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Solar - Geophysical Data

NO. 417 MAY 1979

Part I (Prompt Reports)

DATA FOR
APRIL 1979
MARCH 1979

NATIONAL GEOPHYSICAL AND SOLAR - TERRESTRIAL DATA CENTER
BOULDER, COLORADO

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SOLAR-GEOPHYSICAL DATA

No. 417

Issued in two parts

Helen E. Coffey, Editor

J. Virginia Lincoln, Chief
Solar-Terrestrial Physics Division

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----- = no data available.
blank = data not yet received.

SGD 417 Part I (Prompt)

APRIL 1979 DATA

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APRIL 1979

PRESTO MESSAGES (THE RAPID REPORT OF MAJOR EVENTS).

03 APRIL 1979 BOULDER 03/0447Z TENFLARE 460 FLUX UNITS 03/0106Z DURATION 155 MINUTES.
TENFLARE 800 FLUX UNITS 03/0415Z DURATION 10 MINUTES.
BOULDER 03/2226Z PROTON EVENT BEGAN AT 03/2130Z 17 PROTONS/CM²/SEC/STER AT GREATER THAN 10 MEV AT 2210Z.
11 APRIL 1979 BOULDER 11/1449Z SOFLARE M1/2B N03E51 11/1340Z DURATION 26 MINUTES "Y" SHAPED RIBBON.
TENFLARE 370 FLUX UNITS 11/1325Z DURATION 48 MINUTES.
14 APRIL 1979 BOULDER 14/1600Z SOFLARE M2/1B N01E14 14/1441Z DURATION 6 MINUTES.
TENFLARE 140 FLUX UNITS 14/1441Z DURATION 9 MINUTES.
25 APRIL 1979 BOULDER 25/1530Z STRONG MAGSTORM IN PROGRESS FOLLOWING SSC AT 24/2357Z.
27 APRIL 1979 BOULDER 27/1410Z SOFLARE X1 COORDINATES AND OPTICAL UNKNOWN 27/0652Z DURATION 26 MINUTES.
TENFLARE 740 FLUX UNITS. 27/0639Z DURATION 33 MINUTES.

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions: Location Lat-Long	Flares: Total	Flares: M	Flares: X	Outstanding events	Forecasts: Date	Forecasts: Location Lat-Long	Forecasts: Desc*	Alert Situations
091	01	31	173	212	012	N07W61	1	0	0	M5/2B FLARE IN	01	N07W61	Q	SOLALERT 01/02 MAGNIL 01/XX
						N23W33	0	0	0	REGION 1661 at 31/		N23W33	Q	
						N31W02	2	0	0	2317Z DURATION 26		N31W02	E	
						S23E18	16	1	0	MINUTES		S23E18	DA	
						S16E38	3	0	0			S16E38	E	
						S08W53	0	0	0			S08W53	Q	
						S24W15	0	0	0			S24W15	Q	
						N27E54	0	0	0			N27E54	Q	
						S15W27	0	0	0			S15W27	Q	
						S30W80	0	0	0			S30W80	Q	
						S22W41	0	0	0			S22W41	Q	
						N26W20	3	0	0			N26W20	Q	
						S21W02	0	0	0			S21W02	Q	
						S16W04	1	0	0			S16W04	Q	
						S35E27	4	0	0			S35E27	Q	
						S23W63	1	0	0			S23W63	Q	
092	02	01	213	210	018	N08W74	0	0	0		02	N08W74	Q	SOLALERT 02/04 MAGALERT 02/XX
						S19W54	0	0	0			S19W54	Q	
						N33W15	0	0	0			N33W15	Q	
						S24E06	6	0	0			S24E06	A	
						S17E25	0	0	0			S17E25	E	
						S09E41	0	0	0			S09E41	Q	
						N26E43	0	0	0			N26E43	Q	
						S14W39	0	0	0			S14W39	Q	
						S31E65	0	0	0			S31E65	Q	
						S22W15	2	0	0			S22W15	Q	
						S16W17	2	0	0			S16W17	Q	
093	03	02	230	206	025	N32W26	0	0	0		03	N32W26	Q	SOLALERT 03/05 MAGALERT MINOR 03/05
						S26W07	12	0	0			S26W07	A	
						S19W29	0	0	0			S19W29	Q	
						S18E13	4	0	0			S18E13	E	
						S35E03	0	0	0			S35E03	Q	
						S08E27	0	0	0			S08E27	Q	
						N26E30	0	0	0			N26E30	Q	
						S14W50	0	0	0			S14W50	Q	
						S30E53	0	0	0			S30E53	Q	
						N27E18	0	0	0			N27E18	Q	
094	04	03	197	199	018	N32W40	0	0	0	REGION 1661 PRODUCED	04	N32W40	Q	SOLALERT 04/06 MAGALERT MINOR 04/05
						S25W20	8	2	0	AN M4/1B AT 0109Z,		S25W20	A	
						S20W39	0	0	0	AN M4/SN AT 0417Z		S20W39	Q	
						S17W01	3	0	0	WITH 10.7 CM RADIO		S17W01	E	
						S35W10	0	0	0	BURSTS OF 460 FLUX		S35W10	Q	
						S09E14	2	0	0	UNITS AND 800 FLUX		S09E14	Q	
						S20W53	0	0	0	UNITS RESPECTIVELY		S20W53	Q	
						S14W67	0	0	0	A SATELLITE PROTON		S14W67	Q	
						S31W22	0	0	0	EVENT STARTED AT		S31W22	Q	
						N13E05	0	0	0	03/2120Z. AT		N13E05	Q	
										03/2400Z THERE WERE				
										25 PROTONS (CM²/SEC/				
										STER) AT > 10 MEV.				
095	05	04	216	186	022	S25W32	4	0	0		05	S25W32	A	SOLALERT 05/07 MAGALERT MINOR 05
						S17W16	0	0	0			S17W16	Q	
						S35W23	0	0	0			S35W23	Q	
						S08E02	1	0	0			S08E02	Q	
						S20W67	1	0	0			S20W67	Q	
						S14W82	0	0	0			S14W82	Q	
						S31W32	0	0	0			S31W32	Q	
						N13W06	0	0	0			N13W06	Q	
						S26E79	0	0	0			S26E79	Q	
						N17W18	0	0	0			N17W18	Q	
096	06	05	160	182	037	S25W45	4	0	0		06	S25W45	E	SOLALERT 06 MAGALERT 06
						S20W66	0	0	0			S20W66	Q	
						S17W30	0	0	0			S17W30	Q	
						S08W12	0	0	0			S08W12	Q	
						S20W77	0	0	0			S20W77	Q	
						S25E64	0	0	0			S25E64	Q	
						N13W65	0	0	0			N13W65	Q	
						N11W44	0	0	0			N11W44	Q	
						N32W66	0	0	0			N32W66	Q	
						S20E14	0	0	0			S20E14	Q	
						S35W36	1	0	0			S35W36	Q	
						N27W21	0	0	0			N27W21	Q	
						S31W45	0	0	0			S31W45	Q	
						N13W19	0	0	0			S13W19	Q	
						N17W31	0	0	0			N17W31	Q	
097	07	06	107	175	011	S25W60	2	0	0		07	S25W60	E	SOLALERT 07/08 MAGNIL
						S10W24	0	0	0			S10W24	Q	
						S31W60	0	0	0			S31W60	Q	
						S25E51	3	0	0			S25E51	Q	
						N20E75	3	1	0			N20E75	A	
						S13W14	0	0	0			S13W14	Q	
						S20W79	0	0	0			S20W79	Q	
						S17W43	0	0	0			S17W43	Q	
						N11W57	0	0	0			N11W57	Q	

ALERT PERIODS

INTERNATIONAL URSIGRAM
AND WORLD DAYS SERVICE

APRIL 1979

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions: Location Lat-Long	No. of Flares: Total	M	X	Outstanding events	Forecasts: Date	Location Lat-Long	Desc*	Alert Situations
098	08	07	120	168	010	S24W74	4	0	0		08	S24W74	E	SOLALERT 08/09 MAGNIL
						S31W73	0	0	0			S31W73	Q	
						S27E40	0	0	0			S27E40	Q	
						N20E60	3	0	0			N20E60	E	
						S13W26	1	0	0			S13W26	Q	
						N24E36	0	0	0			N24E36	Q	
						S17W56	6	0	0			S17W56	E	
						S10W37	0	0	0			S10W37	Q	
						N11W70	0	0	0			N11W70	Q	
099	09	08	102	173	014	S24W87	2	0	0		09	S24W87	E	SOLALERT MAGQUIET
						S30W85	0	0	0			S30W85	Q	
						S27E28	0	0	0			S27E28	Q	
						N19E49	6	0	0			N19E49	E	
						S12W40	0	0	0			S12W40	Q	
						S17W69	0	0	0			S17W69	Q	
						S10W50	0	0	0			S10W50	Q	
						N11W83	0	0	0			N11W83	Q	
						N24E23	0	0	0			N24E23	Q	
100	10	09	086	172	007	S26E16	2	0	0		10	S26E16	Q	SOLNIL MAGQUIET
						N19E36	3	0	0			N19E36	Q	
						S13W52	0	0	0			S13W52	Q	
						N04E72	2	0	0			N04E72	Q	
						N34E24	1	0	0			N34E24	Q	
101	11	10	110	174	012	S27E02	0	0	0		11	S27E02	Q	SOLQUIET MAGQUIET
						N19E22	0	0	0			N19E22	Q	
						S13W68	3	0	0			S13W68	Q	
						N06E64	2	1	0			N06E64	E	
						N33E11	0	0	0			N33E11	Q	
						S27W32	0	0	0			S27W32	Q	
						N15W75	1	0	0			N15W75	Q	
102	12	11	146	173	007	S26W11	0	0	0	REGION 1684 HAD AN	12	S26W11	Q	SOLQUIET MAGALERT MINOR 14
						N19E08	4	0	0	M1/2B TENFLARE		N19E08	E	
						S12E81	0	0	0	WHICH MAXED AT		S12E81	Q	
						N04E51	7	1	0	1340Z. THE 10.7 CM		N04E51	A	
						S26W48	7	0	0	RADIO BURST WAS 370		S26W48	E	
						N18E59	0	0	0	FLUX UNITS AND		N18E59	Q	
						N29E65	5	0	0	LASTED 48 MINUTES.		N29E65	E	
						N14E73	1	0	0	THE FLARE HAD A "Y"		N14E73	Q	
						N08E66	1	0	0	SHAPED RIBBON CON-FIGURATION.		N08E66	Q	
103	13	12	143	174	007	N19W05	1	0	0		13	N19W05	E	SOLQUIET MAGALERT 13/14
						N04E34	2	0	0			N04E34	A	
						S25W61	0	0	0			S25W61	Q	
						N18E47	0	0	0			N18E47	Q	
						N28E52	0	0	0			N28E52	CE	
						N15E59	0	0	0			N15E59	Q	
						N08E47	1	0	0			N08E47	Q	
						S25E51	4	0	0			S25E51	CE	
						S09E61	0	0	0			S08E61	Q	
104	14	13	166	175	013	N19W16	4	0	0		14	N19W16	CE	SOLALERT MINOR 14/16
						N04E22	5	0	0			N04E22	A	MAGALERT MINOR 14/15
						S25W73	1	0	0			S25W73	DE	
						N17E30	0	0	0			N17E30	DE	
						N29E39	1	0	0			N29E39	CE	
						N15E45	1	0	0			N15E45	Q	
						N08E34	0	0	0			N08E34	DE	
						S24E37	2	0	0			S24E37	DE	
105	15	14	188	170	009	N19W31	1	0	0	REGION 1684 (N04E08)	15	N19W31	CE	SOLALERT MINOR 15/16
						N04E08	9	1	0	HAD AN M2/1B TEN-		N04E08	A	MAGALERT MINOR 15/16
						S26W82	0	0	0	FLARE WHICH MAXED		S26W82	Q	
						N16E15	0	0	0	AT 1441Z. THE 2695		N16E15	Q	
						N29E24	10	1	0	MHZ RADIO BURST WAS		N29E24	E	
						N14E31	2	0	0	140 FLUX UNITS.		N14E31	Q	
						N08E21	1	0	0	DURATION 9 MINUTES.		N08E21	CE	
						S23E22	4	0	0	TYPE II + IV RADIO SWEEP.		S23E22	E	
106	16	15	202	176	013	N20W42	0	0	0	SOFLARE N04W05	16	N20W42	Q	SOLALERT MINOR 16/18 MAGNIL
						N04W03	2	0	0	C8/1B 15/2007Z		N04W03	CA	
						N16E03	0	0	0	DURATION 18 MINUTES		N16E03	Q	
						N30E12	2	0	0	WITH 170 FLUX UNITS		N30E12	E	
						N08E11	2	0	0	AT 2695 MHZ AND II		N08E11	Q	
						S24E10	0	0	0	AND IV RADIO SWEEP.		S24E10	E	
						N06E16	1	0	0			N06E16	Q	
						N33W33	0	0	0			N33W33	Q	

ALERT PERIODS

INTERNATIONAL URSIGRAM
AND WORLD DAYS SERVICE
APRIL 1979

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions				Outstanding events	Forecasts			Alert Situations
						Location	No. of Flares				Date	Location	Desc*	
						Lat-Long	Total	M	X			Lat-Long		
107	17	16	231	172	013	N20W55	0	0	0		17	N20W55	Q	SOLALERT MINOR 17 MAGQUIET
						N04W19	6	0	0			N04W19	E	
						N17W06	0	0	0			N17W06	Q	
						N28E01	1	0	0			N28E01	E	
						N08W02	0	0	0			N08W02	Q	
						S23W02	0	0	0			S23W02	Q	
						N06E03	1	0	0			N06E03	Q	
						N34W46	2	0	0			N34W46	Q	
						N12W08	0	0	0			N12W08	Q	
						N10E03	0	0	0			N10E03	Q	
						N07E80	0	0	0			N07E80	Q	
108	18	17	185	169	010	N21W69	0	0	0		18	N21W69	Q	SOLNIL MAGQUIET
						N34W60	0	0	0			N34W60	CE	
						N04W33	1	0	0			N04W33	DA	
						N12W23	0	0	0			N12W23	Q	
						N17W19	0	0	0			N17W19	Q	
						N08W18	6	0	0			N08W18	E	
						S22W16	0	0	0			S22W16	E	
						N29W11	2	0	0			N29W11	DA	
						N06W10	0	0	0			N06W10	Q	
						N07E65	0	0	0			N07E65	Q	
109	19	18	156	155	007	N35W73	0	0	0		19	N35W73	Q	SOLQUIET MAGQUIET
						N04W46	2	0	0			N04W46	E	
						N08W31	0	0	0			N08W31	Q	
						N18W30	0	0	0			N18W30	Q	
						S23W28	2	0	0			S23W28	E	
						S13W28	0	0	0			S13W28	Q	
						N30W24	1	0	0			N30W24	E	
						N06W24	0	0	0			N06W24	Q	
						S31E04	0	0	0			S31E04	Q	
						N06E52	0	0	0			N06E52	Q	
110	20	19	122	158	007	N04W57	1	0	0		20	N04W57	Q	SOLQUIET MAGQUIET
						N29W38	0	0	0			N29W38	Q	
						N08W44	0	0	0			N08W44	Q	
						S23W41	0	0	0			S23W41	Q	
						N06E39	0	0	0			N06E39	Q	
						S13W43	0	0	0			S13W43	Q	
						N16W50	0	0	0			N16W50	Q	
						N16W44	0	0	0			N16W44	Q	
						S09W35	0	0	0			S09W35	Q	
						N08W36	0	0	0			N08W36	Q	
						N35W86	0	0	0			N35W86	Q	
111	21	20	124	154	002	N04W72	0	0	0		21	N04W72	Q	SOLQUIET MAGQUIET
						N30W53	2	0	0			N30W53	E	
						N08W58	1	0	0			N08W58	Q	
						S24W57	0	0	0			S24W57	E	
						N07W51	3	0	0			N07W51	Q	
						N06E27	0	0	0			N06E27	Q	
						S13W56	0	0	0			S13W56	Q	
						N16W65	0	0	0			N16W65	Q	
112	22	21	108	160	012	N04W84	0	0	0		22	N04W84	Q	SOLQUIET MAGQUIET
						N28W65	2	0	0			N28W65	E	
						S25W70	0	0	0			S25W70	Q	
						N06E11	0	0	0			N06E11	Q	
						S14W69	0	0	0			S14W69	Q	
						N17W77	0	0	0			N17W77	Q	
						N23W01	0	0	0			N23W01	Q	
						N22E51	0	0	0			N22E51	Q	
113	23	22	123	161	029	N28W79	2	0	0		23	N28W79	E	SOLQUIET MAGALERT MINOR 23/24
						S25W82	0	0	0			S25W82	Q	
						N06W02	0	0	0			N06W02	Q	
						S14W80	1	0	0			S14W80	Q	
						N22W15	0	0	0			N22W15	Q	
						N22E38	0	0	0			N22E38	Q	
						N17W58	2	0	0			N17W58	E	
						N18E76	0	0	0			N18E76	Q	
						S25E76	0	0	0			S25E76	Q	
114	24	23	098	161	020	N07W14	0	0	0		24	N07W14	Q	SOLQUIET MAGALERT MINOR 24
						N20E26	1	0	0			N20E26	E	
						N17W70	0	0	0			N17W70	Q	
						N18E61	0	0	0			N18E61	Q	
						S24E73	1	0	0			S24E73	E	
						N17E17	0	0	0			N17E17	Q	
115	25	24	100	160	012	N06W28	0	0	0		25	N06W28	Q	SOLQUIET MAGALERT MINOR 25/27
						N20E13	1	0	0			N20E13	Q	
						N17E49	5	0	0			N17E49	E	
						S24E60	0	0	0			S24E60	E	
						S18W01	0	0	0			S18W01	Q	

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

APRIL 1979

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions: Location Lat-Long	Flares: Total	Flares: M	Flares: X	Outstanding events	Forecasts: Date	Forecasts: Location Lat-Long	Forecasts: Desc*	Alert Situations
116	26	25	131	174	066	N06W41	0	0	0	STRONG MAGSTORM IN PROGRESS FOLLOWING SSC AT 24/2357Z.	26	N06W41	Q	SOLQUIET MAGALERT 26/28
						N21E00	0	0	0			N21E00	Q	
						N17E35	8	1	0			N17E35	E	
						S25E46	6	0	0			S25E46	E	
						S18W15	0	0	0			S18W15	Q	
						N24E69	2	0	0			N24E69	Q	
						N14E79	0	0	0			N14E79	Q	
117	27	26	174	182	010	N06W54	0	0	0		27	N06W54	Q	SOLALERT 27/28 MAGNIL
						N21W12	2	0	0			N21W12	E	
						N17E23	3	0	0			N17E23	CA	
						S25E19	0	0	0			S25E19	Q	
						S26E33	1	0	0			S26E33	E	
						S17W28	0	0	0			S17W28	Q	
						N23E55	3	0	0			N23E55	Q	
						N15E67	0	0	0			N15E67	Q	
						S31E45	1	0	0			S31E45	E	
118	28	27	239	190	021	N05W69	1	0	0	REGION 1705 (N17 L = 332) PRODUCED AN X1/1B FLARE AT 0652Z, WITH 10 CM RADIO BURST OF 800 FLUX UNITS AND STRONG TYPE II AND MODERATE TYPE IV SWEEP	28	N05W69	Q	SOLALERT 28/30 MAGALERT 28/30
						N21W25	1	0	0			N21W25	Q	
						N17E09	10	1	1			N17E09	A	
						S25E06	0	0	0			S25E06	Q	
						S25E22	4	0	0			S25E22	E	
						N23E42	3	0	0			N23E42	E	
						N14E54	0	0	0			N14E54	Q	
						S30E34	0	0	0			S30E34	Q	
						N14E66	1	1	0			N14E66	E	
						N22W11	0	0	0			N22W11	Q	
119	29	28	228	194	025	N21W37	0	0	0		29	N21W37	Q	SOLALERT 29/01 MAGALERT 29/01
						N16W05	8	0	0			N16W05	A	
						S26W06	0	0	0			S26W06	Q	
						S25E09	0	0	0			S25E09	Q	
						N24E30	3	0	0			N24E30	E	
						N13E41	3	0	0			N13E41	E	
						S31E19	0	0	0			S31E19	Q	
						S39W40	0	0	0			S39W40	Q	
						N11E55	0	0	0			N11E55	Q	
120	30	29	200	182	030	N18W16	6	0	0		30	N18W16	A	SOLALERT 30/02 MAGALERT 30/01
						S25W17	0	0	0			S25W17	Q	
						S23W03	0	0	0			S23W03	Q	
						N23E15	0	0	0			N23E15	Q	
						N14E32	7	0	0			N14E32	A	
						S28E06	0	0	0			S28E06	Q	
						S40W52	0	0	0			S40W52	Q	
						N11E37	1	0	0			N11E37	Q	
121	01	30	206	186	025	N18W29	0	0	0		01	N18W29	E	SOLALERT 01/03 MAGALERT MINOR 01/02
						S23W14	1	0	0			S23W14	E	
						N23E02	3	0	0			N23E02	Q	
						N16E20	13	0	0			N16E20	A	
						S28W07	0	0	0			S28W07	Q	
						N12E25	4	0	0			N12E25	E	
						S25E75	0	0	0			S25E75	Q	
						S33E14	0	0	0			S33E14	Q	

* Q=Quiet E=Eruptive A=Active P=Proton C=Caution D=Doubtful O.G.=Other Groups MF=Major Flare

RELATIVE SUNSPOT NUMBERS

ZURICH, R_Z

	1978 FINAL								1979 PROVISIONAL			
DAY	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
1	85	119	64	42	136	96	109	110	158	116	116	131
2	89	98	61	48	167	112	122	110	158	127	138	134
3	93	78	51	38	159	105	125	117	191	148	141	135
4	92	60	48	62	162	100	129	115	157	123	142	138
5	89	51	54	74	177	73	121	104	146	134	135	109
6	85	31	63	66	177	74	108	122	173	146	144	91
7	75	39	84	58	147	95	112	138	163	144	146	77
8	63	45	105	62	120	103	118	148	172	142	143	69
9	62	36	108	64	109	121	108	152	165	139	146	61
10	60	29	115	67	99	149	120	144	163	137	140	87
11	63	57	127	58	84	158	118	170	157	137	156	109
12	66	62	111	71	72	158	99	188	159	138	170	107
13	74	62	114	93	92	156	90	165	159	152	169	113
14	74	64	109	93	113	170	78	150	162	163	159	116
15	78	89	102	77	133	166	59	140	178	161	155	117
16	91	94	110	52	143	163	77	143	164	159	130	119
17	86	103	98	50	136	143	92	146	164	160	142	107
18	89	115	84	50	156	135	93	132	146	162	142	98
19	84	109	77	42	159	154	85	95	138	166	138	79
20	74	109	76	30	163	151	76	84	177	169	120	68
21	76	154	77	30	171	144	68	68	181	171	134	68
22	74	158	48	36	148	125	77	63	178	155	140	79
23	73	158	38	45	156	116	55	59	188	127	139	79
24	82	154	38	48	153	104	61	65	209	99	118	80
25	85	135	30	55	168	96	85	81	209	88	114	85
26	88	152	13	45	152	102	101	93	173	108	114	118
27	97	143	22	57	142	115	118	110	162	97	117	125
28	93	130	31	57	126	117	118	122	157	95	114	132
29	103	115	48	59	122	137	111	135	153		110	132
30	107	103	39	72	94	128	103	159	149		127	120
31	113		36	100		111		177	130		147	
MEAN	82.7	95.1	70.4	58.1	138.2	125.1	97.9	122.7	165.8	138.0	137.0	102.8

DAILY SOLAR FLUX AT 2800 MHz
OTTAWA ARO

FLUX ADJUSTED TO 1 A.U., S_a

	1978								1979			
DAY	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
1	181.4	149.1	142.9	106.0	159.8	139.0	152.0	166.6	194.1*	185.8	168.5	202.6*
2	183.0	147.0*	127.6	106.0	171.7*	137.8	159.0	167.6	200.1	185.6	170.7	203.4
3	182.2A	130.8	116.5	109.6	167.0	131.7	169.9	164.2	203.5*	187.4*	173.3	194.2
4	178.4	118.6	117.4	112.3	174.4*	132.0*	177.4	165.3	192.7*	187.7	181.4	183.5
5	173.9*	116.9	118.9	117.6	179.4	138.7*	181.2	169.5	194.9	197.4	180.1*	179.3
6	173.1	109.8	119.3*	122.6	181.1	137.4	172.2*	164.5	190.9	206.5	182.4	176.3
7	162.6*	110.6	128.9	128.2	177.5	141.6	174.6	178.5*	186.2	203.4	183.1*	166.7
8	143.4	109.3	135.9	130.6	167.1	150.1	168.0*	189.9	200.1	207.2*	178.9	169.0*
9	135.1	106.5	147.1*	128.1*	157.6*	155.8	164.9*	189.6	192.6	198.7	181.4	169.6
10	129.5	108.4	156.0*	127.5	149.8	162.3	166.3	204.7	186.2	198.4*	180.6	173.0
11	133.8	113.2	163.2*	121.7	141.5	171.6*	163.7	210.5	179.5	202.2*	181.7*	170.0*
12	138.2	116.4*	174.2*	124.5	138.5	177.2	150.4	217.3	174.5	195.4	188.7	174.5
13	140.2	120.3*	165.5	134.9	138.0	176.5	145.3	210.6*	193.9	195.4	186.3	175.8
14	143.7	126.4*	163.1	132.7	143.5*	180.1	136.3	197.0	200.0*	204.2*	189.4	170.9
15	146.1	132.5	169.5	130.0*	152.6	182.0	133.8	192.7	192.1*	205.0*	181.3	168.1
16	147.8*	139.5*	163.4	123.6	161.5	176.7*	128.8	180.5	189.9*	209.2	183.5*	171.7
17	143.8	149.0	159.5	119.3*	161.8	171.5	128.1	177.7	175.7	213.1	177.7	168.0
18	135.6	153.5*	154.1*	115.6	159.3*	169.4	127.4	161.5	177.6	237.7	188.6*	158.7
19	133.6	162.0*	148.6	111.6	158.8*	170.4	128.9	152.9	187.8	237.8	177.6	159.4
20	132.3*	174.2	142.9*	107.5	168.6	171.0	134.9	138.1	197.2	230.1*	184.1	156.1
21	132.7	185.4*	140.2	104.8	172.5	166.9*	126.0	132.1*	210.3	225.1	182.2	161.5
22	135.7*	190.3	127.0	106.0	171.5*	161.4	127.1	132.7	226.9	223.3	181.1	159.7*
23	142.9*	196.7	123.4*	104.1	165.5*	161.4	121.9	133.4	225.1	196.0	188.5	162.3
24	146.5*	194.8	118.5	105.4	158.9	156.9	123.5	135.2*	208.5	182.8	188.3	161.9
25	147.6	183.5	113.7	104.2	157.2	156.1	124.7*	138.0	206.1	167.5	188.2	172.5
26	152.8	182.4*	112.2	100.7	148.5	154.4	132.7	144.2	192.9	166.0	200.2	182.0
27	150.6*	179.5	110.8	107.3*	146.2*	150.7	144.4*	148.7*	205.4	162.7	187.9	195.1*
28	147.1*	174.1	109.9	107.7*	147.8	148.4*	154.1	164.1	209.6	163.6	188.6	192.1*
29	148.6	167.4	109.2	116.2	148.1	149.8	162.2	166.2	209.3		191.4	185.7
30	147.2*	154.6*	109.2	124.1	142.6	146.5	167.8	181.7	194.1*		186.6	185.2*
31	152.6		108.8	133.9*		144.0		195.1	193.7		201.4*	
MEAN	149.7	146.8	135.4	116.9	159.6	157.1	148.2	170.0	196.5	199.1	184.0	175.0

* adjusted for burst
A = interpolated data point

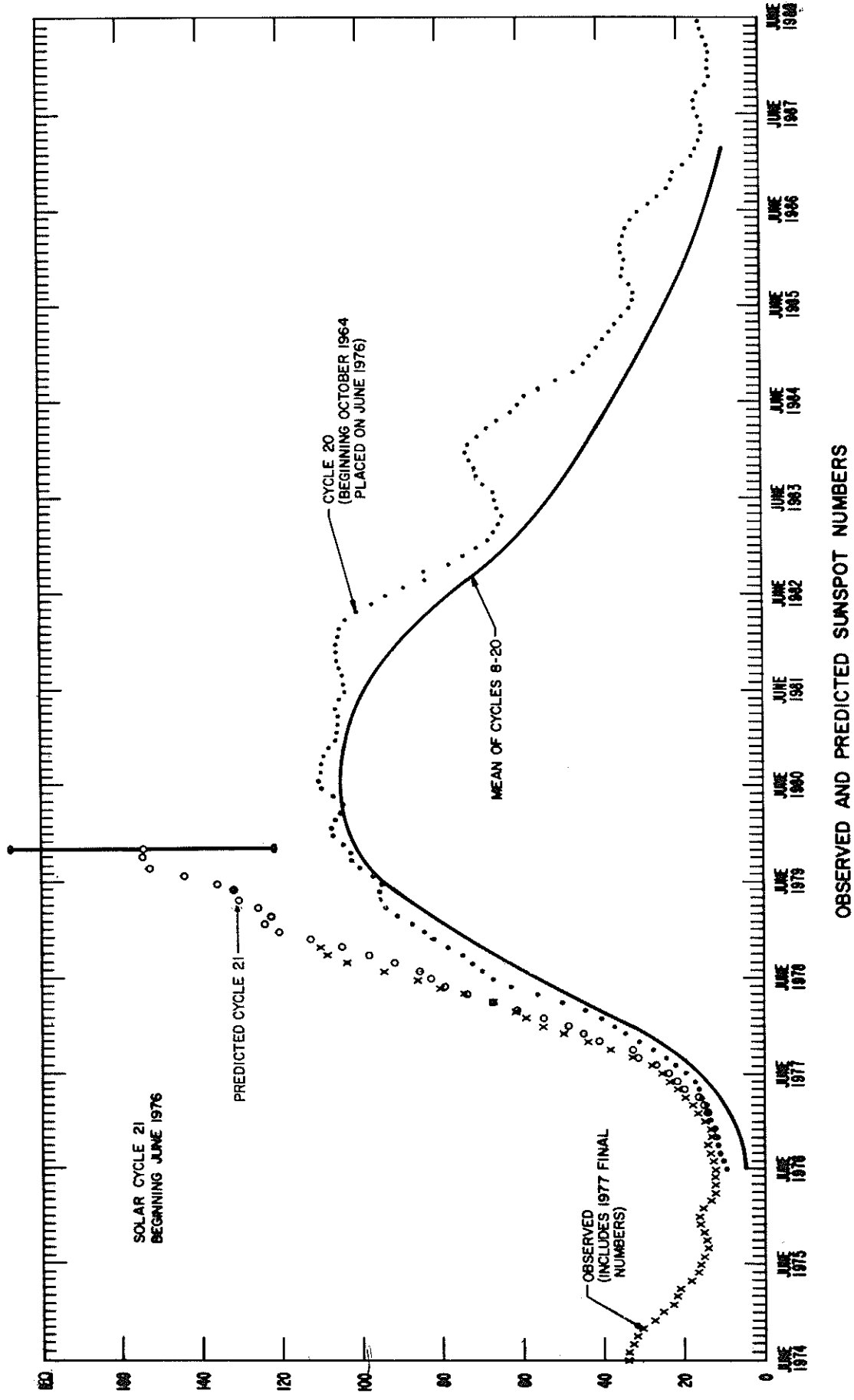
DAILY SOLAR INDICES

APRIL 1979

APR 1979	YEAR DAY	BARTELS 27-DAY CYCLE NUMBER	SUNSPOT NUMBERS		OBSERVED FLUX	SOLAR FLUX ADJUSTED TO 1 A.U.								
			R_Z	$R_{A'}$	OTTAWA 2800	AFGL 15400	AFGL 8800	AFGL 4995	OTTAWA 2800	AFGL 2695	AFGL 1415	AFGL 606	AFGL 410	AFGL 245
1	91	14	131	125	202.8*	604	374	246	202.6*	205.5	128.8	82.6	20.0	10.5
2	92	15	134	132	203.6	601	383	238	203.4	209.8	127.7	84.2	28.3	21.5
3	93	16	135	134	194.2	599	367	232	194.2	201.4	121.1	86.5	29.9	25.3
4	94	17	138	117	183.3	611	374	223	183.5	192.4	110.1	79.5	27.4	15.9
5	95	18	109	85	179.1	606	367	215	179.3	186.1	107.3	76.6	26.0	10.6
6	96	19	91	91	175.9	602	365	211	176.3	187.3	100.8	73.9	29.3	12.5
7	97	20	77	78	166.4	609	368	201	166.7	169.5	97.0	71.3	26.5	12.0
8	98	21	69	51	168.5*	599	361	192	169.0*	178.1	96.2	70.7	25.8	13.6
9	99	22	61	55	169.1	605	365	197	169.6	178.7	105.6	71.3	25.7	13.0
10	100	23	87	66	172.3	611	368	202	173.0	179.4	100.9	71.2	24.0	11.8
11	101	24	109	91	169.2*	617	364	196	170.0*	178.2	101.6	71.0	24.5	11.8
12	102	25	107	93	173.6	601	366	202	174.5	185.1	102.9	71.3	26.1	14.2
13	103	26	113	115	174.8	603	371	201	175.8	182.0	106.3	71.9	26.7	12.8
14	104	27	116	120	169.9	601	363	195	170.9	175.4	110.5	74.9	24.2	12.1
15	105	1	117	106	166.9	598	356	194	168.1	179.1	109.3	76.8	25.6	10.8
16	106	2	119	111	170.5	597	352	194	171.7	183.5	111.0	77.4	27.5	13.7
17	107	3	107	119	166.7	599	365	195	168.0	171.3	104.6	74.0	27.4	12.7
18	108	4	98	98	157.3	594	355	185	158.7	170.6	101.3	73.1	29.5	12.3
19	109	5	79	76	158.0	582	342	189	159.4	168.2	96.9	78.1	30.5	12.6
20	110	6	68	63	154.6	595	350	180	156.1	160.3	89.9	71.1	29.2	11.9
21	111	7	68	60	159.9	579	352	184	161.5	151.4	89.6	71.2	32.6	13.4
22	112	8	79	72	158.0*	603	354	195	159.7*	169.5	92.2	72.2	33.8	15.2
23	113	9	79	68	160.5	598	363	194	162.3	163.6	89.9	72.2	47.7	18.2
24	114	10	80	69	160.0	588	361	197	161.9	159.3	91.8	83.6	43.5	45.0
25	115	11	85	79	170.5	593	345	194	172.5	166.7	94.5	76.9	42.2	18.4
26	116	12	118	118	179.7	584	356	213	182.0	185.6	100.7	79.7	41.0	35.9
27	117	13	125	125	192.4*	590			195.1*		112.7	93.9	42.0	32.3
28	118	14	132	132	189.4*	596	376	205	192.1*	192.5	107.0	80.6	29.6	16.7
29	119	15	132	128	183.0	584	361	195	185.7	188.9	111.2	96.0	39.4	18.0
30	120	16	120	96	182.5*	601	373	212	185.2*	193.2	109.0	79.0	42.6	15.0
MEAN			102.8	95.8	173.8	598	363	203	175.0	179.7	104.3	77.1	31.0	16.7

* Adjusted for burst.

Note: Data gaps in AFGL Sagamore Hill are due to equipment problems.



OBSERVED AND PREDICTED SUNSPOT NUMBERS

SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS
CYCLE 21

MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1976	15.2	13.2	12.2	12.6	12.5	12.2	12.9	14.0	14.3	13.4	13.5	14.8
1977	16.7	18.1	20.0	22.2	24.2	26.3	29.0	33.4	39.1	45.6	51.9	56.9
1978	61.3	64.5	69.6	76.9	83.2	89.3	97.4	104.0	108.4	111.0	115.3	121.0
											(4)	(8)
1979	125.9	130.3	134.8	137.6	140.1	144.7	149.0	151.9	154.1	155.3	155.8*	155.4
	(12)	(13)	(15)	(20)	(24)	(26)	(29)	(31)	(32)	(33)	(34)	(34)
1980	154.1	152.6	151.8	152.1	151.5	148.2	144.5	141.5	139.7	138.7	137.3	136.1
	(34)	(33)	(32)	(32)	(33)	(36)	(38)	(40)	(40)	(41)	(43)	(46)
1981	136.0	135.7	133.2	130.3	127.7	124.8	123.4	122.9	121.8	120.2	117.6	114.4
	(48)	(47)	(46)	(44)	(44)	(44)	(44)	(43)	(43)	(43)	(42)	(40)
1982	111.3	108.1	105.6	103.7	101.5	99.3	95.7	91.2	87.1	82.4	79.0	75.3
	(37)	(36)	(36)	(34)	(32)	(29)	(27)	(25)	(23)	(20)	(19)	(19)
1983	71.1	68.0	65.8	63.5	61.0	58.4	56.2	54.3	52.5	51.4	50.7	49.8
	(19)	(20)	(21)	(22)	(22)	(23)	(24)	(26)	(27)	(29)	(30)	(31)
1984	48.6	46.7	43.8	40.5	38.0	36.8	35.9	34.4	32.8	31.5	30.1	28.5
	(31)	(30)	(29)	(29)	(30)	(31)	(32)	(31)	(31)	(29)	(28)	(27)
1985	27.4	26.7	25.9	25.5	24.8	23.8	23.1	22.3	21.6	20.8	19.9	19.3
	(27)	(26)	(26)	(26)	(26)	(25)	(23)	(23)	(22)	(23)	(24)	(24)
1986	18.7	17.8	16.9	15.9	14.6	13.3	12.3	11.7	11.5	11.3	11.2	11.2
	(24)	(24)	(24)	(23)	(22)	(21)	(20)	(19)	(17)	(16)	(15)	(13)
1987	11.7	12.3	13.2	14.2	15.3	16.4	17.6					
	(12)	(11)	(11)	(12)	(13)	(13)	(14)					

The table gives observed Zürich smoothed sunspot numbers for Cycle 21 up to the one calculated from the latest observed data, marked by a vertical bar. They are based on final Zürich numbers through 1978 and provisional Zürich numbers thereafter. Some of these data after the June 1976 value will change slightly when final data for 1979 are received. The numbers after the vertical bar are predictions by the McNish-Lincoln method (see *Explanation of Data Reports*, February 1978). Shown in parentheses are the corresponding absolute values of the 90% confidence interval, an indication of the uncertainty above and below the predicted number.

The McNish-Lincoln method is very sensitive to the identification of a minimum epoch. In SGD 390-401 issues, the Cycle 21 predictions were based on March 1976 as the minimum epoch. Latest studies, including one published by Waldmeier, show that June 1976 is the more appropriate epoch of minimum. Thus, we have adopted a June 1976 mimimum.

*Prediction of Sunspot Maximum -- The McNish-Lincoln prediction method is recommended for predictions up to only one year ahead. From that point, the predictions regress rapidly towards the mean value. Combining this McNish-Lincoln prediction of sunspot maximum with the Ohl method (as done by Sargent, see *Explanation of Data Reports*, February 1979) indicates that the most probable value for sunspot maximum is 155 ± 31.

Hα SOLAR FLARES

APRIL 1979

OBSERV-ATORY	OBSERVED UT				LOCATION				CMP. DAY	DURA-TION MIN.	IM-POR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DAY	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION				COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
RAMY	01	1426E	1426U	1436	S26	E10	.359		2.4	10D	SB	2	C		28		
RAMY	01	1455	1455	1518	S26	E10	.359		2.4	23	SB	3	C		25		
RAMY	01	1520	1520	1532	S17	W80	.979		23.6	12	SN	3	C		0		
RAMY	01	1555E	1611U	1639D	S23	E13	.344		2.6	44D	SB	3	C		121		F
HOLL	01	1557	1608	1707	S24	E11	.339		2.5	70	SB	3	C		107		F
PALE	01	1810	1810	1846	S24	E15	.376		2.9	36	SN	3	C		30		U F
RAMY	01	1843E	1848	1856D	S22	W13	.332		28.8	13D	SB	3	C		35		F
HOLL	01	1848E	1849	1853	S20	W17	.356		28.5	5D	SN	3	C		34		F
PALE	01	1950	1951	2005	S26	E 9	.353		2.5	15	SN	3	C		20		F
RAMY	01	1952E	1952U	2002D	S25	E11	.353		2.7	10D	SB	3	C		38		F
HOLL	01	1959	2000	2058	S22	W16	.364		28.6	59	SB	3	C		111		U F
RAMY	01	2001E	2001U	2022D	S22	W15	.353		28.7	21D	SB	3	C		158		F
HOLL	01	2300	2300	2309	S23	E 9	.309		2.6	9	SB	3	C		54		DE
HOLL	01	2318	2321	0004	S24	E19	.419	15918	3.4	46	2B	3	C		783		U F
MANI	02	0009	0044	0055D	S25	E 4	.312		2.3	46D	SN	3	V		200		F
MANI	02	0009	0016	0055D	S25	E 4	.312		2.3	46D	SB	3	V		120		F
HOLL	02	0011	0017	0105D	S26	E 8	.346		2.6	54D	SB	3	C		187		FDE
MANI	02	0020E	0045	0107	S25	E 6	.320		2.5	47D	SB	2	C		190		F
PALE	02	0036E	0043U	0047D	S27	E 6	.351	15918	2.5	11D	2N	3	C		589		DE
MANI	02	0339E	0343	0401D	N29	W33	.745		27.7	22D	SB	2	C		110		
RAMY	02	1222	1222	1246	S18	E18	.351		3.9	24	SB	3	C		30		
RAMY	02	1342	1353	1355	S27	W 1	.339		2.5	13	SB	3	C		47		
HOLL	02	1348	1350	1414	S26	W 3	.325		2.4	26	SN	3	C		39		F
RAMY	02	1402	1411	1458	S18	E16	.325	15920	3.8	56	1B	3	C		302		FDE
HOLL	02	1407	1410	1434	S18	E18	.351		3.9	27	SB	3	C		130		F
HOLL	02	1624	1629	1634	S26	W 4	.328		2.4	10	SB	3	C		28		
RAMY	02	1624	1625	1632D	S36	E 5	.487		3.1	8D	SB	3	C		91		F
RAMY	02	1625	1626	1638	S26	W 8	.346		2.1	13	SB	3	C		37		F
RAMY	02	1700E	1700U	1705	S17	E15	.302		3.8	5D	SB	3	C		38		F
RAMY	02	1751	1753	1800	S24	W 2	.290		2.6	9	SB	3	C		35		F
PALE	02	1752	1752	1801	S24	W 4	.296		2.4	9	SN	3	C		24		F
BIGB	02	1804	1806	1815	S32	W01	.419		2.7	11	SF	2	C	1806	70	.7	
RAMY	02	1806	1807	1818	S32	W 2	.420		2.6	12	SB	3	C		51		F
RAMY	02	1828	1830	1902	S26	W 8	.346		2.2	34	SB	3	C		50		F
RAMY	02	1924	1926	1933	S23	W 1	.272		2.7	9	SB	3	C		43		F
RAMY	02	1940	1945	2008	S26	W 8	.346		2.2	28	SB	3	C		131		F
PALE	02	2001	2002	2021	S18	E15	.312		4.0	20	SN	3	C		91		F
RAMY	02	2002	2003	2025	S17	E16	.316		4.0	23	SB	3	C		60		F
HOLL	02	2002	2004	2010	S18	E15	.312		4.0	8	SB	3	C		59		F
RAMY	02	2015	2019	2114	S24	W 3	.293		2.6	59	SN	3	C		44		F
RAMY	02	2015	2034	2114	S24	W 3	.293		2.6	59	SB	3	C		123		F
BIGB	02	2025	2052	2130	S29	W00	.371		2.9	65	SF	2	C	2052	20	.2	
PALE	02	2030	2033	2114	S24	W 5	.300		2.5	44	SB	3	C		139		F
HOLL	02	2033	2035	2052	S26	W 6	.336		2.4	19	SB	3	C		131		
BIGB	02	2033	2034	2038	S24	W01	.289		2.8	5	SN	2	C	2034	50	.5	E
BIGB	02	2035	2044	2048	S26	W10	.359		2.1	13	SF	2	C	2044	30	.3	E
HOLL	02	2052E	2055U	2126	S26	W 6	.336		2.4	34D	SB	3	C		164		F
PALE	03	0109	0308	0329	S26	W14	.391	15918	2.0	140	1B	3	C		200		U F
PALE	03	0109	0139	0329	S26	W14	.391	15918	2.0	140	1N	3	C		410		U F
MANI	03	0112E	0134	0211D	S24	W11	.339		2.2	59D	SN	3	C		180		FDE
MANI	03	0112E	0114	0211D	S24	W11	.339		2.2	59D	SB	3	C		100		FDE
PALE	03	0252	0255	0323	S10	E24	.405		4.9	31	SN	3	C		62		DE
MANI	03	0301E	0303	0327	S 8	E27	.450		5.2	26D	SN	3	C		50		U
MANI	03	0301E	0305	0327D	S24	W12	.347		2.2	26D	SB	3	C		120		F
MANI	03	0417E	0418	0440	S23	W 5	.284		2.8	23D	SB	3	C		100		F
MANI	03	0650E	0652	0707D	S29	W10	.402		2.5	17D	SN	3	C		45		F
MCMA	03	1246E		1335	S19	W12	.285	15918	2.6	49D	SN		C	1246	60	.6	EL
MCMA	03	1328	1342	1415	S18	E09	.240	15920	4.2	47	SN		C	1342	60	.6	E
MCMA	03	1404	1411	1440	S19	W12	.285	15918	2.7	36	SB		C	1411	60	.6	E
HOLL	03	1408E	1411	1434	S22	W13	.332		2.6	26D	SB	2	C		81		DE
MCMA	03	1555	1557	1617	S27	W10	.373	15918	2.9	22	SF		C	1557	25	.3	D
MCMA	03	1636	1644	1715	S19	W13	.297	15918	2.7	39	SB		C	1644	60	.6	EL
RAMY	03	1637	1645	1703	S29	W15	.438		2.6	26	SB	3	C		76		
BIGB	03	1642		1644D	S20	W14	.319		2.6	2D	SN	2	P	1644	90	1.0	
MCMA	03	1818	1819	1825	S18	E07	.221	15920	4.3	7	SF		C	1819	40	.4	E
PALE	03	1900	1900	1902	S18	E 3	.193		4.0	2	SN	3	C		24		F
MCMA	03	1900	1901	1906	S18	E07	.221	15920	4.3	6	SF		C	1901	40	.4	E
RAMY	03	1902E	1903	1905	S18	E 2	.190		3.9	3D	SN	3	C		25		
MCMA	03	1928	1934	1948	N28	W55	.896	15914	27.7	20	SF		C	1934	40	1.0	EH
BIGB	03	1929	1937	1953	N28	W65	.950	15921	26.9	24	1N	1	C	1937	100		

Hα SOLAR FLARES

APRIL 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-POR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DAY	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
MCMA	03	1930	1948	2015D	S29	W14	.430	15918	2.8	45D	1N		C	1939	90	1.0	EKW
MCMA	03	1930	1948	2015D	S29	W14	.430	15918	2.8	45D	1N		C	1948	180	2.1	
BIGB	03	1936	1941	1953	S28	W11	.394		3.0	17	SN	1	C	1941	60	.6	
RAMY	03	1937	1937	1953	S27	W17	.431		2.5	16	SB	3	C		33		F
BIGB	03	1937	1941	1952	S32	W17	.491		2.5	15	SN	1	C	1941	70	.8	E
MCMA	03	1949	2000	2100	S18	E05	.205	15920	4.2	71	1B		C	2000	200	2.1	EH
RAMY	03	1950	1956	2024D	S18	E 1	.187	15920	3.9	34D	1B	3	C		214		DE
PALE	03	1954E	1958U	2030	S18	E 2	.190	15918	4.0	36D	1B	3	C		208		F
HOLL	03	2058	2108	2120	S26	W19	.439		2.4	22	SB	3	C		108		
MCMA	03	2102	2107	2115	S17	W18	.344	15918	2.5	13	SF		C	2107	40	.4	E
MCMA	03	2123	2125	2138	S17	W18	.344	15918	2.5	15	SF		C	2125	30	.3	E
MANI	04	0713E	0715	0730	S21	W58	.844		28.0	17D	SB	3	C		90		
HOLL	04	1432	1432	1438	S25	W28	.531		2.5	6	SB	3	C		23		
HOLL	04	1659	1700	1707	S23	W29	.530		2.5	8	SB	3	C		29		
RAMY	04	1848	1852	1902	S23	W30	.542		2.5	14	SB	3	C		25		
HOLL	04	1850	1852	1902	S23	W30	.542		2.5	12	SB	3	C		20		
HOLL	04	2010	2024	2038	S 9	E 3	.060		5.1	28	SN	3	C		50		
HOLL	04	2139	2140	2147	S25	W32	.578		2.5	8	SB	3	C		21		F
PALE	04	2140	2140	2146	S26	W32	.585		2.5	6	SN	3	C		21		DE
MANI	05	0359	0401	0411	S29	W31	.593		2.8	12	SB	3	C		40		
MANI	05	0523	0528	0533D	S17	W19	.358		3.8	10D	SN	3	C		80		
MANI	05	0525	0526	0533D	S28	W31	.586		2.9	8D	SN	3	C		50		F
MANI	05	0626E	0626U	0633D	S28	W30	.576		3.0	7D	SN	3	V		30		F
ISTA	05	0656		0703	S27	W38	.657		2.4	7	SB						D
MANI	05	0726	0727	0733	S23	W39	.651		2.4	7	SN	3	C		40		
RAMY	05	1459	1459	1503	N20	E78	.989		11.5	4	SB	3	C		0		
HOLL	05	1459	1459	1534	N20	E88	1.000		12.2	35	SB	3	C		0		DE
BIGB	05	1823	1829	1859	N19	E90	1.001		12.5	36	1N	3	C	1829	60		
RAMY	05	1825	1827	1832	N20	E76	.983		11.5	7	SN	3	C		0		
HOLL	05	1826	1828	1848	N20	E88	1.000		12.4	22	SB	3	C		0		
PALE	05	1828E	1828U	1844D	N20	E90	1.001		12.5	16D	SN	3	C		0		DE
HOLL	05	1944	1948	1957	S25	W44	.714		2.5	13	SB	3	C		110		
BIGB	05	2125	2137	2155	N13	E90	1.000		12.6	30	1N	2	C	2137	70		
HOLL	06	1405	1407	1418	S25	W54	.813		2.5	13	SB	3	C		35		
BIGB	06	1549	1557	1559	N20	E90	1.001		13.4	10	SF	2	C	1557	20		
BIGB	06	1600	1613	1620	S20	W90	.999	15917	27.9	20	1N	2	C	1613	60		
HOLL	06	1727	1738	1800	S26	E58	.849		11.1	33	SB	3	C		46		
HOLL	06	1818	1819	1827	S27	W60	.866		2.3	9	SB	3	C		58		DE
BIGB	06	1819	1820	1838	S29	E57	.846		11.0	19	SN	2	C	1820	40	.8	E
PALE	06	1819	1819	1824	S23	W57	.837		2.5	5	SB	3	C		51		DE
BIGB	06	1820E	1820	1832	S22	W52	.790		2.9	12D	SN	2	P	1820	30	.6	E
PALE	06	1828	1832	1839	N18	E72	.968		12.2	11	SF	3	C		0		
BIGB	06	1829	1835	1850	N21	E90	1.001		13.5	21	SN	2	C	1835	30		A
RAMY	06	1833	1833	1838	N22	E77	.987		12.5	5	SF	3	C		0		
BIGB	06	1935	1939	1950	S29	E57	.846		11.1	15	SN	2	C	1939	40	.8	E
RAMY	06	1937	1937	1943	S26	E56	.833		11.0	6	SB	3	C		20		
HOLL	06	2051	2057	2106	N23	E78	.990	15933	12.7	15	1B	3	C		0		
RAMY	06	2054	2057	2059D	N18	E71	.963	15933	12.2	5D	1B	3	V		0		
BIGB	06	2054	2058	2106	N21	E90	1.001	15933	13.6	12	1N	2	C	2058	90		A
PALE	06	2055	2057	2102	N20	E75	.980	15933	12.5	7	1B	3	C		65		
PALE	06	2328	2328	2344	S29	E54	.821		11.0	16	SN	3	C		39		F
ISTA	07	0824		0827	N22	E77	.987		13.1	3	SN						D
RAMY	07	1441	1442	1451	S17	W50	.763		3.9	10	SN	3	C		29		
RAMY	07	1546	1546	1556	S13	W23	.396		5.9	10	SB	3	C		42		
RAMY	07	1652	1653	1703	S23	W66	.907		2.8	11	SB	3	C		28		F
HOLL	07	1653	1653	1704	S26	W67	.915		2.7	11	SB	3	C		35		F
HOLL	07	1752	1756	1827	S18	W52	.785	15920	3.8	35	1B	3	C		170		F
RAMY	07	1754	1756	1804	S17	W52	.784		3.8	10	SB	3	C		60		F
PALE	07	1757E	1757U	1802	S17	W52	.784		3.8	5D	SN	2	C		72		F
HOLL	07	1900	1926	2000	N17	E59	.892		12.2	60	SB	2	C		24		
RAMY	08	1237	1254	1322	N18	E58	.887	15933	12.9	45	1B	3	C		101		F
RAMY	08	1508	1525	1540	S30	W81	.980		2.6	32	SN	3	C		0		
HOLL	08	1822	1822	1828	N19	E51	.836		12.6	6	SB	3	C		48		DE
BIGB	08	1822	1823	1829	N22	E56	.884		13.0	7	SN	2	C	1823	70	1.1	
HOLL	08	1844	1849	1854	N19	E51	.836		12.6	10	SB	3	C		21		
BIGB	08	1935	2000	2030	N02	E90	1.000	15937	15.6	55	1F	2	P	2000	60		

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM POR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DAY	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
PALE	09	0111E	0112	0115D	N17	E57	.877		13.3	4D	SN	3	C		36		DE
MANI	09	0602E	0602U	0612	S27	E27	.535		11.3	10D	SN	3	C		50		F
RAMY	09	1142	1143	1149	N 8	E76	.975		15.2	7	SN	3	C		62		
RAMY	09	1214	1215	1223	S28	E19	.461		10.9	9	SN	3	C		31		
RAMY	09	1218	1226	1248	N 5	E85	.997	15937	15.9	30	1B	3	C		0		
RAMY	09	1518	1519	1521	N20	E39	.732		12.6	3	SN	3	C		42		
BIGB	09	1526	1527	1529	N05	E90	1.000		16.4	3	SF	2	C	1527	20		
RAMY	09	1620	1624	1630	N20	E39	.732		12.6	10	SN	3	C		92		
HOLL	09	1622	1622	1633	N21	E42	.766		12.8	11	SN	3	C		21		
MCMA	10	1428E		1454	N17	W73	.971	15939	5.1	26D	SN		C	1435			D
MCMA	10	1505	1517	1540	N17	W73	.971	15939	5.2	35	SF		C	1517			D
MCMA	10	1619	1623	1633	S12	W64	.892	15924	5.9	14	SN		C	1623	30	.7	E
RAMY	10	1720	1735	1805	N 8	E58	.864	15936	15.1	45	1B	3	C		158		F
MCMA	10	1720	1734	1835	N08	E57	.856	15937	15.0	75	SB		C	1734	50	1.0	EL
BIGB	10	1731	1740	1800	N06	E50	.784		14.5	29	SN	2	C	1740	110	1.8	
MCMA	10	1816	1837	1855	S12	W65	.900	15924	5.9	39	SN		C	1837	50	1.2	EK
RAMY	10	1818	1824	1826	S11	W67	.915		5.7	8	SN	3	C		17		
RAMY	10	1837	1846	1858	S11	W67	.915		5.8	21	SB	3	C		59		
BIGB	10	2040	2042	2043	N16	W75	.977		5.2	3	SN	2	C	2042	30		
RAMY	10	2041	2042	2044	N15	W76	.980		5.2	3	SF	3	C		16		
BIGB	10	2052E	2052U	2055	S11	E68	.921		16.0	3D	SN	2	P	2052	10		D
RAMY	10	2053	2053	2055D	S11	W68	.921		5.8	2D	SN	3	C		14		
BIGB	10	2104	2105	2113	N04	E66	.919		15.8	9	SN	2	C	2105	50		
BIGB	10	2247	2251	2257	N11	E61	.894		15.5	10	SN	2	C	2251	50	1.1	
PALE	10	2251	2251	2257	N61	E 0	.929		11.0	6	SN	3	C		26		DE
MANI	11	0842E	0842U	0847	N10	E67	.933		16.4	5D	SN	3	C		20		
WEND	11	1131E		1154	S28	W41	.694		8.4	23D	SN		V				
RAMY	11	1327	1329	1351	S27	W40	.679		8.6	24	SB	3	C		125		
HOLL	11	1344E	1345U	1356	N 4	E53	.810	15937	15.5	12D	1B	3	C		228		UDE
HOLL	11	1345E	1346U	1351	S26	W41	.685		8.5	6D	SN	3	C		59		
RAMY	11	1516	1521	1542D	N11	E37	.657		14.4	26D	SN	3	C		36		
HOLL	11	1517	1527	1537	N11	E36	.645		14.3	20	SN	3	C		60		F
HOLL	11	1609	1614	1633	S26	W42	.696		8.5	24	SN	3	C		51		
RAMY	11	1611	1615	1624	S27	W42	.700		8.5	13	SN	3	C		25		
RAMY	11	1632	1633	1637	N27	E70	.969		16.9	5	SF	3	C		11		
RAMY	11	1656	1702	1714	N29	E72	.978		17.1	18	SF	3	C		21		
RAMY	11	1657	1701	1724	N18	E17	.505		13.0	27	SB	3	C		134		
HOLL	11	1658	1702	1722	N20	E15	.515		12.8	24	SB	3	C		117		
RAMY	11	1714	1717	1720	S27	W42	.700		8.6	6	SN	3	C		17		
RAMY	11	1718	1723	1726	N27	E70	.969		17.0	8	SF	3	C		12		
RAMY	11	1727	1735	1739	S27	W43	.711		8.5	12	SN	3	C		47		
HOLL	11	1728	1733	1739D	S26	W43	.707		8.5	11D	SN	3	C		87		
RAMY	11	1732	1733	1736	N19	E17	.517		13.0	4	SN	3	C		35		
RAMY	11	1745	1746	1753	S27	W43	.711		8.5	8	SN	3	C		20		
RAMY	11	1756	1756	1759	S27	W43	.711		8.5	3	SN	3	C		19		
BIGB	11	1942	2011	2027	S28	W45	.735		8.4	45	SN	3	P	2011	40	.6	
BIGB	11	1948	1950	2025	S14	E55	.813		16.0	37	SN	3	P	1950	70	1.3	E
PALE	11	1956E	2008U	2020D	S27	W44	.721		8.5	24D	SN	2	C		25		DE
BIGB	11	2135	2153	2236	N06	E72	.957	15948	17.3	61	1N	3	P	2153	240		
PALE	11	2141E	2147	2214	N 5	E71	.950	15948	17.2	33D	1N	3	C		201		FDE
PALE	11	2157E	2201U	2224D	N19	E13	.488		12.9	27D	SB	3	C		61		DE
BIGB	12	1444	1446	1457	N06	E47	.751		16.1	13	SN	2	C	1446	10	.2	
RAMY	12	1453	1456	1458	S24	E56	.830		16.8	5	SF	3	C		14		
BIGB	12	1457E	1457U	1510	S23	E59	.855		17.0	13D	SF	2	P	1457	10	.2	
RAMY	12	1516	1517	1519	N 7	E38	.649		15.5	3	SN	3	C		39		
RAMY	12	1529	1532	1535	N19	E 5	.449		13.0	6	SN	3	C		21		
BIGB	12	1534	1550	1607	N30	E60	.930		17.1	33	SF	2	C	1550	20	.4	
BIGB	12	1547	1558	1632	N13	E53	.833	15943	16.6	45	1N	2	C	1558	150	2.6	
RAMY	12	1548	1558	1622	N12	E53	.830	15943	16.6	34	1B	3	C		213		F
BIGB	12	1637	1638	1640	N25	E55	.887		16.8	3	SF	3	P	1638	30	.5	E
RAMY	12	1649	1700	1701	S24	E55	.821		16.8	12	SF	3	C		22		
BIGB	12	1717	1728	1747	N31	E57	.917		17.0	30	SF	2	C	1728	20	.4	
BIGB	12	1720	1723	1734	N07	E62	.895		17.4	14	SF	2	C	1723	30	.7	
BIGB	12	1725	1728	1733	N01	E38	.626		15.6	8	SN	2	C	1728	60	.8	
HOLL	12	1726	1729	1732	N 3	E32	.552		15.1	6	SN	2	C		34		
BIGB	12	1727	1733	1754	N08	E18	.399		14.1	27	SF	2	C	1733	30		
BIGB	12	1804	1820	1831	S21	E57	.836		17.0	27	SN	3	C	1820	20	.4	
RAMY	12	1836	1836	1840	S24	E54	.812		16.8	4	SF	3	C		17		
BIGB	12	1908	1911	1926	S22	E57	.836		17.1	18	SF	2	C	1911	20	.4	

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DAY	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
BIGB	12	1950	2003	2037	S22	E57	.836		17.1	47	SN	2	C	2003	40	.8	
HOLL	12	1959	2003	2030	S24	E55	.821		17.0	31	SB	3	C		58		
MCMA	12	2001E		2038	S24	E55	.821	15949	17.0	37D	SN		C	2001	60	1.1	E
MCMA	12	2046		2058D	S24	E55	.821	15949	17.0	12D	SN		C				
MCMA	12	2046	2052	2058D	N05	E32	.562	15937	15.3	12D	SN		C	2052	30	.4	E
BIGB	12	2048	2051	2110	N07	E33	.586		15.3	22	SN	3	C	2051	40	.5	E
BIGB	12	2049	2115	2135	S22	E57	.836		17.1	46	SN	3	C	2115	30	.6	
MCMA	12	2137E		2152D	S24	E55	.821	15949	17.0	15D	SN		C	2139	50	.9	E
BIGB	12	2139	2155	2215	S22	E57	.836		17.2	36	SN	3	C	2155	60	1.1	
BIGB	13	0003	0007	0031	S23	E53	.801		17.0	28	SF	3	C	0007	20	.3	
BIGB	13	0024	0029	0047	N15	E60	.895		17.5	23	SF	3	C	0029	90	1.9	
MANI	13	0242E	0244	0251D	N 4	E31	.543		15.4	9D	SB	3	C		35		F
MANI	13	0549E	0550	0602	N 5	E30	.535		15.5	13D	SN	3	C		30		F
MANI	13	0601E	0601U	0613	S24	E49	.764		16.9	12D	SN	3	C		35		
MANI	13	0612E	0612U	0620	N 5	E30	.535		15.5	8D	SN	3	C		30		
BERN	13	0900	0905	0938	N33	W07	.653		12.9	38	SN		P				
BERN	13	1050E	1050	1100	N04	E16	.334		14.7	10D	SB		P				
RAMY	13	1519E	1520U	1526	N21	W 6	.482		13.2	7D	SN	3	C		24		
RAMY	13	1520	1523	1525	S24	E44	.711		16.9	5	SN	3	C		25		
RAMY	13	1520	1524	1527D	N15	E52	.830		17.5	7D	SN	3	C		17		
RAMY	13	1613	1613	1621	N 4	E26	.474		15.6	8	SN	3	C		26		H
HOLL	13	1614E	1616U	1620	N 4	E22	.417		15.3	6D	SN	3	C		86		F
HOLL	13	1627	1631	1650	N21	W 6	.482		13.2	23	SB	3	C		88		
RAMY	13	1628	1628U	1656	N21	W14	.521		12.6	28	SN	3	C		26		
HOLL	13	1719	1719	1729	S25	W70	.933		8.5	10	SN	3	C		11		
BIGB	13	1720	1725	1741	S26	W70	.933		8.5	21	SN	2	C	1725	40		
HOLL	13	1721	1725	1727	N21	W 6	.482		13.3	6	SB	3	C		29		
BIGB	13	1723	1724	1725	S24	E40	.667		16.7	2	SN	3	C	1724	10	.1	D
BIGB	13	1729	1800	1837	N30	E45	.839		17.1	68	SN	2	C	1800	100	1.5	
BIGB	13	1742	1750	1758	S22	E38	.636		16.6	16	SN	3	C	1750	10	.1	D
BIGB	13	2020	2103	2115	N27	E43	.808		17.1	55	SN	3	C	2103	70	1.0	E
HOLL	13	2311	2355	0026	N30	E41	.810	15942	17.0	75	1B	3	C		260		U F
HOLL	13	2340	2343	0017	N 6	E18	.379	15936	15.3	37	1B	3	C		265		Z F
BIGB	13	2341	2350	0004	N06	E18	.379	15936	15.3	23	1N	2	C	2350	250		
BIGB	13	2356	2359	0012	N30	E42	.818		17.1	16	SN	2	C	2359	110	1.5	
BIGB	14	0020	0023	0035	S15	E50	.761		17.8	15	SF	2	C	0023	30	.5	EG
PALE	14	0134E	0134U	0156	N27	E37	.761	15942	16.8	22D	2B	3	C		512		U F
PALE	14	0322E	0322U	0328D	N27	E37	.761	15942	16.9	6D	1N	3	C		157		F
BUCA	14	0720	0733	0746	N30	E37	.782		17.1	26	SN		C	0733	107	1.7	E
WEND	14	0720E		0748	N29	E38	.782	15942	17.2	28D	1N		V		330	4.9	
BERN	14	0729E	0731	0756	N30	E40	.803	15942	17.3	27D	1N		P				
BERN	14	1017	1022	1051	N08	E11	.321	15937	15.3	34	1N		P				
BERN	14	1106	1107	1116	N04	E11	.270		15.3	10	SN		P				
BERN	14	1124	1127	1148	N18	W22	.548	15933	12.8	24	1F		P				
RAMY	14	1202	1214	1303	N30	E36	.775	15942	17.2	61	1B	3	C		196		
RAMY	14	1307	1310	1320	N21	W18	.549		13.2	13	SN	3	C		57		
RAMY	14	1326	1327	1328	N29	E34	.752		17.1	2	SN	3	C		22		
RAMY	14	1328	1330	1338	N 6	E37	.632		17.3	10	SN	3	C		45		
RAMY	14	1331	1341	1345	N30	E35	.767		17.2	14	SN	3	C		42		
MCMA	14	1341E		1445D	N30	E33	.753	15942	17.0	64D	SN		C	1341	100	1.5	E
MCMA	14	1358	1420	1440	N18	E41	.739	15948	17.7	42	SN		C	1420	35	.5	EH
RAMY	14	1406	1406	1411	N28	E33	.737		17.1	5	SN	3	C		18		
HOLL	14	1416	1417	1432	N14	E38	.685		17.4	16	SN	3	C		18		F
HOLL	14	1436	1438	1438D	N25	E31	.696		16.9	2D	SB	3	V		54		
MCMA	14	1440	1444	1452	N04	E07	.228	15937	15.1	12	SB		C	1444	150	1.5	L
HOLL	14	1441	1445	1452	N 1	E14	.279	15937	15.7	11	1B	3	C		305		
RAMY	14	1441	1442	1454	N 4	E 9	.248	15937	15.3	13	1B	3	C		363		F H
RAMY	14	1507	1509	1515	N28	E33	.737		17.1	8	SB	3	C		28		
MCMA	14	1553	1602	1622	N07	E08	.280	15937	15.3	29	SF		C	1602	25	.3	EL
RAMY	14	1558	1610	1616	N 4	E14	.307		15.7	18	SN	3	C		37		
RAMY	14	1758	1802	1809	S24	E29	.537		16.9	11	SN	3	C		24		
RAMY	14	1758	1802	1805	N 7	E 8	.280		15.3	7	SN	3	C		31		
MCMA	14	1759	1802	1812	N08	E06	.281	15937	15.2	13	SF		C	1802	30	.3	E
BIGB	14	1801	1805	1816	S24	E30	.549		17.0	15	SF	3	C	1805	30	.4	
MCMA	14	1801	1803	1810	S23	E30	.543	15949	17.0	9	SF		C	1803	30	.4	E
HOLL	14	1802	1804	1808	S26	E26	.516		16.7	6	SN	3	C		37		
BIGB	14	1903	1909	1923	S25	E28	.532	15949	16.9	20	1N	3	C	1909	180	2.1	
MCMA	14	1905	1909	1927	S23	E30	.543	15949	17.0	22	SN		C	1910	50	.6	E
HOLL	14	1906	1908	1925	S24	E27	.513		16.8	19	SB	3	C		59		
RAMY	14	1908E	1908U	1923	S24	E26	.501		16.7	15D	SN	3	C		42		

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM POR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DAY	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
HOLL	14	1910	1912	1920	N 4	E13	.295		15.8	10	SB	3	C		78		F
MCMA	14	1911	1912	1920	N07	E06	.266	15937	15.2	9	SN		C	1912	30	.3	E
RAMY	14	1912	1913	1920	N 7	E 8	.280		15.4	8	SN	3	C		54		
HOLL	14	1950	1951	1957	N 4	E12	.282		15.7	7	SB	3	C		66		
MCMA	14	1950	1951	1957	N06	E06	.250	15937	15.3	7	SB		C	1951	30	.3	D
BIGB	14	2028	2031	2040	N01	E14	.279		15.9	12	SF	3	C	2031	20	.2	
BIGB	14	2110	2116	2130	S24	E27	.513		16.9	20	SF	3	C	2116	30	.3	
BIGB	14	2129	2131	2135	N30	E32	.746		17.3	6	SF	3	C	2131	10	.1	D
BIGB	14	2148	2157	2217	N31	E31	.747		17.2	29	SF	3	C	2157	50	.6	E
HOLL	14	2300	2303	2309	S24	E25	.489		16.8	9	SN	3	C		24		
HOLL	14	2305	2307	2319	N 4	E 9	.248		15.6	14	SB	3	C		37		DE
HOLL	14	2307	2307	2312	N29	E30	.723		17.2	5	SB	3	C		20		
HOLL	14	2340	2343	0017	N 6	E18	.379	15937	16.3	37	1B	3	C		265		Z F
PALE	14	2348E	2348U	0011	N 4	E22	.417		16.6	23D	SB	3	C		284		F
PALE	14	2358E	2358U	0020	N27	E39	.776	15942	17.9	22D	1B	3	C		377		F
ISTA	15	0730		0750	N10	E18	.420	15943	16.7	20	1B						EF
BUCA	15	0739	0739	0753	N10	E17	.409		16.6	14	SN		C	0739	161	1.8	C
BERN	15	1030	1037	1056	N04	W00	.194	15937	15.4	26	1N		P				
RAMY	15	1317	1318	1326	N 4	W 4	.206		15.3	9	SB	3	C		41		F
HOLL	15	1521	1523	1536	N27	E17	.615		16.9	15	SB	3	C		50		F
RAMY	15	1521	1522	1532D	N28	E22	.657		17.3	11D	SB	3	C		45		F
HOLL	15	1736	1737	1742	N27	E16	.609		16.9	6	SB	3	C		28		
BIGB	15	1815	1817	1822	N05	E21	.410		17.3	7	SF	2	C	1817	10	.1	G
RAMY	15	1816	1817	1821	N 5	E22	.424		17.4	5	SF	3	C		26		
HOLL	15	1816	1817	1824	N 5	E21	.410		17.3	8	SN	3	C		28		F
BIGB	15	1924	1927	1941	N10	E10	.340		16.6	17	SF	2	C	1927	60	.6	
HOLL	15	1925	1925	1939	N12	E10	.368		16.6	14	SB	3	C		24		
RAMY	15	1926	1926	1942	N11	E10	.354		16.6	16	SN	3	C		54		
BIGB	15	2004	2023	2035	N23	W41	.768		12.8	31	SF	3	C	2023	20	.3	D
HOLL	15	2007	2009	2025	N 3	W 5	.196	15937	15.5	18	1B	3	C		452		UDE
RAMY	15	2008	2009	2024	N 5	W 8	.251	15937	15.2	16	2B	3	C		530		H
PALE	15	2010	2013	2021D	N 5	W 5	.228	15934	15.5	11D	1B	3	C		371		F
BIGB	15	2012	2014	2025	N04	W08	.237	15937	15.2	13	1N	3	C	2014	200	2.1	
BIGB	15	2023	2025	2029	N06	E20	.405		17.3	6	SF	3	C	2025	10	.1	G
RAMY	15	2036	2042	2045	N36	W32	.794	15937	13.5	9	SF	3	C		23		
BIGB	15	2037	2040	2050	N34	W34	.791		13.3	13	SF	3	C	2040	20	.2	
RAMY	15	2118	2122	2129	N34	W35	.797		13.3	11	SF	3	C		23		
BIGB	15	2120	2130	2210	N08	W16	.375		14.7	50	SF	3	C	2130	30	.3	D
BIGB	15	2127	2137	2159	N18	W03	.428		15.7	32	SF	3	C	2137	30	.3	D
BIGB	15	2140	2158	2213	N19	W09	.464		15.2	33	SF	3	C	2158	60	.6	
BIGB	15	2241	2247	2322	N10	E07	.318	15943	16.5	41	1N	3	C	2247	230	2.4	
PALE	15	2242E	2244U	2248D	N 7	E 9	.289	15943	16.6	6D	1N	3	C		211		FDE
HOLL	15	2242	2246	2322	N11	E10	.354	15937	16.7	40	1B	3	C		291		F
BERN	16	0746	0749	0847	N18	E12	.466	15952	17.2	61	1N		P				
BERN	16	1134	1135	1205	N03	W15	.310		15.4	31	SN		P				
RAMY	16	1135	1136	1144	N 5	W14	.318		15.4	9	SB	3	C		98		
RAMY	16	1155	1200	1208	N 5	W14	.318		15.4	13	SB	3	C		121		DE H
RAMY	16	1436	1437	1442	N30	E 9	.618		17.3	6	SB	3	C		28		
BIGB	16	1557	1608	1618	S32	E06	.430		17.1	21	SF	3	C	1608	10	.1	D
HOLL	16	1649	1650	1703	N 3	W16	.324	15937	15.5	14	1B	3	C		202		U F
RAMY	16	1650	1651	1703	N 5	W18	.370	15937	15.4	13	1B	3	C		212		
BIGB	16	1650	1651	1701	N04	W27	.487		14.7	11	SN	3	C	1651	110	1.3	
PALE	16	1651E	1652U	1653D	N 4	W17	.347		15.4	2D	SB	3	C		39		U F
BIGB	16	2031	2039	2105	N18	W22	.548		15.2	34	SN	2	C	2039	100	1.1	
PALE	16	2036E	2036U	2046D	N 4	W19	.375		15.4	10D	SN	3	C		25		U F
PALE	16	2146	2146	2153	N 4	W20	.389		15.4	7	SN	3	C		44		U F
BIGB	16	2146	2149	2157	N20	W04	.461		16.6	11	SN	2	C	2149	50	.5	
BIGB	16	2345	2346	2356	N20	W04	.461		16.7	11	SN	2	C	2346	40	.4	
PALE	16	2346E	2346U	2356D	N 5	W20	.397		15.5	10D	SB	3	C		65		DE
ISTA	17	0840E		0915D	N30	E01	.604		17.4	35D	SN						E
MCMA	17	1439	1440	1517	N06	W14	.328	15948	16.6	38	SN		C	1440	50	.5	EK
HOLL	17	1439	1441	1453	N 9	W13	.353		16.6	14	SN	4	C		23		F
MCMA	17	1440	1443	1505	N28	W05	.580	15942	17.2	25	SF		C	1443	40	.5	E
HOLL	17	1443	1446	1510	N28	W 9	.590		16.9	27	SN	4	C		41		
RAMY	17	1459	1502	1514	N 9	W15	.374		16.5	15	SN	3	C		31		
HOLL	17	1459	1459	1505	N 9	W13	.353		16.6	6	SN	4	C		21		
MCMA	17	1520E	1529	1537D	N28	W08	.587	15942	17.0	17D	SF		C	1529	60	.8	E
MCMA	17	1529E		1537D	N06	W15	.341	15948	16.5	8D	SF		C	1535	40	.4	E
HOLL	17	1637	1638	1641	N 5	W34	.588		15.1	4	SN	4	C		53		F

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM POR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DAY	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
MCMA	17	1637	1638	1640	N06	W34	.593	15937	15.1	3	SN		C	1638	40	.5	D
HOLL	17	1722	1722	1725	N 9	W14	.364		16.7	3	SN	3	C		39		F
HOLL	17	1817	1818	1819	N 9	W15	.374		16.6	2	SB	3	C		31		F
BIGB	17	1835	1837	1852	N26	W10	.567		17.0	17	SF	2	C	1837	60	.6	
BIGB	17	1918	1919	1929	N08	W17	.386		16.5	11	SF	2	C	1919	50	.5	
RAMY	17	1945	1945	1953D	N 6	W13	.317		16.8	8D	SN	3	C		20		
MCMA	17	2026E		2037D	N28	W10	.594	15942	17.1	11D	SN		C	2037	80	1.0	E
BIGB	17	2030	2111	2148	N28	W10	.594		17.1	78	SF	2	C	2111	170	1.8	
HOLL	17	2036	2103	2106D	N28	W12	.602		17.0	30D	SB	3	C		183		DE
HOLL	17	2036	2110U	0000	N28	W12	.602	15943	17.0	204	1B	3	C		213		DE
PALE	17	2051E	2109U	2109D	N29	W14	.623		16.8	18D	SB	2	C		147		DE
PALE	18	0035E	0036U	0036D	S24	W17	.398		16.7	1D	SB	2	C		112		DE
MCMA	18	1542	1546	1605	N08	W58	.864	15937	14.3	23	SF		C	1546	20	.4	D
BIGB	18	1546	1559	1626	N07	W57	.853		14.4	40	SF	2	C	1559	30	.6	G
MCMA	18	1845	1846	1908	N10	W47	.764	15937	15.3	23	SN		C	1846	60	1.0	D
HOLL	18	1846	1847	1902	N10	W48	.775		15.2	16	SB	3	C		129		DE
HOLL	18	2036	2103U	2103D	N28	W12	.601		18.0	204	SB	3	C		183		DE
PALE	18	2051E	2109U	2109D	N29	W14	.623		17.8	18D	SB	2	C		147		DE
BIGB	18	2157	2206	2218	S08	E90	1.000		25.7	21	SF	2	C	2206	10		
HOLL	18	2218	2221	2230	N 3	W46	.731		15.5	12	SN	3	C		29		
PALE	18	2219E	2221U	2231D	N 4	W48	.757		15.3	12D	SN	3	C		0		
HOLL	19	0023	0026	0042	N 3	W47	.743		15.5	19	SB	3	C		42		
MANI	19	0823E	0823U	0835	N 5	W47	.748		15.8	12D	SN	3	C		20		
MCMA	19	1240		1320D	N07	W50	.786	15937	15.8	40D	SF		C	1300	50	.8	E
MCMA	19	1702	1704	1730	N05	W52	.802	15937	15.8	28	SF		C	1704	30	.5	D
BIGB	19	1703	1707	1718	N03	W54	.817		15.7	15	SF	2	C	1707	30	.5	
PALE	19	2356	0009	0021	N 9	W45	.739		16.6	25	SB	3	C		100		F
HOLL	19	2356	0009	0101D	N 9	W45	.739	15937	16.6	65D	1B	3	C		220		F
BIGB	19	2357	0014	0048	N06	W46	.740		16.5	51	SN	2	C	0014	130	1.9	
HOLL	20	1430	1434	1438	N 6	W44	.717		17.3	8	SN	3	C		20		
HOLL	20	1505	1515	1530	N 6	W45	.728		17.3	25	SN	3	C		25		
MCMA	20	1704	1716	1800D	N28	W50	.863	15942	17.0	56D	SF		C	1716	50	1.0	E
BIGB	20	1832	1850	1914	N29	W46	.839		17.3	42	SN	2	C	1850	70	1.0	
MCMA	20	1845E	1850	1950D	N28	W50	.863	15942	17.0	65D	SF		C	1850	60	1.2	E
BIGB	20	1903	1934	1935	N26	W51	.862	15943	17.0	32	1N	2	C	1934	130	2.1	
HOLL	20	2356	0009	0010D	N 9	W45	.739	15948	17.6	14D	1B	3	V		220		F
RAMY	21	1429	1429	1437	S15	W63	.884		16.9	8	SN	3	C		16		
BIGB	21	1929	1933	1939	S13	W72	.945		16.4	10	SF	2	C	1933	10		D
HOLL	21	1932	1933	1934	S15	W66	.907		16.9	2	SB	3	C		25		
HOLL	22	1713	1713	1717	N27	W77	.990		16.9	4	SN	3	C		0		F
HOLL	22	1738	1740	1746	N27	W77	.990		17.0	8	SB	3	C		0		F
HOLL	22	1952	1956	2016	S15	W78	.973		17.0	24	SB	3	C		25		
HOLL	23	1356	1400	1418	S23	E76	.963		29.3	22	SB	3	C		93		F
MCMA	23	1446	1515	1620	S23	E20	.423	15958	25.1	94	SN		C	1515	80	.9	E
BIGB	23	1451	1503	1511	S22	E22	.439		25.3	20	SN	2	C	1503	140	1.6	G
BIGB	23	1656	1706	1733	S27	E90	.998		30.5	37	SN	2	P	1706	10		
BIGB	23	1834	1839	1851	N20	E52	.846		27.7	17	SF	2	C	1839	20	.3	G
BIGB	23	2045	2046	2053	N21	E60	.908		28.4	8	SN	2	C	2046	30	.6	E
BIGB	23	2049	2053	2059	N17	E63	.918		28.6	10	SN	2	C	2053	10	.2	D
HOLL	23	2049	2050	2103	N26	E30	.694		26.1	14	SN	3	C		28		
HOLL	24	1356	1407	1407	N18	E55	.864		28.7	11	SN	3	C		57		F
HOLL	24	1356	1411	1427	N18	E55	.864		28.7	31	SB	3	C		37		F
HOLL	24	1521	1526	1530	N18	E54	.856		28.7	9	SN	3	C		27		F
HOLL	24	1607	1607	1624	N18	E54	.856		28.7	17	SB	3	C		18		F
BIGB	24	1633	1641	1647	N21	E90	1.001		31.4	14	SN	2	P	1641	10		
HOLL	24	1648	1651	1655	N21	E18	.545		26.1	7	SN	3	C		59		
BIGB	24	1727	1737	1752	N20	E49	.821		28.4	25	SN	3	C	1737	40	.6	
HOLL	24	1731	1733	1750	N18	E53	.847		28.7	19	SB	3	C		30		
BIGB	24	1801	1815	1903	S28	E65	.904		29.6	62	SN	3	C	1815	40		E
ISTA	25	0655E		0710D	N25	E90	1.001		1.0	15D	SN						A
RAMY	25	1150	1152	1202D	N17	E42	.742		28.6	12D	SB	2	C		104		
HOLL	25	1529	1530	1537	S25	E60	.866		30.1	8	SN	3	C		19		
HOLL	25	1603	1608	1621	N27	E87	1.000		1.2	18	SF	3	C		0		
BIGB	25	1650	1702	1707	S27	E55	.827		29.8	17	SF	3	C	1702	50	.9	

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DAY	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
HOLL	25	1700	1704	1713	S25	E59	.858		30.1	13	SN	3	C		48		F
BIGB	25	1702	1712	1723	N17	E43	.752		28.9	21	SF	2	C	1712	50	.7	
HOLL	25	1708	1712	1717	N18	E41	.737		28.8	9	SB	3	C		35		F
RAMY	25	1710E	1711U	1721D	N18	E41	.737		28.8	11D	SB	2	C		31		F
HOLL	25	1733	1734	1739	N18	E41	.737		28.8	6	SB	3	C		19		DE
HOLL	25	1802	1811	1823	N18	E40	.727		28.8	21	SB	3	C		140		FDE
HOLL	25	1802	1816	1816D	N19	E41	.743		28.8	14D	SN	1	P	1816	90	1.2	
BIGB	25	1802	1816	1816D	N19	E41	.743		28.8	14D	SN	1	P	1816	90	1.2	
BIGB	25	1810	1812	1812D	N13	E43	.733		29.0	2D	SN	2	P	1812	40	.6	
HOLL	25	1950	1952	1954	N18	E40	.727		28.8	4	SN	3	C		35		
HOLL	25	1951	1951	1954	N27	E87	1.000		1.4	3	SF	3	C		0		F
HOLL	25	1955	1956	2000	S24	E53	.804		29.8	5	SN	3	C		24		F
HOLL	25	2003	2005	2020	S25	E58	.850		30.2	17	SN	3	C		20		
HOLL	25	2004	2005	2006	N18	E39	.717		28.8	2	SB	3	C		40		
HOLL	25	2027	2027	2034	N18	E39	.717		28.8	7	SB	3	C		26		DF
HOLL	25	2109	2153	2226	N18	E38	.707		28.7	77	SB	3	C		151		F
HOLL	25	2109	2137	2226	N18	E38	.707		28.7	77	SN	3	C		60		F
HOLL	25	2134	2140	2156	S27	E53	.810	15968	29.9	22	2B	3	C		430		U F
BIGB	25	2231	2235	2247	N20	E37	.710		28.7	16	SN	2	C	2235	20	.3	
BIGB	25	2243	2245	2255	N20	E32	.661		28.3	12	SN	2	C	2245	40	.5	
BIGB	25	2254	2259	2345	N19	E38	.713		28.8	51	SN	1	C	2259	60	.8	
ISTA	26	0715		0730	N21	E26	.613		28.3	15	SN						E
RAMY	26	1159	1203	1212	N23	E64	.935		31.3	13	SN	3	C		40		
RAMY	26	1419	1419	1422	S31	E52	.811		30.5	3	SF	3	C		21		
HOLL	26	1523	1523	1611	S25	E45	.727		30.0	48	SB	3	C		28		F
BIGB	26	1523	1540	1540D	S29	E44	.731	15968	29.9	17D	1N	2	P	1540	150	2.1	
HOLL	26	1523	1540	1611	S25	E45	.727		30.0	48	SB	3	C		140		F
RAMY	26	1524	1540	1607D	S28	E42	.707		29.8	43D	SB	3	C		152		F
HOLL	26	1548	1550	1557	N18	E28	.604		28.8	9	SB	3	C		49		
HOLL	26	1659	1702	1716	N18	E27	.594		28.7	17	SB	3	C		36		
RAMY	26	1702	1703	1716	N19	E28	.613		28.8	14	SB	3	C		36		
BIGB	26	1710	1711	1718	N09	E90	1.000		2.5	8	SF	2	C	1711	20		
HOLL	26	1810	1813	1840	N23	E67	.951		31.8	30	SB	3	C		94		FDE
BIGB	26	1810	1813	1853	N21	E60	.907	15976	31.3	43	1N	2	P	1813	100	2.1	
RAMY	26	1811E	1814	1828	N22	E61	.916		31.3	17D	SB	3	C		84		
BIGB	26	2001	2013	2220	N11	E31	.583	15967	29.2	139	1B	2	P	2013	310	3.7	
HOLL	26	2002	2013	2048	N13	E31	.597	15967	29.2	46	1B	3	C		259		U F
HOLL	26	2016	2017	2021	N23	E65	.941		31.7	5	SN	3	C		15		
HOLL	26	2024	2024	2028	N22	W 9	.502		26.2	4	SN	3	C		25		
BIGB	26	2029	2036	2144	N16	E46	.776		30.3	75	SF	2	P	2036	30	.4	G
HOLL	26	2048	2051	2053	N22	W 9	.502		26.2	5	SN	3	C		28		
MANI	27	0145E	0145U	0150D	S31	E43	.730		30.3	5D	SB	3	C		100		F
MANI	27	0522E	0522U	0525D	N21	W17	.536		25.9	3D	SN	3	C		40		
MANI	27	0523E	0523	0525D	N22	W14	.528		26.2	2D	SN	3	C		40		
MANI	27	0705E	0705U	0710D	N18	E16	.491		28.5	5D	SB	2	C		160		F
RAMY	27	1345	1349	1400	N23	E50	.841		31.3	15	SN	3	C		32		
BIGB	27	1455	1458	1512	N15	E12	.420		28.5	17	SB	2	C	1458	160	1.7	
RAMY	27	1456	1457	1510	N16	E11	.427		28.4	14	SB	3	C		136		F
HOLL	27	1456	1458	1515	N15	E11	.413		28.4	19	SB	3	C		175		U F
BIGB	27	1457	1458	1500	N15	E19	.482		29.0	3	SN	2	C	1458	10	.1	
BIGB	27	1525	1541	1551	S36	W90	.998		20.9	26	SN	2	C	1541	30		
BIGB	27	1628	1648	1725	N20	E10	.478		28.4	57	SB	2	P	1648	150	1.5	
HOLL	27	1634E	1640	1725	N19	E10	.464		28.4	51D	SB	3	C		186		FDE
HOLL	27	1641	1645	1648	N11	W56	.853		23.5	7	SN	3	C		23		F
BIGB	27	1719	1721	1741	S36	W90	.998		21.0	22	SN	3	C	1721	20		
BIGB	27	1722	1729	1753	N22	E50	.837		31.5	31	SF	3	C	1729	50	.9	
HOLL	27	1727	1731	1750	N23	E48	.825		31.3	23	SB	3	C		34		
HOLL	27	1729	1750	1758	N16	E14	.449		28.8	29	SB	3	C		151		FDE
BIGB	27	1739	1749	1803	N14	E10	.391		28.5	24	SN	2	C	1749	120	1.3	E
BIGB	27	1743	1752	1816	S27	E30	.572		30.0	33	SN	2	C	1752	160	1.9	
HOLL	27	1744	1751	1804	S26	E28	.543		29.8	20	SB	3	C		120		F
BIGB	27	1854	1901	1902	S14	E11	.225		28.6	8	SN	2	C	1901	20	.2	E
HOLL	27	1902	1904	1907	N16	E14	.449		28.8	5	SB	3	C		21		
BIGB	27	1909	1910	1911	N13	E16	.429		29.0	2	SN	2	C	1910	60	.6	
HOLL	27	1909	1910	1913	N16	E13	.441		28.8	4	SB	3	C		29		
BIGB	27	1931	1937	2002	N14	E10	.391	15967	28.6	31	1B	3	C	1937	240	2.5	
BIGB	27	1932	1937	1950	N16	E16	.466		29.0	18	SN	3	C	1937	30	.3	
HOLL	27	1932	1938	2003	N16	E13	.441	15967	28.8	31	1B	3	C		387		
BIGB	27	2040	2049	2105	N20	E08	.468		28.5	25	SN	2	C	2049	20	.2	
BIGB	27	2051	2057	2112	N22	E49	.829		31.5	21	SN	1	C	2057	50	.6	
HOLL	27	2131	2136	2155	N16	E12	.434		28.8	24	SB	3	C		45		DE

Hα SOLAR FLARES

APRIL 1979

OBSERVATORY	OBSERVED UT				LOCATION					DURATION — MIN.	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DAY	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP. DAY			COND.	TYPE	TIME — UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
BIGB	27	2213	2224	2234	N22	E45	.795		31.3	21	SN	1	C	2224	60	.9	
MANI	28	0140	0155	0245	N17	E 7	.418	15967	28.6	65	1B	3	C		230		F
MANI	28	0151E	0155U	0209	N18	E12	.461		29.0	180	SB	3	V		180		F
ISTA	28	0850		0915	S41	W30	.688		26.1	25	SN						K
ISTA	28	0912		0917	N20	E08	.468		29.0	5	SN						D
ISTA	28	0924E		0927D	S26	E19	.445		29.8	3D	SN						D
ISTA	28	0925E		0950D	N17	E02	.404	15967	28.5	25D	1B						F
RAMY	28	1310	1312	1319D	N27	E40	.781		31.5	9D	SB	3	C		21		
RAMY	28	1413	1417	1429	N14	W 0	.354		28.6	16	SB	3	C		71		FDE
RAMY	28	1501	1501	1505	N25	E33	.709		31.1	4	SN	3	C		46		
RAMY	28	1638	1641	1648	N 9	E57	.857		2.0	10	SN	3	C		21		
RAMY	28	1700	1701	1707D	N14	W 1	.355		28.6	7D	SB	3	C		72		F
HOLL	28	2032	2035	2042	N13	E54	.840		1.9	10	SB	3	C		32		
BIGB	28	2158	2203	2217	N19	E01	.435		29.0	19	SF	2	C	2203	40	.4	
HOLL	28	2235E	2247	2251	N18	E 1	.419		29.0	16D	SB	3	C		51		
BIGB	28	2240	2247	2251	N19	E01	.435		29.0	11	SN	2	C	2247	60	.6	
MANI	29	0616E	0616U	0624	N17	W 8	.422		28.7	8D	SN	3	C		20		
MANI	29	0731	0734	0750	N17	E51	.826		2.1	19	SB	3	C		70		F
ISTA	29	0735		0750	N13	W02	.339		29.2	15	SN						E
WEND	29	0737E		0802	N17	E51	.826	15974	2.1	25D	1N		C	0741	250	4.3	Z
MANI	29	0739	0743	0824	N11	E 1	.304		29.4	45	SB	3	C		95		F
WEND	29	0740	0743	0830D	N14	E00	.353	15967	29.3	50D	1N		C	0743	400	4.2	
WEND	29	0823		0833	N17	W08	.422		28.7	10	SN		C				
MANI	29	0823	0825	0836	N14	W 9	.383		28.7	13	SB	3	C		25		
HOLL	29	1448	1455	1505	N16	E39	.704		1.5	17	SN	3	C		30		
RAMY	29	1451	1455	1502	N16	E42	.736		1.8	11	SN	4	C		30		
HOLL	29	1530	1538	1545	N15	E41	.720		1.7	15	SB	3	C		43		F
HOLL	29	1540	1540	1549	N16	W13	.440		28.7	9	SB	3	C		55		F
RAMY	29	1540	1540	1546	N16	W11	.425		28.8	6	SB	4	C		36		
RAMY	29	1603	1613	1624	N17	E43	.751		1.9	21	SB	3	C		55		F
HOLL	29	1605	1613	1624	N17	E44	.761		2.0	19	SB	3	C		68		F
HOLL	29	1606	1609	1629	N12	E48	.780		2.3	23	SB	3	C		39		
MANI	29	2305E	2306	2312	N20	W20	.547		28.5	7D	SN	3	C		30		
MANI	30	0025E	0026	0033	N14	E37	.671		1.8	8D	SB	3	C		100		
MANI	30	0025	0027	0043	N28	E21	.645		31.6	18	SN	3	P		120	1.6	
MANI	30	0031	0032	0040	S24	W 4	.305		29.7	9	SN	3	C		50		F
MANI	30	0219	0220	0243	N14	E38	.682		1.9	24	SN	3	C		30		
MANI	30	0219E	0221	0248	N10	E37	.649		1.9	29D	SN	3	C		60		
MANI	30	0522	0526	0540	N12	E42	.716		2.4	18	SB	3	C		80		
MANI	30	0613	0614	0618	N15	E33	.632		1.7	5	SB	3	C		30		
MANI	30	0625E	0626	0638D	N11	E43	.723		2.5	13D	SB	3	V		60		
MANI	30	0634	0636	0648	N28	E18	.626		31.6	14	SB	3	C		35		
RAMY	30	1153	1155	1204	N14	E24	.523		1.3	11	SN	2	C		44		
BIGB	30	1557	1559	1616	N28	E13	.600		31.6	19	SB	1	P	1559	130	1.4	
HOLL	30	1557	1600	1614	N29	E14	.617		31.7	17	SB	3	C		104		DE
RAMY	30	1557	1559	1612	N27	E10	.574		31.4	15	SB	3	C		103		
RAMY	30	1616	1619	1721	N16	E26	.563		1.6	65	SB	3	C		77		F
HOLL	30	1619	1619	1653	N15	E23	.522		1.4	34	SB	3	C		25		F
BIGB	30	1620	1629	1719	N17	E27	.583		1.7	59	SN	2	C	1629	60	.7	
BIGB	30	1628	1631	1640	N20	E27	.611		1.7	12	SF	2	C	1631	20	.2	
BIGB	30	1645	1646	1652	N15	E28	.577		1.8	7	SN	2	C	1646	30	.4	
HOLL	30	1656	1658	1705	N15	E23	.522		1.4	9	SB	3	C		42		
RAMY	30	1747	1747	1754	N15	E22	.511		1.4	7	SN	3	C		24		
BIGB	30	1839	1842	1851	N22	W30	.657		28.5	12	SN	2	C	1842	60	.7	
BIGB	30	2158	2203	2211	N11	E25	.508	15976	1.8	13	1N	2	C	2203	300	3.4	
HOLL	30	2159	2202	2213	N16	E21	.511		1.5	14	SB	2	C		141		DE
MANI	30	2200	2203	2209	N12	E25	.516		1.8	9	SN	2	C		100		F
BIGB	30	2205	2210	2217	N13	E31	.595		2.2	12	SN	2	C	2210	40	.5	
BIGB	30	2223	2224	2231	N13	E24	.514		1.7	8	SN	2	C	2224	90	1.0	
HOLL	30	2224	2225	2236	N16	E21	.511		1.5	12	SB	2	C		103		
MANI	30	2224	2225	2233	N12	E23	.493		1.7	9	SN	2	C		60		
MANI	30	2358	0005	0033	N16	E23	.532		1.7	35	SB	3	C		120		F

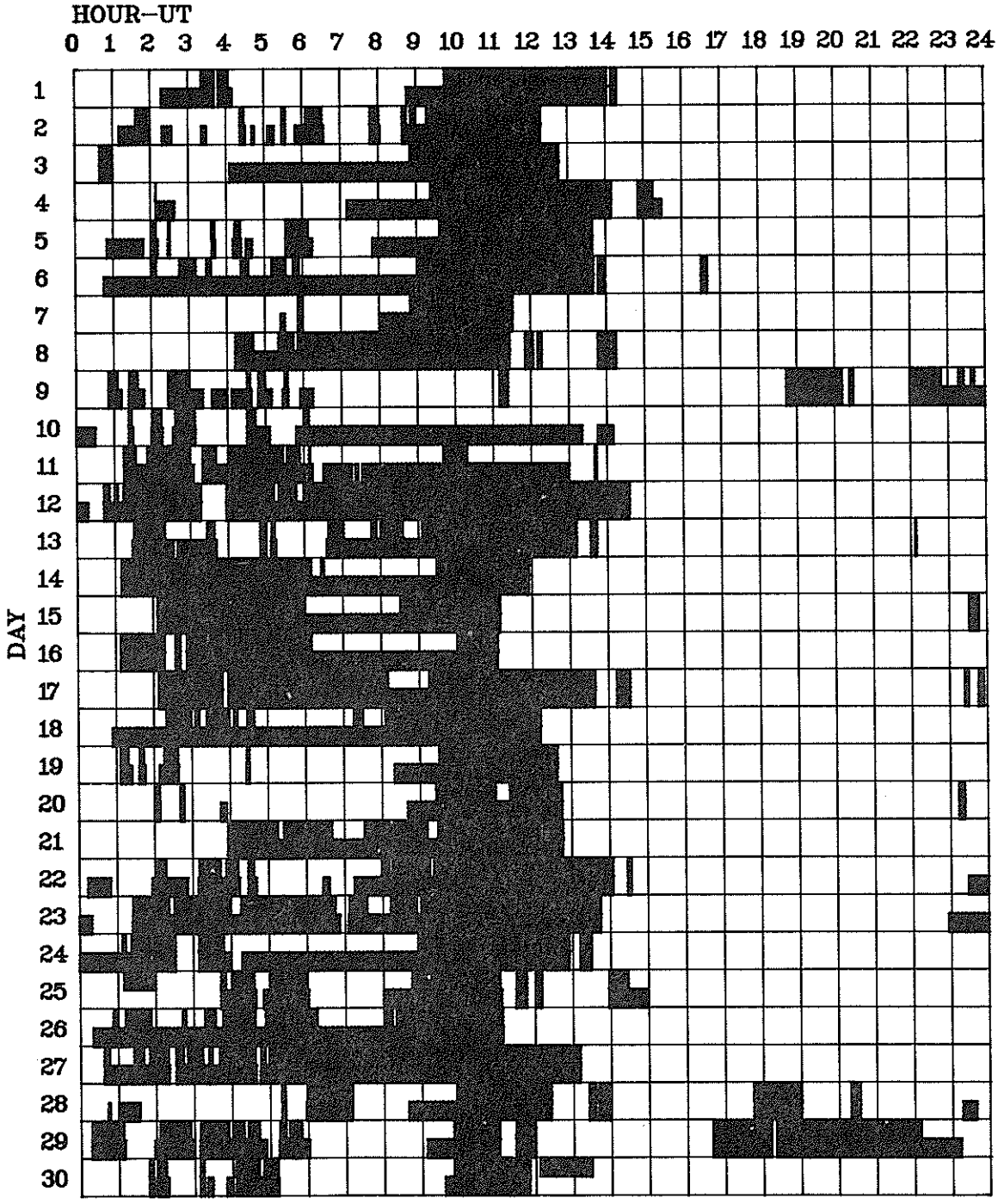
"Remarks":

A = Eruptive prominence whose base is less than 90° 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 a 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 calcium II lines H and K.
P = Flare shows helium D_3 in emission.
Q = Flare shows the Balmer continuum in emission.
R = Marked asymmetry in Hα line suggests ejection of high velocity material.
S = Brightness follows disappearance of filament (same position).
T = Region active all day.
U = Two bright branches, parallel (||) or converging (Y).
V = Occurrence of an explosive phase: important and abrupt expansion in about a minute with or without important intensity increase.
W = Great increase in area after time of maximum intensity.
X = Unusually wide Hα line.
Y = System of loop-type prominences.
Z = Major sunspot umbra covered by flare.

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

APRIL 1979



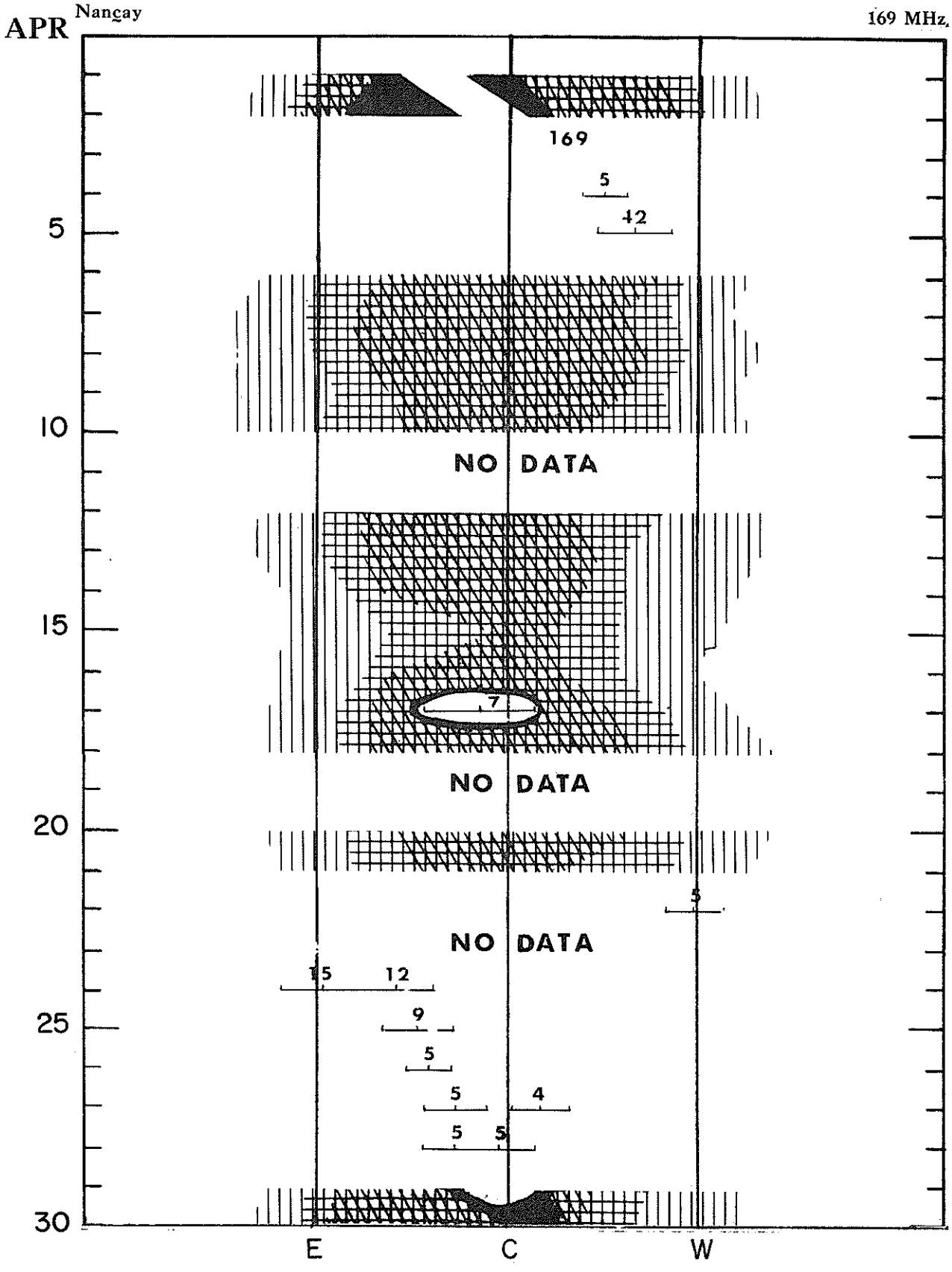
Observatories included in total patrol:

Berne	Holloman	Manila	Palehua	Upice
Big Bear	Istanboul	McMath-Hulbert	Ramey	Wendelstein
Bucharest				

Times of no flare patrol are shown by the shaded area for each day, divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATION

APRIL 1979



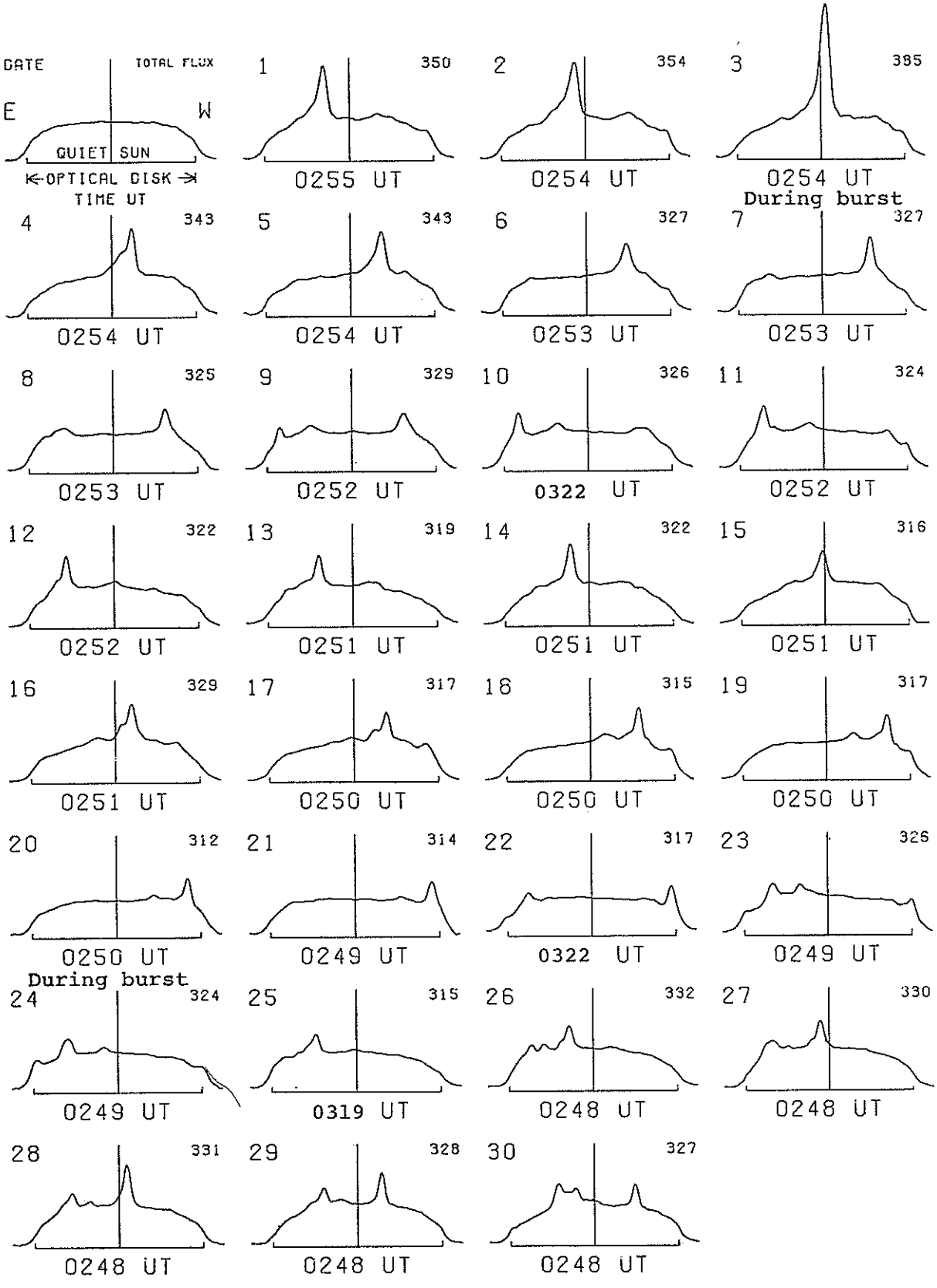
22
Apr 79

EAST-WEST SOLAR SCANS

APRIL 1979

TOYOKAWA, JAPAN

3 CM
FAN BEAM WITH 1.1 MINUTES OF ARC

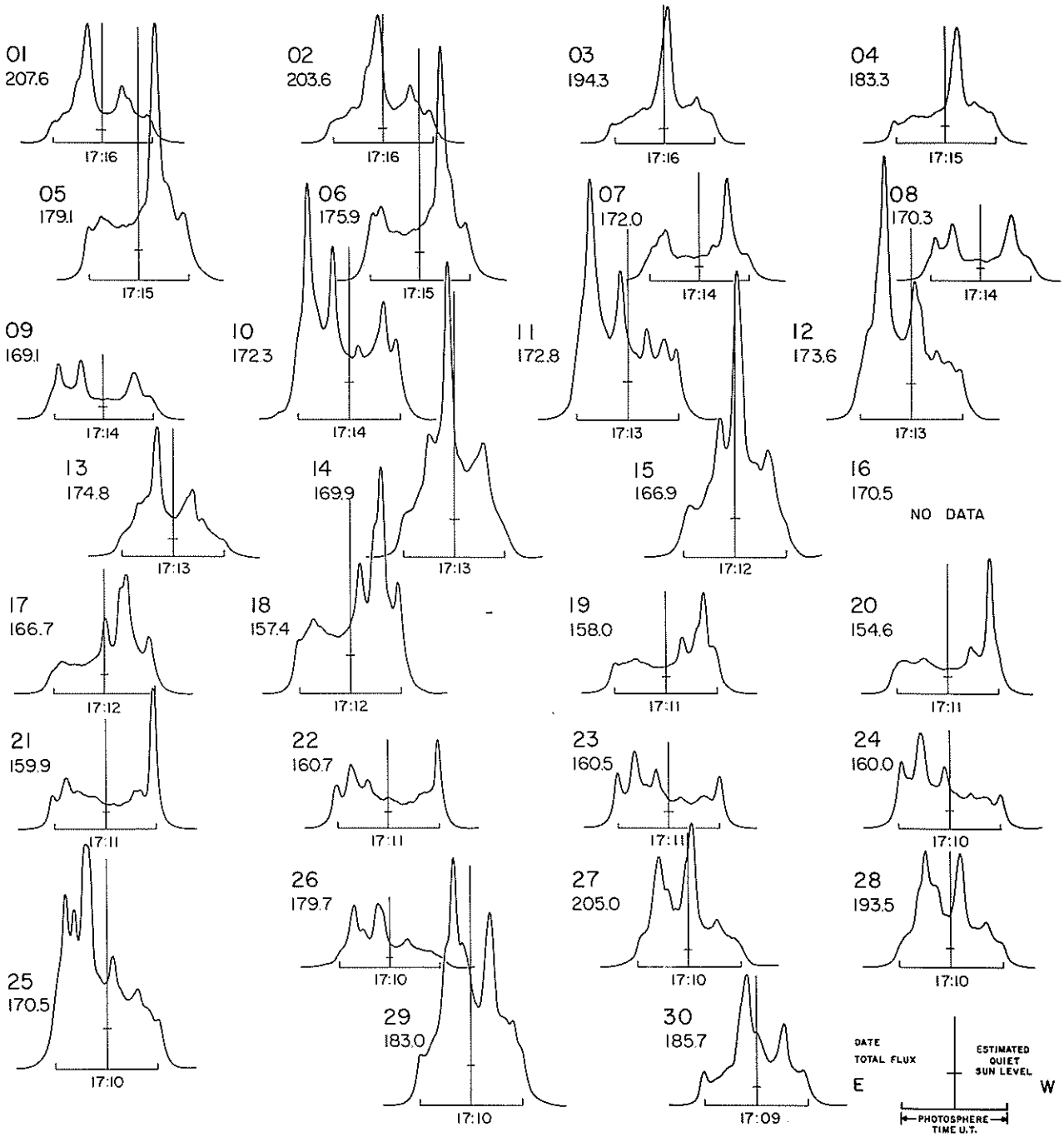


EAST-WEST SOLAR SCANS

APRIL 1979

ALGONQUIN RADIO OBSERVATORY
CANADA

10·7 cm
Fan Beam with 1·5 minutes of arc
E-W Resolution

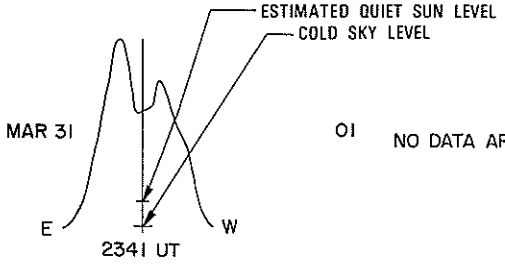


EAST-WEST SOLAR SCANS

APRIL 1979

Fleurs, Australia

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



01 NO DATA APRIL 1-5

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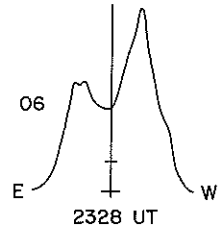

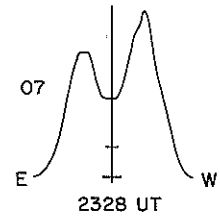

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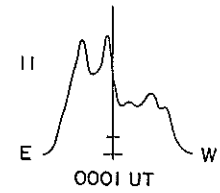

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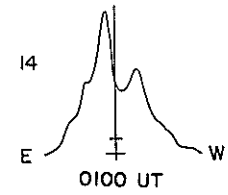

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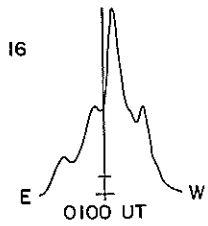

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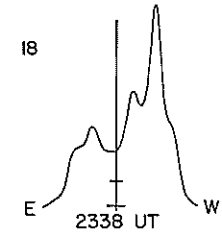

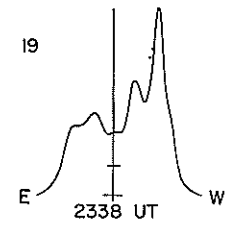

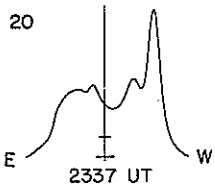

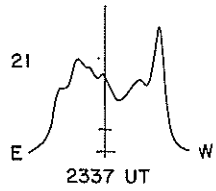

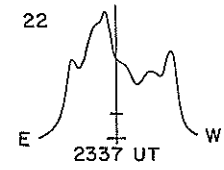

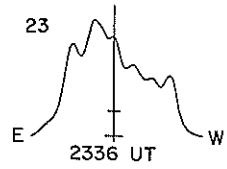

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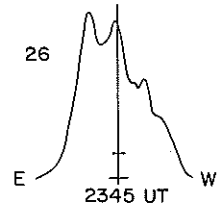

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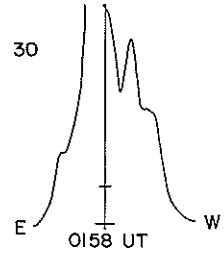
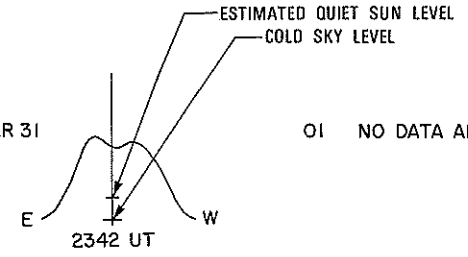


EAST-WEST SOLAR SCANS

APRIL 1979

Fleurs, Australia

43 cm
Fan-Beam with 4 minutes of arc
E-W Resolution



MAR 31

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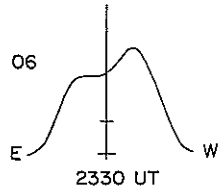

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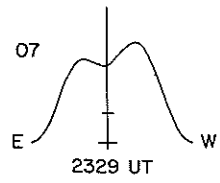

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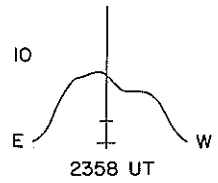

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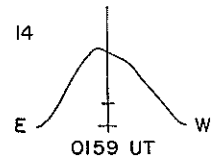

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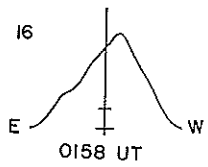

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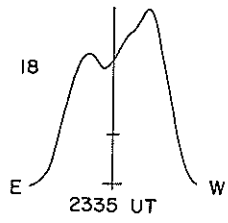

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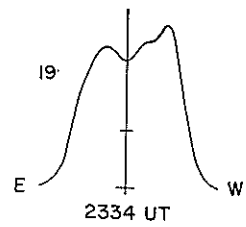

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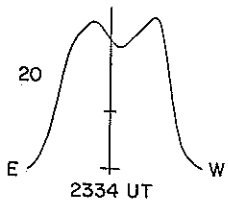

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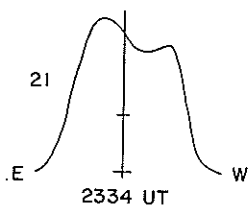

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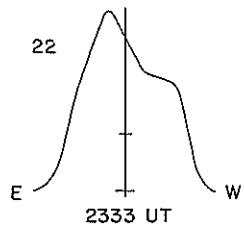

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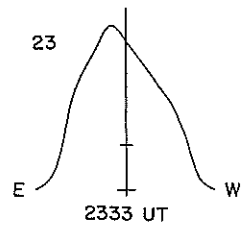

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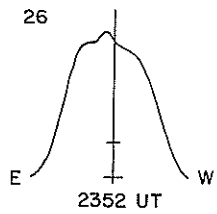

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29 NO DATA

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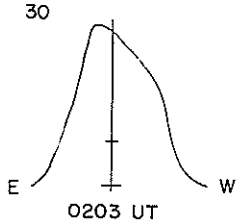


SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

APRIL 1979

APR 1979	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY $10^{-22}Wm^{-2}\ Hz^{-1}$ PEAK	FLUX DENSITY MEAN	INT	REMARKS
1	8400	BERN	20	0659.6	0714.7	34	13			OPR
	8400	BERN	21	0735.4	0754.5	28	44			OPR
	8400	BERN	21	1112.7	1142.8	60	22			OPR
	2800	OTTA	240 R	1242.5	1244	1.5	3.4	1.7		
	2800	OTTA	20 GRF	1328	1335	18	3	1.5		
	2800	OTTA	20 GRF	1418	1422	17	2.2	1.1		
	2800	OTTA	21 GRF	1438	1610	190	11.4	5		
	2800	OTTA	1 S	1451	1452.2	6	4.4	2		
	2800	OTTA	240 R	1820	1850	30	3.8	1.8		
	2800	OTTA	240 R	2000	2010	10	3.4	1.7		
	2800	OTTA	20 GRF	2011	2023	27	3	1.6		
	2695	PENT	22 GRF	2345	2416	95	14.8	5.8		
2	2800	OTTA	3 S	1233.3	1234	4	29	7.2		
	2800	OTTA	23 GRF	1325	1343	70	9	4.5		
	2800	OTTA	1 S	1329	1329.5	3	3.6	1.6		
	2800	OTTA	26 FAL	1440	1520	40	-4.4	-2.2		
	2800	OTTA	1 S	1622	1623.3	3	3.2	1.6		
	8400	BERN	3	1626.3	1627.2	7	22			OPR
	2800	OTTA	26 FAL	1650	1705	15	-4.4	-2.2		
	2800	OTTA	20 GRF	1725	1753	90	5.4	3		
	2800	OTTA	21 GRF	1945	2035	120	5.8	2.9		
	2695	PENT	2 S/F	2000	2005	10	5.2	2.4		
	2800	OTTA	1 S	2032.3	2033	1.5	3.4	1.8		
3	2695	PENT		0107	0146	47 D	475			
	2695	MANI	4 S/F	0118.1	0146	75.2	424.4	164.5		
	8800	MANI	4 S/F	0118.8	0134.5	35.2	201.6	40.3		
	2695	MANI	3 S	0414.3	0417.3	10.1	368.2	93.6		
	8800	MANI	47 GB	0415.6	0417.2	10.2	1000.5	236.8		
	2695	MANI	3 S	0822.5	0823.1	1.9	64.3	21.4		
	8800	MANI	3 S	0822.6	0823	1.2	59.2	19.7		
	8400	BERN	3	0823.1	0824	3	55			22R
	2800	OTTA	23 GRF	1150	1206	70	21	10		
	8400	BERN	21	1156	1204.1	65	33			14R
	2800	OTTA	4 S/F	1156.7	1159	6	71.2	15.4		
	2800	OTTA	20 GRF	1301	1335	70	4.2	2.1		
	2695	BOUL	3 S	1405.5E	1406	1 D	14	5		
	2800	OTTA	26 FAL	1425	1505	40	-4.2	-2.1		
	8400	BERN	3	1634.8	1635.9	16	89			24R
	2800	OTTA	4 S/F	1635	1636.5	4	26	7		
	2695	BOUL	3 SF	1635 E	1637	2.5D	25	8		
	2800	OTTA	23 GRF	1920	2000	270	13	6.5		
	2800	OTTA	1 S	1935	1935.5	1.5	3.4	1.7		
4	2800	OTTA	22 GRF	1155	1345	285	17	8.5		
	2800	OTTA	1 S	1658	1659.2	4	2.8	1.4		
	2800	OTTA	20 GRF	1810	1830	40	1.8			
	2800	OTTA	21 GRF	1950	2020	80	4	2.2		
	2800	OTTA	1 S	2030.5	2032	7	4	2		
	2695	PENT	21 GRF	2200	2300	160	3.4	1.7		
	2695	PENT	22 GRF	2335	2341	17	3.4	1.7		
5	2800	OTTA	20 GRF	1210	1230	60	6.4	3.2		
	2800	OTTA	8 S	1312.3	1312.5	.5	2.2	1.1		
	2800	OTTA	32 ABS	1332	1345	25 D	-8.2			
	2800	OTTA	22 GRF	1457	1459.2	13	5.6	2		
	2800	OTTA	3 S	1720	1721	6	14.4	5.4		
	2695	BOUL	3 S	1721 E	1722	2.5D	11	4		
	2800	OTTA	4 S/F	1825	1827	5	160	45		
	2695	BOUL	3 SF	1826 E	1827.5	9.5D	165	55		
	2800	OTTA	29 PBI	1830	1830	16	10.8	2.8		
	2800	OTTA	240 R	1930	1950	20	6.2	3		
	2800	OTTA	20 GRF	2005	2030	100	4.4	1.5		
	2695	PENT	20 GRF	2305	2405	115	8	3.8		
6	2695	MANI	3 S	0356.8	0357.5	1.4	26.8	8.9		
	8800	MANI	4 S/F	0356.8	0353.3	1.4	68.2	22.7		
	8400	BERN	4	0906.5	0908.2	12	46			9R
	2800	OTTA	20 GRF	1350	1440	140	7.6	2.6		
	2695	BOUL	3 S	1818.5E	1819	1 D	33	11		
	2800	OTTA	3 S	1818	1818.4	2	35.4	8.8		
	2800	OTTA	29 PBI	1820	1820	40	3.4	2.4		
	2800	OTTA	1 S	2034	2034.1	1	2.6	1.2		
	2800	OTTA	1 S	2054.4	2054.7	3	4.4	1.1		
	2695	PENT	1 S	2327.9	2328	1	7	3.5		
7	2800	OTTA	21 GRF	1200	1300	290	6	3		
	2800	OTTA	20 GRF	1606	1607.5	14	6.4	2.2		
	2800	OTTA	22 GRF	1700	1807	180	9.6	5		
	2800	OTTA	32 ABS	2015	2045	60	-3.2	-1.6		
	2800	OTTA	240 R	2200	2225	25	3.4	1.7		
8	2800	OTTA	21 GRF	1200	1246	100	5.4	2.7		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

APRIL 1979

APR 1979	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
	2800	OTTA	1	S	1223	1225	3	1.8	1		
	2800	OTTA	4	S/F	1234.5	1238.5	7.5	11.8	2.8		
	2800	OTTA	21	GRF	1510	1525	185	4.6	2.6		
	2800	OTTA	1	S	1513	1513.6	1	2.2	1.1		
	2800	OTTA	1	S	1518.8	1519	3	7.4	2.4		
	2800	OTTA	1	S	1821.9	1822.4	6	4.4	2.2		
9	2800	OTTA	1	S	1352	1353.5	3	4.6	2.2		
	8400	BERN	4		1516.8	1517.6	7	11			OPR
	2800	OTTA	1	S	1517	1517.5	2	2.2	1.1		
	2800	OTTA	1	S	1544	1545	2	1.4	.7		
	2800	OTTA	1	S	2140	2141	6	1.8			
10	2800	OTTA	21	GRF	1710	1800	170	6	3		
	2800	OTTA	4	S/F	1718	1720	3.5	11	3.6		
	2695	BOUL	42	SER	1720.5E	1726.5	20 D	22	7		
	2800	OTTA	4	S/F	1724	1725.5	3	18.4	6		
	2800	OTTA	4	S/F	1733	1734.2	2	17.8	12.4		
	2800	OTTA	29	PBI	1735	1735	25	10.4	4		
	2800	OTTA	1	S	1840	1845.5	10	4	1.8		
	2695	PENT	3	S	2248.2	2248.5	1.8	21	10.5		
	2695	BOUL	3	S	2249 E	2249.5	2 D	16	5		
	2695	PENT	29	PBI	2250	2250	5	5.2	2.6		
11	2695	PENT	20	GRF	0010	0045	85	4.2	2.1		
	2800	OTTA	4	S/F	1134	1135.7	5.5	19.4	6.4		
	2800	OTTA	21	GRF	1305	1357	175	12.6	6.3		
	2800	OTTA	40	F	1312.5	1318.5	17.5	88			
	8400	BERN	46		1324.2	1329.2	80	309			15R
	2800	OTTA	46F	C	1334	1339.3	8	234	55		
	2695	BOUL	45	C	1335 E	1340	7.5D	362	121		
	2800	OTTA	29	PBI	1342	1342	13	14.8	5.6		
	2800	OTTA	20	GRF	1610	1700	200	2.8	1.4		
	2800	OTTA	20	GRF	1950	2025	95	2.2	1.1		
	2800	OTTA	21	GRF	2134	2201	105	6.8	3.4		
	2800	OTTA	4	S/F	2139	2143.5	9	22.4	9.4		
	2695	BOUL	3	SF	2140 E	2144.5	7 D	22	7		
	2800	OTTA	3	S	2156.5	2157.5	3.5	17.4	5.8		
	2695	BOUL	3	S	2157.5E	2158	4 D	16	5		
	2695	PENT	8	S	2301.9	2302	.4	2.4			
	2695	PENT	8	S	2306.3	2306.5	.4	1.8			
	2695	PENT	8	S	2328	2328.2	.3	1.8			
12	2800	OTTA	240	R	1545	1555	10	2.8	1.4		
	2800	OTTA	20	GRF	1600	1615	35	2.6	1.3		
13	8400	BERN	3		0610.1	0612	2	17			12R
	8400	BERN	3		0827.1	0829.1	3	15			17R
	8400	BERN	4		1049.5	1050.3	12	22			17R
	2800	OTTA	20	GRF	1220	1225	20	1.8	1		
	2800	OTTA	3	S	1344.7	1345.6	2.5	21.2	10		
	2800	OTTA	40	F	1611.5	1616.5	6	15			
	8400	BERN	4		1616.2	1616.6	2	26			18R
	2800	OTTA	21	GRF	1625	1630	45	5.8	2		
	2800	OTTA	1	S	1638.5	1638.8	1.5	4	2		
	2800	OTTA	20	GRF	2000	2045	90	2.4	1.7		
	2800	OTTA	20	GRF	2145	2154	75	4	2		
	2695	PENT	21	GRF	2335	2348	65	10	5		
	2695	PENT	40	F	2340	2343	23	41			
	2695	MANI	4	S/F	2342.3	2343.3	2.4	21.5	7.2		
	2695	BOUL	45	C	2342.5E	2343	1 D	36	12		
14	8400	BERN	20		1020.9	1023.1	9	16			
	8400	BERN	3		1105.3	1106.8	4	37			20R
	2800	OTTA	4	S/F	1440.8	1442	9	170	22		
	8400	BERN	4		1440.9	1441.7	9	484			9R
	2695	BOUL	3	SF	1442 E	1443	3.5D	175	58		
	2800	OTTA	20	GRF	1740	1842	32	2.2	1.1		
	2800	OTTA	1	S	1950	1950.2	1	3			
15	8400	BERN	3		0737.9	0738.5	3	17			0
	8400	BERN	40		1033.4	1036	8	14			5R
	2800	OTTA	240	R	1215	1245	30	6	3		
	2800	OTTA	1	S	1327	1328.5	3	1.8	.9		
	2800	OTTA	1	S	1519.5	1521.8	10	4.6	1.6		
	2800	OTTA	1A	S	1924	1925.5	2.2	2.6	1.3		
	2800	OTTA	8	S	1925.3	1925.3	.1	33			
	2695	PENT	4	S/F	2008	2009.2	8	116	15		
	2695	BOUL	42	SER	2009 E	2010	5.5D	103	34		
	2800	OTTA	21	GRF	2035	2220	290 D	21.6			
	2695	PENT	20	GRF	2237	2250	105	7.4	4		
16	8400	BERN	8		0510	0513.2	8	445 D			OPR
	8800	MANI	4	S/F	0513.2	0513.5	1.4	177.3	59.1		
	2695	MANI	4	S/F	0513.3	0513.5	1.3	40.8	13.6		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

APRIL 1979

APR 1979	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY $10^{-22}Wm^{-2}Hz^{-1}$ PEAK	FLUX DENSITY $10^{-22}Wm^{-2}Hz^{-1}$ MEAN	INT	REMARKS
	2800	OTTA	45 C	1134	1135.3	6	7.8	2.2		
	2800	OTTA	40 F	1155	1157.9	8	4.2			
	2800	OTTA	4 S/F	1649	1650.2	8	30	6.2		
	2695	BOUL	3 S	1650.5E	1651.5	2 D	22	7		
	2800	OTTA	2 S/F	2029.5	2033	5	4.2	2.1		
	2800	OTTA	4 S/F	2145	2145.2	4	17.8	4.4		
	2695	BOUL	3 S	2146 E	2146.5	2.5D	11	4		
	2695	PENT	45 C	2345	2346.5	2	36.6	14.2		
	2695	BOUL	45 C	2356 E	2357	2 D	41	14		
17	2800	OTTA	1 S	1439	1439.7	1	5.8	2.8		
	2800	OTTA	1 S	1719.5	1920	3	4.4	1.4		
	2695	BOUL	45 C	1738.5E	1741	2.5D	52	17		
	2695	BOUL	42 SER	1745 E	1746	1.5D	109	36		
	2800	OTTA	20 GRF	1828	1835	20	3.2	1.1		
	2800	OTTA	21 GRF	2000	2117	180	11.4	4.8		
	2695	BOUL	20 GRF	2104.5E	2111	69 D	22	7		
	2800	OTTA	4 S/F	2108	2110	8	14.6	7		
	2695	PENT	32 ABS	2305	2410	100	-5.4	-2.7		
18	2800	OTTA	21 GRF	1830	1855	90	2.8	1.4		
	2800	OTTA	4 S/F	1845.2	1846.5	2	37.6	12.5		
	2695	BOUL	3 SF	1846 E	1847	1.5D	26	9		
19	2695	PENT	4 S/F	0029	0030	1	10.8	4		
	2695	PENT	20 GRF	2210	2404	125	6.2	3.1		
20	2695	PENT	20 GRF	0020	0025	16	3.4	1.7		
	2800	OTTA	20 GRF	1140	1200	60	3.8	1.9		
21	2800	OTTA	1 S	1521	1522.5	3	2.4			
22	2800	OTTA	1 S	1206	1208	6	3	1.6		
	2800	OTTA	20 GRF	1450	1510	45	2.2	1.1		
	2800	OTTA	20 GRF	1540	1610	130	2	1.6		
	2800	OTTA	20 GRF	1935	2035	105	4.2	2.6		
	2800	OTTA	1 S	2141	2141.5	1	5.2	2.6		
	2695	PENT	240 R	2205	2410	125	14.2	7.1		
23	2800	OTTA	1 S	1357	1358.5	5	6	2		
	2800	OTTA	20 GRF	1440	1540	100	3.4	1.7		
24	2800	OTTA	2 S/F	1727	1727.5	7	4.8	2.6		
25	8400	BERN	20	0650	0656	30	15			15R
	2800	OTTA	20 GRF	1150	1154	20	3	1.5		
	2800	OTTA	240FR	1630	1700	30	3.2			
	2800	OTTA	8 S	1801.7	1801.9	.3	33			
	2800	OTTA	21 GRF	2125	2145	65	12.8	6.4		
	2800	OTTA	8 S	2130.5	2130.6	.5	13.2	6.6		
	2800	OTTA	1A S	2130	2131	4	3.6	2		
	2695	BOUL	22 SER	2131 E	2151.5	42 D	52	17		
	2800	OTTA	4 S/F	2137	2137.8	4.5	24.2	11		
	2800	OTTA	45 C	2147	2150.5	21	44	14		
26	8400	BERN	8	1024	1026	11	40			OPR
	2800	OTTA	20 GRF	1245	1300	35	2.6	1.3		
	2800	OTTA	20 GRF	1340	1400	20	3	1.5		
	8400	BERN	8	1522.1	1522.8	5	21			OPR
	2800	OTTA	1 S	1531	1531.5	1	1.4	.7		
	2800	OTTA	240AR	1534	1545	11	3			
	2800	OTTA	2 S/F	1539	1540	5	3.6	1.4		
	2800	OTTA	1 S	1652	1654	5	1.8	.9		
	2695	BOUL	21 GRF	1657.5E	1703	43 D	22	7		
	8400	BERN	21	1659.4	1701.9	14	24			OPR
	2800	OTTA	3 S	1701	1702	4	13.4	6		
	2800	OTTA	29 PBI	1705	1705	25	3.6	1.8		
	2695	BOUL	3 S	1825.5E	1826.5	2 D	11	4		
	2800	OTTA	8 S	1825	1825.3	.6	23.6			
	2800	OTTA	1 S	1838	1838	1	2.6	1.3		
	2800	OTTA	240 R	1958	2001	3	3.4	1.7		
	2800	OTTA	46F C	2001.5	2001.8	24	66	15.6		
	2800	OTTA		2001.5	2001.8	3.5	66			
	2695	BOUL	45 C	2002.5E	2004	14 D	62	21		
	2800	OTTA		2005	2010	20.5	42.4			
	2800	OTTA	20 GRF	2027	2113	190	9	4		
27	8400	BERN	4	0531.2	0540.7	30	139			OPR
	8800	MANI	4 S/F	0538.7	0540.6	6.3	236.4	157.6		
	8400	BERN	47	0637.6	0646.6	90	750 D			OPR
	8800	MANI	47 GB	0638	0646.4	24	3470 D	2150 D		IIG
	2695	MANI	47 GB	0639	0646.4	23	652.8	421.9		
	2800	OTTA	21 GRF	1205	1300	90	1.8	.9		
	2800	OTTA	40 F	1310	1310.2	3	5.6			
	8400	BERN	21	1454.7	1456.8	15	19			OPR

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

APRIL 1979

APR 1979	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
	2800	OTTA	3 S	1455	1457	3.3	18	9		
	2695	BOUL	21 GRF	1456 E	1458	19.50	17	6		
	2800	OTTA	30 PBI	1458.3	1458.3	12	7.4	3.4		
	2800	OTTA	2 S/F	1501.4	1502.3	3	6	4.4		
	8400	BERN	46	1630	1634 U	60	236 D			OPR
	2800	OTTA		1630	1634.8	7.5	101			
	2800	OTTA	46F C	1630	1639.2	19	173	52		
	2695	BOUL	45 C	1632 E	1641	13 D	195	65		
	2800	OTTA		1637.5	1639.2	11.5	173			
	2800	OTTA	29 PBI	1649	1649	90	15	7.5		
	2800	OTTA	1 S	1904	1904.7	2.5	2.2	1		
	2800	OTTA	27A RF	1930		150	3.6	3.3		
	2800	OTTA	24 R	1930	1934	4	3.6	1.8		
	2800	OTTA	20 GRF	1934.2	1937	22	5.6	2.7		
	2800	OTTA	24P R	1934		126	3.6			
	2800	OTTA	22 GRF	2030	2046.5	50	14	2.8		
	2800	OTTA	26 FAL	2140	2200	20	-3.6	-1.8		
28	2800	OTTA	20 GRF	1415	1420	55	4	2		
	2800	OTTA	1 S	1544	1546.5	6	2.4	1.2		
	2800	OTTA	21 GRF	1630	1703	70	5	2.6		
	2800	OTTA	1 S	1659.2	1700	1.5	7.2	3.4		
	2800	OTTA	20 GRF	1850	2007	150	4.4	2.2		
29	8400	BERN	4	0730.6	0733.7	28	650			12L
	2695	MANI	4 S/F	0731.6	0733.3	5.7	156.7	52.3		
	8800	MANI	47 G8	0731.9	0733.7	5.4	599.6	199.9		II
	2800	OTTA	20 GRF	1203	1207	12	3	1.8		
	2800	OTTA	2 S/F	1337.5	1338.4	3	3.2	1.5		
	2800	OTTA	3 S	1539.8	1540.4	3	22	4.4		
	2695	BOUL	3 S	1541 E	1541.5	1 D	16	5		
	2800	OTTA	21 GRF	1601	1620	58	3.4	1.7		
	8400	BERN	4	1604.3	1612.2	46	163			16L
	2800	OTTA		1604	1607	5	29			
	2800	OTTA	45 C	1604	1612.2	15	40	18.8		
	2695	BOUL	45 C	1605 E	1613	12.50	33	11		
	2800	OTTA		1609	1612.2	10	40			
	2800	OTTA	8 S	1857.3	1857.5	.7	3			
	2800	OTTA	8 S	1858.5	1859	.9	10.4			
30	2695	PENT	21 GRF	0020	0030	22	4.8	2.4		
	2695	MANI	4 S/F	0023.7	0026.1	5.8	21.4	7.1		
	2695	BOUL	20 GRF	0024.5E	0027	4.5D	16	5		
	2695	PENT	4 S/F	0024	0026	6	13.4	6		
	8400	BERN	3	0521.5	0522.3	3	30			30L
	2695	MANI	3 S	0521.8	0522.2	1.5	27.6	9.2		II
	2695	MANI	1 S	0614.3	0614.6	.5	5.5	3.7		
	2800	OTTA	240 R	1144	1456	12	3.2	1.6		
	2800	OTTA	21 GRF	1610	1630	80	6	3		
	2800	OTTA	1 S	1617.7	1618.3	4	4	2		
	2800	OTTA	26 FAL	1950	2005	15	-3.2	-1.6		
	2800	OTTA	8 S	2149	2149	.1	30			
	2695	BOUL	3 S	2149 E	2149.5	1 D	22	7		
	2800	OTTA	21 GRF	2155	2210	35	6.6	3.6		
	2800	OTTA	4 S/F	2158.2	2159	2	92	43		
	2695	BOUL	45 C	2159 E	2200	2 D	62	31		
	2695	PENT	21 GRF	2335	2410	125	20.6	8.2		
	2695	PENT	1 S	2405	2405.9	1.3	4.6	2.3		

Observatories:

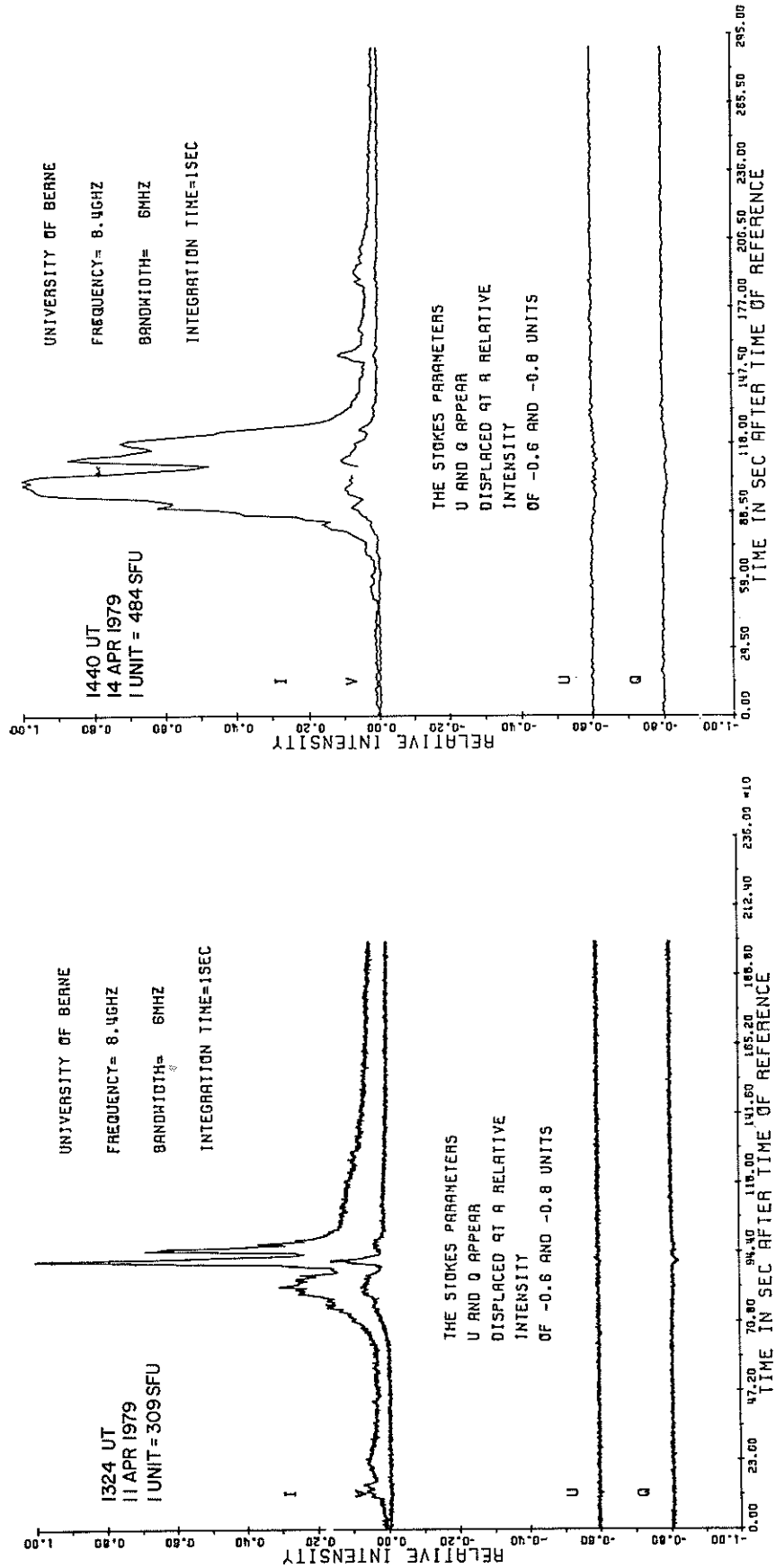
BERN = Berne BOUL = Boulder MANI = Manila OTTA = Ottawa ARO PENT = Penticton SGMR = Sagamore Hill

Explanation of Type Code:

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

SELECTED SOLAR NOISE BURSTS

APRIL 1979



PIONEER XII

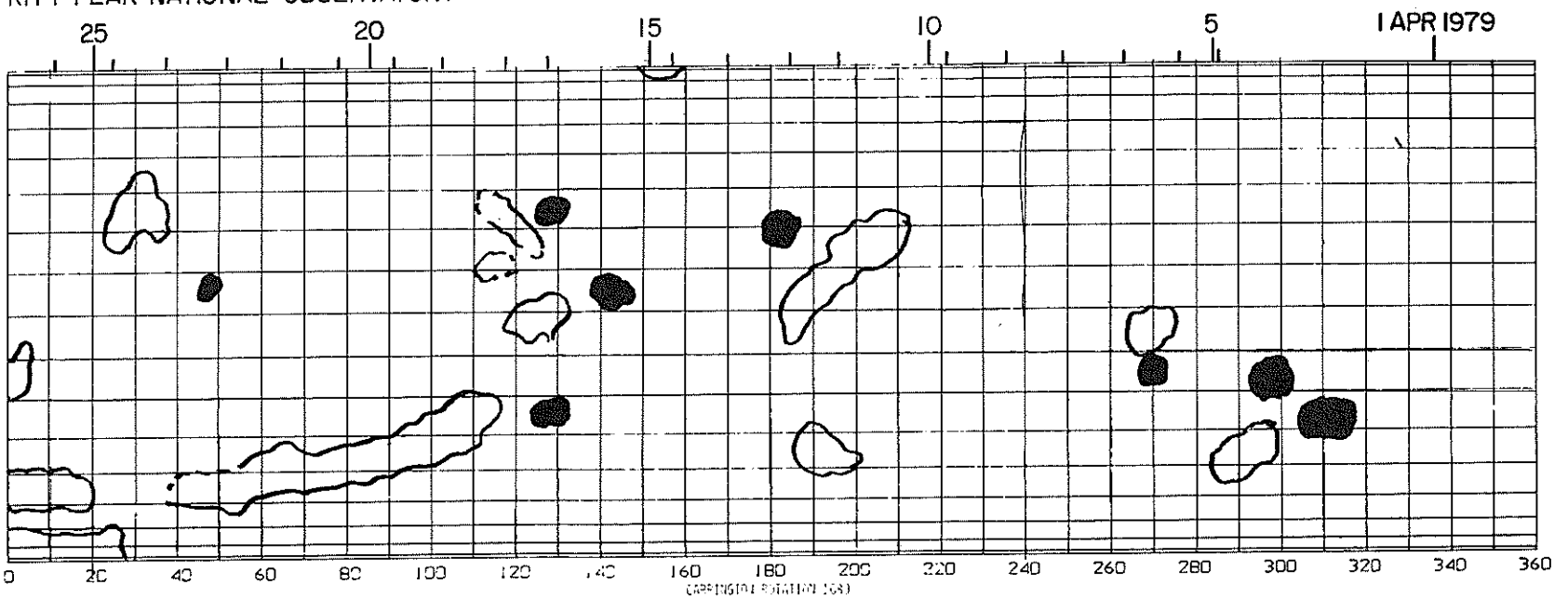
APRIL 1979

DATE Apr '79	TIME (UT)	ESV (°)	U_{H^+} (Km/sec)	N_{H^+} (H^+/CC)	T_{H^+} ($\times 10^{6}$°K)
1	1221	087.	370.	18.5	0.124
2	1503		505.	14.	.194
3	1210		368.	4.8	.075
4	1142		402.	8.4	----
5	0911		---	---	----
6	1220		378.	13.3	.209
7	1009		328.	17.4	.078
8	1500		418.	7.7	.195
9	1258		409.	26.2	.141
10	1411		424.	9.8	.185
11	0907		388.	13.3	.054
12	1006		327.	24.	.074
13	1005		335.	31.3	.035
14	1001		319.	36.7	.073
15	1501		447.	40.3	.080
16	0656	096.	400.	17.9	.071
17	0802		386.	17.8	.111
18	1304		482.	13.5	.285
19	1957		538.	3.6	.104
			536.	3.4	.104
20	1005		408.	10.	.071
21	0855		412.	14.2	.185
22	1605		474.	17.9	.122
23	1250		519.	8.3	.228
24	1425		524.	5.2	.276
25	1205		456.	8.	.166
26	1402		347.	23.4	.09
27	1317		299.	31.3	.045
28	1014		265.	118.2	.018
29	1210		500.	9.1	.158
30	1704	104.	552.	8.7	.227

HELIUM 10830Å SYNOPTIC MAPS

CARRINGTON ROTATION 1680

KITT PEAK NATIONAL OBSERVATORY

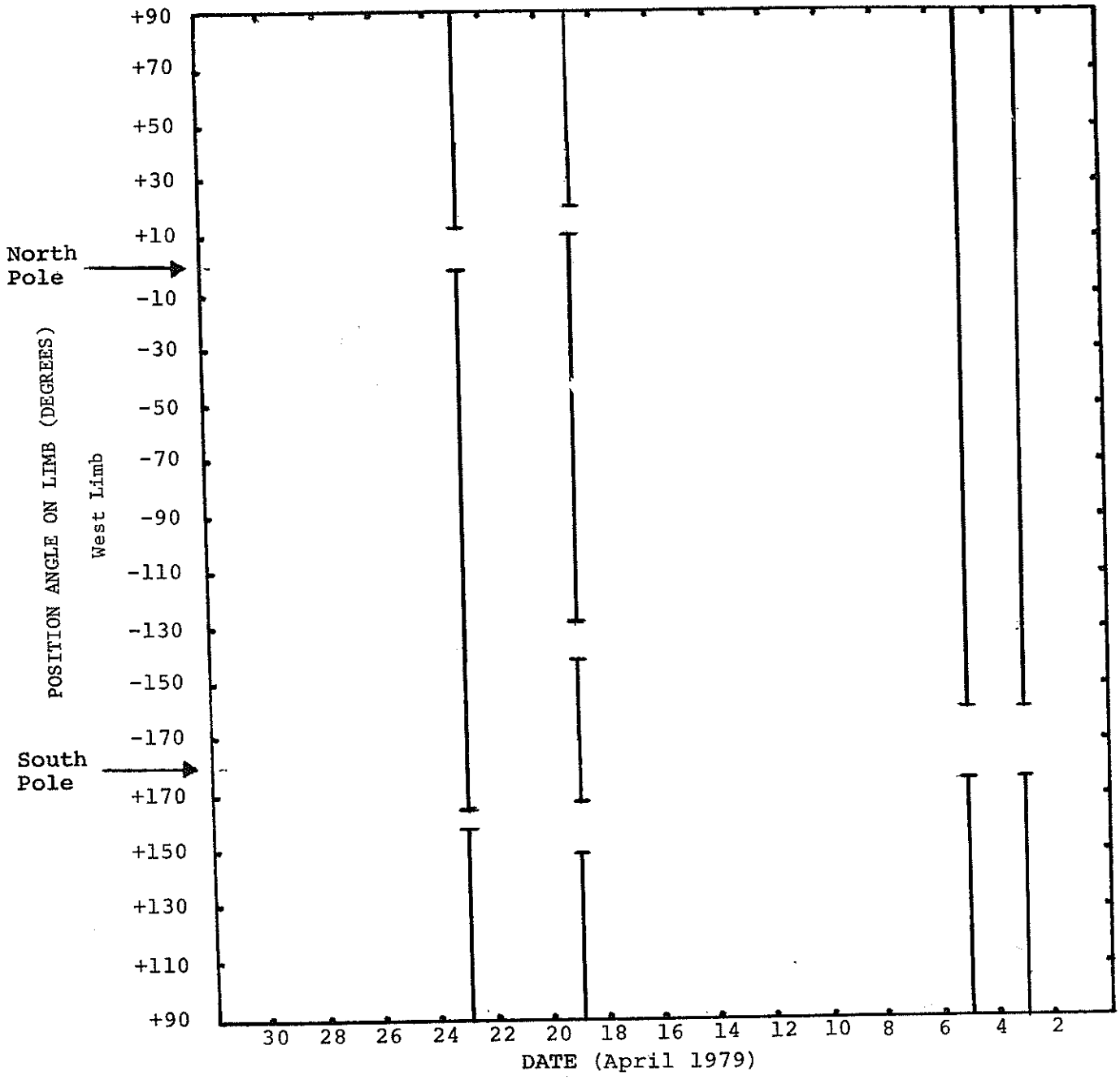


CORONAL HOLES

Helium D3 Chromosphere at Solar Limb

APRIL 1979

Big Bear Solar Observatory



INFERRED IP MAGNETIC FIELD

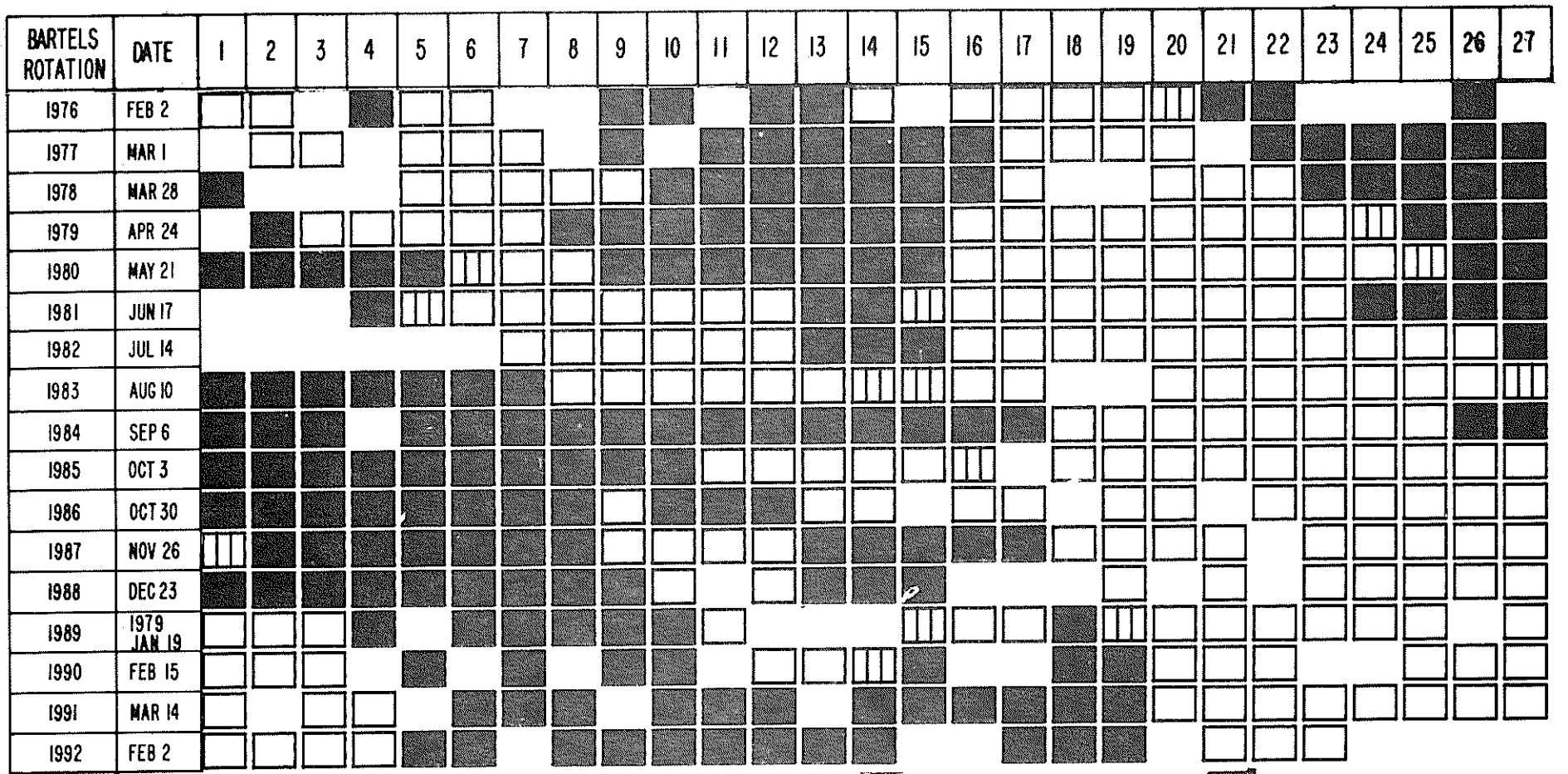
BARTELS ROTATION	DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1976	FEB 7						*	TA				-									-		*			TA	A*	TA	
1977	MAR 6	TA			-				AT			T*	*					TA			AT	AT	AT	AT		*	TA		
1978	APR 2							*	-		AT											AT	AT						
1979	APR 29		TA		*		TA	AT	AT	TA		-	-	T*						TA	TA		AT						
1980	MAY 26				TA		AT	AT					-			AT	TA					-				-	-	-
1981	JUN 22	TA					A*						-	TA	TA	TA	AT		*					*	AT	AT	-		AT			
1982	JUL 19									TA								-		TA					AT	AT	*		TA			
1983	AUG 15					TA			AT		AT	AT		AT	TA						A*							TA		
1984	SEP 11			TA		AT				TA		T*					A*			—				-			A*	TA	-	
1985	OCT 8	*	TA		T*		AT					-	-	-					TA	TA	-		AT			-				
1986	NOV 4			-			-	AT	-		-		-					*	AT		-		AT	AT	AT	AT				
1987	DEC 1	AT	AT		-				-		-	TA		-		AT	-	AT	-	TA	-			A*		-		*		AT	-	-	
1988	DEC 28			-	-	-			-	AT	*			TA		TA	T*		AT	-		-	TA					-	TA			-
1989	1979 JAN 24			-		*		TA				TA		TA						*						-		AT			
1990	FEB 20		TA		-	TA	-		TA		-	TA	-	TA		TA		TA	A*		TA	A*					A*				
1991	MAR 19		AT			AT		T*						*	-	-	-	-	TA	-		AT		T*	TA	TA	-		A*	-		TA	A*
1992	APR 15		A*	TA	T*	AT		TA	TA		T*						TA																

= definitely towards the sun = definitely away from the sun

T = towards the sun A = away from the sun * = effect doubtful or not discernible - = missing data

The table shows daily inferences of the polarity of the interplanetary magnetic field. The first half of the day is based principally on magnetograms produced by the magnetometer at the Vostok Antarctic Station of the USSR. The magnetometer of the U.S. Air Weather Service now operated at Thule by the Danish Meteorological Institute is used for the second half of the day.

STANFORD MEAN SOLAR MAGNETIC FIELD



POLARITY OF THE MEAN SOLAR MAGNETIC FIELD: = FIELD >2μT, = -2μT≤FIELD ≤2μT, = FIELD <-2μT

No box visible indicates no data available for that day.

Note: Data are taken daily at 2000 UT. Dates given are not Bartels Rotation dates. These earlier dates correspond to the occurrence of phenomena on the sun which affect the Earth during the given Bartels Rotation.

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

	1978								1979			
	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL
DAY												
01	-12	-28	1	40	26	-11	-18	-72	11	.	-36	-4
02	-34	-22	13	39	32	-20	-21	-39	.	-1	.	16
03	-27	-12	15	42	15	-14	-36	-7	15	30	.	57
04	-27	-5	18	39	18	-8	-28	17	-6	27	-24	44
05	-29	6	24	31	2	-3	-19	19	-25	-13	-6	11
06	-27	5	43	29	-24	-7	-12	9	-26	1	46	9
07	-23	21	42	30	-12	-20	3	5	.	50	64	14
08	-12	33	36	17	-7	-29	-6	-15	.	88	56	67
09	3	41	16	-11	.	-37	-17	-26	.	59	.	102
10	24	40	-11	-10	-35	-29	-3	-37	27	39	.	124
11	41	23	-17	-15	-34	-32	5	-19	.	40	21	138
12	50	12	-12	-22	-42	-14	9	-16	27	30	63	100
13	47	8	-38	-33	-36	2	.	13	.	.	100	51
14	30	0	.	-43	-27	7	16	31	45	78	106	-12
15	16	-24	.	-31	-26	8	20	43	21	62	.	-51
16	5	-38	.	-9	-36	9	.	65	36	27	24	.
17	1	.	.	5	-48	5	34	.	48	6	45	-121
18	-29	.	.	13	-44	-1	42	59	59	.	.	-117
19	-49	.	.	7	-50	.	.	30	37	-52	-56	-72
20	-75	-16	23	7	-33	4	55	18	18	.	-81	-40
21	-79	0	21	5	-21	3	35	32	9	-86	-81	-27
22	-59	24	16	4	-14	19	40	27	-15	.	.	-32
23	-37	51	6	-1	5	20	28	-3	.	-80	-51	-40
24	-21	52	3	1	31	25	27	-20	-54	-52	-41	.
25	-9	48	3	5	43	23	18	-26	-64	.	-28	.
26	1	30	-7	18	42	24	2	-32	-70	19	.	-99
27	27	12	-13	.	40	29	-17	-63	-64	10	-29	-92
28	14	3	-6	.	29	30	-48	-51	-27	0	-36	-57
29	-10	-5	14	41	15	17	-61	-36	12		-12	.
30	-20	-10	27	41	2	-3	-65	-22	.		-26	3
31	-27		33	35		-16		-21			-28	

DOT SYMBOL ENTRY INDICATES NO DATA AVAILABLE FOR THE DAY.

SOLAR WIND

Interplanetary Scintillations

APRIL 1979

DAY	3C48 VEL	3C48 ERR	3C144 VEL	3C144 ERR	3C147 VEL	3C147 ERR	3C161 VEL	3C161 ERR	3C237 VEL	3C237 ERR	3C273 VEL	3C273 ERR	3C298 VEL	3C298 ERR	3C459 VEL	3C459 ERR
2			438	7			529	6	0							
3			337	5					0							
4			378	39	368	5	507	11	0							
5	488	25	348	28			453	44	484	30						
6	431	84	343	11			400	11								
7	448	7	406	24			542	19								
8	486	32	399	9			424	53								
9	444	30	433	24			379	12								
10			567	80			455	31							326	13
11	467	91	499	9			490	6							269	8
12	356	*	627	29	416	100	491	10							358	11
13	356	*	588	8			505	14	520	64					487	8
14	414	5	502	11			485	10							403	4
15	363	21	405	12											506	34
16	362	14	350	9											447	32
17	385	7	433	19	587	26	361	31							337	24
18	556	45	400	10			460	9							393	26
19			442	14			332	22							549	58
20			336	5	373	48	363	5							380	16
20			332	52												
21	462	20	408	7	501	114	392	5							332	3
22	469	92	430	8			445	26	329	18					395	7
23	822	180	519	8			575	31	256	3					456	24
24	518	64	428	6	520	19	485	13							569	14
25			538	9			637	11	606	11					411	31
26							395	57							329	47
27			361	9			657	89							464	31
28			420	20			437	6							371	8
29	401	58	342	7			509	9							479	36
30	526	24	371	6	469	73	458	46	394	15					535	42

APRIL	5 UT	LAT	DIST	DLON	15 UT	LAT	DIST	DLON	25 UT	LAT	DIST	DLON
3C48	21.	35.	0.47	-48.	20.	51.	0.39	-41.	20.	63.	0.36	-8.
3C144	1.	-7.	0.93	-22.	0.	-7.	0.85	-32.	24.	-8.	0.75	-42.
3C147	24.	1.	0.96	-16.	23.	5.	0.90	-23.	23.	10.	0.83	-31.
3C161	2.	-15.	1.01	-15.	2.	-15.	0.96	-15.	1.	-18.	0.91	-20.
3C237	6.	-7.	1.23	-10.	5.	-7.	1.20	-12.	4.	-6.	1.16	-13.
3C273	8.	-5.	1.30	-2.	7.	-4.	1.29	-5.	6.	-4.	1.27	-7.
3C298	10.	-1.	1.28	3.	9.	-1.	1.29	1.	8.	0.	1.29	-2.
3C459	18.	17.	0.43	61.	18.	11.	0.57	52.	17.	8.	0.70	44.

Note: *indicates data for which no error estimate is available since only two antennas were operating.

3C 144 was observed at 0 hr. U.T. before April 20 and at 23 hr. U.T. after April 20.

BOULDER GEOMAGNETIC SUBSTORM LOG

APRIL 1979

DATE	ONSET TIME	DIRECTION	COMMENTS
01	0305	East	
	0800	≈ center	1st of double onset
	0835	West	2nd of double onset
	1130	West	
	1230	West	
	2150		SSC, beginning of mag storm
02			Mag storm continued through 1800 UT.
03	0630	≈ center	
	1005		Small positive impulse H-component all mid and low latitude stations.
	1515		Onset of mag storm. Strong ring current established.
04			Mag storm continues through 0500 UT.
	0740	West	Strong SS
	1145	West	Strong SS
05	0155		SSC, mag storm through 1900 UT.
06			0215-0915 UT; field disturbed Ft. Churchill and East-West magnetometer chain. 0645-1000 UT; field disturbed Arctic Village to College in Alaskan chain. No distinct SS activity during disturbed periods.
	1600		
07	0450	East	1st of multiple onset, weak SS
	0510	East	2nd of multiple onset, weak SS
	0610	East	3rd of multiple onset, weak SS
	0800	West	1st of multiple onset
	0840	West	2nd of multiple onset
	0900	West	3rd of multiple onset
	1030	West	1st of double onset
	1035	West	2nd of double onset
08	0510	East	Weak SS, slow onset
	1110	West	Weak SS, slow onset
			Field unsettled after 2000 UT at most network stations, no SS activity.
09			Field unsettled through 0500 UT. No distinctive SS activity
10	0630	≈ center	
	0730	≈ center	
	1200	West	
11			Only minor perturbations, no SS activity
12	0945	West	
	1020	West	
	2145		
13	0700	West	
	0750	West	
	0845	West	
	1210	West	
14	0255	East	Weak SS
	0630	East	Weak SS
	0705	East	Weak SS
	2110		
15	0030	East	
	0200	East	
	0925	West	
	1000	West	
	1310	West	
	1445	West	
	2230		
16			Field active through 1100 UT
	0250	East	
	0410	East	
	0745	West	Weak SS, slow onset
	0920	West	Weak SS
17	0530	East	
	0610	East	Strong SS from Ft. Smith eastward and from Cape Parry northward.
	1110	West	
18	0440	East	
	0905	West	
			Magnetometers disturbed Johnson Point to Cape Parry after 1800 UT.
19	0515	East	
	0655		Weak SS
	1610		Slow onset
20			Quiet day
21	0700	≈ center	1st of double onset
	0730	≈ center	2nd of double onset
	1200		Gradual onset of magstorm
22			Magstorm conditions continue throughout this day.
23			Magstorm conditions continue through 0800 UT.
	1025	West	
	1430		
	1730		Slow onset SS; north of oval, Cape Parry to Johnson Point.
24	0025	East	Boulder in partial ring current sector
	0310	East	
	0605	≈ center	Slow onset SS
	0650	West	Rapid onset from prior slow onset SS
	1110	West	
	2350		SSC
25			Strong magstorm through 1600 UT. Field remained disturbed balance of the day.
26			Field unsettled 00-05 UT and 17-24 UT with no distinct SS activity.
27	0225	East	1st of double onset, slow onset
	0250	East	2nd of double onset, rapid onset
	0830	West	
	0930	West	
	1500		Initiation of strong ring current evident on Boulder magnetometer - lasting through 1905 UT. Strong SS activity along Auroral oval. Field remained disturbed.
	2320		Onset of magstorm conditions.
28			Magstorm conditions continue through 1100 UT.
	0600	West	Strong SS
	1235	West	
	1340		Slow onset to broad SS lasting through 1640 UT.
	1950		Field disturbed balance of the day. Magnetometers north of Inuvik especially affected.
29			Magstorm conditions throughout this day.
30			Abating magstorm conditions through 1600 UT.
	0410	centered	Strong SS
	0850	West	Strong SS
	1220	West	
	1330	West	Strong SS

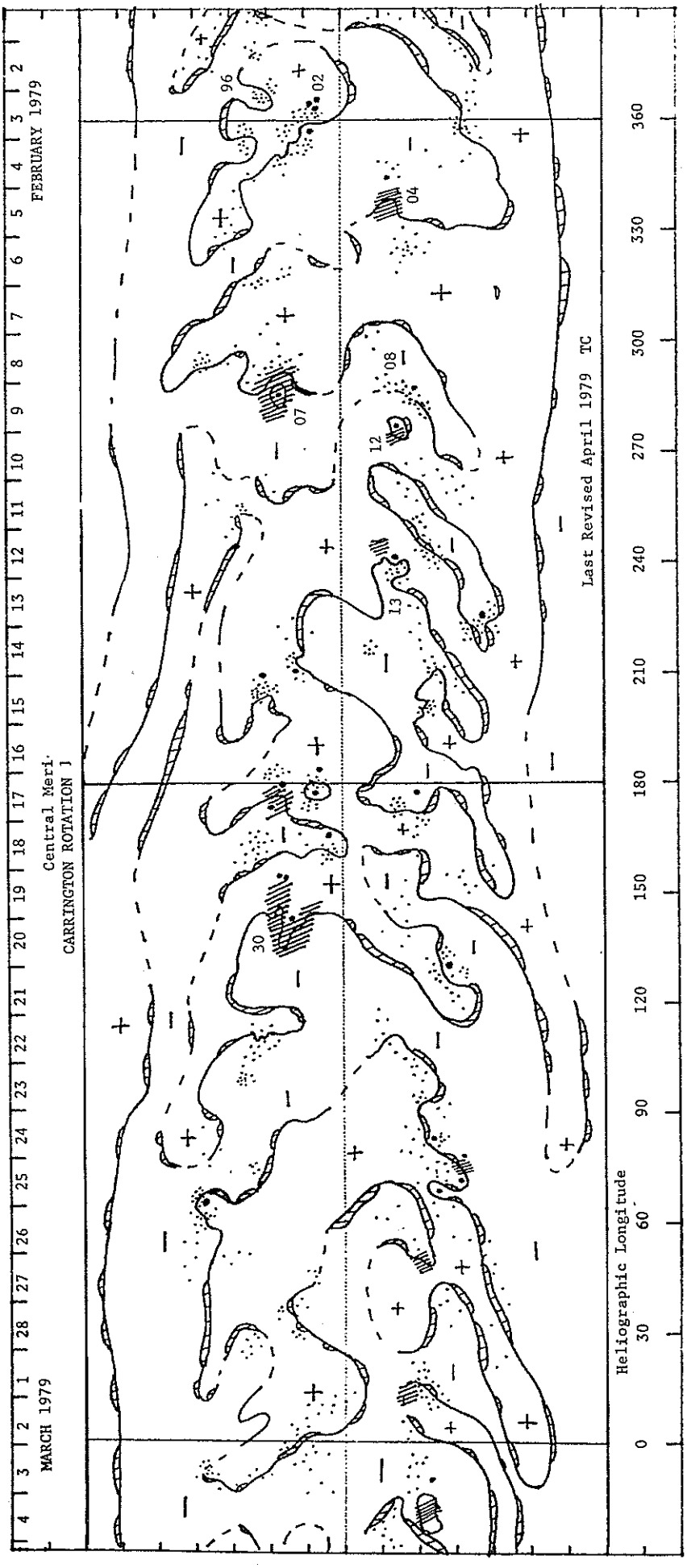
SGD 417 Part I (Prompt)

MARCH 1979 DATA

Contents

Hα SYNOPTIC CHART

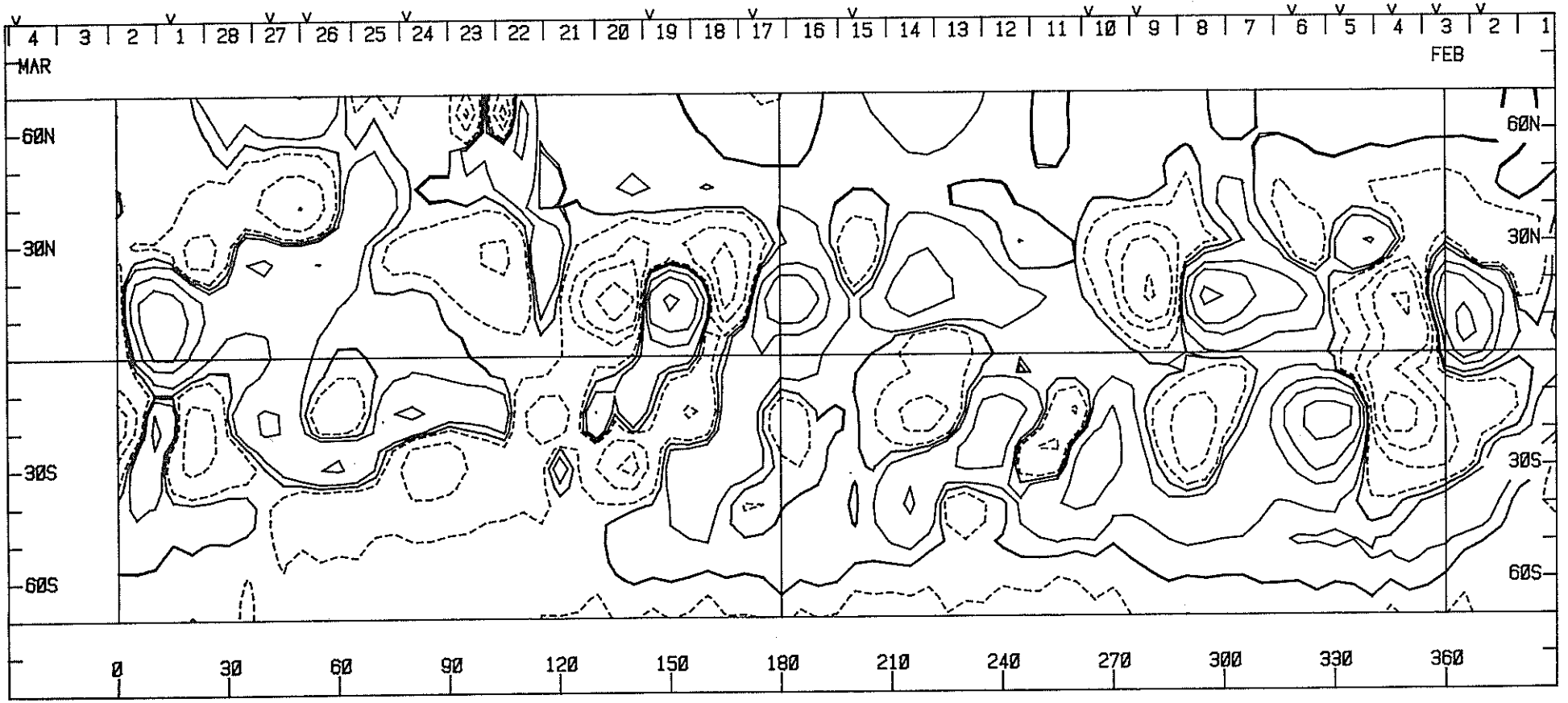
CARRINGTON ROTATION 1678 (PRELIMINARY)



SOLAR MAGNETIC FIELD SYNOPTIC CHART
CARRINGTON ROTATION 1678

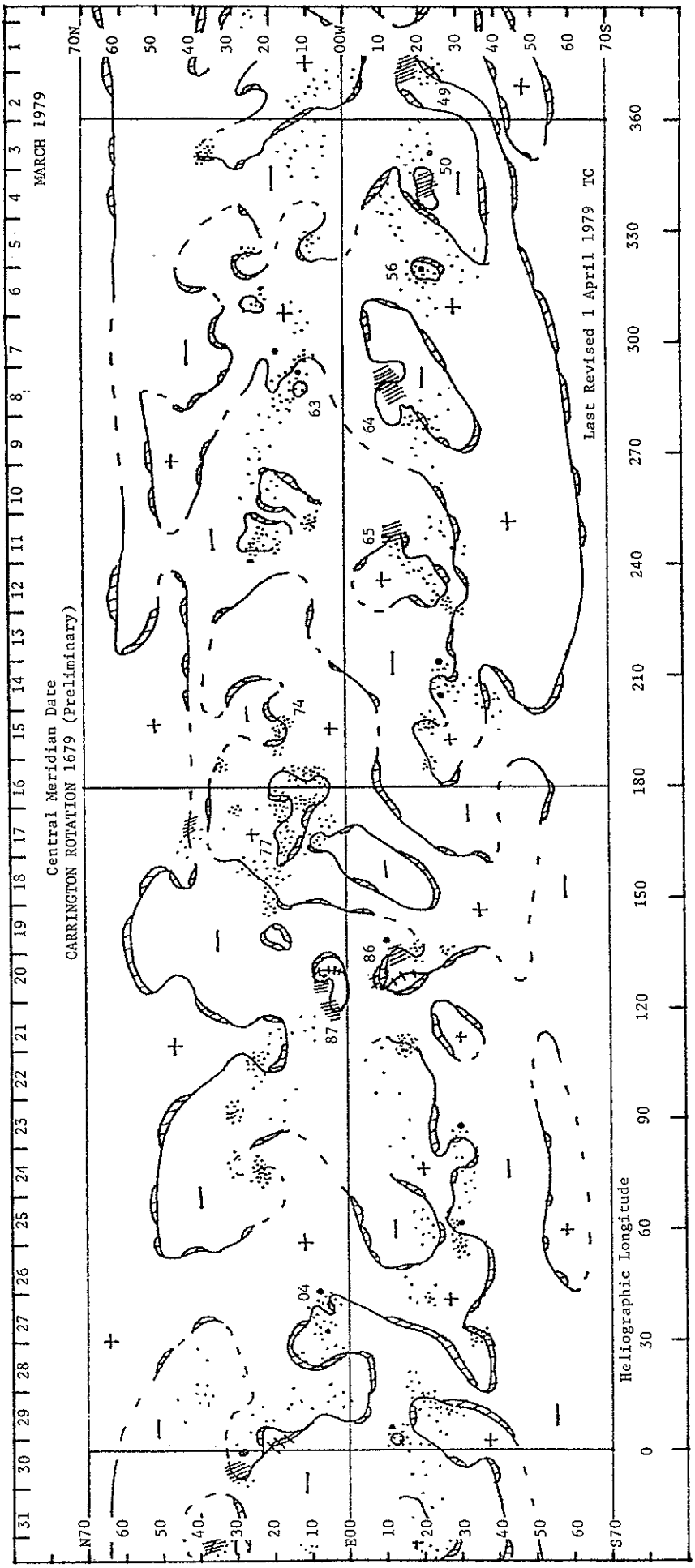
Stanford Solar Observatory

0,±100,200,500... μT



Hα SYNOPTIC CHART

CARRINGTON ROTATION 1679 (PRELIMINARY)

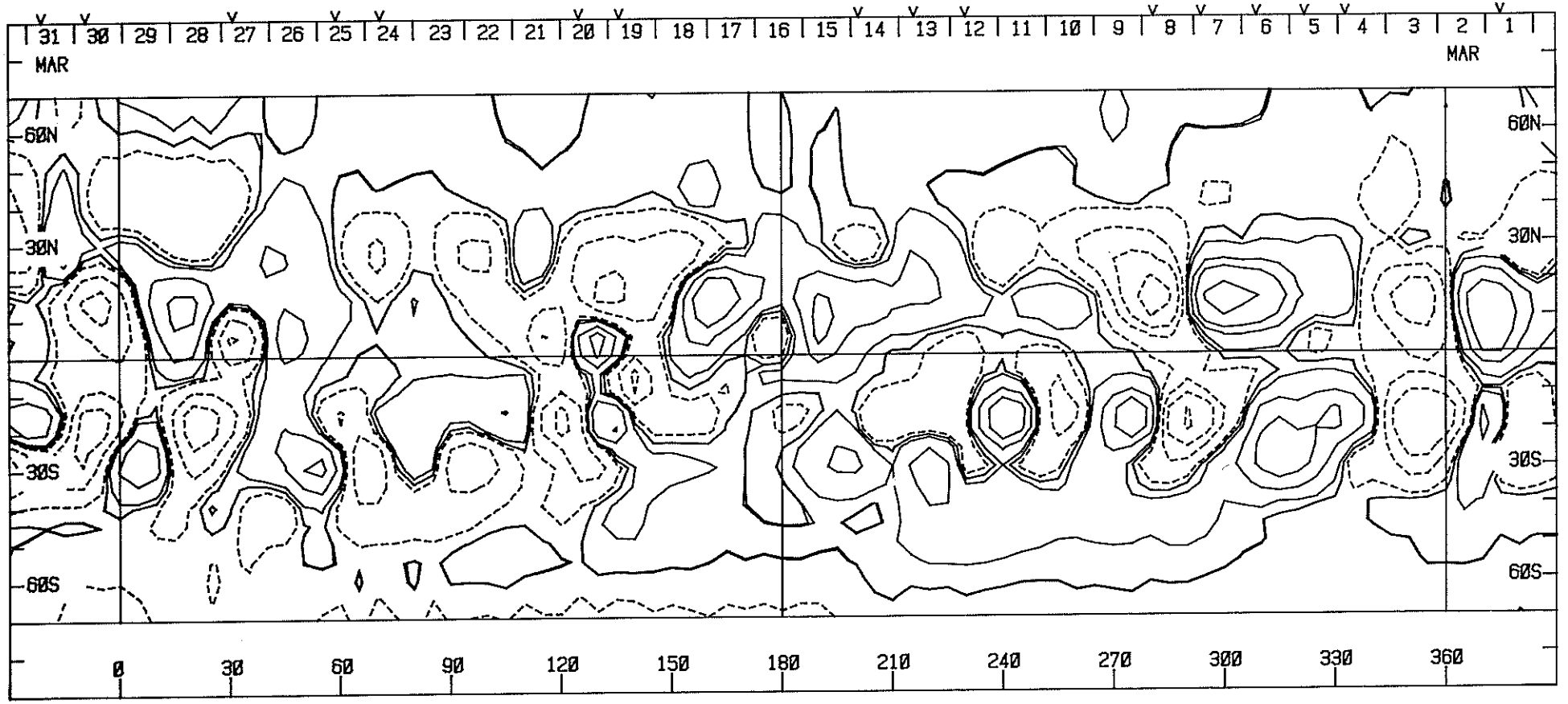


SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION 1679

Stanford Solar Observatory

0,±100,200,500... μT

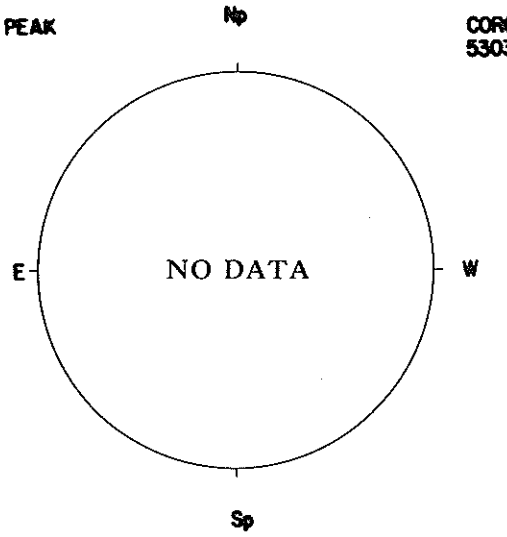


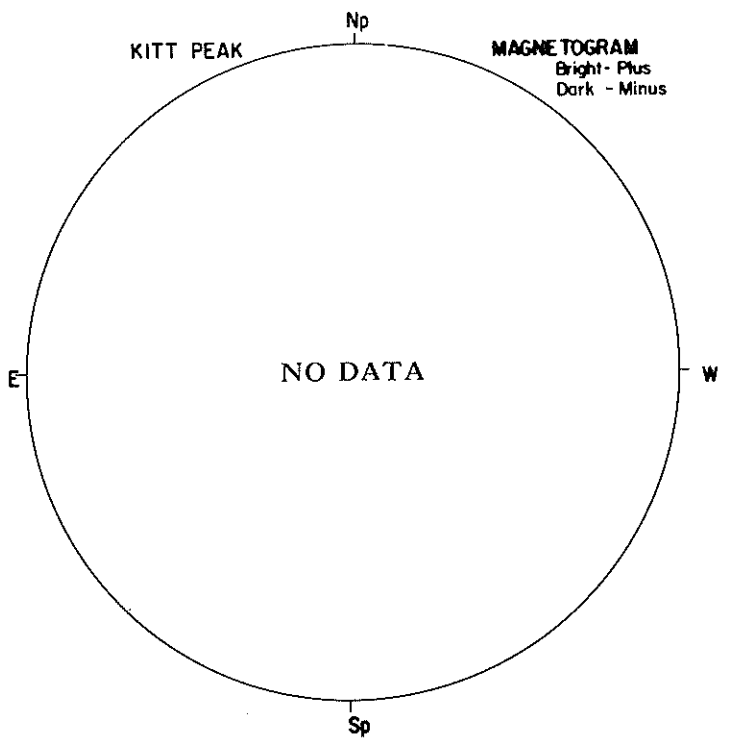
43
Mar 79

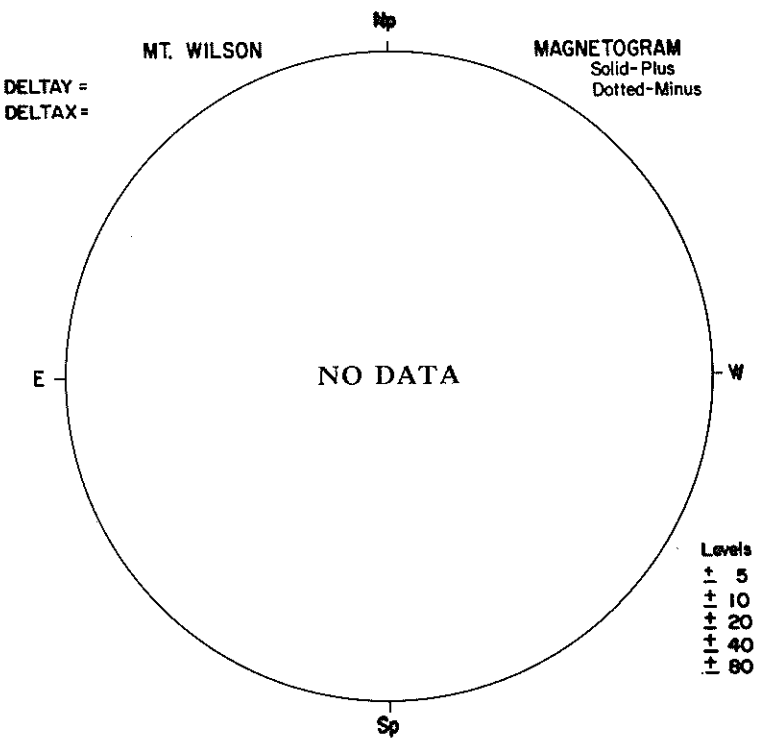
MARCH 1, 1979 (P =-21.42, B_o =-7.21, L_o =25.84)

SACRAMENTO PEAK

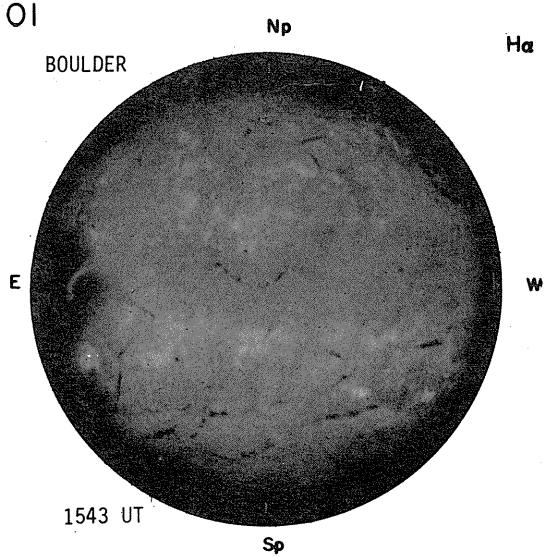
CORONA (1.15 $R_\odot$)
5303 Å



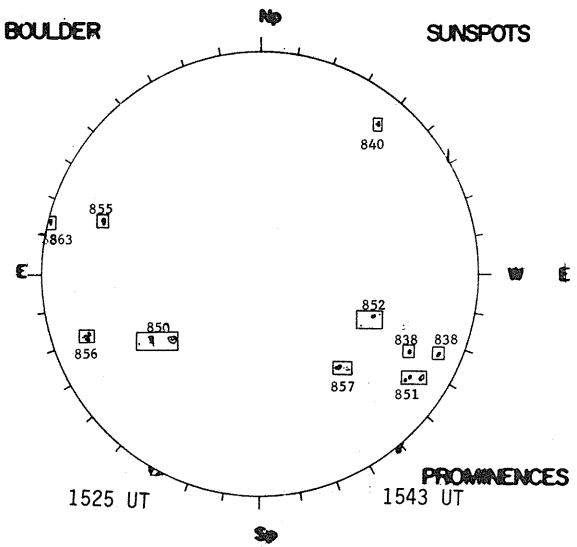




01



Hα BOULDER



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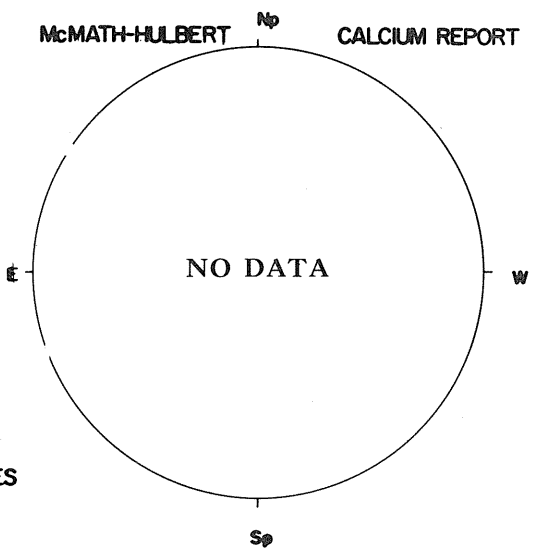
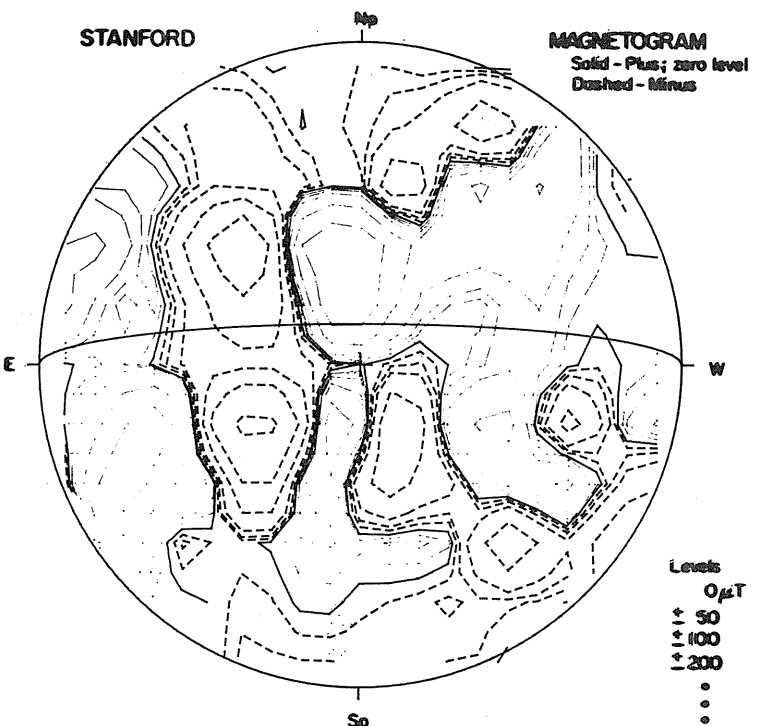


McMATH-HULBERT CALCIUM REPORT

PROMINENCES 1543 UT

STANFORD MAGNETOGRAM

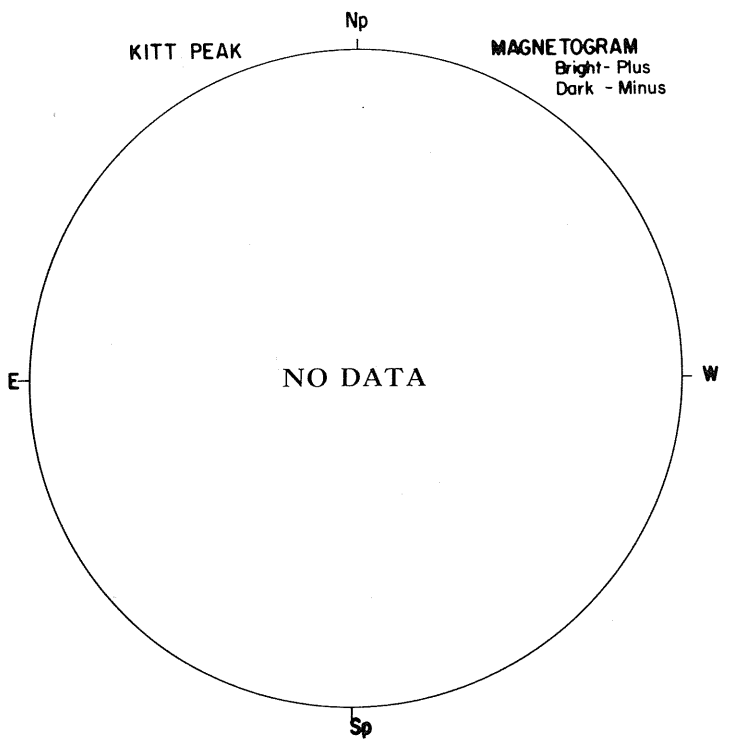
Solid - Plus; zero level
Dashed - Minus

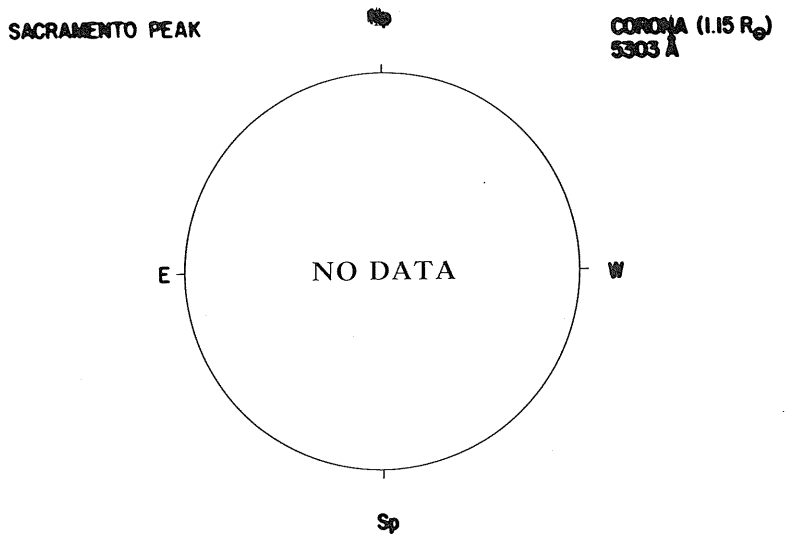


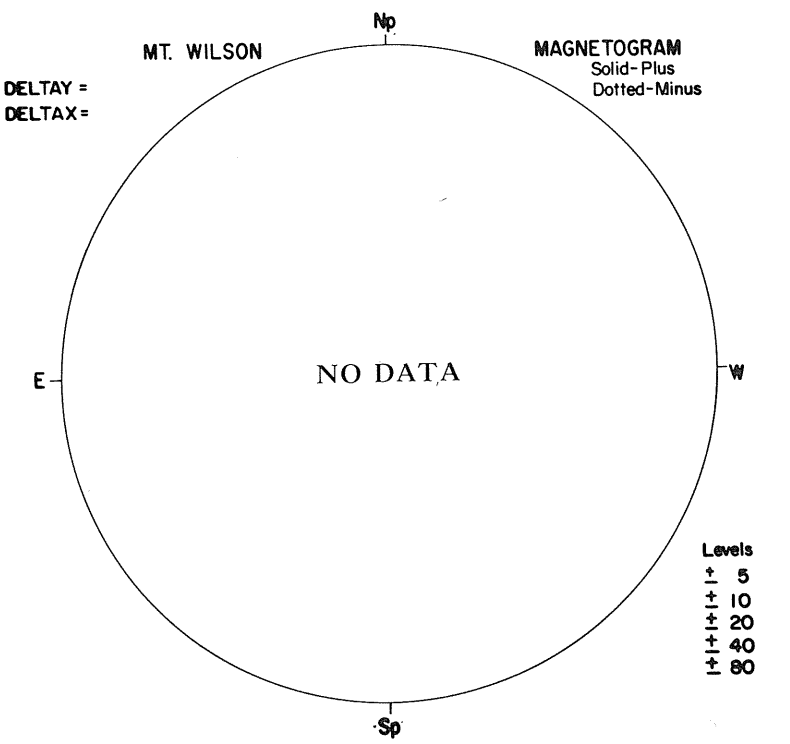
1959 UT

45
Mar 79

MARCH 2, 1979 (P = -21.68, B_o = -7.23, L_o = 12.67)

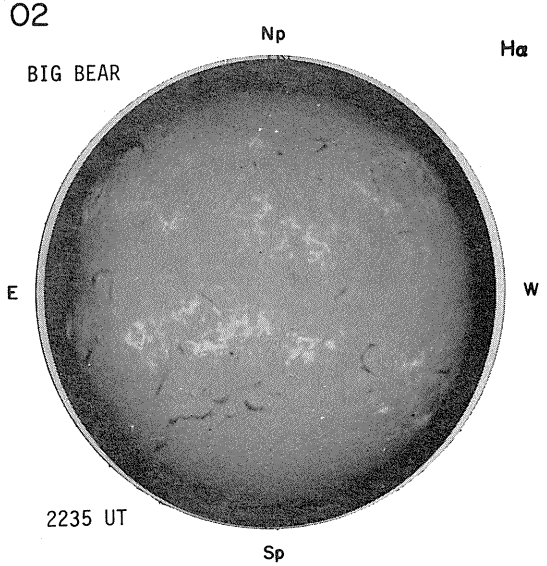






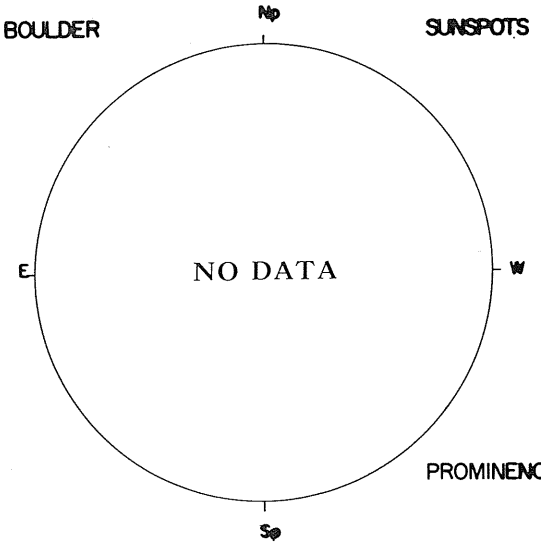
02

BIG BEAR



2235 UT

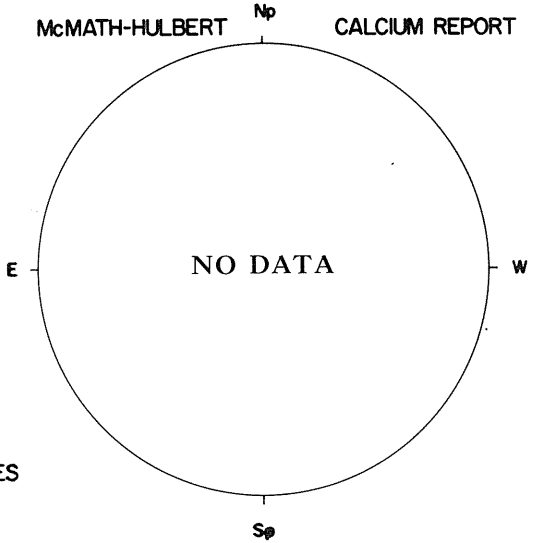
Hα BOULDER



SUNSPOTS

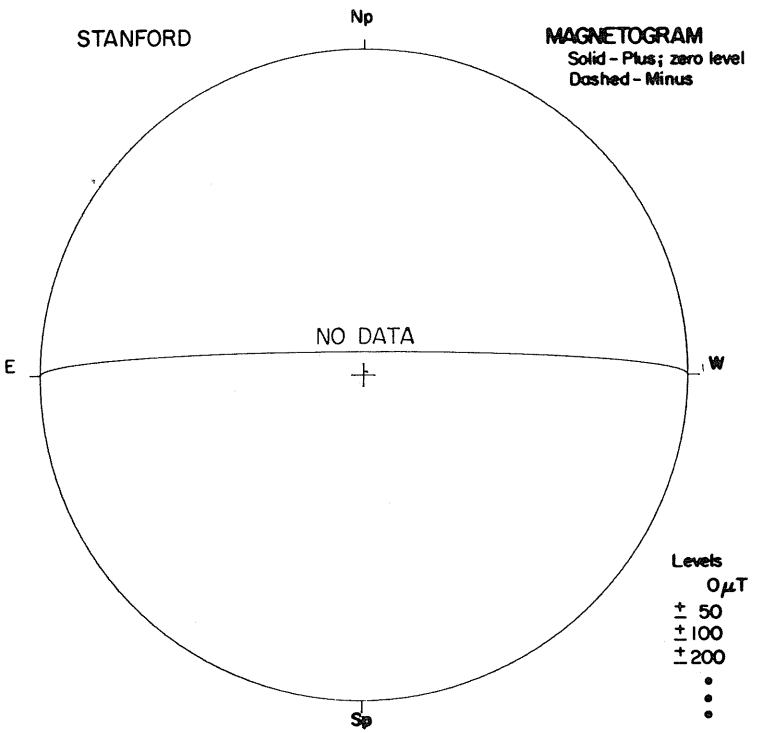
PROMINENCES

McMATH-HULBERT



CALCIUM REPORT

STANFORD



MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus

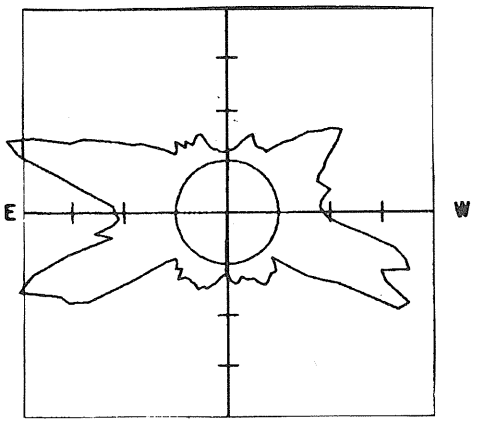
Levels
0μT
± 50
± 100
± 200
•
•
•

MARCH 3, 1979 (P =-21.92, B_o =-7.24, L_o =359.50)

SACRAMENTO PEAK

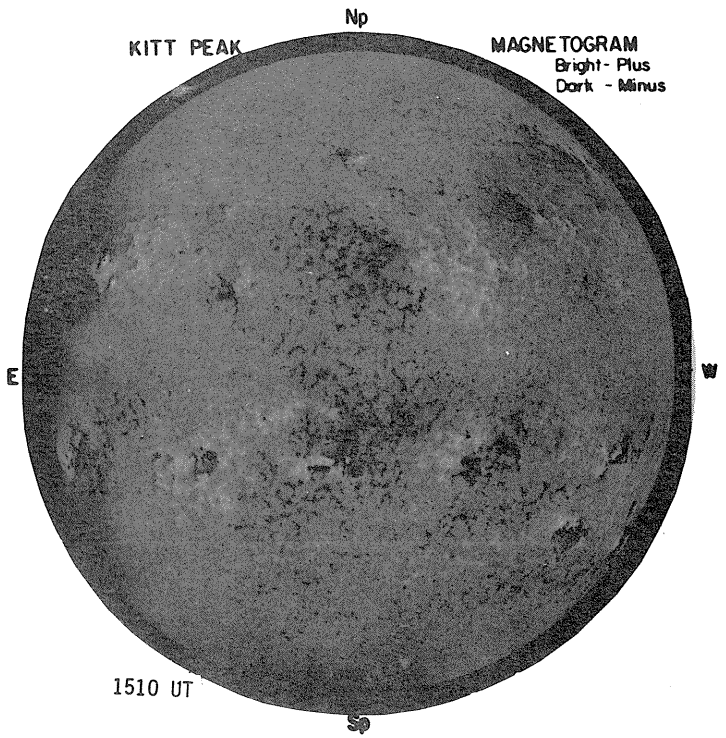
Np

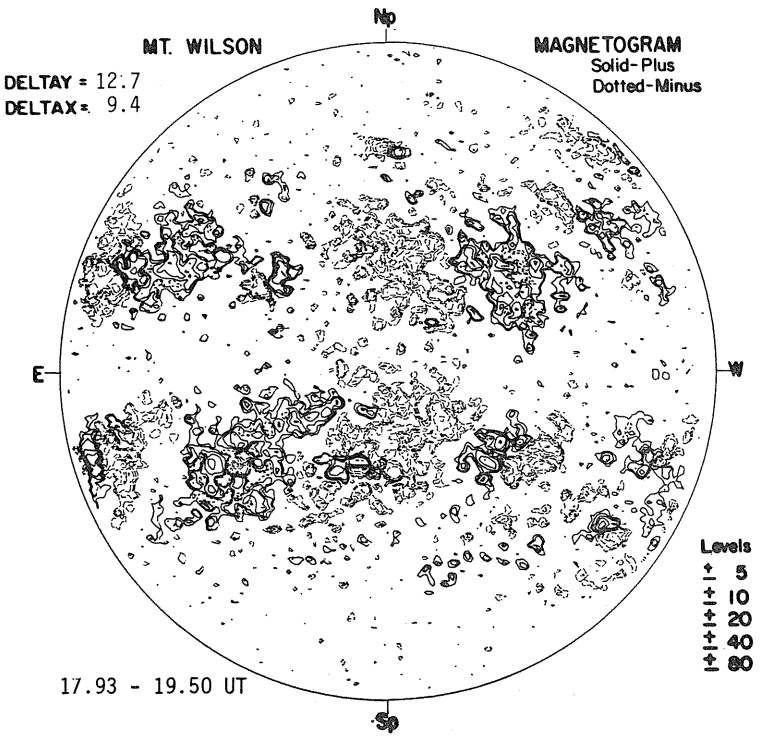
CORONA (1.15 $R_\odot$)
5303 Å



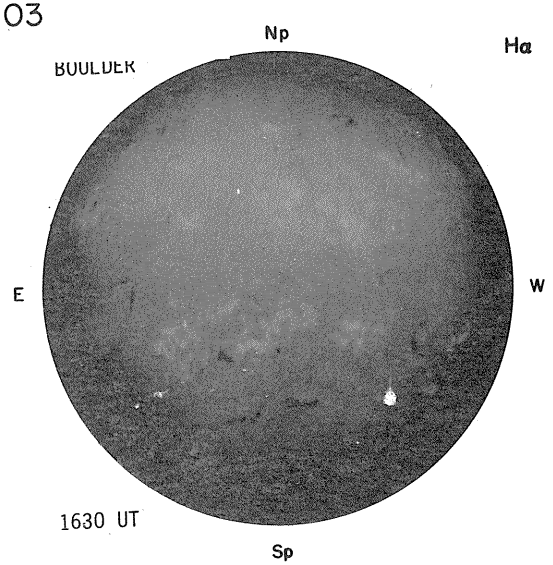
2118 UT

Sp

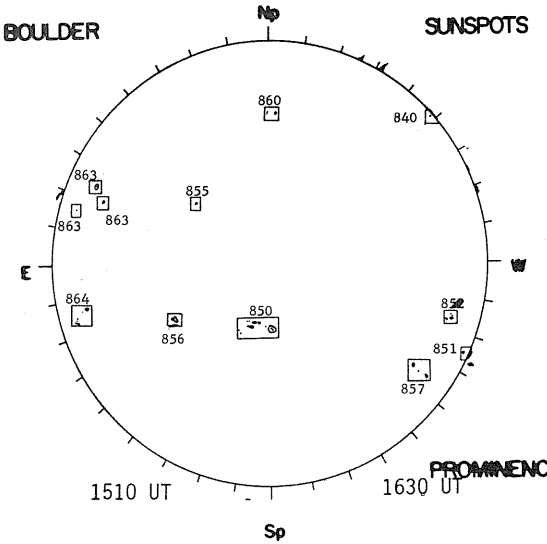




03

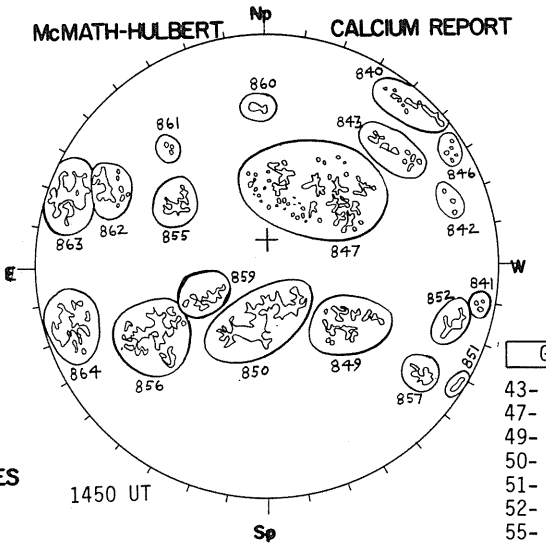


Hα BOULDER



SUNSPOTS

McMATH-HULBERT CALCIUM REPORT

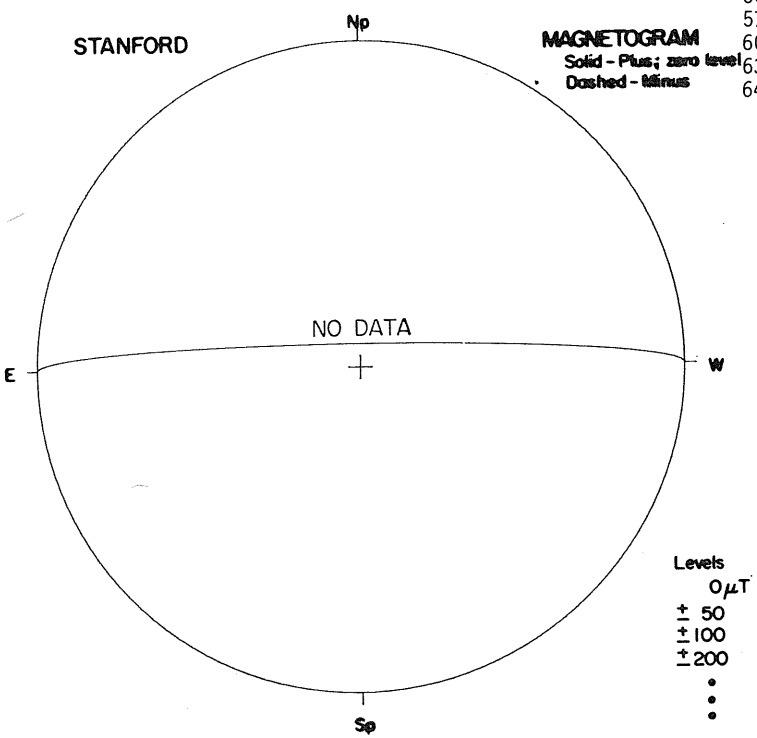


PROMINENCES

GOOD	M
43-	1100-2.5
47-	3300-2.5
49-	1600-2.5
50-	3500-2.5
51-	0900-2.5
52-	1200-3.0
55-	0900-2.5
56-	2800-2.5
57-	0900-3.0
60-	0400-3.0
63-	4500-3.0
64-	3500-3.0

STANFORD

MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus



Levels
0μT
± 50
± 100
± 200
•
•
•

MARCH 4, 1979 (P =-22.16, B_o =- 7.24, L_o = 346.32)

SACRAMENTO PEAK

Np

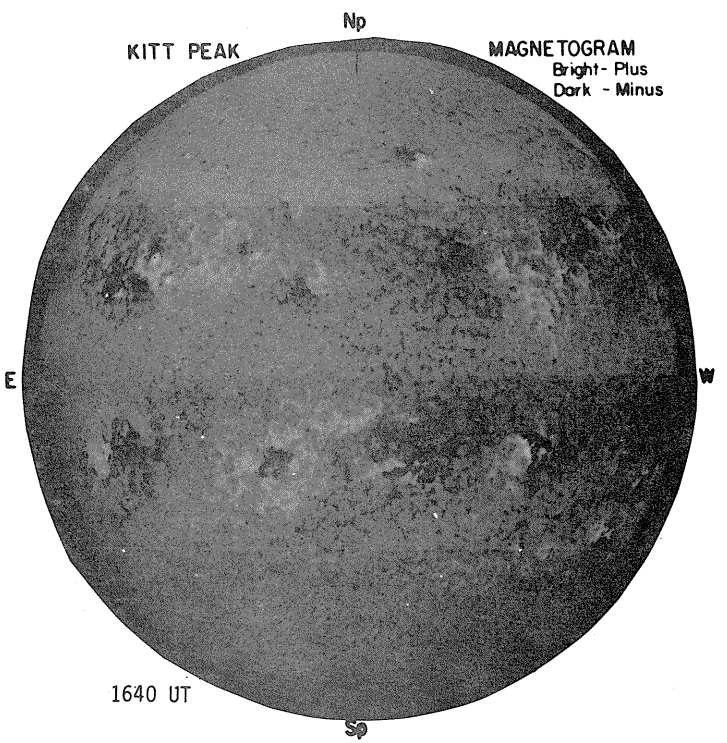
CORONA (1.15 $R_\odot$)
5303 Å

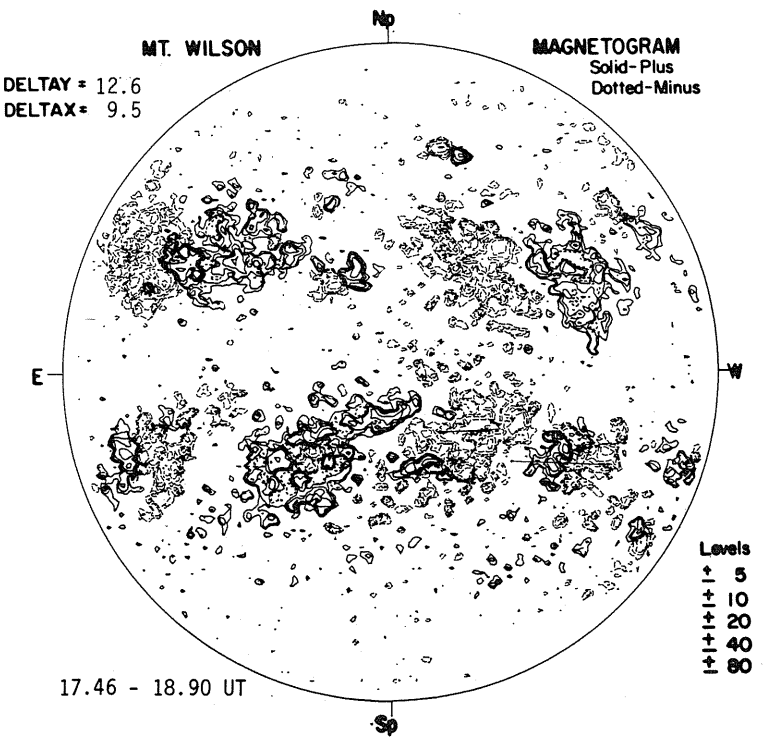
E

W

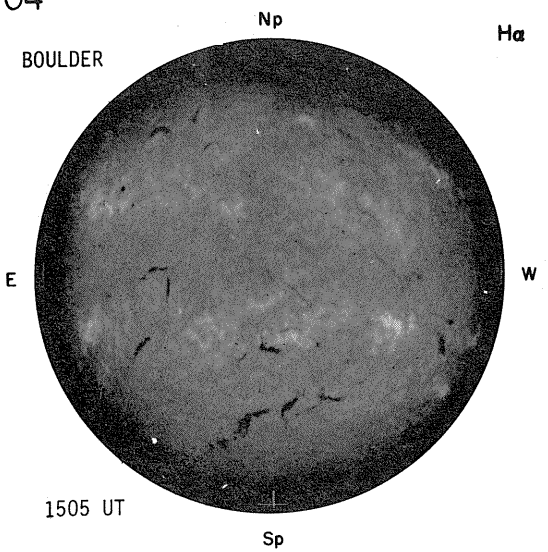
1550 UT

Sp

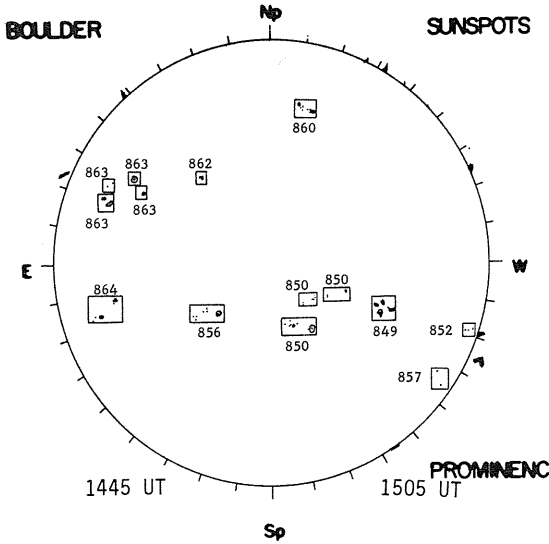




04

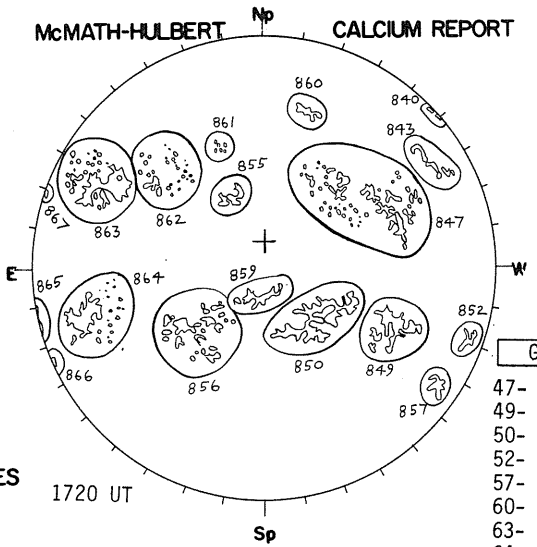


Hα **BOULDER** **SUNSPOTS**



PROMINENCES

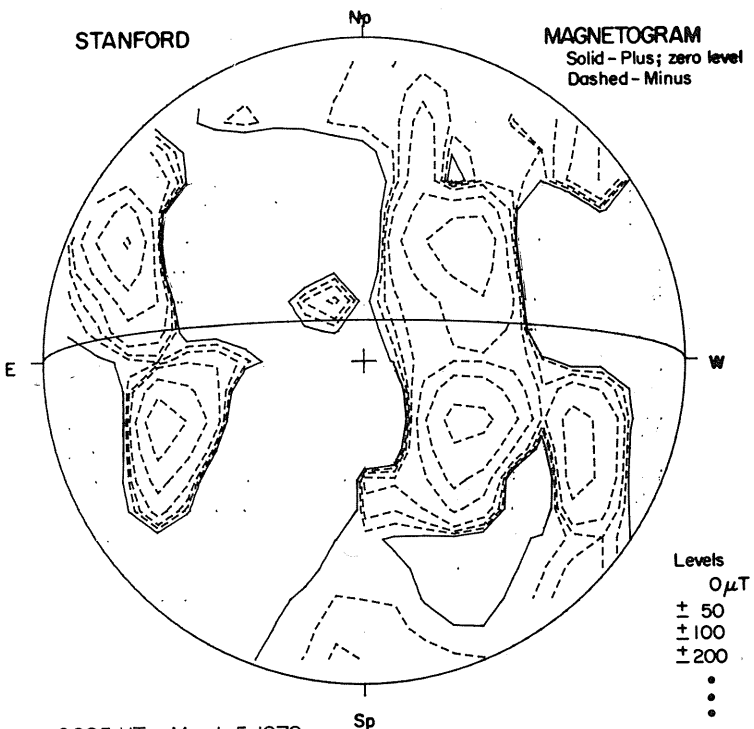
McMATH-HULBERT **CALCIUM REPORT**



GOOD	M
47-	3000-2.0
49-	2500-3.5
50-	3500-2.5
52-	1300-3.0
57-	0800-3.0
60-	0600-3.0
63-	4200-3.0
64-	3100-3.0

STANFORD **MAGNETOGRAM**

Solid - Plus; zero level
Dashed - Minus



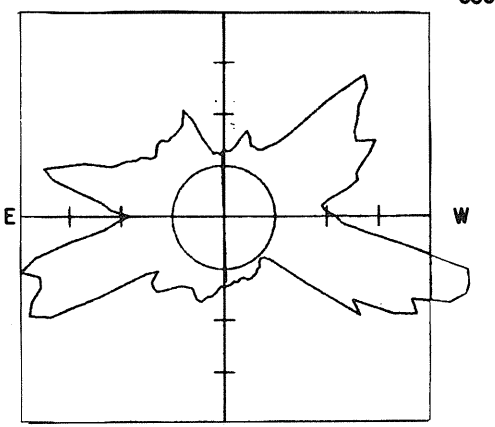
0025 UT - March 5, 1979

MARCH 5, 1979 (P =-22.40, B_o =-7.25, L_c = 333.15)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å



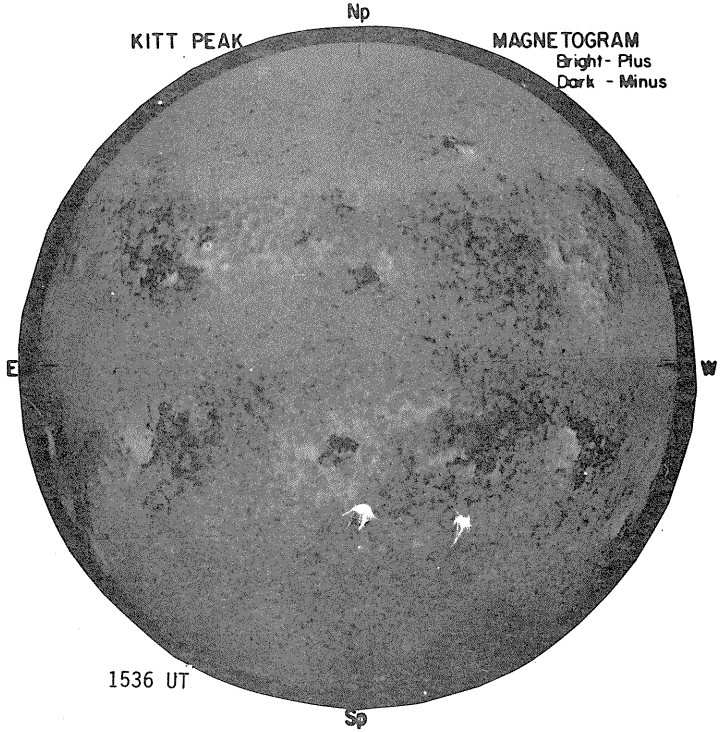
1610 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus



1536 UT

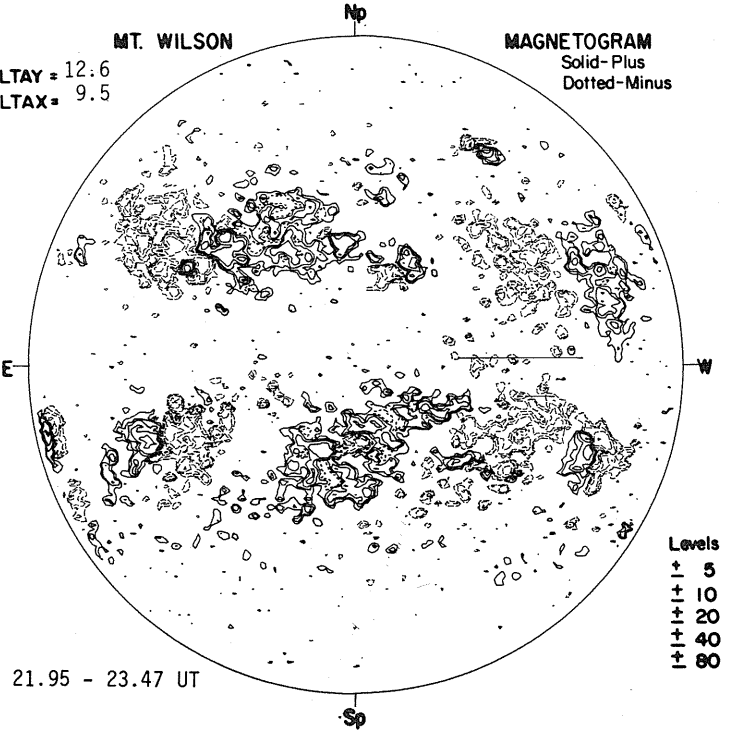
Sp

MT. WILSON

Np

DELTAY = 12.6
DELTAX = 9.5

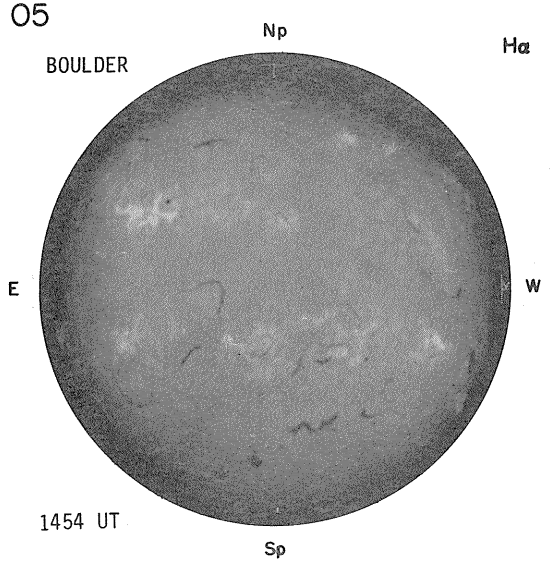
MAGNETOGRAM
Solid - Plus
Dotted - Minus



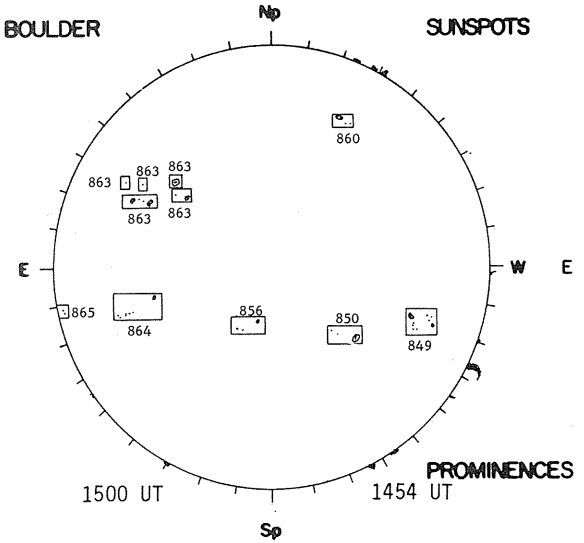
21.95 - 23.47 UT

Sp

05



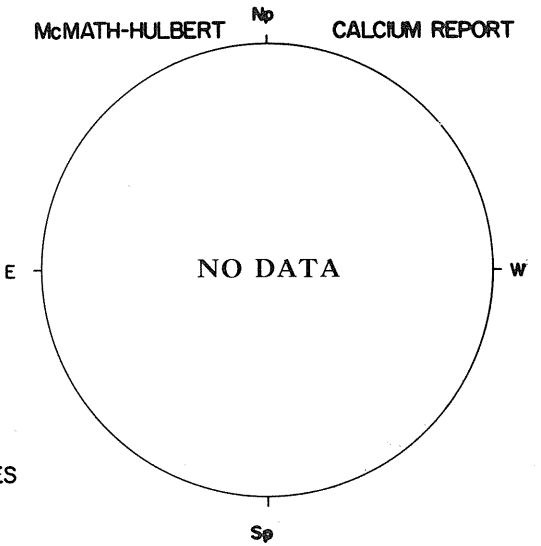
Hα BOULDER



SUNSPOTS

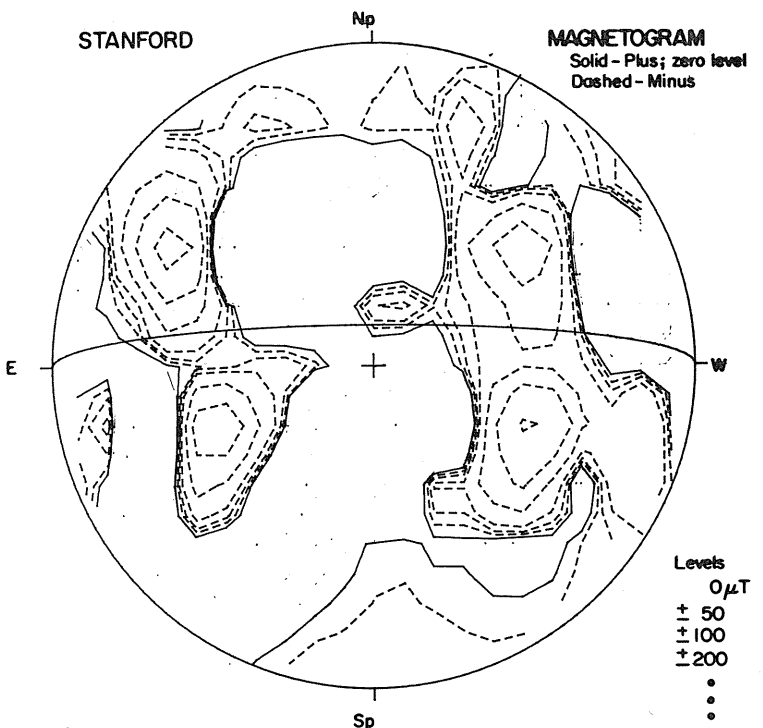
PROMINENCES

McMATH-HULBERT



CALCIUM REPORT

STANFORD



MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus

2000 UT

MARCH 6, 1979 (P =-22.62, B_o =-7.25, L_o = 319.98)

SACRAMENTO PEAK

Np

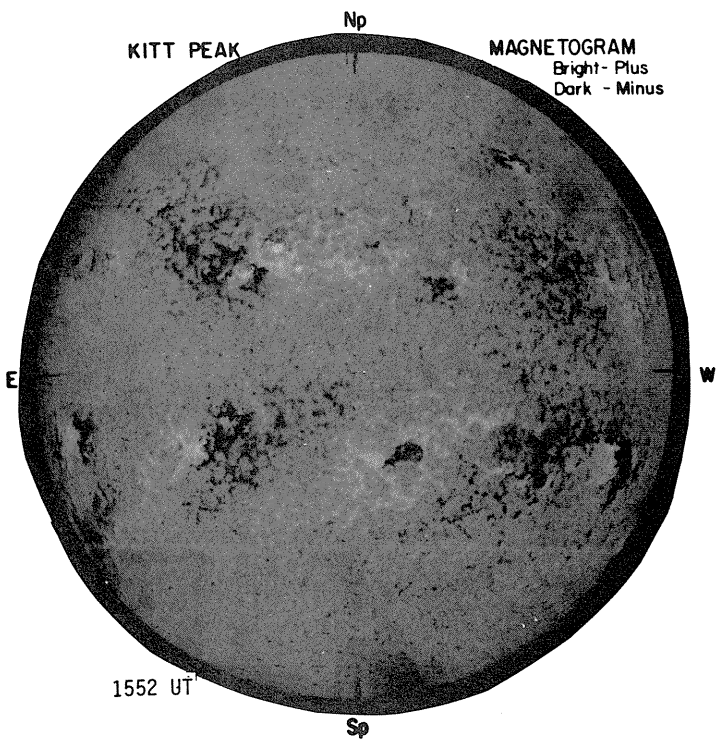
CORONA (1.15 $R_\odot$)
5303 Å

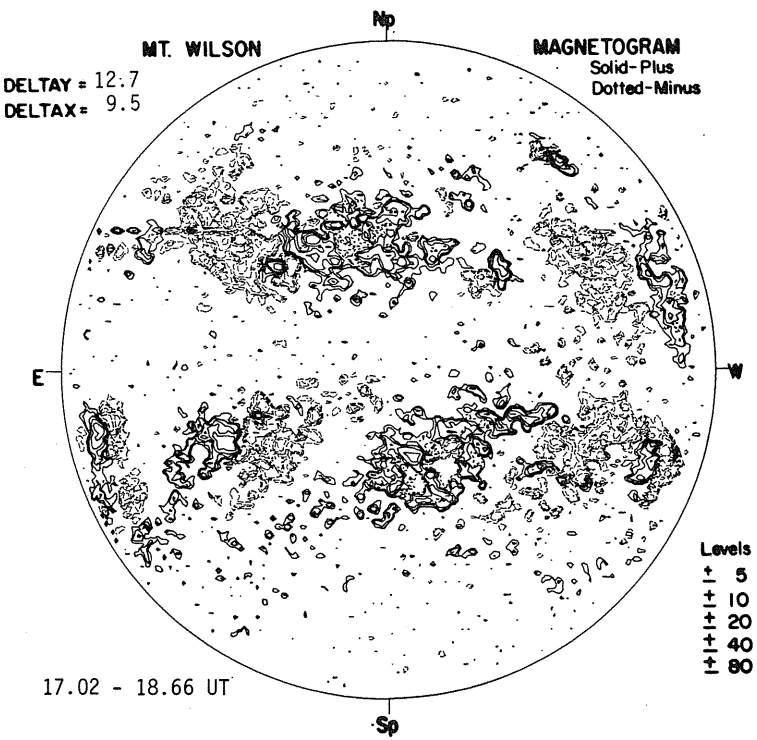
E

W

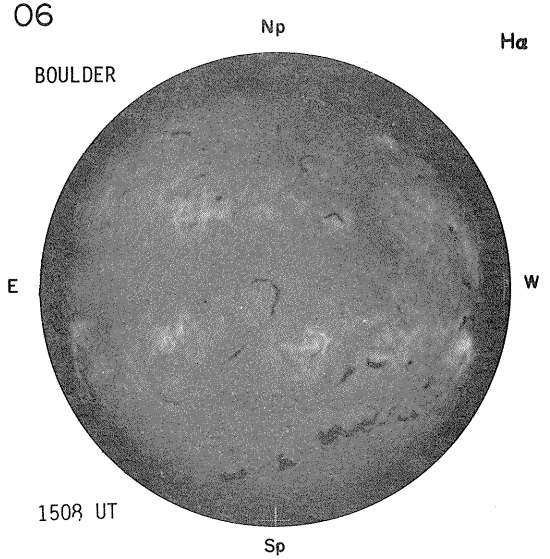
1555 UT

Sp

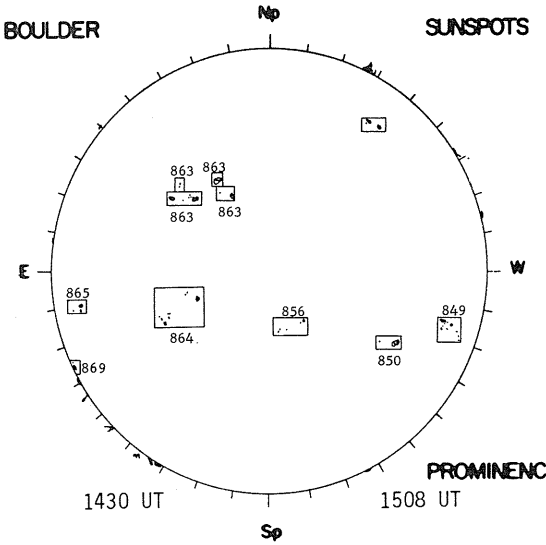




06

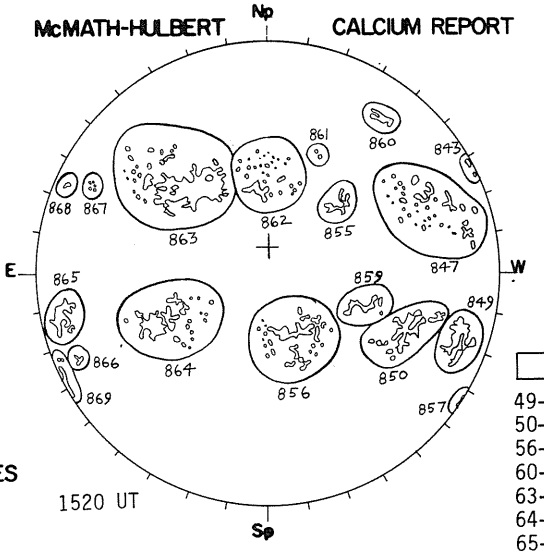


Hα BOULDER SUNSPOTS



PROMINENCES

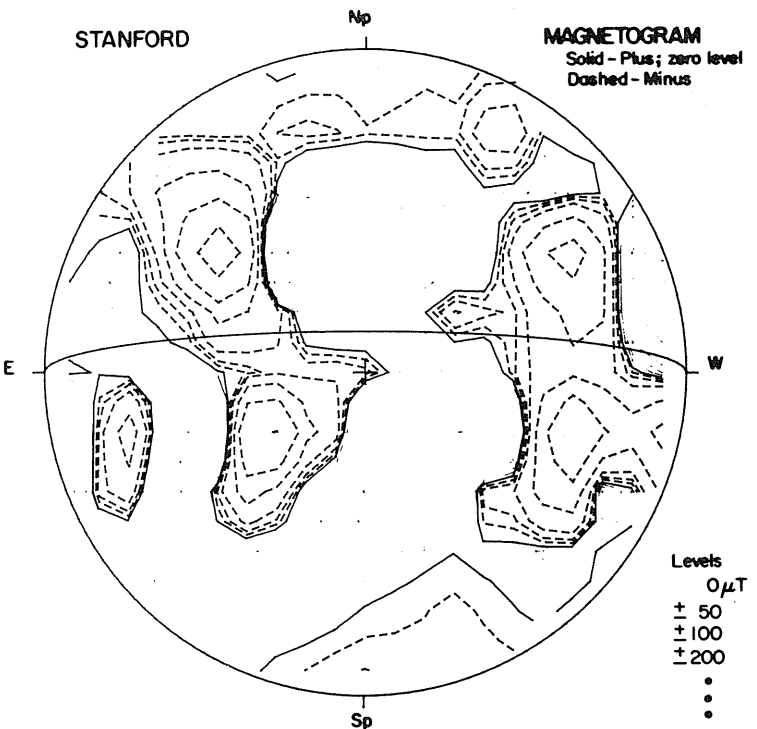
McMATH-HULBERT CALCIUM REPORT



POOR	M
49-	2500-3.5
50-	3100-2.5
56-	2300-2.5
60-	0700-3.0
63-	5000-3.0
64-	2800-2.5
65-	2700-3.0

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus



1929 UT

MARCH 7, 1979 (P =-22.84, B_o =-7.25, L_o = 306.80)

SACRAMENTO PEAK

Np

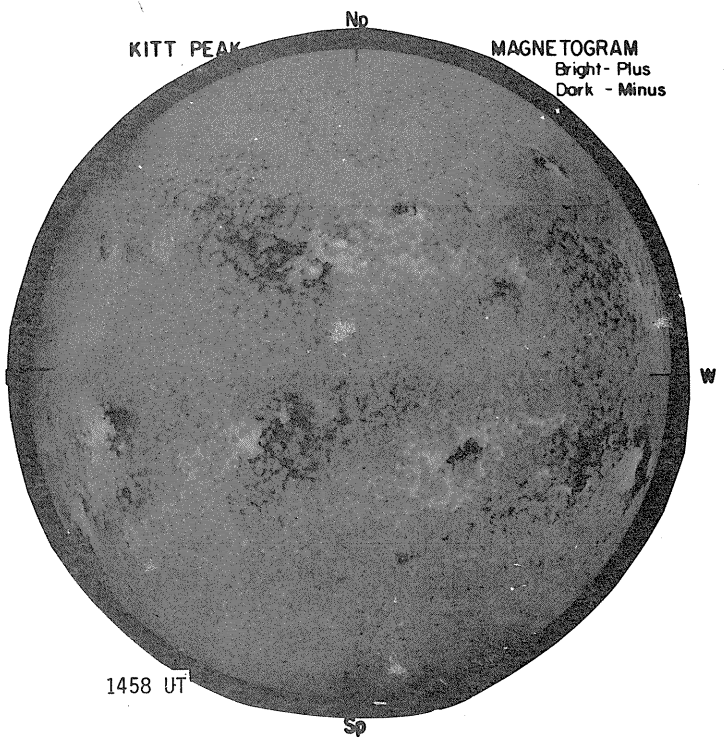
CORONA (1.15 $R_\odot$)
5303 Å

E

W

1545 UT

Sp



MT. WILSON

Np

MAGNETOGRAM
Solid - Plus
Dotted - Minus

DELTAY =
DELTAX =

E

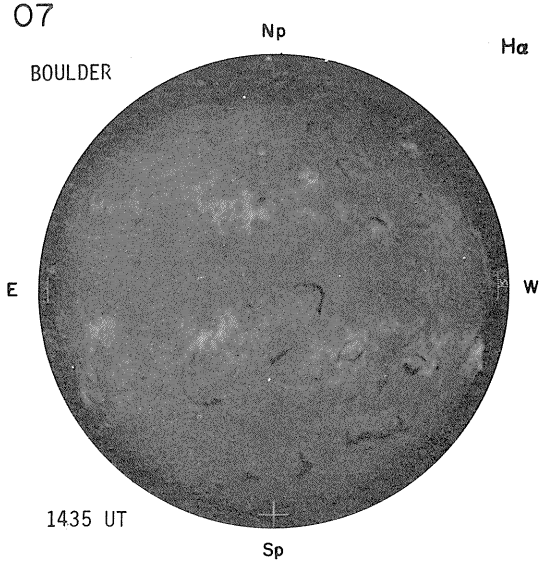
NO DATA

W

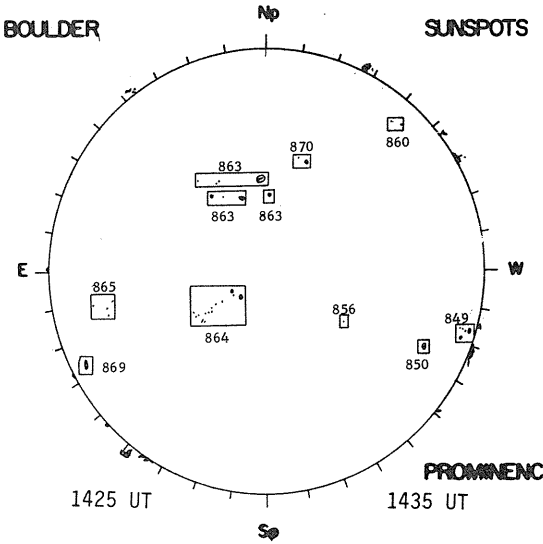
Sp

Levels
± 5
± 10
± 20
± 40
± 80

07

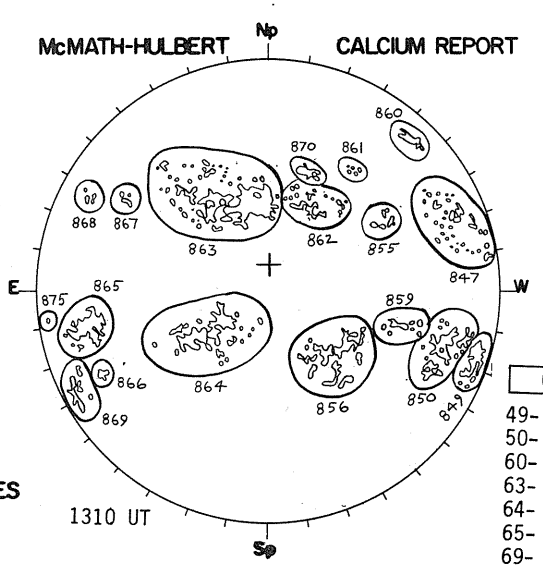


Hα

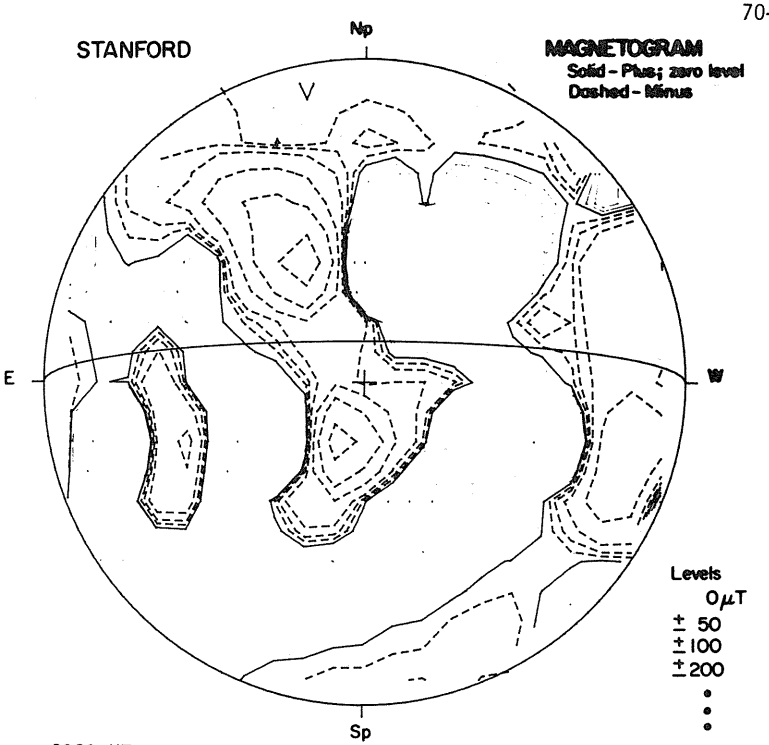


SUNSPOTS

PROMINENCES



GOOD	M
49- 2700-3.0	
50- 2700-2.5	
60- 0700-3.0	
63- 5700-2.5	
64- 2800-2.5	
65- 2700-3.0	
69- 1700-3.0	
70- 0600-3.0	

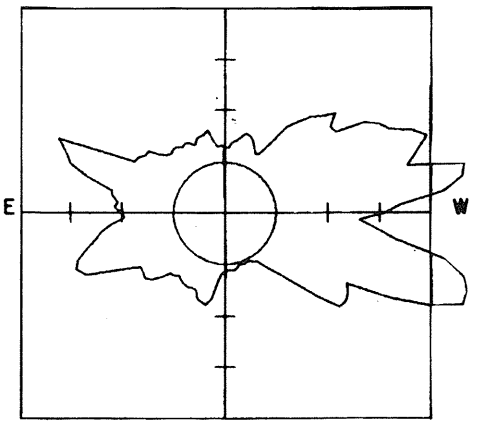


MARCH 8, 1979 (P =-23.06, B_o =-7.25, L_o = 293.62)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å



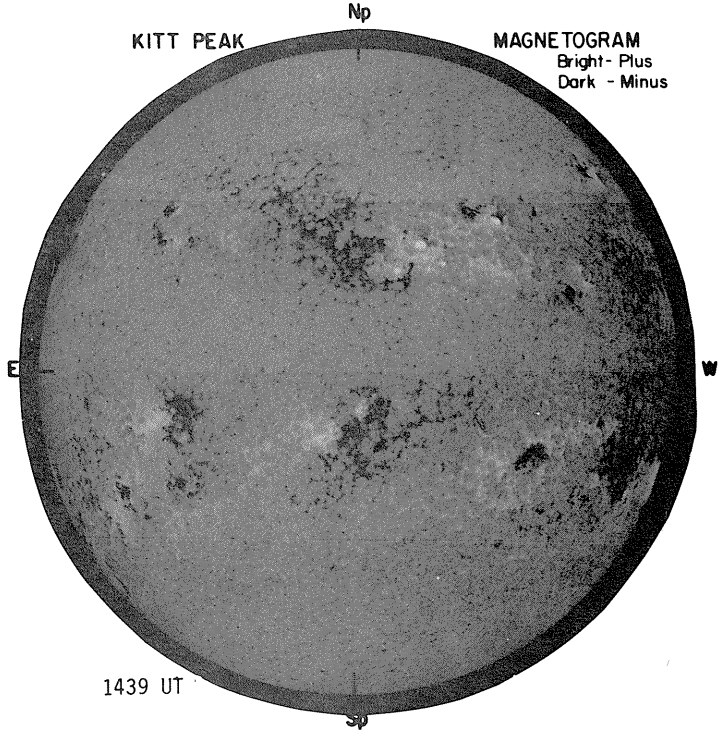
1524 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus



1439 UT

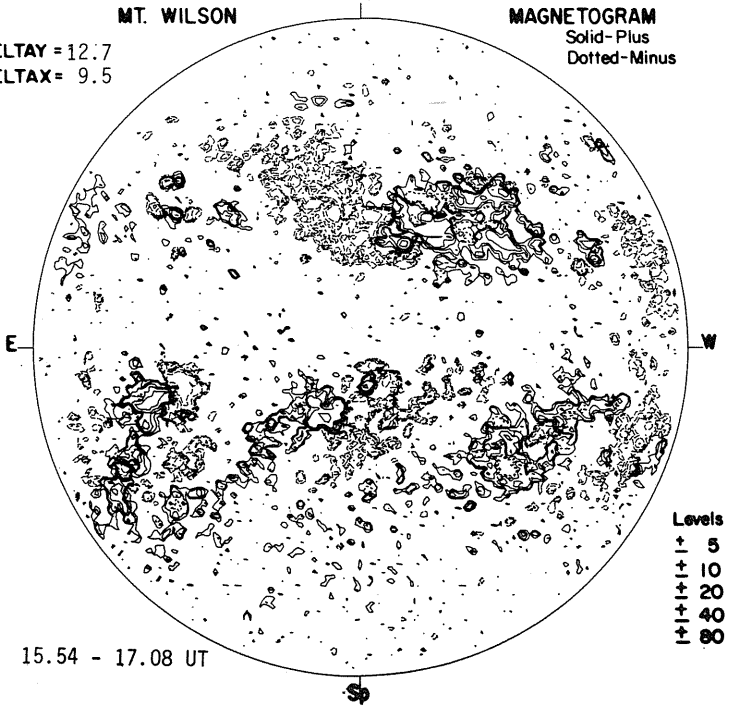
Sp

MT. WILSON

Np

MAGNETOGRAM
Solid - Plus
Dotted - Minus

DELTAY = 12.7
DELTAX = 9.5

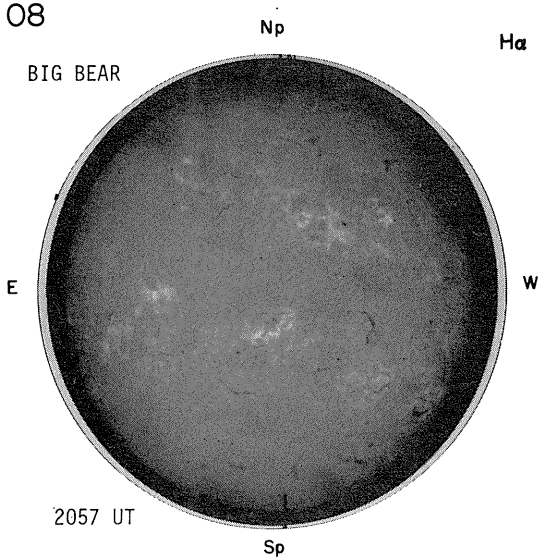


15.54 - 17.08 UT

Sp

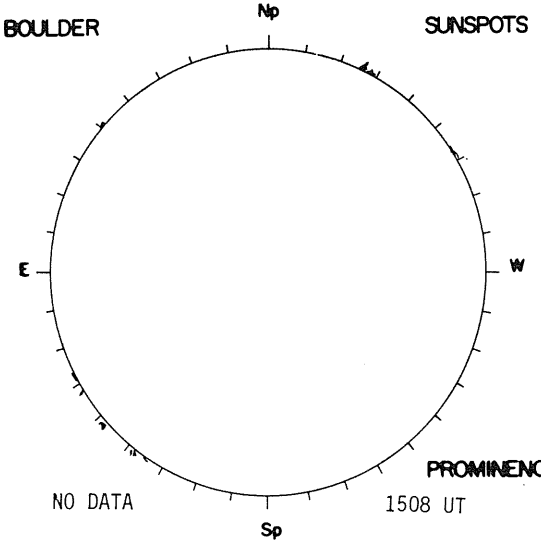
08

BIG BEAR



2057 UT

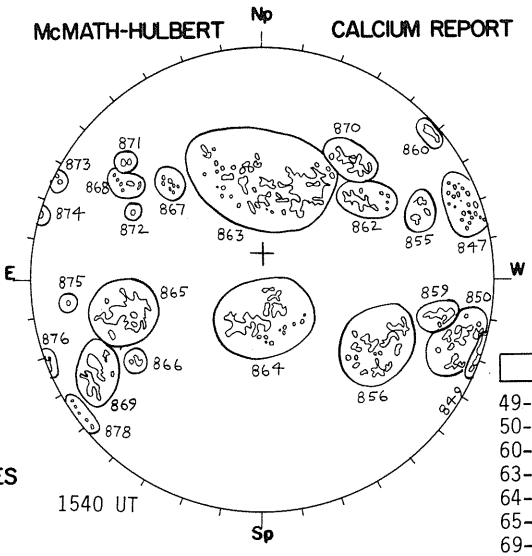
Hα BOULDER



NO DATA

SUNSPOTS

McMATH-HULBERT



1540 UT

CALCIUM REPORT

FAIR	B

49- 2000-3.0
50- 2300-2.5
60- 0900-3.0
63- 5300-3.0
64- 2300-3.0
65- 3100-3.5
69- 1800-3.0
70- 1100-3.5
71- 0200-2.5

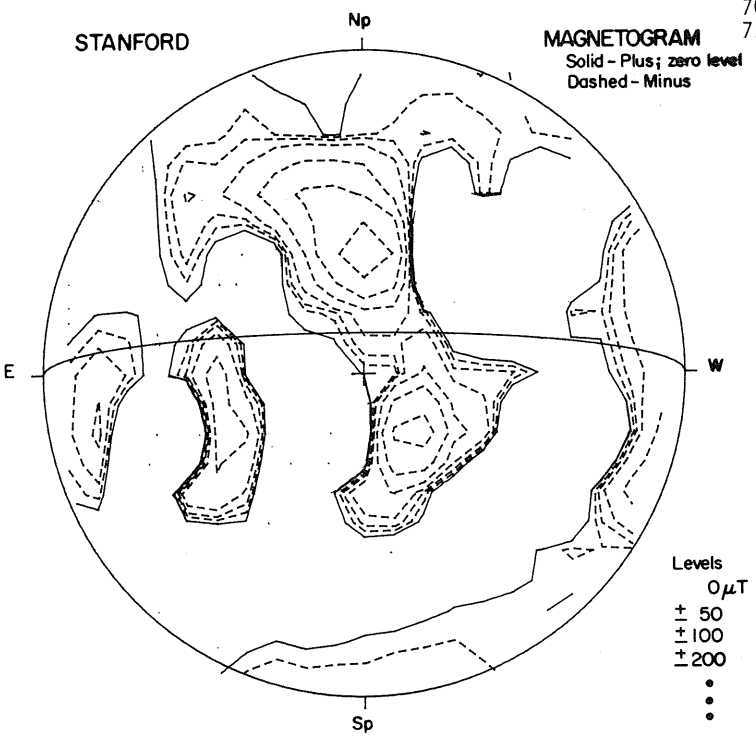
PROMINENCES

1508 UT

STANFORD

MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus

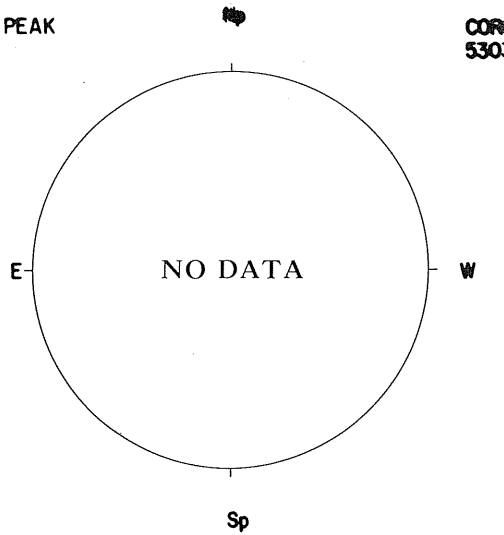


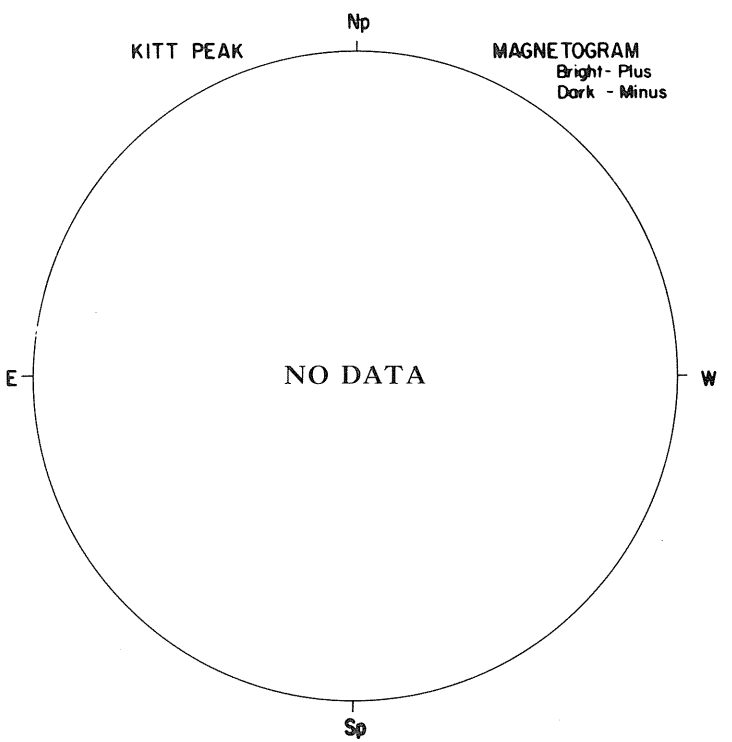
2220 UT

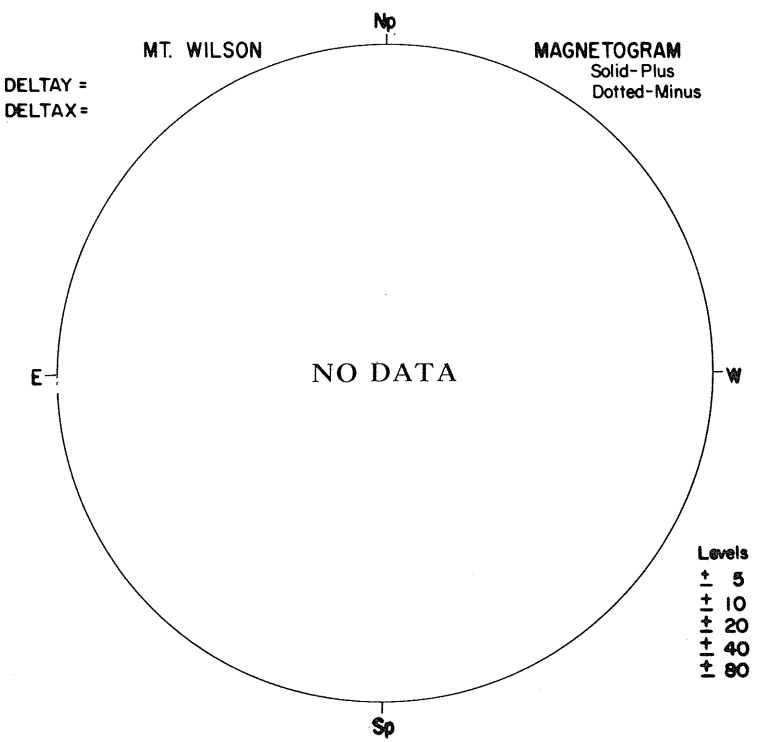
MARCH 9, 1979 (P =-23.27, B_o =-7.24, L_o =280.45)

SACRAMENTO PEAK

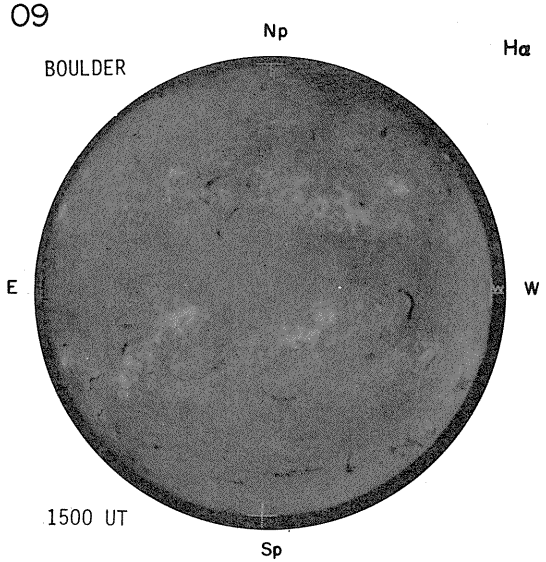
CORONA (1.15 $R_\odot$)
5303 Å



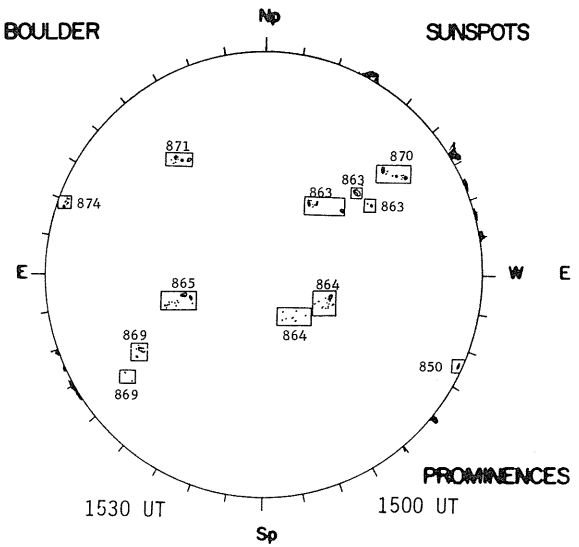


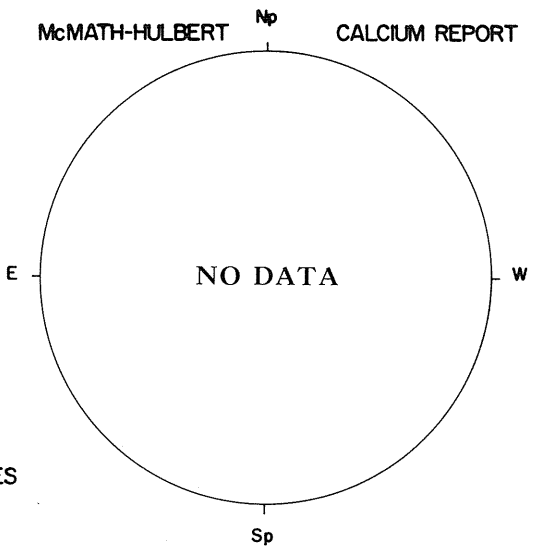


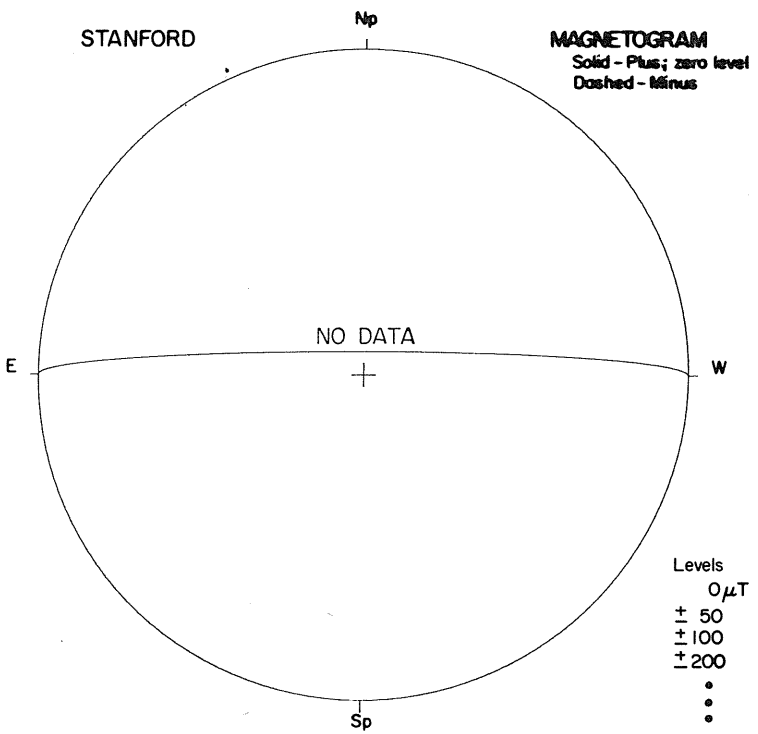
09


Np
BOULDER
E
W
1500 UT
Sp

Hα


BOULDER
Np
SUNSPOTS
871
870
874
863
863
863
E
W
865
864
864
869
869
850
PROMINENCES
1530 UT
1500 UT
Sp

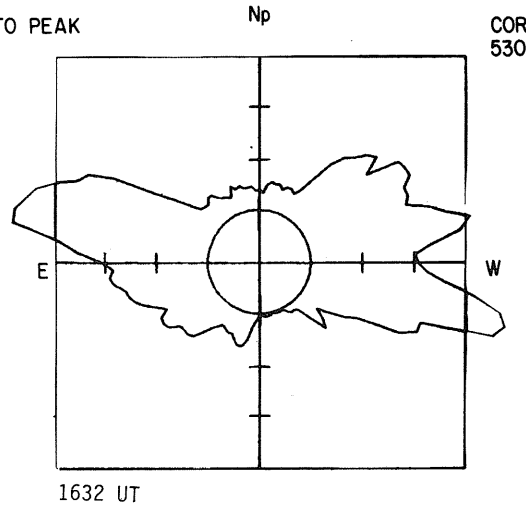

McMATH-HULBERT
Np
CALCIUM REPORT
E
NO DATA
W
Sp


STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
NO DATA
E
W
Sp
Levels
0μT
± 50
± 100
± 200

MARCH 10, 1979 (P =-23.47, B_o =-7.24, L_o =267.27)

SACRAMENTO PEAK

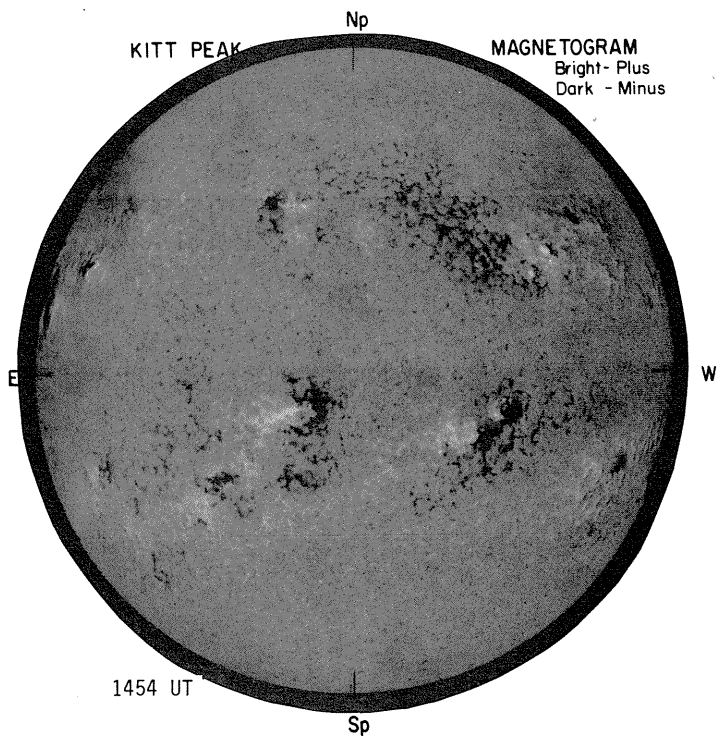
CORONA (1.15 $R_\odot$)
5303 Å



1632 UT

KITT PEAK

MAGNETOGRAM
Bright- Plus
Dark - Minus

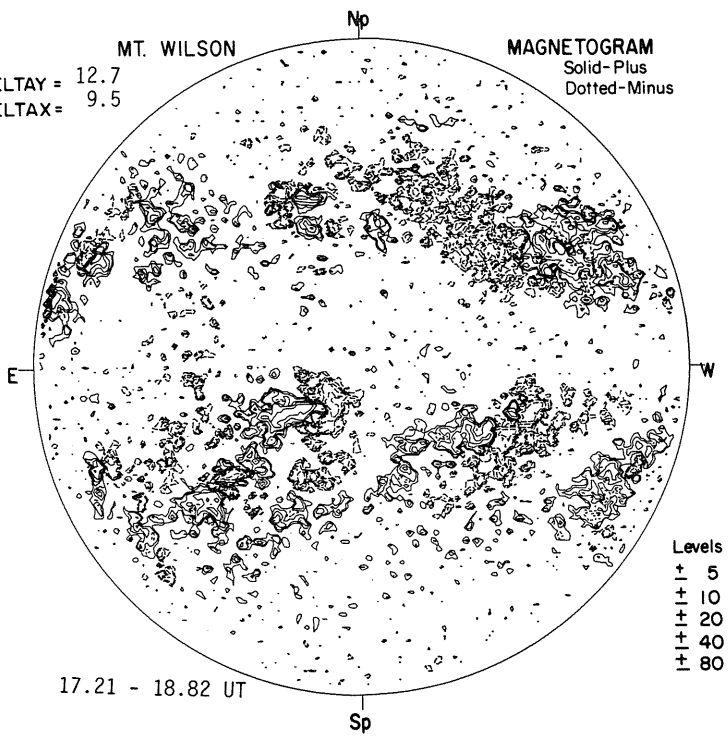


1454 UT

MT. WILSON

DELTAY = 12.7
DELTAX = 9.5

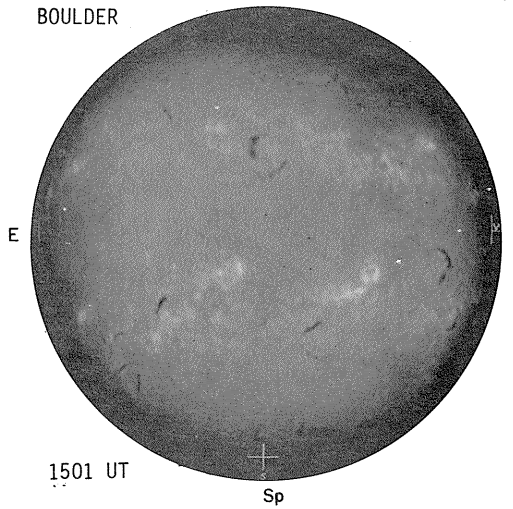
MAGNETOGRAM
Solid- Plus
Dotted-Minus



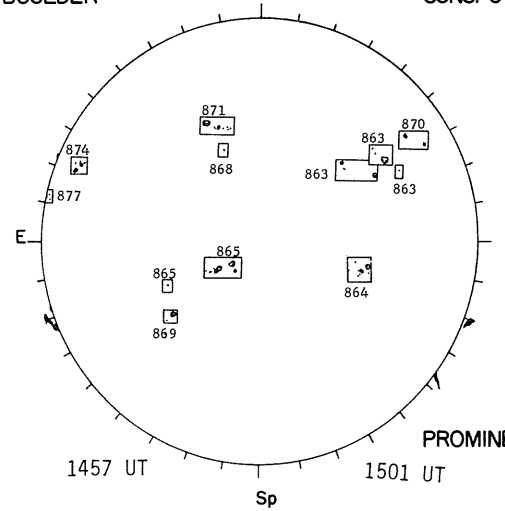
17.21 - 18.82 UT

10

BOULDER

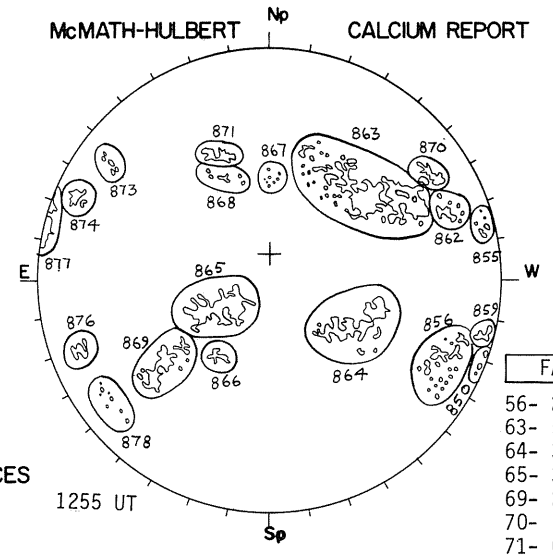


Hα BOULDER



SUNSPOTS

McMATH-HULBERT

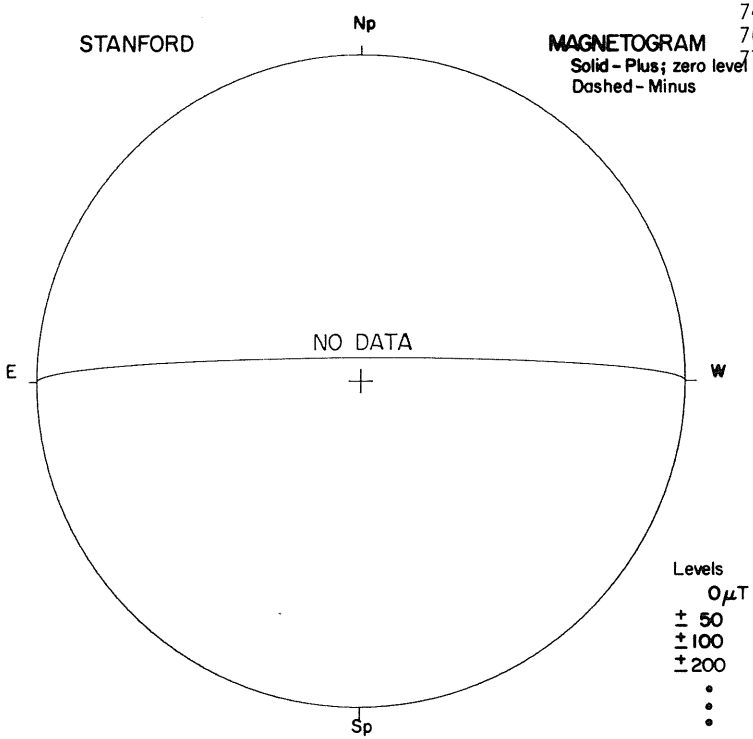


CALCIUM REPORT

FAIR	M
56- 2000-2.5	
63- 5000-3.0	
64- 3000-3.5	
65- 3000-3.0	
69- 2300-2.5	
70- 1100-3.5	
71- 0800-3.0	
74- 0900-3.5	
76- 0900-2.5	
77- 3200-2.5	

PROMINENCES

STANFORD



MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus

Levels

0μT

± 50

± 100

± 200

• • •

63

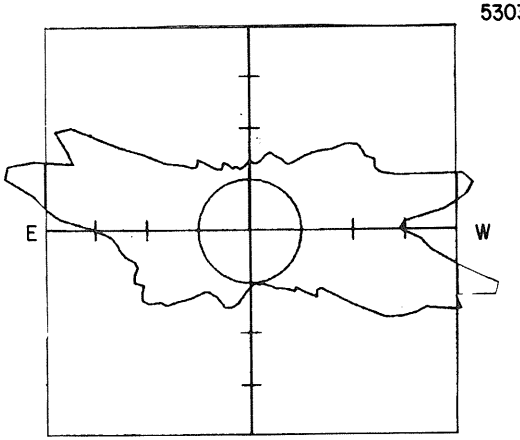
Mar 79

MARCH 11, 1979 (P =-23.66, B_o =-7.23, L_o =254.09)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å



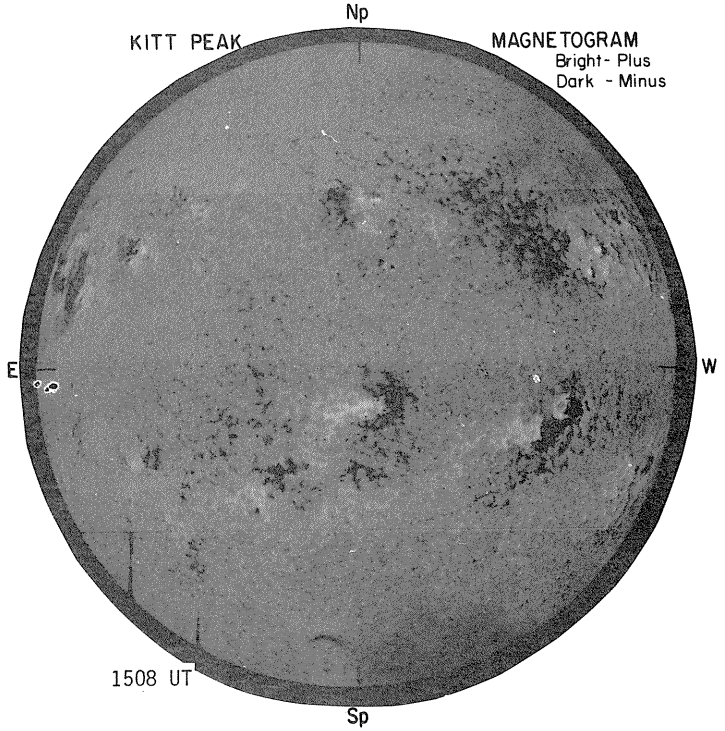
1500 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus



1508 UT

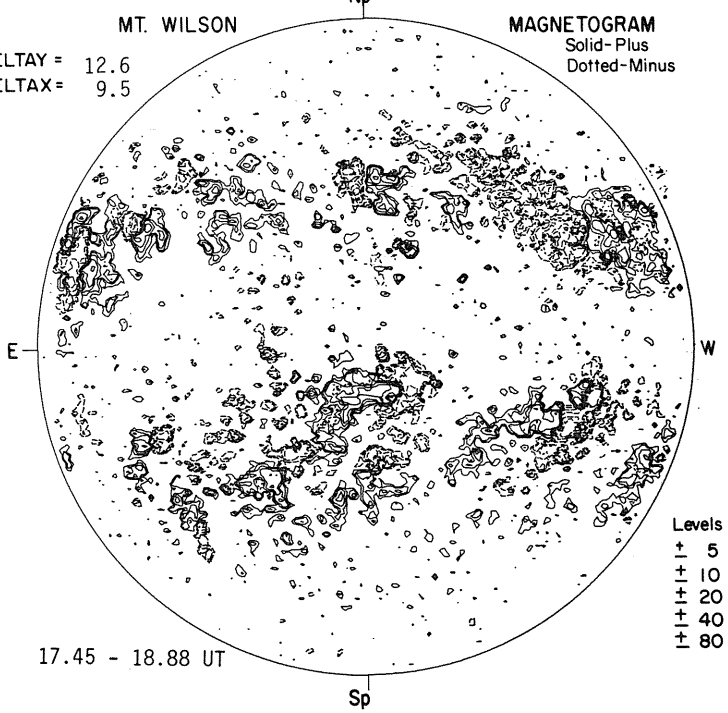
Sp

MT. WILSON

Np

MAGNETOGRAM
Solid - Plus
Dotted - Minus

DELTAY = 12.6
DELTAX = 9.5

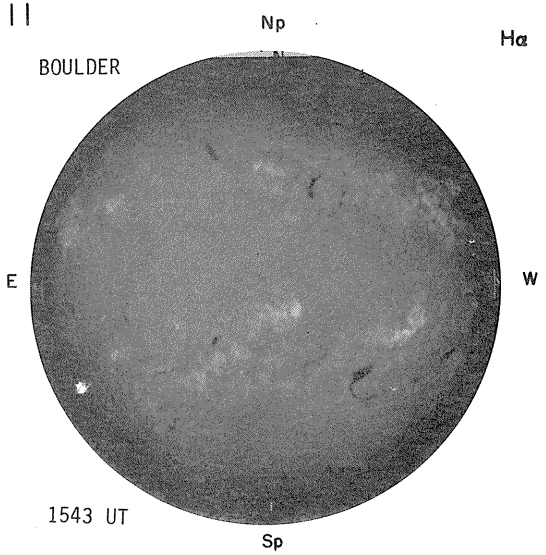


Levels
± 5
± 10
± 20
± 40
± 80

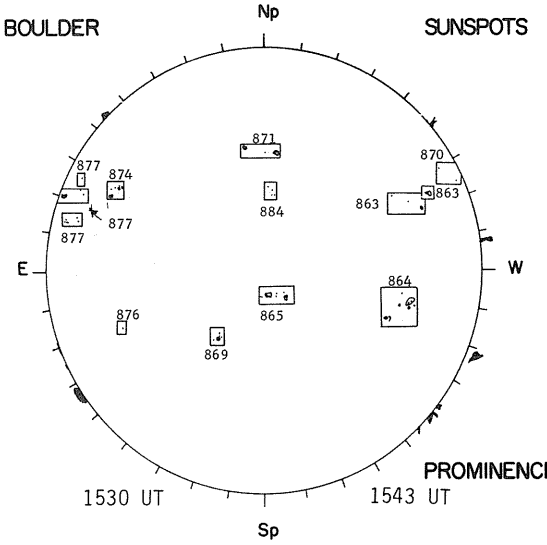
17.45 - 18.88 UT

Sp

II



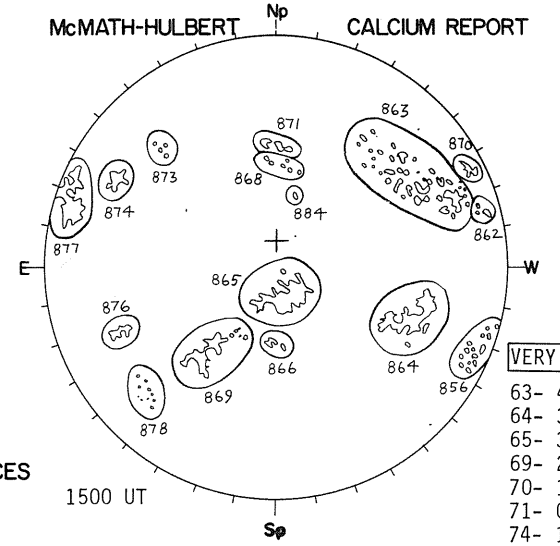
Hα BOULDER



SUNSPOTS

PROMINENCES

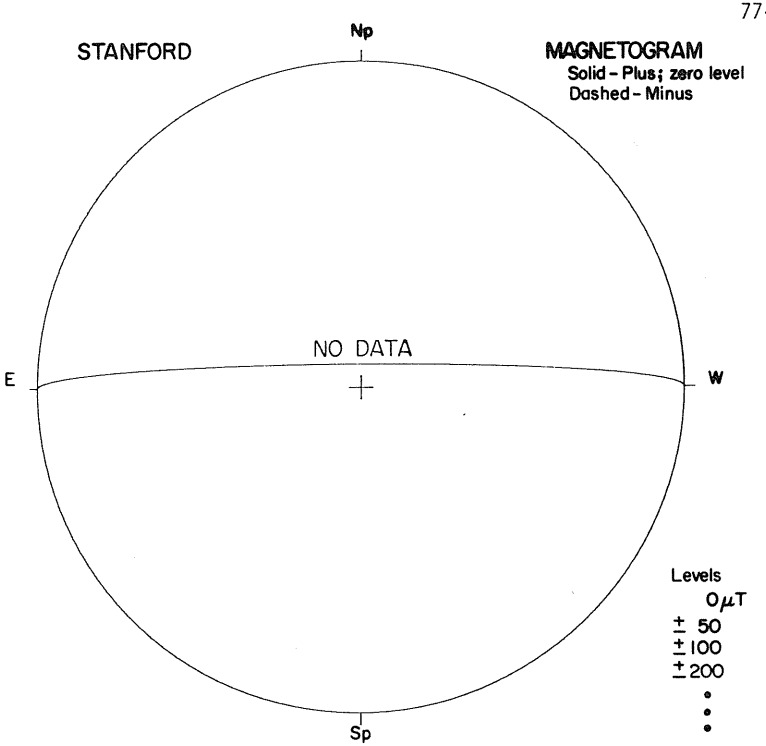
McMATH-HULBERT CALCIUM REPORT



VERY POOR	M
63- 4500-2.5	
64- 3000-3.0	
65- 3000-3.0	
69- 2400-2.5	
70- 1100-3.0	
71- 0700-2.5	
74- 1100-3.5	
77- 5500-3.0	

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus



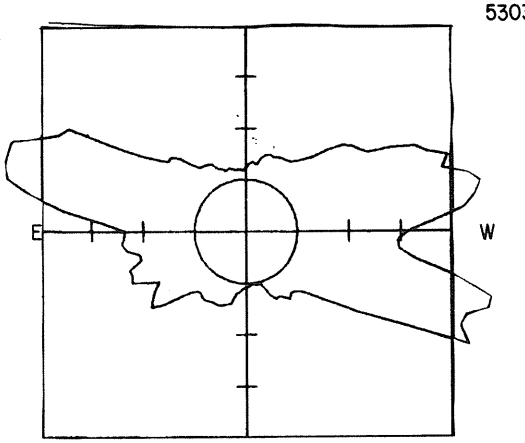
65
Mar 79

MARCH 12, 1979 (P =-23.85, B_o =-7.22, L_o =240.92)

SACRAMENTO PEAK

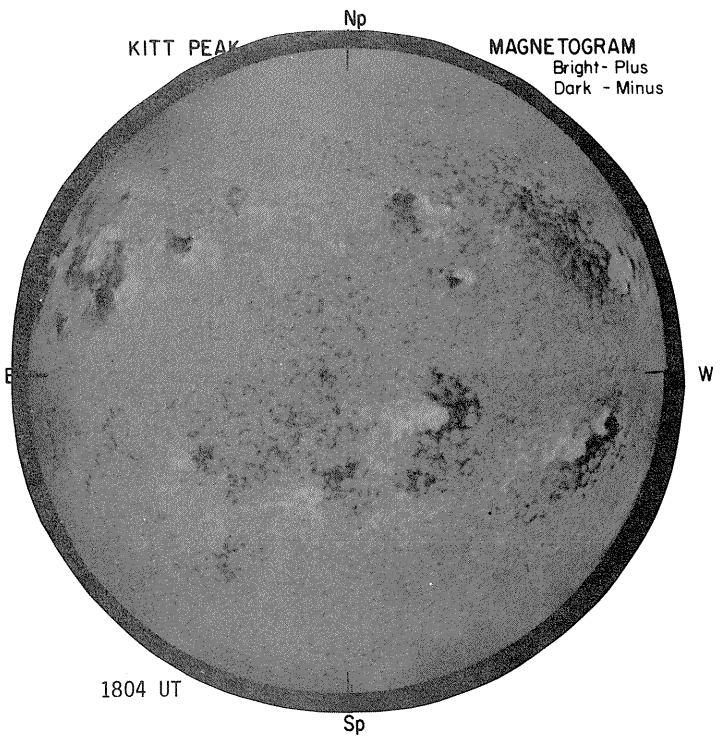
Np

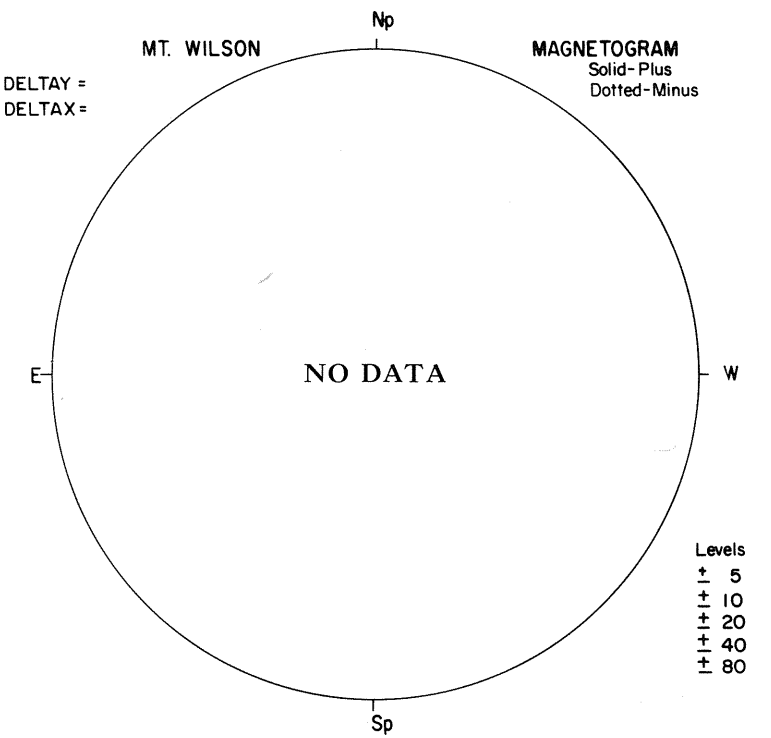
CORONA (1.15 $R_\odot$)
5303 Å



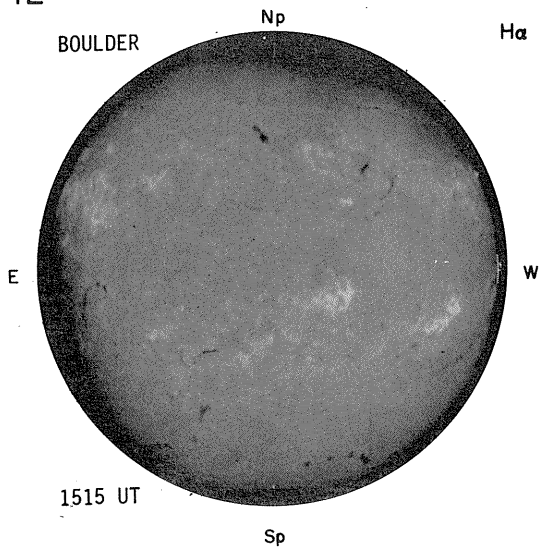
1824 UT

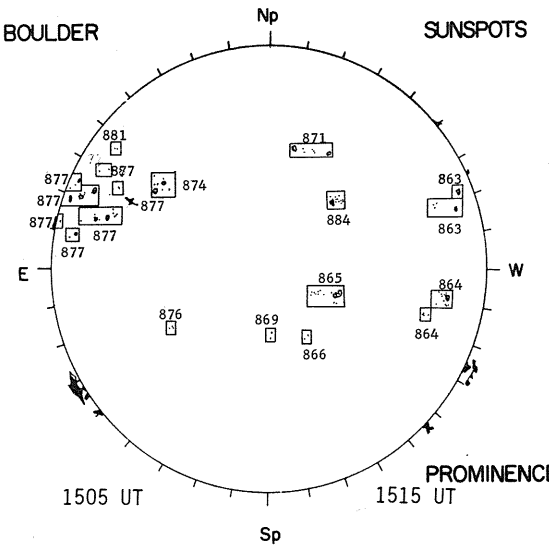
Sp

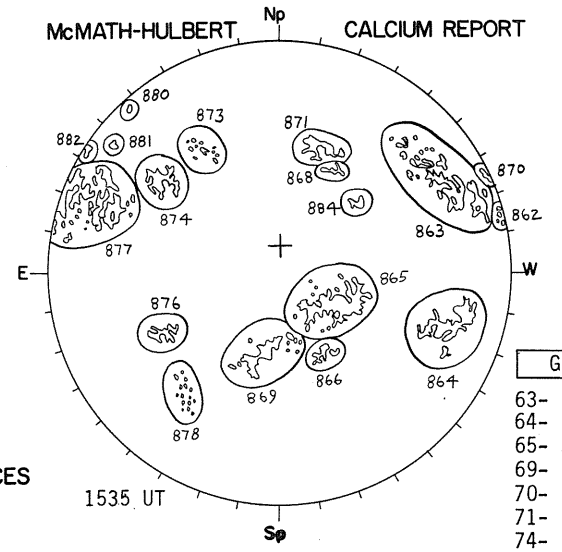




12

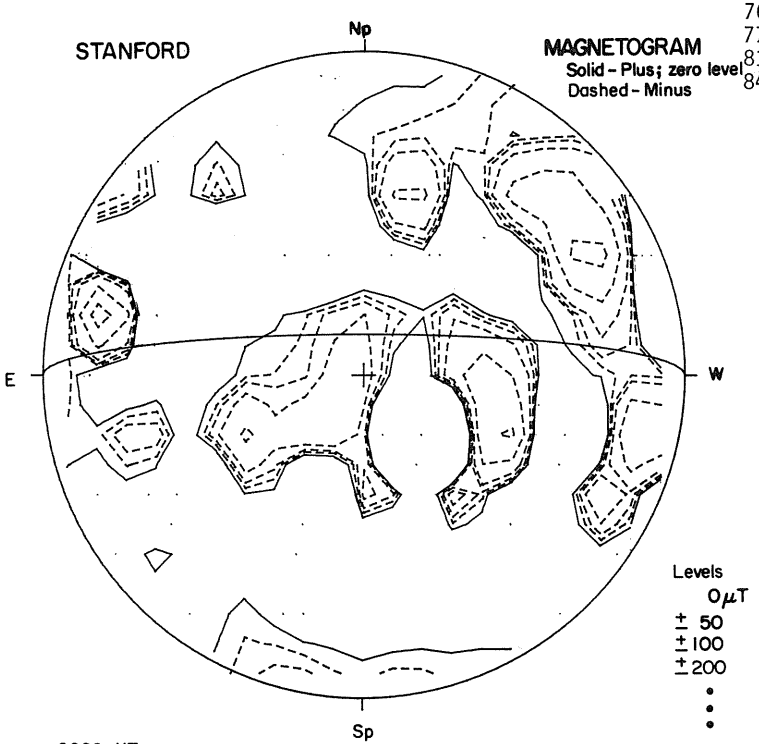






PROMINENCES

GOOD	B
63-	5000-2.5
64-	3600-3.0
65-	3400-3.0
69-	1900-2.5
70-	0900-2.5
71-	1200-3.0
74-	1800-3.0
76-	0900-2.5
77-	8500-3.0
81-	0300-2.5
84-	0400-3.0



MARCH 13, 1979 (P =-24.03, B_o =-7.21, L_o =227.74)

SACRAMENTO PEAK

Np

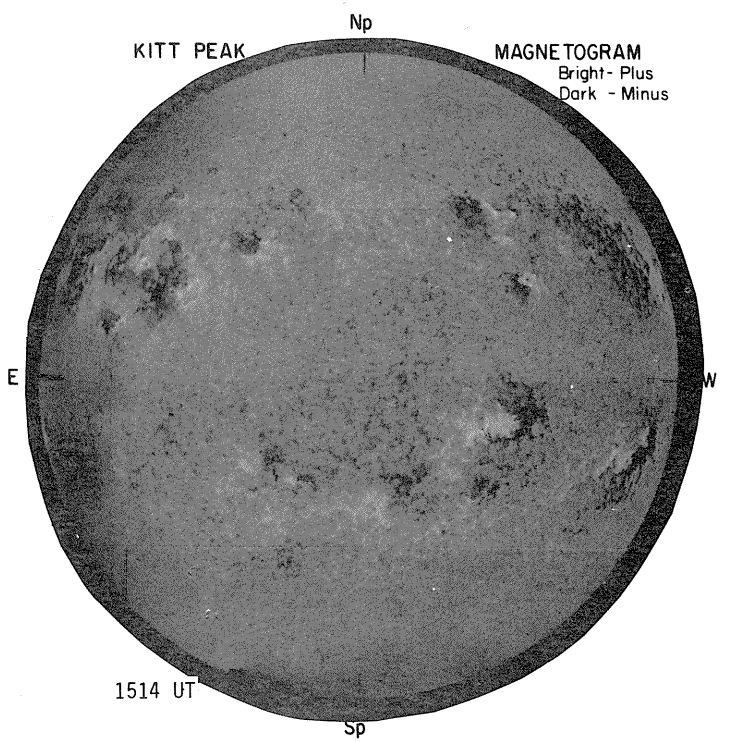
CORONA (1.15 $R_\odot$)
5303 Å

E

NO DATA

W

Sp



MT. WILSON

Np

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY =
DELTAX =

E

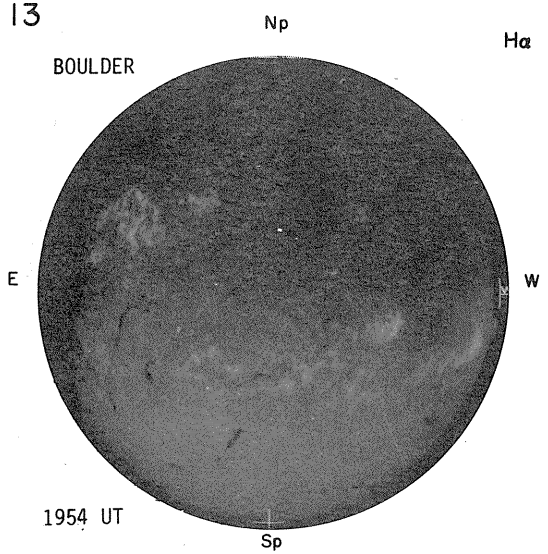
NO DATA

W

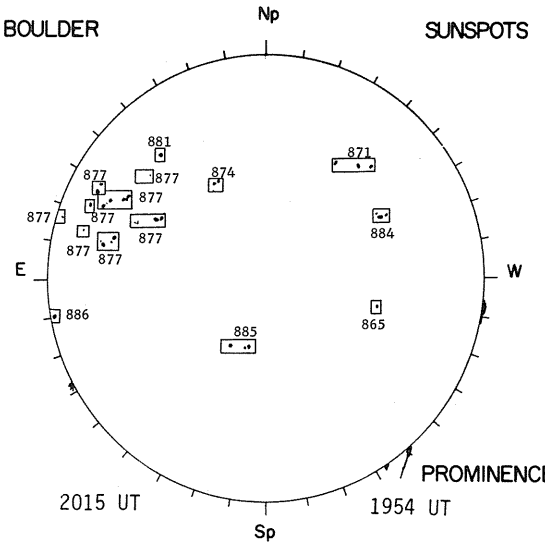
Levels
± 5
± 10
± 20
± 40
± 80

Sp

13



Hα BOULDER

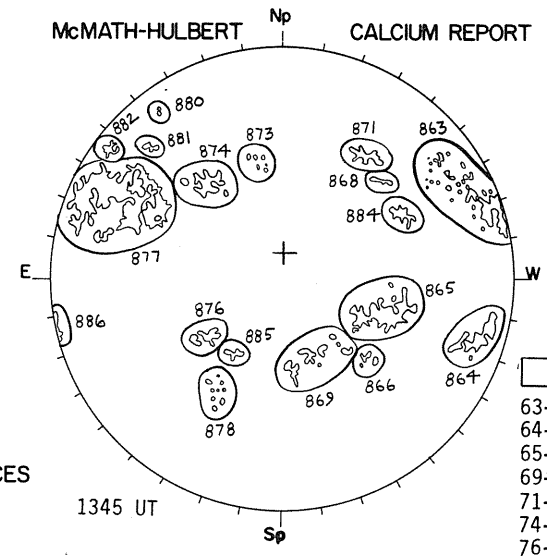


SUNSPOTS

PROMINENCES

McMATH-HULBERT

CALCIUM REPORT



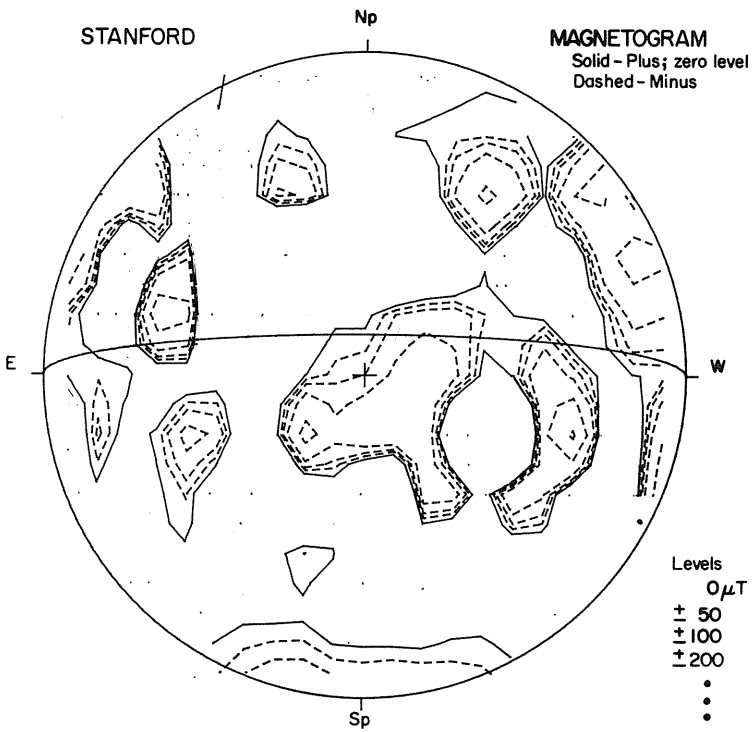
FAIR	M
63- 5000	2.0
64- 3500	3.0
65- 3500	3.0
69- 1500	2.5
71- 1100	3.0
74- 1500	2.5
76- 0800	2.5
77-10700	3.0
84- 0900	3.5
35- 0300	2.5

STANFORD

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus

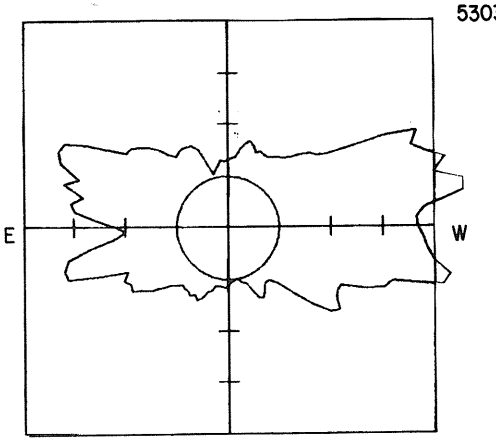


69 Mar 79

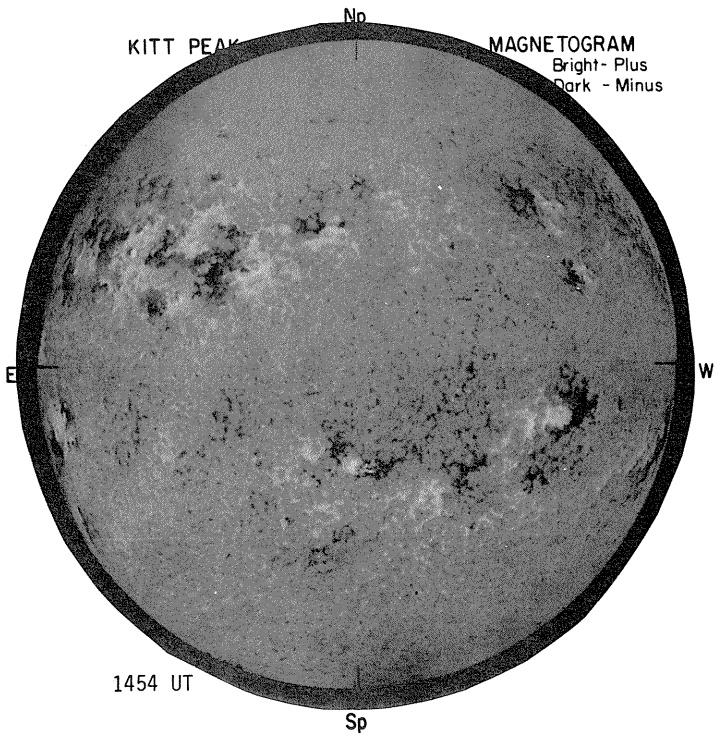
MARCH 14, 1979 (P =-24.21, B_o =-7.19, L_o = 214.56)

SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å



1737 UT



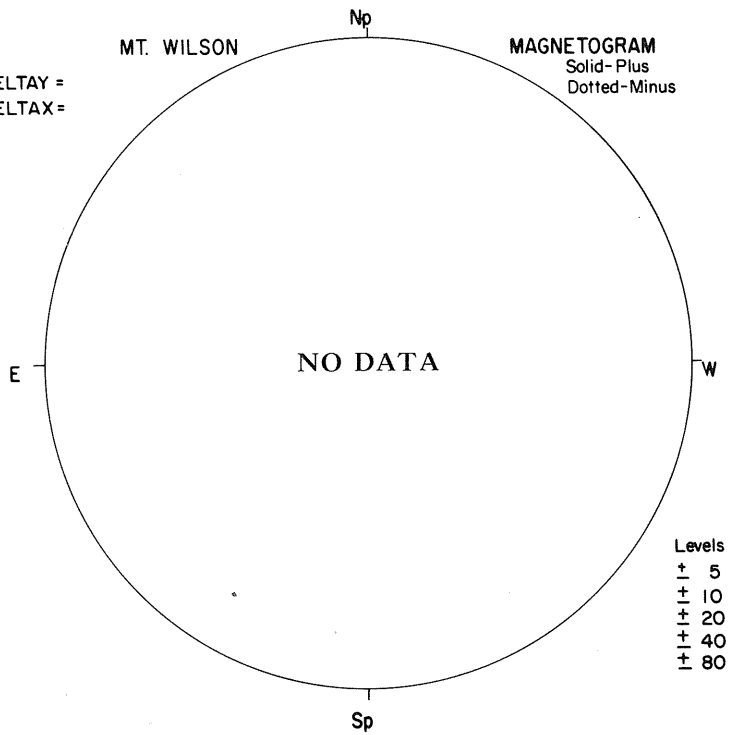
KITT PEAK

MAGNETOGRAM
Bright - Plus
Dark - Minus

1454 UT

MT. WILSON

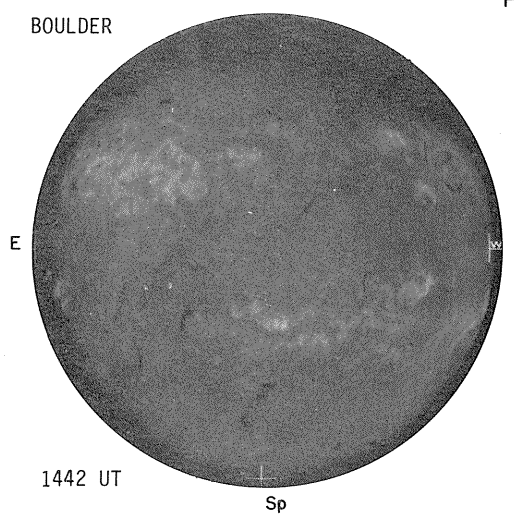
DELTAY =
DELTAX =



MAGNETOGRAM
Solid - Plus
Dotted - Minus

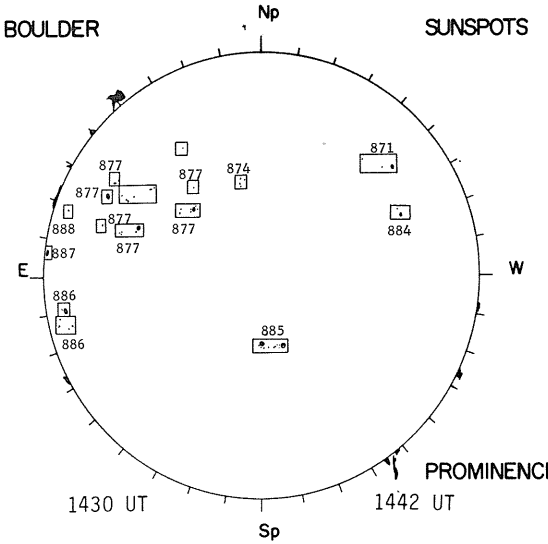
Levels
+ 5
+ + 10
+ + + 20
+ + + + 40
+ + + + + 80

BOULDER



1442 UT

Hα BOULDER

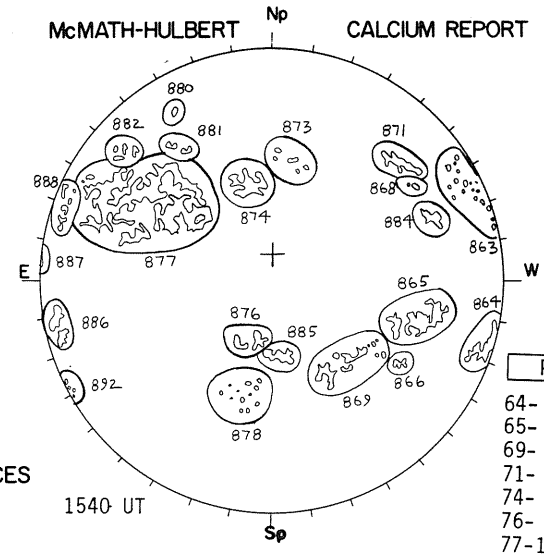


1430 UT 1442 UT

SUNSPOTS

PROMINENCES

McMATH-HULBERT



1540 UT

CALCIUM REPORT

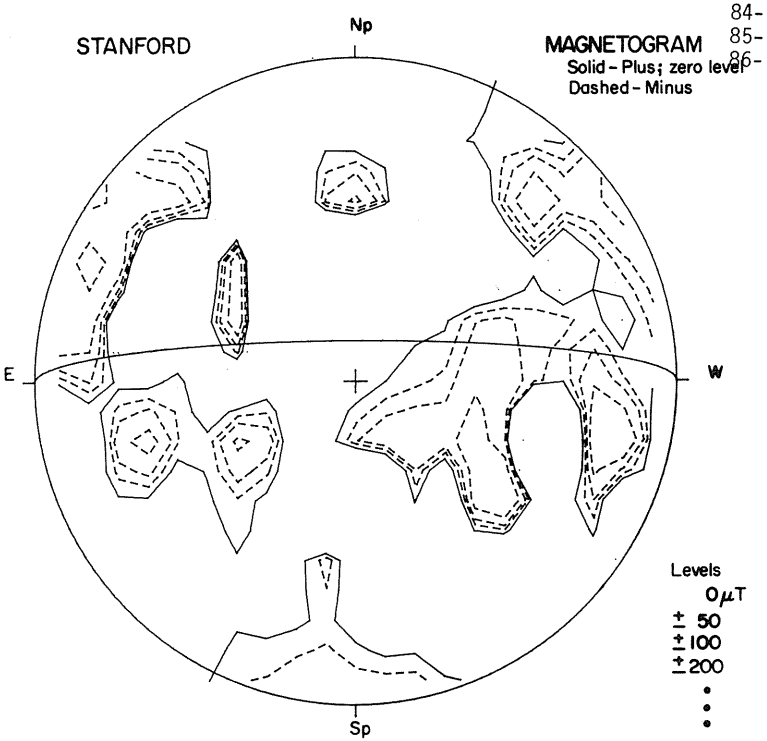
POOR	M
64-	3500-2.5
65-	3100-3.0
69-	1500-2.5
71-	1100-3.0
74-	1500-3.0
76-	0700-2.5
77-	10500-3.0
84-	0900-3.0
85-	0700-3.0
86-	2400-2.5

STANFORD

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



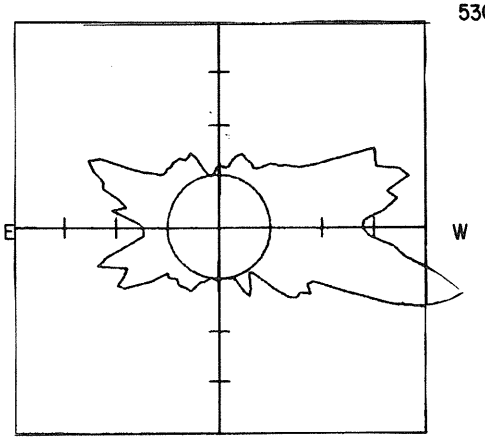
0029 UT - March 15, 1979

MARCH 15, 1979 (P =-24.37, B_o =-7.17, L_o = 201.38)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å



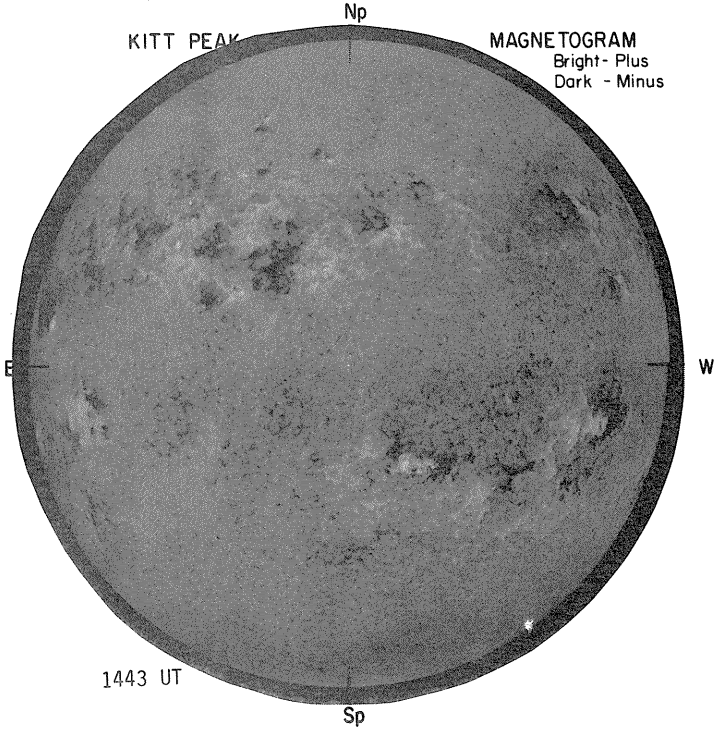
1558 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus



1443 UT

Sp

MT. WILSON

Np

MAGNETOGRAM
Solid - Plus
Dotted - Minus

DELTAY =
DELTAX =

E

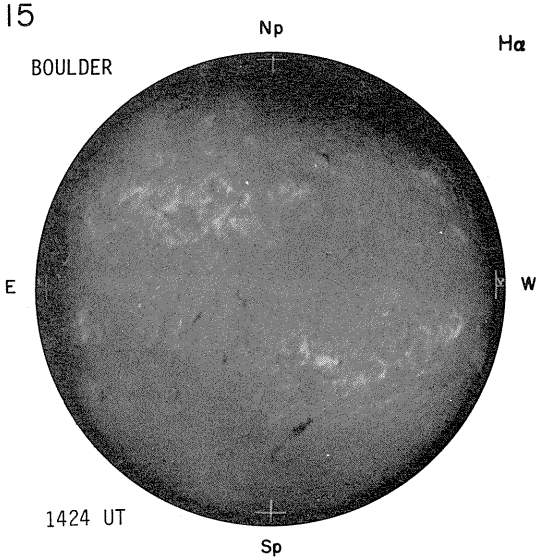
NO DATA

W

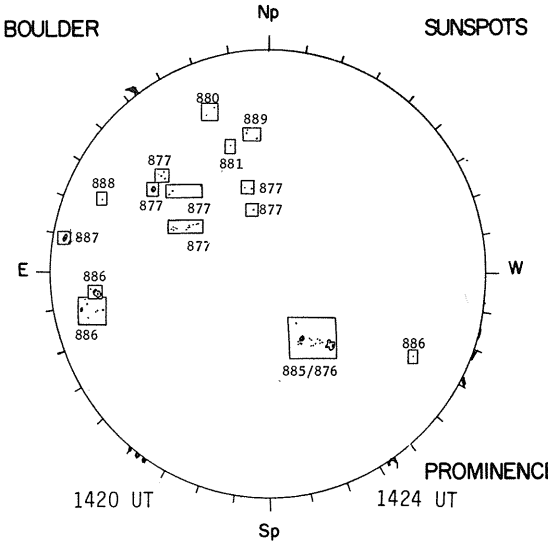
Levels
± 5
± 10
± 20
± 40
± 80

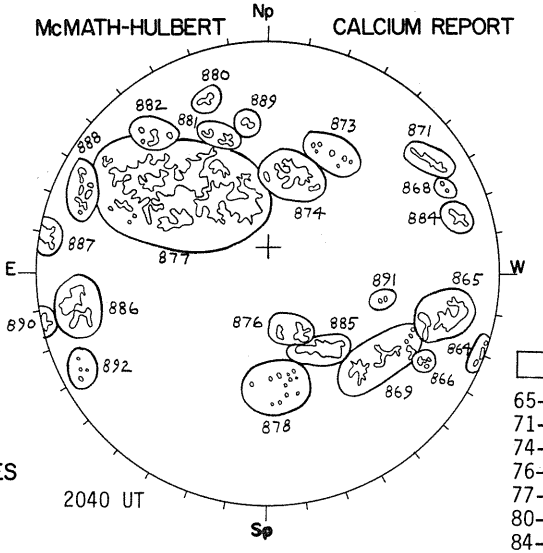
Sp

15

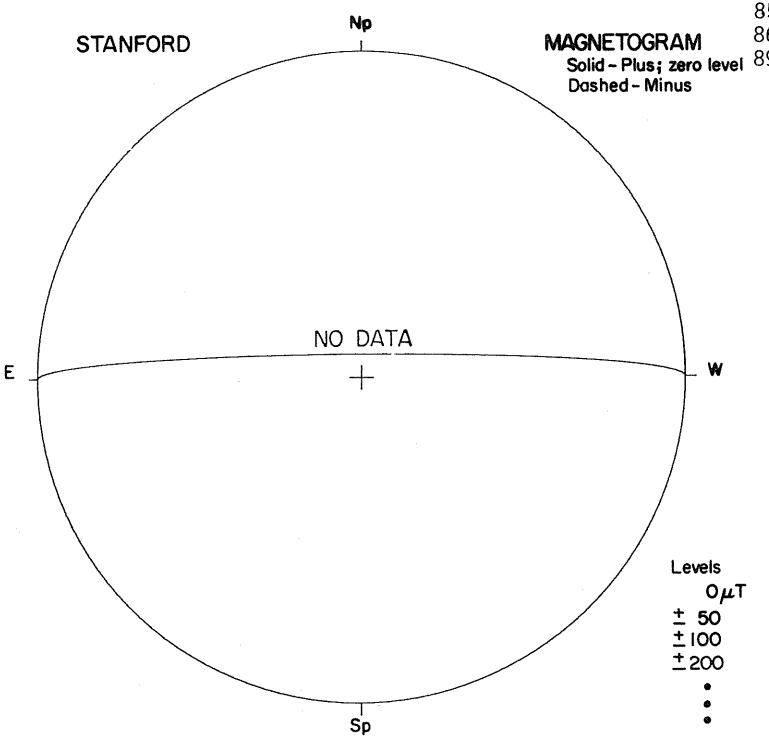


Hα





GOOD	M
65- 3100-3.0	
71- 1000-3.0	
74- 1500-3.0	
76- 0700-2.5	
77-10800-3.0	
80- 0300-3.0	
84- 0700-3.0	
85- 1600-3.0	
86- 2700-2.5	
89- 0400-2.5	

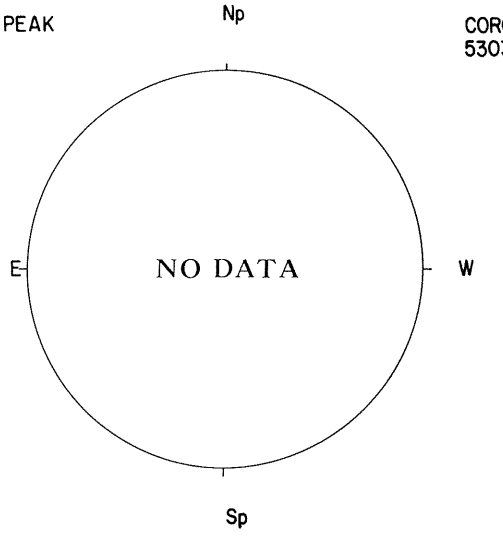


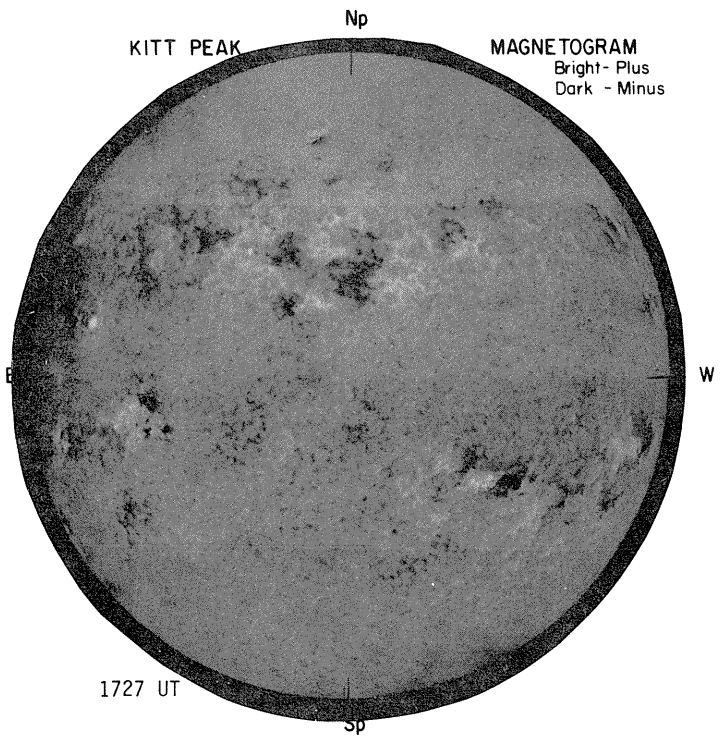
73
Mar 79

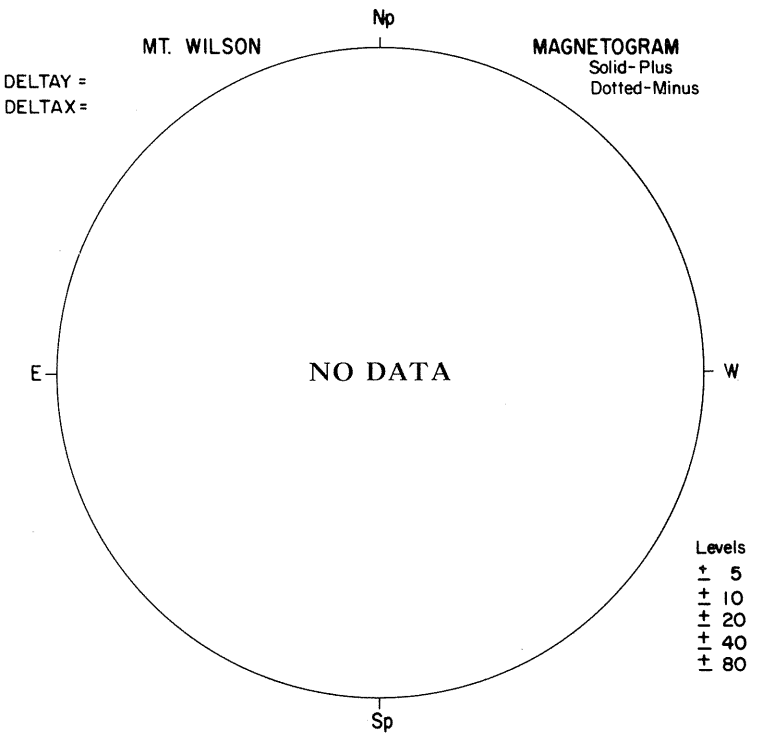
MARCH 16, 1979 (P =-24.54, B_o =-7.15, L_o = 188.20)

SACRAMENTO PEAK

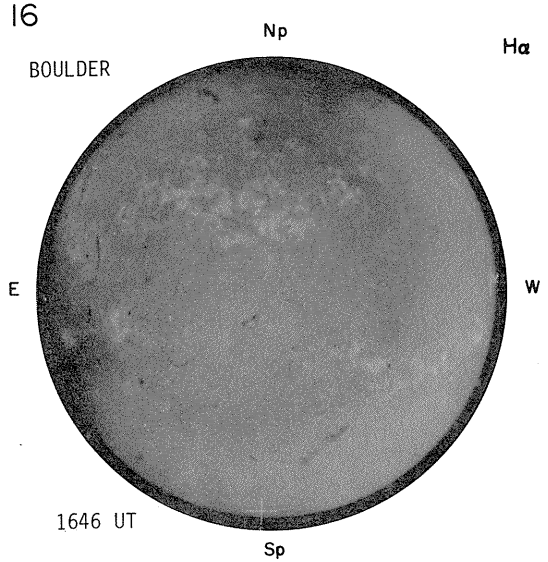
CORONA (1.15 $R_\odot$)
5303 Å



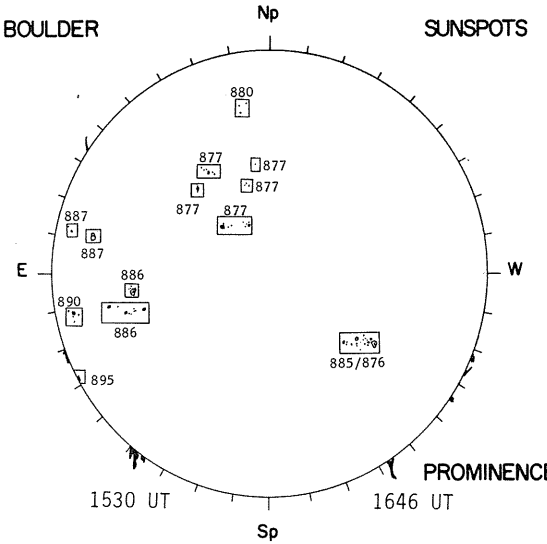




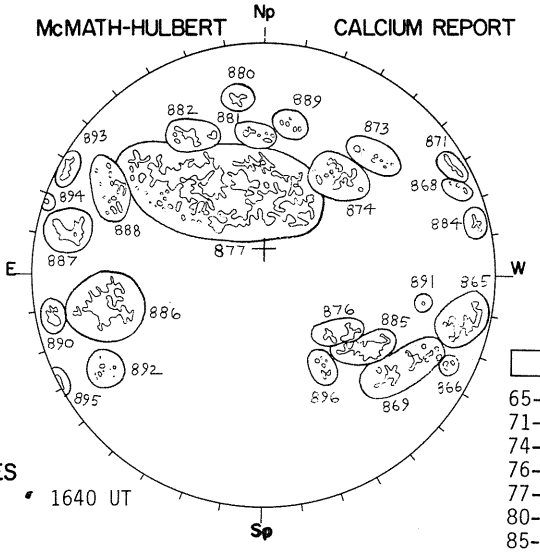
16



Hα



SUNSPOTS



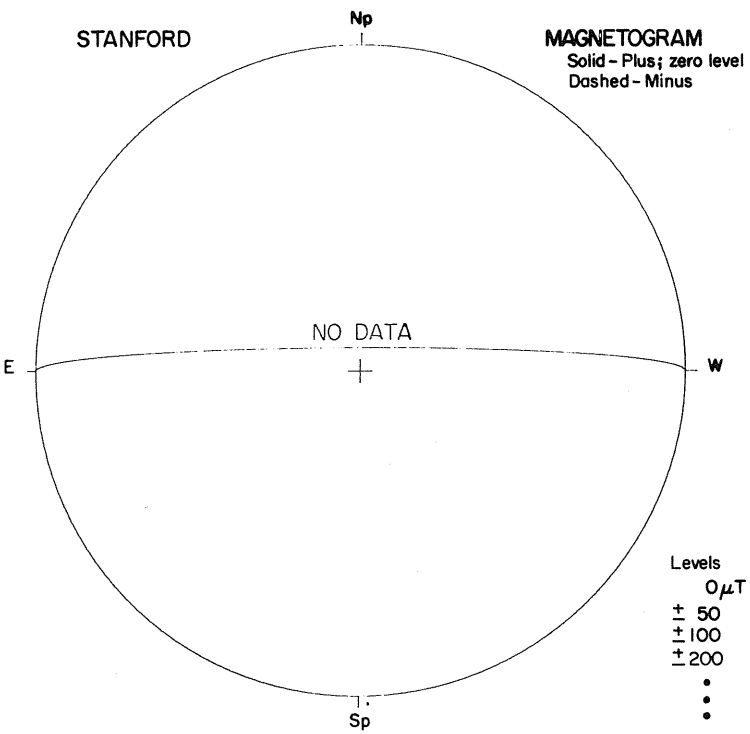
CALCIUM REPORT

FAIR	B

65- 3100-2.5
71- 0600-3.0
74- 1500-3.5
76- 0800-2.5
77-10600-3.0
80- 0300-2.5
85- 1600-3.0
86- 3300-3.5
87- 1600-3.5
90- 1300-3.0

PROMINENCES

STANFORD



MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus

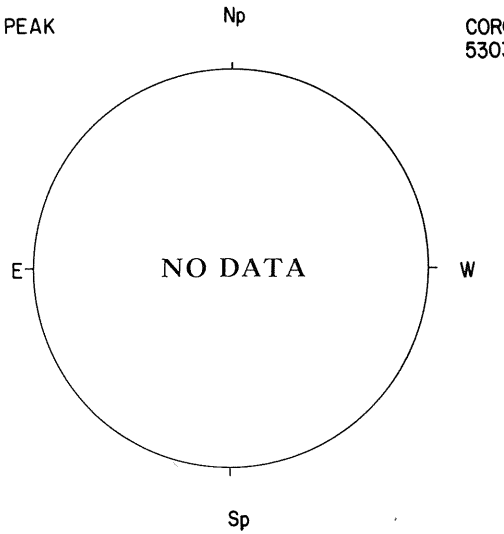
Levels
0μT
± 50
± 100
± 200
• • •

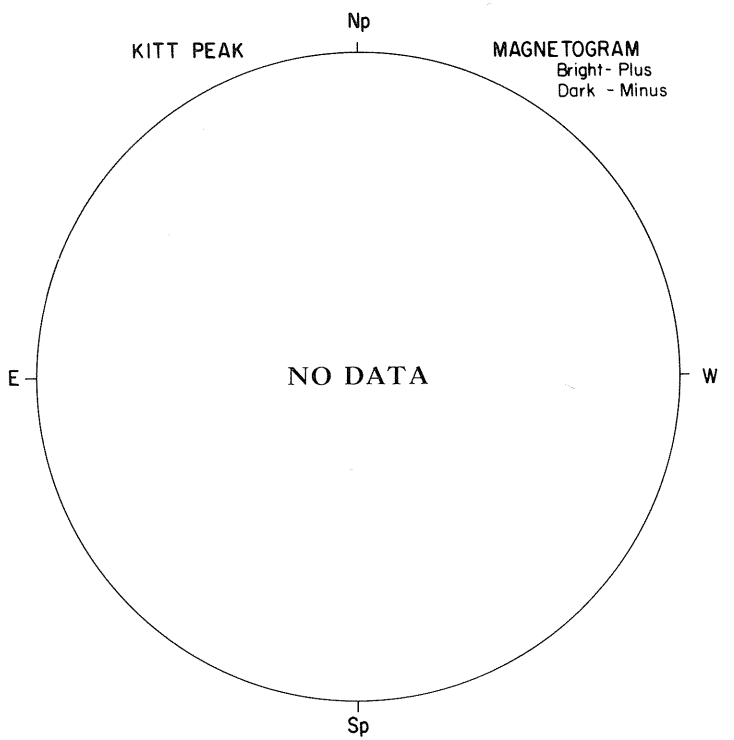
75
Mar 79

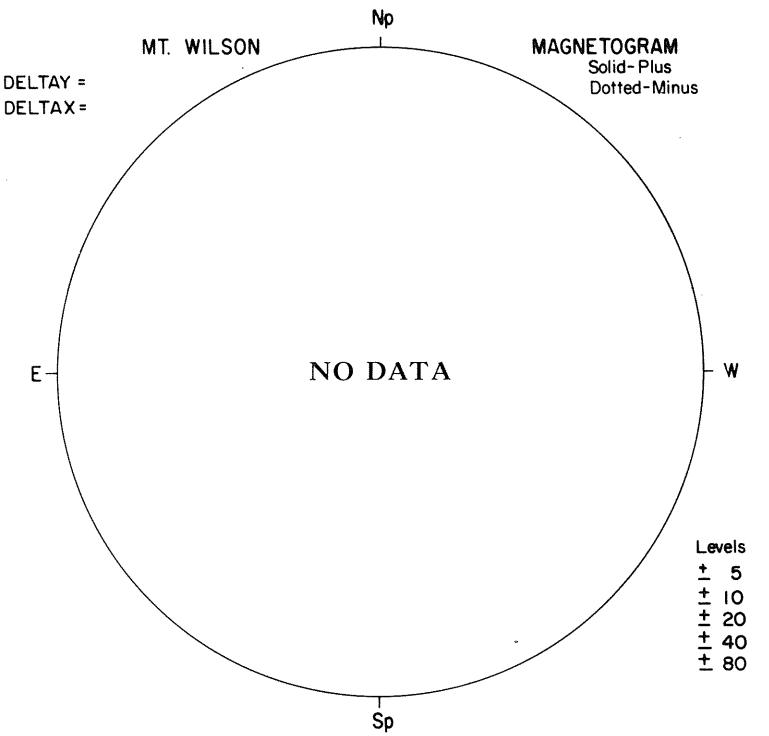
MARCH 17, 1979 (P =-24.69, B_o =-7.13, L_o =175.01)

SACRAMENTO PEAK

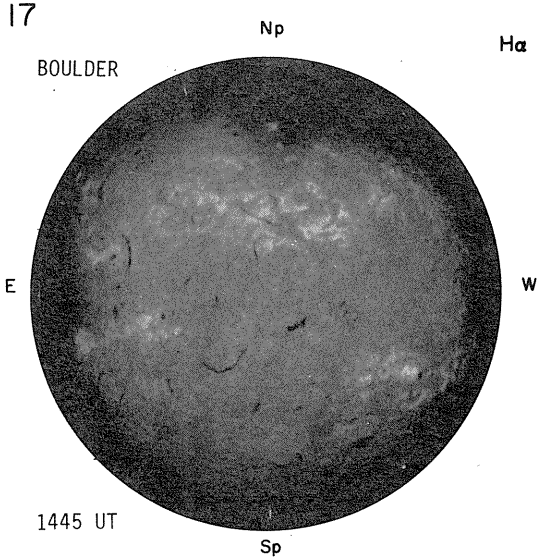
CORONA (1.15 $R_\odot$)
5303 Å



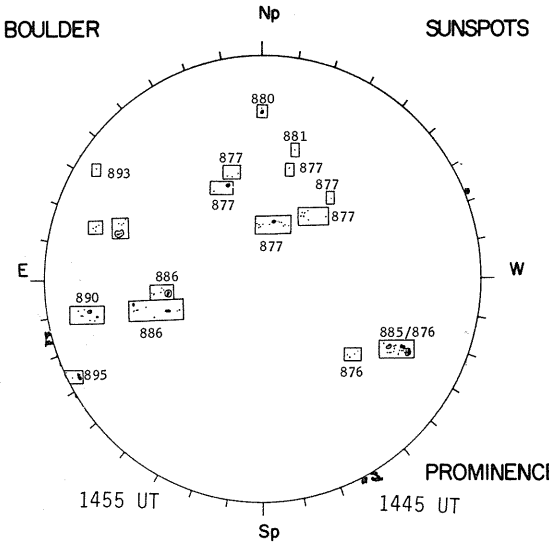




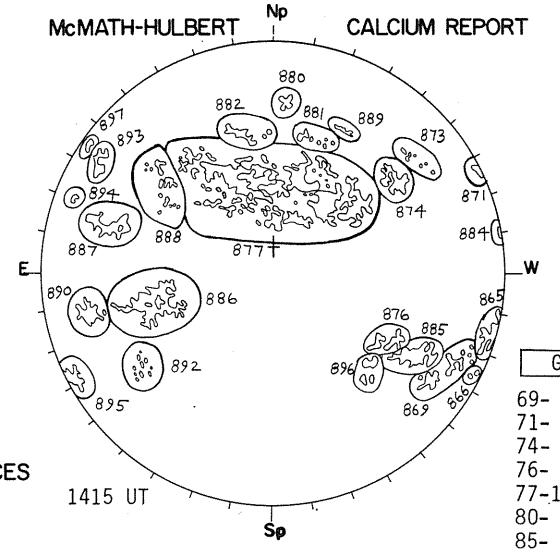
17



Hα BOULDER



SUNSPOTS



McMATH-HULBERT CALCIUM REPORT

GOOD	M

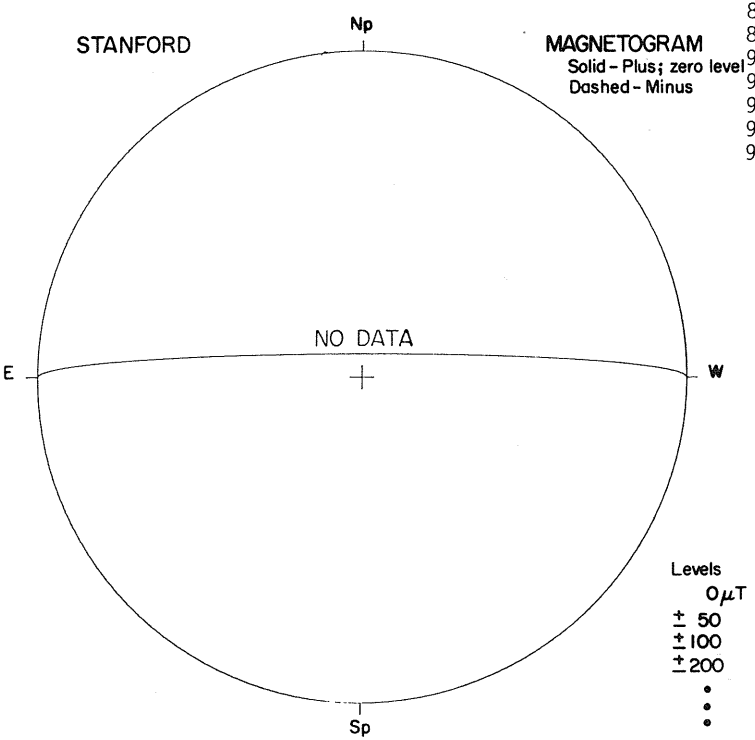
69- 1500-2.5
71- 0600-3.0
74- 1500-2.5
76- 0900-2.5
77-11000-3.0
80- 0400-3.0
85- 2400-3.0
86- 3300-3.0
87- 1600-3.5
90- 1300-3.0
93- 0700-3.0
95- 2700-2.5
96- 0400-2.5
97- 0600-3.0

PROMINENCES

1445 UT

STANFORD

MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus



Levels
0 μT
± 50
± ± 100
± 200
• • •

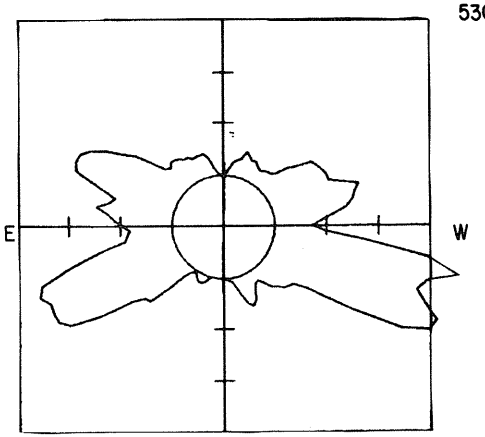
77
Mar 79

MARCH 18, 1979 (P =-24.84, B_0 =-7.11, L_0=161.83)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å



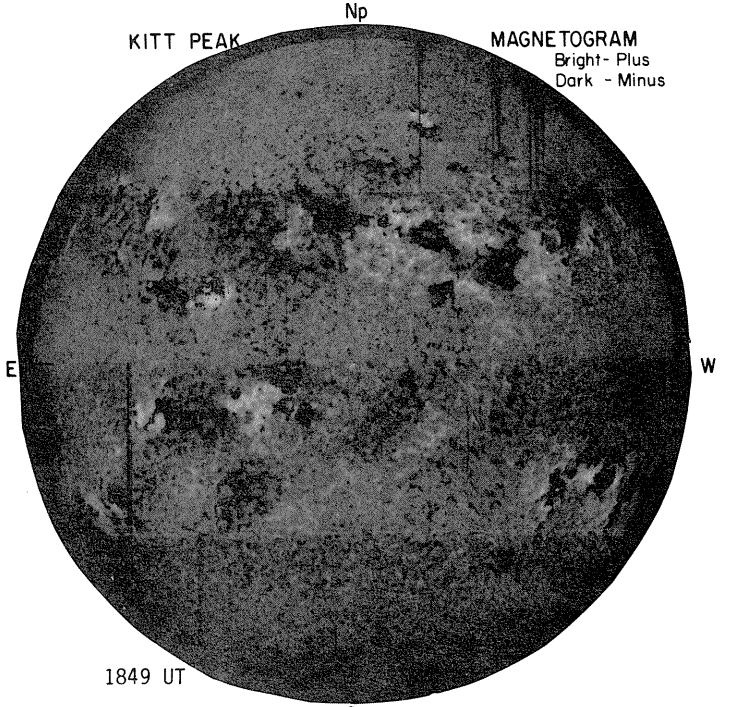
1840 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus



1849 UT

Sp

MT. WILSON

Np

MAGNETOGRAM
Solid - Plus
Dotted - Minus

DELTAY =
DELTAX =

E

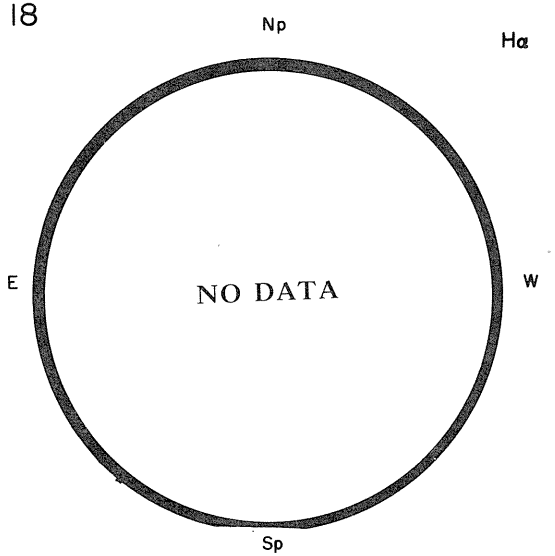
NO DATA

W

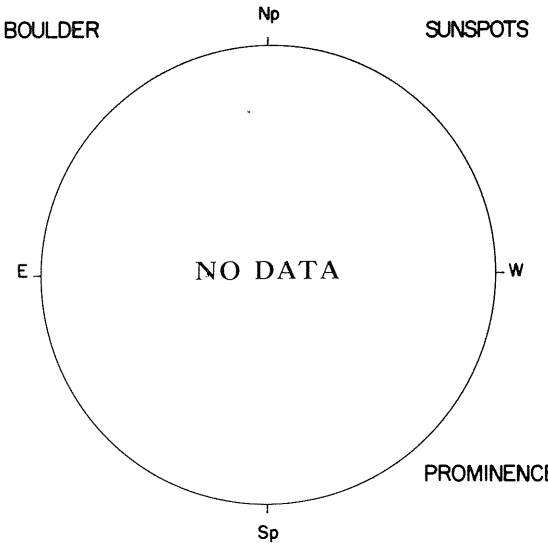
Sp

Levels
± 5
± 10
± 20
± 40
± 80

Hα BOULDER

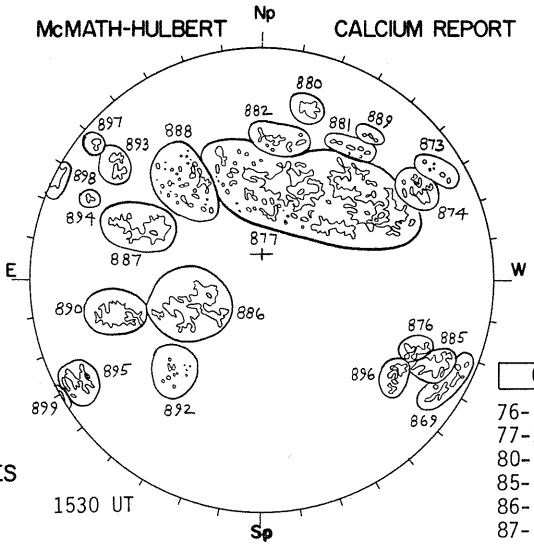


SUNSPOTS



PROMINENCES

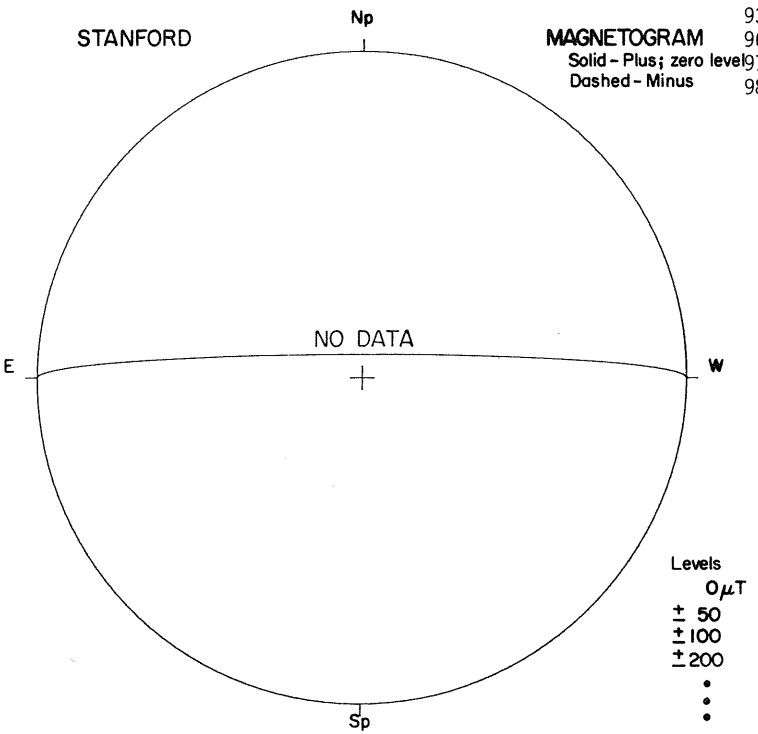
McMATH-HULBERT CALCIUM REPORT



GOOD	M
76-	0900-2.5
77-	11000-3.0
80-	1000-3.5
85-	2200-3.0
86-	3500-3.0
87-	1900-3.5
90-	2000-2.5
93-	0900-3.0
96-	0800-2.5
97-	0400-2.5
98-	1400-2.5

STANFORD

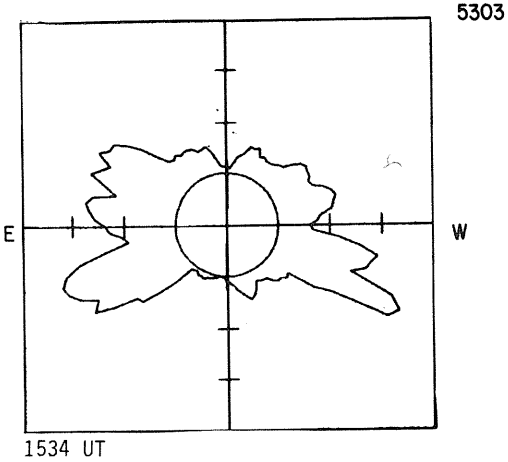
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus



MARCH 19, 1979 (P =-24.98, B_o =- 7.08, L_o =148.65)

SACRAMENTO PEAK

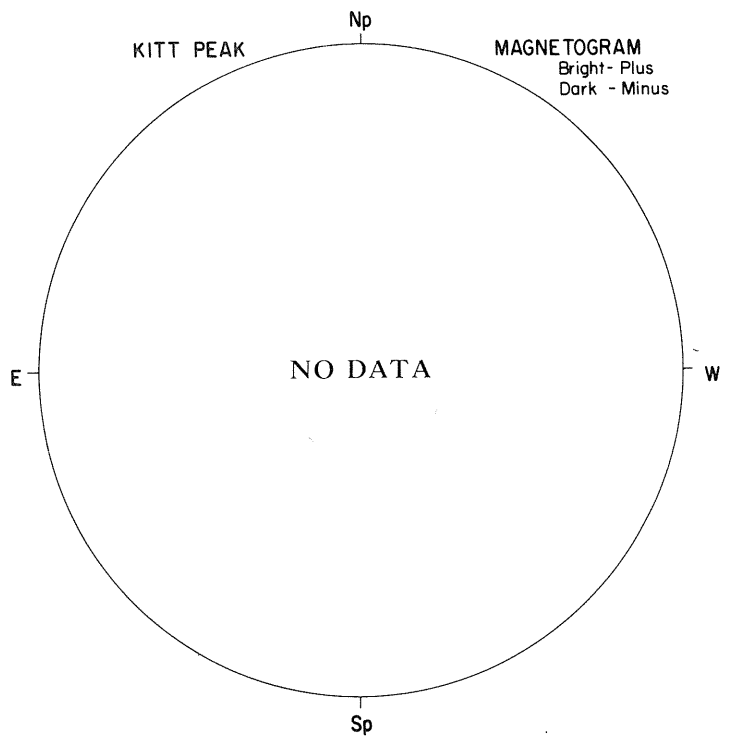
CORONA (1.15 $R_\odot$)
5303 Å



1534 UT

KITT PEAK

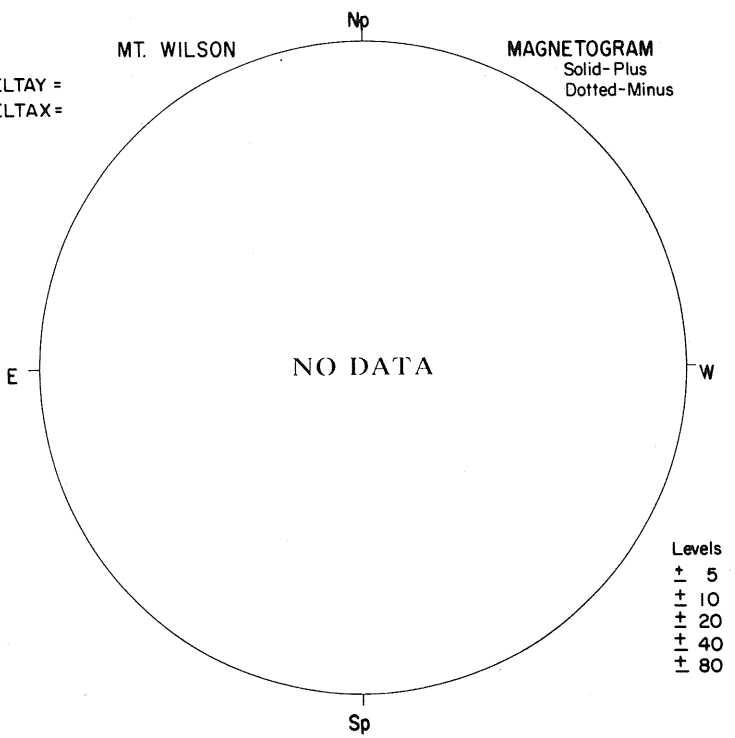
MAGNETOGRAM
Bright - Plus
Dark - Minus



MT. WILSON

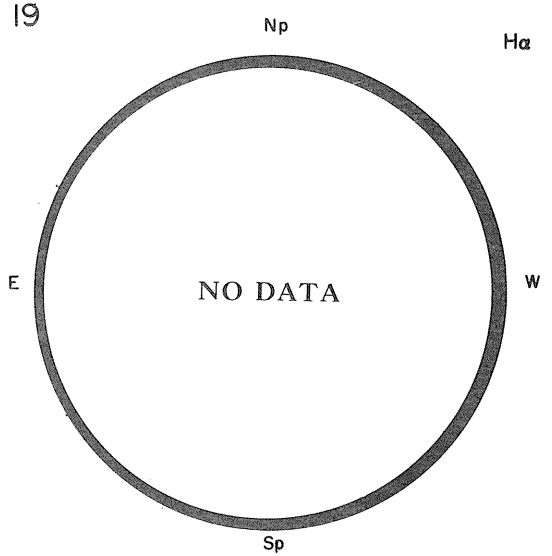
DELTAY =
DELTAX =

MAGNETOGRAM
Solid - Plus
Dotted - Minus

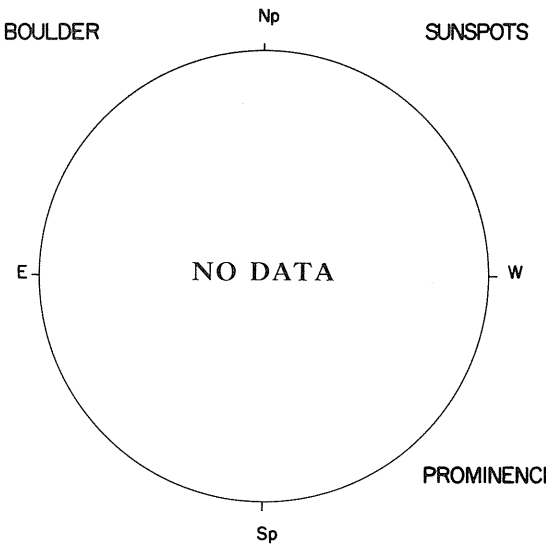


Levels
± 5
± 10
± 20
± 40
± 80

Hα

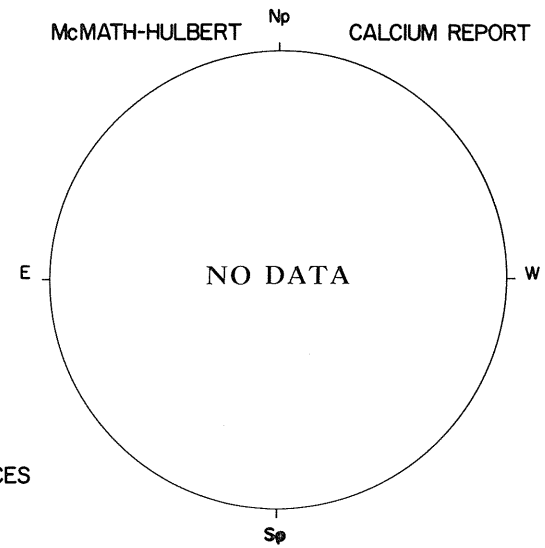


BOULDER



SUNSPOTS

McMATH-HULBERT

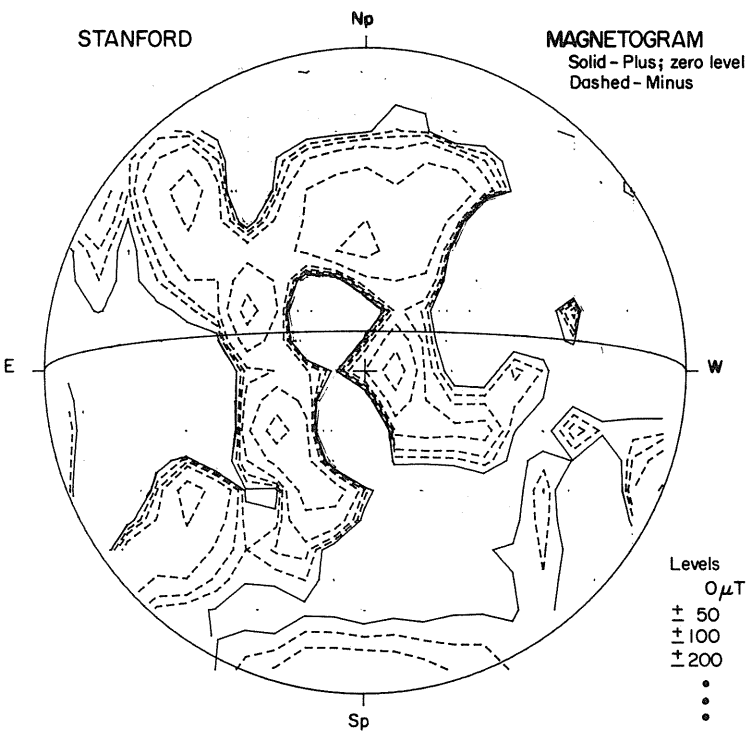


CALCIUM REPORT

PROMINENCES

STANFORD

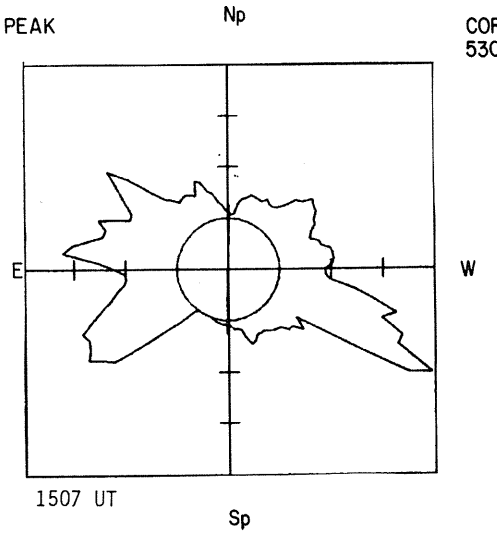
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus



2318 UT

MARCH 20, 1979 (P =-25.11, B_o =-7.05, L_o =135.47)

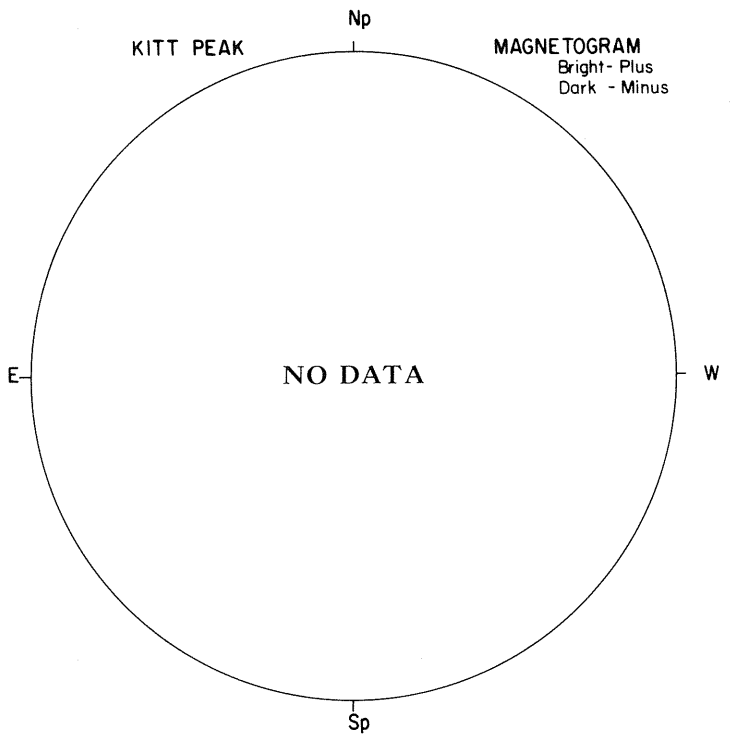
SACRAMENTO PEAK



CORONA (1.15 $R_\odot$)
5303 Å

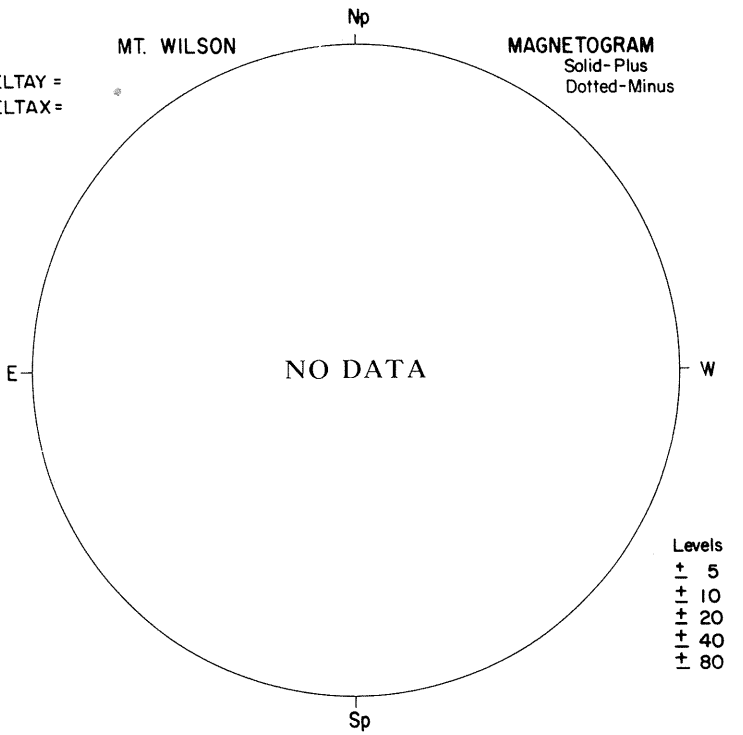
1507 UT

KITT PEAK



MAGNETOGRAM
Bright - Plus
Dark - Minus

MT. WILSON

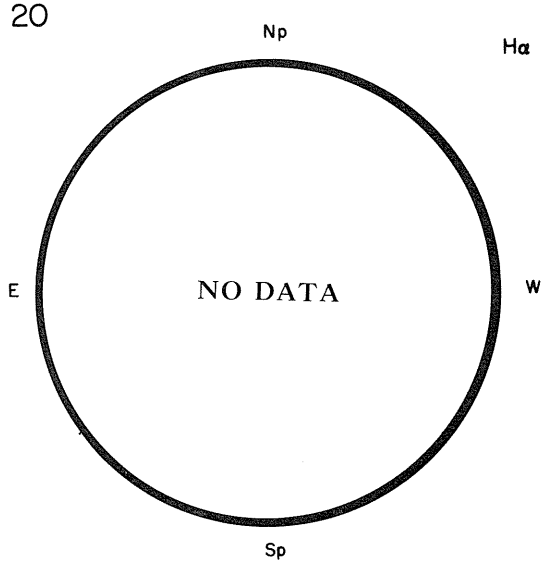


DELTAY =
DELTAX =

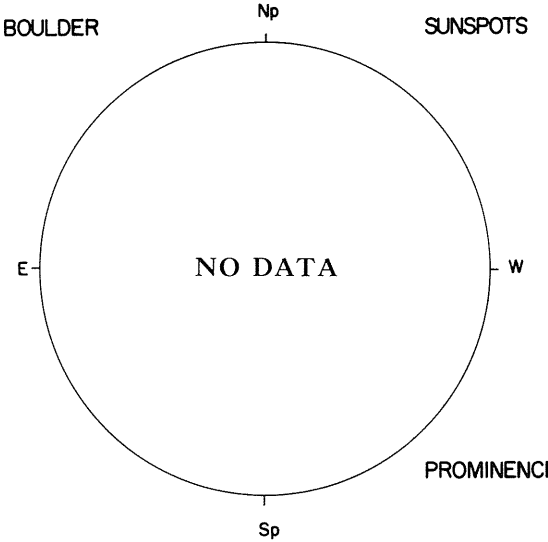
MAGNETOGRAM
Solid - Plus
Dotted - Minus

Levels
± 5
± 10
± 20
± 40
± 80

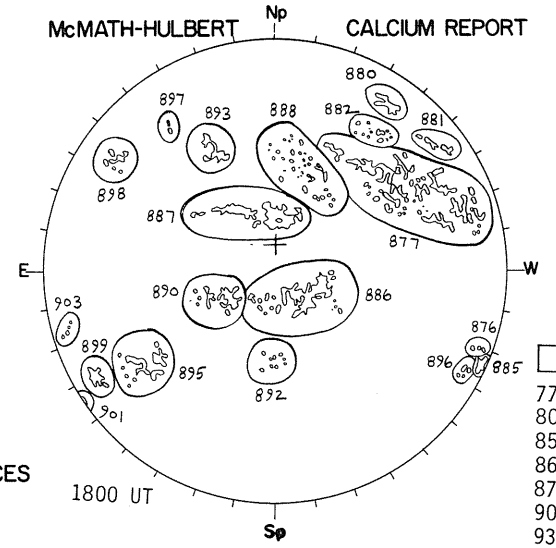
Hα BOULDER



SUNSPOTS



McMATH-HULBERT CALCIUM REPORT



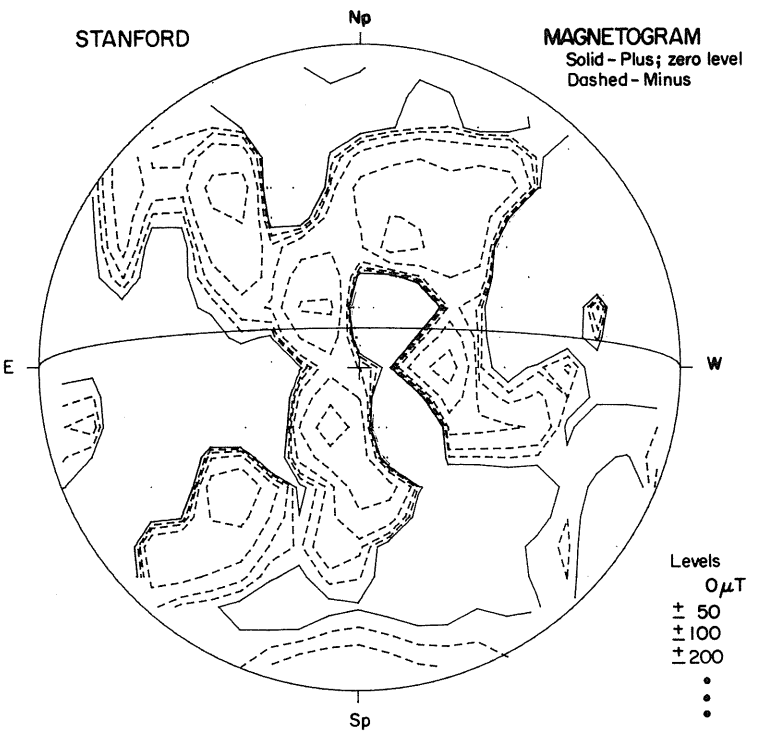
1800 UT

FAIR	M
77- 9500-3.0	
80- 1000-3.5	
85- 1700-2.5	
86- 2700-3.0	
87- 2500-3.5	
90- 1500-2.5	
93- 1000-2.5	
98- 1000-2.5	
99- 1300-3.0	

PROMINENCES

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus

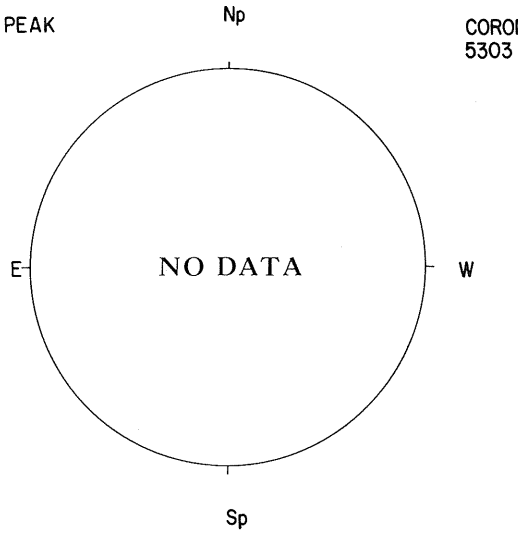


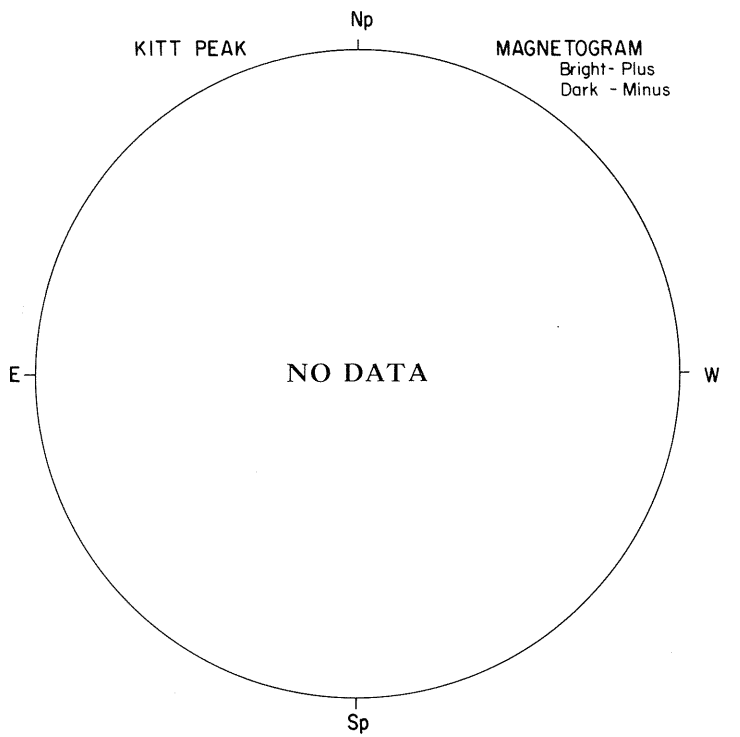
1950 UT

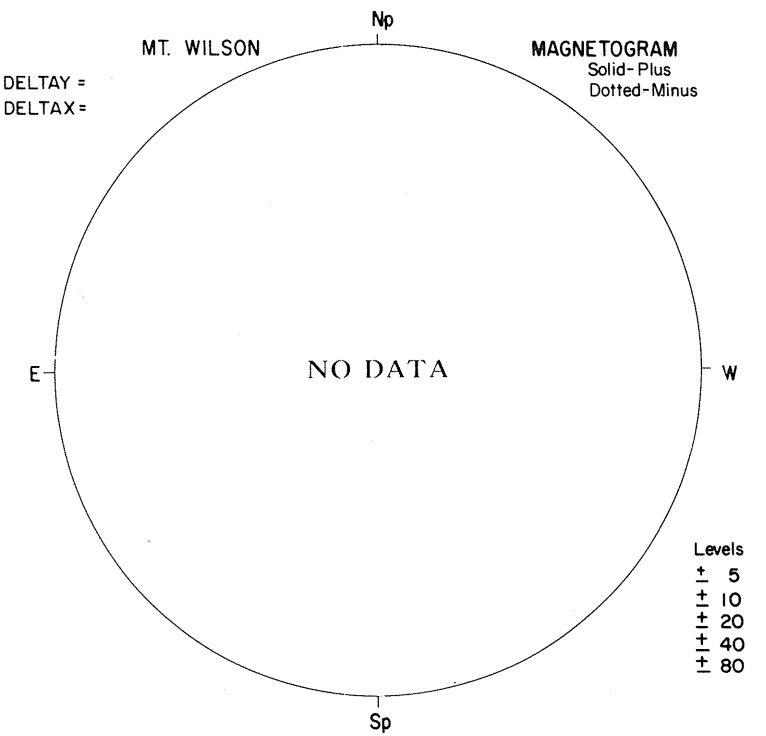
MARCH 21, 1979 (P =-25.24, B_0 =-7.02, L_0 = 122.28)

SACRAMENTO PEAK

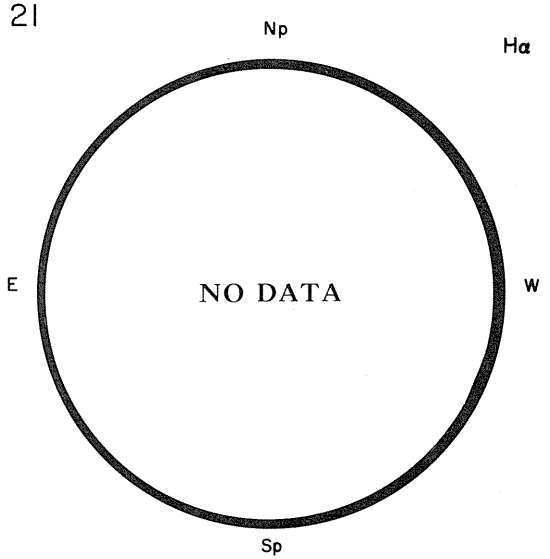
CORONA (1.15 $R_\odot$)
5303 Å



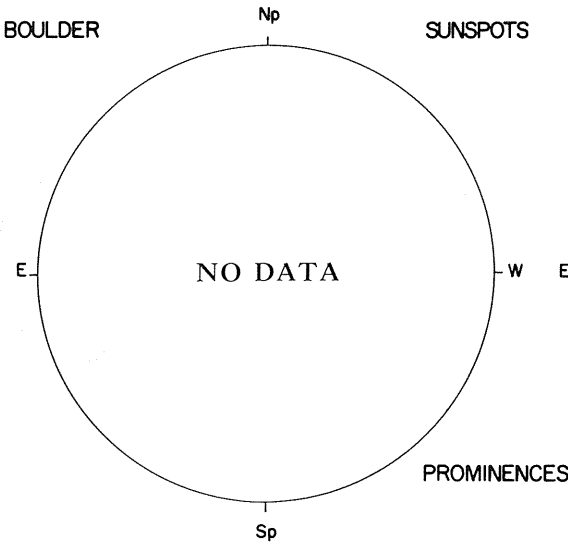




Hα BOULDER

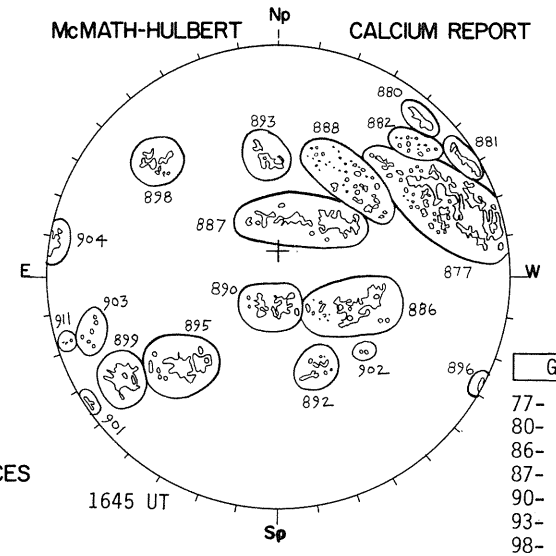


SUNSPOTS



PROMINENCES

McMATH-HULBERT CALCIUM REPORT

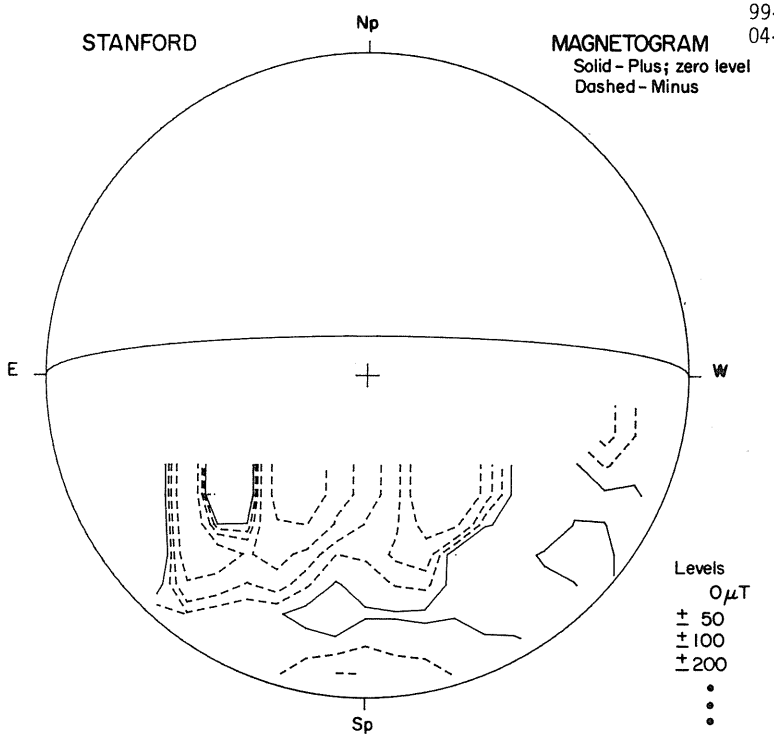


1645 UT

GOOD	M
77- 9500-3.0	
80- 1300-3.0	
86- 2600-3.0	
87- 2400-3.5	
90- 1200-2.5	
93- 0900-2.5	
98- 1200-2.5	
99- 1900-2.5	
04- 2600-3.0	

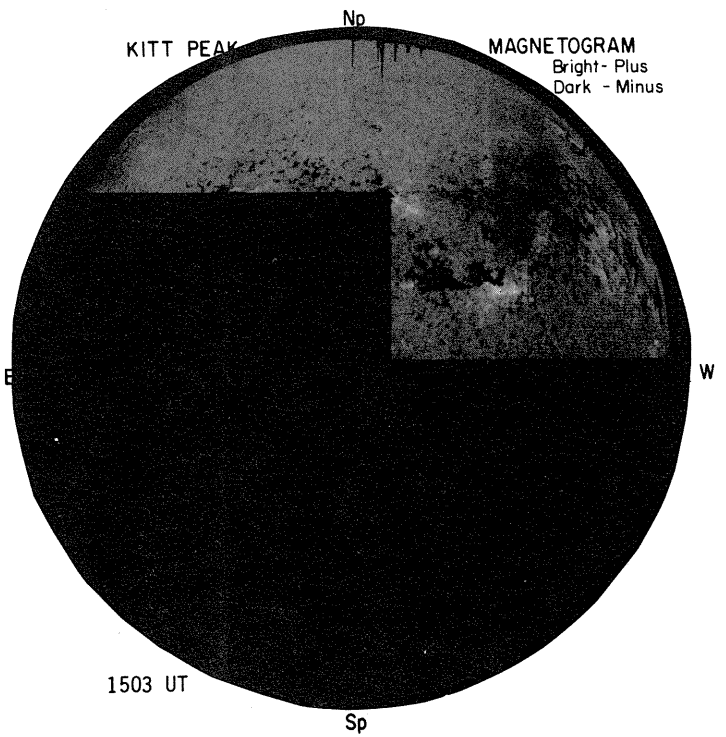
STANFORD MAGNETOGRAM

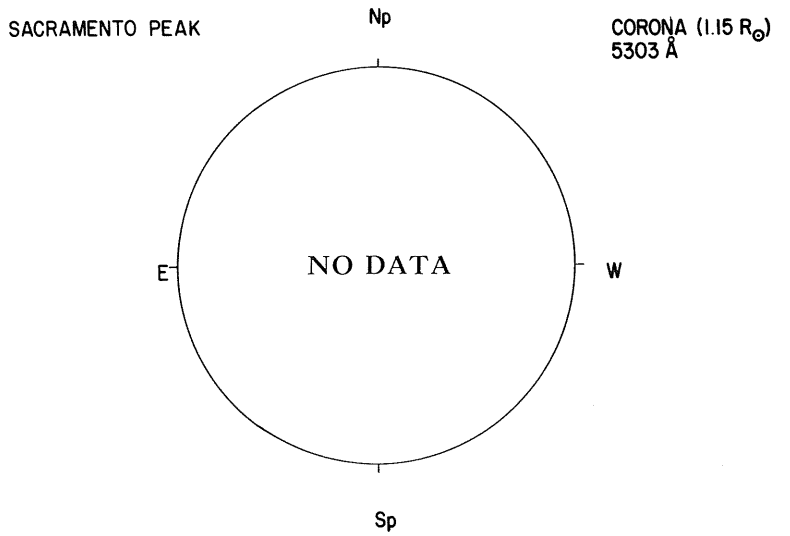
Solid - Plus; zero level
Dashed - Minus

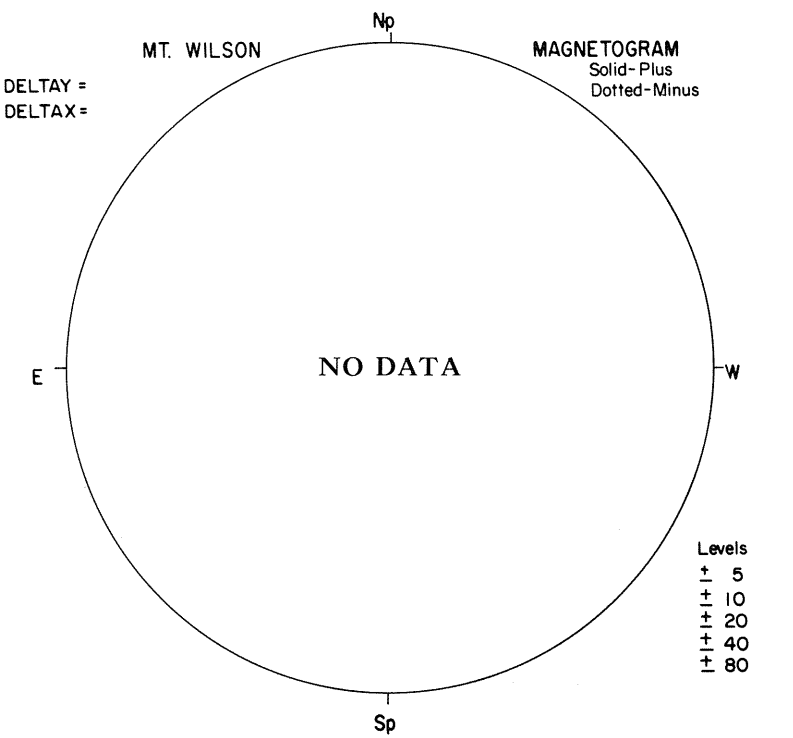


2351 UT

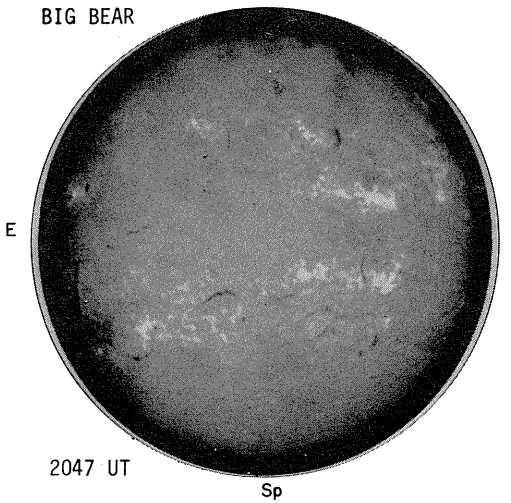
MARCH 22, 1979 (P =-25.36, B_o =-6.99, L_o =109.10)



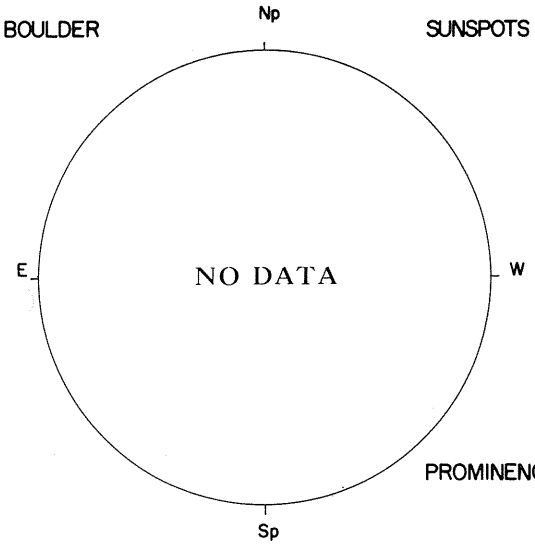




BIG BEAR

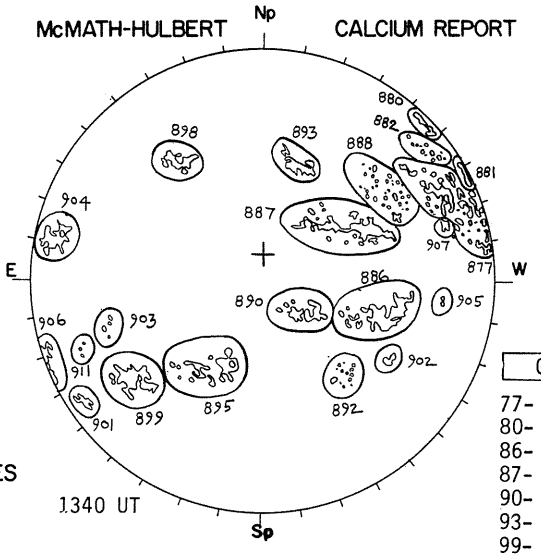


Hα BOULDER



SUNSPOTS

McMATH-HULBERT

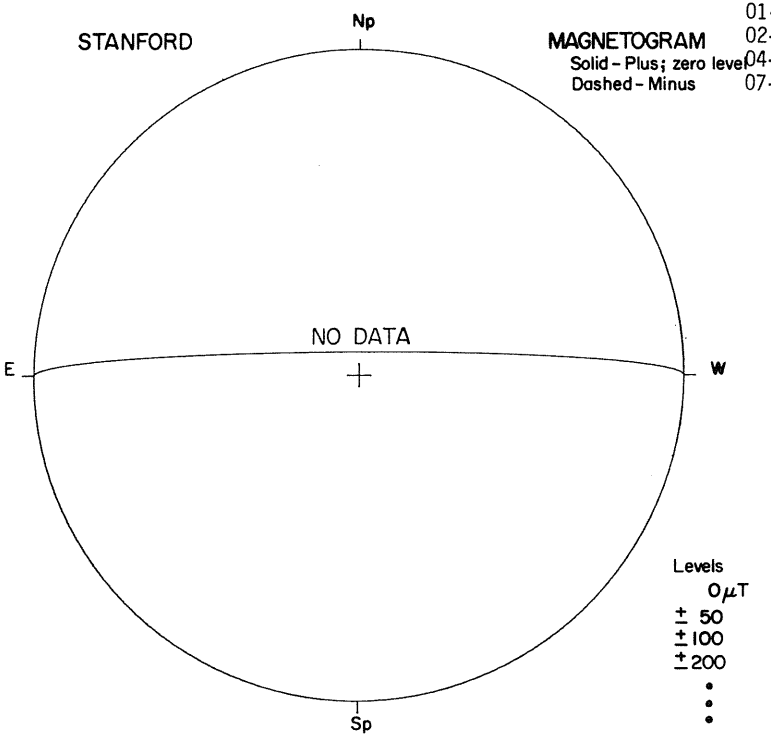


CALCIUM REPORT

GOOD	M
77- 8000-2.5	
80- 0900-3.0	
86- 2600-3.0	
87- 2500-4.0	
90- 1000-2.5	
93- 1100-3.0	
99- 2400-3.0	
01- 0900-2.5	
02- 0400-2.5	
04- 2100-3.0	
07- 0400-3.0	

PROMINENCES

STANFORD



MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus

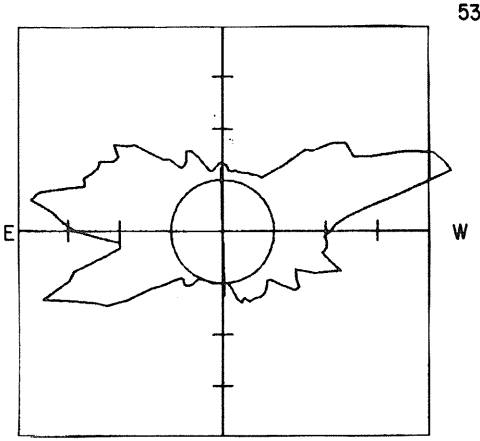
Levels
0μT
± 50
± 100
± 200
• • •

MARCH 23, 1979 (P =-25.47, B_o =-6.96, L_o = 95.91)

SACRAMENTO PEAK

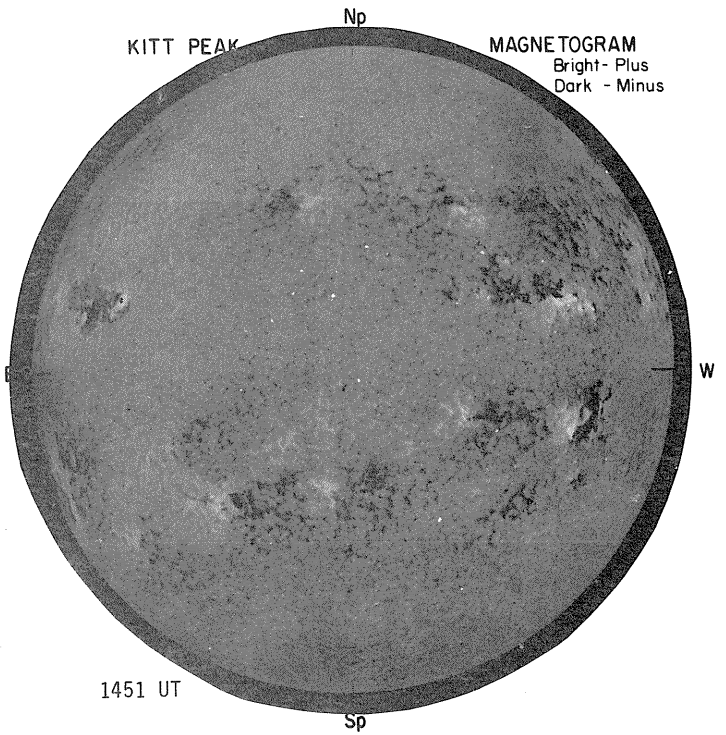
Np

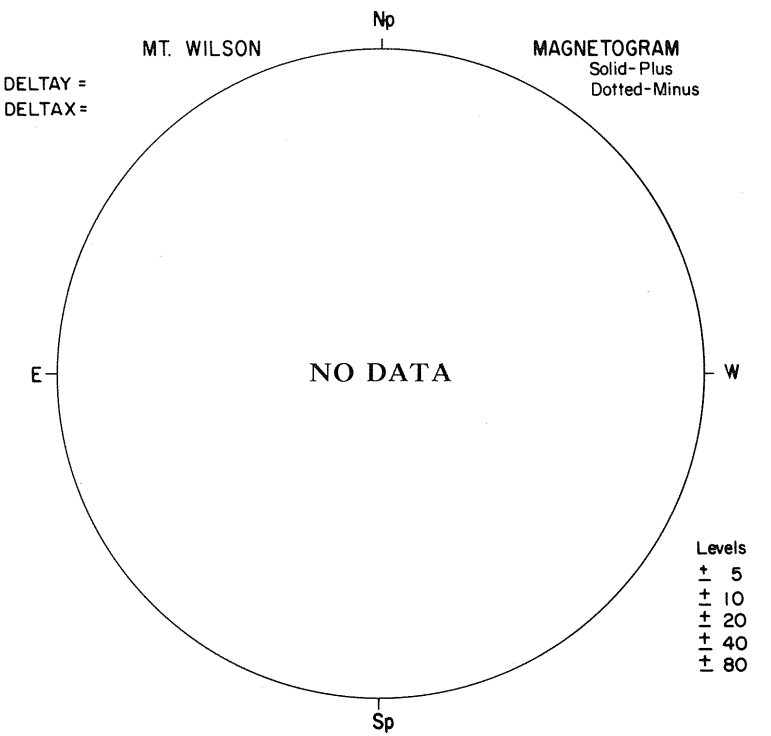
CORONA (1.15 $R_\odot$)
5303 Å

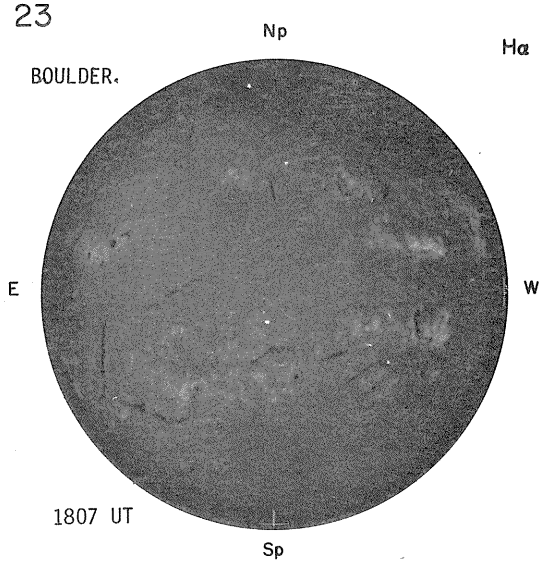


1556 UT

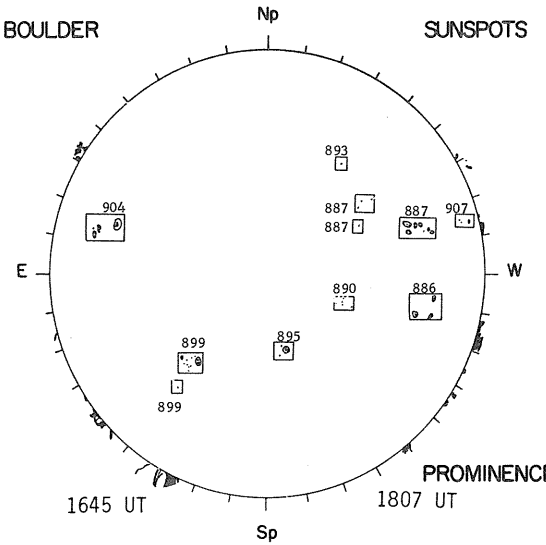
Sp







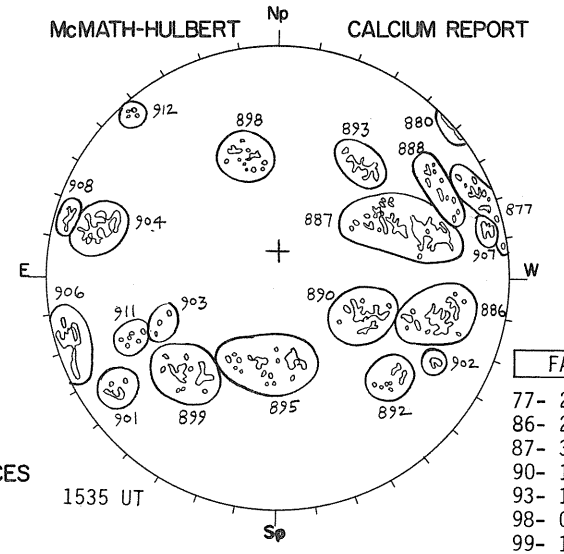
Hα BOULDER SUNSPOTS



1645 UT 1807 UT

PROMINENCES

McMATH-HULBERT CALCIUM REPORT

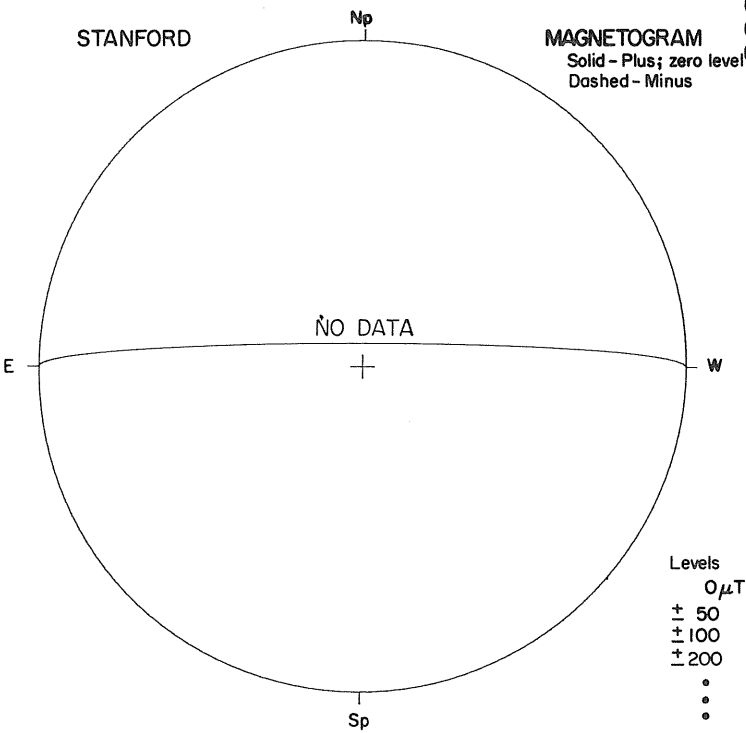


1535 UT

FAIR	S
77-	2200-2.5
86-	2600-3.0
87-	3500-3.5
90-	1300-2.5
93-	1100-3.0
98-	0900-2.5
99-	1700-3.0
01-	0600-2.5
04-	2600-3.0
06-	3400-2.5

STANFORD

MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus

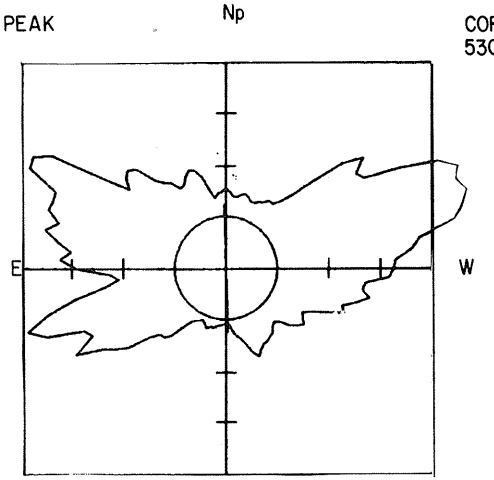


Levels
0μT
± 50
± 100
± 200

MARCH 24, 1979 (P =-25.58, B_o =-6.92, L_o =82.73)

SACRAMENTO PEAK

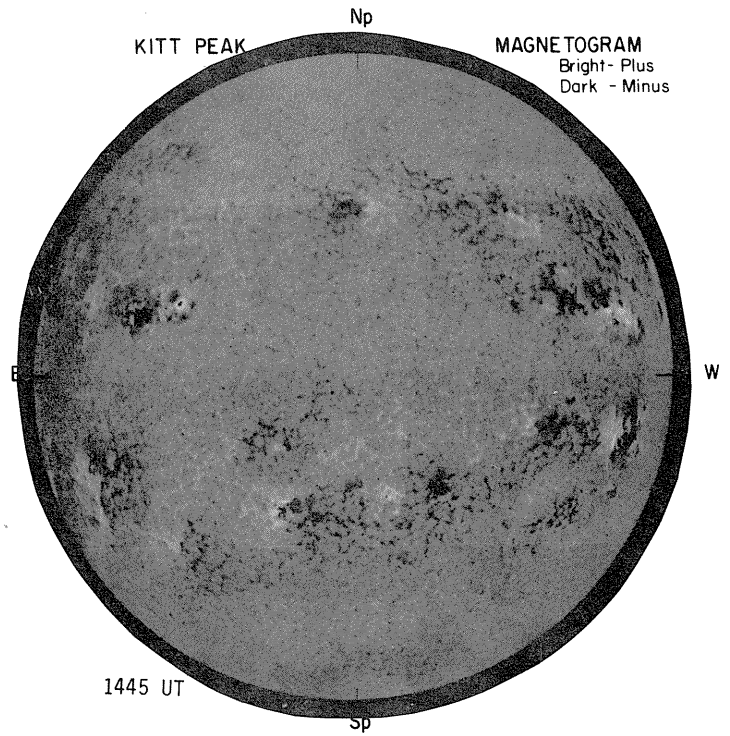
CORONA (1.15 $R_\odot$)
5303 Å



1556 UT

KITT PEAK

MAGNETOGRAM
Bright- Plus
Dark - Minus

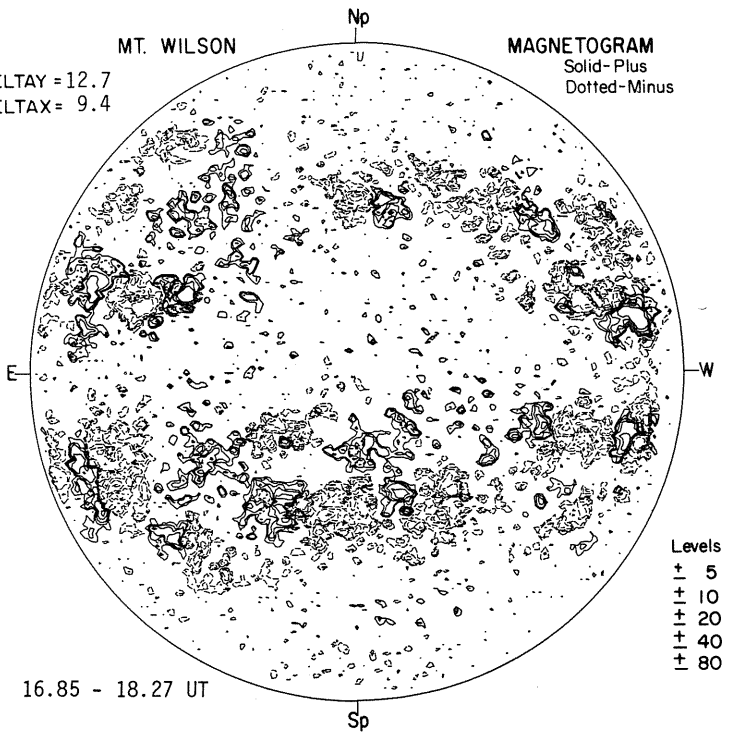


1445 UT

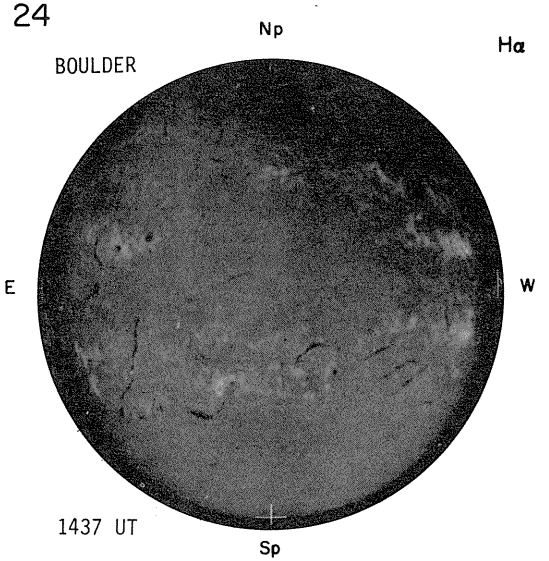
MT. WILSON

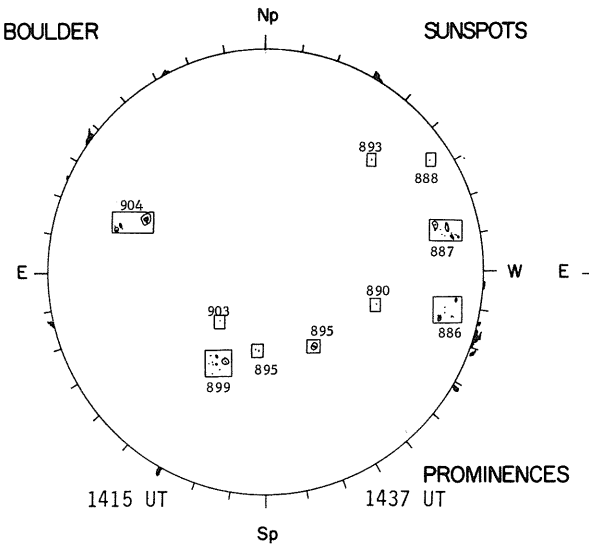
DELTAY = 12.7
DELTAX = 9.4

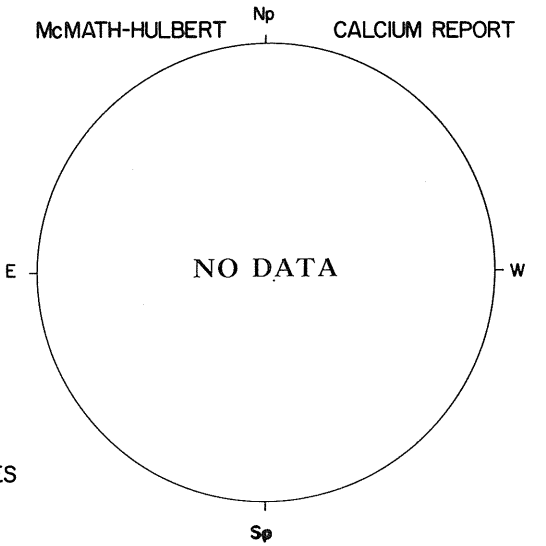
MAGNETOGRAM
Solid- Plus
Dotted-Minus

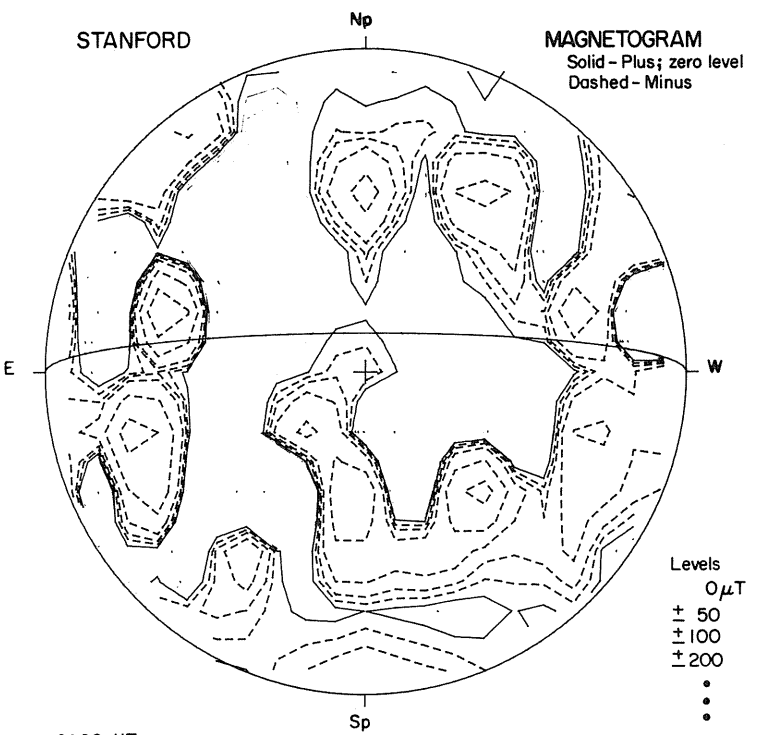


16.85 - 18.27 UT


Np
BOULDER
E
W
1437 UT
Sp

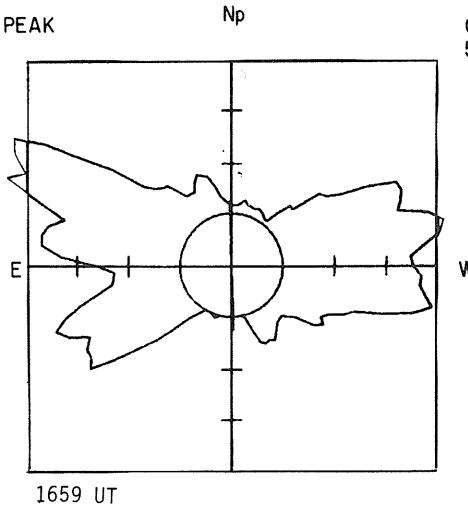

Hα BOULDER
Np
SUNSPOTS
893
888
904
887
890
903
886
895
895
899
E
W
PROMINENCES
1415 UT
1437 UT
Sp

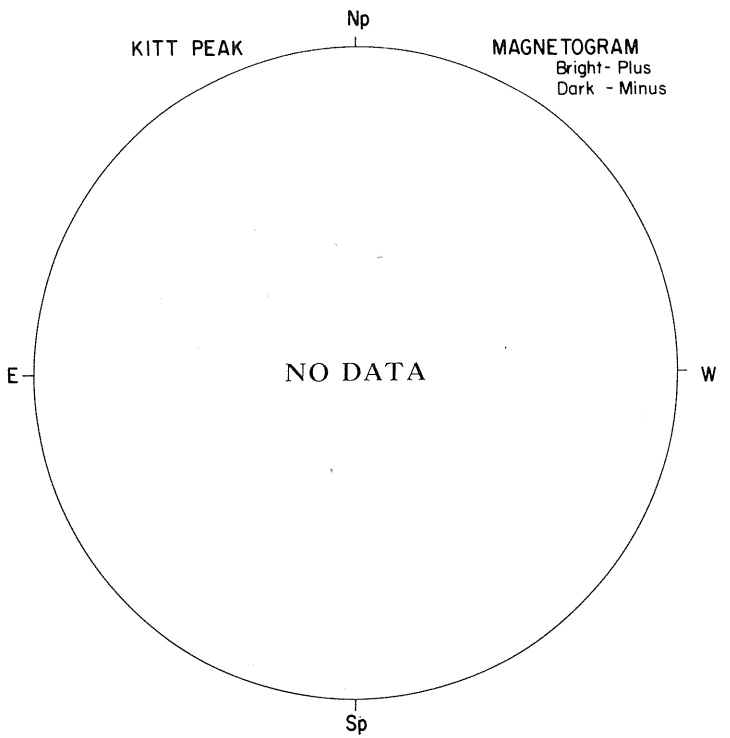

McMATH-HULBERT
Np
CALCIUM REPORT
NO DATA
E
W
Sp

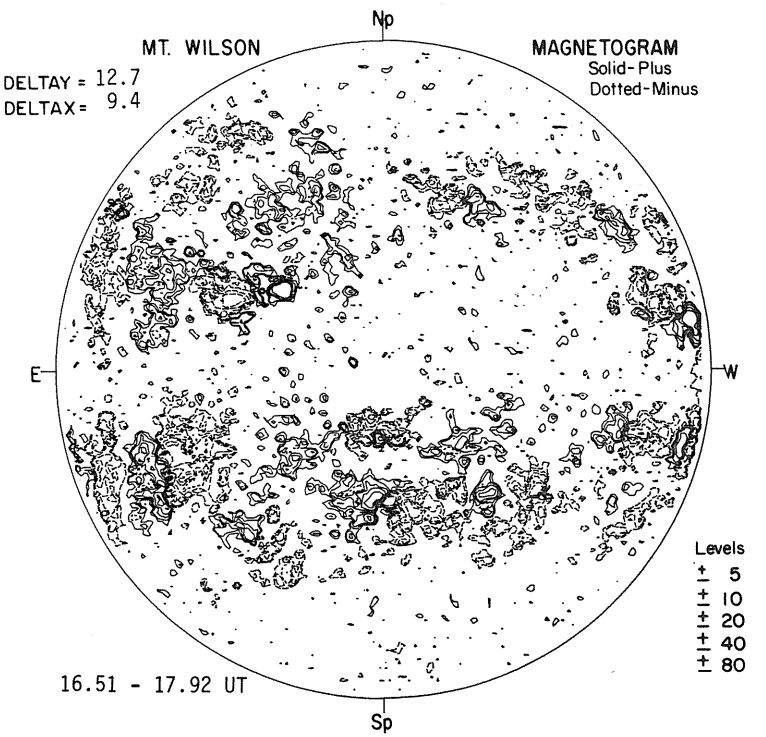

STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Levels
0 μT
± 50
± 100
± 200
Sp
2102 UT

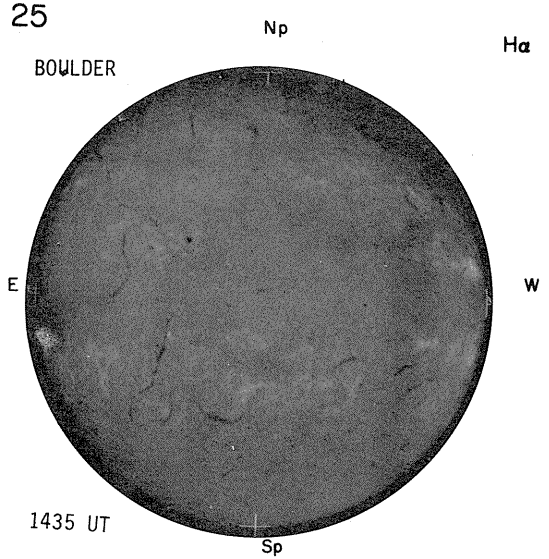
MARCH 25, 1979 (P =-25.68, B_o =-6.88, L_o = 69.54)

SACRAMENTO PEAK

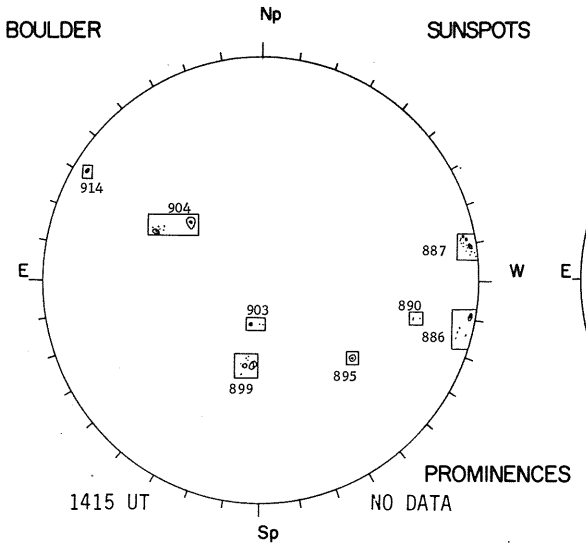








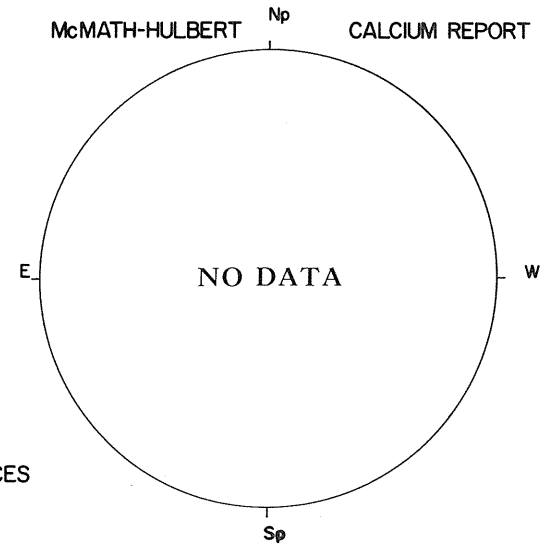
Hα

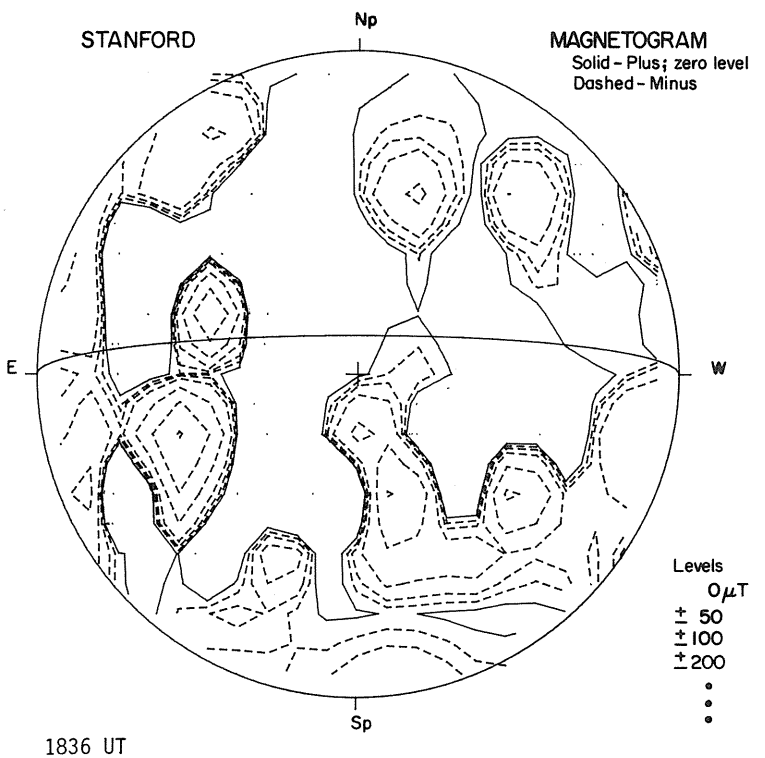


SUNSPOTS

PROMINENCES

NO DATA

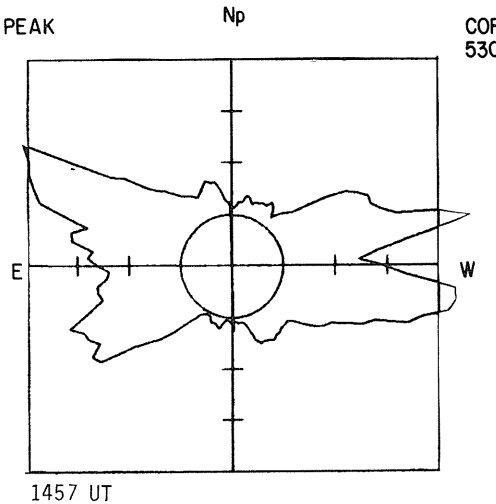


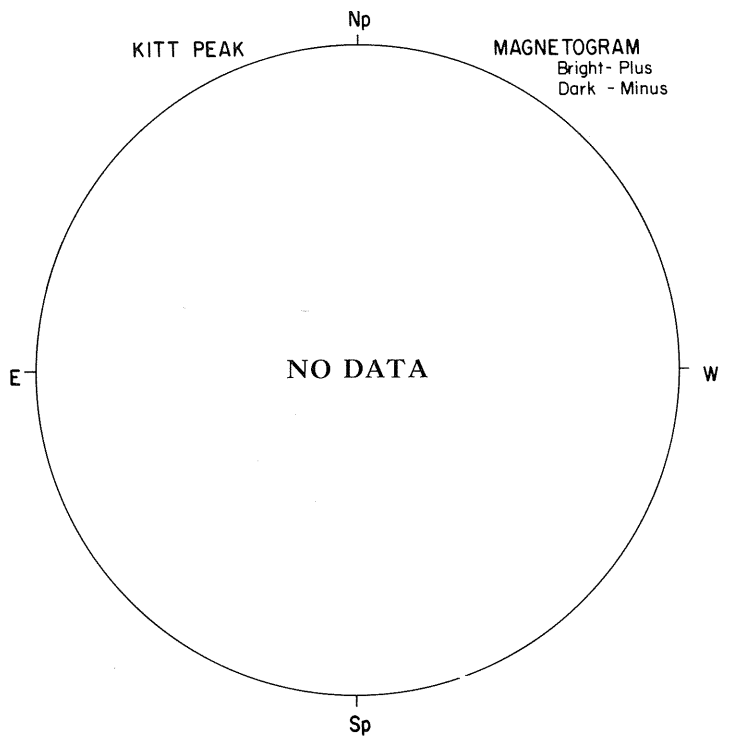


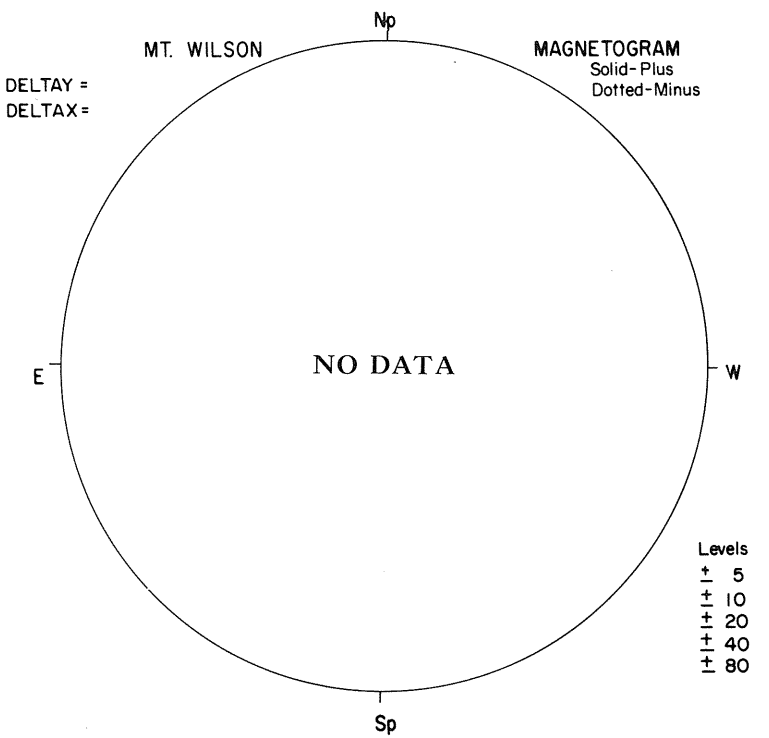
1836 UT

MARCH 26, 1979 (P =-25.77, B_o =-6.84, L_o = 56.36)

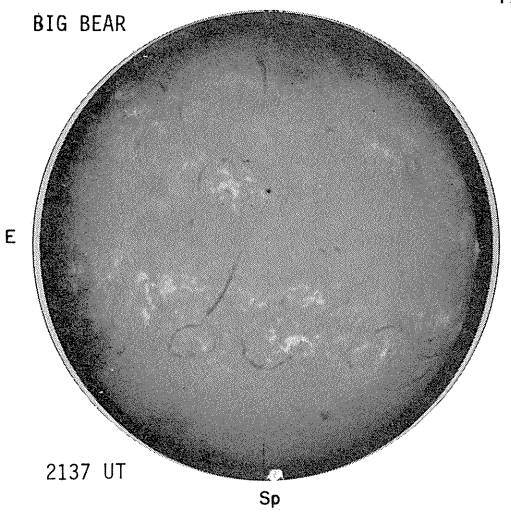
SACRAMENTO PEAK





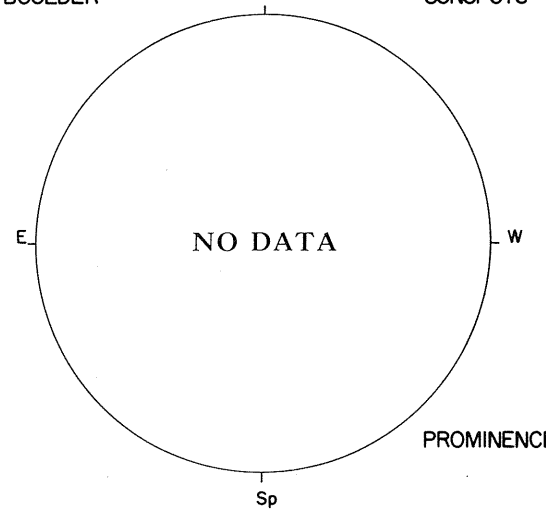


BIG BEAR



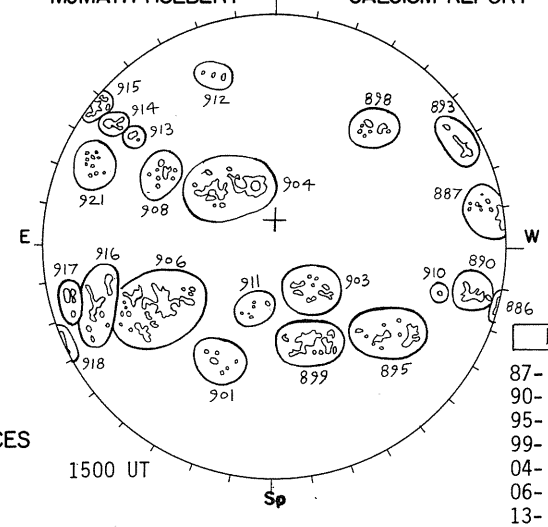
2137 UT

Hα BOULDER



SUNSPOTS

McMATH-HULBERT



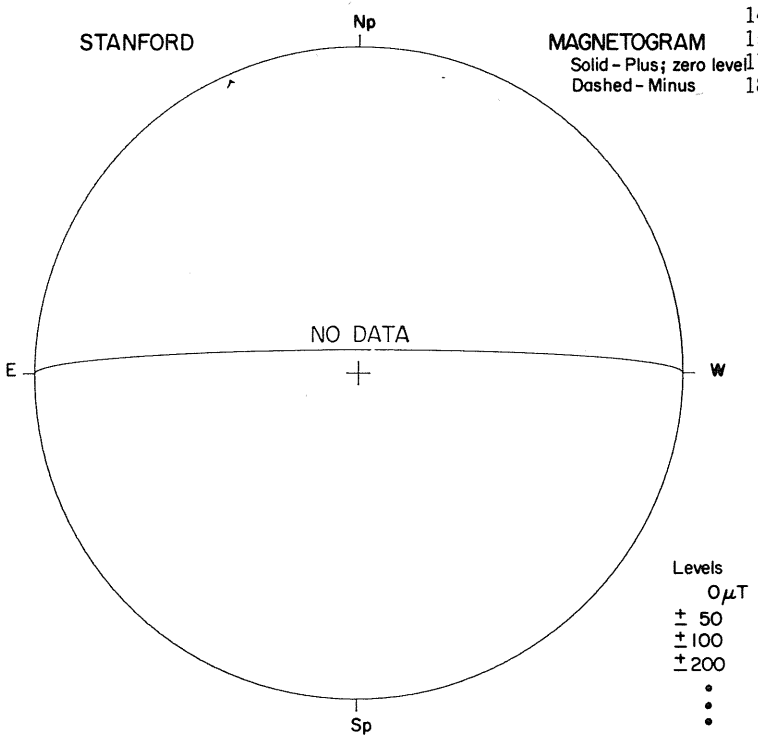
1500 UT

CALCIUM REPORT

FAIR	M
87-	2500-4.5
90-	1700-2.5
95-	1500-2.5
99-	1700-3.0
04-	2500-2.5
06-	3100-2.5
13-	0400-2.5
14-	0600-3.0
15-	1200-3.5
17-	0900-2.5
18-	1500-2.5

PROMINENCES

STANFORD



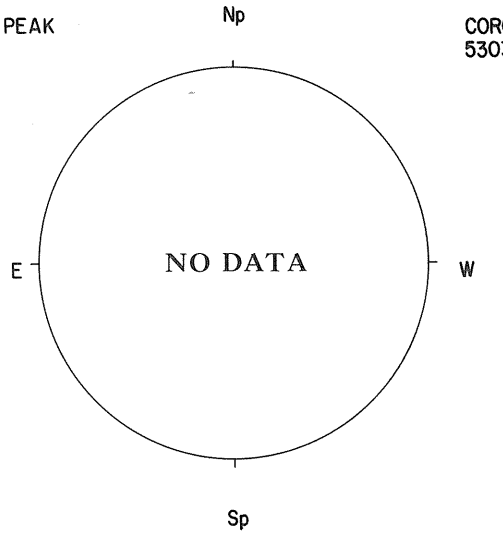
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus

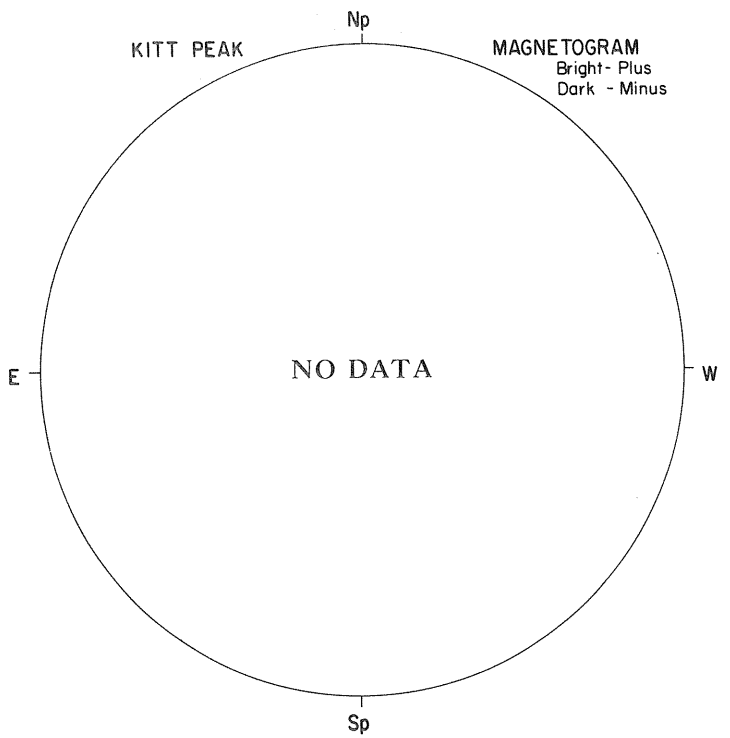
Levels
0 μT
± 50
± 100
± 200
• • •

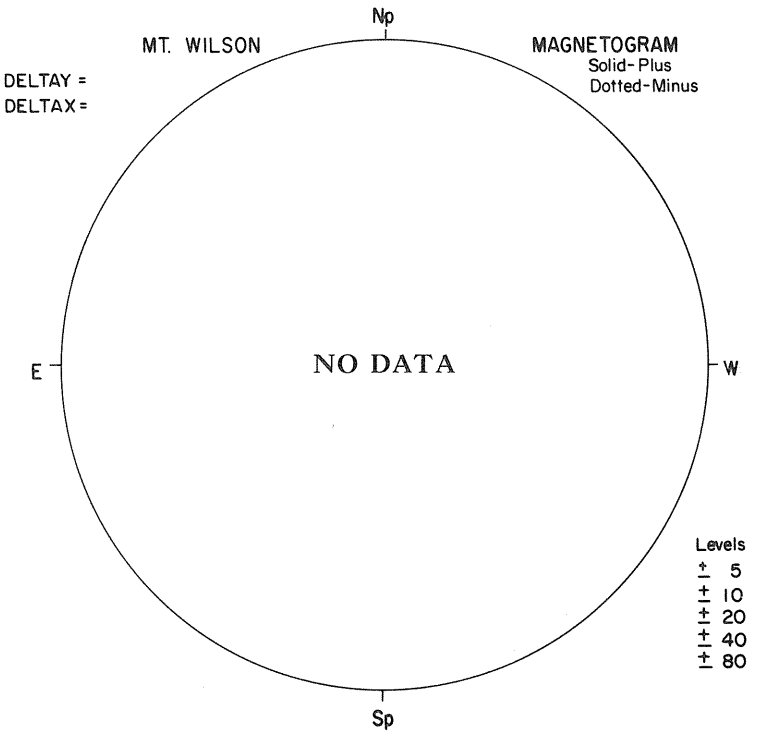
MARCH 27, 1979 (P =-25.86, B_0 =-6.80, L_0 =43.17)

SACRAMENTO PEAK

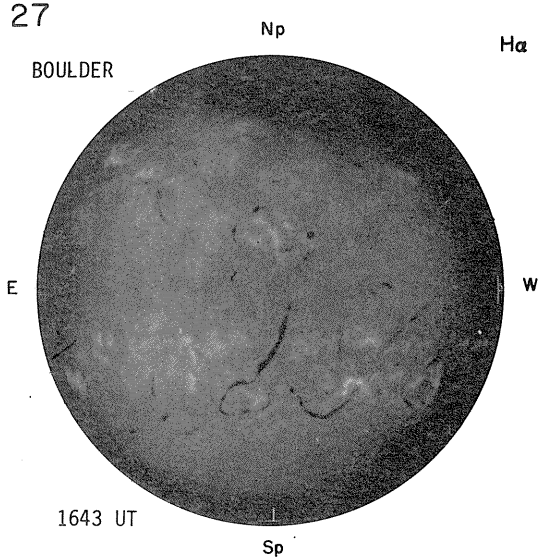
CORONA (1.15 $R_\odot$)
5303 Å





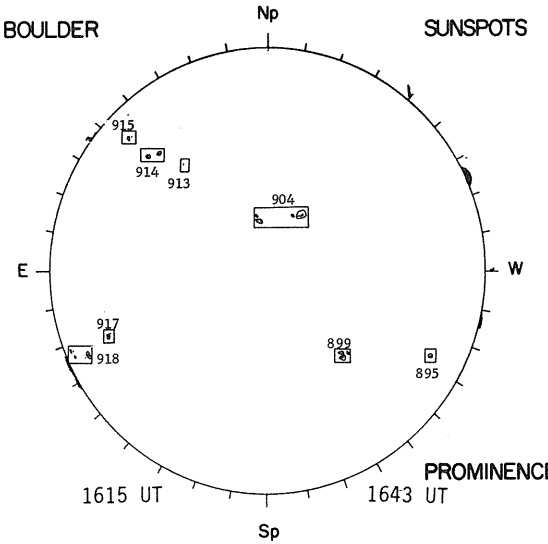


BOULDER



1643 UT

Hα BOULDER

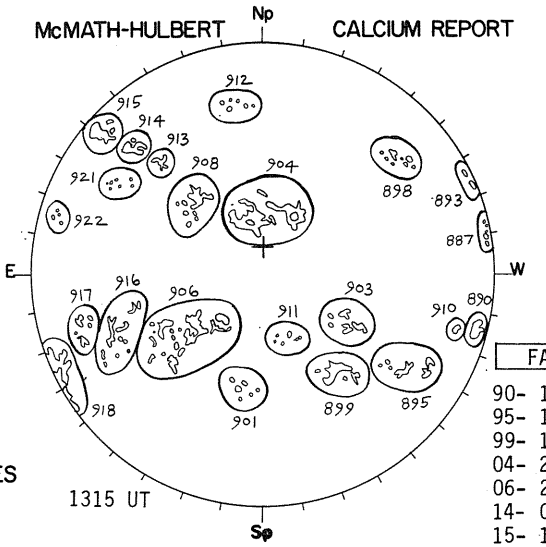


1615 UT 1643 UT

SUNSPOTS

PROMINENCES

McMATH-HULBERT CALCIUM REPORT



1315 UT

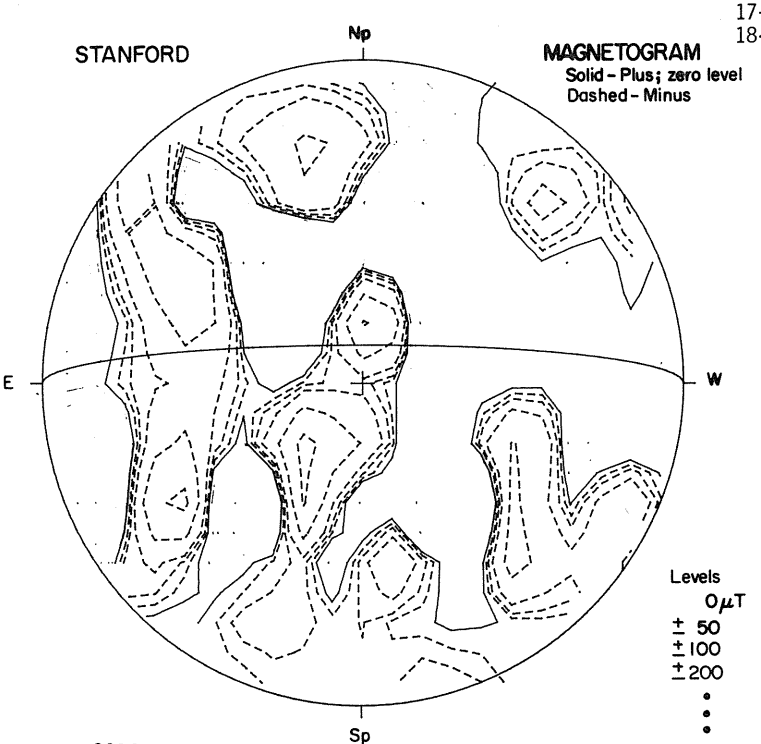
FAIR	M
90-	1300-2.5
95-	1100-2.5
99-	1700-3.5
04-	2400-2.5
06-	2700-2.5
14-	0800-3.5
15-	1800-3.5
17-	0900-2.5
18-	3800-3.5

STANFORD

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus

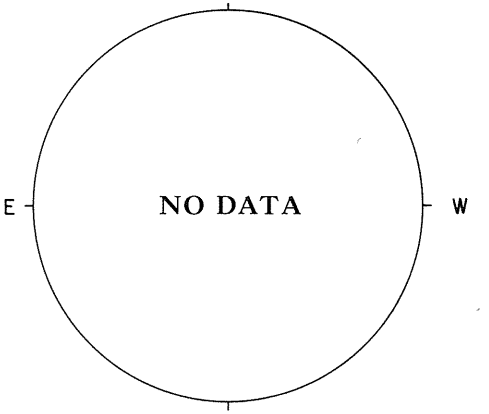


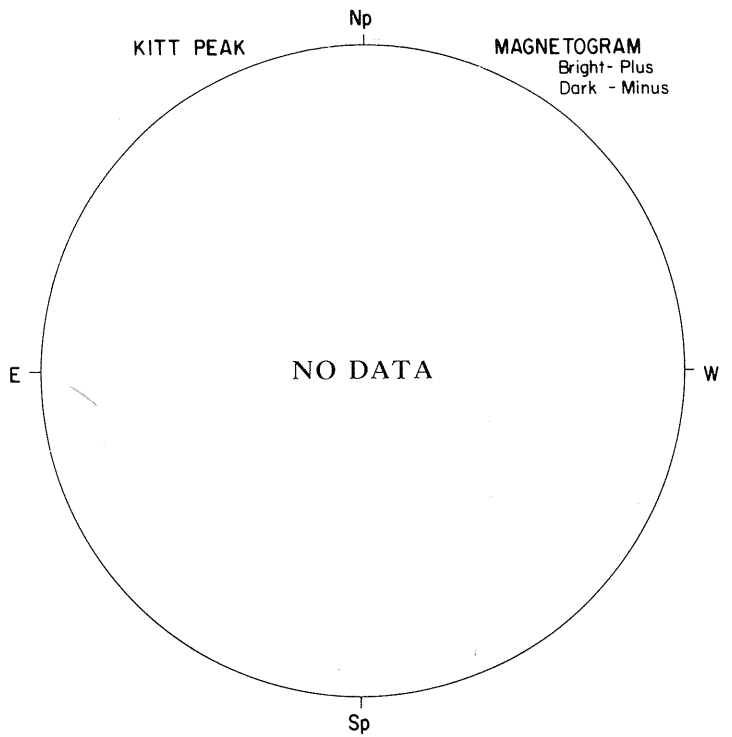
2236 UT

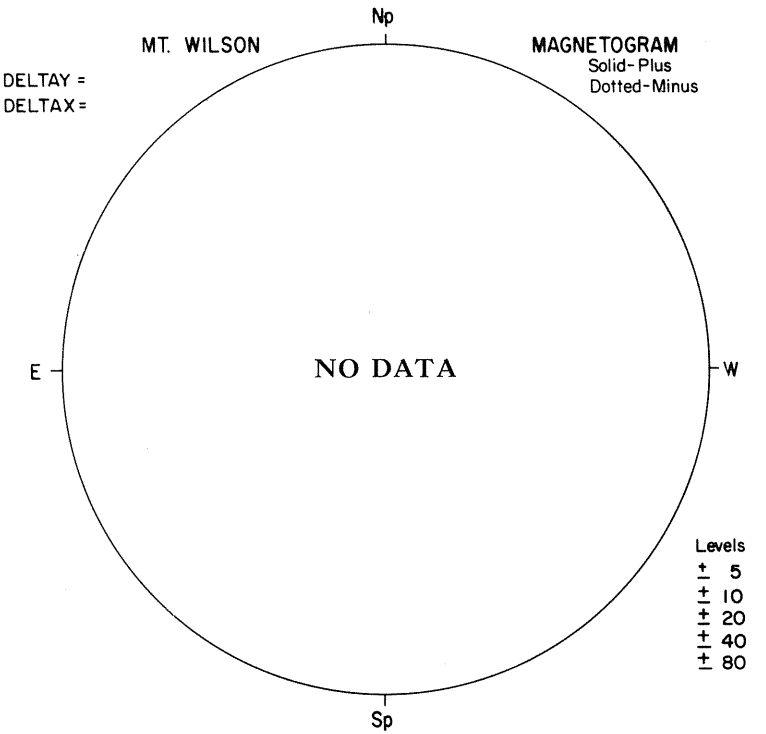
MARCH 28, 1979 (P =-25.94, B_o =-6.75, L_o =29.98)

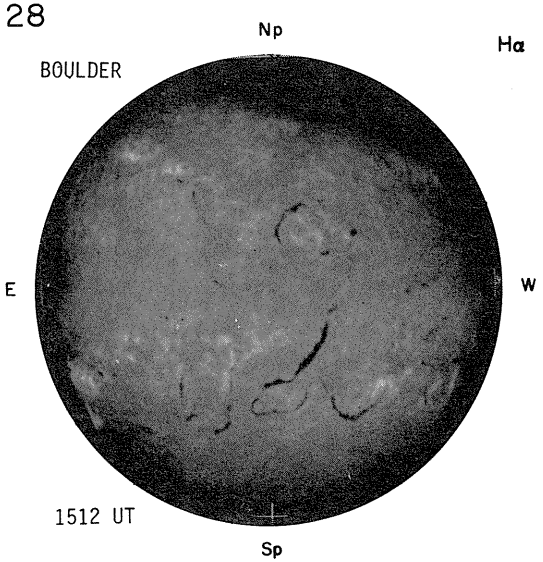
SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å

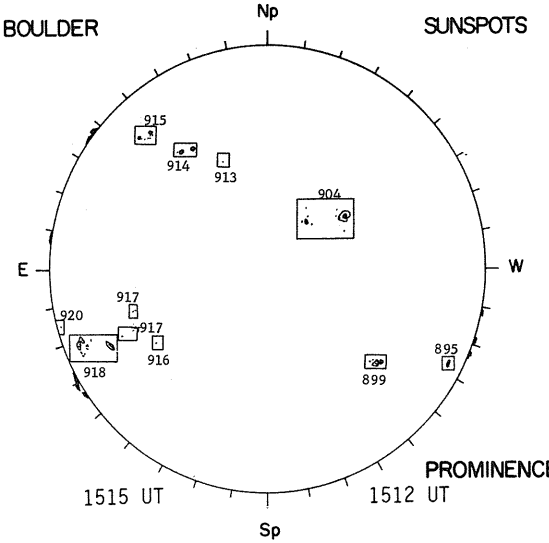








Hα BOULDER

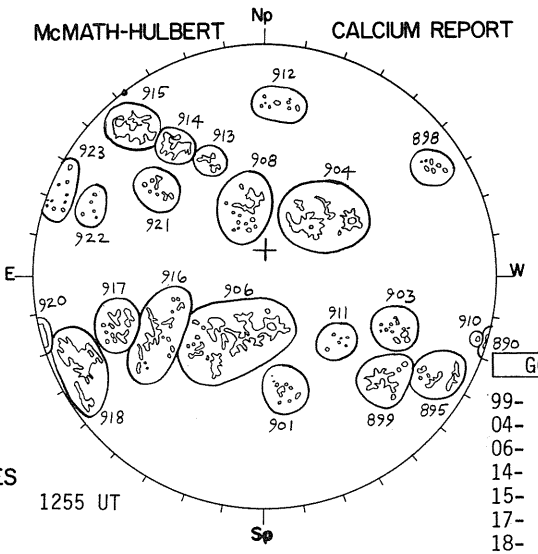


SUNSPOTS

PROMINENCES

1512 UT

McMATH-HULBERT CALCIUM REPORT

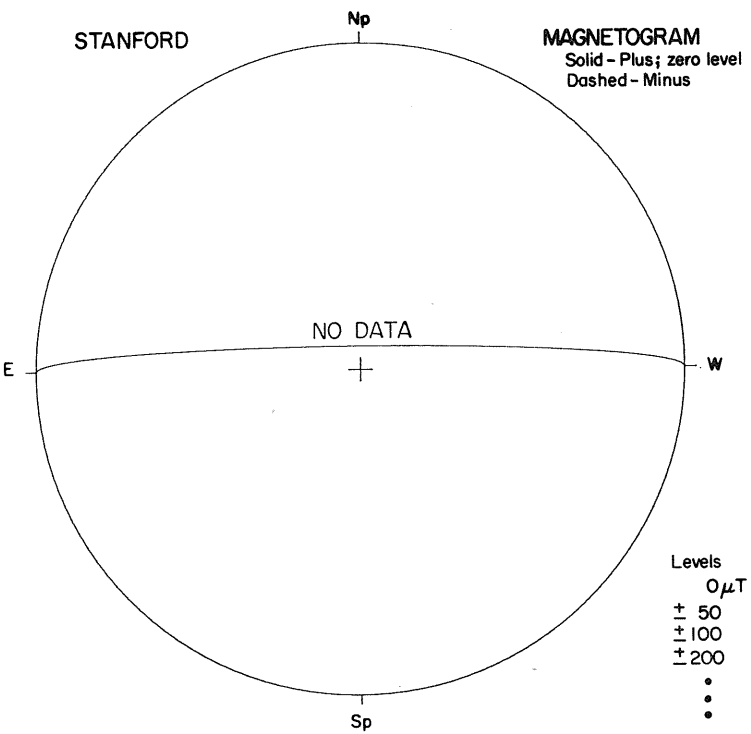


GOOD	M

99- 1700-3.0
04- 2300-2.5
06- 3000-2.5
14- 1100-3.0
15- 2300-3.5
17- 1100-3.0
18- 5000-4.0

STANFORD

MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus



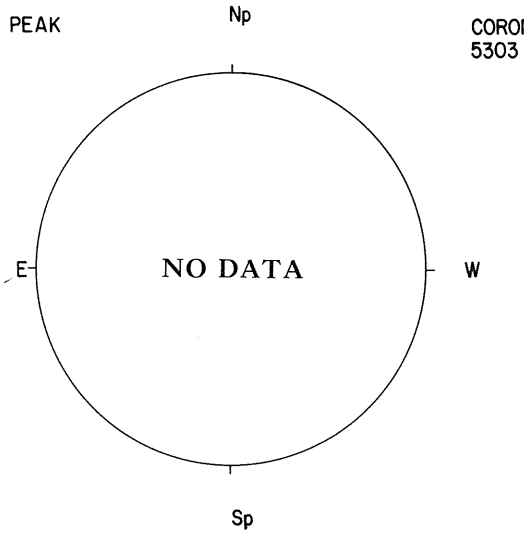
Levels
0μT
± 50
± 100
± 200
•
•
•

99
Mar 79

MARCH 29, 1979 (P =-26.01, B_o =-6.71, L_o =16.79)

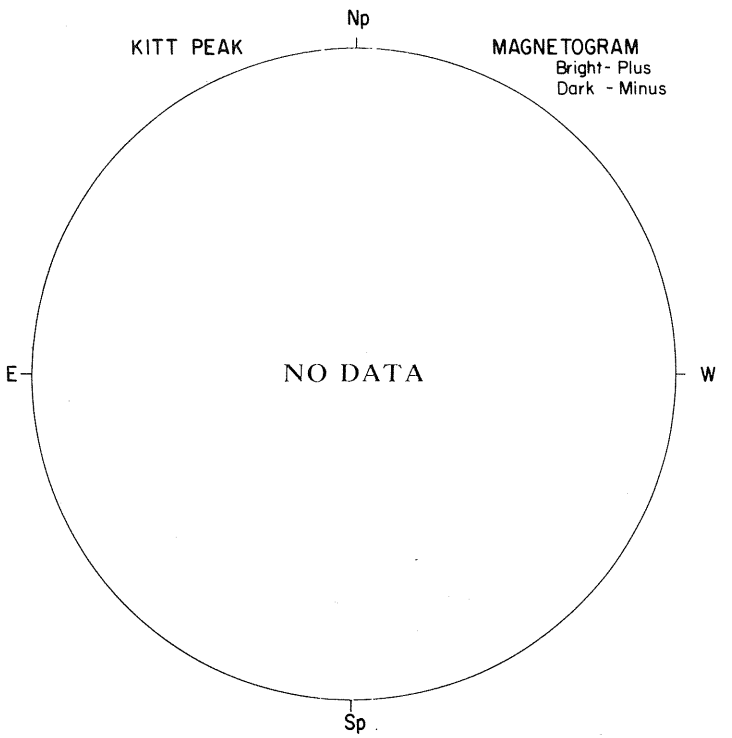
SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å



KITT PEAK

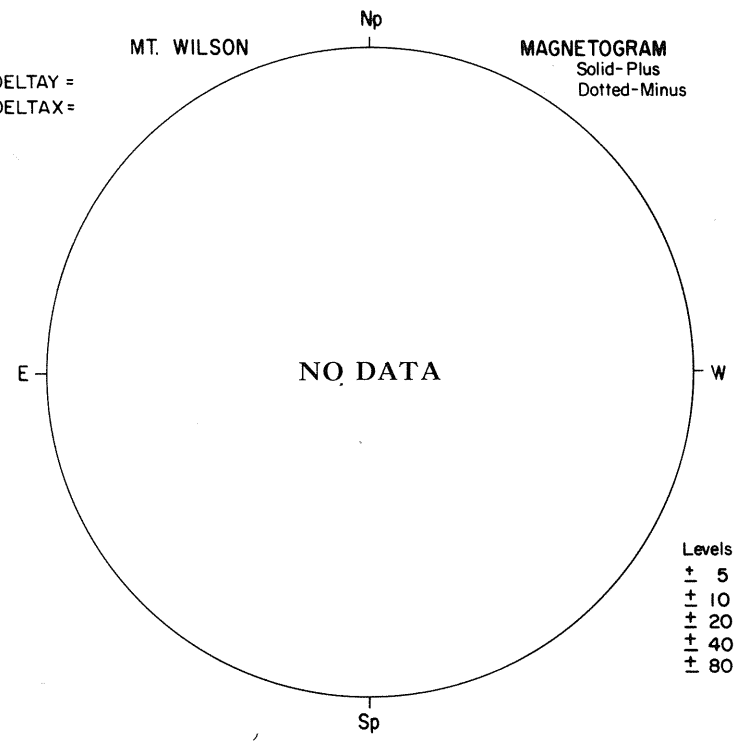
MAGNETOGRAM
Bright - Plus
Dark - Minus



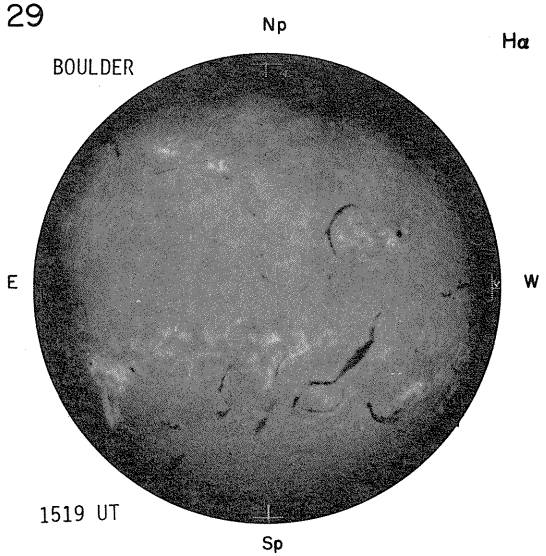
MT. WILSON

DELTAY =
DELTAX =

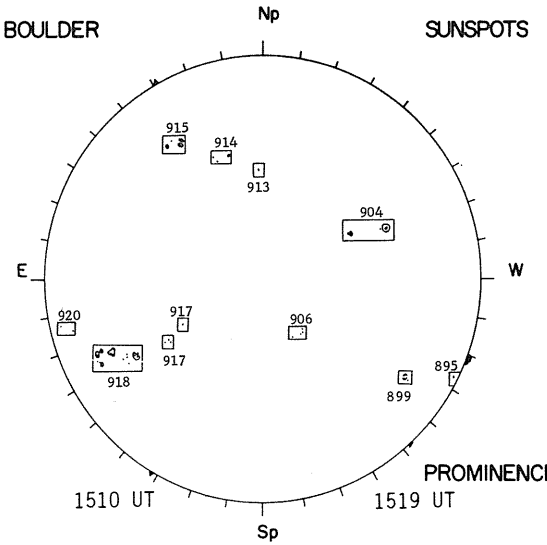
MAGNETOGRAM
Solid - Plus
Dotted - Minus



29

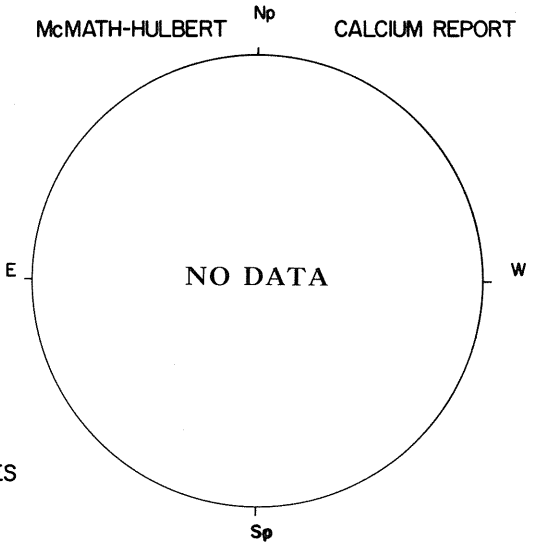


Hα

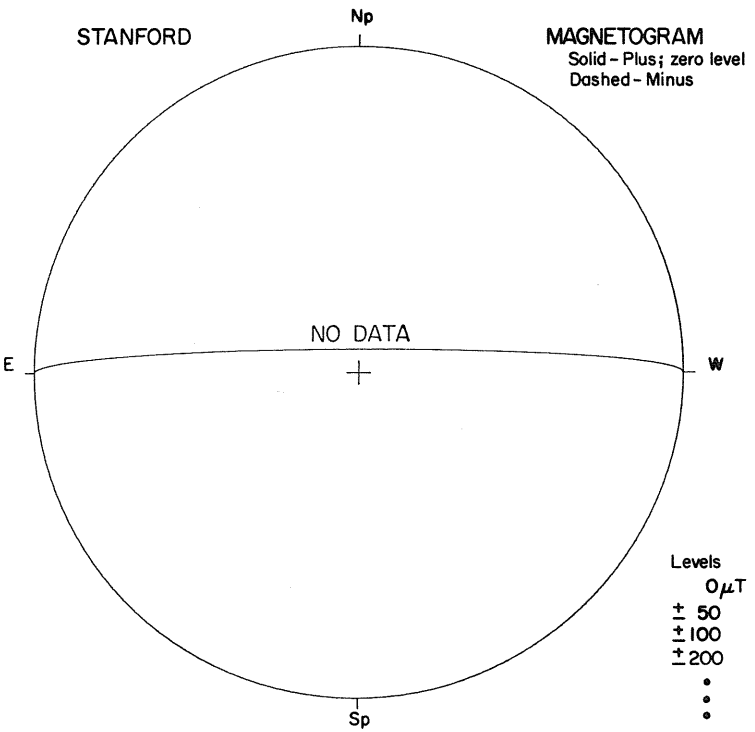


SUNSPOTS

PROMINENCES

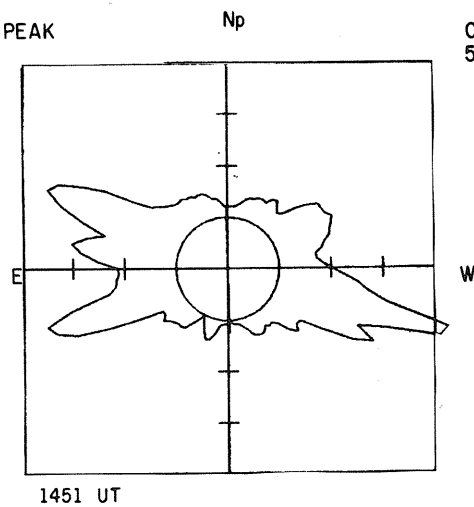


CALCIUM REPORT



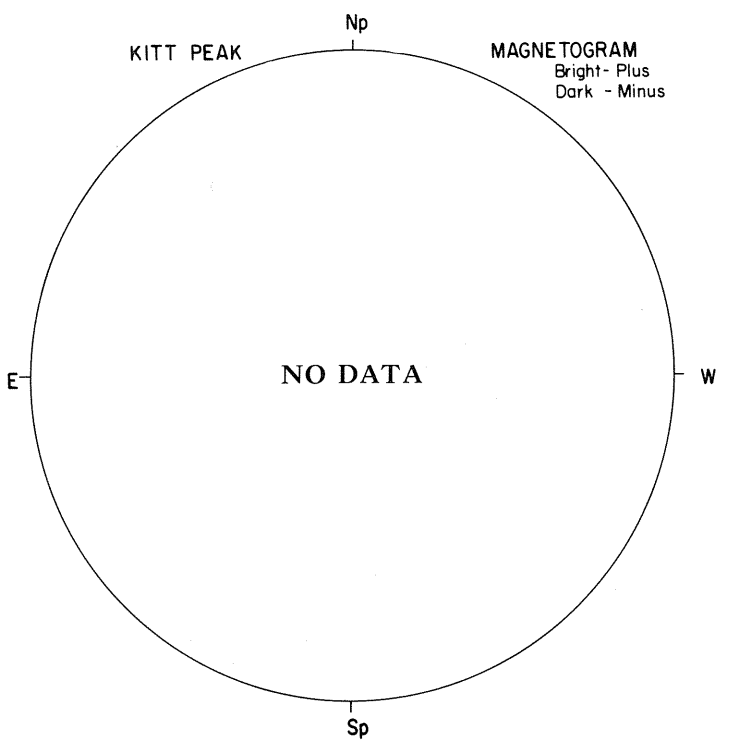
MARCH 30, 1979 (P =-26.07, B_o =-6.66, L_o =3.60)

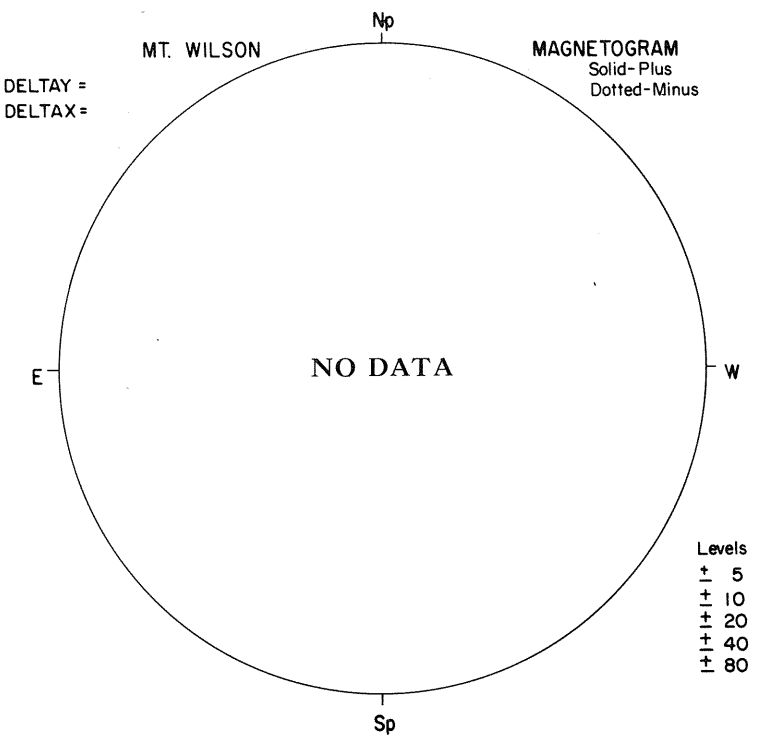
SACRAMENTO PEAK



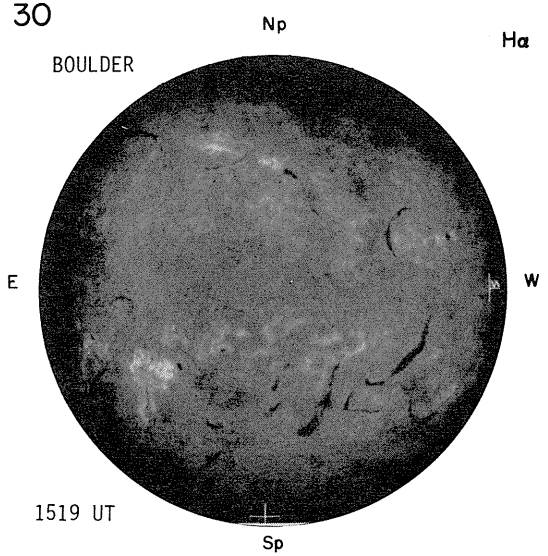
CORONA (1.15 $R_\odot$)
5303 Å

1451 UT

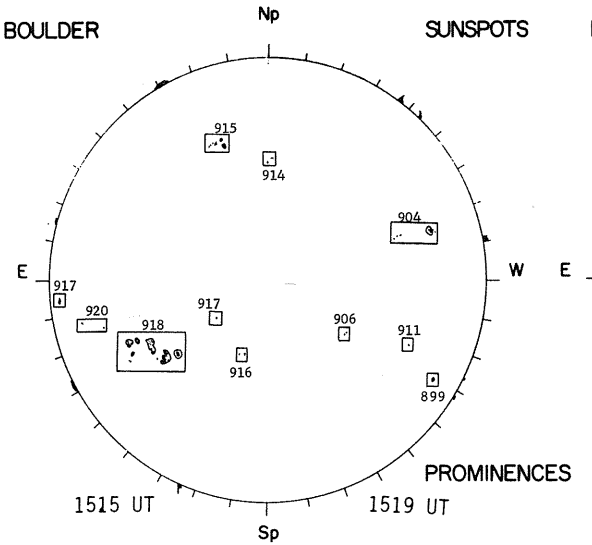




30



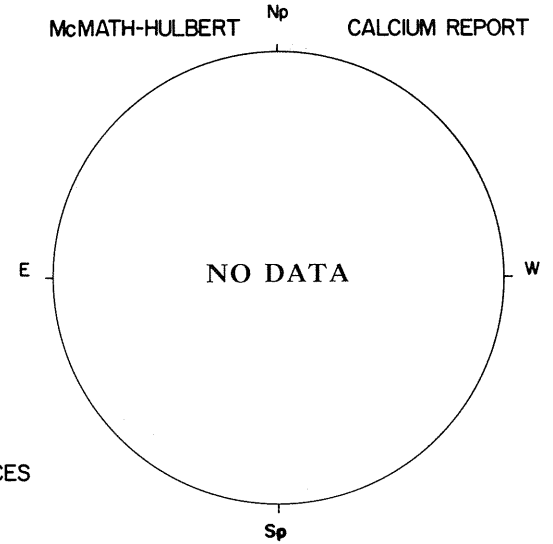
Hα BOULDER



SUNSPOTS

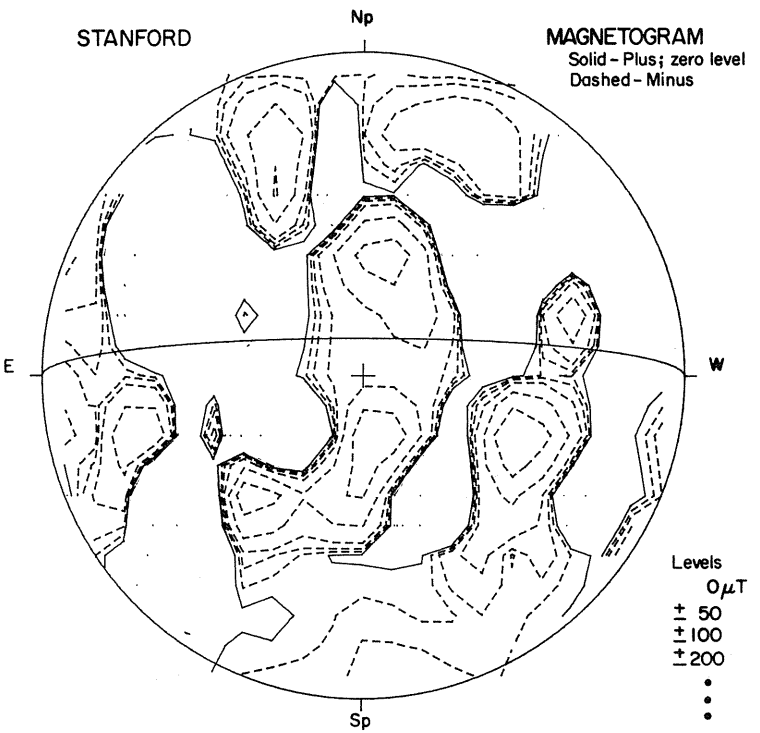
PROMINENCES

McMATH-HULBERT CALCIUM REPORT



STANFORD MAGNETOGRAM

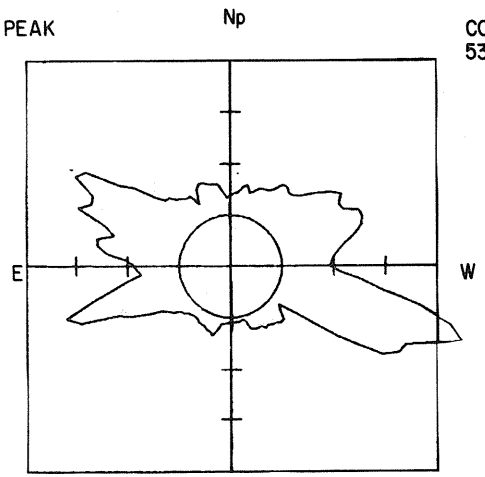
Solid - Plus; zero level
Dashed - Minus



2154 UT

MARCH 31, 1979 (P =-26.13, B_o =-6.61, L_o =350.41)

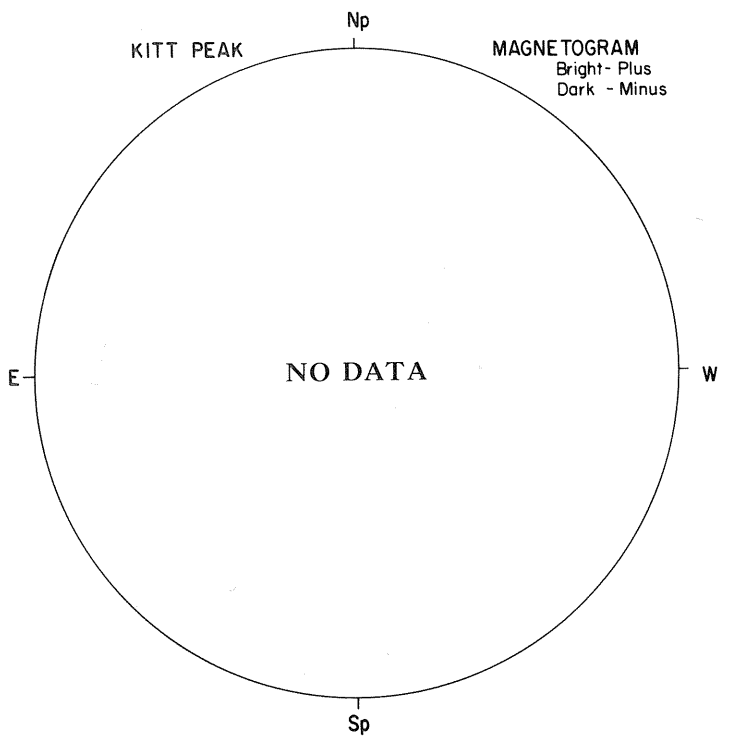
SACRAMENTO PEAK



CORONA (1.15 $R_\odot$)
5303 Å

1435 UT

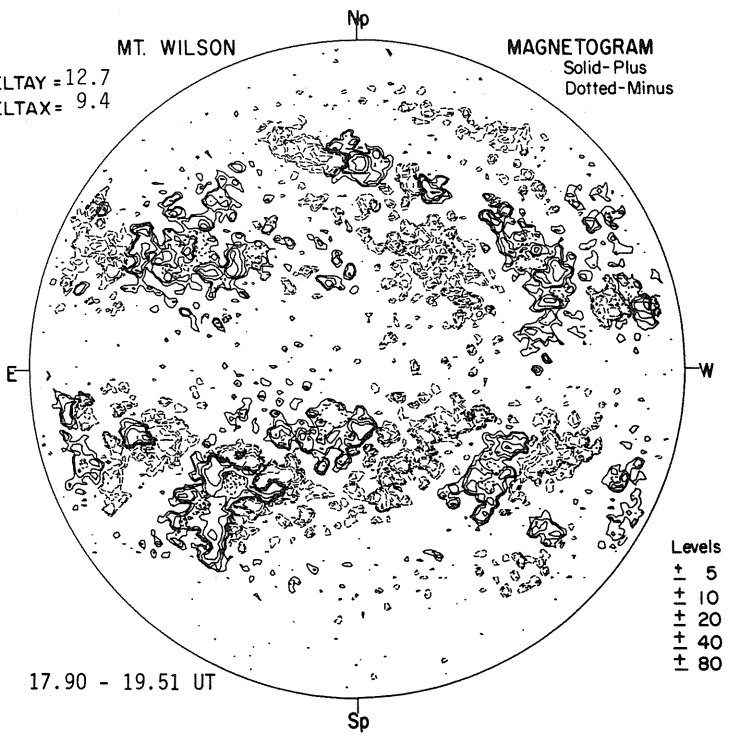
KITT PEAK



MAGNETOGRAM
Bright - Plus
Dark - Minus

MT. WILSON

DELTAY = 12.7
DELTAX = 9.4

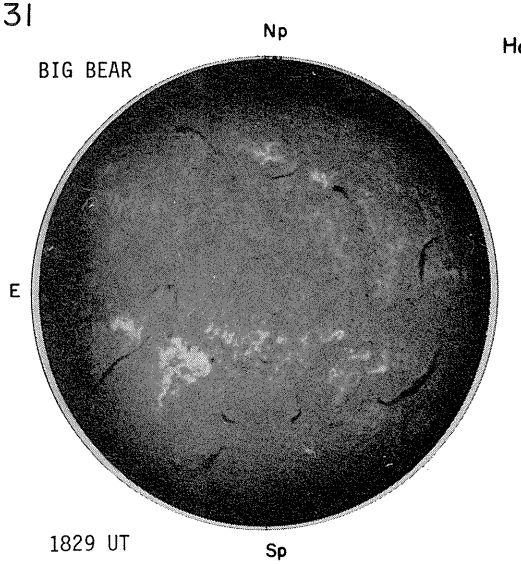


MAGNETOGRAM
Solid - Plus
Dotted - Minus

Levels
± 5
± ± 10
± ± ± 20
± ± ± ± 40
± ± ± ± ± 80

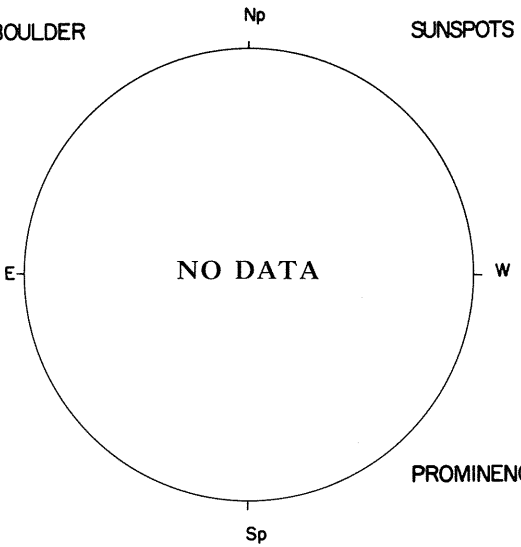
17.90 - 19.51 UT

BIG BEAR



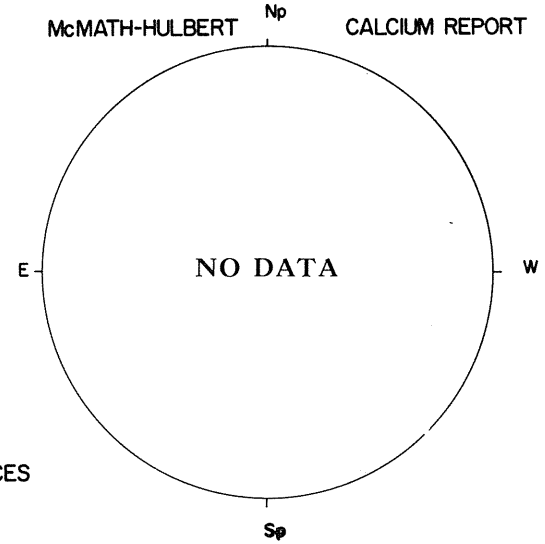
1829 UT

Hα BOULDER



SUNSPOTS

McMATH-HULBERT

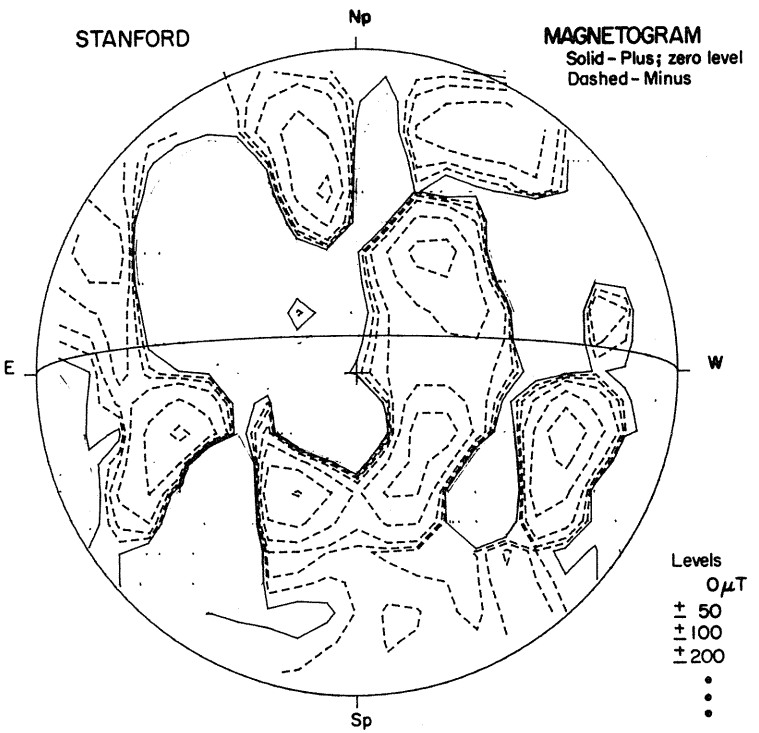


CALCIUM REPORT

PROMINENCES

STANFORD

MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus



1956 UT

105
Mar 79

REGIONS OF SOLAR ACTIVITY

MARCH 1979

MCMATH REGION 15849 CMP DATE 1.9 RETURN OF REGION 15814 ROTATION 2

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	24	15849	S20 E69	14	2100	2.5	20472	S22 E65	17	(AP)	3				
79	2	25	15849					20472	S19 E56	14	(B)	2				
79	2	26	15849	S20 E42	15	2300	2.5									
79	2	27	15849	S20 E30	14	2000	2.5	20472	S21 E26	17	(AP)	3				
79	2	28	15849	S20 E17	14	1800	2.5	20472	S20 E14	16	(AP)	3				
79	3	3	15849	S20 W23	14	1600	2.5	20485	S18 W22	13	(AP)	2	M	10	1	AXX
79	3	4	15849	S20 W38	15	2500	3.5	20485	S18 W35	13	(B)	3	B	270	28	DAI
79	3	5	15849					20485	S18 W47	12	(B)	3	B	90	9	DAI
79	3	6	15849	S20 W63	15	2500	3.5	20485	S18 W61	13	(B)	3	B	100	11	EAI
79	3	7	15849	S20 W75	14	2700	3.0	20485	S18 W74	12	B	3	B	50	5	DAI
79	3	8	15849	S20 W86	11	2000	3.0									

MCMATH REGION 15847 CMP DATE 2.6 RETURN OF REGION 15802 ROTATION 4

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	24	15847	N10 E70	13	1800	1.5									
79	2	26	15847	N10 E48	9	3200	2.5									
79	2	27	15847	N10 E44	0	2800	2.5									
79	2	28	15847	N10 E27	4	3000	2.5									
79	3	3	15847	N10 W13	4	3300	2.5									
79	3	4	15847	N10 W27	4	3000	2.0									
79	3	6	15847	N10 W51	3	2800	2.0									
79	3	7	15847	N11 W63	2	2500	1.5									
79	3	8	15847	N14 W76	1	1200	1.5									

MCMATH REGION 15850 CMP DATE 3.8 RETURN OF REGION 15804 ROTATION 5

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	24	15850	S17 E90	354	600	1.0									
79	2	25	15850					20474	S24 E80	351	(AP)	2				
79	2	26	15850	S20 E70	348	3000	3.0									
79	2	27	15850	S20 E56	349	3000	2.5	20474	S24 E57	347	(BP)	3				
79	2	28	15850	S19 E42	350	3000	3.0	20474	S24 E44	347	(Y)	4				
79	2		15850					20477	S21 E41	350	(AP)	3				
79	3	2	15850					20474	S25 E16	348	(BP)	4				
79	3	3	15850	S20 E02	349	3500	2.5	20474	S25 E02	349	(AP)	4				
79	3		15850					20486	S15 W08	359	AP	1				
79	3	4	15850	S20 W13	350	3500	2.5	20474	S25 W11	349	(BP)	5	B	160	9	DHO
79	3		15850					20486	S14 W23	1	(AP)	2	B	30	5	CRO
79	3		15850					20490	S16 W15	353	(AP)	2	B	20	7	BXO
79	3	5	15850					20474	S25 W25	350	(AP)	4	B	160	3	CSO
79	3	6	15850	S20 W40	352	3100	2.5	20474	S25 W39	351	(AP)	3	B	110	3	CAO
79	3	7	15850	S19 W54	353	2700	2.5	20474	S25 W53	351	(BP)	4	B	80	3	HAX
79	3	8	15850	S19 W67	352	2300	2.5	20474	S25 W68	351	(AP)	3				
79	3	10	15850	S21 W90	350	600	1.0									

MCMATH REGION 15860 CMP DATE 3.8

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	3	15860	N36 E02	349	400	3.0	20487	N35 E00	351	(B)	2				
79	3	4	15860	N36 W13	350	600	3.0	20487	N35 W13	351	(B)	3	B	90	8	DAO
79	3	5	15860					20487	N36 W25	350	(B)	4	B	90	5	DAO
79	3	6	15860	N37 W38	350	700	3.0	20487	N36 W38	350	(B)	3	B	80	4	DSO
79	3	7	15860	N37 W50	349	700	3.0	20487	N35 W48	346	(B)	3	B	10	2	BXO
79	3	8	15860	N37 W64	349	900	3.0		N36 W67				M	10	1	AXX

MCMATH REGION 15859 CMP DATE 4.8

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	26	15859	S14 E80	338	600	2.0									
79	2	27	15859	S16 E68	337	1000	2.0									
79	2	28	15859	S15 E55	337	1000	2.0									
79	3	3	15859	S15 E16	335	800	2.0	20488	S15 E17	334	AP	1	M	160	15	ESO
79	3	4	15859	S15 E01	336	800	2.0									
79	3	6	15859	S15 W25	337	700	1.5									
79	3	7	15859	S15 W37	336	700	1.5									

CONTD

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MCMATH REGION 15859 (CONT) CMP DATE 4.8

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	8	15859	S14 W51	336	800	1.5
79	3	10	15859	S14 W77	337	600	1.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS

MCMATH REGION 15855 CMP DATE 5.3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	26	15855	N09 E90	328	500	1.5
79	2	27	15855	N10 E83	322	1200	3.5
79	2	28	15855	N09 E67	325	1400	3.0
79	3	2	15855				
79	3	3	15855	N09 E24	327	900	2.5
79	3	4	15855	N10 E08	329	700	2.0
79	3	6	15855	N11 W18	330	700	2.0
79	3	7	15855	N12 W30	329	400	2.0
79	3	8	15855	N12 W44	329	500	2.0
79	3	10	15855	N12 W70	330	300	1.5

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20476	N08 E75	329	(AP)	2				
20476	N08 E63	328	(AP)	3				
20476	N09 E33	331	(AP)	2				
20476	N09 E21	330	(AP)	2	M	10	1	AXX

MCMATH REGION 15861 CMP DATE 5.7

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	3	15861	N24 E28	323	200	1.0
79	3	4	15861	N24 E13	324	200	1.0
79	3	6	15861	N24 W13	325	100	1.0
79	3	7	15861	N24 W25	324	200	1.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS

MCMATH REGION 15856 CMP DATE 6.2 RETURN OF REGION 15800 ROTATION 5

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	27	15856	S21 E90	315	1000	2.5
79	2	28	15856	S23 E75	317	2500	3.0
79	3	2	15856				
79	3	3	15856	S23 E34	317	2800	2.5
79	3	4	15856	S23 E20	317	2800	2.0
79	3	5	15856				
79	3	6	15856	S23 W06	318	2300	2.5
79	3	7	15856	S23 W19	318	2300	2.0
79	3	8	15856	S23 W33	318	2100	2.0
79	3	10	15856	S24 W56	316	2000	2.5
79	3	11	15856	S24 W70	316	1300	2.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20478	S21 E72	319	(AP)	3				
20478	S22 E43	321	(AP)	3				
20478	S21 E29	322	(BP)	4	M	100	4	DAO
20478	S21 E18	320	(AP)	3	B	80	9	CAO
20478	S21 E03	322	(AP)	3	B	30	5	CSO
20478	S22 W08	320	(BP)	3	B	20	6	CSO
20478	S21 W20	318	(B)	3	B	10	1	AXX

MCMATH REGION 15862 CMP DATE 6.7

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	2	15862				
79	3	3	15862	N16 E47	304	1600	1.5
79	3	4	15862	N16 E29	308	1400	1.5
79	3		15862				
79	3	5	15862				
79	3		15862				
79	3	6	15862	N16 E01	311	1100	2.0
79	3	7	15862	N15 W12	311	1000	2.0
79	3	8	15862	N15 W26	311	900	2.0
79	3	10	15862	N14 W52	312	900	2.0
79	3	11	15862	N13 W65	311	500	1.5
79	3	12	15862	N13 W78	310	400	1.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20480	N13 E65	299	(AP)	3				
20480	N12 E51	300	(AP)	4				
20480	N13 E38	300	(AP)	4	B	30	1	HSX
20491	N16 E19	319	(AP)	3	B	20	3	HRX
20480	N13 E24	301	(AP)	4	B	30	2	CSO
20491	N16 E06	319	AP	1				
20480	N13 E12	300	(AP)	4	B	40	2	CSO
20480	N13 W02	300	(AP)	4	B	20	1	HSX
20480	N13 W17	300	(AP)	3	M	20	1	HRX
20480	N13 W43	302	(AP)	2	B	0	1	AXX
	N15 W53				B	100	3	HAX

MCMATH REGION 15870 CMP DATE 6.7

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	7	15870	N24 W11	310	600	3.0
79	3	8	15870	N24 W25	310	1100	3.5
79	3	10	15870	N24 W50	310	1100	3.5
79	3	11	15870	N24 W64	310	1100	3.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20496	N23 W11	309	(B)	4	B	50	4	CSO
20496	N23 W26	309	(B)	3	M	50	6	DSO
20496	N23 W51	310	(B)	4	B	90	2	DSO
20496	N23 W65	311	(B)	3	B	10	2	BXO

CONTD

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MCMATH REGION 15870 (CONT) CMP DATE 6.7

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	12	15870	N24 W78	310	900	2.5									

MCMATH REGION 15863 CMP DATE 8.5 RETURN OF REGION 15807 ROTATION 3

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	2	15863					20481	N17 E69	295	(AP)	4				
79	3	3	15863	N16 E66	285	4500	3.0	20481	N17 E56	295	(AP)	4				
79	3		15863					20489	N11 E64	287	(AP)	2	M	110	1	HSX
79	3	4	15863	N16 E50	287	4200	3.0	20481	N17 E42	296	(AP)	4	B	150	1	HHX
79	3		15863					20489	N11 E51	287	(B)	3	B	170	8	DAO
79	3		15863					20492	N15 E52	286	(B)	2	B	30	2	BXO
79	3	5	15863					20481	N17 E28	297	(AP)	4	B	170	1	HSX
79	3		15863					20489	N12 E38	287	(B)	4	B	100	5	DAO
79	3		15863					20492	N17 E41	284	B	1	B	0	1	AXX
79	3	6	15863	N16 E24	288	5000	3.0	20481	N17 E15	297	(BP)	5	B	120	1	HHX
79	3		15863					20489	N12 E24	288	(BP)	4	B	120	10	DSO
79	3		15863					20492	N16 E26	286	(AF)	3	B	10	2	AXX
79	3	7	15863	N16 E12	287	5700	2.5	20481	N17 E03	295	(AP)	5				
79	3		15863					20489	N12 E11	287	(B)	4	B	80	4	DSO
79	3		15863					20492	N17 E15	283	(AF)	2	B	200	4	CHO
79	3	8	15863	N16 W01	286	5300	3.0	20481	N17 W14	297	(AP)	4	M	60	2	CSO
79	3		15863					20489	N12 W05	288	(B)	3	M	100	6	DSO
79	3	10	15863	N16 W27	287	5000	3.0	20481	N16 W38	297	(BP)	4	B	130	4	CSO
79	3		15863					20489	N12 W28	287	(B)	3	B	50	4	DSO
79	3	11	15863	N16 W40	286	4500	2.5	20481	N16 W52	298	(AP)	3				
79	3		15863					20489	N12 W42	288	(B)	4	B	30	2	CSO
79	3	12	15863	N16 W53	285	5000	2.5	20481	N16 W65	298	(AP)	3				
79	3		15863					20489	N12 W60	293	(AP)	3	R	60	1	HSX
79	3	13	15863	N16 W66	286	5000	2.0									
79	3	14	15863	N18 W79	285	1200	1.0									

MCMATH REGION 15864 CMP DATE 8.9 RETURN OF REGION 15808 AND 15812 ROTATIONS 2 AND 4

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	2	15864					20482	S15 E75	289	(B)	3				
79	3	3	15864	S17 E70	281	3500	3.0	20482	S16 E65	286	(B)	3	M	110	3	DSO
79	3	4	15864	S16 E55	282	3100	3.0	20482	S16 E52	286	(D)	4	B	130	9	EAO
79	3	5	15864					20482	S14 E36	289	(AP)	3	B	40	8	CSO
79	3		15864					20493	S18 E44	281	(B)	3				
79	3	6	15864	S16 E30	282	2800	2.5	20482	S13 E22	290	(AP)	4				
79	3		15864					20493	S18 E32	280	(BF)	3	B	80	9	ESO
79	3	7	15864	S16 E18	281	2800	2.5	20482	S13 E08	290	(AP)	3	B	90	16	ESO
79	3		15864					20493	S18 E19	279	(BF)	3				
79	3	8	15864	S16 E03	282	2300	3.0	20482	S13 W05	288	(BP)	3				
79	3		15864					20493	S18 E03	280	BF	2				
79	3	10	15864	S15 W23	283	3000	3.5	20482	S13 W30	289	(BP)	3	B	80	10	DSI
79	3	11	15864	S15 W37	283	3000	3.0	20482	S13 W44	290	(BP)	4	B	130	10	DAO
79	3		15864					20503	S18 W39	285	(B)	3				
79	3	12	15864	S15 W50	282	3600	3.0	20482	S13 W56	289	(BP)	3				
79	3		15864					20503	S18 W52	285	(AP)	2				
79	3	13	15864	S16 W63	283	3500	3.0									
79	3	14	15864	S16 W77	283	3500	2.5									
79	3	15	15864	S20 W89	279	900	1.0									

MCMATH REGION 15867 CMP DATE 10.5

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	4	15867	N19 E83	254	300	1.5									
79	3	6	15867	N19 E56	256	200	1.0									
79	3	7	15867	N19 E42	257	300	1.0									
79	3	8	15867	N19 E26	259	300	1.0									
79	3	10	15867	N19 E00	260	300	1.0									

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MCMATH REGION 15872 CMP DATE 11.3

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	8	15872	N11 E35	250	100	1.5		N13 E30				M	10	1	AXX

MCMATH REGION 15884 CMP DATE 11.3

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	11	15884	N11 W04	250	100	1.0									
79	3	12	15884	N11 W20	252	400	3.0	20508	N09 W09	242	(B)	4				
79	3	13	15884	N11 W33	253	900	3.5		N10 W33				B	70	4	DSI
79	3	14	15884	N11 W46	252	900	3.0		N10 W42				B	50	4	CAO
79	3	15	15884	N11 W58	248	700	3.0									
79	3	16	15884	N11 W72	251	500	1.5									
79	3	17	15884	N11 W84	251	200	1.5									

MCMATH REGION 15865 CMP DATE 11.5 RETURN OF REGION 15813 ROTATION 2

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	4	15865	S14 E90	247	700	2.0									
79	3	5	15865					20494	S14 E78	247	(AP)	3	B	20	2	BXO
79	3	6	15865	S14 E67	245	2700	3.0	20494	S13 E61	251	(AP)	3	B	90	3	DSO
79	3	7	15865	S14 E55	244	2700	3.0	20494	S13 E50	248	(B)	3	B	10	4	BXO
79	3	8	15865	S14 E40	245	3100	3.5	20494	S13 E35	248	(AP)	2				
79	3	10	15865	S14 E14	246	3000	3.0	20494	S14 E10	249	(D)	3	B	120	12	DAI
79	3	11	15865	S14 W01	247	3000	3.0	20494	S14 W04	250	(B)	3	B	90	9	DAI
79	3	12	15865	S14 W14	246	3400	3.0	20494	S15 W17	250	(BP)	3				
79	3	13	15865	S15 W26	246	3500	3.0									
79	3	14	15865	S15 W40	246	3100	3.0									
79	3	15	15865	S15 W53	243	3100	3.0									
79	3	16	15865	S15 W67	246	3100	2.5									
79	3	17	15865	S15 W79	246	2800	2.0									

MCMATH REGION 15868 CMP DATE 11.6

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	6	15868	N20 E69	243	200	1.5									
79	3	7	15868	N19 E56	243	400	1.5									
79	3	8	15868	N19 E40	245	400	2.0		N20 E35				M	10	1	AXX
79	3	10	15868	N19 E14	246	300	1.5	20498	N18 E11	248	(AP)	3	B	0	1	AXX
79	3	11	15868	N20 E00	246	200	1.0									
79	3	12	15868	N19 W13	245	300	1.5									
79	3	13	15868	N19 W26	246	200	1.5									
79	3	14	15868	N19 W40	246	200	1.5									
79	3	15	15868	N19 W53	243	100	1.0									
79	3	16	15868	N19 W66	245	200	1.0									

MCMATH REGION 15871 CMP DATE 11.6

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	8	15871	N25 E41	244	200	2.5	20497	N25 E36	247	(AP)	3	M	30	4	CRO
79	3	10	15871	N25 E15	245	800	3.0	20497	N25 E13	246	(B)	4	B	140	9	DAI
79	3	11	15871	N25 E00	246	700	2.5	20497	N25 W01	247	(B)	4	B	70	5	DSO
79	3	12	15871	N25 W13	245	1200	3.0	20497	N24 W12	245	(B)	4				
79	3	13	15871	N25 W25	245	1100	3.0		N23 W28				B	90	5	ESI
79	3	14	15871	N25 W38	244	1100	3.0		N23 W38				B	60	3	DSO
79	3	15	15871	N25 W50	240	1000	3.0									
79	3	16	15871	N25 W64	243	600	3.0									
79	3	17	15871	N26 W77	244	600	3.0									

MCMATH REGION 15866 CMP DATE 11.7 RETURN OF REGION 15815 ROTATION 4

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	4	15866	S24 E85	252	200	1.5									
79	3	6	15866	S24 E64	248	300	2.0									

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MCMATH REGION 15866 (CONT) CMP DATE 11.7 RETURN OF REGION 15815 ROTATION 4

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	7	15866	S25 E53	246	300	2.0
79	3	8	15866	S25 E38	247	200	1.5
79	3	10	15866	S25 E14	246	200	1.5
79	3	11	15866	S25 E01	245	200	1.5
79	3	12	15866	S26 W12	244	300	1.5
79	3	13	15866	S26 W25	245	200	1.5
79	3	14	15866	S26 W38	244	200	1.5
79	3	15	15866	S26 W50	240	200	1.5
79	3	16	15866	S26 W64	243	200	1.5
79	3	17	15866	S26 W76	243	100	1.5

SUNSPOT DATA

NW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20509	S25 W12	245	(AP)	3				

MCMATH REGION 15869 CMP DATE 13.1

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	6	15869	S27 E84	228	1800	2.0
79	3	7	15869	S27 E71	228	1700	3.0
79	3	8	15869	S27 E57	228	1800	3.0
79	3	10	15869	S27 E32	228	2300	2.5
79	3		15869				
79	3		15869				
79	3	11	15869	S27 E20	226	2400	2.5
79	3	12	15869	S27 E06	226	1900	2.5
79	3	13	15869	S27 W09	229	1500	2.5
79	3	14	15869	S27 W23	229	1500	2.5
79	3	15	15869	S27 W35	225	1300	2.0
79	3	16	15869	S27 W48	227	1300	2.0
79	3	17	15869	S27 W59	226	1500	2.5
79	3	18	15869	S27 W71	224	1300	2.0

SUNSPOT DATA

NW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20495	S27 E79	233	(AP)	3	B	120	1	HSX
20495	S27 E66	232	(AP)	4	B	20	2	HAX
20495	S26 E52	231	(AP)	3				
20495	S27 E28	231	(AP)	3	B	70	4	CAO
20499	S18 E26	233	(AP)	2				
20501	S32 E36	223	(AF)	2				
20495	S25 E14	232	(AP)	3	B	20	5	HSX
20495	S25 E01	232	(AP)	2				

MCMATH REGION 15875 CMP DATE 13.2 RETURN OF REGION 15822 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	7	15875	S10 E75	224	100	1.0
79	3	8	15875	S10 E60	225	100	1.0

SUNSPOT DATA

NW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS

MCMATH REGION 15891 CMP DATE 13.5

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	15	15891	S12 W31	221	100	1.5
79	3	16	15891	S13 W46	225	100	1.0

SUNSPOT DATA

NW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS

MCMATH REGION 15873 CMP DATE 14.1 RETURN OF REGION 15825 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	8	15873	N24 E71	214	100	1.0
79	3	10	15873	N25 E50	210	300	1.0
79	3	11	15873	N25 E36	210	200	1.0
79	3	12	15873	N25 E22	210	300	1.0
79	3	13	15873	N24 E07	213	200	1.0
79	3	14	15873	N24 W07	213	300	1.0
79	3	15	15873	N24 W18	208	300	1.5
79	3	16	15873	N24 W31	210	300	2.0
79	3	17	15873	N24 W43	210	300	1.0
79	3	18	15873	N25 W56	209	200	1.0

SUNSPOT DATA

NW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS

MCMATH REGION 15885 CMP DATE 14.6

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	13	15885	S26 E14	206	300	2.5
79	3	14	15885	S26 W01	207	700	3.0
79	3	15	15885	S26 W14	204	1600	3.0
79	3	16	15885	S26 W28	207	1600	3.0
79	3	17	15885	S26 W41	208	2400	3.0

SUNSPOT DATA

NW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	S24 E07			B		60	3	DSO
	S25 W02			B		70	15	DSI
	S25 W15			B		200	17	EKI
	S25 W27			R		220	27	EAI
	S25 W41			B		240	23	EAI

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MCMATH REGION 15885 (CONT) CMP DATE 14.6

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	18	15885	S25 W54	207	2200	3.0									
79	3	20	15885	S25 W80	206	1700	2.5		S25 W85				P	10	1	AXX

MCMATH REGION 15874 CMP DATE 15.2

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	8	15874	N16 E88	197	200	2.0		N20 E87				M	280	2	DSO
79	3	10	15874	N17 E62	198	900	3.5	20500	N16 E60	199	(Y)	3	B	130	4	DSO
79	3	11	15874	N17 E48	198	1100	3.5	20500	N16 E45	201	(Y)	3	B	60	8	DSI
79	3		15874					20506	N18 E62	184	(B)	2				
79	3	12	15874	N17 E34	198	1800	3.0	20500	N15 E33	200	(Y)	3				
79	3		15874					20506	N17 E47	186	AP	1				
79	3	13	15874	N17 E21	199	1500	2.5		N17 E14				B	70	3	DSI
79	3	14	15874	N17 E07	199	1500	3.0		N20 E06				B	30	4	CSO
79	3		15874						N17 E19				B	10	1	HRX
79	3	15	15874	N18 W06	196	1500	3.0		N15 E06				B	10	2	AXX
79	3	16	15874	N19 W20	199	1500	3.5									
79	3	17	15874	N19 W33	200	1500	2.5									
79	3	18	15874	N19 W46	199	1400	2.0									

MCMATH REGION 15876 CMP DATE 15.2

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	8	15876	S22 E85	200	600	2.0									
79	3	10	15876	S21 E63	197	900	2.5									
79	3	11	15876	S21 E47	199	800	2.0	20504	S21 E44	202	(AP)	3	B	0	1	AXX
79	3	12	15876	S22 E34	198	900	2.5									
79	3	13	15876	S22 E21	199	800	2.5		S13 E33				B	20	1	HSX
79	3	14	15876	S22 E07	199	700	2.5									
79	3	15	15876	S22 W06	196	700	2.5									
79	3	16	15876	S22 W20	199	800	2.5									
79	3	17	15876	S22 W33	200	900	2.5									
79	3	18	15876	S22 W46	199	900	2.5									
79	3	20	15876	S22 W72	198	300	1.0									

MCMATH REGION 15878 CMP DATE 15.2 RETURN OF REGION 15816 ROTATION 2

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	8	15878	S36 E75	210	500	1.0									
79	3	10	15878	S36 E60	200	500	1.0									
79	3	11	15878	S36 E46	200	400	1.0									
79	3	12	15878	S36 E33	199	400	1.0									
79	3	13	15878	S36 E20	200	300	1.0									
79	3	14	15878	S36 E07	199	300	1.0									
79	3	15	15878	S35 W04	194	300	1.5									

MCMATH REGION 15896 CMP DATE 15.4

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	16	15896	S30 W17	196	200	1.5									
79	3	17	15896	S30 W28	195	400	2.5									
79	3	18	15896	S30 W42	195	800	2.5									
79	3	20	15896	S29 W69	195	400	2.0									
79	3	21	15896	S28 W82	195	500	1.0									

MCMATH REGION 15889 CMP DATE 16.3

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	15	15889	N34 E06	184	400	2.5		N30 E06				B	10	3	BXO
79	3	16	15889	N33 W07	186	200	1.0		N32 W05				R	20	2	BXO
79	3	17	15889	N33 W20	187	300	2.0									
79	3	18	15889	N33 W33	186	200	1.5									

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MCMATH REGION 15881 CMP DATE 16.8

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	12	15881	N29 E55	177	300	2.5
79	3	13	15881	N29 E42	178	300	2.0
79	3	14	15881	N29 E28	178	400	1.5
79	3	15	15881	N29 E15	175	400	2.0
79	3	16	15881	N29 E02	177	400	1.5
79	3	17	15881	N29 W10	177	300	1.5
79	3	18	15881	N29 W24	177	300	1.0
79	3	20	15881	N29 W52	178	500	2.0
79	3	21	15881	N29 W66	179	800	2.0
79	3	22	15881	N28 W79	180	1200	1.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20510	N27 E53	180	(AP)	2				
	N22 E36				B	30	3	BXO
	N28 E24				B	10	1	HRX
	N28 E11				B	30	1	AXX
	N28 W50				P	10	1	AXX
	N26 W60				M	10	1	AXX

MCMATH REGION 15880 CMP DATE 17.4

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	12	15880	N41 E60	172	100	2.0
79	3	13	15880	N40 E48	172	100	1.0
79	3	14	15880	N40 E35	171	100	1.0
79	3	15	15880	N41 E23	167	300	3.0
79	3	16	15880	N41 E10	169	300	2.5
79	3	17	15880	N41 W02	169	400	3.0
79	3	18	15880	N41 W15	168	1000	3.5
79	3	20	15880	N41 W41	167	1000	3.5
79	3	21	15880	N40 W54	167	1300	3.0
79	3	22	15880	N40 W67	168	900	3.0
79	3	23	15880	N40 W82	169	800	2.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	N38 E22				B	0	2	BXO
	N41 E12				R	50	4	CSO
	N41 W02				B	30	2	HSX
	N39 W43				P	20	2	BXO
	N40 W45				M	10	2	BXO

MCMATH REGION 15877 CMP DATE 17.7 RETURN OF REGIONS 15823, 15830, 15836 AND 15828 ROTATIONS 2, 4 AND 5

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	10	15877	N14 E88	172	3200	2.5
79	3	11	15877	N16 E72	174	5500	3.0
79	3		15877				
79	3		15877				
79	3		15877				
79	3	12	15877	N15 E60	172	8500	3.0
79	3		15877				
79	3		15877				
79	3		15877				
13	3		15877				
79	3		15877				
79	3		15877				
79	3	13	15877	N15 E50	170	10700	3.0
79	3		15877				
79	3		15877				
79	3		15877				
79	3		15877				
79	3	14	15877	N16 E40	166	10500	3.0
79	3		15877				
79	3		15877				
79	3		15877				
79	3	15	15877	N15 E27	163	10800	3.0
79	3		15877				
79	3		15877				
79	3		15877				
79	3	16	15877	N15 E14	165	10600	3.0
79	3	17	15877	N15 E01	166	11000	3.0
79	3	18	15877	N15 W14	167	11000	3.0
79	3	20	15877	N15 W40	166	9500	3.0
79	3	21	15877	N15 W53	166	9500	3.0
79	3	22	15877	N15 W65	166	8000	2.5
79	3	23	15877	N15 W75	162	2200	2.5

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20502	N09 E80	179	(X)	3	B	30	3	CRO
20502	N10 E63	183	(B)	3	B	50	5	DSO
20505	N22 E65	181	(AP)	2	B	0	1	AXX
20506	N18 E62	184	(B)	2				
20507	N17 E71	175	(AP)	3	B	40	3	CAO
20502	N10 E51	182	(BP)	3				
20506	N17 E47	186	AP	1				
20507	N16 E63	170	(B)	4				
20511	N05 E65	168	(B)	3				
20512	N21 E70	163	(X)	3				
20513	N15 E71	162	(X)	4				
20514	N10 E80	153	(X)	2				
	N16 E45				B	120	7	DAO
	N06 E46				B	100	5	DAO
	N20 E55				B	120	2	DSO
	N15 E56				B	40	1	HSX
	N14 E76				B	10	1	HRX
	N20 E45				B	30	3	BXO
	N06 E37				B	50	5	DSO
	N15 E35				B	80	7	ESO
	N16 E47				B	60	1	HSX
	N15 E14				B	10	3	BXO
	N05 E24				B	20	12	CRI
	N20 E31				B	30	4	CRO
	N16 E34				B	170	1	HSX
	N05 E12				R	70	18	DAO
	N19 W36				P	20	3	HSX
	N20 W49				M	70	5	DRO
20514	N09 W67	154	B	3				

MCMATH REGION 15882 CMP DATE 18.3 RETURN OF PART OF REGION 15823 ROTATION 4

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	12	15882	N29 E76	156	500	1.5
79	3	13	15882	N30 E62	158	800	1.0
79	3	14	15882	N29 E48	158	700	1.0
79	3	15	15882	N29 E35	155	500	2.0
79	3	16	15882	N30 E21	158	500	2.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS

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MCMATH REGION 15882 (CONT) CMP DATE 18.3 RETURN OF REGION 15823 ROTATION 4

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	17	15882	N30 E10	157	700	2.0									
79	3	18	15882	N30 W04	157	600	1.5									
79	3	20	15882	N30 W30	156	400	1.0									
79	3	21	15882	N30 W43	156	500	1.0		N28 W52				M	10	1	AXX
79	3	22	15882	N30 W56	157	400	1.0									

MCMATH REGION 15907 CMP DATE 18.6

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	22	15907	N11 W53	154	400	3.0									
79	3	23	15907	N11 W67	154	1200	2.0									

MCMATH REGION 15905 CMP DATE 18.7

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	22	15905	S09 W51	152	100	1.0									

MCMATH REGION 15902 CMP DATE 19.8

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	21	15902	S25 W25	138	100	1.5									
79	3	22	15902	S25 W37	138	400	2.5									
79	3	23	15902	S25 W50	137	300	2.0	20516	S25 W49	136	AP	2				

MCMATH REGION 15886 CMP DATE 20.3

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	13	15886	S13 E87	133	1200	2.0		S11 E80				B	30	1	HSX
79	3	14	15886	S13 E74	132	2400	2.5		S15 E70				B	30	4	DSO
79	3	15	15886	S13 E61	129	2700	2.5									
79	3	16	15886	S14 E46	133	3300	3.5		S16 E44				R	70	6	DAO
79	3		15886						S13 E47				R	220	18	EAO
79	3	17	15886	S14 E34	133	3300	3.0		S10 E30				B	200	6	CSO
79	3		15886						S16 E30				B	110	12	ERO
79	3	18	15886	S14 E21	132	3500	3.0		S11 E10				B	110	11	DXX
79	3	20	15886	S14 W06	132	2700	3.0		S13 W11				P	140	16	DAO
79	3	21	15886	S14 W19	132	2600	3.0		S13 W15				H	150	9	DSO
79	3	22	15886	S14 W32	133	2600	3.0		S13 W27				H	190	15	ESO
79	3	23	15886	S14 W45	132	2600	3.0	20515	S12 W52	139	AP	3	B	220	13	DSO
79	3		15886					20517	S16 W48	135	B	3				
79	3	24	15886					20515	S12 W65	139	(AP)	3				
79	3		15886					20517	S16 W61	135	(B)	2	B	140	8	DAO
79	3	25	15886					20515	S12 W78	139	(AP)	3				
79	3		15886					20517	S16 W75	136	(B)	2	B	170	5	DAO
79	3	26	15886	S14 W87	135	700	1.0									

MCMATH REGION 15888 CMP DATE 20.3 RETURN OF PART OF REGION 15830 ROTATION 5

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	14	15888	N16 E72	134	1100	1.5		N15 E66				B	20	1	HRX
79	3	15	15888	N17 E58	132	900	1.5		N15 E52				B	80	1	AXX
79	3	16	15888	N16 E44	135	800	2.0		N14 E43				R	20	2	BXO
79	3	17	15888	N16 E32	135	800	2.0									
79	3	18	15888	N17 E20	133	1200	2.0									
79	3	20	15888	N18 W06	132	1100	1.5									
79	3	21	15888	N18 W18	131	1200	1.5									
79	3	22	15888	N18 W31	132	900	1.0									
79	3	23	15888	N19 W45	132	1000	1.0									
79	3	24	15888						N26 W58				B	0	1	AXX

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MCMATH REGION 15892 CMP DATE 20.9 RETURN OF REGION 15832 ROTATION 3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	14	15892	S28 E80	126	300	1.0
79	3	15	15892	S29 E67	123	300	1.0
79	3	16	15892	S28 E53	126	300	1.0
79	3	17	15892	S29 E41	126	300	1.0
79	3	18	15892	S29 E28	125	300	1.0
79	3	20	15892	S30 E02	124	300	1.0
79	3	21	15892	S30 W11	124	400	1.5
79	3	22	15892	S30 W23	124	300	1.0
79	3	23	15892	S30 W37	124	400	1.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS

MCMATH REGION 15887 CMP DATE 21.3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	14	15887	N05 E88	118	600	1.5
79	3	15	15887	N07 E77	113	1800	2.0
79	3	16	15887	N07 E62	117	1600	3.5
79	3	17	15887	N07 E48	119	1600	3.5
79	3		15887				
79	3	18	15887	N07 E34	119	1900	3.5
79	3	20	15887	N07 E07	119	2500	3.5
79	3		15887				
79	3	21	15887	N07 W08	121	2400	3.5
79	3		15887				
79	3	22	15887	N07 W20	121	2500	4.0
79	3		15887				
79	3	23	15887	N07 W35	122	3500	3.5
79	3		15887				
79	3	24	15887				
79	3	25	15887				
79	3	26	15887	N07 W75	123	2500	4.5
79	3	27	15887	N09 W89	124	500	1.5

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	N06 E82				B	80	1	HSX
	N07 E70				B	50	2	HSX
	N05 E63				R	270	8	EKO
	N09 E53				B	20	4	BXO
	N07 E43				B	190	6	CHO
	N06 W03				P	260	30	DHI
	N08 E18				P	40	1	HSX
	N07 W06				M	230	23	DKI
	N07 E13				M	20	1	HRX
	N07 E00				M	30	2	CRO
	N07 W17				M	220	27	EAO
20518	N07 W45	132	D	4	B	390	13	ESI
20519	N06 W25	112	AP	2	B	10	3	BXO
20518	N07 W57	131	(D)	4	B	410	18	EKI
20518	N07 W70	131	(D)	3	B	250	19	EKI
20518	N07 W80	128	(Y)	3				

MCMATH REGION 15890 CMP DATE 21.9 RETURN OF REGION 15834 ROTATION 3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	15	15890	S13 E87	103	700	1.5
79	3	16	15890	S13 E71	108	1300	3.0
79	3	17	15890	S13 E56	111	1300	3.0
79	3	18	15890	S14 E43	110	2000	2.5
79	3	20	15890	S14 E15	111	1500	2.5
79	3	21	15890	S14 E03	110	1200	2.5
79	3	22	15890	S14 W10	111	1000	2.5
79	3	23	15890	S14 W24	111	1300	2.5
79	3	24	15890				
79	3	26	15890	S14 W64	112	1700	2.5
79	3	27	15890	S15 W76	111	1300	2.5
79	3	28	15890	S15 W89	111	500	1.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	S15 E69				R	60	5	DAO
	S13 E55				B	70	7	CSO
	S14 E14				P	60	4	CAO
	S14 E11				M	10	3	BXO
20520	S14 W23	110	B	3	B	10	4	BXO
20520	S15 W34	108	(AF)	2	B	0	1	AXX
20527	S14 W63	111	(B)	2	M	40	3	CSO

MCMATH REGION 15893 CMP DATE 22.0 RETURN OF REGION 15837 ROTATION 4

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	16	15893	N24 E72	107	1300	2.0
79	3	17	15893	N24 E58	109	700	3.0
79	3	18	15893	N25 E45	108	900	3.0
79	3	20	15893	N25 E18	108	1000	2.5
79	3	21	15893	N25 E04	109	900	2.5
79	3	22	15893	N24 W09	110	1100	3.0
79	3	23	15893	N24 W23	110	1100	3.0
79	3	24	15893				
79	3	26	15893	N24 W63	111	1100	1.0
79	3	27	15893	N24 W76	111	900	1.5

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	N26 E58				B	10	1	AXX
	N25 E16				P	20	2	BXO
	N24 E11				M	10	3	BXO
	N24 W01				M	60	8	DRO
20521	N23 W22	109	AP	3	B	0	1	AXX
20521	N23 W35	109	(AP)	2	B	0	1	AXX

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MCMATH REGION 15894 CMP DATE 22.7

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	16	15894	N18 E80	99	100	1.0									
79	3	17	15894	N18 E67	100	100	1.5									
79	3	18	15894	N18 E53	100	200	1.5									

MCMATH REGION 15910 CMP DATE 22.8

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	26	15910	S16 W50	98	100	1.5									
79	3	27	15910	S17 W62	97	200	2.0									
79	3	28	15910	S17 W75	97	100	1.0									

MCMATH REGION 15897 CMP DATE 23.3

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	17	15897	N32 E74	93	600	3.0									
79	3	18	15897	N32 E60	93	400	2.5									
79	3	20	15897	N32 E34	92	200	1.0									

MCMATH REGION 15895 CMP DATE 23.9

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	16	15895	S28 E85	94	600	1.5									
79	3	17	15895	S27 E79	88	2700	2.5									
79	3	18	15895	S27 E66	87	2400	2.0									
79	3	20	15895	S27 E40	86	1900	2.0		S28 E32				P	160	3	HSX
79	3	21	15895	S27 E28	85	2100	2.0		S29 E28				H	150	3	HSX
79	3	22	15895	S27 E16	85	1800	2.0		S29 E16				H	110	5	CSO
79	3	23	15895	S27 E03	84	1800	2.0	20522	S28 W06	93	AP	4	B	110	3	HSX
79	3	24	15895					20522	S28 W18	92	(AP)	4	B	80	1	HSX
79	3	25	15895					20522	S27 W32	93	(AP)	4	B	130	1	HSX
79	3	26	15895	S27 W37	85	1500	2.5	20522	S27 W45	93	(AP)	3				
79	3	27	15895	S27 W49	84	1100	2.5		S26 W58				B	60	1	HSX
79	3	28	15895	S27 W61	83	1300	2.0									

MCMATH REGION 15898 CMP DATE 24.5

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	18	15898	N26 E85	68	1400	2.5									
79	3	20	15898	N26 E51	75	1000	2.5									
79	3	21	15898	N26 E37	76	1200	2.5									
79	3	22	15898	N26 E25	76	1200	2.0									
79	3	23	15898	N26 E11	76	900	2.5									
79	3	26	15898	N26 W29	77	500	2.0									
79	3	27	15898	N26 W41	76	500	2.0									
79	3	28	15898	N26 W54	76	500	1.5									

MCMATH REGION 15899 CMP DATE 25.7 RETURN OF REGION 15851 ROTATION 2

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	18	15899	S30 E90	63	500	1.0									
79	3	20	15899	S30 E65	61	1300	3.0		S32 E66				P	150	9	DAI
79	3	21	15899	S30 E53	60	1900	2.5		S31 E61				H	130	8	DAI
79	3	22	15899	S30 E41	60	2400	3.0									
79	3	23	15899	S30 E25	62	1700	3.0	20523	S31 E27	60	B	3	B	130	10	DSI
79	3	24	15899					20523	S31 E14	60	(B)	3	B	150	12	DSI
79	3	25	15899					20523	S31 E02	59	(BP)	4	B	150	9	DSI
79	3	26	15899	S30 W12	60	1700	3.0	20523	S31 W11	59	(BP)	3				
79	3	27	15899	S31 W24	59	1700	3.5		S28 W25				B	150	5	DKC
79	3	28	15899	S31 W37	59	1700	3.0		S31 W38				B	150	7	HKX
79	3	30	15899					20531	S30 W65	60	AP	3	B	50	1	HSX

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MCMATH REGION 15903 CMP DATE 25.9 RETURN OF REGION 15841 ROTATION 4

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	20	15903	S17 E70	56	300	1.0
79	3	21	15903	S18 E58	55	300	1.5
79	3	22	15903	S17 E45	56	200	1.5
79	3	23	15903	S17 E32	55	200	1.0
79	3	24	15903				
79	3	25	15903				
79	3	26	15903	S17 W10	58	600	1.5
79	3	27	15903	S17 W22	57	700	2.0
79	3	28	15903	S17 W35	57	500	1.5

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20525	S19 E12	62	(AP)	3	B	0	1	AXX
20525	S19 E00	61	(B)	2	B	30	4	CRO
20525	S19 W16	64	(AP)	2				

MCMATH REGION 15911 CMP DATE 27.0 RETURN OF REGION 15852 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	21	15911	S23 E70	43	200	1.0
79	3	22	15911	S23 E58	43	200	1.0
79	3	23	15911	S23 E45	42	300	1.0
79	3	26	15911	S23 E05	43	200	1.0
79	3	27	15911	S23 W07	42	200	1.0
79	3	28	15911	S23 W20	42	200	1.0
79	3	30	15911				

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20532	S23 W48	43	AP	2	B	0	1	AXX

MCMATH REGION 15904 CMP DATE 27.6

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	21	15904	N08 E81	32	2600	3.0
79	3	22	15904	N08 E68	33	2100	3.0
79	3	23	15904	N08 E54	33	2600	3.0
79	3	24	15904				
79	3	25	15904				
79	3	26	15904	N08 E13	35	2500	2.5
79	3	27	15904	N08 E00	35	2400	2.5
79	3	28	15904	N08 W14	36	2300	2.5
79	3	30	15904				
79	3	31	15904				
79	4	01	15904				

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	N07 E86				M	420	1	HSX
	N06 E74				M	560	6	DHO
20524	N07 E51	36	B	5	B	420	6	EHO
20524	N08 E37	37	(B)	5	B	460	5	EHO
20524	N08 E24	37	(B)	5	B	600	8	EHO
20524	N08 E10	38	(B)	5	M	310	9	ESO
	N06 W04				B	280	7	EHO
	N06 W17				B	320	9	EKO
20524	N06 W43	38	BP	4	B	200	8	CSO
20524	N06 W56	39	(BP)	4				
20524	N07 W70		(BP)	3	B	160	6	C

MCMATH REGION 15901 CMP DATE 28.0 RETURN OF REGION 15857 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	20	15901	S35 E90	36	300	1.0
79	3	21	15901	S34 E80	33	400	2.0
79	3	22	15901	S34 E69	32	900	2.5
79	3	23	15901	S34 E57	30	600	2.5
79	3	26	15901	S34 E18	30	300	1.5
79	3	27	15901	S34 E06	29	300	1.5
79	3	28	15901	S35 W06	28	300	1.5

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS

MCMATH REGION 15912 CMP DATE 28.3 RETURN OF REGION 15840 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	23	15912	N41 E56	31	300	1.0
79	3	26	15912	N40 E21	27	200	1.5
79	3	27	15912	N40 E10	25	300	1.0
79	3	28	15912	N40 W03	25	300	1.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS

MCMATH REGION 15908 CMP DATE 28.9 RETURN OF PART OF REGION 15847. ROTATION 5

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	3	23	15908	N12 E69	18	900	2.0
79	3	26	15908	N12 E30	18	500	2.0
79	3	27	15908	N12 E18	17	700	2.0
79	3	28	15908	N12 E05	17	1200	2.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS

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MCMATH REGION 15908 (CONT) CMP DATE 28.9 RETURN OF REGION 15847 ROTATION 5

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	4	03	15908	N10 W75		300	1.0									

A-4
A-5

78
101.2

MCMATH REGION 15906 CMP DATE 29.1 RETURN OF REGION 15849 ROTATION 3

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	22	15906	S21 E85	16	1800	2.0									
79	3	23	15906	S21 E72	15	3400	2.5									
79	3	26	15906	S23 E32	16	3100	2.5									
79	3	27	15906	S23 E21	14	2700	2.5									
79	3	28	15906	S23 E08	14	3000	2.5									
79	3	31	15906					2053[illegible]	S15 W22	5	(B)	2				
79	4	01	15906					20538	S15 W34		(B)	4	B	10	2	B
79	4	02	15906					20538	S13 W50		(BP)	4				
79	4	03	15906	S24 W69		2300	2.0	20538	S14 W64		(AP)	3				
79	4	04	15906					20538	S13 W77		(AP)	3				

MCMATH REGION 15913 CMP DATE 29.7

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	26	15913	N23 E43	5	400	2.5	20528	N23 E40	8	(AP)	3	H	70	7	CSO
79	3	27	15913	N23 E29	6	400	2.0									
79	3	28	15913	N23 E16	6	200	1.0									

MCMATH REGION 15914 CMP DATE 30.6

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	25	15914					20526	N27 E63	359	(AP)	3	B	60	1	HSX
79	3	26	15914	N27 E54	355	600	3.0	20526	N27 E52	357	(B)	4	H	50	4	CSO
79	3	27	15914	N27 E41	355	800	3.5		N26 E36				B	80	2	DSO
79	3	28	15914	N27 E27	356	1100	3.0		N26 E24				B	50	5	DSO
79	3	30	15914					20526	N27 W04	0	AP	2	B	10	3	BXO
79	4	01	15914						N33 W15				B	30	8	C
79	4	02	15914						N32 W26				B	30	5	C
79	4	03	15914	N27 W50		700	2.5		N32 W40				B	10	2	A
79	4	05	15914	N27 W80		400	1.5									

MCMATH REGION 15921 CMP DATE 30.7 RETURN OF PART OF REGION 15847 ROTATION 5

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	26	15921	N17 E56	353	500	1.0									
79	3	27	15921	N17 E42	354	400	1.0									
79	3	28	15921	N17 E29	354	400	1.5									
79	4	03	15921	N17 W50		500	1.0									
79	4	05	15921	N17 W79		400	1.0									

MCMATH REGION 15916 CMP DATE 30.8 RETURN OF REGION 15850 ROTATION 6

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	26	15916	S19 E54	355	1300	2.0									
79	3	27	15916	S19 E42	354	1300	2.0									
79	3	28	15916	S20 E30	353	1500	2.0		S25 E35				B	0	1	AXX
79	4	03	15916	S20 W49		1500	2.0									
79	4	05	15916	S20 W76		900	2.0	20546	S26 W70		(AP)	3				

MCMATH REGION 15917 CMP DATE 31.7

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	26	15917	S15 E67	342	900	2.5									
79	3	27	15917	S16 E54	342	900	2.5									

CONTD

REGIONS OF SOLAR ACTIVITY

MARCH 1979

MCMATH REGION 15917 (CONT) CMP DATE 31.7

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	28	15917	S16 E42	341	1100	3.0		S15 E40				B	0	2	AXX
79	4	01	15917						S20 W39				B	10	1	A
79	4	03	15917	S17 W37		800	2.0									
79	4	05	15917	S18 W64		500	2.0									
79	4	06	15917			500	2.0									

Note: No calcium spectroheliograms were secured at the McMath-Hulbert Observatory on March 1, 2, 5, 9, 18, 24, 25, 29, 30 and 31, 1979.
No sunspot observations were made at Mt. Wilson on March 1, 9, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 27, 28, and 29, 1979.

DAILY CALCIUM PLAGE INDEX

MARCH 1979

YR	MO	DAY	INDEX	YR	MO	DAY	INDEX	YR	MO	DAY	INDEX
79	3	1	*	79	3	11	41.4	79	3	21	50.4
79	3	2	*	79	3	12	51.7	79	3	22	45.1
79	3	3	45.5	79	3	13	52.4	79	3	23	41.7
79	3	4	46.3	79	3	14	50.2	79	3	24	*
79	3	5	*	79	3	15	56.1	79	3	25	*
79	3	6	45.9	79	3	16	61.3	79	3	26	32.0
79	3	7	43.4	79	3	17	65.5	79	3	27	33.7
79	3	8	46.9	79	3	18	68.2	79	3	28	41.1
79	3	9	*	79	3	19	*	79	3	29	*
79	3	10	46.5	79	3	20	53.8	79	3	30	*
								79	3	31	*

* NO OBSERVATIONS

SUDDEN IONOSPHERIC DISTURBANCES

MARCH 1979

DAY	UNIVERSAL TIME				WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TIME							KNOWN FLARE	McMATH REGION
	START	END	MAX	IMP		SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD		
01	1007	1125	1020	3	5	4		6	5		3		1012	15856
01	1132	1215	1144	1	5	2		4	4		3		1132	15850
01	1436	1507	1442	1-	5			1	3		6		NF	
01	1551	1637	1605	1-	5	1			3	1	10		1550E	15856
01	1826	1906	1836	1-	1					1			1823	15843
01	2012	2106	2023	1-	3				2	1			2013E	15864
02	0641	0808	0651	1	1				1				0641	15850
02	1012	1025	1018	1	3	1		1	1				*	
02	1108	1120	1112	1	3	1		1	1				1109	15852
02	1340	1400	1350	1-	1			1					1336	15850
02	1606	1628	1612	1-	3				1	1	1		1605	15852
02	2016	2100	2027	1-	3				1	1	3		2019	15864
02	2126	2155	2132	1	5				2	1	3		2128	15864
03	0234	0400	0242	1	3	1			1				0234E	15864
03	0950	1025	0955	1	5			1	3		1		0950	15864
03	1106	1140	1117	1	5	1		2	4		3		1101E	15864
03	1417	1425	1420	1	5			1	2		1		1409	15864
03	1817	1859	1825	1-	5	2			2		11		1815	15843
03	2019	2049	2029	1-	5				1	1	10		2019	15863
04	0158	0228	0206	1-	1					1			*	
04	1205	1312	1234	1-	1			1					1206	15863
05	1242	1330	1303	1-	1			1					1241	15849
05	1409	1507	1424	2+	5	4		7	4		10		1405	15863
05	1531	1541	1536	1-	5			1	1		4		NF	
06	0117	0222	0128	1-	1				1				*	
06	1718	1742	1722	1-	1				1	1			1717	15849
06	1811	1833	1814	1-	1				1	1			1806	15849
06	2205	2308	2219	1-	3				2	1			2201	15864
07	1654	1730	1704	1-	5	1			1	1	4		1653	15856
08	1015	1030	1022	1-	5	1			3				1015	15874
08	1136	1150	1142	1-	5			1	3		1		1130	15870
08	1210	1225	1216	1-	3			1	3		1		NF	
08	1240	1310	1247	1-	5			1	3		1		NF	
08	1328	1351	1333	1-	5				2	1	1		1328	15874
08	2322	0048D	2338	1	3				2				2203	15874
09	0937	1016	0955	1-	3			3					0935	15874
09	1018	1145	1038	2	5	4		6	4		3		NF	
10	1544	1637	1555	1	1					1			*	
10	1645	1800	1705	1-	5				1		6		1640	15877
10	2253	2317	2303	1-	1				1				2254	15877
11	0003	0058	0029	1-	1				1				0001	15864
11	0526	0600	0532	1-	3	1			1				0526E	15869
11	0657	0835	0718	1+	5			1	2		1		0700E	15877
11	1040	1125	1052	1	5	2		1	4		3		1036	15856
11	1602	1800	1630	1	5				2		5		1558	15865
12	1100	1212	1115	1-	1				1		1		1100	15877
12	1340	1438	1355	1-	5				2		2		NF	
12	2210	2250	2220	1-	3				2				2211	15877
13	0842	0937	0850	1-	5			1	2		1		NF	
13	1323	1405	1336	1	5	3		7	3	1	6		1328	15886
13	1715	1755	1726	1-	1					1			1710	15877
15	0818	0902	0826	1-	1			1					0821	15864
16	0028	0050	0031	1-	1				1				0025	15886
16	0520	0716	0548	1-	1				1				0522E	15877
16	0839	0915	0843	1-	1						1		0839	15877
16	1420	1515	1431	2	5	4		7	4	1	12		1411	15877
16	2015	2051	2021	1-	1					1			2013	15877
17	1804	1856	1812	1-	1					1			1801	15885
18	1419	1500	1428	2	5	5		7	3		14		1418	15877
18	1757	1853D	1806	1+	5	2			1	1	6		1757	15886
18	1853E	1923	1900	1-	1				1				1852	15877
18	2029	2053D	2032	1-	1				1				2031	15896
18	2045	2145	2103	1-	3				1	1	1		2049	15877
19	0052	0156	0104	1	3	1			2				0052	15887
19	1655	1819	1710	2	5	3	1	5	5	1	11		1654	15887
19	2103	2124	2111	1	5	1			3		13		2105E	15901
20	0447	0550	0504	1-	1				1				*	
20	1234	1338	1256	1+	5	2		4	3		5		*	
20	1944	2018	1953	1-	5				1	1	6		NF	
20	2308	0024	2316	1	5	1			2	1	2		NF	
21	0714	0747	0723	1-	3				1		1		0720E	15887
21	1300	1355	1312	2	5	3		6	4		11		1258	15887
21	2100	2148	2113	1	5	3			3	1	12		2057	15887
21	2244	2330	2302	1-	1				1				*	

SUDDEN IONOSPHERIC DISTURBANCES

MARCH 1979

DAY	UNIVERSAL TIME START	END	MAX	IMP	WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD	KNOWN FLARE	McMATH REGION
22	0100	0140	0110	1-	1				1				0100	15904
22	0323	0509	0332	3	5	2		1	1				0324	15887
22	1338	1527	1355	2	5	5		7	3	1	16		1338	15887
22	1350	1414	1356	1-	1				1				1356E	15887
22	1820	1908	1825	1+	5	2	1		2	1	13		1819	15904
23	0646	0822	0652	2+	5	4		3	2		2		0640	15904
23	0839	0910	0947	1+	5	3		2	2		2		0841	15880
23	0959	1055	1005	1	5	1		3	3		2		0954E	15887
23	1741	1905D	1751	1	1					1			1745	15887
23	1906	2046D	1926	2	5	1			3	1	13		1904	15887
23	2044	2132	2052	1	5	2			2		11		2044	15887
23	2226	2314D	2234	1	5				2	1	5		2223	15904
23	2314	0010	2328	1-	1				1				2316	15887
24	0109	0339	0128	2	3	1			2				0112E	15886
24	0720	0832	0728	1+	5	3		3	2		2		0721	15906
24	1442	1632	1555	2	5	5	1	7	4	1	16		1442	15887
25	0039	0213	0048	2+	5	1			2				0040E	15887
25	0649	0705	0656	2+	5	1		2	3		2		NF	
25	0811	0835	0820	1	3			1	2				*	
25	0848	0906	0853	1	3			1	2		1		*	
25	0910	0925	0913	1-	3			2	1				*	
25	0945	0953	0948	1-	1			1	1				*	
25	1024	1043	1035	1-	5	1		1	2		1		*	
25	1045	1100D	1100	1-	5			1	2		1		*	
25	1125	1144D	1144	1-	1				1				*	
25	1154	1200D	1200	1-	3			1	1		1		*	
25	1230	1305	1242	1	5	1		4	4		1		*	
25	1313	1325	1317	1-	3				2		1		*	
25	1426	1500	1438	1	5	1		4	2		6		1430	15887
25	1545	1557D	1557	1-	1				1		1		1548	15887
25	1634	1710	1647	1	5	2		3	4	1	10		1633	15887
25	1803	1850	1815	2	5	3	1		2	1	7		1802	15887
26	0135	0301D	0150	1+	5	1			2				NF	
26	0301E	0524	0331	2	5	1			2				NF	
26	0553	0745D	0601	1+	5	1		2	2		1		*	
26	0746	0835	0753	1+	5	3		2	3		2		0750E	15887
26	0948	1034	1022	1-	3			3					*	
26	1010	1025	1017	1-	1			1	1				*	
26	1147	1307	1216	2	5	6		6	5		8		1150	15887
26	1406	1530	1423	1+	5	5	1	7	4	1	14		1403	15887
26	1645	1800	1700	2	5			1	3	1	13		1641	15899
26	1953	2058	2013	1+	5	1			2	1	8		2002	15887
27	0538	0840	0617	3	5	4		3	1		1		*	
27	1039	1119	1052	1	3			4			1		1040	15899
27	1121	1220	1141	1	5	3		6	4		3		1124	15918
27	1555	1700	1608	1	5	2		3	3		12		1549E	15906
27	1950	2041	1958	1-	5				1		5		NF	
27	2112	2239	2133	1+	5	1			2	1	10		*	
28	0652	0703	0656	1-	3	1		1	1				0644	15915
28	1001	1052	1025	1-	5			2	4		2		*	
28	1100	1145	1105	1-	5			2	2		2		*	
28	1118	1224	1126	1-	1				1				*	
28	1247	1300D	1300	1-	3				1		2		*	
28	1631	1710	1644	1-	1						1		*	
28	2040	2140	2105	1-	1				1		1		*	
28	2100	2145	2125	1-	1				1		1		*	
29	0718	0912	0746	2	5			2	3		1		0719	15895
29	1100	1205	1122	1	5			1	2		2		NF	
29	1251	1307	1258	1	5			1	2		2		1256E	15911
30	0603	0734D	0624	1-	1				1				0610	15920
30	0734E	0830	0744	1	3				2				0735	15915
30	0752	0805	0758	1-	3				2	1			0752	15920
30	0903	0915	0907	1-	3	1			1		1		0900	15918
30	1456	1510	1502	1	3	1		1	1				1441	15918
30	2310	0142	2337	1+	3				2	1			2311	15918
31	0551	0655D	0608	1-	1				1				0554	15918
31	0934	0945	0937	1	3	1			1		2		0933	15918
31	0956	1015	1002	1-	1			1	1				0957	15918
31	1130	1230	1140	1-	5	1		2	3		1		*	
31	1152	1220	1204	1-	1			1	1				*	
31	1244	1408	1315	1-	5			5	3		1		NF	
31	1309	1316	1312	1-	3			1	2		1		1310	15918
31	1655	1800	1715	1	5	1			2	1		12	1656	15906
31	1945	2157	1959	1	3	1			1	1			1945	15906
31	2319	0125	2324	2	5	2		1	2	1	3		2318	15918

SUDDEN IONOSPHERIC DISTURBANCES

MARCH 1979

PERIODS OF NO OBSERVATIONS:

DATE	TIME (UT) and STATION
01-31	0000-2400 CL
02	0000-2400 A3
06	0000-2400 TN, 1100-2200 UM (10, 13, 16 kHz)
07-08	0000-2400 UM (10, 13, 16 kHz)
09	0000-2400 A3, 0000-0015 UM (10, 13, 16 kHz)
	1100-2400 UM (10, 13 kHz)
10-12	0000-2400 A26
10	0500-1000 UM (10, 13 kHz), 1200-2400 UM (10, 13 kHz)
11	1145-2400 UM (10, 13 kHz)
12-13	0000-2400 A3, 0000-2400 UM (10, 13 kHz)
13	0000-2400 TN
14	0000-1130 UM (10, 13 kHz), 1700-2400 UM (10, 13 kHz)
15	0000-1400 UM (10, 13 kHz), 1800-2400 UM (10 kHz)
16-17	0000-2400 UM (10 kHz)
16-19	0000-2400 UM (13 kHz)
23-24	0000-2400 TN
29-30	0000-2400 A28

STATIONS REPORTING FOR MARCH 1979

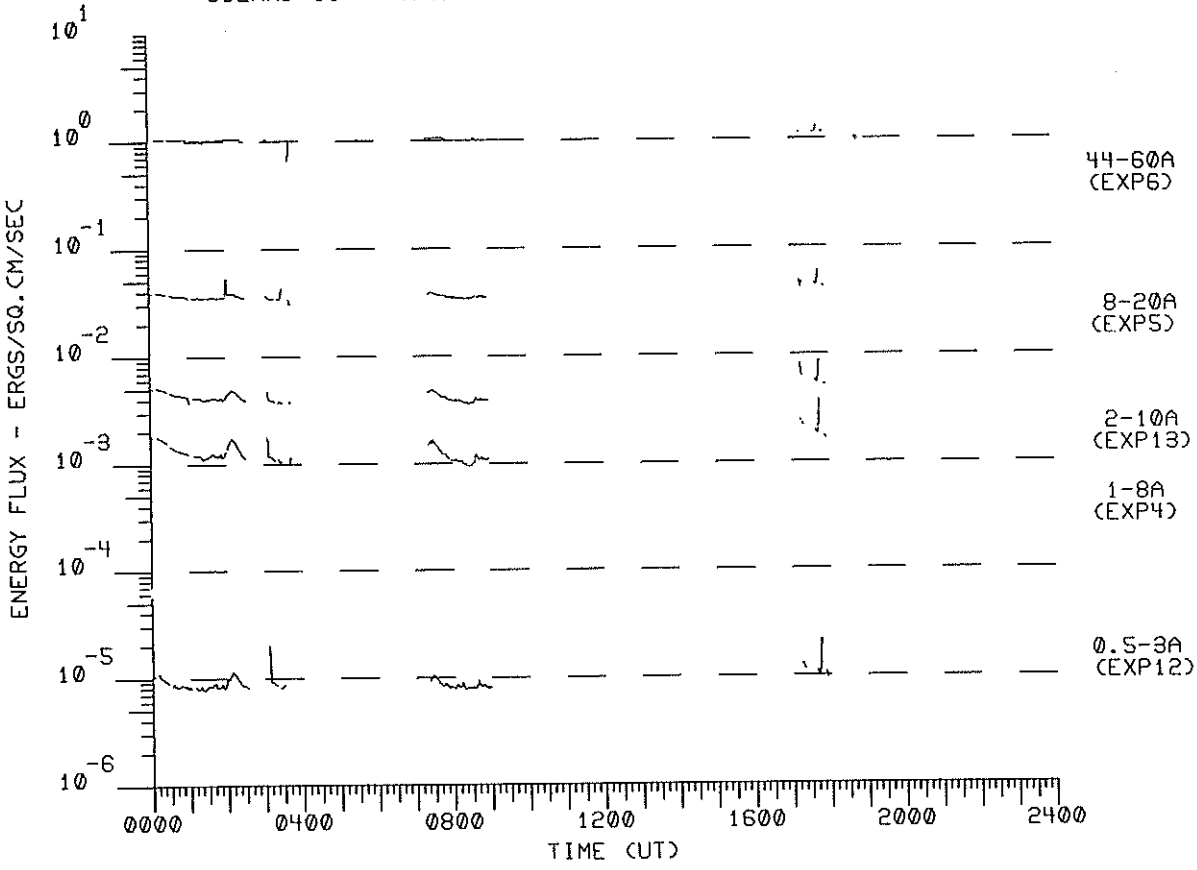
AAVSO (A1, A3, A5, A19, A21, A26, A28, A34, A45, A46, A47) (SES)
CHILWORTH (CL) (SCNA)
DARMSTADT (DA) (SWF)
HERSTMONCEUX (HC) (SEA)
HIRAISO (HI) (SWF)
HOBART (TA) (SEA)
HUANCAYO (HU) (SWF)
INUBO (IN) (SPA)
JULIUSRUH (JH) (SWF)
KANDILLI (KD) (SEA)
KUHLUNGSBORN (KU) (SEA, SPA)
MC MATH (CM) (SCNA, SWF)
NEW JERSEY (NJ) (SES)
PANSKA VES (PU) SWF, SEA, SES)
PRESTON (LO) (SEA)
SAO PAULO (UM) (SES, SPA)
SOFIA (SF) (SES)
SOMERTON (SO) (SWF)
ST CLOUD (SC) (SES)
TABLE MOUNTAIN (TM) (SPA, LF-SPA)
TORINO (TN) (SPA)
UPICE (UI) (SEA)
VSETIN (VS) (SEA)
ZILINA (ZL) (SEA)

SIDs BY McMATH REGION

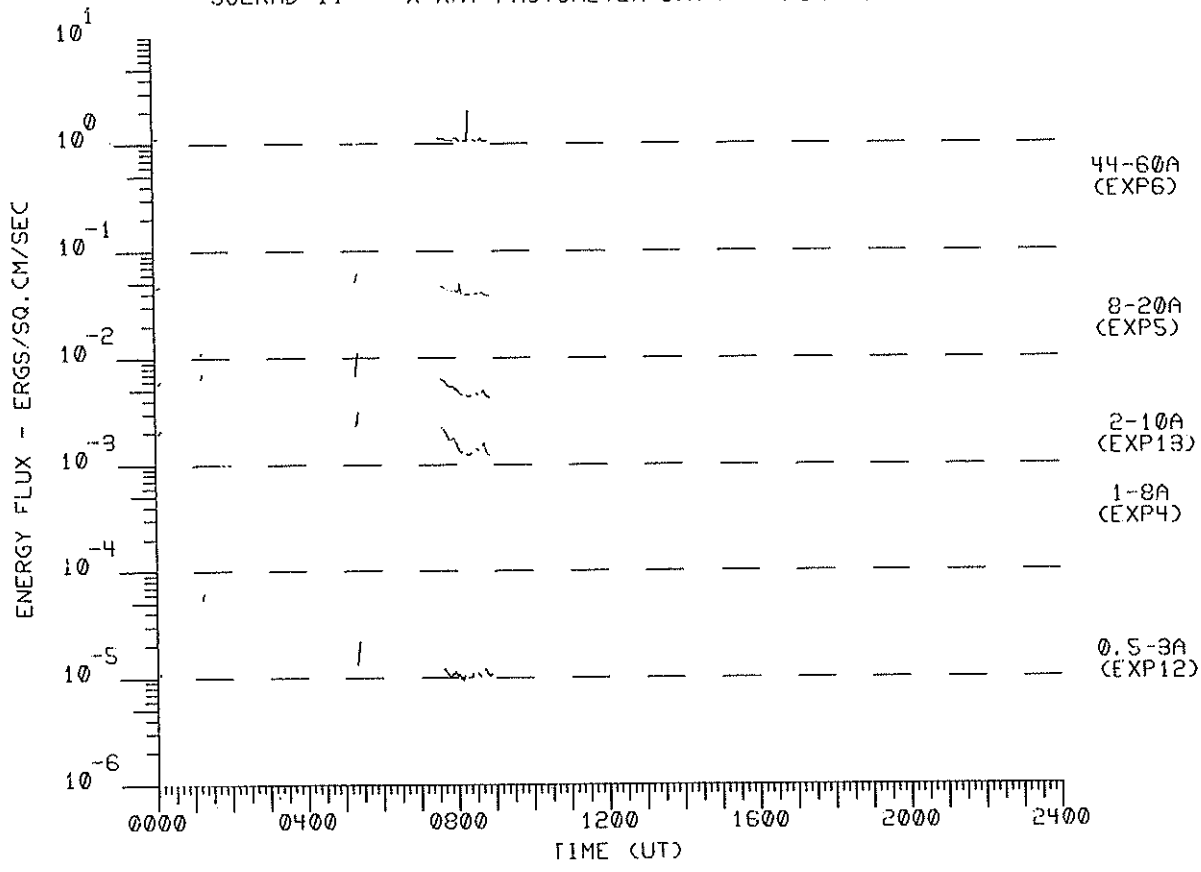
MARCH 1979

DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
REGION																															
15843	1	1																													
15849					1	2																									
15850	1	2																													
15852		2																													
15856	2	2					1				1																				
15863			2	1	1																										
15864	1	1	4			1					1				1																
15865											1																				
15869											1																				
15870								1																							
15874								3	1																						
15877									2	1	2	1				4		3													
15880																							1								
15885																	1														
15886													1			2		1					1								
15887																			2		3	3	5	1	5	4					
15895																													1		
15896																		1													
15899																										1	1				
15901																			1												
15904																						2	2								
15906																								1			1				2
15911																													1		
15915																												1		1	
15918																											1			3	5
15920																														2	
X-RAY																															
UNKNOWN	1				1			2	1			1	1							2	1				1	2	1		1		1
NO FP		1		1		1				1										2	1				10	3	2	7			2

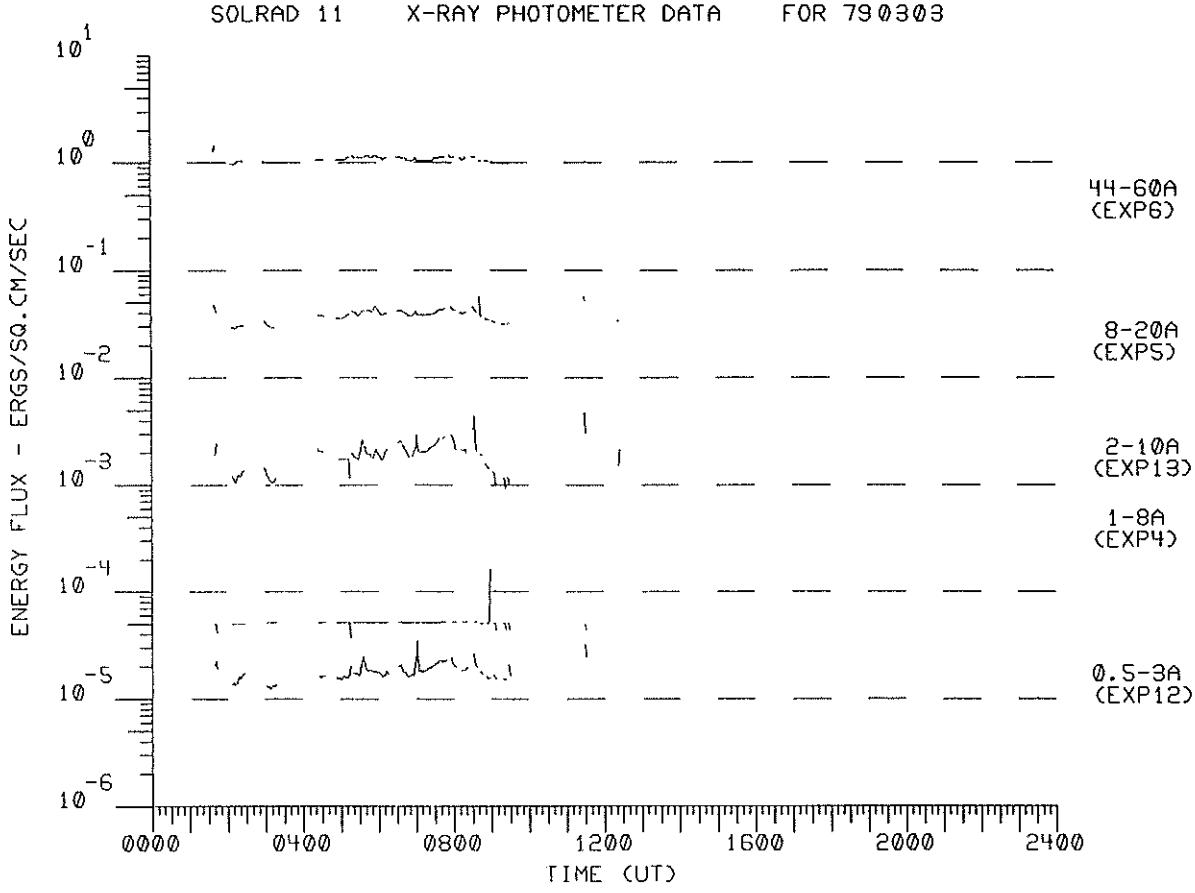
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790301



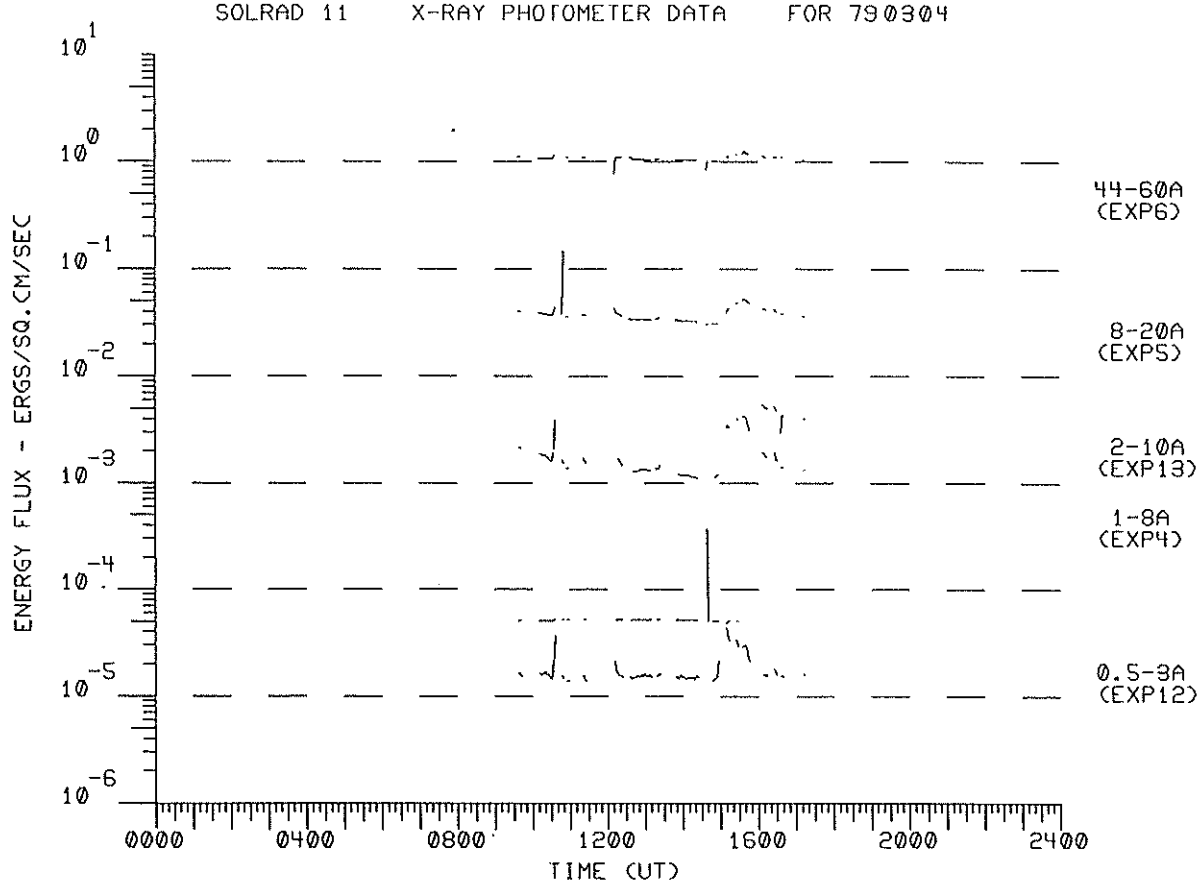
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790302

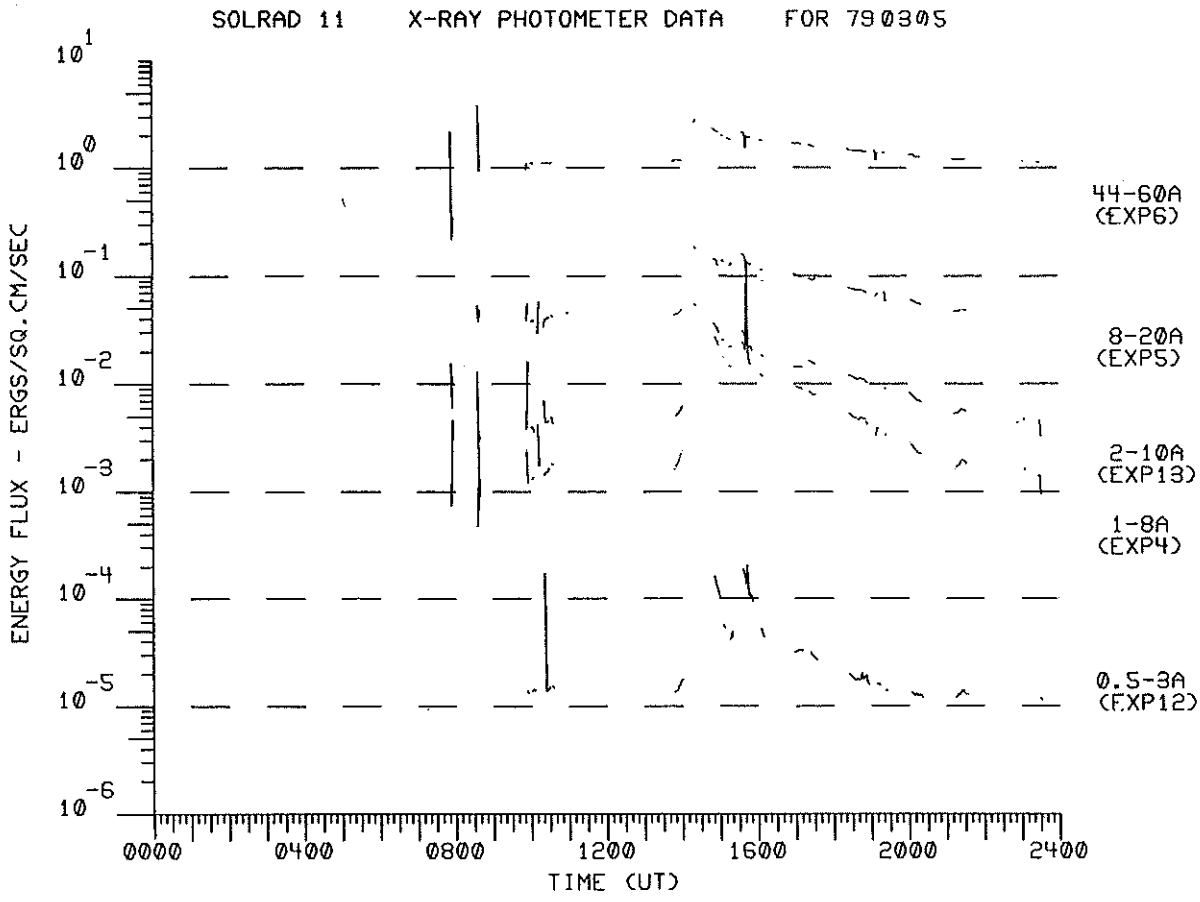


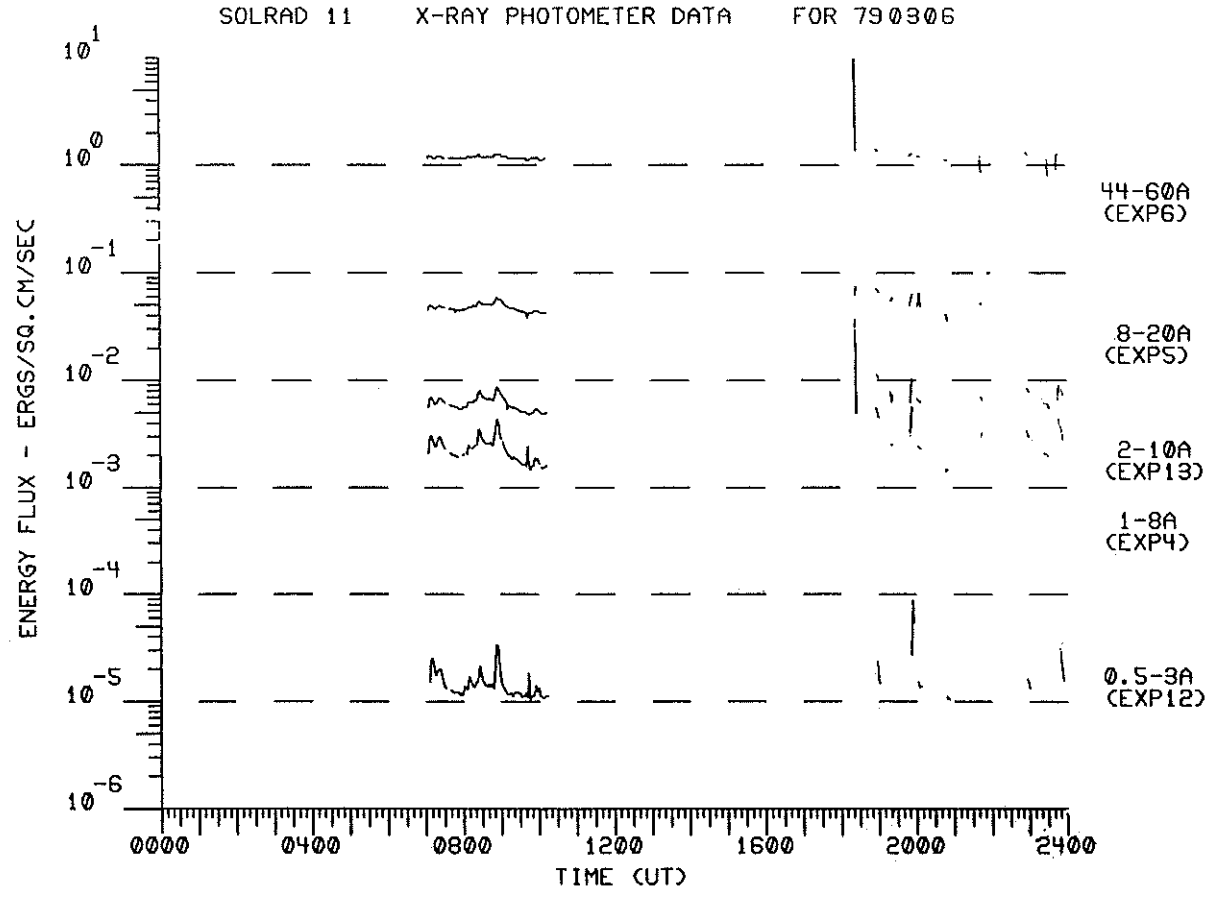
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790303



SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790304




SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790305
ENERGY FLUX - ERGS/SQ.CM/SEC
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790306
ENERGY FLUX - ERGS/SQ.CM/SEC
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
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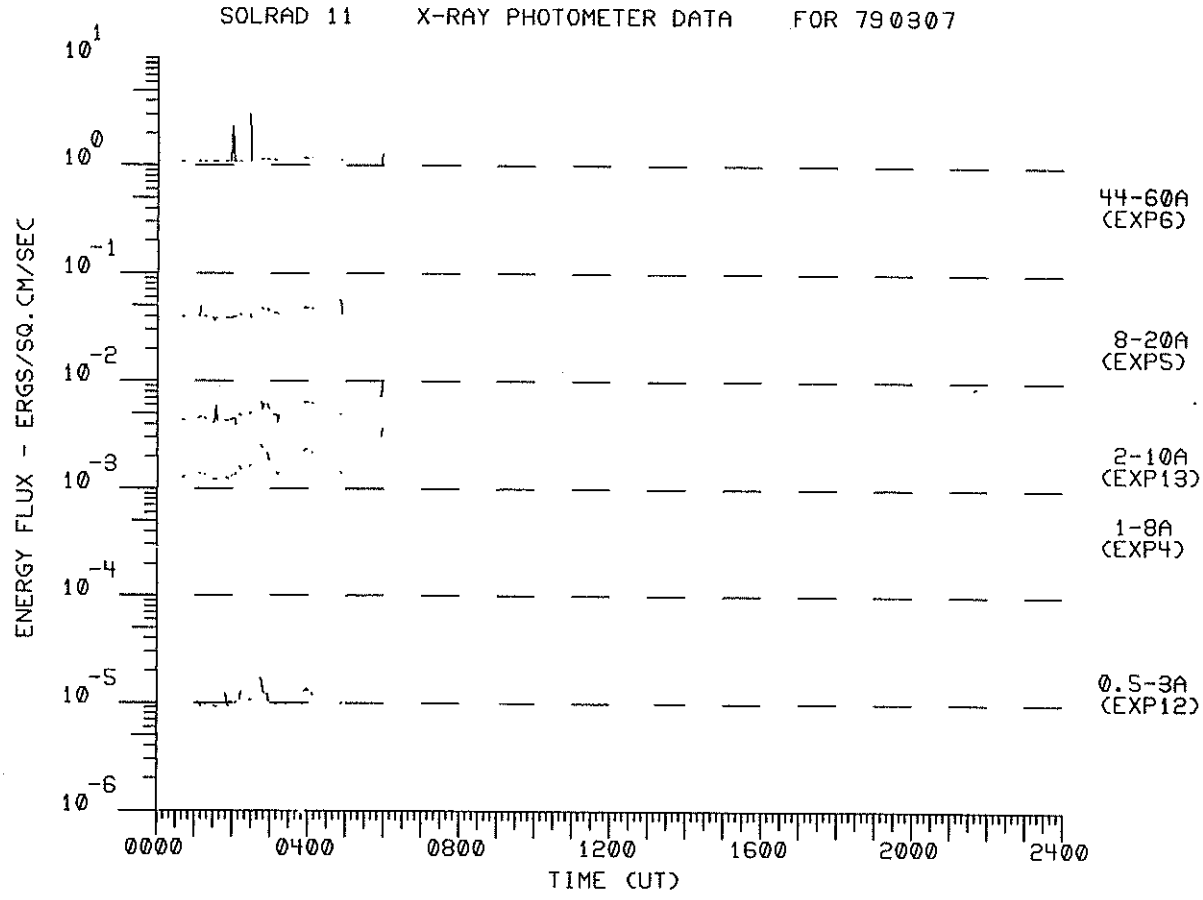
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790307
ENERGY FLUX - ERGS/SQ.CM/SEC
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10^{-1}
10^{-2}
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10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
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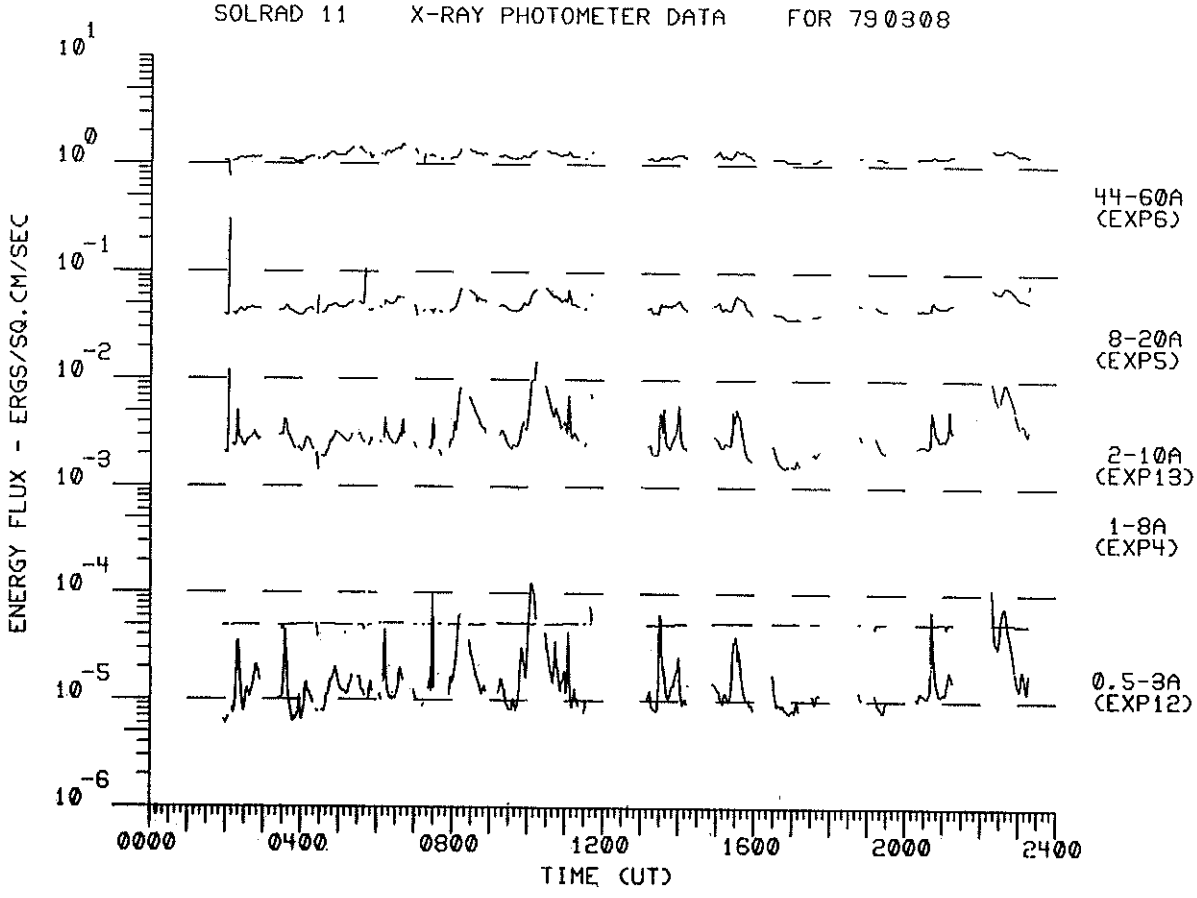
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790308
ENERGY FLUX - ERGS/SQ.CM/SEC
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10^{-1}
10^{-2}
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10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
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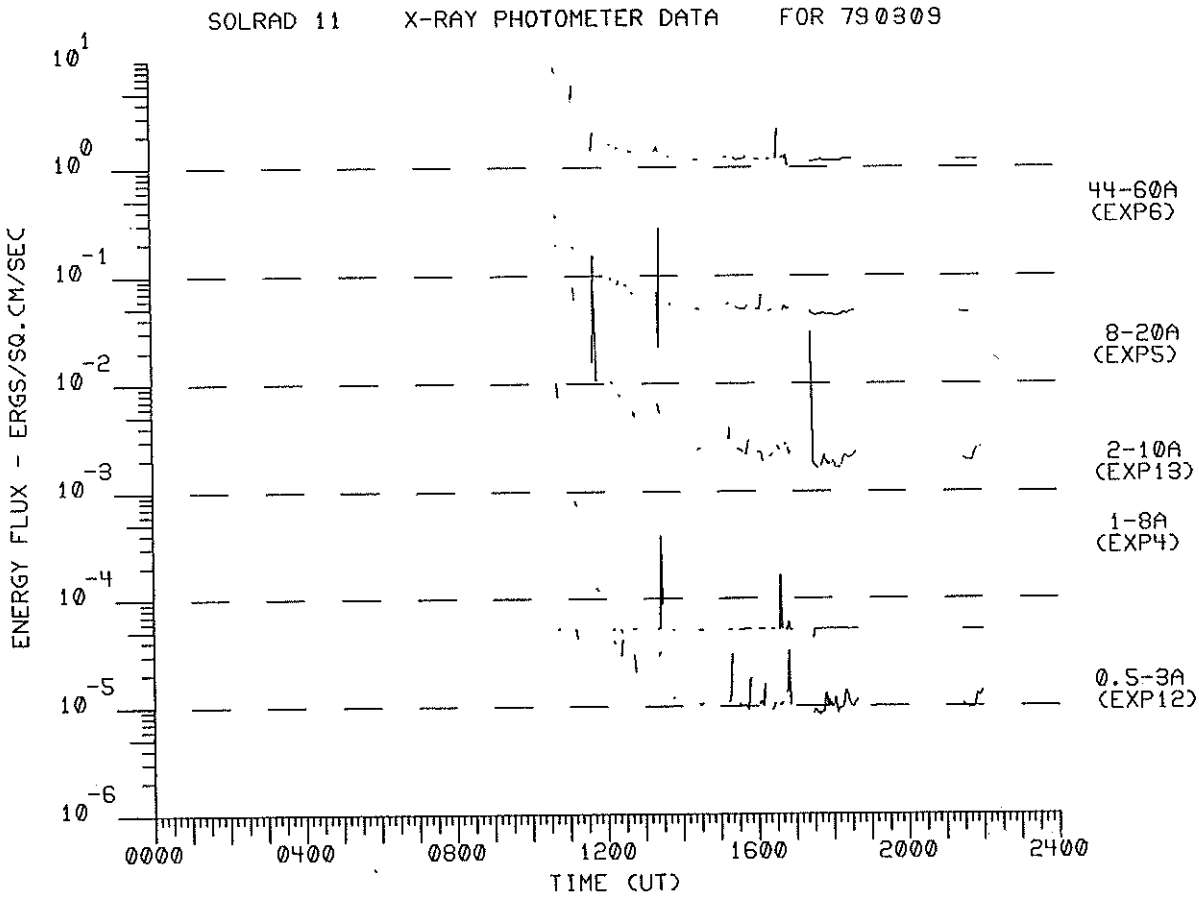
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790309
ENERGY FLUX - ERGS/SQ.CM/SEC
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10^{0}
10^{-1}
10^{-2}
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10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
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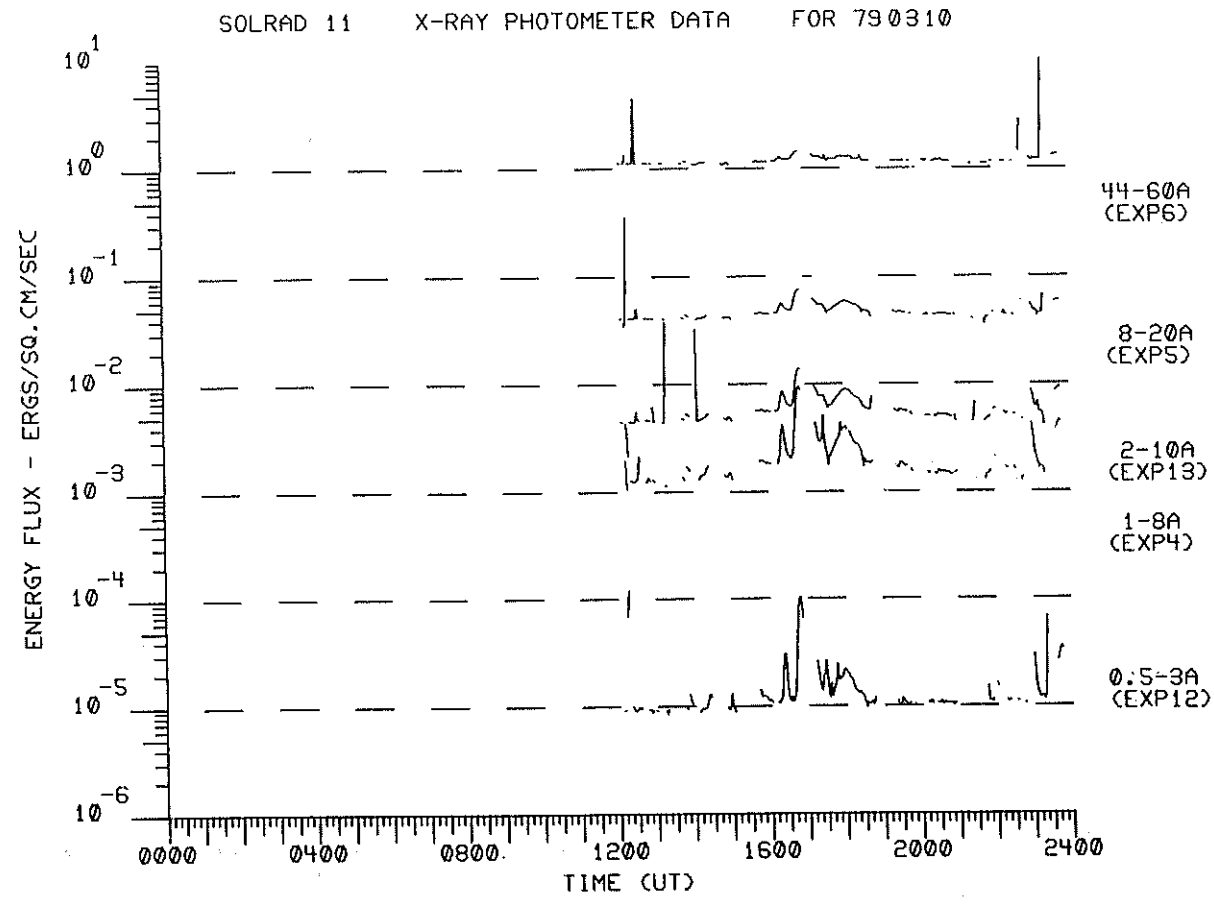
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790310
ENERGY FLUX - ERGS/SQ.CM/SEC
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10^{-1}
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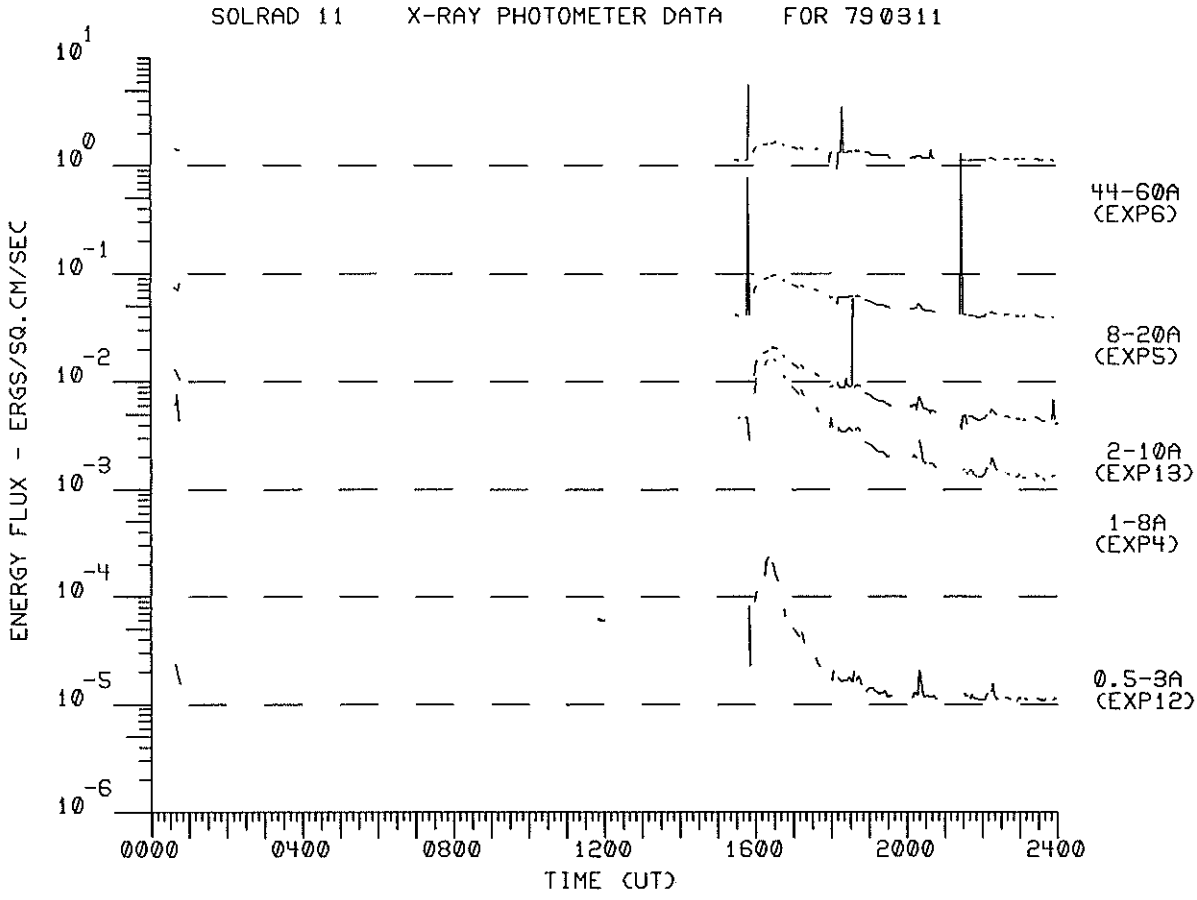
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790311
ENERGY FLUX - ERGS/SQ.CM/SEC
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10^{-1}
10^{-2}
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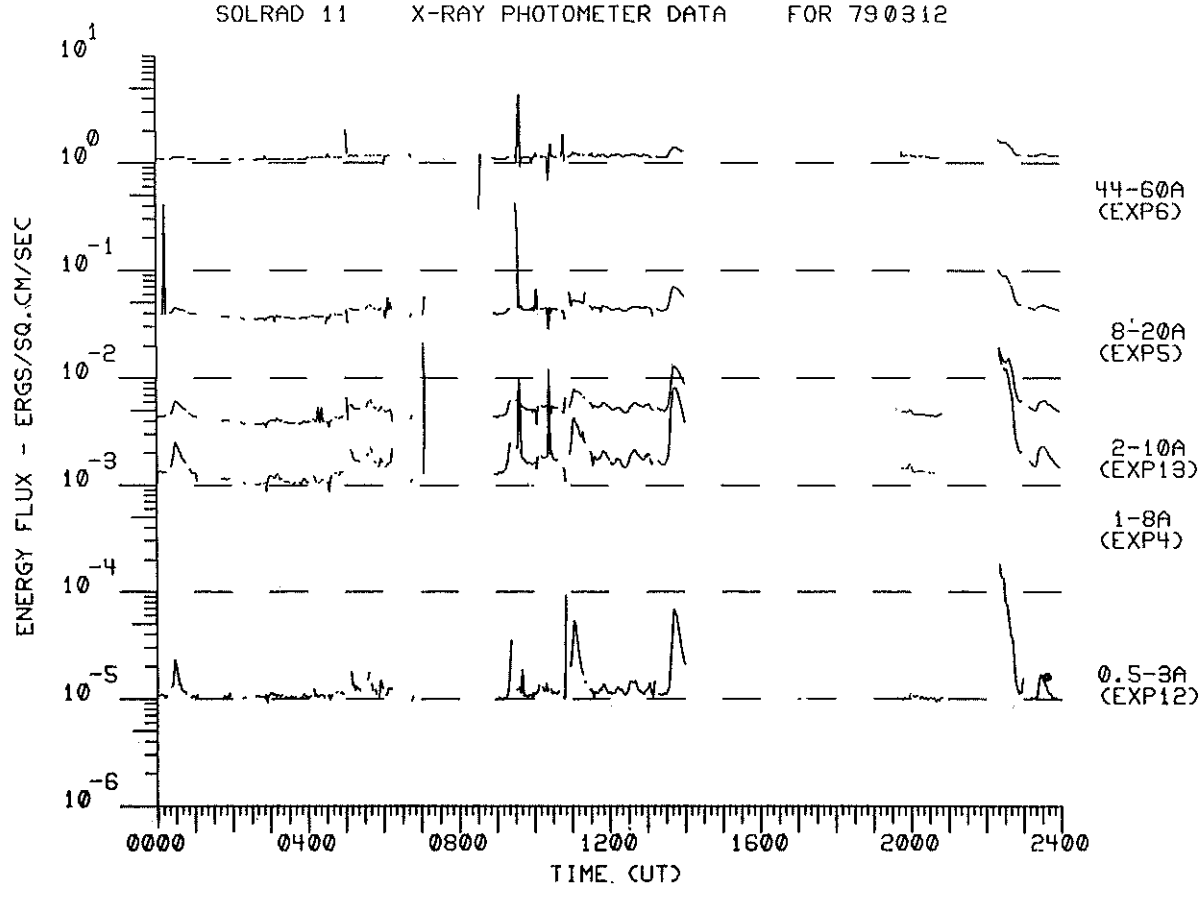
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790312
ENERGY FLUX - ERGS/SQ.CM/SEC
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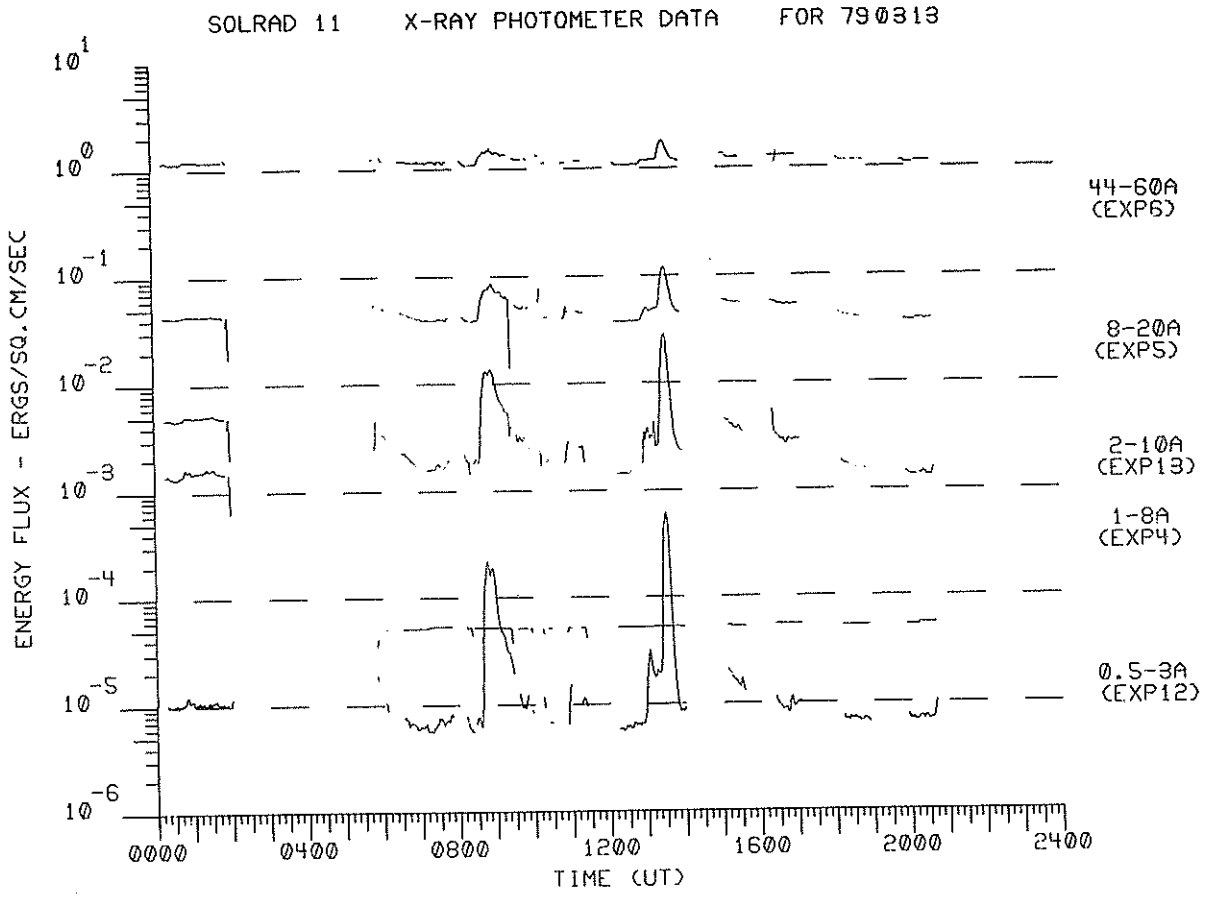
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790313
ENERGY FLUX - ERGS/SQ.CM/SEC
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10^{0}
10^{-1}
10^{-2}
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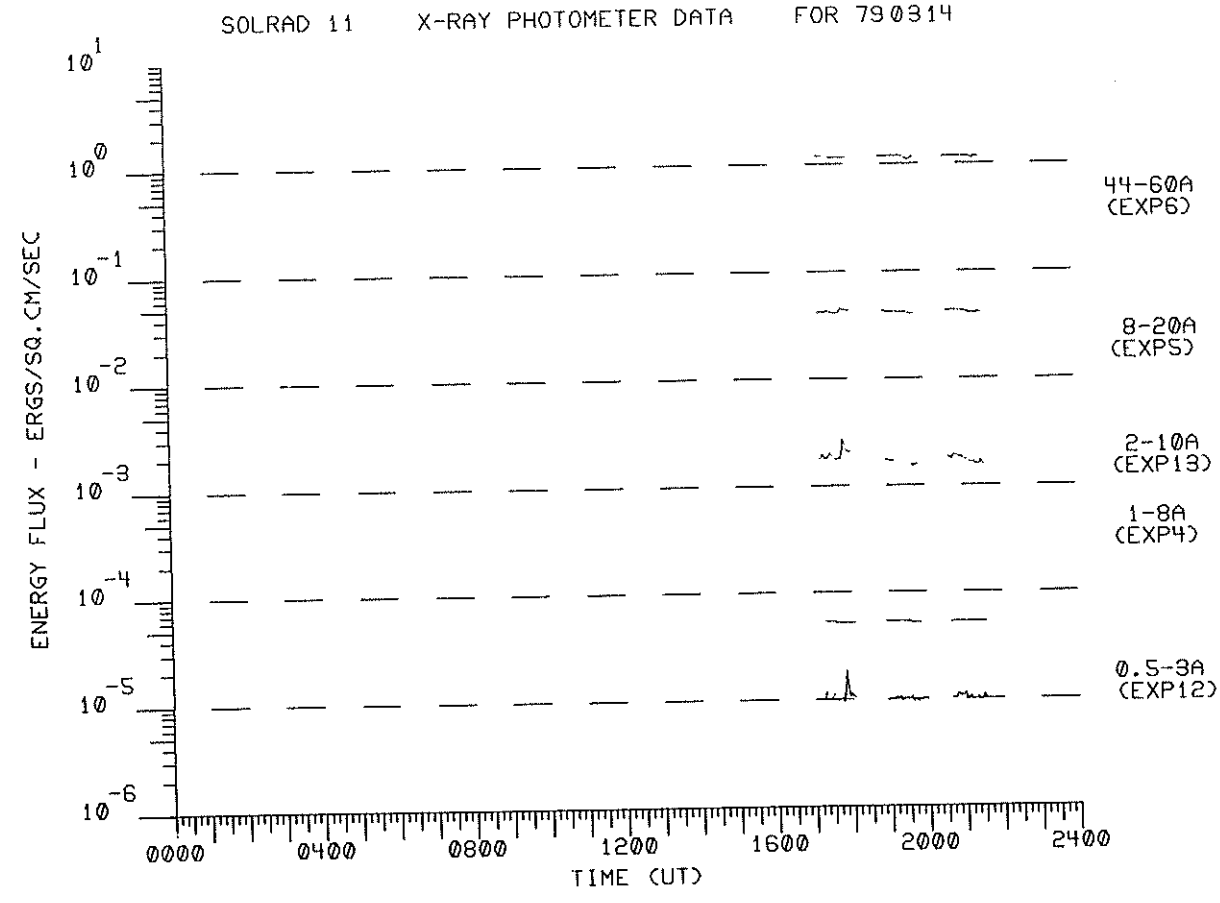
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790314
ENERGY FLUX - ERGS/SQ.CM/SEC
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10^{0}
10^{-1}
10^{-2}
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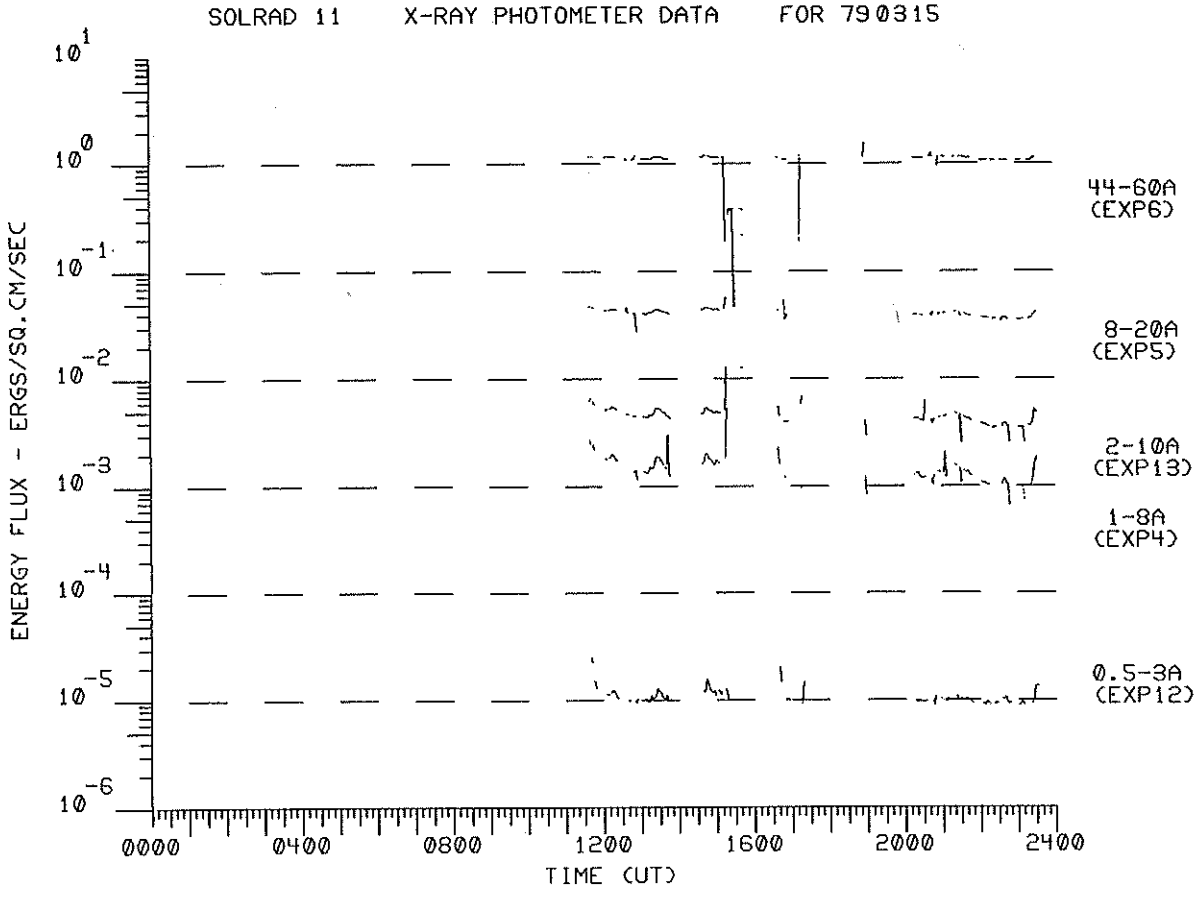
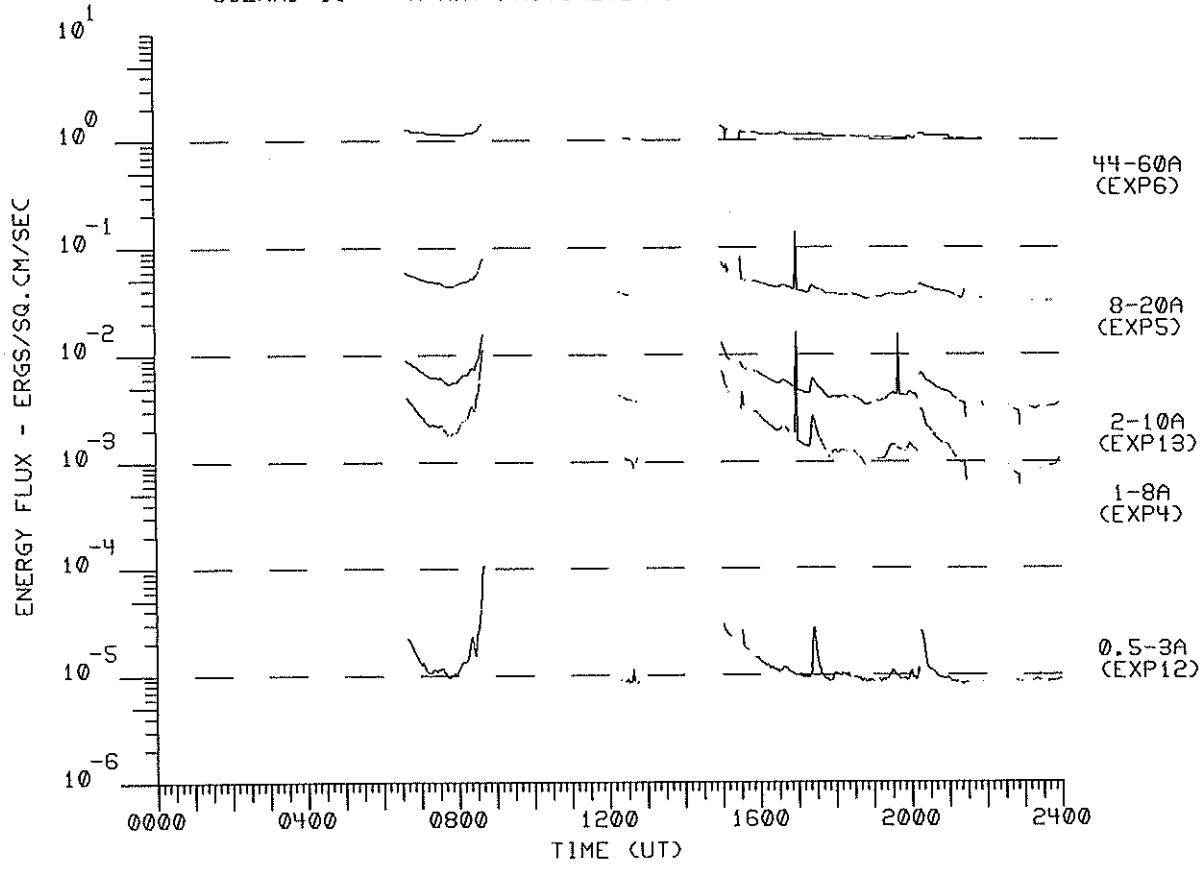
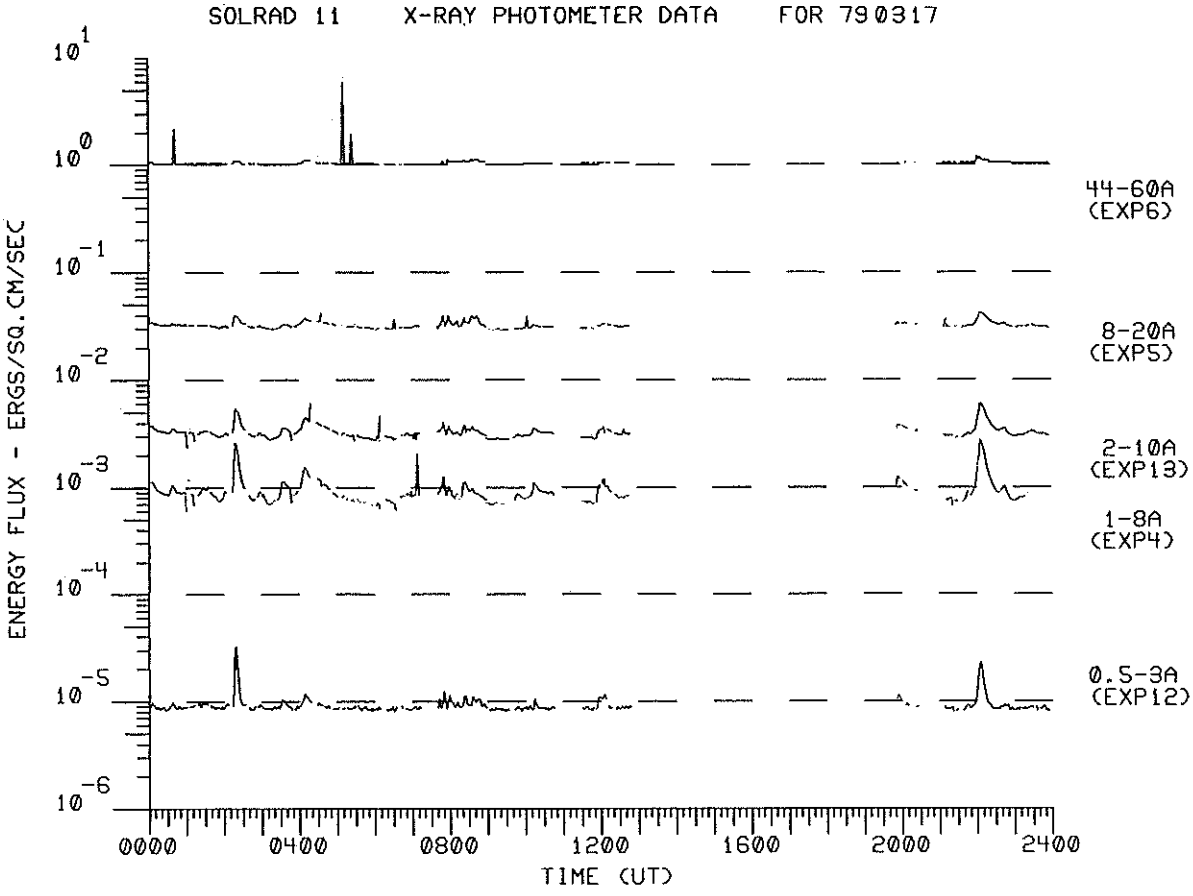
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)

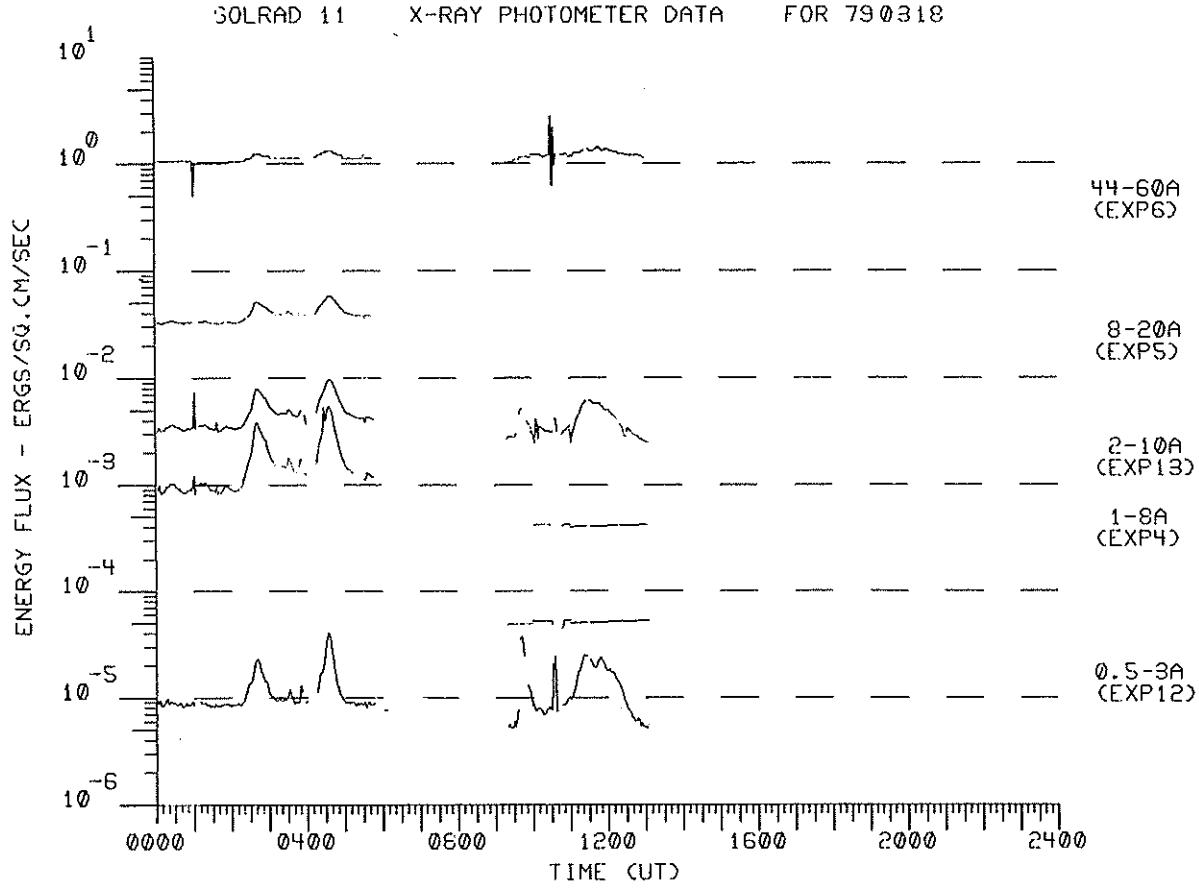
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790315



SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790316




SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790317
ENERGY FLUX - ERGS/SQ.CM/SEC
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790318
ENERGY FLUX - ERGS/SQ.CM/SEC
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10^{0}
10^{-1}
10^{-2}
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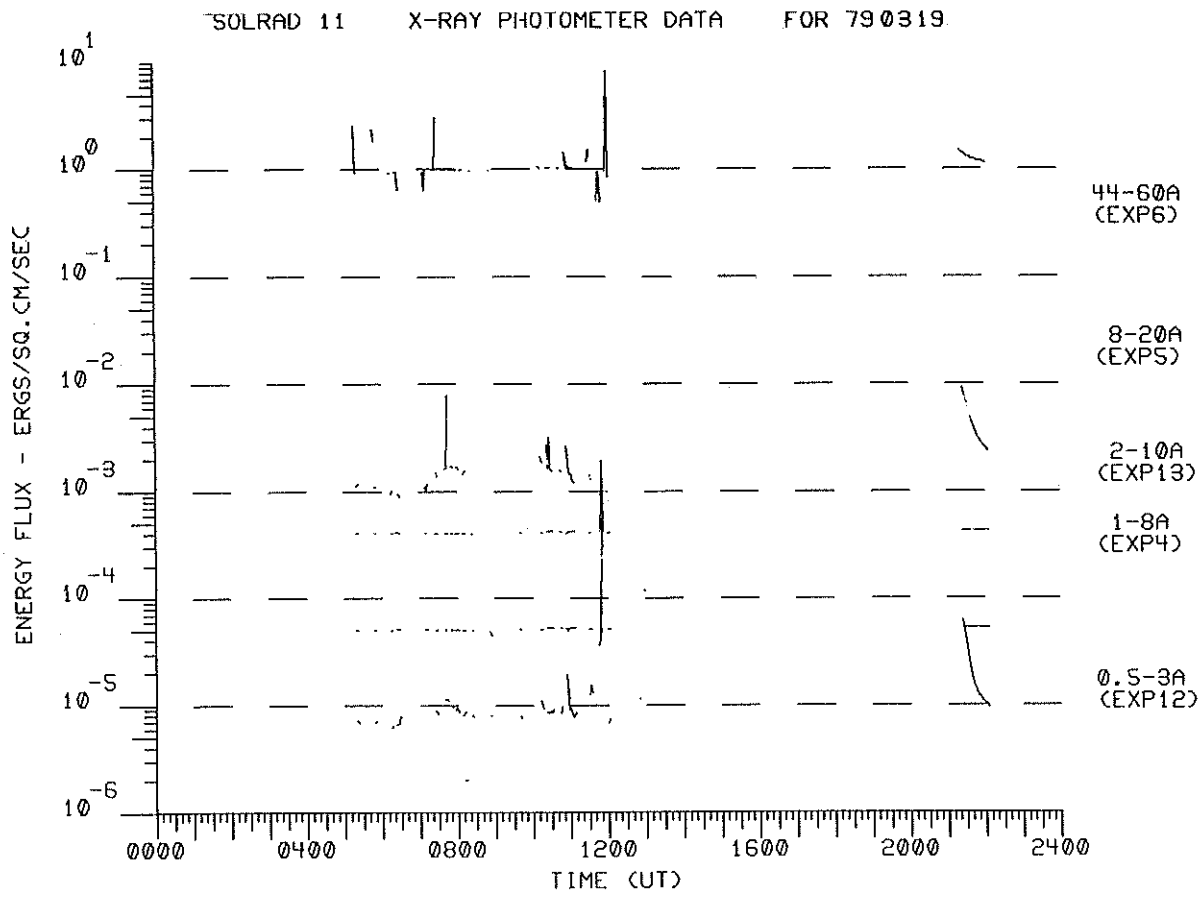
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790319
ENERGY FLUX - ERGS/SQ.CM/SEC
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10^{-1}
10^{-2}
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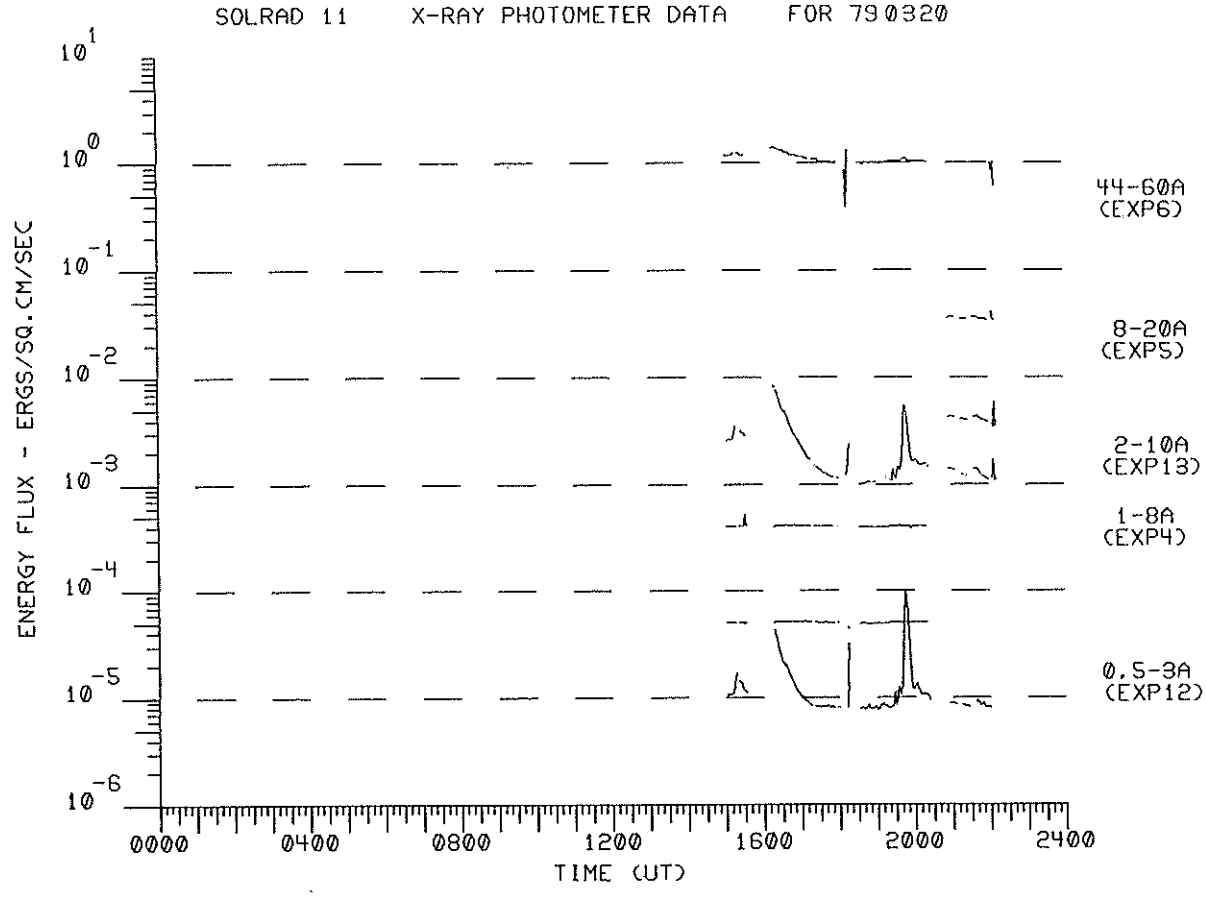
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790320
ENERGY FLUX - ERGS/SQ.CM/SEC
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10^{0}
10^{-1}
10^{-2}
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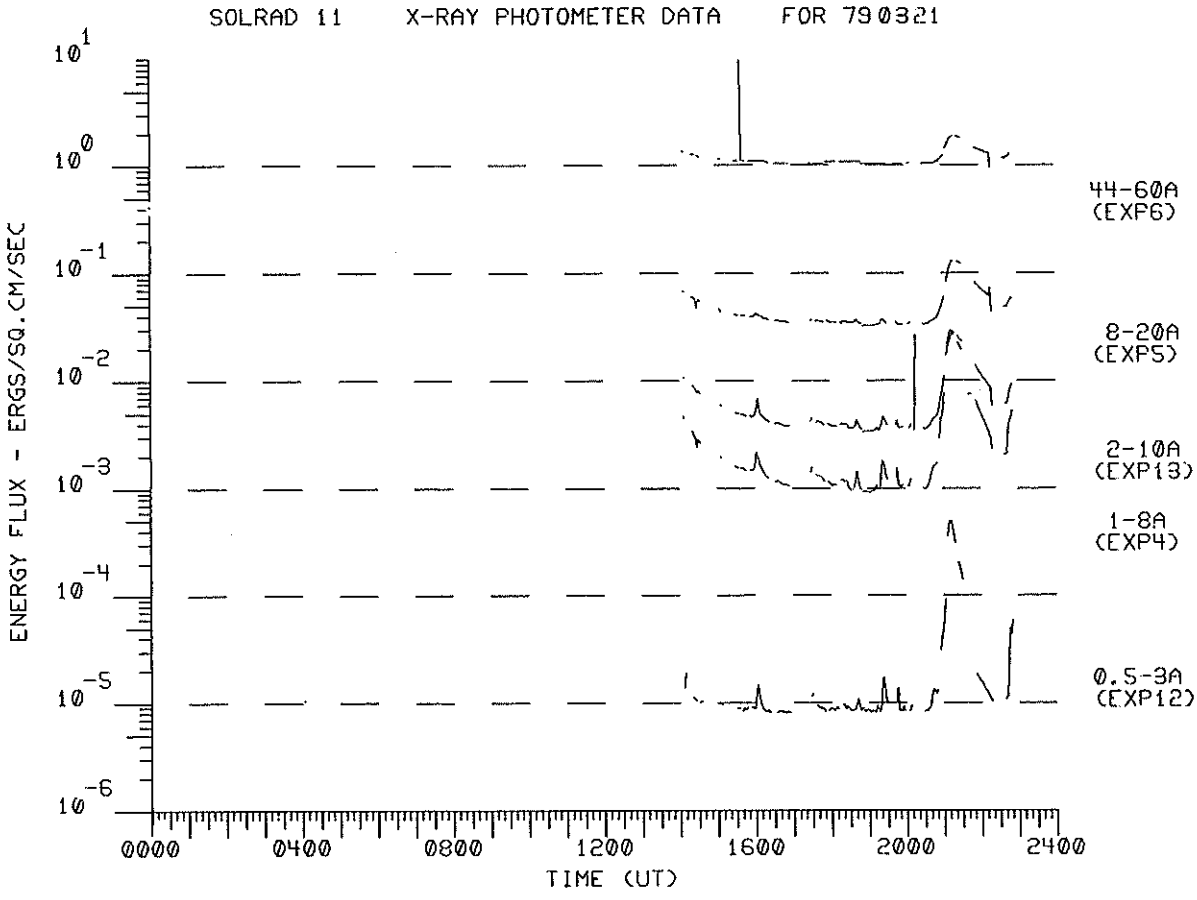
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790321
ENERGY FLUX - ERGS/SQ.CM/SEC
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10^{0}
10^{-1}
10^{-2}
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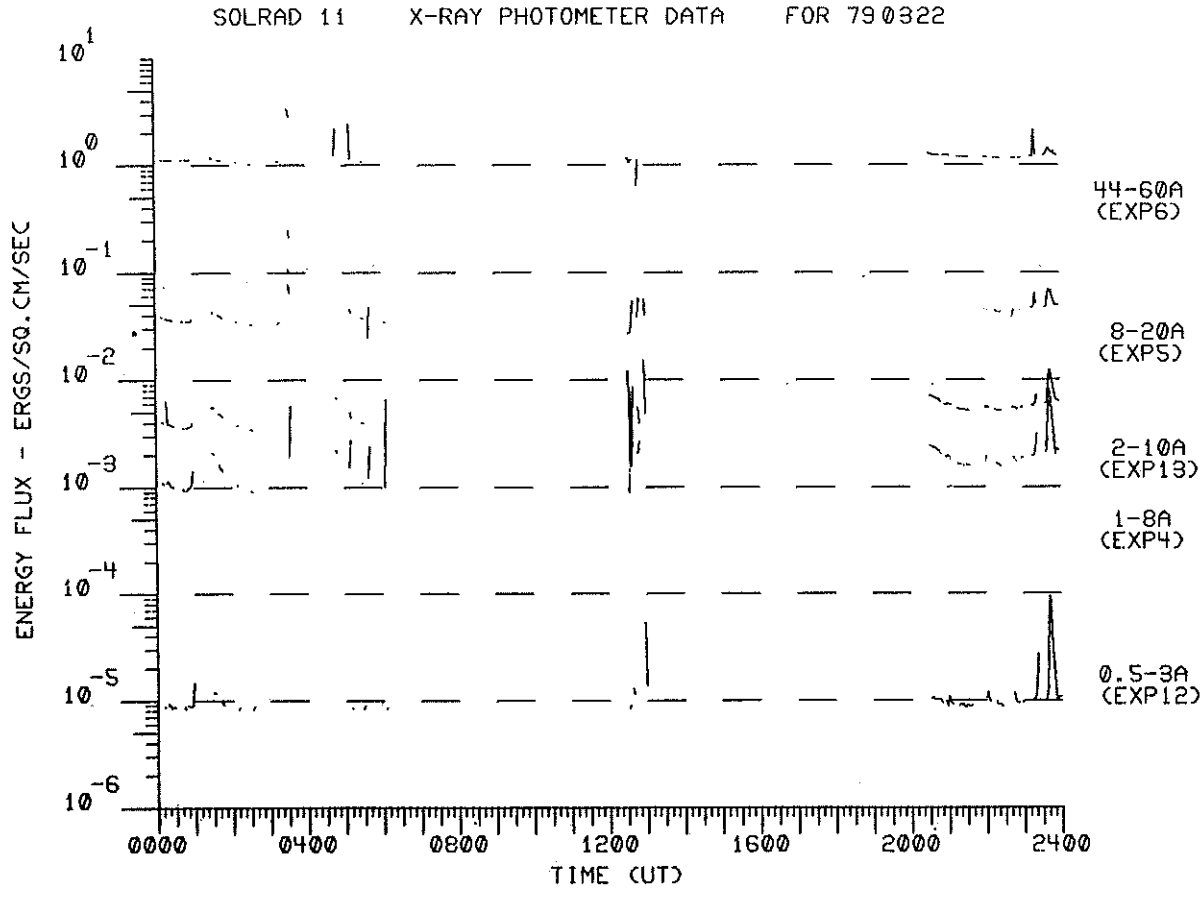
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790322
ENERGY FLUX - ERGS/SQ.CM/SEC
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10^{0}
10^{-1}
10^{-2}
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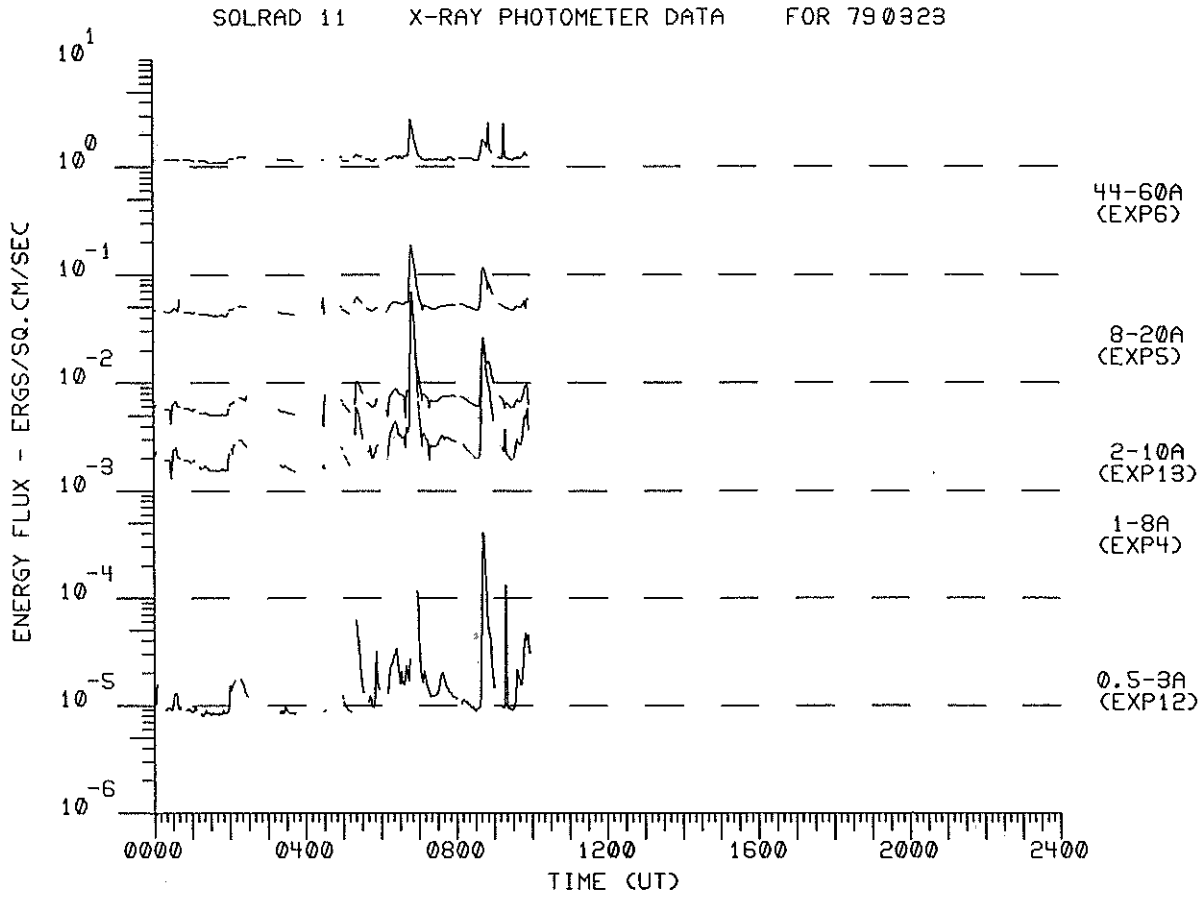
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790323
ENERGY FLUX - ERGS/SQ.CM/SEC
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10^{0}
10^{-1}
10^{-2}
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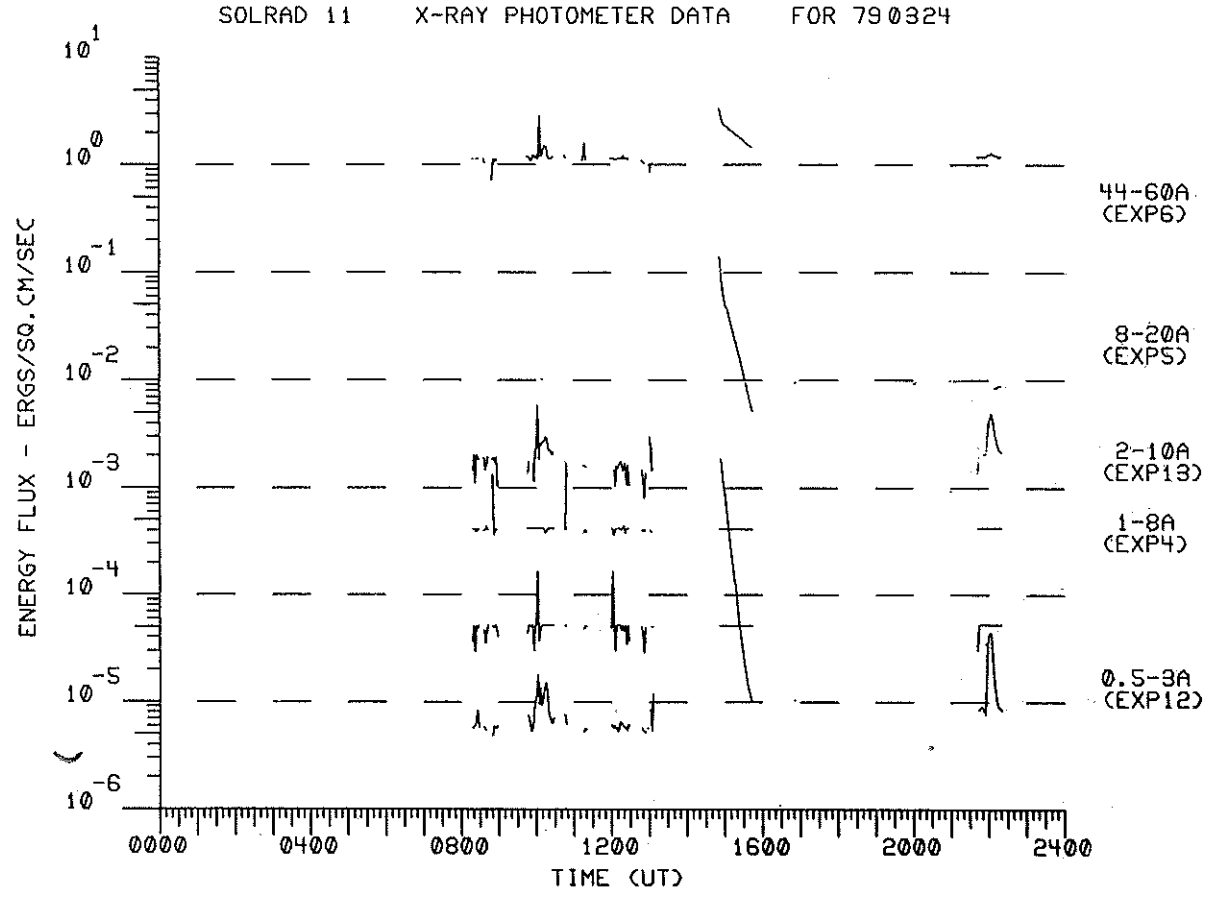
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790324
ENERGY FLUX - ERGS/SQ.CM/SEC
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10^{-1}
10^{-2}
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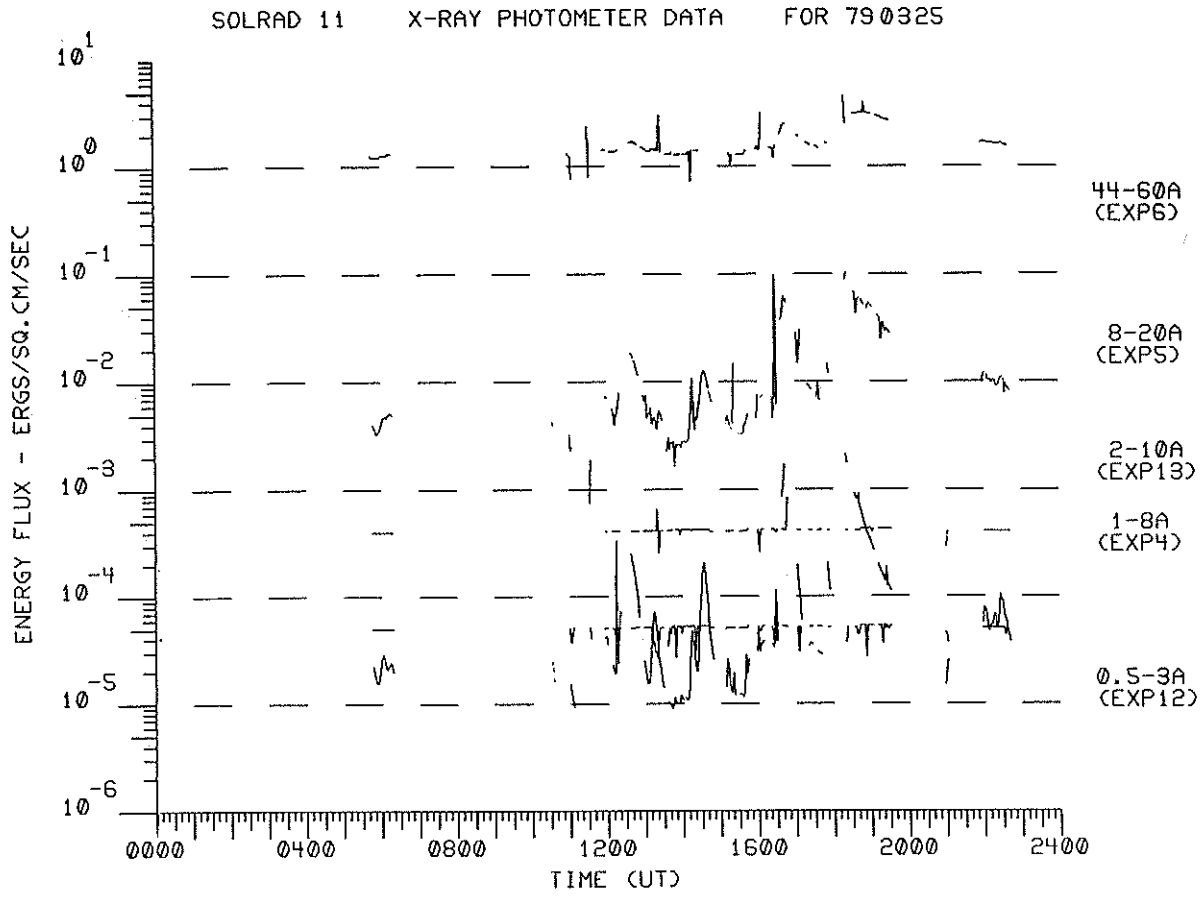
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790325
ENERGY FLUX - ERGS/SQ.CM/SEC
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10^{-1}
10^{-2}
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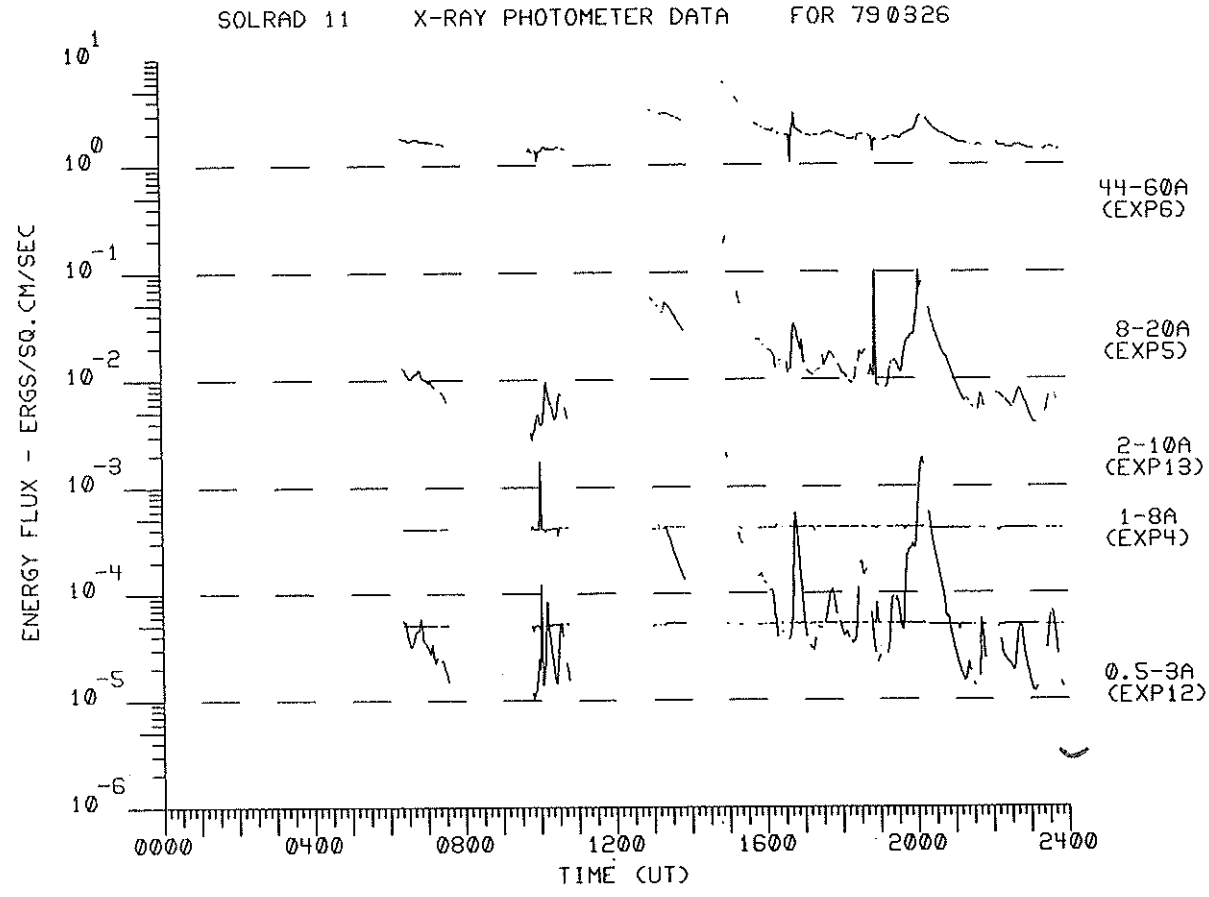
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790326
ENERGY FLUX - ERGS/SQ.CM/SEC
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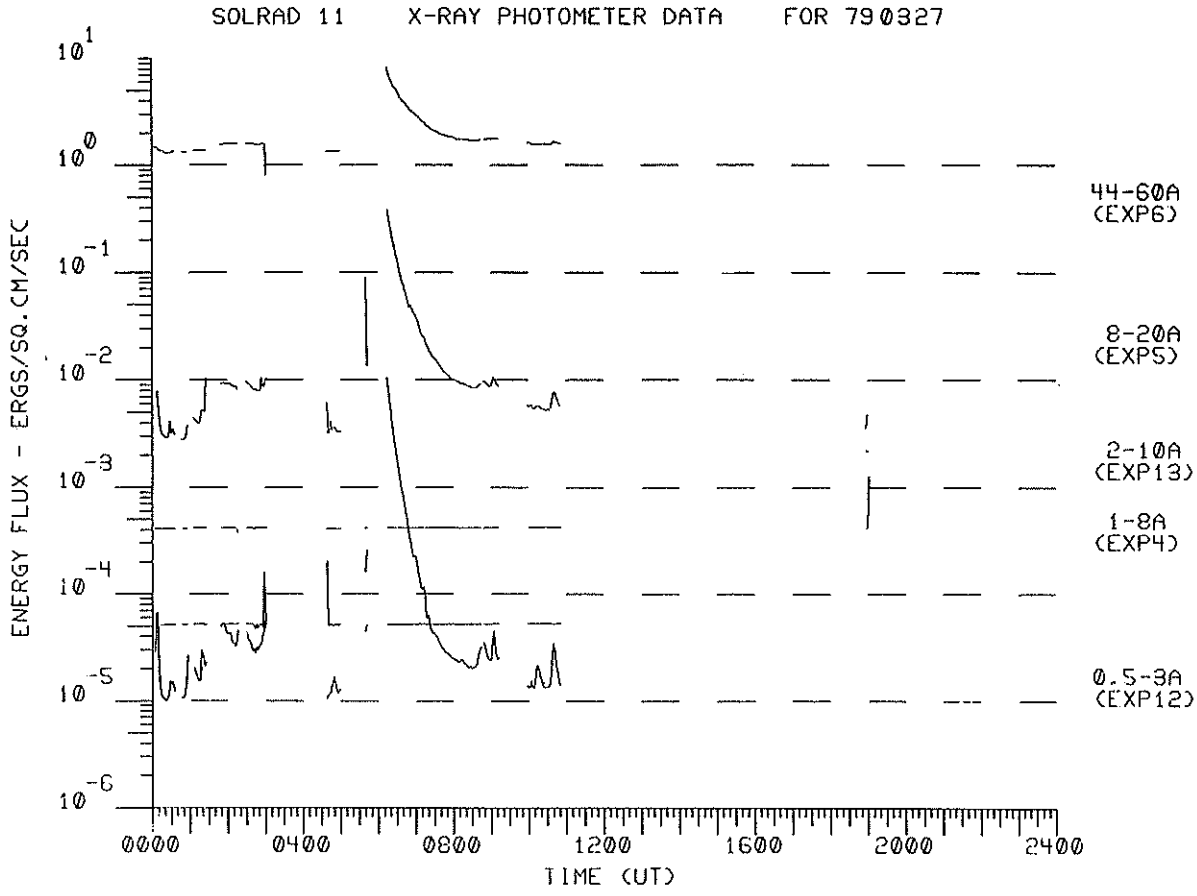
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790327
ENERGY FLUX - ERGS/SQ.CM/SEC
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10^{-1}
10^{-2}
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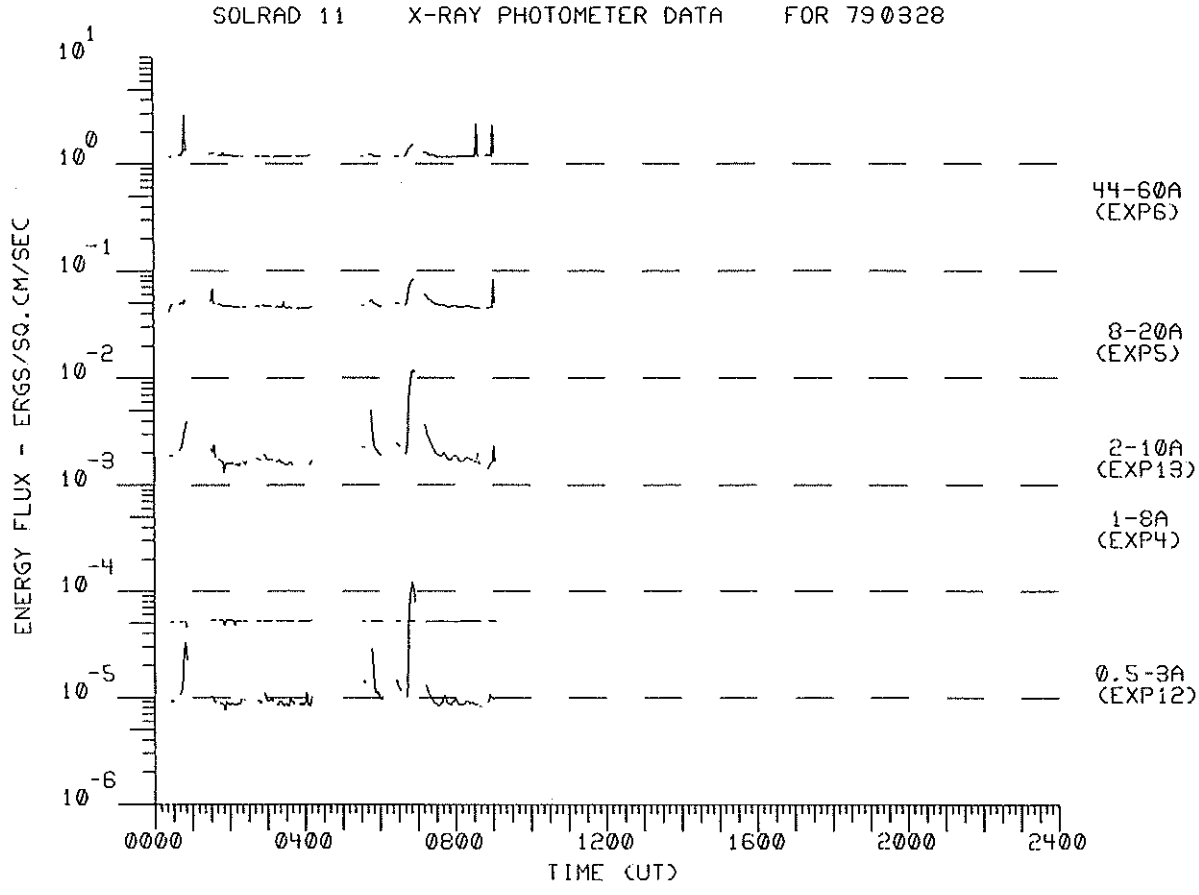
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790328
ENERGY FLUX - ERGS/SQ.CM/SEC
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10^{-1}
10^{-2}
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10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
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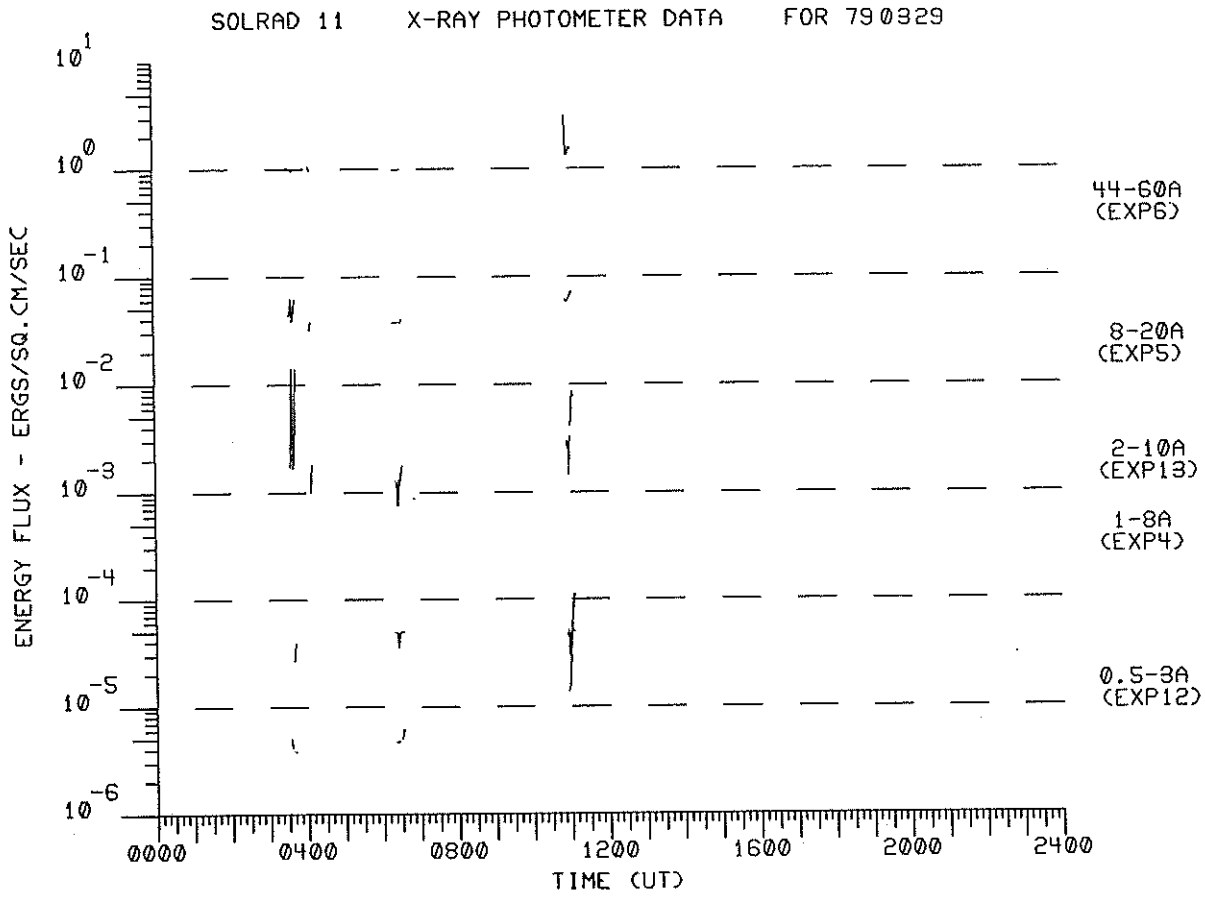
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790329
ENERGY FLUX - ERGS/SQ.CM/SEC
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10^{-1}
10^{-2}
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10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
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0.5-3A (EXP12)
0000
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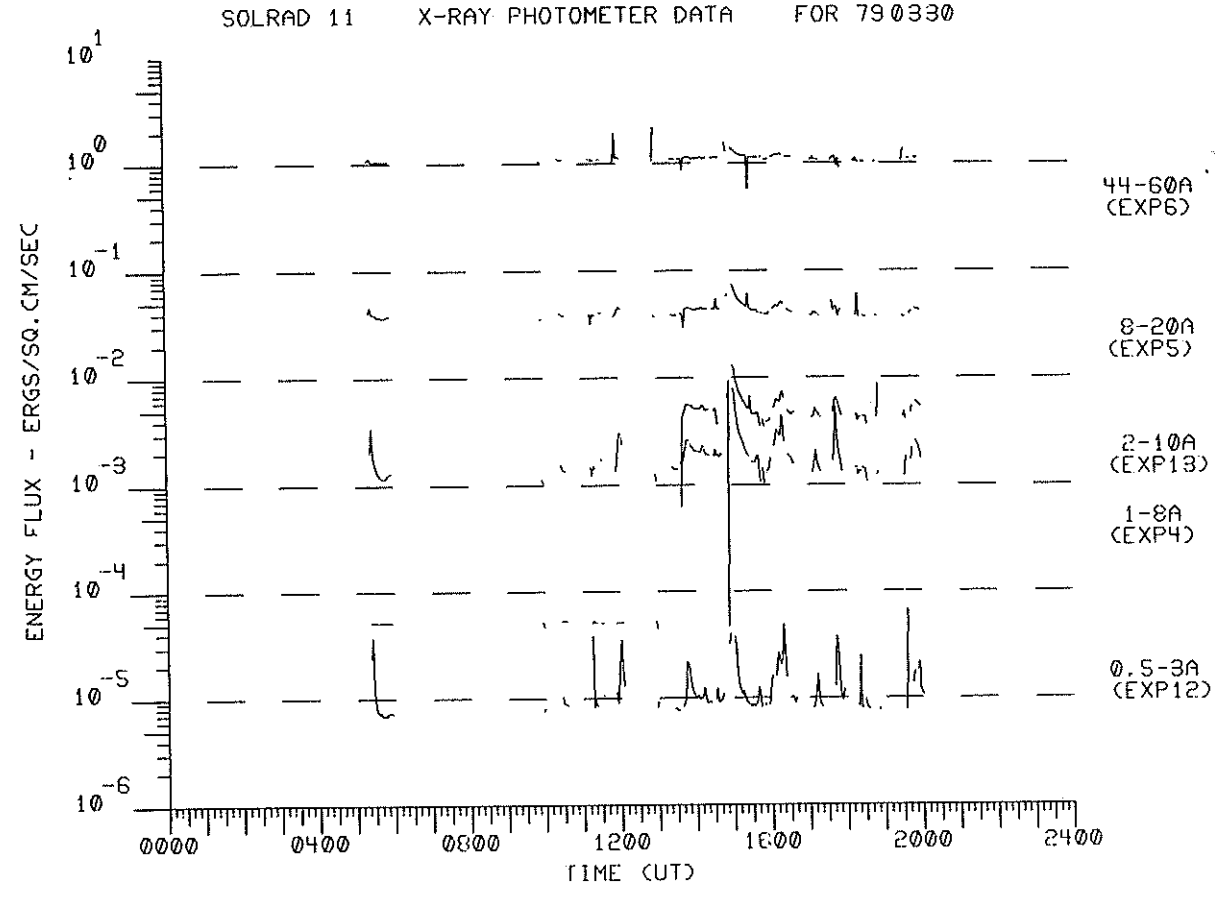
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790330
ENERGY FLUX - ERGS/SQ.CM/SEC
10^{1}
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10^{-1}
10^{-2}
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10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
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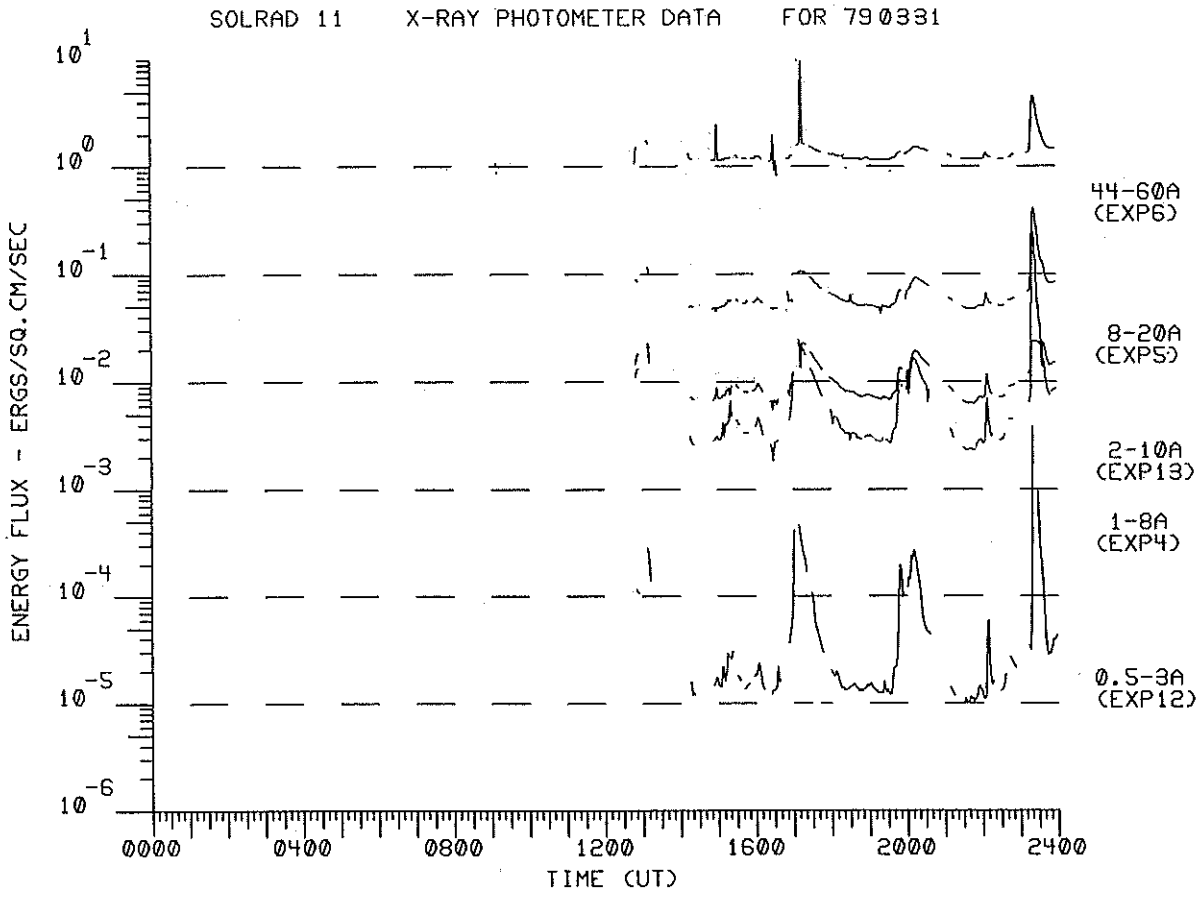
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790331
ENERGY FLUX - ERGS/SQ.CM/SEC
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10^{0}
10^{-1}
10^{-2}
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10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

MARCH 1979

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
01	0000	0920	MANI										
	0000	0745	CULG				0459		1	0459		1	IIIB
			CULG	0517.5	0518	1	0517.5	0518.5	2	0517.5	0518.5	2	IIIG
	0724	0746	WEIS										
	0633	1657	DURN				0837.4	0837.4	3				III
	0751	1629	WEIS				1004	1021	2				IIIG
			WEIS				1015.8	1018.7	2				III
			DURN	1015.9	1019.5								DCIM
			WEIS				1018	1036	2				IIH ARM
	1120	1900	SGMR										
			DURN				1253.4	1253.6	1				IIIG
	1345	2345	HARV										
	2045	2400	CULG				2056		1				IIIB
			CULG				2057		1				IIIB
			CULG				2116	2400					IS,W
			CULG				2131.5	2132.5	1				IIIG
			CULG				2148	2149	1				IIIG
			CULG				2149	2157					IIIN,W
			CULG	2150	2332	1							N,FASTDRIF
	2215	2400	MANI										
			CULG				2239	2239.5	1	2239.5	2240	1	IIIG
			CULG				2242	2243	1				IIIG
			CULG				2320	2320.5					IIIG,W
			CULG	2346	2346.5	1							FAST DRIFT
			CULG				2351	2354.5	2				IIIGG
02	0000	0745	CULG	0020	0020.5	1							FAST DRIFT
			CULG				0032.5	0033.5					IIIG,W
			CULG				0047.5	0051	2	0049	0050.5	1	IIIGG
			CULG				0114						IIIB,W
			CULG				0237.5	0239.5	2	0239	0239.5	1	IIIG
			CULG				0310.5		1				IIIB
			CULG				0312.5	0313	1				IIIG
			CULG				0342	0343	1				IIIG
			CULG				0344.5	0346	2				IIIG
	0000	0929	MANI							0406.7	0407.3	2	III
			CULG				0406	0409	3	0406	0407	2	IIIG,V
			CULG				0549						IIIB,W
			CULG				0608.5						IIIB,W
	0632	1305	DURN										
	0638	0645	WEIS										
			CULG				0657		1				IIIB
			CULG				0717.5		1				IIIB
			CULG				0723	0725					IIIG,W
			CULG				0724.5	0725	3				IIIG
			CULG				0727		1				IIIB
	0729	1630	WEIS				0735.4	0738.6	2				IIIGG
			CULG				0735	0736	2				IIIG
			CULG				0736.5	0738.5	3				IIIGG
			MANI							0736.9	0737.2	1	III
			WEIS				0826.3	0826.7	2				IIIG
			WEIS				0840.1	0843.3	2				IIIGG
			WEIS				0954.5	0954.6	2				IIIB
			WEIS				1012.4	1012.5	1				IIIB
			WEIS				1014.3	1014.4	1				IIIB
			WEIS				1038.1	1038.4	2				IIIG
			DURN	1109.2	1110.2	3							IIIGG,RS
	1122	1900	SGMR										
			WEIS				1126.3	1126.4	1				IIIB
			DURN	1133.0	1133.5	3							IIIGG,RS
			WEIS	1133.1	1133.4	2							III
			DURN	1237.8	1240.2	3							IIIGG,RS
			WEIS				1444.3	1444.4	2				IIIB
			WEIS				1520.4	1524.0	1				IIIG
	1345	2345	HARV				1838		3	1838		3	IIIB
			HARV				2044		2	2044		1	IIIB
			CULG				2132.5	2133.5					IIIG,W
	2045	2332	CULG				2132		1				IIIB
	2220	2400	MANI										
			CULG				2233.5						IIIB,W

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
02			CULG				2240.5						IIIB,W
			CULG				2317	2318					IIIG,W
	2336	2400	CULG				2348	2350.5					IIIG,W
03	0000	0929	MANI										
	0000	0638	CULG				0039	0039.5	2	0039	0039.5	1	IIIG
			CULG				0105.5	0106					IIIG,W
			CULG				0109.5	0110.5					IIIG,W
			CULG				0128.5		1				IIIB
			CULG				0303.5	0305.5					IIIG,W
			CULG				0407	0410.5	1				POSS RS,DP
			CULG				0408	0409	1				IIIG
			CULG				0410.5						IIIB,W
			CULG				0411.5						IIIB,W
			CULG				0438						IIIB,W
			CULG	0438	0438.5	1							IIIG
			CULG	0556	0557.5	2							IIIGG
			CULG				0557	0557.5	1				UNCLF.
			CULG				0608.5		2				IIIB
	0636	1632	WEIS				0757.7	0758.0	1				IIIG
	1120	1900	SGMR										
	1345	2345	HARV										
	2216	2400	MANI										
	2044	2400	CULG				2223	2300					IIIS,W
04	0000	0744	CULG										
	0000	0926	MANI										
	0636	0707	WEIS										
	0759	1634	WEIS				0827.6	0828.0	1				IIIG
			WEIS				1029.2	1030.8	2				III
			WEIS				1114.2	1114.5	1				IIIG
	1119	1900	SGMR										
			WEIS				1126.4	1126.6	1				IIIB
			WEIS				1205.6	1205.7	1				IIIB
			WEIS				1514.6	1514.7	1				IIIB
			WEIS				1525.6	1525.7	1				IIIB
			WEIS				1530.3	1530.7	2				IIIG
			WEIS				1553.0	1554.0	2				IIIG
	1345	2345	HARV				1553	1554	1				IIIG
	2044	2400	CULG				2057						IIIB,W
	2203	2400	MANI										
			CULG				2304.5						IIIB,W
05	0000	0929	MANI										
			CULG				0028	0037	1				RS,DP
	0000	0157	CULG	0028	0034.5	1	0027.5	0037	2				IIIGG
			CULG				0037	0119	1				IIIS
			CULG				0143		1				IIIB
	0201	0744	CULG				0303						IIIB,W
			CULG				0308.5						IIIB,W
			CULG				0311	0311.5	2				IIIG
			CULG				0343.5	0344	1				IIIG,U
			CULG				0524	0744					IIIN,W
	0632	1635	WEIS										
			CULG	0703	0703.5	1							IIIG
			CULG				0740.5		1				IIIB
	0850	1300	DWIN										
	1118	1900	SGMR										
	1327	1510	DWIN										
	1330	2345	HARV										
	2044	2340	CULG				2044	2305					IS,W
			CULG				2044	2340					IIIS,W
			CULG				2052	2319	1				N,RS,DP
			CULG				2052	2340					I N,W
	2213	2400	MANI										
			CULG				2253						W,DP
			CULG				2305	2340	1				IS
06	0000	0922	MANI										
	0042	0744	CULG				0047	0325					IIIS,W

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
06			CULG				0047	0530	1				IS
			CULG				0051	0722	1				N,RS,DP
			CULG	0056	0145								IS,W
			CULG	0145	0744								IN,W
			CULG				0325	0744					IIIN,W
			CULG				0325	0326	1				IIIG
			CULG				0530	0744					IS,W
	0630	0732	WEIS										
	0744	1636	WEIS				0848.7	0848.8	1				IIIB
			WEIS				0951.8	0951.9	1				IIIB
			WEIS				1022.3	1022.4	1				IIIB
			WEIS				1045.0	1104.0	1				IN
			WEIS				1045.8	1045.9	1				IIIB
	1118	1900	SGMR				1405.0	1637.1	1				CONT
			WEIS				1410.6	1433.5	1				IIIGG
	1330	2345	HARV				1419	1425	1				I
			HARV				1939	1942	2	1939	1942	2	IIIG
	2043	2400	CULG				2043	2207					IS,W
			CULG				2046						IIIB,W
	2210	2400	MANI										
			CULG				2335.5						IIIB,W
			CULG				2340.5	2341.5					IIIG,W
07	0000	0743	CULG				0000	0723					IIIN,W
	0000	0941	MANI										
			CULG				0048		1				IIIB
			CULG				0103.5	0104.5	2	0104	0105	2	IIIG
			CULG				0113	0113.5	1				IIIG
			CULG				0306.5	0307	1	0306.5	0307.5	1	IIIG
			CULG				0526	0527.5	1				IIIG
	1114	1900	SGMR										
	0629	1638	WEIS				1600.4	1600.5	2				IIIB
	1330	2345	HARV				1640	1658	1				IIIN
			HARV				1649	1651	2				IIIGG
	2044	2400	CULG				2044	2400					IIIN,W
			CULG				2149	2150	1				IIIG
	2211	2400	MANI										
08	0000	0940	MANI										
	0000	0743	CULG				0010	0128					IIIN,W
			CULG				0022.5	0023	1				IIIG
			CULG				0124	0310					IN,W
			CULG				0310	0743					IS,W
			CULG				0542.5		2				IIIB
			CULG				0542.5	0543.5					IIIG,W
			CULG	0642.5	0643	1	0642.5	0643.5	2				IIIG
	0626	0731	WEIS				0642.5	0646.9	2				IIIG
			CULG	0644.5	0645	1	0644.5	0645.5	1				IIIG
	0737	1640	WEIS				0751.5	0811.0	2				IIIGG
			WEIS				0813.5	0910.3	1				IIIN
	0952	1513	DWIN										
	1113	1900	SGMR										
			WEIS				1327.6	1328.0	1				IIIB
	1330	2345	HARV				1731		1				IIIG
			HARV				1757		2				IIIG
	2043	2400	CULG				2043	2400					IN,W
			CULG				2048	2400					IIIN,W
			CULG	2144	2400								IN,W
			CULG	2148.5	2149	1							FAST DRIFT
	2224	2400	MANI										
09	0000	0940	MANI										
	0000	0743	CULG				0054	0743					IIIN,W
			CULG				0219.5	0225.5	1				IIIGG
			CULG				0539	0540	1				IIIG
			CULG	0548	0548.5	1	0548	0548.5	1				IIIG
	0712	1640	WEIS				0818.5	0819.1	2				IIIG
			WEIS				1020.5	1026.0	2				IIIRS
			WEIS	1021.0	1106.0	2						IV	
			WEIS				1021.7	1033.7	3				IIIGG

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
09			WEIS				1027.0	1042.0	3				IIH ARM
			WEIS				1102.6	1107.5	3				IIIGG
	1114	1900	SGMR										
			WEIS				1140.3	1140.9	2				IIIG
			WEIS				1204.1	1204.2	1				IIIB
			WEIS				1346.5	1352.3	2				IIIGG
	1330	2345	HARV				1816		2				IIIG
			HARV				1830	1842	1				IIIGG
			HARV				1903	1905	2	1903		1	IIIGG
	2043	2400	CULG	2046.5	2047								IIIG,W
			CULG				2050	2400					IIIN,W
			CULG				2119	2330					IN,W
	2220	2400	MANI										
			CULG				2318.5	2320	2	2319	2320.5	2	IIIGG
			CULG				2333.5	2334.5	1				UNCLF.
			CULG	2337.5	2338.5	1							I
10	0000	0743	CULG				0000	0743					IIIN,W
	0000	0944	MANI										
			CULG	0119	0120.5	1							FAST DRIFT
			CULG				0201	0202	1				IIIG
			CULG				0245	0743					IN,W
			CULG				0338	0339	2				IIIB
			CULG	0416	0416.5	1	0416	0416.5	1				IIIG
			CULG	0501.5	0502.5	1	0501.5	0502.5	1				IIIG
			CULG	0559.5	0601	1	0559.5	0601	1				UNCLF.
	0624	0800	WEIS				0710.0	0710.3	1				IIIG
	0850	1640	WEIS				0921.9	0922.1	1				IIIB
			WEIS				1036.8	1036.9	1				IIIB
	1109	1900	SGMR										
			WEIS				1159.6	1200.8	2				IIIGG
	0710	1715	DURN				1159.6	1200.7	3				IIIGG
	1330	2345	HARV				1823		2				IIIB
			HARV				1919	1920	2	1919		2	IIIG
	2042	2400	CULG				2042	2400					IIIS,W
			CULG				2056	2400	1				N,RS,DP
	2208	2400	MANI										
			CULG				2322	2323	1				IIIGG
			CULG				2347.5		1				IIIB
11	0000	0742	CULG				0000	0525					IIIN,W
			CULG				0000	0525	1				N,RS,DP
			CULG				0101.5		1				IIIB
			CULG				0143		1				IIIB
			CULG	0449	0450								I,W
	0000	0945	MANI							0520.4	0522.3	1	IIIG
			CULG	0525.5	0527	1	0525	0527	3	0525.5	0527	3	IIIGG,V
			CULG				0527	0544					IIIS,W
			CULG				0527	0544	1				N,RS,DP
			CULG				0544	0742					IIIN,W
			CULG				0654.5	0656	1				IIIG
	0624	1643	WEIS				0656.6	0657.5	2				IIIG
			WEIS				0658.3	0702.6	3				IIIGG,U
			CULG				0658	0702	2				IIIGG
			CULG				0711	0712.5	1				UNCLF.
			CULG				0719	0732					II, W
	0612	1633	DURN				0755.3	0755.5	1				IIIG
			DURN				0838.7	0838.9	3				IIIG
			WEIS				0838.8	0838.9	1				IIIG
			WEIS				1036.0	1042.6	2				IIIGG
			WEIS				1054.4	1059.0	2				IIH ARM
	1108	1900	SGMR										
			WEIS				1441.9	1442.2	2				IIIU
	1330	2345	HARV				1813		1				IIIGW
			CULG				2043	2400					IIIN,W
	2043	2400	CULG				2043	2110					IS,W
			CULG				2110	2400					IN,W
	2206	2400	MANI										
			CULG				2207						IIIB,W,U
12	0000	0742	CULG				0000	0742					IIIN,W

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
12	0000	0945	MANI										
			CULG				0233.5		1				IIIB
			CULG	0234.5		1							I IIB
			CULG				0527.5		1				IIIB
	0620	0814	WEIS				0652.3	0652.5	2				IIIG
			WEIS				0654.6	0655.3	2				IIIG
	0835	1644	WEIS				0903.5	0904.7	2				IIIG
			WEIS				0929.7	0930.0	1				IIIG
	0608	1715	DURN				1051.1	1051.5	3				IIIG
			WEIS				1051.2	1051.7	3				IIIG
	1106	1900	SGMR										
	1330	2345	HARV										
	2042	2400	CULG				2049						IIIB,W
	2210	2400	MANI										
			CULG				2226						IIIB,W
13	0000	0946	MANI										
	0000	0742	CULG	0206.5	0207								IIIG,W
			CULG	0333	0333.5								IIIG,W
			CULG				0335.5	0336.5					IIIG,W
	0607	0902	DURN										
	0619	0813	WEIS										
	0940	1715	DURN										
	1103	1900	SGMR										
	1330	2345	HARV										
	1321	1646	WEIS				1347.2	1347.4	1				IIIB
			WEIS				1402.6	1402.8	2				IIIB
	2201	2400	MANI										
	2042	2400	CULG	2249	2250	1	2249	2250.5	1				IIIG
14	0000	0945	MANI										
	0000	0741	CULG	0031									IIIB,W
			CULG	0101									IIIB,W
			CULG				0101	0102.5	1				IIIG
			CULG				0258.5						IIIB,W
			CULG				0352	0352.5					IIIG,W
			CULG				0354.5	0355	2				IIIG
			CULG				0452.5						IIIB,W
	0603	1715	DURN										
	0616	0806	WEIS										
			CULG	0642		1	0642		1				IIIB
	0812	1647	WEIS				1019.4	1019.6	1				IIIB
			WEIS				1021.2	1021.3	2				IIIB
			WEIS				1421.7	1423.3	3				IIIGG
	1102	1900	SGMR				1422.1	1423.0	2				IIIS.
	1330	2345	HARV				1422	1423	2				IIIG,V
	2115	2400	CULG										
	2213	2400	MANI										
15	0000	0954	MANI										
	0000	0741	CULG				0354.5	0355.5	1				IIIG
			CULG				0356	0356.5	2	0356	0356.5	2	IIIG
			CULG	0432	0741		0533	0741					IS,W
			CULG				0632	0640					IIIS,W
			CULG				0633.5		1				IIIB
	0615	1651	WEIS				0633.6	0705.5	1				IIIN
			CULG				0705.5						IIIB,W
			CULG				0706	0707.5					IIIG,W,U
	0603	1716	DURN				0900	1520	1				I,DC
			WEIS				1100.0	1100.2	1				IIIG
	1101	1900	SGMR										
			WEIS				1410.6	1410.8	1				IIIG
	1330	2345	HARV				1755	1853	1				IIINW,INW
			HARV				1836		1	1836		1	IIIG
			HARV				1853	1913	2				IIIN,IN
			HARV				1913	2027	1				IIIN,IN
			CULG				2041	2327	1				IS
	2041	2400	CULG				2041	2105					IIIS,W
			CULG	2103	2104	1	2103	2105	1				IIIGG
			HARV				2103	2104	2				IIIG

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
15			CULG				2105	2400					IIIN,W
			CULG	2118	2400								IS,W
	2212	2400	MANI										
			CULG	2215	2216	1	2215	2216	1				IIIG
			CULG	2255.5	2256	1							IIIG
			CULG	2256.5		1	2256.5		1				IIIB
			CULG				2306.5		1				IIIB
			CULG				2327	2400					IS,W
16			CULG				0000	0741					IIIN,W
	0000	0741	CULG	0000	0455		0000	0455					IS,W
			CULG	0027.5	0030.5	3	0027.5	0030	3	0028	0030.5	3	IIIGG,V
	0000	0945	MANI							0028.1	0031.1	2	III
			CULG	0116.5	0117.5	2	0116.5	0117.5	1				IIIG
			CULG				0208.5		1				IIIB
			CULG	0325.5	0327.5	2	0325	0327	2	0326	0326.5	1	IIIGG,V
			CULG	0329	0330	2							IIIGG
			CULG	0450.5	0452	1	0450.5	0452	2				IIIGG
			CULG	0455	0741		0455	0741					IN,W
	0610	0703	WEIS										
	0713	1652	WEIS				0734.4	0736.7	1				IIIG
			CULG				0734.5	0736					IIIG,W
			WEIS				0753.9	0754.2	1				IIIB
			WEIS				0815.6	0816.7	2				IIIG
			WEIS				0908.0	0908.3	1				IIIB
			WEIS				0945.7	0945.9	1				IIIB
			WEIS				1025.3	1025.7	1				IIIB
			WEIS				1150.5	1151.7	2				IIIG
	1101	1900	SGMR				1150.5	1151.8	2				V
	0557	1545	DURN				1150.7	1151.4	3				IIIGG
			WEIS				1351.2	1351.3	1				IIIB
			WEIS				1354.3	1355.7	2				IIIG
			SGMR				1354.4	1356.4	2				IIIS
			DURN				1400	1545 D	2				I,DC
			WEIS				1422.0	1422.2	1				IIIB
			WEIS				1440.0	1630.0	1				IN
			WEIS				1445.3	1446.8	1				IIIG
	1330	2345	HARV				1710	2253	1				INW
			CULG	2041	2233	1							IS
	2041	2400	CULG				2041	2110					IS,W
	2207	2400	MANI										
			CULG				2226						IIIB,W
			CULG	2233	2400								IS,W
			CULG				2308.5	2309					IIIG,W
17	0000	0740	CULG	0000	0150								IN,W
	0000	0946	MANI										
			CULG	0150	0524								IS,W
			CULG				0417	0422					I,W
			CULG				0521.5	0522.5					I,W
			CULG	0524	0700	1							IS
	0607	1612	WEIS										
			CULG	0700	0740								IS,W
			CULG	0724	0725		0723.5	0724					IIIG,W
	1059	1900	SGMR										
	1330	2345	HARV				1335	1435	1				INW
	1158	1715	DURN				1421.4	1421.6	3				IIIG
	1627	1653	WEIS										
	2041	2252	CULG	2041	2138								IS,W
			CULG				2137						IIIB,W
			CULG	2138	2252								IN,W
	2202	2400	MANI										
			CULG				2207						IIIB,W
			CULG				2243	2243.5					IIIG,W
			CULG				2250	2250.5	1				IIIG
18	0000	0947	MANI										
	0142	0740	CULG	0142	0740		0216	0740					IS,W
			CULG				0220						IIIB,W
			CULG				0240.5						IIIB,W

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
18			CULG	0251	0252	1							IIIG
	0553	1715	DURN				0553 E	1300	2				I,DC
			DURN				0607.1	0607.4	3				IIIG
			CULG	0607	0607.5	2							IIIG
	0605	1655	WEIS				0922.7	0923.0	3				IIIB
	1057	1900	SGMR										
			WEIS				1156.0	1216.0	1				IN
			WEIS				1325.4	1325.5	1				IIIB
			WEIS	1455.3	1455.7								IIIG
			DURN	1455.3	1455.8	3							IIIG
			WEIS				1603.3	1610.2	1				IIIG
	1330	2345	HARV				1955	1958	1				IIIGG
	2040	2400	CULG	2040	2312								IS,W
	2203	2400	MANI										
19	0000	0952	MANI										
	0000	0740	CULG				0027						IIIB,W
			CULG	0051	0051.5	1							I
			CULG	0210.5	0212.5	1							I,DC
			CULG				0211.5						IIIB,W
			CULG	0229			0228.5	0229					IIIG,W
			CULG				0317		1				IIIB
			CULG				0501.5						IIIB,W
			CULG	0601	0740								IS,W
	0603	1335	WEIS										
			CULG				0606						IIIB,W
			CULG	0634.5	0635	1							IIIG
	1054	1900	SGMR										
	1352	1656	WEIS				1418.9	1419.6	2				IIIG
	1330	2345	HARV	1655	1656	1	1655	1656	1				IIIG
			HARV				1659	1700	2				IIIG
			HARV	1705	1706	1	1705	1706	1				IIIG
			HARV				1731		2	1731		2	IIIG
			HARV				1827		1	1827		1	IIIB
	2040	2400	CULG	2115	2400		2141	2400					IN,W
	2205	2400	MANI										
20	0000	0951	MANI										
	0000	0740	CULG	0000	0354								IN,W
			CULG				0323.5						IIIB,W
			CULG	0354	0740								IS,W
			CULG				0457.5	0458.5					IIIG,W
			WEIS				0628.0	1559.0	1				IN
			CULG	0729	0729.5	1							IIIG
	0601	1658	WEIS				0740.9	0741.6	2				IIIG
			WEIS				1045.8	1046.1	1				IIIG
	1053	1900	SGMR										
			WEIS				1208.3	1208.8	2				IIIG
			WEIS				1210.3	1210.6	2				IIIG,RS
			WEIS				1317.2	1318.4	2				IIIG
			WEIS				1329.4	1330.0	1				IIIG
	1331	1538	DWIN										
			WEIS				1509.8	1510.3	2				UNCL
			WEIS				1615.7	1616.0	1				IIIB
	1315	2345	HARV	1932	1933	2	1932	1933	1				IIIG
	2200	2400	MANI										
	2040	2400	CULG				2210						IIIB,W
			CULG	2257	2258	2							UNCLF,RS
			CULG	2258.5	2259								IIIG,W
			CULG	2303	2303.5		2303	2303.5					IIIG,W
			CULG	2309	2310	1	2309	2312	1				IIIG
			HARV	2309	2310	1	2310		1				IIIG
			CULG				2314.5	2326	1				II
			CULG	2315	2400								IS,W
			CULG				2341	2345.5					IIIGG,W
			CULG				2345.5	2348.5	1				IIIGG
21	0000	0740	CULG	0000	0029								IN,W
	0000	0950	MANI										
			CULG	0119	0119.5	1							IIIG

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
21			CULG	0120.5		1							IIIB
			CULG	0244.5	0246	2	0244.5	0246	2				IIIGG,U
			CULG	0247.5	0249	1	0248	0300	1			II	
			CULG				0724.5		1				IIIB
	0600	1009	WEIS				0724.5	0724.7	1				IIIB
			WEIS				0855.3	0855.6	1				IIIB
	0855	1007	OWIN	1002.5	1003.5	1							IIIG
	1025	1659	WEIS										
	1051	1900	SGMR										
	1111	1715	DURN				1114.4	1115.1	2				IIIG
	1315	2345	HARV				2009		1				IIIB
	2216	2400	MANI										
	2040	2400	CULG	2222.5	2227	1							I
			HARV	2223	2226	1							IIIG
22	0000	0952	MANI										
	0000	0739	CULG	0035	0105								IS,W
			CULG	0036	0036.5	1							IIIG
			CULG	0059	0101	2	0059	0101	2	0100	0100.5	1	IIIGG
			CULG	0102.5	0103	1							IIIG
			CULG				0104	0104.5					IIIG,W
			CULG	0104	0104.5	1							IIIG
			CULG				0523.5		1				IIIB
	0546	1715	DURN										
	0600	1701	WEIS										
			CULG				0601	0601.5	1				IIIG
	1051	1900	SGMR										
	1500	1730	OWIN										
	1315	2400	HARV	1818	1821	3	1819	1820	1				IIIGG
			HARV				1822	1828	3			II	
	2159	2400	MANI										
	2200	2400	CULG										
			HARV				2334		1				IIIB
			HARV	2339	2343	2	2341	2343	1				IIIG
23	0000	0533	CULG				0030.5	0031		0030.5	0031		IIIB,W
			CULG	0034	0034.5	1	0034	0034.5	1				IIIG
			CULG				0159.5	0200					IIIG,W
			CULG	0200.5		1	0200.5	0201.5	2	0201	0201.5	1	IIIG
			CULG				0201.5	0202					IIIG,W
			CULG	0209.5	0210	1	0209.5	0210.5	3	0209.5	0210.5	2	IIIG,V
	0000	0950	MANI							0210.0	0210.3	1	III
			CULG	0252	0252.5	2	0252	0253	2				IIIG
	0545	0940	DURN	0551.7	0552.2	3	0551.7	0552.2	3				IIIGG/V
			DURN				0553.7	0558.9	2				III,N
			DURN	0644.4	0648.4	3	0644.4	0648.4	3				IIIGG
	0554	0801	WEIS				0644.4	0644.7	2				IIIG
			WEIS				0645.2	0646.4	2				IIIRS
			WEIS				0647.3	0658.3	2			IIH	ARM
			DURN				0647	0649	2				DCIM
			DURN				0649.3	0657	3			II	
	0649	0739	CULG	0650	0650.5	1	0649.5	0700	2			II	
			DURN				0713.6	0713.7	1				IIIG
			CULG				0738	0739					IIIG,W
			DURN				0753.8	0755.0	3				IIIG
			WEIS				0753.8	0754.9	1				IIIG
			DURN				0824.1	0824.3	3				IIIG
			DURN				0900.8	0901.2	3				IIIG
	0814	1704	WEIS				0900.8	0901.4	2				IIIG
			WEIS				0915.2	0916.7	2				IIIG
			DURN				0916.1	0916.6	3				IIIGG
	0729	1337	OWIN	0920.1	0920.3	1							IIIG
			OWIN	0934.3	0935.2	2							IIIG
	1012	1715	DURN				1015.4	1015.5	2				IIIG
			DURN				1039.9	1040.2	3				IIIG
			WEIS				1039.9	1040.3	2				IIIG
			WEIS				1042.4	1042.5	1				IIIB
			OWIN	1042.4	1042.5	1							IIIG
			DURN				1047.5	1047.6	1				IIIG
	1047	1900	SGMR										

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
23			DURN				1108.1	1108.5	3				IIIG
			WEIS				1108.2	1108.5	2				IIIG
			WEIS				1141.7	1143.6	2				IIIG
			DURN				1141.9	1146.5	3				IIIGG
			WEIS				1145.2	1146.3	2				IIIG
			DURN				1205.4	1207.2	3				IIIG
			WEIS				1215.4	1217.3	2				IIIG
			WEIS				1627.4	1629.6	1				IIIG
			DURN				1627.6	1628.2	3				IIIG
	1551	2350	HARV				1628		2				IIIG
			DURN	1708.2	1710.2	3	1708.2	1710.2	3				IIIGG
			HARV	1708	1710	3	1708	1710	2				IIIG
			HARV	1733	1737	1	1737		2				IIIG
			HARV				1807		2				IIIG
			HARV				1849		1				IIIB
			HARV	2007		1	2006	2007	2				IIIG
			HARV				2031	2035	2				IIIG
	2039	2400	CULG				2039	2217	1				IS
			CULG				2050	2346					IIIN,W
			HARV				2055	2057	1				IIIG
			CULG				2057	2058	1				IIIG
			CULG				2111	2111.5	1				IIIG
			HARV				2111		1				IIIG
			HARV	2132		1	2132		1				IIIG
	2205	2400	MANI										
			CULG				2217	2400					IN,W
			CULG	2223	2224	1							IIIG
			HARV	2223	2228	2	2223	2228	2				IIIGG
			CULG				2227.5	2228	1				IIIB
			CULG	2228	2228.5	1							IIIG
24	0000	0739	CULG				0000	0115					IN,W
	0000	0957	MANI										
			CULG				0003		1				IIIB
			CULG				0048	0739					IIIN,W
			CULG				0052.5	0054	1				I
			CULG				0356.5	0357	1				IIIG,U
			CULG				0535	0536	1				IIIG
			CULG				0536.5	0537	2				IIIG
	0544	0825	DURN	0550.6	0551.4	2	0550.6	0551.3	2				IIIGG
			CULG				0551.5	0554	1				IIIG,V
			CULG				0612.5		1				IIIB
	0552	1705	WEIS				0612.6	0613.7	2				IIIG
			CULG				0613.5		1				IIIB
			WEIS				0627.3	0627.8	3				IIIG
			CULG				0627.5	0628	2				IIIG
			WEIS				0631.4	0632.5	1				IIIG
			DURN				0642.3	0642.3	3				III
			DURN	0720.3	0721.5	3							DCIM
			WEIS				0720.4	0722.7	1				IIIG
			DURN				0720	0820					I
			WEIS	0731.4	0731.5	1							IIIG
			WEIS				0735.8	0735.9	1				IIIB
			DURN	0737.3	0739.5	3	0738.0	0740.6	3				IIIGG
			WEIS				0738.0	0740.6	1				IIIG
			WEIS				0840.8	0841.2	1				IIIG
	0902	1730	DURN				0902 E	1730	1				I
			WEIS				1008.6	1008.8	1				IIIG
			WEIS				1315.5	1317.5	2				IIIG
			DURN	1315.5	1317.3	3	1315.5	1317.3	3				IIIGG
			DURN	1316.3	1317.4	2							DCIM
	1315	2345	HARV	1316	1317	3	1310	1322	3				IIIG
			WEIS				1458.3	1459.9	2				IIIG
	1045	1900	SGMR				1458.9	1500.1	1				V
			HARV				1458	1459	3				G
			WEIS				1635.6	1635.8	1				IIIG
			HARV				1636		2				IIIG
			HARV				1718	1730	2				IIIN
			DURN				1721.1	1723.8	3				IIIGG
			HARV	1722		2	1721	1724	3				IIIG

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
24			HARV				1832	1834	1				I
			HARV	2018		3	2018		1				IIIG
	2039	2400	CULG				2045.5	2046					IIIG,W
			CULG				2137						IIIB,W
			CULG				2156.5	2200	2				IIIGG
			HARV	2157	2159	2	2157	2200	1				IIIG
	2200	2400	MANI										
			CULG				2219						IIIB,W
			CULG				2238.5						IIIB,W
			CULG				2331	2333.5	2				IIIGG
			HARV				2331	2333	2				IIIG
25	0000	0950	MANI										
	0000	0738	CULG				0025	0025.5					IIIG,W
			CULG				0031.5						IIIB,W
			CULG				0041	0130	1				S.W.F.
			CULG				0421.5	0423	1				IIIG
			CULG				0428	0429					IIIG,W
			CULG				0437.5						IIIB,W
	0550	0624	WEIS										
	0542	1736	DURN	0857.4	0857.7	3							IIIGG
	0746	1707	WEIS				0857.5	0857.7	2				IIIG
			WEIS	0909.8	0909.9	2							IIIG
			WEIS	0941.6	0941.8	1							IIIG
			DURN	0941.6	0941.9	3							IIIG
			WEIS				1026.3	1026.4	1				IIIB
			DURN				1040	1550	1				I
	1044	1900	SGMR										
			DURN	1125.6	1125.9	3							IIIG,RS
			DURN	1156.1	1159.5	3	1159.2	1159.4	3				IIIGG
			WEIS				1156.2	1159.4	1				IIIG
			DURN	1340.3	1340.4	2							IIIG
			DURN	1345.7	1347.5	2							IIIGG
	1315	2345	HARV	1346	1347	2							IIIG
			DURN	1417.1	1417.3	3							IIIGG
			WEIS	1417.2	1417.4	2							IIIG
			HARV	1417	1418	3	1417		1				IIIG
			DURN				1543.5	1543.6	3				III
			WEIS				1543.5	1543.6	1				IIIB
			HARV	1543	1545	1	1543	1545	1				IIIG
			HARV	1803	1804	2	1803	1804	2				IIIG
			HARV	1824		1	1824		2				IIIB
			HARV				1858	1916	1				INH
			HARV				1907		2	1907		1	IIIB
	2038	2400	CULG				2126.5	2127					IIIG,W
			CULG				2127.5						IIIB,W
	2200	2400	MANI										
			HARV	2230	2231	3							IIIGG
26	0000	0958	MANI										
	0000	0738	CULG				0056.5						IIIB,W
			CULG				0303.5			0303.5			IIIB,W
			CULG				0308	0311					IIIN,W
			CULG	0317.5	0318	1							IIIG
			CULG				0441	0444					IIIG,W
			CULG				0506	0606					IIIS,W
	0539	1318	DURN				0539 E	1737 D	1				I,DC
	0547	1629	WEIS				0605.6	0606.0	1				IIIG
			WEIS				0614.3	0625.2	1				IIIG
			WEIS	0648.3	0648.4	1							IIIG
			WEIS				0722.0	0722.6	1				IIIG
			CULG				0722	0723.5	1				IIIG
			DURN	0750.4	0751.0	2	0750.5	0751.1	3				IIIGG
			WEIS				0750.5	0751.1	3				IIIG
			DURN	0857.6	0857.9	3	0857.6	0857.9	3				IIIGG
			WEIS				0857.7	0900.5	2				IIIG
			DURN				0901.4	0901.5	3				IIIG
	1042	1900	SGMR										
			WEIS				1120.4	1127.5	2				IIIGG
			DURN	1120.8	1124.8	3	1120.8	1124.8	3				IIIGG

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
26			WEIS				1257.6	1258.8	2				IIIG,U
	1332	1737	DURN	1333.2	1334.8	3	1333.2	1334.8	3				IIIGG
			WEIS				1333.3	1335.4	2				IIIGG
	1315	2345	HARV	1334		1	1333	1335	3				IIIG
			WEIS				1500.6	1500.8	2				IIIG
			HARV				1501		2				IIIG
			DURN	1505.6	1505.7	1							IIIG
			DURN	1532.3	1532.3	2	1532.3	1532.3	2				III
			WEIS				1537.0	1537.6	2				IIIG,U
			WEIS				1540.8	1541.5	2				IIIG,U
			HARV	1541	1555	2	1528	1555	2				IIIGN
			DURN	1550.2	1550.3	3							III
			DURN	1604.2	1604.2	3	1604.2	1604.2	3				III
			HARV				1645	1806	1				IN
	1650	1708	WEIS										
			DURN	1651.3	1655.6	3	1651.3	1655.6	3				IIIGG
			HARV	1653	1655	2	1651	1656	3				IIIG
			HARV	1712		1	1712		2				IIIG
			DURN	1734.2	1734.2	2	1734.2	1734.2	2				III
			HARV				1801	1802	3				IIIG
			HARV	1804		1	1803	1817	2				IIIG
			HARV				1844	1845	1				IIIG
			HARV	2001	2003	3	2001		2				IIIG
	2038	2400	CULG	2109.5	2110.5	2	2109.5	2110.5	2				IIIG
			CULG				2118	2400					IIIN,W
			CULG	2140.5		1	2140.5	2141	1				IIIG
			HARV				2140		2				IIIG
	2200	2400	MANI										
			CULG				2253.5	2254	2				IIIG
			HARV				2254		2				IIIG
			HARV				2307		2				IIIB
			CULG				2307		1				IIIB
			CULG				2319.5	2320.5	1				IIIG
			CULG	2357.5	2400	1	2359.5		1				IIIGG
27	0000	1000	MANI										
	0000	0738	CULG				0001	0001.5					IIIG,W
			CULG				0006.5	0007					IIIG,W
			CULG				0007.5	0008	2				IIIG
			CULG				0012	0013.5	1				IIIG
			CULG				0444.5	0445					IIIG,W
			CULG				0448.5	0452	2				IIIGG
	0537	1138	DURN				0537 E	1739 E	3				I,DC
			WEIS				0608.0	1708.0	2				IN,DC
	0545	1709	WEIS				0634.8	0635.1	2				I IIG,U
			CULG				0635		1				IIIB
			CULG				0637.5	0639					IIIG,W
			WEIS				0638.3	0638.5	2				IIIG
			CULG	0638.5		1							IIIB
			DURN	0639.3	0639.3	3	0638.3	0640.6	3				IIIG
			CULG				0656	0738					IN,W
			DURN	0811.7	0818.0	3	0811.7	0815	3				II
			WEIS				0811.7	0819.0	2				IIH ARM
			WEIS				0811.7	0812.0	3				IIIG,U
			WEIS				0848.3	0848.6	2				IIIG,U
			DURN	0848.3	0848.6	3	0848.3	0848.6	3				IIIG
			WEIS				1108.3	1111.3	1				II
			WEIS				1120.3	1125.7	3				IIIGG
	1040	1900	SGMR				1120.5	1131.0	2				IIIS
			WEIS				1127.8	1131.5	3				IIIGG
			SGMR				1145.3	1151.3	2				II
			WEIS				1146.5	1153.6	2				II
			SGMR				1151.3	1313.0	2				CONT
	1205	1739	DURN										
	1315	2345	HARV	1315	1512	2	1315	1512	2				IN
			WEIS				1355.6	1400.0	2				IIIG
			WEIS				1422.7	1423.4	2				IIIG
			HARV				1423		2				IIIG
			HARV	1513	1822	1	1512	1713	3				IN
			HARV				1714	1956	1				IN

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

MARCH 1979

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
27	2037	2400	CULG	2037	2224								IS,W
	2200	2400	MANI										
28	0000	1000	MANI										
	0000	0737	CULG				0148.5	0149					IIIG,W
	0536	0700	DURN				0536 E	0634	3				I,DC
			WEIS				0546.0	0840.0	1				IN
	0740	0810	DURN				0740 E	0810 D	3				I,DC
	1010	1622	DURN										
	0544	1429	WEIS				1030.7	1031.2	1				IIIG
	1038	1900	SGMR										
	1315	2347	HARV	1316	1317	1							IW
	1514	1709	WEIS										
			HARV				1722	1723	2				IIIG
	2159	2400	MANI										
	2037	2400	CULG				2213						IIIB,W
			HARV				2216	2222	2				IIIG
			CULG				2221.5	2222	1				IIIG
			CULG				2242.5	2243.5	1				IIIG
			HARV				2242	2244	2				IIIG
29	0000	1000	MANI										
	0000	0737	CULG				0031.5						IIIB,W
			CULG				0034.5		1				IIIB,U
			CULG				0036						IIIB,W
			CULG	0102	0637								IN,W
			CULG	0156	0156.5	1	0156	0156.5	1				IIIG
			CULG				0252	0252.5					IIIG,W
			CULG	0303.5	0304								IIIG,W
			CULG	0306	0307.5	1							IIIG
			CULG	0316.5	0318.5								IIIGG,W
			CULG	0509	0509.5	1							IIIG
			CULG	0516	0518	1							IIIG
			CULG	0518	0518.5	1	0518	0518.5	1				IIIG
			CULG	0521.5	0522.5	1							IIIG
	0545	1711	WEIS				0626.4	0628.4	1				IIIG
			CULG	0637	0737	1							IS
			WEIS				0708.0	0708.4	1				IIIG
			CULG				0708	0708.5	1				IIIG
			WEIS				0709.0	1015.0	1				IN
			WEIS				0848.1	0848.6	2				IIIG
			WEIS				0945.2	0945.9	1				IIIG
			WEIS				0949.6	0951.2	2				IIIG
			WEIS				1013.6	1013.8	2				IIIG
	1039	1900	SGMR										
			WEIS				1245.6	1245.8	2				IIIG
			WEIS				1249.0	1254.6	2				IIIGG
	1020	1523	DWIN	1251.4	1252.2	2							IIIG
			WEIS				1300.4	1301.4	2				IIIG
	1413	1739	DURN				1609.7	1611.0	3				IIIGG
			WEIS				1610.8	1612.2	1				IIIG
	1315	2345	HARV				1611	1612	1				IIIG
			HARV				1634	1638	1				IIIG
			HARV				1722						IIIG
			HARV				1909	1917	2				IIIGG
			HARV				1954		2				IIIB
	2037	2400	CULG	2132	2258								IIIN,W
	2152	2400	MANI										
30	0000	1000	MANI										
			CULG				0037.5	0038					IIIG,W
	0000	0737	CULG	0037	0042	2							IIIGG
			CULG				0039.5	0040	1				IIIG
			CULG				0044	0045.5	1				POSS II
			CULG	0046	0051	1							I IIN
			CULG	0314	0314.5	1							IIIG
			CULG	0336	0351								IS,W
			CULG	0457.5	0458								IIIG,W
			CULG	0459.5	0500	1							IIIG
	0542	1047	WEIS										

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

MARCH 1979

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
30			CULG	0548	0548.5	1							IIIG
	0916	1134	DURN				1107.0	1112.7	3				IIIGG
	1222	1740	DURN				1232.6	1232.9	3				IIIG
	1133	1712	WEIS				1233.6	1234.3	2				IIIG
			DURN				1321.3	1321.8	3				IIIGG
	1315	1345	HARV	1322	1323	2	1322	1323	3				IIIG
			DURN				1522.4	1522.8	1				IIIG
			DURN				1557.1	1608.6	3				IIIG,N
			HARV				1558	1610	2				IIIGG
			WEIS				1619.7	1619.9	1				IIIB
			HARV				1631	1633	1				IIIG
			WEIS				1645.4	1645.5	1				IIIB
			WEIS				1654.3	1655.3	2				IIIG,RSU
	1034	1900	SGMR				1654.4	1655.5	1				III
			HARV				1654	1655	2	1654	1655	3	IIIG
	2036	2400	CULG	2311.5	2314	1	2312	2317	2	2313	2314	1	IIIGG
	2200	2400	MANI							2312.7	2313.7	1	III
			HARV	2312	2313	1	2312	2316	3				IIIG,V,U
			CULG				2317	2320.5					IIIG,W
31	0000	1000	MANI										
	0000	0736	CULG				0525.5						IIIB,W
			CULG				0542						IIIB,W
			CULG				0543						IIIB,W
	0531	1741	DURN	0929.1	0929.1	1	0929.1	0929.1	3				III
			DURN	1310.5	1310.6	2							IIIG
	1315	2345	HARV				1342	1540	2				IN
			DURN				1345.8	1345.8	1				III
	1033	1900	SGMR				1345.9	1346.3	2				V
			HARV				1346	1349	2				IIIGG
			SGMR				1348.0	1348.9	1				V
			DURN				1348.4	1348.6	1				IIIG
			DURN				1350	1741 D	3				I,DC
			SGMR				1419.8	1420.1	2				V
			DURN				1420.5	1423.1	2				IIIG
			HARV				1420	1423	2				IIIGG
			SGMR				1422.5	1423.7	2				V
	1440	1619	WEIS										
			HARV	1534	1600	2	1540	2120	3				IN
	2036	2400	CULG				2036	2057	1				IS,DC
			CULG				2057	2140	1				IS
			CULG				2140	2256					IS,W
	2154	2320	MANI										
			CULG				2227.5	2228					IIIG,W
			CULG							2321	2333	1	S.W.F.
			CULG	2325	2400	1							IS
			CULG	2351.5	2352.5		2351	2353					IIIG,W

The symbols used in connection with the spectral type in describing the important bursts are as follows:

B = Single burst
G = Small group (< 10) of bursts
GG = Large group (> 10) of bursts
C = Underlying continuum (particularly with type I)
S = Storm in the sense of intermittent but apparently connected activity
N = Intermittent activity in this period
U = U-shaped burst of Type III

RS = Reverse slope burst
DP = Drifting pairs
DC = Drifting Chains
H = Herringbone
W = Weak
P = Pulsations
CONT = Continuum
UNCLF = Unclassified activity
DCIM = Fast drift

COSMIC RAY INDICES

(Neutron Monitors)

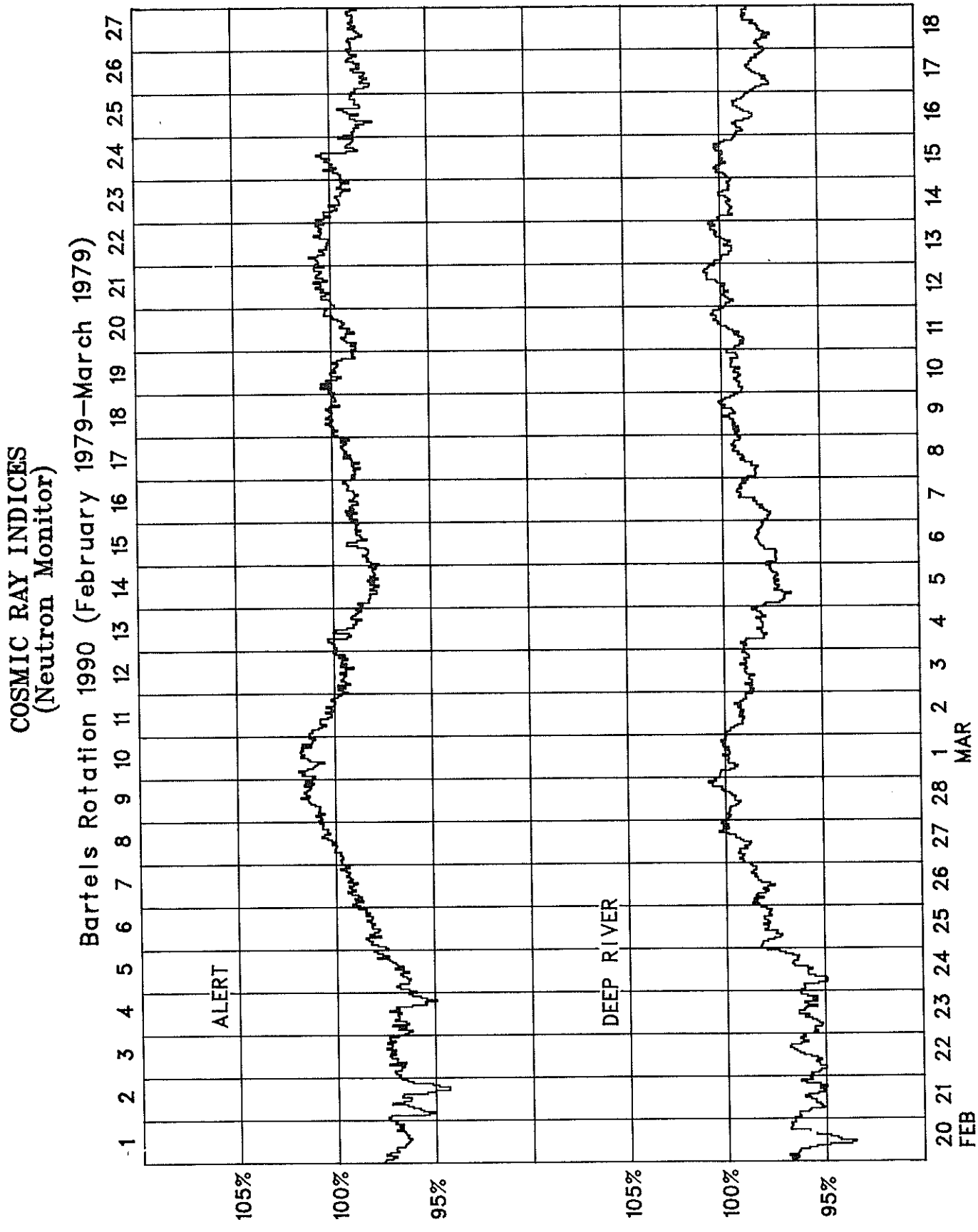
MARCH 1979

Mar. 1979	THULE Average cts/hr	ALERT Average cts/hr	DEEP RIVER Average cts/hr	CALGARY Average cts/hr	KIEL Average cts/hr	CLIMAX Average cts/hr	TOKYO Average cts/hr	KULA Average cts/hr	HUANCAYO Average cts/hr
1	Data not available at time of publication.	7230.0	6736.2	Data not available at time of publication.	6115.2	4082.2	3626.0	Data not available at time of publication.	Data not available at time of publication.
2		7163.5	6689.1		6040.0	4059.8	3613.3		
3		7099.4	6659.9		5992.2	4037.3	3618.5		
4		7087.9	6627.4		6015.6	4022.7	3615.6		
5		6995.0	6558.4		5952.8	3955.5	3589.0		
6		7027.9	6596.7		5995.0	3965.8	3610.5		
7		7064.2	6636.5		6013.8	3975.5	3610.1		
8		7070.3	6665.6		6029.9	3998.4	3622.9		
9		7131.8	6710.0		6081.7	4023.7	3628.6		
10		7116.3	6690.9		6078.8	4033.7	3633.8		
11		7090.9	6717.4		6083.4	4046.6	3638.3		
12		7160.2	6748.0		6108.3	4041.5	3632.7		
13		7166.1	6739.1		6087.5	4050.5	3624.4		
14		7112.1	6716.6		6076.4	4021.1	3606.0		
15		7101.9	6731.8		6051.2	3999.0	3603.1		
16		7042.3	6664.6		6009.0	3982.0	3587.3		
17		7027.5	6608.5		5937.8	3966.7	3569.2		
18		7046.0	6616.6		5950.9	3961.0	3572.3		
19		7083.7	6642.6		6013.1	3981.1	3585.5		
20		7132.8	6670.3		6037.3	3987.7(32)	3585.8		
21		7122.6	6662.3		6035.6	3964.0(2)	3593.7		
22		7073.8	6620.5		5986.1	3961.5	3596.2		
23		6981.3	6578.9		5962.5	3941.1	3589.7		
24		7001.5	6567.3		5947.3	3927.9	3574.0		
25		7049.6	6615.7		5977.9	3953.7	3588.8		
26		7077.8	6647.6		6020.0	3977.1	3605.5		
27		7071.3	6665.8		6039.9	3993.8	3614.8		
28		7028.5	6606.7		6012.7	3950.4	3600.1		
29		6854.5	6413.5		5833.3	3874.7	3547.7		
30		6796.3	6400.0		5824.8	3849.5	3537.1		
31		6869.1	6451.5		5869.7	3880.4	3553.9		
MEAN		7060.5	6634.0		6005.8	3982.9	3599.2		

( ) is the number of hours for which data are available if less than 24. Number of Section Hours at Climax if sum of both sections is less than 40 hours.

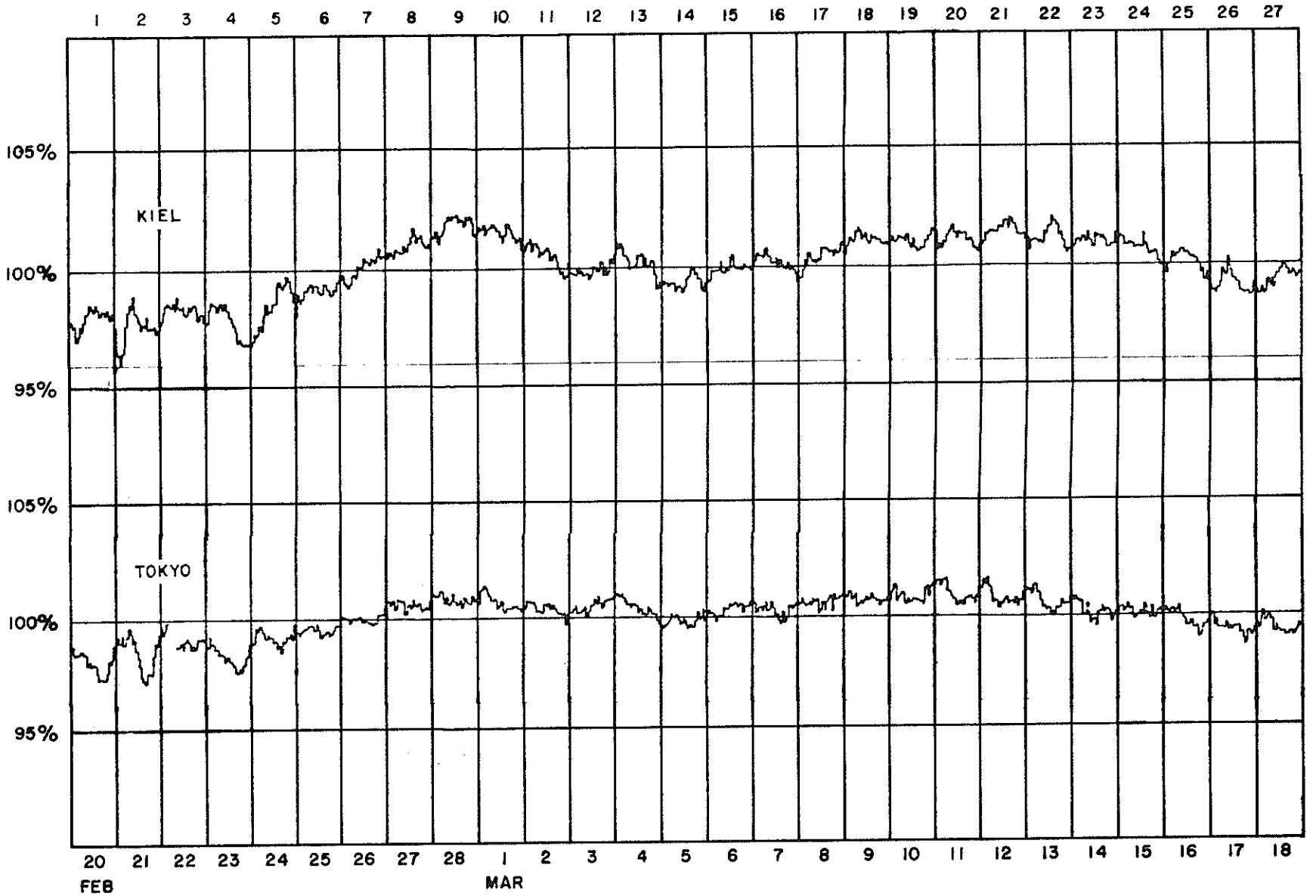
Scaling Factors: 100 for Thule, Alert, Calgary, Sulphur Mountain, Kiel, Climax and Kula; 300 for Deep River; 256 for Tokyo.

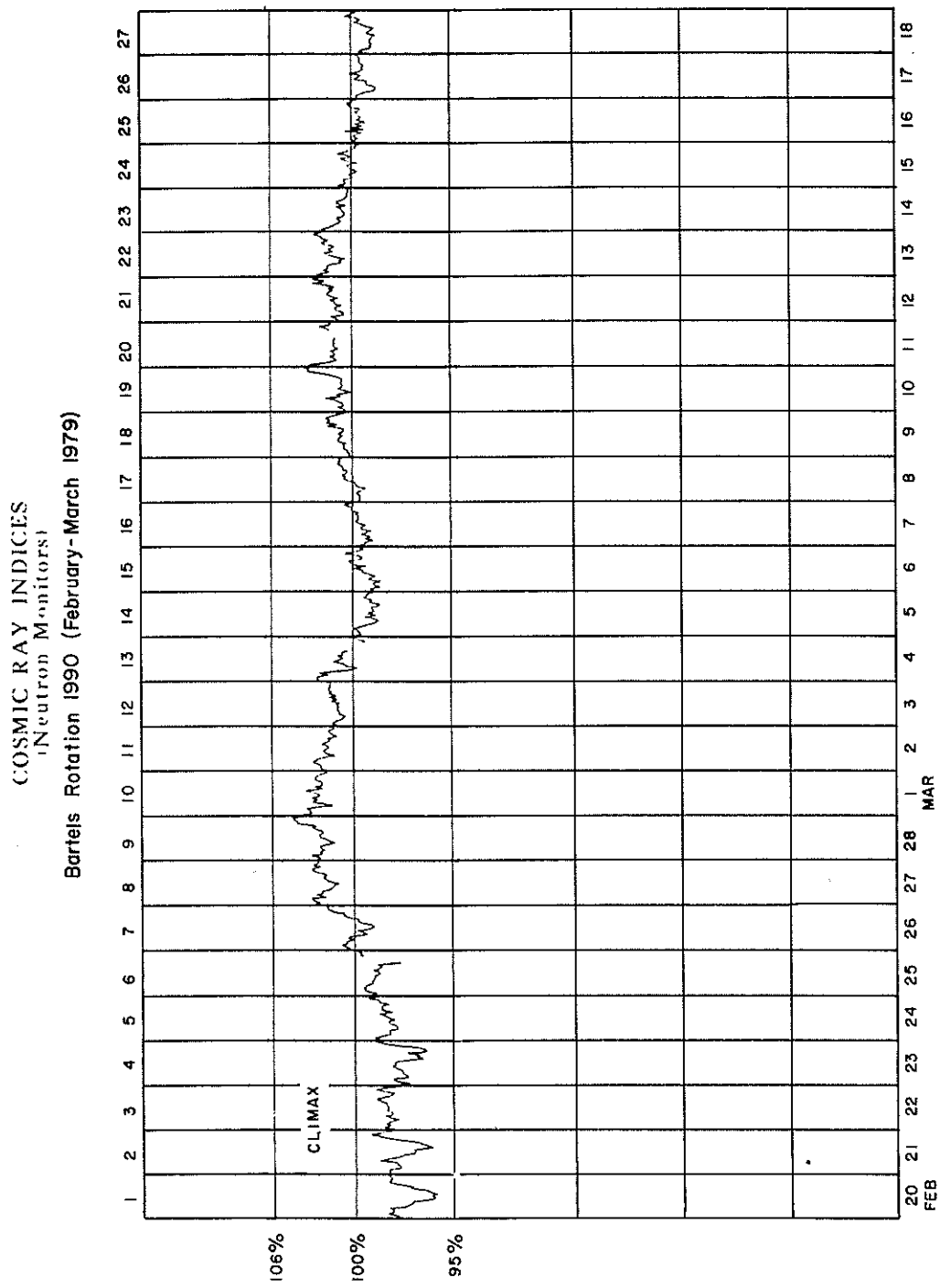
NOTE: SULPHUR MOUNTAIN STATION CLOSED AUGUST 1978.


COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 1990 (February 1979–March 1979)
ALERT
DEEP RIVER
105%
100%
95%
FEB
MAR

COSMIC RAY INDICES
(Neutron Monitors)

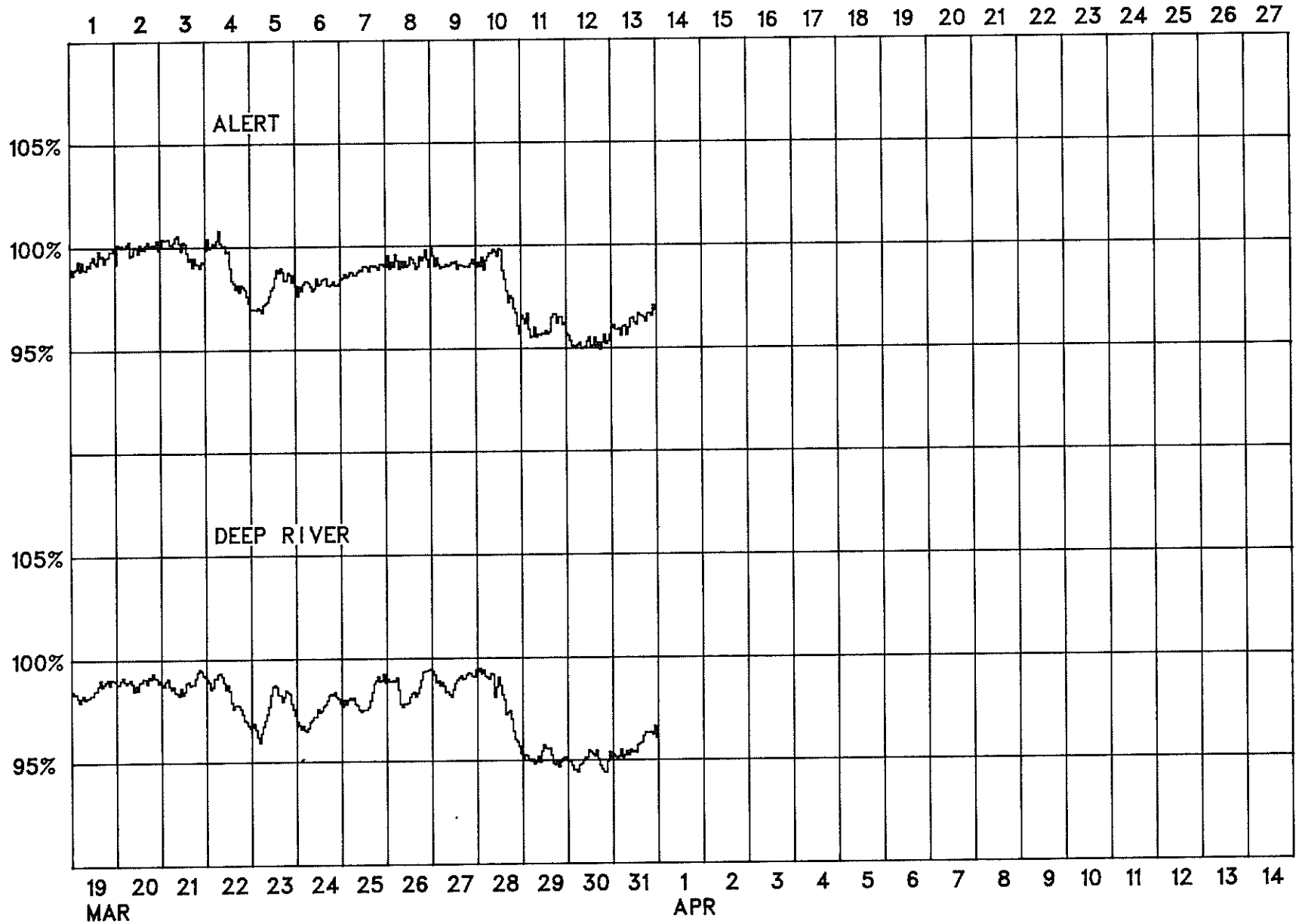
Bartels Rotation 1990 (February - March 1979)




COSMIC RAY INDICES
Neutron Monitors
Bartels Rotation 1990 (February-March 1979)
CLIMAX
106%
100%
95%
20 21 22 23 24 25 26 27 28 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
FEB
MAR

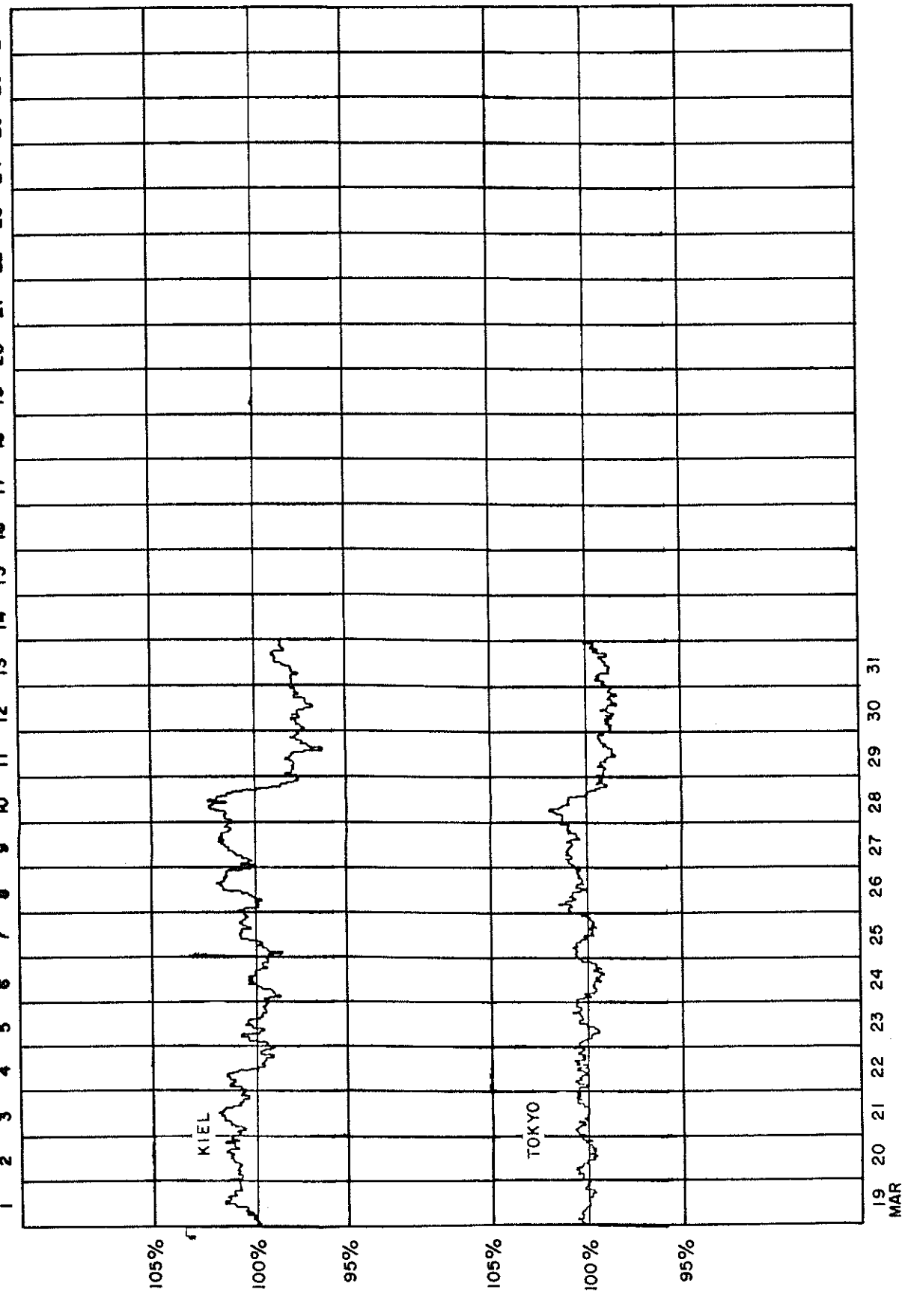
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 1991 (March 1979–April 1979)



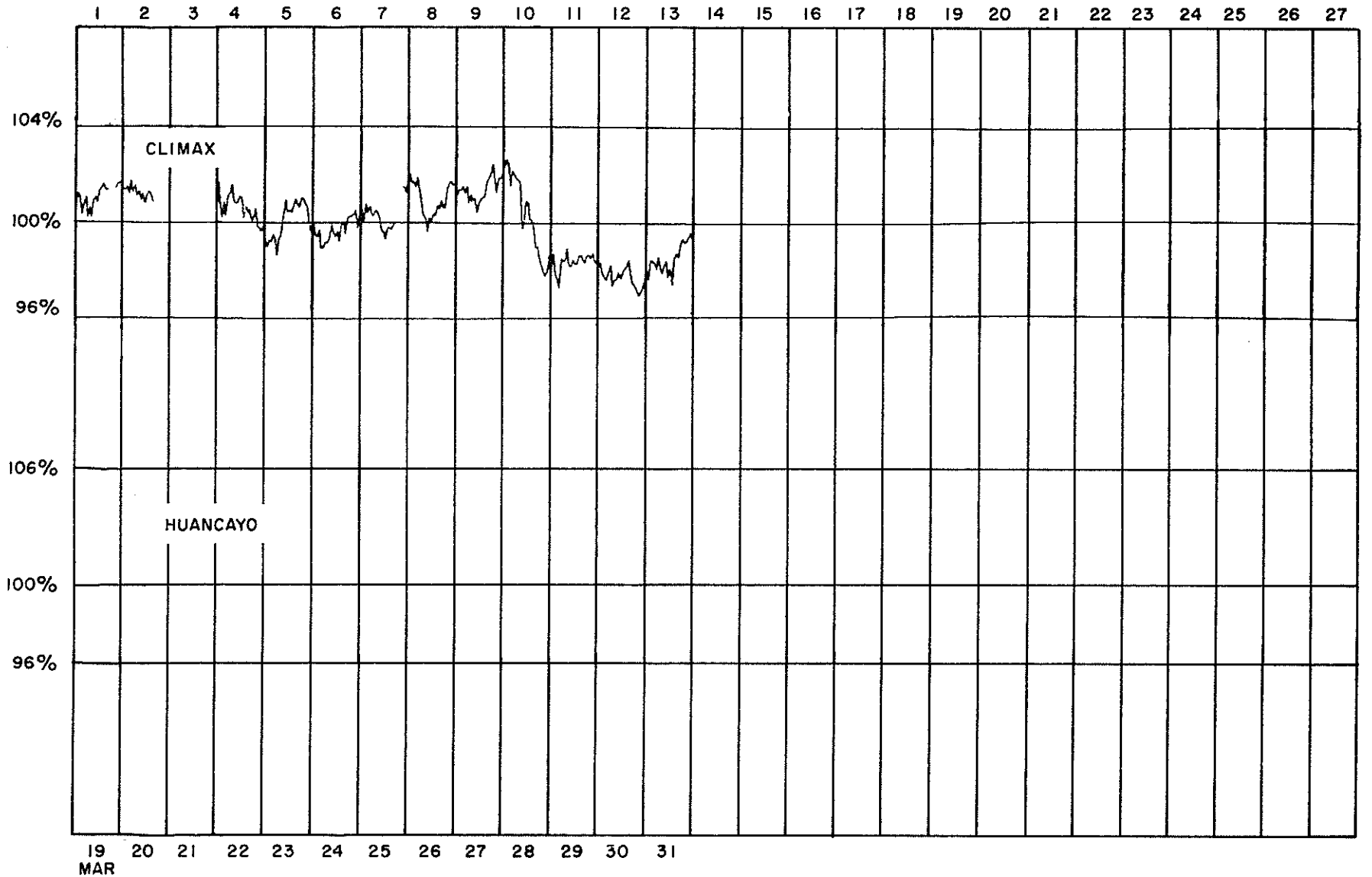
COSMIC RAY INDICES
(Neutron Monitors)

Bartels Rotation 1991 (March 1979)



COSMIC RAY INDICES
(Neutron Monitors)

Bartels Rotation 1991 (March 1991)



GEOMAGNETIC ACTIVITY INDICES

MARCH 1979

Day		Three-Hourly Indices Kp									Three-Hourly Indices Km								Ap	aa * *				Cp
		1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8		N	S	M		
1		4	3+	2+	2+	2+	2+	3-	2	21+	3+	2+	2-	2+	2	2+	3-	2	12	25	18	25	19	0.7
2		4	4	3	4-	3+	3-	3	4-	27+	3+	3	3-	3	3	3-	3+	3	20	32	26	32	27	1.0
3		4-	1+	3-	2	3-	3+	3	3-	21+	3	1+	2	2-	2+	3	3-	2+	13	23	16	17	23	0.7
4		4	3+	3+	5-	4+	3	3+	5	31	3+	3-	3-	4	4-	3+	3+	4+	27	47	37	38	47	1.2
5		3	4	3+	3	2-	1+	3-	2	21	3	3+	3-	3	1+	1	3-	2+	13	21	24	30	15	0.8
6	D5	3+	3+	4	5-	5-	5-	4+	4	33	3-	3	3	5-	4+	4	4	4-	30	42	39	35	46	1.3
7	Q5A	3-	3	1+	0+	0+	1	2-	2	12+	2+	3-	1+	0+	0+	1+	2-	2+	7	15	9	13	12	C	0.3
8	Q6A	2	2	1+	3-	2	1	1+	2-	14	2	1+	1	2+	2	1	1+	1+	7	13	10	12	11	C	0.3
9		3+	2-	3+	4-	3	2+	3-	3+	23+	3-	1-	3	4-	3-	2	2+	4-	15	21	21	23	19		0.8
10	D2	5	5-	4+	4+	4	4+	6+	7	40	5-	4-	3	4-	5-	4+	5+	6	54	91	63	54	101		1.6
11		5+	3+	3+	3	3+	3-	2-	0	23-	5-	3-	3-	3-	3-	2+	1+	0	18	35	13	29	19		1.0
12	Q4	1	2-	3-	2-	0+	1+	2+	0+	11+	1-	1	2	1	1-	1+	2+	1-	6	7	7	8	7	CK	0.3
13	Q8A	1+	3	3-	2	1+	2	0+	1-	13+	2-	2+	2+	2	1+	1+	0+	1-	7	9	9	12	6	CC	0.4
14	Q1	1-	1-	0+	0+	0+	0+	1	1	5-	0+	0+	0	0	0	0	1-	1	3	4	2	2	4	CC	0.0
15	Q9A	1-	1+	1	1	2+	3-	3-	3-	14+	1-	2-	1+	1	2+	3-	3-	3-	8	15	14	9	20		0.4
16	Q0A	3	3-	2+	3	3	2+	1+	2	20-	3-	3-	2-	2+	3-	2	2-	2+	11	21	15	22	15		0.6
17		3	3	6-	4	3	3-	2	3-	26	3	3	5	4-	3-	2	2	3	21	32	35	46	22		1.1
18	Q7A	2+	3-	2	2	3-	1+	0+	0	13+	2+	2+	1+	2	3-	1+	0+	0	7	13	9	14	9	C	0.3
19		0	0+	3-	3+	3+	3+	3	2-	18-	0+	1-	2+	3-	3	3	3-	2-	11	20	17	14	24		0.6
20	Q3	1+	2	2	2-	1+	1+	1+	2-	13-	1+	2-	2-	1	1+	1+	1+	2-	6	10	8	9	9	CK	0.3
21	Q2	0	0+	2-	1	1+	1	2+	2-	9+	0+	1-	2-	1-	1+	1+	2+	2	4	9	8	8	10	C	0.2
22	D4	1-	1-	4	6-	7-	7-	4-	3	31	1-	1+	4-	5	6-	6-	4-	3	45	45	74	33	85		1.5
23		4-	3+	3	2-	2	2+	2+	2+	21-	3	3-	3-	2	2	2	2+	2+	12	29	17	26	21		0.7
24		2+	3-	4	3+	2+	2+	3-	4-	23+	2+	2+	4-	3	2	2	3	3+	15	27	27	29	25		0.8
25		3+	4	4-	3+	3	3+	3+	4+	28+	3	3+	3+	3+	3-	3-	3	4-	21	34	32	34	33		1.1
26		4+	4-	4-	3+	4-	5-	4	4-	31	4	3+	3+	3	3+	4	4-	4-	26	42	39	33	48		1.2
27		1+	3	3	3+	3+	4-	4-	4	25+	1+	3-	3	3	3+	3+	4-	4-	18	26	31	16	41		1.0
28	D3	4	4-	4	5+	6-	5-	3	5+	36-	3+	3	3+	5-	5-	4+	3	5	39	50	43	37	57		1.4
29	D1	6	5	6+	5+	5-	6	7-	5-	45-	5+	4	5	5-	4	5	6-	4+	68	87	74	72	89		1.7
30		5	4+	3	1+	2+	2-	2	2-	21+	5-	4-	2+	1+	2	1+	1+	2	16	19	14	23	12		0.9
31		3	3+	2-	2-	3	3+	3+	5+	25-	3	3-	2	2-	3-	3	3+	4+	19	31	22	17	36		1.0
																		Mean	19	28.9	24.9	27.2		0.81

Day	Three-Hourly Indices Kn								Three-Hourly Indices Ks							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
1	3	2+	2-	2+	2	2	3-	2	3+	2+	2-	3-	2	3-	3-	2+
2	3+	3	2+	3	3	2+	3	3	3+	3	3-	3	3	3-	3+	3-
3	3	1	2+	1+	3-	3+	3-	2+	3-	2-	2-	2-	2-	3	2+	3-
4	3+	3-	3	4+	4-	3+	3+	4+	4-	3-	3-	4	4-	4-	4-	5-
5	3-	3+	3-	3	1+	1	2+	2+	3	3+	3-	3-	1	1-	3-	2+
6	3-	3	3+	4+	4	4	4	3+	3-	3	3	5-	5-	4	4	4-
7	2+	3-	1+	1-	0+	1+	2-	2	2+	2+	2-	0+	1-	1	1+	3-
8	2-	1+	1	2+	2	1	1+	1+	2+	1	1-	2+	2	1	1-	1+
9	3-	1	3	4-	3	2	3-	4-	2+	0+	3-	3+	2+	2	2	4
10	4+	4-	3+	4-	5	4	5	6-	5-	4-	3-	4-	4	5-	6-	6+
11	4+	3-	3	3-	3	2+	2-	0	5-	3	3-	3-	3-	2+	1+	0
12	1-	1+	2+	1+	1-	1+	3-	1-	1	1-	1+	1	1-	1+	2+	1
13	1+	2	2+	2	1+	1+	0+	1-	2-	2+	2+	2-	1+	1+	0+	1-
14	0+	0+	0	0	0	0	1-	1	0+	0+	0+	0	0	0	1-	1
15	1	2-	1+	1+	3-	3-	2+	3-	1-	2	2-	1	2	2+	3-	3-
16	3-	2+	2	3-	3-	2	1+	2+	3-	3-	2-	2+	3	2-	2-	2+
17	3	3-	4+	4-	3-	2+	2	3	3+	3+	5+	4-	2+	2-	2-	3
18	2	3-	2-	2	3-	2-	1-	0	2+	2	1+	2-	2+	1+	0+	0+
19	0	1	3-	3-	3	3	3-	2-	0+	0+	2-	3-	3	3	2+	2-
20	1	2	2-	1+	1+	1+	1+	2-	2-	1+	1+	1	1+	2-	1+	2
21	0+	0+	1+	1-	2-	1+	2+	2	1-	1	2-	1-	1+	1	2	2
22	1-	1	4-	5+	6-	5+	4-	3	1	2-	4	5	6-	6	4	3
23	3	3-	2+	2	2	2	2+	2+	3	3-	3	2	2-	2	3-	2+
24	2	2	4-	3	2	2	3	3	2+	3-	3+	3	2+	2+	3-	3+
25	3	3	3+	3	3-	3-	3	3+	3	4-	3+	3+	3	3-	3	4-
26	4	3	3+	3-	3+	4	4-	3+	4+	3+	3+	3	4-	4	4-	4
27	1+	3-	3	3	3	3+	3+	4-	1+	2+	3-	3	4-	4-	4	4-
28	3+	3-	3+	5-	5-	4+	3-	5-	3+	3	3+	5-	5-	4+	3	6-
29	5	4	6-	5	4+	5-	5+	5-	6-	4+	5-	4+	4	5+	6	4+
30	4+	4-	2+	1+	2+	2-	2-	2+	5-	4-	2	1+	2	1+	1+	2-
31	3-	3-	2	2-	2+	3	3+	4	3	3-	2	2-	3-	3	4-	5-

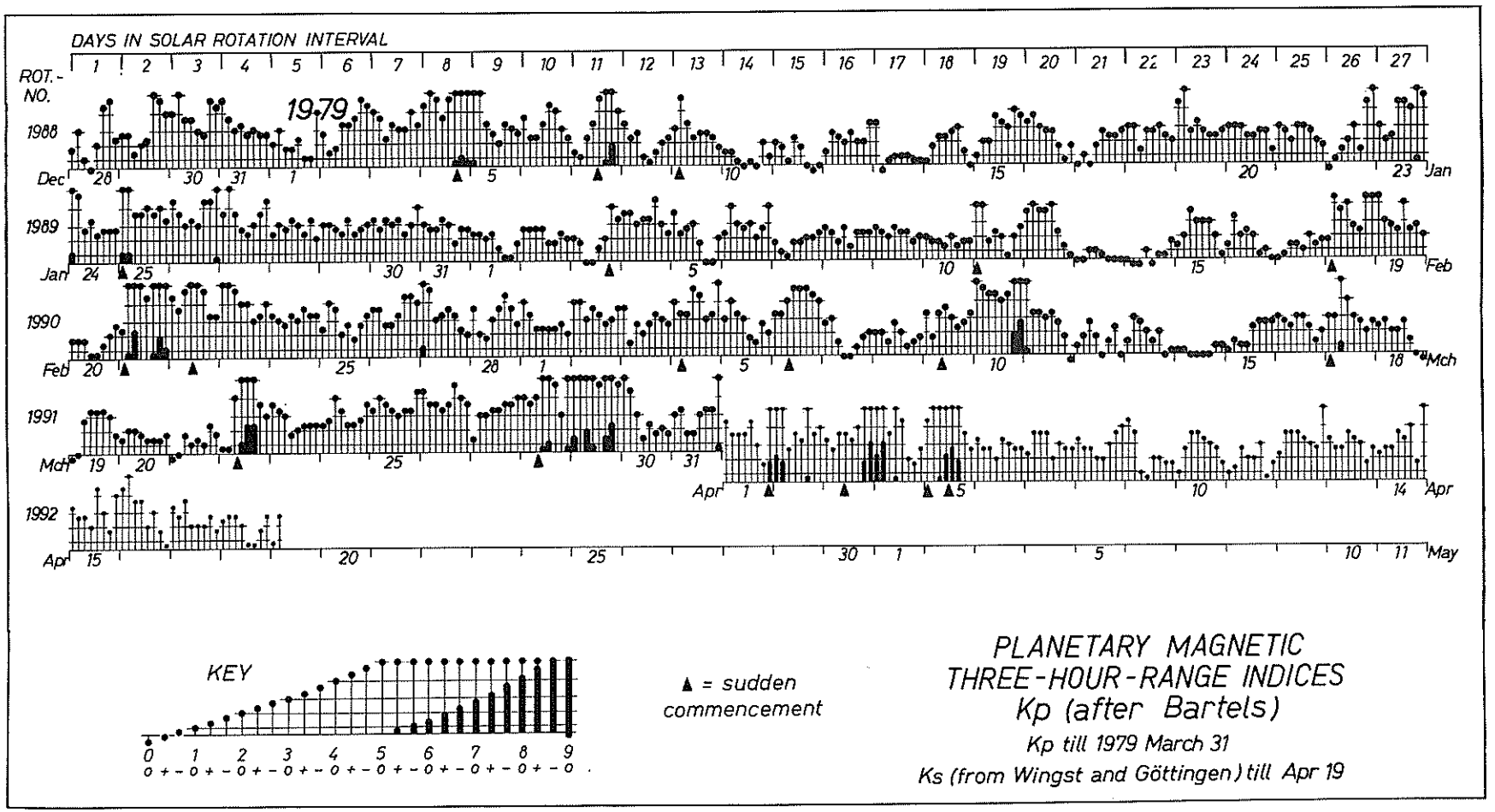
Quiet days (Q) and disturbed days (D), geomagnetic planetary three-hour-range indices (Kp) (integers alone are equivalent to those normally given with a small zero), magnetic character figures (Cp), and average amplitude (Ap) (unit 2γ) prepared by Geophysikalisches Institut at the University of Göttingen, F.R. of Germany for the International Service of Geomagnetic Indices. Ten most quiet days [Q1-Q0(10)] and five most disturbed days [D1-D5] are ordered from most quiet or disturbed, respectively. A or K means "not really quiet" (A = "Ap>6" K = "Ap ≤6 but one Kp ≥3o or two Kp values ≥3-"). An * means "not really disturbed" (Ap<20).

Geomagnetic three-hourly indices (Kn), (Ks) and (Km) as in IAGA-Bulletin No. 32 and indices (aa), "antipoda", as in IAGA-Bulletin No. 33 prepared by P. N. Mayaud of the Institut de Physique du Globe, Paris, France. Really quiet (C) and quiet but slightly disturbed three-hourly intervals (K) are given for 24-hour and 48-hour intervals centered on 12 UT.

DAILY AVERAGE INDICES Ap

	1978									1979		
DAY	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
1	12	88	9	6	4	21	13	13	11	10	6	12
2	15	94	82	5	4	20	12	10	3	19	10	20
3	41	83	31	11	16	11	8	12	5	19	9	13
4	55	96	26	80	30	8	17	5	12	45	19	27
5	21	7	38	53	22	7	8	6	10	23	9	13
6	9	5	8	13	16	14	4	2	5	18	16	30
7	5	7	11	14	7	6	4	9	2	32	6	7
8	5	16	10	14	6	24	5	14	3	8	9	7
9	6	85	4	8	5	31	11	8	3	15	9	15
10	36	10	24	10	6	12	15	16	1	4	6	54
11	64	30	17	6	11	12	5	10	1	4	12	18
12	29	18	10	4	21	13	14	53	4	10	17	6
13	24	11	7	20	13	6	8	22	7	5	3	7
14	51	9	4	48	6	5	5	11	28	8	2	3
15	19	5	6	6	3	3	5	8	28	15	11	8
16	8	7	6	6	4	6	4	6	14	12	7	11
17	7	8	9	6	9	8	5	6	9	7	5	21
18	19	5	11	18	24	3	32	5	48	11	22	7
19	38	4	17	11	11	2	22	13	24	19	15	11
20	23	8	11	5	3	5	9	22	26	12	6	6
21	9	26	33	6	6	9	13	16	12	11	59	4
22	8	24	15	8	6	12	10	28	19	14	33	45
23	22	24	18	8	4	11	6	12	7	27	31	12
24	48	26	19	6	4	10	5	18	6	23	17	15
25	17	10	24	8	9	36	7	60	21	34	14	21
26	18	7	46	5	4	36	18	33	8	28	22	26
27	16	5	15	4	29	51	23	17	14	23	24	18
28	12	7	12	6	124	50	14	5	14	13	17	39
29	6	8	32	4	40	109	16	4	20	13		68
30	58	18	31	3	31	11	25	5	27	16		16
31		12		2	45		20		18	13		19
MEAN	23	25	20	13	17	18	12	15	13	16	15	19

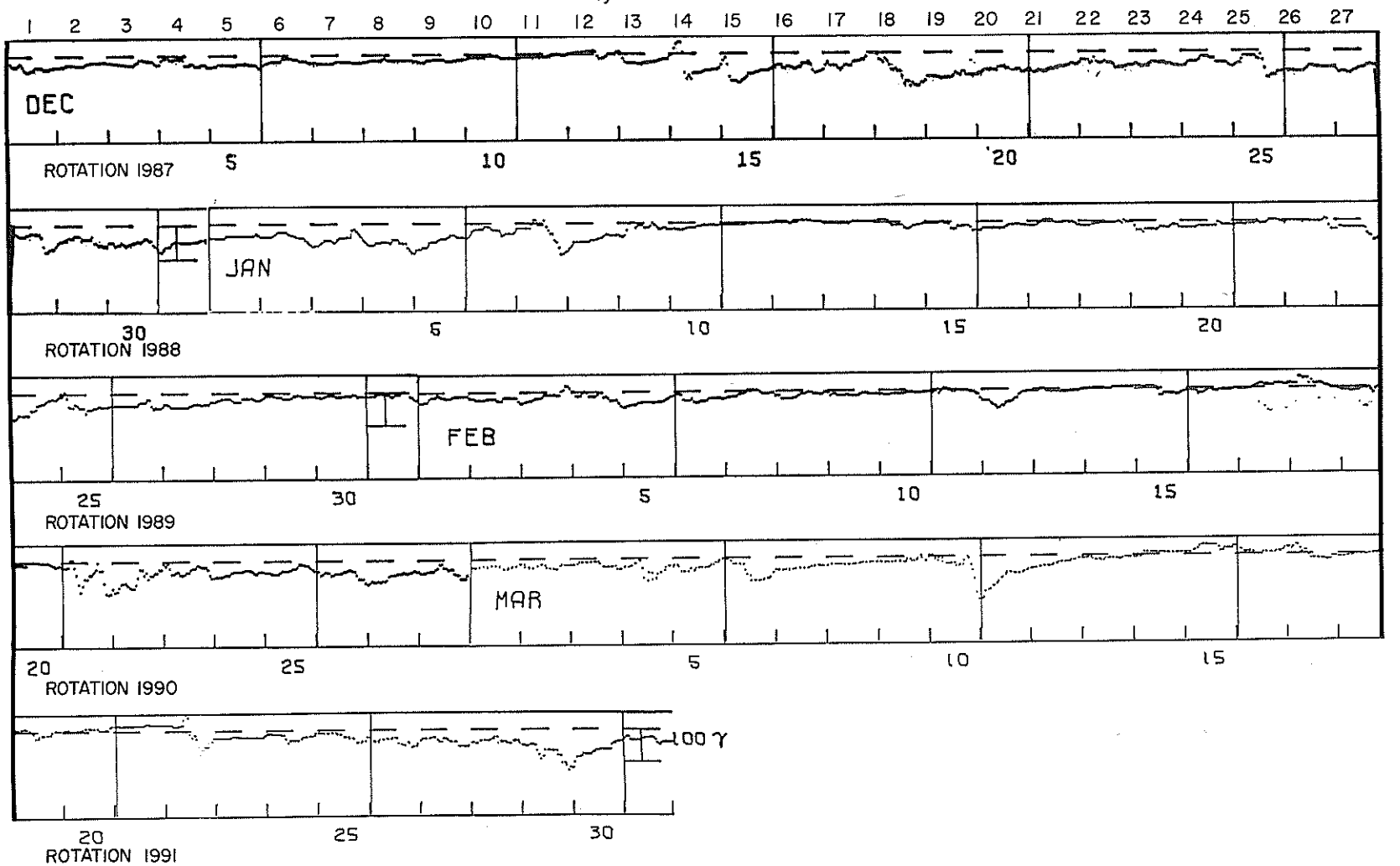
GEOMAGNETIC ACTIVITY INDICES



GEOMAGNETIC ACTIVITY INDICES

Hourly Equatorial Dst

by Bartels Rotation



Note: Both the sensitivity indicator placed on the last day of the month and the zero reference level change from month to month.

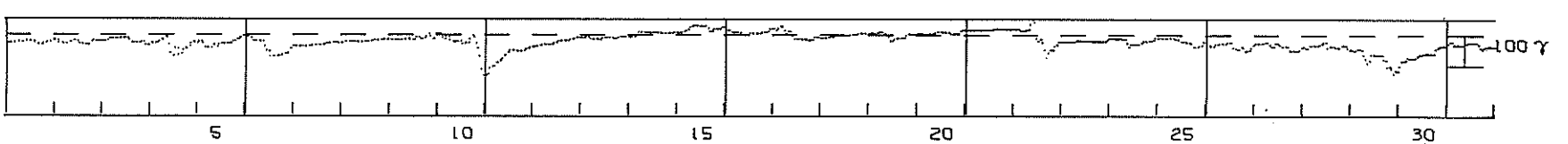
HOURLY EQUATORIAL Dst VALUES (PROVISIONAL)

MARCH 1979

NASA/GODDARD SPACE FLIGHT CENTER

(Time-UT) (Units-Gammas)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-31	-27	-30	-24	-25	-22	-23	-28	-28	-20	-18	-22	-26	-26	-29	-34	-37	-36	-27	-25	-22	-23	-21	-16
2	-18	-22	-29	-29	-33	-32	-33	-23	-22	-17	-19	-25	-32	-34	-35	-36	-37	-30	-23	-17	-24	-23	-18	-18
3	-22	-21	-16	-12	-12	-11	-12	-13	-10	-9	-10	-10	-11	-20	-28	-30	-29	-25	-26	-22	-27	-35	-37	-32
4	-26	-28	-28	-23	-20	-15	-19	-7	-12	-35	-62	-69	-42	-48	-66	-59	-49	-42	-44	-37	-28	-23	-27	-30
5	-20	-24	-29	-42	-45	-40	-39	-32	-37	-41	-30	-27	-27	-28	-30	-30	-25	-20	-18	-13	-13	-8	-3	-2
6	-10	-8	-13	-21	-21	-19	-22	-25	-24	-38	-52	-57	-70	-67	-71	-71	-64	-66	-62	-59	-62	-56	-45	-36
7	-37	-40	-41	-35	-38	-38	-36	-34	-33	-32	-31	-32	-32	-32	-30	-29	-26	-26	-24	-23	-26	-30	-29	-28
8	-24	-20	-21	-22	-24	-26	-25	-24	-23	-25	-25	-20	-20	-20	-18	-16	-15	-16	-17	-15	-13	-13	-14	-14
9	-16	-18	-16	-15	-15	-15	-14	-13	-2	-13	-20	-19	-14	-8	-12	-16	-16	-10	-5	3	-8	-16	-12	4
10	1	2	-11	-16	-5	-11	-19	-26	-22	-26	-20	-19	-32	-27	-24	-24	-15	-4	-11	-31	-44	-71	-110	-129
11	-125	-120	-103	-98	-95	-88	-85	-80	-74	-65	-62	-55	-48	-49	-50	-55	-54	-54	-51	-48	-44	-41	-38	-37
12	-36	-35	-34	-32	-31	-29	-32	-33	-32	-28	-25	-23	-19	-18	-17	-17	-17	-19	-13	-14	-12	-8	-8	-10
13	-10	-8	-5	-12	-15	-18	-18	-12	-19	-15	-10	-10	-7	-10	-11	-14	-15	-12	-8	-5	-6	-8	-8	-11
14	-11	-9	-5	-3	7	5	8	7	6	6	7	6	5	6	2	1	2	1	3	6	6	7	8	6
15	6	5	8	12	14	17	24	28	30	27	26	23	28	26	24	16	8	12	17	15	17	15	23	21
16	11	10	9	4	3	8	5	1	-5	-1	-5	-2	5	3	0	4	3	2	8	9	7	12	17	20
17	19	11	19	26	21	12	2	10	10	-7	-15	-14	-15	-15	-19	-18	-18	-22	-18	-15	-8	-7	-8	-14
18	-12	-10	-8	-7	-6	-8	-4	-1	-2	-3	-4	-3	-2	0	0	2	1	-2	4	6	4	3	4	4
19	6	7	6	8	10	9	6	1	-5	-10	-21	-24	-13	-10	-9	-9	-9	-7	-2	3	2	-1	3	4
20	7	3	0	-2	0	3	5	5	8	10	11	9	7	5	7	7	-1	1	2	4	3	12	16	14
21	14	14	12	14	15	15	13	14	15	16	17	15	15	17	20	19	14	17	14	14	15	16	16	18
22	18	16	14	9	10	14	15	17	33	47	37	-14	-22	-13	-26	-50	-74	-57	-47	-48	-37	-30	-22	-20
23	-20	-21	-23	-24	-23	-25	-19	-16	-19	-21	-23	-23	-20	-21	-24	-23	-21	-23	-21	-21	-22	-20	-14	-10
24	-9	-14	-16	-13	-11	-13	-18	-18	-28	-38	-30	-29	-31	-32	-31	-24	-19	-21	-20	-16	-16	-14	-9	-12
25	-8	-9	-14	-13	-10	-8	-8	-11	-16	-18	-15	-24	-23	-22	-28	-27	-30	-39	-39	-40	-33	-31	-23	-24
26	-36	-36	-39	-35	-28	-29	-27	-24	-32	-27	-22	-23	-26	-43	-46	-49	-46	-37	-43	-54	-47	-46	-40	-32
27	-26	-25	-28	-25	-23	-21	-22	-34	-39	-36	-27	-25	-35	-39	-36	-36	-37	-51	-53	-48	-54	-48	-45	-38
28	-35	-44	-39	-33	-31	-31	-31	-34	-29	-25	-21	-21	-43	-35	-34	-37	-43	-44	-40	-33	-31	-35	-43	-49
29	-45	-53	-46	-42	-48	-50	-64	-75	-88	-79	-60	-60	-65	-66	-65	-66	-78	-82	-103	-97	-108	-121	-112	-115
30	-96	-82	-80	-77	-70	-76	-76	-77	-69	-64	-60	-59	-57	-56	-57	-60	-60	-58	-45	-38	-35	-33	-32	-32
31	-26	-20	-26	-34	-36	-32	-30	-34	-33	-26	-22	-26	-24	-22	-25	-33	-41	-47	-38	-36	-35	-39	-35	-40



PRINCIPAL MAGNETIC STORMS

MARCH 1979

OBS. 3 letter IAGA code	GEOMAG-NETIC LATI-TUDE	COMMENCEMENT DAY	hr min (UT)	TYPE	SC - AMPLITUDES D(')	H(γ)	Z(γ)	MAXIMUM 3 HOUR - INDEX K DAY(3 HOUR PERIOD)	K	RANGES D(')	H(γ)	Z(γ)	UT END DAY	HOUR
SIT	60.1N	4	0448	SC	- 1	+67	+ 7	04(4)	8	--	--	490	06	22
NEW	55.1N	4	0446	SC	1	20	--	04(4) 06(5)	5	27	176	239	07	10
HON	21.1N	4	0445	SC	--	3	1	04(4)	5	2	71	8	05	03
HYB	07.6N	4	0446	SC	- .1	+25	- 3	04(4)	5	4	138	12	05	12
GUA	04.0N	4	0446	SC	--	+21	- 6	04(4)	6	10	180	30	05	12
HUA	00.6S	4	0446	SC	1	15	3	04(4,5,6)	5	8	354	38	05	05
PMG	18.6S	4	0445	SC*	+ .2*	+ 7	+ 8	04(4)	6	6	150	80	05	11
HER	33.7S	4	0445	SC*	+ 3	+ 5	+ 9	04(5,8)	5	27	128	84	05	12
KGL	56.5S	4	0445	SC*	-16	-12	- 8	04(8)	5	--	--	--	05	13
COL	64.6N	6	07--	..	..	..	..	06(3,4,5,6)	6	213	1110	940	06	23
IRK	41.0N	6	0818	SC*	- 1	26	5	06(7)	5	19	92	46	06	24
HON	21.1N	6	0818	SC	--	4	1	06(4,5)	4	4	71	11	06	23
JAI	17.3N	6	0818	SC	- .5	11	- 3	--	-	7	136	36	06	22
SHL	14.6N	6	0818	SC	- .3	10	3	--	-	4	148	26	06	22
UJJ	13.5N	6	0819	SC	- .4	14	- 3	--	-	5	147	28	06	22
ABG	09.5N	6	0818	SC	- .6	12	- 6	06(4)	6	6	154	33	06	22
HYB	07.6N	6	0818	SC	- .4	+13	- 3	06(4,5)	6	5	168	23	07	10
GUA	04.0N	6	0818	SC	--	--	--	06(4)	6	--	150	30	07	06
ANN	01.4N	6	0818	SC	- 1.1	30	9	--	-	4	207	76	06	22
HUA	00.6S	6	0818	SC	1	8	1	06(5,6)	6	7	349	42	07	01
TRD	01.2S	6	0819	SC	- .1	3	4	--	-	3	235	100	06	22
PMG	18.6S	6	0817	SC		+ 8	+ 8	06(4,5,6)	5	6	110	70	07	04
KGL	56.5S	6	0818	SC*	- 4	+ 8	+ 6	06(5)	6	--	--	--	07	08
COL	64.6N	9	08--	..	..	..	..	10(3)	6	85	1020	320	11	15
WIT	54.2N	9	2300	..	..	..	..	10(7,8)	6	43	210	65	11	03
FRD	49.6N	9	0809	SC	- 1	+21	- 3	10(8)	6	30	167	149	11	15
IRK	41.0N	9	0818	SC	- 1	3	2	10(8)	6	25	171	32	11	19
SJG	29.9N	9	0809	SC	--	+11	+ 2	10(7)	6	8	181	55	11	07
HON	21.1N	9	2317	SC	--	2	1	10(8)	6	11	140	33	11	12
JAI	17.3N	9	0809	SC	- 1	20	- 3	--	-	9	174	46	11	19
SHL	14.6N	9	0809	SC	- .5	17	3	--	-	6	182	48	11	19
UJJ	13.5N	9	0809	SC	- .7	25	- 5	--	-	7	209	43	11	19
ABG	09.5N	9	0809	SC	- .8	20	- 7	10(7,8)	6	7	207	40	11	19
HYB	07.6N	9	0810	SC	- .5	+21	- 2	10(7,8)	6	6	224	28	11	19
GUA	04.0N	9	2323	SC*	--	+31	- 9	10(8)	7	--	250	60	11	12
ANN	01.4N	9	0809	SC	- 1.5	43	14	--	-	5	276	91	11	19
HUA	00.6S	9	0808	SC	1	7	3	10(5,7,8)	6	10	515	47	11	06
TRD	01.2S	9	0809	SC	- .1	5	5	--	-	2	310	139	11	19
HER	33.7S	9	0800	..	..	..	..	10(1,7,8) 11(1)	5	37	170	147	11	14
GNA	43.3S	9	2318	SC*	+ .6*	+ 2 *	+ 2 *	09(8) 10(7,8)	5	20	130	130	11	18
KGL	56.5S	9	0809	SC	- 6	+12	+ 7	10(8)	9	--	--	--	11	15
KGL	56.5S	9	2323	SC*	--	--	--	10(8)	9	--	--	--	11	15
HYB	07.6N	15	0557	SC	- .2	+18	- 2	15(6)	4	7	139	37	16	18
GUA	04.0N	15	0556	SC*	--	+13	- 3		-	--	--	--		
HUA	00.6S	15	0556	SC	1	11	2	16(5,6)	5	6	310	53	16	21
HYB	07.6N	17	0231	SC	- .2	+17	- 3	17(3)	5	5	142	33	17	19
GUA	04.0N	17	0231	SC*	--	+35	-10	--	-	--	--	--		
HUA	00.6S	17	0231	SC	1	19	3	17(3,5)	5	8	270	55	17	21
PMG	18.6S	17	0232	SC*		+21 *	+19	17(3)	5	4	160	90	17	19
HER	33.7S	17	0232	SC*	+ 2	+ 9	+ 7	17(3)	5	30	117	56	17	19
TOO	46.7S	17	0232	SC*	+ 1.2	+18 *	+ 5	17(3)	5	14	90	40	17	19
KGL	56.5S	17	0231	SC	+14	+10	- 8	17(3)	5	--	--	--	17	17
COL	64.6N	22	0826	SC*	-10	--	-15	22(5,6)	7	220	1600	840	23	03
SIT	60.1N	22	0826	SC	- 4	+49	+ 7	22(5)	7	80	--	570	0	
NEW	55.1N	22	0826	SC	3	53	--	22(5,6)	6	36	159	200	27	01
WIT	54.2N	22	0826	SC*	+ 4 *	+20 *		22(5,6)	6	33	230	100	22	19
FRD	49.6N	22	0827	SC	+ 1	+46	- 6	22(5) 28(5) 29(3)	6	35	195	154	30	15
IRK	41.0N	22	0826	SC*	- 2.2	45	5	22(3,4,6)	6	18	145	29	23	12
SJG	29.9N	22	0826	SC	+ .5	20 *	6 *	22(4)	5	13	105	51	23	10
HON	21.1N	22	0827	SC	- 1	8	3	22(4)	5	11	63	24	23	13
JAI	17.3N	22	0826	SC	- 1.1	31	- 9	--	-	7	248	58	23	03
SHL	14.6N	22	0826	SC	- .4	28	7	--	-	6	277	47	23	03
UJJ	13.5N	22	0826	SC	- .6	48	-11	--	-	5	289	47	23	03
ABG	09.5N	22	0826	SC	- 1.1	40	-11	22(4)	7	7	282	42	23	03
HYB	07.6N	22	0826	SC	- .5*	+37	- 4	22(4,6)	7	6	311	26	23	21
GUA	04.0N	22	0826	SC*	--	+29	- 6	22(4)	6	--	170	30	23	14
ANN	01.4N	22	0826	SC	- 1.8	64	24	--	-	6	347	77	23	03
HUA	00.6S	22	0826	SC	1	15	7	22(6)	8	12	522	67	23	05
TRD	01.2S	22	0826	SC	--	--	--	--	-	--	--	--	23	03
PMG	18.6S	22	0826	SC	+ .4	+28	+21	22(4)	7	8	170	85	23	09
HER	33.7S	22	0827	SC	- 2	+28	+ 5	22(4)	6	38	168	138	23	12
GNA	43.3S	22	0827	SC*	+ 1.1*	+32 *	+ 5 *	22(4,5,6)	5	21	160	160	23	10
TOO	46.7S	22	0826	SC	+ 2	+27	+ 9	22(6)	6	27	180	40	23	12
KGL	56.5S	22	1010	SC*	--	--	--	22(6)	8	--	--	--	23	12
KGL	56.5S	22	0826	SC*	-26	+22	+18	22(6)	8	--	--	--	23	12

PRINCIPAL MAGNETIC STORMS

- MARCH 1979 .

OBS. 3 letter IAGA code	GEOMAG-NETIC LATI-TUDE	COMMENCEMENT DAY	hr min (UT)	TYPE	SC - AMPLITUDES D(')	H(γ)	Z(γ)	MAXIMUM 3 HOUR - INDEX K DAY(3 HOUR PERIOD)	K	RANGES D(')	H(γ)	Z(γ)	UT END DAY	HOUR
HYB	07.6N	24	0635	..	..	..	..	24(3) 25(3) 26(1,3,5,7)	4	7	144	29	26	22
SIT	60.1N	26	0758	SC	+ 4	+10	- 5	29(3)	7	140	--	630	30	08
COL	64.6N	27	05--	..	..	..	..	29(3)	7	245	1240	1140	30	10
HYB	07.6N	27	0200	..	..	..	..	27(4,6,7) 28(1)	4	5	154	23	28	05
NEW	55.1N	28	0826	SC	3	18	6	29(3)	7	42	366	458	31	07
WIT	54.2N	28	0827	SC*	+ 5 *	+13 *		29(1,6,7)	6	40	190	135	30	02
IRK	41.0N	28	09--	..	..	..	..	28(4) 29(7)	6	24	124	52	30	09
SJG	29.9N	28	0826	SC	--	+ 4	+ 2	29(7)	6	12	147	45	30	08
HON	21.1N	28	0827	SC	--	4	2	28(4,5) 29(3,4,7)	4	11	128	38	30	09
JAI	17.3N	28	0827	SC	- 1.1	14	- 4	--	-	10	161	48	30	10
SHL	14.6N	28	0827	SC	- .6	11	5	--	-	7	150	56	30	10
UJJ	13.5N	28	0827	SC	- .9	17	- 5	--	-	7	185	46	30	10
ABG	09.5N	28	0827	SC	- 1	14	- 8	28(4)	6	7	184	48	30	10
HYB	07.6N	28	0828	SC	- .5	+14	- 1	28(5)	6	7	200	36	30	02
GUA	04.0N	28	0827	..	..	..	..	29(4)	5	10	160	30	30	08
ANN	01.4N	28	0827	SC	--	--	--	--	-	--	--	--		
HUA	00.6S	28	0826	SC	1	9	3	29(6,7)	6	12	425	71	29	23
TRD	01.2S	28	0827	SC	--	--	--	--	-	--	--	--	30	10
PMG	18.6S	28	0826	..	..	..	..	28(4,5) 29(3,4,7)	5	7	150	65	30	09
HER	33.7S	28	0827	SC*	- 2	+16	--	29(1)	6	35	146	160	30	08
GNA	43.3S	28	0827	SC*	+ 1.7*	+15 *	+ 7 *	29(7)	6	22	110	120	30	12
TOO	46.7S	28	0827	SC*	- 1.4	+18 *	+ 2	29(7)	6	23	160	100	30	02
KGL	56.5S	28	0827	SC*	- 6	+16	+10	29(7)	9	--	--	--	30	09
COL	64.6N	31	13--	..	..	..	..	01(4) 02(6)	6	143	950	560	02	23
IRK	41.0N	31	16--	..	..	..	..	02(1)	5	20	146	34	02	24

Reports were received from the following observatories:

ALIBAG ANNAMALAINAGAR COLLEGE FREDERICKSBURG GNANGARA GUAM HERMANUS HONOLULU HUANCAYO HYDERABAD IRKUTSK JAIPUR KERGUELEN NEWPORT PORT MORESBY SAN JUAN SHILLONG SITKA TOOLANGI TRIVANDRUM UJJAIN WITTEVEEN

RADIO PROPAGATION QUALITY INDICES

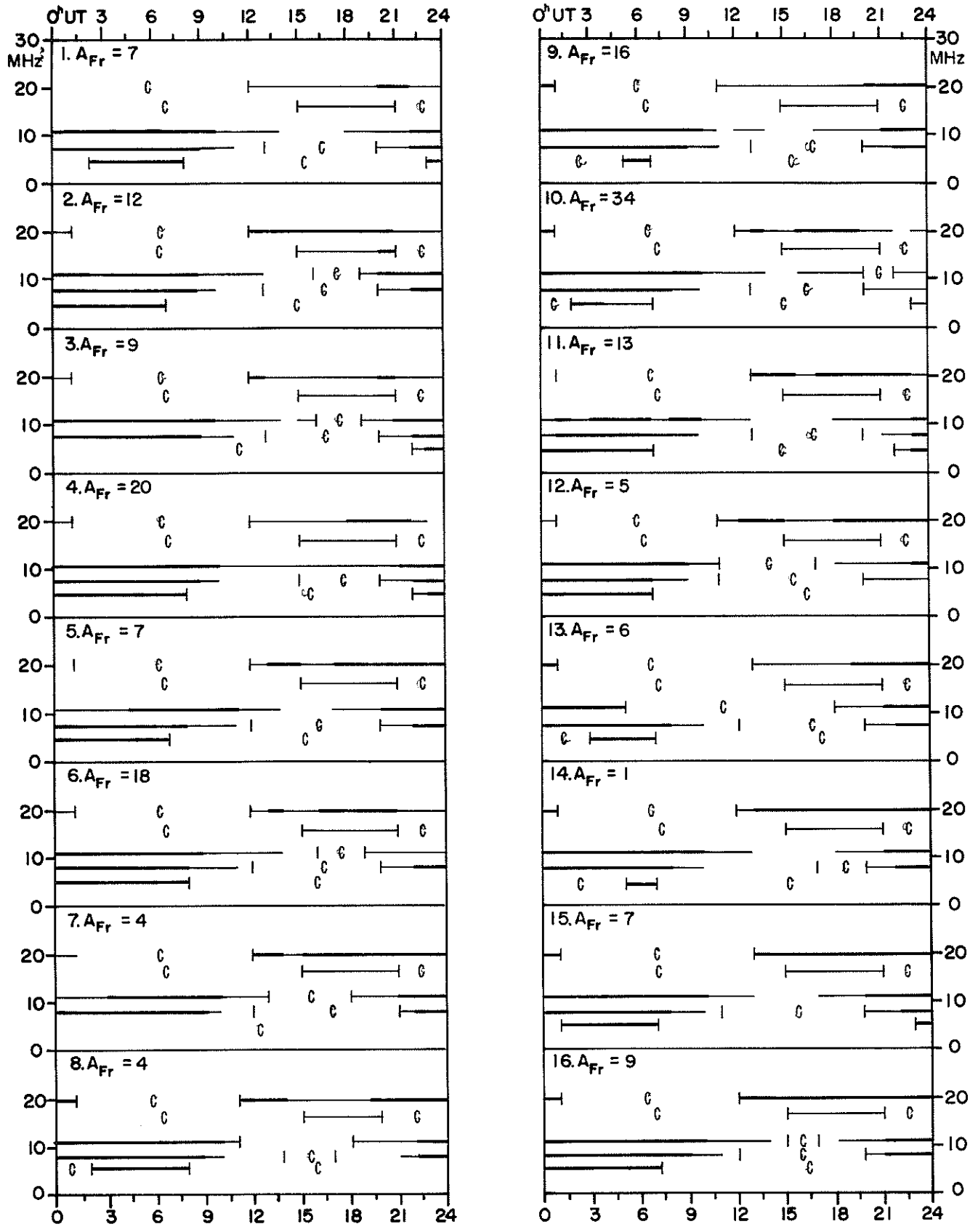
MARCH 1979

Quality Indices calculated for reception at Lüchow

DAY	TOKYO	NORFOLK	MOSCOW	CANBERRA	BRACKNELL
1	4.6	5.3	12.6	3.1	12.8
2	4.9	5.6	12.8	3.4	12.8
3	5.1	5.3	12.9	3.5	12.9
4	3.5	4.9	12.3	2.7	12.6
5	5.1	5.5	12.4	3.6	12.5
6	4.6	5.2	12.7	3.0	12.4
7	6.6	5.5	12.9	3.2	12.6
8	5.8	5.6	13.1	3.2	12.5
9	4.9	5.1	12.6	3.5	12.4
10	5.1	4.5	12.9	2.0	12.1
11	4.9	5.2	12.5	2.9	12.1
12	6.6	5.1	12.8	4.4	12.7
13	6.2	5.6	12.7	3.9	12.7
14	6.6	6.2	12.8	3.4	12.9
15	5.8	6.3	12.6	4.0	12.7
16	5.0	6.3	12.1	4.0	11.5
17	4.8	5.3	12.7	3.2	11.6
18	5.7	6.1	12.2	4.3	12.6
19	5.4	6.0	12.7	4.2	12.7
20	6.2	5.7	12.3	4.8	12.7
21	6.4	6.7	12.5	5.5	12.6
22	3.5	5.0	13.1	4.1	12.3
23	5.0	6.0	12.4	3.9	11.4
24	5.5	5.3	13.4	4.1	12.4
25	4.8	5.4	12.1	3.9	12.5
26	4.7	5.0	12.4	4.5	12.2
27	4.8	5.8	12.6	3.9	11.6
28	3.8	4.8	12.3	3.6	11.9
29	2.8	4.9	12.4	3.8	12.5
30	4.7	5.0	11.9	3.7	11.0
31	5.0	5.2	12.6	3.9	12.2
MEAN	5.1	5.5	12.6	3.7	12.3

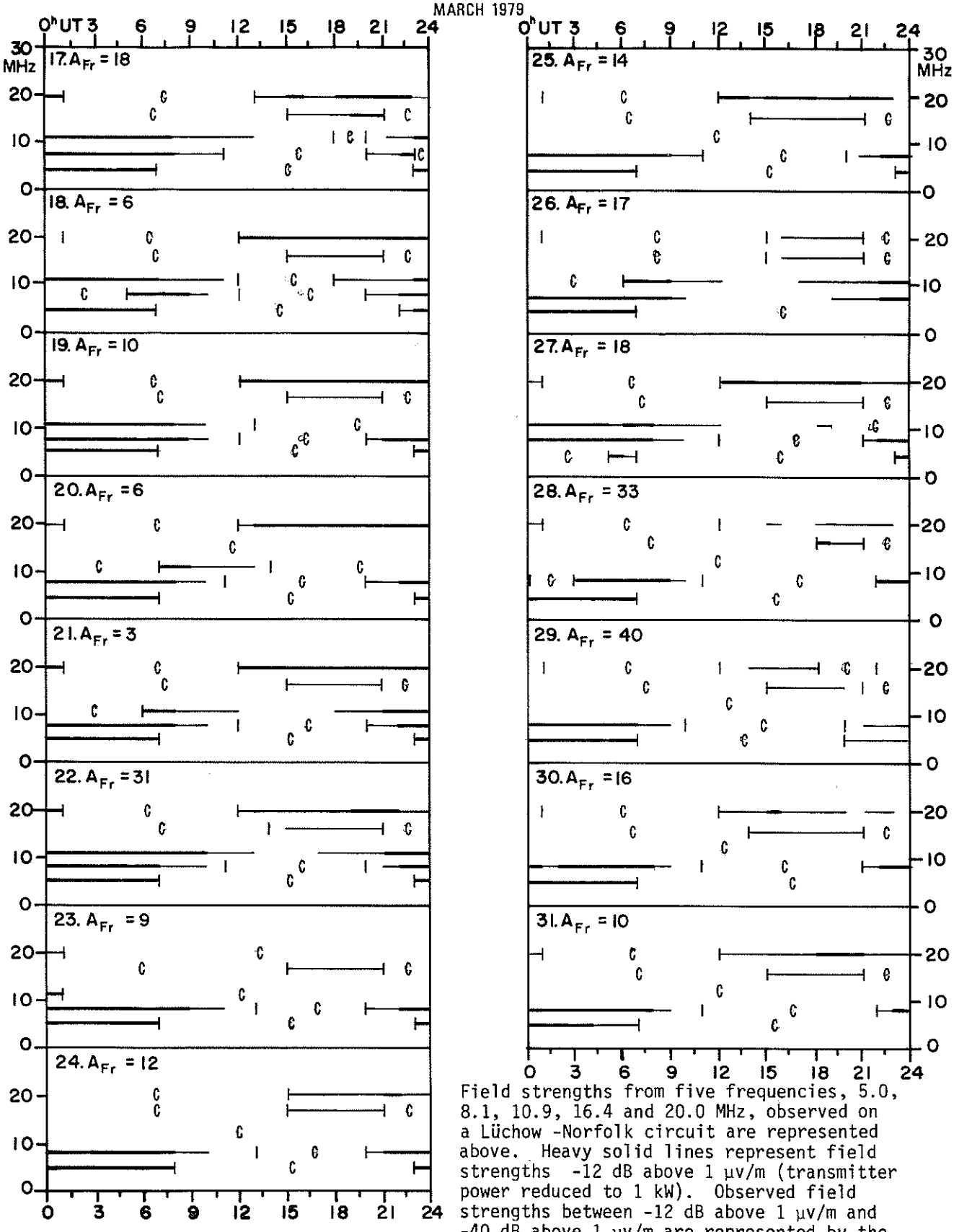
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

MARCH 1979



TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

MARCH 1979



Field strengths from five frequencies, 5.0, 8.1, 10.9, 16.4 and 20.0 MHz, observed on a Lüchow -Norfolk circuit are represented above. Heavy solid lines represent field strengths -12 dB above 1 μv/m (transmitter power reduced to 1 kW). Observed field strengths between -12 dB above 1 μv/m and -40 dB above 1 μv/m are represented by the fine line. **Adapted from Observations by Deutsche Bundespost**

☆GPO 1979—677-073/1

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."