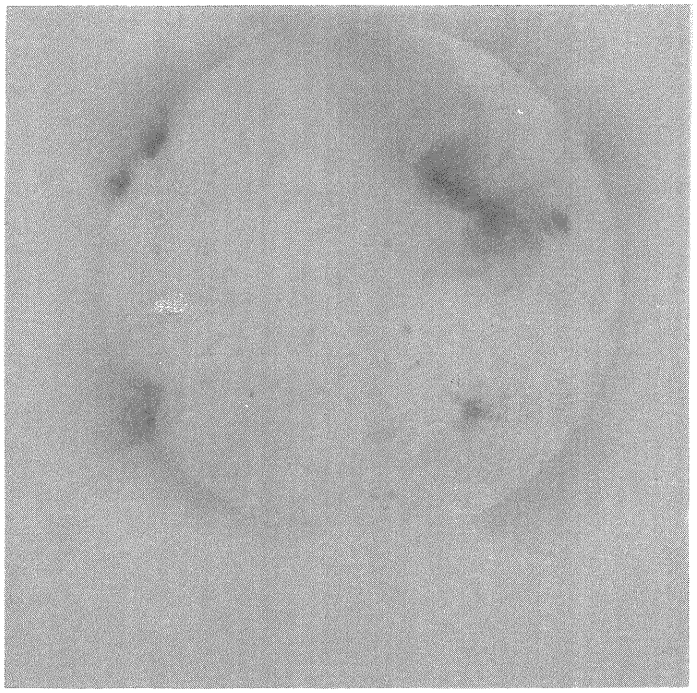
Day 2
12:19:43 UT



Day 4
11:59:05 UT

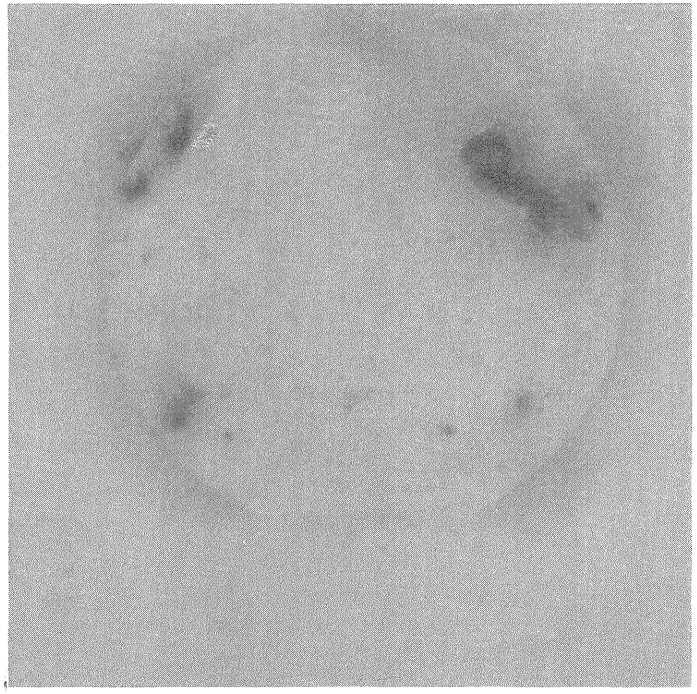
YOHKOH SOFT X-RAY TELESCOPE IMAGES

September 1997

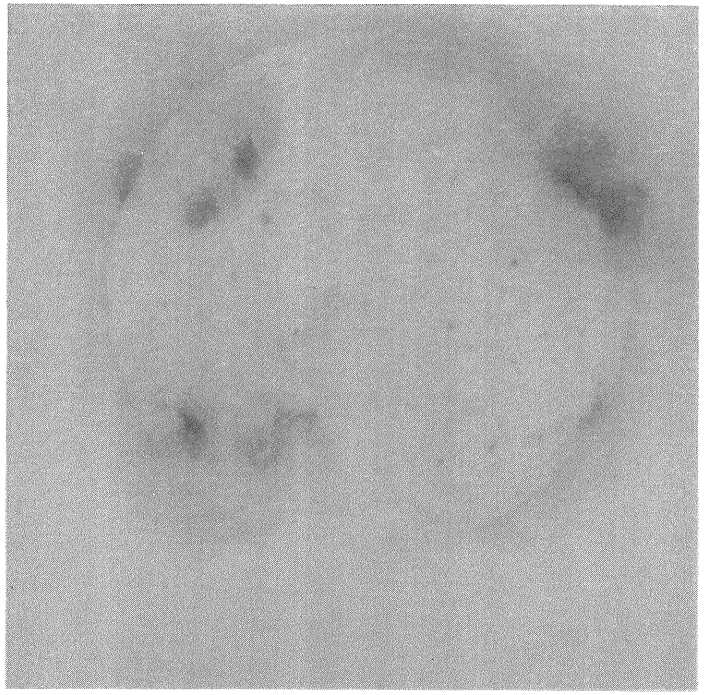


Day 1
11:59:00 UT

Day 3
11:53:15 UT



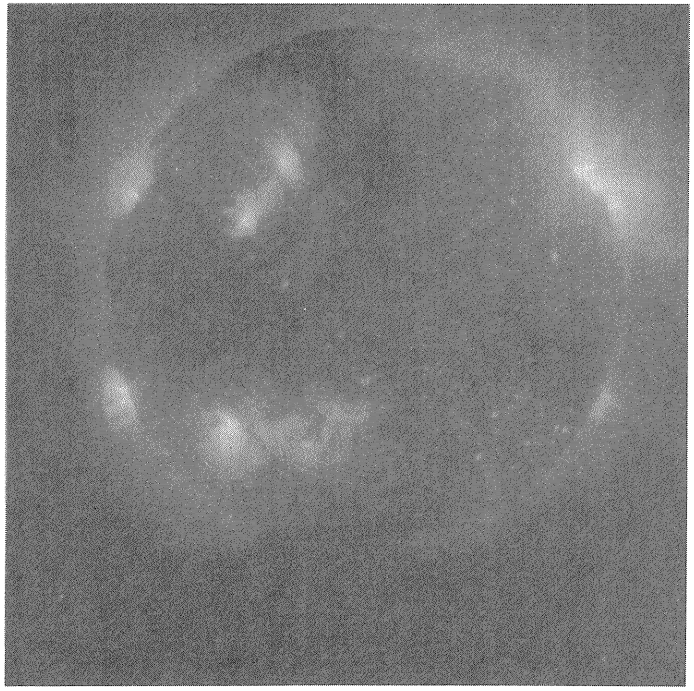
Day 2
12:19:43 UT



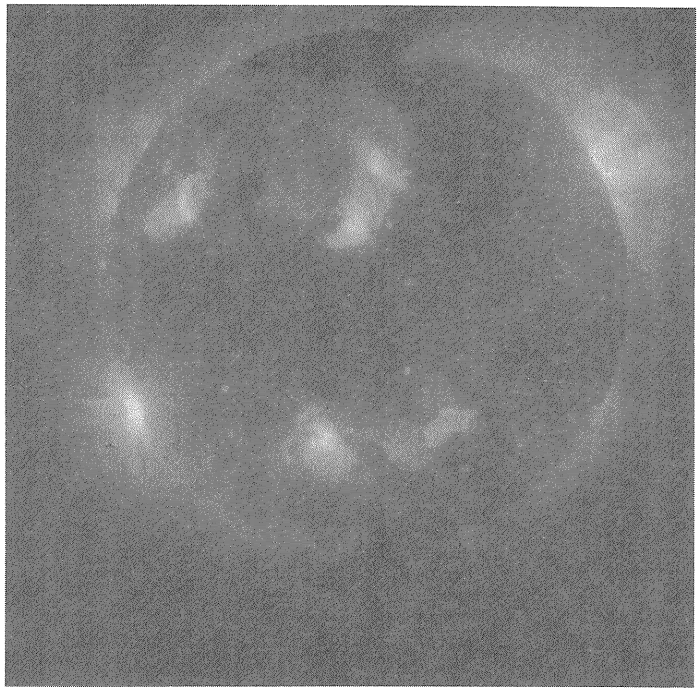
Day 4
11:59:05 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

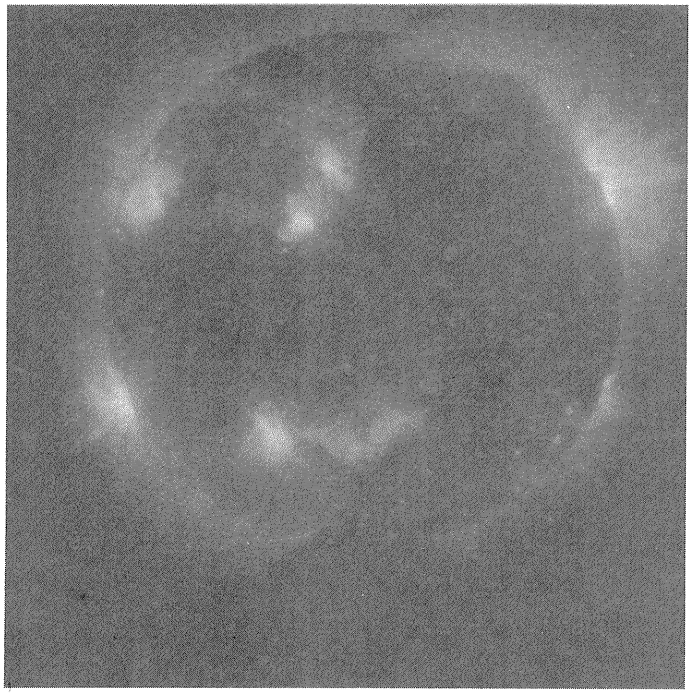
September
1997



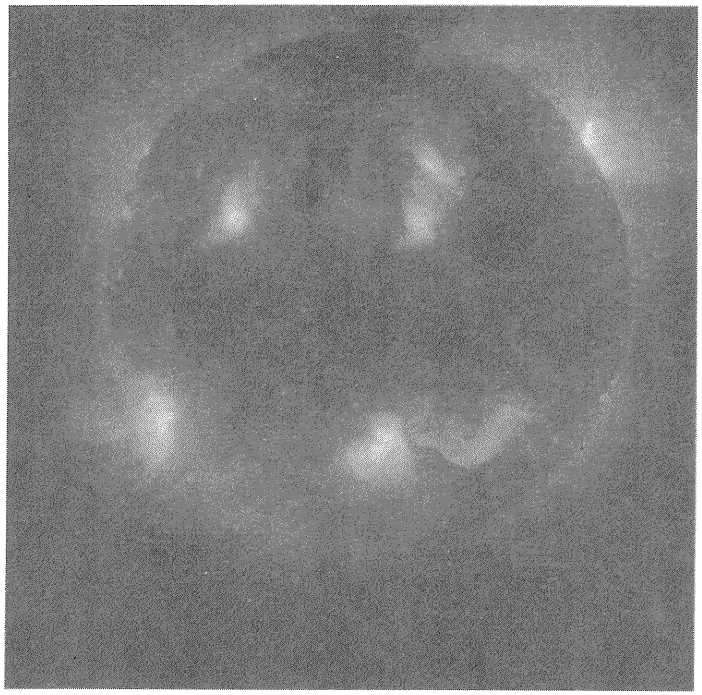
Day 5
12:23:21 UT



Day 7
10:30:28 UT



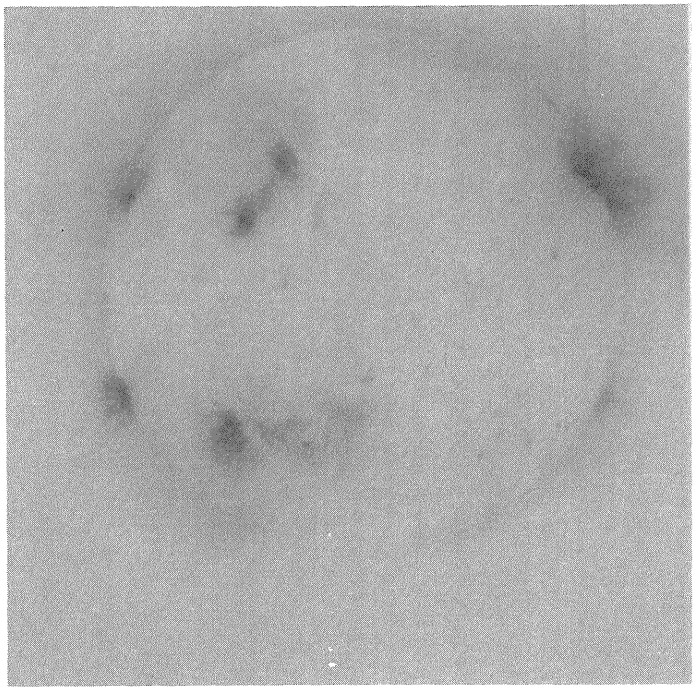
Day 6
11:55:10 UT



Day 8
12:17:40 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

September 1997



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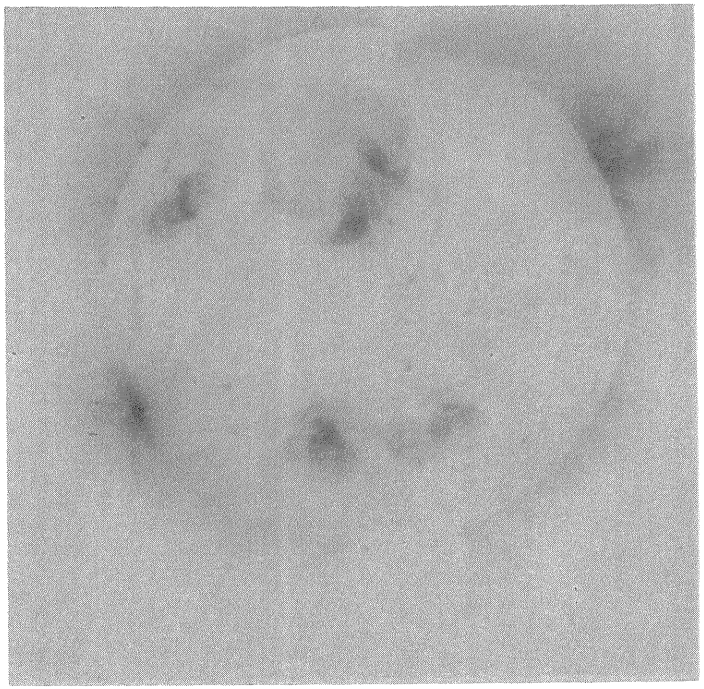

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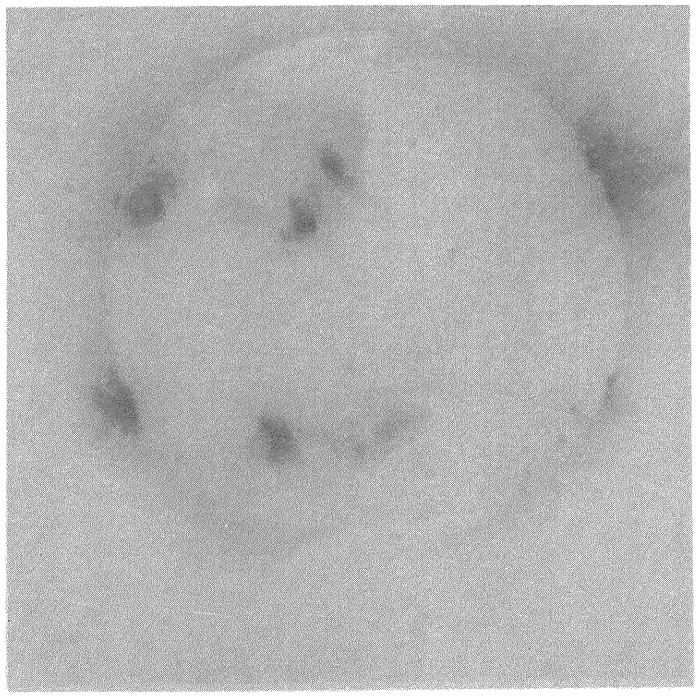
10:30:28 UT



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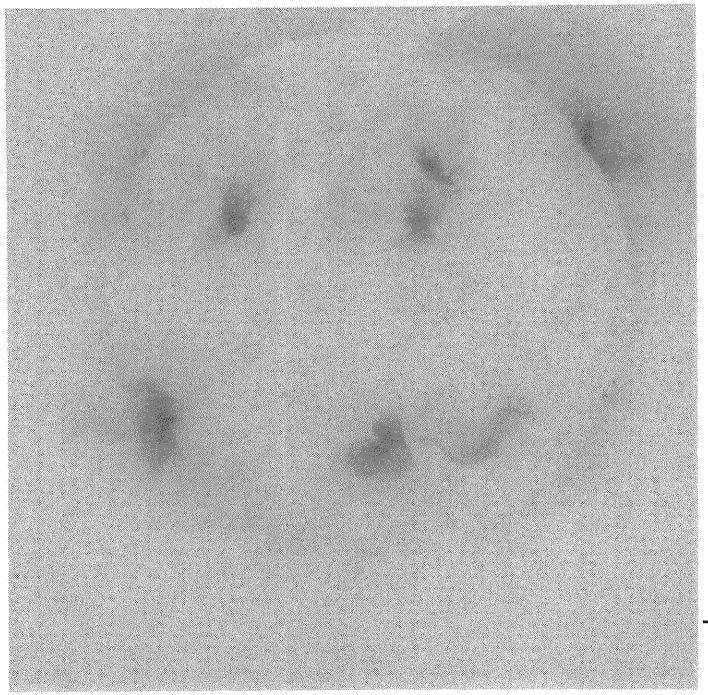
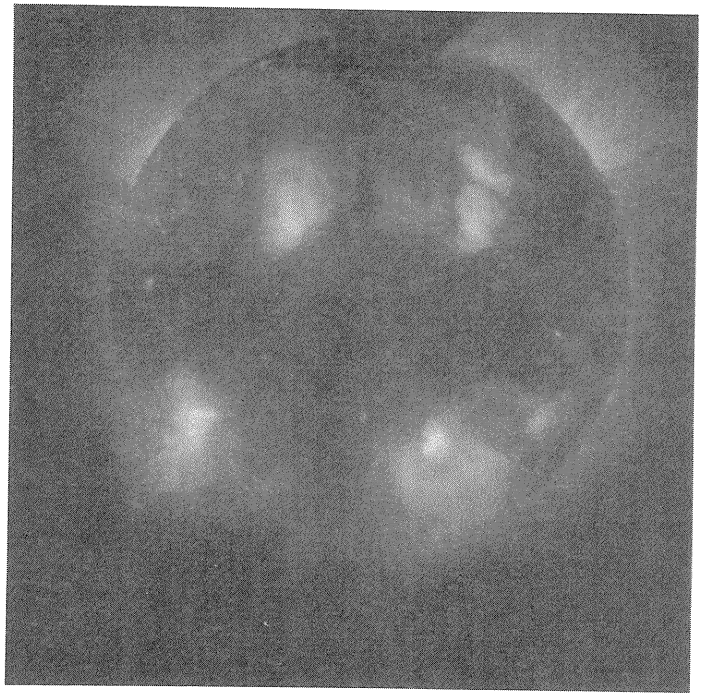
11:55:10 UT



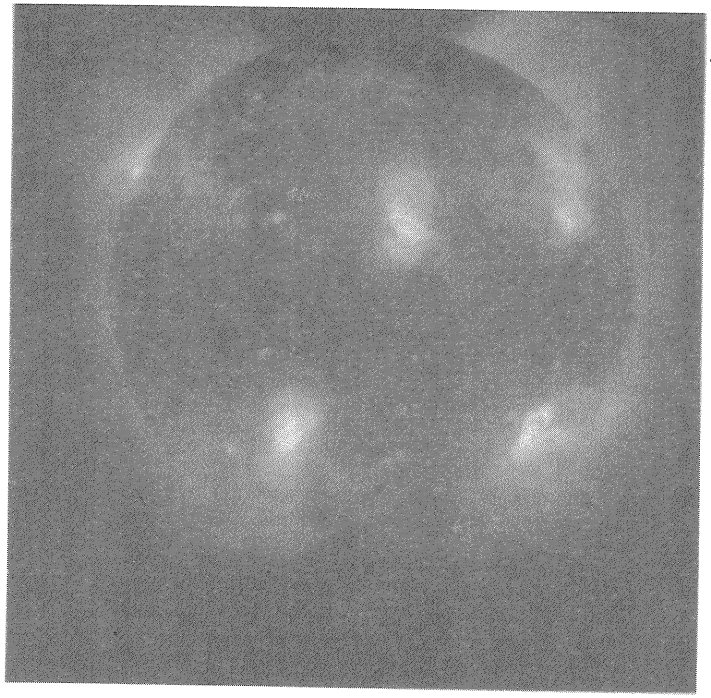
Day 8
12:17:40 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

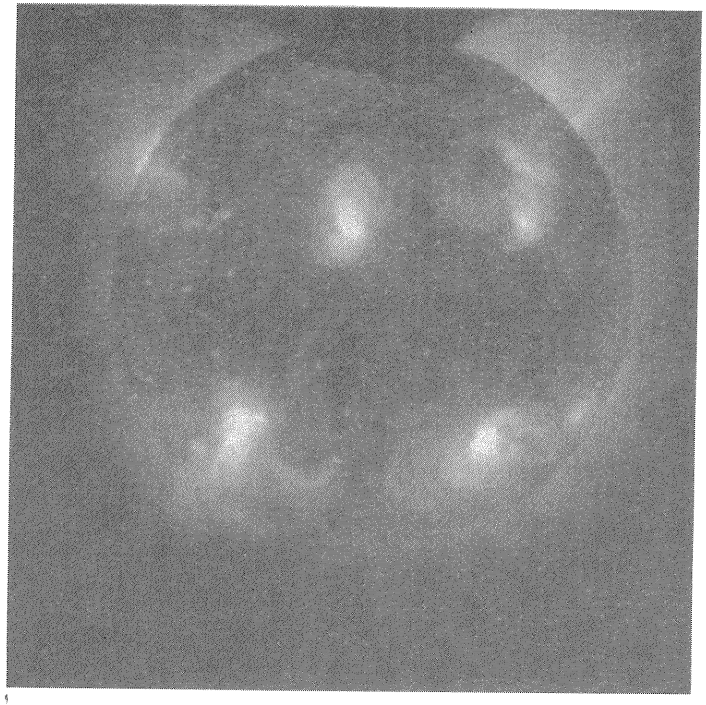
September
1997



Day 9
12:34:38 UT



Day 11
11:47:59 UT



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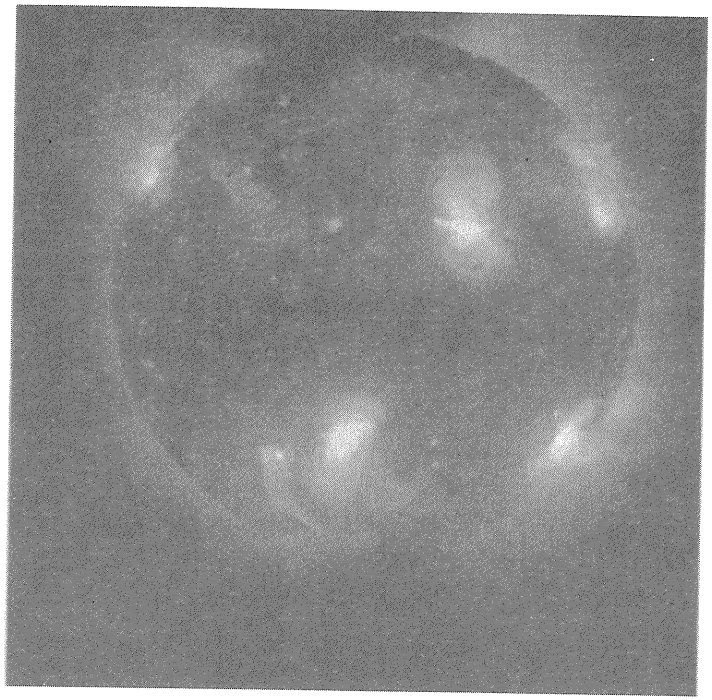
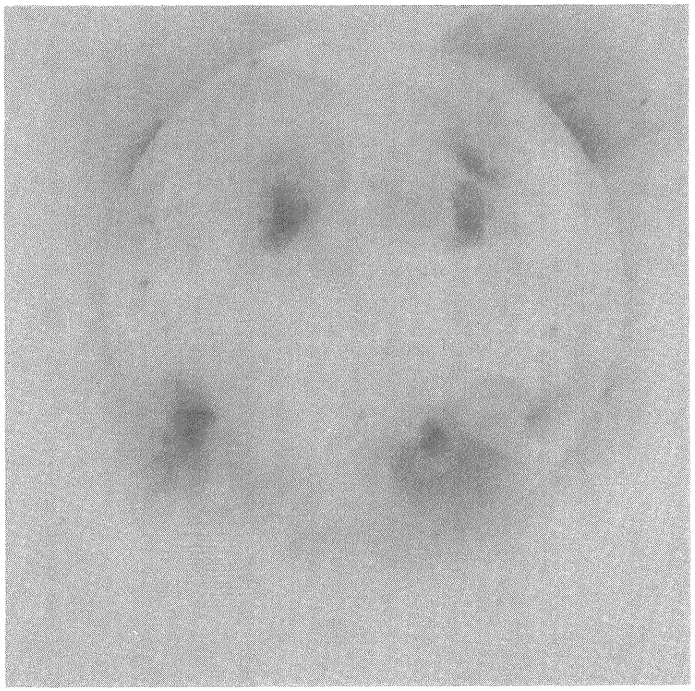
12:54:26 UT



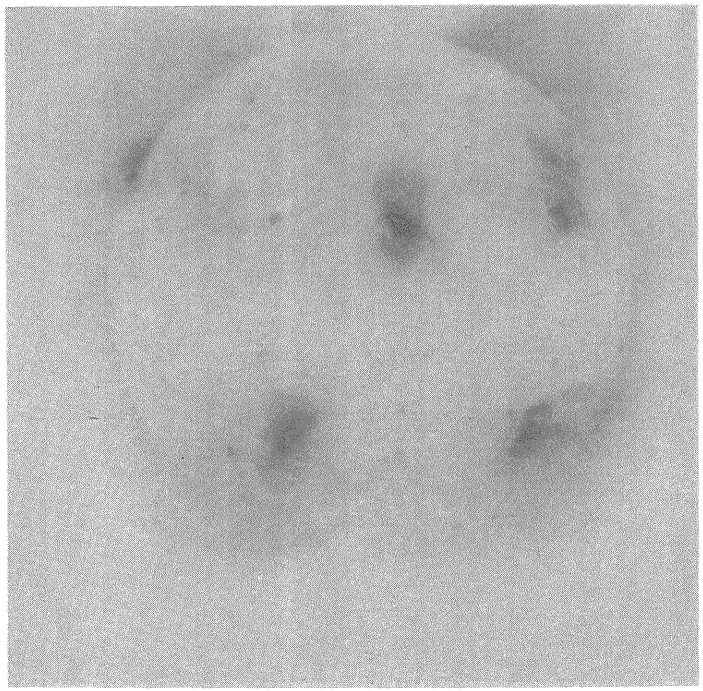
Day 12
12:00:21 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

September 1997



Day 9
12:34:38 UT



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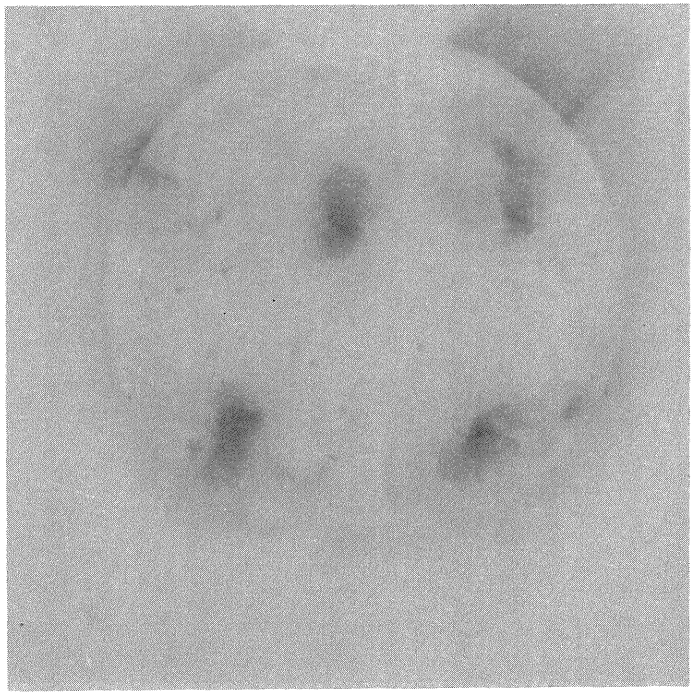
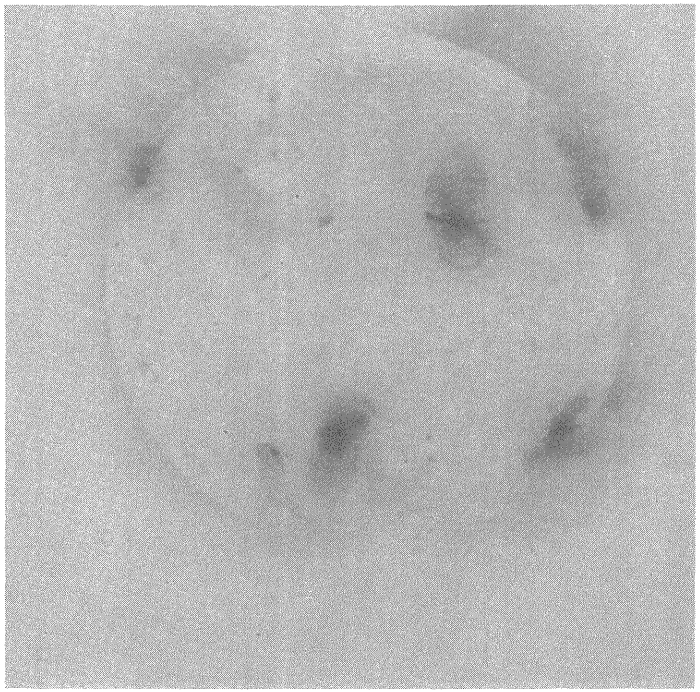
11:47:59 UT



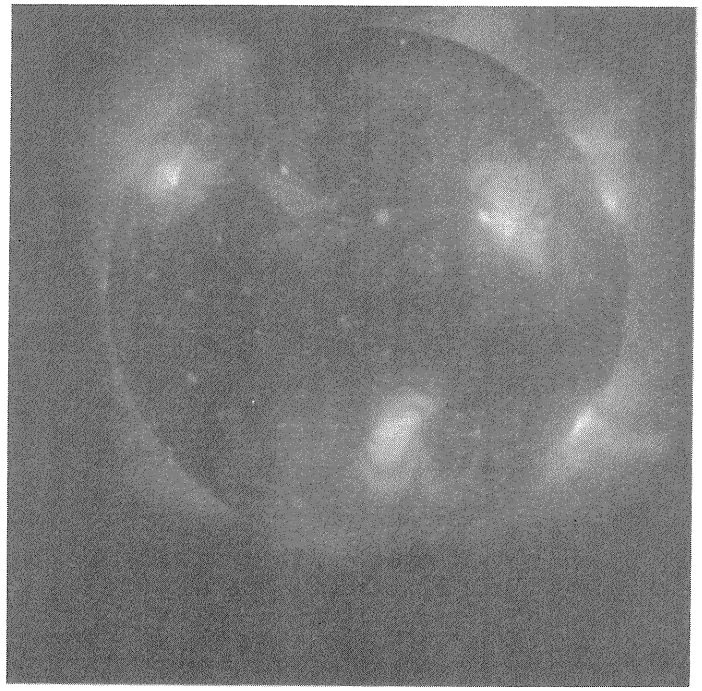
Day 10
12:54:26 UT



Day 12
12:00:21 UT

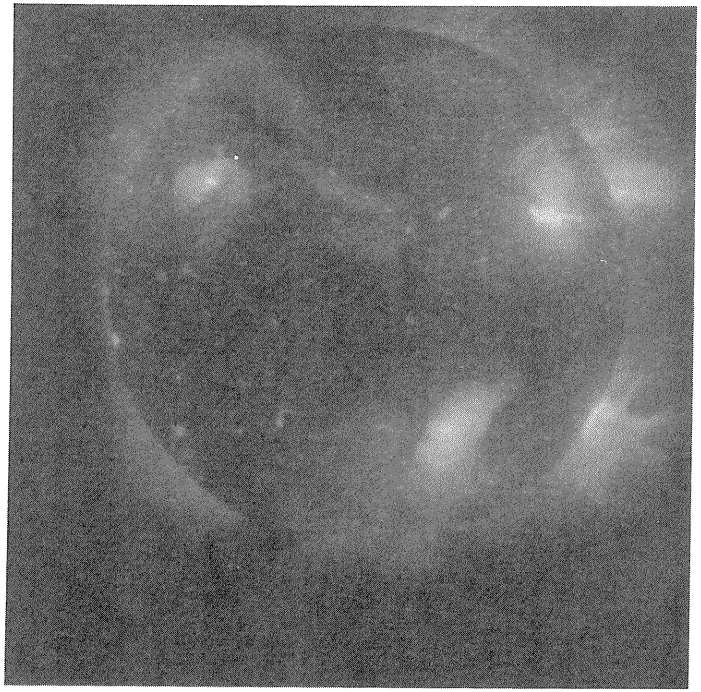
YOHKOH SOFT X-RAY TELESCOPE IMAGES

September
1997

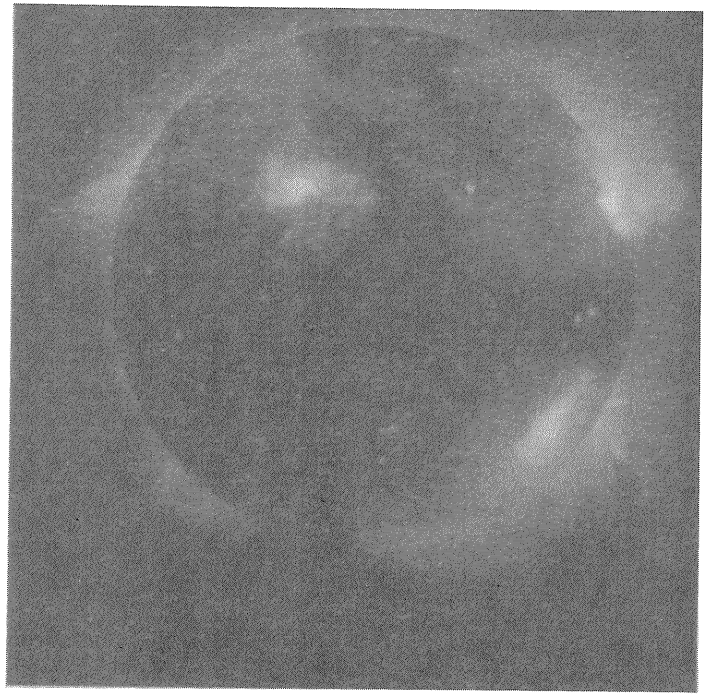


Day 13
12:06:53 UT

Day 15
12:34:35 UT



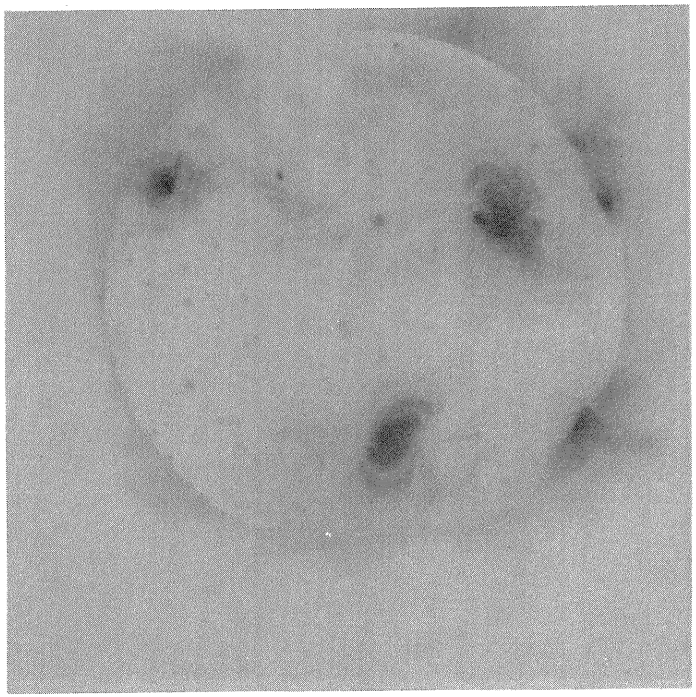
Day 14
14:12:57 UT



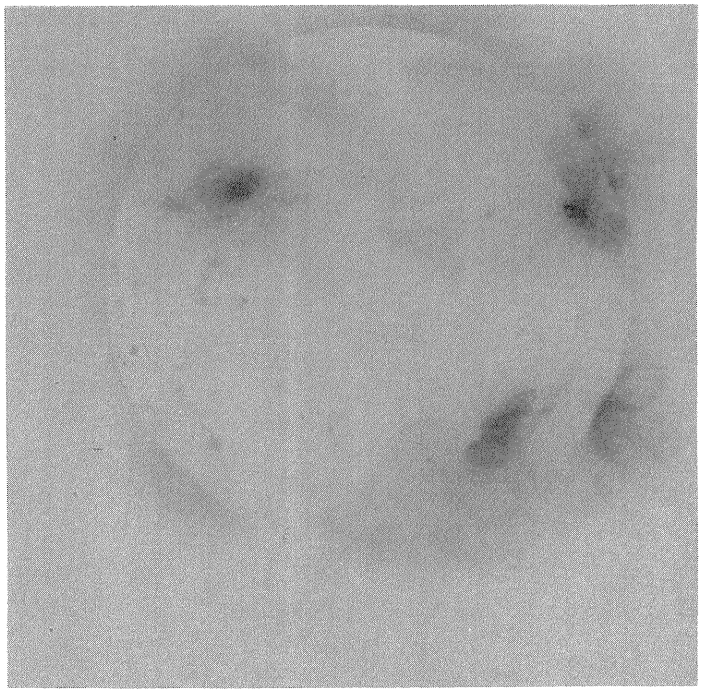
Day 16
14:51:46 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

September 1997



Day 13
12:06:53 UT



Day 15
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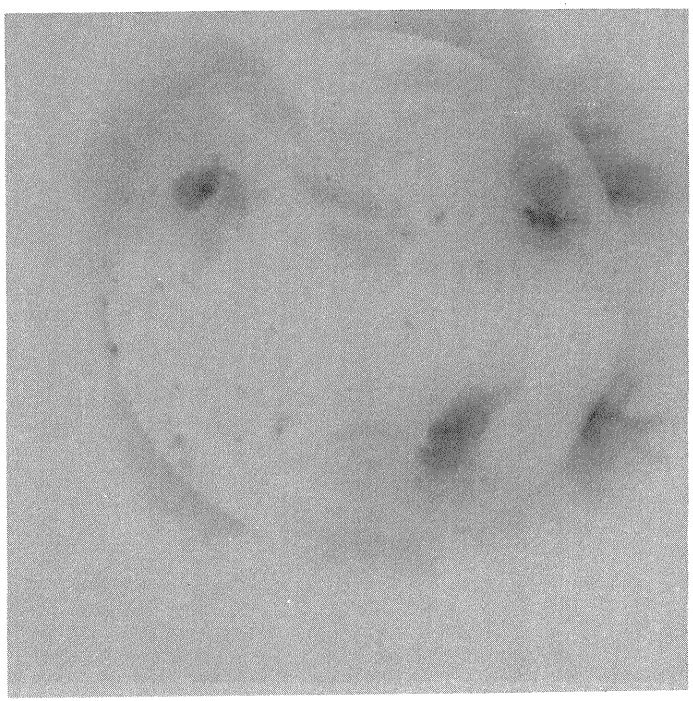
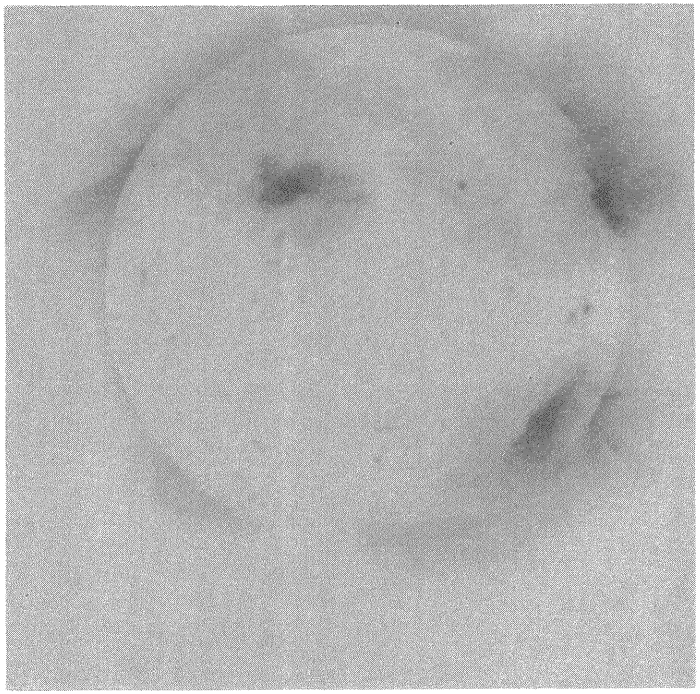


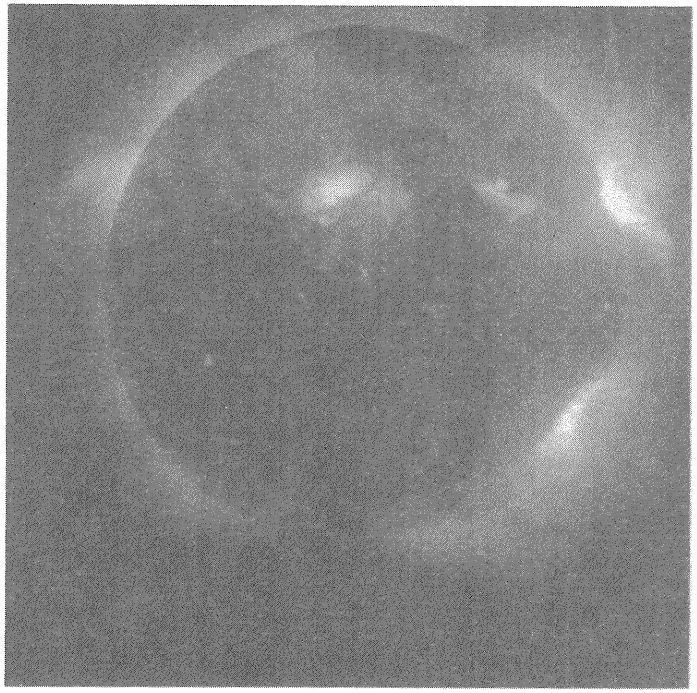
Day 14
14:12:57 UT



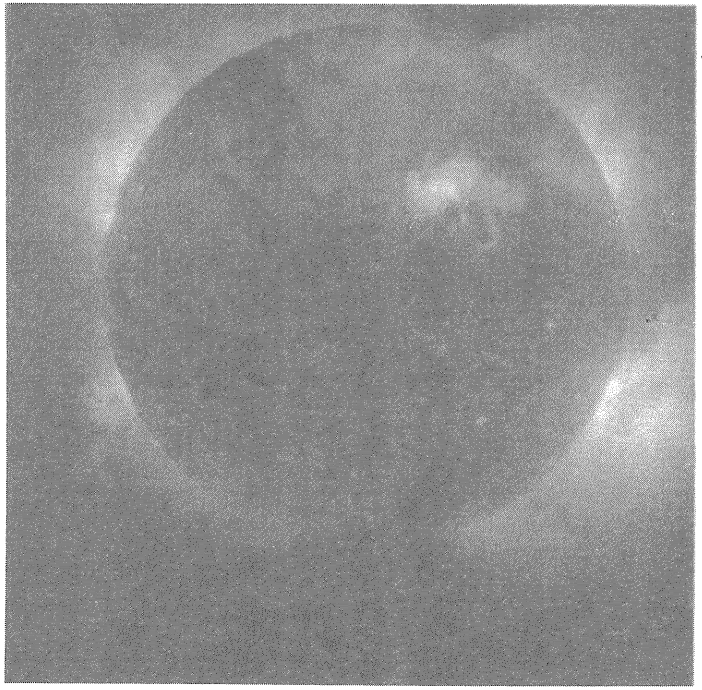
Day 16
14:51:46 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

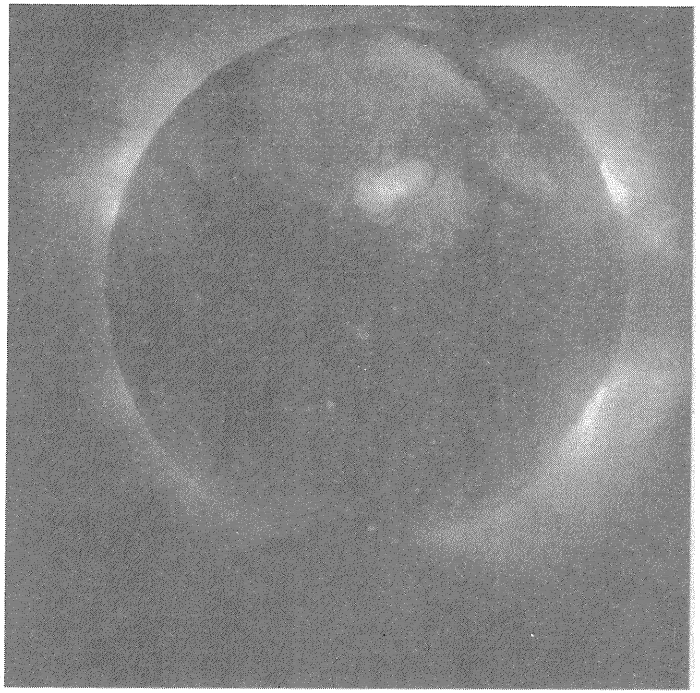
September
1997



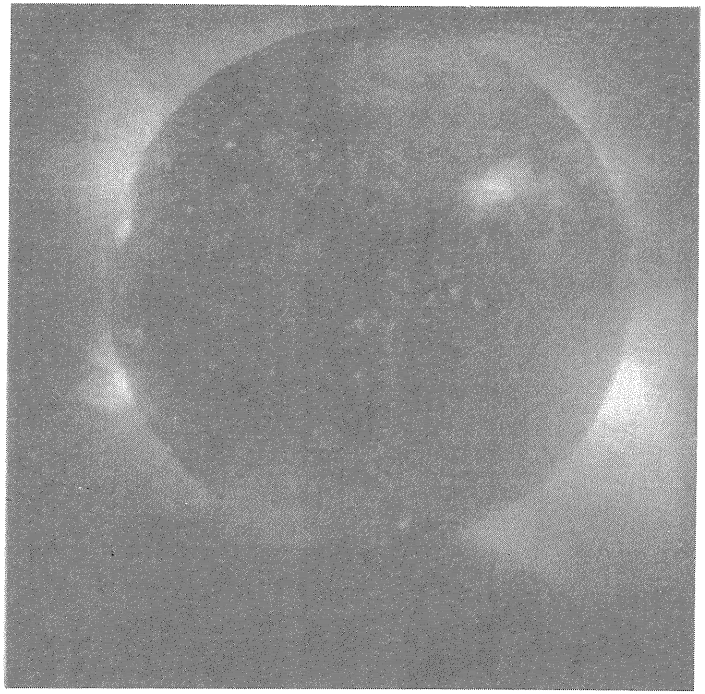
Day 17
11:35:20 UT



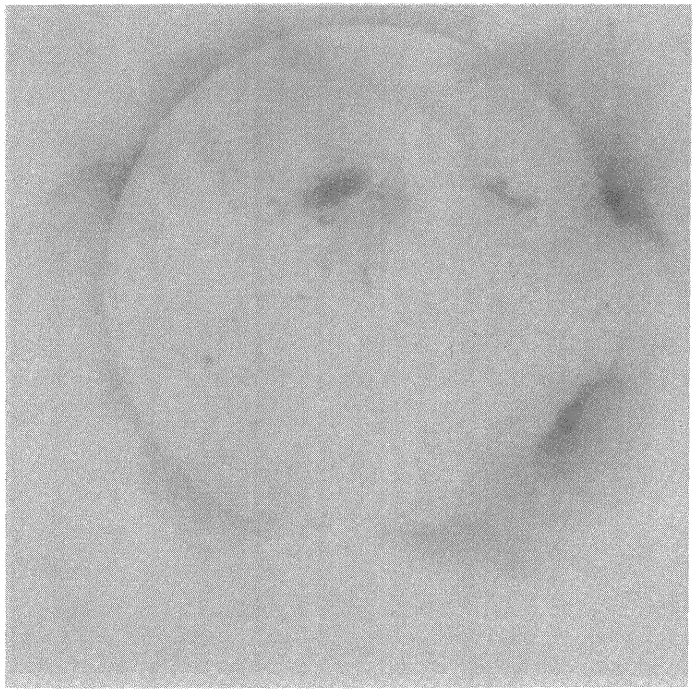
Day 19
12:05:12 UT



Day 18
12:01:42 UT



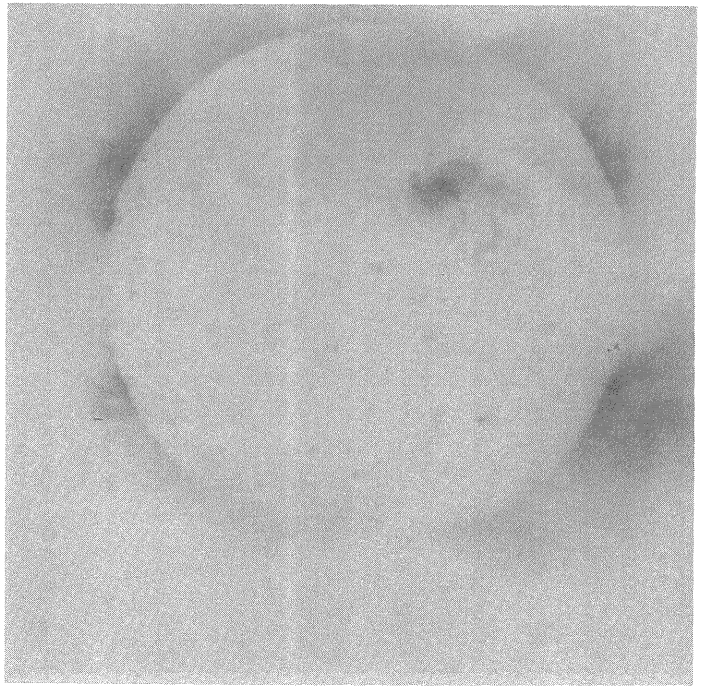
Day 20
12:27:33 UT



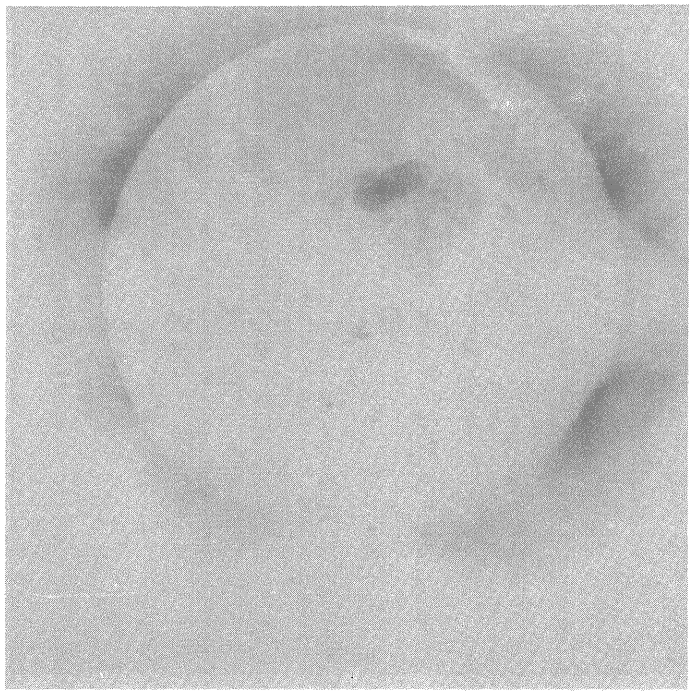
YOHKOH SOFT X-RAY TELESCOPE IMAGES

September 1997

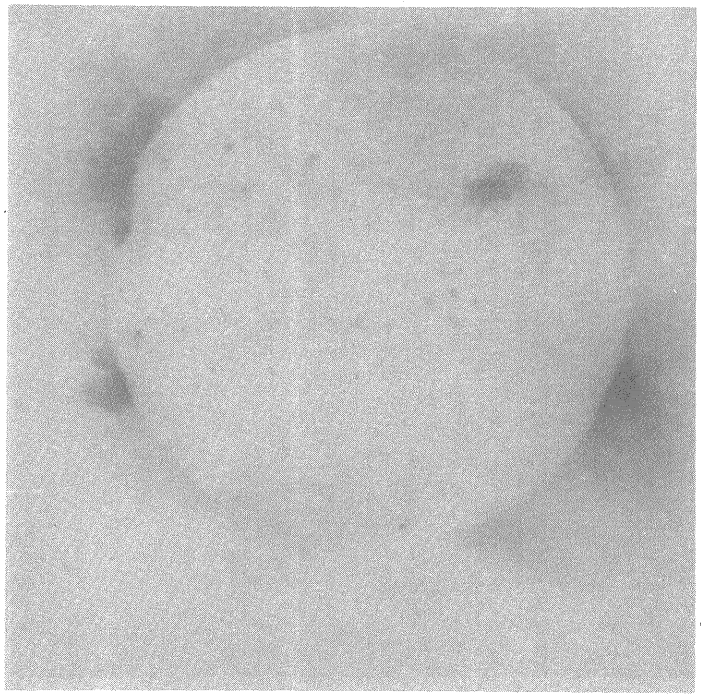
Day 17
11:35:20 UT



Day 19
12:05:12 UT



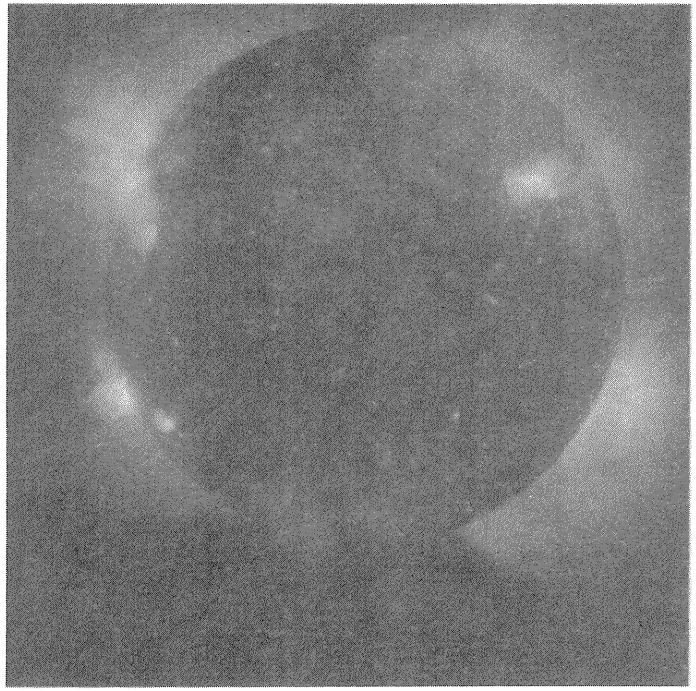
Day 18
12:01:42 UT



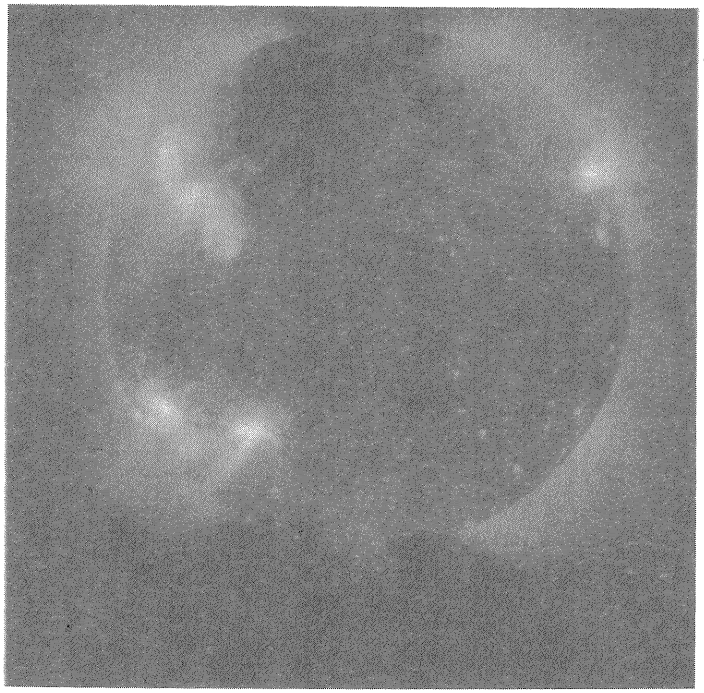
Day 20
12:27:33 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

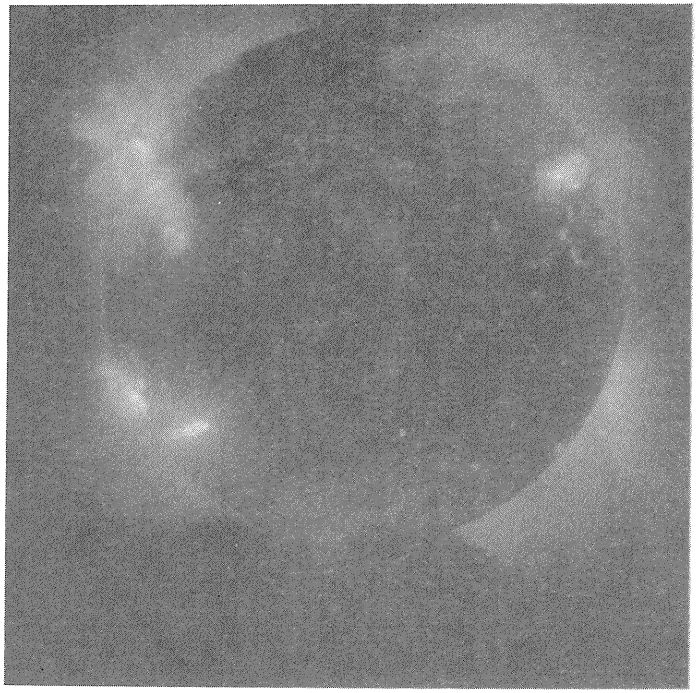
September
1997



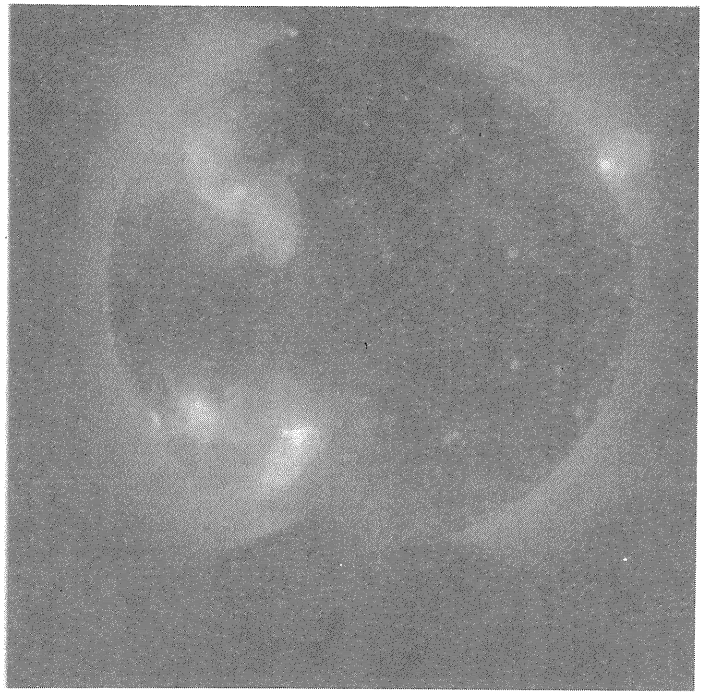
Day 21
14:27:29 UT



Day 23
11:57:55 UT



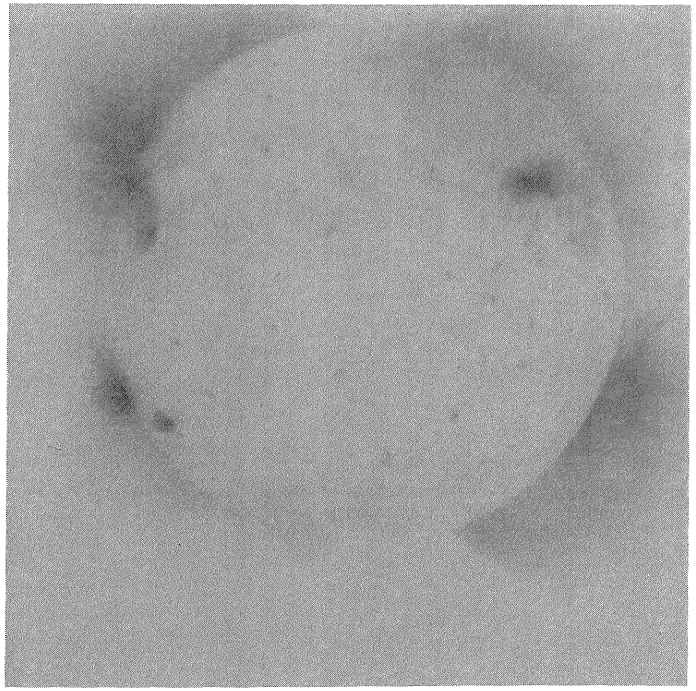
Day 22
10:06:01 UT



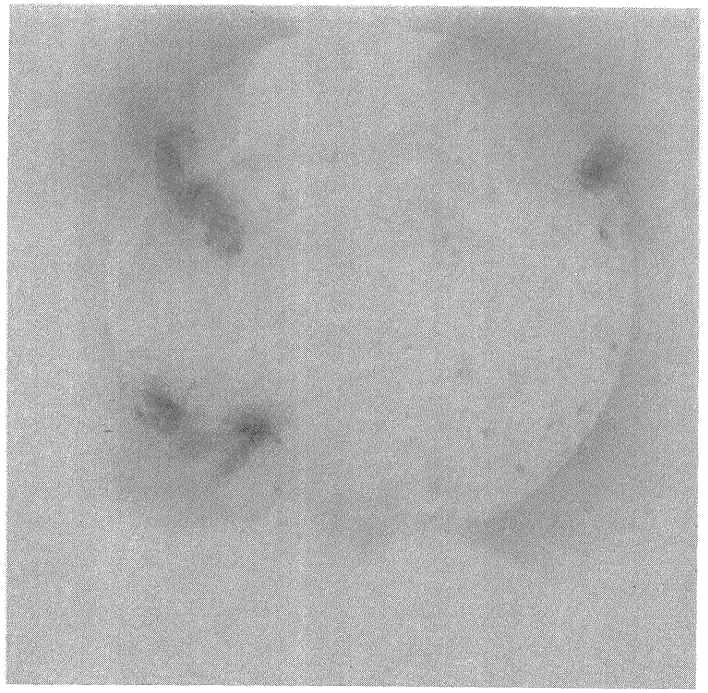
Day 24
10:26:47 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

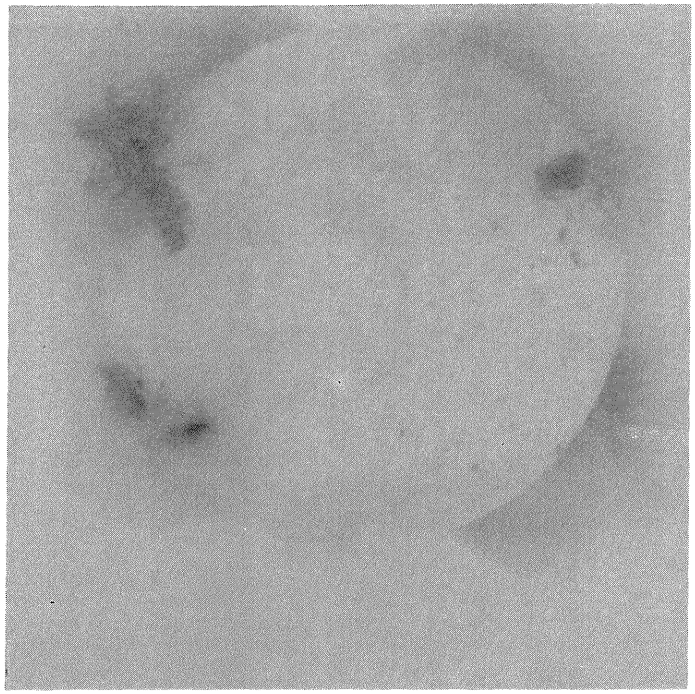
September 1997



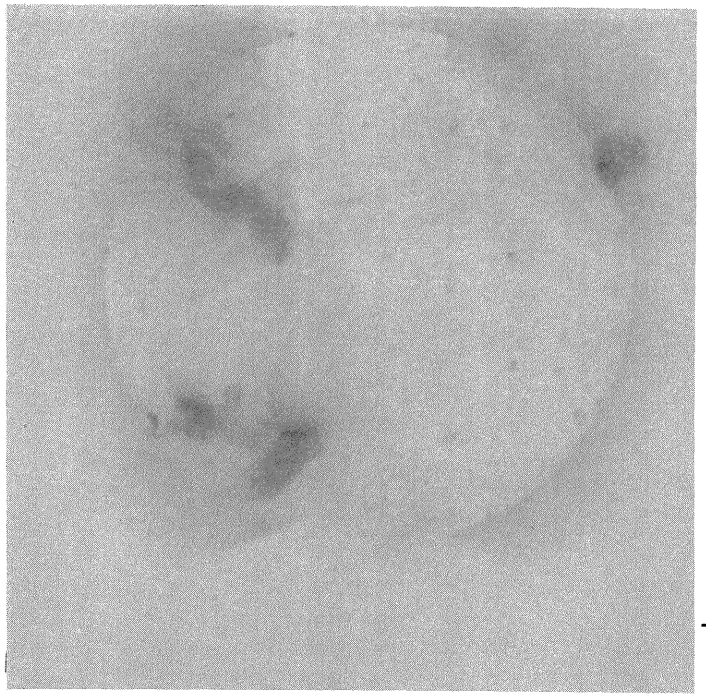
Day 21
14:27:29 UT



Day 23
11:57:55 UT



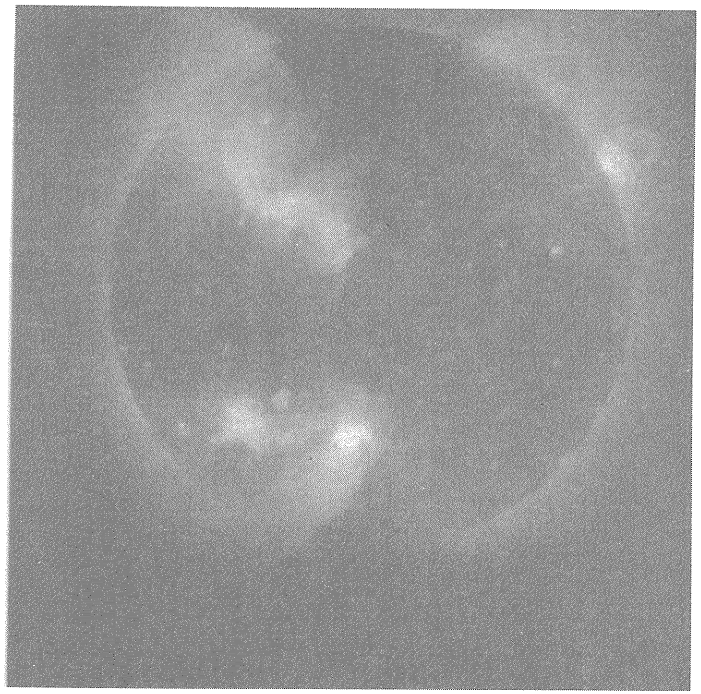
Day 22
10:06:01 UT



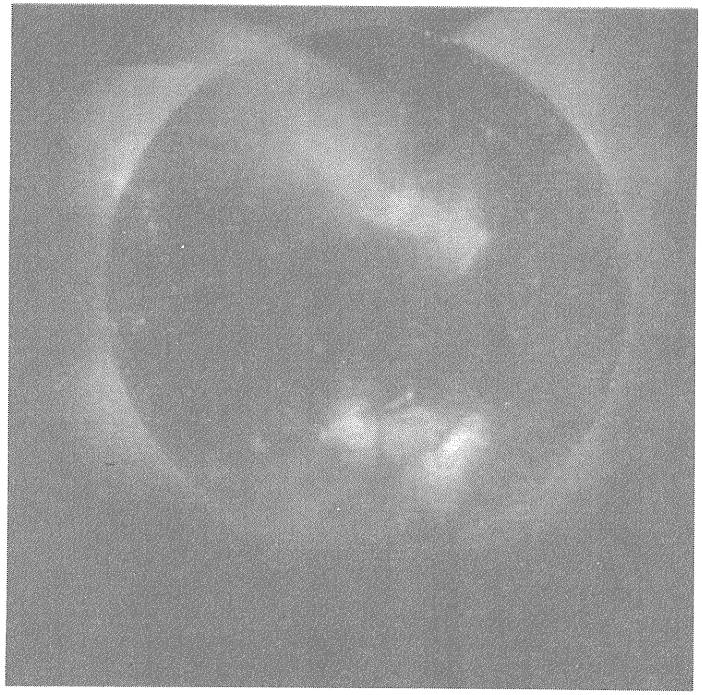
Day 24
10:26:47 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

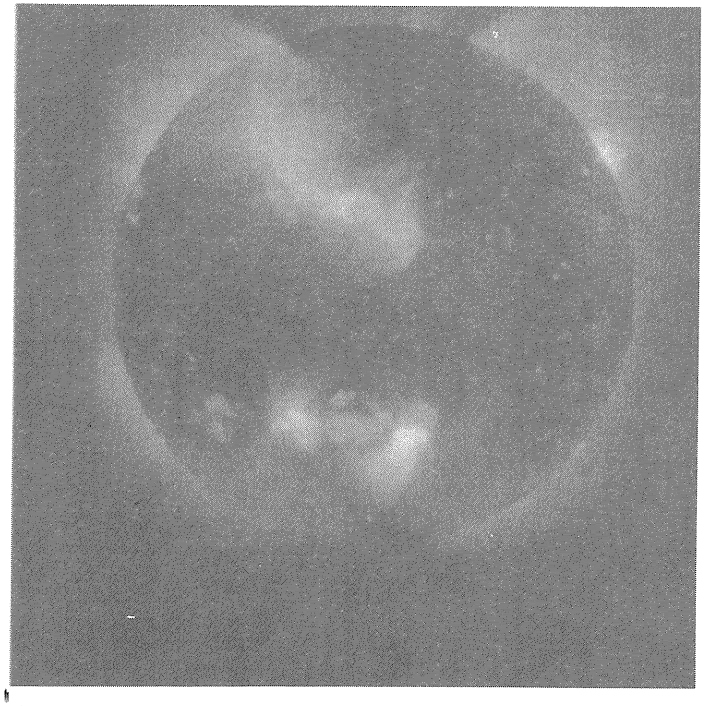
September
1997



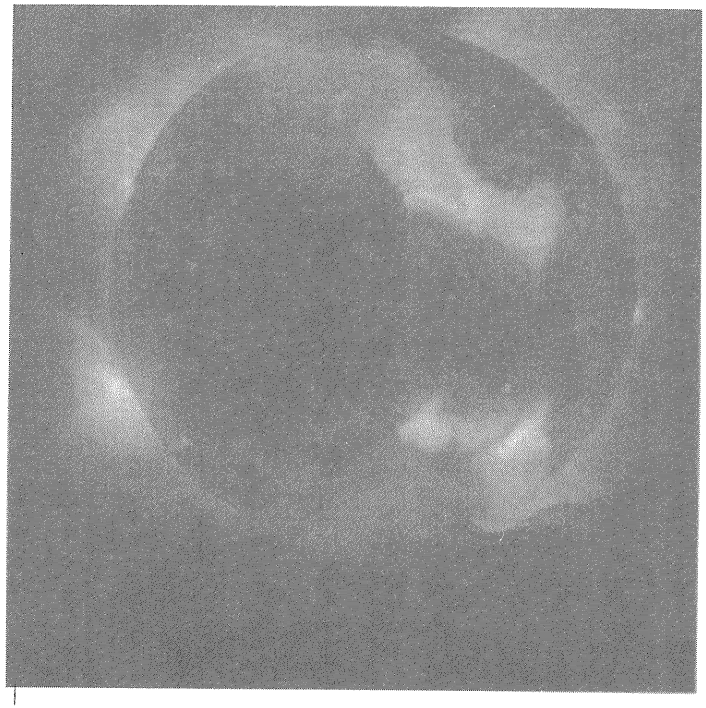
Day 25
09:14:22 UT



Day 27
12:22:12 UT



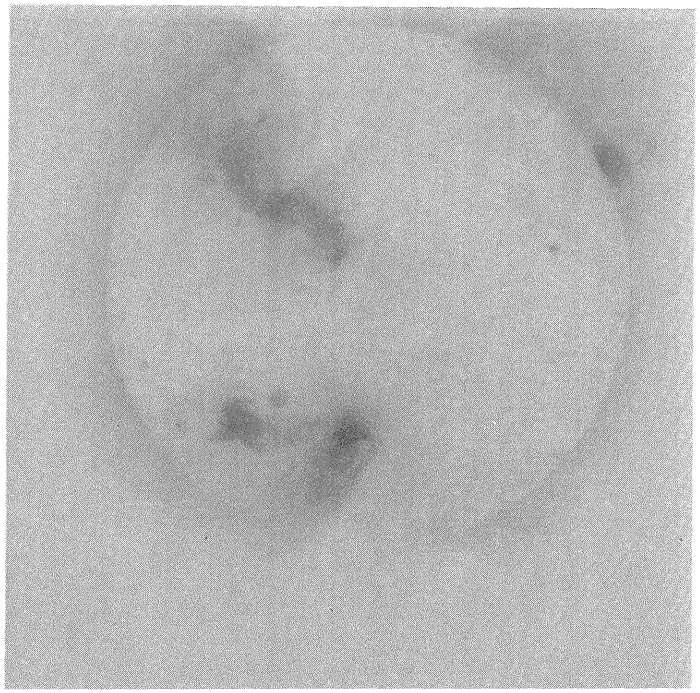
Day 26
09:42:14 UT



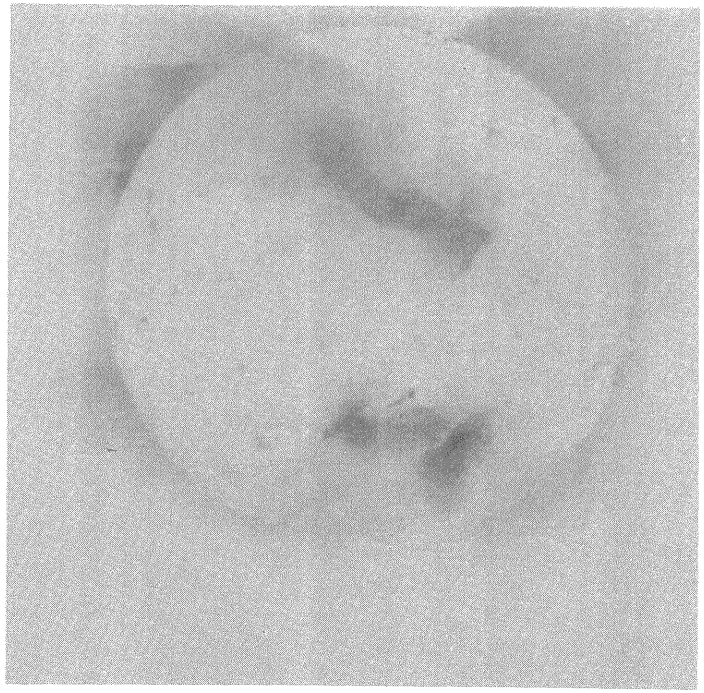
Day 28
18:10:12 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

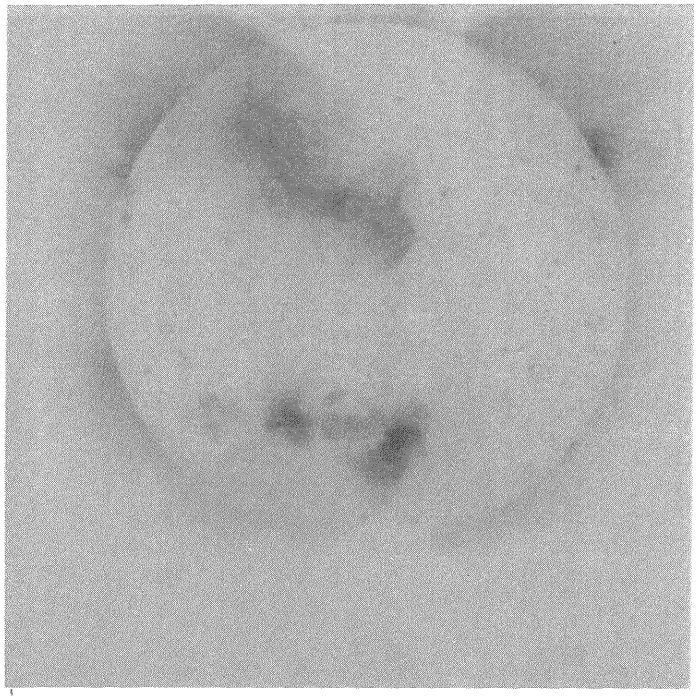
September 1997



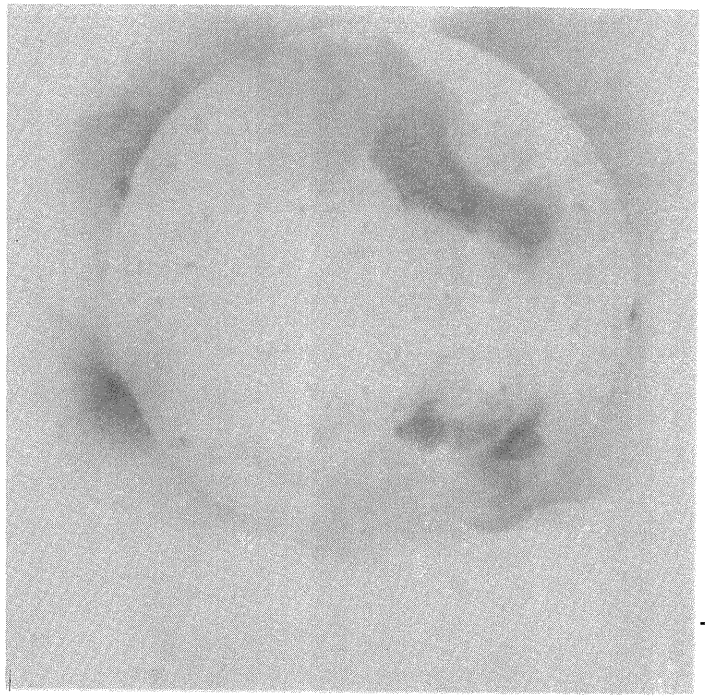
Day 25
09:14:22 UT



Day 27
12:22:12 UT



Day 26
09:42:14 UT



Day 28
18:10:12 UT

87
Sep 97

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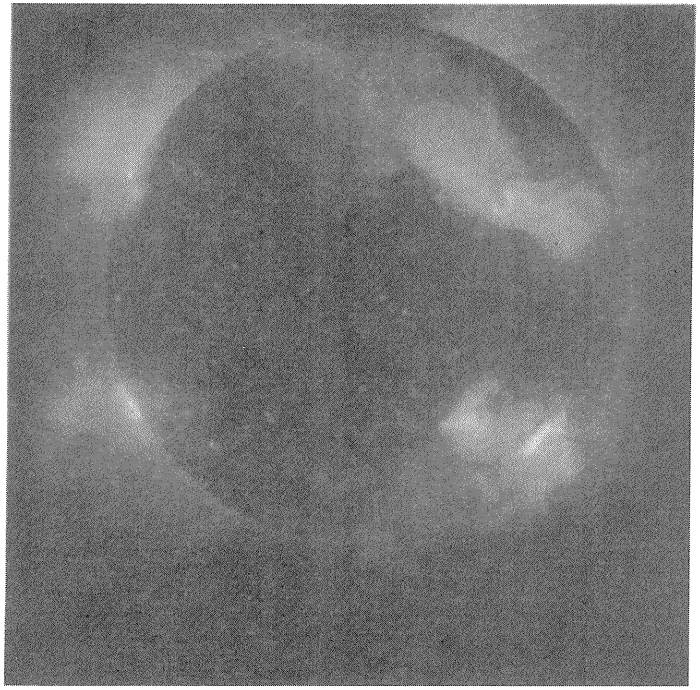
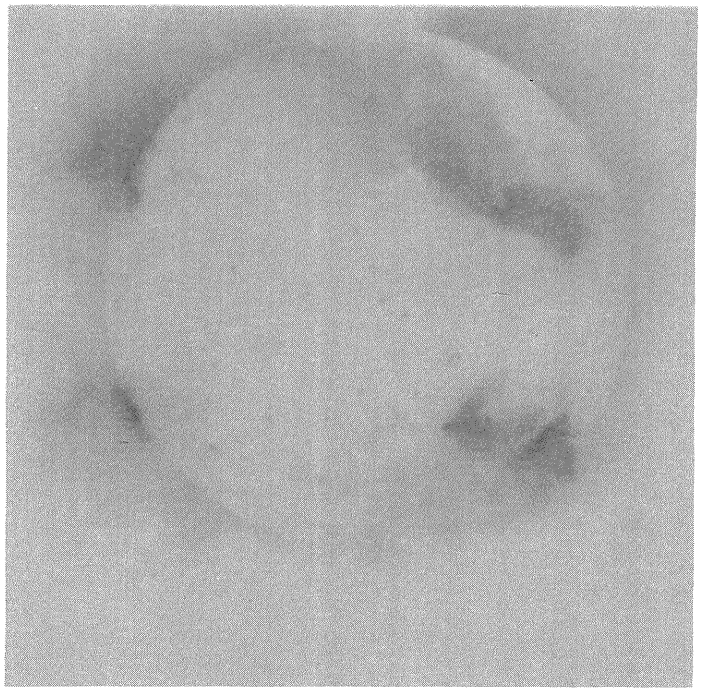
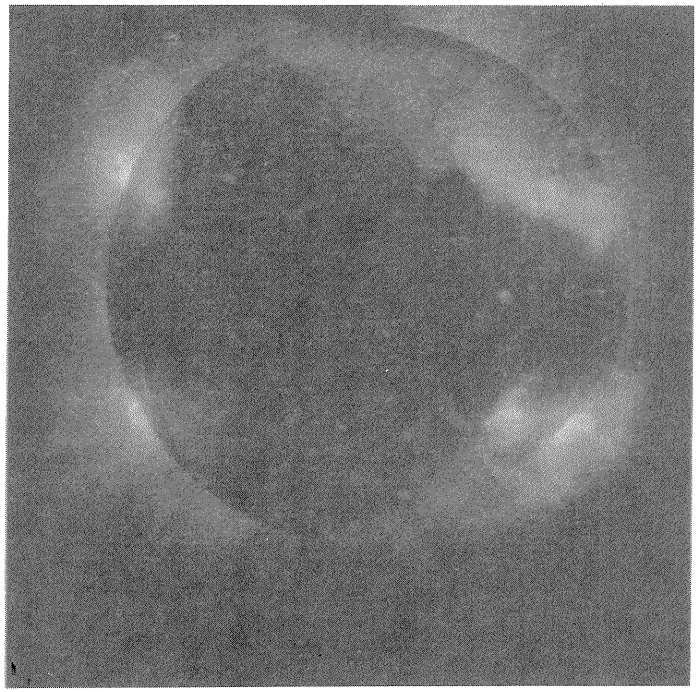
September
1997



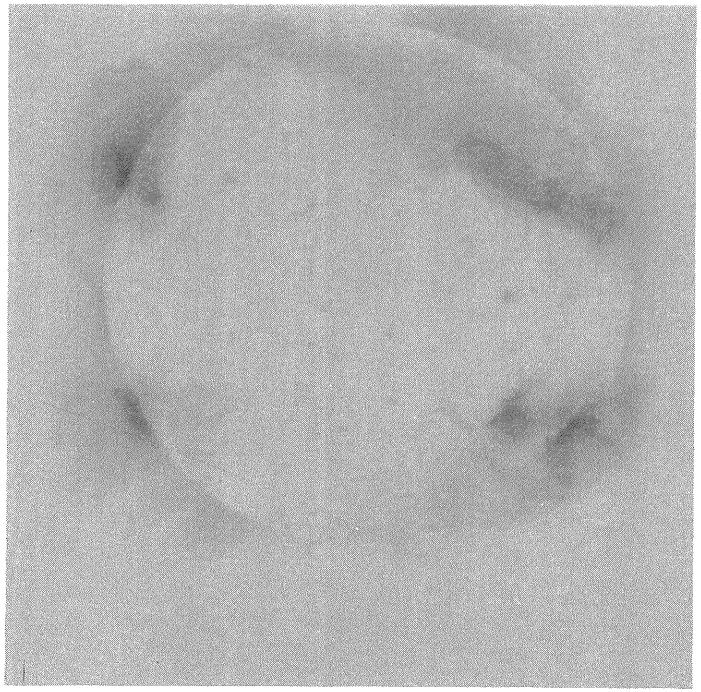
Day 29
15:26:24 UT



Day 29
15:26:24 UT



Day 30
12:27:05 UT



Day 30
12:27:05 UT

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

SEPTEMBER 1997

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
8081		KAND	08	31	0730	N34	E85	09	7.1			HR		2	1	2
8081		RAMY	08	31	1212	N34	E78	09	6.7		A	HR	10	1		4
8081	28485	MWIL	08	31	1530	N34	E80	09	7.0	4	AP					
8081		HOLL	08	31	1538	N34	E77	09	6.8		A	AX	30	1	1	3
8081		TACH	09	01	0550	N36	E74	09	7.2			HSX	70	1	2	4
8081		SVTO	09	01	0605	N34	E70	09	6.8		A	HS	30	1	1	3
8081		LEAR	09	01	0615	N34	E70	09	6.8		B	HS	10	1		2
8081		RAMY	09	01	1202	N34	E67	09	6.8		A	HR	20	2	1	4
8081		KAND	09	01	1315	N34	E70	09	7.1			HA		1	1	2
8081	28485	MWIL	09	01	1445	N33	E68	09	7.0	4	(AP)					
8081		HOLL	09	01	1800	N34	E65	09	6.9		A	AX	10	2	1	3
8081		VORO	09	01	2151	N34	E65	09	7.1			HAX	28	1		3
8081		LEAR	09	02	0022	N34	E60	09	6.8		A	AX	10	2	1	3
8081		TACH	09	02	0514	N34	E62	09	7.1			AR	30	2	1	3
8081		SVTO	09	02	0740	N34	E57	09	6.9		A	HR	20	2	1	3
8081		KAND	09	02	1030	N32	E58	09	7.0			AX		3	2	5
8081		RAMY	09	02	1307	N34	E55	09	6.9		A	HR	10	3	1	3
8081	28485	MWIL	09	02	1515	N33	E54	09	6.9	5	(AP)					
8081		HOLL	09	02	2025	N34	E52	09	7.0		A	AX	20	3	1	3
8081		VORO	09	02	2205	N34	E52	09	7.1			HAX	28	1		3
8081		TACH	09	03	0536	N35	E47	09	7.0			AX	10	2	1	3
8081		KAND	09	03	0615	N34	E47	09	7.0			AX		3	2	2
8081		SVTO	09	03	0720	N34	E44	09	6.8		A	AX	10	3	2	3
8081		RAMY	09	03	1325	N34	E43	09	7.0		A	AX	10	4	2	3
8081		HOLL	09	03	1435	N34	E43	09	7.0		A	AX	30	5	1	3
8081	28485	MWIL	09	03	1615	N33	E41	09	6.9	4	AP					
8081		VORO	09	03	2150	N34	E39	09	7.0			AXX	19	1		2
8081		LEAR	09	04	0405	N34	E36	09	7.0		A	AX		1		3
8081		TACH	09	04	0502	N35	E30	09	6.6			AX	11	2	1	3
8081		KAND	09	04	0740	N33	E34	09	7.0			AX		1		3
8081		RAMY	09	04	1201	N33	E31	09	7.0		A	AX	10	3	1	4
8081	28485	MWIL	09	04	1430	N33	E31	09	7.1	4	(AP)					
8081		RAMY	09	05	1224	N33	E23	09	7.3		B	BXO	10	4	3	4
8081		HOLL	09	05	1420	N34	E22	09	7.3		A	AX	330	2	1	3
8081	28485	MWIL	09	05	1430	N33	E23	09	7.4	4	(B)					
8081		LEAR	09	06	0510	N35	E10	09	7.0		B	CSO	50	8	6	2
8081		RAMY	09	06	1351	N34	E09	09	7.3		A	AX		1		3
8081	28485	MWIL	09	06	1430	N34	E08	09	7.2	4	(B)					
8081		HOLL	09	06	1600	N34	E09	09	7.4		A	AX		1		2
8081		SVTO	09	07	0605	N34	W04	09	6.9		A	AX		1		3
8082		RAMY	09	01	1202	N22	E76	09	7.3		A	AX	10	1		4
8082	28486	MWIL	09	01	1445	N19	E78	09	7.6	4	(AP)					
8082		HOLL	09	01	1800	N21	E74	09	7.4		A	AX		1		3
8082		LEAR	09	02	0022	N20	E69	09	7.3		A	AX		1	1	3
8082		SVTO	09	02	0740	N21	E67	09	7.4		A	AX		1		3
8082		KAND	09	02	1030	N19	E68	09	7.6			AX		1		5
8082		RAMY	09	02	1307	N22	E63	09	7.4		A	AX		1		3
8082	28486	MWIL	09	02	1515	N20	E63	09	7.4	4	(AP)					
8082		HOLL	09	02	2025	N21	E59	09	7.4		A	AX	10	1		3
8082		RAMY	09	04	1201	N22	E42	09	7.7		A	AX		1		4
8082		TACH	09	05	0515	N21	E31	09	7.6			BR	14	7	2	2
8082		SVTO	09	05	0740	N22	E30	09	7.6		B	BXO	10	4	4	2
8082		KAND	09	05	1045	N20	E28	09	7.6			BXO		8	4	3
8082		RAMY	09	05	1224	N22	E28	09	7.7		B	BXO	20	15	6	4
8082		HOLL	09	05	1420	N20	E27	09	7.7		B	BXO	50	11	5	3
8082	28488	MWIL	09	05	1430	N20	E27	09	7.7	4	(B)					
8082		VORO	09	06	0120	N21	E22	09	7.7			CAI	55	3	4	3
8082		TACH	09	06	0351	N21	E19	09	7.6			CRO	84	12	4	4
8082		LEAR	09	06	0510	N21	E19	09	7.7		B	CSO	50	8	6	2
8082		SVTO	09	06	0625	N21	E18	09	7.6		B	DAO	50	11	5	4
8082		RAMY	09	06	1351	N22	E13	09	7.6		B	DAO	30	9	6	3
8082	28488	MWIL	09	06	1430	N21	E14	09	7.7	4	(B)					
8082		HOLL	09	06	1600	N22	E13	09	7.7		B	BXO	70	10	6	2
8082		LEAR	09	07	0200	N21	E08	09	7.7		B	DSO	50	6	8	3
8082		VORO	09	07	0316	N21	E07	09	7.7			CAI	50	4	6	3
8082		SVTO	09	07	0605	N21	E05	09	7.6		B	DAO	30	6	8	3
8082		KAND	09	07	0710	N20	E04	09	7.6			BXO		6	8	3
8082		RAMY	09	07	1305	N21	E02	09	7.7		B	DAO	40	8	8	2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

SEPTEMBER 1997

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
8082	28488	MWIL	09	07	1430	N21	E00	09	7.6	4	(B)					
8082		HOLL	09	07	1456	N20	W01	09	7.5		B	DSO	50	20	9	3
8082		VORO	09	08	0310	N22	W07	09	7.6			BXO	37	2	6	2
8082		TACH	09	08	0414	N21	W07	09	7.6			BRO	43	5	6	2
8082		KAND	09	08	0610	N20	W08	09	7.6			BXO		7	8	4
8082		SVTO	09	08	0800	N20	W09	09	7.6		B	CSO	20	8	8	3
8082		LEAR	09	08	0845	N21	W05	09	8.0		B	DRO	20	4	7	3
8082		RAMY	09	08	1204	N21	W12	09	7.6		B	BXO	20	8	7	5
8082	28488	MWIL	09	08	1430	N21	W13	09	7.6	5	(B)					
8082		HOLL	09	08	1550	N21	W14	09	7.6		B	CSO	20	6	8	3
8082		LEAR	09	09	0113	N21	W18	09	7.7		B	BX	20	4	8	3
8082		TACH	09	09	0516	N22	W21	09	7.6			BRO	55	4	7	3
8082		KAND	09	09	0605	N21	W20	09	7.7			BXO		4	9	4
8082		SVTO	09	09	0715	N21	W22	09	7.6		B	BXO	10	4	8	3
8082		RAMY	09	09	1221	N21	W25	09	7.6		B	BXO	10	4	8	4
8082	28488	MWIL	09	09	1430	N21	W25	09	7.7	4	(B)					
8082		LEAR	09	10	0045	N20	W32	09	7.6		B	BXO	10	4	8	4
8082		RAMY	09	10	1214	N19	W43	09	7.2		A	AX	10	2	1	3
8082		RAMY	09	11	1133	N19	W54	09	7.4		A	AX		1		3
8083		RAMY	09	03	1325	S27	E60	09	8.2		B	CRO	20	3	5	3
8083		HOLL	09	03	1435	S28	E59	09	8.2		B	CSO	120	5	3	3
8083	28487	MWIL	09	03	1615	S27	E57	09	8.1	5	B					
8083		VORO	09	03	2150	S27	E54	09	8.1			DAI	173	3	5	2
8083		LEAR	09	04	0405	S27	E51	09	8.1		B	DSO	110	9	8	3
8083		TACH	09	04	0502	S28	E51	09	8.2			DAI	217	10	6	3
8083		KAND	09	04	0740	S28	E50	09	8.2			DAO		4	8	3
8083		RAMY	09	04	1201	S28	E46	09	8.1		B	DSO	8210	6	3	4
8083	28487	MWIL	09	04	1430	S27	E45	09	8.1	5	(B)					
8083		HOLL	09	04	1550	S27	E46	09	8.2		B	DAO	280	6	6	3
8083		VORO	09	04	2158	S27	E42	09	8.2			DKI	448	4	6	2
8083		TACH	09	05	0515	S27	E37	09	8.1			DAI	604	14	6	2
8083		SVTO	09	05	0740	S26	E37	09	8.2		B	DKO	270	8	9	2
8083		KAND	09	05	1045	S27	E35	09	8.2			DKO		11	10	3
8083		RAMY	09	05	1224	S27	E34	09	8.2		B	DAO	300	12	8	4
8083		HOLL	09	05	1420	S28	E32	09	8.1		B	DKO	10	11	10	3
8083	28487	MWIL	09	05	1430	S27	E32	09	8.1	5	(B)					
8083		VORO	09	06	0120	S27	E27	09	8.1			DKI	441	4	7	3
8083		TACH	09	06	0351	S26	E25	09	8.1			DAI	656	11	5	4
8083		LEAR	09	06	0510	S26	E24	09	8.1		B	DKO	250	7	10	2
8083		SVTO	09	06	0625	S28	E25	09	8.2		B	DAO	300	12	9	4
8083		RAMY	09	06	1351	S27	E20	09	8.1		B	DAO	290	13	9	3
8083	28487	MWIL	09	06	1430	S27	E19	09	8.1	5	(B)					
8083		HOLL	09	06	1600	S28	E19	09	8.1		BG	DAO	350	9	8	2
8083		LEAR	09	07	0200	S28	E15	09	8.2		B	EKO	380	15	12	3
8083		VORO	09	07	0316	S27	E14	09	8.2			DKI	613	4	7	3
8083		SVTO	09	07	0605	S27	E13	09	8.3		B	DAI	320	11	9	3
8083		KAND	09	07	0710	S27	E11	09	8.1			DAI		11	10	3
8083		RAMY	09	07	1305	S28	E09	09	8.2		B	DAI	280	11	9	2
8083	28487	MWIL	09	07	1430	S28	E06	09	8.1	5	(B)					
8083		HOLL	09	07	1456	S28	E08	09	8.2		B	DAI	430	17	9	3
8083		VORO	09	08	0310	S27	E01	09	8.2			DKI	577	5	9	2
8083		TACH	09	08	0414	S26	W01	09	8.1			DAI	892	17	7	2
8083		KAND	09	08	0610	S27	W01	09	8.2			DAO		12	10	4
8083		SVTO	09	08	0800	S27	W02	09	8.2		B	DKC	400	18	8	3
8083		LEAR	09	08	0845	S28	E01	09	8.4		B	EKO	260	14	8	3
8083		RAMY	09	08	1204	S28	W04	09	8.2		B	DAI	590	22	9	5
8083	28487	MWIL	09	08	1430	S27	W05	09	8.2	5	(B)					
8083		HOLL	09	08	1550	S28	W06	09	8.2		B	DAO	460	22	9	3
8083		LEAR	09	09	0113	S27	W11	09	8.2		B	DKO	600	19	10	3
8083		TACH	09	09	0516	S26	W12	09	8.3			DAI	993	21	5	3
8083		KAND	09	09	0605	S28	W14	09	8.1			DKO		18	10	4
8083		SVTO	09	09	0715	S28	W13	09	8.3		B	DAO	410	11	8	3
8083		RAMY	09	09	1221	S28	W16	09	8.3		B	DKI	590	16	9	4
8083	28487	MWIL	09	09	1430	S27	W18	09	8.2	5	(BG)					
8083		HOLL	09	09	1520	S28	W18	09	8.2		B	DKC	800	17	8	4
8083		VORO	09	09	2226	S27	W22	09	8.2			DKI	750	8	6	2
8083		LEAR	09	10	0045	S28	W22	09	8.3		B	EKO	720	15	11	4
8083		TACH	09	10	0535	S26	W24	09	8.4			DHI	1226	19	6	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

SEPTEMBER 1997

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
8083		KAND	09	10	0610	S28	W25	09	8.3			DKC		17	10	4
8083		SVTO	09	10	0715	S28	W25	09	8.3		B	DKI	780	23	10	3
8083		RAMY	09	10	1214	S28	W30	09	8.2		B	DKI	590	23	10	3
8083	28487	MWIL	09	10	1435	S27	W31	09	8.2	5	(B)					
8083		HOLL	09	10	1525	S28	W31	09	8.2		B	DKO	740	17	9	4
8083		LEAR	09	11	0300	S27	W38	09	8.2		B	EKO	570	13	11	3
8083		TACH	09	11	0444	S26	W37	09	8.3			DAI	804	15	6	2
8083		VORO	09	11	0607	S28	W39	09	8.2			DKI	562	5	7	2
8083		KAND	09	11	0635	S28	W39	09	8.2			DKO		9	10	4
8083		SVTO	09	11	0928	S30	W40	09	8.2		B	DKO	680	11	10	4
8083		RAMY	09	11	1133	S28	W42	09	8.2		B	DKO	550	14	10	3
8083	28487	MWIL	09	11	1430	S27	W44	09	8.2	5	(B)					
8083		HOLL	09	11	1540	S28	W45	09	8.1		B	DSO	590	8	10	3
8083		TACH	09	12	0506	S25	W51	09	8.3			DAI	724	7	7	3
8083		SVTO	09	12	0615	S27	W50	09	8.4		B	EAO	340	13	11	4
8083		KAND	09	12	0710	S28	W54	09	8.1			DKO		10	10	4
8083		RAMY	09	12	1210	S28	W54	09	8.3		B	DKO	350	10	9	3
8083	28487	MWIL	09	12	1430	S27	W56	09	8.2	5	(B)					
8083		LEAR	09	13	0030	S27	W60	09	8.3		BG	DKO	340	10	5	3
8083		TACH	09	13	0431	S27	W62	09	8.3			DAI	329	9	8	3
8083		SVTO	09	13	0715	S27	W65	09	8.2		B	DAO	390	4	10	2
8083		KAND	09	13	0750	S28	W64	09	8.3			DKO		10	10	4
8083		RAMY	09	13	1207	S28	W68	09	8.2		B	DKO	300	7	10	3
8083	28487	MWIL	09	13	1430	S27	W69	09	8.2	5	(B)					
8083		HOLL	09	13	1818	S28	W69	09	8.4		B	DAO	120	6	9	2
8083		VORO	09	14	0001	S28	W74	09	8.2			DAI	174	2	6	2
8083		LEAR	09	14	0338	S27	W73	09	8.5		B	DKO	110	2	6	3
8083		TACH	09	14	0446	S26	W71	09	8.7			HR	35	2	2	3
8083		KAND	09	14	0745	S26	W75	09	8.5			HA		1	1	4
8083		SVTO	09	14	0825	S27	W77	09	8.3		A	AX	30	1	3	2
8083		RAMY	09	14	1230	S28	W80	09	8.3		A	HS	30	1	1	3
8083	28487	MWIL	09	14	1445	S27	W80	09	8.4	5	X					
8084A	28493	MWIL	09	12	1430	N30	W28	09	10.4	3	(AP)					
8084		RAMY	09	05	1224	N23	E70	09	10.9		A	AX	10	1		4
8084		HOLL	09	05	1420	N21	E70	09	11.0		B	BXO	20	2	3	3
8084	28489	MWIL	09	05	1430	N21	E71	09	11.0	5	(B)					
8084		VORO	09	06	0120	N21	E64	09	11.0			HAX	22	1		3
8084		TACH	09	06	0351	N22	E62	09	10.9			AX	10	1	1	4
8084		LEAR	09	06	0510	N22	E61	09	10.9		A	AX		1		2
8084		SVTO	09	06	0625	N22	E60	09	10.9		A	HR	10	1		4
8084		RAMY	09	06	1351	N22	E57	09	10.9		B	CRO	20	4	4	3
8084	28489	MWIL	09	06	1430	N20	E55	09	10.8	5	(AP)					
8084		HOLL	09	06	1600	N21	E55	09	10.9		A	AX	20	2	1	2
8084		LEAR	09	07	0200	N21	E48	09	10.8		B	CRO	20	3	2	3
8084		VORO	09	07	0316	N21	E47	09	10.7			AXX	16	1		3
8084		SVTO	09	07	0605	N21	E44	09	10.6		A	HS	10	3	2	3
8084		RAMY	09	07	1305	N21	E41	09	10.7		A	AX	10	4	2	2
8084	28489	MWIL	09	07	1430	N20	E41	09	10.7	4	(AP)					
8084		HOLL	09	07	1456	N22	E42	09	10.8		B	BXO	10	5	5	3
8084		VORO	09	08	0310	N22	E36	09	10.9			AXX	8	1		2
8084		TACH	09	08	0414	N21	E34	09	10.8			BRI	65	9	7	2
8084		KAND	09	08	0610	N21	E35	09	10.9			BXI		16	8	4
8084		SVTO	09	08	0800	N22	E34	09	10.9		B	CAO	60	14	8	3
8084		LEAR	09	08	0845	N20	E35	09	11.0		B	DSO	40	7	4	3
8084		RAMY	09	08	1204	N21	E31	09	10.9		B	CAI	80	19	6	5
8084	28489	MWIL	09	08	1430	N20	E30	09	10.9	5	(B)					
8084		HOLL	09	08	1550	N22	E30	09	11.0		B	CAO	80	16	8	3
8084		LEAR	09	09	0113	N21	E26	09	11.0		B	DSO	210	15	8	3
8084		TACH	09	09	0516	N23	E22	09	10.9			DAI	361	18	5	3
8084		SVTO	09	09	0715	N22	E22	09	11.0		B	DAI	140	19	7	3
8084		RAMY	09	09	1221	N22	E18	09	10.9		B	DAI	170	22	7	4
8084	28489	MWIL	09	09	1430	N21	E18	09	11.0	5	(B)					
8084		HOLL	09	09	1520	N20	E17	09	10.9		B	BXO	40	5	8	4
8084		VORO	09	09	2226	N22	E13	09	10.9			DSI	141	6	7	2
8084		LEAR	09	10	0045	N20	E11	09	10.9		B	DSO	230	16	8	4
8084		TACH	09	10	0535	N23	E09	09	10.9			CSO	349	24	7	3
8084		KAND	09	10	0610	N21	E10	09	11.0			CAO		25	10	4

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8084		SVTO	09	10	0715	N22	E06	09	10.8		BG	EAC	240	31	11	3
8084		RAMY	09	10	1214	N23	E05	09	10.9		B	DAO	200	30	10	3
8084	28489	MWIL	09	10	1435	N21	E04	09	10.9	5	(B)					
8084		HOLL	09	10	1525	N22	E06	09	11.1		B	DSI	380	15	9	4
8084		LEAR	09	11	0300	N23	W03	09	10.9		B	EHO	250	15	12	3
8084		TACH	09	11	0444	N24	W04	09	10.9			CAI	456	21	9	2
8084		VORO	09	11	0607	N23	W04	09	10.9			CAI	236	12	9	2
8084		KAND	09	11	0635	N21	W04	09	11.0			EKO		14	11	4
8084		SVTO	09	11	0928	N21	W06	09	10.9		B	CHI	250	20	13	4
8084		RAMY	09	11	1133	N22	W06	09	11.0		B	EAI	210	27	11	3
8084	28489	MWIL	09	11	1430	N21	W08	09	11.0	5	(BP)					
8084		HOLL	09	11	1540	N22	W08	09	11.0		B	ESI	240	19	12	3
8084		TACH	09	12	0506	N23	W16	09	11.0			EHI	578	16	10	3
8084		SVTO	09	12	0615	N22	W16	09	11.0		BG	EAO	260	25	13	4
8084		KAND	09	12	0710	N21	W18	09	10.9			EAI		19	13	4
8084		RAMY	09	12	1210	N22	W21	09	10.9		B	ESI	220	17	13	3
8084	28489	MWIL	09	12	1430	N22	W22	09	10.9	5	(BG)					
8084		LEAR	09	13	0030	N22	W27	09	10.9		BG	EAI	230	18	12	3
8084		TACH	09	13	0431	N23	W25	09	11.3			DSI	432	18	9	3
8084		SVTO	09	13	0715	N23	W29	09	11.1		B	EAO	250	15	13	2
8084		KAND	09	13	0750	N22	W30	09	11.0			EAI		17	13	4
8084		RAMY	09	13	1207	N22	W34	09	10.9		BD	ESO	210	17	13	3
8084	28489	MWIL	09	13	1430	N22	W35	09	10.9	5	(B)					
8084		HOLL	09	13	1818	N22	W37	09	10.9		B	ESO	230	11	13	2
8084		VORO	09	14	0001	N23	W41	09	10.8			DSO	249	4	10	2
8084		LEAR	09	14	0338	N22	W42	09	10.9		BG	ESO	230	16	13	3
8084		TACH	09	14	0446	N23	W42	09	11.0			DAO	380	6	9	3
8084		KAND	09	14	0745	N22	W44	09	10.9			EAO		12	13	4
8084		SVTO	09	14	0825	N23	W44	09	11.0		BG	EHO	460	8	14	2
8084		RAMY	09	14	1230	N22	W47	09	10.9		BG	ESO	200	11	12	3
8084	28489	MWIL	09	14	1445	N22	W48	09	10.9	5	(B)					
8084		HOLL	09	14	1553	N23	W49	09	10.9		B	DSO	250	11	11	3
8084		LEAR	09	15	0100	N21	W52	09	11.0		BG	DAO	260	9	8	4
8084		TACH	09	15	0457	N22	W55	09	11.0			DSI	278	13	9	3
8084		SVTO	09	15	0540	N21	W54	09	11.1		BG	EAI	110	14	11	3
8084		KAND	09	15	0820	N21	W57	09	11.0			ESO		08	12	2
8084		RAMY	09	15	1419	N20	W60	09	11.0		B	DAO	210	6	10	2
8084		HOLL	09	15	1515	N22	W60	09	11.0		B	DAO	340	11	9	4
8084		VORO	09	15	2157	N23	W64	09	11.0			DAI	346	4	10	2
8084	28489	MWIL	09	15	2345	N22	W65	09	11.0	5	B					
8084		LEAR	09	16	0147	N22	W64	09	11.1		BG	ESO	220	6	11	3
8084		TACH	09	16	0436	N21	W68	09	11.0			DRO	176	6	9	2
8084		KAND	09	16	0620	N21	W68	09	11.0			EAO		07	13	3
8084		RAMY	09	16	1157	N21	W71	09	11.0		B	EAO	270	8	11	4
8084		SVTO	09	16	1205	N24	W73	09	10.9		B	EAO	110	6	14	2
8084		HOLL	09	16	1545	N22	W72	09	11.1		B	DAO	400	4	9	4
8084	28489	MWIL	09	16	2030	N22	W75	09	11.1	5	(D)					
8084		VORO	09	16	2325	N23	W78	09	11.0			DAI	202	4	9	3
8084		LEAR	09	17	0000	N20	W79	09	10.9		B	DAO	120	7	5	3
8084		TACH	09	17	0520	N22	W81	09	11.0			BR	80	4	7	3
8084		SVTO	09	17	0730	N24	W86	09	10.7		B	CRO	90	7	7	3
8084		RAMY	09	17	1302	N21	W82	09	11.2		B	DRO	20	2	4	2
8084	28489	MWIL	09	17	1930	N22	W85	09	11.3	4	(B					
8084		VORO	09	17	2139	N24	W86	09	11.2			HAX	97	1		3
8085		RAMY	09	06	1351	S24	E87	09	13.3		A	HS	20	1	1	3
8085	28490	MWIL	09	06	1430	S26	E80	09	12.8	4	X					
8085		HOLL	09	06	1600	S25	E80	09	12.9		A	AX	60	1	1	2
8085		LEAR	09	07	0200	S24	E74	09	12.8		B	DSO	60	2	3	3
8085		SVTO	09	07	0605	S22	E75	09	13.0		B	EHO	210	3	13	3
8085		KAND	09	07	0710	S25	E75	09	13.1			EAO		3	12	3
8085		RAMY	09	07	1305	S26	E74	09	13.3		B	EAO	250	6	15	2
8085	28490	MWIL	09	07	1430	S27	E67	09	12.8	4	(B)					
8085		HOLL	09	07	1456	S26	E71	09	13.1		B	EAO	390	12	13	3
8085		VORO	09	08	0310	S26	E65	09	13.2			EHI	487	3	12	2
8085		TACH	09	08	0414	S25	E62	09	13.0			EAI	458	8	13	2
8085		KAND	09	08	0610	S26	E62	09	13.1			FKI		16	17	4
8085		SVTO	09	08	0800	S25	E62	09	13.1		B	FHI	500	14	16	3
8085		LEAR	09	08	0845	S25	E61	09	13.1		B	EKO	310	10	13	3

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8085		RAMY	09	08	1204	S25	E59	09	13.1		B	FKI	480	20	16	5
8085	28490	MWIL	09	08	1430	S27	E56	09	13.0	5	(B)					
8085		HOLL	09	08	1550	S26	E58	09	13.2		B	FKI	520	17	16	3
8085		LEAR	09	09	0113	S26	E52	09	13.1		BG	FKO	440	23	16	3
8085		TACH	09	09	0516	S25	E49	09	13.0			EAI	724	16	14	3
8085		KAND	09	09	0605	S25	E47	09	12.9			FKI		20	16	4
8085		SVTO	09	09	0715	S23	E47	09	12.9		BG	FKC	570	19	16	3
8085		RAMY	09	09	1221	S25	E45	09	13.0		B	FKI	610	23	16	4
8085	28490	MWIL	09	09	1430	S26	E41	09	12.8	5	(BG)					
8085		HOLL	09	09	1520	S25	E45	09	13.1		BG	FHI	900	26	16	4
8085		VORO	09	09	2226	S26	E40	09	13.0			EHI	678	6	14	2
8085		LEAR	09	10	0045	S27	E39	09	13.1		BG	EKO	530	20	15	4
8085		TACH	09	10	0535	S25	E36	09	13.0			EHI	755	19	14	3
8085		KAND	09	10	0610	S26	E36	09	13.0			FKO		24	17	4
8085		SVTO	09	10	0715	S24	E35	09	13.0		BG	FKC	660	26	17	3
8085		RAMY	09	10	1214	S26	E32	09	13.0		BG	FKO	600	26	17	3
8085	28490	MWIL	09	10	1435	S26	E29	09	12.9	5	(BG)					
8085		HOLL	09	10	1525	S27	E32	09	13.1		B	FKI	660	26	17	4
8085		LEAR	09	11	0300	S26	E24	09	13.0		BG	FKI	610	18	18	3
8085		TACH	09	11	0444	S25	E23	09	13.0			EHI	1054	18	15	2
8085		VORO	09	11	0607	S25	E24	09	13.1			EKI	832	10	15	2
8085		KAND	09	11	0635	S26	E23	09	13.1			FHO		19	19	4
8085		SVTO	09	11	0928	S26	E25	09	13.3		B	FKI	650	29	18	4
8085		RAMY	09	11	1133	S26	E21	09	13.1		BG	FKI	570	27	17	3
8085	28490	MWIL	09	11	1430	S26	E16	09	12.8	5	(B)					
8085		HOLL	09	11	1540	S26	E18	09	13.0		BG	FKI	570	24	16	3
8085		TACH	09	12	0506	S26	E09	09	12.9			EHI	1200	14	15	3
8085		SVTO	09	12	0615	S26	E12	09	13.2		B	FKI	500	39	18	4
8085		KAND	09	12	0710	S26	E09	09	13.0			FKI		29	18	4
8085		RAMY	09	12	1210	S26	E07	09	13.0		B	FHI	420	24	18	3
8085	28490	MWIL	09	12	1430	S26	E04	09	12.9	5	(B)					
8085		LEAR	09	13	0030	S26	E00	09	13.0		B	FKI	400	19	18	3
8085		TACH	09	13	0431	S25	W07	09	12.6			EAI	950	15	14	3
8085		SVTO	09	13	0715	S25	W02	09	13.1		B	FKC	360	23	17	2
8085		KAND	09	13	0750	S25	W04	09	13.0			FKO		20	18	4
8085		RAMY	09	13	1207	S27	W06	09	13.0		B	FHI	390	17	17	3
8085	28490	MWIL	09	13	1430	S26	W10	09	12.8	5	(B)					
8085		HOLL	09	13	1818	S27	W09	09	13.1		B	FKI	360	13	17	2
8085		VORO	09	14	0001	S26	W13	09	13.0			EKI	521	6	15	2
8085		LEAR	09	14	0338	S25	W14	09	13.1		B	FHO	360	16	16	3
8085		TACH	09	14	0446	S25	W16	09	12.9			EHI	1045	8	15	3
8085		KAND	09	14	0745	S25	W18	09	12.9			FKO		14	17	4
8085		SVTO	09	14	0825	S26	W18	09	12.9		BG	FKO	550	12	18	2
8085		RAMY	09	14	1230	S26	W19	09	13.0		B	FKI	350	19	17	3
8085	28490	MWIL	09	14	1445	S26	W23	09	12.8	5	(BG)					
8085		HOLL	09	14	1553	S26	W21	09	13.0		B	FKI	330	16	17	3
8085		LEAR	09	15	0100	S25	W25	09	13.1		BG	E	240	10	20	4
8085		SVTO	09	15	0540	S26	W25	09	13.3		B	FKO	310	10	17	3
8085		KAND	09	15	0820	S26	W31	09	12.9			FKO		10	17	2
8085		RAMY	09	15	1419	S27	W33	09	13.0		B	FKO	350	7	17	2
8085		HOLL	09	15	1515	S26	W33	09	13.1		B	CKO	420	6	16	4
8085		VORO	09	15	2157	S25	W39	09	12.9			HAX	336	2		2
8085	28490	MWIL	09	15	2345	S24	W41	09	12.8	5	BP					
8085		LEAR	09	16	0147	S25	W39	09	13.0		B	FKO	350	5	17	3
8085		TACH	09	16	0436	S24	W47	09	12.6			HA	252	3	2	2
8085		KAND	09	16	0620	S25	W48	09	12.5			HK		3	4	3
8085		RAMY	09	16	1157	S25	W51	09	12.5		A	HK	240	5	3	4
8085		SVTO	09	16	1205	S23	W51	09	12.6		A	HS	160	3	3	2
8085		HOLL	09	16	1545	S26	W51	09	12.7		A	HK	390	3	3	4
8085	28490	MWIL	09	16	2030	S24	W56	09	12.5	5	(AP)					
8085		VORO	09	16	2325	S25	W58	09	12.5			HAX	240	2		3
8085		LEAR	09	17	0000	S25	W56	09	12.7		B	CAO	180	3	3	3
8085		TACH	09	17	0520	S24	W61	09	12.5			HA	350	2	2	3
8085		SVTO	09	17	0730	S24	W63	09	12.4		A	HK	360	2	6	3
8085		RAMY	09	17	1302	S27	W65	09	12.5		A	HA	170	2	4	2
8085	28490	MWIL	09	17	1930	S25	W69	09	12.5	5	(AP)					
8085		VORO	09	17	2139	S25	W70	09	12.5			HAX	462	2		3
8085		TACH	09	18	0425	S23	W74	09	12.5			HA	200	3	2	3
8085		LEAR	09	18	0435	S24	W71	09	12.7		A	HK	150	2	3	4

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8085		SVTO	09	18	1019	S24	W80	09	12.2		B	CAO	130	3	9	3
8085		RAMY	09	18	1206	S25	W78	09	12.5		B	DSO	70	2	5	3
8085		HOLL	09	18	1725	S26	W80	09	12.5		A	HH	80	1	3	3
8085	28490	MWIL	09	18	2000	S25	W80	09	12.6	5	AP					
8085A		TACH	09	15	0457	S25	W27	09	13.1			CAI	421	7	14	3
8085B	28491	MWIL	09	11	1430	N21	E22	09	13.3	4	(B)					
8085C	28494	MWIL	09	12	1430	N32	E35	09	15.4	4	(AF)					
8086		RAMY	09	11	1133	N28	E82	09	17.9		B	BXO	10	2	5	3
8086	28492	MWIL	09	11	1430	N24	E81	09	17.9	3	AP					
8086		HOLL	09	11	1540	N26	E80	09	17.9		A	AX	10	1	1	3
8086	28492	MWIL	09	12	1430	N28	E70	09	18.1	3	(AF)					
8086		LEAR	09	13	0030	N27	E62	09	17.8		B	BXO	10	3	3	3
8086		TACH	09	13	0431	N27	E61	09	17.9			BR	22	5	2	3
8086		SVTO	09	13	0715	N27	E60	09	18.0		B	CSO	30	3	3	2
8086		KAND	09	13	0750	N27	E61	09	18.1			BXO		4	3	4
8086		RAMY	09	13	1207	N28	E57	09	17.9		B	DSO	50	5	5	3
8086	28492	MWIL	09	13	1430	N27	E56	09	18.0	5	(B)					
8086		HOLL	09	13	1818	N27	E52	09	17.8		B	CSO	70	5	4	2
8086		VORO	09	14	0001	N27	E50	09	17.9			HAX	87	1		2
8086		LEAR	09	14	0338	N28	E48	09	17.9		B	CSO	80	5	5	3
8086		TACH	09	14	0446	N27	E47	09	17.9			HS	202	3	1	3
8086		KAND	09	14	0745	N26	E47	09	18.0			CSO		5	7	4
8086		SVTO	09	14	0825	N28	E46	09	17.9		B	DSO	120	4	6	2
8086		RAMY	09	14	1230	N28	E44	09	17.9		B	CSO	70	6	7	3
8086	28492	MWIL	09	14	1445	N27	E42	09	17.9	5	(BP)					
8086		HOLL	09	14	1553	N27	E44	09	18.1		B	CSO	60	5	5	3
8086		LEAR	09	15	0100	N28	E38	09	18.0		B	DAO	140	10	6	4
8086		TACH	09	15	0457	N28	E35	09	17.9			CAI	246	13	6	3
8086		SVTO	09	15	0540	N27	E36	09	18.0		B	DSI	160	12	9	3
8086		KAND	09	15	0820	N29	E33	09	17.9			DAI		10	8	2
8086		RAMY	09	15	1419	N28	E31	09	18.0		B	DAO	190	12	9	2
8086		HOLL	09	15	1515	N27	E32	09	18.1		B	DAI	280	17	8	4
8086		VORO	09	15	2157	N28	E28	09	18.1			DAI	136	3	8	2
8086	28492	MWIL	09	15	2345	N27	E26	09	18.0	5	B					
8086		LEAR	09	16	0147	N28	E25	09	18.0		B	EHO	190	10	11	3
8086		TACH	09	16	0436	N29	E23	09	18.0			DAI	230	5	7	2
8086		KAND	09	16	0620	N28	E24	09	18.1			DAI		16	10	3
8086		RAMY	09	16	1157	N28	E20	09	18.1		B	DSO	200	31	10	4
8086		SVTO	09	16	1205	N27	E20	09	18.1		BG	ESI	140	23	11	2
8086		HOLL	09	16	1545	N28	E18	09	18.1		B	DSO	180	23	9	4
8086	28492	MWIL	09	16	2030	N28	E15	09	18.0	5	(B)					
8086		VORO	09	16	2325	N29	E14	09	18.1			DAI	194	7	10	3
8086		LEAR	09	17	0000	N28	E12	09	17.9		B	EAI	200	13	11	3
8086		TACH	09	17	0520	N29	E10	09	18.0			DAI	369	11	9	3
8086		SVTO	09	17	0730	N27	E10	09	18.1		BG	ESO	170	20	13	3
8086		RAMY	09	17	1302	N27	E05	09	17.9		B	CSO	70	8	11	2
8086	28492	MWIL	09	17	1930	N28	E03	09	18.0	5	(BP)					
8086		VORO	09	17	2139	N29	E03	09	18.1			DAI	215	8	10	3
8086		TACH	09	18	0425	N29	W03	09	17.9			CAI	305	14	10	3
8086		LEAR	09	18	0435	N28	W01	09	18.1		B	ESO	120	12	13	4
8086		SVTO	09	18	1019	N27	W04	09	18.1		B	CSO	110	8	12	3
8086		RAMY	09	18	1206	N28	W06	09	18.0		B	CSO	70	9	12	3
8086		HOLL	09	18	1725	N29	W09	09	18.0		B	CHO	160	8	12	3
8086	28492	MWIL	09	18	2000	N27	W10	09	18.0	5	(BP)					
8086		VORO	09	18	2245	N27	W16	09	17.7			HAX	116	1		2
8086		LEAR	09	19	0300	N28	W13	09	18.1		B	DSO	60	8	10	2
8086		TACH	09	19	0504	N28	W14	09	18.1			CSO	225	4	10	2
8086		SVTO	09	19	0850	N26	W20	09	17.8		A	HA	110	4	4	3
8086		RAMY	09	19	1118	N28	W19	09	18.0		B	CSO	80	9	12	3
8086		HOLL	09	19	1433	N28	W19	09	18.1		B	CSO	100	6	12	3
8086	28492	MWIL	09	19	1445	N27	W22	09	17.9	5	(BP)					
8086		VORO	09	19	2254	N27	W29	09	17.7			HAX	144	1		3
8086		LEAR	09	20	0001	N27	W25	09	18.0		B	CSO	70	5	11	3
8086		TACH	09	20	0408	N27	W30	09	17.8			CSO	187	5	3	3
8086		KAND	09	20	1005	N27	W34	09	17.8			HS		3	3	3

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

SEPTEMBER 1997

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8086		SVTO	09	20	1045	N26	W35	09	17.7		B	CAO	50	4	4	2
8086		RAMY	09	20	1157	N26	W35	09	17.8		A	HS	60	4	4	3
8086	28492	MWIL	09	20	1445	N26	W35	09	17.9	5	(BP)					
8086		HOLL	09	20	1543	N27	W36	09	17.8		B	CSO	60	5	5	3
8086		VORO	09	20	2246	N27	W41	09	17.7			HAX	91	3		3
8086		LEAR	09	21	0009	N26	W41	09	17.8		B	CSO	60	4	3	3
8086		TACH	09	21	0506	N28	W40	09	18.1			CSO	85	5	9	3
8086		SVTO	09	21	0600	N26	W45	09	17.7		B	CSO	40	7	5	3
8086		KAND	09	21	0830	N26	W47	09	17.7			HA		5	4	2
8086		RAMY	09	21	1153	N24	W49	09	17.7		A	HA	50	6	4	2
8086	28492	MWIL	09	21	1430	N27	W47	09	17.9	5	(BG)					
8086		VORO	09	21	2140	N27	W54	09	17.7			HAX	77	4		2
8086		LEAR	09	22	0040	N25	W55	09	17.8		B	CSO	30	4	3	3
8086		KAND	09	22	0655	N26	W59	09	17.7			HA		2	3	2
8086		TACH	09	22	0822	N26	W61	09	17.6			AR	30	4	1	3
8086		SVTO	09	22	0830	N25	W61	09	17.6		B	CRO	40	3	3	3
8086		RAMY	09	22	1226	N24	W62	09	17.7		A	HA	40	2	3	3
8086	28492	MWIL	09	22	1430	N26	W63	09	17.7	0	BF2+					
8086		HOLL	09	22	1625	N27	W63	09	17.8		A	AX	40	2	2	2
8086		RAMY	09	23	1227	N25	W76	09	17.6		A	AX	10	1		3
8088		RAMY	09	21	1153	S28	E59	09	26.1		B	BXO	10	2	2	2
8088		VORO	09	21	2140	S29	E53	09	26.0			CAI	107	3	3	2
8088		LEAR	09	22	0040	S29	E50	09	25.9		B	CSO	20	5	4	3
8088		KAND	09	22	0655	S28	E48	09	26.0			CSO		9	8	2
8088		TACH	09	22	0822	S28	E45	09	25.9			BRI	47	12	7	3
8088		SVTO	09	22	0830	S27	E47	09	26.0		B	DAO	100	13	7	3
8088		RAMY	09	22	1226	S28	E45	09	26.0		B	CSI	70	13	9	3
8088	28496	MWIL	09	22	1430	S29	E42	09	25.9	5	(B)					
8088		HOLL	09	22	1625	S29	E41	09	25.9		B	CAO	360	9	8	2
8088		VORO	09	22	2152	S29	E38	09	25.9			CAI	213	8	8	2
8088		LEAR	09	23	0101	S28	E37	09	25.9		B	CSO	170	14	9	3
8088		TACH	09	23	0447	S29	E32	09	25.7			DSI	245	21	9	3
8088		KAND	09	23	0945	S29	E31	09	25.8			EAO		25	11	2
8088		RAMY	09	23	1227	S28	E30	09	25.9		B	DAI	200	20	10	3
8088		HOLL	09	23	1419	S28	E28	09	25.8		B	DKO	320	12	9	3
8088	28496	MWIL	09	23	1430	S29	E27	09	25.7	5	(BG)					
8088		VORO	09	23	2145	S29	E24	09	25.8			DAI	369	14	8	2
8088		LEAR	09	24	0018	S28	E23	09	25.8		B	ESO	240	29	11	3
8088		TACH	09	24	0402	S28	E18	09	25.6			DSI	385	15	6	3
8088		KAND	09	24	0700	S29	E19	09	25.8			DAO		12	10	2
8088		RAMY	09	24	1151	S28	E17	09	25.8		BG	DAI	240	23	10	3
8088	28496	MWIL	09	24	1430	S29	E13	09	25.6	5	(BG)					
8088		HOLL	09	24	1558	S29	E14	09	25.8		BG	EAC	310	24	11	3
8088		LEAR	09	25	0006	S28	E09	09	25.7		BG	EHC	300	23	12	3
8088		TACH	09	25	0448	S28	E08	09	25.8			DAI	564	27	10	3
8088		KAND	09	25	0605	S28	E05	09	25.6			EAO		16	12	3
8088		SVTO	09	25	0858	S29	E04	09	25.7		B	CSI	290	34	13	3
8088		RAMY	09	25	1257	S28	E03	09	25.8		BG	ESI	210	20	12	4
8088		HOLL	09	25	1510	S28	E01	09	25.7		BG	EAI	310	26	12	3
8088		VORO	09	26	0054	S29	W03	09	25.8			DAI	390	9	9	3
8088		LEAR	09	26	0115	S28	W05	09	25.7		B	ESO	230	18	11	3
8088		TACH	09	26	0436	S28	W07	09	25.6			DHI	435	8	7	3
8088		SVTO	09	26	0600	S29	W07	09	25.7		B	EAO	230	22	12	4
8088		KAND	09	26	0610	S27	W06	09	25.8			ESO		15	13	4
8088		RAMY	09	26	1157	S29	W09	09	25.8		B	ESO	250	14	11	3
8088	28496	MWIL	09	26	1445	S30	W12	09	25.7	5	(B)					
8088		HOLL	09	26	1500	S28	W13	09	25.6		BG	ESC	290	14	12	2
8088		TACH	09	27	0400	S29	W18	09	25.7			DHI	495	11	8	4
8088		KAND	09	27	0600	S29	W20	09	25.7			DAO		12	10	3
8088		SVTO	09	27	0820	S29	W22	09	25.6		B	DAO	310	9	10	3
8088		RAMY	09	27	1231	S29	W23	09	25.7		B	DSO	210	16	10	4
8088	28496	MWIL	09	27	1445	S30	W25	09	25.6	5	(B)					
8088		HOLL	09	27	1500	S29	W26	09	25.6		B	DAO	210	11	10	3
8088		VORO	09	27	2228	S30	W28	09	25.7			DAO	220	2	7	3
8088		LEAR	09	28	0017	S29	W29	09	25.7		BG	DKO	290	8	10	4
8088		TACH	09	28	0440	S29	W32	09	25.7			DAO	430	3	7	4
8088		SVTO	09	28	0558	S28	W30	09	25.9		B	EKI	240	25	11	4
8088		KAND	09	28	0700	S29	W34	09	25.6			DAO		5	9	2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

SEPTEMBER 1997

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo Day	Time (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8088		RAMY	09 28	1207	S29 W36	09 25.7		B	DAO	210	9	8	4
8088	28496	MWIL	09 28	1430	S30 W37	09 25.7	5	(BP)					
8088		HOLL	09 28	1630	S29 W37	09 25.8		B	DAO	300	7	8	3
8088		VORO	09 28	2207	S30 W41	09 25.7			DAI	290	5	7	3
8088		LEAR	09 29	0006	S29 W42	09 25.7		BG	DSO	180	7	10	3
8088		SVTO	09 29	0605	S28 W44	09 25.8		BG	DAO	200	4	8	3
8088		TACH	09 29	0730	S29 W46	09 25.7			DAX	295	3	6	3
8088		KAND	09 29	0845	S29 W47	09 25.7			DAO		4	9	4
8088		RAMY	09 29	1147	S29 W49	09 25.6		B	CAO	230	3	9	3
8088	28496	MWIL	09 29	1430	S29 W50	09 25.7	5	(BP)					
8088		HOLL	09 29	1438	S30 W51	09 25.6		B	DAO	220	5	9	3
8088		VORO	09 29	2211	S31 W56	09 25.5			DKI	243	4	9	3
8088		LEAR	09 30	0018	S29 W56	09 25.6		BG	CHO	260	3	11	3
8088		TACH	09 30	0410	S29 W57	09 25.7			CAO	220	3	3	3
8088		KAND	09 30	0600	S28 W58	09 25.7			CAO		3	8	3
8088		SVTO	09 30	0715	S29 W55	09 26.0		B	CAO	150	5	10	3
8088		RAMY	09 30	1229	S29 W61	09 25.7		B	CSO	200	3	10	3
8088	28496	MWIL	09 30	1430	S29 W64	09 25.6	5	(BP)					
8088		HOLL	09 30	1813	S30 W67	09 25.5		B	CAO	180	3	8	3
8088		VORO	09 30	2224	S32 W72	09 25.2			HAX	318	2		3
8088		LEAR	10 01	0000	S30 W70	09 25.6		A	HS	90	1	3	3
8088		TACH	10 01	0444	S29 W74	09 25.5			HAX	100	2	1	3
8088		SVTO	10 01	0615	S28 W78	09 25.3		A	HA	120	1	7	3
8088		RAMY	10 01	1152	S29 W77	09 25.5		A	HS	60	1	2	3
8088	28496	MWIL	10 01	1445	S28 W79	09 25.5	5	(AP)					
8088		HOLL	10 01	1509	S30 W80	09 25.4		A	HA	60	1	3	3
8088A	28497	MWIL	09 23	1430	N21 E43	09 26.9	4	(AF)					
8088A	28497	MWIL	09 26	1445	N21 E01	09 26.7	3	(B)					
8088A		TACH	09 27	0400	N24 W06	09 26.7			AX	5	1	1	4
8088A		RAMY	09 27	1231	N21 W10	09 26.7		A	AX	10	3	3	4
8088A	28497	MWIL	09 27	1445	N21 W12	09 26.7	3	(AF)					
8088A		RAMY	09 28	1207	N21 W24	09 26.7		A	AX		2	1	4
8088A		RAMY	09 29	1147	N20 W38	09 26.6		A	AX	10	2	1	3
8088B	28498	MWIL	09 23	1430	N28 E44	09 27.0	3	X					
8088C	28499	MWIL	09 24	1430	N30 E38	09 27.6	3	(AP)					
8087		SVTO	09 21	0600	S22 E80	09 27.4		A	HS	30	1	3	3
8087		RAMY	09 21	1153	S21 E79	09 27.5		A	HS	40	1	1	2
8087	28495	MWIL	09 21	1430	S22 E75	09 27.4	4	(AP)					
8087		VORO	09 21	2140	S22 E71	09 27.3			HAX	111	1		2
8087		LEAR	09 22	0040	S22 E69	09 27.3		A	HS	60	1	2	3
8087		KAND	09 22	0655	S22 E66	09 27.4			HS		1	1	2
8087		TACH	09 22	0822	S22 E64	09 27.3			AX	30	2	2	3
8087		SVTO	09 22	0830	S21 E66	09 27.4		A	HR	50	2	2	3
8087		RAMY	09 22	1226	S19 E65	09 27.5		B	CAO	70	2	3	3
8087	28495	MWIL	09 22	1430	S22 E62	09 27.4	5	(BP)					
8087		HOLL	09 22	1625	S22 E61	09 27.4		A	AX	20	1	1	2
8087		VORO	09 22	2152	S22 E57	09 27.3			HAX	93	1		2
8087		LEAR	09 23	0101	S22 E55	09 27.3		A	HS	80	1	2	3
8087		TACH	09 23	0447	S22 E53	09 27.3			HS	60	1	1	3
8087		KAND	09 23	0945	S22 E51	09 27.3			HA		1	2	2
8087		RAMY	09 23	1227	S20 E50	09 27.3		A	HA	40	3	1	3
8087		HOLL	09 23	1419	S22 E48	09 27.3		A	HA	130	2	2	3
8087	28495	MWIL	09 23	1430	S22 E48	09 27.3	4	(AP)					
8087		VORO	09 23	2145	S22 E44	09 27.3			HAX	40	1		2
8087		LEAR	09 24	0018	S22 E42	09 27.2		A	HS	30	1	1	3
8087		TACH	09 24	0402	S21 E39	09 27.1			HS	70	1	1	3
8087		KAND	09 24	0700	S21 E39	09 27.3			HA		1	2	2
8087		RAMY	09 24	1151	S20 E38	09 27.4		A	HR	20	3	2	3
8087	28495	MWIL	09 24	1430	S22 E35	09 27.3	4	(AP)					
8087		HOLL	09 24	1558	S25 E40	09 27.8		B	CSO	80	4	11	3
8087		LEAR	09 25	0006	S23 E30	09 27.3		B	CSO	70	6	14	3
8087		TACH	09 25	0448	S21 E27	09 27.3			AR	36	3	1	3
8087		KAND	09 25	0605	S22 E31	09 27.6			BXO		4	14	3
8087		SVTO	09 25	0858	S24 E31	09 27.8		B	BXO	10	4	14	3
8087		RAMY	09 25	1257	S23 E30	09 27.8		B	BXO	20	5	14	4

S U N S P O T G R O U P S
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SEPTEMBER 1997

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8087		HOLL	09	25	1510	S24	E27	09	27.7		B	BXO	40	5	15	3
8087		LEAR	09	26	0115	S25	E17	09	27.4		B	BXO	80	5	14	3
8087		TACH	09	26	0436	S22	E14	09	27.3			AX	12	2	1	3
8087		SVTO	09	26	0600	S24	E18	09	27.6		B	BXO	10	4	10	4
8087		KAND	09	26	0610	S23	E19	09	27.7			BXO		6	12	4
8087		RAMY	09	26	1157	S26	E19	09	28.0		A	AX	10	2	2	3
8087	28500	MWIL	09	26	1445	S26	E20	09	28.2	4	(A)					
8087		HOLL	09	26	1500	S26	E20	09	28.2		A	AX	10	2	2	2
8087		RAMY	09	27	1231	S25	E12	09	28.4		A	AX		1		4
8087	28500	MWIL	09	27	1445	S26	E07	09	28.1	3	(AF)					
8098B	28503	MWIL	10	03	1430	N45	W65	09	28.3	4	(AP)					
8098B	28503	MWIL	10	04	1430	N44	W75	09	28.5	2	B)					
8087A		TACH	09	27	0400	N21	E16	09	28.4			AX	6	2	1	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

SEPTEMBER 1997

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
01	0155	0213	0320	1-	1			1			0152	C2.2	
01	1638	1654	1726	1	1		1				No flare		
02	0816	0837	0934	3	1		1				No flare		
02	1231	1245	1331	1+	5		1	2		2	1225	M1.0	
02	1638	1648	1720	1-	3			1		1	1635	C1.2	8076
02	2111	2119	2148	1-	5			1		2	2106	C4.1	8076
02	2359	2407	2448	1-	1			1			2354	C2.8	8076
03	0210	0218	0254	1-	1			1			0205	C2.7	8076
03	0538	0545	0615	1-	1			1			0531	C1.7	
03	1458	1512	1544	1	5		1			2	1509	C1.1	8076
03	1938	1941	1947	1-	3					2	1942	B3.7	
05	1203	1228	1430	2	1		1				1214	B7.3	
05	1320	1330	1345	1	1					1	1320	C1.7	8076
07	0305	0319	0435	1-	1			1			0300	C1.6	
07	0615	0627	0735	1-	1			1			0606	C3.1	8085
08	0950	1000	1015	1	1					1	0952	C1.0	
08	1020	1030	1045	1	1					1	1024	C2.3	8085
08	1400	1405	1435	1-	1			1			1342	C1.8	8085
08	1740	1750	1820	1-	5			2		3	1735	C3.5	8085
08	2000	2012	2110	1-	5			3		2	2000	C5.4	
09	0948	1005	1050	3-	5		1	1		1	0945	C9.7	8085
09	1623	1634	1700	1	1		1				No flare		
09	1840	1847	1923	1-	5			2		3	1835	C2.5	8085
10	0949	0954	1053	2+	1					1	No flare		
11	1256	1310	1327	1	1		1				No flare		
11	1343	1410	1456	1	1		1				1333	B3.7	
12	0211	0215	0300	1-	1			1			0207	C1.1	8084
12	1322	1336	1421	2	1		1				No flare		
13	1950	1956	2011	1-	3					3	1945	C2.4	
14	0254	0258	0342	1-	1			1			0250	C2.8	8083
14	1040	1115	1130	2+	1					1	1043	C2.7	8085
14	1200	1210	1220	1	1					1	1202	C1.9	
14	1700	1705	1715	1-	5			1		3	1658	C1.5	8086
15	0205	0222	0330	1+	1			1			0202	C4.4	8084
15	0643	0656	0740	1-	5		1	1		1	0638	C3.1	8084
15	1345	1400	1415	1+	1						1349	C1.5	8086
15	1602	1615	1657	1	1		1				1623	B9.5	
16	2212	2225	2326	1-	1			1			2206	C3.4	8084
17	0135	0140	0233	1-	1			1			0117	C5.6	
17	0349	0404	0443	1-	1			1			0342	C1.7	
17	1002	1011	1025	1	1		1				No flare		
17	1139	1156	1258	2+	5		1	3		2	1135	M1.7	8084
17	1350	1408	1418	1-	5		1	1		1	1345	C1.2	
17	1729	1736	1749	1	3					2	1725	C1.2	8085
17	1750	1813	1910	2	5			2		2	1745	M1.0	8084
17	2242	2258	2500	2-	5			1		1	2239	C7.1	
18	0800	0820	0825	1	1					1	0803	C1.4	
18	1203	1214	1220	1-	5		1			1	1208	C2.9	
18	1218	1223	1252	1-	5		1	2			1208	C2.9	
18	1708	1712	1723	1-	3					6	1705	C1.5	
18	1935	1937	1948	1-	3					3	1933	C1.5	
18	1950	1954	2003	1-	3					3	1947	C1.6	

* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

SEPTEMBER 1997

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
19	0006	0018	0110	1-	1			1			0001	C1.8	
19	0144	0153	0316	2	1			1			0139	C8.6	8085
19	0542	0550	0640	1-	1			1			0535	C1.5	
19	0916	0922	0942	1+	1			1		1	0911	C2.6	
20	0030	0038	0200	1-	1			1			0027	B8.0	
20	0744	0755	0850	1	1		1				No flare		
20	0950	1045	1220	3+	1					1	0949	C2.3	
20	1208	1244	1314	1	1		1				No flare		
21	0416	0422	0530	1-	1			1			0411	C2.6	
22	0050	0052	0135	1-	1			1			0046	C1.7	8087
22	0530	0548	0626	1	1		1				0538	B5.2	8088
22	0612	0617	0640	1-	1			1			0604	C1.4	
22	0813	0813	0820	1-	1					1	No flare		
22	0900	0920	0925	1	1					1	0905	C2.2	8088
22	1259	1318	1341	1-	5			2		3	1306	C2.6	
22	1415	1420	1510	1-	5		1	3		3	1410	C4.7	8088
22	1814	1822	1908	1-	3			2			1806	C5.1	8088
23	1550	1558	1625	1-	3			2			1544	B9.5	8088
23	2110	2120	2200	1-	5			2			2105	C1.9	
24	0246	0250	0500	3	1			1			0243	M5.9	8088
24	0534	0542	0620	1-	5		1	1		1	0523	C4.5	8088
24	0700	0707	0800	1-	5		1	1			0654	C2.5	8088
24	0905	0910	0915	1-	1					1	0906	C2.2	8088
24	1025	1100	1205	1+	5		1	3		2	1057	M3.0	8088
24	1830	1842	1935	1-	3			2		1	1824	C8.3	8088
24	2316	2330	2410	1-	1			1			2312	B8.3	8088
25	0322	0334	0440	1-	1			1			0317	C2.7	8088
25	0900	0915	0920	1	1					1	No flare		
25	1149	1200	1248	1+	5		2	3		2	1140	C7.2	8088
26	0317	0330	0430	1-	1			1			0312	C4.4	8088
28	1405	1445	1535	3	1					1	1411	C1.0	

* = no flare patrol.

OBSERVATORIES REPORTING FOR SEPTEMBER 1997

Brazilian Antarctic Station	SPA	New Milford, New York, USA	SES
Cambridge, England, UK	SES	Panska Ves, Czech Republic	SES, SEA, SWF
Edenvale, Rep of S. Africa	SES	Parma, OH, USA	SES
Fort Wayne, Indiana, USA	SES	Rimavska Sobota, Slovakia	SEA
Houston, Texas, USA	SES	Rochester, New Hampshire, USA	SES
Hudson, Ohio, USA	SES	Tucson, Arizona, USA	SES
Inubo, Japan	SPA	Upice, Czech Republic	SEA
Itapetinga, Brazil	SPA	Windsor Locks, Connecticut, USA	SES
Koniz, Switzerland	SES	Ziar nad Hronom, Slovakia	SEA
LaCrescenta, California, USA	SES	Zilina, Slovakia	SEA
Nerja, Spain	SES		

Observations are not necessarily continuous.

SOLAR RADIO EMISSION
Spectral Observations

SEPTEMBER 1997

OBSERVATION Start Day (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
01 0000	0912	HIRA								
		LEAR	0240.0	0251.0	III		1	30	50	
		PALE	0240.0	0240.0	III		1	39	52	
		LEAR	0256.0	0300.0	III		1	30	50	
		POTS	0507 E	1639 U	III	N	1	40X	90U	
		POTS	0507 E	1639 U	III	N	2	40X	90U	
0507	1639	POTS	0507 E	1639 U	I	S,C	2	110U	350	
0524	1635	ONDR								
		LEAR	0528.0	0533.0	III		2	30	77	
		POTS	0528.3	0533.1	III	G	3	40X	170U	
		SVTO	0529.0	0533.0	III		2	36	76	
		LEAR	0640.0	0646.0	III		2	30	80	
		POTS	0640.0	0645.6	III	GG	3	40X	170U	
		SVTO	0640.0	0646.0	III		3	35	85	
		POTS	0646.1	0646.5	III	G	3	40X	90U	
		POTS	0719.9	0720.1	III	B	2	40X	170U	
		LEAR	0733.0	0733.0	III		1	30	58	
		SVTO	0733.0	0734.0	III		2	35	61	
		POTS	0733.6	0733.8	III	G	3	40X	130	
0800	1200	IZMI	0733.6	0733.8	III	G	2	45X	65	
		SVTO	0743.0	0746.0	III		1	35	44	
		POTS	0744.8	0745.0	III	B	3	40X	170U	
		POTS	0751.9	0752.0	III	B	2	110U	170U	
		IZMI	0800.0U	1200.0D	I	N	1	80	160	
		IZMI	0805.1	0805.2	III	B	2	45X	75	
		SVTO	0812.0	0820.0	III		2	35	57	
		IZMI	0812.7	0812.8	III	B	1	45X	90	
		POTS	0812.7	0820.5	III	G	3	40X	90u	
		IZMI	0816.6	0817.1	III	G	1	45X	90	
		LEAR	0819.0	0820.0	III		1	30	52	
		IZMI	0819.9	0820.5	III	G	2	45X	85	
		IZMI	0836.0	0836.1	III	B	1	45X	90	
		SVTO	0836.0	0836.0	III		2	36	49	
		IZMI	0900.5	0900.7	III	B	1	45X	95	
		POTS	0900.6	0900.8	III	B	2	40X	170U	
		LEAR	0923.0	0923.0	III		1	30	63	
		SVTO	0923.0	0925.0	III		2	35	62	
		IZMI	0923.3	0925.1	III	G	3	45X	95	
		POTS	0923.3	0928.0	III	G	3	40X	170U	
		IZMI	0951.0	0951.1	III	B	1	55	135	
		IZMI	0953.7	0954.4	III	G	1	55	120	
		IZMI	1129.4	1129.5	III	B	1	45	95	
		POTS	1129.4	1129.7	III	G	2	40X	170U	
		SGMR	1238.0	1241.0	III		1	35	57	
		SGMR	1238.0	1257.0	III	N	1	35	57	
		POTS	1250.2	1256.8	III	G	3	40X	170U	
		SVTO	1254.0	1256.0	III		2	36	55	
		SGMR	1323.0	1332.0	III		1	30	80	
		SGMR	1323.0	1341.0	III	N	1	30	80	
		POTS	1323.4	1341.1	III	GG	3	40X	170U	
		SVTO	1330.0	1335.0	III		2	35	76	
		SVTO	1340.0	1341.0	III		2	36	50	
		SGMR	1445.0	1502.0	III	N	2	30	70	
		POTS	1457.1	1502.7	III	G,C	3	40X	90U	
		SVTO	1500.0	1503.0	V		3	36	80	
		SGMR	1551.0	1553.0	V		2	30	58	
		SVTO	1551.0	1553.0	III		3	36	83	
		POTS	1551.6	1553.9	III	G	3	40X	350	
		POTS	1634	1635.2	UNCLF		2	120	400	
		SGMR	1636.0	1641.0	V		3	30	80	
		POTS	1636.1	1638.9	III	G	3	40X	400	
		PALE	1637.0	1638.0	III		2	27	55	
		SVTO	1637.0	1639.0	III		3	35	85	
		PALE	1730.0	1731.0	III		1	25	52	
		SGMR	1730.0	1731.0	V		1	30	63	
		PALE	1747.0	1749.0	III		1	27	55	
		SGMR	1747.0	1817.0	III	N	2	30	80	
		PALE	1807.0	1817.0	III		2	27	55	
		SGMR	1932.0	1947.0	III	N	2	30	80	

SOLAR RADIO EMISSION
Spectral Observations

SEPTEMBER 1997

OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
01		PALE	1933.0	1938.0	III		2	27	53	
		PALE	1942.0	1946.0	III		2	25	66	
		PALE	2038.0	2045.0	III		3	25	68	
		SGMR	2038.0	2045.0	V		2	30	80	
	2008	HIRA	2038.5	2041.5	III	G	2	25X	50X	
	2400	PALE	2145.0	2152.0	III		2	25	55	
		SGMR	2146.0	2151.0	V		1	30	68	
		HIRA	2146.2	2146.4	III	B	1	25X	50X	
		HIRA	2151.6	2151.8	III	B	1	25X	50X	
		PALE	2212.0	2218.0	III		3	25	75	
		SGMR	2212.0	2214.0	III		2	30	80	
		HIRA	2212.3	2214.6	III	G	3	25X	50X	
		LEAR	2357.0	2357.0	III		1	30	65	
		LEAR	2359.0	0005.0	III		2	30	73	
02	0000	HIRA	0001.3	0001.6	III	B	1	25X	50X	
	0911	LEAR	0024.0	0025.0	III		1	30	70	
		PALE	0024.0	0025.0	III		1	27	60	
		HIRA	0024.6	0024.7	III	B	1	25X	50X	
		LEAR	0111.0	0111.0	III		1	30	38	
		LEAR	0149.0	0159.0	III		2	30	78	
		PALE	0150.0	0152.0	III		2	27	75	
		HIRA	0151.3	0151.5	III	B	1	25X	50X	
		LEAR	0223.0	0223.0	III		1	32	40	
		LEAR	0337.0	0345.0	III		1	30	58	
		LEAR	0350.0	0350.0	III		1	30	37	
		POTS	0507 E	1639 U	III	N	1	40X	90U	
		POTS	0507 E	1639 U	III	N	2	40X	90U	
	0507	POTS	0507 E	1639 U	I	S	2	110U	300	
	1639	LEAR	0508.0	0508.0	III		1	32	37	
		LEAR	0534.0	0536.0	III		1	30	45	
		LEAR	0538.0	0538.0	III		1	32	43	
	0605	IZMI	0611.0	0611.4	III	G	1	50	95	
	1200	IZMI	0621.0	0621.2	III	B	1	55	90	
		IZMI	0622.9	0641.1	III	GG	2	45	120U	
		LEAR	0626.0	0626.0	III		1	30	42	
		IZMI	0644.0	0937.5	III	N	1	45	165	
		LEAR	0644.0	0644.0	III		1	37	47	
		SVTO	0644.0	0645.0	III		1	39U	46U	
		IZMI	0644.6	0644.8	III	G	2	45X	165	
		POTS	0644.7	0644.9	III	B	3	40X	170U	
		IZMI	0656.9	0657.0	III	B	2	45X	120	
		POTS	0657.4	0657.9	DCIM		3	450	550	
		IZMI	0834.7	0923.0	I	N	1	120	165	
		IZMI	0937.3	0937.5	III	B	2	45	90	
		IZMI	1000.2	1000.3	III	B	1	48	90	
		IZMI	1039.6	1039.7	III	B	1	55	66	
		POTS	1056.8	1059.7	III	G	2	40X	170U	
		IZMI	1058.2	1100.5	III	G	1	45	150	
		IZMI	1137.2	1158.8	I	S	1	135	175	
		POTS	1142.5	1143.6	DCIM		2	450	800X	
		POTS	1208.7	1209.1	III	G	3	40X	150	
		POTS	1227.6	1232.6	DCIM		3	200U	750	
		ONDR	1228.0	1229.5	DCIM	G	1	1000X	1990X	
	0526	ONDR	1228.1	1229.5	DCIM	G	1	2215X	4345X	
	1633	POTS	1247.8	1252.8	III	G	3	40X	170U	
		SGMR	1250.0	1252.0	III		1	30	52	
		SVTO	1251.0	1253.0	III		2	36	54	
		SGMR	1324.0	1325.0	V		1	30	56	
		SVTO	1324.0	1325.0	III		2	35	47	
		POTS	1341.8	1342.7	III	G	2	40X	170U	
		POTS	1356.1	1356.3	III	G	2	40X	170U	
		POTS	1417.1	1421.1	III	G,C	2	40X	150	
		POTS	1450.7	1450.8	DCIM		2	350	600	
		POTS	1549.4	1551.5	DCIM		1	325	400	
		SGMR	1616.0	1616.0	III		1	30	43	
		POTS	1631.3	1638.4	DCIM		2	200U	550	
		SGMR	1638.0	1646.0	III		1	30	42	
		PALE	2357.0	0006.0	III		2	27	60	

SOLAR RADIO EMISSION
Spectral Observations

SEPTEMBER 1997

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
02	2009	2400	HIRA	2357.5	2358.0	III	B	1	420	830	
03	0000	0909	HIRA								
			POTS	0507 E	1639 U	I	S	1	110U	300	
	0507	1639	POTS	0507 E	1639 U	III	N	1	40X	90U	
	0527	1630	ONDR								
	0810	1200	IZMI								
			POTS	1309.0	1309.3	III	B	3	40X	150	
			SGMR	1309.0	1309.0	V		1	31	57	
			SVTO	1309.0	1309.0	III		2	35	56	
	2010	2400	HIRA								
04	0000	0908	HIRA								
	0507	1639	POTS	0507 E	1639 U	I	S,C	2	110U	350	
	0529	1525	ONDR								
	0745	1200	IZMI	0745.0E	1200.0D	I	S	1	190U	270	
			POTS	0805.0	0805.1	III	B	1	110U	170U	
			POTS	0823.6	0823.7	III	B	2	110U	170U	
			POTS	0906.7	0907.0	III	G	2	110U	170U	
			POTS	0933.4	0934.7	III	G	1	110U	170U	
			POTS	1119.1	1123.1	III	G,RS	3	40X	250	
			IZMI	1119.3	1119.4	III	G	1	45	190	
			IZMI	1122.1	1123.0	III	GG	2	45X	190	
			SGMR	1853.0	1855.0	III		1	30	50	
			SGMR	1953.0	1955.0	III		1	30	50	
	2011	2400	HIRA								
05	0000	0906	HIRA								
	0507	1639	POTS	0507 E	1639 U	I	S,C	2	110U	350	
	0645	1200	IZMI	0553.0E	1200.0D	I	S	2	80	270X	
	0616	1627	ONDR								
			POTS	0703.0	0703.1	DCIM		2	300	450	
			POTS	1020.0	1020.1	DCIM		2	350	500	
			POTS	1354.4	1354.6	III	G	2	40X	70	
			POTS	1448.6	1448.7	III	B	2	40X	70	
	2011	2400	HIRA								
06	0000	0905	HIRA								
			POTS	0507 E	1639 U	III	N	1	40X	90U	
	0507	1639	POTS	0507 E	1639 U	I	S,C	2	110U	400	
	0531	1625	ONDR								
	0608	1155	IZMI	0608.0E	1155.0D	I	S	2	85	270X	
			POTS	0624.5	0624.6	III	B	2	40X	70	
			IZMI	0641.8	0642.0	III	G	1	45	85	
			POTS	0641.8	0642.1	III	G	2	40X	170U	
			LEAR	0652.0	0653.0	III		1	30	51	
			SVTO	0652.0	0652.0	III		2	35U	61U	
			IZMI	0652.5	0652.6	V		2	45	65	
			IZMI	0652.5	0652.7	III	G	2	45X	90	
			POTS	0652.5	0652.8	III	B	2	40X	70	
			POTS	0657.3	0657.4	III	G	2	120	170U	
			POTS	0811.6	0812.4	III	G	2	40X	70	
			POTS	0818.1	0818.2	III	B	2	40X	70	
			SVTO	0831.0	0835.0	III		2	35U	54U	
			IZMI	0832.9	0833.1	III	G	2	45X	85	
			IZMI	0833.0	0833.1	V		2	45	60	
			POTS	0833.0	0835.6	III	G	3	40X	140	
			IZMI	0835.2	0835.4	III	G	2	45X	90	
			IZMI	0835.3	0835.5	V		2	45X	60	
			LEAR	0852.0	0855.0	III		1	32	67	
			IZMI	0900.7	0900.8	III	B	2	55	65	
			IZMI	0902.1	0902.3	III	B	1	45	90	
			POTS	0902.2	0902.3	III	B	2	40X	130	
			IZMI	0903.6	0903.7	III	G	1	45X	120	
			IZMI	1032.2	1032.5	III	G	1	45	90	
			POTS	1032.3	1032.6	III	B	2	40X	90U	
			POTS	1110.2	1110.3	III	B	2	40X	70	
			POTS	1134.6	1135.0	III	G	2	40X	70	
			POTS	1331.0	1332.8	III	G	2	110U	170U	

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

SEPTEMBER 1997

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
06			POTS	1335.0	1335.1	III	B	2	110U	170U	
			POTS	1440.8	1441.0	III	B	2	40X	150	
			SGMR	1512.0	1512.0	III		1	30	65	
			POTS	1512.2	1512.4	III	B	3	40X	90U	
	2012	2400	HIRA								
07	0000	0903	HIRA								
			POTS	0509 E	1639 U	III	N	1	40X	90U	
	0507	1639	POTS	0509 E	1639 U	I	S,C	2	110U	450	
	0533	1623	ONDR								
	0605	1159	IZMI	0604. E	1159.0D	I	S	2	105	270	
			POTS	1147.8	1147.9	III	B	2	50	70	
			POTS	1153.4	1153.6	III	G	2	110U	300	
			POTS	1538.7	1538.9	III	B	2	40X	60	
	2013	2400	HIRA								
08	0000	0902	HIRA								
			LEAR	0231.0	0231.0	III		1	30	45	
			LEAR	0241.0	0242.0	III		1	30	75	
			PALE	0241.0	0242.0	III		1	35	70	
			LEAR	0248.0	0249.0	III		1	30	75	
			PALE	0248.0	0249.0	III		1	40	75	
			POTS	0507 E	1639 U	III	N	1	40X	90U	
	0507	1639	POTS	0507 E	1639 U	I	S,C	2	110U	400	
	0555	1200	IZMI	0555.0E	1200.0D	I	S	2	90	270	
	0756	1621	ONDR								
			POTS	1014.6	1015.5	III	G	2	40X	80	
			POTS	1145.0	1145.2	III	B	2	40X	70	
			POTS	1357.5	1357.6	III	G	2	200U	400	
			POTS	1417.3	1417.4	III	B	2	275	450	
			SGMR	1426.0	1426.0	III		1	30	43	
			POTS	1426.6	1426.8	III	G	2	40X	90U	
			POTS	1526.5	1526.7	III	B	2	40X	90U	
			POTS	1548.8	1549.1	III	B	2	40X	70	
	2014	2400	HIRA								
			LEAR	2340.0	2340.0	III		1	30	48	
			PALE	2340.0	2340.0	III		1	27	53	
09	0000	0900	HIRA								
			LEAR	0452.0	0452.0	III		1	30	69	
			POTS	0507 E	1639 U	III	N	1	40X	90U	
			POTS	0507 E	1639 U	III	N	2	40X	90U	
	0507	1639	POTS	0507 E	1639 U	I	S,C	2	40X	400	
	0555	1200	IZMI	0555.0E	1200.0D	I	S	2	90U	270U	
			POTS	0741.9	0742.1	III	B	2	200U	350	
			SVTO	0742.0	0742.0	III		2	35U	45U	
			POTS	0749.5	0749.6	III	B	2	325	600	
			POTS	0825.0	0825.1	DCIM		2	400	500	
	0653	1617	ONDR	0949.2	0950.5	III	B	2	2000X	4305X	
			ONDR	0949.3	0949.5	DCIM	G	1	815	950	
			ONDR	0949.3	0950.4	III	B	1	1000X	1990X	
			SGMR	1609.0	2050.0	CONT		2	30	80	
			POTS	1610.7	1610.9	III	B	2	65	120	
			POTS	1633.8	1634.0	III	G	3	40X	90U	
			PALE	1906.0	1906.0	III		1	30	52	
			PALE	1921.0	1922.0	III		1	27	53	
			PALE	1945.0	2016.0	III	N	1	27	52	
	2015	2400	HIRA								
			PALE	2017.0	0130.0	CONT		1	27	50	
			LEAR	2324.0	0718.0	CONT		1	30	50	
10	0000	0858	HIRA								
			LEAR	0205.0	0206.0	III		1	30	42	
			POTS	0507 E	1639 U	III	N	1	40X	90U	
			POTS	0507 E	1639 U	III	N	2	40X	90U	
	0507	1639	POTS	0507 E	1639 U	I	S,C	2	40X	350	
	0600	1200	IZMI	0600.0E	1200.0D	I	S	1	90U	270U	
			IZMI	0611.2	0611.3	III	B	1	55	85	
	0653	1616	ONDR								

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OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
10			IZMI	0735.7	0735.8	III	B	2	45	85	
			IZMI	1150.4	1150.5	III	B	1	50	70	
			SGMR	1201.0	1201.0	III		1	38	55	
			SVTO	1201.0	1201.0	III		2	35U	48U	
			POTS	1201.1	1201.5	III	U	3	40X	60	
			SGMR	1236.0	1239.0	III		1	30	52	
			POTS	1239.0	1239.2	III	B	3	40X	90U	
			SVTO	1239.0	1239.0	III		2	35U	48U	
			SVTO	1256.0	1256.0	III		2	35U	46U	
			POTS	1256.2	1256.3	III	B	3	40X	60	
			POTS	1606.3	1609.3	III	G	3	40X	160	
			SGMR	1609.0	1609.0	III		1	37	57	
			SVTO	1609.0	1609.0	III		2	35U	57U	
			SGMR	1629.0	1918.0	CONT		1	30	80	
			PALE	1927.0	1927.0	III		1	40	61	
			PALE	2014.0	2015.0	III		1	40	53	
			SGMR	2014.0	2015.0	III		1	30	70	
	2016	2400	HIRA								
			PALE	2037.0	2037.0	III		1	28	55	
			SGMR	2037.0	2037.0	III		1	30	55	
			PALE	2212.0	2213.0	III		2	28	53	
			PALE	2229.0	2234.0	III		1	28	53	
11	0000	0857	HIRA								
			LEAR	0058.0	0058.0	III		1	30	40	
			LEAR	0129.0	0129.0	III		1	30	50	
			PALE	0129.0	0129.0	III		1	28	53	
			LEAR	0144.0	0144.0	III		1	30	40	
			LEAR	0145.0	0727.0	CONT		1	30	50	
			POTS	0523 E	1616 U	III	N	1	40X	90U	
			POTS	0523 E	1616 U	III	N	2	40X	90U	
	0523	1616	POTS	0523 E	1616 U	I	S,C	3	50	400	
	0539	1614	ONDR								
	0605	1200	IZMI	0605.0E	1200.0D	I	S	2	55	270U	
			POTS	0617.1	0617.2	III	B,RS	2	300	550	
			SVTO	0638.0	0640.0	II		2	66	76	ESS 0800
			LEAR	0645.0	0653.0	III		1	65	80	
			SVTO	0645.0	0653.0	III		2	66	83	
			IZMI	0710.6	0710.7	III	B	1	45	90	
			IZMI	0711.7	0711.8	III	B	1	45	60	
			IZMI	0742.3	0742.4	III	B	1	45	70	
			IZMI	0759.0U	1200.0D	III	N	2	55	160	
			LEAR	0800.0	0800.0	III		1	44	65	
			SVTO	0800.0	0800.0	III		1	35	61	
			IZMI	0800.3	0800.4	III	B	2	45X	85	
			POTS	0800.3	0800.5	III	B	3	40X	90U	
			LEAR	0817.0	0959.0	CONT		1	63	80	
			SVTO	0822.0	0905.0	CONT		1	63U	78U	
			SGMR	1334.0	1913.0	CONT		1	30	66	
			POTS	1341.6	1341.7	III	B	3	40X	70	
			SGMR	1915.0	1944.0	III	N	1	30	53	
			PALE	1944.0	1944.0	III		1	28	50	
			SGMR	2010.0	2010.0	III		1	35	45	
			SGMR	2055.0	2055.0	III		1	40	68	
			PALE	2056.0	2056.0	III		1	25	55	
			PALE	2135.0	2142.0	III		2	25	75	
			SGMR	2135.0	2137.0	III		2	30	80	
	2016	2400	HIRA	2135.2	2137.0	III	G	3	25X	240	
			HIRA	2141.8	2142.0	III	B	1	30	240	
			PALE	2153.0	2153.0	III		1	27	53	
			HIRA	2153.4	2153.5	III	B	1	25X	150	
			PALE	2220.0	2221.0	III		1	25	66	
			SGMR	2220.0	2221.0	III		1	36	68	
			HIRA	2220.9	2222.4	III	G	1	25X	150	
			PALE	2242.0	2244.0	III		2	25	75	
			LEAR	2243.0	2244.0	III		1	30	80	
			HIRA	2243.4	2243.9	III	G	2	25X	310	
			HIRA	2247.6	2247.7	III	B	1	60	310	
			HIRA	2252.6	2253.3	III	G	2	80	300	

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OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
11		PALE	2312.0	2324.0	III	N	2	25	75	
		LEAR	2317.0	2317.0	III		1	42	80	
		HIRA	2322.0	2323.4	III	G	2	25X	300	
		LEAR	2322.0	2323.0	III		2	30	80	
		HIRA	2343.6	2343.9	III	B	1	30	200	
		LEAR	2352.0	2353.0	III		1	32	52	
12		LEAR	0016.0	0019.0	III		1	30	75	
		PALE	0016.0	0054.0	III	N	/	25	75	
		LEAR	0024.0	0027.0	III		3	30	80	
	0000 0855	HIRA	0024.1	0027.5	III	G	3	25X	700	
		LEAR	0035.0	0038.0	III		2	30	80	
		HIRA	0035.5	0038.0	III	G	1	25X	200	
		LEAR	0042.0	0043.0	III		1	40	50	
		LEAR	0053.0	0054.0	III		2	30	80	
		HIRA	0053.3	0053.6	III	G	1	25X	250	
		LEAR	0105.0	0107.0	III		1	30	40	
		LEAR	0123.0	0123.0	III		1	30	37	
		LEAR	0137.0	0138.0	III		2	30	80	
		PALE	0137.0	0138.0	III		2	25	75	
		HIRA	0137.6	0137.9	III	B	1	25X	260	
		LEAR	0148.0	0148.0	III		1	30	37	
		LEAR	0203.0	0204.0	III		2	30	75	
		PALE	0203.0	0211.0	III		3	25	75	
		HIRA	0203.6	0204.0	III	B	1	25X	160	
		LEAR	0206.0	0211.0	III		3	30	80	
		HIRA	0206.8	0207.3	III	G	3	25X	270	
		HIRA	0210.0	0211.4	III	G	2	25X	600	
		LEAR	0226.0	0227.0	III		1	30	47	
		LEAR	0231.0	0233.0	III		2	30	80	
		PALE	0231.0	0233.0	III		2	25	75	
		HIRA	0231.5	0232.4	III	G	1	25X	220	
		LEAR	0312.0	0312.0	III		1	30	40	
		HIRA	0334.8	0335.0	III	B	1	80	140	
		LEAR	0343.0	0343.0	III		1	30	80	
		HIRA	0343.1	0343.3	III	B	1	30	170	
		PALE	0356.0	0357.0	III		1	40	75	
		LEAR	0357.0	0357.0	III		2	30	80	
		HIRA	0357.2	0357.3	III	B	2	25X	600	
		HIRA	0407.9	0408.1	III	B	2	30	150	
		LEAR	0408.0	0408.0	III		1	30	80	
		LEAR	0450.0	0452.0	III		2	30	80	
		HIRA	0451.7	0452.0	III	B	1	60	250	
		LEAR	0514.0	0516.0	III		3	30	80	
		SVTO	0514.0	0516.0	V		3	35	82	
		HIRA	0514.3	0515.7	III	G	3	25X	1100	
		POTS	0523 E	1616 U	III	N	1	40X	90U	
		POTS	0523 E	1616 U	III	N	2	40X	90U	
	0523 1616	POTS	0523 E	1616 U	I	S,C	2	110U	450	
		LEAR	0536.0	0536.0	III		2	30	70	
		SVTO	0536.0	0536.0	III		2	37	69	
		POTS	0536.6	0536.9	III	B	3	40X	250	
		LEAR	0545.0	0545.0	III		1	30	40	
		SVTO	0557.0	0558.0	III		2	35	81	
		POTS	0557.9	0558.6	III	G	3	40X	250	
		LEAR	0558.0	0558.0	III		1	30	75	
		HIRA	0558.1	0558.3	III	B	1	50	140	
	0600 1200	IZMI	0600.0E	1200.0D	I	S	2	85	270X	
		IZMI	0601.4	0601.5	III	G	1	45	165	
		POTS	0601.4	0601.5	III	G	3	40X	160	
		IZMI	0612.0	0612.4	III	G	2	45X	165	
		SVTO	0612.0	0612.0	III		2	45	58	
		POTS	0612.1	0617.4	III	G	3	40X	170U	
		IZMI	0616.9	0617.3	III	G	2	45	150	
		IZMI	0630.7	0632.1	III	G	3	45X	170	
		LEAR	0631.0	0631.0	III		1	30	65	
		SVTO	0631.0	0633.0	III		2	37	57	
		POTS	0631.3	0641.5	III	G	3	40X	170U	
		HIRA	0631.4	0631.5	III	B	1	50	170	

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OBSERVATION Start Day (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
12		IZMI	0637.4	0637.5	III	B	1	45	75	
		LEAR	0656.0	0658.0	III		2	30	80	
		SVTO	0656.0	0658.0	V		2	35	76	
		IZMI	0656.3	0658.7	III	GG	3	45X	270X	
		POTS	0656.3	0658.7	III	G	3	40X	800X	
		IZMI	0656.6	0657.1	V	G	2	45	135	
		HIRA	0656.7	0657.6	III	G	1	50	220	
		POTS	0705.4	0712.8	III	G	3	40X	70	
		POTS	0721.2	0725.8	III	G	3	40X	170U	
		IZMI	0723.4	0725.7	III	G	2	45X	180	
		IZMI	0739.0	0739.1	III	G, HARM	2	45	135	
		POTS	0739.0	0739.1	III	G	3	40X	170U	
		IZMI	0753.5	0759.0	III	GG	2	45X	235	
		POTS	0753.6	0758.8	III	G	3	40X	225	
		SVTO	0814.0	0814.0	III		2	36	43	
		POTS	0817.1	0817.2	DCIM		2	450	700	
		IZMI	0826.8	0833.4	III	GG	3	45X	270X	
		POTS	0826.9	0834.3	III	GG,U,RS	3	40X	450	
		LEAR	0827.0	0833.0	III		2	30	80	
		SVTO	0827.0	0827.0	III		2	37	46	
		SVTO	0828.0	0829.0	III		2	36	79	
		IZMI	0828.7	0829.1	V	G	2	45	150	
		SVTO	0832.0	0834.0	V		2	35	79	
		IZMI	0832.7	0834.2	V	G	2	45X	165	
		HIRA	0833.1	0833.4	III	B	2	25X	260	
		POTS	0833.3	0833.9	V		3	40X	60	
		SVTO	0845.0	0846.0	III		2	36	77	
		LEAR	0846.0	0847.0	III		2	30	80	
		IZMI	0846.4	0848.8	III	G	2	45	170	
		POTS	0846.4	0848.9	III	G	3	40X	250	
		IZMI	0847.1	0847.3	V		2	50	85	
		IZMI	0915.6	0916.4	III	G	1	45	95	
		POTS	0931.6	0933.1	III	G,RS	3	40X	250	
		IZMI	0932.0	0932.4	III	G	2	45	170	
		IZMI	0932.1	0932.6	CONT		2	75	95	
		POTS	0938.6	0938.7	III	B	3	40X	170U	
		IZMI	0948.9	0949.0	III	G	2	65	140	
		SVTO	0955.0	1005.0	III		1	37	67	
		SVTO	0955.0	1005.0	III		2	37	67	
		IZMI	0955.5	0955.9	III	G	2	45X	180	
		POTS	0955.6	0956.1	III	G	3	40X	170U	
		IZMI	1004.1	1004.4	III	G	2	45X	250	
		POTS	1004.1	1004.5	III	G	3	40X	250	
		IZMI	1004.2	1004.3	V		2	45X	85	
		IZMI	1021.1	1021.2	III	G	2	185	205	
		POTS	1031.9	1037.0	III	G	3	40X	450	
		IZMI	1033.9	1034.6	III	GG	3	45X	270X	
		IZMI	1034.0	1034.1	V		2	55	90	
		SVTO	1034.0	1034.0	III		2	35	75	
		IZMI	1133.6	1133.8	III	G	1	45X	105	
		SGMR	1135.0	1147.0	III	N	2	30	80	
		IZMI	1135.8	1136.0	III	G	3	45X	270X	
		IZMI	1135.9	1136.4	V	G	2	45	85	
		IZMI	1142.4	1142.6	III	G	2	85	140	
		POTS	1142.5	1142.7	III	G	3	110U	170U	
		SVTO	1146.0	1147.0	III		2	37	67	
		IZMI	1146.4	1146.9	III	GG	3	45	145	
		POTS	1146.4	1146.9	III	G	3	40X	275	
		IZMI	1146.5	1146.9	V	G	2	50	65	
		POTS	1146.5	1146.9	V		3	50	65	
		SGMR	1215.0	1225.0	III	N	1	30	70	
		SVTO	1215.0	1224.0	III		2	35	72	
		POTS	1217.1	1224.5	III	GG	3	40X	600	
		POTS	1316.7	1329.0	III	GG	3	40X	700	
		SGMR	1322.0	1324.0	III		2	30	80	
		SVTO	1323.0	1325.0	III		3	35U	85U	
		SGMR	1348.0	1450.0	III	N	1	30	53	
		POTS	1412.3	1424.4	III	GG	3	40X	600	
		POTS	1433.6	1433.7	III	B	3	40X	55	

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OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
12		SVTO	1450.0	1450.0	III		2	35	42	
		POTS	1450.2	1450.4	III	B	3	40X	50	
		SGMR	1454.0	1728.0	CONT		1	30	53	
		POTS	1459.2	1502.8	DCIM		2	400	650	
		POTS	1459.4	1501.7	III	G	3	50	170U	
		POTS	1535.7	1536.6	III	G	3	40X	250	
		POTS	1601.5	1607.5	III	G,C	3	40X	400	
		SGMR	1603.0	1604.0	III		1	30	48	
		SGMR	1605.0	1608.0	II		2	30	80	ESS 3500
		SVTO	1605.0	1607.0	III		3	40	83	
		ONDR	1605.3	1606.4	DCIM	GG SP	3	1000X	2000X	
0540	1611	ONDR	1605.3	1606.4	DCIM	G	3	2000X	4500X	
		POTS	1605.4	1607.4	DCIM		3	400	800X	
		SGMR	1636.0	1639.0	V		1	30	55	
		SGMR	1729.0	1732.0	III		1	30	64	
		PALE	1730.0	1730.0	III		1	42	54	
		SGMR	1741.0	1847.0	CONT		1	30	52	
		PALE	1840.0	1840.0	III		1	35	55	
		PALE	1858.0	1901.0	III		2	25	75	
		SGMR	1858.0	1913.0	III	N	3	30	80	
		SGMR	1943.0	1943.0	III		1	30	44	
		PALE	2007.0	2008.0	III		3	25	75	
		SGMR	2007.0	2025.0	III	N	3	30	80	
		PALE	2017.0	2025.0	III		1	27	67	
2017	2400	HIRA	2024.4	2024.9	III	B	1	40	180	
		LEAR	2343.0	2344.0	III		1	37	70	
13		LEAR	0119.0	0119.0	III		2	33	61	
		PALE	0119.0	0119.0	III		1	40	55	
		LEAR	0131.0	0718.0	CONT		1	30	38	
		LEAR	0141.0	0141.0	III		1	30	43	
		LEAR	0507.0	0513.0	III		1	30	70	
0000	0854	HIRA	0507.1	0519.6	III	GG	1	50	330	
		LEAR	0517.0	0519.0	III		1	35	58	
		POTS	0523 E	1616 U	III	N	1	40X	90U	
		POTS	0523 E	1616 U	III	N	1	110U	170U	
0523	1616	POTS	0523 E	1616 U	I	S,C	2	110U	350	
0542	1611	ONDR								
0600	1200	IZMI	0600.0E	1200.0D	I	N	1	80	270	
		POTS	0610.6	0610.7	DCIM		2	400	500	
		POTS	0614.8	0614.9	III	B	2	50	170U	
		POTS	0625.3	0626.0	DCIM		3	400	650	
		POTS	0627.8	0628.1	DCIM		2	400	750	
		IZMI	0642.5	0642.6	III	G, HARM	2	105	265	
		POTS	0642.5	0642.6	III	B	3	50	275	
		IZMI	0722.7	0722.9	III	G	1	45	95	
		POTS	0728.5	0728.9	DCIM		2	225	450	
		POTS	0758.8	0758.9	III	B	2	40X	60	
		IZMI	0818.0	0818.2	III	G	1	45	85	
		POTS	0818.1	0818.3	UNCLF		2	50	90U	
		IZMI	0830.4	0833.2	III	GG	2	45	270X	
		POTS	0830.4	0832.6	III	G	3	40X	170U	
		SVTO	1056.0	1056.0	III		2	37U	58U	
		POTS	1056.1	1057.2	III	G	3	40X	225	
		IZMI	1056.4	1056.8	III	G	2	45X	225	
		POTS	1159.1	1159.3	III	B	2	40X	90U	
		POTS	1211.0	1215.3	III	GG,RS	3	40X	250	
		SVTO	1211.0	1215.0	III		2	35U	75U	
		SGMR	1213.0	1215.0	III		2	30	80	
		POTS	1314.3	1314.6	III	G	2	40X	170U	
		POTS	1405.4	1405.5	III	B	2	80	150	
		SGMR	1439.0	1440.0	III		1	30	43	
		POTS	1439.7	1440.2	III	G	2	40X	170U	
		SGMR	1543.0	1605.0	III	N	1	30	53	
		POTS	1605.0	1605.9	III	G	2	40X	275	
		SGMR	1858.0	1910.0	III	N	2	30	80	
		PALE	1949.0	1955.0	III		2	27	75	
		SGMR	1949.0	1955.0	III		2	30	80	
		PALE	2239.0	2239.0	III		1	27	53	

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Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
13	2018	2400	HIRA	2239.1	2239.3	III	B	1	25X	160	
			PALE	2343.0	2343.0	III		1	27	43	
14			LEAR	0119.0	0119.0	III		1	30	40	
			LEAR	0313.0	0313.0	III		1	30	42	
			POTS	0523 U	1616 U	III	N	1	40X	70	
			POTS	0523 U	1616 U	III	N	2	40X	70	
	0523	1616	POTS	0523 U	1616 U	I	S,C	2	110U	350	
	0543	1608	ONDR								
	0600	1200	IZMI	0600.0E	1200.0D	I	N	1	85	160	
			LEAR	0745.0	0745.0	III		2	30	75	
			SVTO	0745.0	0745.0	III		3	35U	74U	
			IZMI	0745.3	0745.5	III	G	2	45X	205	
			IZMI	0745.4	0745.5	V		2	45	65	
			POTS	0745.4	0745.7	III	B	3	40X	220	
	0000	0853	HIRA	0745.5	0745.6	III	B	1	25X	190	
			SVTO	0746.0	0746.0	III		3	35U	74U	
			IZMI	0838.7	0838.9	III	G	1	45	90	
			POTS	0909.6	0909.7	III	B	3	40X	60	
			IZMI	1055.2	1055.4	III	B	1	45	90	
			POTS	1355.6	1356.2	III	G,C	3	110U	325	
			SGMR	1613.0	1613.0	V		1	32	54	
			POTS	1613.3	1613.4	III	B	3	40X	160	
			PALE	1813.0	1813.0	III		1	27	53	
			SGMR	1813.0	1814.0	V		1	30	63	
			SGMR	2053.0	2053.0	V		1	32	57	
	2019	2400	HIRA	2053.1	2053.3	III	B	1	25X	210	
			PALE	2108.0	2109.0	III		1	27	45	
			PALE	2315.0	2318.0	III		1	28	54	
			LEAR	2317.0	2317.0	III		1	35	60	
15			LEAR	0258.0	0701.0	CONT		1	30	65	
			LEAR	0402.0	0419.0	III	N	2	30	75	
	0000	0851	HIRA	0408.3	0408.5	III	B	1	25X	130	
			HIRA	0415.6	0415.7	III	B	1	25X	130	
			POTS	0523 E	1616 U	III	N	1	40X	70	
	0523	1616	POTS	0523 E	1616 U	I	S	2	110U	250	
	0552	1606	ONDR								
	0610	1200	IZMI	0610.0E	1200.0D	I	N	1	60	160	
			POTS	0733.0	0733.1	III	B	2	150	375	
			IZMI	0734.5	0735.0	III	G	1	45	90	
			POTS	0734.5	0735.1	III	G	2	40X	150	
			POTS	0831.0	0832.6	III	G	3	40X	250	
			IZMI	0831.5	0832.6	III	G	2	45X	150	
			LEAR	0832.0	0832.0	III		2	30	80	
			SVTO	0832.0	0832.0	III		2	35U	85U	
			SGMR	1720.0	1721.0	III		1	30	42	
	2019	2400	HIRA								
16	0000	0849	HIRA								
	0523	1616	POTS	0523 E	1616 U	I	S	1	110U	300	
	0546	1604	ONDR								
			POTS	0644.5	0644.9	UNCLF		1	40X	50	
			POTS	0808.4	0808.6	III	B	2	40X	50	
	0600	1200	IZMI	0822.0U	0912.0U	I	N	1	80	95	
			POTS	1135.2	1136.4	III	G	2	110U	225	
	2136	2400	HIRA								
17	0000	0848	HIRA								
	0548	1600	ONDR								
	0523	1616	POTS	0559	1616 U	I	S,W	1	110U	400	
			POTS	0800.5	0800.9	DCIM		1	340	400	
			POTS	0850.7	0851.2	III	G	2	50	170U	
			POTS	0855.6	0856.5	III	G	2	80	375	
			POTS	0901.1	0901.8	III	G	1	110U	170U	
			LEAR	0923.0	0923.0	III		1	35	65	
			SVTO	0923.0	0924.0	III		2	35	70	
			POTS	0923.6	0924.1	III	G	3	40X	275	
	0600	1200	IZMI	0923.6	0923.8	III	G	2	45X	135	

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17			IZMI	0923.8	0923.9	V		2	45X	85	
			POTS	0936.3	0936.6	III	G	1	110U	170U	
			POTS	1006.9	1008.7	III	G	1	40X	170U	
			SGMR	1052.0	1054.0	III		1	30	62	
			SVTO	1052.0	1054.0	V		3	35	76	
			IZMI	1052.2	1054.2	III	GG	3	45X	245	
			POTS	1052.2	1054.8	III	GG,C	3	40X	275	
			IZMI	1052.6	1054.4	CONT		3	45X	135	
			POTS	1053.4	1054.8	V		3	40X	70	
			POTS	1107.6	1108.3	III	G	2	40X	170U	
			IZMI	1107.8	1108.2	III	G	1	50	145	
			IZMI	1117.6	1117.9	III	B	1	45	90	
			POTS	1117.6	1118.0	III	G	3	40X	150	
			POTS	1134.8	1143.8	III	GG	3	40X	500	
			IZMI	1137.1	1137.4	III	G	1	205	270X	
			IZMI	1139.3	1139.6	III	G	2	110	220	
			POTS	1142.2	1142.4	III	B	1	40X	60	
			IZMI	1143.4	1143.7	III	GG	2	55	145	
			POTS	1143.5	1145.2	II	F	2	50	80	
			POTS	1143.5	1146.0	II	SH	3	110U	160	
			IZMI	1144.3	1145.6	II	HARM	2	50	130	
			IZMI	1146.1	1146.2	III	G	1	45	110	
			POTS	1150.0	1218.6	III	GG	3	40X	370	
			SGMR	1156.0	1218.0	III	N	2	30	80	
			SVTO	1156.0	1205.0	III		2	35U	67U	
			IZMI	1156.8	1157.2	III	G	1	50	90	
			SVTO	1214.0	1217.0	V		3	35	85	
			POTS	1215.9	1216.3	V		3	110U	120	
			POTS	1215.9	1217.2	V		3	40X	70	
			POTS	1227.4	1234.9	III	G,RS	2	40X	350	
			POTS	1247.2	1303.1	III	GG	2	40X	170U	
			SGMR	1252.0	1315.0	III	N	1	30	70	
			SVTO	1314.0	1315.0	III		2	35U	77U	
			SGMR	1357.0	1503.0	III	N	2	30	70	
			SVTO	1357.0	1401.0	III		3	35U	85U	
			POTS	1357.7	1401.3	III	GG	3	40X	250	
			POTS	1357.9	1358.3	V		3	40X	60	
			POTS	1408.1	1410.4	III	G	2	40X	170U	
			POTS	1414.6	1417.4	III	GG	3	40X	170U	
			POTS	1443.1	1443.5	III	G	2	40X	60	
			POTS	1448.8	1452.0	III	GG	3	40X	400	
			SVTO	1449.0	1451.0	III		3	35U	75U	
			POTS	1502.0	1503.1	III	G	3	40X	170U	
			SVTO	1502.0	1503.0	V		3	35U	85U	
			POTS	1530.0	1530.4	III	G	2	110U	225	
			POTS	1538.9	1548.6	III	GG	3	40X	350	
			SGMR	1539.0	1548.0	CONT		2	30	70	
			SVTO	1539.0	1541.0	III		3	35U	75U	
			SGMR	1659.0	1730.0	III	N	3	30	80	
			PALE	1728.0	1729.0	III		2	25	75	
			PALE	1809.0	1813.0	III		1	40	55	
			SGMR	1809.0	1812.0	III		1	30	56	
			PALE	1940.0	1940.0	III		1	25	45	
			PALE	2011.0	2028.0	III	N	1	25	55	
			SGMR	2011.0	2028.0	III	N	1	30	55	
	2021	2400	HIRA	2027.2	2032.3	III	G	1	25X	160	
			SGMR	2127.0	2128.0	III		1	30	80	
			HIRA	2127.7	2128.5	III	G	2	25X	80	
			LEAR	2343.0	2343.0	III		1	37	66	
			PALE	2343.0	2343.0	III		1	25	55	
			HIRA	2343.4	2343.7	III	B	1	25X	150	
18	0000	0847	HIRA	0000 6	0000.8	III	B	1	25X	120	
			LEAR	0000.0	0009.0	III		2	30	80	
			PALE	0000.0	0003.0	III		2	25	60	
			HIRA	0003.4	0003.6	III	B	1	25X	180	
			LEAR	0121.0	0122.0	III		2	30	45	
			PALE	0121.0	0122.0	III		1	28	43	
			LEAR	0202.0	0202.0	III		1	30	50	

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18		PALE	0202.0	0202.0	III		1	40	48	
		LEAR	0228.0	0306.0	III	N	1	30	47	
		LEAR	0440.0	0440.0	III		1	33	63	
0523	1616	POTS	0523 E	1616 U	I	S	1	110U	400	
		LEAR	0536.0	0600.0	III	N	2	30U	80U	
		POTS	0536.5	0537.5	III	G	3	40X	400	
		SVTO	0537.0	0537.0	III		2	39U	49U	
		POTS	0545.9	0546.0	III	B	1	110U	170U	
		POTS	0555.8	0559.5	III	G	2	40X	170U	
0555	1200	IZMI	0555.8	0556.5	III	G	1	45	90	
0556	1558	ONDR								
		IZMI	0558.9	0559.4	III	G	2	50	125	
		IZMI	0616.9	0617.1	III	B	1	50	70	
		POTS	0617.0	0617.7	III	G	2	40X	170U	
		IZMI	0617.4	0617.5	III	B	1	45	65	
		POTS	0828.3	0828.8	III	G	2	40X	170U	
		IZMI	0828.4	0828.7	III	G	1	50	135	
		IZMI	0918.9	0919.4	III	G	2	50	160	
		POTS	0918.9	0919.8	III	G	2	40X	170U	
		POTS	1049.4	1051.4	III	GG	2	40X	250	
		IZMI	1051.2	1051.4	III	G	2	85	150	
		POTS	1117.7	1119.3	III	G	2	40X	170U	
		IZMI	1118.8	1119.2	III	G	2	45	125	
		POTS	1336.7	1337.4	III	G	2	40X	170U	
		POTS	1356.3	1356.6	III	G	1	110U	250	
		SGMR	1443.0	1447.0	V		2	30	80	
		POTS	1443.2	1446.3	III	GG	3	40X	170U	
		SVTO	1445.0	1446.0	V		3	35	82	
		POTS	1446.0	1446.7	V		3	40X	70	
		SGMR	1522.0	1626.0	III	N	2	30	80	
		POTS	1522.1	1526.4	III	G	3	40X	170U	
		SVTO	1525.0	1525.0	III		2	38U	54U	
		POTS	1542.4	1544.5	III	G	3	40X	170U	
		SVTO	1543.0	1544.0	III		2	37U	56U	
		POTS	1603.2	1603.7	DCIM		2	450	800X	
		SVTO	1605.0	1607.0	V		3	35U	80U	
		POTS	1605.4	1607.9	III	GG	3	40X	250	
		POTS	1605.9	1606.7	V		3	40X	70	
		POTS	1607.3	1607.4	DCIM		1	300	450	
		PALE	1707.0	1710.0	III		2	25	75	
		SGMR	1707.0	1711.0	V		3	30	80	
		SGMR	1804.0	1955.0	III	N	2	30	80	
		PALE	1819.0	1820.0	III		1	29	51	
		PALE	2205.0	2207.0	V		2	27	55	
		SGMR	2205.0	2206.0	V		1	30	55	
		PALE	2212.0	2214.0	III		1	27	55	
		LEAR	2347.0	2349.0	III		1	30	65	
		PALE	2347.0	2352.0	III		1	29	50	
		LEAR	2351.0	2352.0	III		1	30	50	
19		LEAR	0006.0	0006.0	III		2	30	70	
		PALE	0006.0	0007.0	III		1	29	55	
		PALE	0024.0	0025.0	III		1	27	37	
		LEAR	0038.0	0043.0	III		2	30	65	
		PALE	0038.0	0043.0	III		1	28	54	
0031	0845	HIRA	0039.0	0042.7	III	G	1	25X	80	
		HIRA	0142.5	0142.8	III	B	1	80	300	
		LEAR	0201.0	0201.0	III		1	30	42	
		LEAR	0426.0	0426.0	III		1	30	45	
		LEAR	0519.0	0800.0	CONT		1	30	80	
0523	1616	POTS	0523 E	1616 U	I	S	1	40X	400	
		SVTO	0541.0	0541.0	III		1	38U	52U	
		POTS	0541.2	0541.6	III	G	3	40X	170U	
0551	1557	ONDR								
0555	1200	IZMI	0555.0E	0735.0U	III	S	2	45	90	
		SVTO	0611.0	0750.0	CONT		2	53U	71U	
		IZMI	0843.7	0844.6	III	G	2	45X	120	
		POTS	0843.7	0844.8	III	G	3	40X	170U	
		LEAR	0844.0	0844.0	III		1	35	65	

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Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
19			SVTO	0844.0	0844.0	III		2	35U	64U	
			IZMI	0853.6	0853.8	III	G	1	70	85	
			LEAR	0911.0	0911.0	III		2	32	80	
			SVTO	0911.0	0912.0	III		3	35	82	
			IZMI	0911.3	0911.9	III	G	3	45X	245	
			IZMI	0911.4	0911.5	V		2	45	85	
			POTS	0911.4	0921.1	III	G,RS	3	40X	400	
			IZMI	0917.8	0918.0	III	G	2	60	270X	
			IZMI	0920.8	0921.1	III	G	2	185	245	
			SVTO	1003.0	1004.0	III		3	35	79	
			POTS	1003.7	1004.3	III	G	3	40X	275	
			IZMI	1003.8	1004.2	III	G	3	45X	250	
			IZMI	1003.9	1004.1	V		2	45X	85	
			POTS	1126.6	1127.0	III	G,RS	1	110U	250	
			POTS	1225.8	1226.3	III	G	1	110U	170U	
			POTS	1248.5	1249.9	III	GG	3	40X	170U	
			POTS	1425.0	1425.5	III	G	2	40X	170U	
			POTS	1501.9	1502.0	UNCLF		1	110U	140	
			POTS	1554.2	1554.3	DCIM		1	250	400	
			POTS	1607.8	1608.9	III	G	2	40X	60	
			SGMR	1608.0	1609.0	III		1	30	45	
			SGMR	1655.0	1656.0	III		1	30	57	
			SGMR	1658.0	1658.0	III		1	30	55	
			SGMR	1750.0	1750.0	III		1	30	43	
			SGMR	1828.0	1828.0	III		1	30	45	
	2022	2400	HIRA								
20			LEAR	0315.0	0318.0	III		2	30	55	
			PALE	0315.0	0317.0	III		1	27U	55U	
	0000	0844	HIRA	0315.9	0318.5	III	G	1	25X	130	
	0523	1616	POTS	0542.3	0543.6	III	G	2	110U	250	
	0552	1555	ONDR								
			POTS	0630.5	0631.5	III	G	2	110U	250	
	0555	1200	IZMI	0715.2	0715.8	UNCLF		2	45X	95	
			POTS	0729.6	0731.1	III	G,U?	2	110U	170U	
			POTS	0854	1616 U	I	S,W	1	130	250	
			POTS	0855.6	0855.7	III	B	1	110U	170U	
			POTS	1322.9	1323.0	III	B	2	200U	250	
			POTS	1506.0	1506.5	DCIM		1	350	450	
	2023	2400	HIRA								
21	0000	0842	HIRA	0057.4	0057.7	III	B	1	100	340	
	0540	1552	POTS	0540 E	1552 U	I	S,W	1	120	170U	
			POTS	0551.6	0553.1	DCIM		2	200U	300	
	0554	1553	ONDR								
	0600	1200	IZMI								
			POTS	0614.7	0614.8	III	B	1	200U	400	
			POTS	0615.1	0615.2	III	B	1	110U	275	
			POTS	0913.2	0913.7	UNCLF		2	200U	275	
	2024	2400	HIRA								
22	0000	0841	HIRA	0048.2	0048.6	III	B	1	110	500	
	0540	1552	POTS	0540 E	1552 U	I	S,W	1	120	350	
	0555	1548	ONDR								
	0600	1200	IZMI								
			POTS	0703.9	0704.0	III	B	1	120	170U	
			POTS	1021.9	1022.2	UNCLF		2	200U	300	
			POTS	1122.2	1122.4	UNCLF		1	200U	325	
			POTS	1123.6	1123.7	III	B	1	130	170U	
			POTS	1204.7U	1205.5U	UNCLF		2	40X	150	
			POTS	1239.4	1239.5	III	G	2	200U	250	
			POTS	1239.9	1240.1	III	G	2	140	275	
			POTS	1427.0	1428.7	DCIM		2	200	400	
			POTS	1427.5	1428.8	UNCLF		2	110U	170U	
	2025	2400	HIRA								
23	0540	1552	POTS	0540 E	1552 U	I	S	1	110U	400	
			POTS	0547.3	0547.4	UNCLF		1	140	170U	
	0557	1548	ONDR								

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23			POTS	0633.1	0633.2	III	B	2	40X	170U	
			POTS	0705.1	0710.3	III	GG,RS	3	110U	400	
	0000	0839	HIRA	0707.8	0708.0	III	B	2	80	330	
	0600	1200	IZMI	0707.8	0708.3	III	G	2	55	216	
			POTS	0814.0	0814.2	UNCLF		2	200U	250	
			IZMI	0826.4	0826.8	III	G	2	105	245	
			POTS	0826.4	0828.3	III	G,RS	3	110U	400	
			POTS	0850.2	0850.5	DCIM		2	300	400	
			POTS	0926.9	0927.0	III	B,U	1	120	170U	
			POTS	0944.5	0945.0	III	G	2	110U	150	
			POTS	1247.0	1247.1	III	G,RS	2	110U	170U	
	2026	2400	HIRA	2130.5	2131.0	III	B	1	140	1700	
			PALE	2131.0	2138.0	III		1	24	45	
			LEAR	2228.0	0248.0	CONT		1	35U	80U	
24			LEAR	0105.0	0105.0	III		1	30	35	
	0000	0838	HIRA	0247.2	0247.3	III	B	2	90	600	
			LEAR	0248.0	0615.0	IV		3	30	80	
			HIRA	0248.6	0255.2	II		3	25	60	ESS 800
			HIRA	0248.6	0258.1	II		3	30	80	ESS 800
			LEAR	0249.0	0258.0	II		3	30	80	ESS 1400
			PALE	0249.0	0254.0	II		3	25	75	ESS 1200
			LEAR	0530.0	0535.0	III		3	30	80	
			SVTO	0533.0	0534.0	III		3	35	85	
			HIRA	0533.3	0534.2	III	G	2	25X	2200	
			POTS	0540 E	1552 U	III	N	1	40X	70	
	0540	1552	POTS	0540 E	1552 U	I	S,C	2	110U	400	
	0600	1200	IZMI	0600.0E	1119.0U	I	N	1	105	270	
			IZMI	0656.9	0657.2	III	G	3	60	265	
			POTS	0656.9	0704.4	III	GG,C,RS	3	40X	600	
			IZMI	0658.0	0658.7	III	G	3	45X	270X	
			LEAR	0658.0	0659.0	III		1	55	80	
			SVTO	0658.0	0659.0	III		2	35U	85U	
			HIRA	0658.1	0659.3	III	G	1	40	250	
			IZMI	0658.1	0658.3	V		2	50	145	
			IZMI	0658.8	0659.7	III	GG	2	45	270X	
			IZMI	0703.1	0703.8	III	GG	1	110	270	
			POTS	0703.8	0704.4	DCIM		2	400	600	
			POTS	0737.9	0738.1	DCIM		2	400	600	
			POTS	0819.0	0819.1	III	B,RS	2	40X	70'	
			POTS	0826.7	0826.8	III	B	2	40X	90U	
			POTS	0847.7	0847.8	UNCLF		2	40X	60	
			POTS	0850.1	0850.4	UNCLF		2	40X	70	
			POTS	0853.7	0853.9	III	G	3	40X	170U	
			POTS	0916.7	0916.8	III	B	2	110U	150	
			POTS	0922.0	0922.9	III	G	2	40X	90U	
			POTS	0937.0	0940.6	III	G	2	40X	70	
			POTS	1035.0	1039.8	III	GG	3	40X	400	
			IZMI	1037.8	1039.3	III	GG	3	45	270X	
			IZMI	1037.9	1038.4	V	G	3	55	145	
			SVTO	1038.0	1038.0	III		1	60U	75U	
			POTS	1050.5	1051.2	DCIM		2	200U	350	
			ONDR	1100.2	1107.2	DCIM	GG	3	1000X	2000X	
			ONDR	1101.0	1107.2	DCIM	GG	2	2000X	4500X	
			POTS	1101.1	1102.5	III	G,C	3	40X	750	
	0558	1545	ONDR	1101.1	1104.0	DCIM	GG	2	800X	1000X	
			IZMI	1101.2	1101.9	III	G	3	45	270X	
			IZMI	1101.3	1101.7	V	G	3	120	205	
			POTS	1102.5	1203 U	IV		3	40X	800X	
			IZMI	1103.1	1119.0U	CONT		1	80	270	
			IZMI	1103.4	1118.7	II	HARM	3	45X	270	
			POTS	1103.5	1117 U	II	SH,H	3	110U	450	
			POTS	1103.5	1119 U	II	F,H	3	40X	200U	
			SVTO	1107.0	1120.0	II		3	39	75	ESS 0600
			SGMR	1111.0	1114.0	II		1	40	57	ESS 1200
			SVTO	1113.0	1210.0	IV		2	35U	85U	
			IZMI	1119.0U	1200.0D	I	S	2	45	270	
			IZMI	1139.0U	1157.0U	III	S	1	45	120	
			POTS	1202.0	1209.9	III	G,RS	3	40X	700	

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24			SGMR	1204.0	1204.0	III		1	30	57	
			SVTO	1204.0	1205.0	III		3	35U	74U	
			POTS	1245.9	1246.0	III	B	2	40X	70	
			POTS	1251.0	1251.2	III	G	2	40X	90U	
			SGMR	1323.0	1502.0	III	N	1	30	80	
			SVTO	1323.0	1332.0	III		2	35U	85U	
			POTS	1323.2	1326.3	III	GG	3	40X	400	
			POTS	1327.6	1328.3	III	G	3	40X	400	
			POTS	1334.8	1341.8	III	GG	3	40X	90U	
			POTS	1413.6	1413.7	III	G	2	110U	150	
			SVTO	1419.0	1420.0	III		2	35U	85U	
			POTS	1419.4	1420.3	III	G	3	40X	275	
			POTS	1421.4	1422.1	III	G	2	40X	60	
			POTS	1430.6	1430.7	III	B	3	40X	60	
			POTS	1447.4	1447.5	III	B	2	110U	225	
			POTS	1502.0	1502.4	III	G	2	40X	90U	
			SGMR	1828.0	1834.0	III		1	30	46	
			PALE	1834.0	1838.0	II		1	40	70	ESS 1000
			SGMR	1834.0	1841.0	II		1	30	80	ESS 1800
	2027	2400	HIRA								
			PALE	2207.0	0016.0	CONT		1	25	75	
25	0000	0836	HIRA								
			LEAR	0056.0	0057.0	III		1	30	55	
			PALE	0056.0	0057.0	III		1	30	55	
			LEAR	0320.0	0321.0	III		1	30	55	
			POTS	0540 E	1553 U	III	N	1	40X	70	
			POTS	0540 E	1553 U	III	N	1	110U	170U	
			POTS	0540 E	1553 U	III	N	2	40X	70	
	0540	1553	POTS	0540 E	1553 U	I	S,C	2	110U	400	
			LEAR	0546.0	0546.0	III		1	30	42	
			POTS	0625.7	0633.0	III	GG	2	40X	275	
	0600	1230	IZMI	0631.1	0631.3	III	G	1	45	255	
			IZMI	0632.7	0633.1	III	G	1	45X	85	
			IZMI	0658.6	0658.7	III	B	1	45	85	
			POTS	0700.1	0700.2	III	B	3	40X	60	
			POTS	0707.0	0707.3	III	G	2	110U	150	
			IZMI	0729.1	0729.2	III	G	1	45X	85	
			IZMI	0741.1	0741.2	III	B	1	40	65	
			POTS	0854.6	0857.5	III	GG	2	135	170U	
			IZMI	0900.0U	1218.0U	I	N	1	200	250	
			IZMI	1039.5	1039.6	III	B	1	45X	85	
	0600	1542	ONDR	1144.3	1153.3	DCIM	G	1	2000X	4500X	
			POTS	1146.1	1150.1	DCIM		2	325	600	
			POTS	1147.3	1147.9	II	F	2	250	350	
			POTS	1147.3	1147.9	II	SH	2	450	700	
			POTS	1147.9	1148.0	III	B	2	350	650	
			IZMI	1148.3	1148.4	III	B	1	190	230	
			IZMI	1208.1	1208.3	III	B	1	190	225	
			SGMR	1307.0	1308.0	III		1	30	54	
			SGMR	1307.0	1320.0	III	N	1	30	56	
			SVTO	1307.0	1308.0	III		2	35U	50U	
			POTS	1307.2	1308.0	III	G	3	40X	250	
			POTS	1313.1	1313.3	III	G	2	40X	250	
			POTS	1316.5	1320.6	III	G	3	40X	250	
			SGMR	1335.0	1350.0	III	N	3	30	80	
			POTS	1341.6	1348.5	III	GG	3	40X	800X	
			SVTO	1343.0	1347.0	III		3	35U	85U	
			POTS	1456.0	1456.4	III	G	3	40X	300	
			SGMR	1456.0	1456.0	III		1	30	57	
			POTS	1525.4	1525.6	III	G	2	40X	275	
			SGMR	1607.0	1616.0	III		2	30	70	
			PALE	1748.0	1750.0	V		1	30	55	
			SGMR	1748.0	1749.0	V		2	30	70	
			SGMR	1753.0	1956.0	CONT		1	30	50	
			PALE	1808.0	1935.0	III	N	2	25	70	
			SGMR	1808.0	1808.0	III		1	30	65	
			SGMR	1924.0	1925.0	V		2	30	80	
			PALE	2058.0	2059.0	III		1	25	55	

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Day 25		LEAR	2302.0	2343.0	CONT		1	30	50	
		LEAR	2318.0	2331.0	III	N	2	30	80	
		PALE	2318.0	2323.0	III		2	25	53	
2027	2400	HIRA	2318.5	2320.8	III	G	1	25X	300	
Day 26		LEAR	0024.0	1003.0	CONT		2	30	58	
		LEAR	0210.0	0211.0	III		1	30	50	
		LEAR	0222.0	0222.0	III		1	30	40	
		LEAR	0235.0	0235.0	III		1	30	50	
		LEAR	0305.0	0307.0	III		2	30	80	
0000	0833	HIRA	0305.5	0306.7	III	G	1	25X	280	
		LEAR	0321.0	0327.0	III		1	30	55	
		PALE	0335.0	0336.0	III		1	39	50	
		LEAR	0336.0	0336.0	III		2	30	60	
		LEAR	0413.0	0416.0	III		1	30	55	
		HIRA	0445.0	0445.2	III	B	1	25X	330	
		HIRA	0515.7	0521.2	III	G	1	25X	100	
		SVTO	0516.0	0521.0	III		2	35U	59U	
		SVTO	0516.0	0848.0	III	N	2	35U	78U	
		SVTO	0532.0	0533.0	III		2	35U	59U	
		SVTO	0538.0	0549.0	III		2	35	78	
		SVTO	0538.0	0549.0	III		2	35U	78U	
		SVTO	0538.0	0549.0	III	N	2	35U	78U	
		HIRA	0539.0	0540.4	III	G	1	25X	110	
		POTS	0540 E	1553 U	III	N	1	40X	90U	
		POTS	0540 E	1553 U	III	N	2	40X	90U	
		POTS	0540 E	1553 U	III	N	3	40X	90U	
0540	1553	POTS	0540 E	1553 U	I	S,C	3	40X	400	
		IZMI	0555.0E	1200.0D	I	S	2	45	270X	
		SVTO	0555.0	0605.0	III		2	35U	58U	
0555	1200	IZMI	0555.0E	1200.0D	III	S	2	45X	220U	
0602	1541	ONDR								
		SVTO	0617.0	0618.0	III		2	68U	78U	
		SVTO	0640.0	0654.0	III		2	35U	71U	
		SVTO	0640.0	0654.0	III	N	2	35U	71U	
		IZMI	0654.0	0654.3	III	G	2	45X	95	
		SVTO	0658.0	0700.0	III		2	35U	66U	
		SVTO	0704.0	0923.0	CONT		1	35U	72U	
		IZMI	0709.3	0709.8	III	G	2	45X	105	
		IZMI	0725.5	0726.2	III	G	2	45X	105	
		IZMI	0814.2	0815.3	III	G	2	45X	90	
		POTS	0924.1	0924.3	III	B	2	40X	170U	
		POTS	0936.3	0936.4	III	B	2	110U	170U	
		POTS	1003.6	1003.7	III	B,RS	2	110U	170U	
		SVTO	1005.0	1005.0	III		2	35	53	
		IZMI	1005.3	1005.9	III	G	2	45X	90	
		SVTO	1012.0	1417.0	CONT		2	35U	49U	
		POTS	1023.0	1023.1	III	G	2	40X	170U	
		IZMI	1042.5	1042.7	III	G	2	45X	90	
		IZMI	1042.6	1042.7	V		2	45X	50	
		SVTO	1316.0	1340.0	III	N	2	35U	47U	
		SVTO	1441.0	1619.0	CONT		2	54U	79U	
		POTS	1447.3	1448.7	UNCLF		3	70	85	
		POTS	1454.6	1500.2	II	UE	3	50	85	
		PALE	1748.0	1749.0	III		2	25	75	
		SGMR	1748.0	1749.0	V		2	30	80	
		PALE	1931.0	2033.0	CONT		1	25	75	
2028	2400	HIRA								
Day 27 0000	0833	HIRA								
		LEAR	0138.0	0138.0	III		1	30	43	
		POTS	0540 E	1553 U	III	N	1	40X	90U	
		POTS	0540 E	1553 U	III	N	2	40X	90U	
0540	1553	POTS	0540 E	1553 U	I	S,C,DC	3	110U	400	
		LEAR	0552.0	0552.0	III		1	30	55	
		POTS	0602.3	0602.6	III	B	2	40X	170U	
0555	1200	IZMI	0602.3	0602.5	III	B	1	45	85	
0603	1538	ONDR								
		IZMI	0622.6	0622.8	I	G	1	180	205	

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27		POTS	0701.4	0701.5	III	B	2	110U	145	
		IZMI	0710.9	0711.0	III	B	1	45	90	
		IZMI	0717.2	0718.0	III	G	1	45X	85	
		IZMI	0719.5	0720.2	III	G	2	45X	90	
		POTS	0719.5	0720.3	III	G	3	40X	70	
		IZMI	0736.6	0737.0	I	GG	1	185	255	
		LEAR	0812.0	0813.0	III		2	30	67	
		SVTO	0812.0	0813.0	III		2	35U	55U	
		POTS	0812.2	0813.1	III	G	3	40X	90U	
		IZMI	0812.3	0813.1	III	GG	2	45X	90	
		IZMI	0816.0	1200.0D	I	S	2	50U	270X	
		IZMI	0826.2	0826.4	III	B	1	45X	85	
		IZMI	0905.0	0906.1	III	G	2	45X	90	
		IZMI	0913.1	0914.4	III	G	1	45	90	
		LEAR	0941.0	0942.0	III		2	30	65	
		SVTO	0941.0	0942.0	III		2	37U	72U	
		POTS	0941.7	0942.1	III	B	3	40X	90U	
		IZMI	0941.8	0941.9	III	G	3	45X	95	
		IZMI	0941.8	0941.9	V		2	45	65	
		IZMI	0950.4	0950.5	III	B	1	45	85	
		IZMI	1012.7	1012.9	III	B	2	45X	95	
		POTS	1012.7	1013.0	III	G	3	40X	70	
		IZMI	1030.8	1031.7	III	G	2	45X	140	
		POTS	1030.9	1031.8	III	G	3	40X	170U	
		IZMI	1035.0	1200.0D	III	S	2	45X	95	
		IZMI	1102.1	1102.4	III	G	2	45X	100	
		POTS	1102.2	1102.4	III	G	3	40X	90U	
		POTS	1127.5	1127.6	III	B	3	40X	90U	
		SGMR	1334.0	1429.0	CONT		1	30	58	
		SGMR	1453.0	1900.0	CONT		1	30	55	
		PALE	1804.0	1830.0	CONT		1	38	55	
		PALE	1906.0	1907.0	V		2	25	61	
		SGMR	1906.0	1907.0	V		1	30	80	
	2029 2400	HIRA								
		PALE	2237.0	2237.0	III		1	30	48	
28	0000 0832	HIRA	0130.0	0250.0	I	S	1	90	200	
		LEAR	0223.0	0223.0	III		2	30	78	
		HIRA	0224.0	0224.1	III	B	1	25X	140	
		POTS	0540 E	1553 U	III	N	1	40X	70	
	0540 1553	POTS	0540 E	1553 U	I	S,C	2	110U	400	
	0553 1200	IZMI	0553.0E	1200.0D	I	S	2	105	260	
		POTS	0554.6	0555.1	III	G	3	40X	170U	
		IZMI	0554.8	0555.1	III	G	2	50	150	
		IZMI	0604.0	0604.1	III	G	1	45	135	
		POTS	0604.0	0604.2	III	G	2	40X	170U	
	0605 1535	ONDR								
		IZMI	0609.3	0609.4	III	B	2	45	135	
		POTS	0609.4	0609.5	III	B	3	40X	300	
		POTS	0803.0	0804.3	II	UE,H	3	120	250	
		POTS	0902.7	0903.5	III	G	2	40X	170U	
		POTS	1015.0	1016.0	III	G	2	110U	500	
		POTS	1148.0	1148.6	III	G	3	40X	400	
		SGMR	1148.0	1148.0	III		1	47	80	
		SVTO	1148.0	1148.0	III		2	55U	76U	
		IZMI	1148.1	1148.4	III	G	3	45X	270X	
		IZMI	1148.2	1148.6	V	G	2	45X	85	
		POTS	1226.5	1226.6	III	B	2	110U	350	
		SGMR	1318.0	1318.0	III		1	30	80	
		SVTO	1318.0	1318.0	III		2	35U	85U	
		POTS	1318.2	1318.4	III	B	3	40X	150	
		POTS	1403.9	1409.8	III	G,C	3	40X	170U	
		SGMR	1404.0	1410.0	III		3	30	80	
		SVTO	1404.0	1407.0	III		3	35	75	
		POTS	1404.6	1406.8	V		3	40X	70	
		SGMR	1417.0	1419.0	III		1	30	57	
		SGMR	1419.0	1430.0	II		1	30	55	ESS 1200
		SGMR	1438.0	1448.0	III	N	1	30	60	
		POTS	1439.2	1439.6	III	G	3	40X	90U	

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

SEPTEMBER 1997

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
28			POTS	1458.4	1458.6	III	B	3	40X	90U	
			PALE	1742.0	1742.0	III		1	43	55	
			SGMR	1742.0	1907.0	III	N	2	30	80	
			PALE	1804.0	1804.0	III		1	41	55	
			PALE	1814.0	1823.0	III		1	25	55	
			PALE	1907.0	1907.0	III		2	25	75	
			PALE	1945.0	1946.0	III		1	25	67	
			SGMR	1945.0	2057.0	III	N	2	30	80	
			PALE	2003.0	2057.0	III	N	3	25	75	
	2030	2400	HIRA	2034.1	2035.4	III	G	1	25X	160	
			HIRA	2055.2	2057.0	III	G	2	25X	230	
			PALE	2151.0	2156.0	III		2	25	55	
			HIRA	2152.0	2152.1	III	B	1	25X	180	
			PALE	2212.0	2216.0	V		2	25	66	
			HIRA	2213.3	2216.0	III	G	2	25X	330	
			LEAR	2250.0	2321.0	CONT		1	30	42	
			PALE	2254.0	2255.0	III		1	25	55	
			HIRA	2255.0	2255.1	III	B	1	25X	200	
			LEAR	2255.0	2255.0	III		2	30	65	
			LEAR	2330.0	2359.0	III	N	3	30	80	
			PALE	2330.0	2359.0	III	N	3	25	75	
			HIRA	2343.7	2347.0	III	G	2	25X	310	
29			LEAR	0029.0	0029.0	III		2	30	80	
			PALE	0029.0	0029.0	III		1	25	60	
	0000	0831	HIRA	0029.1	0029.8	III	G	1	25X	150	
			LEAR	0203.0	0203.0	III		2	30	70	
			PALE	0203.0	0203.0	III		1	35	55	
			HIRA	0203.1	0203.2	III	B	1	25X	320	
			LEAR	0210.0	0210.0	III		1	30	45	
			LEAR	0258.0	0305.0	III		1	30	47	
			HIRA	0305.2	0305.4	III	B	1	25X	150	
			LEAR	0312.0	0322.0	III		2	30	80	
			PALE	0316.0	0317.0	III		1	25	55	
			HIRA	0317.2	0317.5	III	B	1	25X	180	
			HIRA	0320.6	0321.6	III	G	1	25X	220	
			LEAR	0413.0	0414.0	III		3	30	80	
			HIRA	0413.3	0414.1	III	G	2	25X	310	
			LEAR	0531.0	0534.0	III		1	30	52	
			POTS	0540 E	1553 U	III	N	1	40X	70	
	0540	1553	POTS	0540 E	1553 U	I	S	2	110U	400	
			LEAR	0544.0	0600.0	III	N	2	30	72	
			POTS	0544.8	0545.4	III	G	3	40X	170U	
			HIRA	0544.9	0545.2	III	B	1	25X	180	
			SVTO	0545.0	0545.0	III		2	43U	55U	
			HIRA	0551.6	0552.0	III	B	1	40	170	
			POTS	0551.6	0552.1	III	G	2	40X	170U	
	0556	1156	IZMI	0556.0E	1156.0D	I	S	1	60	260	
			SVTO	0559.0	0600.0	III		2	35U	79U	
			POTS	0559.3	0600.8	III	G,C	3	40X	350	
			IZMI	0559.4	0600.8	III	GG	2	45X	165	
	0606	1531	ONDR								
			IZMI	0621.5	0621.8	III	G	2	45	150	
			POTS	0621.5	0621.7	III	G	2	40X	170U	
			LEAR	0702.0	0702.0	III		2	30	75	
			SVTO	0702.0	0712.0	III		3	35	85	
			IZMI	0702.3	0702.6	III	G	2	45X	85	
			POTS	0702.3	0702.7	III	G	2	40X	90U	
			LEAR	0709.0	0712.0	III		3	30	80	
			IZMI	0709.6	0710.7	CONT		2	45X	85	
			POTS	0709.6	0715.6	III	GG,RS	3	40X	325	
			IZMI	0709.7	0714.7	III	GG	3	45X	270	
			HIRA	0709.8	0710.4	III	G	2	25X	300	
			LEAR	0805.0	0826.0	III	N	2	30	80	
			SVTO	0805.0	0814.0	III		2	35U	85U	
			IZMI	0805.2	0805.4	III	B	2	45X	180	
			IZMI	0805.3	0805.5	V		2	45	85	
			POTS	0805.3	0814.1	III	GG	3	40X	325	
			IZMI	0810.5	0810.6	III	B	1	45X	90	

SOLAR RADIO EMISSION
Spectral Observations

SEPTEMBER 1997

OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
29		IZMI	0812.5	0812.6	III	B	1	45X	90	
		IZMI	0813.7	0813.8	III	G	2	45X	245	
		IZMI	0813.8	0813.9	V		2	45	85	
		SVTO	0825.0	0826.0	III		2	35U	85U	
		IZMI	0825.6	0826.2	III	G	2	45X	270X	
		POTS	0825.6	0826.3	III	G	3	40X	170U	
		IZMI	0825.7	0826.2	V	G	2	45X	85	
		POTS	0932.0	0932.4	III	G	2	40X	130	
		IZMI	1014.9	1015.3	III	G	1	45X	150	
		POTS	1015.0	1025.2	III	GG	3	40X	350	
		IZMI	1017.7	1024.7	III	GG	2	45X	170	
		SVTO	1024.0	1024.0	III		2	35	49	
		POTS	1030.5	1030.6	III	B	2	110U	170U	
		IZMI	1039.5	1156.0D	III	N	1	45X	135	
		POTS	1105.3	1109.5	III	G,C	3	40X	400	
		IZMI	1107.7	1108.3	III	G	1	50	245	
		IZMI	1122.4	1122.5	III	G	2	45X	255	
		POTS	1122.4	1122.6	III	B	3	40X	400	
		POTS	1212.8	1213.1	III	G	2	40X	170U	
		POTS	1231.7	1237.1	III	G	3	40X	800X	
		POTS	1233.8	1235.2	DCIM		3	200U	450	
		SGMR	1234.0	1234.0	III		1	30	57	
		POTS	1313.3	1313.5	III	B	2	40X	250	
		POTS	1446.1	1446.2	DCIM		1	350	400	
		SGMR	1458.0	1507.0	V		3	30	80	
		SVTO	1458.0	1507.0	III		3	35U	85U	
		POTS	1458.2	1459.5	III	G	3	40X	400	
		POTS	1506.5	1507.3	III	G	3	40X	325	
		SGMR	1619.0	1620.0	V		2	30	80	
		SGMR	1705.0	1705.0	V		1	30	51	
		PALE	1726.0	1726.0	III		1	25	55	
		SGMR	1726.0	1726.0	V		1	30	72	
		SGMR	1726.0	1749.0	III	N	2	30	72	
		PALE	1745.0	1745.0	III		1	25	55	
		PALE	1747.0	1748.0	III		1	25	55	
		PALE	1941.0	1941.0	III		1	25	62	
		SGMR	1941.0	1941.0	III		2	30	70	
		PALE	2054.0	2054.0	III		1	25	55	
		PALE	2111.0	2112.0	III		2	25	53	
		SGMR	2111.0	2111.0	III		1	30	52	
		PALE	2233.0	2234.0	III		1	25	55	
		LEAR	2328.0	2332.0	III		2	30	70	
		PALE	2328.0	2332.0	III		2	25	63	
	2031 2400	HIRA	2328.9	2329.0	III	B	1	25X	140	
		HIRA	2332.0	2332.1	III	B	1	25X	70	
		LEAR	2356.0	2356.0	III		1	30	55	
30		LEAR	0001.0	0002.0	III		1	30	55	
		LEAR	0016.0	0019.0	III		2	30	80	
	0000 0829	HIRA	0018.2	0019.7	III	G	1	25X	70	
		LEAR	0032.0	0033.0	III		1	30	45	
		LEAR	0117.0	0203.0	III	N	3	30	80	
		PALE	0120.0	0202.0	III	N	2	25	75	
		HIRA	0121.5	0123.0	III	G	1	25X	270	
		HIRA	0140.8	0141.1	III	G	2	25X	190	
		HIRA	0152.4	0202.0	III	G	2	25X	190	
		LEAR	0311.0	0312.0	III		2	30	55	
		HIRA	0311.7	0311.8	III	B	1	25X	50	
		HIRA	0342.9	0343.0	III	B	1	25X	80	
		LEAR	0344.0	0345.0	III		2	30	62	
		LEAR	0352.0	0354.0	III		3	30	80	
		PALE	0353.0	0353.0	III		1	47	70	
		HIRA	0353.4	0353.7	III	B	3	25X	220	
		POTS	0540 E	1553 U	III	N	1	40X	70	
	0540 1553	POTS	0540 E	1553 U	I	S	2	110U	300	
		POTS	0542.8	0543.0	III	B	3	40X	170U	
	0616 1531	ONDR								
		SVTO	0812.0	0813.0	III		2	35U	45U	
		POTS	0812.8	0813.1	III	B	3	40X	170U	

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

SEPTEMBER 1997

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
30	0605	1200	IZMI	0812.9	0813.0	III	B	1	45X	90	
			POTS	0822.4	0822.7	III	B	2	40X	140	
			IZMI	1112.0	1200.0D	I	S	2	105	205	
			POTS	1215.8	1216.6	DCIM		3	200U	400	
			SGMR	1216.0	1216.0	III		1	30	67	
			SVTO	1216.0	1216.0	III		2	35U	72U	
			POTS	1216.4	1217.0	III	G	3	40X	400	
			SGMR	1336.0	1337.0	III		1	30	56	
			SVTO	1336.0	1337.0	III		1	35U	46U	
			POTS	1336.8	1337.1	III	B	2	40X	70	
			POTS	1415.9	1418.6	III	G	3	40X	70	
			SGMR	1416.0	1418.0	III		1	30	57	
			SGMR	1456.0	1457.0	III		1	30	57	
			POTS	1456.5	1457.6	III	G	3	40X	170U	
			SGMR	1539.0	1553.0	CONT		2	30	80	
			POTS	1550.6	1551.8	III	GG	3	40X	170U	
			SVTO	1551.0	1551.0	III		2	35U	60U	
			SGMR	1757.0	1759.0	III		1	03	44	
			PALE	2242.0	2244.0	III		1	28	53	
			LEAR	2243.0	2252.0	III	N	1	30	80	
			PALE	2251.0	2252.0	III		1	27	60	
	2031	2400	HIRA	2251.9	2252.0	III	B	1	25X	130	

Event Remarks:

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

Frequency qualifiers:

X = Extends beyond instrument range U = Uncertain frequency

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 NANÇAY RADIOHELIOGRAPH
SEPTEMBER 1997

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
01/09/97	+0.31	+0.76	1	8H30 E	15H35 D
01/09/97	+0.76	+0.56	1	8H30 E	15H35 D
02/09/97	+0.76	+0.67	2	8H04 E	15H34 D
03/09/97	+1.00	+0.53	1	8H04 E	15H34 D
04/09/97	-0.80	-0.67	2	8H03 E	15H34 D
05/09/97	-0.84	-0.65	3	8H02 E	15H32 D
06/09/97	-1.00	-0.76	1	8H11 E	15H33 D
06/09/97	-0.09	-0.76	2	8H03 E	15H33 D
07/09/97	-1.20	-0.62	2	8H03 E	15H33 D
07/09/97	-0.24	-0.71	2	8H03 E	15H33 D
08/09/97	-1.20	-0.67	3	8H05 E	15H32 D
08/09/97	+0.00	-0.69	3	8H05 E	15H32 D
09/09/97	-0.98	-0.80	3	8H01 E	15H31 D
09/09/97	-0.39	-0.97	1	8H01 E	15H31 D
09/09/97	+0.31	-0.58	3	8H01 E	15H31 D
10/09/97	-0.91	-0.84	3	8H02 E	15H32 D
10/09/97	-0.18	-0.84	3	8H02 E	15H32 D
11/09/97	-0.63	-1.00	3	8H00 E	15H30 D
11/09/97	+0.00	-0.76	3	8H00 E	15H30 D
11/09/97	+0.84	-0.51	2	8H00 E	15H30 D
12/09/97	-0.38	-0.98	2	8H00 E	15H30 D
12/09/97	+0.22	-0.67	2	8H00 E	15H30 D
12/09/97	+0.20	+0.00	2	8H00 E	15H30 D
12/09/97	+0.49	+0.33	1	8H00 E	15H30 D
13/09/97	-0.11	-0.95	2	8H08 E	15H31 D
13/09/97	+0.09	-0.65	1	8H08 E	15H31 D
13/09/97	+0.53	-0.05	1	8H08 E	15H31 D
14/09/97	+0.18	-0.82	2	8H04 E	15H30 D
15/09/97	+0.44	-0.78	1	8H09 E	15H30 D
16/09/97	+1.00	+0.22	1	8H00 E	15H30 D
20/09/97	-1.40	-0.54	1	8H01 E	15H28 D
20/09/97	+0.90	-1.20	1	12H30	15H28 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 NANÇAY OBSERVATIONS
D NOISE STORM IN PROGRESS AT THE END OF THE NANCAY OBSERVATIONS

22/09/97	-1.10	-0.71	1	8H06 E	11H00
23/09/97	-0.67	-0.56	1	8H56 E	15H27 D
24/09/97	-0.42	-0.62	2	9H15 E	15H27 D
24/09/97	+0.04	-0.76	2	9H15 E	15H27 D
25/09/97	-0.27	-0.65	1	7H55 E	15H25 D
25/09/97	+0.18	-0.85	1	7H55 E	15H25 D
26/09/97	+0.22	-1.00	3	7H56 E	15H26 D
27/09/97	+0.56	-0.84	3	8H09 E	15H27 D
28/09/97	+0.56	-0.93	3	7H59 E	15H28 D
29/09/97	+1.00	-0.71	3	7H56 E	15H25 D
30/09/97	+0.97	-0.86	2	8H06 E	15H25 D

SOLAR RADIO NOISE STORM AT 327 MHZ
FROM NANÇAY RADIOHELIOGRAPH
SEPTEMBER 1997

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
01/09/97	+0.73	+0.43	1	13H20	15H35 D
02/09/97	+0.84	+0.58	1	11H00	15H34 D
03/09/97	-0.84	-0.69	1	13H10	15H34 D
03/09/97	+1.10	+0.54	1	12H20	15H34 D
04/09/97	-0.80	-0.71	1	8H03 E	15H34 D
05/09/97	-0.80	-0.59	1	8H02 E	15h32 D
05/09/97	-0.54	-0.54	1	8H02 E	15H32 D
06/09/97	-0.22	-0.71	1	8H03 E	15H33 D
07/09/97	-1.10	-0.62	1	8H03 E	15H33 D
07/09/97	-0.29	-0.60	2	8H03 E	15H33 D
07/09/97	+0.04	-0.71	2	8H03 E	15H33 D
08/09/97	-0.95	-0.70	2	8H05 E	15H32 D
08/09/97	+0.01	-0.62	2	8H05 E	15H32 D
09/09/97	-0.93	-0.71	2	8H01 E	15H31 D
09/09/97	-0.44	-0.62	1	8H01 E	15H31 D
09/09/97	+0.27	-0.49	1	8H01 E	15H31 D
10/09/97	-0.76	-0.84	1	8H02 E	15H32 D
10/09/97	-0.27	-0.67	1	8H02 E	15H32 D
10/09/97	+0.40	-0.62	1	8H02 E	15H32 D
11/09/97	-0.51	-1.00	1	8H00 E	15H30 D
11/09/97	-0.08	+0.22	1	8H00 E	15H30 D
11/09/97	-0.08	-0.62	1	8H00 E	15H30 D
11/09/97	+0.71	-0.49	1	8H00 E	15H30 D

12/09/97	+0.18	+0.09	1	8H00 E	15H30 D
12/09/97	+0.53	+0.18	2	8H00 E	15H30 D
13/09/97	+0.00	-0.84	1	8H08 E	15H31 D
13/09/97	+0.38	-0.53	1	8H08 E	15H31 D
13/09/97	+0.44	+0.00	1	8H08 E	15H31 D
13/09/97	+0.67	+0.18	1	8H08 E	15H31 D
14/09/97	+0.22	-0.80	1	8H04 E	15H30 D
15/09/97	+0.40	-0.76	1	8H09 E	15H30 D
15/09/97	+0.76	-0.53	1	8H09 E	15H30 D
18/09/97	+1.10	-0.49	1	7H58 E	13H30
19/09/97	+1.10	-0.59	1	8H19 E	9H40
23/09/97	-0.31	-0.80	1	8H56 E	15H27 D
24/09/97	-0.31	-0.62	1	9H15 E	15H27 D
24/09/97	-0.11	-0.67	1	9H15 E	15H27 D
25/09/97	-0.33	-0.70	1	7H55 E	15H25 D
25/09/97	+0.20	-0.70	1	7H55 E	15H25 D
26/09/97	+0.29	-0.67	1	7H56 E	15H26 D
27/09/97	+0.56	-0.67	2	8H09 E	15H27 D
28/09/97	+0.67	-0.71	2	7H59 E	15H28 D
29/09/97	+0.95	-0.70	1	7H56 E	15H25 D
30/09/97	+1.10	-0.70	1	11H00	15H25 D

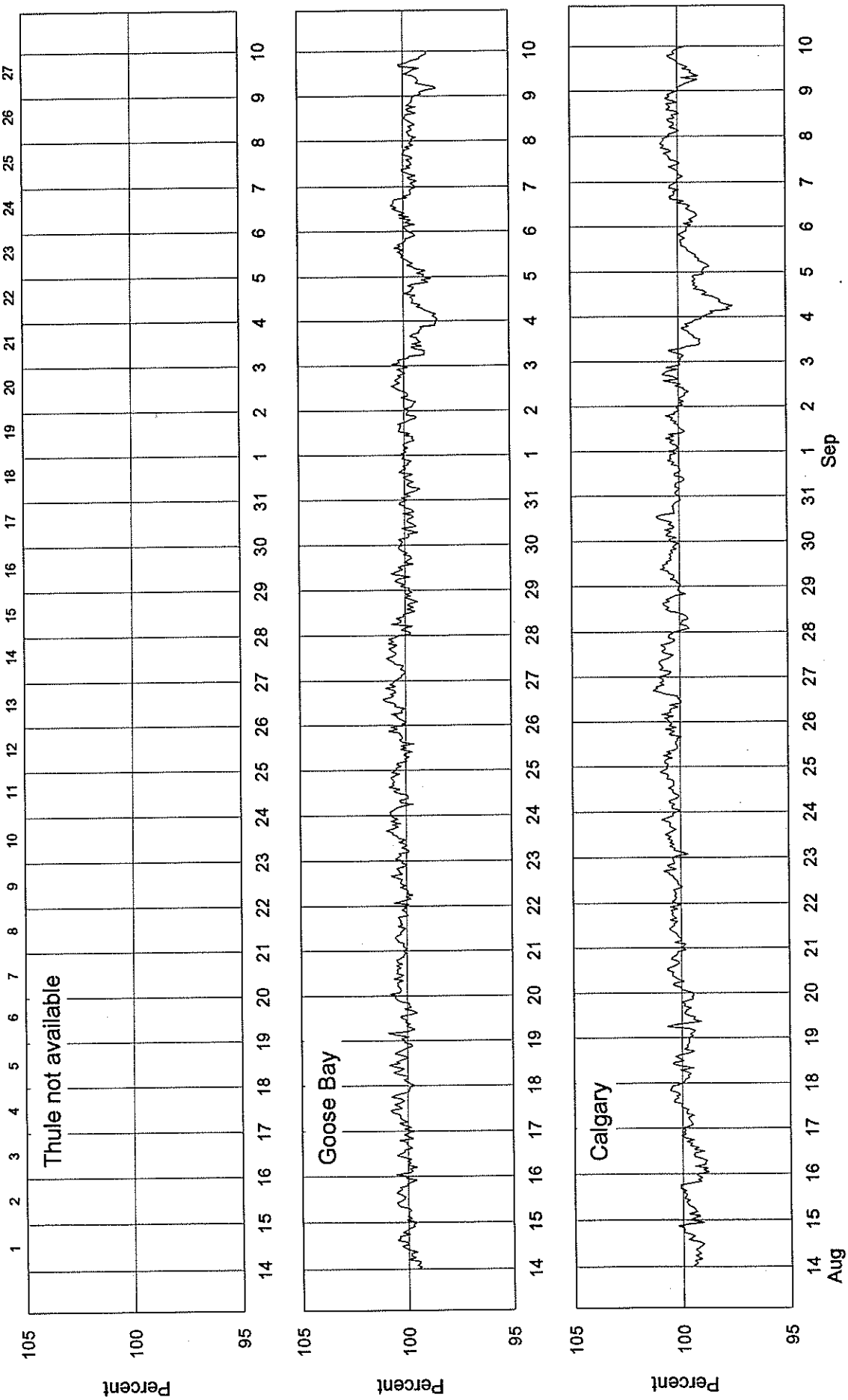
OTHERS DAYS: NO DETECTABLE NOISE STORM

COSMIC RAY INDICES
(Neutron Monitor)
SEPTEMBER 1997

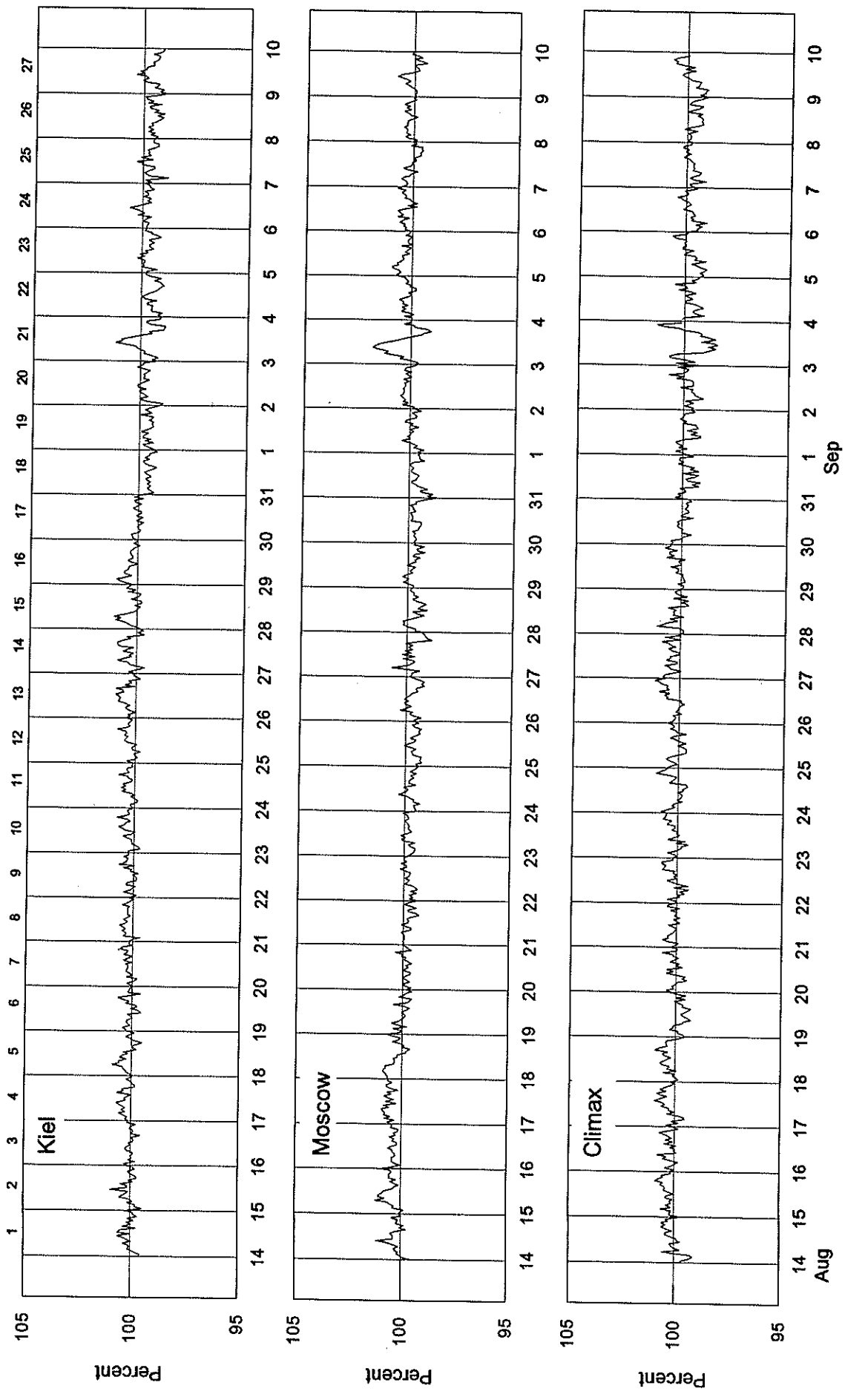
Day	THULE Average (cts/h)/100	GOOSE BAY Average (cts/h)/100	CALGARY Average (cts/h)/300	KIEL Average (cts/h)/100	MOSCOW Average (cts/h)/64	CLIMAX Average (cts/h)/100	BEIJING Average (cts/h)/256	HALEAKALA Average (cts/h)/1000
1	No data	7411.2	4020.3	6326.7	9339.1	4285.5	1918.8	3581.0
2	at time of	7419.7	4015.7	6339.7	9371.2	4284.2	1932.3	3585.5
3	publication	7376.9	3995.7	6341.9	9390.2	4275.8	1933.2	3582.3
4	---	7357.8	3958.2	6316.8	9370.3	4280.2	1936.2	3586.5
5	---	7400.0	3987.8	6335.3	9391.6	4282.3	1933.5	3594.1
6	---	7417.8	4003.0	6345.5	9386.5	4284.0	1936.9	3598.0
7	---	7396.7	4024.7	6334.2	9359.7	4282.8	1929.9	3596.6
8	---	7393.1	4024.0	6323.2	9374.2	4278.2	1927.5	3597.8
9	---	7368.9	4004.5	6327.5	9359.7	4286.4	1938.3	3601.2
10	---	7354.2	3996.3	6318.7	9382.3	4280.6	1947.9	3594.0
11	---	7352.3	3994.3	6305.6	9370.4	4274.4	1953.8	3587.3
12	---	7351.6	3978.8	6337.9	9371.8	4288.7	1960.1	3589.0
13	---	7356.0	3974.0	6343.1	9338.2	4274.1	1958.7	3585.1
14	---	7363.8	3988.5	6328.2	9341.2	4273.2	1963.5	3583.9
15	---	7358.6	3985.3	6309.3	9340.7	4275.4	1963.5	3576.6
16	---	7390.6	3995.5	6313.9	9349.7	4284.2	1970.9	3579.9
17	---	7385.1	4002.3	6306.6	9340.2	4283.9	1980.2	3578.6
18	---	7342.4	3958.7	6287.1	9323.1	4278.0	1976.4	3573.4
19	---	7343.1	3974.0	6276.1	9330.0	4259.6	1975.4	3565.0
20	---	7362.2	3985.0	6305.5	9392.2	4264.5	1989.9	3578.6
21	---	7436.5	4013.3	6346.5	9458.8	4300.8	1994.1	3584.7
22	---	7459.6	4035.2	6365.8	9505.9	4292.9	1995.7	3581.3
23	---	7448.4	4023.3	6336.0	9455.9	4299.0	1983.3	3574.1
24	---	7458.7	4022.7	6315.0	9449.0	4280.1	1987.5	3578.0
25	---	7443.6	4013.2	6296.6	9450.4	4268.9	1992.4	3575.0
26	---	7403.0	4009.2	6293.6	9439.5	4266.6	1988.1	3574.5
27	---	7393.4	4009.2	6308.5	9443.8	4268.6	1989.4	3576.6
28	---	7363.9	3994.7	6303.2	9413.7	4264.4	1989.0	3576.8
29	---	7355.3	3999.7	6290.1	9422.0	4260.0	1984.1	3574.1
30	---	7373.5	3989.7	6298.3	9430.5	4251.6	1979.3	3572.6
Mean	---	7387.9	3999.2	6319.2	9389.7	4277.6	1963.7	3582.7

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.

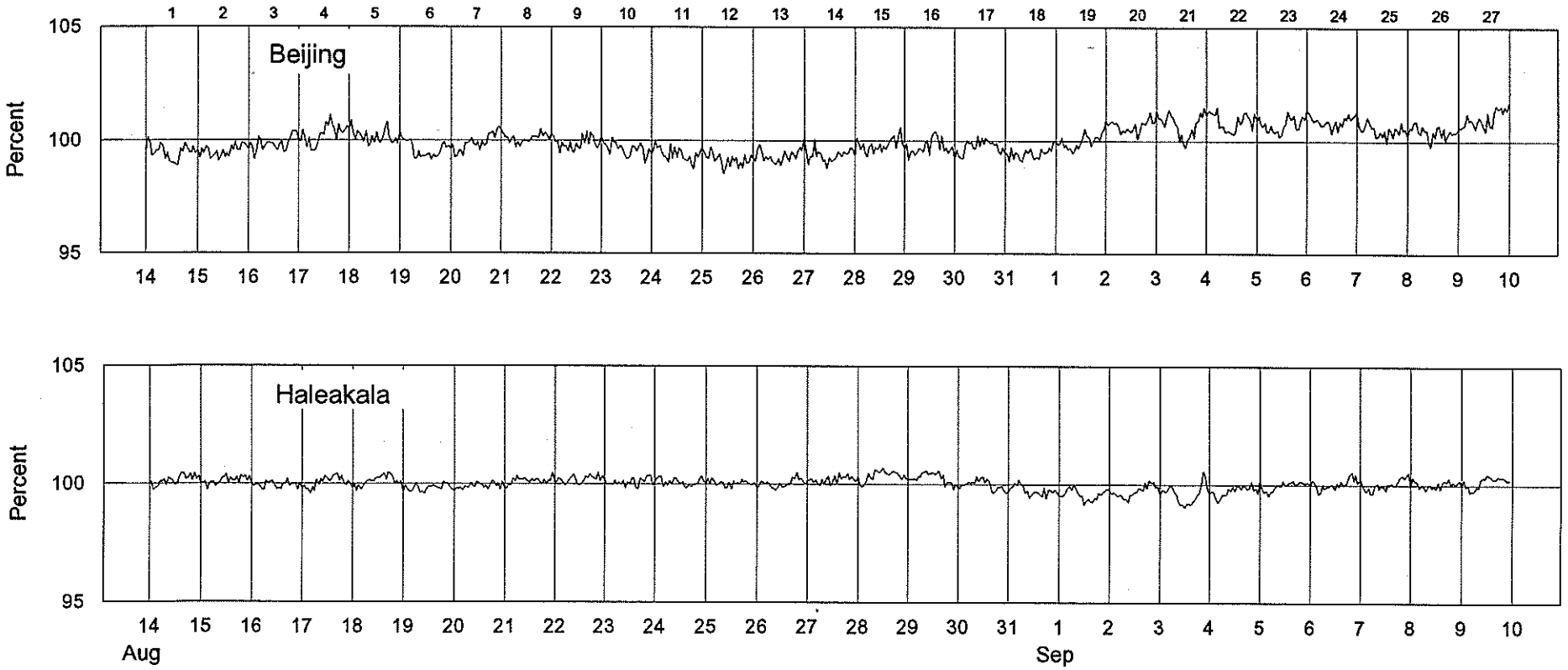
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2240 - Beginning 14 Aug 97



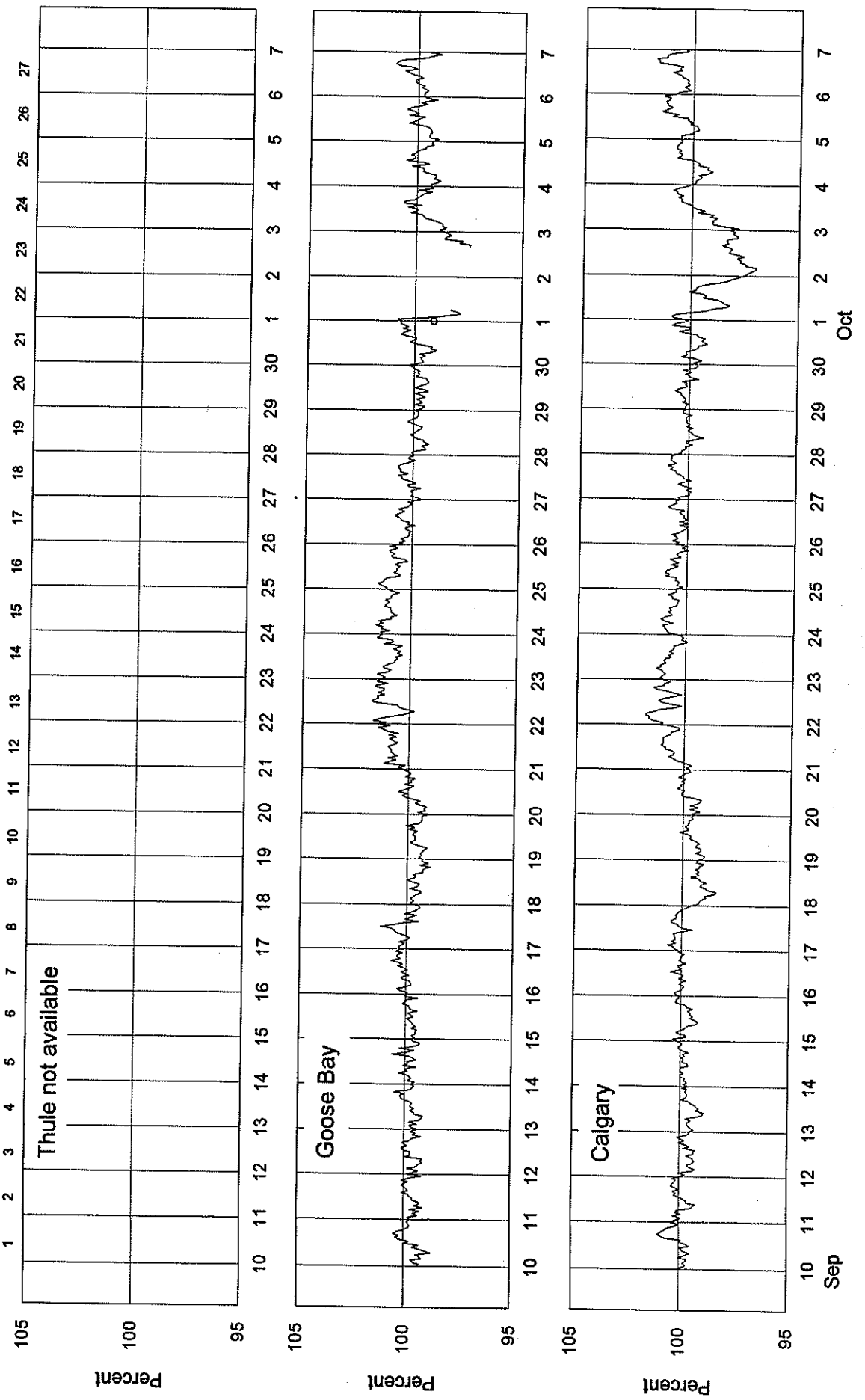
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2240 - Beginning 14 Aug 97



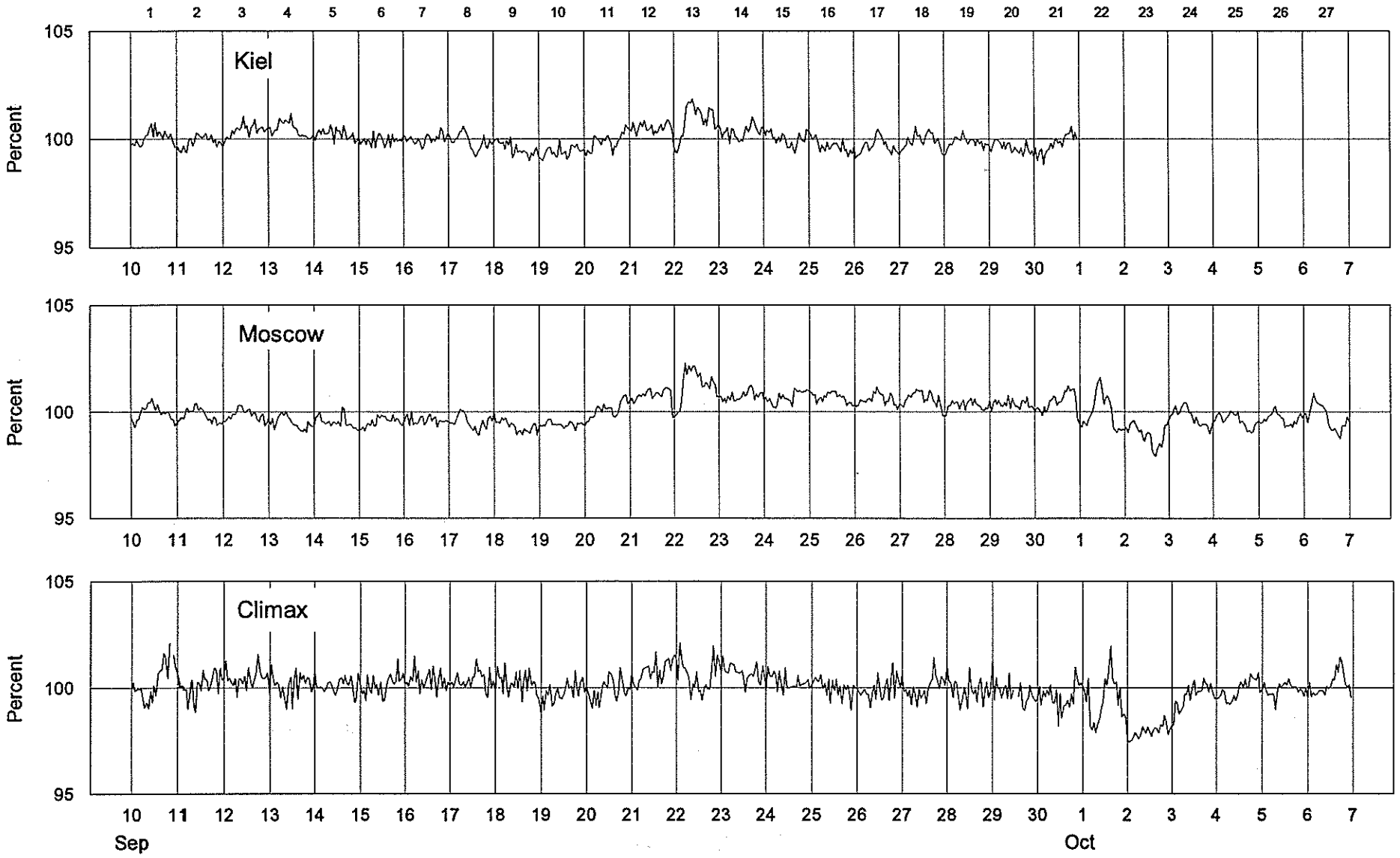
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2240 - Beginning 14 Aug 97



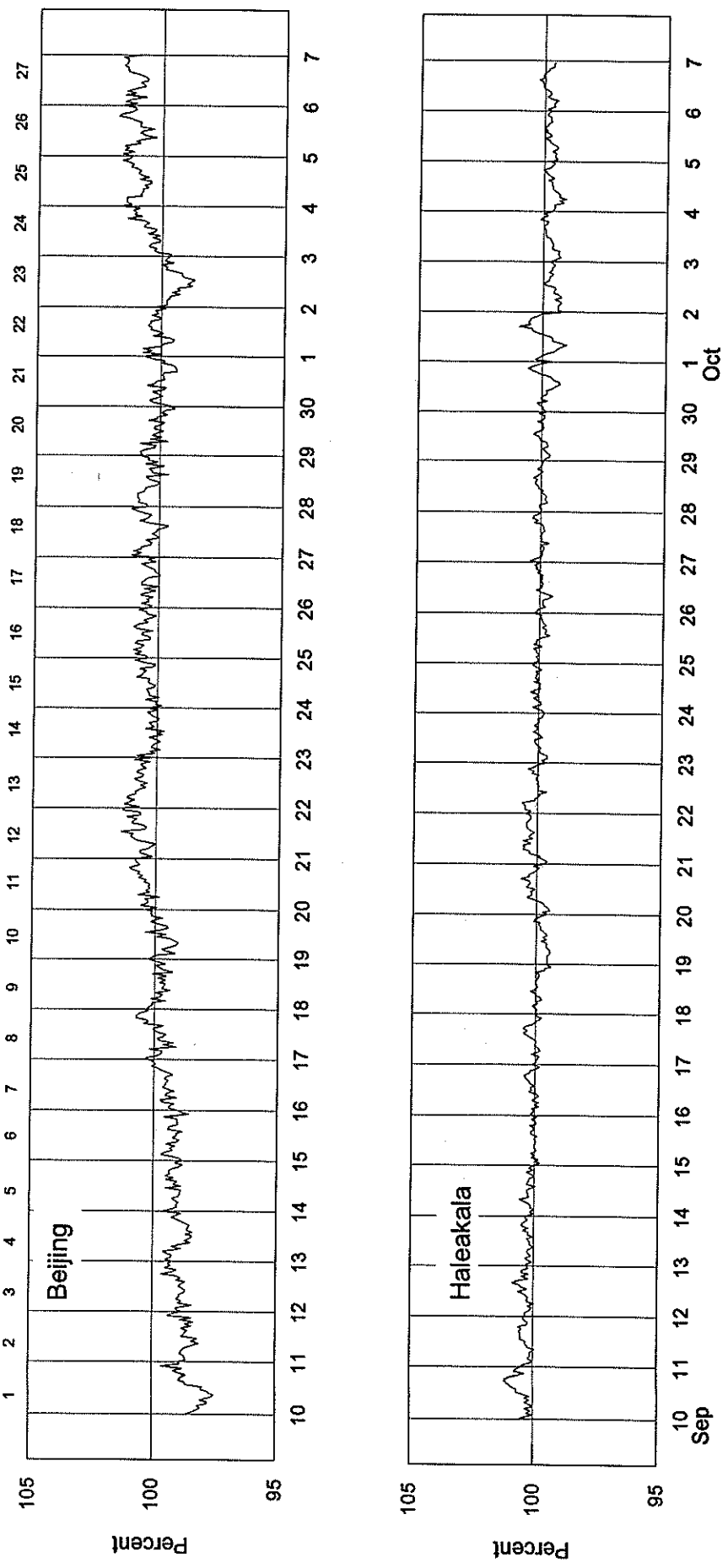
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2241 - Beginning 10 Sep 97



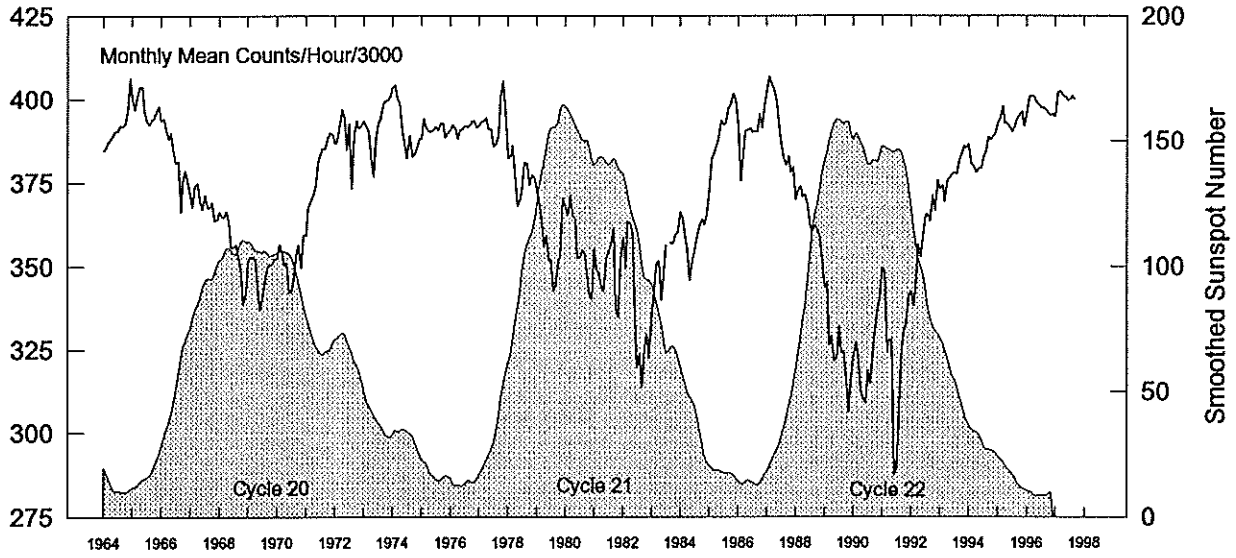
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2241 - Beginning 10 Sep 97



COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2241 - Beginning 10 Sep 97



Calgary Neutron Monitor Pressure-Corrected Values
Jan 1964 - Sep 1997



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1964	3847	3852	3872	3883	3892	3905	3905	3921	3920	3926	3966	4064	3913
1965	4006	3968	4007	4040	4040	3967	3935	3923	3938	3942	3960	3980	3976
1966	3935	3943	3906	3881	3899	3844	3807	3814	3663	3758	3785	3750	3832
1967	3710	3678	3741	3750	3697	3671	3713	3679	3675	3691	3638	3639	3690
1968	3663	3653	3647	3665	3632	3561	3556	3567	3529	3482	3386	3420	3563
1969	3515	3531	3529	3520	3417	3370	3408	3464	3500	3507	3506	3524	3483
1970	3523	3565	3548	3505	3512	3424	3426	3477	3543	3564	3497	3596	3515
1971	3593	3678	3693	3712	3737	3813	3832	3853	3851	3883	3899	3893	3786
1972	3865	3875	3924	3969	3942	3847	3926	3731	3895	3935	3912	3920	3895
1973	3935	3919	3903	3819	3768	3875	3926	3944	3986	3995	3997	4008	3923
1974	4036	4043	4005	3988	3906	3861	3822	3890	3827	3831	3850	3881	3912
1975	3883	3943	3914	3905	3904	3910	3918	3907	3929	3927	3884	3897	3910
1976	3908	3923	3915	3881	3909	3909	3921	3918	3920	3936	3935	3916	3916
1977	3919	3933	3933	3943	3911	3911	3857	3865	3895	4010	4055	3961	3933
1978	3823	3826	3860	3773	3681	3697	3730	3811	3808	3744	3772	3764	3774
1979	3726	3696	3647	3559	3592	3516	3521	3427	3447	3519	3528	3705	3573
1980	3681	3652	3711	3649	3643	3527	3525	3550	3540	3471	3414	3403	3564
1981	3550	3491	3483	3440	3426	3522	3546	3560	3615	3374	3348	3520	3490
1982	3586	3492	3634	3632	3608	3344	3196	3239	3137	3257	3296	3225	3387
1983	3364	3421	3510	3515	3399	3487	3563	No Data	3571	3569	3597	3599	3509
1984	3661	3646	3586	3551	3460	3515	3551	3593	3623	3641	3623	3652	3592
1985	3723	3821	3834	3858	3888	3936	3921	3929	3971	3987	4017	3997	3907
1986	3923	3755	3814	3905	3906	3915	3902	3907	3902	3958	3912	3974	3898
1987	4025	4068	4047	4028	3993	3914	3866	3822	3802	3827	3779	3796	3914
1988	3698	3729	3739	3709	3714	3682	3621	3608	3624	3603	3590	3520	3653
1989	3436	3454	3263	3290	3216	3222	3321	3224	3246	3164	3063	3152	3254
1990	3227	3272	3232	3129	3099	3089	3188	3147	3237	3317	3375	3401	3226
1991	3496	3489	3244	3279	3280	2873	2896	3078	3253	3311	3330	3412	3245
1992	3425	3382	3463	3566	3528	3593	3655	3655	3636	3711	3665	3758	3586
1993	3730	3741	3693	3753	3765	3775	3780	3775	3815	3836	3859	3852	3781
1994	3864	3807	3798	3779	3793	3793	3822	3841	3885	3878	3891	3896	3837
1995	3929	3945	3919	3929	3927	3917	3902	3919	3940	3956	3963	3920	3931
1996	3960	4008	4012	4010	3993	3983	3976	3976	3970	3960	3953	3955	3980
1997	3947	4023	4024	4014	4007	3998	4001	4010	3999				4003

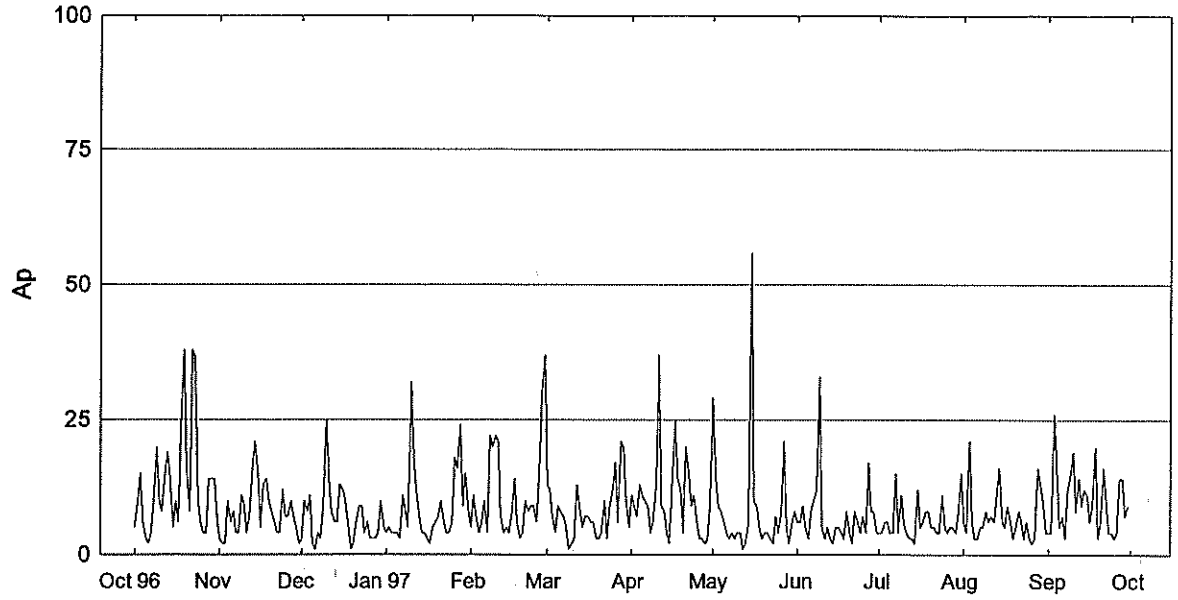
Multiply table entries by 300 to obtain hourly counting rate. Calgary, Canada: N51 W114, Alt=1128m, Cutoff Rigidity=1.09GV.

Geomagnetic Activity Indices
September 1997

Day		Kp Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	Ap	Cp	Km Three-Hourly Indices 1	2	3	4	5	6	7	8	Am	aa Provisional N	S	M	
1	Q6	2-	2-	1	1+	0+	1	0+	1	8+	4	0.1	2o	2-	1+	1+	1-	1-	0+	1o	8	8	5	9	5	CC
2	Q5	2-	1+	0+	0+	1-	0+	1	2	8-	4	0.1	2-	2-	1-	0+	1o	1-	1+	2o	8	8	7	6	9	CC
3	D1	3	2+	2	3-	3	3-	5	6+	27	26	1.2	3-	2o	3-	3o	3+	3o	5-	5o	41	43	47	20	71	
4	D5*	5	4	3	3-	2-	1+	2	1+	21	16	0.9	4+	4+	3+	3-	2-	2-	2o	1+	31	21	28	38	11	
5	Q9	1+	1+	1-	1-	1	2	1+	1+	10-	5	0.2	1o	2-	1o	1+	1+	2o	2-	1+	10	12	9	8	13	CC
6		1-	3-	2-	2	3-	1+	2	2	15	7	0.4	1-	3-	2o	2+	3-	1+	2o	2+	17	16	16	13	19	K
7	Q3	0	1-	0+	1-	2	2	1-	0+	7-	3	0.1	0+	1-	0+	1o	2-	2-	0+	1-	6	10	6	5	11	CK
8		0+	0	0+	2+	4-	4-	4-	3	17	12	0.7	1-	0+	0+	2o	3+	4-	3o	3-	20	28	21	7	42	
9	D4*	1+	3+	4-	3+	2+	3-	3+	3+	23+	15	0.8	1+	3o	4-	3o	3o	3-	3o	4-	30	33	19	24	29	
10	D2*	3+	2	2+	2+	3+	4	4	5-	26	19	1.0	3o	2+	2+	2+	3o	4o	4-	4o	34	42	30	20	52	
11		3	2-	1+	2-	2+	2-	2+	3-	17-	8	0.5	3-	1+	1+	2o	2+	2o	2o	3-	16	20	12	14	18	
12		4+	3	2+	2	3	2+	3+	2-	22	14	0.8	4-	3o	2o	2+	3o	3-	3o	2o	25	37	19	26	30	
13		3+	3-	2	1	1	2-	2	3-	16+	9	0.5	3-	2+	2+	1+	2-	2-	2o	2+	16	18	11	14	15	
14		3	3+	2+	3+	3	2+	2+	2-	21+	12	0.7	2+	3o	2+	3+	3-	3-	3-	2-	23	26	18	23	21	
15		3+	3-	3-	3	2	3-	1	2	19+	11	0.6	3o	3-	3-	3+	2+	3-	1o	2-	22	21	16	22	15	
16		2+	3	2	1	1	1+	1-	1+	13-	6	0.3	2o	2+	2o	1o	1o	1+	1o	1o	10	12	6	10	8	CC
17		1-	1+	1-	1+	2	3-	3	4-	15+	9	0.5	1-	1o	1-	2-	2o	2+	3-	4-	17	21	11	7	25	
18	D3	5	5	3+	2+	3-	3	2-	2	25	20	1.0	4o	4o	3+	2+	3+	3o	2o	2+	34	32	34	38	29	
19	Q2	0+	0	1-	1-	0+	1-	2-	1+	6-	3	0.1	0+	0+	1o	1+	0+	1-	2-	1+	6	7	5	6	6	C
20	Q10	2-	2-	2+	2-	2+	1-	0+	1	12-	6	0.3	1+	1o	3-	2+	3-	1-	1-	1o	12	11	13	14	10	KK
21		1+	1+	2+	2+	1-	2+	5-	5	20	16	0.9	1o	1+	3-	3-	1+	3o	4+	4+	30	35	27	15	47	
22		4+	4	1+	1-	1+	0+	1-	0+	13	10	0.6	4-	3+	2-	1+	1+	1-	1o	0+	16	22	12	29	5	
23	Q8	1	1	1	1-	1+	1-	1+	2	9	4	0.2	1+	1+	1o	1+	1+	1+	1+	2+	10	10	11	9	12	CC
24	Q7	2	1-	2-	1	1	0+	1-	1	8+	4	0.1	2o	1-	1+	2-	1+	1-	1o	1+	8	10	8	10	8	CC
25	Q1	0+	1-	0+	0+	1+	1+	1	0+	6-	3	0.1	0+	1-	1-	1-	2-	2-	1o	0+	6	4	8	4	9	CC
26	Q4	0+	0	1-	2-	1+	1-	1+	2-	8-	4	0.1	1-	0+	1+	2-	2-	1+	2-	1+	9	8	9	7	11	CC
27		3-	2-	3-	2	2	4	4	3-	22-	14	0.8	2+	2-	3o	3-	3-	4-	4-	3o	27	29	29	18	40	
28		4	4	4	2-	2-	2+	1+	1	20	14	0.8	3o	3+	4-	3-	2+	3-	2-	1o	25	22	28	34	16	
29		3	2+	3-	2	1-	0+	1	1+	13+	7	0.4	2+	2o	3o	3-	1o	1-	1+	2-	15	15	14	21	8	
30		1+	3+	2+	2-	1+	2	3	2+	17+	9	0.5	2-	3+	2+	2o	2-	2-	3o	2o	18	21	19	20	20	
Mean											10	0.51									18.3	20.2	16.7		18.4	

Day	Kn Three-Hourly Indices 1	2	3	4	5	6	7	8	An	Ks Three-Hourly Indices 1	2	3	4	5	6	7	8	As	Sa	Prov Ri	Ra	Rs	IMF
1	2-	2-	1+	2-	0+	1+	0+	1+	8	2o	2o	1+	1+	1o	0+	0+	1-	8	95.1	65	59	41	
2	2-	1+	0+	0+	1-	0+	1o	2+	7	2o	2+	1o	0+	1+	1-	1+	2o	10	93.3	59	53	39	
3	3-	2o	3-	3+	3+	3o	5-	5o	42	3-	2o	2+	3-	3o	3-	5o	5o	40	94.7	52	46	40	
4	4+	4-	3+	3-	2-	2-	2o	1+	26	4+	5o	3+	3o	2-	1+	2o	2-	34	94.6	42	38	40	
5	1-	1+	1-	1-	1+	2o	2-	1+	9	1o	2-	1o	2-	1+	2o	2-	1o	10	97.6	50	53	43	
6	1-	2+	2-	3-	3-	1+	2-	2o	15	1o	3o	2+	2+	3-	1+	2+	2+	18	99.1	56	57	45	
7	0o	0+	0o	1o	2-	2o	0+	1o	6	0+	1o	1-	1o	1+	1+	0+	0+	5	103.6	68	69	50	
8	0+	0o	0+	2o	4-	4-	3+	3-	21	1-	1-	1-	2-	3+	4-	3-	2+	19	121.1	87	84	69	
9	1o	3o	4-	3o	3o	3-	3o	3o	29	1+	3o	3+	3+	3o	3-	3o	4o	31	117.7	91	98	65	
10	3o	2+	2+	2+	3o	4+	4-	4o	35	3o	2o	2o	2o	3o	4-	4-	4o	33	116.4	93	98	64	
11	3-	1+	2-	2+	2+	2o	2+	2+	17	3-	1+	1+	2o	2o	2o	2-	3-	15	110.0	86	95	57	
12	4-	3-	2+	3-	3o	3-	3o	2-	27	3o	3o	2-	2o	3o	3-	3o	2+	24	110.3	88	87	57	
13	3o	3-	2+	1o	2-	2o	2o	2+	17	2+	2o	2o	1+	2-	1+	2o	2+	15	108.9	80	83	56	
14	2+	3-	2+	4-	3-	3-	2+	2o	24	2+	3o	2+	3-	3-	3-	3-	1+	22	103.7	70	67	50	
15	3-	3-	3-	4-	2o	3-	1+	2-	22	3+	3o	2+	3+	2+	2o	1o	2-	22	99.1	65	66	45	
16	2-	2+	2+	1-	1o	1+	1-	1+	11	2+	2+	1+	1+	1o	1o	1o	1-	10	96.4	61	63	42	
17	1o	1+	1-	2-	2+	3-	3-	3+	16	1-	1o	1o	2-	2o	2o	3-	4o	18	94.0	49	47	40	
18	4o	4+	3o	2+	3o	3-	2-	2o	31	4+	4o	4-	2+	3+	3+	2o	3-	38	89.0	33	32	34	
19	0+	0o	1-	1-	0o	1o	2-	1+	5	0+	1-	1+	2-	0+	1-	1+	1o	6	89.1	16	17	34	
20	1+	1-	3-	2+	3-	0+	0+	1+	11	1+	1o	2+	2+	3-	1-	1o	1-	12	88.4	14	15	33	
21	1o	1o	3-	3-	2o	3o	5-	5-	32	1o	1+	3-	3-	1-	3o	4o	4o	27	85.8	28	29	31	
22	4-	3+	2-	1o	2-	1-	1o	0+	16	4-	3+	1+	1+	1+	0+	1o	0+	15	89.6	45	44	35	
23	1o	1-	1o	1-	2-	1o	1+	2+	8	1+	2-	1o	2-	1+	1+	1+	2+	11	92.3	42	41	38	
24	2-	1-	1+	2-	1+	1-	1-	1+	8	2o	1o	1+	2-	1o	0+	1o	1+	9	93.5	42	43	39	
25	0+	1-	1-	0o	2-	1+	1o	0+	5	1-	1o	1o	1o	2-	2-	1+	0+	8	88.9	49	45	34	
26	0+	0o	1o	2-	2+	1+	1o	1+	8	1-	0+	2-	2o	1+	1+	2o	1+	10	89.5	26	27	35	
27	3-	2-	3-	3-	3-	4-	4-	3o	28	2+	2o	3+	3-	2+	3+	3o	3o	26	88.8	30	23	34	
28	3+	3+	4o	2+	2+	3-	2-	1o	26	3-	3+	4-	3-	2+	2+	1+	1o	23	87.5	18	19	33	
29	2+	2+	3o	3-	1-	1o	1+	2-	15	3-	1+	3-	3-	1o	0+	1o	1+	14	90.0	16	18	35	
30	1+	3o	2o	2o	2-	2-	3o	2o	18	2o	3+	3-	2o	2o	2-	3-	2o	19	87.9	19	21	33	
Mean									18.1									18.4	97.2	51.3	51.3	43.0	

Daily Average Indices Ap
Oct 1996 - Sep 1997

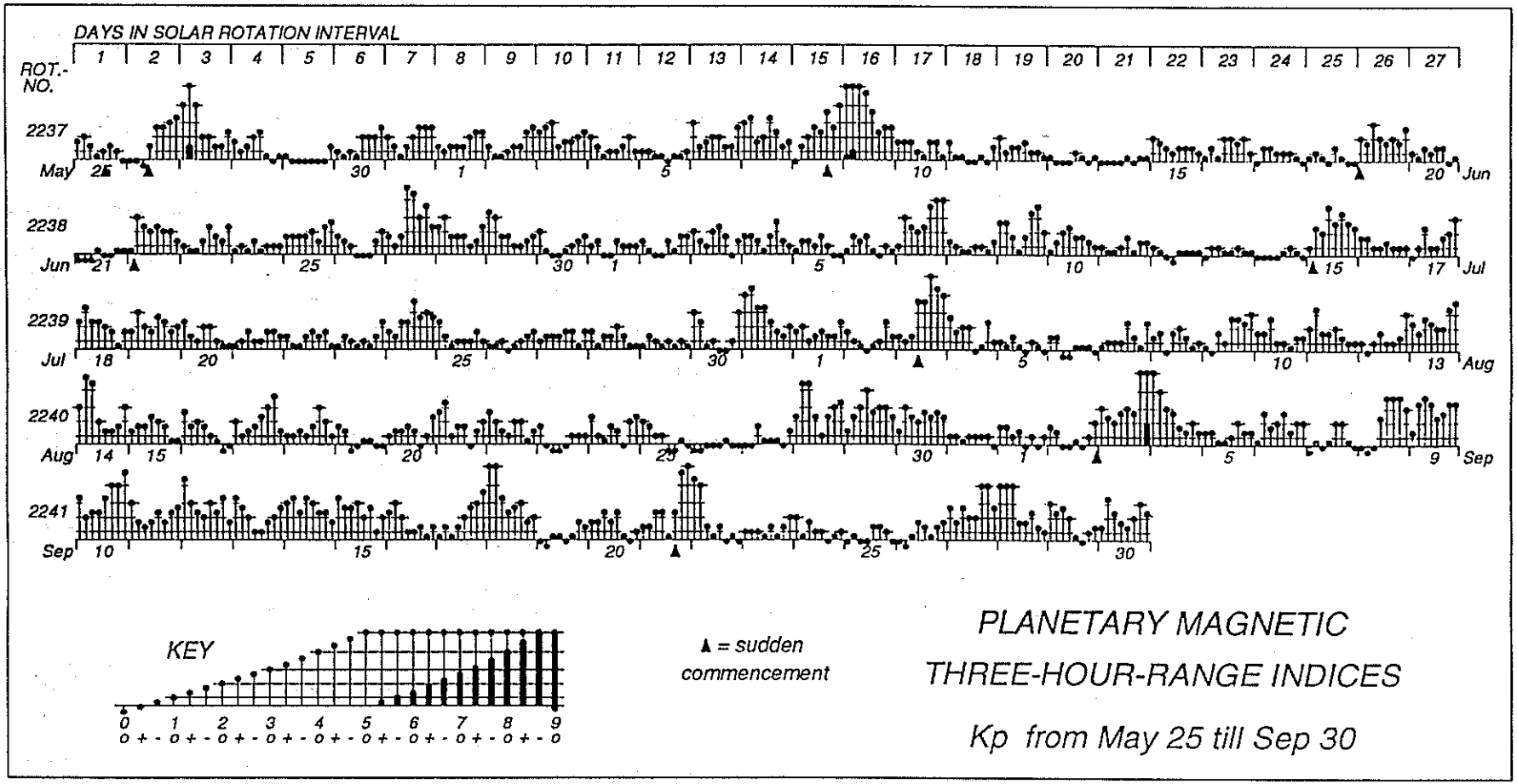


Day	Oct 96	Nov	Dec	Jan 97	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	5	3	3	4	5	13	11	29	6	4	6	4
2	10	2	10	5	11	12	9	14	6	4	4	4
3	15	2	8	4	7	7	7	9	9	6	21	26
4	6	10	11	4	4	4	13	8	5	6	6	16
5	3	6	2	4	6	9	11	6	3	4	3	5
6	2	8	1	3	10	8	10	4	8	4	3	7
7	4	4	4	11	4	7	9	3	10	15	5	3
8	10	4	3	8	22	5	4	4	12	4	5	12
9	20	11	9	5	20	1	6	3	33	11	8	15
10	10	9	25	32	22	2	13	4	5	6	6	19
11	8	4	14	18	21	3	37	4	3	4	7	8
12	15	8	8	12	7	13	9	1	5	3	6	14
13	19	16	6	7	4	8	8	2	3	3	11	9
14	14	21	6	4	5	5	4	6	2	2	16	12
15	5	15	13	4	4	7	2	56	5	12	6	11
16	10	5	12	3	8	7	15	10	5	5	5	6
17	6	13	10	2	14	6	25	9	4	6	9	9
18	27	14	6	5	6	6	14	5	3	8	6	20
19	38	10	1	6	3	3	12	3	8	8	3	3
20	16	8	2	7	4	3	4	4	4	5	5	6
21	8	6	6	10	10	4	20	4	2	5	8	16
22	38	4	9	6	8	10	15	3	8	4	6	10
23	37	4	9	4	9	3	9	2	6	4	3	4
24	10	12	4	4	9	9	11	7	4	11	6	4
25	6	7	6	6	6	12	6	4	7	5	3	3
26	4	7	3	18	15	17	3	8	4	4	2	4
27	4	10	3	16	30	6	3	21	17	5	3	14
28	14	7	3	24	37	21	2	5	8	5	16	14
29	14	5	4	9		20	3	2	8	4	13	7
30	14	2	10	15		10	10	6	4	7	10	9
31	7		5	8		5	5	8		15	4	
Mean	13	8	7	9	11	8	10	8	7	6	7	10

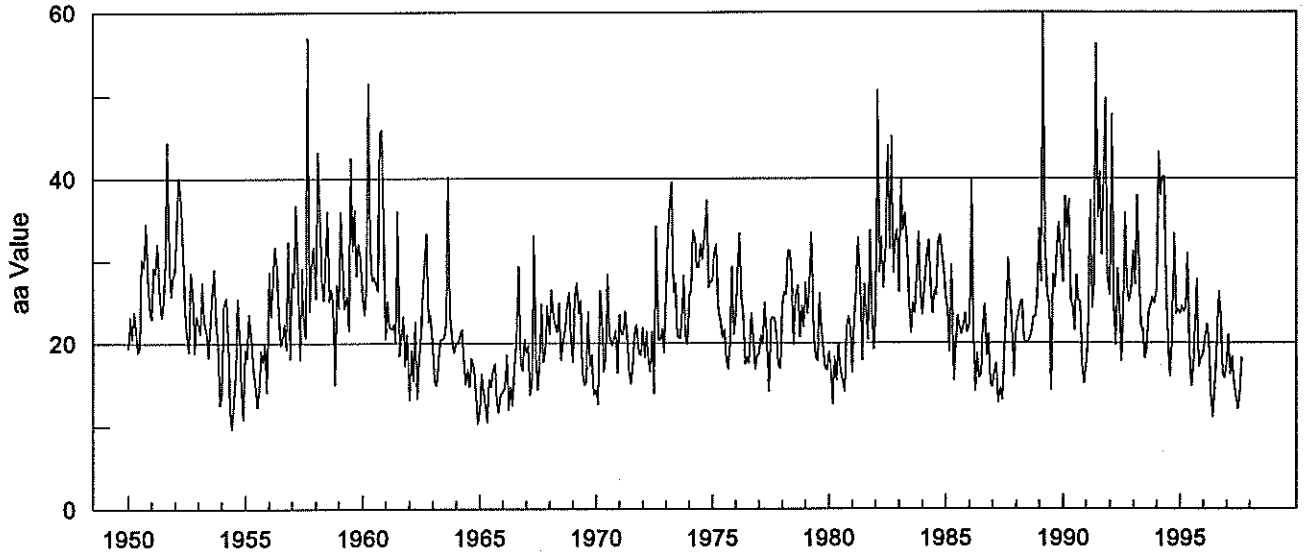
PLANETARY 3-HOUR-RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

University of Gottingen

Kp through September 30, 1997



Monthly Mean aa Index Jan 1950 - Sep 1997

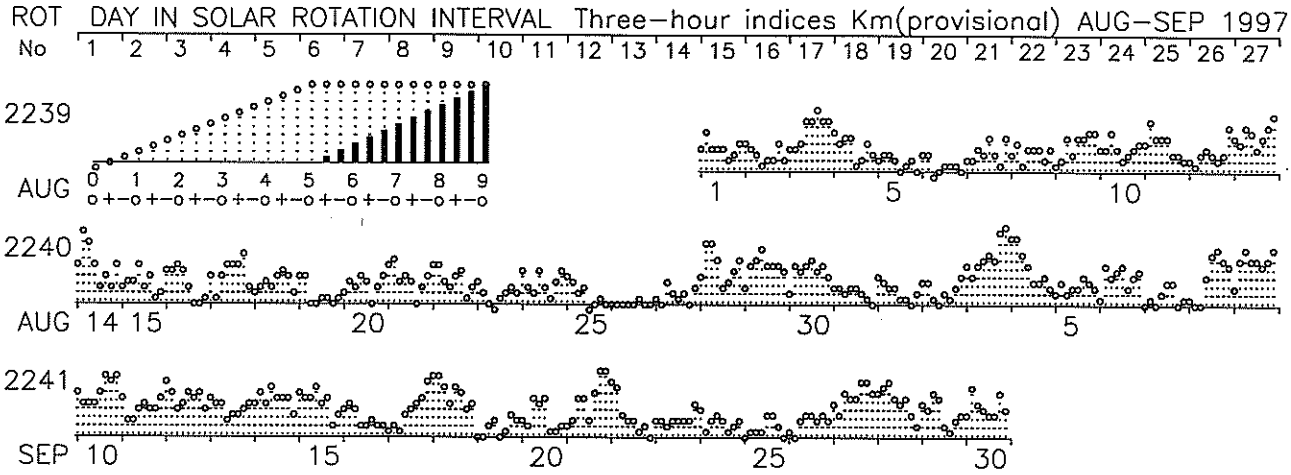


Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4	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				16.2

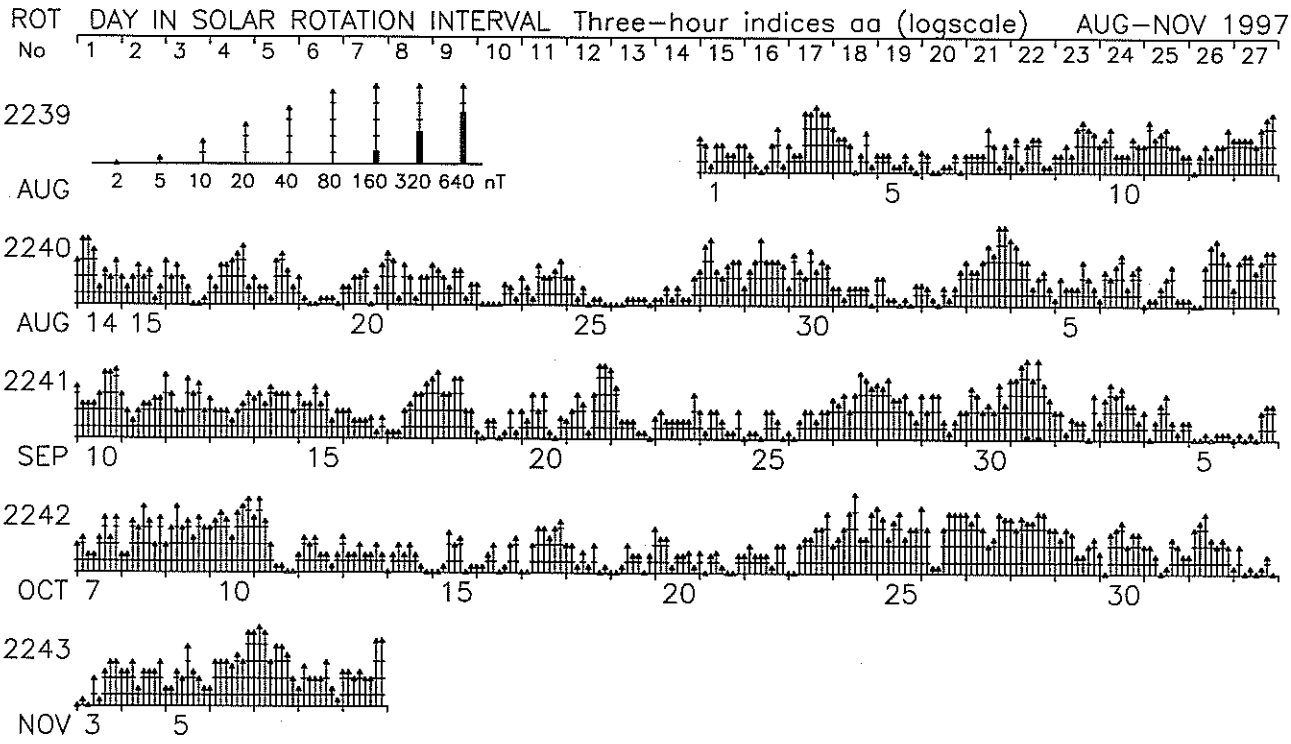
PLANETARY GEOMAGNETIC ACTIVITY

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

ISGI PUBLICATION OFFICE - EMail : ISGI.PUBOFF@cetp.ipsl.fr
CETP, 4 Avenue de Neptune, F-94107 Saint Maur des Fosses CEDEX - FRANCE



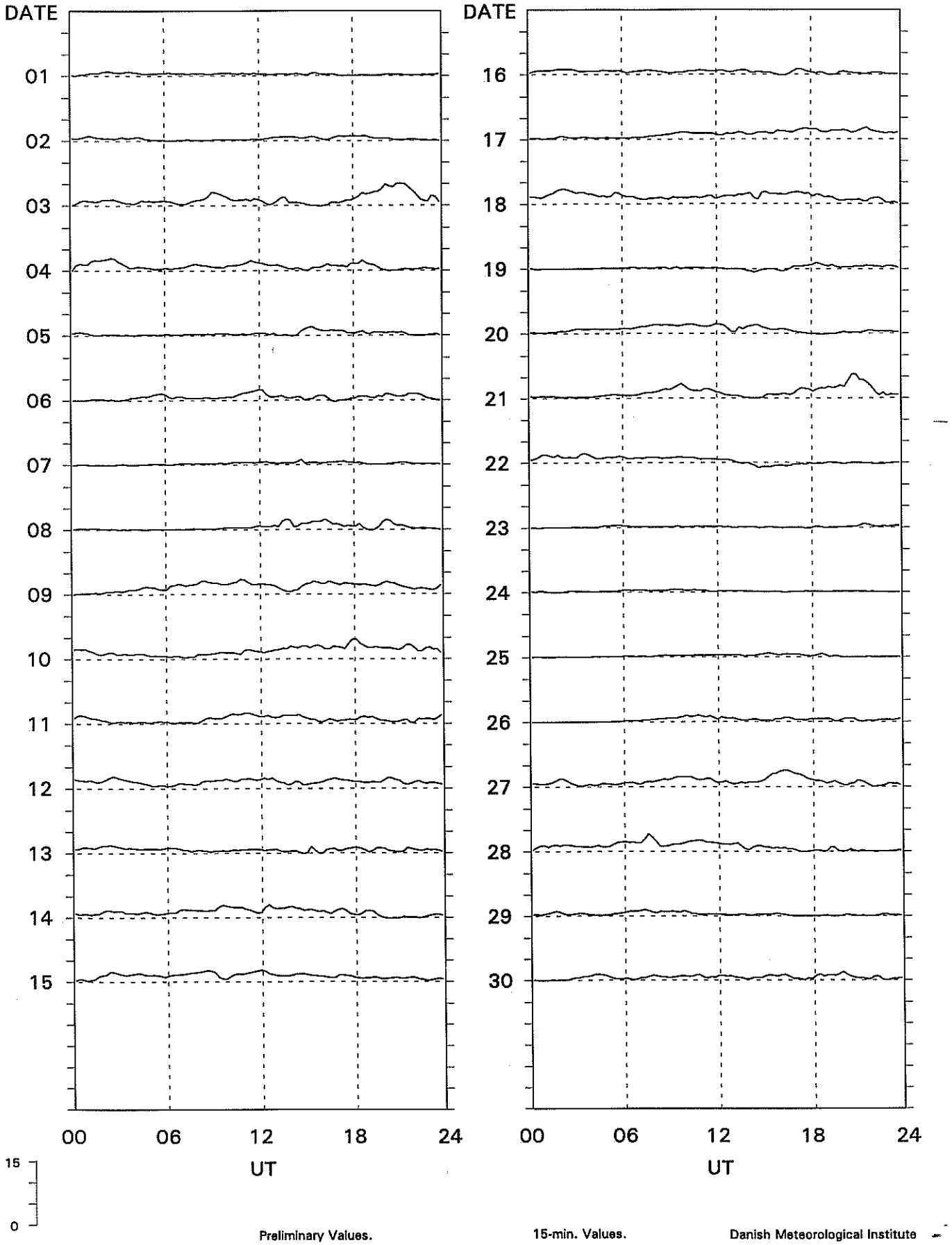
Indices Derivation at Universite Paris Sud; Graph Prepared at ISGI Publication Office.



Indices Derivation at Universite Paris Sud; Graph Prepared at ISGI Publication Office.

PC-INDEX

Thule **September, 1997**



Preliminary Values. 15-min. Values. Danish Meteorological Institute

WDC-C2 FOR GEOMAGNETISM, KYOTO UNIVERSITY

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

SEPTEMBER 1997

UNIT=NT

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	U.T. 24
1	-11	-10	-9	-9	-9	-11	-11	-11	-9	-9	-4	0	0	-1	-2	-1	-1	-1	0	0	-2	-5	-8	-8
2	-7	-4	-2	-2	-2	-3	-2	-1	-2	-1	2	2	-1	-5	-7	-7	-6	-5	-4	-3	-1	-1	0	11
3	9	2	0	-2	-2	-4	-8	-10	-10	-5	3	6	2	-4	6	9	8	4	2	-22	-50	-84	-96	-79
4	-60	-55	-67	-70	-67	-65	-64	-64	-59	-54	-53	-50	-48	-50	-47	-39	-35	-37	-39	-40	-40	-34	-32	-31
5	-28	-26	-26	-28	-23	-23	-23	-26	-24	-21	-19	-17	-21	-22	-19	-18	-20	-16	-14	-16	-18	-19	-21	-21
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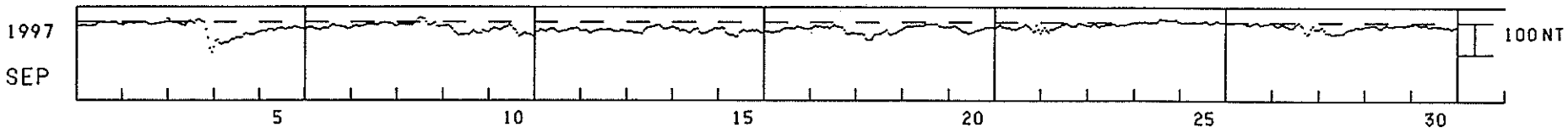

Note: The baselines for the observatories were adjusted for secular change for the Provisional Dst values for September 1997.

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

SEPTEMBER 1997

Sta	Geomag Lat	Commencement Day	Time (UT)	Type	SC Amplitudes D (Min)	H (Gamma)	Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	Ranges K	D (Min)	H (Gamma)	Z (Gamma)	End Day	Hour (UT)
KRC	16.4N	02	2304	SC	- 0.9	20	9	03(7)	6	12	138	22	04	15
UJJ	13.6N	02	2259	SC	- 0.2	13	- 3		-	9	97	33	04	21
NGP	11.3N	02	2259	SC	..	..	..		-	--	--	--	04	21
ABG	09.4N	02	2259	SC	- 0.1	12	- 2	03(7)	5	9	118	57	04	21
HYB	07.6N	02	2258	SC	- 0.1	13	- 1	03(7,8)	5	8	124	34	04	22
PND	02.0N	02	2259	SC	--	10	8		-	7	155	73	04	21
ETT	00.7S	02	2258	SC	0	10	11		-	--	--	--	--	--
TRD	01.1S	02	2259	SC	--	7	- 10		-	6	212	81	04	21
HER	33.6S	02	23--	..	..	..	..	03(7,8)	5	31	130	135	04	05
AMS	46.8S	02	2300	SC	2	7	- 9	03(7,8)	5	21	88	47	04	12
CZT	51.5S	02	2300	SC	1.8	10	--	03(7,8)	5	31	88	58	04	12
PAF	57.2S	02	2300	SC	2	11	5	03(7,8)	6	45	348	241	04	13
FRD	49.4N	03	16--	..	..	..	..	03(8) 04(1)	5	25	97	86	05	01
UJJ	13.6N	08	1300	..	..	..	..		-	5	76	33	10	24
NGP	11.3N	08	1300	..	..	..	..		-	5	89	40	10	24
ABG	09.4N	08	1300	..	..	..	..	08(5,6) 09(4) 10(5,6)	4	5	82	51	10	24
ABG	09.4N	08	1300	..	..	..	..	12(7) 14(5)	4	5	82	51	10	24
HYB	07.6N	08	0700	..	..	..	..	10(6)	5	6	96	47	11	04
PND	02.0N	08	1300	..	..	..	..		-	4	106	85	10	24
ETT	00.7S	08	0300	..	..	..	..		-	--	160	62	10	20
TRD	01.1S	08	1300	..	..	..	..		-	3	162	64	10	24
PAF	57.2S	08	07--	..	..	..	..	08(6)	5	18	115	53	08	23
HER	33.6S	10	17--	..	..	..	..	10(8)	5	10	66	68	11	06
CZT	51.5S	10	09--	..	..	..	..	10(8)	5	21	49	38	11	02
PAF	57.2S	10	07--	..	..	..	..	10(6,7,8)	5	25	186	152	11	06
UJJ	13.6N	17	1300	..	..	..	..		-	4	51	27	18	23
NGP	11.3N	17	1300	..	..	..	..		-	4	55	24	18	23
ABG	09.4N	17	1300	..	..	..	..	18(2)	5	4	44	38	18	23
HYB	07.6N	17	0500	..	..	..	..	18(2)	5	4	77	28	18	23
PND	02.0N	17	1300	..	..	..	..		-	4	72	80	18	23
ETT	00.7S	17	1300	..	..	..	..		-	--	119	75	18	23
TRD	01.1S	17	1300	..	..	..	..		-	3	133	119	18	23
CZT	51.5S	17	10--	..	..	..	..	18(1)	5	23	73	60	18	09
PAF	57.2S	17	1007	SC	1.4	5.3	0.9	18(1)	5	25	131	142	18	10
KRC	16.4N	21	1440	..	..	..	..	21(7,8)	6	6	93	21	22	07
UJJ	13.6N	21	1500	..	..	..	..		-	4	75	27	22	21
NGP	11.3N	21	1500	..	..	..	..		-	5	93	19	22	21
ABG	09.4N	21	1500	..	..	..	..	21(7,8) 22(1)	-	5	71	36	22	21
HYB	07.6N	21	0600	..	..	..	..	21(7,8)	5	6	77	23	22	22
PND	02.0N	21	1500	..	..	..	..		-	4	77	49	22	21
ETT	00.7S	21	0200	..	..	..	..		-	--	130	53	22	15
TRD	01.1S	21	1500	..	..	..	..		-	3	80	80	22	21
AMS	46.8S	21	17--	..	..	..	..	21(7,8)	5	13	66	58	22	05
CZT	51.5S	21	1653	SC	0.4	- 5.6	- 1.0	21(7,8) 22(1)	4	16	83	44	22	05
PAF	57.2S	21	17--	..	..	..	..	21(7,8)	5	28	221	114	22	05
DRV	75.2S	21	18--	..	..	..	..	21(8)	5	378	426	445	22	09
HYB	07.6N	26	1400	..	..	..	..	27(6,7)	5	4	106	39	28	23
UJJ	13.6N	27	1400	..	..	..	..		-	3	68	27	28	23
NGP	11.3N	27	1400	..	..	..	..		-	3	83	27	28	23
ABG	09.4N	27	1400	..	..	..	..	27(5,6)	-	3	80	29	28	23
PND	02.0N	27	1400	..	..	..	..		-	2	101	41	28	23
ETT	00.7S	27	0200	..	..	..	..		-	--	166	47	28	18
TRD	01.1S	27	1400	..	..	..	..		-	2	126	73	28	23

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

SEPTEMBER 1997

Storm Sudden Commencements (SSC)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
02	2259	A: DOU HRB* COI SPT TEN	02	1218-1234	NGK
		B: WNG GCK QUE	02	1227-1245	WNG + BDV + HRB
		C: NGK BDV CLF EBR* HYB ETT	07	1452-1504	NAG (si: SPT)
21	1651	B: HRB	08	1403-1419	NAG (ssc: HRB)
		C: WNG NGK BDV GCK COI*	24	0246-0305	KAK + KNY + LNP
			24	0533-0544	LNP

REPORTING OBSERVATORIES (up to the 4th of November 1997):
SOD DOB NUR WNG NGK DOU BDV CLF HRB NAG GCK MMB EBR COI SPT FRD KAK 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 (+).

* U.S. GOVERNMENT PRINTING OFFICE: 1997-673-001/29007

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."