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Solar - Geophysical Data

NO. 416 APRIL 1979

Part I (Prompt Reports)

DATA FOR
MARCH 1979
FEBRUARY 1979

NATIONAL GEOPHYSICAL AND SOLAR - TERRESTRIAL DATA CENTER
BOULDER, COLORADO

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SOLAR-GEOPHYSICAL DATA

No. 416

Issued in two parts

Helen E. Coffey, Editor

J. Virginia Lincoln, Chief
Solar-Terrestrial Physics Division

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A = Part I, B = Part II.

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

MARCH 1979 DATA

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INTERNATIONAL URSIGRAM
AND WORLD DAYS SERVICE
MARCH 1979

PRESTO MESSAGES (THE RAPID REPORT OF MAJOR EVENTS).

1 MARCH 1979 BOULDER 01/1414Z SOFLARE X1/OPTICAL UNKNOWN 01/1019Z DURATION 59 MINUTES.
TENFLARE 290 FLUX UNITS 01/1015Z DURATION 64 MINUTES.
5 MARCH 1979 BOULDER 05/1700Z SOFLARE C9/2B S20W51 05/1517Z FLARE DURATION 54 MINUTES.
9 MARCH 1979 BOULDER 09/1438Z TENFLARE 904 FLUX UNITS 09/1019Z DURATION 63 MINUTES.
19 MARCH 1979 BOULDER 19/1800Z SOFLARE M6/1B N07E15 19/1654Z DURATION 15 MINUTES.
TENFLARE 300 FLUX UNITS 19/1653Z DURATION 12 MINUTES.
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BOULDER 22/1530Z SOFLARE M3/2B N07W28 22/1317Z DURATION 46 MINUTES
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23 MARCH 1979 TOYOKAWA 23/0740Z TENFLARE 210 UNITS 23/0628Z DURATION 23 MINUTES.
BOULDER 23/1430Z TENFLARE 280 FLUX UNITS 23/0644Z DURATION 7 MINUTES.
25 MARCH 1979 BOULDER 25/1840Z SOFLARE X1/1B N09W72 25/1802Z DURATION 20 MINUTES.
TENFLARE 350 FLUX UNITS 25/1802Z DURATION 18 MINUTES.
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TENFLARE 520 FLUX UNITS 26/1149Z DURATION 37 MINUTES.
27 MARCH 1979 TOYOKAWA 27/0614Z TENFLARE 120 UNITS 27/0600Z DURATION 10 MINUTES
BOULDER 27/1405Z SOFLARE X1 N09W90 27/0541Z DURATION 44 MINUTES.
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1 APRIL 1979 TOYOKAWA 31/2318Z TENFLARE 250 UNITS 01/0110Z DURATION 22 MINUTES.
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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	M	X	Outstanding events	Forecasts: Date	Location Lat-Long	Desc*	Alert Situations
060	01	28	143	167	013	S25W56	0	0	0		01	S25W56	Q	SOLQUIET MAGQUIET
						S26W43	0	0	0			S26W43	Q	STRATWARM 1 MARCH /THURSDAY/ STRAT-
						N36W35	0	0	0			N36W35	Q	WARM EXISTS. WARMING AND ANTI-
						S21E12	0	0	0			S21E12	Q	CYCLONIC CIRCULATION OVER ARCTIC
						S32W48	0	0	0			S32W48	Q	REGION.
						S25E38	1	0	0			S25E38	Q	
						S18W23	1	0	0			S18W23	E	
						N08E60	4	0	0			N08E60	E	
						S22E65	5	0	0			S22E65	Q	
						S33W15	0	0	0			S33W15	Q	
061	02	01	202	172	09	S25W69	0	0	0	PRESTO BOULDER 01/	02	S25W69	Q	SOLQUIET MAGQUIET
						S26W54	0	0	0	1414Z SOFLARE X1/		S26W54	Q	STRATWARM 2 MARCH /FRIDAY/ CURRENT
						N36W47	0	0	0	OPTICAL UNKNOWN		N36W47	Q	STRATWARM EPISODE PEAKED FEB 27.
						S20W03	0	0	0	01/1019Z DURATION		S20W03	Q	ANTICYCLONE AND WARMING POLAR REGION
						S32W61	0	0	0	59 MINUTES. TEN-		S32W61	Q	DIMINISHING.
						S24E26	1	0	0	FLARE 290 FLUX		S24E26	A	
						S18W36	0	0	0	UNITS 01/1015Z DUR-		S18W36	Q	
						N09E44	0	0	0	ATION 64 MINUTES.		N09E44	Q	
						S21E53	6	0	1			S21E53	A	
						S33W33	2	0	0			S33W33	Q	
						N13E75	0	0	0			N13E75	E	
						N24W13	1	0	0			N24W13	Q	
						N35E22	0	0	0			N35E22	Q	
062	03	02	224	174	014	S25W84	0	0	0		03	S25W84	Q	SOLALERT MAGNIL
						S26W70	0	0	0			S26W70	Q	
						N36W60	0	0	0			N36W60	Q	
						S21W16	1	0	0			S21W16	E	
						S32W75	0	0	0			S32W75	Q	
						S25E14	3	1	0			S25E14	E	
						S19W51	2	0	0			S19W51	E	
						N09E30	1	0	0			N09E30	E	
						S21E40	2	0	0			S21E40	E	
						S34W46	1	0	0			S34W46	E	
						N13E64	0	0	0			N13E64	Q	
						N23W28	0	0	0			N23W28	Q	
						N35E11	0	0	0			N35E11	Q	
						N18E65	0	0	0			N18E65	Q	
						S15E75	2	0	0			S15E75	E	
063	04	03	241	176	010	S26W83	0	0	0		04	S26W83	Q	SOLALERT 04/XX
						N36W74	0	0	0			N36W74	Q	MAGALERT MINOR 04/XX
						S20W28	4	0	0			S20W28	Q	
						S32W86	0	0	0			S32W86	Q	
						S25E01	2	1	0			S25E01	A	
						S19W64	3	0	0			S19W64	Q	
						N09E16	0	0	0			N09E16	Q	
						S21E26	1	0	0			S21E26	DA	
						S34W59	0	0	0			S34W59	Q	
						N13E48	0	0	0			N13E48	Q	
						N22W42	0	0	0			N22W42	Q	
						N35W03	0	0	0			N35W03	Q	
						N18E56	1	0	0			N18E56	DA	
						S16E64	4	0	0			S16E64	Q	
						N12E62	0	0	0			N13E62	Q	
064	05	04	261	184	015	S18W41	10	0	0		05	S18W41	A	SOLALERT MINOR MAGNIL
						S24W14	0	0	0			S24W14	Q	
						S19W77	3	0	0			S19W77	E	
						S21E12	0	0	0			S21E12	Q	
						S33W72	0	0	0			S33W72	Q	
						N12E35	0	0	0			N12E35	Q	
						N36W16	1	0	0			N36W16	Q	
						N17E38	0	0	0			N17E38	Q	
						S17E49	1	0	0			S17E49	Q	
						N12E48	1	0	0			N12E48	Q	
						S14W28	0	0	0			S14W28	Q	
						S18W15	0	0	0			S18W15	Q	
						N16E15	0	0	0			S16E15	Q	
						N17E45	1	0	0			N17E45	Q	
						S16W20	0	0	0			S16W20	Q	
065	06	05	264	186	011	S19W54	4	0	0	PRESTO BOULDER 05/	06	S19W54	A	SOLALERT 06 MAGQUIET
						S24W28	0	0	0	1700Z SOFLARE C9/		S24W28	E	
						S21W00	0	0	0	2B S20W51 05/1517Z		S21W00	Q	
						N13E22	1	0	0	DURATION 54 MINUTES		N13E22	CA	
						N35W30	7	0	0			N35W30	E	
						N17E25	0	0	0			N17E25	Q	
						S17E35	1	0	0			S17E35	Q	
						N12E34	1	0	0			N12E34	CA	
						S14W41	0	0	0			S14W41	Q	
						N16E01	0	0	0			N16E01	Q	
						N17E36	1	1	0			N17E36	DA	
						S13E71	0	0	0			S13E71	Q	

ALERT PERIODS

INTERNATIONAL URSIGRAM
AND WORLD DAYS SERVICE
MARCH 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 Lat-Long	No. of Flares Total	M	X		Date	Location Lat-Long	Desc*	
066	07	06	182	187	025	S19W65	6	0	0		07	S19W65	A	SOLALERT MINOR 07 MAGQUIET
						S25W41	0	0	0			S25W41	Q	
						S21W13	2	0	0			S21W13	E	
						N13E08	2	0	0			N13E08	Q	
						N35W42	1	0	0			N35W42	Q	
						N17E10	0	0	0			N17E10	Q	
						S16E22	4	0	0			S16E22	E	
						N12E21	3	0	0			N12E21	Q	
						N16E22	0	0	0			N16E22	Q	
						S12E29	0	0	0			S12E59	Q	
						S26E75	0	0	0			S26E75	Q	
067	08	07	184	190	005	S18W80	3	0	0		08	S18W80	Q	SOLNIL MAGQUIET
						S28W55	1	0	0			S28W55	Q	
						S22W29	1	0	0			S22W29	Q	
						N12W07	1	0	0			N12W07	Q	
						N36W54	0	0	0			N36W54	Q	
						N17E04	0	0	0			N17E04	Q	
						S16E08	2	0	0			S16E08	Q	
						N13E07	2	0	0			N13E07	Q	
						S13E45	0	0	0			S13E45	Q	
						S27E63	0	0	0			S27E63	Q	
						N22W21	2	0	0			N22W21	E	
068	09	08	228	181	006	S19W86	0	0	0		09	S19W86	Q	SOLQUIET MAGQUIET
						S26W71	0	0	0			S26W71	Q	
						S22W38	1	0	0			S22W38	Q	
						N13W20	0	0	0			N13W20	Q	
						N35W69	0	0	0			N35W69	Q	
						N17W12	0	0	0			N17W12	Q	
						S16W03	1	0	0			S16W03	Q	
						N12W13	0	0	0			N12W13	Q	
						S13E34	3	0	0			S13E34	E	
						S26E48	1	0	0			S26E48	Q	
						N21W31	5	0	0			N21W31	DA	
						N19E32	0	0	0			N19E32	Q	
						N26E34	0	0	0			N26E34	Q	
069	10	09	271	184	014	S25W86	0	0	0	PRESTO BOULDER 09/	10	S25W86	Q	SOLQUIET MAGALERT 10/11
						N12W35	0	0	0	1438Z TENFLARE 904		N12W35	Q	
						N36W83	0	0	0	FLUX UNITS 09/1019Z		N36W83	Q	
						N17W30	1	0	0	DURATION 63 MINUTES		N17W30	Q	
						S15W22	0	0	0			S15W22	Q	
						N12W25	0	0	0			N12W25	Q	
						S13E20	2	0	0			S13E20	DA	
						S27E35	0	0	0			S27E35	DA	
						N22W44	0	0	0			N22W44	Q	
						N18E20	0	0	0			N18E20	Q	
						N25E22	3	0	0			N25E22	Q	
						S17W13	0	0	0			S17W13	Q	
						N11E15	0	0	0			N11E15	Q	
						S32E42	0	0	0			S32E42	Q	
						N16E69	3	1	0			N16E69	CA	
070	11	10	266	183	023	N13W48	0	0	0		11	N13W48	Q	SOLQUIET MAGALERT 11/XX
						N17W43	0	0	0			N17W43	Q	
						S13W35	4	0	0			S13W35	CA	
						N12W35	0	0	0			N12W35	Q	
						S13E06	0	0	0			S13E06	CA	
						S26E22	0	0	0			S26E22	Q	
						N23W58	0	0	0			N23W58	Q	
						N25E08	0	0	0			N25E08	E	
						S18W30	0	0	0			S18W30	Q	
						S32E31	0	0	0			S32E31	Q	
						N17E55	1	0	0			N17E55	CA	
						N09E73	0	0	0			N09E73	Q	
						N19E04	0	0	0			N19E04	Q	
						S17E22	0	0	0			S17E22	Q	
						S21E52	1	0	0			S21E52	E	
						N20E89	3	0	0			N20E89	E	
071	12	11	270	195	013	N16W55	0	0	0		12	N16W55	Q	SOLALERT 12/XX MAGNIL
						S13W48	1	0	0			S13W48	E	
						N12W48	0	0	0			N12W48	Q	
						S14W08	1	0	0			S14W08	DA	
						S26E10	0	0	0			S26E10	Q	
						N22W68	0	0	0			N22W68	Q	
						N24W05	0	0	0			N24W05	Q	
						S18W42	4	0	0			S18W42	E	
						N11W11	0	0	0			N11W11	Q	
						N17E42	2	0	0			N17E42	E	
						N09E58	0	0	0			N09E58	Q	
						S21E39	0	0	0			S21E39	Q	
						N18E63	2	1	0			N18E63	DA	
						N17E57	0	0	0			N17E57	Q	
						N22E62	0	0	0			N22E62	E	

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072	13	12	290	191	006	N16W69	1	0	0		13	N16W69	Q	SOLNIL MAGQUIET
						S13W61	0	0	0			S13W61	Q	
						N12W60	0	0	0			N12W60	Q	
						S14W22	3	0	0			S14W22	Q	
						S25W04	0	0	0			S25W04	Q	
						N25W18	0	0	0			N25W18	Q	
						S18W56	0	0	0			S18W56	Q	
						N10W24	3	0	0			N10W24	Q	
						N17E28	0	0	0			N17E28	Q	
						N09E45	1	0	0			N09E45	Q	
						S21E26	0	0	0			S21E26	Q	
						N17E55	1	0	0			N17E55	Q	
						N17E44	0	0	0			N17E44	Q	
						N22E49	1	0	0			N22E49	Q	
						N28E49	0	0	0			N28E49	Q	
						N06E59	0	0	0			N06E59	Q	
						N20E65	1	0	0			N20E65	Q	
						N10E73	0	0	0			N10E73	Q	
						N18E68	0	0	0			N18E68	Q	
073	14	13	290	189	006	N17W83	0	0	0		14	N17W83	Q	SOLQUIET MAGQUIET
						S12W77	1	0	0			S12W77	Q	
						N11W75	0	0	0			N11W75	Q	
						S14W35	2	0	0			S14W35	Q	
						S25W16	0	0	0			S25W16	Q	
						N25W31	0	0	0			N25W31	Q	
						N10W35	2	0	0			N10W35	Q	
						N17E15	1	0	0			N17E15	Q	
						N09E31	1	0	0			N09E31	Q	
						N16E43	0	0	0			N16E43	Q	
						N19E32	4	0	0			N19E32	Q	
						N21E35	0	0	0			N21E35	Q	
						N28E35	0	0	0			N28E35	Q	
						N05E46	0	0	0			N05E46	Q	
						N20E54	0	0	0			N20E54	Q	
						N09E57	0	0	0			N09E57	Q	
						N15E54	0	0	0			N15E54	Q	
						S26E06	0	0	0			S26E06	Q	
						S11E77	1	0	0			S11E77	Q	
074	15	14	257	189	005	S16W41	0	0	0			S16W41	Q	SOLQUIET MAGQUIET
						N23W43	0	0	0			N23W43	Q	
						N10W47	0	0	0			N10W47	Q	
						S32W19	0	0	0			S32W19	Q	
						N17E01	0	0	0			N17E01	Q	
						N09E19	1	0	0			N09E19	Q	
						N15E30	0	0	0			N15E30	Q	
						N17E15	0	0	0			N17E15	Q	
						N28E19	0	0	0			N28E19	Q	
						N06E32	0	0	0			N06E32	Q	
						N20E40	0	0	0			N20E40	Q	
						N09E42	0	0	0			N09E42	Q	
						N16E42	0	0	0			N16E42	Q	
						S25W07	2	0	0			S25W07	Q	
						S11E63	0	0	0			S11E63	Q	
						N15E61	0	0	0			N15E61	Q	
						S15E65	0	0	0			S15E65	Q	
						N06E77	0	0	0			N06E77	Q	
075	16	15	314	183	005	N26W58	0	0	0		16	N26W58	Q	SOLQUIET MAGQUIET
						N11W62	0	0	0			N11W62	Q	
						N18W14	4	1	0			N18W14	DA	
						N11E03	0	0	0			N11E03	Q	
						N15E08	0	0	0			N15E08	Q	
						N17E10	1	0	0			N17E10	Q	
						N28E05	0	0	0			N28E05	Q	
						N06E17	0	0	0			N06E17	Q	
						N20E25	0	0	0			N20E25	Q	
						N16E25	1	0	0			N16E25	Q	
						S25W20	0	0	0			S25W20	E	
						S11E53	1	0	0			S11E53	E	
						N15E46	0	0	0			N15E46	Q	
						S16E51	0	0	0			S16E51	Q	
						N06E63	0	0	0			N06E63	Q	
						N33W00	0	0	0			N33W00	Q	
						N41E15	0	0	0			N41E15	Q	
						S26W54	0	0	0			S26W54	Q	
						S13E76	1	0	0			S13E76	Q	

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076	17	16	293	188	010	N17W25	3	0	0		17	N17W25	Q	SOLQUIET MAGQUIET
						N09W11	0	0	0			N09W11	Q	
						N16E05	2	0	0			N16E05	Q	
						N16W11	1	0	0			N16W11	Q	
						N23W00	0	0	0			N23W00	Q	
						N06E05	0	0	0			N06E05	Q	
						N20E14	4	1	0			N20E14	E	
						N16E16	2	0	0			N16E16	Q	
						S25W33	0	0	0			S25W33	Q	
						S13E40	1	0	0			S13E40	Q	
						N14E36	0	0	0			N14E36	Q	
						S16E37	0	0	0			S16E37	Q	
						N06E52	0	0	0			N06E52	Q	
						N32W11	0	0	0			N32W11	Q	
						N41E05	0	0	0			N41E05	Q	
						S25W68	0	0	0			S25W68	Q	
						S14E62	1	0	0			S14E62	Q	
						N25E67	0	0	0			N25E67	Q	
						S31E80	0	0	0			S31E80	Q	
077	18	17	290	177	019	N09W21	0	0	0		18	N09W21	Q	SOLQUIET MAGQUIET
						N16W09	0	0	0			N16W09	Q	
						N15W23	0	0	0			N15W23	Q	
						N23W12	0	0	0			N23W12	Q	
						N06W09	0	0	0			N06W09	Q	
						N20E01	0	0	0			N20E01	Q	
						N17E05	0	0	0			N17E05	Q	
						S26W47	0	0	0			S26W47	CE	
						S13E28	0	0	0			S13E28	Q	
						S16E23	0	0	0			S16E23	Q	
						N07E36	3	0	0			N07E36	DE	
						N30W17	0	0	0			N30W17	Q	
						N39W08	1	0	0			N39W08	DE	
						S15E48	2	0	0			S15E48	DE	
						N26E53	0	0	0			N26E53	Q	
						S31E67	0	0	0			S31E67	Q	
						S28W34	0	0	0			S28W34	Q	
						N09E48	0	0	0			N09E48	Q	
078	19	18	273	196	008	N11W31	2	0	0		19	N11W31	Q	SOLQUIET MAGQUIET
						N16W29	0	0	0			N16W29	Q	
						N28W35	0	0	0			N28W35	Q	
						N07W22	2	0	0			N07W22	Q	
						N19W12	0	0	0			N19W12	DA	
						N18W12	3	0	0			N18W12	Q	
						S25W62	0	0	0			S25W62	DA	
						S12E15	0	0	0			S12E15	E	
						S16E10	2	0	0			S16E10	Q	
						N07E26	2	1	0			N07E26	CA	
						N40W20	0	0	0			N40W20	E	
						S15E36	0	0	0			S15E36	E	
						N20E40	0	0	0			N20E40	Q	
						S29E54	0	0	0			S29E54	Q	
						S28W49	0	0	0			S28W49	Q	
						S30E81	0	0	0			S30E81	Q	
079	20	19	251	192	010	N12W43	0	0	0	PRESTO BOULDER 19/	20	N12W43	Q	SOLQUIET MAGQUIET
						N16W42	0	0	0	1800Z SOFLARE M6/1B		N16W42	Q	
						N19W23	0	0	0	N07E15 19/1654Z DUR-		N19W23	Q	
						N17W25	0	0	0	ATION 15 MINUTES.		N17W25	Q	
						S25W74	0	0	0	TENFLARE 300 FLUX		S25W74	Q	
						S12E01	1	0	0	UNITS 19/1653Z DUR-		S12E01	Q	
						S16E01	1	0	0	ATION 12 MINUTES.		S16E01	Q	
						N07E12	2	1	0			N07E12	E	
						N40W32	0	0	0			N40W32	E	
						S13E23	0	0	0			S13E23	Q	
						N25E26	0	0	0			N25E26	Q	
						S29E42	0	0	0			S29E42	Q	
						S27W62	1	0	0			S27W62	Q	
						S31E71	1	0	0			S31E71	Q	
080	21	20	222	186	007	N28W56	0	0	0		21	N28W56	Q	SOLQUIET MAGQUIET
						N20W35	0	0	0			N20W35	Q	
						N17W37	0	0	0			N17W37	Q	
						S25W86	0	0	0			S25W86	Q	
						S13W13	0	0	0			S13W13	Q	
						N06W01	2	0	0			N06W01	Q	
						N39W44	0	0	0			N39W44	Q	
						S13E10	0	0	0			S13E10	Q	
						N22E12	0	0	0			N22E12	Q	
						S29E28	0	0	0			S29E28	Q	
						S31E59	1	0	0			S31E59	Q	
						N07E14	0	0	0			N07E14	Q	

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081	22	21	187	194	002	N28W69	1	0	0	PRESTO TOYOKAWA	22	N28W69	Q	SOLQUIET MAGQUIET
						N20W48	0	0	0	21/0320Z TENFLARE		N20W48	Q	
						S13W26	0	0	0	100 FLUX UNITS		S13W26	Q	
						N07W17	2	0	0	21/0244Z DURATION		N07W17	O	
						N39W57	0	0	0	8 MINUTES.		N39W57	Q	
						S14E01	0	0	0			S14E01	Q	
						N23W00	0	0	0			N23W00	Q	
						S29E16	0	0	0			S29E16	Q	
						S32E46	0	0	0			S32E46	Q	
						N07W00	0	0	0			N07W00	Q	
						N05E71	0	0	0			N05E71	Q	
						S28E25	0	0	0			S28E25	Q	
082	23	22	256	181	035	N26W80	0	0	0	AN M3/2B PARALLEL	23	N26W80	Q	SOLQUIET- MAGALERT 23/25
						N20W61	0	0	0	RIBBON FLARE OCCUR-		N20W61	Q	
						S13W39	0	0	0	RED FROM REGION		S13W39	Q	
						N07W31	9	2	0	1638 (N07W31) AT		N07W31	CA	
						N38W72	0	0	0	22/1319Z ACCOMPAN-		N38W72	Q	
						S15W13	0	0	0	IED BY AN SWF AND		S15W13	Q	
						N24W12	1	0	0	A RADIO BURST ON		N24W12	E	
						S29E03	0	0	0	2695 MHZ OF 120		S29E03	Q	
						S31E34	0	0	0	FLUX UNITS.		S31E34	Q	
						N07W13	0	0	0	AN M3/2N FLARE		N07W13	Q	
						N06E60	3	1	0	OCCURRED FROM		N06E60	DA	
						S28E15	0	0	0	REGION 1638 (N07		S28E15	Q	
						N12W56	0	0	0	W31) AT 22/0326Z		N12W56	Q	
						S24W42	0	0	0	ACCOMPANIED BY RADIO		S24W42	Q	
						N09W22	0	0	0	BURST ON 2695 MHZ		N09W22	Q	
						S36E59	0	0	0	OF 64 FLUX UNITS.		S36E59	Q	
083	24	23	207	189	013	N20W75	0	0	0	REGION 1649 (N07E46)	24	N20W75	Q	SOLALERT 24/25 MAGALERT MINOR 24/XX
						S13W53	3	0	0	PRODUCED AN M2/2B		S13W53	CE	
						N07W47	10	2	0	FLARE AT 23/0647Z		N07W47	A	
						S15W26	0	0	0	WITH STRONG SWF		S15W26	Q	
						N23W24	0	0	0	FROM 9 TO 15 MHZ,		N23W24	Q	
						S28W10	0	0	0	AND A 280 FLUX UNIT		S28W10	Q	
						S30E21	1	0	0	BURST ON 2700 MHZ.		S30E21	Q	
						N07W28	0	1	0			N07W28	Q	
						N07E46	5	0	0			N07E46	A	
						S28W00	0	0	0			S28W00	Q	
						N12W70	0	0	0			N12W70	Q	
						S24W55	0	0	0			S24W55	Q	
						N08W36	0	0	0			N08W36	Q	
						N38W85	1	0	0			N38W85	Q	
						S36E46	0	0	0			S36E46	Q	
084	25	24	220	190	011	S13W66	7	0	0		25	S13W66	E	SOLALERT 25/27 MAGALERT MINOR 24/XX
						N07W61	3	1	0			N07W61	A	
						S14W40	0	0	0			S14W40	Q	
						N23W38	0	0	0			N23W38	O	
						S27W24	0	0	0			S27W24	Q	
						S31E09	0	0	0			S31E09	CE	
						N07E33	4	0	0			N07E33	A	
						S27W03	0	0	0			S27W03	Q	
						N11W84	0	0	0			N11W84	Q	
						S24W68	0	0	0			S24W68	Q	
						N26W63	0	0	0			N26W63	Q	
						S20E07	0	0	0			S20E07	Q	
						S21W58	2	0	0			S21W58	Q	
						N25E67	1	0	0			N26E67	Q	
085	26	25	164	192	017	S13W79	0	0	0	REGION 1638 (N07W73)	26	S13W79	O	SOLALERT 26/28 MAGALERT 26/XX
						N07W75	12	2	1	PRODUCED AN X1/1B		N07W75	A	
						S15W52	1	0	0	FLARE AT 25/1808Z		S15W52	Q	
						N23W53	0	0	0	WITH A 10 CM BURST		N23W53	Q	
						S28W36	0	0	0	OF 360 FLUX UNITS		S28W36	Q	
						S30W03	0	0	0	AND POST FLARE LOOPS		S30W03	Q	
						N07E18	2	0	0	NO TYPE II OR IV		N07E18	A	
						S19W05	0	0	0	RADIO BURSTS WERE		S19W05	O	
						S21E46	2	0	0	DETECTED.		S21E46	E	
						N27E59	0	0	0			N27E59	Q	
086	27	26	166	198	022	N07W86	10	5	1	REGION 1638 (N07W86)	27	N07W86	A	SOLALERT 27/28 MAGALERT 27/XX
						S15W67	0	0	0	PRODUCED 5M FLARES		S15W67	Q	
						S27W47	0	0	0	AND 1X FLARE DURING		S27W47	Q	
						S31W16	3	0	0	PAST 24 HOURS. 520		S31W16	E	
						N06E05	2	0	0	FLUX UNITS WERE		N06E05	E	
						S19W18	0	0	0	OBSERVED AT 1149Z		S19W18	Q	
						N27E46	0	0	0	DURING X1 FLARE ON		N27E46	Q	
						N22E37	0	0	0	2695 MHZ.		N22E37	Q	
						N31E57	0	0	0			N31E57	Q	
						S25E73	0	0	0			S25E73	Q	

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						Location	No. of Flares				Date	Location	Desc*	
						Lat-Long	Total	M	X			Lat-Long		
087	28	27	200	187	018	S13W82	0	0	0	AN X-1 EVENT OCCURRED AT 0612Z FROM REGION 1638 WHICH WAS BEHIND THE WEST LIMB.	28	S13W82	Q	SOLALERT MINOR 28
						S28W59	0	0	0			S28W59	Q	MAGALERT MINOR 28/XX
						S31W28	2	0	0			S31W28	E	
						N06W08	0	0	0			N06W08	Q	
						N28E34	0	0	0			N28E34	Q	
						N22E21	0	0	0			N22E21	Q	
						N32E44	4	0	0			N32E44	E	
						S23E67	2	1	0			S23E67	A	
						S21E50	1	0	0			S21E50	Q	
						S20E08	0	0	0			S20E08	Q	
						N11E12	0	0	0			N11E12	Q	
088	29	28	197	191	025	S28W73	0	0	0		29	S28W73	Q	SOLNIL MAGALERT MINOR 29/31
						S30W43	0	0	0			S30W43	Q	
						N06W21	0	0	0			N06W21	Q	
						N28E21	0	0	0			N28E21	Q	
						N22E07	0	0	0			N22E07	Q	
						N32E35	1	0	0			N32E35	Q	
						S23W56	2	0	0			S23W56	E	
						S21E38	0	0	0			S21E38	Q	
						N10W01	0	0	0			N10W01	Q	
						S15E75	0	0	0			S15E75	Q	
						S15E35	0	0	0			S15E35	Q	
						S35E67	0	0	0			S35E67	Q	
089	30	29	211	195	029	S27W87	0	0	0		30	S27W87	Q	SOLALERT 30/31 MAGALERT 30/31
						S30W56	0	0	0			S30W56	Q	
						N07W35	0	0	0			N07W35	Q	
						S22W15	0	0	0			S22W15	Q	
						N27E08	0	0	0			N27E08	Q	
						N22W04	0	0	0			N22W04	Q	
						N32E24	1	0	0			N32E24	Q	
						S24E44	2	0	0			S24E44	A	
						S21E24	1	0	0			S21E24	Q	
						S16E65	0	0	0			S16E65	Q	
						S16E19	0	0	0			S16E19	Q	
						S37E53	0	0	0			S37E53	Q	
						S08E83	0	0	0			S08E83	Q	
090	31	30	197	190	014	S30W67	0	0	0	M1/2B FLARE IN REGION 1661 STARTED AT 30/2311Z LASTED 20 MINUTES.	31	S30W67	Q	SOLALERT 31/01 MAGALERT 31
						N07W48	1	0	0			N07W48	E	
						S22W28	0	0	0			S22W28	Q	
						N26W07	2	0	0			N26W07	E	
						N31E10	3	0	0			N31E10	E	
						S24E31	7	1	0			S24E31	A	
						S16E51	0	0	0			S16E51	Q	
						S16E09	0	0	0			S16E09	Q	
						S08E68	0	0	0			S08E68	Q	
						S23W50	0	0	0			S23W50	Q	
						S27E02	0	0	0			S27E02	Q	
						N26E64	1	0	0			N26E64	E	
091	01	31	173	212	012	N07W61	1	0	0	M5/2B FLARE IN REGION 1661 AT 31/2317Z. 26 MINUTE DURATION.	01	N07W61	Q	SOLALERT 01/02 MAGNIL 01/XX
						N23W33	0	0	0			N23W33	Q	
						N31W02	2	0	0			N31W02	E	
						S23E18	16	1	0			S23E18	DA	
						S16E38	3	0	0			S16E38	E	
						S08E53	0	0	0			S08E53	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	

* 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	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
1	70	85	119	64	42	136	96	109	110	158	116	116
2	68	89	98	61	48	167	112	122	110	158	127	138
3	71	93	78	51	38	159	105	125	117	191	148	141
4	75	92	60	48	62	162	100	129	115	157	123	142
5	94	89	51	54	74	177	73	121	104	146	134	135
6	92	85	31	63	66	177	74	108	122	173	146	144
7	88	75	39	84	58	147	95	112	138	163	144	146
8	105	63	45	105	62	120	103	118	148	172	142	143
9	126	62	36	108	64	109	121	108	152	165	139	146
10	125	60	29	115	67	99	149	120	144	163	137	140
11	120	63	57	127	58	84	158	118	170	157	137	156
12	109	66	62	111	71	72	158	99	188	159	138	170
13	105	74	62	114	93	92	156	90	165	159	152	169
14	91	74	64	109	93	113	170	78	150	162	163	159
15	90	78	89	102	77	133	166	59	140	178	161	155
16	95	91	94	110	52	143	163	77	143	164	159	130
17	99	86	103	98	50	136	143	92	146	164	160	142
18	103	89	115	84	50	156	135	93	132	146	162	142
19	111	84	109	77	42	159	154	85	95	138	166	138
20	115	74	109	76	30	163	151	76	84	177	169	120
21	114	76	154	77	30	171	144	68	68	181	171	134
22	115	74	158	48	36	148	125	77	63	178	155	140
23	119	73	158	38	45	156	116	55	59	188	127	139
24	106	82	154	38	48	163	104	61	65	209	99	118
25	136	85	135	30	55	168	96	85	81	209	88	114
26	115	88	152	13	45	152	102	101	93	173	108	114
27	99	97	143	22	57	142	115	118	110	162	97	117
28	83	93	130	31	57	126	117	118	122	157	95	114
29	78	103	115	48	59	122	137	111	135	153		110
30	75	107	103	39	72	94	128	103	159	149		127
31		113		36	100		111		177	130		147
MEAN	99.7	82.7	95.1	70.4	58.1	138.2	125.1	97.9	122.7	165.8	138.0	137.0

DAILY SOLAR FLUX AT 2800 MHz
OTTAWA ARO

FLUX ADJUSTED TO 1 A.U., S_a

	1978									1979		
DAY	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
1	130.0	181.4	149.1	142.9	106.0	159.8	139.0	152.0	166.6	194.1*	185.8	168.5
2	129.8	183.0	147.0*	127.6	106.0	171.7*	137.8	159.0	167.6	200.1	185.6	170.7
3	134.5	182.2A	130.8	116.5	109.6	167.0	131.7	169.9	164.2	203.5*	187.4*	173.3
4	143.3*	178.4	118.6	117.4	112.3	174.4*	132.0*	177.4	165.3	192.7*	187.7	181.4
5	146.7*	173.9*	116.9	118.9	117.6	179.4	138.7*	181.2	169.5	194.9	197.4	180.1*
6	145.3*	173.1	109.8	119.3*	122.6	181.1	137.4	172.2*	164.5	190.9	206.5	182.4
7	146.9	162.6*	110.6	128.9	128.2	177.5	141.6	174.6	178.5*	186.2	203.4	183.1*
8	148.6	143.4	109.3	135.9	130.6	167.1	150.1	168.0*	189.9	200.1	207.2*	178.9
9	156.1	135.1	106.5	147.1*	128.1*	157.6*	155.8	164.9*	189.6	192.6	198.7	181.4
10	155.4	129.5	108.4	156.0*	127.5	149.8	162.3	166.3	204.7	186.2	198.4*	180.6
11	162.8*	133.8	113.2	163.2*	121.7	141.5	171.6*	163.7	210.5	179.5	202.2*	181.7*
12	156.2	138.2	116.4*	174.2*	124.5	138.5	177.2	150.4	217.3	174.5	195.4	188.7
13	145.6	140.2	120.3*	165.5	134.9	138.0	178.5	145.3	210.6*	193.9	195.4	186.3
14	139.1	143.7	126.4*	163.1	132.7	143.5*	180.1	136.3	197.0	200.0*	204.2*	189.4
15	141.4	146.1	132.5	169.5	130.0*	152.6	182.0	133.8	192.7	192.1*	205.0*	181.3
16	137.6	147.8*	139.5*	163.4	123.6	161.5	176.7*	128.8	180.5	189.9*	209.2	183.5*
17	133.4	143.8	149.0	159.5	119.3*	161.8	171.5	128.1	177.7	175.7	213.1	177.7
18	134.1	135.6	153.5*	154.1*	115.6	169.3*	169.4	127.4	161.5	177.6	237.7	188.6*
19	139.5*	133.6	162.0*	148.6	111.6	168.8*	170.4	128.9	152.9	187.8	237.8	177.6
20	138.1	132.3*	174.2	142.9*	107.5	168.6	171.0	134.9	138.1	197.2	230.1*	184.1
21	138.4*	132.7	185.4*	140.2	104.8	172.5	166.9*	126.0	132.1*	210.3	225.1	182.2
22	146.4	135.7*	190.3	127.0	106.0	171.5*	161.4	127.1	132.7	226.9	223.3	181.1
23	162.9	142.9*	196.7	123.4*	104.1	165.5*	161.4	121.9	133.4	225.1	196.0	188.5
24	159.8	146.5*	194.8	118.5	105.4	158.9	156.9	123.5	135.2*	208.5	182.8	188.3
25	159.1*	147.6	183.5	113.7	104.2	157.2	156.1	124.7*	138.0	206.1	167.5	188.2
26	166.7	152.8	182.4*	112.2	100.7	148.5	154.4	132.7	144.2	192.9	166.0	200.2
27	172.8	150.6*	179.5	110.8	107.3*	146.2*	150.7	144.4*	148.7*	205.4	162.7	187.9
28	176.6*	147.1*	174.1	109.9	107.7*	147.8	148.4*	154.1	164.1	209.6	163.6	188.6
29	185.2	148.6	167.4	109.2	116.2	148.1	149.8	162.2	166.2	209.3		191.4
30	182.1*	147.2*	154.6*	109.2	124.1	142.6	146.5	167.8	181.7	194.1*		186.6
31		152.6		108.8	133.9*		144.0		195.1	193.7		201.4*
MEAN	150.5	149.7	146.8	135.4	116.9	159.6	157.1	148.2	170.0	196.5	199.1	184.0

* adjusted for burst
A = interpolated data point

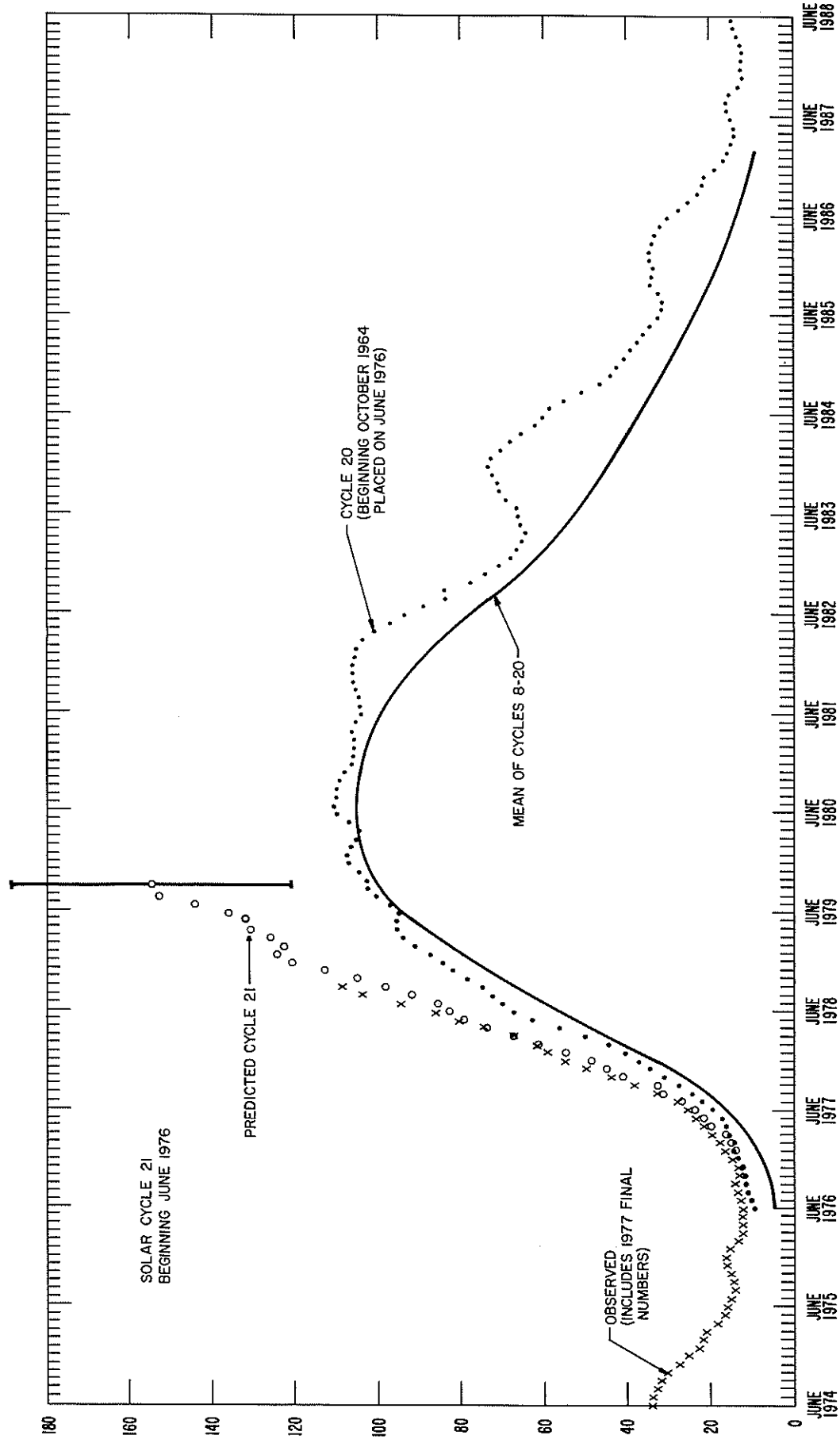
DAILY SOLAR INDICES

MARCH 1979

MAR 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	60	10	116	124	171.6	603	357	203	168.5	168.7	106.0	83.8	22.7	11.2
2	61	11	138	123	173.7	589	346	200	170.7	171.4	112.2	81.2	25.1	12.6
3	62	12	141	125	176.3	597	355	200	173.3	170.6	114.0	83.6	23.4	12.5
4	63	13	142	127	184.4	606	360	208	181.4	179.6	118.5	85.2	23.5	12.2
5	64	14	135	124	183.0*	608	371	223	180.1*	200.1	126.1	88.6	24.0	12.2
6	65	15	144	130	185.2	590	357	207	182.4	186.5	118.5	82.0	24.3	15.4
7	66	16	146	143	185.9*	579	356	195	183.1*	180.2	120.9		22.2	12.7
8	67	17	143	145	181.4	601	354	207	178.9	173.9	121.6	78.7	25.2	13.2
9	68	18	146	162	184.0	610	361	207	181.4	174.5	115.1	78.8	24.4	13.6
10	69	19	140	145	183.0	606	362	208	180.6	187.6	114.6		22.2	11.6
11	70	20	156	146	184.1*	612	372	213	181.7*	181.4	122.5	80.0	24.1	15.1
12	71	21	170	141	191.0	619	383	211	188.7	201.9	116.4	79.9	28.8	13.4
13	72	22	169	146	188.6	620	380	207	186.3	184.2	121.1	82.5	25.4	12.4
14	73	23	159	155	191.5	608	375	209	189.4	191.1	121.2	72.0	24.6	12.4
15	74	24	155	157	183.3	610	370	205	181.3	179.3	119.8	74.6	25.7	11.8
16	75	25	130	139	185.4*	616	383	213	183.5*	188.2	123.3	79.4	31.7	16.9
17	76	26	142	147	179.5	608	375	207	177.7	190.0	114.6	73.5	22.5	12.1
18	77	27	142	130	190.3*	619	384	222	188.6*	203.6	126.0	74.4	26.2	13.6
19	78	1	138	128	179.0	612	379	221	177.6	191.9	118.2	77.1	23.0	10.6
20	79	2	120	124	185.6	606	376	218	184.1	184.2	115.8	77.0	24.3	11.9
21	80	3	134	131	183.5	600	369	213	182.2	182.9	110.9	77.6	20.5	14.2
22	81	4	140	143	182.4	612	377	211	181.1	177.1	109.1	77.5	20.0	12.0
23	82	5	139	138	189.6	612	377	222	188.5	187.1	111.3	79.1	26.0	13.6
24	83	6	118	112	189.4	616	395	224	188.3	195.6	114.9	79.5	26.1	14.8
25	84	7	114	113	189.1	627	389	232	188.2	190.3	117.3	81.2	25.9	12.6
26	85	8	114	108	201.0	638	397	228	200.2	210.1	127.1	85.1	21.7	14.6
27	86	9	117	104	188.7	617	394	225	187.9	193.2	119.6	98.3	33.0	17.3
28	87	10	114	111	189.2	610	390	221	188.6	190.8	115.2	88.3	27.7	11.4
29	88	11	110	131	192.0	598	377	221	191.4	202.5	119.3	84.7	29.4	12.0
30	89	12	127	139	187.0	603	384	224	186.6	188.0	117.4	82.5	27.2	13.2
31	90	13	147	117	201.8*	609	389	240	201.4*	209.9	128.6	95.2	40.9	50.6
MEAN			137.0	132.5	185.8	608	374	214	184.0	187.6	118.0	81.4	25.5	14.3

* 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	112.3	116.6	122.4
										(3)	(6)	(9)
1979	127.3	131.7	136.1	138.9	141.3	145.9	150.2	153.1	155.3	156.6	157.1*	156.7
	(13)	(14)	(17)	(22)	(26)	(28)	(31)	(34)	(34)	(35)	(36)	(36)
1980	155.3	153.8	152.9	153.3	152.8	149.4	145.6	142.5	140.7	139.7	138.3	137.0
	(36)	(35)	(34)	(33)	(35)	(37)	(39)	(41)	(41)	(42)	(43)	(46)
1981	136.8	136.4	134.0	131.1	128.3	125.5	124.0	123.6	122.4	120.7	118.1	114.8
	(49)	(48)	(46)	(45)	(45)	(45)	(44)	(43)	(43)	(44)	(42)	(40)
1982	111.8	108.5	106.0	104.1	102.0	99.8	96.1	91.6	87.4	82.7	79.3	75.6
	(38)	(37)	(36)	(34)	(32)	(30)	(28)	(25)	(24)	(21)	(20)	(20)
1983	71.3	68.2	66.0	63.5	61.0	58.3	56.1	54.1	52.3	51.2	50.4	49.6
	(20)	(20)	(21)	(22)	(22)	(23)	(24)	(26)	(28)	(29)	(31)	(31)
1984	48.5	46.6	43.7	40.4	37.8	36.8	35.9	34.3	32.7	31.4	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	22.4	21.7	20.8	20.0	19.3
	(27)	(27)	(26)	(26)	(26)	(25)	(23)	(23)	(22)	(23)	(24)	(24)
1986	18.8	17.9	17.0	16.0	14.7	13.4	12.4	11.8	11.6	11.5	11.3	11.3
	(25)	(24)	(24)	(23)	(22)	(21)	(20)	(19)	(17)	(16)	(15)	(13)
1987	11.8	12.5	13.4	14.4	15.5	16.7	17.8					
	(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 156 ± 33.

Hα SOLAR FLARES

MARCH 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-POR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE MAR	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	MIN.		CORD.	TYPE	TIME — UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
RAMY	01	1126	1126	1135	S22	E57	.836		5.8	9	SN	2	C		17		
RAMY	01	1132	1140	1210	S25	E33	.590		4.0	38	SB	2	C		86		F
RAMY	01	1308	1308	1327	S34	W27	.596		27.5	19	SN	4	C		27		
RAMY	01	1457	1516	1544	S22	E57	.836		5.9	47	SB	3	C		127		
HOLL	01	1550E	1550U	1627	S22	E57	.836		5.9	37D	SN	3	C		37		F
RAMY	01	1649	1651	1735	S22	E56	.828		5.9	46	SB	3	C		20		
HOLL	01	1713	1713	1723	S34	W29	.614		27.5	10	SN	2	C		18		
RAMY	01	1823	1824	1830	N22	W12	.522		28.9	7	SF	3	C		22		
PALE	01	2013E	2018U	2021D	S18	E90	.999	15864	8.6	8D	1N	3	V		0		
RAMY	01	2015E	2018	2042	S15	E90	.999	15864	8.6	27D	1B	3	C		0		
PALE	01	2219E	2219	2223D	S21	E55	.817		6.1	4D	SN	3	C		20		
MITK	02	0327E		0350	S22	E53	.799	15856	6.1	23D	1N		C	0327	230	4.0	E
MITK	02	0639	0647	0720	S23	E29	.530	15850	4.5	41	1N		C	0647	170	2.1	E
MANI	02	0641	0647	0655	S25	E19	.429		3.7	14	SN	3	C		50		F
HTPR	02	0651E		0700	S22	E46	.728		5.7	9D	SN		C	0653	120	1.7	E
HTPR	02	1048	1053	1110	S20	E47	.734		6.0	22	SF		C	1053	90	1.4	E
HTPR	02	1109	1111	1115	S18	W43	.685		27.2	6	SN		C	1111	30	.4	
HTPR	02	1122	1123	1126	S04	E90	1.000		9.2	4	SF		C	1123	20		A
HTPR	02	1218	1224	1230	N19	E90	1.001		9.3	12	SN		C	1224	120		A
RAMY	02	1225	1238	1310	S22	E46	.728		6.0	45	SB	4	C		143		F
RAMY	02	1225	1225	1310	S22	E46	.728		6.0	45	SN	4	C		19		F
HTPR	02	1233	1239	1253	S19	E46	.721	15856	6.0	20	1F		C	1239	160	2.2	E
HTPR	02	1234	1246	1310	S22	E24	.461		4.3	36	SF		C	1246	20	.2	E
RAMY	02	1245	1245	1303	S24	E19	.419		4.0	18	SN	4	C		19		F
RAMY	02	1332	1335	1340	S19	W44	.698		27.3	8	SB	4	C		22		
RAMY	02	1335	1338	1404	S24	E19	.419		4.0	29	SB	4	C		78		
HTPR	02	1336	1340	1405	S22	E21	.424		4.1	29	SN		C	1340	100	1.0	E
HTPR	02	1523	1526	1529	N13	E85	.998		9.0	6	SF		C	1526	30		A
BIGB	02	1605	1607	1623	S19	W47	.733		27.1	18	SN		C	1607	50	.7	
HTPR	02	1607	1608	1617	S18	W58	.842		26.3	10	SF		C	1608	60	1.2	E
RAMY	02	1608	1608	1633	S19	W48	.744		27.1	25	SB	3	C		89		
PALE	02	2019	2019	2025	S19	E78	.972		8.7	6	SF	3	C		11		DE
PALE	02	2128	2128	2134	S16	E75	.960		8.5	6	SN	3	C		60		F
RAMY	02	2129E	2131	2140D	S17	E78	.972		8.7	11D	SB	3	C		0		
PALE	03	0234E	0234U	0237D	S16	W73	.950		25.6	3D	SN	3	C		38		
PALE	03	0336E	0336U	0336D	S24	E12	.347		4.1		SN	3	C		36		DE
HTPR	03	0950	0952	1001	S19	E78	.972		9.3	11	SN		C	0952	70		
HTPR	03	0957	1011	1027	S18	W60	.860		26.9	30	SF		C	1011	20	.4	E
WEND	03	1101E		1128	S18	E73	.949	15864	8.9	27D	2N		V		300		C
HTPR	03	1101	1107	1132	S18	E78	.972	15864	9.3	31	1B		C	1107	120		EK
RAMY	03	1115E	1115U	1140	S17	E70	.932		8.7	25D	SN	3	C		133		
HTPR	03	1204	1205	1206	S20	E33	.565		6.0	2	SF		C	1205	20	.2	
RAMY	03	1206	1206	1208	S22	E33	.574		6.0	2	SB	3	C		25		
RAMY	03	1226	1227	1235	S19	W57	.834		27.2	9	SN	3	C		22		
RAMY	03	1338	1339	1353	S18	W60	.860		27.1	15	SN	3	C		17		
RAMY	03	1409	1418	1430	S17	E69	.926		8.8	21	SB	3	C		28		
HTPR	03	1508	1510	1512	S17	W20	.372		2.1	4	SF		C	1510	10	.1	
RAMY	03	1511	1511	1514	S20	W23	.433		1.9	3	SB	3	C		23		
RAMY	03	1529	1529	1533	S20	W23	.433		1.9	4	SN	3	C		19		
RAMY	03	1702E	1702U	1711	S20	W24	.447		1.9	9D	SN	3	C		22		
HOLL	03	1707	1718	1808	S16	E69	.926		8.9	61	SB	3	C		97		F
RAMY	03	1716	1720	1725	S16	E67	.913		8.7	9	SN	3	C		25		
HOLL	03	1801	1805	1824	S20	W23	.433		2.0	23	SB	3	C		65		
RAMY	03	1801	1805	1824	S20	W24	.447		2.0	23	SB	3	C		86		
PALE	03	1802	1803	1816	S20	W25	.460		1.9	14	SN	3	C		40		DE
HOLL	03	1806	1820	1852	S24	E 4	.296	15850	4.1	46	1B	3	C		353		U F
HOLL	03	1813	1824	1828	S20	W62	.877		27.1	15	SN	3	C		15		
PALE	03	1815	1823	1824D	N25	W 4	.537	15843	3.5	9D	1B	3	V		309		H F
RAMY	03	1815	1819	1850	S24	E 5	.300	15850	4.1	35	1B	3	C		323		F
PALE	03	1815	1823	1848	S25	E 4	.312	15856	4.1	33	1B	3	C		309		H F
BIGB	03	2014	2022	2045	N20	E60	.906		8.3	31	SN		C	2022	80	1.6	
RAMY	03	2015	2020	2035	N16	E55	.859		8.0	20	SB	3	C		69		F
PALE	03	2019	2019	2040D	N16	E57	.875		8.1	21D	SN	3	C		30		DE
HTPR	04	1206E		1215	N13	E54	.842		8.6	9D	SF		C	1213	10	.2	
WEND	04	1216E		1228D	N12	E55	.848		8.6	12D	SF		V				
HTPR	04	1500	1540	1553D	S19	W40	.650		1.6	53D	SF		C	1540	50	.6	EFKT
RAMY	04	1535E	1541	1636	S19	W35	.587		2.0	61D	SB	3	C		89		F
HOLL	04	1601E	1624	1641	S20	W38	.629		1.8	40D	SB	3	C		71		F
HOLL	04	1638	1641	1651	N12	E52	.821		8.6	13	SN	3	C		21		

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE MAR	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	04	1643	1716	1740	S20	W39	.641		1.8	57	SB	3	C		88		F
RAMY	04	1714	1717	1720	S20	W36	.604		2.0	6	SN	3	C		23		
HOLL	04	1928	1931	1944	S20	W40	.653		1.8	16	SB	3	C		27		
HOLL	04	1937	1939	1944	S20	W78	.972		27.0	7	SN	3	C		16		
HOLL	04	2030	2031	2037	S20	W40	.653		1.9	7	SN	3	C		32		
HOLL	04	2035	2044	2053	N35	W14	.698		3.8	18	SN	3	C		36		
HOLL	04	2153	2153	2203	S20	W41	.665		1.8	10	SB	3	C		31		
HOLL	04	2208	2211	2251	N21	E52	.851		8.8	43	SB	3	C		86		F
HOLL	04	2216	2220	2230	S20	W41	.665		1.9	14	SB	3	C		18		
HOLL	04	2234	2250	2327	S20	W42	.677		1.8	53	SB	3	C		156		F
HOLL	04	2256	2256	2304	S20	W80	.979		27.0	8	SN	3	C		30		
RAMY	05	1231	1231	1237	N35	W23	.737		3.8	6	SN	3	C		19		
RAMY	05	1237	1239	1249	S18	E47	.731		9.1	12	SB	3	C		46		
HTPR	05	1238		1250D	S20	W49	.756		1.9	12D	SF		C	1243	60	.9	E
RAMY	05	1241	1241	1250	S20	W47	.734		2.0	9	SN	3	C		20		
RAMY	05	1405	1415	1517D	N11	E38	.669	15863	8.4	72D	1B	3	C		200		F
HTPR	05	1405E		1419D	N14	E37	.675	15862	8.4	14D	2N		C	1417	900	11.7	EFI
HOLL	05	1408	1415	1513	N21	E44	.784		8.9	65	SB	3	C		85		F
HOLL	05	1409	1416	1644	N12	E25	.522	15862	7.5	155	1B	3	C		290		U F
RAMY	05	1409	1413	1454	N12	E26	.533	15862	7.5	45	1B	3	C		250		U F
HOLL	05	1415	1418	1558	N13	E39	.691	15863	8.5	103	1B	3	C		236		F
HOLL	05	1451	1456	1502	N35	W24	.742		3.8	11	SN	3	C		31		
HOLL	05	1517	1534	1611	S20	W51	.777	15849	1.8	54	2B	3	C		396		U F
BIGB	05	1542E		1607	S19	W54	.806	15849	1.6	25D	1N		P	1542	190	3.3	
HOLL	05	1637	1659	1731D	N35	W25	.748		3.8	54D	SB	3	C		101		U
RAMY	05	1732	1742	1747	N35	W25	.748		3.9	15	SN	3	C		111		
RAMY	05	1802	1807	1816	N35	W25	.748		3.9	14	SN	3	C		52		
RAMY	05	1842	1851	1859	N35	W26	.753		3.8	17	SB	3	C		48		
HOLL	05	1849	1851	1856	N35	W26	.753		3.8	7	SB	3	C		32		
RAMY	05	1930	1936	1944	N35	W26	.753		3.9	14	SB	3	C		52		
BIGB	05	1932	1936	1942	N36	W27	.768		3.8	10	SN		C	1936	40	.5	
PALE	05	1938E	1938	1946	N34	W27	.749		3.8	8D	SN	3	C		42		
PALE	05	2118E	2118	2122	S19	W52	.786		2.0	4D	SN	3	C		20		DE
HOLL	05	2335	2352	0004	S19	E54	.806		10.0	29	SB	3	C		20		
HOLL	05	2358	0022	0024D	S19	W53	.796		2.0	26D	SB	3	V		30		F
MANI	06	0020E	0022	0023D	S16	W54	.804		2.0	3D	SB	2	C		30		F
MANI	06	0630	0634	0648	S19	E36	.600		9.0	18	SN	2	C		30		
MANI	06	0656	0700	0729	S19	E35	.587		8.9	33	SN	2	C		40		
WEND	06	0825		0836	S23	W30	.542		4.1	11	SN		P				E
RAMY	06	1423	1431	1506	S21	W 8	.272		6.0	43	SB	2	C		129		
WEND	06	1425E	1432	1502	S21	W11	.299	15856	5.8	37D	2F		P		700	7.8	U
HOLL	06	1439	1506	1542	S22	W10	.303		5.9	63	SN	3	C		52		
RAMY	06	1511	1514	1516	S19	W62	.876		2.0	5	SN	2	C		129		
HOLL	06	1511	1513	1516	S19	W61	.868		2.1	5	SN	3	C		20		
RAMY	06	1617	1617	1626	S18	E32	.544		9.1	9	SN	2	C		20		
RAMY	06	1621	1629	1713	N10	E22	.468		8.3	52	SN	3	C		55		
BIGB	06	1621	1650	1704	N13	E26	.542		8.6	43	SN		C	1650	90	1.0	
RAMY	06	1627	1636	1656	N10	E11	.349		7.5	29	SN	3	C		64		
RAMY	06	1638	1638	1643	S18	E32	.544		9.1	5	SN	3	C		25		
BIGB	06	1717	1720	1747	S18	W65	.899	15849	1.8	30	1N		C	1720	130	2.4	
HOLL	06	1718	1724	1746	S19	W63	.884		2.0	28	SB	3	C		115		F
RAMY	06	1718	1724	1741	S19	W63	.884		2.0	23	SB	3	C		88		
BIGB	06	1806	1807	1825	S17	W65	.899	15849	1.9	19	1N		C	1807	100	2.4	E
HOLL	06	1808	1808	1820	S19	W63	.884		2.0	12	SB	3	C		57		F R
RAMY	06	1808	1809	1814	S19	W63	.884		2.0	6	SN	3	C		17		
RAMY	06	1816	1818	1820	S19	W63	.884		2.0	4	SN	3	C		30		
BIGB	06	1823	1849	1854	S24	W65	.901	15849	1.9	31	1N		C	1849	130	3.2	
RAMY	06	1915	1919	1936	N10	E10	.341		7.6	21	SN	3	C		41		
BIGB	06	2013	2016	2021	S19	E61	.868		11.4	8	SN		C	2016	25	.5	E
HOLL	06	2117	2127	2212	N35	W40	.835		3.9	55	SB	3	C		139		
BIGB	06	2123	2143	2220	N35	W42	.847		3.7	57	SN		C	2143	60	.8	
RAMY	06	2127	2127	2131D	N35	W40	.835		3.9	4D	SN	2	C		22		
BIGB	06	2143	2153	2213	N14	E16	.447		8.1	30	SN		C	2153	50	.5	E
HOLL	06	2153	2153	2201	N11	E18	.432		8.3	8	SB	3	C		27		
BIGB	06	2159	2213	2242	N13	E14	.416		8.0	43	SN		C	2213	130	1.4	
HOLL	06	2201	2208	2212D	N11	E18	.432		8.3	11D	SB	3	C		120		F
BIGB	06	2214	2223	2235	N14	E22	.507		8.6	21	SN		C	2223	50	.6	
BIGB	06	2245	2315	0001	S24	W38	.643		4.1	76	SN		C	2315	60	.8	
HOLL	06	2358	0022	0024D	S19	W53	.796		3.0	26D	SB	3	V		30		F

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-POR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE MAR	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.	
MANI	07	0616E	0617	0630D	S20	E24	.447		9.1	140	SN	3	C		20		
MANI	07	0620E	0622	0635D	N22	W 7	.501		6.7	150	SF	3	C		25		
MANI	07	0647E	0649	0701	S19	E20	.386		8.8	140	SB	3	C		60		F
RAMY	07	1126	1137	1148	N10	E12	.358		8.4	22	SN	2	C		31		
RAMY	07	1149	1149	1157	N10	E12	.358		8.4	8	SN	3	C		49		
RAMY	07	1204	1205	1217	S19	W73	.949		2.0	13	SB	3	C		36		
MCMA	07	1303	1304	1308	N13	E07	.365	15863	8.1	5	SN		C	1304	60	1.6	E
RAMY	07	1303	1304	1310	N10	W 0	.297		7.5	7	SB	3	C		42		
MCMA	07	1313	1318	1327	S17	W74	.954	15849	2.0	14	SF		C	1318	20	.7	E
MCMA	07	1328	1335	1345	N35	W50	.893	15860	3.8	17	SF		C	1335	30	.7	E
MCMA	07	1332	1337	1345	N13	E07	.365	15863	8.1	13	SN		C	1337	40	.4	E
MCMA	07	1335	1340	1410	S24	W52	.793	15850	3.7	35	SF		C	1340	30	.5	E
MCMA	07	1344	1359	1417	S17	E17	.330	15864	8.8	33	SN		C	1359	60	.6	E
MCMA	07	1348	1408	1419	S17	W75	.959	15849	2.0	31	SN		C	1408	40	1.6	E
MCMA	07	1531	1534	1545	S17	E17	.330	15864	8.9	14	SN		C	1534	50	.5	E
MCMA	07	1548	1605	1625	S22	W50	.770	15850	3.9	37	SF		C	1605	100	1.6	E
BIGB	07	1602	1607	1620	S22	W50	.770		3.9	18	SN		C	1607	50	.8	
HOLL	07	1602	1605	1620	S25	W48	.756		4.1	18	SB	3	C		87		
MCMA	07	1635	1703	1810D	S20	W26	.473	15856	5.7	95D	1N		C	1703	165	2.0	L
HOLL	07	1653	1655	1730	S22	W23	.448		6.0	37	SB	3	C		55		U
BIGB	07	1653	1702	1737	S22	W25	.473		5.8	44	SN		C	1702	90	1.0	G
BIGB	07	1654	1713	1718	S15	W80	.980		1.7	24	SN		C	1713	30		E
MCMA	07	1732	1739	1753	S17	W75	.959	15849	2.1	21	SF		C	1739	20	.7	D
HOLL	07	1934	1936	1951	S20	W74	.954		2.3	17	SB	3	C		35		F
HOLL	07	2224	2233	2333	S22	W85	.992		1.6	69	SN	3	C		14		
HOLL	07	2345	2348	0014	S25	W39	.659		5.1	29	SB	3	C		74		
MANI	08	0400E	0403U	0408	N23	W19	.581		6.7	80	SN	3	C		30		
HTPR	08	0752	0822	0915	S19	W32	.548	15856	5.9	83	1N		C	0822	400	5.0	EK
MANI	08	0805E	0809	0903D	S21	E33	.570		10.8	58D	SB	3	C		80		F
HTPR	08	1015	1020	1026	N18	E90	1.001		15.2	11	SN		C	1020	20		
HTPR	08	1100	1103	1109	N13	W05	.356		8.1	9	SB		C	1103	100	1.0	
HTPR	08	1130	1135	1210	N22	W24	.609		6.7	40	SF		C	1135	60	.7	E
RAMY	08	1143E	1144U	1215	N22	W23	.601		6.8	32D	SB	2	C		98		
HTPR	08	1328	1331	1338	N18	E90	1.001		15.3	10	SF		C	1331	20	.3	
RAMY	08	1335	1357	1418	S15	E34	.562		11.1	43	SB	3	C		132		
HTPR	08	1348	1357	1408	S14	E41	.653		11.7	20	SF		C	1357	60	.8	E
HTPR	08	1444	1449	1453	S17	E46	.718		12.1	9	SF		C	1449	30	.4	
RAMY	08	1449	1449	1453	S24	E52	.793		12.5	4	SN	3	C		19		
RAMY	08	1452	1535	1540D	S15	E33	.548	15865	11.1	48D	1B	3	C		215		
RAMY	08	1459	1459	1506	S18	E 6	.212		9.1	7	SN	3	C		24		
HTPR	08	1512	1518	1520	S12	E36	.585		11.3	8	SF		C	1518	40	.5	E
HOLL	08	1522	1525U	1559	N20	W30	.645		6.4	37	SB	3	C		35		
HTPR	08	1524	1526	1540	N23	W27	.645		6.6	16	SF		C	1526	30	.3	E
RAMY	08	1524	1525	1540D	N22	W25	.618		6.8	16D	SB	3	C		50		
HTPR	08	1529	1534	1550	S12	E36	.585		11.3	21	SN		C	1534	70	.9	E
HOLL	08	1549	1702	1753	N28	E36	.760		11.4	124	SF	3	C		24		
HTPR	08	1610	1618	1640	N18	E90	1.001		15.4	30	SF		C	1618	20		
BIGB	08	1618	1620	1626	N16	E90	1.001		15.4	8	SN		C	1620	10		
HTPR	08	1625	1630	1640	S12	E35	.571		11.3	15	SF		C	1630	30	.4	E
BIGB	08	1709		1715D	N36	W70	.980		3.5	6D	SF		P	1715	10		D
BIGB	08	1711	1713	1720	S25	E56	.831		12.9	9	SN		C	1713	30	.6	
HOLL	08	1715	1715	1755	S 9	E36	.583		11.4	40	SN	3	C		32		
BIGB	08	1734	1746	1746D	N22	W26	.627		6.8	12D	SF		P	1746	50	.6	
HOLL	08	1740	1742	1756	N20	W31	.655		6.4	16	SN	3	C		26		
HOLL	08	1838	1843	1846	N25	E37	.747		11.6	8	SF	3	C		48		
BIGB	08	1845	1911	1911D	N16	E90	1.001		15.5	26D	SN		P	1911	20		
BIGB	08	2108	2118	2135	N15	E90	1.001		15.6	27	SN		P	2118	20		
BIGB	08	2113	2134	2135	S14	W90	1.000		2.1	22	SN		P	2134	45		
BIGB	08	2128	2131	2137	S18	W90	.999		2.1	9	SN		C	2131	30		
BIGB	08	2148	2151	2153	N13	W03	.350		8.7	5	SF		C	2151	20	.2	D
BIGB	08	2203	2204	2221	N15	E90	1.001		15.7	18	SB		C	2204	40		
BIGB	08	2225	2236	2252	N15	E90	1.001		15.7	27	SN		C	2236	15		
BIGB	08	2329	2332	2337	S19	W90	.999		2.2	8	SN		C	2332	10		
BIGB	08	2338	2353	0003	N15	E90	1.001		15.7	25	SN		C	2353	15		
HOLL	08	2355	2355	0005	N22	W25	.618		7.1	10	SN	3	C		23		
BIGB	09	0009	0013	0023	N15	E90	1.001		15.8	14	SN		C	0013	10		
HTPR	09	0700	0707	0820	S13	E29	.486		11.5	80	SN		C	0707	40	.5	EK
ISTA	09	0730E		0737	N18	E80	.992		15.3	7D	SN						D
HTPR	09	0731	0733	0740	N17	E85	.999		15.7	9	SN		C	0733	80		
HTPR	09	0745	0752	0759	S13	E28	.472		11.4	14	SF		C	0752	50	.6	E

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-POR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE MAR	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.	
HTPR	09	0821	0829	0925	N17	E84	.998		15.6	64	SF		C	0829	30		
KAND	09	0848		0855	S19	W90	.999		2.6	7	SN		C				
KAND	09	0906	0910	0932D	S19	W90	.999		2.6	26D	SN		C				
HTPR	09	0935	0948	0950	N17	E83	.997		15.6	15	SN		C	0948	140		AEK
┌HTPR	09	1441	1443	1455	N14	W13	.420		8.6	14	SN		C	1443	80	.8	
└RAMY	09	1442	1444	1452	N19	W19	.533		8.2	10	SB	3	C		22		
RAMY	09	1456	1504	1522D	N24	E26	.646		11.6	26D	SN	3	C		30		
RAMY	09	1657	1659	1703	N24	E26	.646		11.7	6	SN	3	C		31		
RAMY	09	1747	1747	1755	N16	E71	.961		15.1	8	SF	3	C		0		
RAMY	09	1805	1806	1808	N16	E69	.952		14.9	3	SF	3	C		0		
RAMY	09	1811	1817	1840	N24	E25	.638		11.6	29	SN	3	C		41		F
RAMY	09	1822	1833	1840	S14	E21	.370		11.3	18	SN	3	C		31		
RAMY	09	1844	1850	1906	S23	W50	.772		6.0	22	SB	3	C		57		F
RAMY	09	1852	1852	1858	S14	E21	.370		11.4	6	SB	3	C		51		F
PALE	10	0050E	0053	0110	S35	W90	.997		3.3	20D	SF	2	C		20		Y
HTPR	10	0906	0909	0920	S14	E09	.193		11.1	14	SF		C	0909	60	.6	E
MCMA	10	1416	1418	1425	N22	W48	.823	15870	7.0	9	SF		C	1418	25	.4	D
HTPR	10	1459		1503D	N25	E90	1.001		17.4	4D	SN		C	1502	40		A
┌HOLL	10	1620E	1625	1710	S21	E60	.861	15876	15.2	50D	1B	3	C		202		U F
└HTPR	10	1622E		1645D	S22	E62	.878		15.3	23D	SN		C	1624	70	1.4	E
┌HTPR	10	1640		1652	N20	E90	1.001		17.4	12	SN		C	1644	50		A
└HOLL	10	1650E	1650U	1657	N20	E79	.991		16.6	7D	SN	3	C		23		
┌HOLL	10	1724	1729	1738	N16	E58	.882		15.1	14	SB	3	C		24		
└BIGB	10	1729	1732	1740	N17	E60	.899		15.2	11	SN		C	1732	20	.4	
┌HOLL	10	1800	1801	1803	S14	W32	.532		8.4	3	SN	3	C		22		
└HOLL	10	1804	1827	1830	S14	W32	.532		8.4	26	SB	3	C		35		F
HOLL	10	1846	1850	1902	S14	W32	.532		8.4	16	SB	3	C		40		
RAMY	10	1911	1915	1922	S17	W28	.485		8.7	11	SN	2	C		25		
HOLL	10	2159	2209	2230	N20	E77	.986		16.7	31	SN	3	C		0		
HOLL	10	2254	2255	2300	N20	E76	.983		16.7	6	SN	3	C		17		
┌HOLL	11	0001	0011	0037	S14	W35	.574		8.4	36	SB	3	C		48		
└MANI	11	0009E	0015U	0040	S14	W34	.560		8.5	31D	SN	2	C		50		F
MANI	11	0526E	0531	0536	S31	E26	.559		13.2	10D	SB	3	C		30		
MANI	11	0700E	0708	0732	N19	E76	.983		17.0	32D	SB	3	C		70		
HTPR	11	0736E		0830	N12	E72	.962	15877	16.7	54D	1N		C	0736	160		EK
HTPR	11	0835	0836	0840	S17	W34	.568		8.8	5	SF		C	0836	30	.4	E
HTPR	11	1021E		1040	S24	E18	.408		12.8	19D	SN		C	1032	50	.6	E
HTPR	11	1036	1040	1115	S19	W78	.972	15856	5.6	39	1B		C	1040	120		EFK
HTPR	11	1057	1058	1109	N20	E58	.893		15.8	12	SN		C	1058	90	1.7	
HTPR	11	1319E		1323	S18	E39	.635		14.5	4D	SF		C	1319	10	.1	
HTPR	11	1515E		1535	N10	E70	.950		16.9	20D	SF		C	1520	30	.8	
┌HTPR	11	1554		1634D	S15	W05	.160	15865	11.3	40D	2N		C	1613	550	5.7	EIU
├HOLL	11	1557	1605	1751	S14	W 5	.145	15865	11.3	114	1B	3	C		429		U F
├BIGB	11	1558	1640	1802	S16	W04	.167	15865	11.4	124	1N		C	1640	200	2.1	
├HTPR	11	1558	1601	1608	S18	W40	.648		8.7	10	SF		C	1601	20	.3	E
└HOLL	11	1600	1600	1611	S19	W39	.638		8.7	11	SB	3	C		35		F
┌BIGB	11	1652	1705	1723	N15	E65	.928		16.6	31	SN		C	1705	40	1.0	E
└HOLL	11	1703	1708	1723	N16	E70	.957		17.0	20	SN	3	C		0		
HOLL	11	1728	1748	1749	S26	E12	.374		12.6	21	SN	3	C		34		
HOLL	11	2020	2024	2035	S19	W40	.650		8.8	15	SB	3	C		72		
HOLL	11	2034	2043	2048	N15	E43	.744		15.1	14	SN	3	C		22		
HOLL	11	2135	2148	2155	N15	E42	.734		15.0	20	SB	3	C		27		
MANI	12	0508E	0509	0512	N10	W15	.387		11.1	4D	SN	3	C		25		
HTPR	12	1100	1102	1108	N19	E68	.951		17.6	8	SF		C	1102	30	.7	E
KAND	12	1118E		1139	N23	W80	.994		6.5	21D	SN		C				
┌KAND	12	1147		1204	N09	E55	.840		16.6	17	SF		C		52	1.0	
└RAMY	12	1148	1148	1223	N 7	E49	.776		16.2	35	SN	3	C		16		
HTPR	12	1251	1256	1303	S25	E03	.309		12.8	12	SB		C	1256	40	.4	EG
HTPR	12	1330	1335	1345	S14	W90	1.000		5.8	15	SF		C	1335	60		AE
HTPR	12	1427	1440	1452	N30	E57	.914		16.9	25	SF		C	1440	50	.9	
HOLL	12	1513	1513	1517	N20	W82	.996		6.5	4	SN	3	C		0		
HOLL	12	1513	1513	1517	N15	W66	.934		7.7	4	SN	3	C		0		
BIGB	12	1609	1619	1634	N22	W90	1.001		5.9	25	SF		C	1619	10		
RAMY	12	1619	1620	1641	N 9	W20	.434		11.2	22	SN	4	C		23		
┌HTPR	12	1636		1711D	S13	W21	.366		11.1	35D	SF		C	1708	40	.4	E
├RAMY	12	1637	1644	1710D	S16	W15	.294		11.6	33D	SN	3	C		39		
├MCMA	12	1705E	1732	1800D	S14	W18	.324	15865	11.4	55D	SN		C	1732	70	.8	E
└HOLL	12	1724E	1727	1820	S13	W19	.335		11.3	56D	SB	4	C		125		FDE

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-POR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE MAR	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	1803	1807	1818	S14	E90	1.000		19.5	15	SN		C	1807	30		
BIGB	12	1950	1957	2008	N20	E52	.847		16.7	18	SN		P	1957	20	.3	E
MCMA	12	1956	1957	2000D	N20	E51	.839	15877	16.7	4D	SF		C	1957	20	.4	E
HOLL	12	1957	1958	2004	N19	E52	.844		16.7	7	SB	4	C		29		
HOLL	12	2158	2158	2213	N 9	W23	.471		11.2	15	SB	3	C		21		
BIGB	12	2211	2217	2252	N19	E80	.993	15877	18.9	41	1N		C	2217	160		
HOLL	12	2212	2218	2252	N15	E73	.969	15877	18.4	40	1B	4	C		0		F
HOLL	12	2222	2224	2225	N19	E52	.844		16.8	3	SN	4	C		16		
HOLL	12	2223	2224	2229	N 6	E43	.706		16.2	6	SN	4	C		20		
HTPR	13	1056	1057	1108	N18	E20	.530		15.0	12	SF		C	1057	30	.3	EH
HTPR	13	1103	1107	1115	N12	E39	.685		16.4	12	SF		C	1107	30	.4	E
RAMY	13	1258	1333	1415	N 9	W32	.584		11.1	77	SB	3	C		110		U
RAMY	13	1258	1328	1331D	N 9	W32	.584		11.1	33D	SB	3	V		121		U
HTPR	13	1259	1300	1305	N16	E53	.842		17.5	6	SN		C	1300	70	1.1	
HTPR	13	1302	1327	1340	N11	W33	.609		11.1	38	SN		C	1327	50	.6	EK
KAND	13	1328	1331	1339D	S19	E85	.992		19.9	11D	SN		C				
KAND	13	1329	1333	1339D	N11	W31	.585		11.2	10D	SF		C		52	.7	
RAMY	13	1435	1436	1441	N19	E38	.716		16.5	6	SN	3	C		19		
HTPR	13	1500	1515	1540	S15	E90	.999		20.4	40	SF		C	1515	30		
RAMY	13	1515	1519	1529	S12	E81	.984		19.7	14	SF	3	C		15		
HOLL	13	1531	1537	1550	N16	E60	.897		18.1	19	SN	3	C		42		
RAMY	13	1609	1609	1613	N19	E37	.706		16.4	4	SN	3	C		18		
RAMY	13	1617	1618	1623	N19	E37	.706		16.5	6	SN	3	C		18		
HOLL	13	1709	1723	1754	N13	E37	.668		16.5	45	SB	3	C		82		U F
RAMY	13	1710	1718	1752	N16	E35	.665		16.3	42	SB	3	C		52		
HOLL	13	2039	2046	2109	N14	E56	.861		18.1	30	SB	3	C		79		
PALE	13	2126	2126	2130	S13	W35	.572		11.3	4	SN	2	C		23		
HOLL	13	2132	2138	2140D	N18	E16	.496		15.1	8D	SB	3	C		54		
PALE	13	2141	2146	2149	S13	W35	.572		11.3	8	SN	2	C		33		
PALE	13	2228	2229	2236	S13	W73	.950		8.5	8	SN	2	C		18		S
KAND	14	0804		0835	S27	E01	.339		14.4	31	SF		P				
KAND	14	0927		0948	N18	W85	.999		8.0	21	SN		C				
KAND	14	0953	1011	1106	N18	W85	.999		8.0	73	SN		C				
KAND	14	1152	1218	1239	S10	E90	1.000		21.2	47	SN		C				
KAND	14	1201		1231	N18	W85	.999		8.1	30	SN		C				
KAND	14	1228	1239	1303	N03	E90	1.000		21.3	35	SN		C				
KAND	14	1320	1322	1325	N06	E90	1.000		21.3	5	SB		C				
RAMY	14	1702	1717	1720	S26	W 4	.329		14.4	18	SN	3	C		46		
MITK	15	0337	0349	0410D	N20	E31	.654	15877	17.5	33D	1N		C	0349	270	3.7	E
MANI	15	0345E	0350	0405	N20	E24	.588		17.0	20D	SB	3	C		70		F U
ISTA	15	0630E		0645	S25	W12	.362		14.4	15D	SF						B
ISTA	15	0657	0740	0825D	N17	W05	.417	15874	14.9	88D	1B						F
MANI	15	0706E	0715U	0803D	N19	W 4	.446		15.0	57D	SB	3	C		150		FDE
MANI	15	0706E	0745U	0803D	N19	W 4	.446	15874	15.0	57D	1N	3	C		350		FDE
KAND	15	0707	0741	0838	N19	W05	.448		14.9	91	SN		P		104	1.2	
KAND	15	0821	0833	0852	S18	W90	.999		8.6	31	SB		C				
RAMY	15	1235	1236	1243	N18	W 4	.430		15.2	8	SN	3	C		22		
RAMY	15	1330	1331	1334	N18	W 4	.430		15.3	4	SN	3	C		25		
MCMA	15	1617E		1635	S13	E85	.994	15890	22.1	18D	SN		C	1620			D
HOLL	15	1623E	1623U	1646	S13	E82	.987		21.8	23D	SF	3	C		0		
HOLL	15	1938	1939	1946	N18	W 8	.444		15.2	8	SB	3	C		58		
HOLL	15	2215	2218	2225	S10	E53	.793		19.9	10	SB	3	C		27		
HOLL	15	2332	2340	2350	S13	W61	.868		11.4	18	SN	3	C		21		
HOLL	15	2350	2351	0017	N19	E31	.646		18.3	27	SN	3	C		25		
HOLL	16	0025	0029	0037	S10	E52	.782		19.9	12	SB	3	C		137		
MANI	16	0027E	0030	0035D	S10	E51	.771		19.8	8D	SB	3	C		80		
MITK	16	0510	0529	0700	N16	E22	.527	15877	17.9	110	1N		C	0529	390	4.8	E
MANI	16	0522E	0525	0610	N14	E20	.485		17.7	48D	SB	3	C		100		F U
HTPR	16	0807	0843	0910	N18	E14	.480		17.4	63	SN		C	0843	120	1.2	E
KAND	16	0816		0910	S26	W27	.528		14.3	54	SF		P				
ISTA	16	0820E		0900D	N16	E15	.462	15877	17.5	40D	1N						F
HTPR	16	0830	0836	0842	N20	W19	.544		14.9	12	SF		C	0836	30	.3	E
KAND	16	0830	0837	0849	N19	W18	.524		15.0	19	SN		P				
ISTA	16	0832E		0837D	N17	W23	.547	15877	14.6	5D	1N						GE
KAND	16	0839	0845	0910	N15	E18	.476		17.7	31	SF		P				
RAMY	16	1200E	1200U	1212	N18	W17	.504		15.2	12D	SN	3	C		31		
KAND	16	1245	1257	1306	N30	E90	1.002		23.3	21	SN		C				
RAMY	16	1309	1309	1316	N18	E27	.597		18.6	7	SN	3	C		28		

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-POR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE MAR	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	MIN.		CORD.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
RAMY	16	1411	1428	1507	N18	E27	.597	15877	18.6	56	1B	3	C		400		F
MCMA	16	1411	1427	1500	N21	E25	.607	15877	18.5	49	2B		C	1427	400	5.2	E
RAMY	16	1433	1434	1446	N18	E 9	.449		17.3	13	SB	3	C		39		F
RAMY	16	1439	1443	1515D	N19	W19	.532		15.2	36D	SB	3	C		157		F
MCMA	16	1440	1455	1700D	N19	W20	.541	15874	15.1	140D	1B		C	1455	200	2.5	EFG
RAMY	16	1532	1532	1537	N18	E27	.597		18.7	5	SN	3	C		22		
RAMY	16	2013	2014	2032	N18	E24	.567		18.6	19	SB	2	C		41		
HOLL	16	2014	2014	2028	N20	E21	.561		18.4	14	SB	3	C		40		U
PALE	16	2014	2014	2026	N20	E16	.521		18.0	12	SN	3	C		25		DE
HOLL	16	2032	2032	2039	N19	E23	.568		18.6	7	SN	3	C		20		
RAMY	16	2036	2036	2041	N18	E24	.567		18.7	5	SN	2	C		20		
HOLL	16	2311	2318	2357	S15	E64	.892		21.8	46	SN	3	C		75		
HOLL	16	2350	0002	0017	N19	W 0	.441		17.0	27	SF	3	C		19		
HOLL	17	1618	1623	1631	S14	E56	.823		21.9	13	SB	3	C		55		F
HOLL	17	1619	1621	1625	N40	W 3	.734		17.5	6	SN	3	C		19		
RAMY	17	1620	1621	1643	S16	E56	.823		21.9	23	SB	3	C		58		F
MCMA	17	1621	1625	1630	S13	E56	.823	15890	21.9	9	SF		C	1623	40	.7	E
RAMY	17	1647	1647	1657	N 5	E45	.726		21.1	10	SN	3	C		22		
MCMA	17	1801	1808	1825D	S25	W46	.736	15885	14.3	24D	SN		C	1808	50	.7	E
RAMY	17	1829E	1832	1834	N 6	E43	.705		21.0	5D	SN	2	C		27		
HOLL	17	2105	2106	2112	N 8	E39	.666		20.8	7	SN	3	C		18		
MITK	18	0413	0436	0454	N14	W08	.384	15877	17.6	41	1F		C	0436	360	4.0	E
ISTA	18	0635E		0650	S27	W38	.658		15.4	15D	SF						E
ISTA	18	0635		0710	S11	W47	.726		14.7	35	SF						E
ISTA	18	0730		0750	S13	W48	.738		14.7	20	SF						E
HOLL	18	1355	1426	1445	N40	W14	.753		17.5	50	SN	3	C		66		F
HOLL	18	1404	1405	1422	S11	E18	.312		19.9	18	SN	3	C		30		
HOLL	18	1418	1424	1425D	N 6	E32	.567	15877	21.0	7D	1B	3	V		402		ZDE
HOLL	18	1440	1443	1450	S28	W41	.695		15.5	10	SB	3	C		60		F
HOLL	18	1531	1543	1705	S25	W47	.746		15.1	94	SB	3	C		90		UDE
HOLL	18	1541	1541	1548	N 7	W17	.376		17.4	7	SN	4	C		24		F
MCMA	18	1607E		1655D	S24	W49	.764	15876	15.0	48D	1N		C	1607	175	2.8	F
HOLL	18	1615	1615	1627	S11	E17	.296		20.0	12	SN	4	C		23		
HOLL	18	1646	1650	1659	N 7	W17	.376		17.4	13	SB	4	C		39		
HOLL	18	1741	1741	1750	S15	E14	.273		19.8	9	SN	4	C		27		F
HOLL	18	1756	1811	1904	S16	E12	.254	15886	19.6	68	1N	4	C		206		UDE
PALE	18	1757	1759	1815	S15	E14	.273	15886	19.8	18	1B	3	C		194		U F
MCMA	18	1758E		1845D	S15	E12	.245	15886	19.6	47D	1B		C	1758	220	2.1	EL
HOLL	18	1852	1859	1908	N 6	E30	.540		21.0	16	SB	3	C		95		
PALE	18	1854	1855	1902	N 6	E29	.526		21.0	8	SN	3	C		34		DE
MCMA	18	1859E		1900D	N08	E28	.526	15887	20.9	1D	SF		P	1900	50	.6	E
HOLL	18	1945	1954	2003	N16	W 7	.409		18.3	18	SN	3	C		19		
HOLL	18	2014	2014	2017	N16	W 7	.409		18.3	3	SN	3	C		44		
HOLL	18	2031	2046	2052	S28	W44	.725		15.6	21	SB	3	C		33		U
HOLL	18	2049	2106	2130	N18	W 8	.443		18.3	41	SN	3	C		94		
HOLL	18	2049	2054	2130	N18	W 8	.443		18.3	41	SB	3	C		125		
HOLL	18	2234	2242	2250	N18	W10	.454		18.2	16	SB	3	C		30		
HOLL	18	2300	2313	2322	N16	W 9	.419		18.3	22	SN	3	C		56		DE
PALE	18	2300	2300	2308	N18	W 7	.439		18.4	8	SN	3	C		87		DE
HOLL	18	2300	2300	2322	N16	W 9	.419		18.3	22	SB	3	C		96		DE
MANI	18	2302E	2302U	2309D	N17	W 8	.429		18.4	7D	SN	2	C		70		DE
HOLL	18	2349	2352	2357	N16	W 9	.419		18.3	8	SN	3	C		27		
PALE	19	0052	0055	0140	N 6	E26	.486	15887	21.0	48	1B	3	C		207		DE
MANI	19	0053E	0102	0133	N 7	E25	.479	15887	20.9	40D	1N	3	C		200		F
MANI	19	0053E	0055	0133	N 7	E25	.479	15887	20.9	40D	1B	3	C		180		F
WEND	19	0944	0954	1012	S11	W10	.184	15886	18.7	28	1N		P		300	3.2	EG
HOLL	19	1516	1521	1541	S15	E 2	.142		19.8	25	SN	4	C		38		F
HOLL	19	1516	1531	1541	S15	E 2	.142		19.8	25	SF	4	C		23		F
RAMY	19	1654	1657	1745D	N 7	E15	.351	15887	20.8	51D	1B	3	C		300		UDE
RAMY	19	1803	1805	1822D	S27	W58	.851		15.4	19D	SN	2	C		20		
HOLL	19	1803	1804	1812	S28	W56	.837		15.6	9	SN	3	C		22		F
PALE	19	1804	1808	1816	S28	W59	.861		15.3	12	SN	3	C		18		DE
RAMY	19	1835	1837	1851	S 7	E10	.172		20.5	16	SN	-2	C		30		F
PALE	19	1836	1836	1843	S12	E10	.191		20.5	7	SN	3	C		42		FDE
PALE	19	2105E	2115	2121	S31	E74	.955		25.4	16D	SN	3	C		19		DE
MANI	19	2302E	2302U	2310	S13	E 0	.103		20.0	8D	SN	2	C		20		F
PALE	20	0311E	0319	0330	N 7	E10	.296	15887	20.9	19D	1N	3	C		163		DE
MANI	20	0318E	0318U	0327D	N 8	E 7	.286		20.7	9D	SN	3	C		80		

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE MAR	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.	
KAND	20	1148	1156	1209	S30	E43	.724		23.7	21	SF		P				
HTPR	20	1242E		1243D	N07	E02	.245		20.7	1D	SB		C	1242	180	1.8	E
HTPR	20	1312E		1326D	N09	E02	.279		20.7	14D	SN		C	1315	50	.5	EI
HTPR	20	1313E		1324	N04	E02	.195		20.7	11D	SF		C	1316	30	.3	EI
HOLL	20	2031	2031	2058	S14	W10	.208		20.1	27	SB	3	C		86		F
PALE	20	2036E	2036U	2051	S13	W10	.199		20.1	15D	SN	2	C		44		DE
HOLL	20	2214	2218	2228	N 7	W 2	.245		20.8	14	SB	3	C		50		U F
MANI	21	0720E	0720U	0723D	N 8	W 7	.285		20.8	3D	SN	2	C		50		F
HTPR	21	0724E		0726D	N07	W07	.270		20.8	2D	SF		C	0725	30	.3	E
HTPR	21	1258	1307	1325	N07	W08	.278		20.9	27	1B		C	1307	240	2.4	ELU
HTPR	21	1341	1345	1350	N12	W37	.662		18.8	9	SF		C	1345	20	.2	E
HOLL	21	1548	1603	1615	N26	W63	.936		16.9	27	SN	3	C		0		
MCMA	21	2011E		2015	S17	W22	.402	15886	20.2	4D	SF		P	2011	30	.3	D
MCMA	21	2011E		2055D	N07	W13	.327	15887	20.9	44D	SN		C	2019	80	.8	E
MCMA	21	2057	2118	2155D	N07	W13	.327	15887	20.9	58D	1B		C	2118	200	2.1	FU
MANI	22	0100E	0103	0110D	N 5	E78	.981	15904	27.9	10D	1B	3	C		100		
PALE	22	0324	0326	0343D	N 7	W19	.400	15887	20.7	19D	2B	3	C		530		U
MITK	22	0325	0327	0355	N07	W20	.413	15887	20.6	30	1N		C	0327	440	5.0	FHZ
HTPR	22	0732	0740	0750	S15	W33	.549		19.8	18	SF		C	0740	60	.7	
HTPR	22	0804	0806	0825	N24	W04	.519		22.0	21	SF		C	0806	30	.3	E
HTPR	22	0840	0850	0901	S17	W30	.514		20.1	21	SF		C	0850	20	.2	
HTPR	22	0905	0907	0913	S15	W34	.563		19.8	8	SN		C	0907	50	.6	
HTPR	22	1149	1150	1210	S29	E42	.710		25.6	21	SF		C	1150	40	.7	EK
RAMY	22	1317	1341U	1458D	N 7	W28	.519	15887	20.5	101D	2B	2	C		539		Z U
MCMA	22	1338	1345	1700	N07	W26	.492	15887	20.6	202	1B		C	1345	250	2.9	EFU
HTPR	22	1339	1341	1403	N08	W25	.486	15887	20.7	24	1B		C	1340	240	2.6	U
HOLL	22	1356E	1400	1546	N 7	W24	.465	15887	20.8	110D	1B	3	C		376		U F
HOLL	22	1356E	1527	1546	N 7	W24	.465		20.8	110D	SN	3	C		95		U F
MCMA	22	1434	1435	1439	S30	E40	.695	15899	25.6	5	SF		C	1435	25	.4	DL
HOLL	22	1724	1725	1732	N 7	W26	.492		20.8	8	SB	3	C		21		
MCMA	22	1811	1813	1837	N08	E68	.936	15904	27.9	26	SB		C	1822	30	.9	EKL
MCMA	22	1811	1822	1837	N08	E68	.936	15904	27.9	26	SB		C				
BIGB	22	1812		1837	N06	E70	.946		28.0	25	SB		P	1824	60		
HOLL	22	1813	1820	1844	N 5	E62	.891		27.4	31	SB	3	C		113		DE
HOLL	22	1813	1831	1844	N 5	E62	.891		27.4	31	SF	3	C		44		DE
PALE	22	1819	1820	1830	N 7	E65	.916		27.6	11	SB	3	C		63		DE
MCMA	22	1848	1858	1925	N27	W10	.578	15893	22.0	37	SF		C	1858	90	1.1	E
HOLL	22	1849	1855	1907	N24	W 8	.529		22.2	18	SN	3	C		101		F
MCMA	22	1850	1855	1907	N27	W09	.575	15893	22.1	17	SF		C	1855	60	.8	E
MCMA	22	1852	1903	2000	N07	W28	.519	15887	20.7	68	SN		C	1903	100	1.2	EK
MCMA	22	1852	1931	2000	N07	W28	.519		20.7	68	SN		C				
PALE	22	1858	1901	1911	N 8	W26	.499		20.8	13	SN	3	C		31		F
HOLL	22	1858	1901	1916	N 7	W27	.505		20.8	18	SB	3	C		84		UDE
HOLL	22	1923	1931	1949	N 7	W24	.465		21.0	26	SB	3	C		86		U F
MCMA	22	1945E		2001D	N27	W10	.578	15893	22.1	16D	SF		C	2000	30	.4	E
HOLL	22	1957	1959	2009	N24	W 9	.533		22.2	12	SB	3	C		27		
HOLL	22	2043	2046	2050	N 7	W28	.519		20.8	7	SB	3	C		21		
HOLL	22	2134	2142	2146	N 7	W29	.532		20.7	12	SB	3	C		39		
MITK	23	0516	0518	0530	S15	W44	.693		19.9	14	SN		C	0518			E
BUCA	23	0635		0653	N08	E62	.896	15908	27.9	18	1B		C	0645	139	3.0	CE
HTPR	23	0640	0648	0658	N08	E60	.880	15904	27.8	18	1B		C	0648	160	3.2	E
HTPR	23	0641E		0648	N08	W39	.665		20.4	7D	SF		C	0642	100	1.3	BE
MITK	23	0647E		0701	N08	E63	.903	15908	28.0	14D	1N		C	0647	150	3.5	
KAND	23	0745E		0759	N07	W38	.648		20.5	14D	SN		P		67	.9	
KAND	23	0841	0842	0855	N40	W85	1.000		17.0	14	SN		C				
MCMA	23	1608	1609	1612D	N07	W47	.754	15887	20.1	4D	SN		C	1609	40	.6	E
HOLL	23	1609	1609	1622	N 8	W42	.700		20.5	13	SB	3	C		22		
HOLL	23	1727	1731	1808	N 7	W41	.685		20.7	41	SN	3	C		76		U
HOLL	23	1727	1746	1808	N 7	W41	.685		20.7	41	SB	3	C		90		U
HOLL	23	1728	1734	1741	S31	E22	.525		25.4	13	SB	3	C		95		
PALE	23	1734E	1734U	1745D	S31	E23	.534		25.5	11D	SN	2	C		28		
HOLL	23	1735	1750	1757	N 5	E49	.770		27.4	22	SB	3	C		46		
PALE	23	1745	1745	1820D	N 8	W43	.712		20.5	35D	SN	2	C		38		DE
HOLL	23	1904	1936	2015	N 8	W43	.712	15887	20.6	71	1B	3	C		238		U
HOLL	23	1904	1920	2015	N 8	W43	.712	15887	20.6	71	1B	3	C		268		U
PALE	23	1909	1922	2015D	N 8	W43	.712	15887	20.6	66D	1B	2	C		299		U F
PALE	23	1909	1910	1912D	N 8	W43	.712	15887	20.6	3D	1B	2	C		332		
HOLL	23	1933	1936	1942	S19	W43	.688		20.6	9	SN	3	C		27		
HOLL	23	2044	2047	2105	N 8	W44	.724		20.6	21	SB	3	C		115		FDE

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-POR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE MAR	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	23	2044	2057	2105	N 8	W44	.724		20.6	21	SN	3	C		47		FDE
HOLL	23	2206	2208	2212	S19	W44	.700		20.6	6	SB	3	C		23		
HOLL	23	2223	2229	2242	N 5	E46	.737	15904	27.4	19	1B	3	C		188		DE
PALE	23	2228E	2231U	2238	N 5	E46	.737		27.4	10D	SB	3	C		67		DE
HOLL	23	2316	2328	2340	N 8	W46	.746		20.5	24	SB	3	C		68		U F
PALE	23	2320	2321	2325	N 8	W46	.746		20.5	5	SN	3	C		29		DE
HOLL	24	0037	0039	0047	N 8	W46	.746		20.6	10	SB	3	C		47		FDE
MANI	24	0039E	0039U	0048D	N 8	W45	.735		20.7	9D	SB	2	C		50		F
PALE	24	0039	0039	0047D	N 8	W46	.746		20.6	8D	SN	3	C		47		DE
MANI	24	0112E	0114	0120	S14	W53	.793		20.1	8D	SB	2	C		90		
HTPR	24	0620E	0622	0630	S14	W59	.851		19.8	10D	SF		C	0622	30	.6	
HTPR	24	0721	0722	0755	N08	E49	.778		28.0	34	SB		C	0722	80	1.2	E
MANI	24	0724E	0724U	0728D	N 7	E46	.743		27.8	4D	SN	1	C		80		
HTPR	24	0905	0908	0919	N25	E90	1.001		31.1	14	SF		C	0908	30		
RAMY	24	1316	1318	1331	N 7	E33	.584		27.0	15	SB	3	C		167		
HTPR	24	1319E		1324D	N09	E35	.620		27.2	5D	SN		C	1319	90	1.1	E
RAMY	24	1442	1455	1510	N 8	W54	.828		20.6	28	SB	3	C		87		F
HOLL	24	1442	1509	1528	N 9	W57	.857		20.3	46	SN	3	C		64		U F
HOLL	24	1442	1456	1528	N 9½	W57	.857		20.3	46	SB	3	C		126		U F
HOLL	24	1503	1512	1518	S19	W53	.797		20.7	15	SN	3	C		19		
RAMY	24	1531	1555	1609	S17	W52	.785		20.7	38	SB	3	C		36		
HOLL	24	1555	1558	1606	S19	W54	.807		20.6	11	SN	3	C		38		
HOLL	24	1734	1735	1742	N 5	E37	.627		27.5	8	SN	3	C		36		
HOLL	24	1740	1741	1746	N22	E73	.975		30.2	6	SF	3	C		13		
PALE	24	1748	1748	1753	S14	W64	.892		19.9	5	SN	3	C		13		DE
PALE	24	1824	1824	1849	S14	W64	.892		20.0	25	SN	3	C		14		DE
PALE	24	1859	1915	1919	S14	W65	.900		19.9	20	SN	3	C		37		DE
RAMY	24	1904	1909	1917	S17	W54	.805		20.7	13	SB	3	C		33		
PALE	24	1921	1921	1929	S14	W65	.900		19.9	8	SN	3	C		23		DE
RAMY	24	2027	2027	2033	S25	E60	.866		29.4	6	SF	3	C		21		
HOLL	24	2158	2200	2233	N 8	W60	.880		20.4	35	SB	3	C		51		U F
HOLL	24	2218	2219	2224	N 5	E34	.587		27.5	6	SN	3	C		26		F
HOLL	25	0030	0040	0058D	N 8	W60	.880		20.5	28D	SB	3	C		76		UDE
MANI	25	0040E	0040U	0055	N 7	W61	.886		20.5	15D	SB	2	C		70		F
HOLL	25	1410	1414	1435	S14	W50	.761		21.8	25	SB	3	C		68		F
RAMY	25	1412	1414	1432	S14	W51	.772		21.8	20	SB	3	C		58		
RAMY	25	1430	1432	1435	N 8	W67	.930		20.6	5	SB	3	C		20		
HOLL	25	1548	1548	1554	N 9	W70	.949		20.4	6	SB	3	C		27		
HOLL	25	1633	1650	1657D	N 9	E20	.430		27.2	24D	SB	3	C		87		F H
HOLL	25	1633	1636	1723	N 9	W71	.954		20.4	50	SN	3	C		28		F H
HOLL	25	1633	1650	1723	N 9	W71	.954		20.4	50	SB	3	C		87		F H
HOLL	25	1633	1636	1657D	N 9	E20	.430		27.2	24D	SN	3	C		199		F H
HOLL	25	1749	1751	1759	N 9	W72	.959		20.3	10	SB	3	C		23		DE
HOLL	25	1802	1803	1808	N 5	E23	.436		27.5	6	SB	3	C		96		FDE
HOLL	25	1802	1813	1903	N10	W77	.980	15887	20.0	61	1B	3	C		235		DE H
HOLL	25	1802	1815	1903	N10	W77	.980	15887	20.0	61	1B	3	C		254		DE H
RAMY	25	1819E	1821U	1829	N 7	W66	.922		20.8	10D	SB	3	C		75		
HOLL	25	1842	1843	1846	N 5	E23	.436		27.5	4	SN	3	C		34		F
PALE	25	1934	1935	1937	N 9	W69	.943		20.6	3	SN	3	C		19		F
PALE	25	1947	1949	1955	N 9	W69	.943		20.6	8	SN	3	C		28		F
HOLL	25	1947	1948	1956	N 9	W73	.963		20.3	9	SB	3	C		44		
RAMY	25	1947	1948	1954	N 7	W67	.929		20.8	7	SB	3	C		29		
RAMY	25	1948	1948	1953	N22	E61	.916		30.4	5	SN	3	C		20		
PALE	25	2018	2018	2025D	N 9	W69	.943		20.7	7D	SN	3	C		13		F
RAMY	25	2106	2106	2111D	S23	E45	.721		29.3	5D	SN	2	C		42		
HOLL	25	2118	2123	2124D	S24	E46	.734		29.3	6D	SB	3	C		70		F
PALE	25	2121	2123	2131	S25	E45	.727		29.3	10	SN	3	C		58		F
PALE	25	2241	2243	2247	N 9	W70	.949		20.7	6	SN	3	C		47		DE
PALE	26	0020E	0021	0024D	N 9	W71	.954		20.7	4D	SN	3	C		16		FDE
PALE	26	0123	0138	0150D	N 9	W72	.959	15887	20.7	27D	1N	3	C		225		FDE
PALE	26	0123	0149	0150D	N 9	W72	.959	15887	20.7	27D	1B	3	C		235		FDE
MANI	26	0318E	0319	0326	N 6	W81	.990		20.1	8D	SN	3	C		25		
MANI	26	0603E	0603U	0614D	S36	E25	.603		28.1	11D	SN	3	C		70		U
KANO	26	0646E		0648D	N07	W85	.997		19.9	2D	SN		P				
MANI	26	0750E	0751	0756	N 8	W85	.998		20.0	6D	SB	3	C		70		
RAMY	26	1150	1213	1243	N 5	W78	.981	15887	20.6	53	2B	3	C		0		DE
RAMY	26	1354	1408	1538	N 9	W68	.937	15887	21.5	104	1B	3	C		0		
RAMY	26	1354	1408	1410D	N 5	W79	.984	15887	20.7	16D	1B	3	V		0		
HOLL	26	1403	1504	1543	N 6	W75	.970		21.0	100	SB	3	C		0		DE

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE MAR	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	26	1403	1408	1543	N 6	W75	.970	15887	21.0	100	1B	3	C		0		DE
MCMA	26	1456E		1543D	N08	W81	.991	15887	20.5	47D	1B		P	1456			
HOLL	26	1553	1554	1558	N 7	E11	.303		27.5	5	SN	3	C		36		
RAMY	26	1553	1553	1559	N 7	E11	.303		27.5	6	SN	3	C		38		
HOLL	26	1641	1641	1648	S30	W13	.441		25.7	7	SN	3	C		31		
RAMY	26	1641	1642	1650	S30	W12	.435		25.8	9	SN	3	C		23		
RAMY	26	1653	1655	1703	N 7	E 3	.245		26.9	10	SB	3	C		56		
HOLL	26	1721	1721	1833	S31	W14	.462		25.7	72	SB	3	C		58		
RAMY	26	1805	1809	1829	S30	W14	.448		25.7	24	SN	3	C		29		F
HOLL	26	1805	1806	1814	N 5	E10	.267		27.5	9	SN	3	C		34		
RAMY	26	1828	1829	1834	N 8	W82	.993		20.6	6	SB	3	C		0		
HOLL	26	1828	1829	1844	N 6	W79	.984		20.8	16	SB	3	C		0		DE
PALE	26	1939	1947	1951	N 9	W82	.993		20.7	12	SN	3	C		14		DE
HOLL	26	2002	2009	2023	N 6	W80	.987		20.8	21	SB	3	C		0		
PALE	26	2003	2013	2029	N 9	W83	.995	15887	20.6	26	1B	3	C		93		DE F
HOLL	26	2140	2143	2200	N 7	E13	.325		27.9	20	SB	3	C		35		
PALE	26	2141	2141	2143	N 6	E 7	.252		27.4	2	SN	3	C		32		DE
MITK	26	2355	2400	2422	N07	E11	.303		27.8	27	SB		C	2400			D
MANI	26	2358E	2359	0020	N 6	E10	.280		27.7	22D	SB	3	C		100		
PALE	27	0002E	0002U	0020D	N 7	E12	.313		27.9	18D	SB	3	C		108		F
HTPR	27	0716	0723	0730	S29	W22	.506		25.7	14	SF		C	0723	50	.6	E
HTPR	27	0902		0907D	S29	W23	.516		25.7	5D	SF		C	0905	40	.5	E
HTPR	27	1040	1043	1052	S29	W24	.526		25.6	12	SF		C	1043	30	.3	
HTPR	27	1124	1131	1149	S25	E80	.978	15918	2.5	25	1N		C	1131	250		E
RAMY	27	1125	1126	1200	S25	E71	.939		1.8	35	SB	3	C		34		
RAMY	27	1203	1204	1225	S30	W24	.535		25.7	22	SN	3	C		36		
HTPR	27	1220	1228	1250	N06	W10	.279		26.8	30	SF		C	1228	20	.2	
RAMY	27	1228	1231	1254	N33	E56	.916		31.7	26	SN	3	C		39		
RAMY	27	1409	1410	1413	S21	E54	.809		31.6	4	SN	3	C		26		
RAMY	27	1503	1505	1512	N33	E55	.911		31.8	9	SN	3	C		27		
RAMY	27	1617	1619	1625	N33	E54	.905		31.7	8	SN	3	C		29		
RAMY	27	1916	1918	1926	S26	E72	.945		2.2	10	SN	3	C		25		
RAMY	27	2026E	2033U	2038	N30	E52	.883		31.8	12D	SN	3	C		39		
HOLL	27	2357	0000	0004D	N 7	E11	.303		28.8	7D	SB	3	C		147		U F
MITK	28	0644	0647	0702D	N37	E55	.923	15915	1.4	18D	1N		C	0647	180		E
ISTA	29	0719	0727	0825	S30	E56	.842	15895	2.5	66	3B						K
HTPR	29	0720	0726	0820	S28	E50	.786	15918	2.1	60	1B		C	0726	150	2.3	EU
KAND	29	0722E	0731	0806	S30	E55	.834	15919	2.4	44D	1N		C		228	3.9	
MANI	29	0732	0733	0749D	S25	E52	.797	15918	2.2	17D	1B	3	V		200		Z U
KAND	29	0901	0903	0927	S22	E63	.887		3.1	26	SF		C		73	1.6	
KAND	29	1022	1027	1102	S25	E60	.866		2.9	40	SN		C		62	1.3	
HTPR	29	1105	1106	1116	S22	E56	.829		2.7	11	SF		C	1106	30	.4	E
KAND	29	1207	1213	1226	N09	W37	.644		26.7	19	SN		C		73	1.0	
HTPR	29	1256E		1303	N09	W35	.619		26.9	7D	SN		C	1257	40	.5	E
HOLL	29	1847	1850	1923	N32	E27	.725		31.8	36	SN	3	C		50		
HOLL	29	1953	1956	2007	S25	E46	.738		2.3	14	SB	3	C		19		F
KAND	30	0610	0613	0625	S26	E48	.761		2.9	15	SN		C		94	1.5	
KAND	30	0618	0623	0639	S02	W44	.696		27.0	21	SF		C		31	.5	
KAND	30	0631	0641	0705	S26	E48	.761		2.9	34	SN		C				
KAND	30	0643		0755	N27	E90	1.001		6.0	72	SN		C				
ISTA	30	0710E		0741	N17	E90	1.001	15923	6.0	31D	1N						
KAND	30	0735	0739	0805	N31	E22	.684		1.0	30	SN		C		104	1.5	
MANI	30	0736E	0738	0748	N32	E21	.689		31.9	12D	SB	3	V		30		
ISTA	30	0738E		0801D	N31	E21	.678	15915	31.9	23D	1N						F
ISTA	30	0750E		0807	N26	E03	.542	15921	30.6	17D	1B						E
KAND	30	0752	0753	0803	S26	E48	.761		2.9	11	SN		C				
KAND	30	0754	0756	0806	N27	E05	.559		30.7	12	SN		C		73	.9	
HTPR	30	0758E		0815	N27	E06	.561		30.8	17D	SN		C	0758	70	.8	E
HTPR	30	0840	0844	0910	S20	W40	.656		27.4	30	SF		C	0844	20	.3	E
KAND	30	0900	0902	0906	S28	E37	.656		2.1	6	SF		C		42	.6	
HTPR	30	0902	0904	0911	S26	E35	.623		2.0	9	SN		C	0904	50	.6	
KAND	30	1003	1011	1021	S28	W90	.999		23.7	18	SN		C				
KAND	30	1053	1059	1105	S25	W90	.999		23.7	12	SN		C				
KAND	30	1108	1109	1113D	N09	W50	.791		26.7	5D	SN		C		21	.3	
KAND	30	1234		1250	S34	W85	.991		24.1	16	SF		C				
KAND	30	1333	1340	1350	N27	E85	1.000		5.9	17	SN		C				
HOLL	30	1441	1459	1515	S27	E33	.607		2.1	34	SN	3	C		57		U F
HOLL	30	1441	1446	1515	S27	E33	.607		2.1	34	SB	3	C		64		U F

Hα SOLAR FLARES

MARCH 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-POR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE MAR	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	30	1514	1516	1532	N32	E16	.663		31.8	18	SN	3	C		32		F
HOLL	30	1601	1603	1617	N 6	W44	.716		27.4	16	SB	3	C		116		
HOLL	30	1609	1618	1635	S25	E35	.618		2.3	26	SB	3	C		62		U F
HOLL	30	1738	1739	1746	N26	W 0	.540		30.7	8	SB	3	C		30		U
HOLL	30	1742	1747	1751	S25	E34	.606		2.3	9	SB	3	C		30		F
HOLL	30	1754	1757	1802	S25	E34	.606		2.3	8	SB	3	C		33		
HOLL	30	1800	1801	1806	N28	E77	.990		5.5	6	SF	3	C		0		
HOLL	30	1835	1836	1845	S25	E33	.595		2.2	10	SB	3	C		19		F
HOLL	30	2010	2011	2021	N32	E13	.651		31.8	11	SB	3	C		35		F
HOLL	30	2133	2135	2208	S25	E32	.583		2.3	35	SB	3	C		52		U
HOLL	30	2311	2313	0012	S25	E31	.571	15918	2.3	61	1B	3	C		399		U F
MANI	30	2320E	2320U	2350	S24	E37	.636	15918	2.7	30D	1B	3	C		350		F Z
HOLL	30	2335	2338	2339D	N26	W 2	.541		30.8	4D	SB	3	V		145		F
MANI	30	2337E	2339	2345	N26	W 5	.545		30.6	8D	SB	3	C		120		F
MANI	31	0043	0045	0048D	S24	E37	.636		2.8	5D	SN	3	C		80		F
MANI	31	0554	0558	0630	S25	E27	.525		2.3	36	SN	3	C		50		F
MANI	31	0556	0559	0602	S24	E34	.601		2.8	6	SN	3	V		50		F
ISTA	31	0833		1014	S27	E23	.498		2.1	101	SB						F
ISTA	31	0933		0938	S20	E29	.517		2.6	5	SF						E
ISTA	31	0957		1012	S25	E37	.641		3.2	15	SB						D
RAMY	31	1310	1311	1316	S16	E26	.456		2.5	6	SB	2	C		121		
RAMY	31	1310E	1311	1433	S23	E22	.450	15918	2.2	83D	1B	2	C		246		F
HOLL	31	1335E	1335U	1407	S32	E32	.631		3.0	32D	SN	3	C		90		F
RAMY	31	1523	1524	1545	S23	E22	.450		2.3	22	SB	2	C		65		
RAMY	31	1524	1525	1546	N 8	W54	.827		27.6	22	SB	2	C		87		
HOLL	31	1524	1525	1533	N10	W67	.932		26.6	9	SB	3	C		45		
HOLL	31	1524	1524	1528	S24	E23	.471		2.4	4	SB	3	C		30		
RAMY	31	1525	1528	1555	N26	W11	.564		30.8	30	SB	3	C		71		
RAMY	31	1549	1550	1611	N33	E 4	.640		1.0	22	SB	3	C		60		
HOLL	31	1559	1559	1624	S17	E43	.685		3.9	25	SN	3	C		19		
RAMY	31	1602	1603	1636	N26	W12	.568		30.8	34	SB	3	C		75		
RAMY	31	1656	1656	1703	N26	W12	.568		30.8	7	SN	3	C		57		
RAMY	31	1656	1706	1806	S23	E21	.439		2.3	70	SB	3	C		194		U F
HOLL	31	1700	1708	1743	S25	E21	.458		2.3	43	SB	3	C		171		U U
RAMY	31	1829	1831	1848	S15	E43	.682		4.0	19	SN	3	C		37		
PALE	31	1945	1950	2027	S24	E21	.448		2.4	42	SN	3	C		85		DE
RAMY	31	1950	2000	2037D	S24	E20	.437		2.3	47D	SB	3	C		60		U F
PALE	31	2034	2039	2045	S24	E21	.448		2.4	11	SN	3	C		42		F
BIGB	31	2203	2207	2221	S26	E25	.511		2.8	18	SN		C	2207	100	1.0	
BIGB	31	2304	2308	2324	S15	E43	.682	15920	4.2	20	1N		C	2308	150	2.0	
HOLL	31	2311	2313	0012	S25	E31	.572	15918	3.3	61	1B	3	C		399		U F
PALE	31	2317E	2322U	0013D	S24	E19	.426	15918	2.4	56D	2B	3	C		701		DE
BIGB	31	2318	2321	2321D	S25	E16	.406	15918	2.2	3D	1B		P	2321	450	4.8	
HOLL	31	2318	2321	2325D	S24	E19	.426	15918	2.4	7D	2B	3	V		783		U F
MANI	31	2320E	2322	2332D	S24	E19	.426	15918	2.4	12D	2B	3	V		650		F
HOLL	31	2335	2338	0001	N26	W 2	.540		31.8	26	SB	3	C		145		F

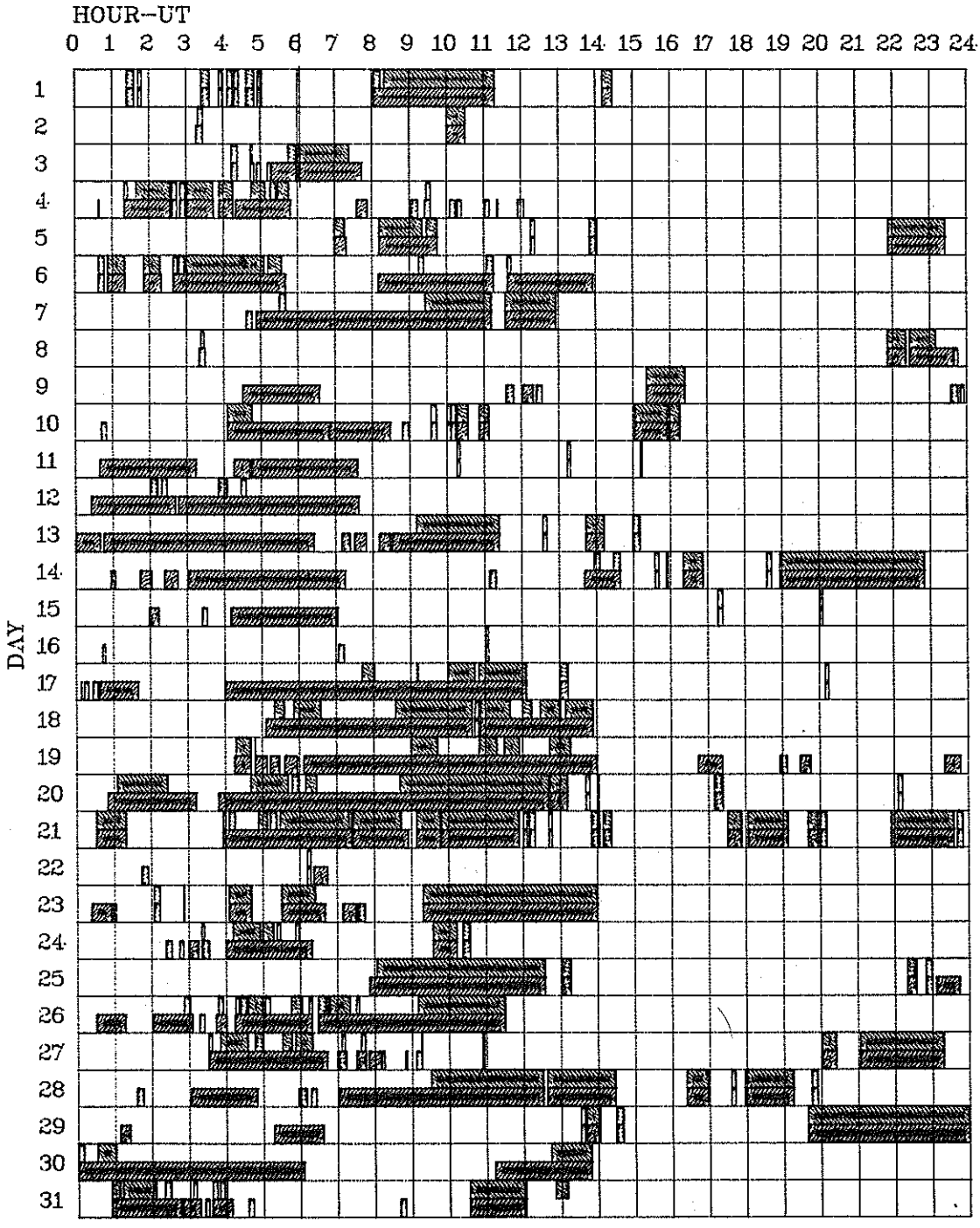
"Remarks":

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

MARCH 1979



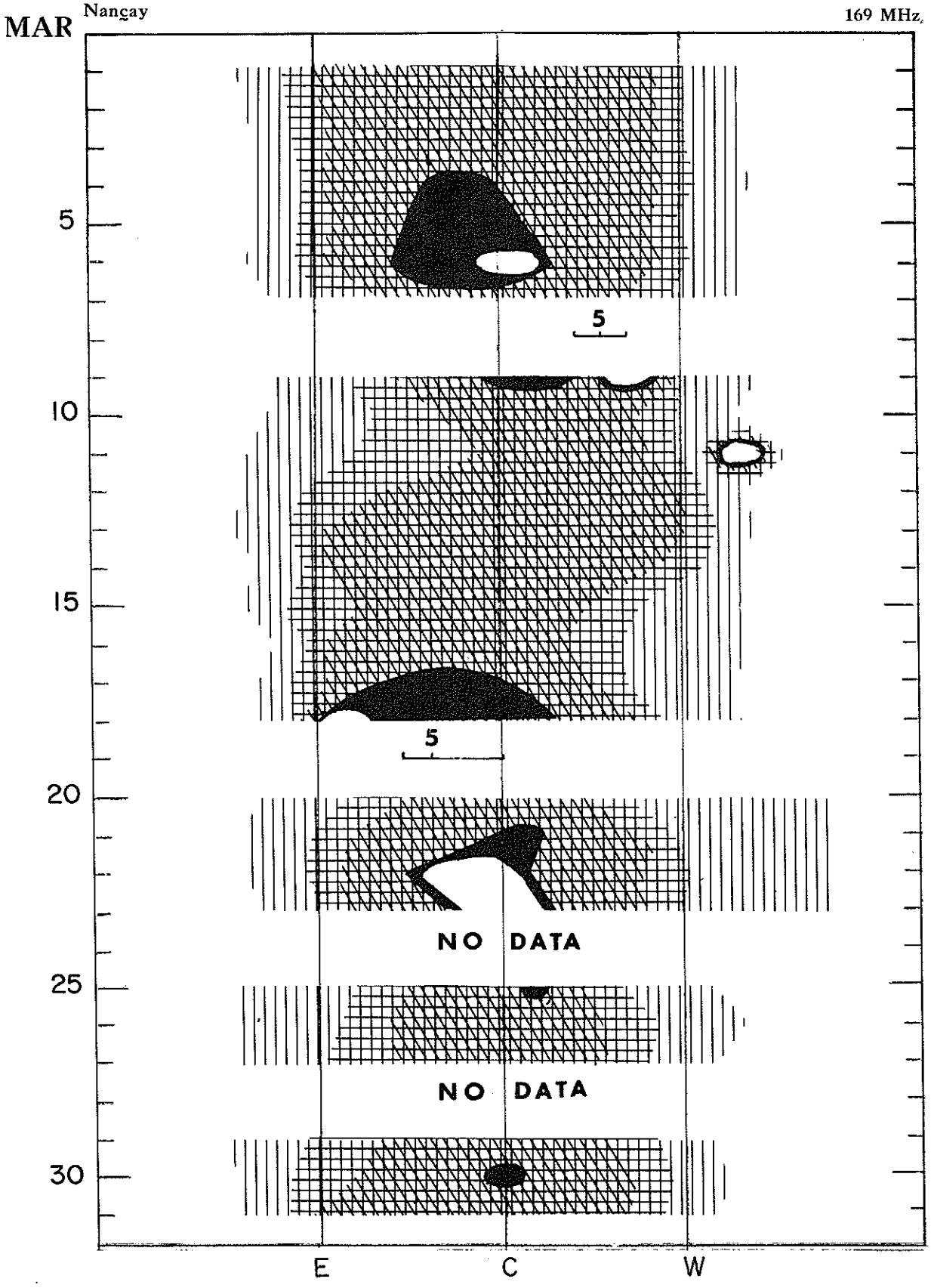
Observatories included in total patrol:

Big Bear	Holloman	Manila	Palehua	Upice
Bucharest	Istanboul	McMath-Hulbert	Ramey	Wendelstein
Haute Provence	Kandilli	Mitaka		

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

MARCH 1979

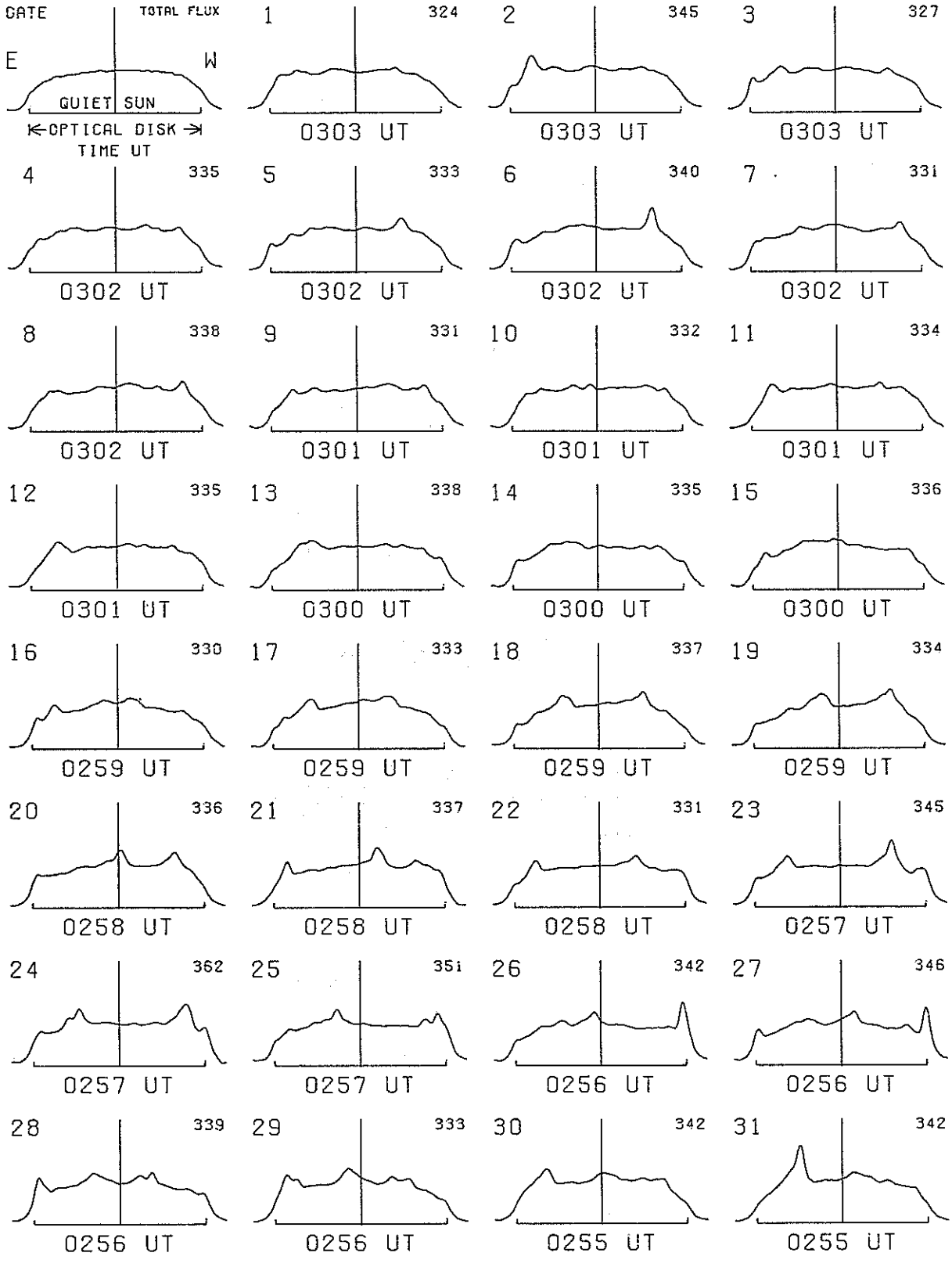


EAST-WEST SOLAR SCANS

MARCH 1979

TOYOKAWA, JAPAN

3 CM
FAN BEAM WITH 1.1 MINUTES OF ARC

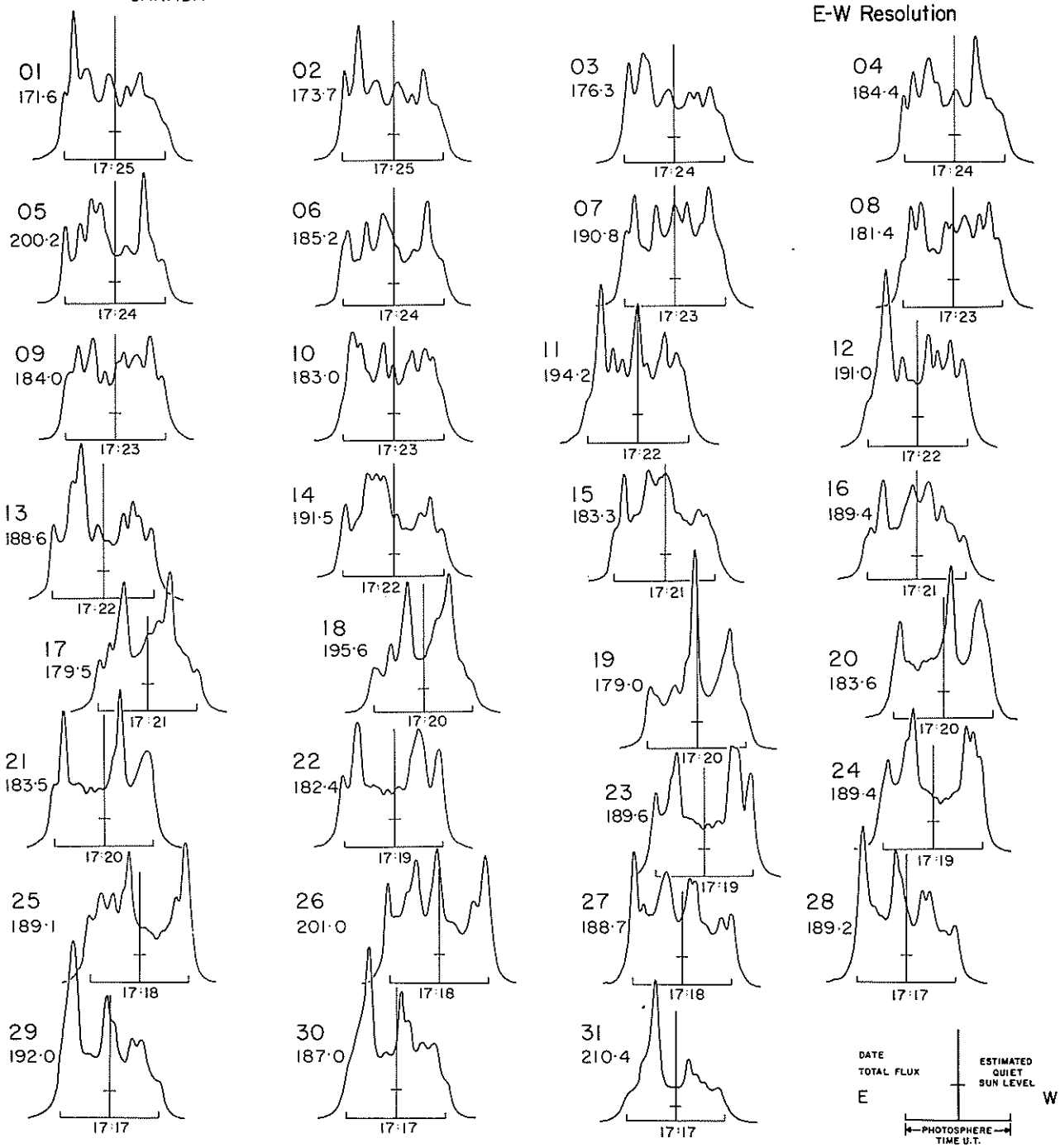


EAST-WEST SOLAR SCANS

MARCH 1979

ALGONQUIN RADIO OBSERVATORY
CANADA

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

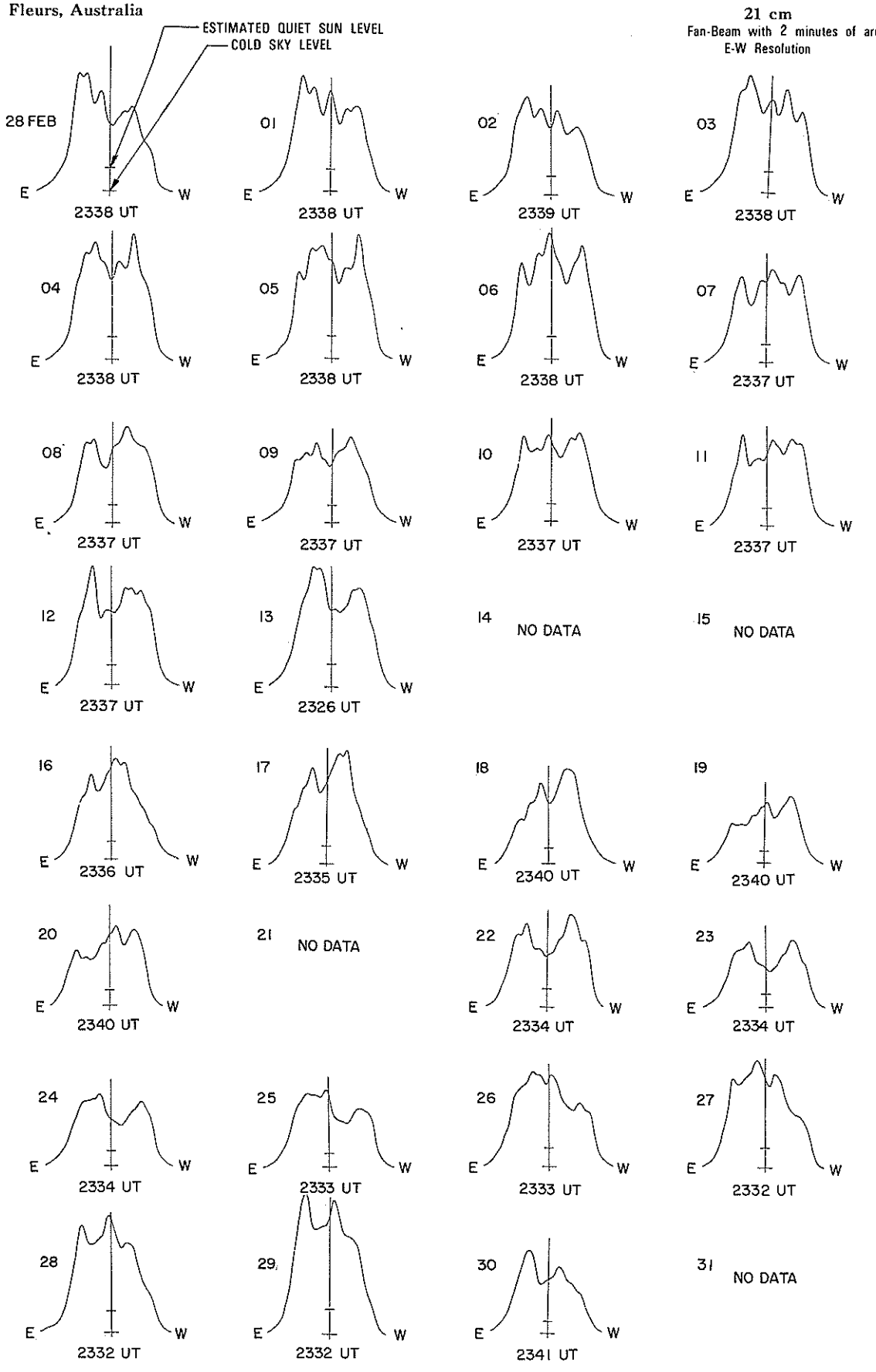


EAST-WEST SOLAR SCANS

MARCH 1979

Fleurs, Australia

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

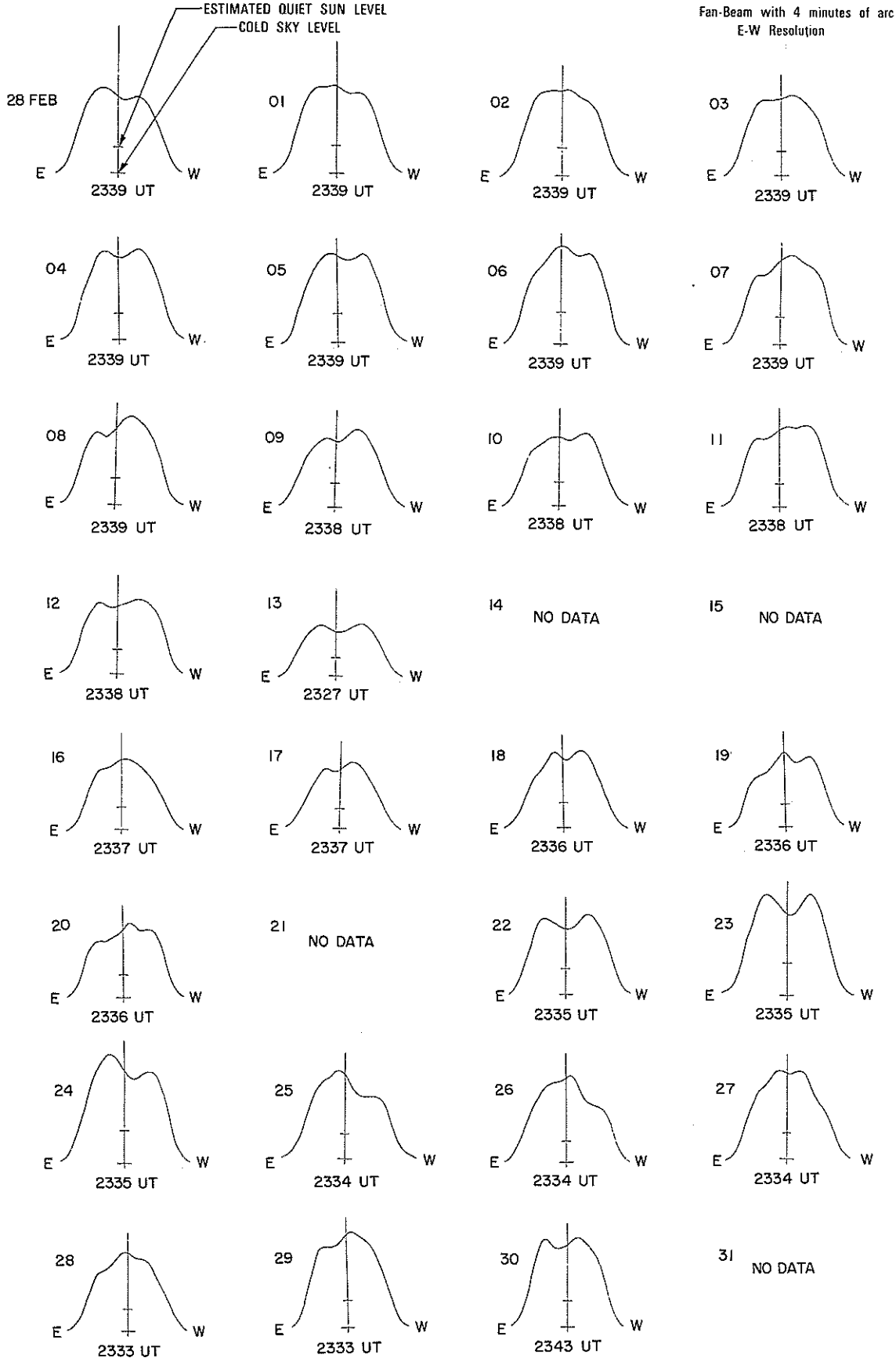


EAST-WEST SOLAR SCANS

MARCH 1979

Fleurs, Australia

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



SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

MARCH 1979

MAR 1979	FREQUENCY	STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	REMARKS
				UT	UT	MINUTES	PEAK	MEAN		
1	8400	BERN	46	0839	1015.1	285	770			8R
	2800	OTTA	21 GRF	1450	1512	45	2.8	1.4		
	2800	OTTA	40 F	1454.5	1456.5	12	8.2			
	2800	OTTA	27 RF	1550		57	2.6	2.4		
	2800	OTTA	24 R	1550	1553	3	2.6	1.3		
	2800	OTTA	24P R	1553		47	2.6			
	2800	OTTA	26 FAL	1640	1647	7	-2.6	-1.3		
	2800	OTTA	240 R	2015	2115	60	6	3		
2	2695	MANI	3 S	0020.4	0020.7	1	12.7	6.3		
	2695	PENT	3 S	0020	0020.3	1	11.6	5.8		
	2695	MANI	3 S	0336.9	0338.2	3.6	27.2	13.6		
	2800	OTTA	1 S	1334	1336	9	3.6	1.2		
	2800	OTTA	8 S	1605.2	1605.4	.3	5.4	2.7		
	2800	OTTA	20 GRF	1730	1745	55	2.4	1.6		
	2800	OTTA	1 S	2015	2016.5	10	1.6	.8		
	2800	OTTA	40 F	2125.8	2126	5	21			
	2695	BOUL	3 S	2126 E	2126.5	1 D	17	6		
	2695	PENT	8 S	2347	2347.2	.5	2.2	1.1		
3	2800	OTTA	1 S	1712	1715.5	8	2.8	1		
	2800	OTTA	21 GRF	1808	1820	95	7.2	3.4		
	2695	SGMR	3 S	1811.4	1823.1	16.6	22.9	6.9		
	8800	SGMR	3 S	1814.9	1822.7	13.1	19	5.7		
	2800	OTTA	3 S	1821	1822.8	5	10.8	5.4		
	2695	PENT	20 GRF	2000	2015.3	60	3	1.3		
	2695	PENT	240 R	2210	2255	45	4	2		
4	2800	OTTA	20 GRF	1510	1535	60	3.6	2		
	2800	OTTA	1 S	2209	2210	3	7.8	3		
	2695	PENT	8 S	2247.9	2248	.5	2.4	1		
5	2800	OTTA	21 GRF	1355	1444	485	26	13		
	8800	SGMR	20 GRF	1409	1432	39	8.6	3.4		SWF
	2695	SGMR	20 GRF	1409	1444	39	16.8	6.7		SWF
	2800	OTTA	20 GRF	1520	1526	40	5.8	2.9		
6	2695	PENT	8 S	0013.3	0013.7	.7	3.4	1.7		
	2800	OTTA	20 GRF	1440	1450	65 D	3.2			
	2800	OTTA	20 GRF	1720	1838	200	8.4	4.8		
	2800	OTTA	21 GRF	2140	2209	95	7	3.5		
	2800	OTTA	2 S/F	2206.3	2207.5	1.8	5.8	4.4		
7	2800	OTTA	240 R	1300	1303	3	3.8	1.9		
	2695	SGMR	1 S	1339.3	1339.4	1.1	1 U	0.3U		
	2800	OTTA	20 GRF	1528	1531	14	3.2	1		
	2800	OTTA	20 GRF	1552	1610	33	2.8	1.4		
	2800	OTTA	20 GRF	1635	1710	125	5.2	2.6		
8	2800	OTTA	21 GRF	1515	1530	40	2.8	1.4		
	2800	OTTA	1 S	1524.5	1525.5	3	1.6	.8		
9	8400	BERN	46	0940.4	1024.8	180	808 D			
	2800	OTTA	21 GRF	1440	1444	30	1.6	.8		
	2800	OTTA	1 S	1442.7	1443	1	3.6	1.8		
	2800	OTTA	240 R	1840	1847	7	3	1.5		
	2800	OTTA	20 GRF	2035	2100	35	1.6	.8		
	2800	OTTA	21 GRF	2135	2157	55	3.4	1.7		
	2800	OTTA	1 S	2146.5	2149	4	2.8	2.1		
10	2800	OTTA	1 S	1351	1352	1.5	2.4	1.2		
	2800	OTTA	20 GRF	1520	1645	125	2	1		
	2800	OTTA	20 GRF	1750	1810	50	2.4	1.4		
	2800	OTTA	1 S	2200	2200.3	2	2.6	1.4		
	2800	OTTA	1 S	2206	2206.2	2	2	1		
11	2695	MANI	1 S	0520.3	0521.7	1.1	5.1	1.7		IG
	2800	OTTA	22 GRF	1552	1603	350	15	7.5		
	2695	BOUL	20 GRF	1559 E	1619	65 D	16	5		
12	2695	PENT	23 GRF	2150	2220	120	3.4			
	2800	OTTA	4 S/F	2211	2212	2	11.2	3.7		
13	8400	BERN	23	1321.6	1327.2	32	21			OPR
	8800	SGMR	3 S	1322.8	1330.7	13.2	22.4	9		SWF
	2695	SGMR	3 S	1323.7	1330.7	12.3	24.8	9.9		SWF
	2800	OTTA	45 C	1324	1330.5	11	16.6	8.3		
	2800	OTTA	8 S	1429.9	1429.9	.1	4			
	2800	OTTA	8 S	1438.3	1438.4	.7	3.2	2.8		
	2800	OTTA	20 GRF	1700	1720	65	3.2	2.1		
	2695	PENT	240 R	2000	2015	15	2.6	1.3		
	2800	OTTA	21 GRF	2120	2127	30	2.2	1.8		
	2800	OTTA	8 S	2145.1	2145.5	.8	2.8	1.4		
	2695	PENT	21 GRF	2205	2212	40	2.6	1.3		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

MARCH 1979

MAR 1979	FREQUENCY	STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY $10^{-22}Wm^{-2}Hz^{-1}$		INT	REMARKS
				UT	UT	MINUTES	PEAK	MEAN		
	2800	OTTA	1 S	2212.5	2213.1	1	3.4	1.7		
14	2800	OTTA	21 GRF	1332	1338	31	4.2	2.1		
	2800	OTTA	1 S	1334.5	1336	3	5	2.5		
	2800	OTTA	8 S	1748.1	1748.1	.3	4.2			
	2800	OTTA	20 GRF	2110	2148	70	2.2	1.4		
15	2800	OTTA	20 GRF	1310	1330	35	3	1.5		
	2800	OTTA	20 GRF	1430	1445	80 D	3			
16	2695	PENT	4 S/F	0027.8	0028.5	1.2	23	10		
	2695	MANI	4 S/F	0027.8	0028.6	2.2	21.7	7.2		I
	2695	BCUL	3 S	0028 E	0029	2.5D	23	8		
	2695	SGMR	20 GRF	1420.3	1425.6	34.7	21.6	8.6		SWF
	2800	OTTA	21 GRF	1420	1445	275	12.4	6		
	8400	BERN	20	1422.3	1426.8	40	18			OPR
	8800	SGMR	20 GRF	1423.7	1431.7	21.3	25.2	10.1		SWF
	2800	OTTA	4 S/F	1424	1424.6	4	15.8	5.2		
	2800	OTTA	20 GRF	2000	2025	80	5	2.5		
17	2800	OTTA	20 GRF	1500	1535	30	3.8	2.5		
	2800	OTTA	20 GRF	1730	1806	70	3.8	1.5		
	2695	PENT	20 GRF	2150	2210	70	3.2	1.6		
18	2800	OTTA	4 S/F	1418.5	1424	13	20.4	10.2		
	2695	SGMR	3 S	1418.8	1423.9	12.2	29.9	12		SWF
	2800	OTTA	21 GRF	1418	1445	210 D	12			
	8800	SGMR	3 S	1419.5	1424.4	12.5	24.1	9.6		SWF
	2800	OTTA	23 GRF	1755	1805	80	4.4	2.8		
	2800	OTTA	2 S/F	1756	1757.7	3	5.6	2.4		
	2800	OTTA	26 FAL	2120	2140	20	-4.4	-2.2		
19	2800	OTTA	20 GRF	1230	1250	40	3.8	2.2		
	2800	OTTA	240 R	1430	1447	17	2.4	1.2		
	8400	BERN	46	1654	1656.8	16 D	228			18R
	2695	BCUL	45 C	1654	1658	10	235	79 U		
	2800	OTTA	46F C	1654	1657	14	220	73		
	2695	BOUL	4 SF	1659	1700	2 U	227	76 U		
	2800	OTTA	30 PBI	1708	1708	220	15.8			
	2800	OTTA	21 GRF	1834	1955	125	5	2.5		
	2800	OTTA	1 S	1835.9	1836	1	7	3.5		
	2800	OTTA	21 GRF	2100	2105	70	3.2	2.7		
	2800	OTTA	1 S	2109.4	2110.7	2.5	4.4	2.2		
	2695	PENT	26 FAL	2330	2405	35	-5.6	-2.8		
20	2800	OTTA	24 R	1225	1230	5	4	2		
	2800	OTTA	27A RF	1225		285	4	3.7		
	2800	OTTA	24P R	1230		250	4			
	2800	OTTA	23 GRF	1231	1237	65	5.4	2.7		
	2695	SGMR	20 GRF	1233.6	1235.2	26.4	11.6	5.8		
	8800	SGMR	20 GRF	1234.2	1255.6	25.8	15.1	7.5		
	2800	OTTA	1 S	1239.8	1240.4	1.5	5.4	2.7		
	2800	OTTA	26 FAL	1640	1710	30	-4	-2		
	2800	OTTA	1 S	1932	1932.8	1	1.8			
	2800	OTTA	1 S	2030.1	2030.5	1.5	2.4	1.4		
	2800	OTTA	240AR	2030	2031.8	1.8	2.4			
	2695	PENT	4 S/F	2308.5	2310	7	49	13		
	8800	MANI	4 S/F	2308.5	2310.2	3.4	99.2	33.1		
	2695	MANI	4 S/F	2308.5	2310.2	5.2	47.7	15.9		
21	8800	MANI	4 S/F	0244.3	0245.3	5.9	135.1	46		
	2695	MANI	4 S/F	0244.5	0245.3	8.6	133.4	44		
	8400	BERN	2	0714	0717.4	6	37			7R
	2800	OTTA	21 GRF	1248	1302	170	14.8			
	8400	BERN	3	1259	1307.4	34	76			14R
	2695	SGMR	3 S	1300.5	1307.8	12.9	44.9	13.5		
	8800	SGMR	3 S	1300.5	1307.2	18.5	70	21		
	2800	OTTA	4 S/F	1304.5	1307.5	10	32	12		
	2800	OTTA	21 GRF	2040	2120	250	15.8	7.9		
	2695	PENT	20 GRF	2242	2248	78	5.4	2.5		
	2695	BOUL	4 SF	2310 E	2311	3.5D	51	17		
22	2695	PENT	4 S/F	0059.5	0100.2	3	35	12		
	8800	MANI	4 S/F	0059.5	0101.2	5.6	76.6	25.6		
	2695	MANI	4 S/F	0059.7	0101.2	6.8	29.3	9.7		
	2695	MANI	4 S/F	0323.3	0327.4	7.5	64.9	21.6		
	8800	MANI	4 S/F	0324.8	0327.4	4	120.8	40.3		
	8400	BERN	23	1335.3	1340.6	46	67			15R
	2695	SGMR	3 S	1336.5	1340.8	13.8	122	36.6		SWF
	2800	OTTA	4 S/F	1336	1340.5	15	104	30		
	8800	SGMR	45 C	1338.3	1343.2		76.5			SWF
	8800	SGMR	45 C	1338.3	1340.3	13.1	91.6	30		SWF
	2695	BOUL	4 SF	1339.5E	1341.5	6 D	133	44		
	2800	CTTA	29 PBI	1351	1351	150	13.4	10.8		
	2800	OTTA	240 R	1705	1750	45	3.6	1.8		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS
MARCH 1979

MAR 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
	8800	SGMR	3 S	1818	1819.3	4	305	91.4		SWF
	2695	SGMR	3 S	1818	1819.8	6	64	19.2		SWF
	2800	OTTA	4 S/F	1818.5	1819.1	5	92.4	28		
	2695	BCUL	45 C	1819.5E	1820.5	3 D	73	24		
	2800	OTTA	20 GRF	1835	2000	195	7.6	5		
	2695	MANI	4 S/F	2337.1	2340.3	5.4	13.4	4.5		
	2695	PENT	3 S	2339.5	2340.3	2.5	10.6	3.6		
	2695	BCUL	3 S	2341 E	2341.5	1 D	13	4		
23	8400	BERN	46	0640	0647.3	17	324			9R
	2695	MANI	4 S/F	0645.3	0647.5	7.3	202.1	67.4		
	8800	MANI	4 S/F	0645.3	0647.4	7.2	382.1	127.4		
	2800	OTTA	20 GRF	1740	1746	15	2.2	1.1		
	2800	OTTA	40 F	1900	1907	28	8			
	2800	OTTA	21 GRF	1935	2100	265	8.8	4.4		
	2800	OTTA	4 S/F	2044	2046.5	8	32.4	10.8		
	2695	BCUL	4 SF	2045 E	2048	5 D	30	10		
	2695	MANI	4 S/F	2225.9	2227.4	4.1	66.8	22.1		
	2695	PENT	4 S/F	2225	2227	7	72	18		
	8800	MANI	4 S/F	2226.3	2227.2	2.7	99.9	33.5		
	2695	BCUL	45 C	2226.5E	2228	3 D	64	21		
24	8400	BERN	4	0719.9	0721.1	8	266			4R
	2695	MANI	4 S/F	0720.2	0721.2	4.8	119.7	39.9		
	8800	MANI	4 S/F	0720.2	0721.2	4.8	318.6	106.2		
	8800	SGMR	1 S	1315.7	1316.6	7.3	5.8	1.7		
	2695	SGMR	3 S	1316.7	1317.3	1.5	55.5	16.7		
	2800	OTTA	21 GRF	1410	1450	230	11.4			
	8400	BERN	46	1440	1442.7	33	69			0
	8800	SGMR	45 C	1441.7	1442.5	10.3	125	38		5,SWF
	8800	SGMR	45 C	1441.7	1446.7		92			5,SWF
	2800	OTTA	2 S/F	1441	1446.8	9	9	4.9		
	2695	BOUL	20 GRF	1443 E	1448	15.5D	11	4		
	2800	OTTA	1 S	1721	1722	2	9.8	4.9		
	2695	PENT	2 S/F	2156	2159	6	5	2.5		
25	8800	MANI	4 S/F	0039.5	0040.9	8.8	252.8	84.3		
	2695	MANI	3 S	0040	0041.1	8.3	30.1	10		
	2695	PENT	45 C	0040	0041	8	32.6	17.6		
	2695	PENT	29 PBI	0048	0048	40 D	14			
	8400	BERN	3	1023.1	1024.4	8	27			0
	2800	OTTA	1 S	1632	1633.4	3	8.2	2.8		
	8800	SGMR	47 GB	1800.6	1808.8	15.2	776	233		SWF
	2800	OTTA	4 S/F	1802.2	1809	13.8	325	63		
	2800	OTTA	21 GRF	1802	1907	180	17.4	9.2		
	2695	SGMR	3 S	1803.3	1809.6	15.5	356	107		SWF
	2695	BCUL	45 C	1803.5E	1810	11.5D	362	121		
	2800	OTTA	29 PBI	1816	1816	14	9.8	3.2		
26	2695	MANI	3 S	0135.1	0136.7	4.2	42.4	14.1		
	8800	MANI	3 S	0135.9	0136.5	1.6	36.5	12.1		
	8400	BERN	3	0747.8	0748.4	4	27			OPR
	8800	SGMR	47 GB	1147.1	1151.8	29	247	219		SWF
	8800	SGMR	47 GB	1147.1	1211		729			SWF
	8400	BERN	46	1149.2	1152	50	163			4R
	8400	BERN	46	1149.2	1210.8	50	375			5R
	2695	SGMR	45 C	1150.2	1152.5	27	49	149		SWF
	2695	SGMR	45 C	1150.2	1211.5		496			SWF
	2800	OTTA	20 GRF	1405	1455	100	10.8	6		
	8400	BERN	20	1414	1427	86	33			OPR
	2800	OTTA	26 FAL	1645	1705	20	-2.8	-1.4		
	2800	OTTA	20 GRF	1715	1800	95	5	2.6		
	2695	PENT	26 FAL	1842	1908	16	-2.4	-1.2		
	2800	OTTA	21 GRF	2005	2040	55	3.6	1.8		
	2695	PENT	2 S/F	2013	2013.5	3	6	3		
	2800	OTTA	8 S	2109.8	2110	.5	2.8	1.4		
	2800	OTTA	1 S	2139.5	2141	3	4.4	2.4		
	2695	MANI	4 S/F	2357	2359.6	5.5	40.7	9		
	2695	PENT	45 C	2357.5	2400	5.3	40	11.2		
	2695	BOUL	45 C	2358 E	0000.5	4 D	36	12		
	8800	MANI	4 S/F	2359.3	2359.6	.8	55.3	18.4		
27	8800	MANI	4 S/F	0600.9	0607.6	10.5	266.2	156.6		
	2695	MANI	4 S/F	0601	0606.5	10.7	72.1	40.1		
	8400	BERN	4	0601 E	0607.4	14 D	85 D			
	2695	SGMR	3 S	1120	1123	15	58.8	17.6		3S
	8400	BERN	23	1120.6	1134.8	76	27			0
	8800	SGMR	3 S	1120.8	1122.4	14.5	20.8	6.2		3S
	2800	OTTA	240 R	1805	1930	85	3.6	1.8		
	2800	OTTA	20 GRF	2105	2155	100	2.6	1.3		
28	2800	OTTA	20 GRF	1240	1325	230	6.2	3.3		
	2800	OTTA	20 GRF	1720	1850	195	3.6	1.8		
	2695	PENT	20 GRF	2215	2255	135	3.4	1.7		
29	8400	BERN	20	0717	0735.7	85	33			0

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS
MARCH 1979

MAR 1979	FREQUENCY	STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY $10^{-22}Wm^{-2}\ Hz^{-1}$		INT	REMARKS
				UT	UT	MINUTES	PEAK	MEAN		
	2800	OTTA	20 GRF	1230	1252	70	2.6	1.3		
	2800	OTTA	1 S	1848	1849	3	3.6	1.6		
	2800	OTTA	20 GRF	1950	2000	15	1.8	.9		
	2800	OTTA	20 GRF	2015	2022	25	3.6	1.8		
	2800	OTTA	20 GRF	2117	2122	20	1.8			
	2695	PENT	20 GRF	2300	2312	95	9.4	4.5		
30	2695	PENT	1 S	0038.5	0039.1	2	9.4	5.7		
	2695	MANI	4 S/F	0409	0410	2.7	12	4.1		
	8400	BERN	3	0734.7	0736.2	6	35			
	2800	OTTA	20 GRF	2100	2105	30	3.6	1.8		
	2695	PENT	3 S	2306	2313.7	14	73	36		
	2695	MANI	S/F	2307.4						
	2695	BOUL	4 SF	2309 E	2314.5	12 D	65	22		
	2695	PENT	29 PBI	2320	2320	110 D	21			
31	8400	BERN	3	0606.8	0608.3	14	22			
	8400	BERN	1	0835.5	0836	3	10			
	8400	BERN	3	0932.4	0937.7	10	11			
	8400	BERN	23	1100.4	1131.8	50	26			
	8400	BERN	1	1209.7	1210.1	1.5	12			
	2800	OTTA	21 GRF	1235	1256	90	9.4	6.8		
	8400	BERN	3	1305	1307.7	9	44			
	8800	SGMR	3 S	1306.8	1307.8	2.8	46.4	13.9		
	2695	SGMR	3 S	1307.7	1308.3	1.9	50.4	15.1		
	2800	OTTA	4 S/F	1307	1308	2	30	7.5		
	2695	BOUL	4 SF	1309 E	1309.5	1.5D	65	22 U		
	2800	OTTA	23 GRF	1505	1706	250	11.4	5.5		
	2800	OTTA	1 S	1513	1514	2	4	2		
	8400	BERN	23	1553.6	1555.1	6	10			
	2695	SGMR	20 GRF	1658.9	1715.1	35.1	3.5	1.7		
	8800	SGMR	45 C	1700	1737		15.6			
	8800	SGMR	45 C	1700	1715.5	53.1	12.3	7.8		
	2800	OTTA	20 GRF	1943	2013	110	8.6	4.3		
	2800	OTTA	3 S	2206	2207	2	37.6	9.4		
	2695	BOUL	4 SF	2207 E	2207.5	1 D	40	13		
	2800	OTTA	29 PBI	2208	2208	4	3.4	1.7		
	2695	PENT	21 GRF	2315	2421	100	8.6	4.3		
	2695	MANI	4 S/F	2318	2320.2U	1 D	158.4U	50 U		
	8800	MANI	4 S/F	2318	2320.2U	1 D	236.8U	70 U		
	2695	PENT	46F C	2318	2319.5	9	140	35		
	2695	BOUL	45 C	2319 E	2320	3.5D	184	61		

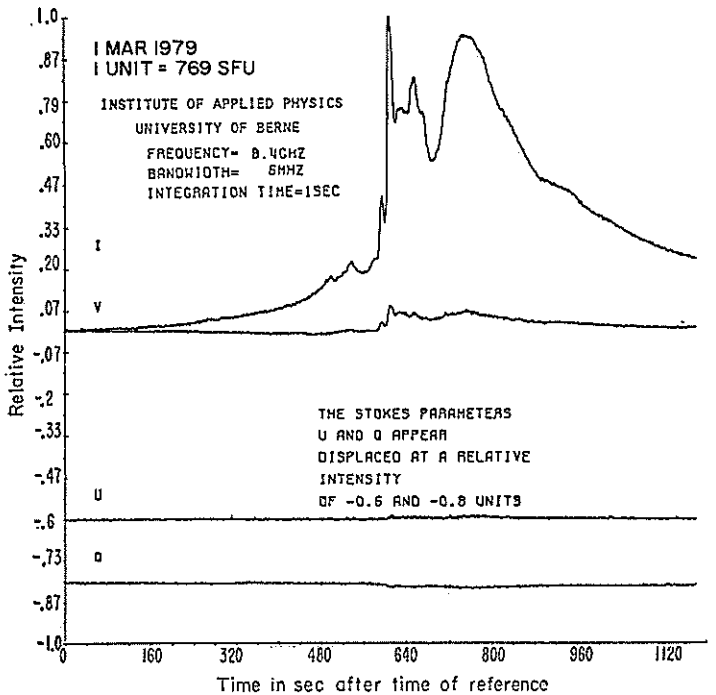
Observatories:

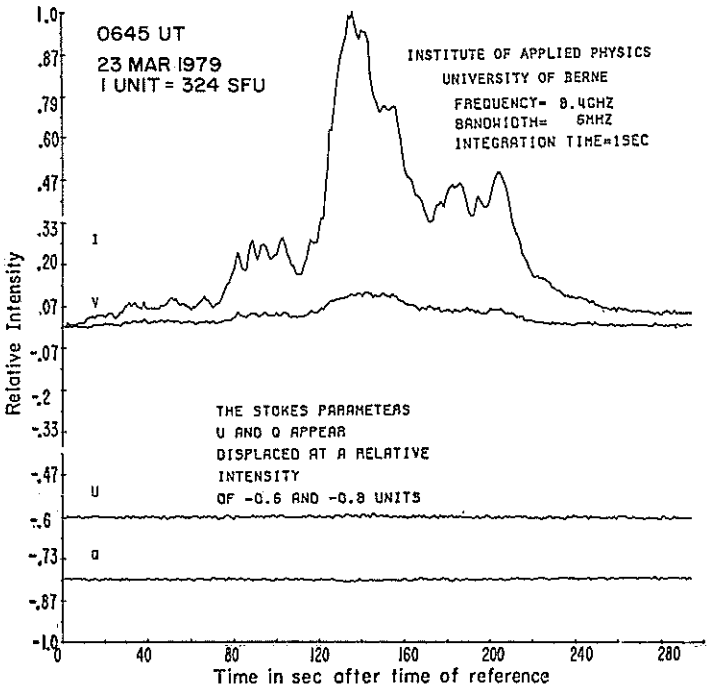
BERN = Berne BOUL = Boulder MANI = Manila OTTA = Ottawa ARO PENT = Penticton SGMR = Sagamore Hill

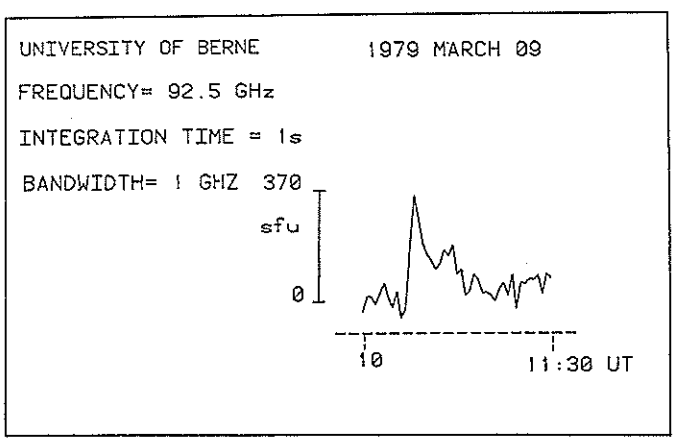
Explanation of Type Code:

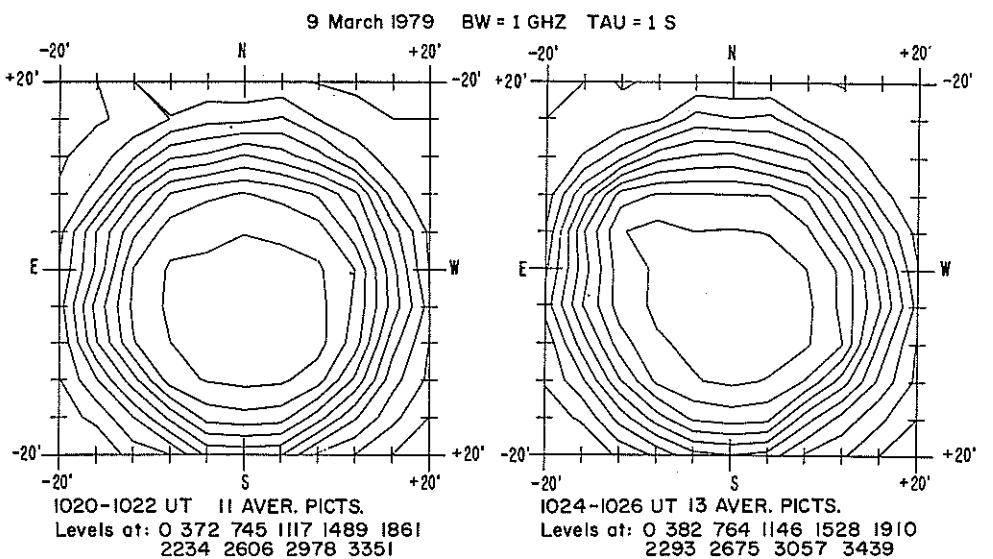
1 Simple 1
2 Simple 1F
3 Simple 2
4 Simple 2F
5 Simple
6 Minor
7 Minor +
8 Spike
20 Simple 3
21 Simple 3A
22 Simple 3F
23 Simple 3AF
24 Rise
25 Rise A
26 Fall
27 Rise and Fall
28 Precursor
29 Post Burst Increase
30 Post Burst Increase A
31 Post Burst Decrease
32 Absorption
40 Fluctuation
41 Group of 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









PIONEER XII

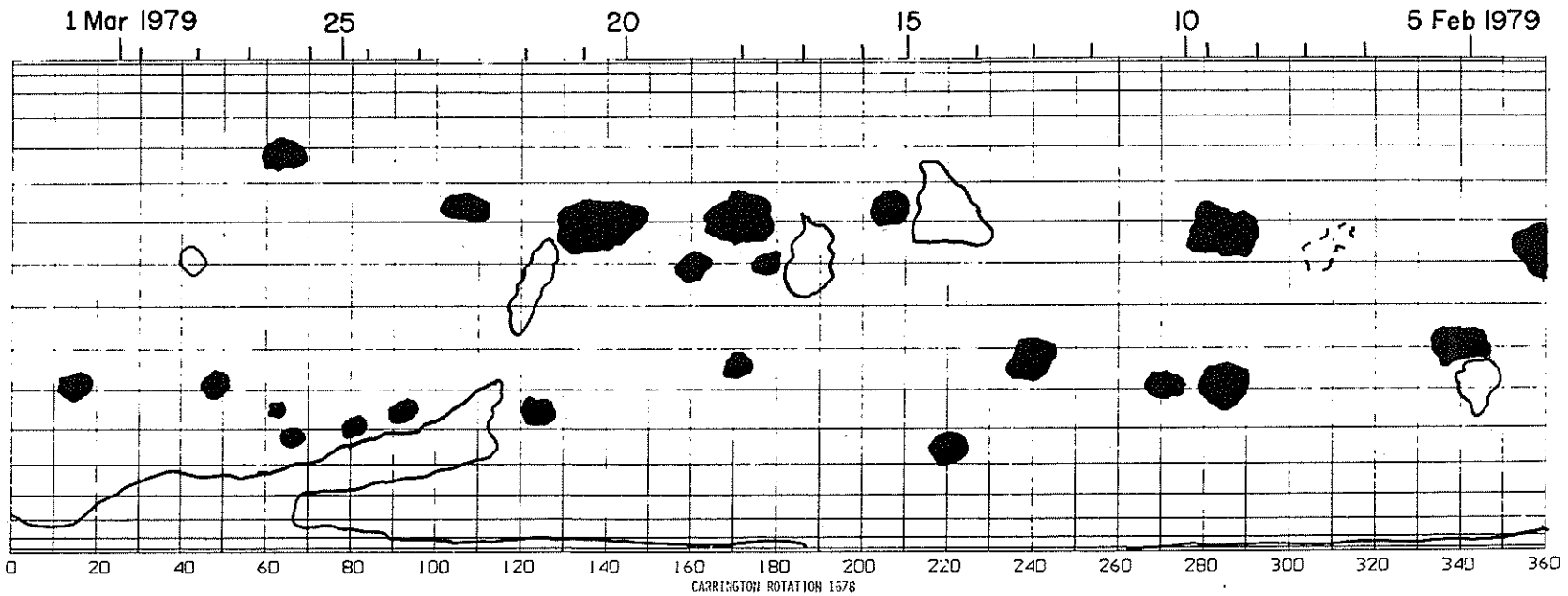
MARCH 1979

DATE Mar '79	TIME (UT)	ESV (°)	U_{H^+} (Km/sec)	N_{H^+} (H^+/CC)	T_{H^+} ($\times 10^6$°K)
1	1231	068.	416.	22.	0.285
2	0903		365.	19.5	.146
3	0801		412.	9.6	.103
4	0709		382.	10.	.081
5	1157		325.	15.8	.027
6	1253		315.	31.9	.037
7	1133		333.	41.4	- - - -
8	1301		334.	29.8	.075
9	1319		345.	21.1	.05
10	1215		301.	40.	.084
11	1239		306.	71.5	.019
12	0800		299.	18.7	.033
13	1115		381.	77.5	.056
14	1156		556.	6.6	.167
15	1201		405.	13.1	.109
16	1300	078.	394.	19.6	.067
17	1238		379.	20.9	- - - -
18	1244		299.	33.9	.035
19	1239		326.	120.1	.038
20	0122		390.	35.2	.267
21	1156		467.	7.7	.172
22	1239		418.	17.8	.122
23	0514		587.	9.	.318
24	1030		554.	8.7	.241
25	1326		456.	9.6	.252
26	0920		385.	16.8	.16
27	0605		369.	17.4	.035
28	1337		316.	37.5	.108
29	1502		275.	37.2	.032
30	1330		279.	51.7	.080
31	0842	086.	274.	44.2	.063

HELIUM 10830Å SYNOPTIC MAPS

CARRINGTON ROTATION 1678

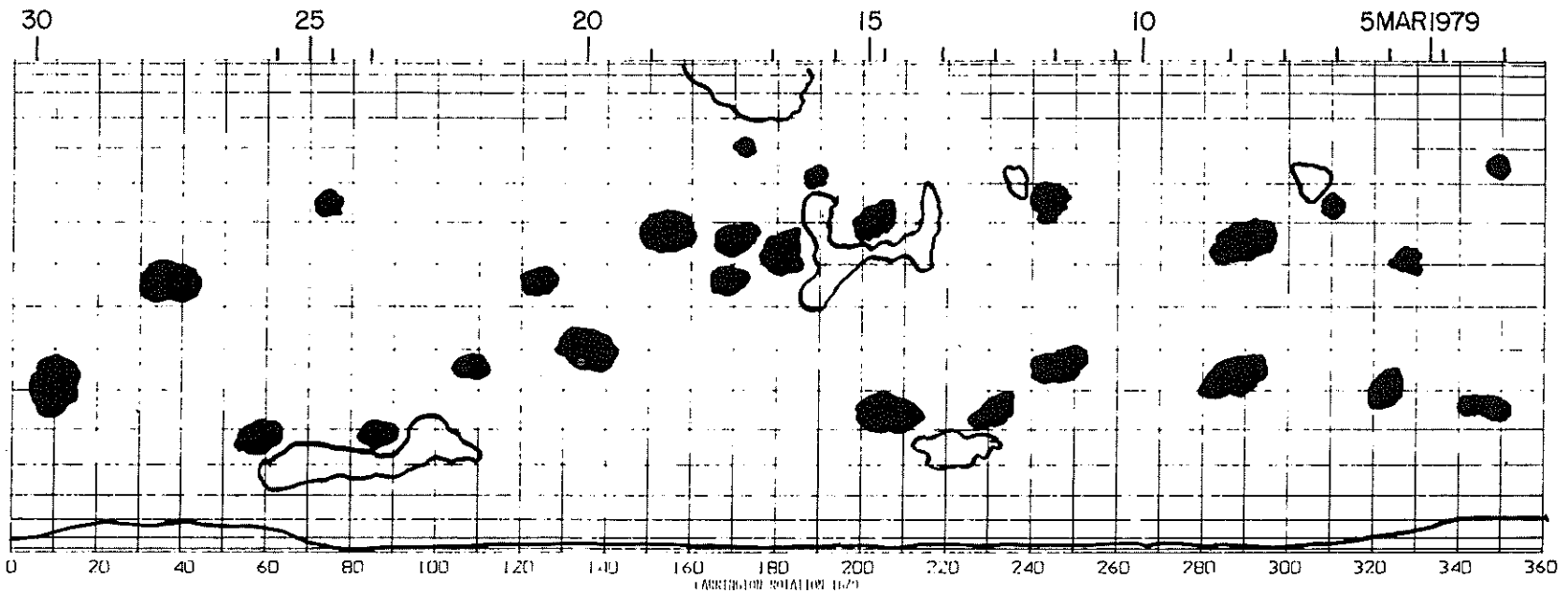
KITT PEAK NATIONAL OBSERVATORY



HELIUM 10830Å SYNOPTIC MAPS

CARRINGTON ROTATION **1679**

KITT PEAK NATIONAL OBSERVATORY



CORONAL HOLES

Helium D3 Chromosphere at Solar Limb

MARCH 1979

Big Bear Solar Observatory

Only one D_3 limb observation was made during the month of March, 1979 with only one hole seen as follows:

Position angles of coronal hole boundaries (in degrees)

Date	South	
8 March	-167	163

SOLAR WIND

Interplanetary Scintillations

MARCH 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
1	302	11	576	65			384	8					519	26		
2			321	7			342	21								
3	386	23											313	30		
4	449	17														
5	237	31														
6	354	22	312	77									306	29		
7													453	57		
8	405	5	330	29			359	53					499	36		
9	316	13	333	81												
10	424	10	330	38			451	32								
11	379	6	427	40			248	10					479	16		
13	385	8	338	17	277	8	286	67					448	15		
14	325	14	332	34			331	6								
15	340	32			286	30	308	7								
16	365	24	310	*	616	*	264	*								
17	367	50	434	24			382	4								
18	387	35	438	94												
19	543	31					393	38								
20	419	5	381	32	370	12	406	59								
21			442	10	319	25	248	5								
22	438	6	349	13	218	41										
23	398	55	382	47			433	26								
24	367	5	409	11			323	18								
25	277	6	368	6			325	20								
26	335	9	491	22	370	13	442	5								
27	358	4														
28	333	9	728	8			286	54								
29	323	5	393	56			478	33								
30							406	43								
31			374	68			369	62								

MARCH	5 UT	5 LAT	5 DIST	5 DLON	15 UT	15 LAT	15 DIST	15 DLON	25 UT	25 LAT	25 DIST	25 DLON
3C48	23.	9.	0.80	-33.	22.	15.	0.70	-40.	22.	23.	0.59	-46.
3C144	3.	-7.	1.09	-16.	2.	-7.	1.04	-17.	1.	-7.	0.99	-17.
3C147	2.	0.	1.09	-14.	1.	0.	1.05	-15.	1.	0.	1.01	-16.
3C161	4.	-14.	1.14	-13.	3.	-14.	1.10	-14.	3.	-15.	1.05	-15.
3C237	8.	-8.	1.29	-3.	7.	-8.	1.28	-6.	6.	-7.	1.26	-8.
3C273	10.	-6.	1.28	5.	9.	-5.	1.30	2.	8.	-5.	1.30	0.
3C298	11.	-2.	1.22	9.	11.	-2.	1.25	7.	10.	-2.	1.27	5.
3C459	20.	48.	0.18	-66.	19.	62.	0.15	56.	19.	29.	0.27	68.

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

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
1974	DEC 15					–	–	–	AT	–	AT				AT		AT			TA		TA		TA			*	
1975	1978 JAN 11		*	*					*		*	*							*		TA	–	AT				–	–
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	–	TA	–		A*	–		*			–	AT	–	–	
1988	DEC 28		–	–	–	–			–	AT	*			TA	TA	T*	AT	–		–	TA			TA	–			–	TA		–
1989	1979 JAN 24		–			*		TA				TA	TA							*					–			AT		
1990	FEB 20		TA		TA	–	TA			–																			

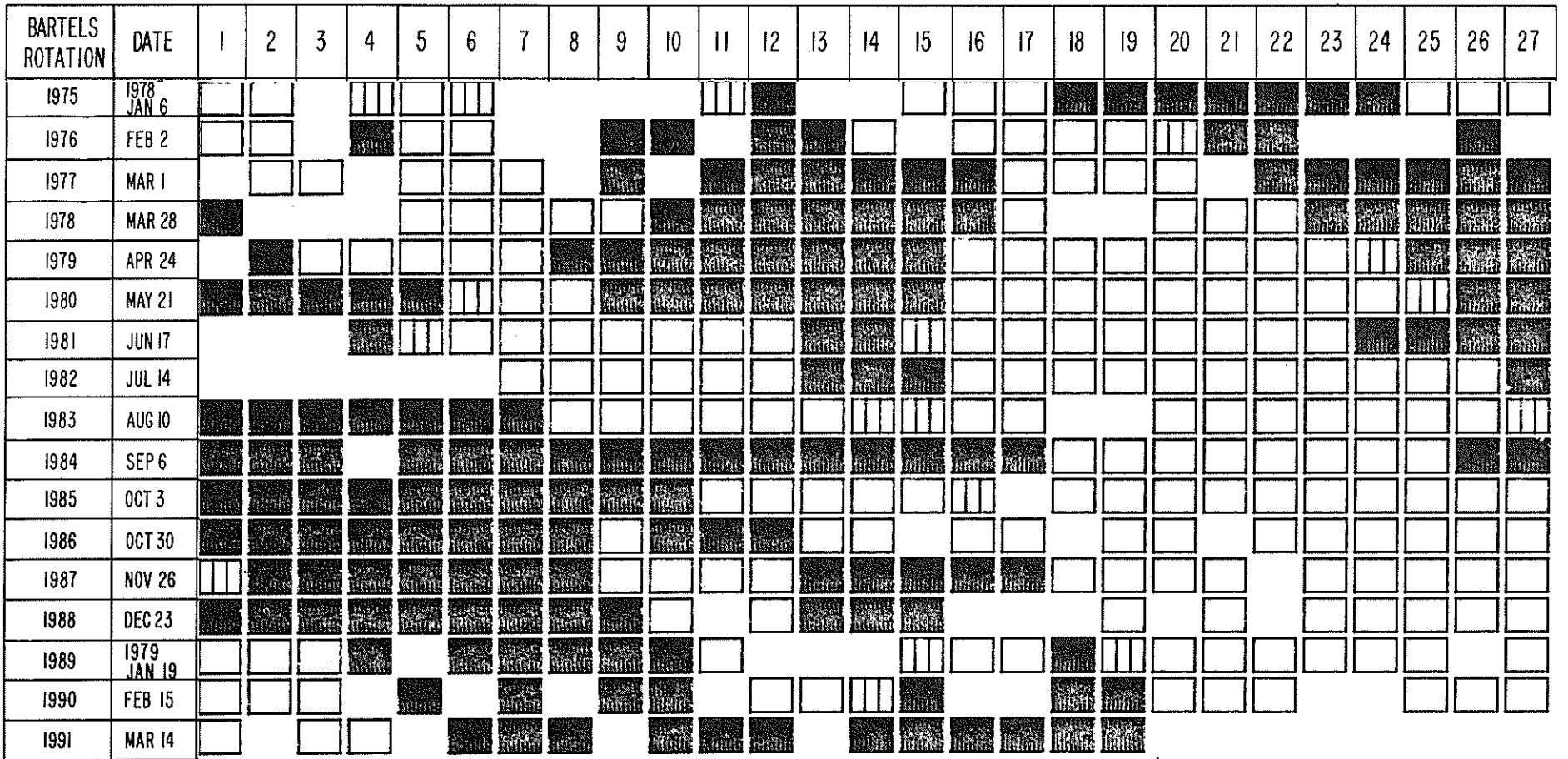
= definitely towards the sun = definitely away from the sun

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.

NOTE: Thule data not available at time of publication. March 1979 Thule and Vostok data will appear in the next issue.

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		
	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH
DAY												
01	52	-12	-28	1	40	26	-11	-18	-72	11	.	-36
02	46	-34	-22	13	39	32	-20	-21	-39	.	-1	.
03	43	-27	-12	15	42	15	-14	-36	-7	15	30	.
04	13	-27	-5	18	39	18	-8	-28	17	-6	27	-24
05	4	-29	6	24	31	2	-3	-19	19	-25	-13	-6
06	-15	-27	5	43	29	-24	-7	-12	9	-26	1	46
07	-32	-23	21	42	30	-12	-20	3	5	.	50	64
08	-53	-12	33	36	17	-7	-29	-6	-15	.	88	56
09	-52	3	41	16	-11	.	-37	-17	-26	.	59	.
10	-41	24	40	-11	-10	-35	-29	-3	-37	27	39	.
11	-32	41	23	-17	-15	-34	-32	5	-19	.	40	21
12	-4	50	12	-12	-22	-42	-14	9	-16	27	30	63
13	22	47	8	-38	-33	-36	2	.	13	.	.	100
14	.	30	0	.	-43	-27	7	16	31	45	78	106
15	.	16	-24	.	-31	-26	8	20	43	21	62	.
16	58	5	-38	.	-9	-36	9	.	65	36	27	24
17	37	1	.	.	5	-48	5	34	.	48	6	45
18	11	-29	.	.	13	-44	-1	42	59	59	.	.
19	-9	-49	.	.	7	-50	.	.	30	37	-52	-56
20	-30	-75	-16	23	7	-33	4	55	18	18	.	-81
21	-49	-79	0	21	5	-21	3	35	32	9	-86	-81
22	-50	-59	24	16	4	-14	19	40	27	-15	.	.
23	-62	-37	51	6	-1	5	20	28	-3	.	-80	-51
24	.	-21	52	3	1	31	25	27	-20	-54	-52	-41
25	-13	-9	48	3	5	43	23	18	-26	-64	.	-28
26	10	1	30	-7	18	42	24	2	-32	-70	19	.
27	13	27	12	-13	.	40	29	-17	-63	-64	10	-29
28	6	14	3	-6	.	29	30	-48	-51	-27	0	-36
29	13	-10	-5	14	41	15	17	-61	-36	12		-12
30	18	-20	-10	27	41	2	-3	-65	-22	.		-26
31		-27		33	35		-16		-21	.		-28

DOT SYMBOL ENTRY INDICATES NO DATA AVAILABLE FOR THE DAY.

BOULDER GEOMAGNETIC SUBSTORM LOG

MARCH 1979

DATE	ONSET TIME	DIRECTION	COMMENTS
01			0730-2110 UT, field unsettled with numerous minor SS.
	1040	West	
02	0455	East	Weak SS
	0550	East	
	1130	West	Strong SS
	1450		
	1540		
03	0700	≈ center	1st of double onset
	0740	≈ center	2nd of double onset
	1300	West	
04	0850	≈ center	Strong SS from Ft. Simpson eastward
	0925	West	Very strong SS Alaska, prior SS continues at other stations.
	1300	West	Slow onset
	1715		Slow onset
	2235		
05			Field unsettled 00-12 UT. No distinct SS except as follows.
	1010	West	SS in evidence Arctic Village to Talkeetna in Alaska. Strong response at College only. SS in evidence mid and low latitude stations from Boulder westward.
06	0235	East	Weak SS.
	0305	East	Weak SS.
	0630	East	
	0815		Positive impulse H-component mid and low latitude stations. Mag storm conditions through 1900 UT.
	0900	West	Strong SS
	0930	West	
	1050		Strong response at Lynn Lake and Back
	1255		Strong SS
	1640		
	1715		
07			Unsettled field through 0900 UT.
08	1145	West	
09	0145	East	Weak SS
	0805		Positive impulse H-component mid and low latitude stations.
	0920	West	1st of double onset
	0940	West	2nd of double onset
	1305	West	1st of double onset
	1325	West	2nd of double onset
10			Field at minor mag storm level much of the day. Strong ring current established after 2130 UT and persisting through 11/1800 UT.
11	0145	East	Weak SS
	0555	East	
	0955	West	Slow onset, beginning of numerous small injections making a continuous event through 1350 UT.
	1035	West	
	1130	West	
12	0345		Weak SS, localized Eskimo Pt. - Back
	0445		Weak SS, localized Eskimo Pt. - Back
	0535		Weak SS, localized Eskimo Pt. - Back
	0735	West	1st of double onset
	0755	West	2nd of double onset
13	0410	East	Weak SS
	0905	West	Weak SS
14			Quiet day
15	0555		Small positive impulse H-component all mid and low latitude stations. Field unsettled after 1300 UT with no distinct SS activity.
16	0940	West	Weak SS
	1050	West	Weak SS
17	0230		Small positive impulse H-component all mid and low latitude stations.
	0530	East	Weak SS
	0635	≈ center	
	0730	≈ center	Strong SS
	0955	West	
	1055	West	
	2230		
18	0525	East	
	0940	West	
	1400		Slow onset
19	0610	East	Field disturbed 0525-1815 UT. Numerous small SS.
	1325		
	1455		Slow onset
20	0600	≈ center	Weak SS
	0745	West	
21	0615	East	Weak SS .
22	0827		Positive impulse H-component all mid and low latitude stations.
	1100	West	Moderate SS
	1430		Strong SS. Several injections maintain total SS through 1720 UT.
23			Field intermittently unsettled, no distinct SS activity.
24	0630		Slow onset. Repeating injections maintain total SS through 1000 UT. Field unsettled after 1800 UT with no distinct SS activity.
25			Field unsettled all day.
	0510	East	
	0825	West	Slow onset
	1035	West	Slow onset
	1300	West	Slow onset
	2150	East	Boulder in partial ring current sector
26	0225	East	
	0800	West	
	1155	West	1st of multiple onset
	1230	West	2nd of multiple onset
	1330	West	3rd of multiple onset
	1420	West	4th of multiple onset
	1615		Slow onset
	1655		
27	0605	East	
	1225		Weak SS
	1505		Strong SS with numerous minor injections. Final recovery from SS at 1830 UT.
28	0215		Positive impulse H-component all mid and low latitude stations
	0820		Positive impulse H-component all mid and low latitude stations. Onset of mag storm conditions lasting through 1845 UT.
	1035		Strong SS
	1320		
	1500		
	1600		
29			Mid and low latitude stations very active from Tucson - Boulder eastward until 0530 UT, when entire network went into mag storm conditions which lasted through 2130 UT. SS activity nearly continuous during mag storm.
30	0045	East	Very abrupt current reversal at Back-Lynn Lake - Island Lake; intense localized SS.
	0350	East	
	1250	West	Slow onset, weak SS
31			Field became active after 1235 UT. No distinct network SS activity.

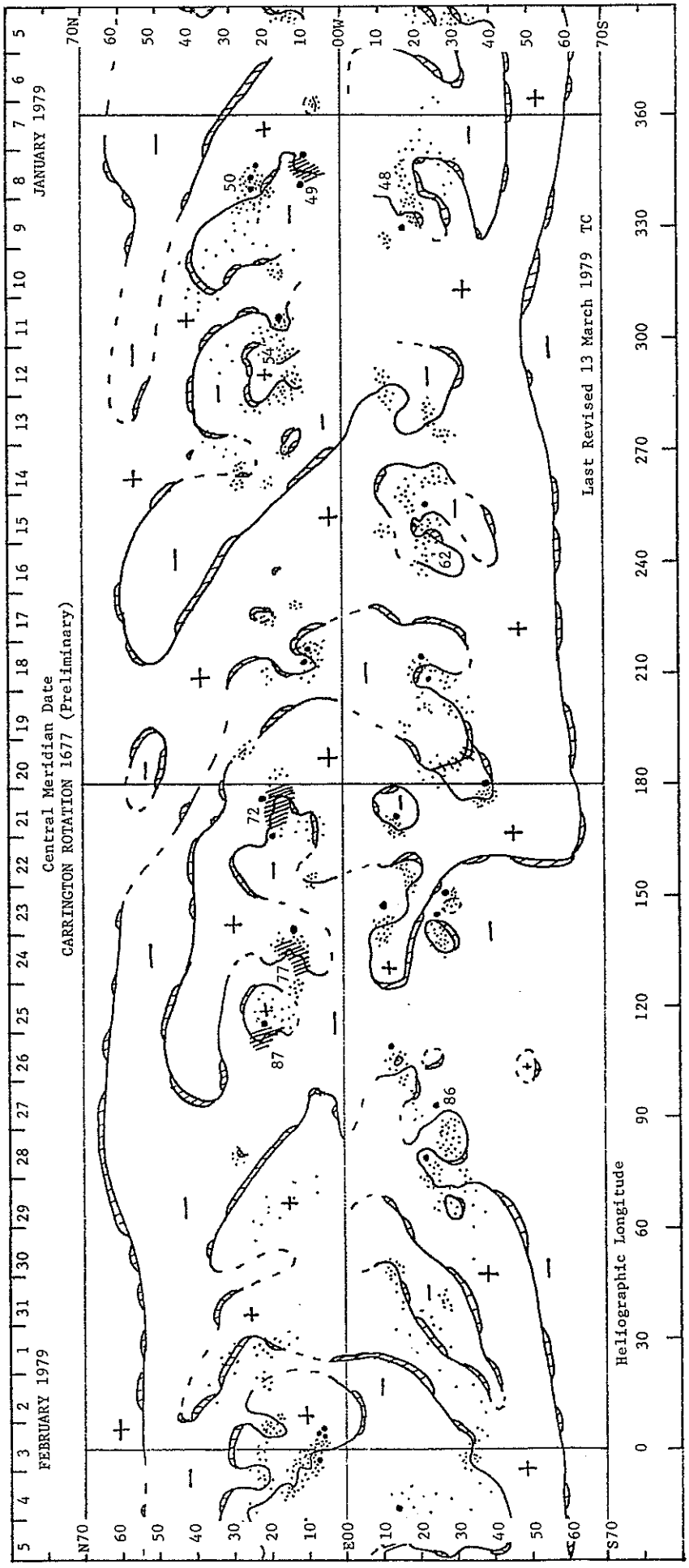
SGD 416 Part I (Prompt)

FEBRUARY 1979 DATA

Contents

Hα SYNOPTIC CHART

CARRINGTON ROTATION 1677 (PRELIMINARY)

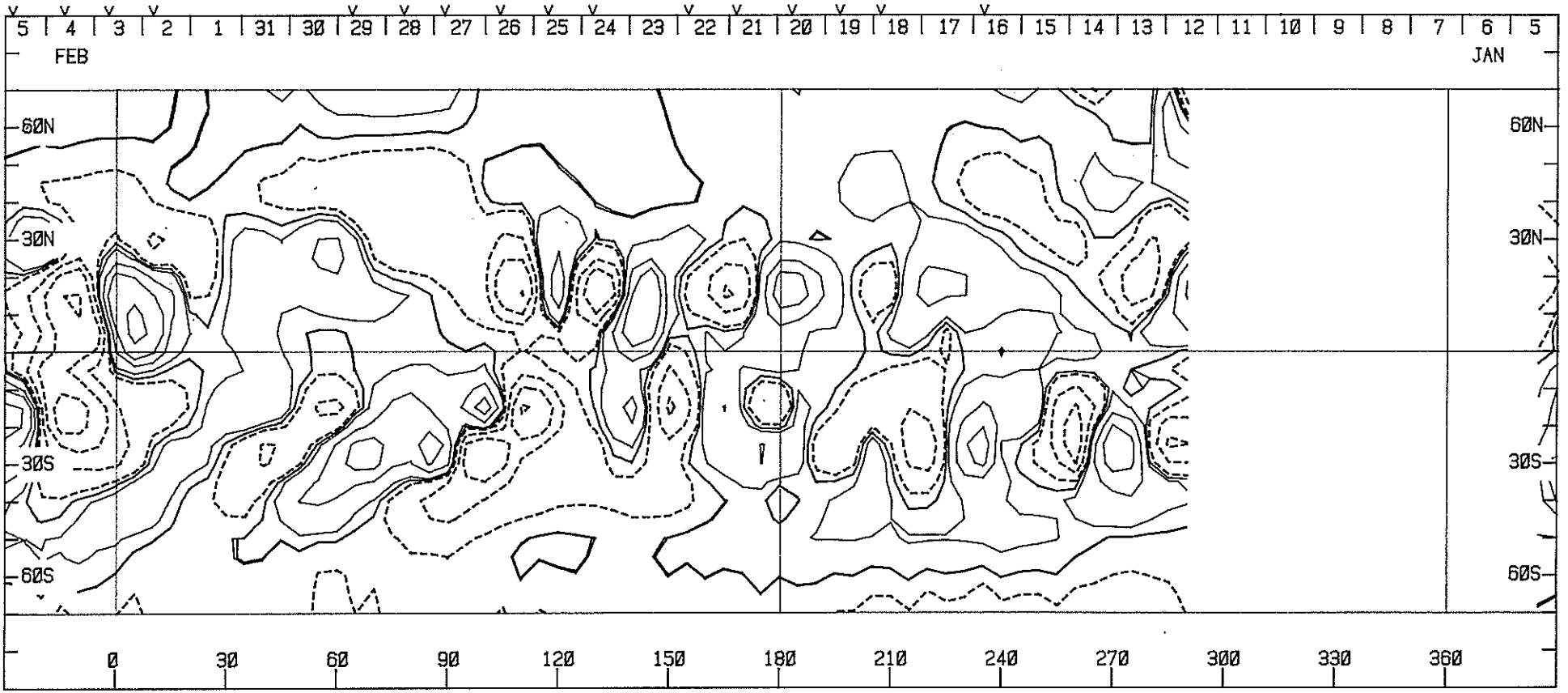


SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION 1677

Stanford Solar Observatory

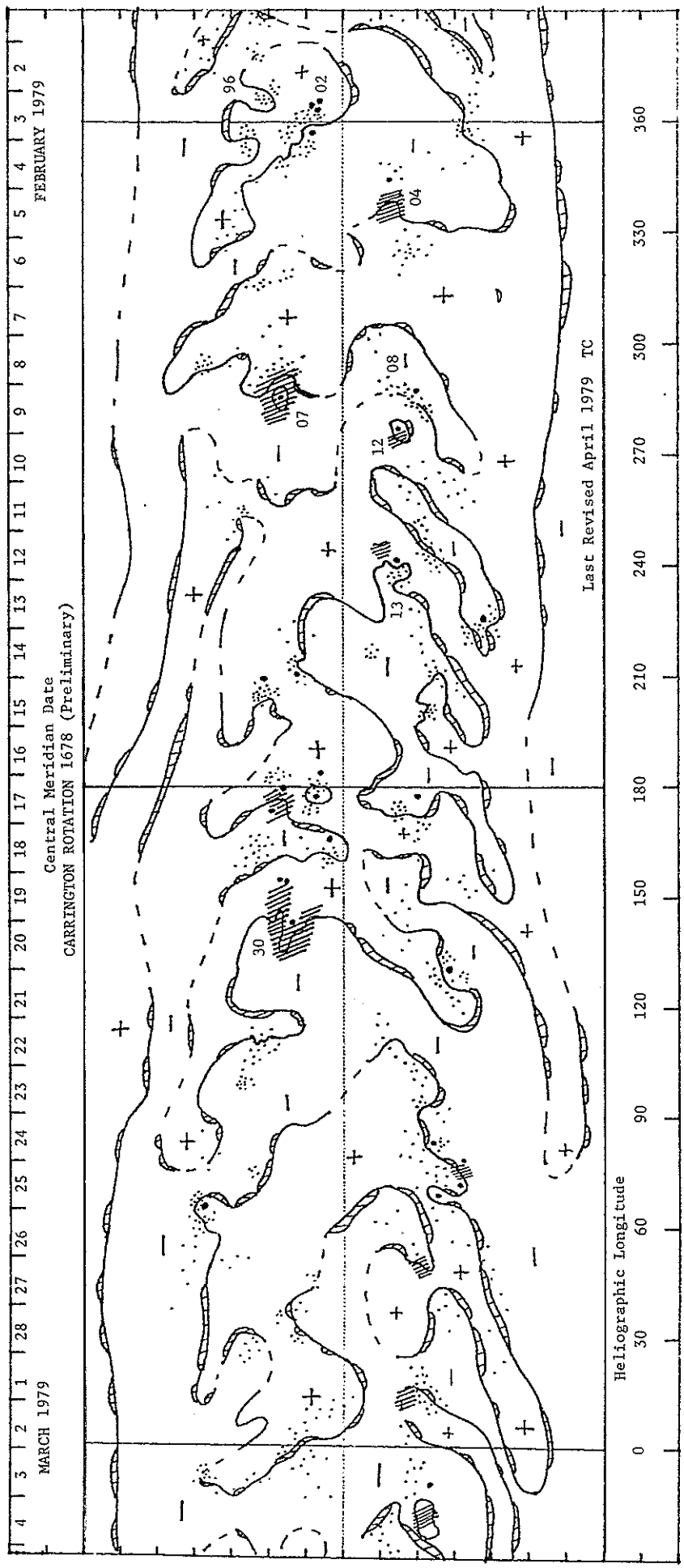
0,±100,200,500... μT



47
Feb 79

Hα SYNOPTIC CHART

CARRINGTON ROTATION 1678 (PRELIMINARY)

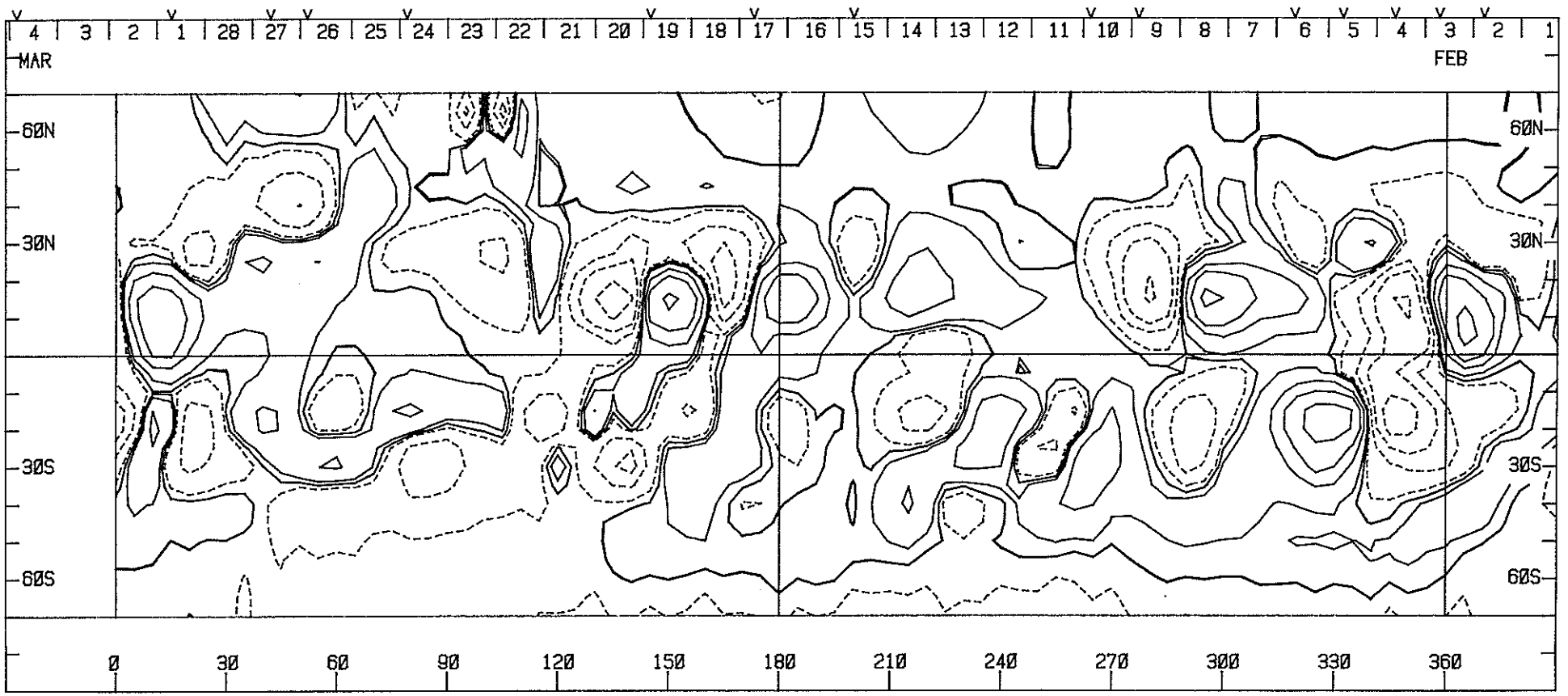


SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION 1678

Stanford Solar Observatory

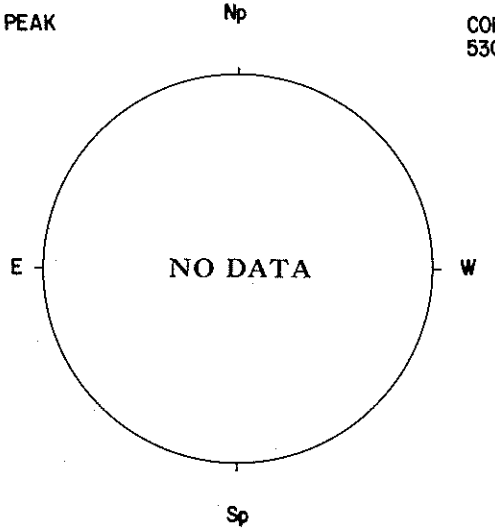
0,±100,200,500... μT

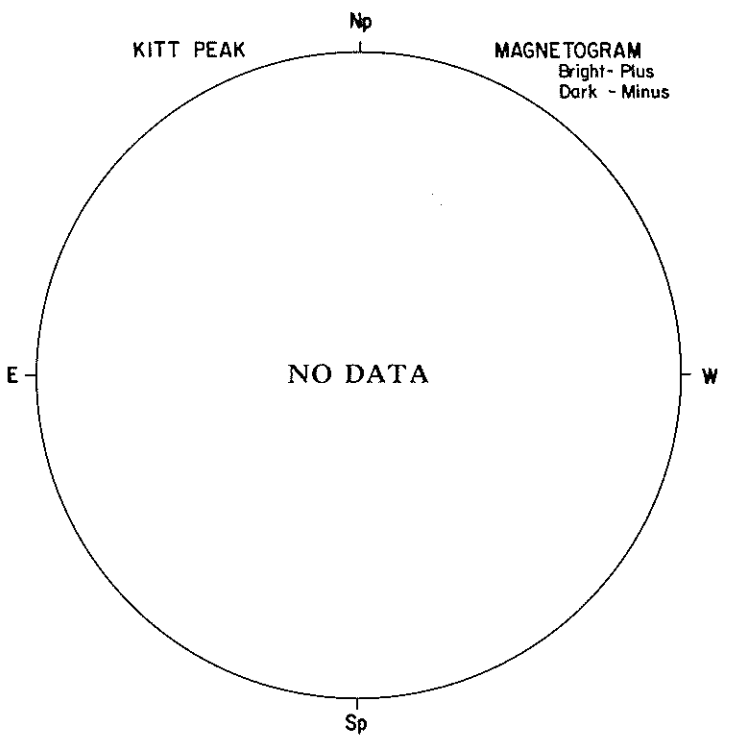


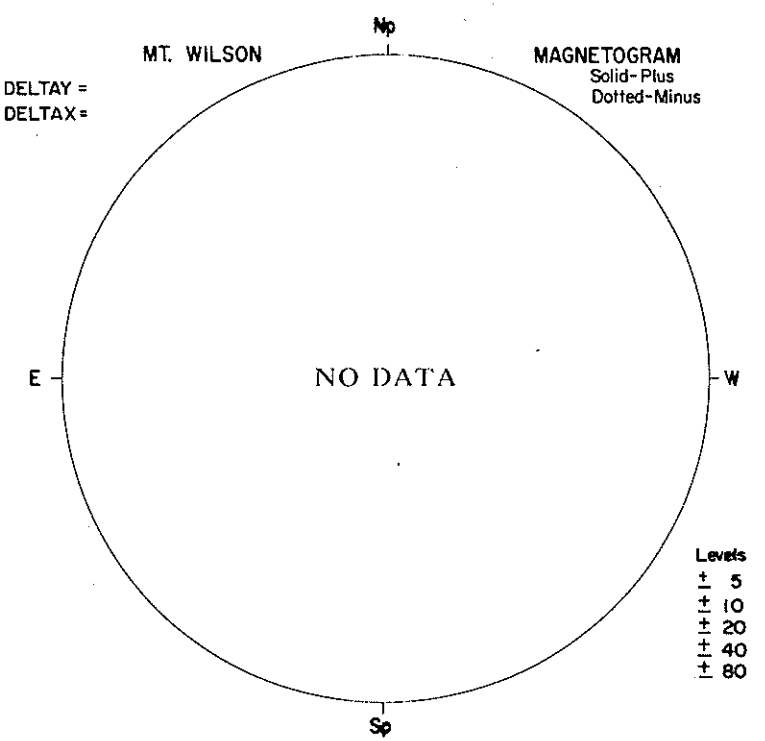
FEBRUARY 1, 1979 (P =-11.97, B_o =-6.01, L_o =34.56)

SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å

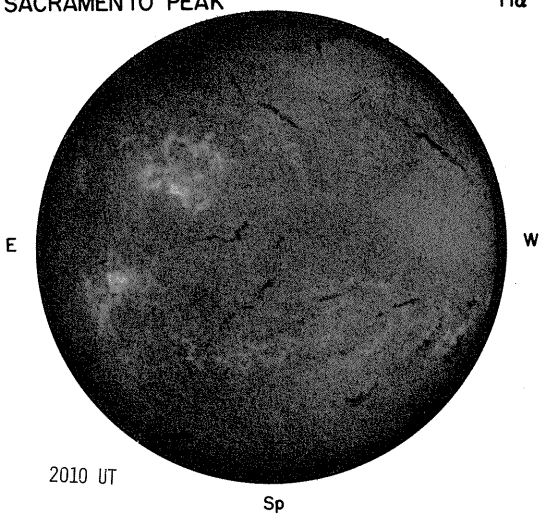




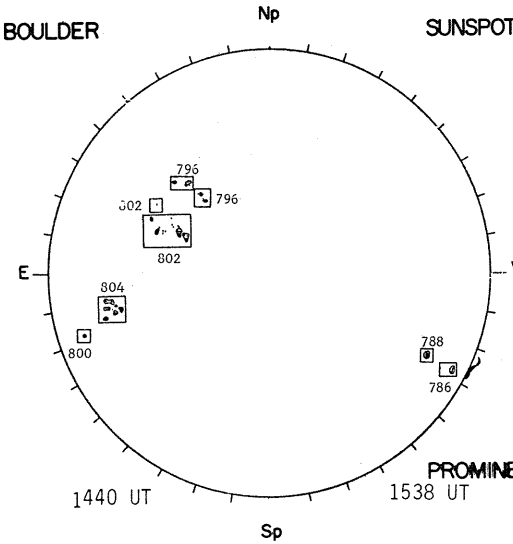


01

SACRAMENTO PEAK



Hα BOULDER

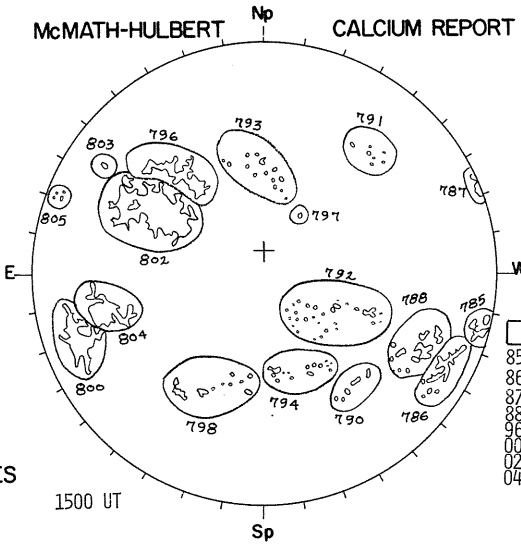


SUNSPOTS

PROMINENCES

1538 UT

McMATH-HULBERT CALCIUM REPORT



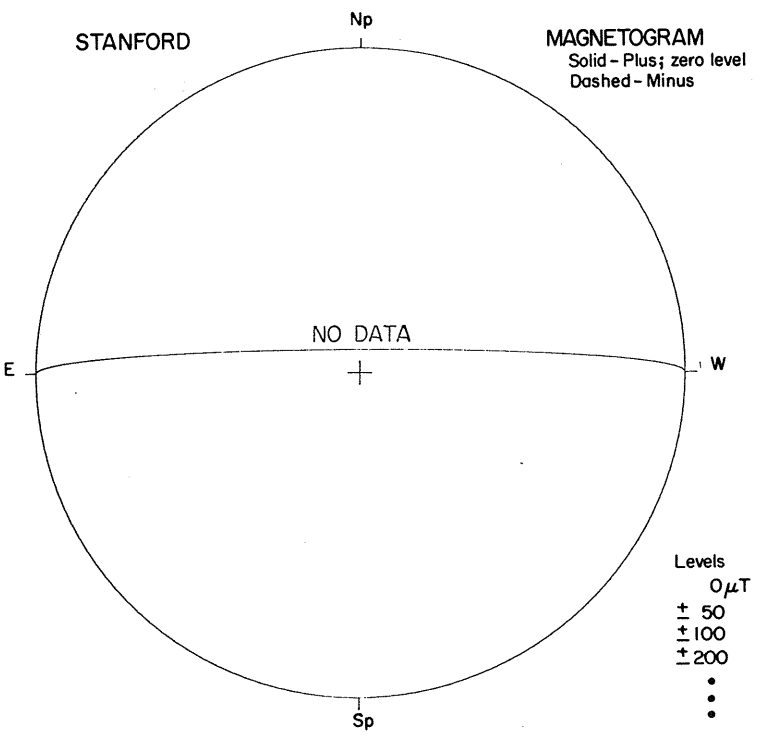
POOR	M
85- 2300-2.5	
86- 3000-3.0	
87- 1300-2.5	
88- 2600-2.5	
96- 2600-3.5	
00- 3500-3.0	
02- 7000-3.5	
04- 3500-3.5	

STANFORD

MAGNETOGRAM

Solid – Plus; zero level

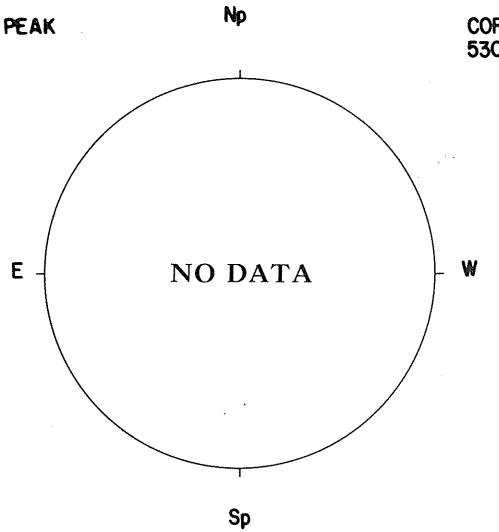
Dashed – Minus

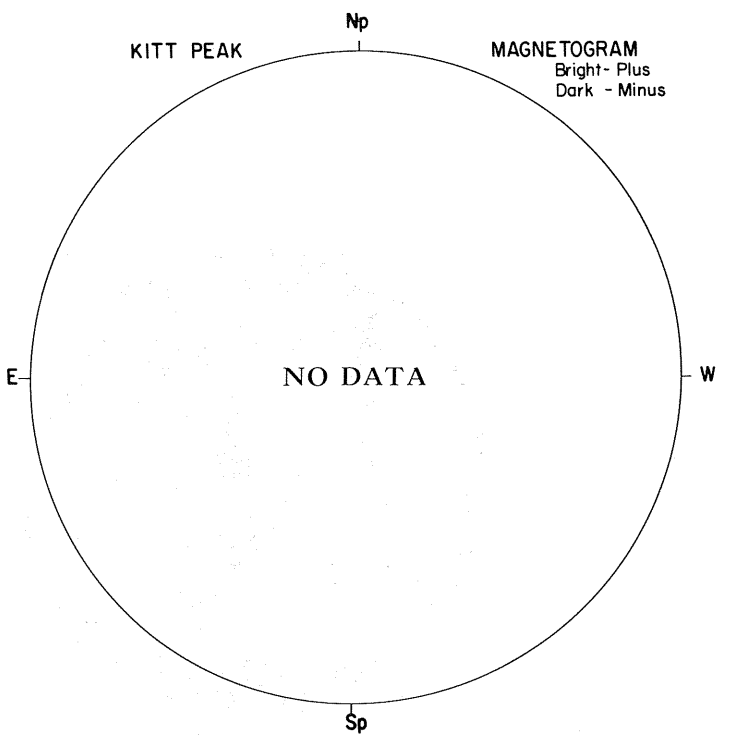


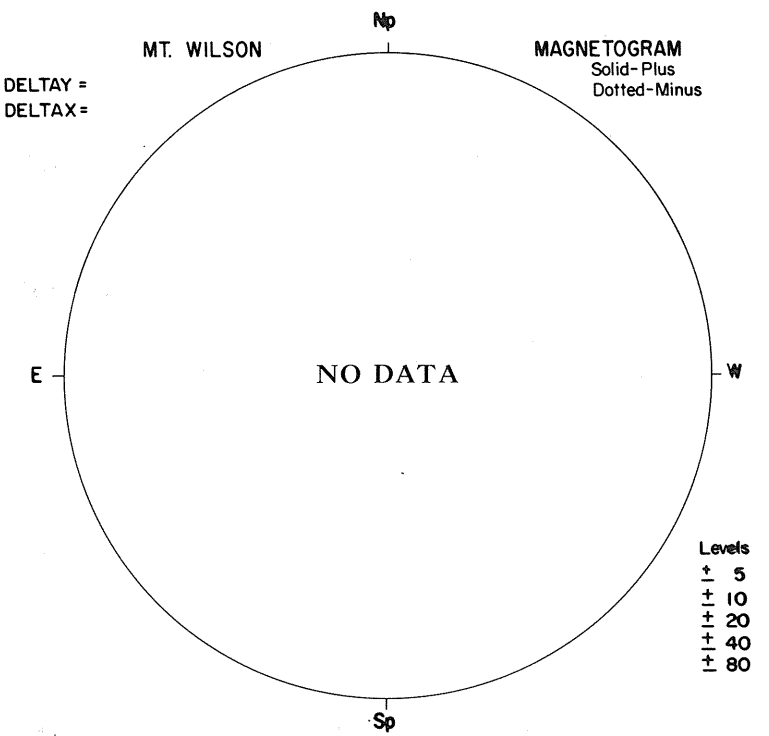
FEBRUARY 2, 1979 (P =-12.38, B_o =-6.08, L_o = 21.39)

SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å

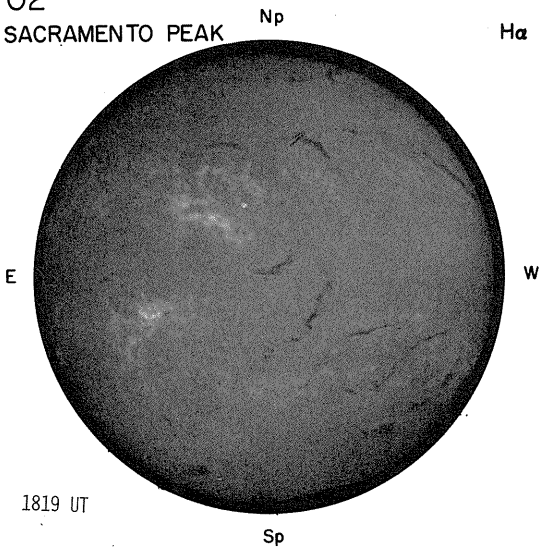






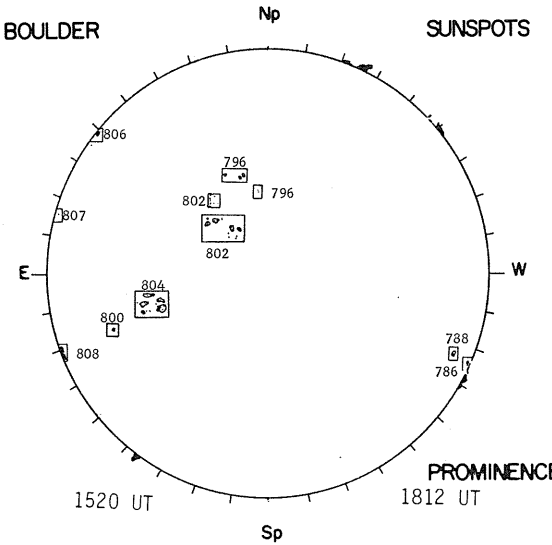
02

SACRAMENTO PEAK Hα



1819 UT

BOULDER SUNSPOTS

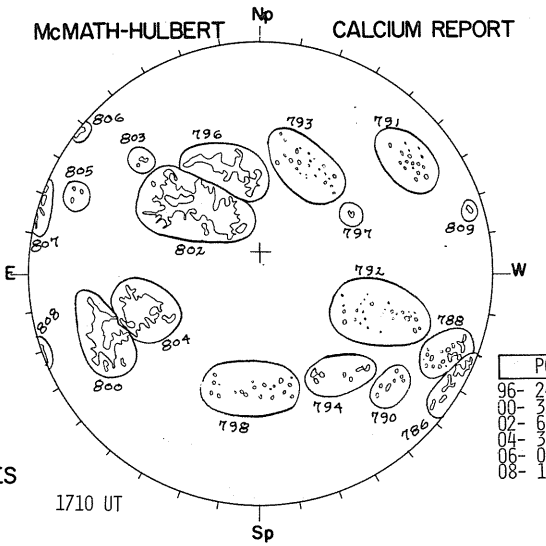


1520 UT

PROMINENCES

1812 UT

McMATH-HULBERT CALCIUM REPORT

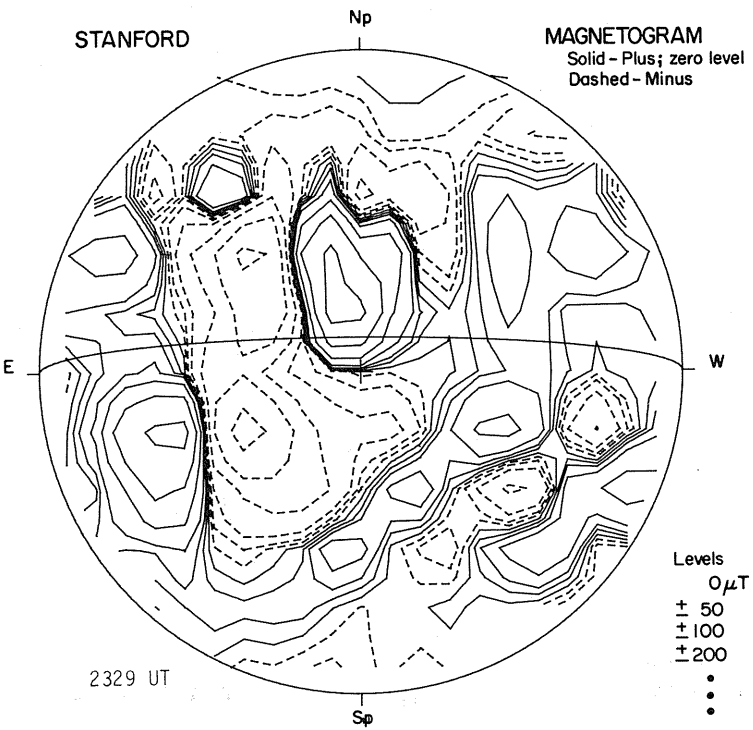


	POOR	M
96-	2400-	3.0
00-	3500-	3.0
02-	6600-	3.5
04-	3300-	3.5
06-	0800-	2.5
08-	1200-	2.5

1710 UT

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus

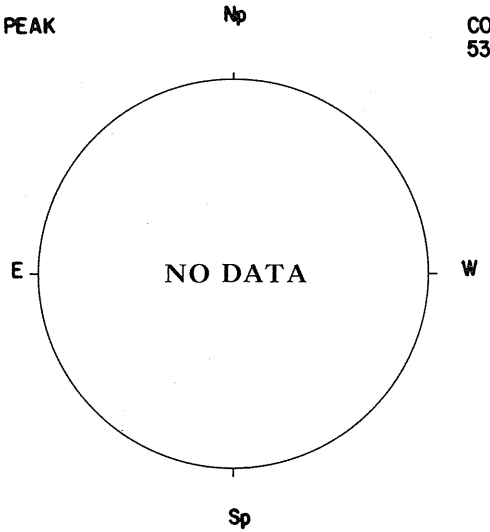


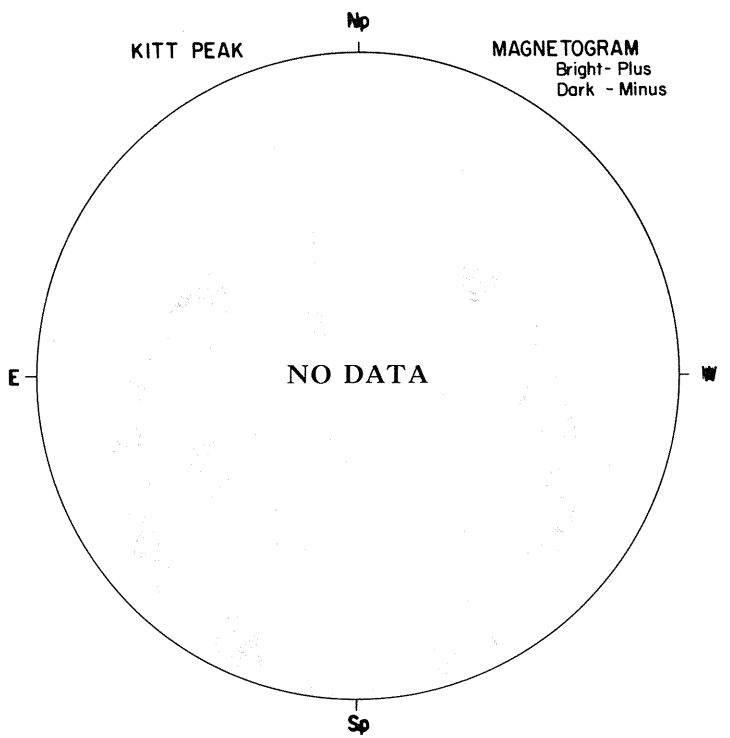
2329 UT

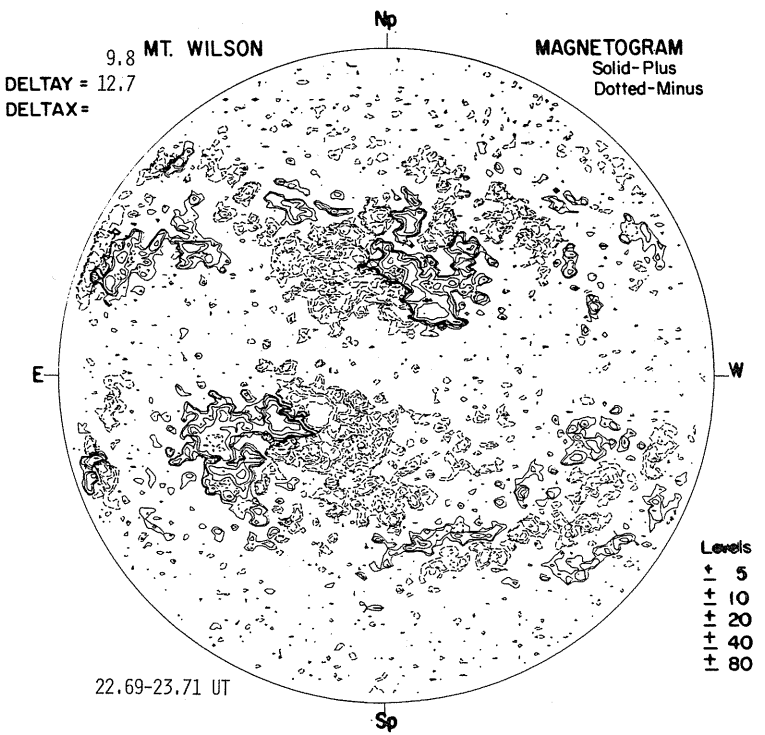
FEBRUARY 3, 1979 (P =-12.79, B_o =-6.15, L_o = 8.23)

SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å



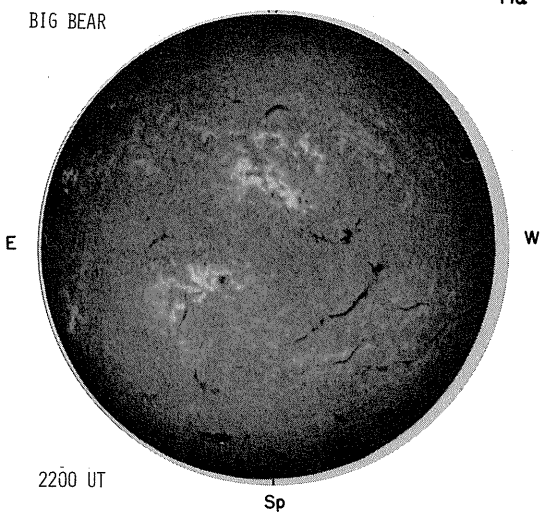




03

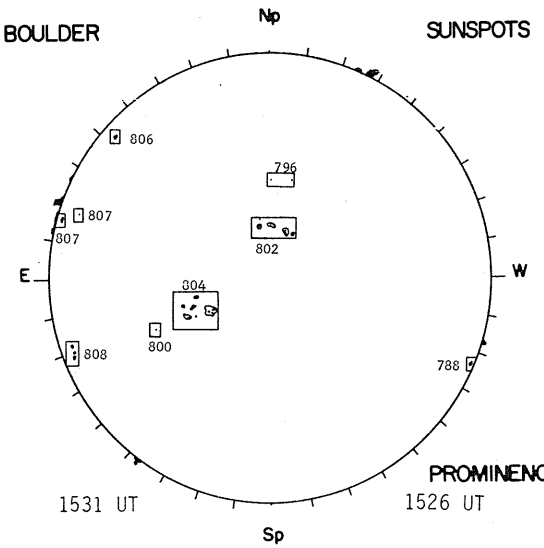
BIG BEAR

Hα



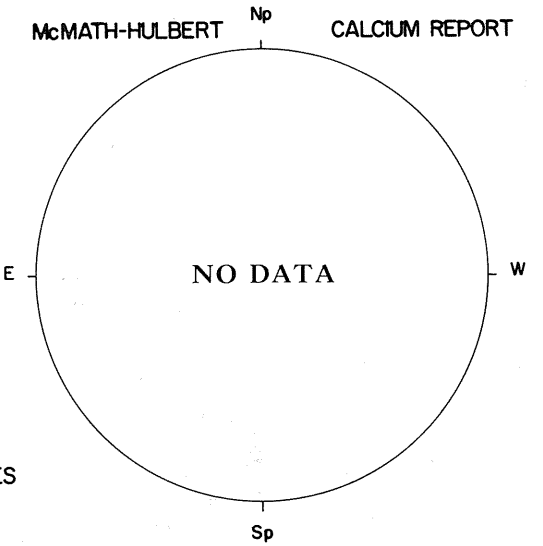
2200 UT

BOULDER SUNSPOTS



1531 UT

McMATH-HULBERT CALCIUM REPORT

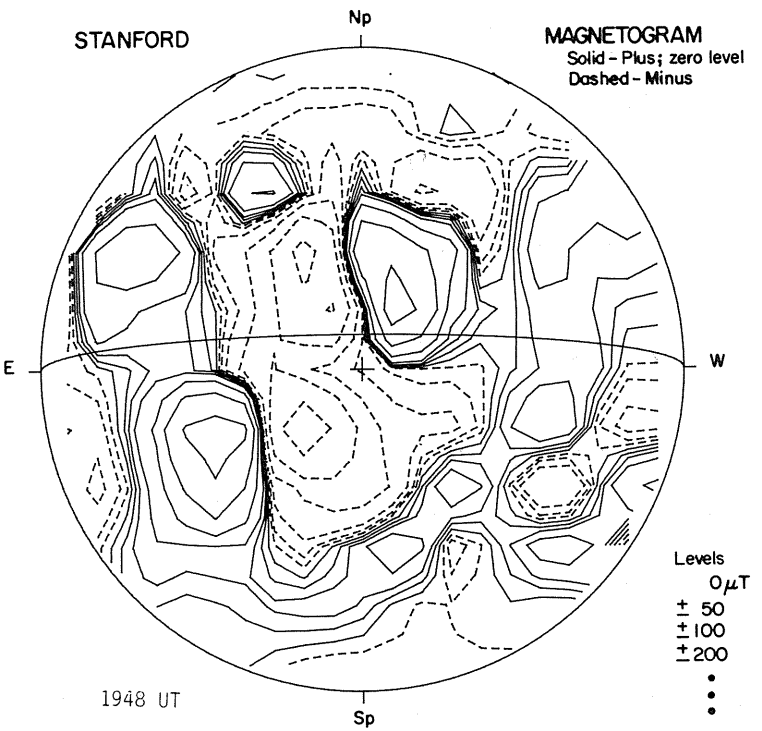


PROMINENCES

1526 UT

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus



1948 UT

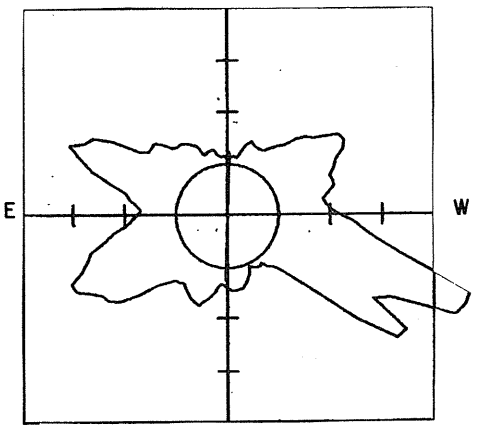
55
Feb 79

FEBRUARY 4, 1979 (P =-13.18, B_o =-6.22, L_o =355.06)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å



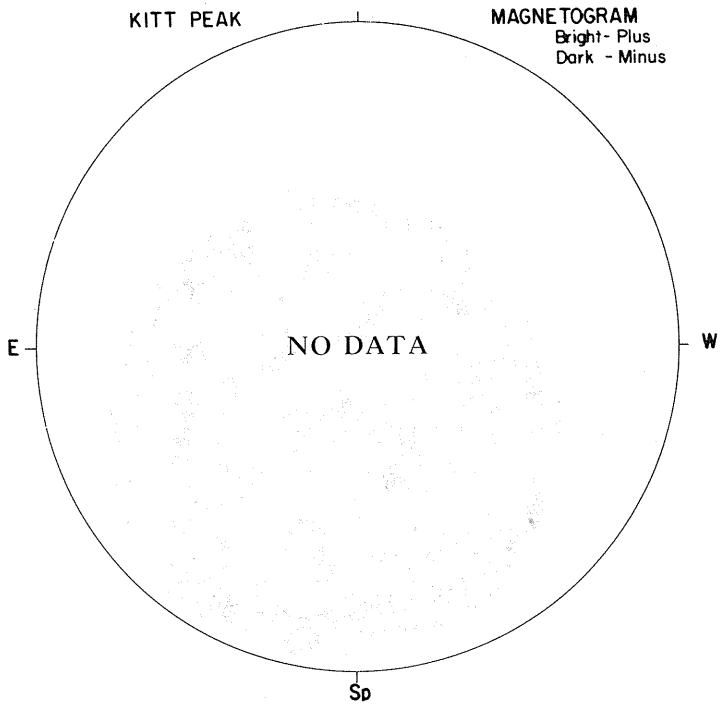
1813 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright- Plus
Dark - Minus

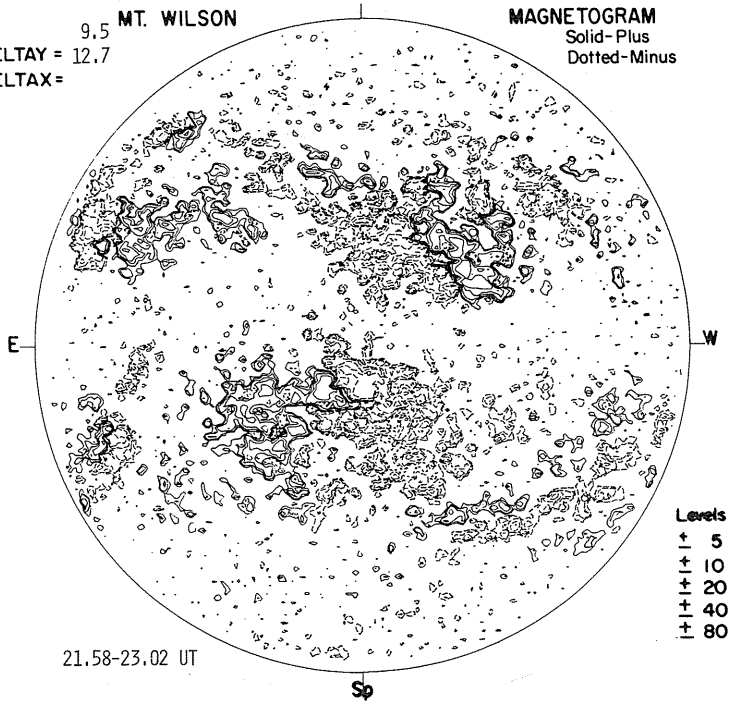


MT. WILSON

Np

MAGNETOGRAM
Solid- Plus
Dotted- Minus

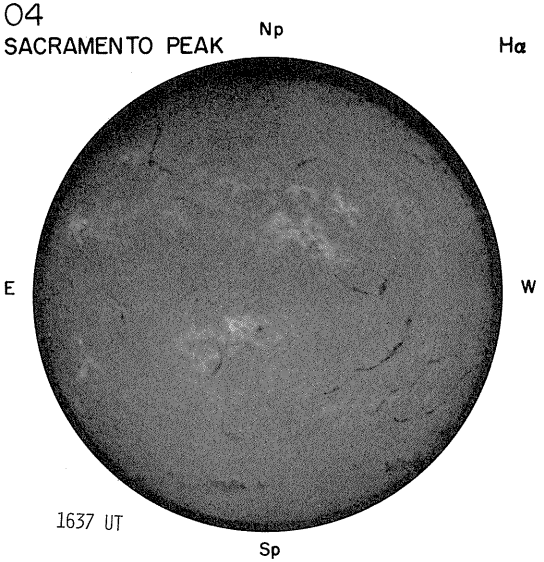
DELTAY = 9.5
DELTAX = 12.7



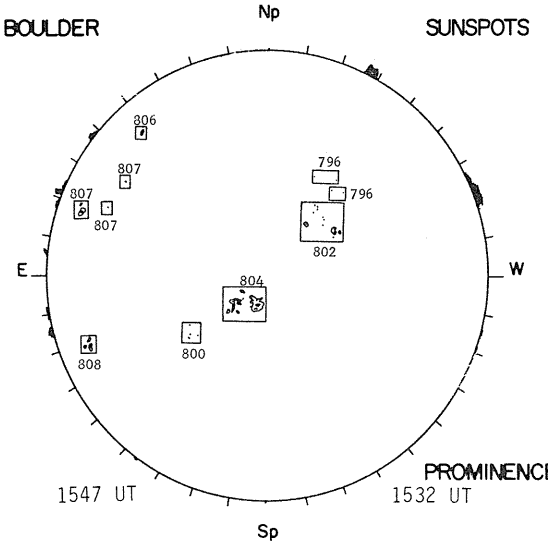
21.58-23.02 UT

04

SACRAMENTO PEAK Hα

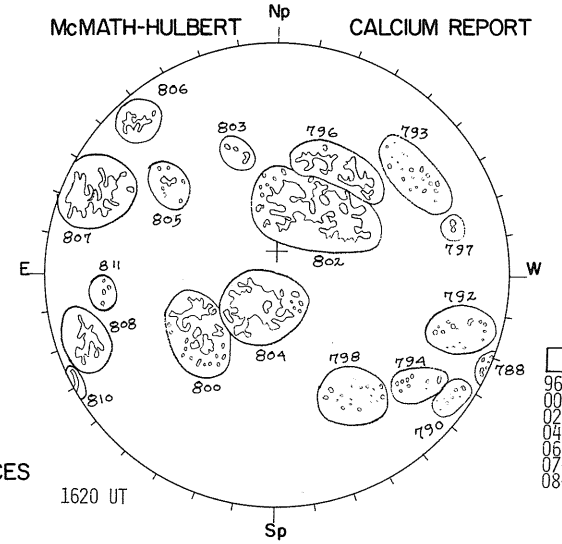


BOULDER SUNSPOTS



PROMINENCES

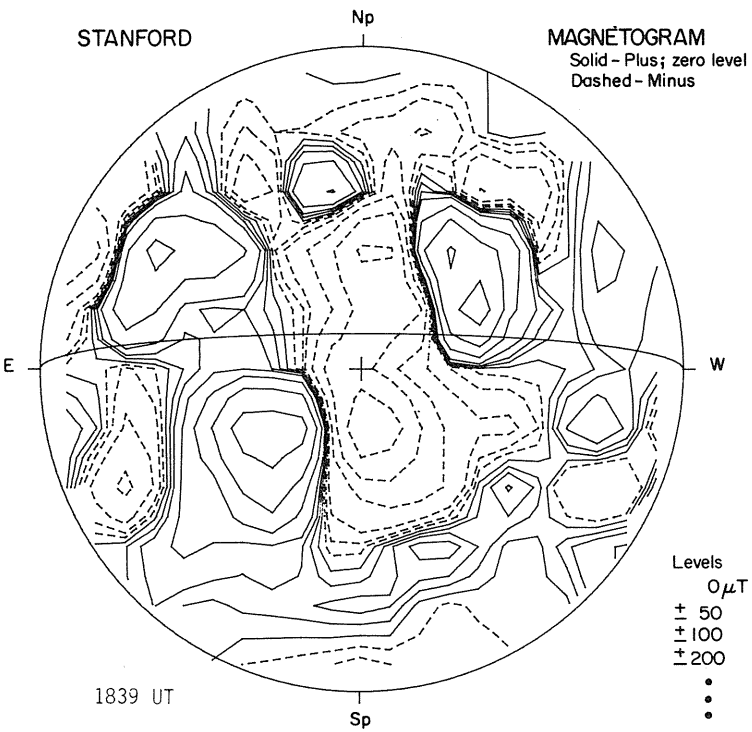
McMATH-HULBERT CALCIUM REPORT



FAIR	M
96- 2400-3.0	
00- 3100-3.0	
02- 6700-3.5	
04- 4000-3.5	
06- 1100-2.5	
07- 6000-3.0	
08- 2200-3.0	

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus

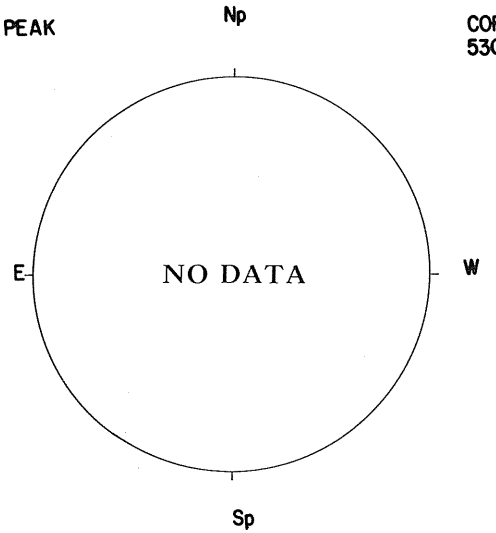


57
Feb 79

FEBRUARY 5, 1979 (P =-13.58, B_o =-6.28, L_o = 341.89)

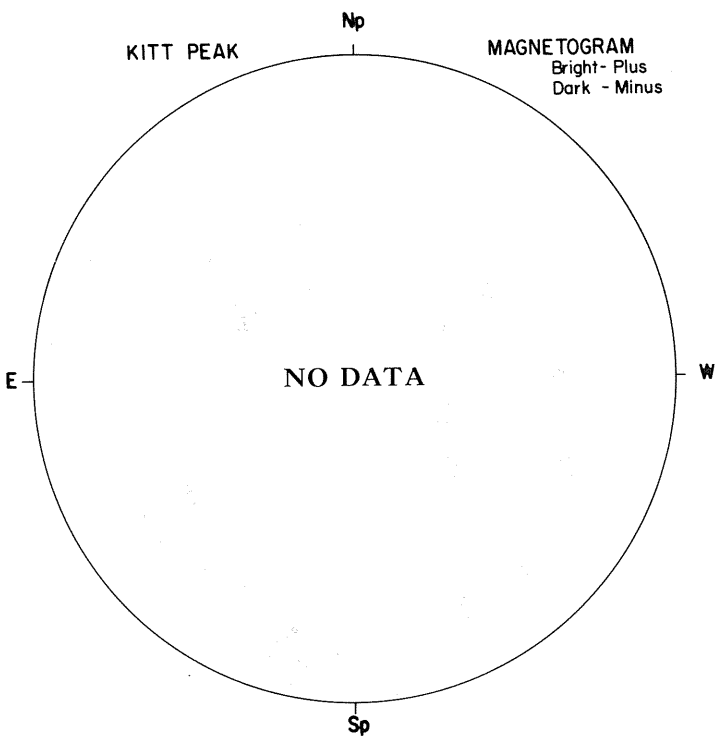
SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å



KITT PEAK

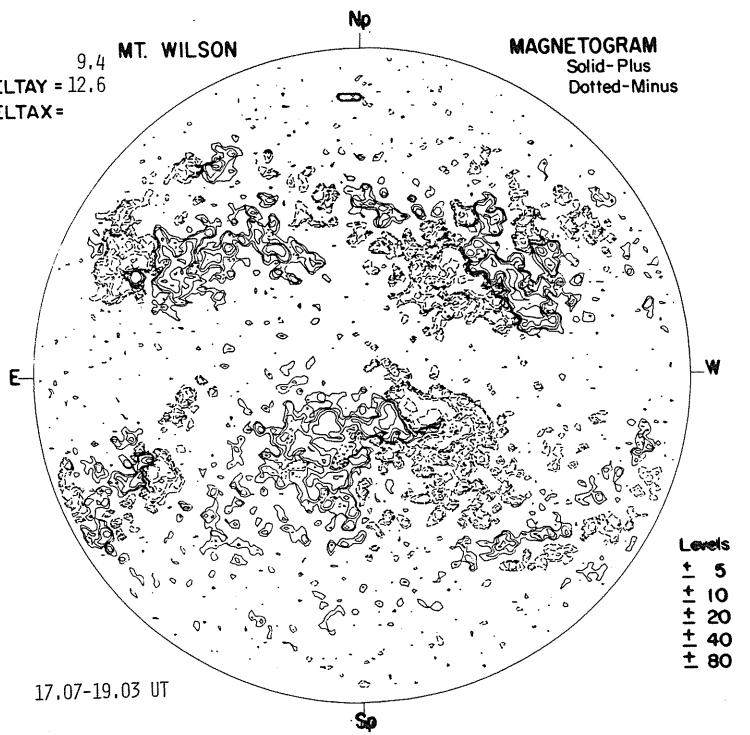
MAGNETOGRAM
Bright - Plus
Dark - Minus



MT. WILSON

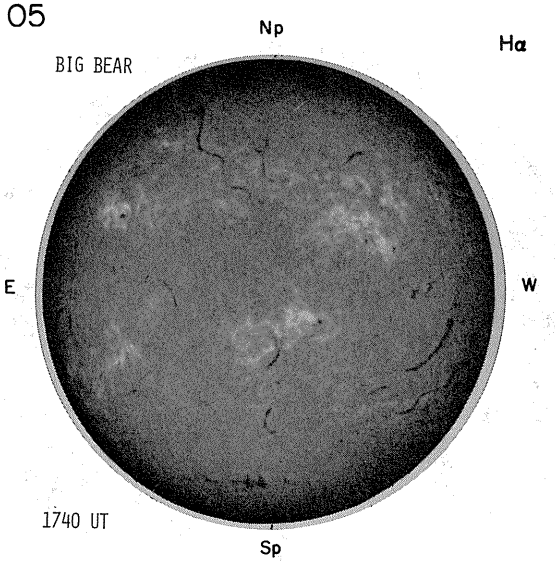
9.4
DELTAY = 12.6
DELTAX =

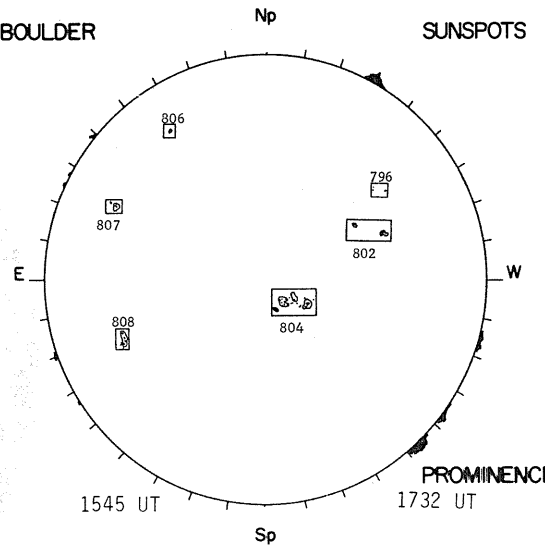
MAGNETOGRAM
Solid - Plus
Dotted - Minus

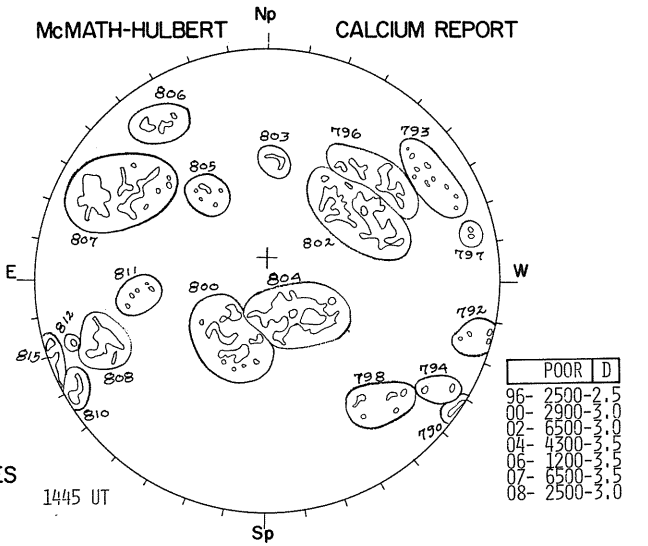


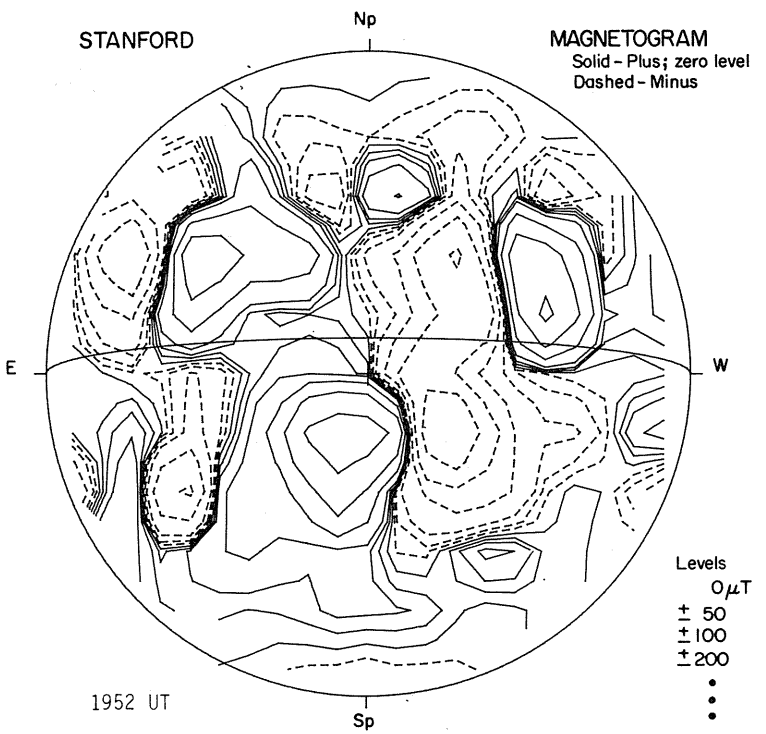
17.07-19.03 UT

05


Np
BIG BEAR
Hα
E
W
1740 UT
Sp


Np
BOULDER
SUNSPOTS
806
796
807
802
808
804
E
W
1545 UT
1732 UT
PROMINENCES
Sp

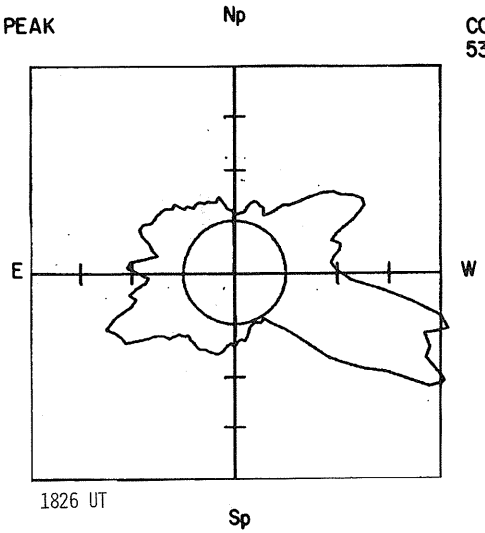

Np
McMATH-HULBERT
CALCIUM REPORT
806
803
796
793
805
807
802
797
E
W
811
804
800
812
792
815
808
798
794
810
790
POOR | D
96- 2500-2.5
00- 2900-3.0
02- 6500-3.0
04- 4300-3.5
06- 1200-3.5
07- 6500-3.5
08- 2500-3.0
Sp

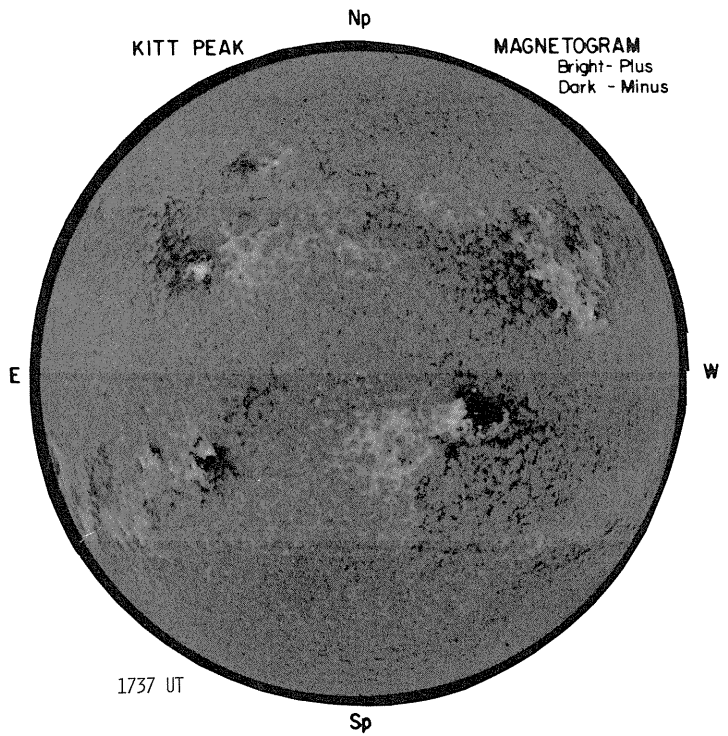

Np
STANFORD
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
1952 UT
Levels
0 μT
± 50
± 100
± 200
Sp

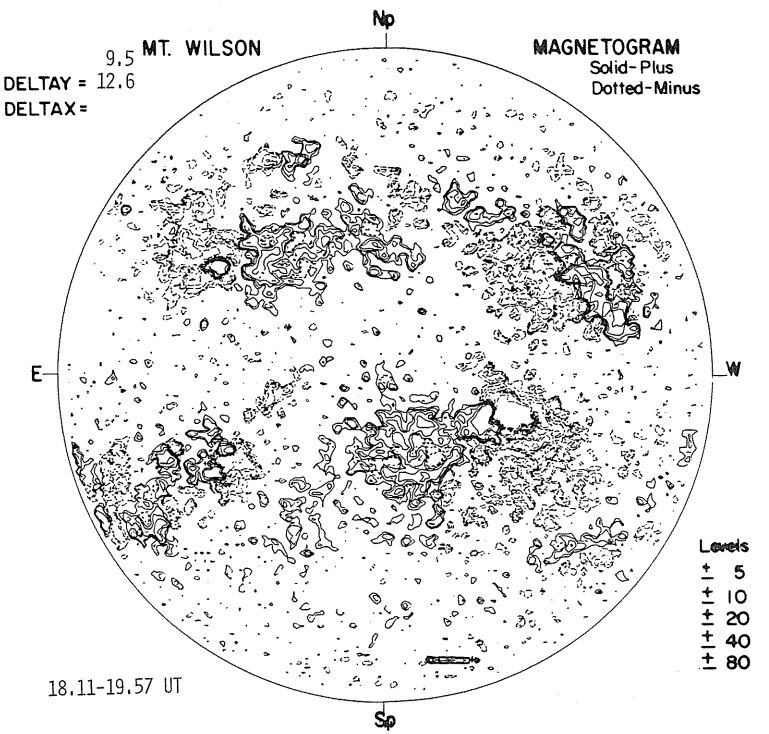
59
Feb 79

FEBRUARY 6, 1979 (P = -13.97, B_o = -6.34, L_o = 328.73)

SACRAMENTO PEAK

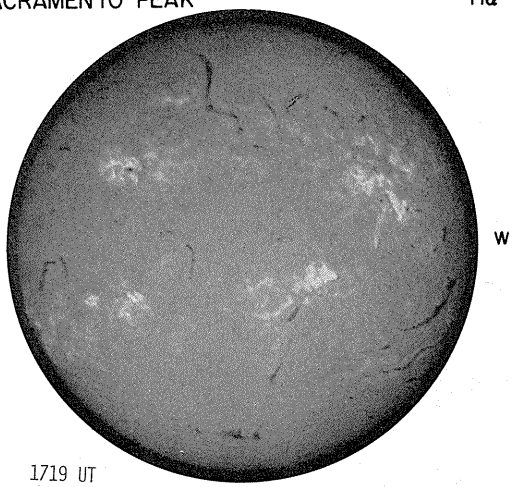






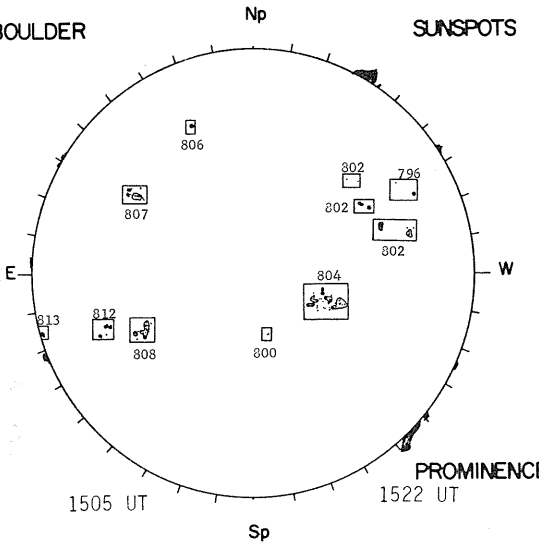
06

SACRAMENTO PEAK Hα



1719 UT

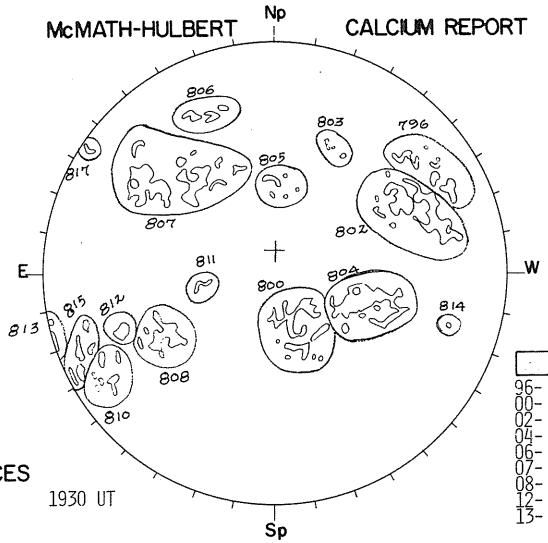
BOULDER SUNSPOTS



1505 UT

PROMINENCES 1522 UT

McMATH-HULBERT CALCIUM REPORT

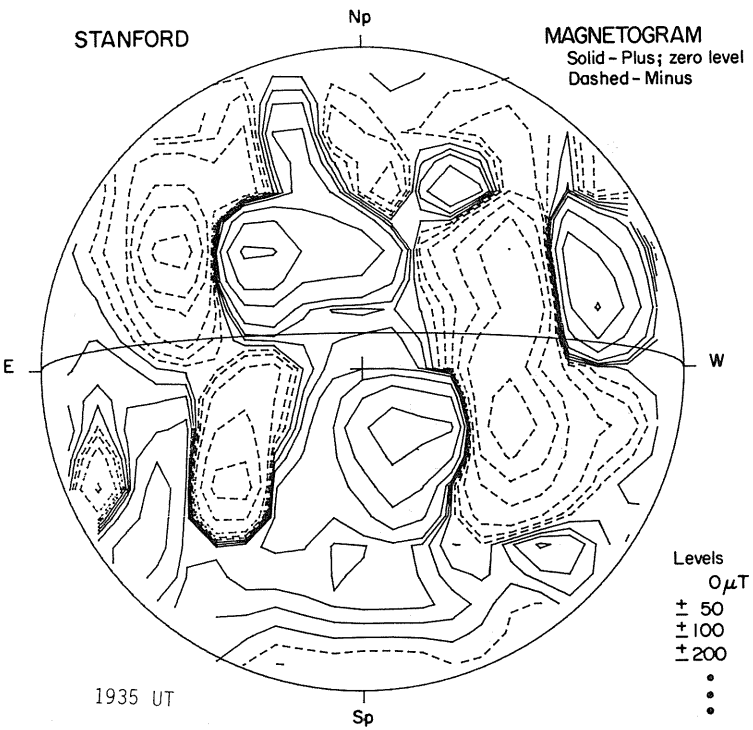


1930 UT

	POOR	S
96-	2200-	2.5
00-	2300-	2.5
02-	6200-	3.0
04-	4000-	3.0
06-	1200-	3.0
07-	6800-	3.5
08-	2500-	3.5
12-	0800-	3.0
13-	1200-	2.5

STANFORD MAGNETOGRAM

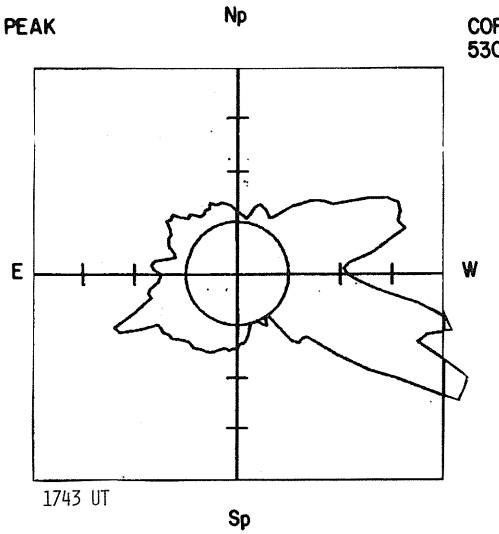
Solid - Plus; zero level
Dashed - Minus

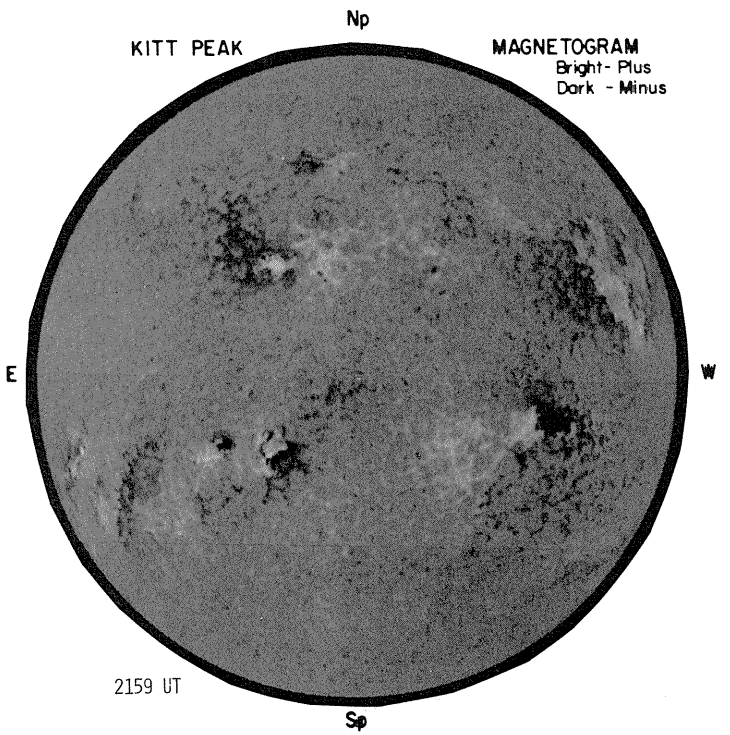


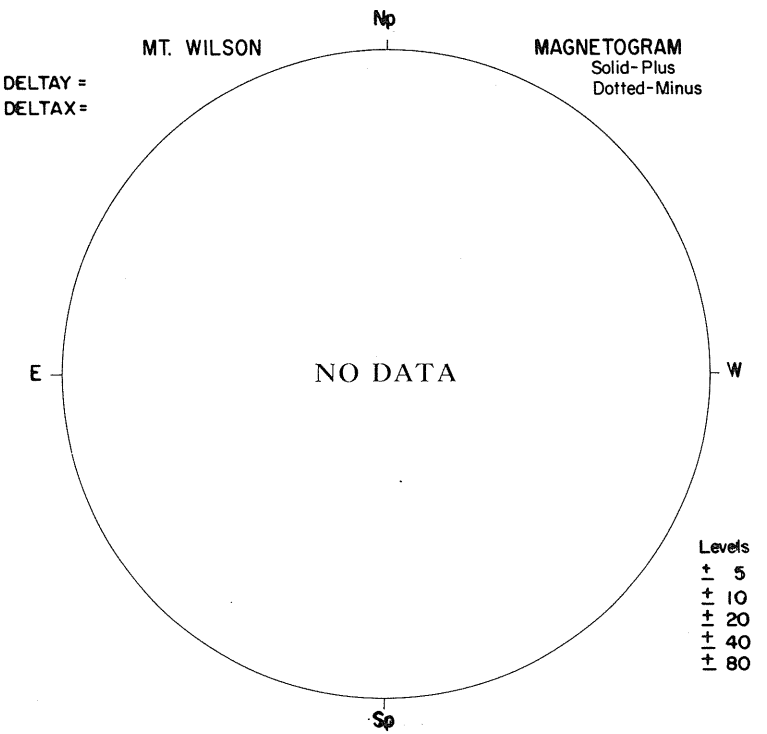
1935 UT

FEBRUARY 7, 1979 (P =-14.35, B_0 =-6.41, L_0 = 315.56)

SACRAMENTO PEAK

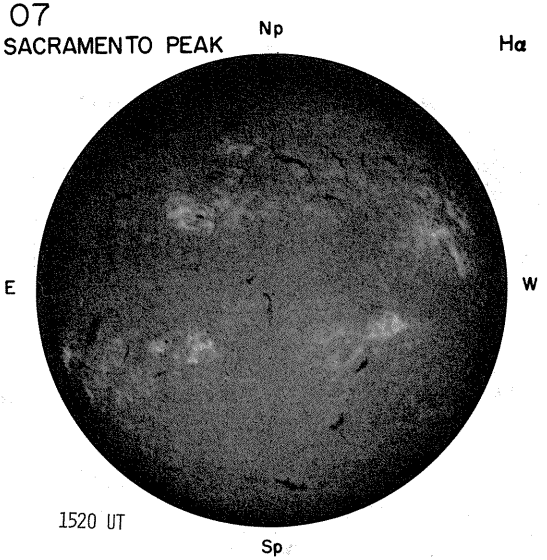




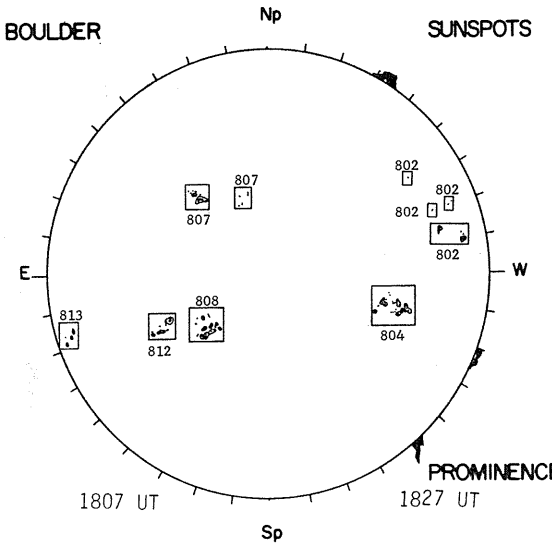


07

SACRAMENTO PEAK

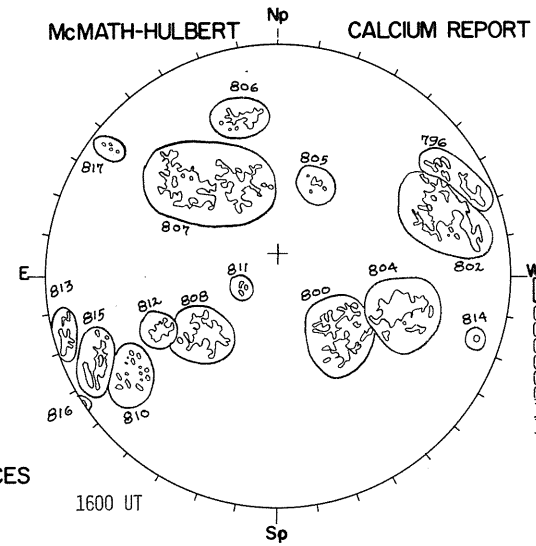


BOULDER SUNSPOTS



PROMINENCES

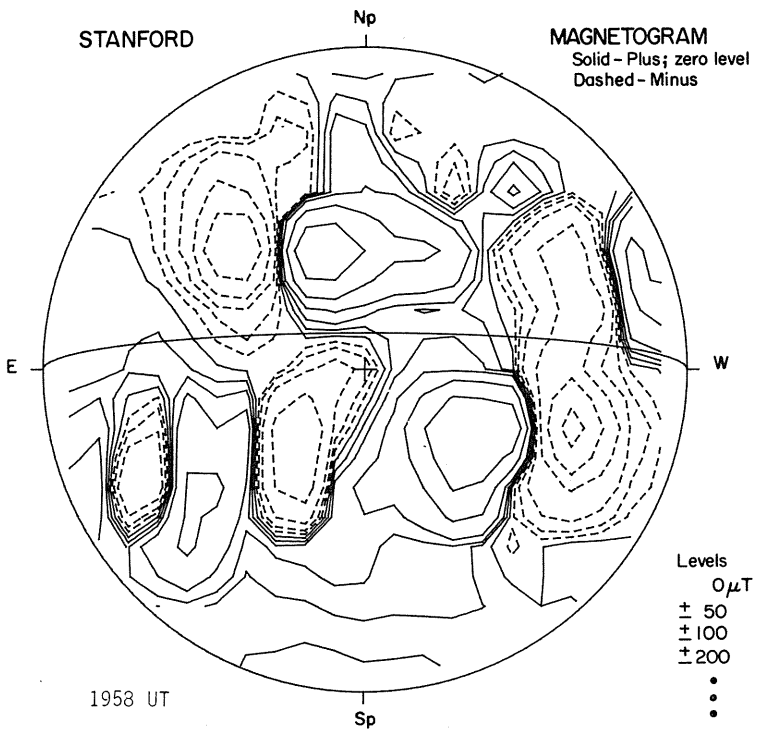
McMATH-HULBERT CALCIUM REPORT



FAIR	M
00- 2800-2.5	
02- 6500-3.0	
04- 4300-3.5	
06- 1200-3.0	
07- 6500-3.0	
08- 2500-3.5	
12- 0800-3.5	
13- 2000-3.0	

STANFORD MAGNETOGRAM

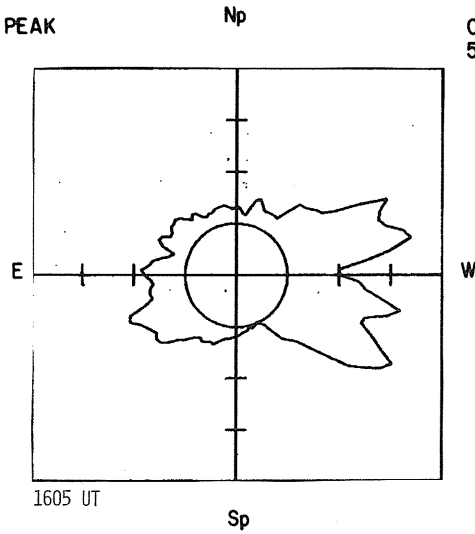
Solid - Plus; zero level
Dashed - Minus

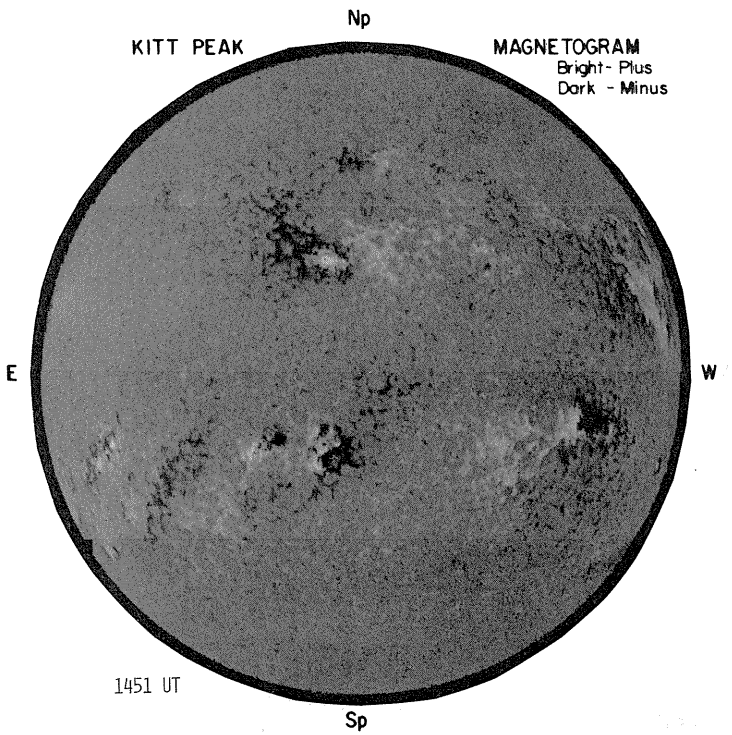


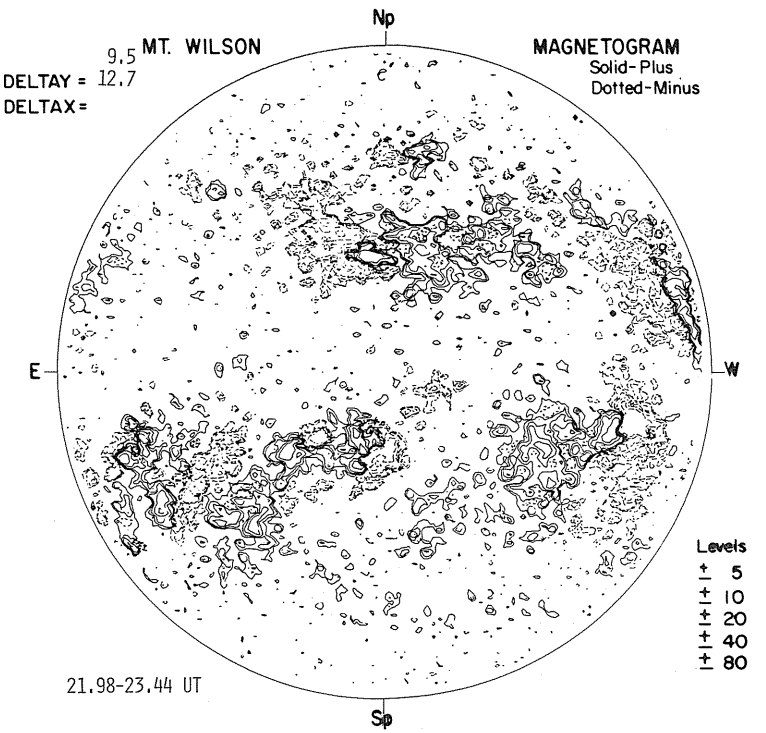
63
Feb 79

FEBRUARY 8, 1979 (P =-14.73, B_0 =-6.47, L_0 = 302.39)

SACRAMENTO PEAK

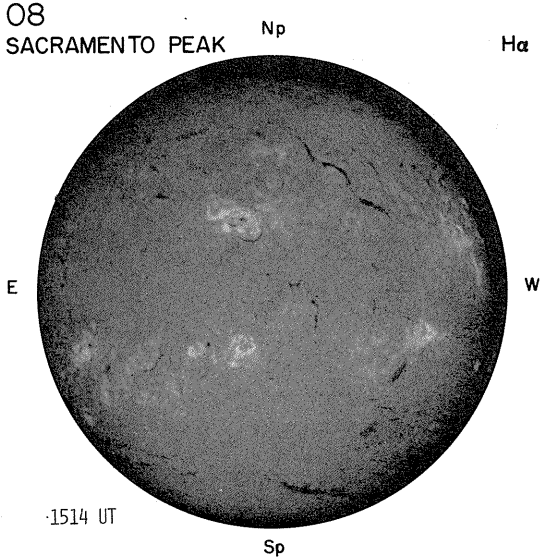






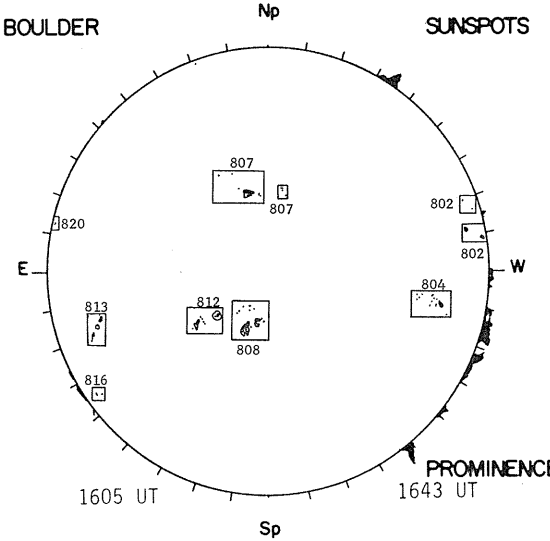
08

SACRAMENTO PEAK



Hα

BOULDER



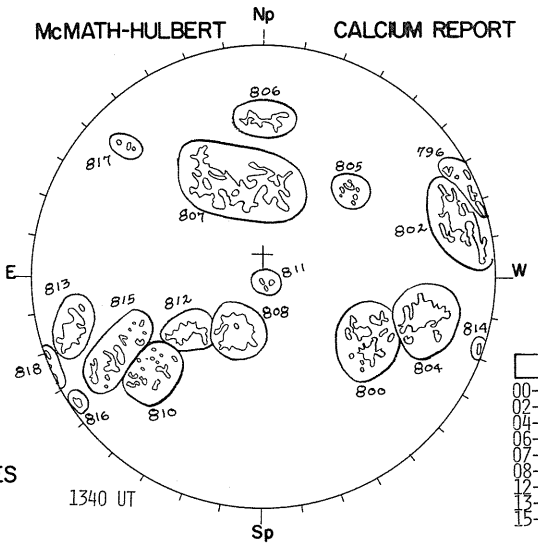
SUNSPOTS

PROMINENCES

1643 UT

McMATH-HULBERT

CALCIUM REPORT



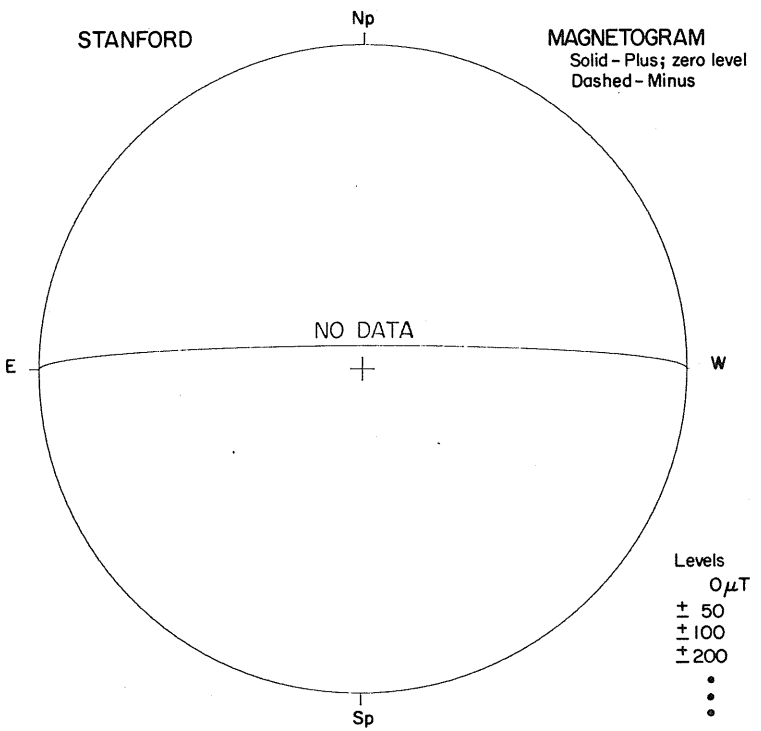
FAIR	M
00- 2500-2.5	
02- 6500-3.5	
04- 4500-3.5	
06- 1000-2.5	
07- 6500-3.5	
08- 2800-3.0	
12- 0800-3.0	
13- 3000-3.0	
15- 2300-2.5	

STANFORD

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus

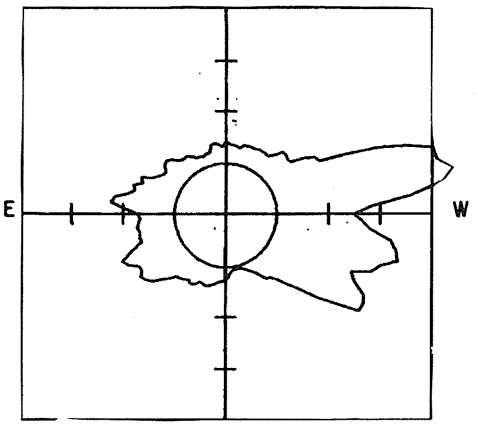


FEBRUARY 9, 1979 (P =-15.11, B_o =-6.52, L_o = 289.23)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å



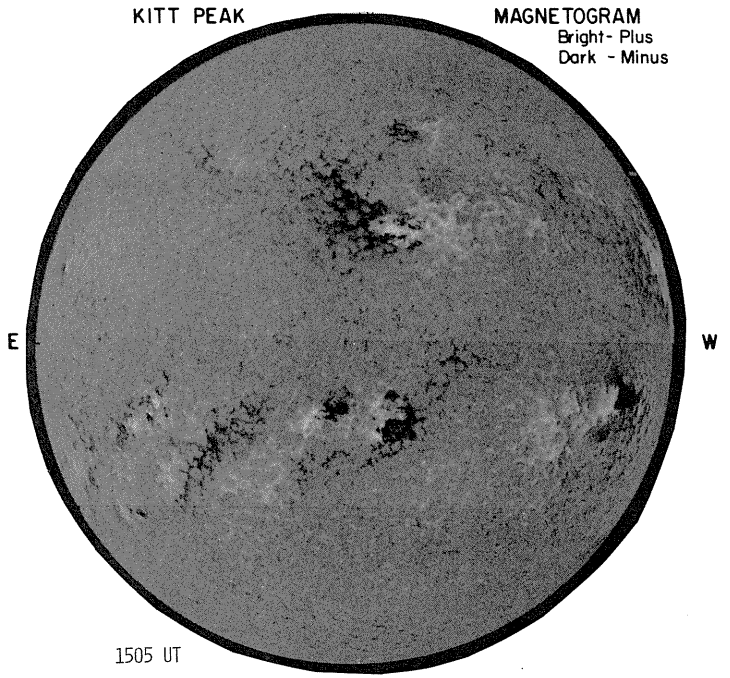
1516 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright- Plus
Dark - Minus



1505 UT

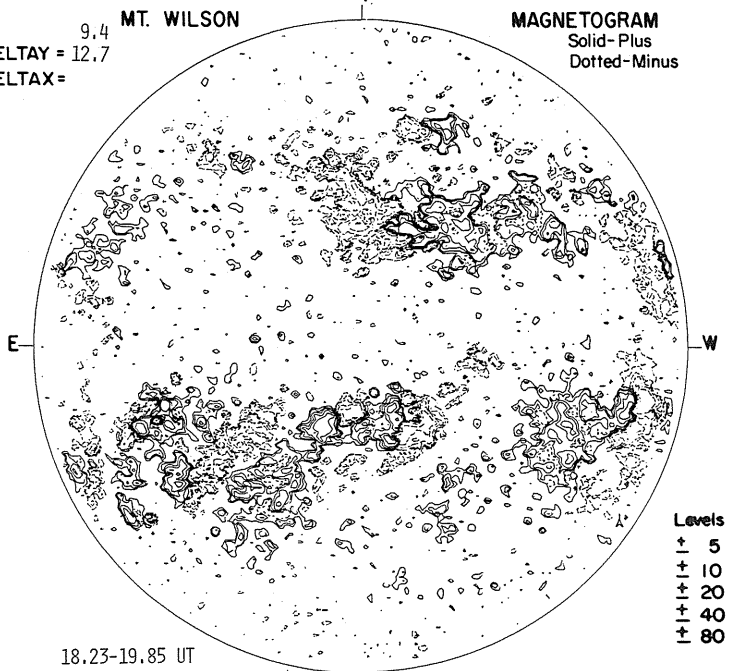
Sp

MT. WILSON

Np

9,4
DELTAY = 12.7
DELTAX =

MAGNETOGRAM
Solid- Plus
Dotted-Minus



18.23-19.85 UT

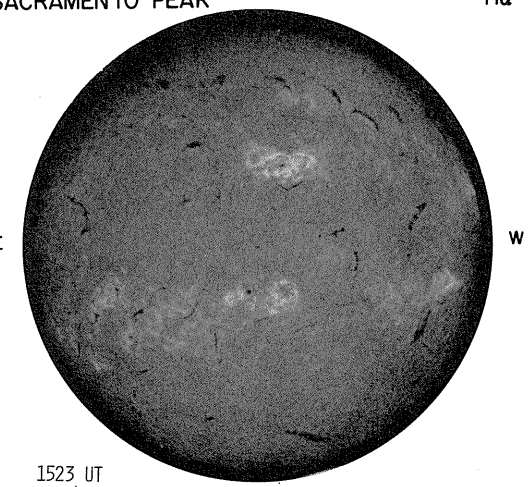
Sp

09

SACRAMENTO PEAK

Np

Hα



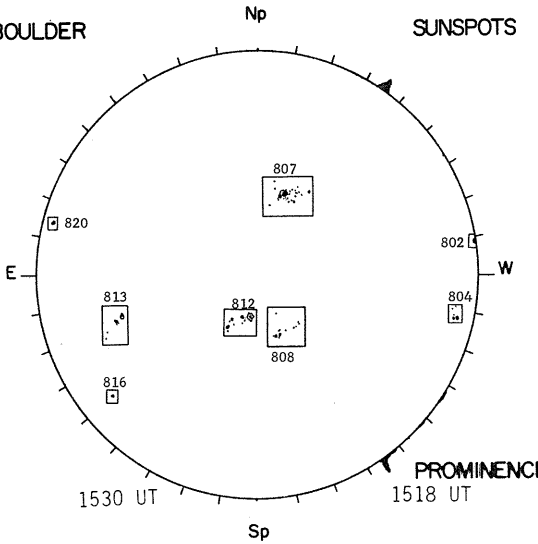
E W

Sp

1523 UT

BOULDER

SUNSPOTS



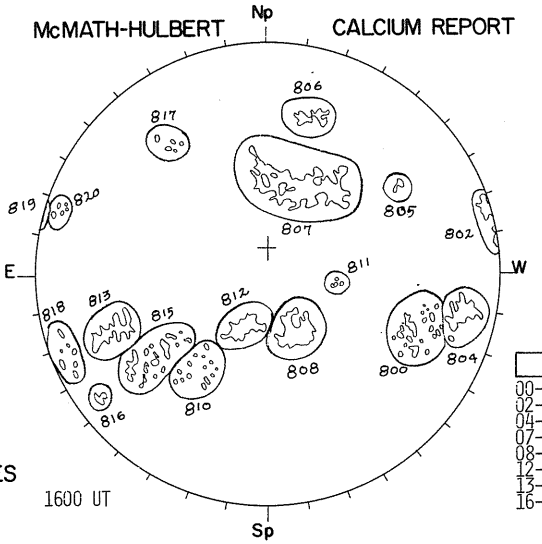
1530 UT

PROMINENCES

1518 UT

McMATH-HULBERT

CALCIUM REPORT



1600 UT

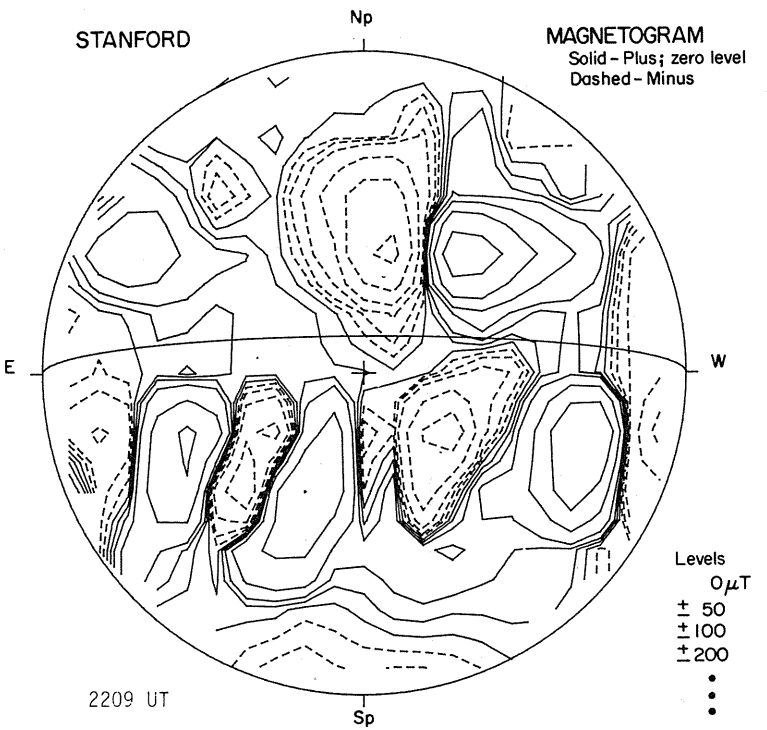
	FAIR	M
00-	2500	2.5
02-	3000	2.5
04-	3800	3.5
07-	6900	3.5
08-	2500	3.0
12-	1300	3.0
13-	2700	2.5
16-	0600	3.0

STANFORD

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



Levels

0 μT

± 50

± 100

± 200

2209 UT

67

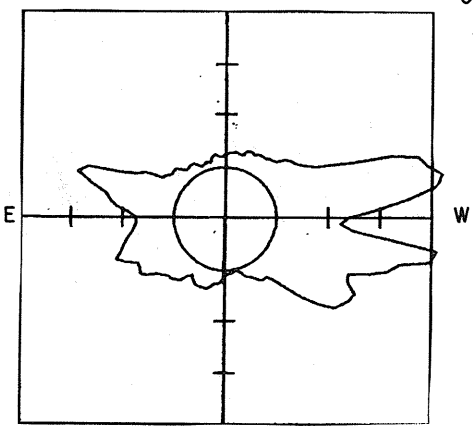
Feb 79

FEBRUARY 10, 1979 (P =-15.48, B_0 =-6.58, L_0 = 276.06)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å



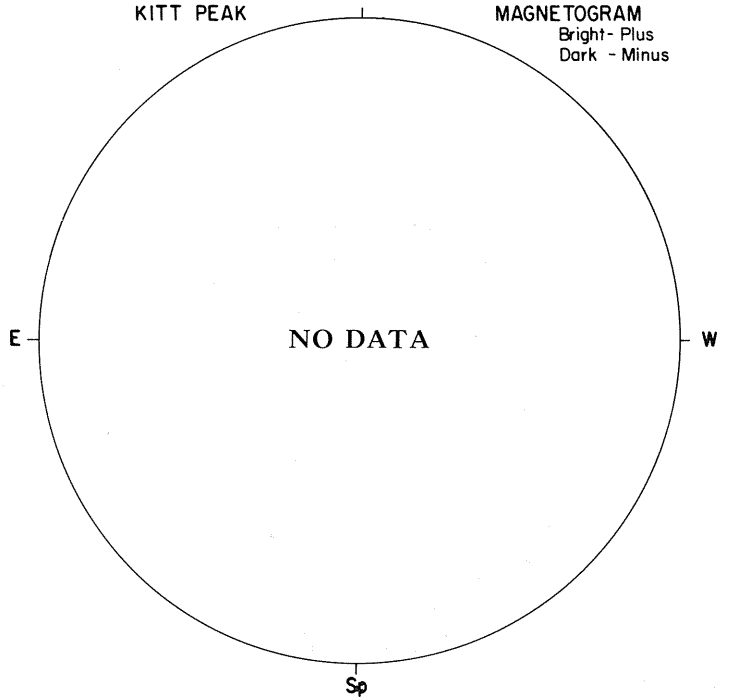
1510 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright- Plus
Dark - Minus

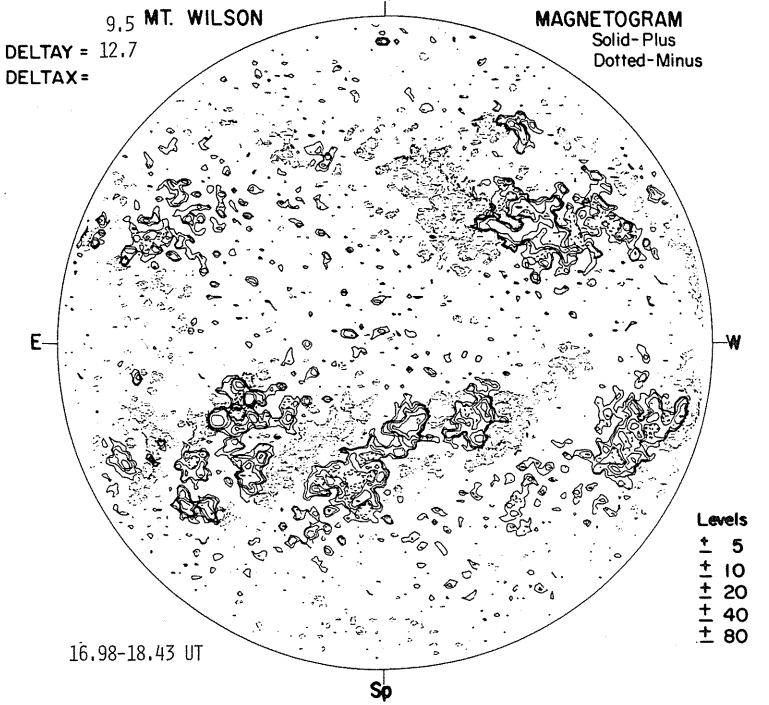


9,5 MT. WILSON

DELTAY = 12.7
DELTAX =

Np

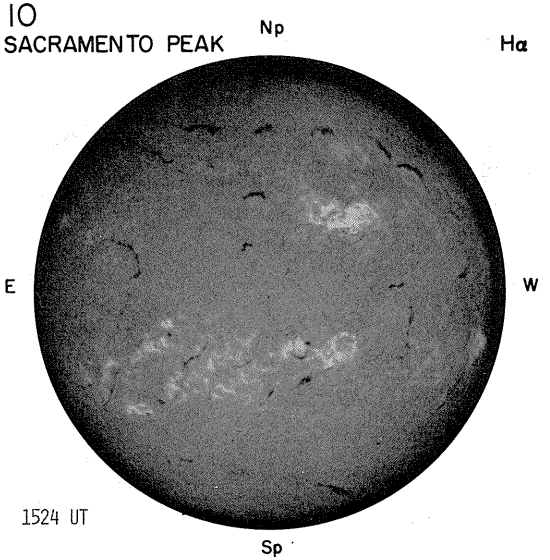
MAGNETOGRAM
Solid-Plus
Dotted-Minus



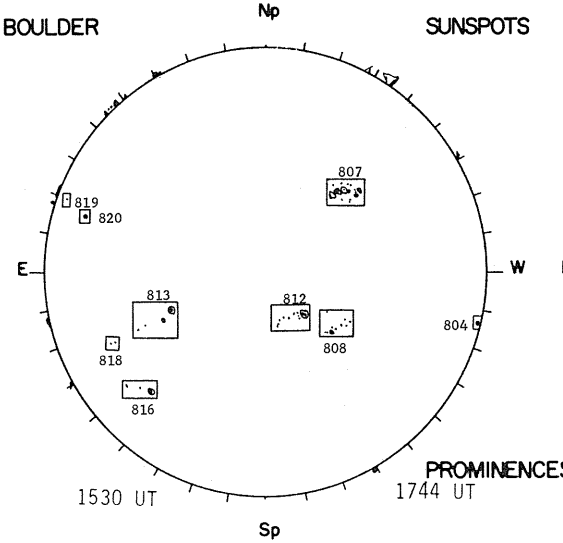
16.98-18.43 UT

10

SACRAMENTO PEAK



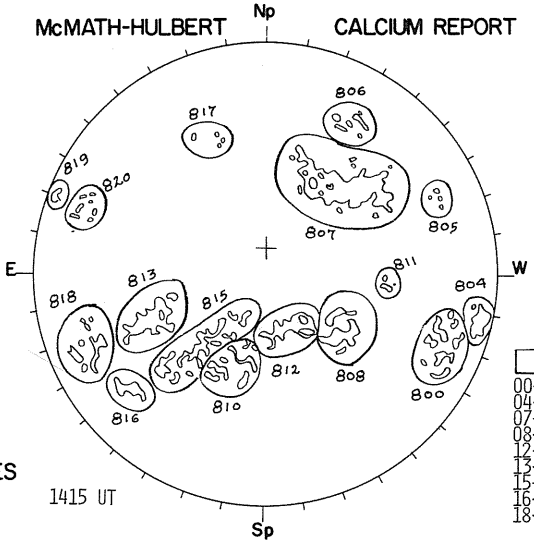
BOULDER SUNSPOTS



PROMINENCES

1744 UT

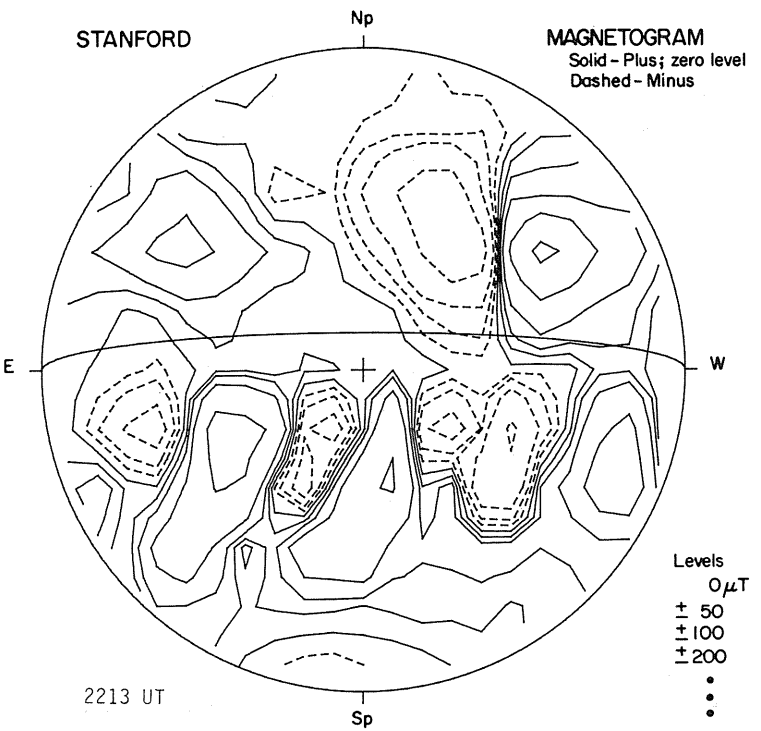
McMATH-HULBERT CALCIUM REPORT



FAIR	S
00- 2500-2.5	
04- 3400-3.0	
07- 7200-3.5	
08- 2500-3.0	
12- 1500-3.0	
13- 3000-3.0	
15- 2300-2.5	
16- 1200-3.0	
18- 1500-2.5	

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus

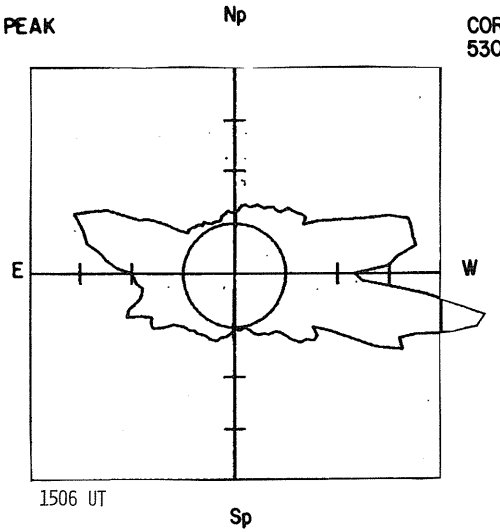


69
Feb 79

FEBRUARY 11, 1979 (P =-15.84, B_o =-6.63, L_o = 262.89)

SACRAMENTO PEAK

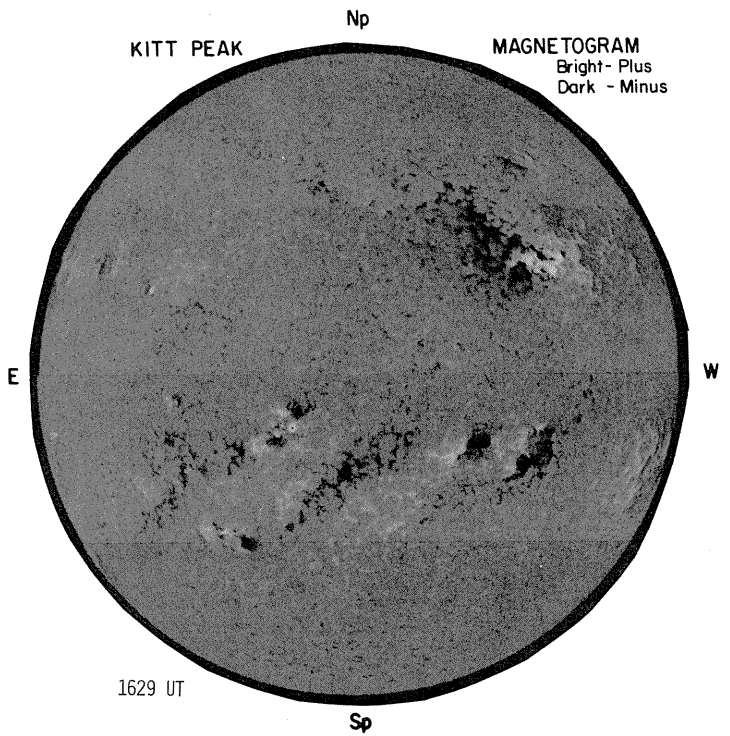
CORONA (1.15 $R_\odot$)
5303 Å



1506 UT

KITT PEAK

MAGNETOGRAM
Bright - Plus
Dark - Minus

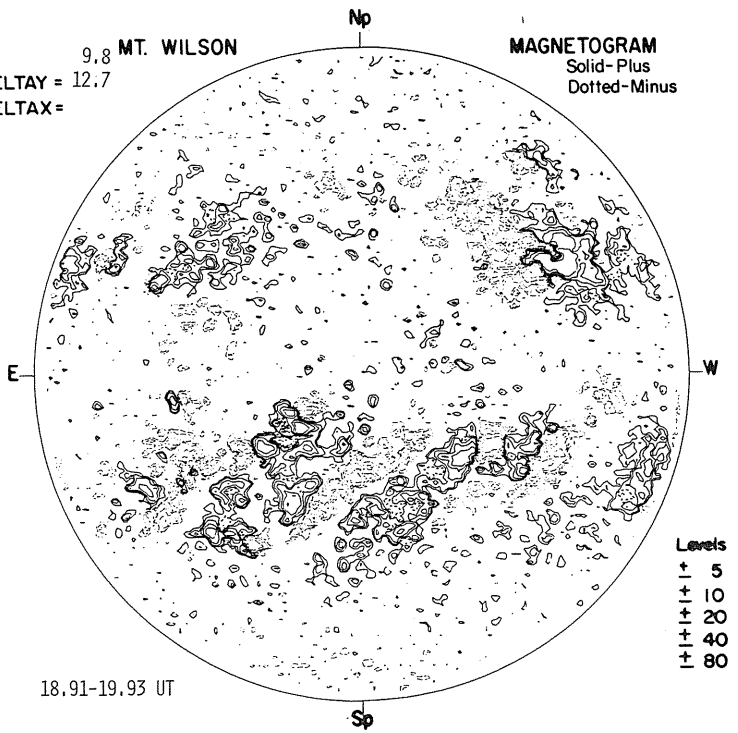


1629 UT

MT. WILSON

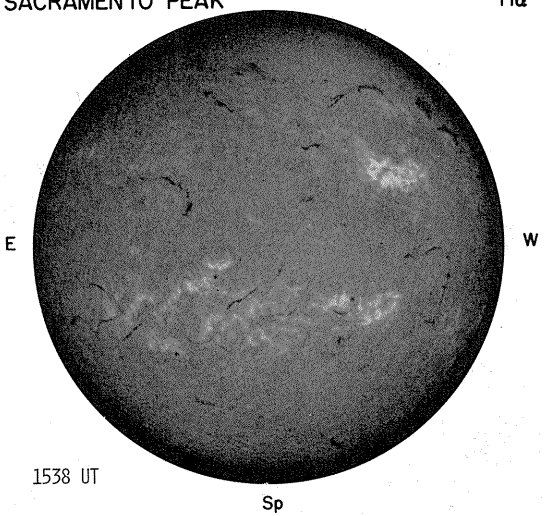
9.8
DELTAY = 12.7
DELTAX =

MAGNETOGRAM
Solid - Plus
Dotted - Minus

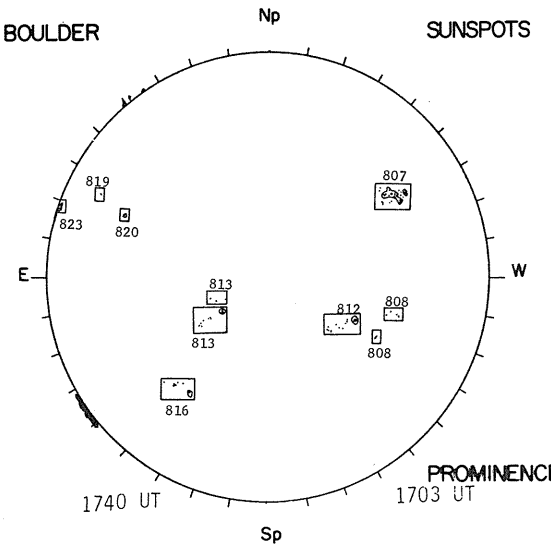


18.91-19.93 UT

SACRAMENTO PEAK Hα

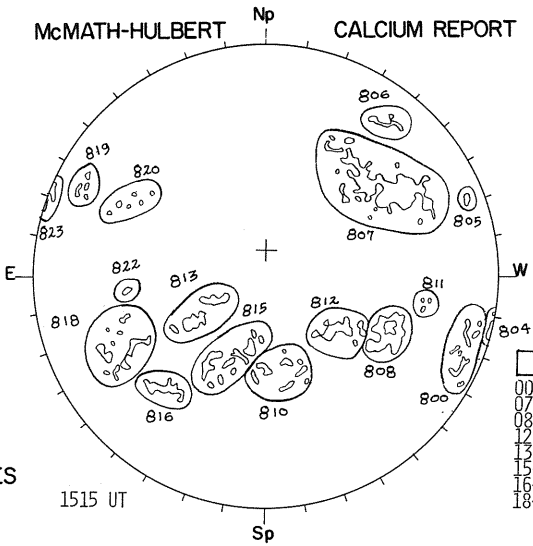


BOULDER SUNSPOTS



PROMINENCES 1703 UT

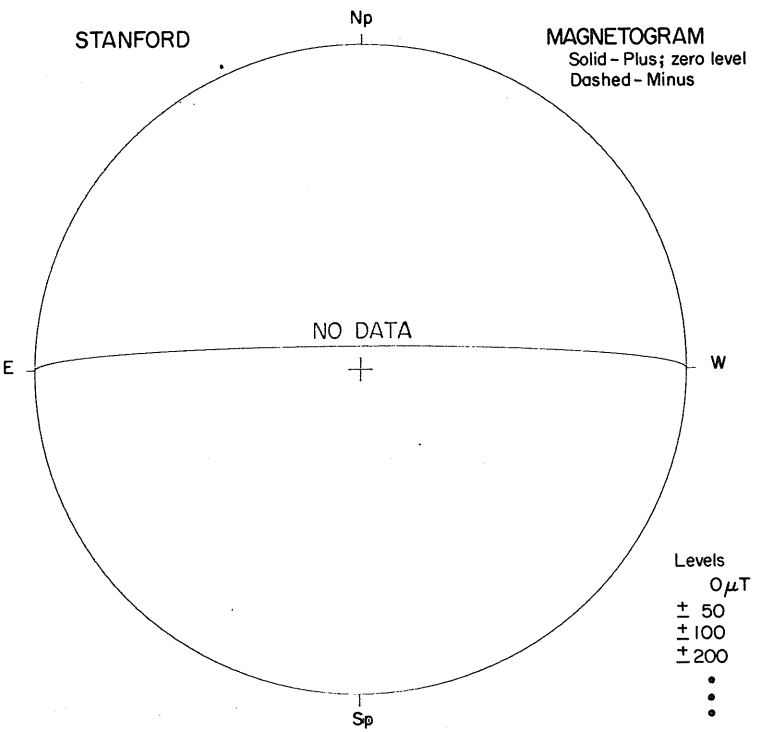
McMATH-HULBERT CALCIUM REPORT



FAIR	S
00- 2100-2.5	
07- 7000-3.5	
08- 2800-3.0	
12- 1500-3.0	
13- 2800-3.0	
15- 2300-2.5	
16- 1200-2.5	
18- 1600-2.5	

STANFORD MAGNETOGRAM

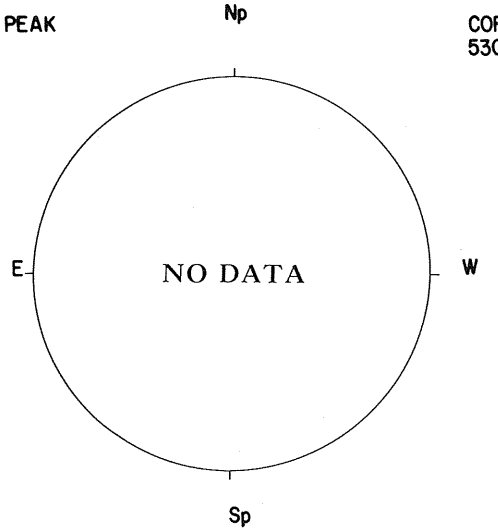
Solid - Plus; zero level
Dashed - Minus

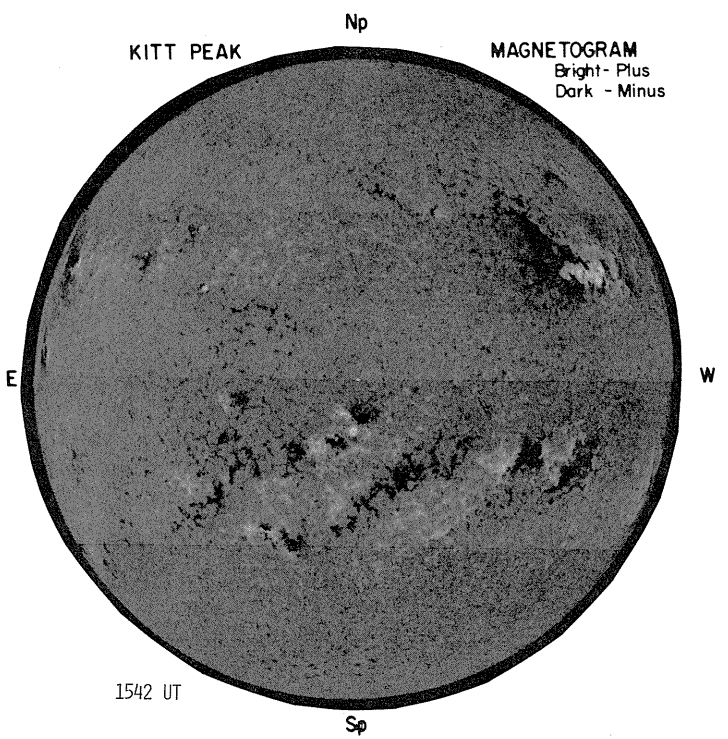


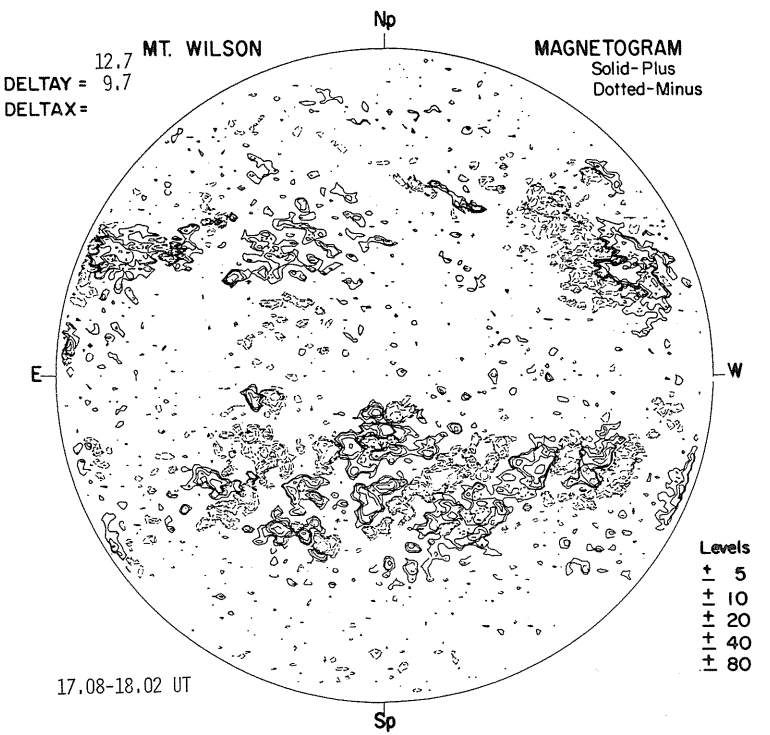
FEBRUARY 12, 1979 (P =-16.20, B_o =-6.68, L_o = 249.72)

SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å



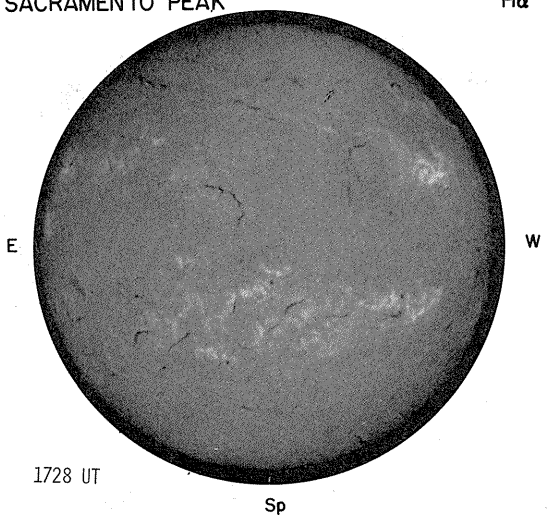




12

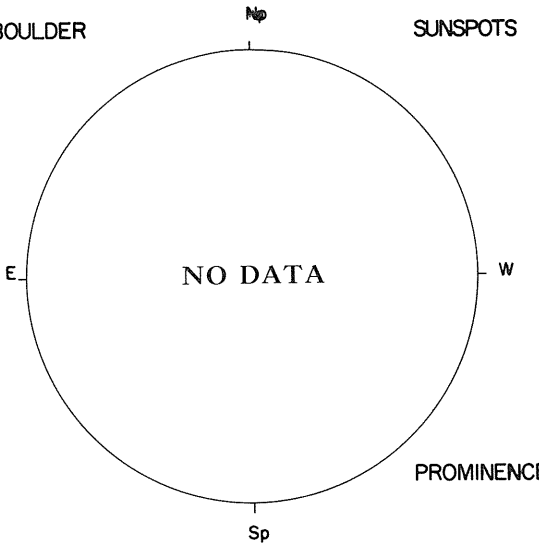
SACRAMENTO PEAK

Hα



BOULDER

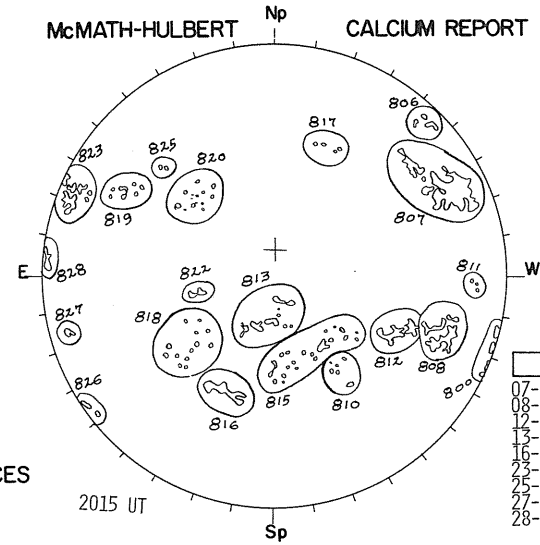
SUNSPOTS



PROMINENCES

McMATH-HULBERT

CALCIUM REPORT



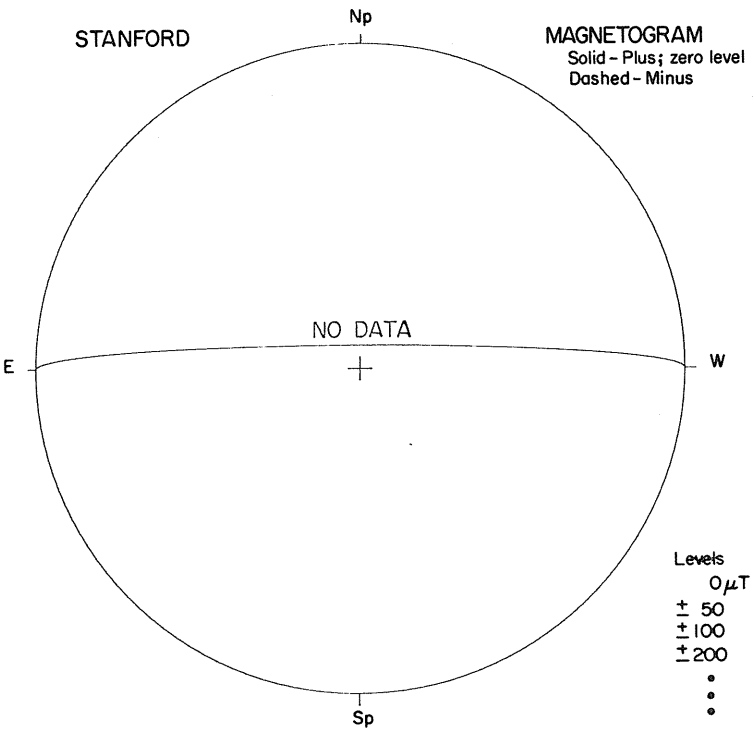
	POOR	S
07-	7000-	3.5
08-	2500-	3.0
12-	1700-	3.0
13-	2000-	2.5
16-	1200-	3.0
23-	3800-	3.0
25-	0200-	2.5
27-	0400-	2.5
28-	1100-	3.5

STANFORD

MAGNETOGRAM

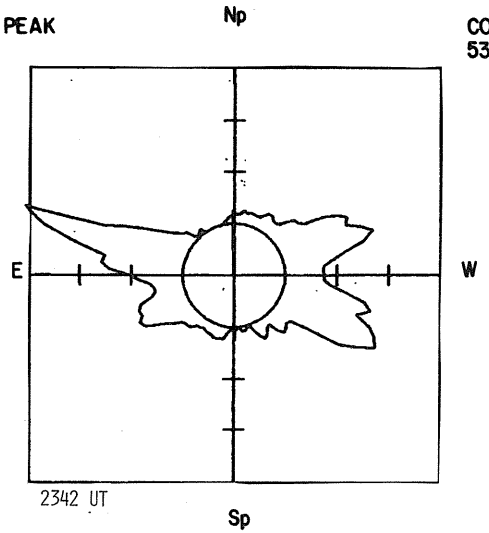
Solid – Plus; zero level

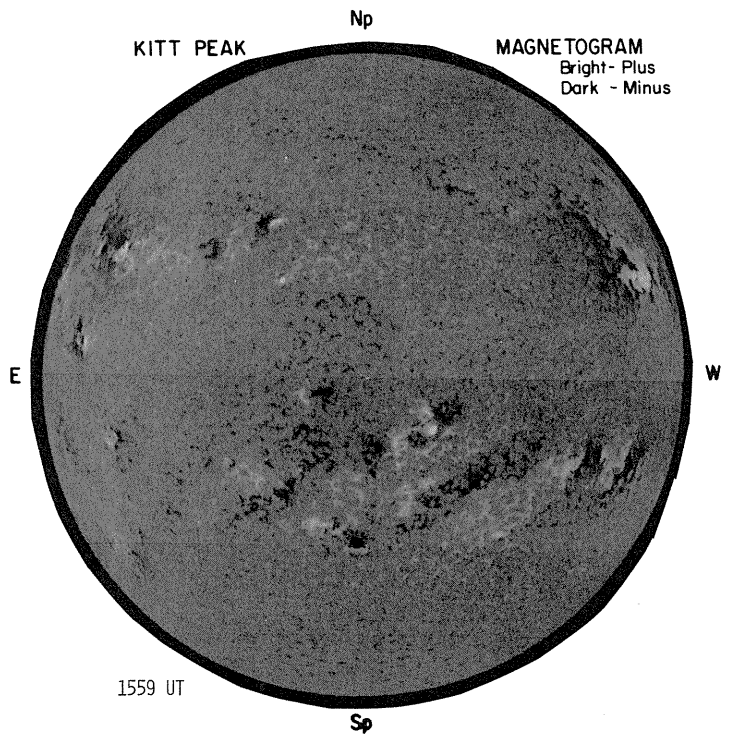
Dashed – Minus

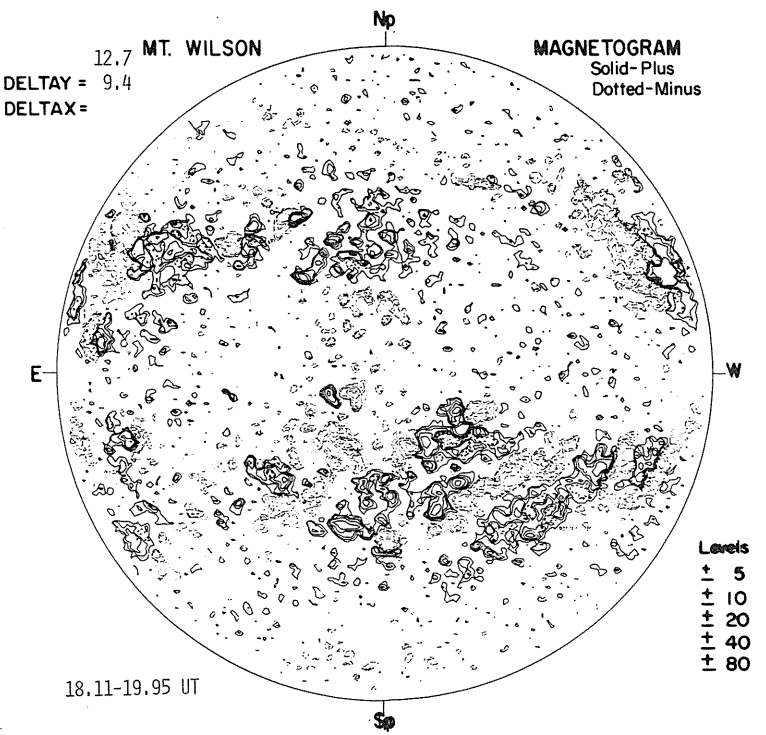


FEBRUARY 13, 1979 (P =-16.55, B_o =-6.73, L_o = 236.56)

SACRAMENTO PEAK



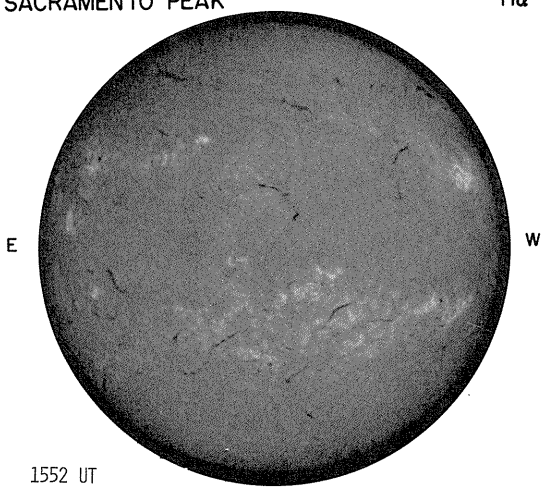




13

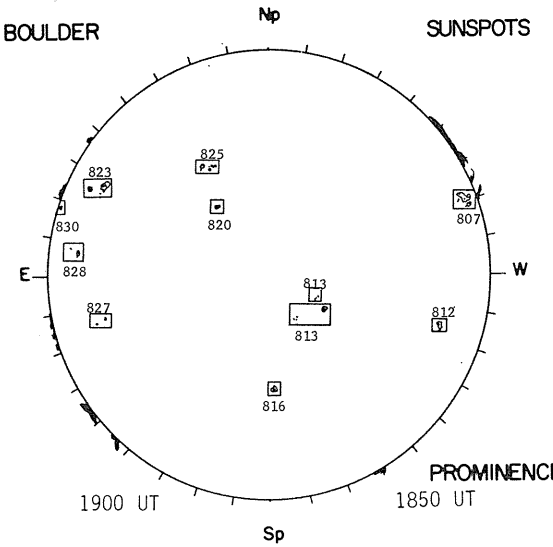
SACRAMENTO PEAK

Hα



1552 UT

BOULDER SUNSPOTS

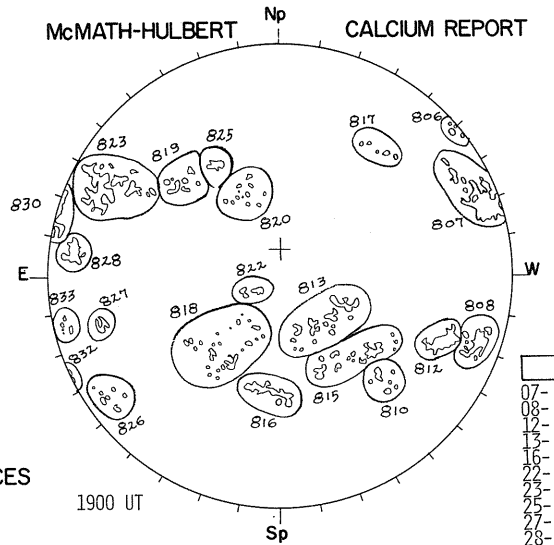


1900 UT

PROMINENCES

1850 UT

McMATH-HULBERT CALCIUM REPORT

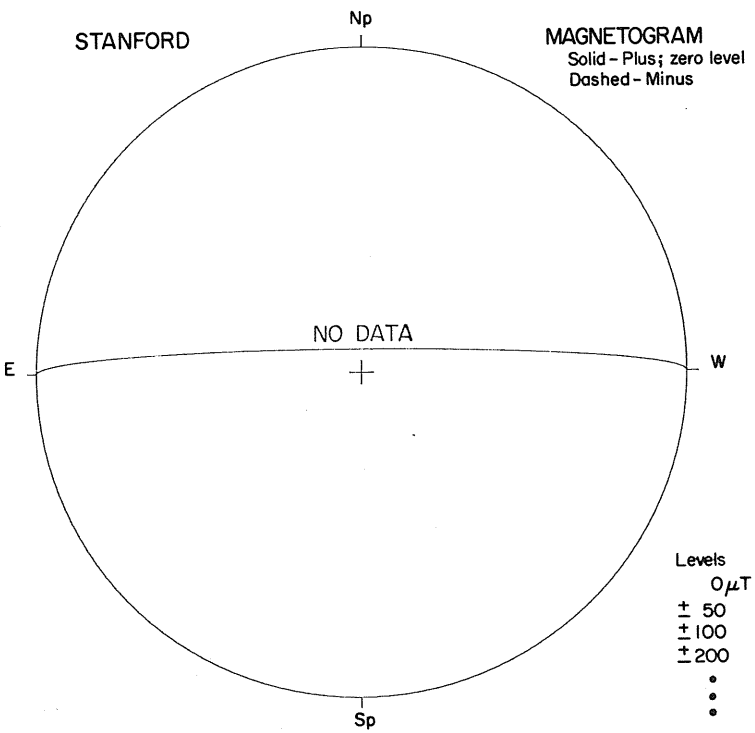


1900 UT

	FAIR	M
07-	7000-	3.5
08-	2500-	3.0
12-	1800-	3.0
13-	2000-	2.5
16-	1200-	2.5
22-	0400-	2.5
23-	4100-	3.0
25-	0400-	3.0
27-	0800-	2.5
28-	1300-	3.5
30-	4000-	2.5

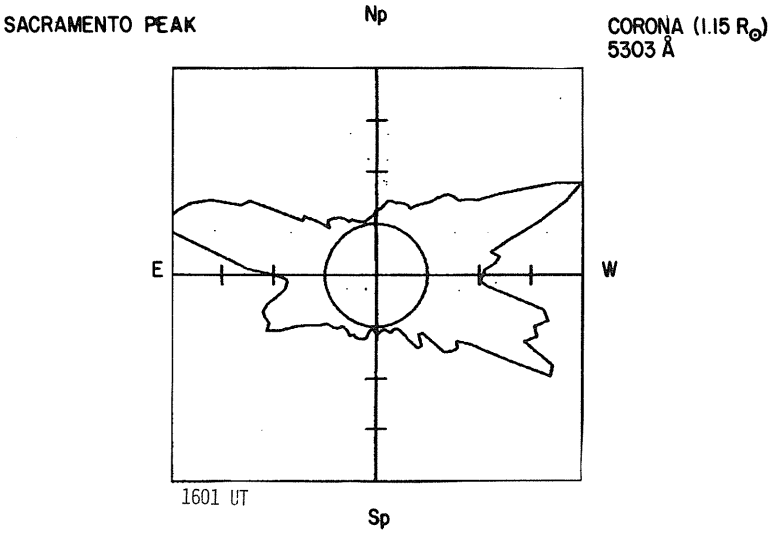
STANFORD MAGNETOGRAM

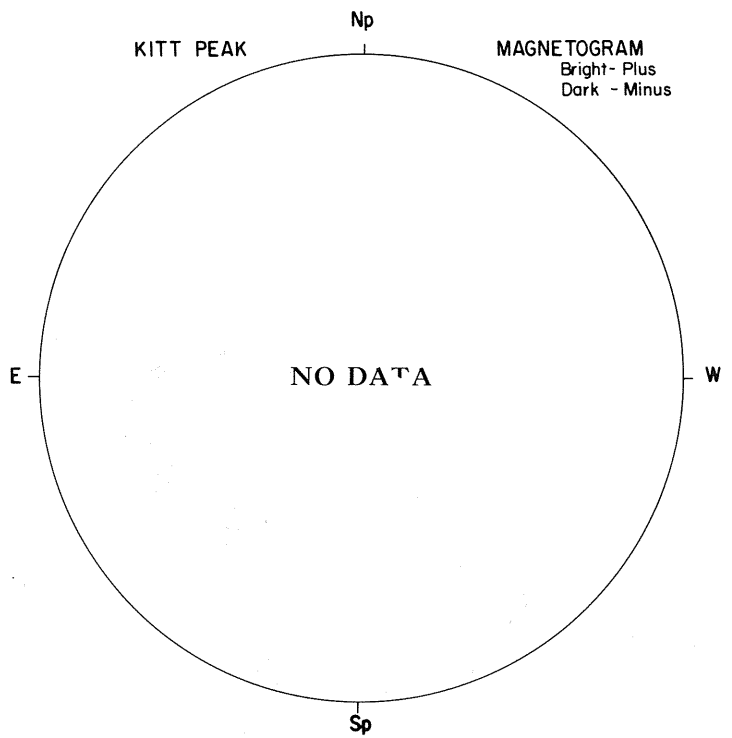
Solid - Plus; zero level
Dashed - Minus

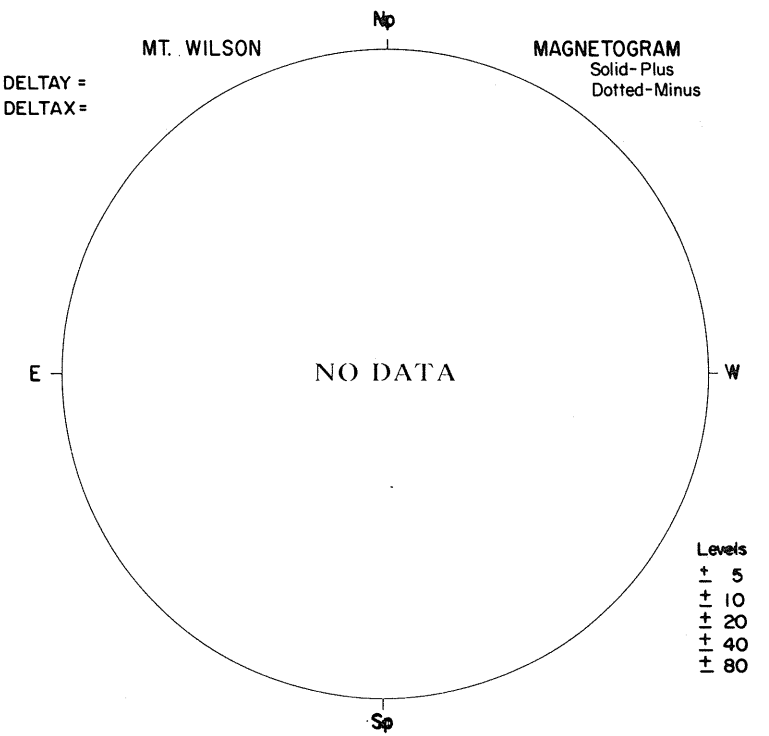


FEBRUARY 14, 1979 (P =-16.90, B_o =-6.78, L_o = 223.39)

SACRAMENTO PEAK

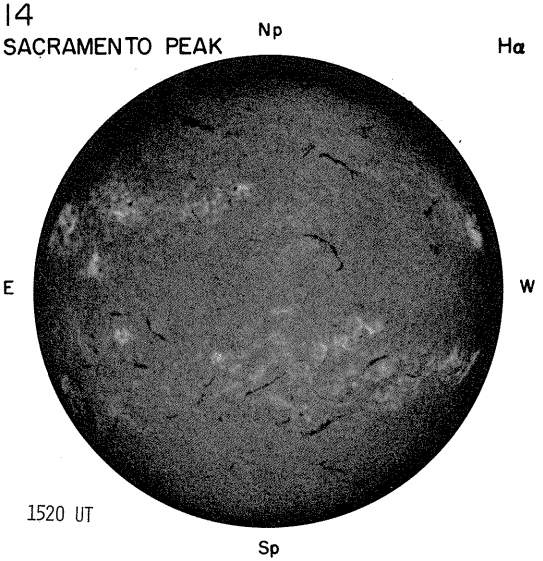




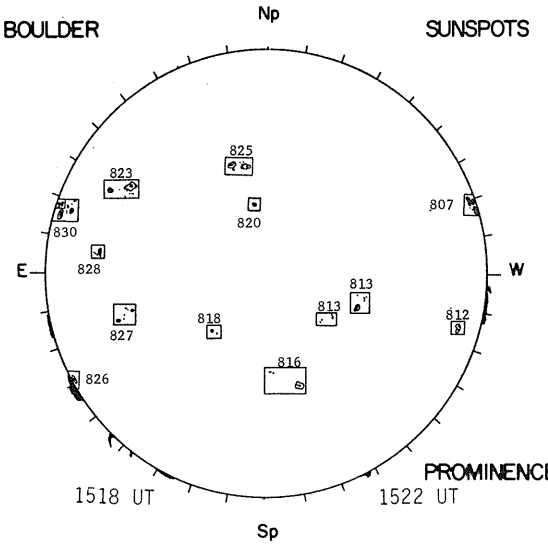


14

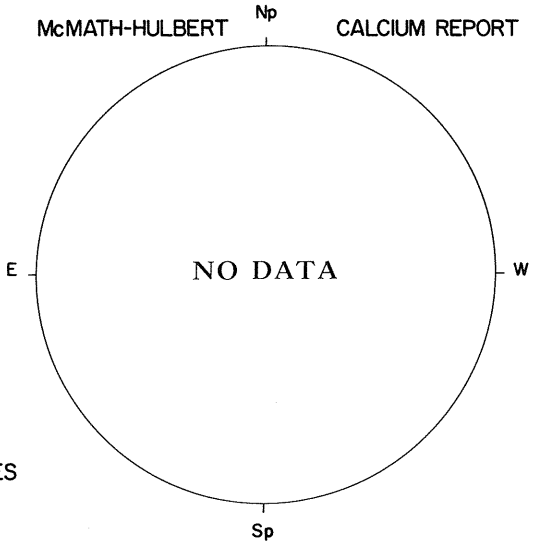
SACRAMENTO PEAK



BOULDER SUNSPOTS



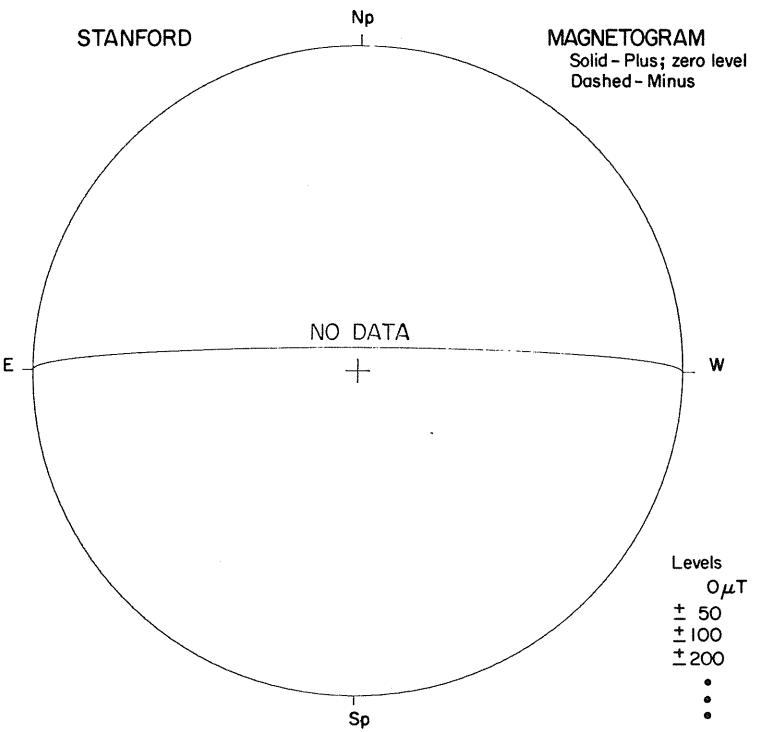
McMATH-HULBERT CALCIUM REPORT



PROMINENCES

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus

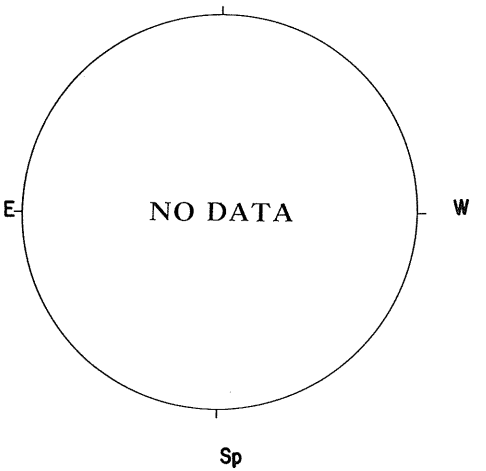


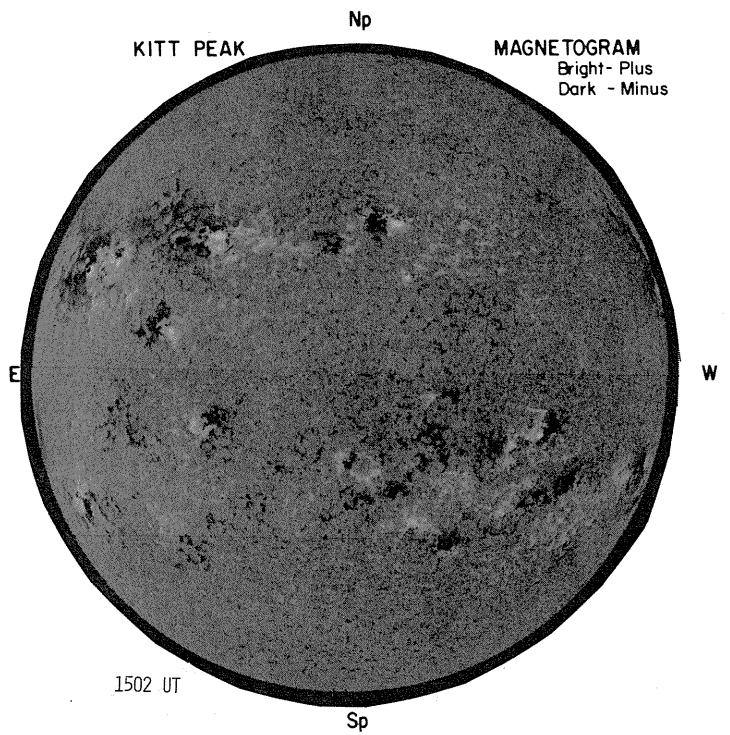
77
Feb 79

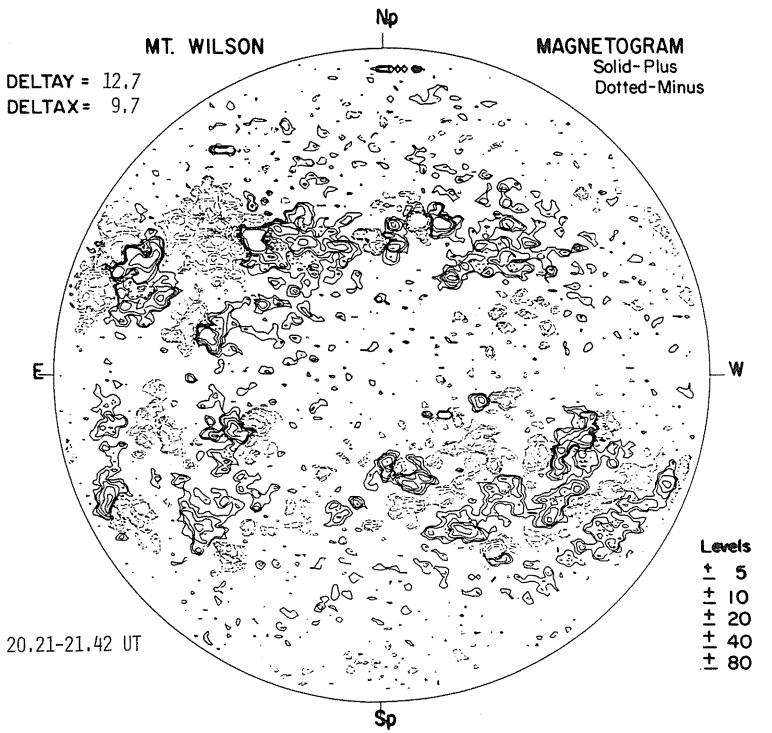
FEBRUARY 15, 1979 (P =-17.24, B_o =-6.82, L_o = 210.22)

SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å

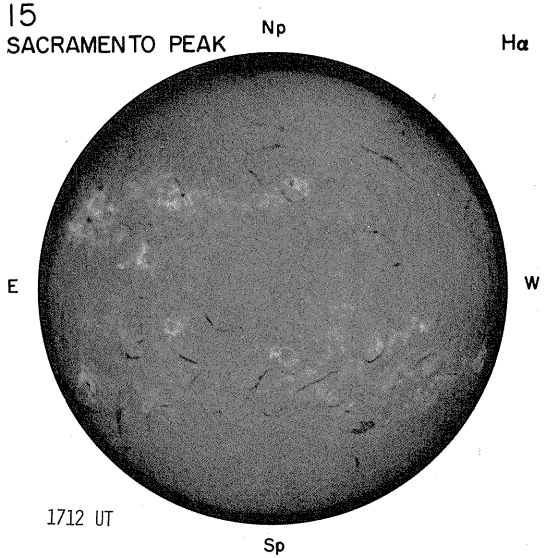






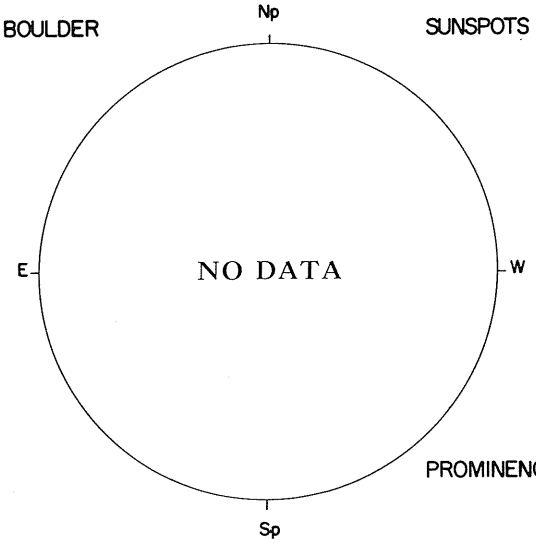
15

SACRAMENTO PEAK



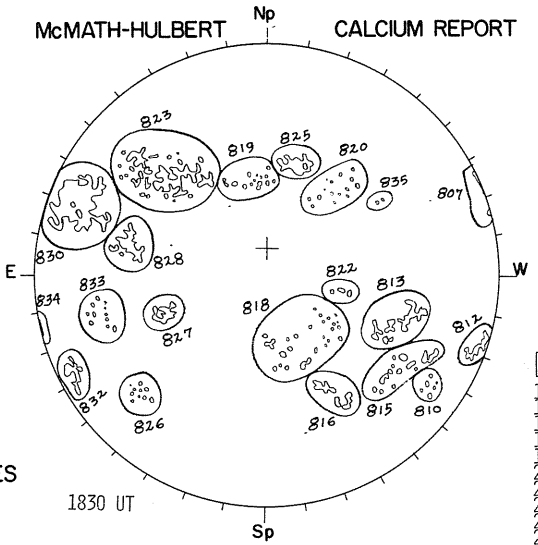
Hα

BOULDER



SUNSPOTS

McMATH-HULBERT



CALCIUM REPORT

	FAIR	M
12-	2200	2.5
13-	1900	3.0
15-	1700	2.5
16-	1200	2.5
18-	1200	2.5
22-	0300	2.5
23-	4500	3.0
25-	1400	3.0
27-	1100	3.0
28-	1400	3.0
30-	7200	3.5
32-	1600	3.0

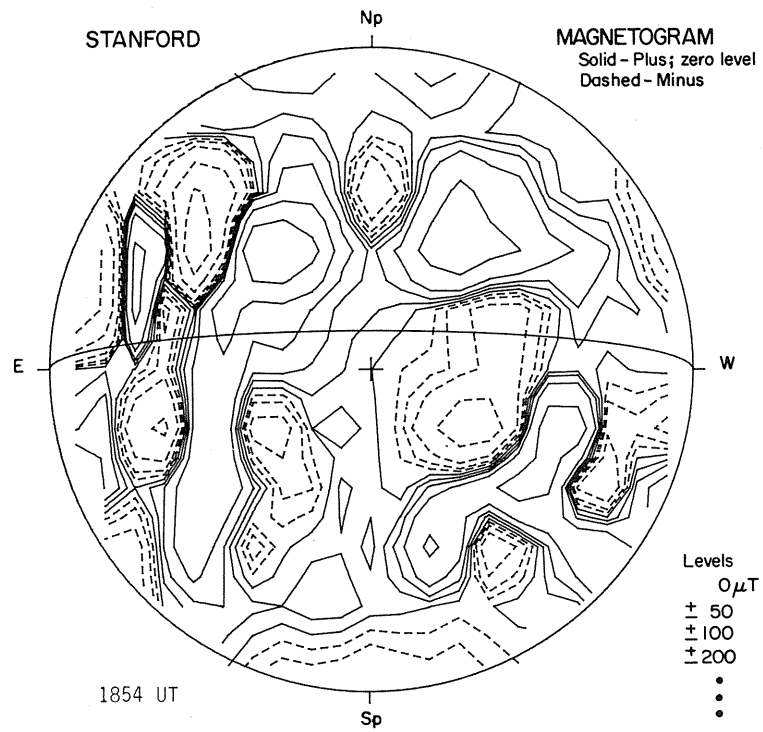
PROMINENCES

STANFORD

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



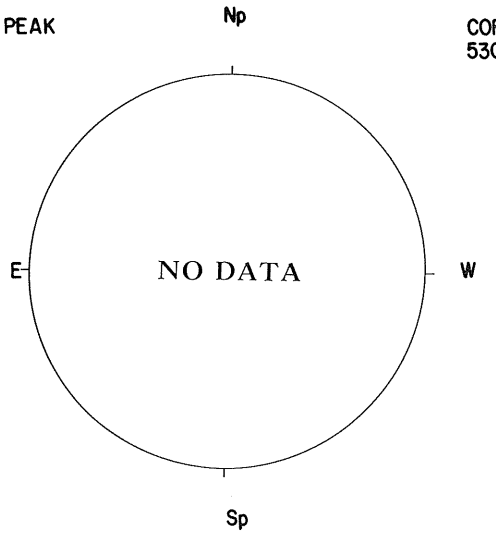
79

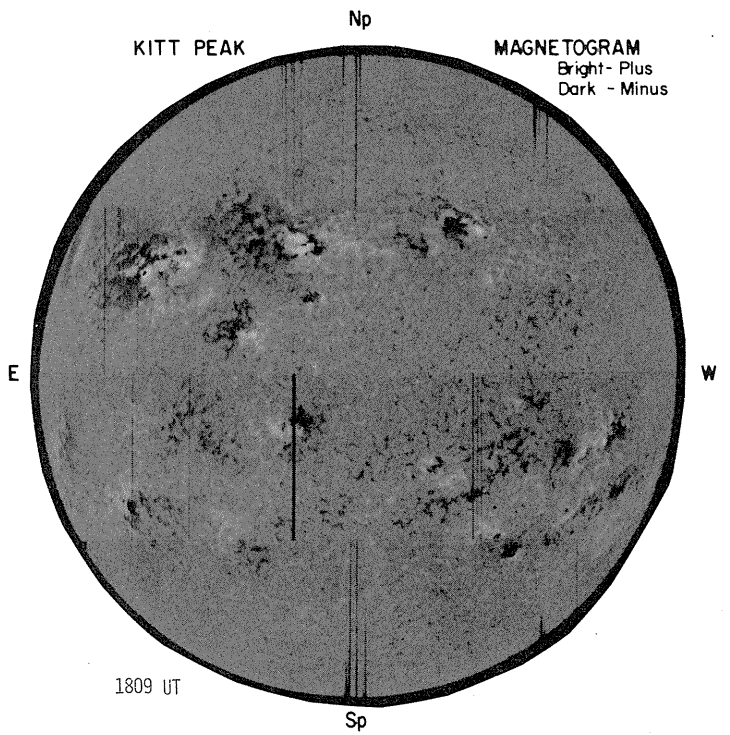
Feb 79

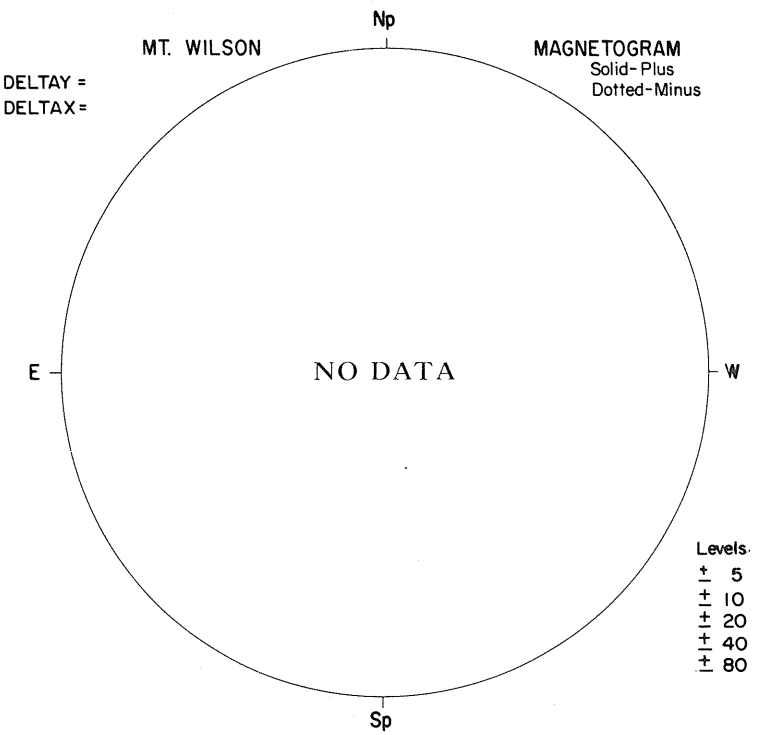
FEBRUARY 16, 1979 (P = -17.58, B_o = -6.86, L_o = 197.05)

SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å

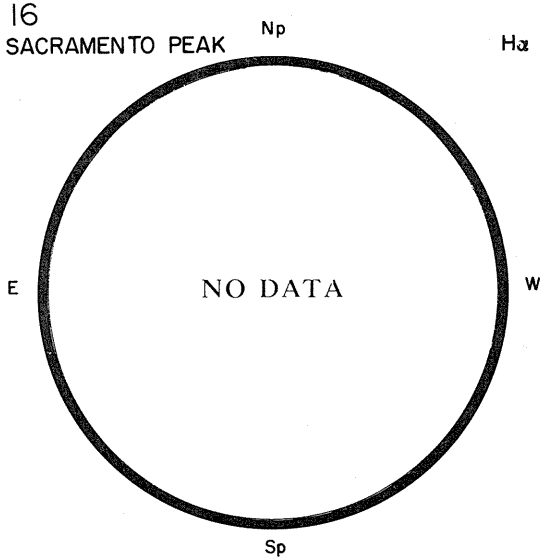




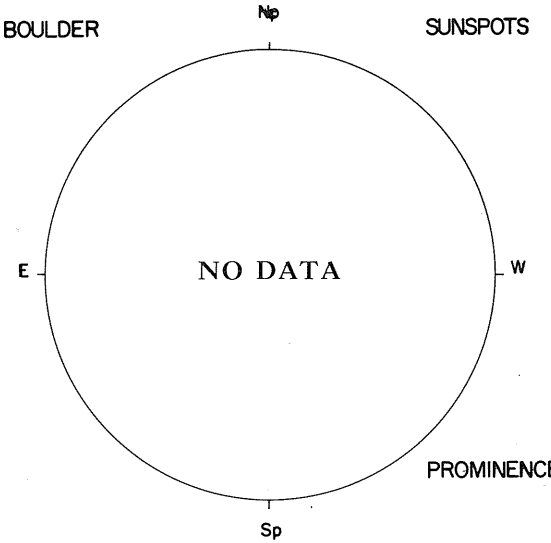


16

SACRAMENTO PEAK Hα

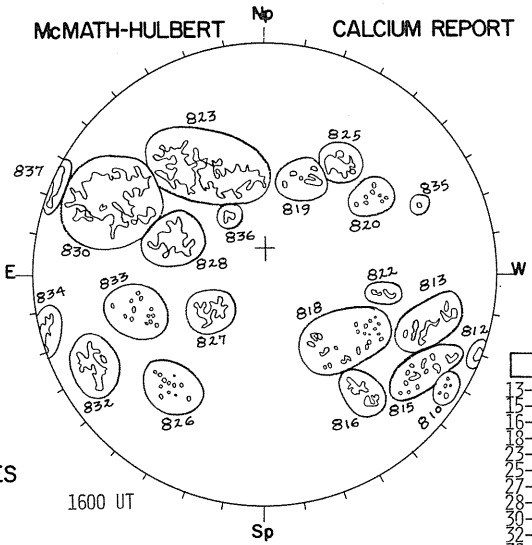


BOULDER SUNSPOTS



PROMINENCES

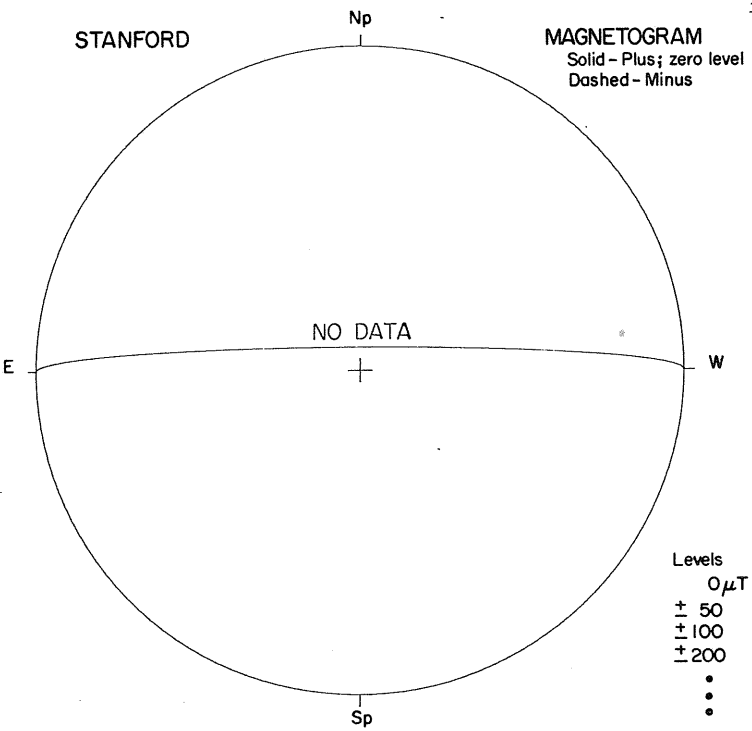
McMATH-HULBERT CALCIUM REPORT



	FAIR	M
13-	1900-	3.0
15-	1200-	2.5
16-	1100-	2.5
18-	1200-	2.5
23-	5300-	3.0
25-	1500-	3.5
27-	1100-	2.5
28-	1700-	3.0
30-	8000-	3.5
32-	2300-	3.5
36-	0200-	2.5
37-	3000-	2.5

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus

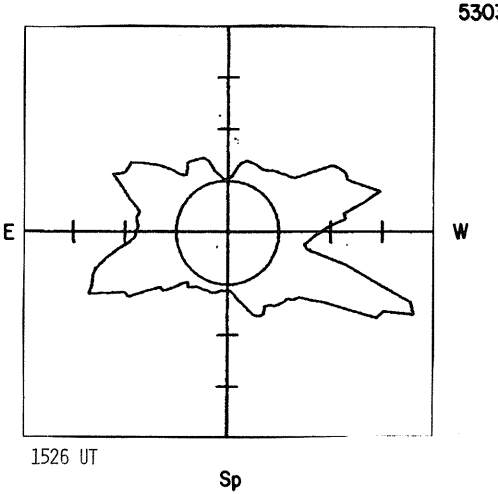


81
Feb 79

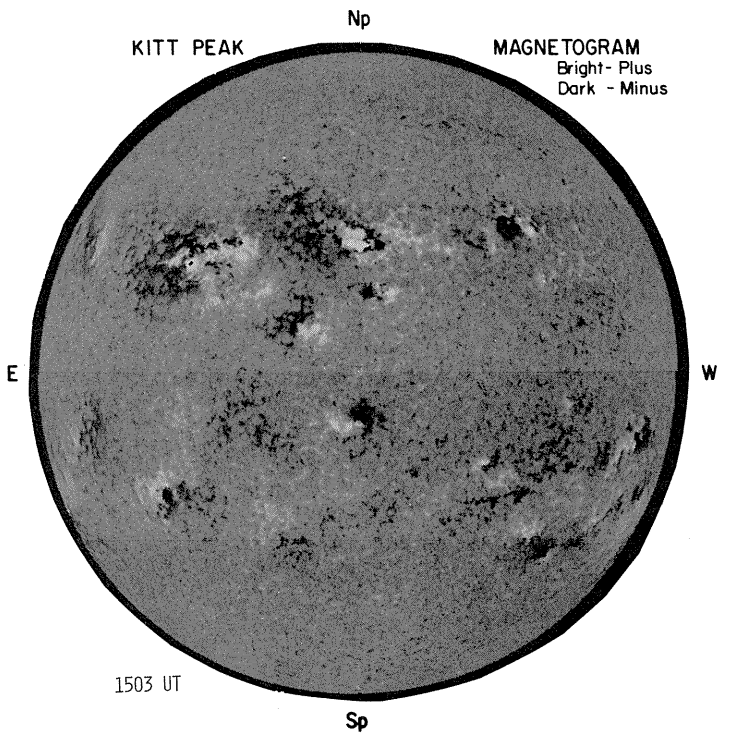
FEBRUARY 17, 1979 (P =-17.91, B_o =-6.90, L_o =183.88)

SACRAMENTO PEAK

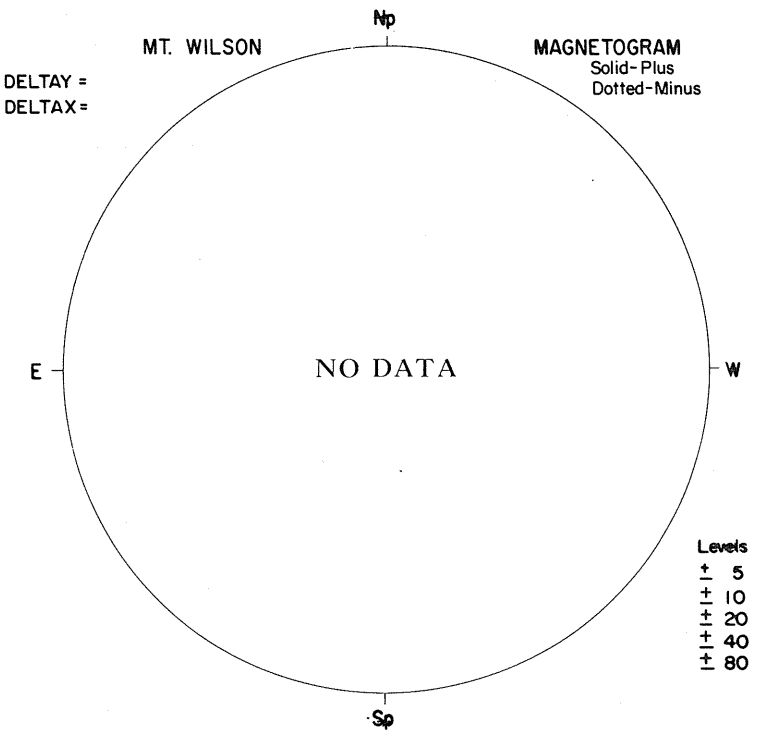
CORONA (1.15 $R_\odot$)
5303 Å



1526 UT

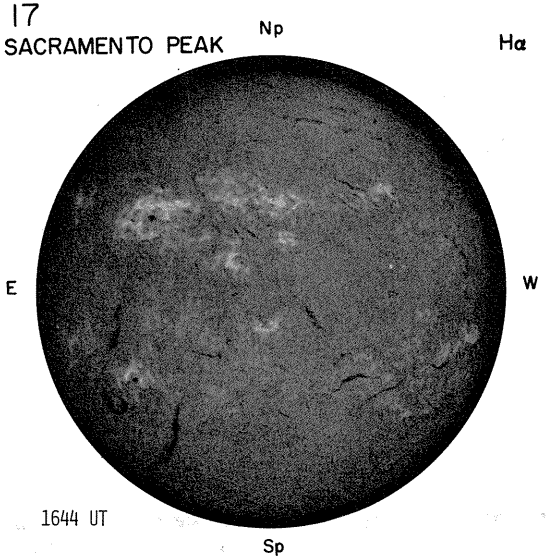


1503 UT

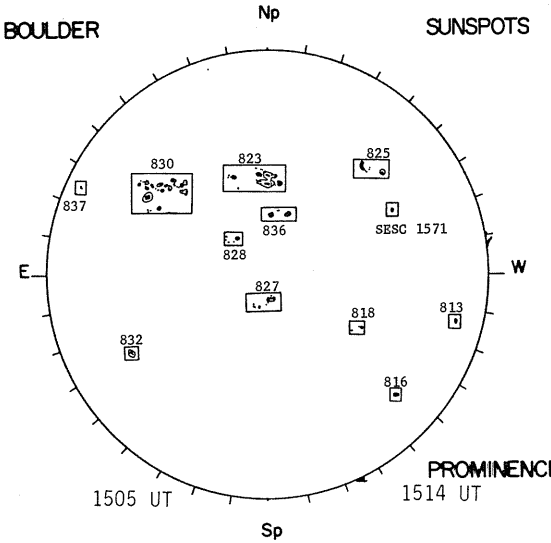


17

SACRAMENTO PEAK Hα

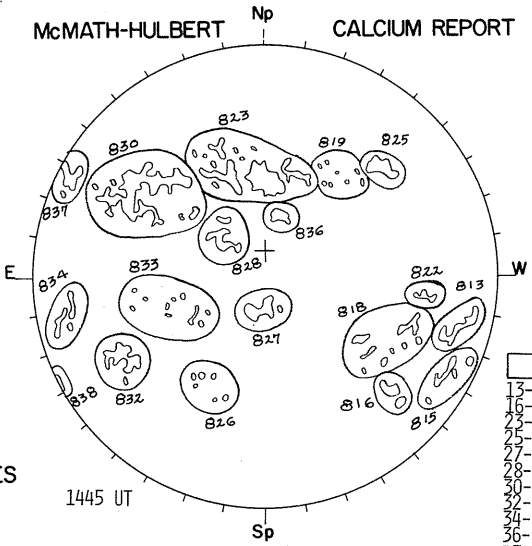


BOULDER SUNSPOTS



PROMINENCES 1514 UT

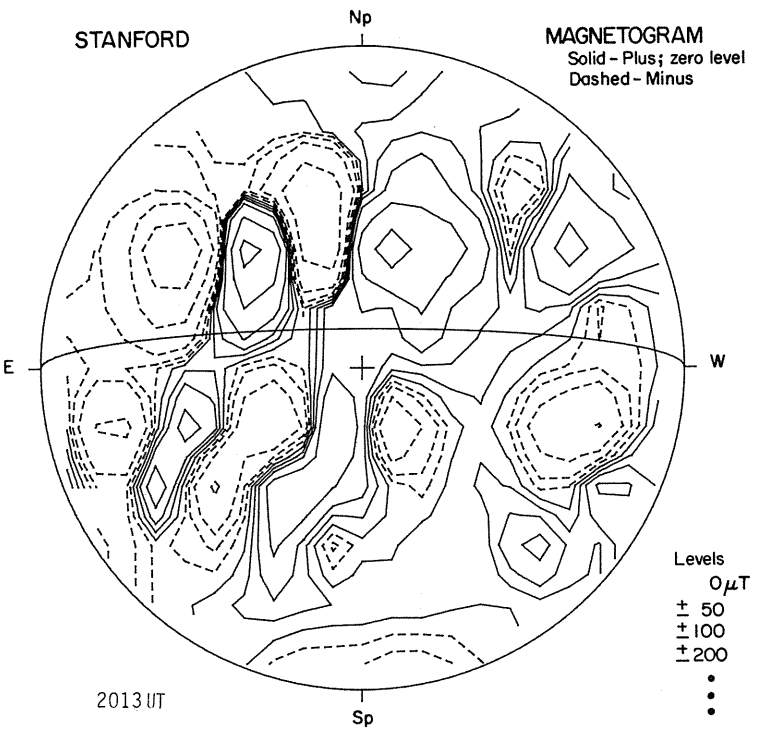
McMATH-HULBERT CALCIUM REPORT



	POOR	S
13-	1900	3.0
16-	1100	2.5
22-	5800	3.0
25-	1600	3.0
27-	1200	3.0
28-	1400	3.0
30-	7600	3.0
32-	2300	3.0
34-	1700	2.5
36-	0700	2.5
37-	3000	3.0

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus



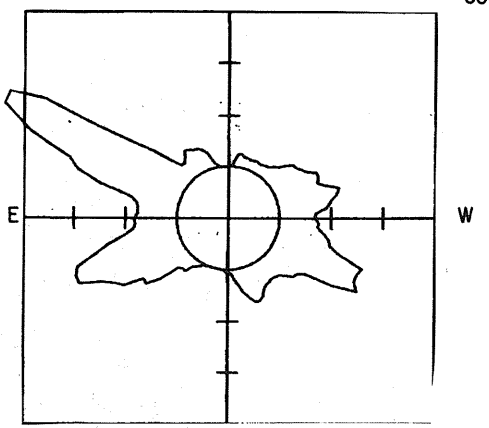
83
Feb 79

FEBRUARY 18, 1979 (P =-18.24, B_o =-6.94, L_o =170.71)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å



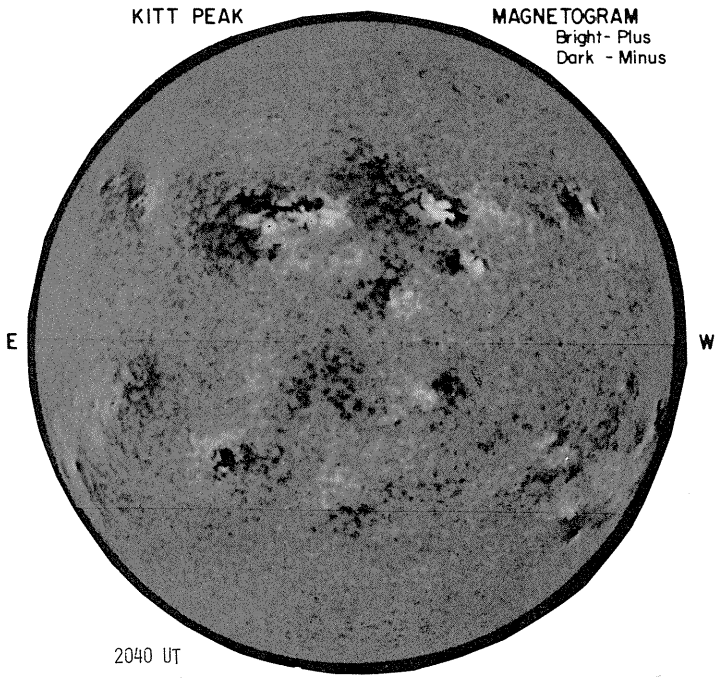
1533 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright- Plus
Dark - Minus



2040 UT

Sp

MT. WILSON

Np

DELTAY =
DELTAX =

MAGNETOGRAM
Solid- Plus
Dotted- Minus

E

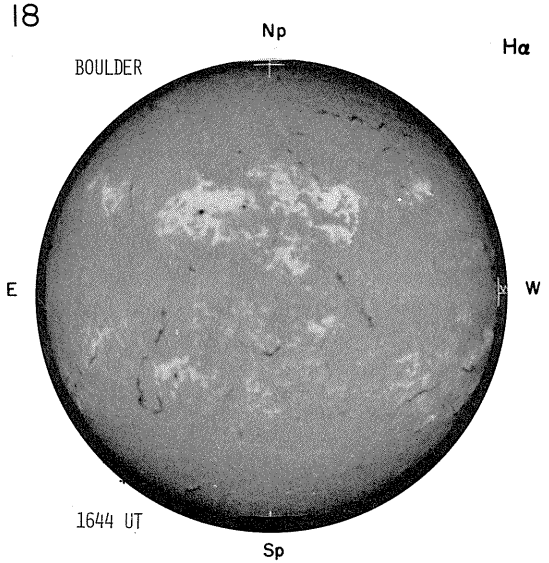
NO DATA

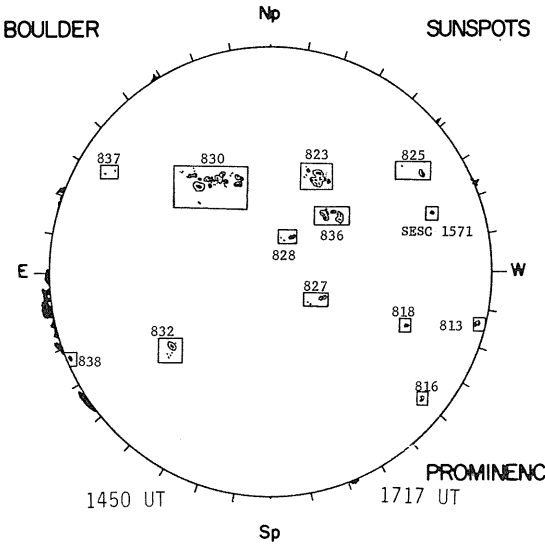
W

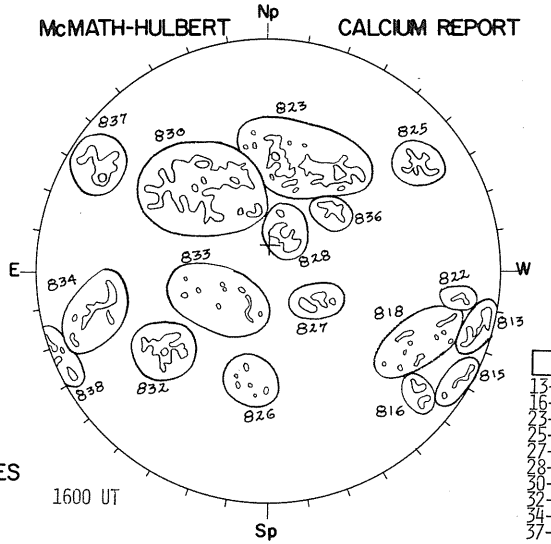
Levels
± 5
± 10
± 20
± 40
± 80

Sp

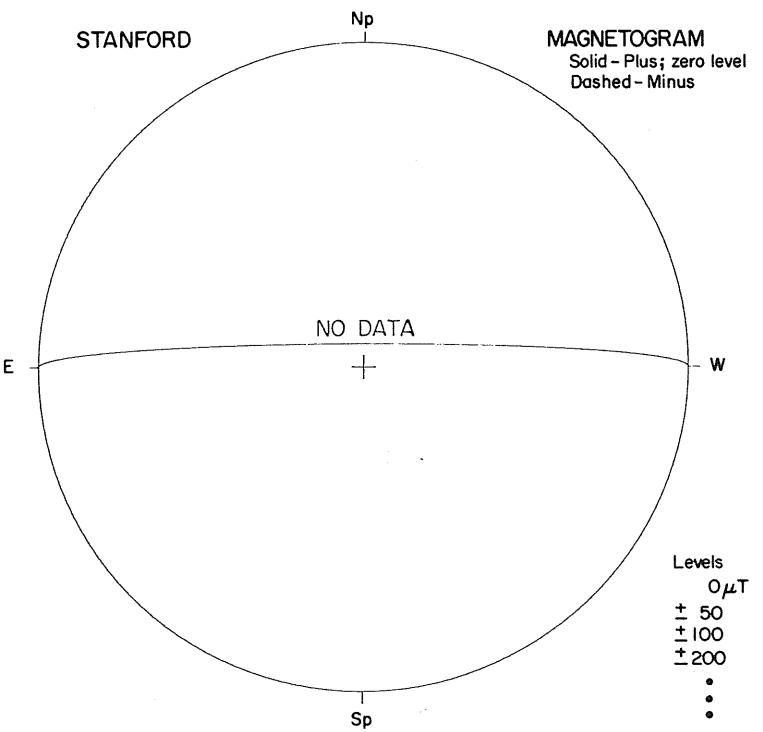
18







	POOR	S
13-	2100-	3.0
16-	1100-	2.5
23-	5800-	3.0
25-	1800-	3.0
27-	0900-	2.5
28-	1200-	2.5
30-	8000-	3.0
32-	2300-	3.0
34-	1500-	2.5
37-	3000-	3.0

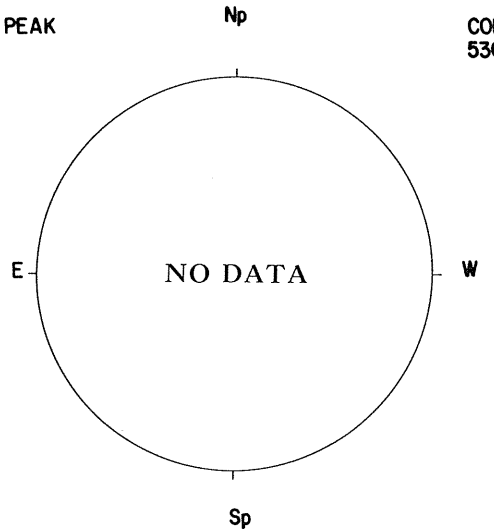


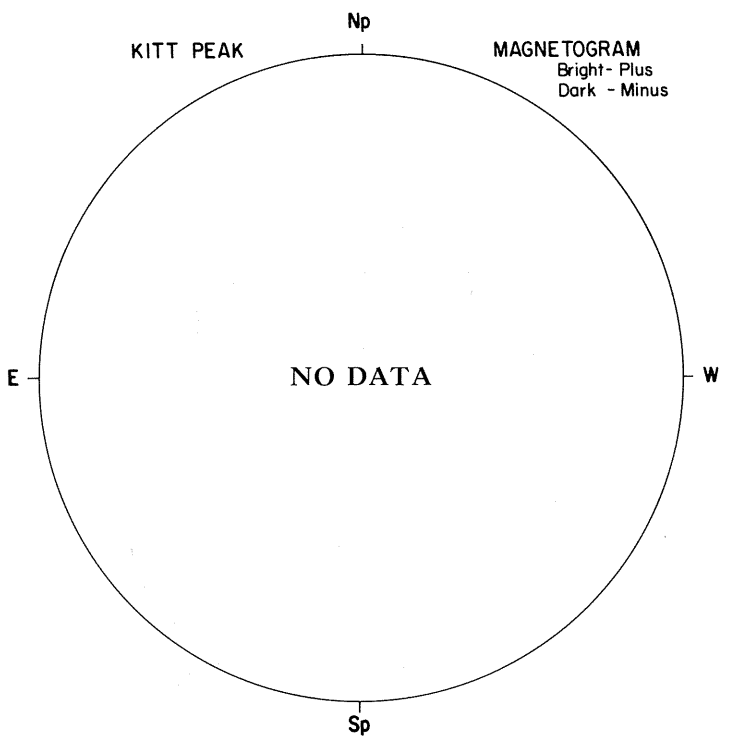
85
Feb 79

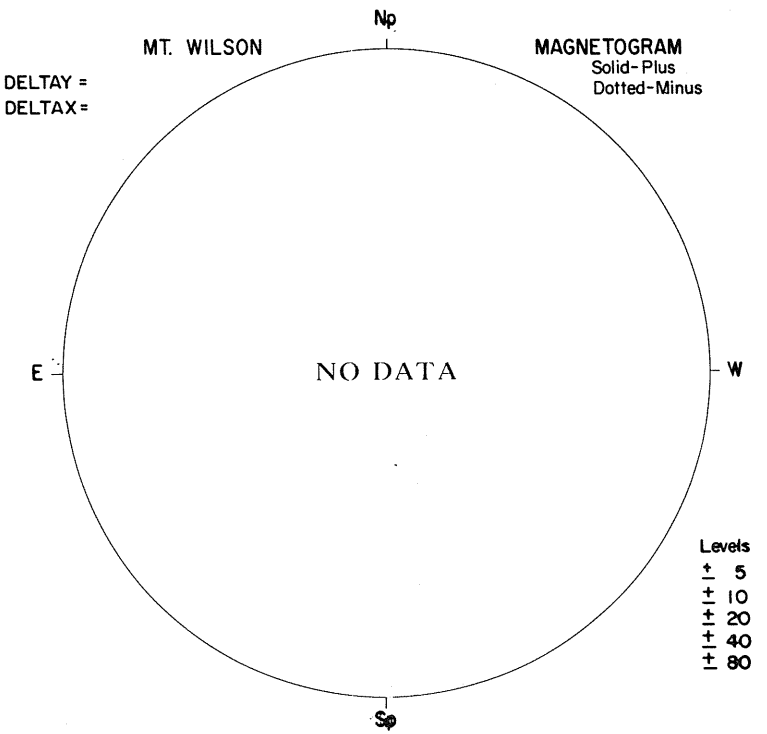
FEBRUARY 19, 1979 (P =-18.55, B_0 =-6.98, L_0 = 157.55)

SACRAMENTO PEAK

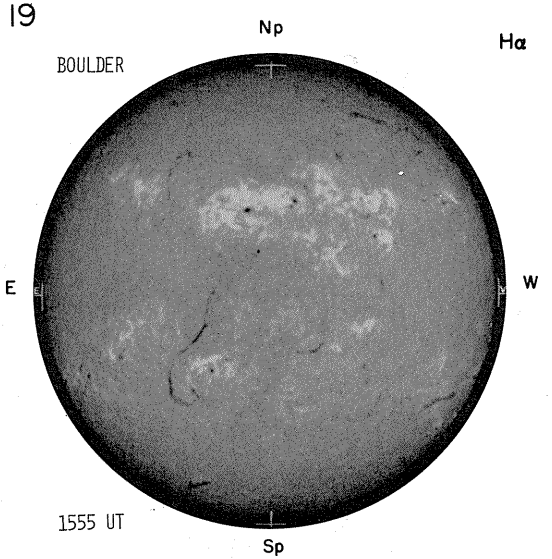
CORONA (1.15 $R_\odot$)
5303 Å

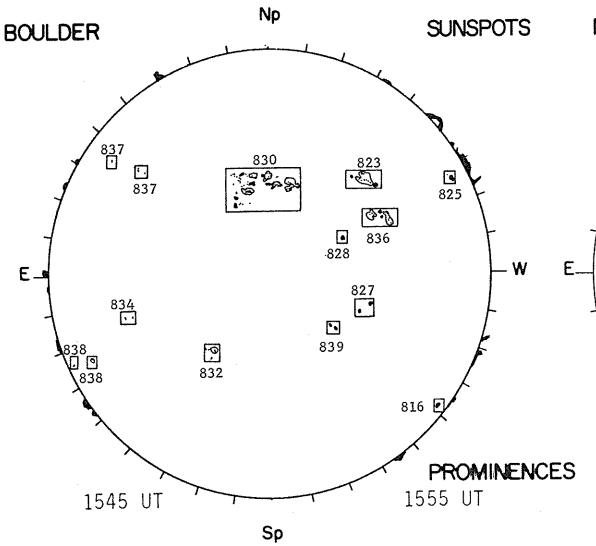


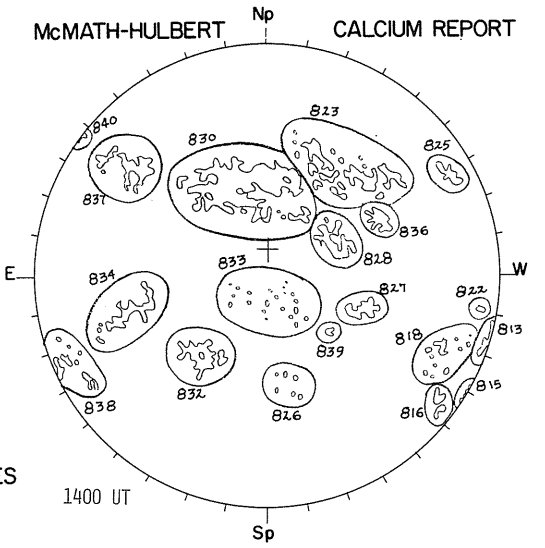




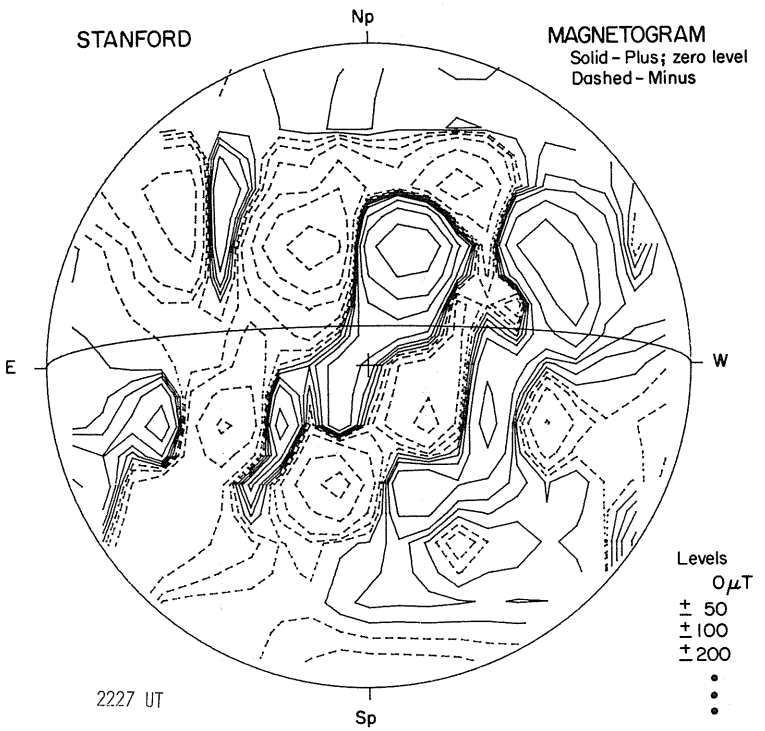
19







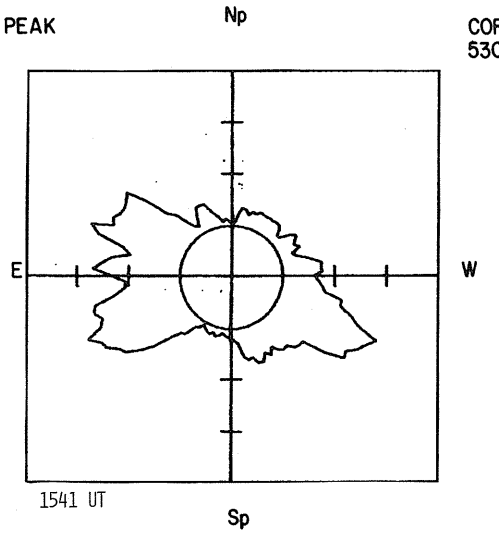
	FAIR	M
16-	1300-	2.5
23-	5200-	3.0
25-	1800-	3.0
27-	0900-	3.0
28-	1300-	2.5
30-	8000-	3.5
32-	2300-	3.0
34-	1800-	3.0
36-	1000-	3.0
37-	2700-	3.0

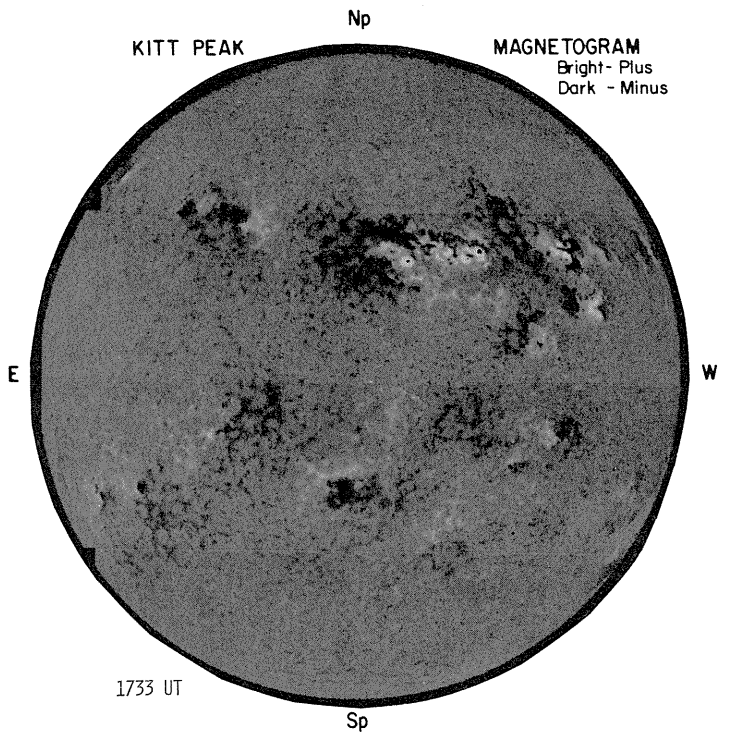


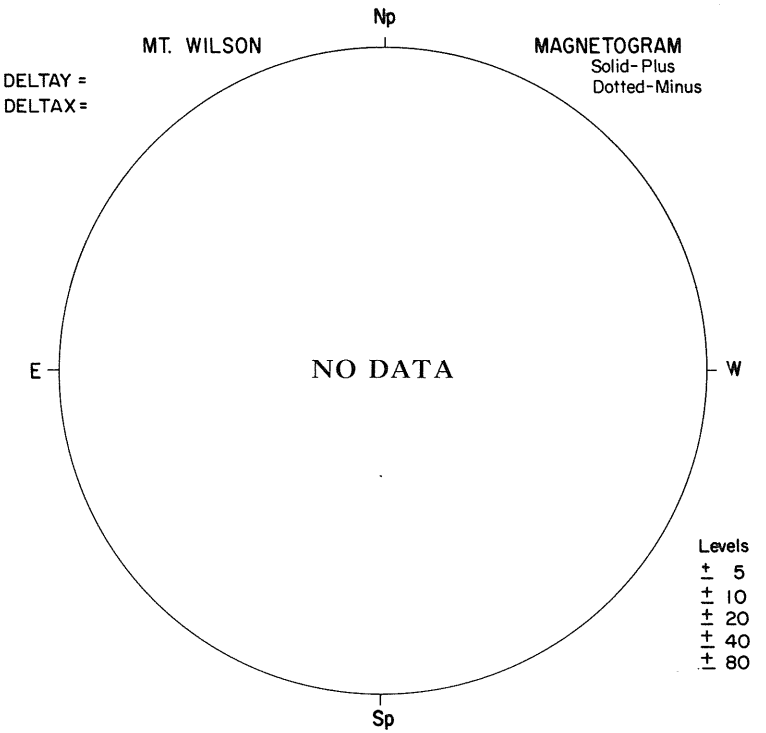
87
Feb 79

FEBRUARY 20, 1979 (P = -18.87, B_o = -7.01, L_o = 144.38)

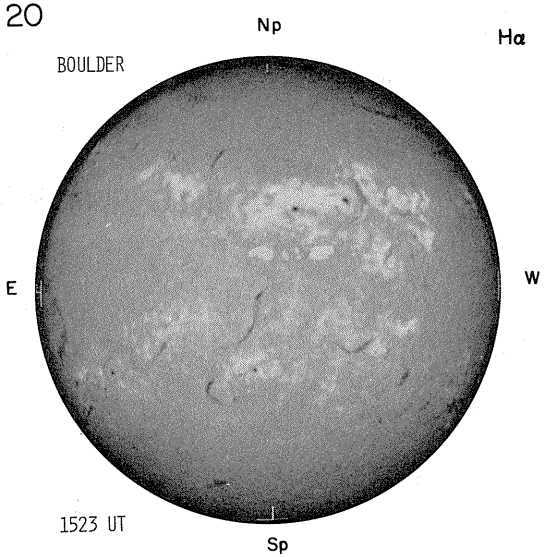
SACRAMENTO PEAK

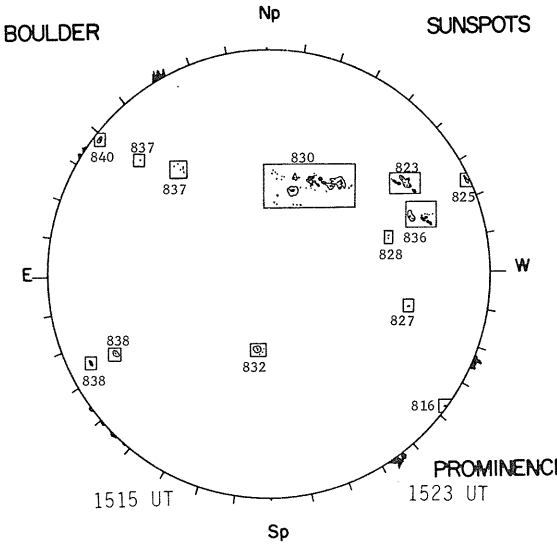


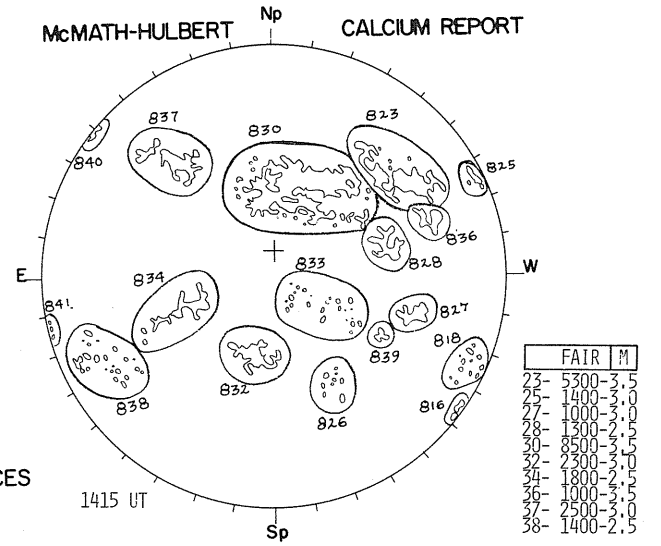


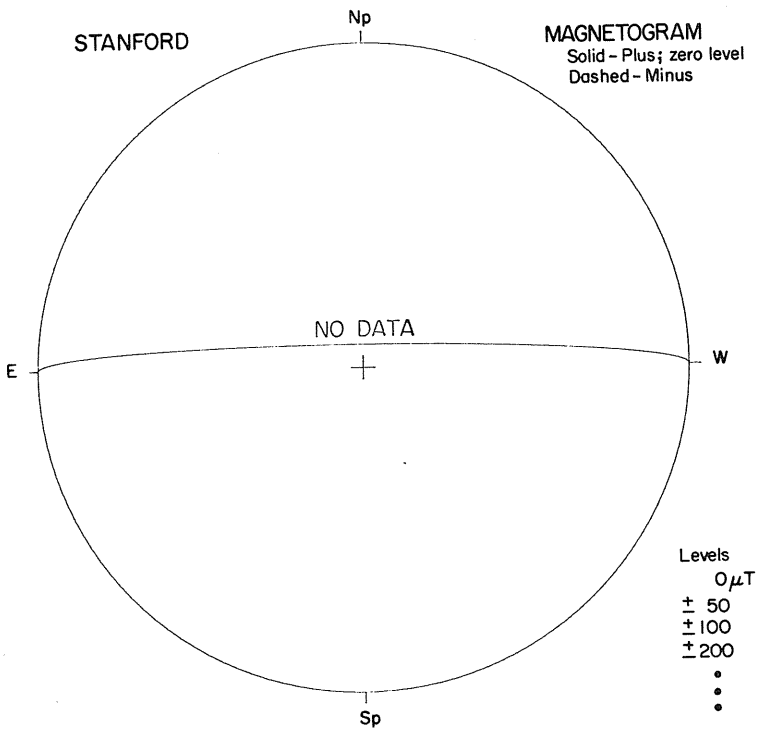


20


BOULDER
Np
Hα
E
W
Sp
1523 UT


BOULDER
Np
SUNSPOTS
E
W
Sp
1515 UT
1523 UT
PROMINENCES
840
837
837
830
823
825
836
828
827
838
838
832
816


McMATH-HULBERT
Np
CALCIUM REPORT
E
W
Sp
1415 UT
840
837
830
823
825
836
828
833
834
841
827
839
818
838
832
826
816
FAIR | M
23- 5300-3.5
25- 1400-3.0
27- 1000-3.0
28- 1300-2.5
30- 8500-3.5
32- 2300-3.0
34- 1800-2.5
36- 1000-3.5
37- 2500-3.0
38- 1400-2.5

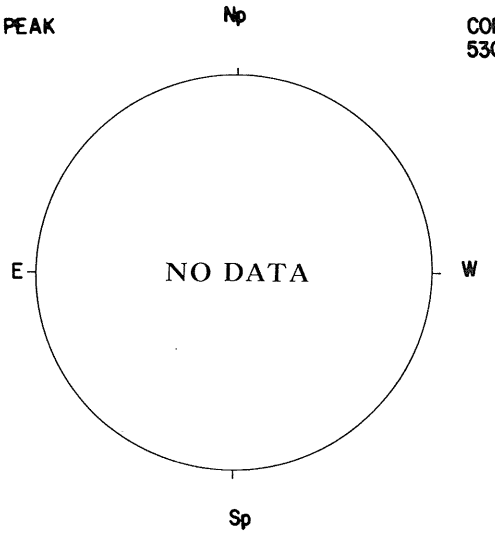

STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
NO DATA
E
W
Sp
Levels
0μT
± 50
± 100
± 200

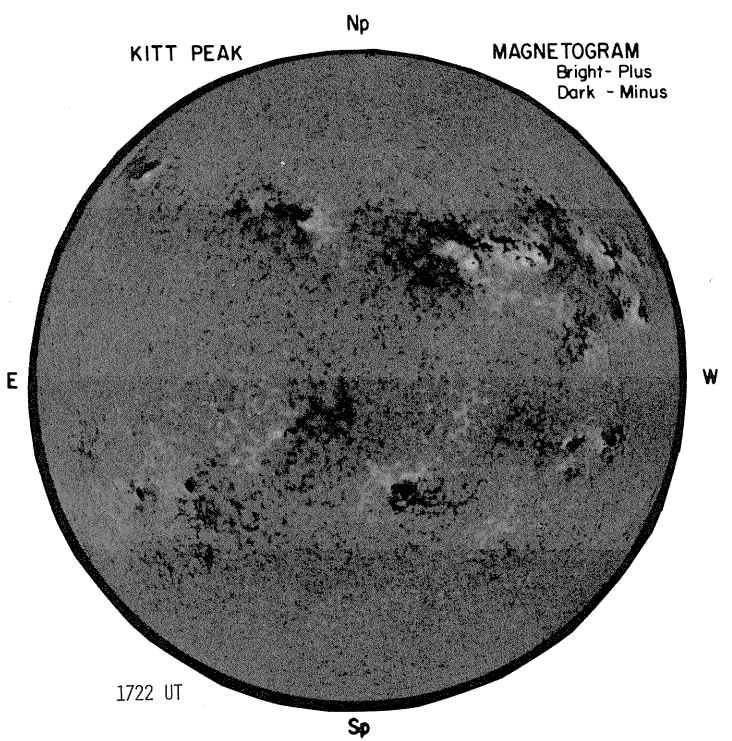
89
Feb 79

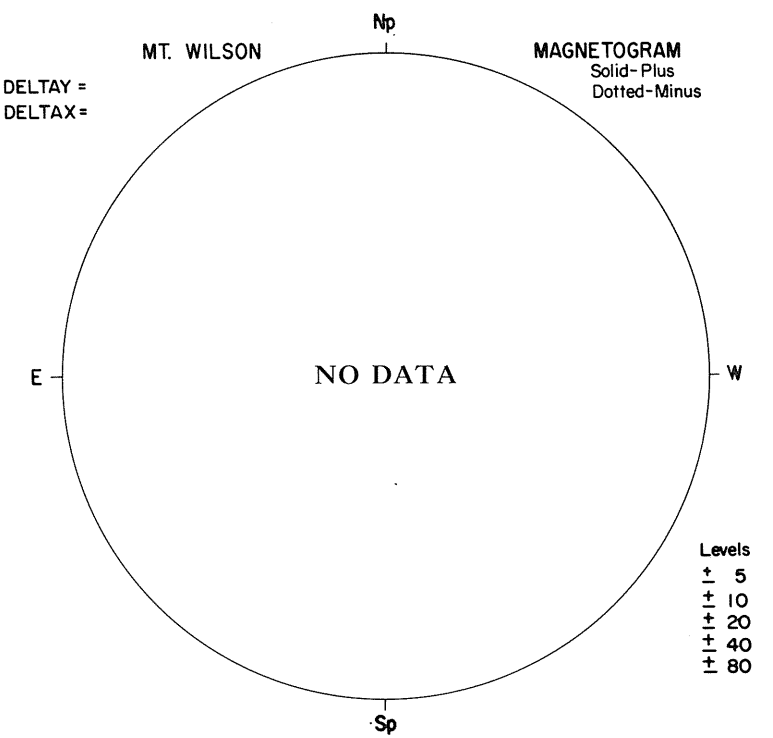
FEBRUARY 21, 1979 (P = -19.18, B_0 = -7.04, L = 131.21)

SACRAMENTO PEAK

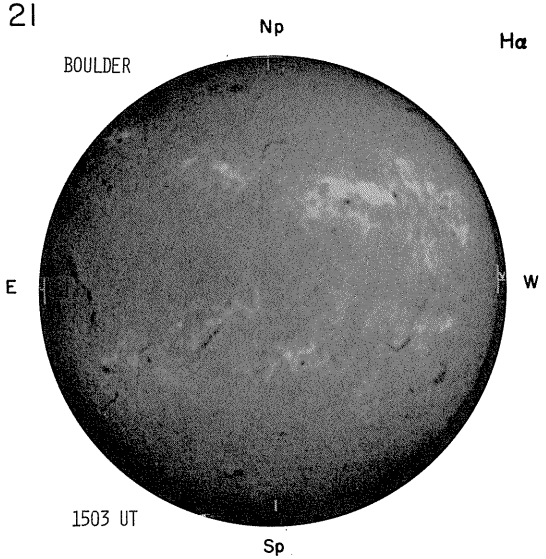
CORONA (1.15 $R_\odot$)
5303 Å

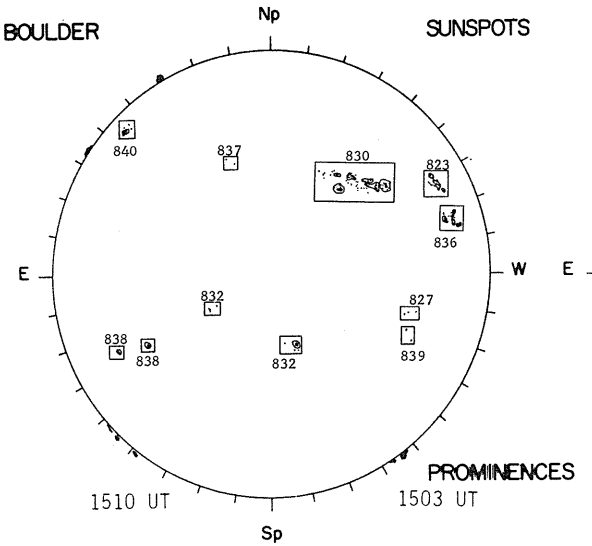


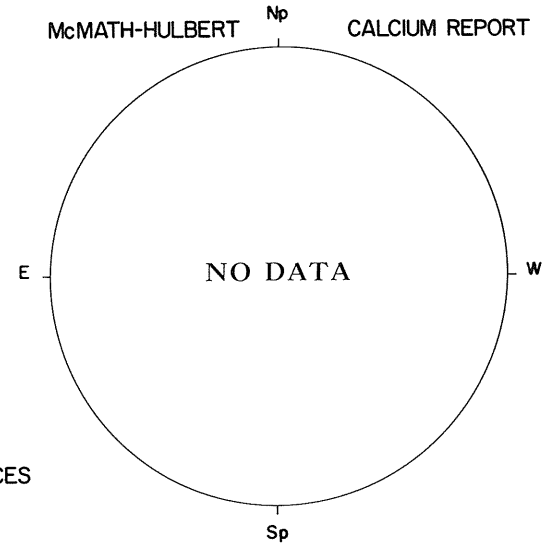


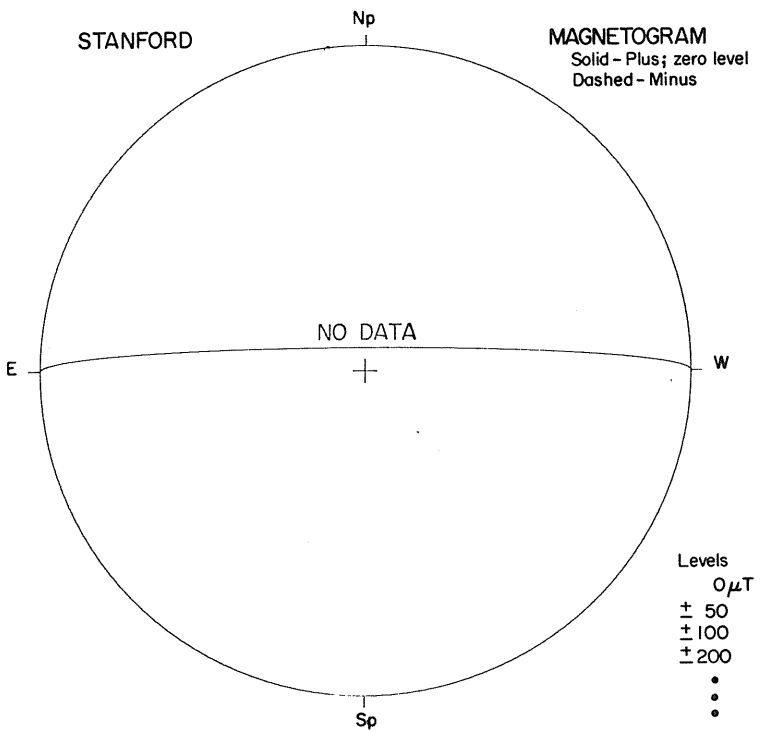


21


Np
BOULDER
Hα
E
W
1503 UT
Sp


Np
BOULDER
SUNSPOTS
840
837
830
823
836
E
W
832
827
838
838
832
839
PROMINENCES
1510 UT
1503 UT
Sp

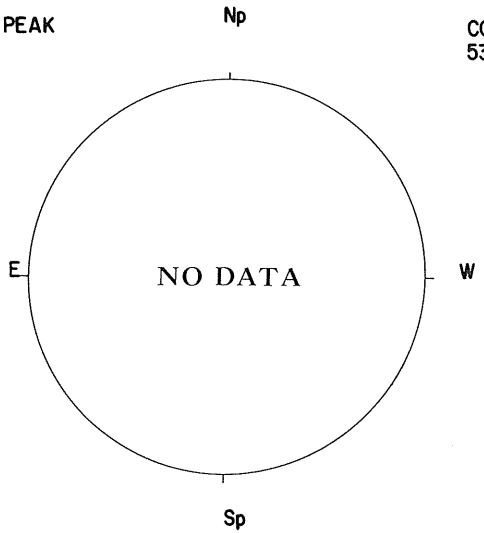

Np
McMATH-HULBERT
CALCIUM REPORT
NO DATA
E
W
Sp

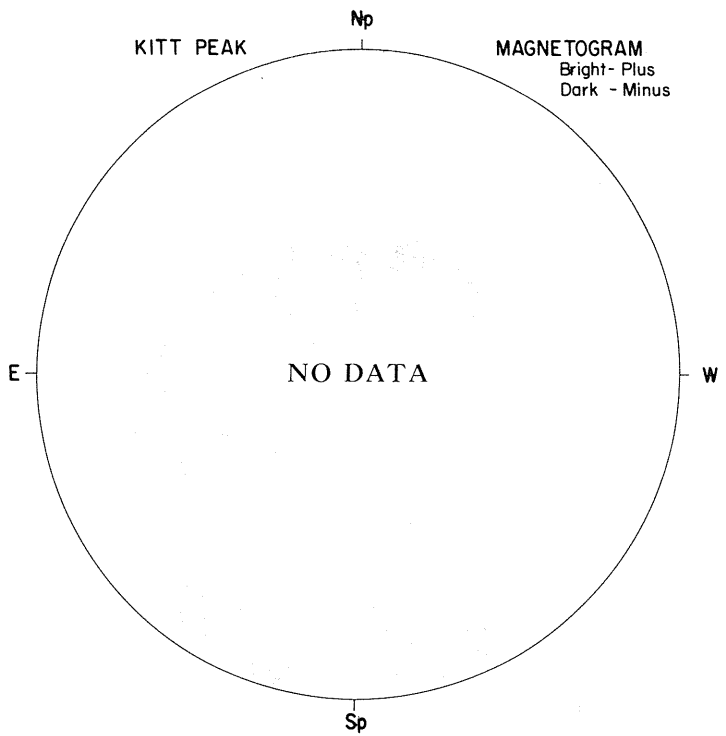

Np
STANFORD
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
NO DATA
E
W
Sp
Levels
0 μT
± 50
± 100
± 200

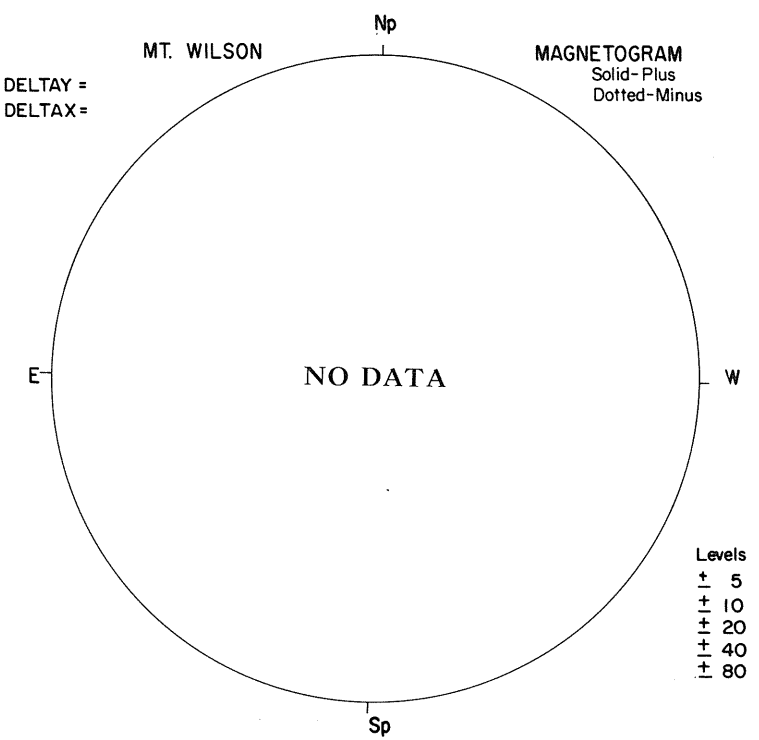
FEBRUARY 22, 1979 (P = -19.48, B_o = -7.07, L_o = 118.04)

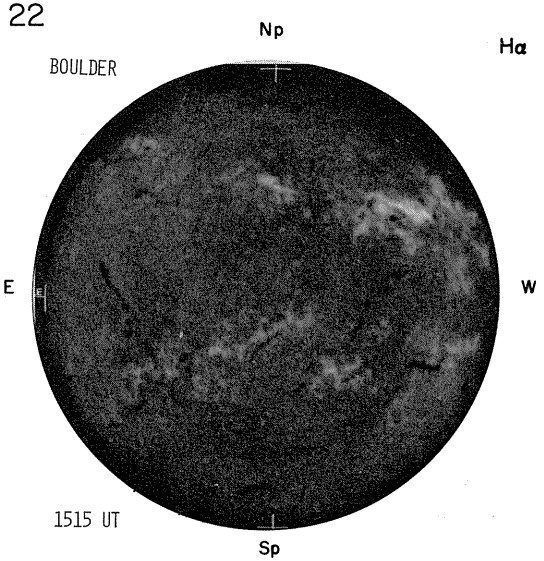
SACRAMENTO PEAK

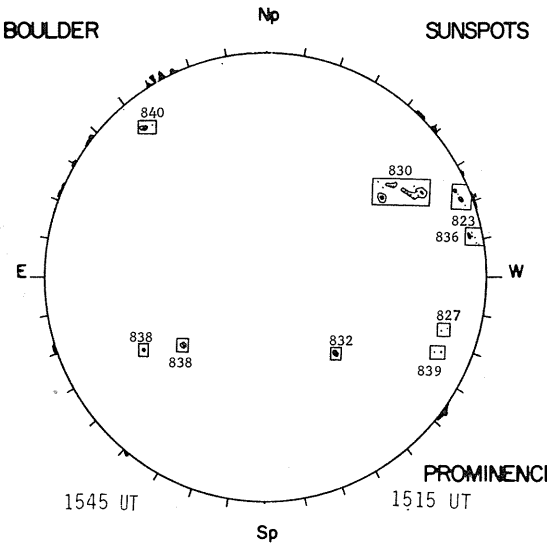
CORONA (1.15 $R_\odot$)
5303 Å

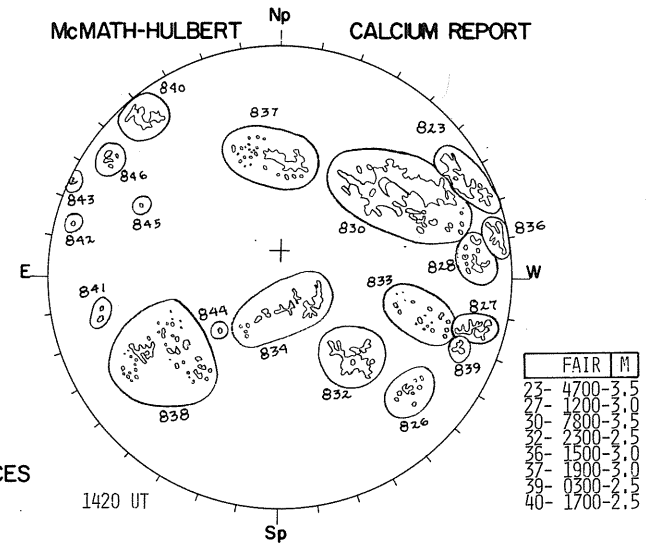


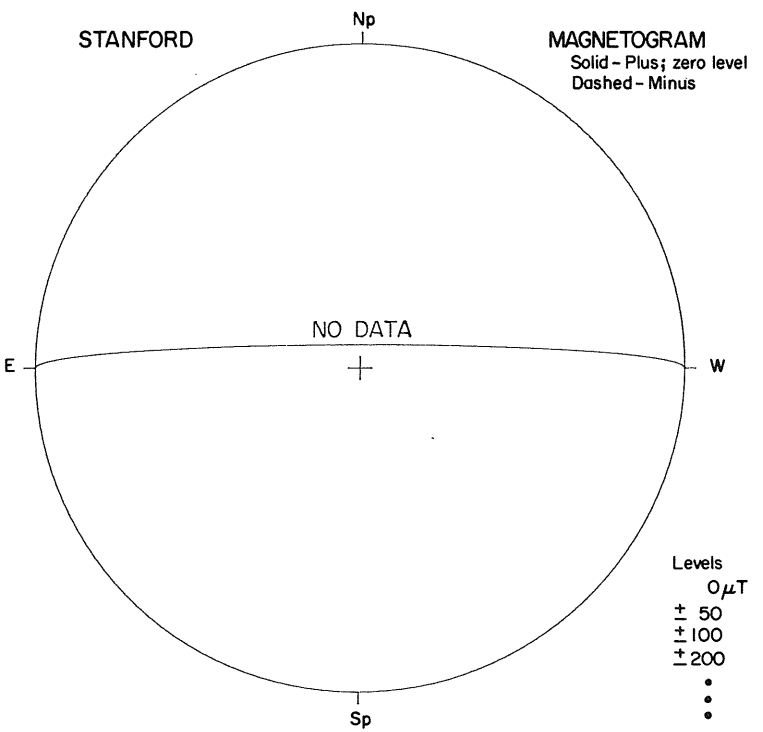





Np
BOULDER
Hα
E
W
1515 UT
Sp


Np
BOULDER
SUNSPOTS
840
830
823
836
838
838
832
827
839
E
W
1545 UT
Sp

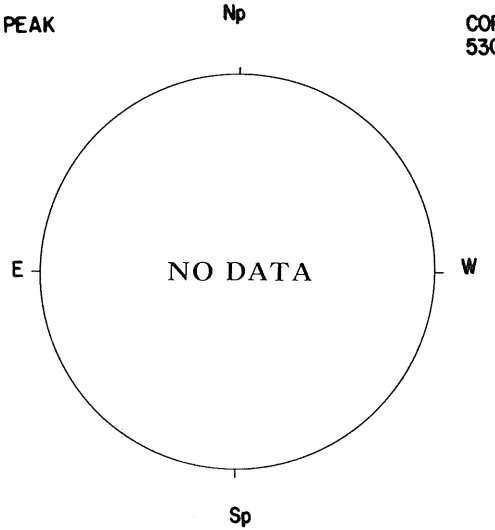

Np
McMATH-HULBERT
CALCIUM REPORT
840
837
823
846
843
845
842
830
836
828
841
844
833
827
839
838
832
826
E
W
1420 UT
Sp
PROMINENCES
1515 UT
FAIR | M
23- 4700-3.5
27- 1200-3.0
30- 7800-3.5
32- 2300-2.5
36- 1500-3.0
37- 1900-3.0
39- 0300-2.5
40- 1700-2.5

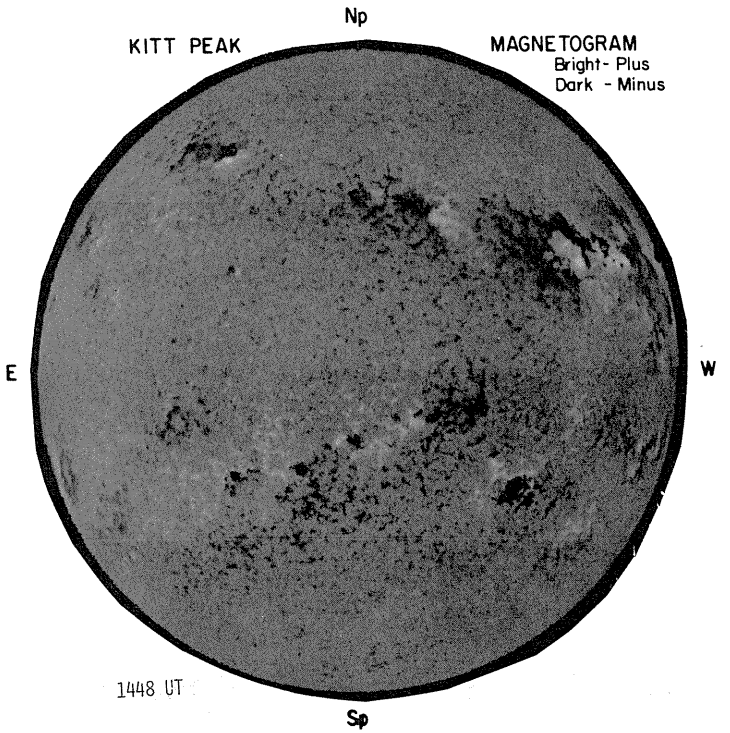

Np
STANFORD
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
NO DATA
E
W
Sp
Levels
0μT
± 50
± ± 100
± 200
• • •

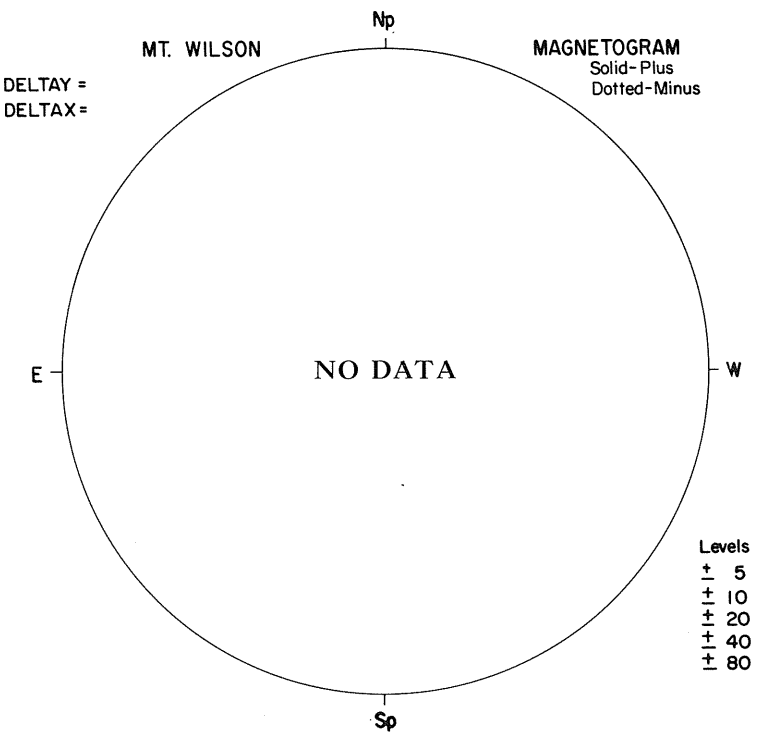
FEBRUARY 23, 1979 (P = -19.77, B_o = -7.10, L_o = 104.87)

SACRAMENTO PEAK

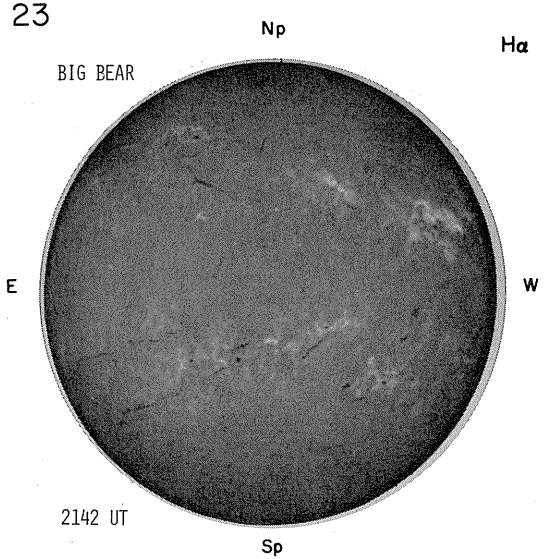
CORONA (1.15 $R_\odot$)
5303 Å

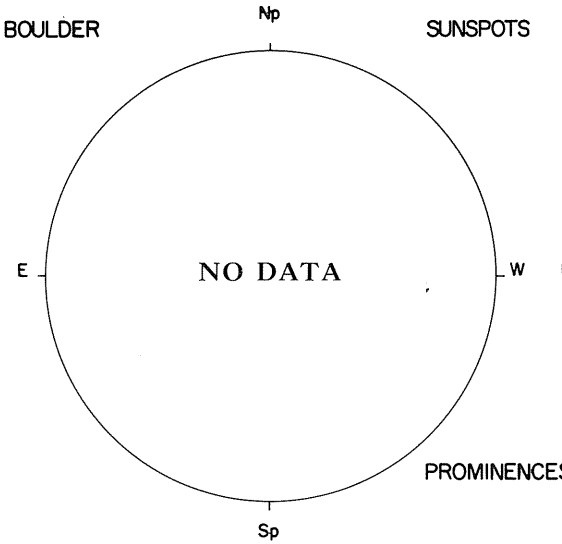


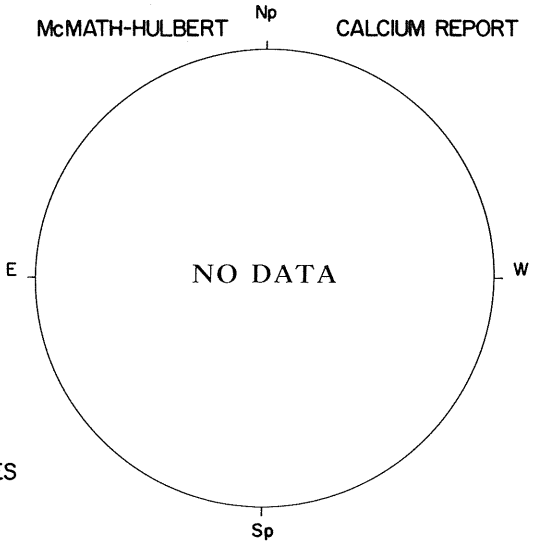


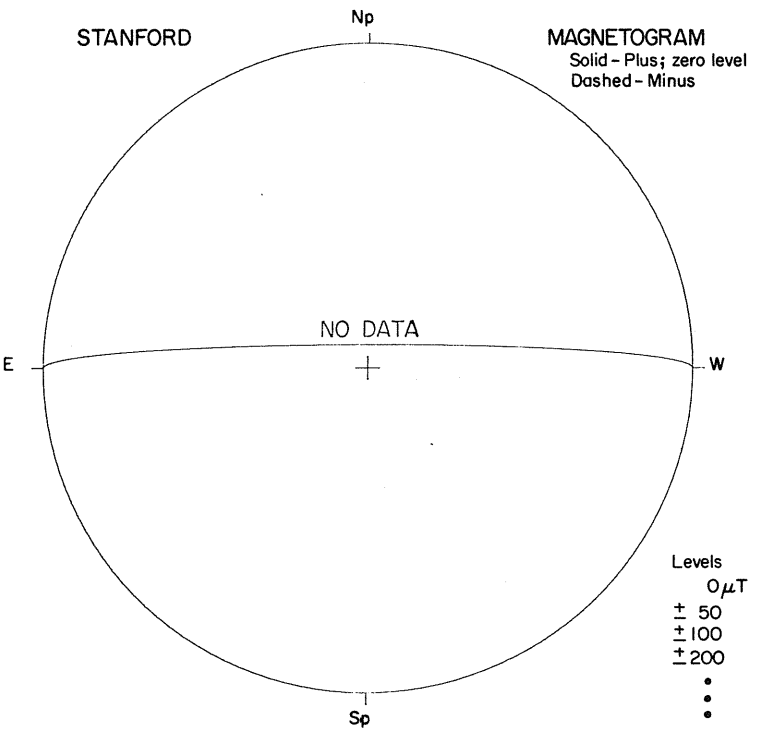


23


Np
BIG BEAR
Hα
E
W
2142 UT
Sp


BOULDER
Np
SUNSPOTS
E
NO DATA
W
PROMINENCES
Sp


McMATH-HULBERT
Np
CALCIUM REPORT
E
NO DATA
W
Sp

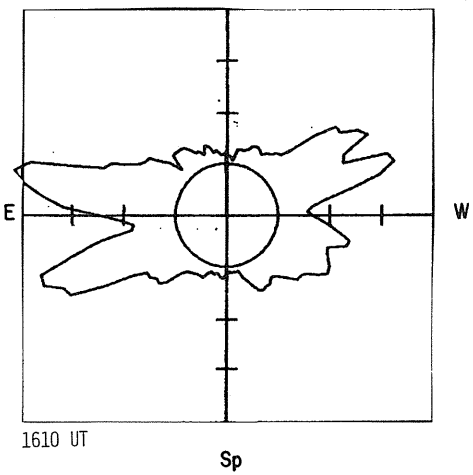

STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
NO DATA
E
W
Sp
Levels
0μT
± 50
± 100
± 200

95
Feb 79

FEBRUARY 24, 1979 (P = -20.06, B_o = -7.12, L_o = 91.70)

SACRAMENTO PEAK

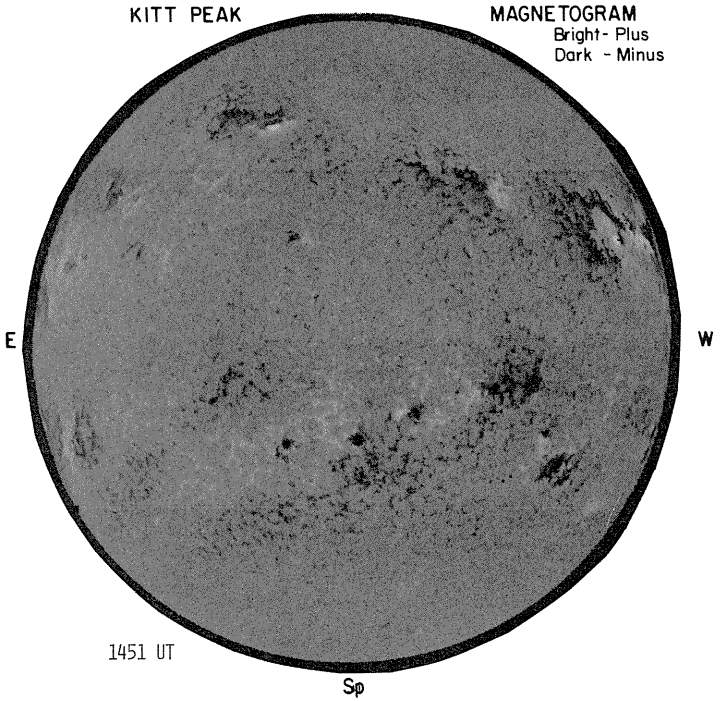
CORONA (1.15 $R_\odot$)
5303 Å



1610 UT

KITT PEAK

MAGNETOGRAM
Bright - Plus
Dark - Minus

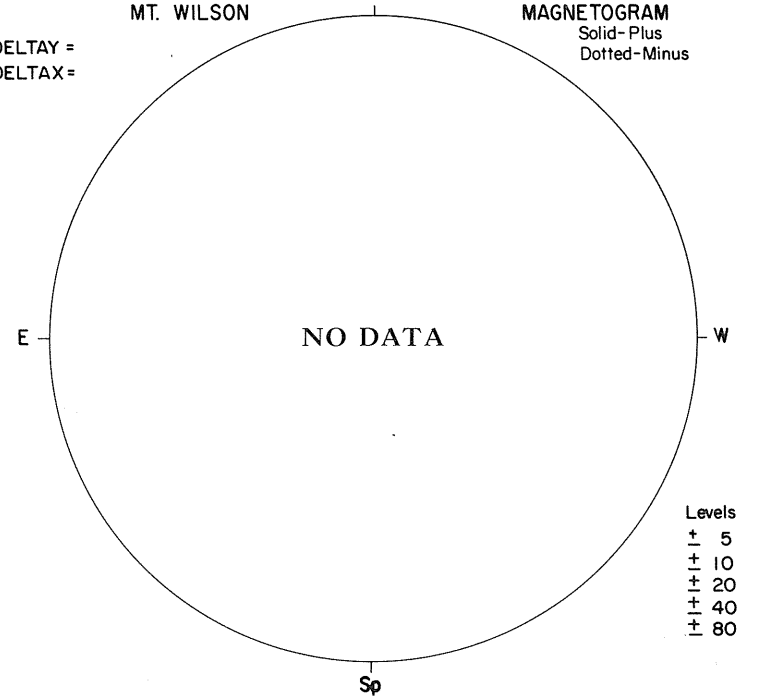


1451 UT

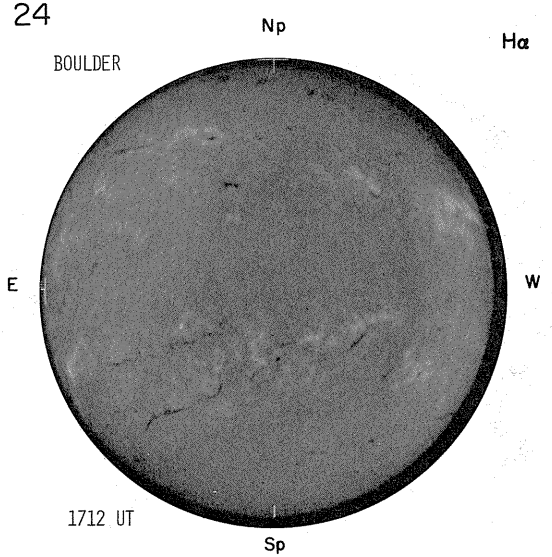
MT. WILSON

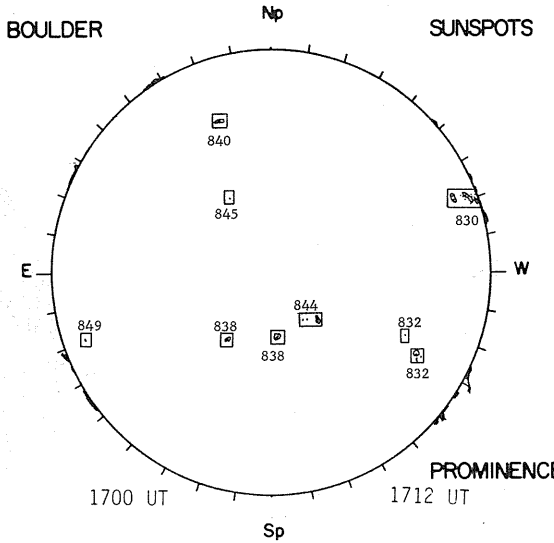
DELTAY =
DELTAX =

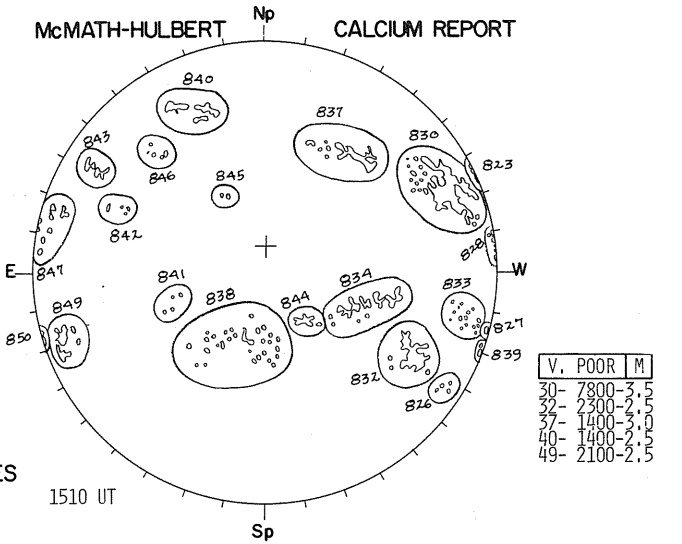
MAGNETOGRAM
Solid - Plus
Dotted - Minus

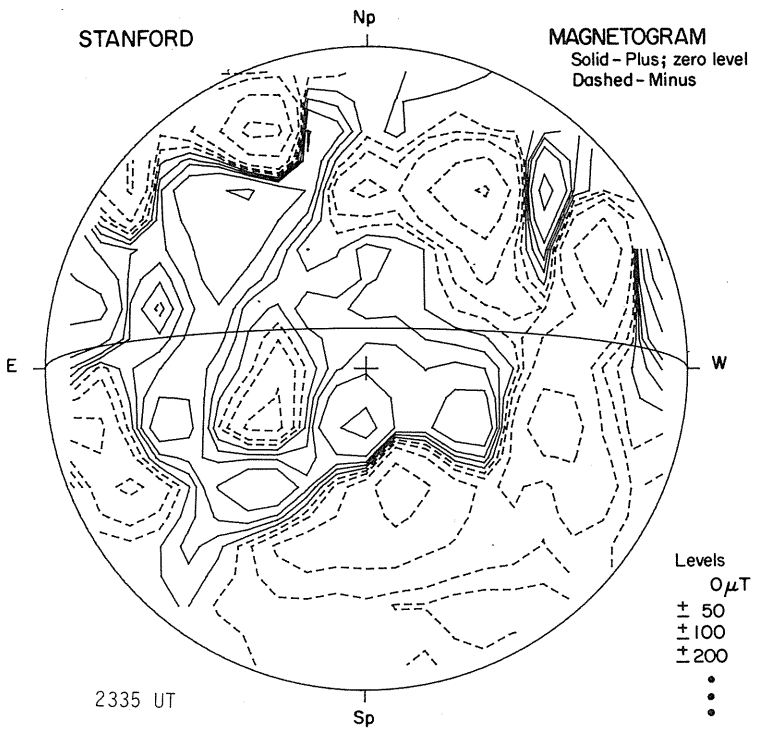


Levels
± 5
± 10
± 20
± 40
± 80


Np
BOULDER
Hα
E
W
1712 UT
Sp

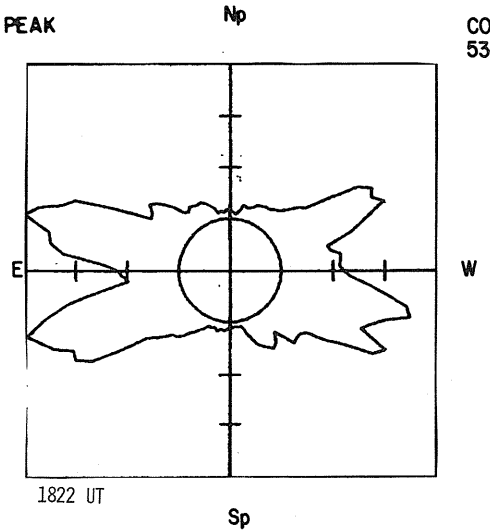

Np
BOULDER
SUNSPOTS
840
845
830
844
849
838
832
E
W
1700 UT
1712 UT
PROMINENCES
Sp

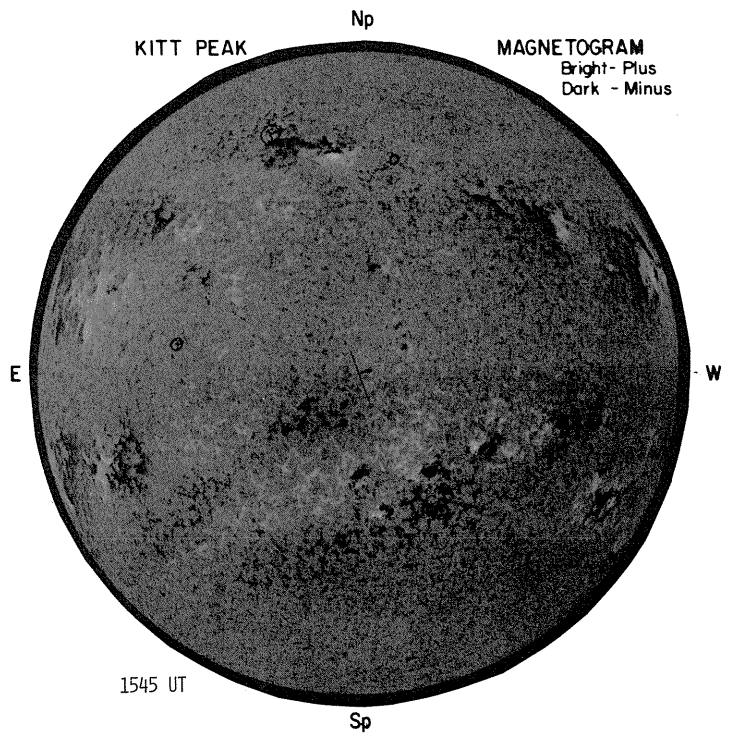

Np
McMATH-HULBERT
CALCIUM REPORT
840
837
843
830
823
846
845
842
847
841
838
844
834
833
849
850
827
839
832
826
E
W
Sp
V. POOR | M
30- 7800-3.5
32- 2300-2.5
37- 1400-3.5
40- 1400-2.5
49- 2100-2.5

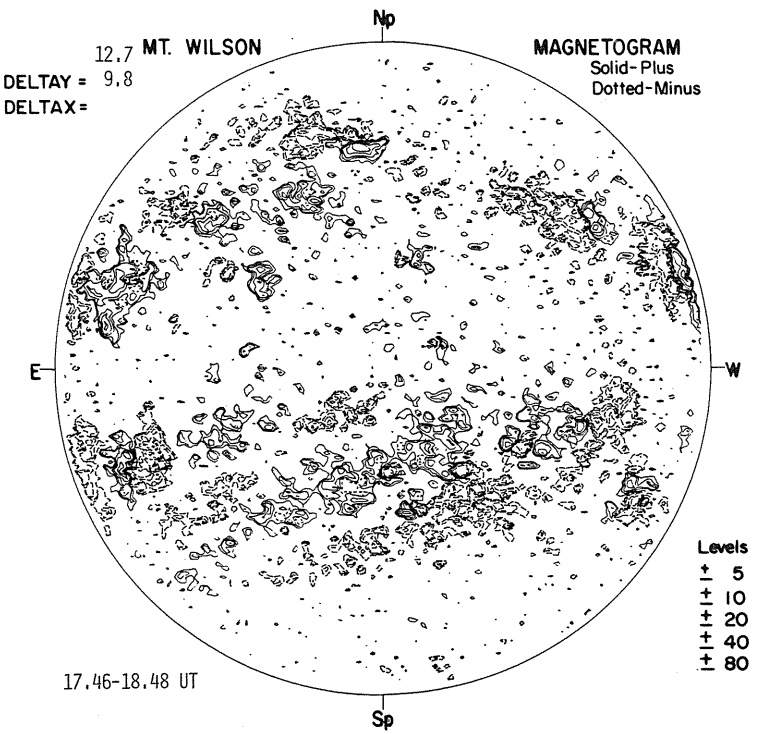

Np
STANFORD
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
2335 UT
Sp
Levels
0 μT
± 50
± 100
± 200

FEBRUARY 25, 1979 (P = -20.35, B_o = -7.15, L_o = 78.53)

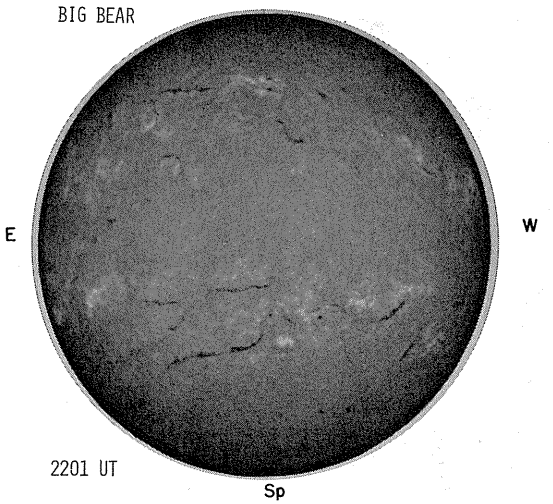
SACRAMENTO PEAK



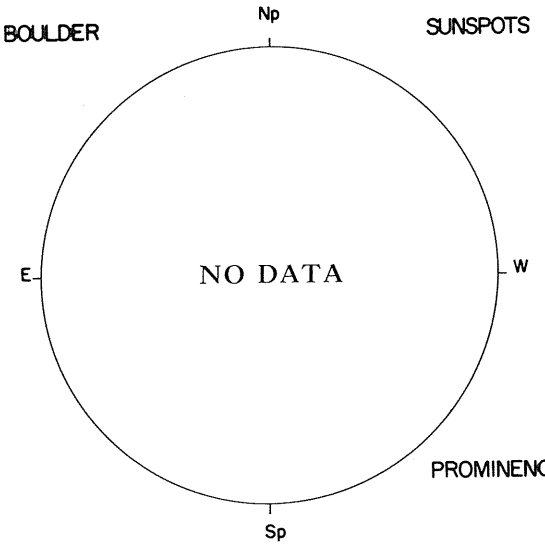




25



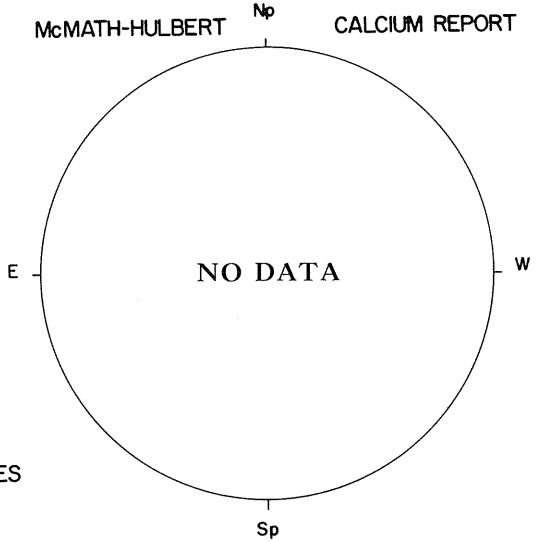
Hα BOULDER



SUNSPOTS

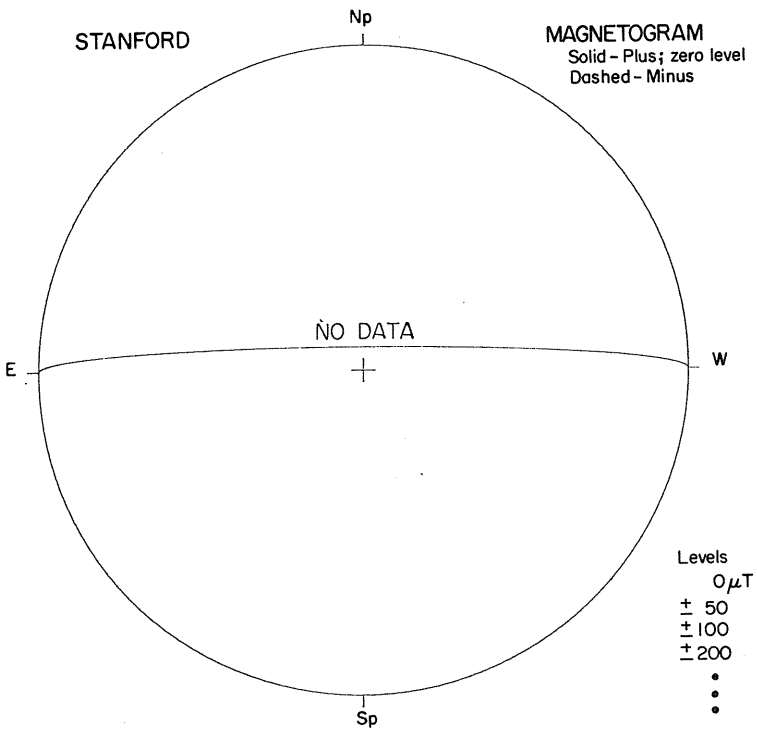
PROMINENCES

McMATH-HULBERT



CALCIUM REPORT

STANFORD



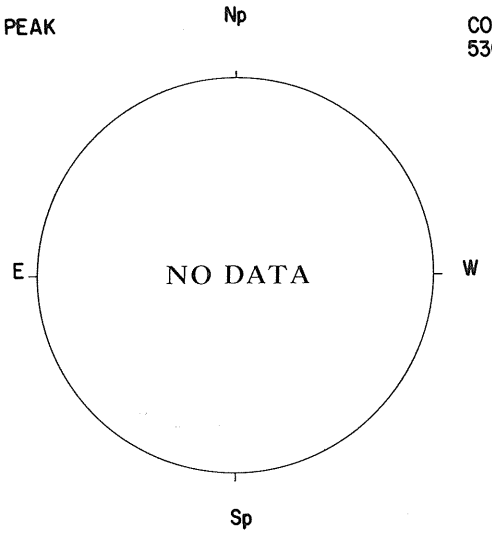
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus

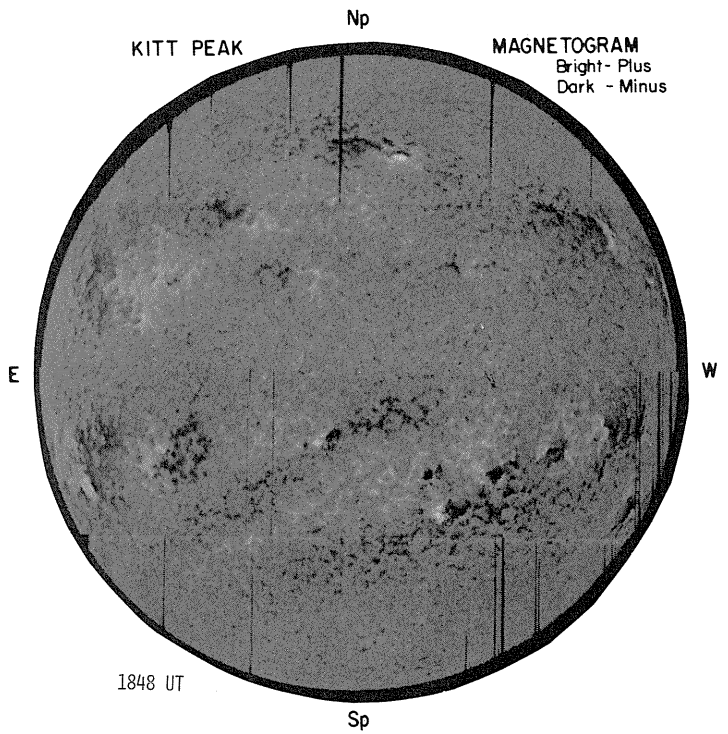
99
Feb 79

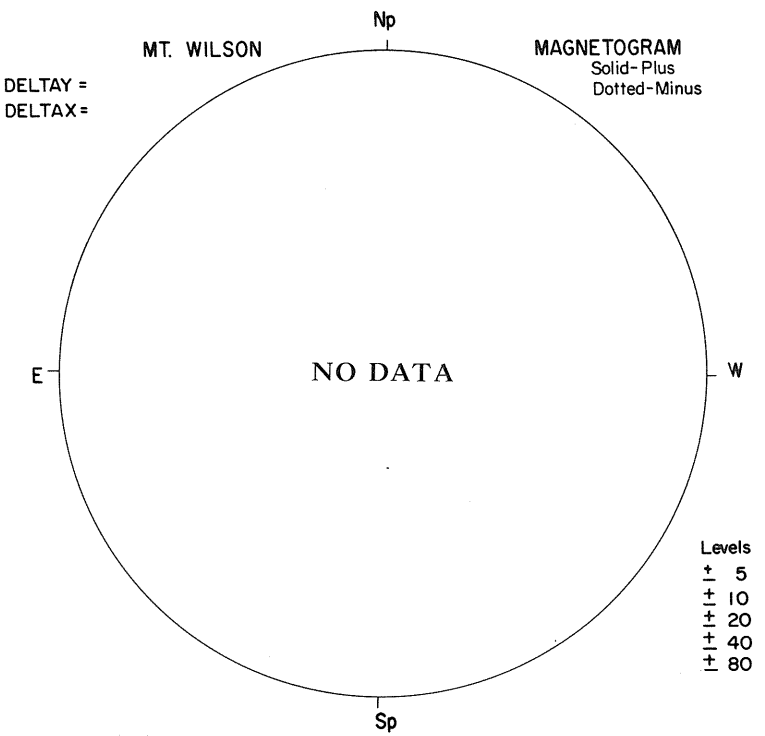
FEBRUARY 26, 1979 (P =-20.63, B_o =-7.17, L_o =65.36)

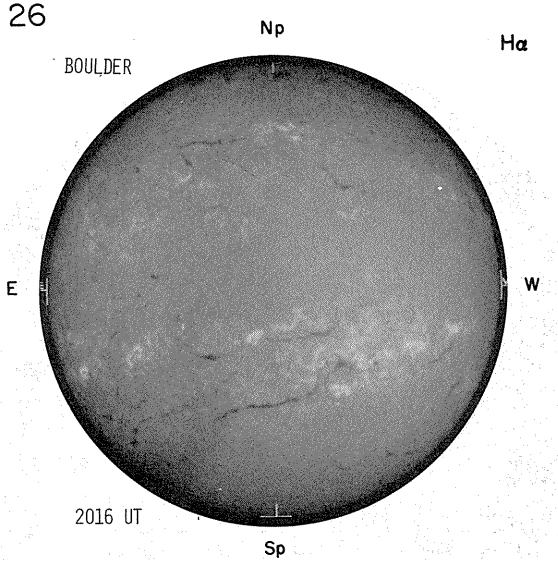
SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å

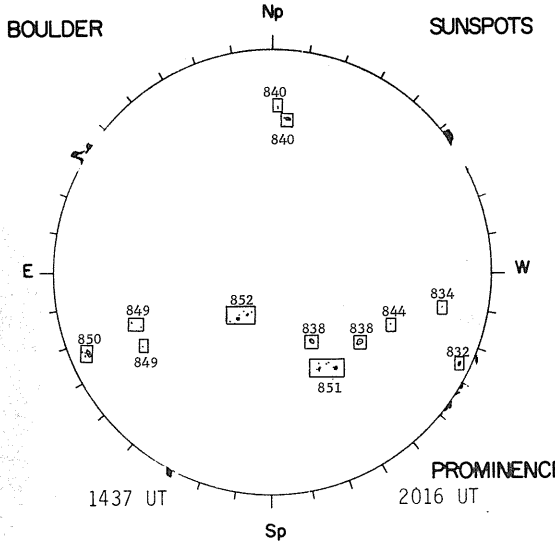








Hα BOULDER



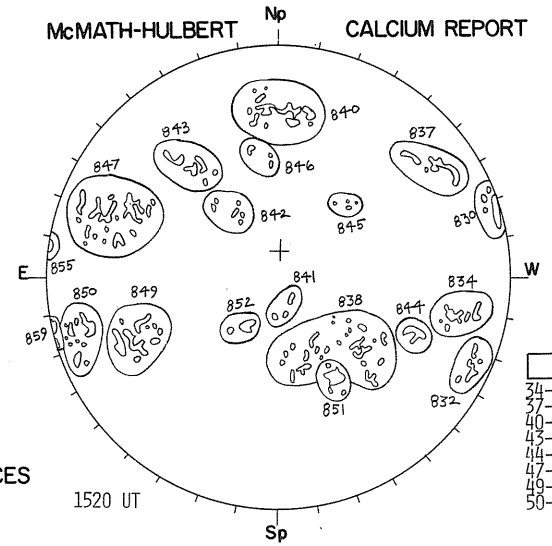
1437 UT

SUNSPOTS

PROMINENCES

2016 UT

McMATH-HULBERT CALCIUM REPORT

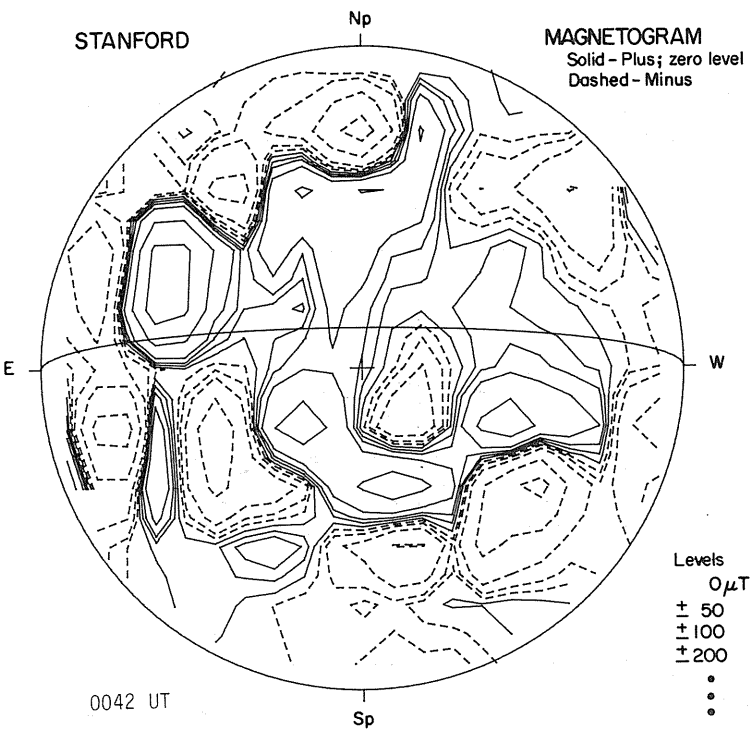


	FAIR	S
34-	1200-	2.5
37-	1200-	3.0
40-	1500-	2.5
43-	0800-	2.5
44-	0800-	2.5
47-	3200-	2.5
49-	2300-	2.5
50-	3000-	3.0

STANFORD MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus

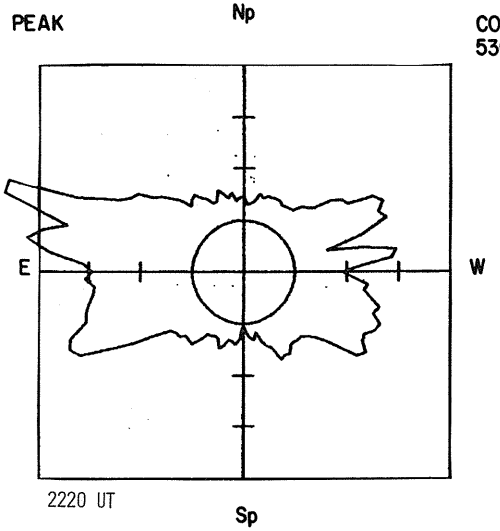


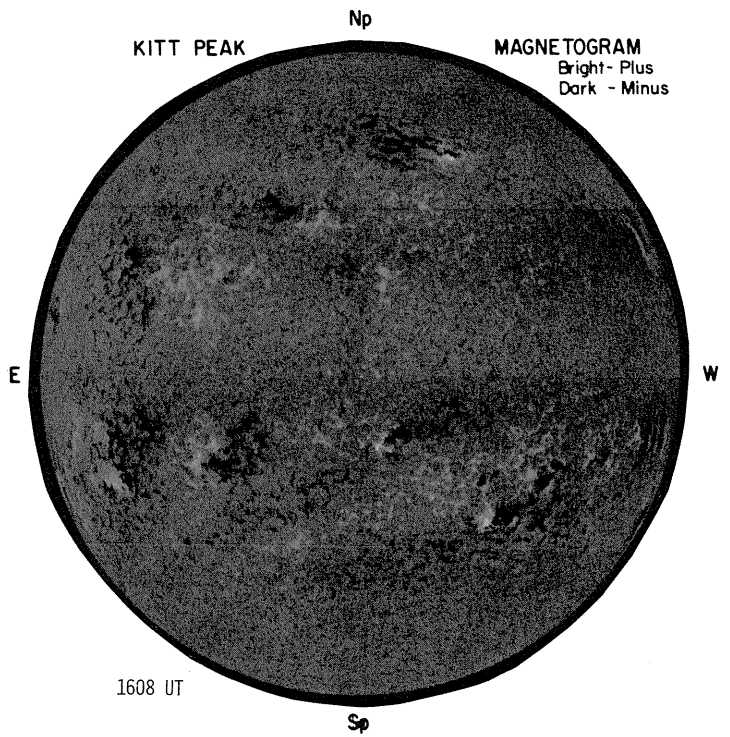
0042 UT

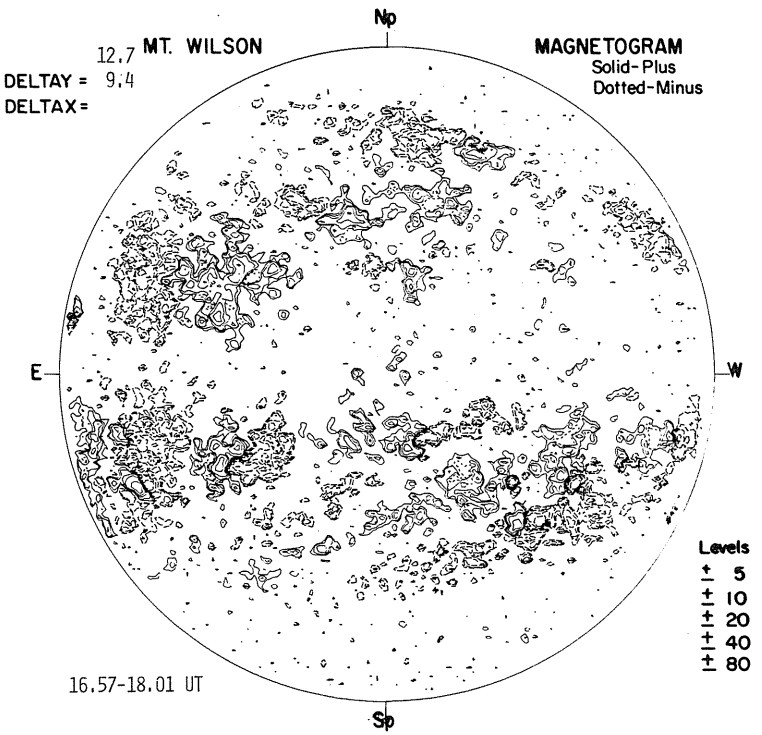
FEBRUARY 27, 1979

FEBRUARY 27, 1979 (P =-20.90, B_o =-7.18, L_o = 52.19)

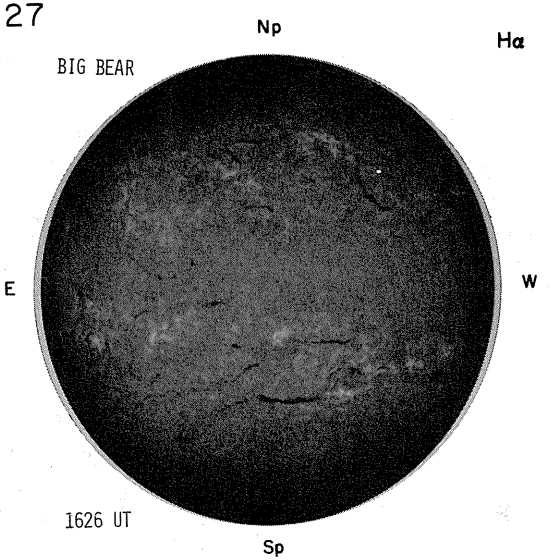
SACRAMENTO PEAK

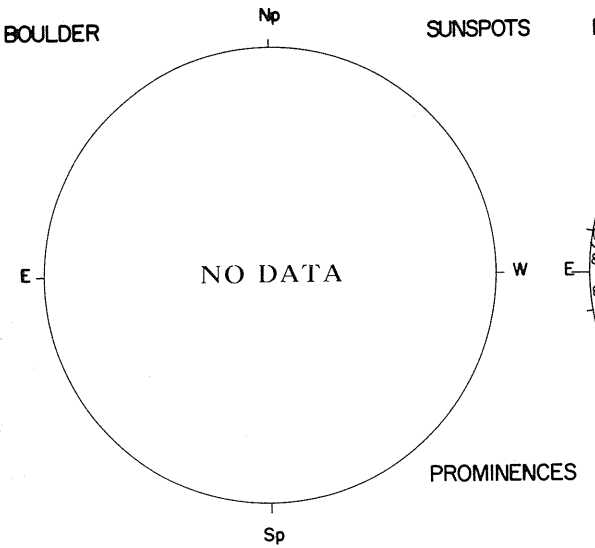


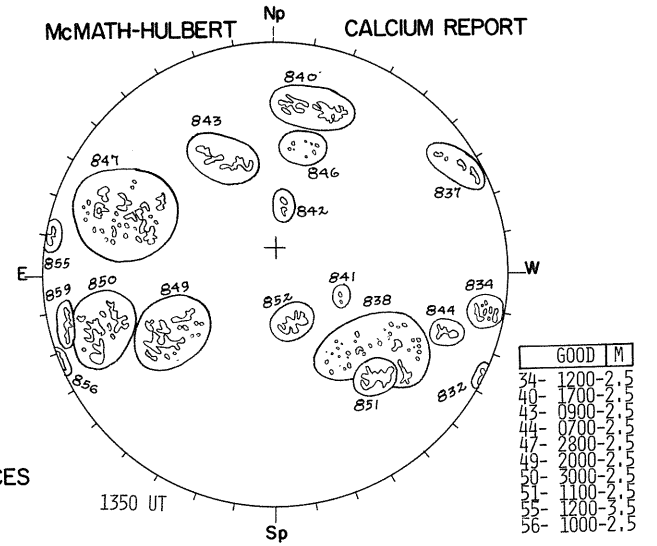


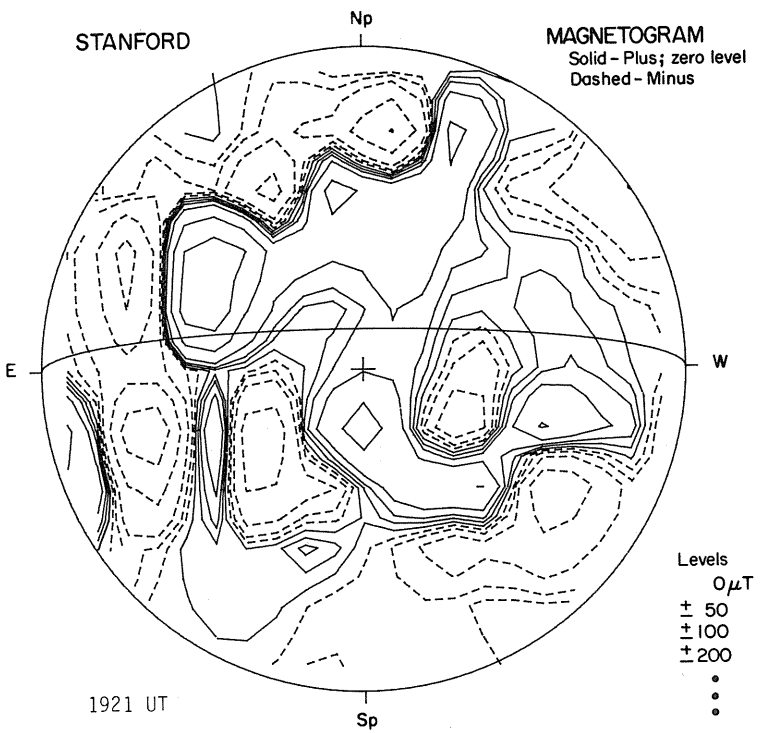


27


Np
BIG BEAR
Hα
E
W
1626 UT
Sp


Np
BOULDER
SUNSPOTS
E
NO DATA
W
PROMINENCES
Sp


Np
McMATH-HULBERT
CALCIUM REPORT
840
843
847
846
842
837
855
859
850
849
841
852
838
844
834
856
851
832
E
W
1350 UT
Sp
GOOD | M
34- 1200-2.5
40- 1700-2.5
43- 0900-2.5
44- 0700-2.5
47- 2800-2.5
49- 2000-2.5
50- 3000-2.5
51- 1100-2.5
55- 1200-3.5
56- 1000-2.5

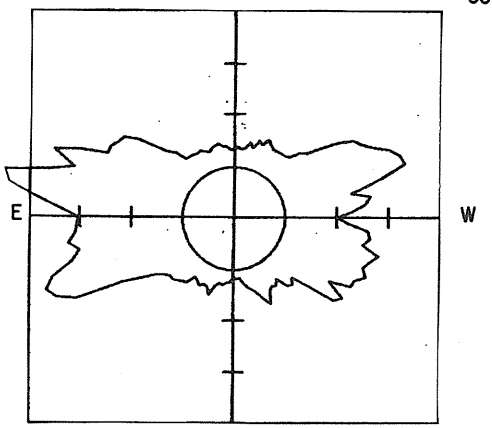

Np
STANFORD
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
1921 UT
Sp
Levels
0 μT
± 50
± ± 100
± ± 200
• • •

103
Feb 79

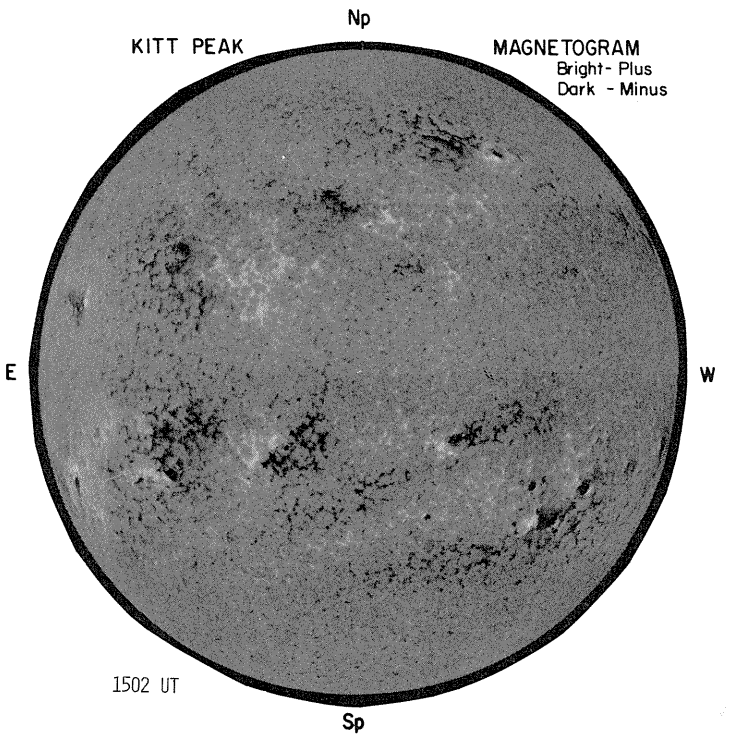
FEBRUARY 28, 1979 (P = -21.16, B_o = -7.20, L_o = 39.01)

SACRAMENTO PEAK

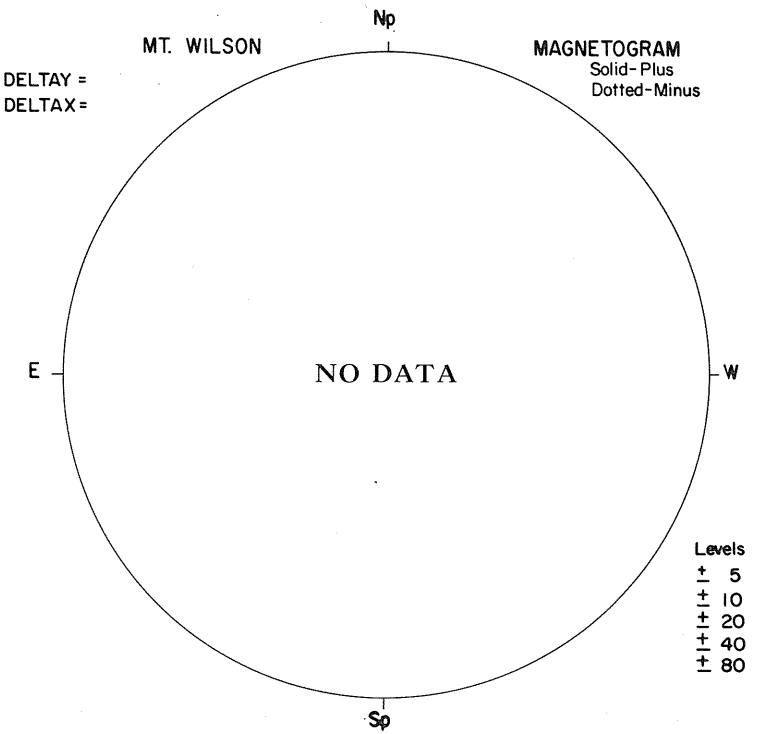
CORONA (1.15 $R_\odot$)
5303 Å



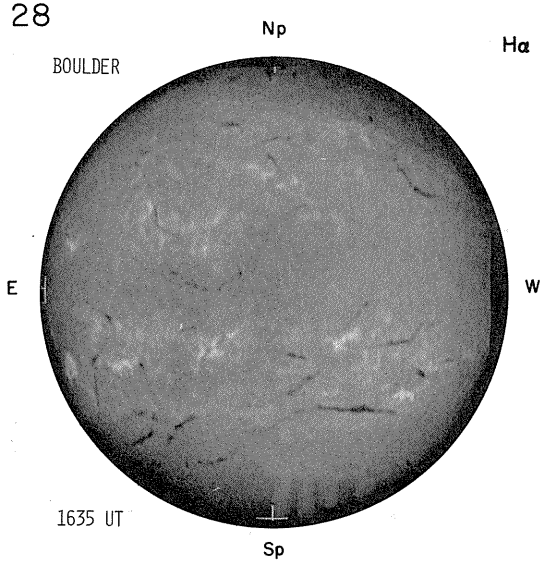
1523 UT

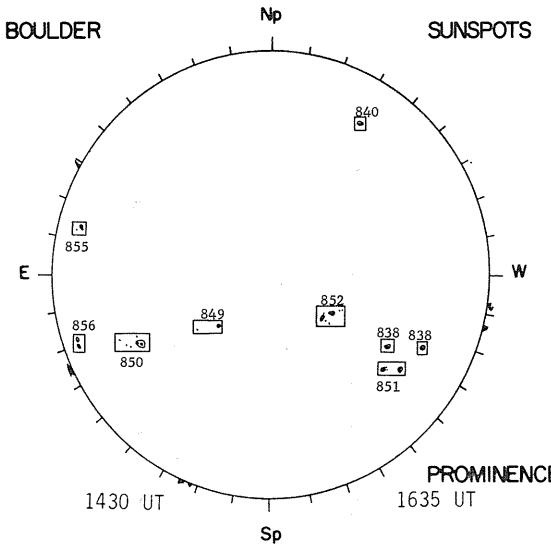


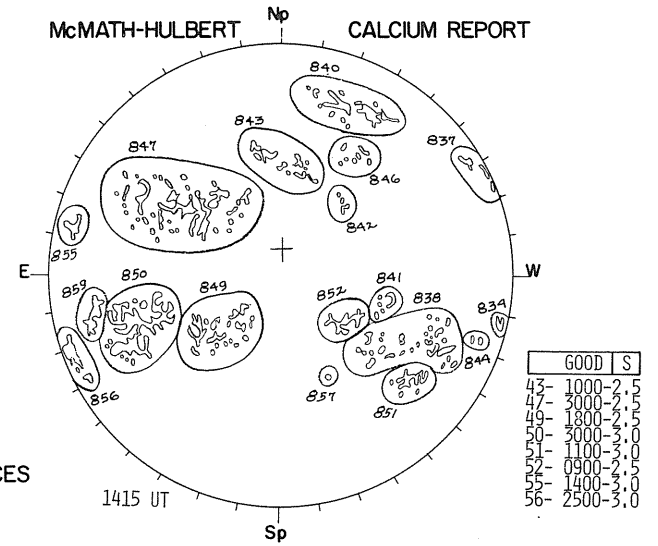
1502 UT

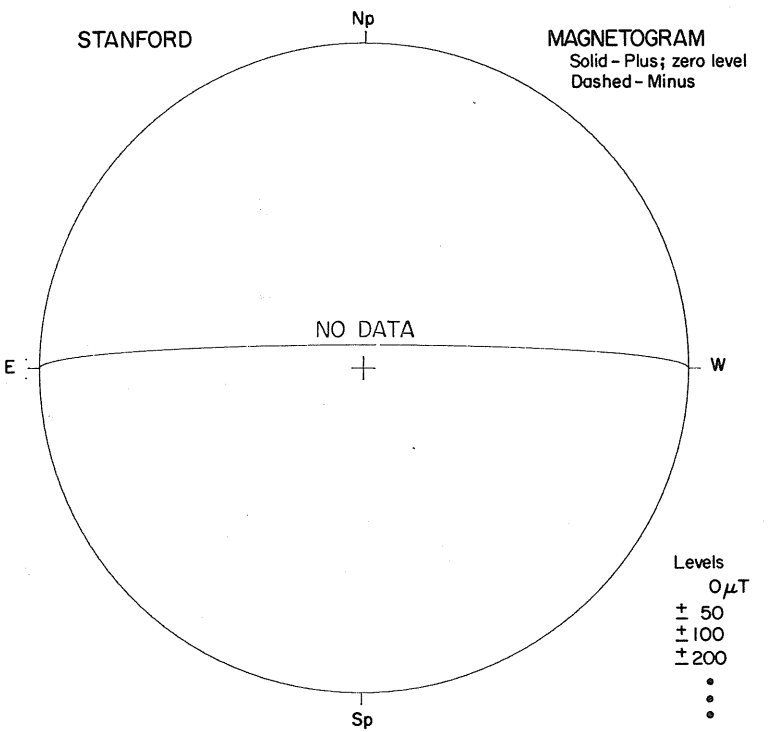


28


Np
BOULDER
Hα
E
W
1635 UT
Sp


Np
BOULDER
SUNSPOTS
840
855
E
W
856
849
852
850
838
838
851
1430 UT
PROMINENCES
1635 UT
Sp


Np
McMATH-HULBERT
CALCIUM REPORT
840
843
847
837
846
842
855
E
W
859
850
849
841
852
838
834
844
856
857
851
Sp
1415 UT
GOOD | S
43- 1000-2.5
47- 3000-2.5
49- 1800-2.5
50- 3000-3.0
51- 1100-3.0
52- 0900-2.5
55- 1400-3.0
56- 2500-3.0


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

105
Feb 79

REGIONS OF SOLAR ACTIVITY

FEBRUARY 1979

MCMATH REGION 15794 CMP DATE 1.0 RETURN OF PART OF REGION 15740 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	1	26	15794	S33 E78	26	700	1.5									
79	1	27	15794	S32 E67	24	900	2.0									
79	1	30	15794	S32 E20	32	500	1.5									
79	1	31	15794	S32 E05	33	400	1.0									
79	2	1	15794	S32 W08	34	400	1.5									
79	2	2	15794	S32 W23	34	400	1.5									
79	2	4	15794	S32 W49	36	400	1.0									
79	2	5	15794	S31 W61	35	400	1.5									

MCMATH REGION 15793 CMP DATE 1.8 RETURN OF REGION 15745 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	1	26	15793	N18 E78	26	900	1.0									
79	1	27	15793	N19 E64	27	900	1.5									
79	1	30	15793	N20 E27	25	600	1.0									
79	1	31	15793	N20 E14	24	400	1.0									
79	2	1	15793	N20 E02	24	500	1.0									
79	2	2	15793	N20 W11	22	500	1.0									
79	2	4	15793	N21 W37	24	500	1.0									
79	2	5	15793	N22 W50	24	500	1.0									

MCMATH REGION 15814 CMP DATE 3.0

			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	6	15814	S17 W50	9	100	1.0									
79	2	7	15814	S18 W64	11	100	1.0									
79	2	8	15814	S18 W76	11	300	2.0									

MCMATH REGION 15798 CMP DATE 3.1 RETURN OF PART OF REGION 15740 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	1	30	15798	S35 E42	10	800	1.5									
79	1	31	15798	S35 E30	8	700	2.0									
79	2	1	15798	S35 E18	8	500	2.0									
79	2	2	15798	S35 E05	6	500	1.0									
79	2	4	15798	S35 W27	14	500	1.0									
79	2	5	15798	S35 W40	14	500	1.0									

MCMATH REGION 15796 CMP DATE 3.5 RETURN OF REGION 15766 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	1	27	15796	N18 E87	4	500	1.0									
79	1	28	15796					20430	N19 E72	6	B	3				
79	1		15796					20431	N15 E70	8	AP	3				
79	1	29	15796					20430	N22 E65	0	(BP)	2				
79	1		15796					20431	N15 E56	9	(AP)	2				
79	1	30	15796	N20 E50	2	2400	3.5									
79	1	31	15796	N20 E40	359	2200	3.0									
79	2	1	15796	N20 E25	1	2600	3.5		N19 E27				B	90	5	DAO
79	2	2	15796	N20 E11	0	2400	3.0		N20 E09				B	70	3	DSO
79	2	3	15796						N20 W04				B	10	2	BXO
79	2	4	15796	N20 W15	2	2400	3.0		N20 W16				B	10	2	BXO
79	2	5	15796	N20 W29	3	2500	2.5	20433	N18 W32	6	(B)	3	B	20	3	BXO
79	2	6	15796	N20 W45	4	2200	2.5	20433	N17 W47	8	(B)	2	B	30	2	CRO
79	2	7	15796	N20 W57	4	2300	2.0		N15 W56				B	20	2	BXO
79	2	8	15796	N20 W68	3	1800	2.0		N16 W66				B	0	1	AXX

MCMATH REGION 15802 CMP DATE 3.9 RETURN OF REGION 15749 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	1	2	15802					20432	N08 E80	359	Y	4				
79	1	29	15802					20432	N08 E67	359	(Y)	3				

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MCMATH REGION 15802 (CONT) CMP DATE 3.9 RETURN OF REGION 15749 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	1	30	15802	N13 E59	354	6300	3.5									
79	1	31	15802	N13 E43	356	6500	3.0									
79	2	1	15802	N12 E30	357	7000	3.5		N14 E33				B	10	1	AXX
79	2	2	15802	N12 E16	356	6600	3.5		N13 E14				B	10	3	BXO
79	2	3	15802						N07 W02				B	200	7	DSO
79	2	4	15802	N12 W10	357	6700	3.5		N08 W15				B	130	11	DAI
79	2	5	15802	N12 W24	358	6500	3.0	20432	N07 W28	2	(B)	3	B	160	3	DAO
79	2	6	15802	N12 W40	359	6200	3.0	20432	N07 W41	2	(B)	4	B	210	6	EAO
79	2		15802					20438	N12 W32	353	(B)	3	B	60	5	DAO
79	2	7	15802	N12 W50	357	6500	3.0	20432	N07 W55	2	B	4	B	180	5	EAO
79	2	8	15802	N12 W62	357	6500	3.0	20432	N07 W68	2	(B)	4	B	40	2	ESO
79	2		15802					20444	N13 W65	359	(AP)	2				
79	2	9	15802	N12 W77	358	3000	2.5	20432	N07 W78	359	AP	3				
79	2		15802					20444	N12 W85	6	AP	3	B	30	1	HSX

MCMATH REGION 15804 CMP DATE 5.1 RETURN OF PART OF REGION 15748 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	1	30	15804	S14 E70	343	3000	3.0									
79	1	31	15804	S14 E60	339	3000	3.0									
79	2	1	15804	S14 E44	343	3500	3.5		S13 E47				B	340	11	DAI
79	2	2	15804	S14 E32	340	3300	3.5		S13 E33				B	480	27	DKI
79	2	3	15804						S14 E20				B	440	8	DHO
79	2	4	15804	S14 E05	342	4000	3.5		S13 E05				B	560	29	EKI
79	2	5	15804	S14 W07	341	4300	3.5	20434	S13 W07	341	(B)	4	B	590	24	EKI
79	2	6	15804	S14 W23	342	4000	3.0	20434	S13 W21	342	(BP)	4	B	530	36	EKI
79	2	7	15804	S14 W34	341	4300	3.5	20434	S13 W35	342	BP	4	B	370	28	EAI
79	2	8	15804	S14 W46	341	4500	3.5	20434	S13 W48	342	(BP)	3	B	110	13	ESI
79	2	9	15804	S14 W60	341	3800	3.5	20434	S14 W65	346	(AP)	3	B	60	5	DSO
79	2	10	15804	S14 W72	341	3400	3.0	20434	S14 W80	346	AP	3	B	10	1	HSX
79	2	11	15804	S15 W85	340	2100	2.0									

MCMATH REGION 15803 CMP DATE 5.5 RETURN OF REGION 15750 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	1	30	15803	N25 E80	333	300	1.0									
79	1	31	15803	N25 E63	336	200	1.0									
79	2	1	15803	N25 E50	337	200	1.0									
79	2	2	15803	N25 E36	336	200	1.0									
79	2	4	15803	N26 E11	336	200	1.5									
79	2	5	15803	N26 W02	336	300	1.5									
79	2	6	15803	N26 W17	336	200	1.0									

MCMATH REGION 15799 CMP DATE 5.5

				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	1	30	15799	S34 E74	339	300	1.0									
79	1	31	15799	S34 E63	336	300	1.0									

MCMATH REGION 15800 CMP DATE 6.3 RETURN OF PART OF REGION 15748 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	1	30	15800	S20 E85	328	2500	3.0									
79	1	31	15800	S22 E70	329	3500	3.0									
79	2	1	15800	S19 E59	328	3500	3.0		S18 E63				B	40	2	HSX
79	2	2	15800	S19 E45	327	3500	3.0		S18 E48				B	30	1	HSX
79	2	3	15800						S18 E32				B	0	1	AXX
79	2	4	15800	S19 E21	326	3100	3.0		S21 E21				B	10	5	BXO
79	2	5	15800	S20 E09	325	2900	3.0									
79	2	6	15800	S20 W07	326	2800	2.5	20439	S22 W04	325	B	1	B	0	1	AXX
79	2	7	15800	S20 W18	325	2800	2.5									
79	2	8	15800	S21 W29	324	2500	2.5									
79	2	9	15800	S21 W43	324	2500	2.5									
79	2	10	15800	S21 W56	325	2500	2.5									
79	2	11	15800	S21 W68	323	2100	2.5									
79	2	12	15800	S20 W83	321	2500	2.0									

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MCMATH REGION 15805 CMP DATE 6.8 RETURN OF REGION 15753 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	1	15805	N18 E70	317	300	1.0								
79	2	2	15805	N17 E57	315	300	1.0								
79	2	4	15805	N17 E30	317	400	2.0								
79	2	5	15805	N18 E17	317	300	2.0								
79	2	6	15805	N17 E00	319	400	1.5								
79	2	7	15805	N18 W10	317	300	1.5								
79	2	8	15805	N18 W22	317	200	1.5								
79	2	9	15805	N18 W36	317	200	1.5								
79	2	10	15805	N17 W50	319	200	1.5								
79	2	11	15805	N17 W63	318	300	1.0								

MCMATH REGION 15811 CMP DATE 8.3 RETURN OF REGION 15756 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	4	15811	S09 E50	297	200	1.0								
79	2	5	15811	S09 E34	300	200	1.5								
79	2	6	15811	S09 E19	300	300	1.0								
79	2	7	15811	S09 E09	298	200	1.0								
79	2	8	15811	S09 W01	296	200	1.5								
79	2	9	15811	S09 W18	299	100	1.0								
79	2	11	15811	S10 W43	298	100	1.0								
79	2	10	15811	S09 W31	300	100	1.0								
79	2	12	15811	S09 W61	177	100	1.0								

MCMATH REGION 15806 CMP DATE 8.6

				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	2	2	15806	N37 E77	295	800	2.5		N37 E81				B	50	1 HSX
79	2	3	15806						N36 E60				B	50	1 HSX
79	2	4	15806	N37 E52	295	1100	2.5		N36 E41				B	50	1 HSX
79	2	5	15806	N37 E39	295	1200	3.5	20435	N34 E32	302	(AP)	3	B	40	1 HRX
79	2	6	15806	N37 E22	297	1200	3.0	20435	N34 E20	301	(AP)	3	B	40	1 HSX
79	2	7	15806	N37 E12	295	1200	3.0								
79	2	8	15806	N36 E00	295	1000	2.5								
79	2	9	15806	N36 W13	294	900	2.0								
79	2	10	15806	N35 W26	295	700	2.0								
79	2	11	15806	N35 W38	293	700	1.5								
79	2	12	15806	N36 W53	291	400	1.5								
79	2	13	15806	N36 W66	292	400	1.5								

MCMATH REGION 15807 CMP DATE 9.1 RETURN OF REGIONS 15754 AND 15773 ROTATIONS 3 AND 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	2	15807	N16 E80	292	1500	2.0		N14 E80				B	20	1 HSX
79	2	4	15807	N16 E60	287	6000	3.0		N15 E61				B	170	2 HSX
79	2	5	15807	N16 E45	289	6500	3.5	20436	N13 E45	289	(BP)	3	B	140	2 DSO
79	2	6	15807	N17 E27	292	6800	3.5	20436	N13 E32	289	(BP)	4	B	280	11 DHI
79	2		15807					20440	N23 E17	304	(AP)	1			
79	2	7	15807	N17 E18	289	6500	3.0	20436	N14 E20	293	(BP)	4			
79	2		15807					20443	N15 E10	297	AP	4	B	180	12 OKI
79	2	8	15807	N16 E07	288	6500	3.5	20436	N14 E05	289	(BP)	4	B	170	7 EAO
79	2		15807					20443	N15 W05	299	(AP)	3	B	20	4 CAO
79	2		15807					20446	N20 E15	279	(AP)	2			
79	2	9	15807	N16 W08	289	6900	3.5	20436	N15 W08	289	(BF)	4	B	220	30 EAI
79	2	10	15807	N16 W21	290	7200	3.5	20436	N15 W25	291	(Y)	4	B	460	17 DAI
79	2	11	15807	N16 W34	289	7000	3.5	20436	N15 W36	291	(D)	4	M	1090	11 EXX
79	2	12	15807	N16 W49	287	7000	3.5	20436	N15 W50	291	(D)	4			
79	2	13	15807	N16 W64	290	7000	3.5	20436	N15 W64	292	(Y)	4			
79	2	15	15807	N20 W90	290	1200	1.5								

MCMATH REGION 15808 CMP DATE 9.2 RETURN OF PART OF REGION 15757 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	2	2	15808	S21 E83	289	1200	2.5		S21 E85				B	160	5 DSO
79	2	3	15808						S21 E72				B	40	3 DSO
79	2	4	15808	S20 E62	285	2200	3.0		S21 E60				B	150	4 DSI

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MCMATH REGION 15808 (CONT) CMP DATE 9.2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	5	15808	S19 E49	285	2500	3.0
79	2	6	15808	S20 E31	288	2500	3.5
79	2	7	15808	S20 E20	287	2500	3.5
79	2	8	15808	S20 E08	287	2800	3.0
79	2		15808				
79	2	9	15808	S21 W07	288	2500	3.0
79	2		15808				
79	2	10	15808	S21 W20	289	2500	3.0
79	2		15808				
79	2	11	15808	S20 W33	288	2800	3.0
79	2		15808				
79	2	12	15808	S20 W48	286	2500	3.0
79	2		15808				
79	2	13	15808	S20 W63	289	2500	3.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20437	S21 E45	289	(Y)	3	B	310	8	DSC
20437	S20 E32	289	(D)	4	B	310	19	DKI
20437	S20 E20	287	Y	4	B	300	24	DKI
20437	S20 E05	289	(Y)	4	B	260	20	DAI
20445	S17 E07	287	(B)	2				
20437	S21 W07	288	(Y)	4	B	90	10	DRI
20445	S17 W05	286	(AP)	3	B	140	11	DSI
20437	S22 W22	288	(B)	3	B	60	10	CSI
20445	S17 W23	289	(AP)	2				
20437	S23 W32	287	(AP)	2	M	150	15	DSI
20445	S17 W36	291	(Y)	3	M	10	3	BXO
20437	S23 W46	287	(AP)	2				
20445	S17 W53	294	(AP)	4				

MCMATH REGION 15812 CMP DATE 10.1

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	5	15812	S20 E56	278	300	2.0
79	2	6	15812	S19 E43	276	800	3.0
79	2	7	15812	S19 E33	274	800	3.5
79	2	8	15812	S20 E21	274	800	3.0
79	2	9	15812	S20 E06	275	1300	3.0
79	2	10	15812	S20 W07	276	1500	3.0
79	2	11	15812	S20 W19	274	1500	3.0
79	2	12	15812	S20 W34	272	1700	3.0
79	2	13	15812	S20 W47	273	1800	3.0
79	2	15	15812	S20 W73	273	2200	2.5
79	2	16	15812	S20 W85	274	1500	2.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20441	S20 E44	277	(B)	3	B	100	6	DSI
20441	S19 E30	277	BP	4	B	230	13	DKI
20441	S19 E18	276	(BP)	5	B	230	8	DSO
20441	S19 E04	277	(BP)	5				
20441	S19 W10	276	(BP)	4	B	180	10	CSI
20441	S20 W21	276	(BP)	4	M	150	16	DSI
20441	S20 W34	275	(AP)	4				
20441	S18 W51	279	(AP)	4				
20441	S18 W79	281	AP	4				

MCMATH REGION 15810 CMP DATE 11.3 RETURN OF PART OF REGION 15757 ROTATION 3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	4	15810	S30 E80	267	600	1.5
79	2	5	15810	S30 E70	264	1000	2.0
79	2	6	15810	S30 E60	259	1000	1.5
79	2	7	15810	S29 E50	257	900	1.5
79	2	8	15810	S30 E37	258	900	1.5
79	2	9	15810	S30 E22	259	900	1.5
79	2	10	15810	S31 E09	260	1200	1.5
79	2	11	15810	S31 W03	258	1300	1.5
79	2	12	15810	S31 W18	256	1000	1.5
79	2	13	15810	S31 W31	257	600	1.5
79	2	15	15810	S32 W56	256	400	1.5
79	2	16	15810	S32 W68	257	300	1.0

SUNSPOT DATA

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

MCMATH REGION 15817 CMP DATE 11.8 RETURN OF REGION 15759 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	6	15817	N30 E75	244	200	1.0
79	2	7	15817	N30 E58	249	300	1.0
79	2	8	15817	N29 E45	250	300	1.0
79	2	9	15817	N28 E30	251	300	1.0
79	2	10	15817	N28 E17	252	200	1.0
79	2	11	15817	N28 E02	253	100	1.0
79	2	12	15817	N28 W16	254	200	2.0
79	2	13	15817	N28 W28	254	200	1.0

SUNSPOT DATA

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

MCMATH REGION 15815 CMP DATE 12.2 RETURN OF REGION 15761 AND PART OF REGION 15762 ROTATIONS 2 AND 3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	5	15815	S25 E78	256	2000	1.5
79	2	6	15815	S28 E65	254	2000	2.0
79	2	7	15815	S25 E64	243	2300	2.0
79	2	8	15815	S24 E48	247	2300	2.5
79	2	9	15815	S25 E34	247	2000	2.0
79	2	10	15815	S25 E20	249	2300	2.5

SUNSPOT DATA

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

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MCMATH REGION 15815 (CONT) CMP DATE 12.2

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	11	15815	S26	E08	247	2300	2.5	20452	S25	E03	252	(AP)	2				
79	2	12	15815	S25	W10	248	2300	2.0										
79	2	13	15815	S26	W21	247	1800	2.0										
79	2	15	15815	S26	W47	247	1700	2.5										
79	2	16	15815	S26	W58	247	1200	2.5										
79	2	17	15815	S26	W65	240	1300	2.0										
79	2	18	15815	S28	W75	237	1200	1.0										
79	2	19	15815	S29	W87	237	500	1.0										

MCMATH REGION 15813 CMP DATE 13.2

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	6	15813	S18	E86	233	1200	2.5	20442	S17	E80	241	B	4	B	50	2	HSX
79	2	7	15813	S17	E75	232	2000	3.0	20442	S17	E70	237	Y	4	B	130	4	DSO
79	2	8	15813	S16	E63	232	3000	3.0	20442	S17	E56	238	(Y)	4	B	160	8	DSO
79	2	9	15813	S18	E48	233	2700	2.5	20442	S18	E42	239	(Y)	4	B	100	6	DSO
79	2	10	15813	S18	E33	236	3000	3.0	20442	S18	E28	238	(B)	4	B	200	6	EHO
79	2		15813						20449	S14	E24	242	(AP)	3				
79	2	11	15813	S19	E21	234	2800	3.0	20442	S18	E17	238	(Y)	4	M	160	25	EHO
79	2		15813						20449	S14	E13	242	(B)	3	M	150	18	EHO
79	2	12	15813	S19	E05	233	2000	2.5	20442	S16	E02	239	BF	4				
79	2		15813						20449	S14	E00	241	(B)	3				
79	2	13	15813	S17	W11	237	2000	2.5	20442	S16	W12	240	(AF)	4				
79	2		15813						20449	S14	W13	241	(B)	3				
79	2	15	15813	S17	W37	237	1900	3.0	20442	S18	W37	239	(AF)	3				
79	2	16	15813	S17	W49	238	1900	3.0										
79	2	17	15813	S17	W62	237	1900	3.0	20442	S17	W65	240	(AF)	3				
79	2	18	15813	S17	W74	236	2100	3.0	20442	S16	W78	240	AP	3				
79	2	19	15813	S17	W86	236	2100	1.5										

MCMATH REGION 15835 CMP DATE 13.4

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	15	15835	N13	W31	231	100	1.0										
79	2	16	15835	N13	W44	233	100	2.0										

MCMATH REGION 15816 CMP DATE 14.0

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	7	15816	S34	E88	219	300	2.0										
79	2	8	15816	S34	E77	218	600	2.0	20447	S35	E68	226	(AP)	3	B	10	2	BXO
79	2	9	15816	S35	E63	218	600	3.0	20447	S36	E54	227	(AP)	3	B	20	1	HRX
79	2	10	15816	S34	E45	224	1200	3.0	20447	S37	E40	226	(BP)	4	B	130	3	CHO
79	2	11	15816	S34	E32	223	1200	2.5	20447	S37	E29	226	(BP)	4	M	150	8	DSO
79	2	12	15816	S35	E16	222	1200	3.0	20447	S37	E17	224	(BP)	4				
79	2	13	15816	S35	E03	223	1200	2.5	20447	S37	E04	224	(BP)	4				
79	2	15	15816	S36	W21	221	1200	2.5	20447	S37	W20	222	(BP)	4				
79	2	16	15816	S36	W33	222	1100	2.5										
79	2	17	15816	S36	W45	220	1100	2.5	20447	S39	W49	224	(AP)	4				
79	2	18	15816	S36	W55	217	1100	2.5	20447	S39	W62	224	(AP)	3				
79	2	19	15816	S36	W67	217	1300	2.5										
79	2	20	15816	S36	W80	217	1300	2.0										

MCMATH REGION 15822 CMP DATE 14.3

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	2	11	15822	S09	E37	218	200	2.0	20453	S10	E37	218	(B)	2	M	10	2	BXO
79	2	12	15822	S10	E21	217	200	2.0	20453	S10	E22	219	B	2				
79	2	13	15822	S10	E07	219	400	2.5	20453	S12	E11	217	AP	1				
79	2	15	15822	S10	W19	219	300	2.5										
79	2	16	15822	S10	W31	220	200	2.0										
79	2	17	15822	S10	W44	219	400	1.5										
79	2	18	15822	S10	W57	219	400	1.5										
79	2	19	15822	S11	W69	219	300	1.5										

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MCMATH REGION 15820 CMP DATE 14.5 RETURN OF REGION 15768 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	2	8	15820					20448	N11 E80	214	X	3	B	10	1	HRX
79	2	9	15820	N13 E68	213	300	1.5	20448	N11 E67	214	AP	4	B	30	1	HSX
79	2	10	15820	N12 E52	217	400	1.0	20448	N11 E53	213	(AP)	4	B	50	1	HSX
79	2	11	15820	N13 E35	220	300	1.0	20448	N11 E42	213	(AP)	3				
79	2	12	15820	N12 E20	218	400	1.0	20448	N11 E29	212	(AP)	4				
79	2	13	15820	N12 E10	216	400	1.0	20448	N10 E15	213	(AP)	4				
79	2	15	15820	N13 W15	215	400	1.0	20448	N11 W11	213	(AP)	4				
79	2	16	15820	N13 W27	216	200	1.0									
79	2	17	15820					20448	N11 W36	211	(AP)	3				
79	2	18	15820					20448	N11 W49	211	(AP)	3				

MCMATH REGION 15818 CMP DATE 15.0 RETURN OF REGION 15767 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	8	15818	S24 E87	208	900	1.0									
79	2	9	15818	S24 E73	208	1000	2.0									
79	2	10	15818	S24 E56	213	1500	2.5	20450	S22 E44	222	(B)	2	B	40	2	BXO
79	2	11	15818	S24 E43	212	1600	2.5	20450	S23 E34	221	(B)	1	M	50	7	BXO
79	2	12	15818	S24 E28	210	1400	2.0	20456	S27 E29	212	(B)	2				
79	2	13	15818	S24 E15	211	1400	2.0									
79	2	15	15818	S24 W10	210	1200	2.5									
79	2	16	15818	S24 W22	211	1200	2.5									
79	2	17	15818	S24 W35	210	1400	2.0	20462	S22 W27	202	(B)	3				
79	2	18	15818	S24 W47	209	1500	2.0	20462	S21 W42	204	(AP)	2				
79	2	19	15818	S25 W59	209	1200	2.0									
79	2	20	15818	S25 W72	209	1200	2.0									

MCMATH REGION 15825 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	2	12	15825	N22 E32	206	200	2.5	20455	N21 E32	209	(B)	2				
79	2	13	15825	N22 E18	208	400	3.0	20455	N22 E19	209	(B)	4				
79	2	15	15825	N22 W07	207	1400	3.0	20455	N21 W06	208	(B)	4				
79	2	16	15825	N23 W19	208	1500	3.5									
79	2	17	15825	N23 W32	207	1600	3.0	20455	N21 W32	207	(B)	4				
79	2	18	15825	N23 W45	207	1800	3.0	20455	N21 W46	208	(BP)	4				
79	2	19	15825	N23 W57	207	1800	3.0									
79	2	20	15825	N24 W70	207	1400	3.0									

MCMATH REGION 15819 CMP DATE 16.1

				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	9	15819	N16 E88	193	500	2.0									
79	2	10	15819	N17 E70	199	600	2.0	20451	N17 E65	201	AP	2	B	10	1	AXX
79	2	11	15819	N18 E58	197	600	2.0	20451	N17 E53	202	(AP)	2	M	40	1	HSX
79	2	12	15819	N18 E43	195	700	1.5									
79	2	13	15819	N18 E26	200	800	2.0									
79	2	15	15819	N18 E04	196	600	2.0									
79	2	16	15819	N18 W09	198	500	2.0									
79	2	17	15819	N18 W20	195	300	1.5									

MCMATH REGION 15836 CMP DATE 17.3

				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	2	16	15836	N09 E09	180	200	2.5									
79	2	17	15836	N08 W04	179	700	2.5	20465	N08 W04	179	(B)	4				
79	2	18	15836	N08 W17	179	800	2.0	20465	N08 W17	179	(B)	4				
79	2	19	15836	N08 W29	179	1000	3.0									
79	2	20	15836	N08 W43	180	1000	3.5									
79	2	22	15836	N08 W70	180	1500	3.0									

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MCMATH REGION 15823 CMP DATE 17.8 RETURN OF REGION 15772 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	2	11	15823	N20 E83	172	2200	2.0	20454	N20 E80	175	(X)	4	M	280	2	EHO
79	2	12	15823	N20 E68	170	3800	3.0	20454	N19 E70	311	(B)	4				
79	2	13	15823	N19 E53	173	4100	3.0	20454	N19 E58	170	(B)	4				
79	2	15	15823	N20 E27	173	4500	3.0	20454	N19 E30	172	(BP)	4				
79	2	16	15823	N19 E17	172	5300	3.0									
79	2	17	15823	N19 E03	172	5800	3.0	20454	N18 E02	173	(D)	4				
79	2	18	15823	N19 W11	173	5800	3.0	20454	N18 W14	176	(D)	4				
79	2	19	15823	N19 W23	173	5200	3.0									
79	2	20	15823	N19 W36	173	5300	3.5									
79	2	22	15823	N20 W61	171	4700	3.5									
79	2	24	15823	N24 W90	173	1000	1.5									

MCMATH REGION 15827 CMP DATE 17.8

			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	12	15827	S16 E67	171	400	2.5									
79	2	13	15827	S16 E53	173	800	2.5	20459	S17 E54	174	(B)	3				
79	2	15	15827	S15 E27	173	1100	3.0	20459	S15 E28	174	(B)	3				
79	2	16	15827	S15 E14	175	1100	2.5									
79	2	17	15827	S15 E02	173	1200	3.0	20459	S16 E01	174	(BP)	4				
79	2	18	15827	S15 W11	173	900	2.5	20459	S16 W13	175	(BP)	3				
79	2	19	15827	S15 W24	174	900	3.0									
79	2	20	15827	S15 W37	174	1000	3.0									
79	2	22	15827	S15 W63	173	1200	3.0									
79	2	24	15827	S15 W90	173	400	1.5									

MCMATH REGION 15828 CMP DATE 18.4

			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	12	15828	N04 E77	161	1100	3.5	20457	N02 E75	166	X	3				
79	2	13	15828	N04 E63	163	1300	3.5	20457	N02 E61	167	(BP)	2				
79	2	15	15828	N04 E37	163	1400	3.0	20457	N02 E35	167	(BP)	4				
79	2	16	15828	N04 E25	164	1700	3.0									
79	2	17	15828	N04 E11	164	1400	3.0	20457	N02 E09	166	(BP)	4				
79	2	18	15828	N03 W03	165	1200	2.5	20457	N02 W06	168	(AP)	3				
79	2	19	15828	N03 W16	166	1300	2.5									
79	2	20	15828	N03 W29	166	1300	2.5									
79	2	22	15828	N03 W56	166	900	2.0									
79	2	24	15828	N04 W83	166	600	1.0									

MCMATH REGION 15839 CMP DATE 18.4

			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	19	15839	S21 W16	166	100	2.0									
79	2	20	15839	S21 W29	166	300	2.0									
79	2	22	15839	S22 W56	166	300	2.5									
79	2	24	15839	S21 W82	165	400	1.5									

MCMATH REGION 15826 CMP DATE 19.1 RETURN OF REGION 15783 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	12	15826	S34 E75	163	500	1.5									
79	2	13	15826	S35 E62	164	500	1.0									
79	2	15	15826	S35 E42	158	700	1.0									
79	2	16	15826	S35 E30	159	600	1.5									
79	2	17	15826	S34 E18	157	400	1.0									
79	2	18	15826	S34 E06	156	300	1.0									
79	2	19	15826	S34 W06	156	300	1.0									
79	2	20	15826	S34 W18	155	300	1.5									
79	2	22	15826	S34 W44	154	300	1.0									
79	2	24	15826	S34 W70	153	200	1.0									

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MCMATH REGION 15833 CMP DATE 19.6 RETURN OF REGION 15778 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	13	15833	S14 E72	154	400	1.0							
79	2	15	15833	S15 E48	152	400	1.0							
79	2	16	15833	S15 E36	153	500	1.0							
79	2	17	15833	S14 E24	151	600	1.0							
79	2	18	15833	S13 E12	150	500	1.0							
79	2	19	15833	S13 E00	150	500	1.0							
79	2	20	15833	S14 W13	150	600	1.0							
79	2	22	15833	S15 W39	149	600	1.0							
79	2	24	15833	S15 W65	148	600	1.0							

MCMATH REGION 15830 CMP DATE 20.1 RETURN OF REGION 15777 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	13	15830	N15 E85	141	4000	2.5	20460	N17 E80	148	(X)	3		
79	2	15	15830	N14 E58	142	7200	3.5	20460	N15 E55	147	(Y)	4		
79	2	16	15830	N14 E45	144	8000	3.5							
79	2	17	15830	N15 E33	142	7600	3.0	20460	N15 E28	147	(Y)	5		
79	2	18	15830	N15 E19	143	8000	3.0	20460	N17 E15	147	(Y)	5		
79	2	19	15830	N15 E07	143	8000	3.5							
79	2	20	15830	N15 W07	144	8500	3.5							
79	2	22	15830	N15 W33	143	7800	3.5							
79	2	24	15830	N15 W59	142	7800	3.5	20460	N17 W68	150	(BF)	3		
79	2	25	15830					20460	N17 W76	146	(AP)	3		
79	2	26	15830	N15 W85	142	2500	2.0							

MCMATH REGION 15832 CMP DATE 21.0 RETURN OF REGION 15779 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	13	15832	S25 E88	138	400	1.0							
79	2	15	15832	S26 E68	132	1600	3.0	20461	S27 E69	133	(BP)	3		
79	2	16	15832	S26 E57	132	2300	3.5							
79	2	17	15832	S26 E43	132	2300	3.0	20461	S27 E43	132	(AP)	4		
79	2	18	15832	S26 E30	132	2300	3.0	20461	S27 E29	133	(AP)	4		
79	2	19	15832	S26 E18	132	2300	3.0							
79	2	20	15832	S26 E05	132	2300	3.0							
79	2	22	15832	S26 W20	130	2300	2.5							
79	2	24	15832	S26 W45	128	2300	2.5	20461	S28 W49	131	(BP)	3		
79	2	25	15832					20461	S28 W60	130	(AP)	3		
79	2	26	15832	S26 W70	127	1500	2.0							
79	2	27	15832	S26 W82	126	900	1.5							

MCMATH REGION 15834 CMP DATE 22.5 RETURN OF REGION 15785 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	15	15834	S13 E90	110	500	1.0							
79	2	16	15834	S14 E79	110	1300	2.0							
79	2	17	15834	S13 E64	111	1700	2.5							
79	2	18	15834	S13 E51	111	1500	2.5							
79	2	19	15834	S14 E39	111	1800	3.0							
79	2	20	15834	S14 E26	111	1800	2.5							
79	2	22	15834	S14 W01	111	1800	2.0							
79	2	24	15834	S14 W27	110	1400	2.0							
79	2	26	15834	S14 W55	112	1200	2.5							
79	2	27	15834	S13 W68	112	1200	2.5							
79	2	28	15834	S14 W80	111	800	2.0							

MCMATH REGION 15837 CMP DATE 22.8 RETURN OF REGION 15787 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	2	16	15837	N23 E80	109	3000	2.5							
79	2	17	15837	N23 E66	109	3000	3.0	20463	N21 E65	110	AP	1		
79	2	18	15837	N23 E53	109	3000	3.0	20463	N21 E50	112	B	1		
79	2		15837					20466	N26 E64	98	X	1		
79	2	19	15837	N23 E41	109	2700	3.0							
79	2	20	15837	N24 E29	108	2500	3.0							
79	2	22	15837	N24 E03	107	1900	3.0							

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MCMATH REGION 15837 (CONT) CMP DATE 22.8 RETURN OF REGION 15787 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	2	24	15837	N24 W23	106	1400	3.0									
79	2	26	15837	N24 W50	107	1200	3.0									
79	2	27	15837	N24 W62	106	1200	2.0									
79	2	28	15837	N24 W74	105	1000	1.5									

MCMATH REGION 15844 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	2	22	15844	S20 E16	94	100	2.0									
79	2	24	15844	S19 W10	93	400	2.0									
79	2	26	15844	S19 W38	95	800	2.5									
79	2	27	15844	S19 W50	94	700	2.5									
79	2	28	15844	S19 W63	94	400	2.0									

MCMATH REGION 15838 CMP DATE 25.1 RETURN OF REGIONS 15786 AND 15788 ROTATIONS 2 AND 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	17	15838	S26 E85	90	1000	1.0	20464	S25 E90	85	X	3				
79	2	18	15838	S24 E80	82	1400	1.5	20464	S25 E77	85	(AP)	4				
79	2	19	15838	S25 E69	81	1400	1.5									
79	2	20	15838	S25 E57	80	1400	2.5									
79	2	22	15838	S25 E32	78	1600	2.0									
79	2	24	15838	S25 E06	77	1200	1.5	20464	S26 W03	85	(AP)	3				
79	2		15838					20471	S26 E12	70	(AP)	3				
79	2	25	15838					20464	S25 W15	85	(AP)	3				
79	2		15838					20471	S25 E00	70	(AP)	3				
79	2	26	15838	S25 W20	77	1400	1.5									
79	2	27	15838	S25 W31	75	1200	1.5	20464	S25 W40	83	(AP)	4				
79	2		15838					20471	S26 W25	68	(AP)	3				
79	2	28	15838	S24 W42	73	1200	1.5	20464	S25 W53	83	(AP)	3				
79	2		15838					20471	S26 W38	68	(AP)	3				
79	3	01	15838						S26 W54				B	50	1	H
79	3	02	15838					20464	S25 W79		(AP)	3	B	40	1	H
79	3	02	15838					20471	S26 W65		(AP)	3				
79	3	03	15838	S24 W83		500	1.0	20471	S27 W77		(AP)	3	B	40	1	H

MCMATH REGION 15851 CMP DATE 25.3

			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	2	25	15851					20473	S33 W05	75	(BP)	2				
79	2	26	15851	S31 W18	75	800	2.0									
79	2	27	15851	S32 W30	74	1100	2.5	20473	S33 W31	74	(B)	3				
79	2	28	15851	S32 W43	74	1100	3.0	20473	S33 W44	74	(B)	3				
79	3	01	15851						S32 W61				B	90	10	D
79	3	02	15851					20473	S32 W70		(B)	3	B	70	5	C
79	3	03	15851	S32 W82		900	2.5	20473	S32 W85		(AP)	3	B	30	1	H

MCMATH REGION 15845 CMP DATE 25.4

			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	22	15845	N12 E38	72	100	1.0									
79	2	24	15845	N11 E10	73	100	1.5	20469	N12 E08	74	(B)	2				
79	2	26	15845	N12 W17	40	100	1.0									

MCMATH REGION 15840 CMP DATE 26.6

			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	2	19	15840	N38 E90	60	300	1.0									
79	2	20	15840	N37 E78	59	1000	2.0									
79	2	22	15840	N37 E50	60	1700	2.5									
79	2	24	15840	N38 E24	59	1400	2.5	20470	N36 E17	65	(AP)	3				
79	2	25	15840					20470	N36 E06	64	(AP)	3				
79	2	26	15840	N39 W01	58	1500	2.5									

CONTD

REGIONS OF SOLAR ACTIVITY

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MCMATH REGION 15840 (CONT) CMP DATE 26.6

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	27	15840	N39 W12	56	1700	2.5
79	2	28	15840	N39 W25	56	2000	2.0
79	3	01	15840				
79	3	02	15840				
79	3	03	15840	N39 W61		1600	1.5
79	3	04	15840	N40 W76		600	1.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
21470	N36 W19	62	(AP)	4				
20470	N36 W31	61	(AP)	3				
	N36 W47				B	30	2	H
20470	N37 W57		(AP)	2	B	30	1	H
20470	N37 W69		(AP)	2	B	10	2	B

MCMATH REGION 15841 CMP DATE 26.6 RETURN OF REGION 15792 ROTATION 3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	20	15841	S14 E80	57	300	1.0
79	2	22	15841	S14 E53	57	300	1.5
79	2	24	15841	S14 E27	56	200	1.0
79	2	26	15841	S14 W01	58	300	1.0
79	2	27	15841	S13 W15	59	100	1.0
79	2	28	15841	S13 W28	59	300	1.0
79	3	03	15841	S13 W70		200	1.0

SUNSPOT DATA

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

MCMATH REGION 15846 CMP DATE 26.9 RETURN OF REGION 15791 ROTATION 3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	22	15846	N25 E56	54	300	1.0
79	2	24	15846	N24 E30	53	200	1.0
79	2	26	15846	N24 E03	54	200	1.5
79	2	27	15846	N25 W08	52	200	1.0
79	2	28	15846	N25 W21	52	400	1.0
79	3	03	15846	N26 W61		400	1.0

SUNSPOT DATA

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

MCMATH REGION 15852 CMP DATE 27.2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	26	15852	S19 E08	49	300	2.0
79	2	27	15852	S19 W04	48	600	2.0
79	2	28	15852	S18 W17	48	900	2.5
79	3	01	15852				
79	3	02	15852				
79	3	03	15852	S19 W57		1200	3.0
79	3	04	15852	S20 W72		1300	3.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20475	S18 W06	49	(B)	3				
20475	S19 W17	47	(B)	3				
	S18 W36				B	30	7	C
	S19 W51				B	20	5	B
20483	S19 W60		(AP)	3	B	130	6	D
20483	S18 W74		(B)	2	B	20	4	B

MCMATH REGION 15842 CMP DATE 27.5 RETURN OF REGION 15797 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	22	15842	N10 E65	45	100	1.5
79	2	24	15842	N10 E40	43	200	1.5
79	2	26	15842	N10 E12	45	200	1.5
79	2	27	15842	N10 W01	45	200	1.5
79	2	28	15842	N10 W16	47	300	1.5
79	3	03	15842	N12 W56		300	1.0

SUNSPOT DATA

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

MCMATH REGION 15857 CMP DATE 27.5

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	28	15857	S33 W14	45	100	1.0
79	3	01	15857				
79	3	02	15857				
79	3	03	15857	S33 W54		900	3.0
79	3	04	15857	S34 W67		800	3.0
79	3	06	15857	S34 W90		400	2.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	S33 W33				B	70	12	D
20479	S34 W42		(B)	3	B	80	13	D
20479	S34 W54		(B)	3	B	90	7	D
20479	S33 W67		(B)	2	B	30	4	B

REGIONS OF SOLAR ACTIVITY

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MCMATH REGION 15843 CMP DATE 28.6

			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	2	22	15843	N24 E85	25	400	2.0									
79	2	24	15843	N24 E54	29	800	2.0									
79	2	26	15843	N24 E26	31	800	2.5									
79	2	27	15843	N24 E14	30	900	2.5									
79	2	28	15843	N24 E00	31	1000	2.5									
79	3	01	15743						N24 W13				B	10	2	B
79	3	02	15843						N23 W28				B	10	2	B
79	3	03	15843	N25 W39		1100	2.0	20484	N23 W38		(B)	2	B	10	2	B
79	3	04	15843	N24 W54		1100	2.0									
79	3	06	15843	N27 W80		600	1.0									

NOTE; NO CALCIUM SPECTROHELIOGRAMS WERE SECURED AT THE MCMATH-HULBERT OBSERVATORY ON FEB. 3, 14, 21, 23 AND 25, 1979.
NO SUNSPOT OBSERVATIONS WERE MADE AT MT. WILSON ON FEB. 1, 2, 3, 4, 14, 16, 19, 20, 21, 22, 23 AND 26, 1979.

DAILY CALCIUM PLAGE INDEX

FEBRUARY 1979

YR	MO	DAY	INDEX	YR	MO	DAY	INDEX	YR	MO	DAY	INDEX
79	2	1	54.0	79	2	11	53.1	79	2	21	*
79	2	2	51.2	79	2	12	46.6	79	2	22	52.8
79	2	3	*	79	2	13	44.2	79	2	23	*
79	2	4	65.8	79	2	14	*	79	2	24	31.9
79	2	5	70.9	79	2	15	51.6	79	2	25	*
79	2	6	69.2	79	2	16	62.6	79	2	26	27.3
79	2	7	67.4	79	2	17	65.8	79	2	27	27.3
79	2	8	67.9	79	2	18	66.6	79	2	28	33.3
79	2	9	56.8	79	2	19	70.3				
79	2	10	58.7	79	2	20	71.7				

* NO OBSERVATIONS

ERRATA: August and September 1978 data have an error in the L values in Regions of Solar Activity. All L values for these two months are a day behind the tabulated CMP dates. These data appear in SGD 410 Part I, pages 110-120 (October 1978 issue) and SGD 411 Part I, pages 106-116 (November 1978 issue).

SUDDEN IONOSPHERIC DISTURBANCES

FEBRUARY 1979

DAY	UNIVERSAL TIME START	END	MAX	IMP	WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TIME SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD	KNOWN FLARE	McMATH REGION
01	0808	0840	0815	2	5			5	3		1		0805	15800
01	0909	0950	0914	2+	5			5	3		1		0905	15800
01	1852	1916	1855	1-	3	1			1				1847	15796
02	0058	0156D	0123	1-	1				1				0047E	15802
02	0203	0316	0217	1-	1				1				0155	15802
02	0835	1010	0850	1-	1				1				0835E	15802
02	1433	1450	1437	1-	5	1		2	3				*	
02	1610	1628	1620	1-	3				1	1	1		*	
02	1638	1714D	1642	1-	1					1			*	
02	1714	1740	1722	1-	1					1			*	
04	1725	1820	1731	1	5				2	1	3		1724	15808
04	1828	1851	1832	1	5				2	1	3		1823	15804
05	0113	0247	0133	1-	1				1				0124E	15802
05	0638	0810	0648	2	5	1		1	1				*	
05	1150	1255	1155	1	5	2		6	4		2		1153E	15808
05	1230	1253	1233	1	1		1						1228	15808
05	2119	2221	2137	2	5	2			3	1	4		2119	15808
06	0915	0930	0918	1-	1				1				0917	15802
06	1300	1320	1302	1	1				1				1255	15802
06	1605	1628	1657	1	3				2	1	1		1605	15802
06	2106	2120	2111	1-	1					1			2059E	15807
07	0351	0502	0400	2	3	1			1				0351	15808
07	1107	1227	1122	1+	5	1		7	4		2		1110	15808
07	1242	1321	1255	1-	1			1					1250	15813
08	0203	0349	0213	2+	3	1			2				0205	15808
08	0651	0825	0714	2	1				1				*	
08	1419	1511	1427	1-	5			2	2	1			1421	15818
08	1448	1507	1452	1-	5				3	1	3		1458	15802
08	1521	1625	1527	1-	5	1			3	1	2		1518	15802
08	2355	0020D	0001	1-	1				1				2347	15818
09	0744	0926	0800	2	5	1		1	3				0750	15807
09	1144	1240	1158	1-	5	1		2	2	1			NF	
09	1340	1455	1355	1-	1				1	1			1339	15807
09	1552	1608D	1559	1-	1					1			1554	15807
09	1622	1653	1643	1-	3				1	1	1		1618	15807
09	1630	1702	1634	1-	5				2	1	2		1622	15808
09	1900	1943	1904	1	5	1			2	1	4		1900	15818
09	2020	2042	2024	1-	1				1	1			2016	15807
09	2057	2120	2101	1-	1				1	1			2054	15807
10	0035	0100	0040	1-	1				1				*	
10	0337	0413D	0344	1-	1				1				*	
10	0413E	0506	0440	1-	1				1				*	
10	0741	0942	0759	1+	5			2	1				NF	
10	1126	1200D	1200	1-	1				1		1		*	
10	1245	1315	1255	1+	5			3	2		1		1241	15807
10	1430	1645	1440	1-	1				1		1		1430	15807
10	1648	1750D	1708	1-	1					1			1654	15807
10	1750	1928	1804	1	3					1	1		1758	15807
10	1859	1835	1905	1-	1						1		1853	15807
10	2039	2117	2045	1-	5	1			2	1	4		2037	15807
11	0813	0908	0826	1-	1				1				0813E	15807
11	1226	1435	1246	1+	5	4		7	5		2		1225	15807
11	1501	1546	1526	1-	1				1		1		1507E	15807
11	2036	2104	2043	1-	3	1			1				2036	15826
12	0000	0400	0042	2+	3	1			1				0000	15807
12	0210E	0230	0223	1-	1	1							0213	15816
12	0547E	0812D	0624	2	1				1				0548	15807
12	0812E	0921D	0823	1+	5			3	3				*	
12	0918	0945	0927	1+	5	1		4	3				*	
12	1002E	1155D	1013	1+	5	1		3	4		1		*	
12	1031	1130	1050	1-	5	1		3	3		1		NF	
12	1154	1250	1213	1	5			4	4		2		1157	15813
12	1436	1635	1450	1	5	1		7	4		4		1424E	15816
12	1950	2110	2010	1-	5	2			3	1	4		1948	15816
12	2028	2055	2033	1-	1				1				2025	15818
13	0225	0320	0236	1-	1				1				0222E	15816
13	1058	1125	1108	1	5	1		6	2		1		1050	15832
13	1215	1320	1220	1-	3	1		5	2		1		1200	15830
13	1339	1410	1345	1-	5	1		2	3		2		*	
13	1417	1515	1427	1-	5			5	3	1	1		*	
13	1652	1718D	1702	1-	5				2	1	4		NF	
13	1718	1758	1728	1-	5	2			2		4		1715	15830
13	1756	1852D	1808	1-	5	1			2		4		NF	
13	1850	1920	1858	1-	5	1			2		4		1847	15818
13	1944	2018	1952	1-	5	2			3		4		1937	15818
13	2146	2217D	2157	1-	1				1				2151	15830
13	2328	0019D	2346	1-	3				2				2338	15832

SUDDEN IONOSPHERIC DISTURBANCES

FEBRUARY 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
14	0018	0106D	0024	1-	1				1				0018	15807
14	0105E	0238	0114	1	3	1			1				0106	15830
14	0653	0724	0700	1-	1				1				0653	15830
14	0803	0839	0810	1-	1				1				0802E	15819
14	1156	1310	1220	1	5	1		5	4		2		NF	
14	1518	1530D	1530	1-	5				2		3		NF	
14	1550	1910	1620	1+	5	2		3	2	1	4		1548	15835
14	2225	2321	2238	1	5				1	1	1		2222	15830
15	0118	0223	0129	1-	3	1			1				0118	15830
15	1123	1149	1130	1-	1				1				1118	15807
15	1619	1637D	1637	1-	5				1	1	3		NF	
15	1716	1807	1718	1-	5				1	1	4		1713	15830
15	2153	2244	2200	1-	3				1	1			2152	15832
16	0144	0320	0150	1-	1	1							0144	15830
16	0549	0722	0606	1+	1				1				0552	15807
16	1107	1120	1109	1-	1				1				*	
16	1247	1315	1255	1-	5	1		4	3		2		1245	15830
16	1629	1716	1636	1-	5				1	1	3		1624	15830
16	1724	1830	1737	1-	5	1			1	1	4		1718	15830
16	1755	1845	1802	1-	5					1	3		1750	15830
16	1955	2035	2005	1-	5					1	2		1951	15823
16	2142	2237	2157	1-	5	2			2	1	4		*	
16	2252	0003D	2308	1-	1				1				*	
17	0004E	0224D	0035	1-	1				1				0004	15823
17	0124E	0208	0139	1-	1				1				*	
17	0805	0930	0810	1+	3				2				0805E	15823
17	1437	1609	1455	1-	5	1			2		4		1431	15823
17	1721	1832	1731	1-	5				1	1	4		1720	15830
17	1847	1910D	1856	1-	5				1	1	4		1844	15830
17	1905	1950	1917	1-	5				1	1	4		1905	15830
17	2128	2142	2135	1-	5				1		3		2126	15823
18	0641	0725	0647	2	5	2		4	1				0637	15830
18	1122	1151D	1151	1-	3			1	1		1		1117	15823
18	1218	1245D	1245	1-	1				1		1		1214	15823
18	1306	1405	1328	1	5	1		5	3		1		1306	15823
18	1444	1455	1449	1-	5			1	3		3		1442	15823
18	1540	1617	1554	1-	5	1			2		4		1538	15823
18	1635	1655	1638	2	5	3		1	3	1	3		1628	15823
18	1843	1849D	1849	1-	1				1		1		1842	15823
18	1955	2054	2013	1	5	2			2		3		1947	15830
18	2053	2200	2112	1-	1				1		1		2055	15830
18	2115	2207D	2128	1	5	1			1		3		2115	15830
18	2207E	2328D	2222	1	5	2			2		4		2203	15823
18	2336	0049D	2347	2+	5	1			1		2		2329	15823
19	0352	0423D	0358	1-	3	1			1				0357E	15823
19	0921	1015	0944	1	5			4	3				0928E	15830
19	0955	1012	1004	1-	1				1		1		*	
19	1016	1023D	1023	1-	5			3	4		1		*	
19	1033	1105	1038	1-	5			4	3		2		*	
19	1130	1208	1140	1-	1			1					*	
19	1239	1300	1246	1-	3			5	2		1		NF	
19	1520	1600	1530	1-	5	2		7	2		4		1524	15823
19	1808	1945	1823	2	5	1			1		4		1805	15830
19	2224	2246	2230	1-	1				1				2221	15830
20	0440	0626	0459	2-	1				1				0447	15830
20	0945	1050		1-	1			1					*	
20	1011	1030	1016	1-	1				1				*	
20	1032	1045	1034	1-	1	1							*	
20	1047	1053	1049	1-	1			1					*	
20	1231	1243	1234	1	3	1		1	2				1230	15830
20	1257	1310	1304	1-	1			1	1				1257	15830
20	1321	1323D	1323	1-	1				1				1319	15830
20	1349	1356	1352	1-	1			1	1				1349	15823
20	1410	1600	1434	2	5	2		6	3		5		NF	
20	1614	1625D	1625	1	5				2	1	4		1610	15830
20	1648	1657D	1657	1	5	1			2		4		1644	15830
20	1730E	2100	1820	1-	1						1		1729	15828
20	1800	1920	1827	1-	5	1			1		3		1759	15830
20	2145	2347	2230	1	5	2			1		4		*	
20	2303	2320	2309	1	1	1							*	
20	2347E	0042D	2354	1-	3	1			1				2348	15830
21	0004E	0035D	0004	1-	1				1				0005E	15830
21	0042E	0133	0052	1	3	1			2				0045	15830
21	0934	1008	0940	1+	5	1		2	4		2		0932	15823
21	1114	1155	1135	1	5	2		5	4		1		1107	15823
21	1333	1343D		1-	1				1		1		1334	15830
21	1414	1500	1424	1+	5	4		7	3		5		1418E	15830
21	1537	1545D	1545	1-	5				1		4		1537	15830
21	1557	1624	1602	1-	5	1		1	3		4		1555E	15830
21	1629	1638D	1638	1-	5				1		4		1627	15830
21	1721	1738D	1733	1-	3	1			1		1		1723	15830
21	1850	1905D	1905	1-	1				1		1		1853E	15830
21	1930	2021D	2021	1-	5				2		4		1939	15830
21	1953	2154D	2018	1-	5	1			2		4		NF	
21	2154	2218	2200	1-	3				1		1		*	
22	0123E	0240	0131	1-	5	1			3				0125	15830
22	0504E	0658D	0514	3	3	1			1				0505	15830
22	0911	1037	0918	1+	5	1		4			1		0915	15830
22	1109	1150D	1150	1-	5			2	3		1		NF	

SUDDEN IONOSPHERIC DISTURBANCES

FEBRUARY 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	1222	1230	1224	1-	5			1	3		1		1220	15823-
22	1253	1330	1300	1	5	2		7	3		2		1253	15830
22	1534	1550	1540	1-	5	1		1	2		3		1534	15836
22	1602	1615D	1615	1-	1				1		1		1558	15840
22	1622	1640D	1640	1-	5	1			1		4		1622	15836
22	1715	1759D	1717	1-	3						2		1713	15823
22	1807	1900D	1820	1	5	1			2		4		1808	15830
22	2223	2342	2234	1	5				2	1			*	
23	0415	0554D	0441	1-	3	1			1				*	
23	0554E	0730	0607	1-	1				1				*	
23	0930	1000	0936	1-	5	1		2	4		2		*	
23	1452	1515	1457	1	5	2		6	4		5		1452	15830
23	1733	1806	1738	1-	5				2		4		1725	15830
23	1826	1912D	1836	1-	5				2	1	4		1825	15830
23	1912	2012	1920	1-	5	1			3	1	4		NF	
24	1207	1223	1211	1-	1			1	1				1208	15830
24	1235	1247	1241	1-	5			1	3		1		1235	15830
24	1330	1340	1335	1-	1				1				1333	15830
24	1352	1410	1356	1-	5			2	3		2		1352	15830
24	1548	1610	1553	1-	5	1		1	4	1	4		1547	15830
24	1632	1720D	1640	1-	5				2	1	4		1636	15830
24	1725	1820	1735	1-	5				2	1	4		1724	15830
25	0640E	0844D	0708	1+	1				1				0643E	15849
25	0844	0900	0850	1	5			1	3				NF	
25	1200	1230	1206	1-	5			1	5		2		NF	
25	1443	1450	1445	1-	5				3	1	1		1438	15823
25	1510	1515	1512	1-	5			2	2	1	1		NF	
25	1816	1853	1822	1-	5	1			2	1	3		NF	
25	2008	2040	2012	1-	1				1	1			2010	15837
25	2206	2238	2212	1-	1				1	1			2206	15850
26	1349	1358	1353	1-	5			1	2	1	1		*	
26	1445	1535	1508	1-	1				1		1		*	
26	1842	1936	1848	1	5	1			2	1	1		1850E	15855
28	0031	0105	0038	1-	3				2				0028	15855
28	0228	0302	0235	1-	1				1				0228	15855

PERIODS OF NO OBSERVATIONS:

DATE	TIME (UT) and STATION
06	0000-2400 TN
09	1745-2400 UM (10 kHz)
	1815-2400 UM (13 kHz)
10	0000-1300 UM (13 kHz)
	0000-1315 UM (10 kHz)
13	0700-0900 UM (13 kHz)
13	1010-1300 UM (16 kHz)
	1105-1415 UM (10 kHz)
	1110-1900 UM (13 kHz)
16	1225-1230 UM (10, 13 and 16 kHz)
28	0000-2400 TN

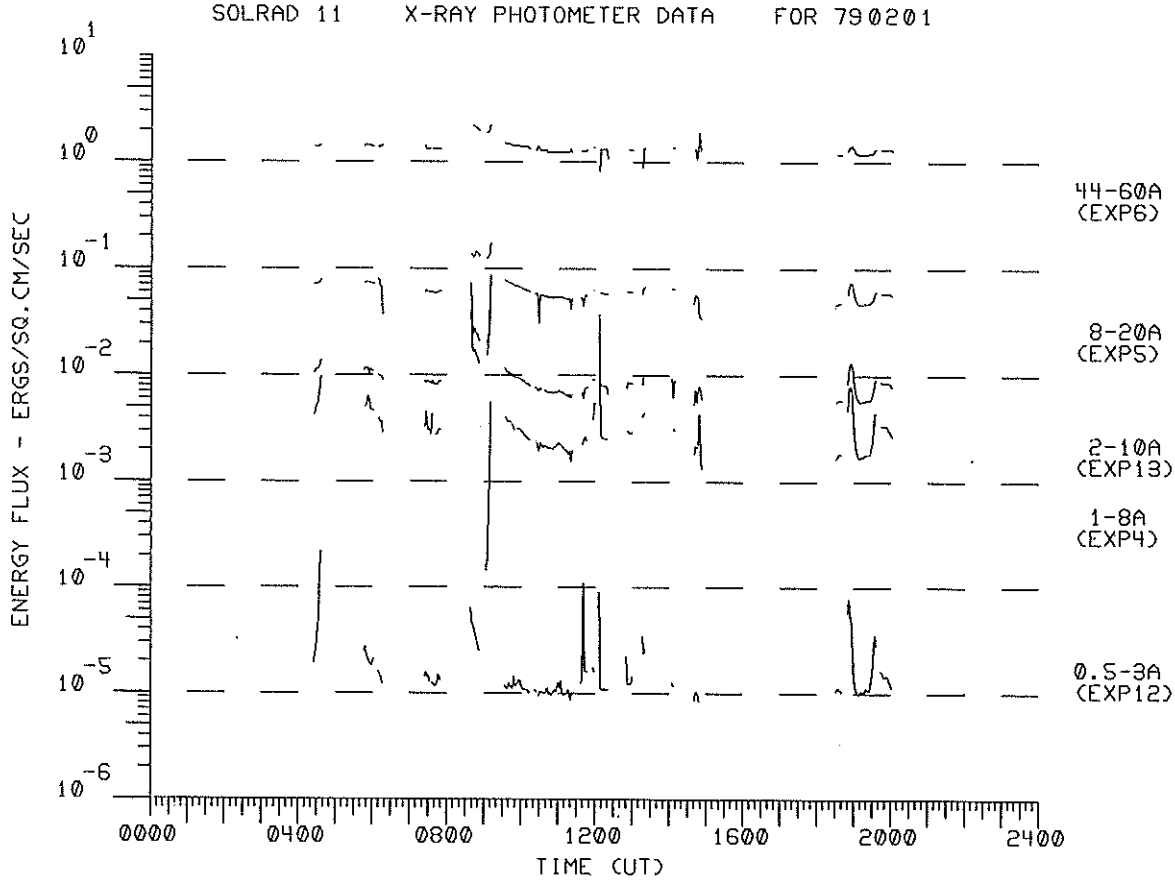
STATIONS REPORTING FOR FEBRUARY 1979

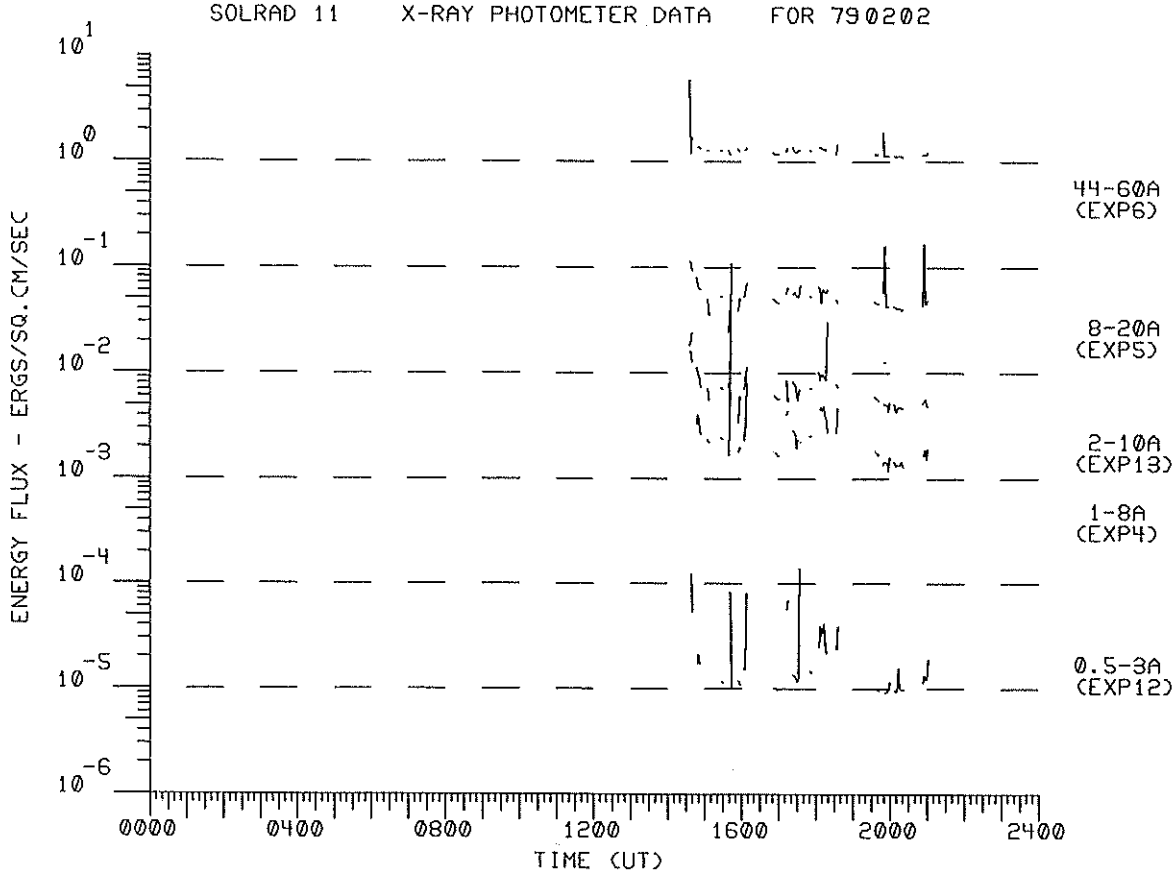
AAVSO (A21) (SES)
CHILWORTH (CL) (SCNA)
DARMSTADT (DA) (SWF)
HERSTMONCEUX (HC) (SEA)
HIRAISO (HI) (SWF)
HOBART (TA) (SEA)
HUANCAYO (HU) (SWF)
INUBO (IN) (SPA)
JULIUSRUH (JR) (SWF)
KANDILLI (KD) (SEA)
KUHLUNGSBORN (KU) (SES, SPA)
MC MATH (MC) (SWF, SCNA)
NEW JERSEY (NJ) (SES)
PANSKA VES (PU) (SWF, SEA, SES)
PRESTON (LO) (SEA)
SAO PAULO (UM) (SES,SPA)
ST CLOUD (SC) (SES)
TABLE MOUNTAIN (TM) (SPA)
TORINO (TN) (SPA)
UPICE (UI) (SEA)
WHITE SANDS (WS) (SEA)
VSETIN (VS) (SEA)
ZILINA (ZL) (SEA)

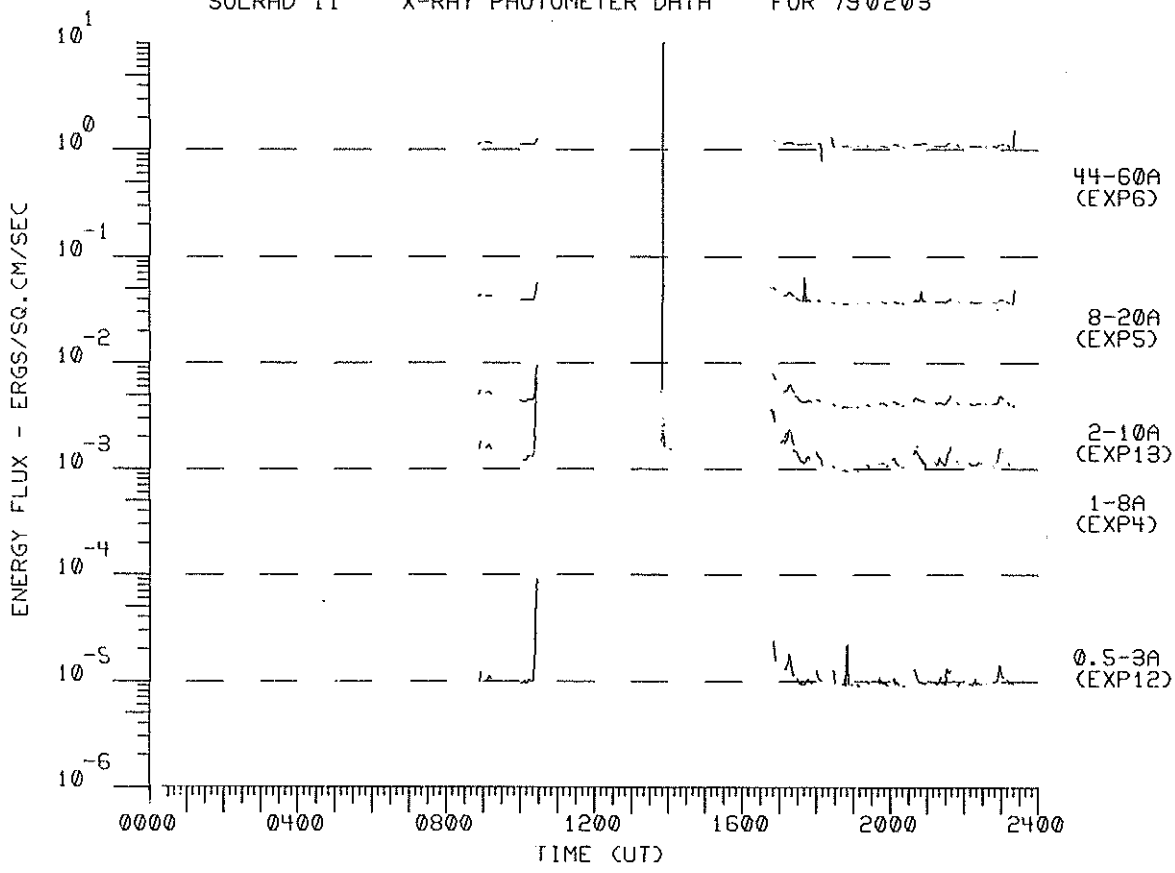
SIDs BY McMATH REGION

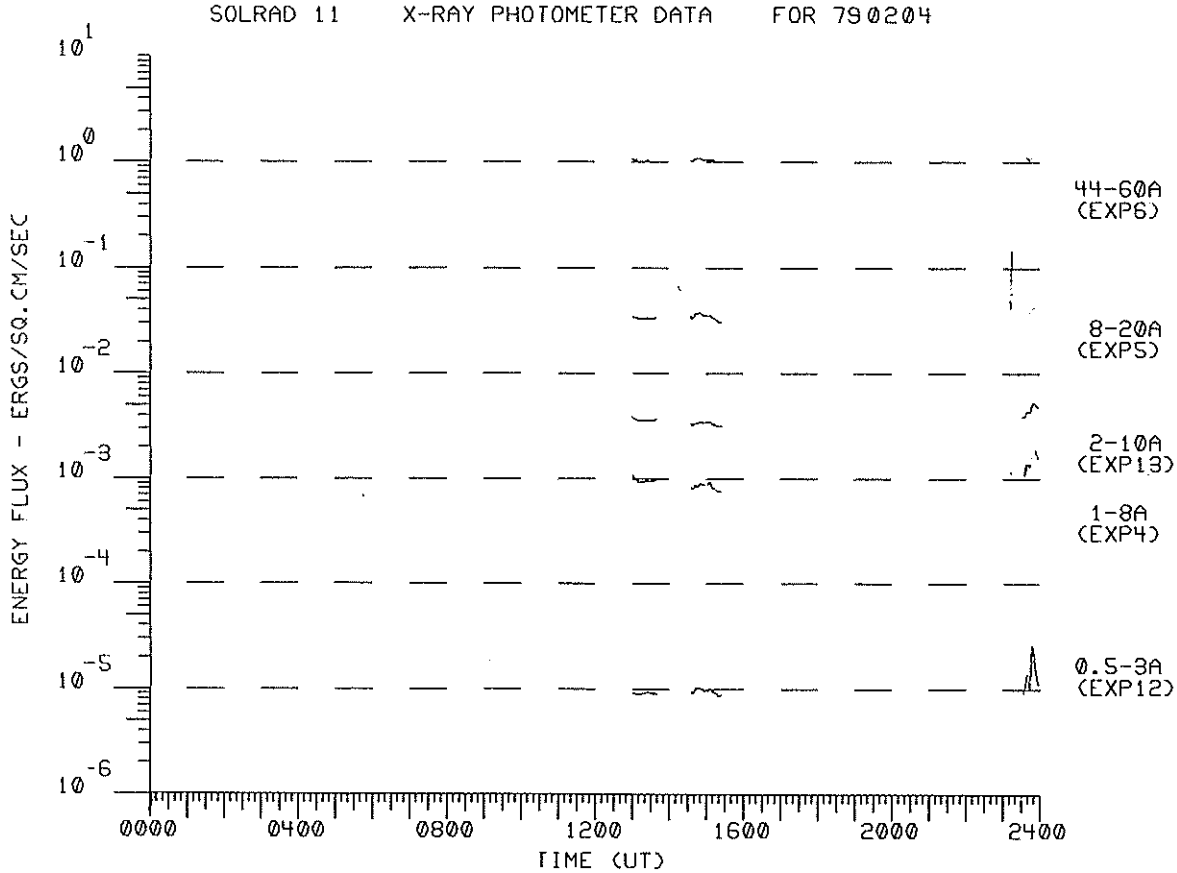
FEBRUARY 1979

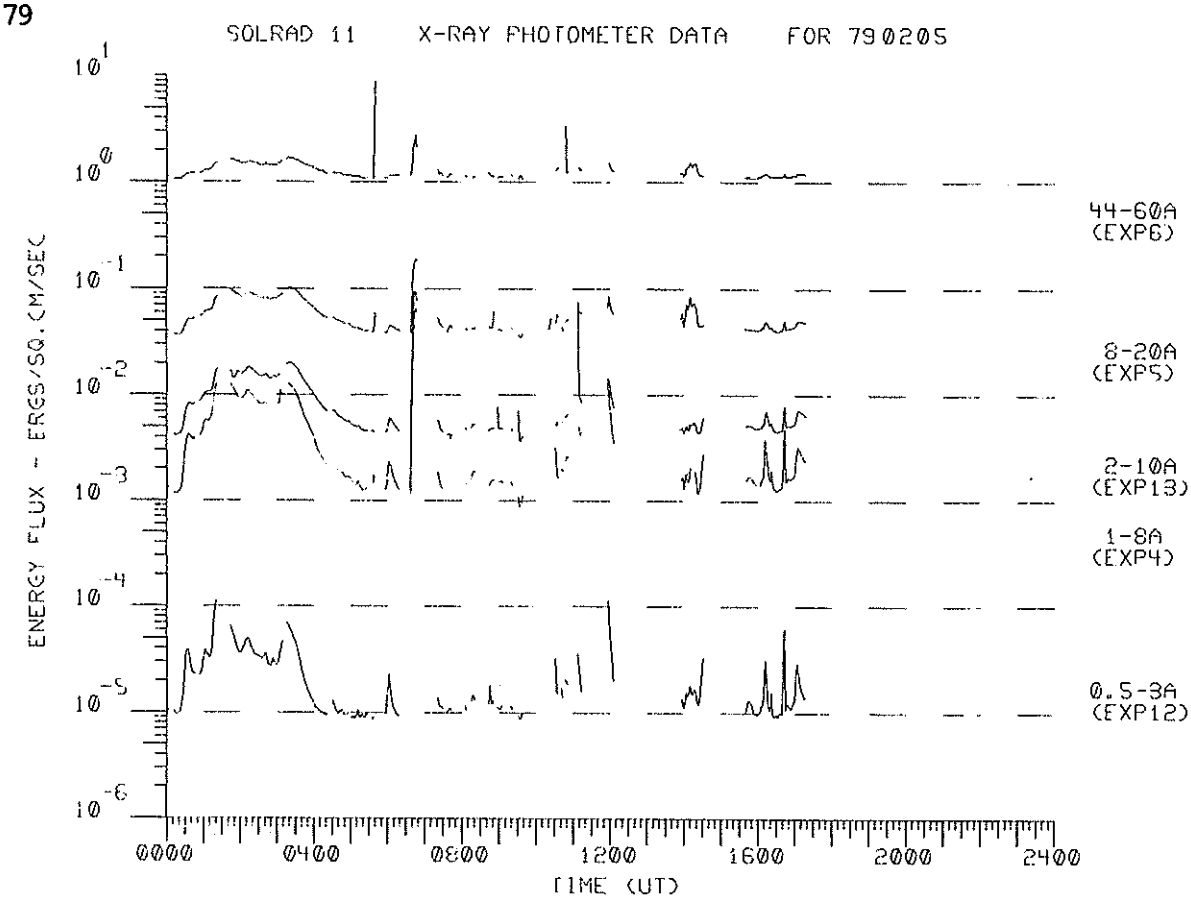
DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
REGION																												
15796	1																											
15800	2																											
15802		3			1	3		2																				
15804				1																								
15807						1			6	6	3	2		1	1	1												
15808				1	3		2	1	1																			
15813							1					1																
15816												3	1															
15818								2	1			1	2															
15819														1														
15823																1	4	9	2	1	2	2			1			
15826											1																	
15828																				1								
15830													3	3	2	5	3	4	3	8	10	5	3	7				
15832													2		1													
15835														1														
15836																						2						
15837																									1			
15840																						1						
15849																									1			
15850																									1			
15855																										1		2
X-RAY																												
UNKNOWN									1	1		3	2	2	1				4	1	1	1	1		4			
NO FP	4			1			1		4		1	2				3	1		1	6	1	1	3			2		

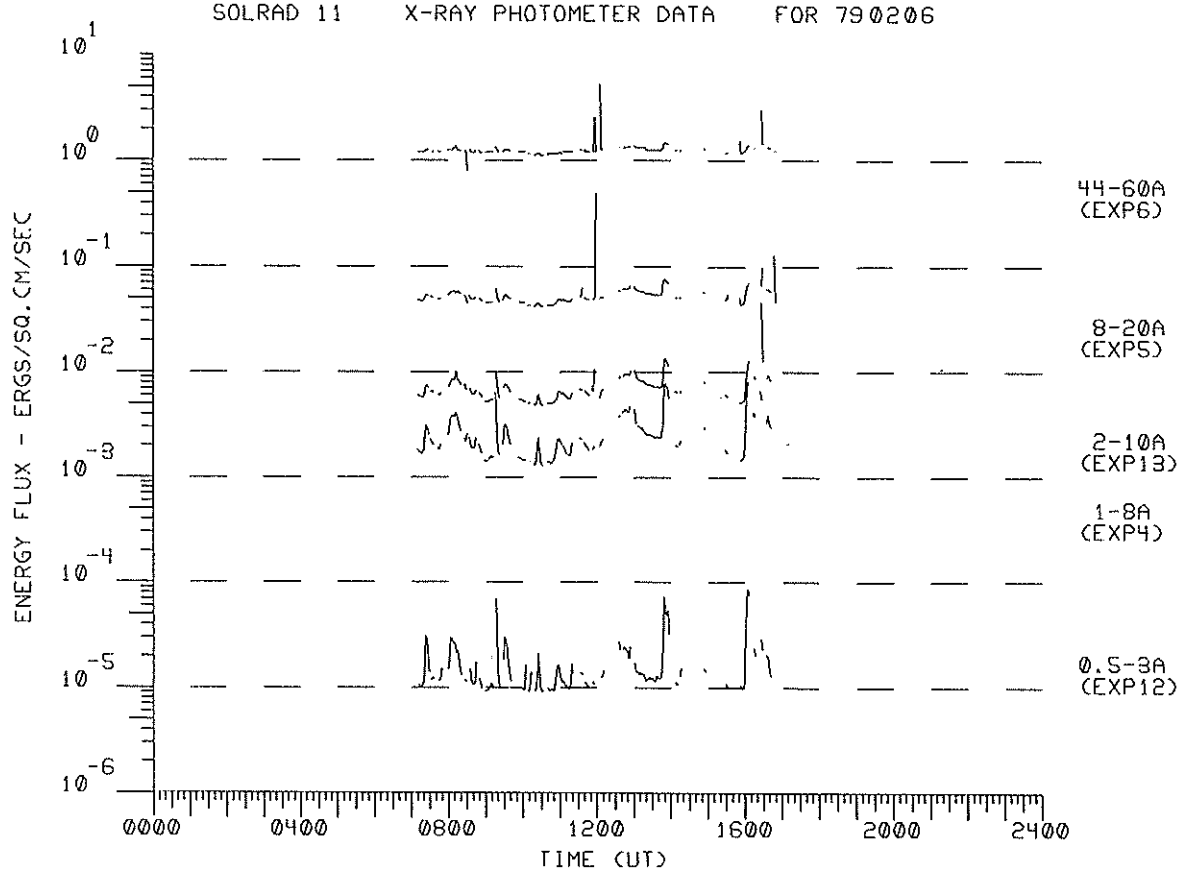

SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790201
ENERGY FLUX - ERGS/SQ.CM/SEC
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)

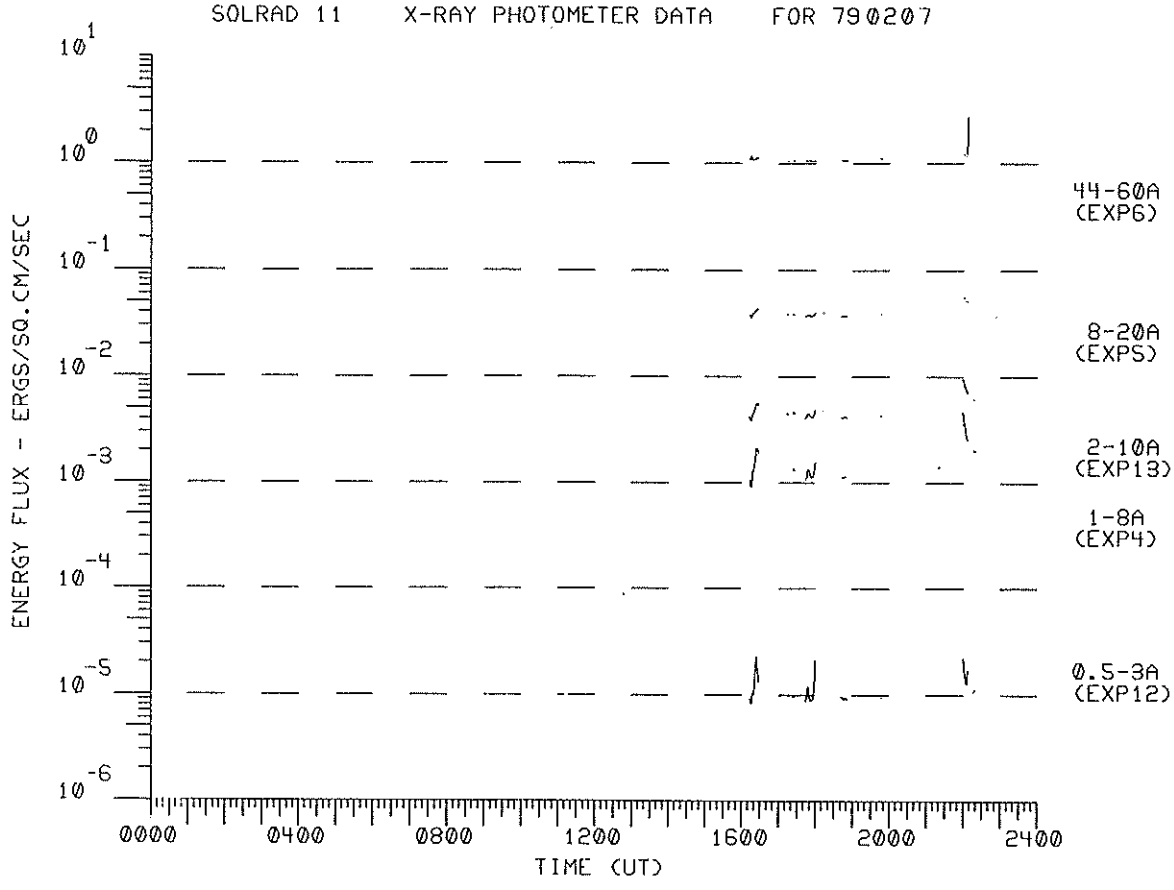

SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790202
ENERGY FLUX - ERGS/SQ.CM/SEC
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)

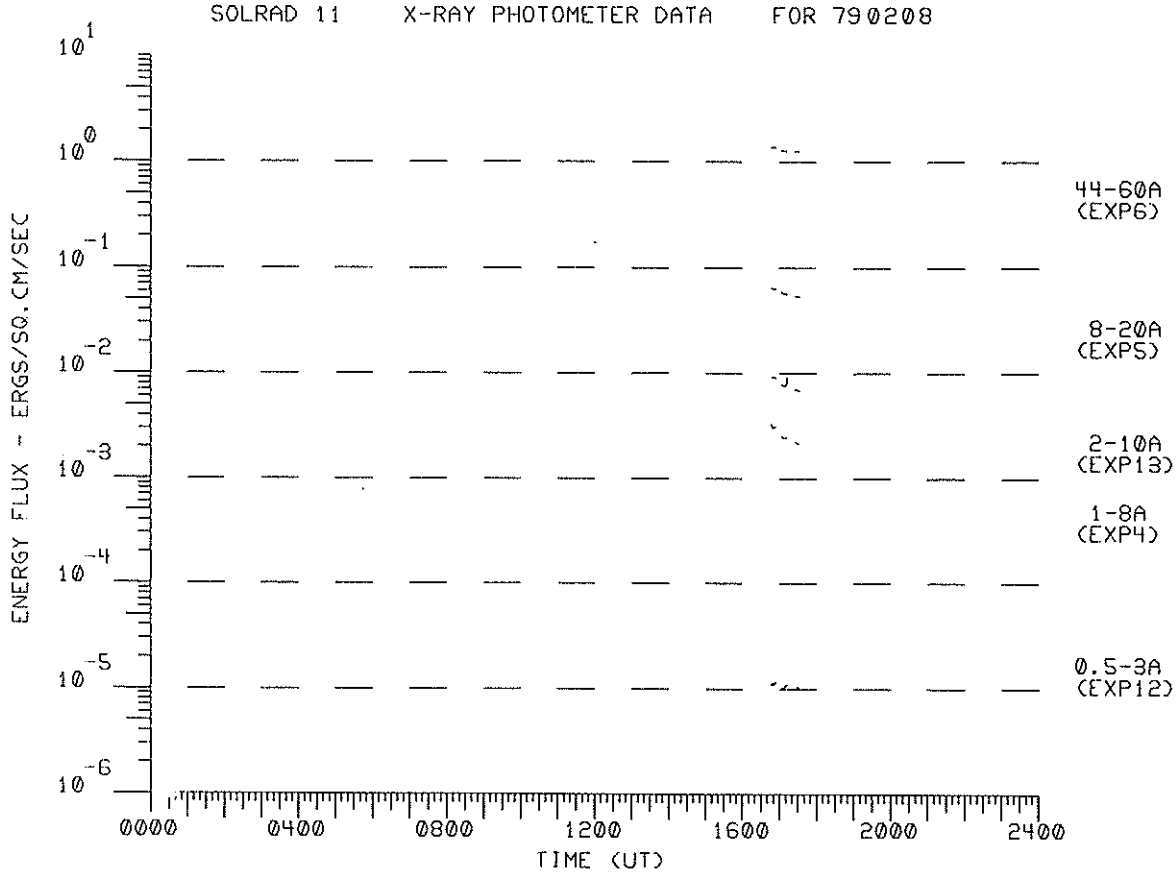

SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790203
ENERGY FLUX - ERGS/SQ.CM/SEC
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)

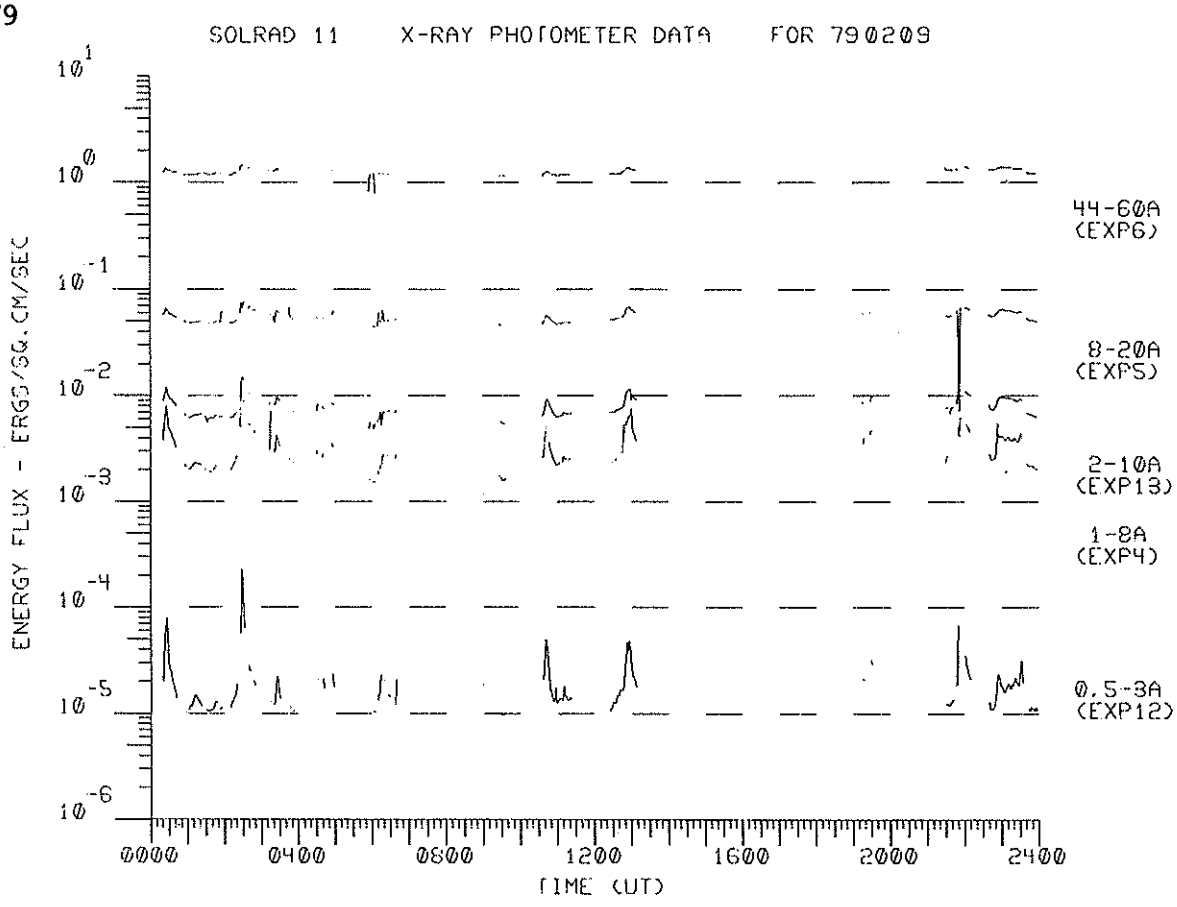

SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790204
ENERGY FLUX - ERGS/SQ.CM/SEC
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)

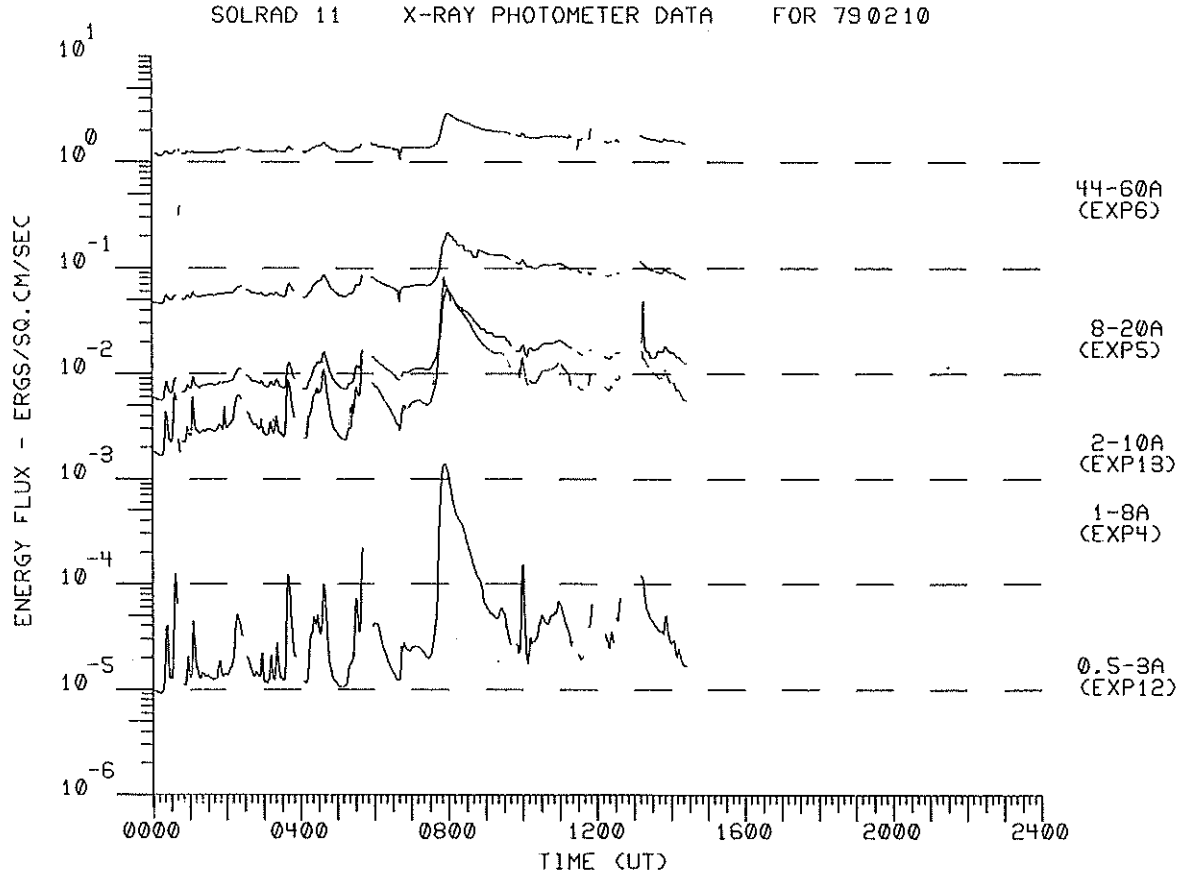

SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790205
ENERGY FLUX - ERGS/SQ.CM/SEC
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)

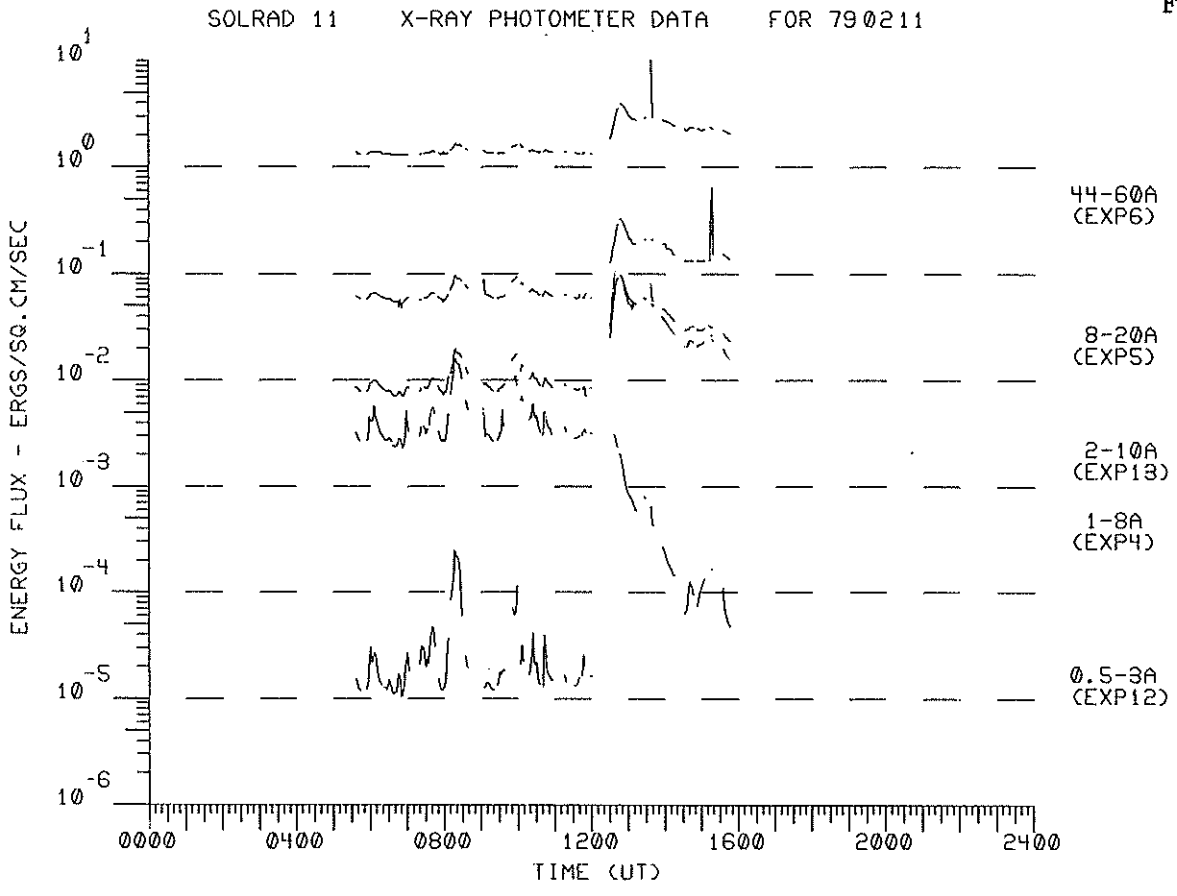

SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790206
ENERGY FLUX - ERGS/SQ.CM/SEC
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)

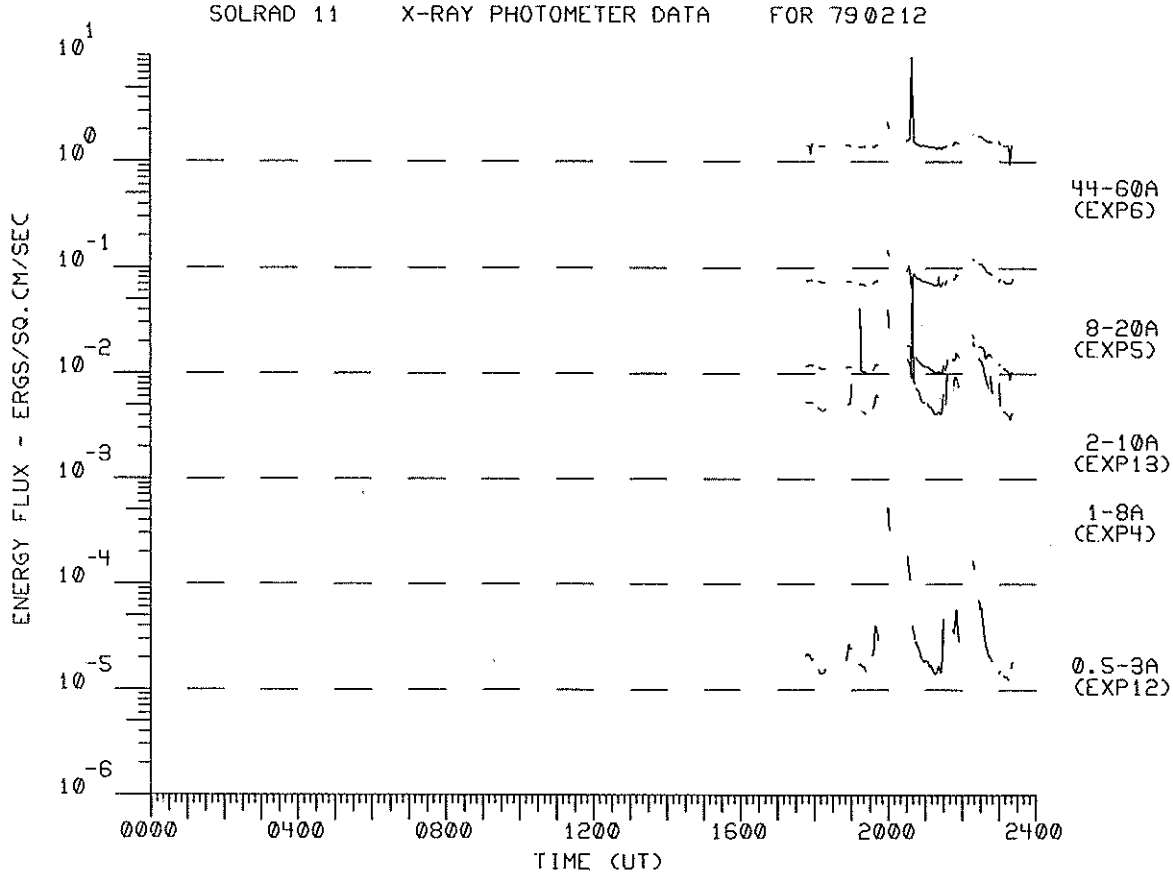

SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790207
ENERGY FLUX - ERGS/SQ.CM/SEC
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP8)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)

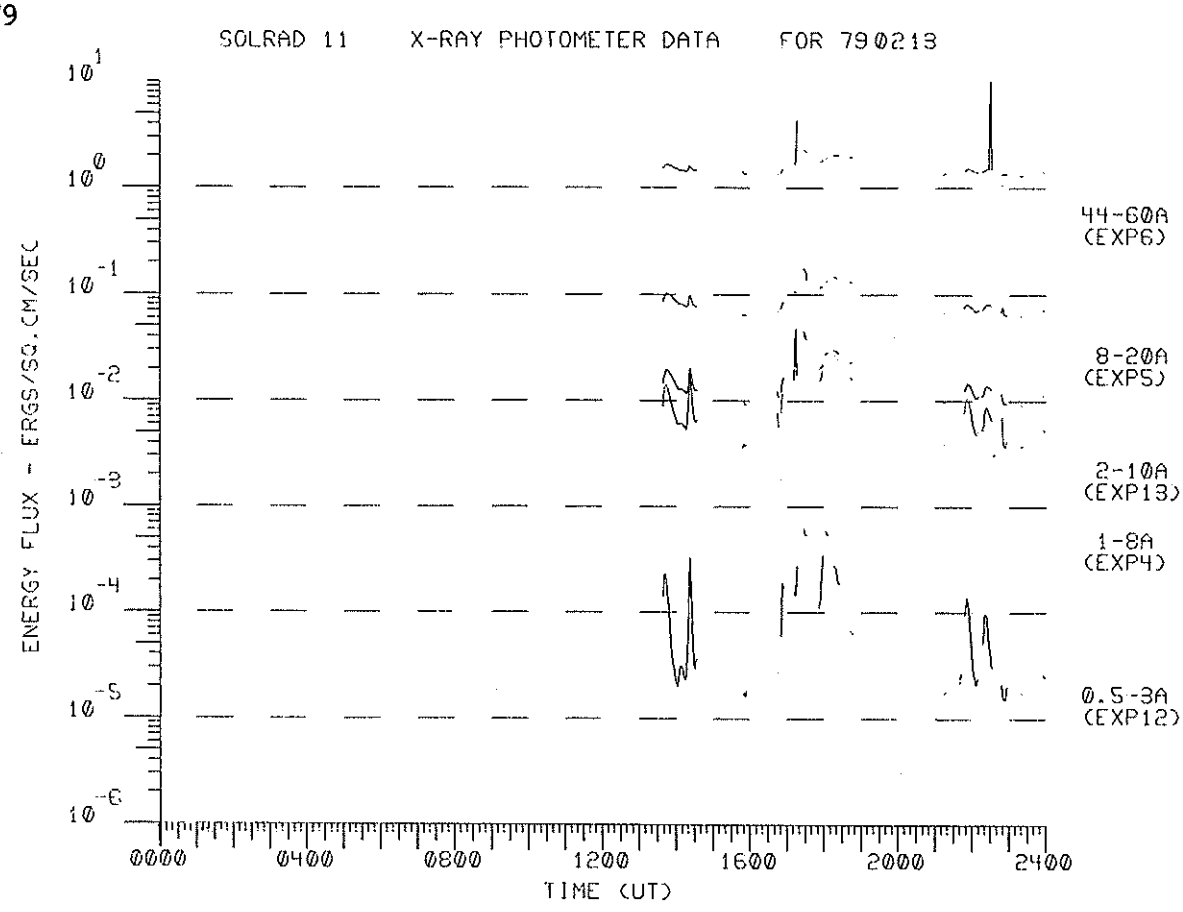

SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790208
ENERGY FLUX - ERGS/SQ.CM/SEC
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP8)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)

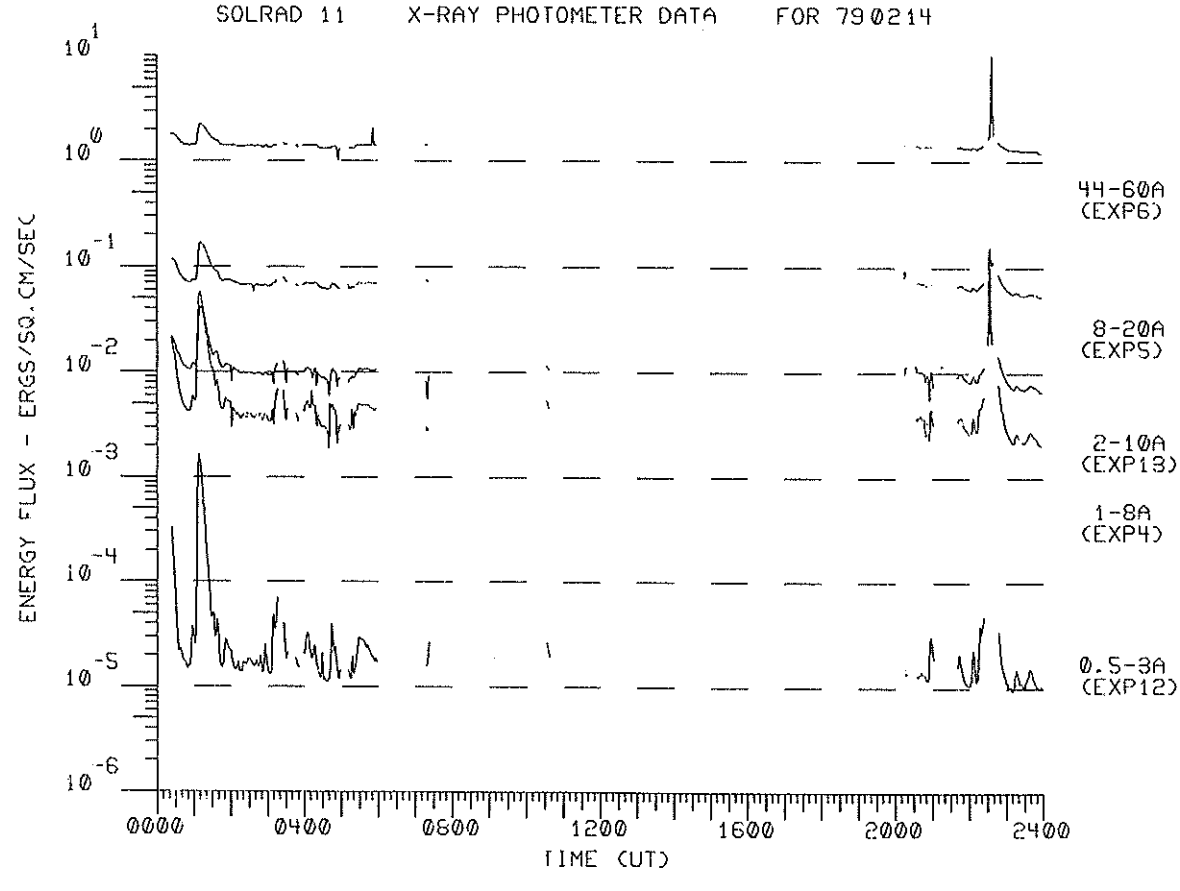

SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790209
ENERGY FLUX - ERGS/SQ.CM/SEC
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)

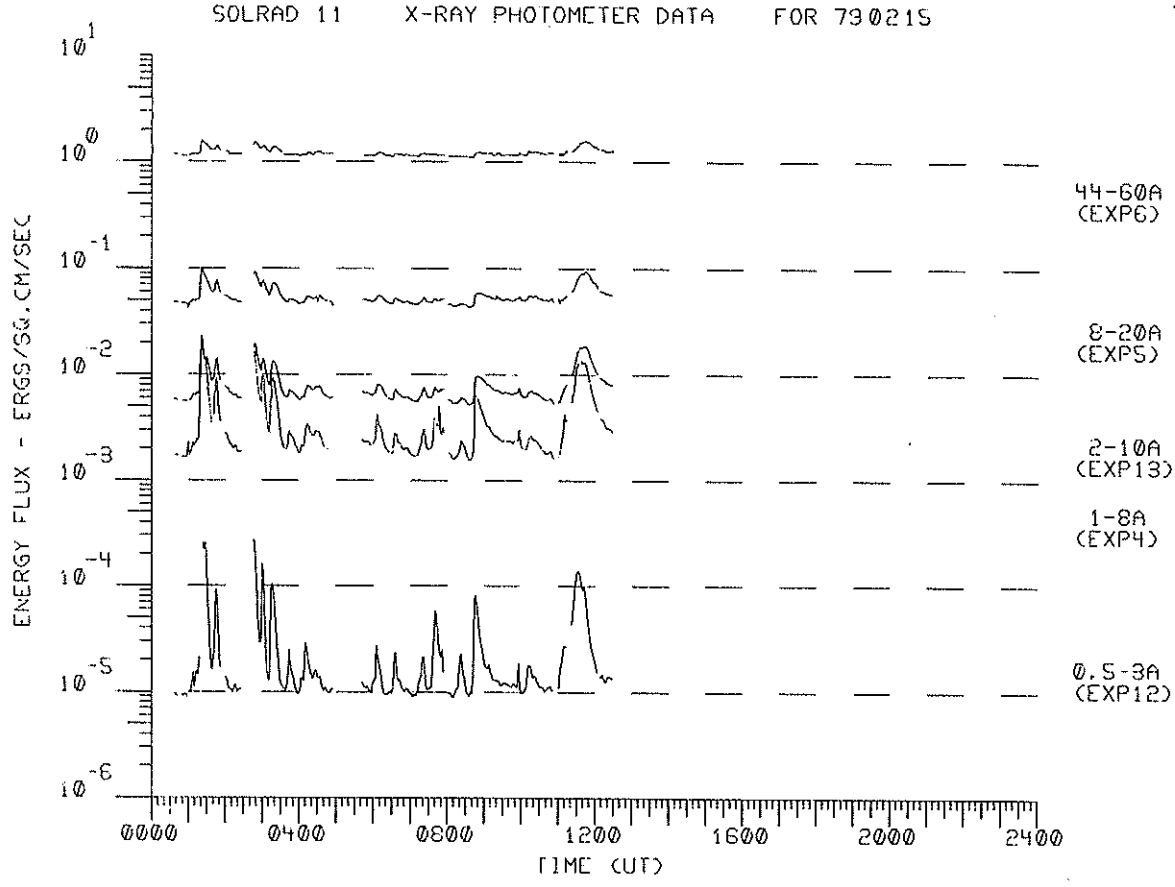

SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790210
ENERGY FLUX - ERGS/SQ.CM/SEC
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790211
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 790212
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 790213
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 790214
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 790215
ENERGY FLUX - ERGS/SQ.CM/SEC
10^{1}
10^{0}
10^{-1}
10^{-2}
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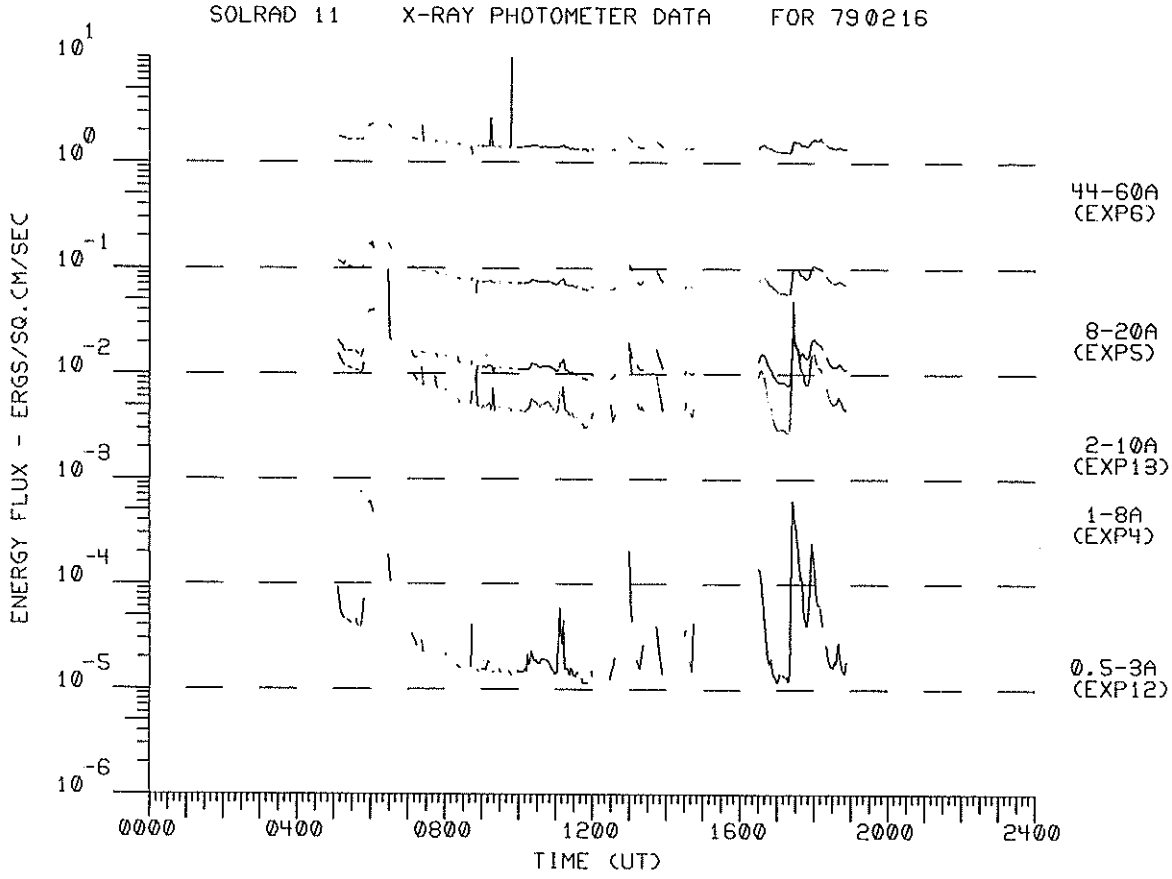
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790216
ENERGY FLUX - ERGS/SQ.CM/SEC
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10^{0}
10^{-1}
10^{-2}
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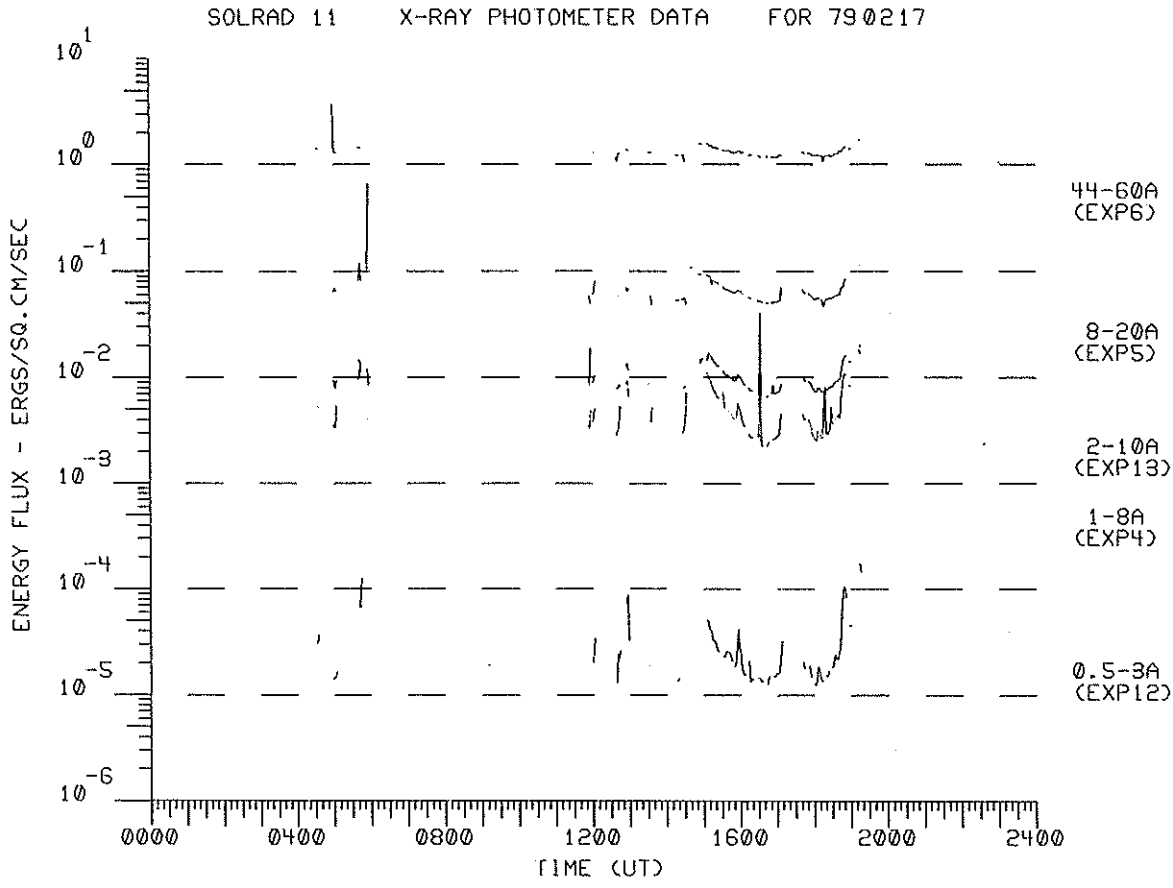
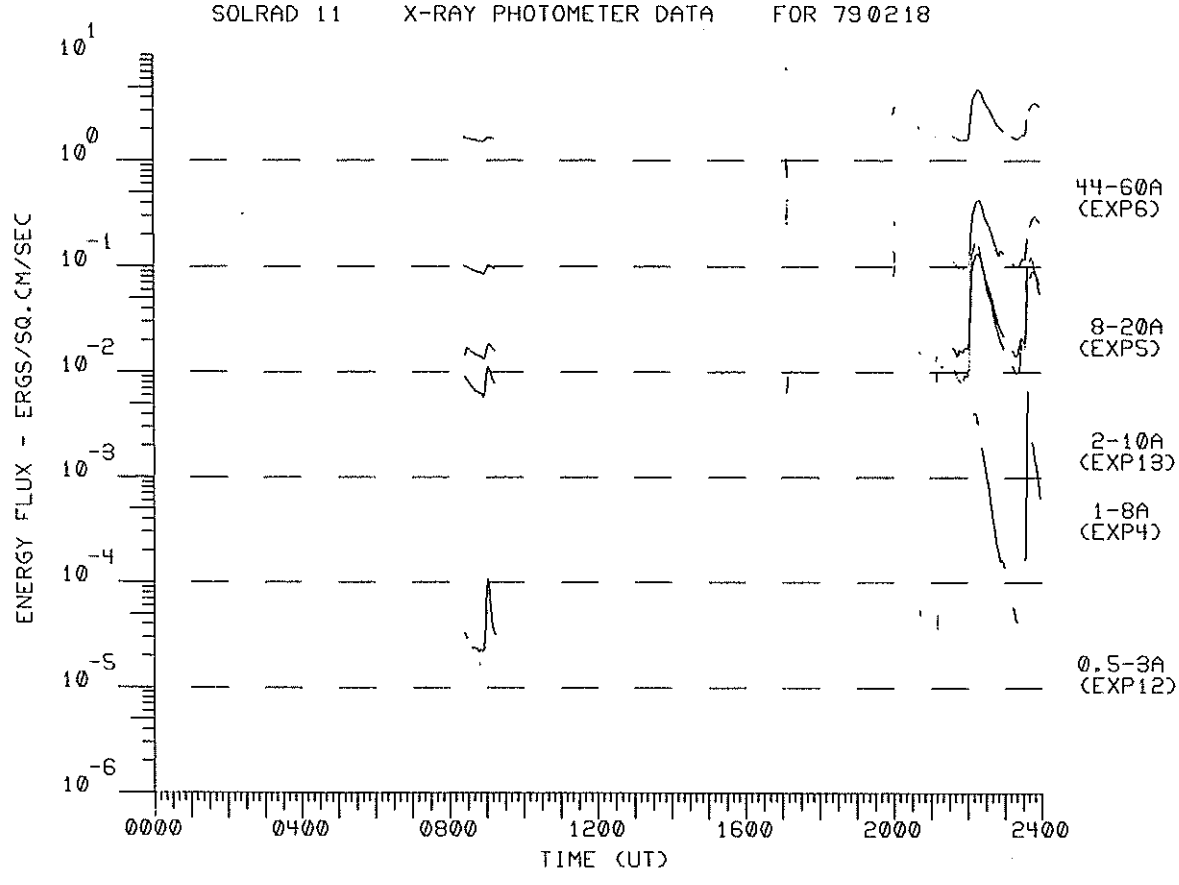
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790217
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 790218
ENERGY FLUX - ERGS/SQ.CM/SEC
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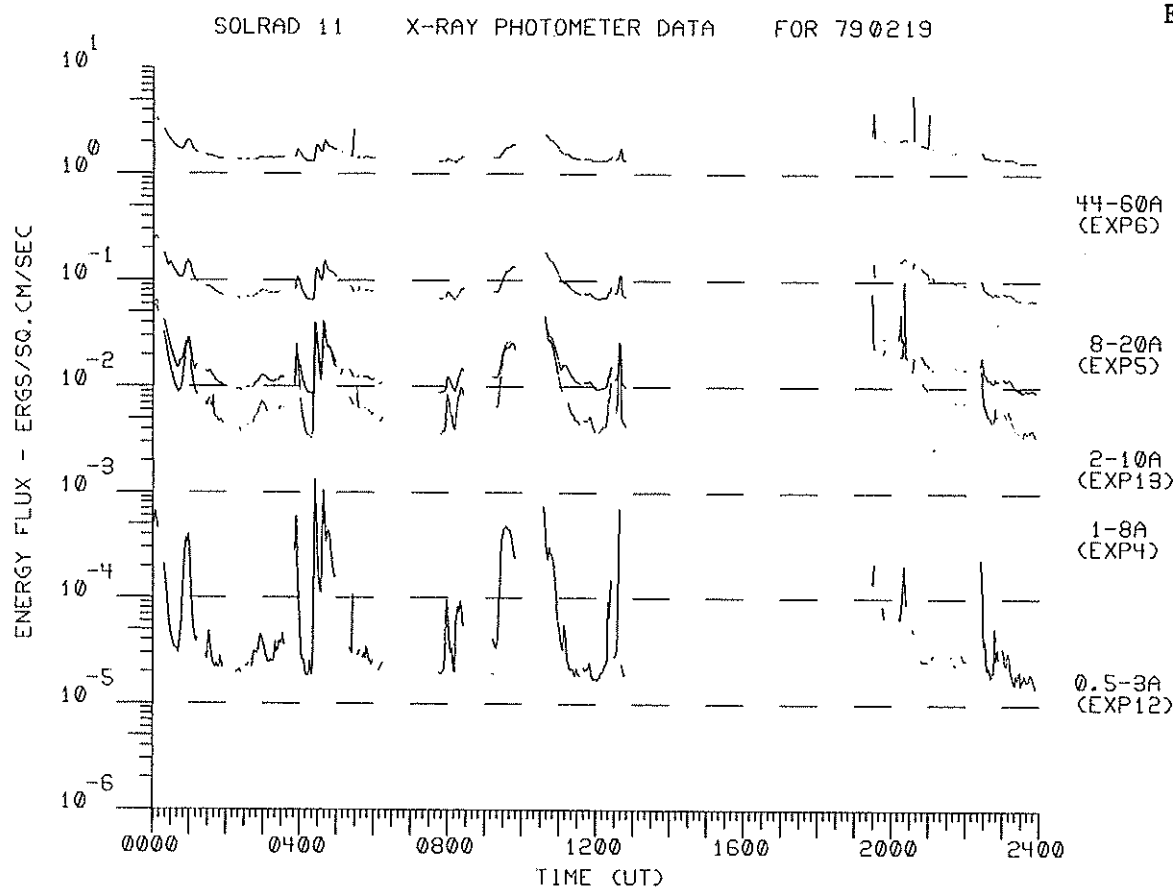
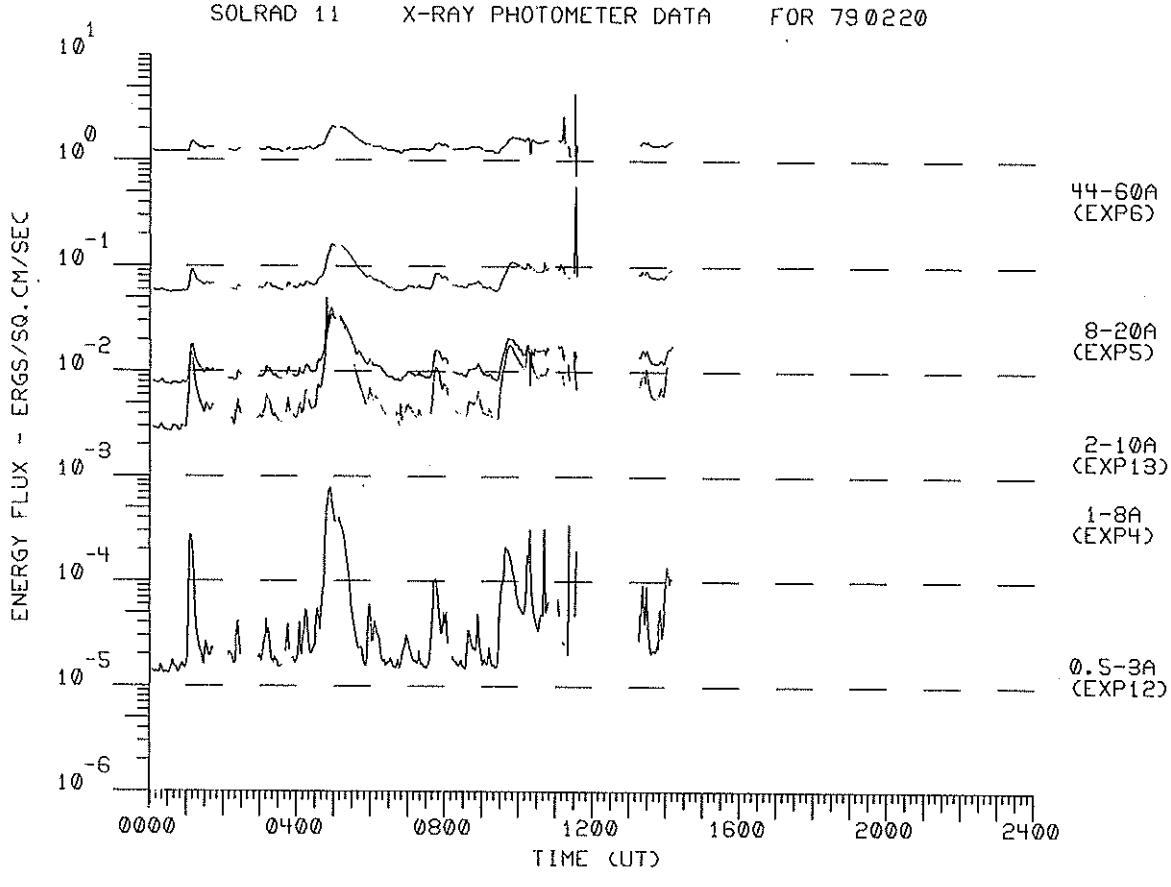
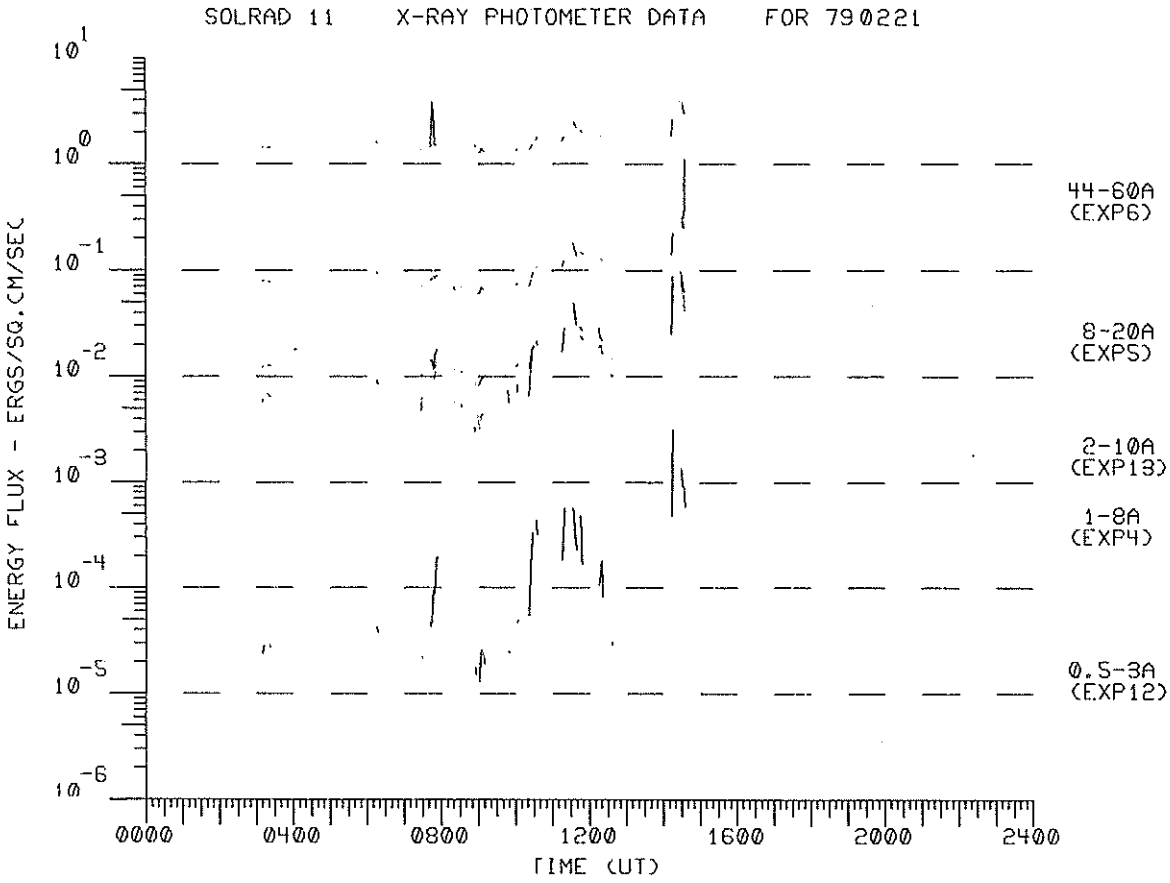
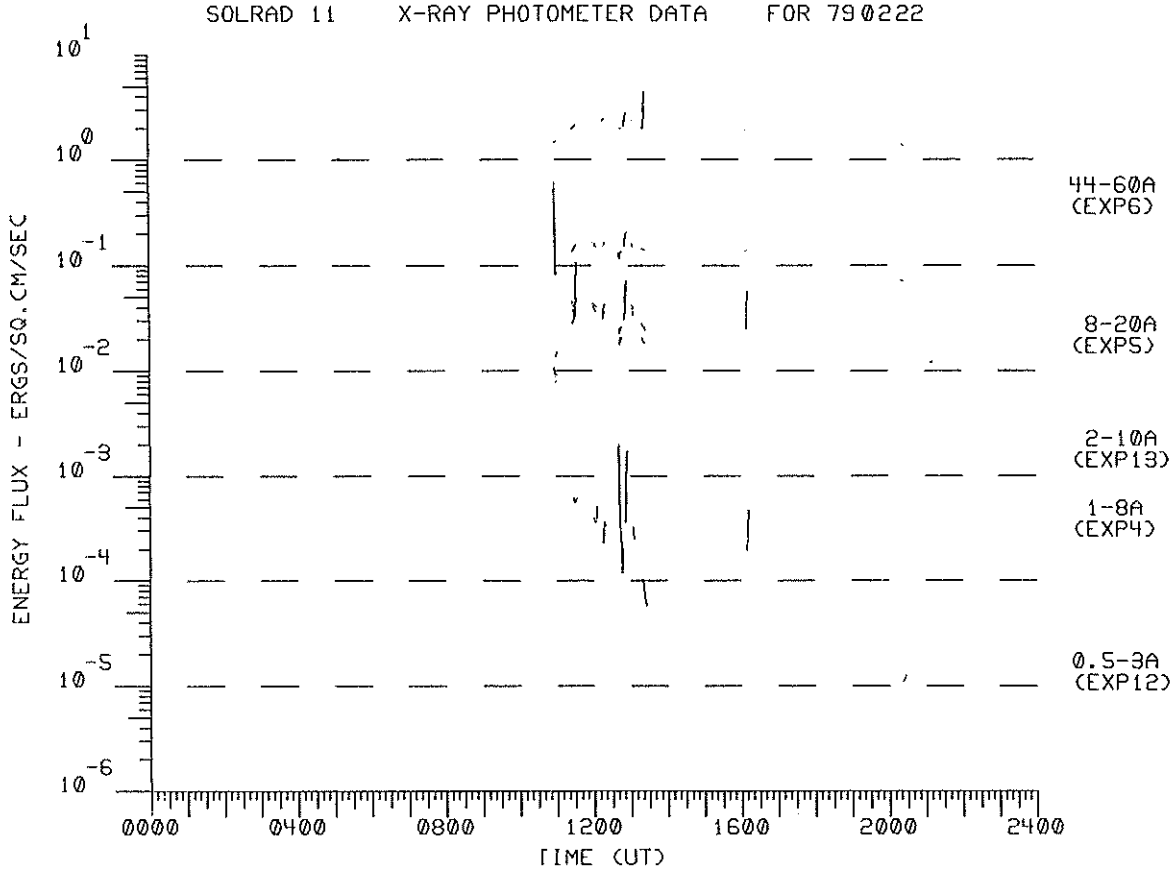
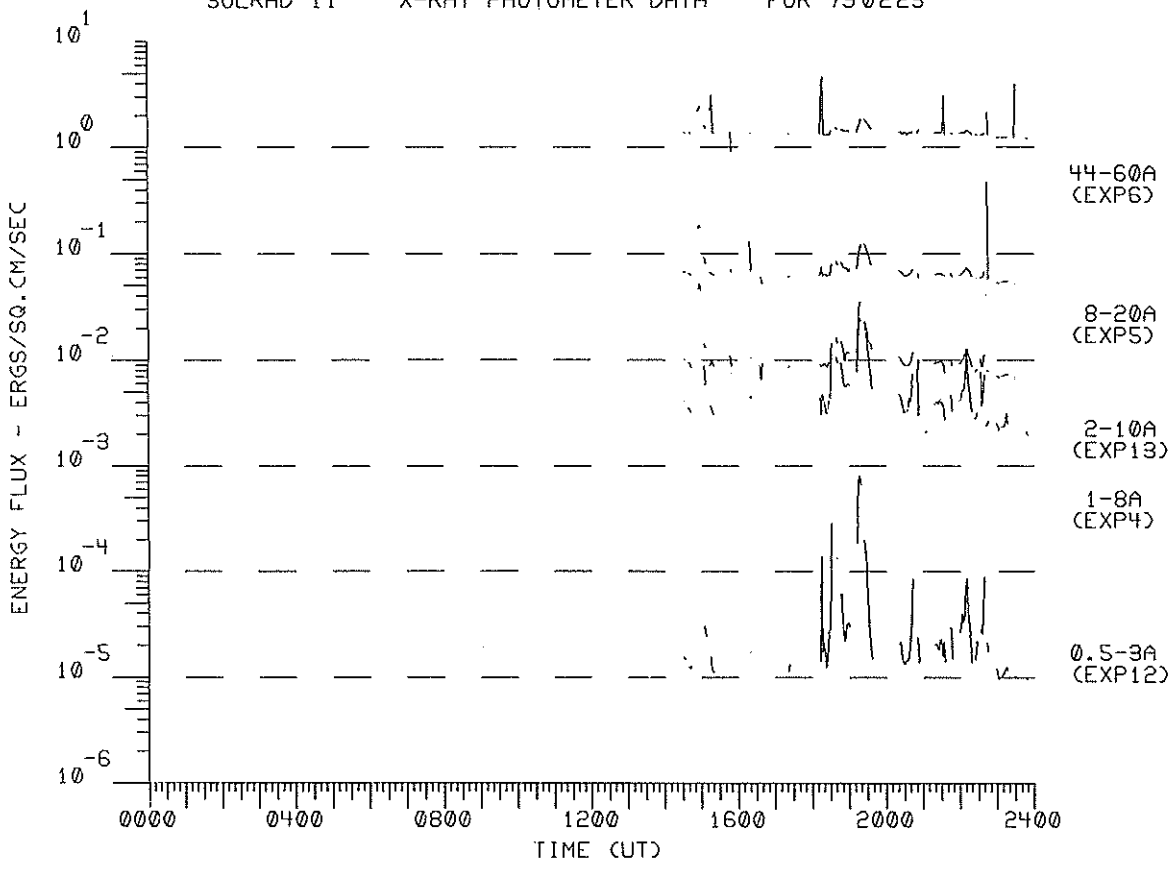
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)

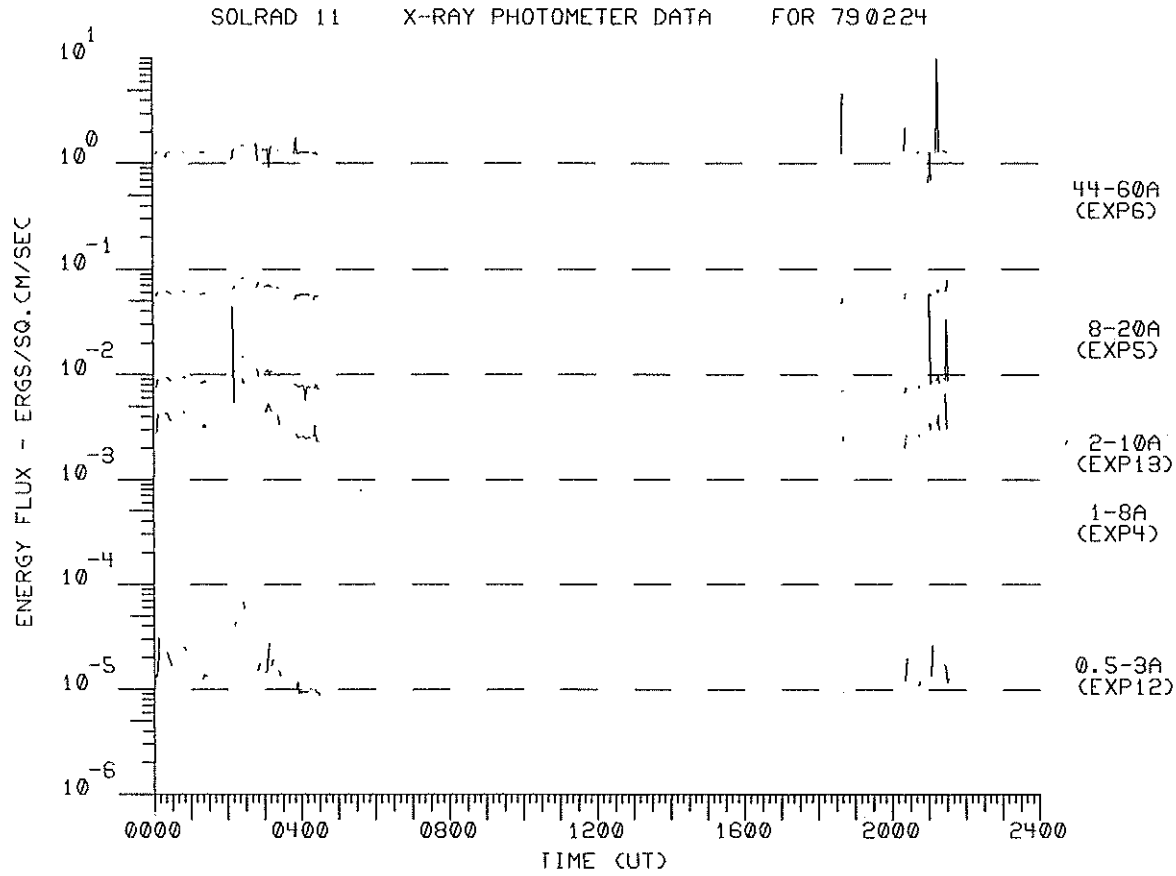

SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790219
ENERGY FLUX - ERGS/SQ.CM/SEC
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)

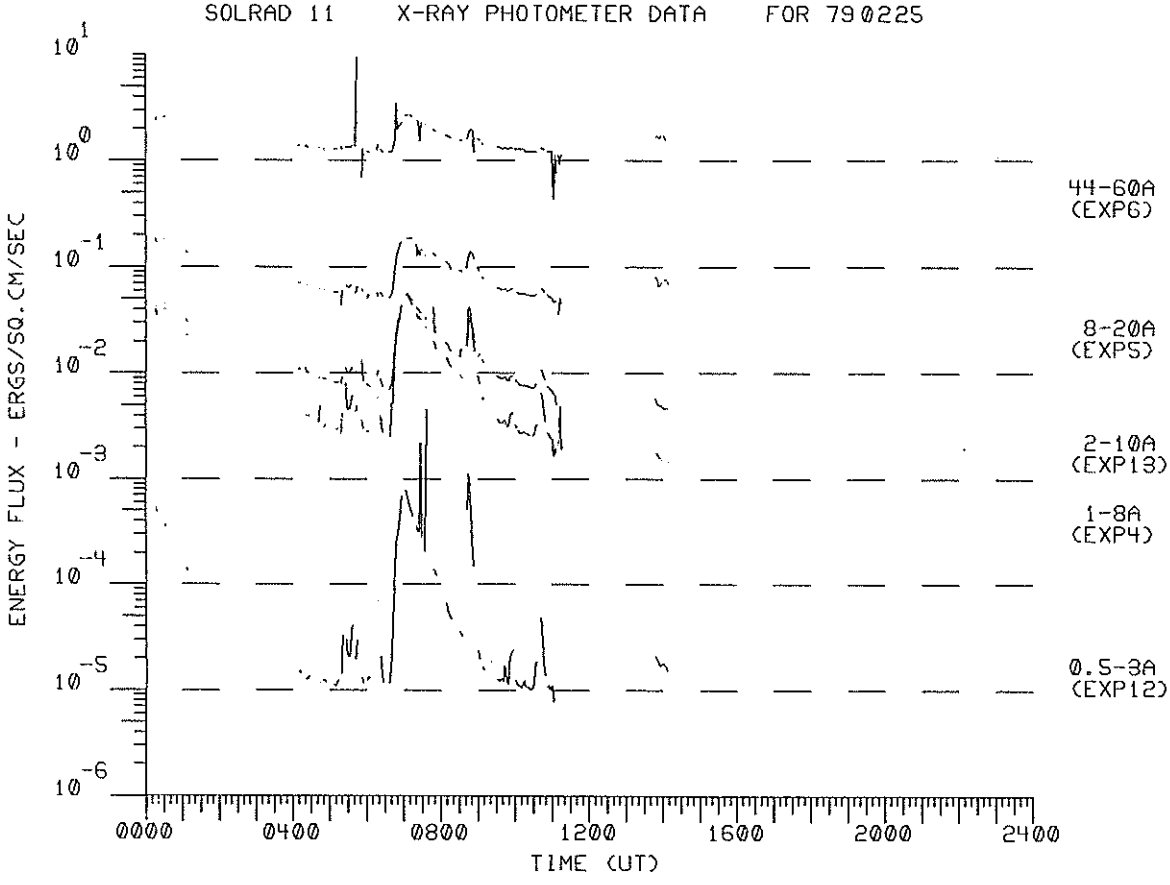

SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790220
ENERGY FLUX - ERGS/SQ.CM/SEC
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)

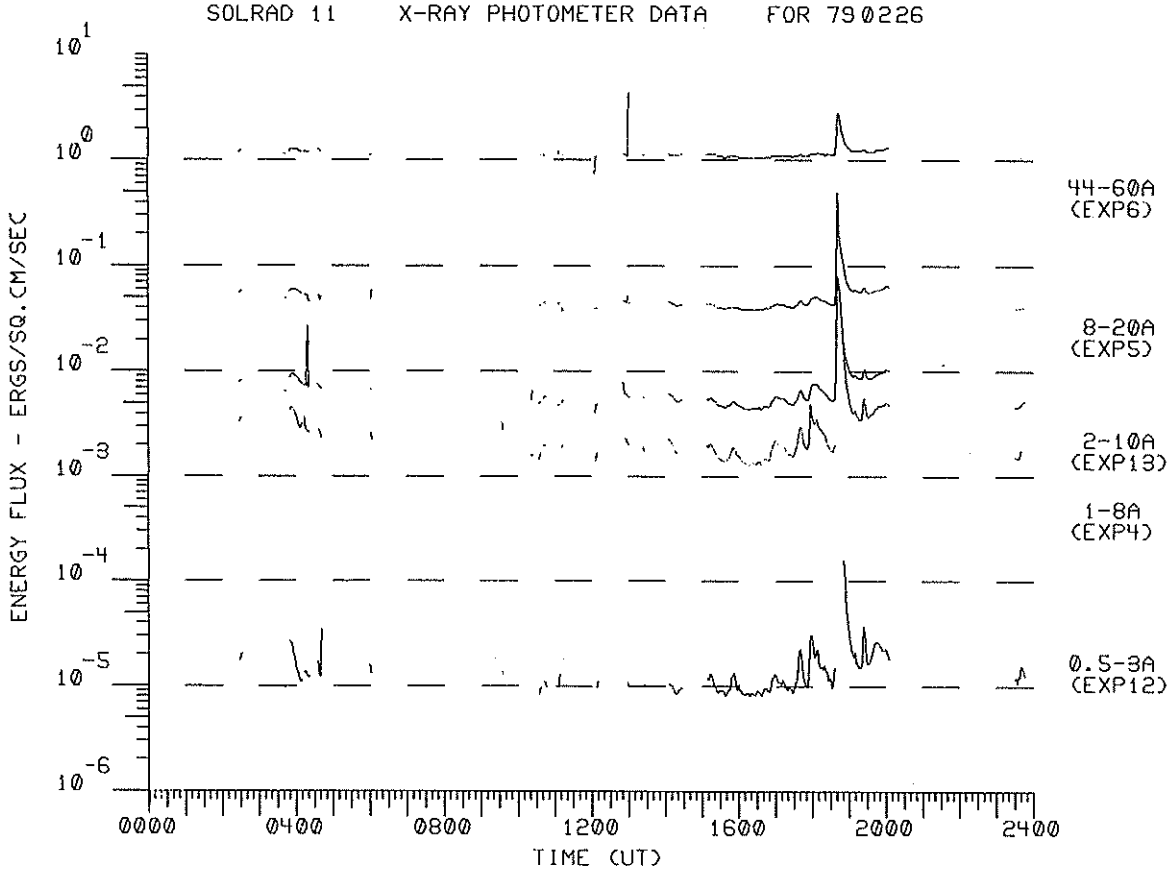

SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790221
ENERGY FLUX - ERGS/SQ.CM/SEC
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
0000
0400
0800
1200
1600
2000
2400
TIME (UT)
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790222
ENERGY FLUX - ERGS/SQ.CM/SEC
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
0000
0400
0800
1200
1600
2000
2400
TIME (UT)
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790223
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 790224
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 790225
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 790226
ENERGY FLUX - ERGS/SQ.CM/SEC
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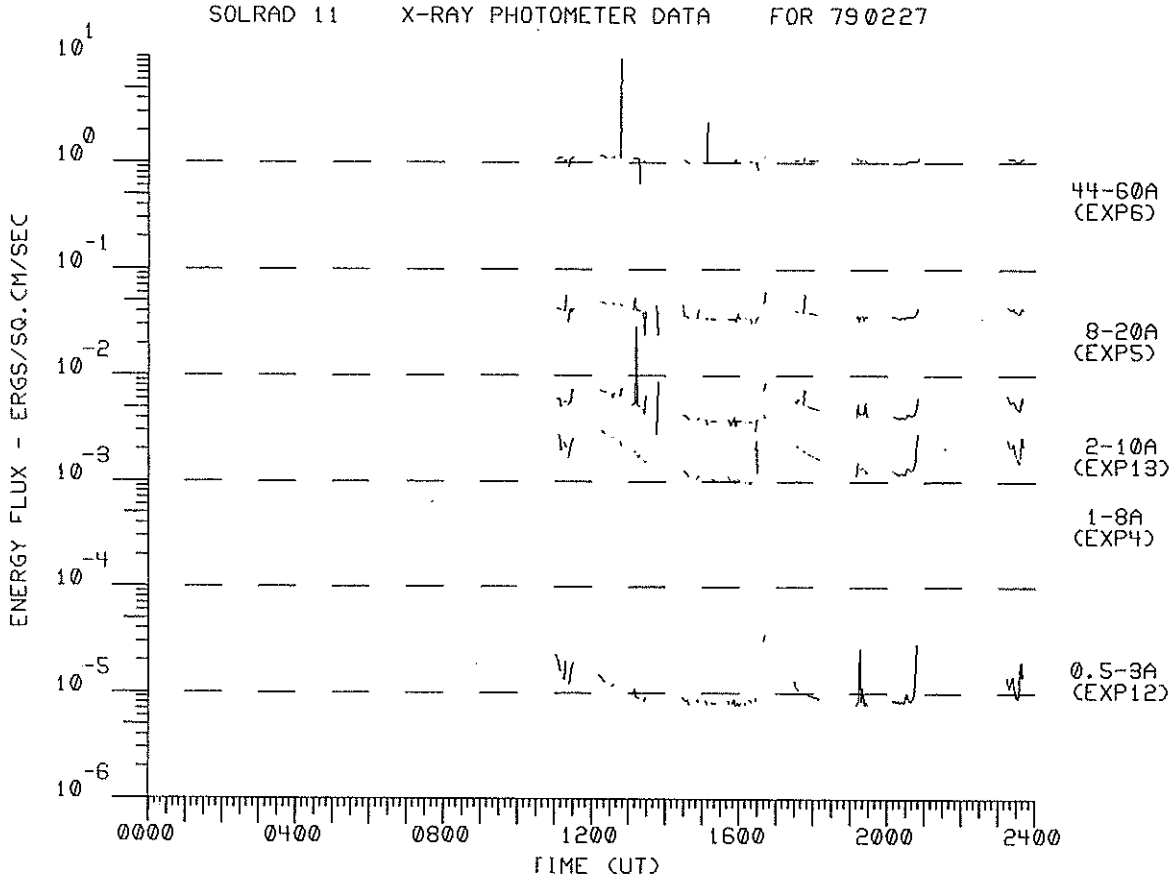
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790227
ENERGY FLUX - ERGS/SQ.CM/SEC
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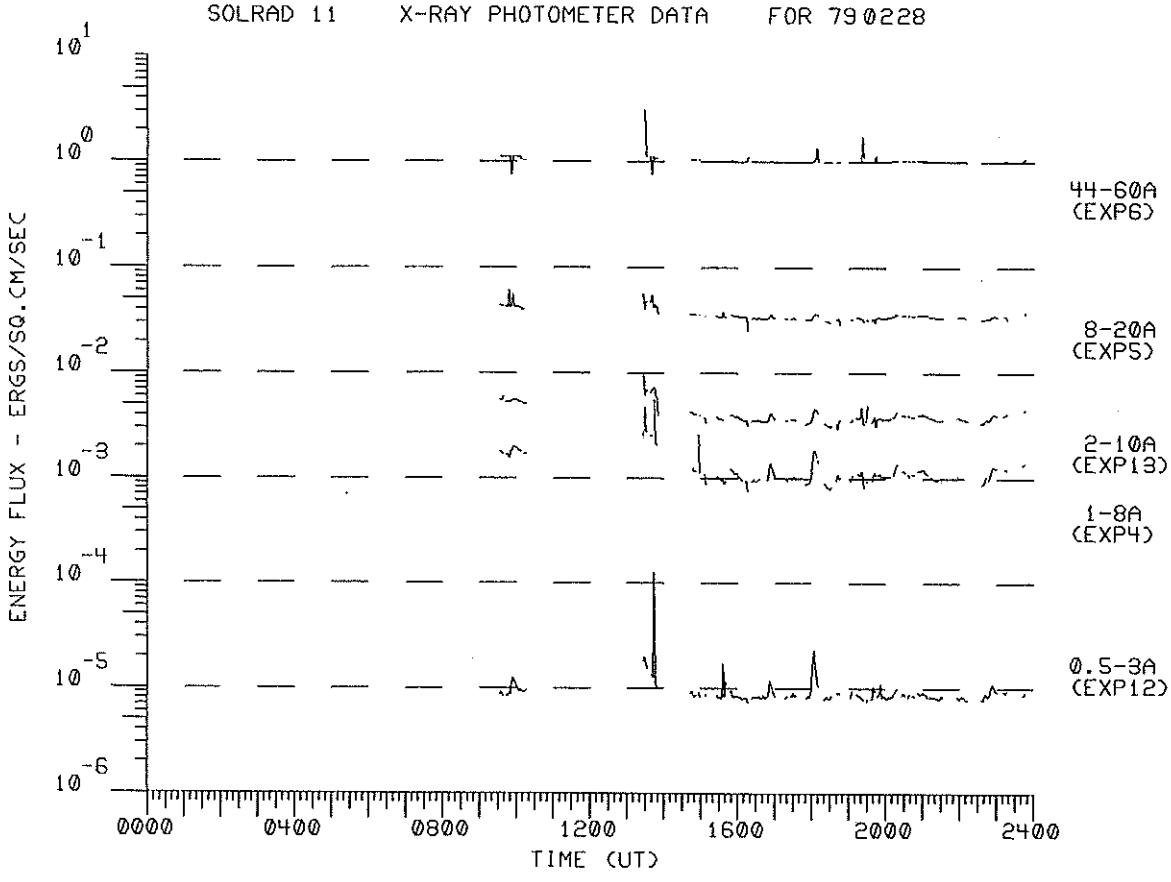
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
44-60A (EXP6)
8-20A (EXP5)
2-10A (EXP13)
1-8A (EXP4)
0.5-3A (EXP12)
0000
0400
0800
1200
1600
2000
2400
TIME (UT)


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790228
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)

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

FEBRUARY 1979

FEB 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			CULG				0000	0745					IIIN,W
	0000	0745	CULG				0000	0338	1				IS
			CULG				0002		2				IIIB
			CULG				0016		1				IIIB
			CULG				0019.5	0020	1				IIIG
			CULG				0025.5		1	0025.5	0026	1	IIIB
			CULG				0056.5	0057	1				IIIB,U
			CULG				0203.5	0204	2				IIIG
			CULG				0325		1				IIIB
			CULG				0337	0745					IN,W
			CULG	0346	0346.5								FDRIFT,W
			CULG				0400		2				IIIB
			CULG	0433	0433.5	2	0433	0433.5	2				IIIG
			CULG	0436.5	0437	2	0436.5	0440	2				II
			CULG				0536	0536.5	1				IIIG
			CULG				0612.5	0614.5	3	0612.5	0614	2	IIIGG
	0030	0920	MANI							0614.7	0615.0	1	III
			CULG				0644	0644.5	2				IIIG
			CULG	0702	0743	1							FDRIFT,N
			CULG				0726.5	0727					IIIG,W,U
			CULG	0726.5	0727	1							IIIG
			CULG				0736		1				IIIB
	0734	1610	DURN				0758.0	0758.2	2				IIIG
			DURN	0807.1	0809.8	1							IIIG
			DURN				0820	1610	1				I
	0745	1545	WEIS				0825.6	0825.8	1				IIIB
			DURN				0859.4	0902.0	2				IIIG
			WEIS				0910.6	0911.3	1				IIIG
			WEIS				0925.3	0926.3	2				IIIG
			WEIS				1002.6	1002.8	3				IIIB
			WEIS				1003.8	1004.3	1				IIIG
	1202	2152	SGMR				1415.1	1506.0	2				IIIS
			WEIS				1429.5	1430.0	2				IIIG
			DURN				1448.0	1448.1	1				III
			WEIS				1450.3	1451.1	1				IIIG
			SGMR				2039.5	2039.9	1				III
	2045	2400	CULG				2045	2400					IIIN,W
			CULG				2117	2400	1				IS
			CULG				2145.5	2148	2	2147	2147.5	1	IIIGG
			CULG				2150.5	2152	1				IIIG
			CULG				2218.5	2219	1				IIIG
	2224	2400	MANI										
			CULG				2252		1	2252	2252.5	1	IIIB
			CULG				2253.5		1	2253.5	2254	1	IIIB
			CULG				2315.5	2318.5	2	2315.5	2318.5	2	IIIGG
			CULG				2322	2325	3	2322.5	2324	2	IIIGG
			CULG				2349	2352.5					IIIGG,W
			CULG				2358.5	2359	2	2358.5	2359	2	IIIB
02	0000	0746	CULG				0000	0140					IS,W
	0000	0920	MANI										
			CULG				0001.5		2				IIIB
			CULG				0024		2	0024	0024.5	2	IIIB
			CULG				0024	0746					IIIN,W
			CULG				0052.5		1				IIIB
			CULG				0139	0258					IN,W
			CULG	0145.5	0147	1							FAST DRIFT
			CULG	0217.5		1	0217	0217.5	2	0217	0217.5	2	IIIG
			CULG				0250.5	0251.5	2	0250.5	0251.5	2	IIIG
			CULG				0349.5		1				IIIB,U
			CULG	0455	0455.5								FDRIFT,W
			CULG				0526.5		1				IIIB
			CULG				0658	0709	1				IS
	0748	1022	WEIS										
	0734	1026	DURN				1009.1	1009.7	2				IIIG
	1028	1545	WEIS										
	1201	2153	SGMR										
	1113	1612	DURN				1300.8	1302.0	2				IIIG
			DURN				1353.2	1353.2	2				IIIG
			DURN				1501.5	1501.5	2				III

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

FEBRUARY 1979

FEB 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	
02	2045	2400	CULG				2052	2053.5					IIIG,W
			CULG				2204	2210	1				IIIN
	2225	2400	MANI										
			CULG	2231	2231.5	1							IIIB
			CULG	2304	2304.5	1							FAST DRIFT
03	0000	0933	MANI										
	0000	0746	CULG				0702	0702.5					IIIG,W
			CULG				0704.5						IIIB,W
	0733	0759	DURN										
	0944	1545	WEIS										
	1200	2154	SGMR										
	2225	2400	MANI										
			CULG				2238.5	2239					IIIG,W
	2045	2400	CULG	2238			2238						IIIB,W
			CULG				2302						IIIB,W
04	0000	0920	MANI										
	0000	0746	CULG				0005	0005.5					IIIG,W
			CULG				0119.5	0120.5	1	0120	0120.5	1	IIIG
			CULG				0124						IIIB,W
			CULG				0136	0136.5					IIIG,W
			CULG				0208	0209					IIIG,W
			CULG				0305.5	0306	1	0306	0306.5	1	IIIG
			CULG				0307.5	0308	1				IIIB
			CULG							0307.5	0308		IIIB,W
			CULG	0344	0344.5	1							IIIG
			CULG				0344	0345					IIIG,W
			CULG				0351	0357					IIIN,W
			CULG	0354	0354.5	1	0354	0354.5	3	0354.5	0350	2	IIIG
			CULG				0559.5						IIIB,W
			CULG				0607.5	0608					IIIG,W
			CULG	0607.5	0608	1							IIIG
			CULG				0621	0652					IIIN,W
			CULG				0635.5		1				IIIB
	0740	1615	DURN										
	0944	1548	WEIS										
	1159	2156	SGMR										
			CULG				2048.5						IIIB,W
	2046	2400	CULG	2048	2048.5	1							IIIG
	2228	2400	MANI										
			CULG				2317.5		2				IIIB
05	0000	0745	CULG				0017.5	0019.5	3	0018	0019	1	IIIG,U
			CULG				0033.5		1				IIIB
			CULG				0101		1				IIIB
			CULG	0150.5	0151	1							IIIG
			CULG				0246		1				IIIB
			CULG				0304.5	0305.5	2	0305	0306	2	IIIG
			CULG				0330	0640					IIIN,W
			CULG				0443.5		1				IIIB
			CULG				0455		1				IIIB
			CULG				0458.5	0459.5	2	0459	0459.5	2	IIIG
			CULG	0638	0641.5	1							IIIGG,RS
			CULG							0639	0701	1	S.W.F.
			CULG	0642	0645.5	2	0640.5	0646	3				II
			CULG				0644	0645.5	3	0644	0644.5	2	IIIG,V
	0000	0920	MANI							0645.1-	0645.3	1	III
			CULG	0646.5	0649.5	1							IIIGG
			CULG				0646	0704.5					II, W
			CULG	0735.5	0737.5	1							IIIG
	0734	1616	DURN				0855.4	0855.8	2				IIIG
			DURN				0901.8	0902.8	3				IIIGG
	0746	1000	WEIS				0901.8	0904.6	2				IIIGG
	1006	1549	WEIS										
			DURN				1027	1616 D	1				I,DC
	1158	2157	SGMR				1607.5	1621.0	2				IIIG
			DURN				1608.4	1609.0	2				IIIG
			SGMR				1641.0	1641.7	2				IIIG
			SGMR				1725.4	1725.8	2				IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

FEBRUARY 1979

FEB 1979	TIMES OF OBSERVATION START UT	TIMES OF OBSERVATION END UT	STATION	EVENTS DECIMETRIC BAND START UT	DECIMETRIC BAND END UT	DECIMETRIC BAND INT	METRIC BAND START UT	METRIC BAND END UT	METRIC BAND INT	DEKAMETRIC BAND START UT	DEKAMETRIC BAND END UT	DEKAMETRIC BAND INT	SPECTRAL TYPE
05			SGMR				1741.8	1742.0	2				IIIS
			SGMR				1907.1	1909.4	3				V
			SGMR				2013.3	2013.5	2				IIIG
	2046	2400	CULG				2049						IIIB,W
			CULG				2101	2204					IS,W
			CULG				2120	2143					IIIS,W
			CULG	2120	2126.5	2	2122	2128.5	2				II
			CULG				2121	2121.5	2	2121	2121.5	1	IIIG
			CULG				2125.5	2126	2	2125.5	2126	1	IIIG
			CULG	2130.5	2134	2	2130.5	2136	2				IV, P
			CULG				2130.5	2133.5	3	2131.5	2134	2	IIIG,V
			CULG				2134	2148	2				II
			CULG							2134	2146		S.W.F.,W
			CULG				2135.5	2137	1				IIIG
			CULG	2144	2144.5	1							IIIG,RS
			CULG	2148	2152	2	2148	2152	3	2149.5	2152.5	2	IIIGG,V
			CULG	2152	2154	1							FAST DRIFT
			CULG	2154	2154.5	1	2154	2156.5	1				IIIGG
			CULG				2204	2255	1				IS
	2227	2400	MANI										
			CULG				2229	2250					IIIS,W
			CULG				2247.5		1				IIIB
			CULG				2249		1				IIIB
			CULG				2255	2400					IS,W
			CULG				2333.5	2335	1	2333.5	2334.5	1	IIIG
			CULG	2343		1							IIIB
06	0000	0746	CULG				0000	0746					IS,W
			CULG				0020	0720					IIIN,W
			CULG	0108.5	0109		0108.5	0109					IIIG,W
			CULG				0122.5		1	0122.5		1	IIIB
			CULG				0127.5	0129.5	2				IIIGG
			CULG				0141	0142.5	1				IIIGG
			CULG				0154.5	0156.5	2	0155.5	0156.5	1	IIIG
			CULG	0158	0158.5	1	0157	0159.5	2				IIIGG
	0000	0928	MANI							0231.4	0232.4	2	III
			CULG	0241	0242	1	0241	0243.5	3	0241	0243.5	3	IIIG,V
			CULG	0243.5	0245	1	0244	0246.5	2				IIIGG
			CULG	0248	0248.5	1							IIIG
			CULG	0254.5	0255	1	0253	0256.5	2				IIIGG
			CULG				0304		1				IIIB
			CULG				0305		2				IIIB
			CULG	0358.5	0359	1	0357	0400	3	0357.5	0400	3	IIIGG
			CULG				0401.5	0402.5	1				IIIG
			MANI							0444.1	0445.0	1	IIIG
			CULG	0444.5	0445.5	2	0444.5	0446.5	3	0445	0446.5	3	IIIG,V
			CULG	0510.5	0511	1							IIIG
			CULG	0551.5	0552	2	0551.5	0552	1				IIIG
			CULG				0559	0701	1				IIIN
			CULG				0607.5	0611	3	0607.5	0610.5	3	IIIGG
			MANI							0607.6	0610.3	2	IIIG
			CULG				0637.5	0642	2				IIIGG
			CULG	0706		1	0704	0706	2				IIIG
			CULG				0707.5	0709.5	2				IIIG
			CULG				0721	0724	1				IIIG
	0733	1618	OURN	0802.6	0802.9	1							IIIG
	0742	1552	WEIS				0809.5	0811.6	2				IIIG
			OURN	0822.9	0823.1	1	0822.8	0823.3	3				IIIGG
			OURN				0832.7	0832.8	1				IIIG
			WEIS				0833.3	0836.2	2				IIIGG
			MANI							0834.4	0835.6	1	III
			WEIS				0843.2	0845.6	2				IIIG
			WEIS				0910.4	0910.8	2				IIIG
			OURN				0915.0	0917.3	3				IIIGG,RS
			WEIS				0915.2	0916.3	2				IIIGG,U
			WEIS				0922.7	0922.7	1				IIIB
			WEIS				0928.7	0928.8	1				IIIB
			WEIS				0947.7	0949.2	2				IIIGG
			WEIS				1022.0	1026.9	2				IIIG
			OURN				1022.0	1022.1	1				IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

FEBRUARY 1979

FEB 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	
06			DURN				1023.5	1023.5	2				III
			WEIS				1041.7	1042.0	2				IIIB
			WEIS				1054.5	1054.6	2				IIIB
			WEIS				1126.8	1127.3	1				IIIG
			WEIS				1143.4	1143.6	2				IIIB
			WEIS				1254.5	1256.3	2				IIIG
	1157	2158	SGMR				1254.5	1256.6	2				IIIG
			WEIS				1347.7	1349.5	2				IIIG
			SGMR				1347.8	1349.9	3				IIIG
			SGMR				1619.3	1620.0	2				IIIG
	2046	2400	CULG	2055	2055.5	1							IIIG,RS
			CULG				2113	2114	2				IIIG
			CULG				2116		2				IIIB
			CULG				2138	2138.5	1				IIIG
			CULG				2203	2400					IIIN,W
			CULG	2218	2218.5	2	2218	2218.5	2				IIIG
	2231	2400	MANI										
			CULG	2244	2244.5	1	2244	2244.5	2				IIIG
			CULG	2334.5	2335.5	2	2334.5	2335	2	2335	2335.5	2	IIIG
			CULG				2338	2338.5	1				IIIG
07	0000	0746	CULG				0005	0746					IIIN,W
			CULG				0209.5	0211	2				IIIG
			CULG				0227		1				IIIB
	0000	0925	MANI							0250.5	0250.7	2	III
			CULG				0250	0252	3	0250	0251.5	3	IIIGG
			CULG	0315.5	0316	1							IIIG
			CULG	0318		1	0318		2				IIIB
			CULG				0406.5	0407	2				IIIG
			CULG				0531.5	0532	1				IIIG
			CULG				0544	0545	2				IIIG
			CULG				0639.5		1				IIIB
			CULG				0656.5	0657	1				IIIG
			CULG				0720.5	0721.5	2				IIIG
			CULG	0726	0726.5	2	0726	0726.5	1				IIIG
	0734	1620	DURN										
	0734	1325	WEIS				0821.1	0821.4	2				IIIB
			WEIS				0851.7	0852.9	1				IIIG
			WEIS				1039.2	1039.6	2				IIIG
	1156	2200	SGMR										
	1333	1554	WEIS										
	2046	2400	CULG										
	2227	2400	MANI										
			CULG				2251.5		1				IIIB
08	0000	0928	MANI										
	0000	0746	CULG				0026.5	0030.5	2				IIIGG
			CULG				0032	0746					IIIN,W
			CULG				0104	0104.5	1				IIIG
			CULG				0123.5	0124	1	0123.5	0124	1	IIIG
			CULG				0143	0144	1	0143	0143.5	1	IIIG
			CULG							0207	0218.	1	S.W.F.
			CULG				0224	0450					IS,W
			CULG				0242	0746	1				CONT
			CULG				0243	0244	1				IIIG
			CULG				0244	0247	1				P
			CULG				0450	0746	1				IS
			CULG				0527.5	0528	2				IIIG
			CULG	0537.5		1							FAST DRIFT
	0734	1621	DURN				0734.7	0735.2	1				IIIG
	1154	2201	SGMR										
	0718	1555	WEIS				1233.0	1233.3	1				IIIB
			WEIS				1317.8	1318.8	2				IIIG
			WEIS				1338.3	1338.5	1				IIIG
			DURN				1338.5	1338.6	2				III
			DURN				1407.5	1407.9	2				IIIGG
			WEIS				1407.6	1408.2	2				IIIG
			DURN	1545.4	1545.5	2							IIIG
	2046	2400	CULG				2046	2400	1				IS
			CULG				2049	2400					IIIN,W

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FEB 1979	TIMES OF OBSERVATION START UT	TIMES OF OBSERVATION END UT	STATION	EVENTS DECIMETRIC BAND START UT	DECIMETRIC BAND END UT	DECIMETRIC BAND INT	METRIC BAND START UT	METRIC BAND END UT	METRIC BAND INT	DEKAMETRIC BAND START UT	DEKAMETRIC BAND END UT	DEKAMETRIC BAND INT	SPECTRAL TYPE
08			CULG	2227.5		1							IIIB,RS
	2228	2400	MANI										
			CULG				2232	2244	1				IIIS
			CULG				2237	2338.5	2	2237.5	2338.5	2	IIIGG
			CULG	2239.5	2240	1							IIIGG
			CULG				2242	2243	1				IIF OSSIBLE
			CULG				2246.5		1				IIIB
			CULG	2249.5	2250	2							IIIG
			CULG	2303	2303.5	2							IIIGG
			CULG				2324.5		1				IIIB
			CULG				2345.5		1				IIIB
			CULG				2346.5	2347					IIIG,W
			CULG	2346.5	2347	1							IIIG
			CULG	2355.5	2356.5								FDRIFT,W
09	0000	0746	CULG				0000	0125					IS,W
	0000	0928	MANI										
			CULG				0005	0746					IIIN,W
			CULG				0006.5		1				IIIB
			CULG	0109	0110								IIIGG,W
			CULG				0125	0746	1				IS,DC
			CULG				0138	0138.5					IIIG,W
			CULG	0138	0138.5	1							IIIG
			CULG	0143.5	0151								IIIG,N,W
			CULG	0157	0157.5	1							IIIG
			CULG	0222.5	0223	1							IIIG
			CULG				0222.5						IIIB,W
			CULG	0227		1							IIIB
			CULG				0237.5	0239.5	2	0238	0239	2	IIIG
			CULG	0246.5		1	0245.5	0246	2				IIIG
			CULG				0247.5		2				IIIB
			CULG	0346	0346.5	1	0346	0346.5	1				IIIG
			CULG				0351		1				IIIB
			CULG	0406	0406.5	1							IIIG
			CULG	0410	0410.5	1							IIIG
			CULG				0631.5		1				IIIB
			CULG				0636.5		1				IIIB
	0733	1622	DURN				0819	1522	1				I,DC
	0716	1557	WEIS				0903.3	0903.8	1				IIIG
			WEIS				0905.8	0907.5	2				IIIG
			WEIS				1102.8	1103.0	1				IIIB
			WEIS				1314.4	1314.6	1				IIIB
			WEIS				1319.2	1319.3	1				IIIB
			WEIS				1323.7	1323.8	1				IIIG
			WEIS				1511.8	1512.0	1				IIIU
			WEIS				1515.1	1515.4	1				IIIG
	1153	2202	SGMR				1859.9	1901.0	1				IIIG
	2046	2400	CULG				2051	2333					IIIN,W
			CULG				2105		1				IIIB
			CULG				2134.5		1				IIIB
			CULG	2145.5		1	2144.5	2146.5	2				IIIG,V
			CULG	2148	2150.5	1	2148	2150.5	2	2150.5		1	IIIGG
	2225	2400	MANI										
			CULG				2328	2329.5	2				IIIG
10	0000	0924	MANI										
	0000	0743	CULG				0027.5	0028	1				IIIG
			CULG				0032.5	0034	3	0033	0033.5	1	IIIG
			CULG				0034.5	0039	2				IIIGG,U
			CULG				0041	0743					IIIN,W
			CULG				0221.5		1				IIIB
			CULG				0311	0313.5	2	0311	0313	2	IIIGG,U
			CULG				0334.5	0335	1				IIIG
			CULG				0447	0448	2				IIIG
			CULG				0513.5		1				IIIB
			CULG				0515	0516.5	2				IIIG
			CULG				0543	0543.5	1				IIIG
			CULG				0552	0553.5	2				IIIG
			CULG	0558	0600	1							I
			CULG	0651.5		2	0652	0652.5	1				IIIG,U

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				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	
10			CULG	0719.5		1							FAST DRIFT
			CULG				0722.5	0723	1				IIIB
			CULG				0724.5	0727	3				IIIG,V
	0734	0939	DURN				0756.2	0756.5	2				IIIG
	0848	1559	WEIS				0938.1	0938.3	1				IIIG
	1017	1623	DURN										
			WEIS				1021.2	1021.3	1				IIIB
			WEIS				1022.4	1022.6	1				IIIB
			WEIS				1028.9	1029.2	2				IIIG
			WEIS				1047.0	1047.3	2				IIIB
			WEIS				1222.0	1222.6	2				IIIG
			WEIS				1425.9	1426.0	1				IIIB
	1152	2204	SGMR				1513.5	1515.8	2				IIIG
			WEIS				1518.7	1519.3	2				IIIG
			WEIS				1519.3	1514.9	2				IIIG
	2046	2400	CULG				2117.5	2122.5	1				IIIN
			CULG				2118	2119	2				IIIG
			CULG				2155	2400					IIIN,W
	2226	2400	MANI										
			CULG				2243	2243.5	2	2243	2243.5	2	IIIG
			CULG				2245.5	2246.5	2	2245.5	2246.5	2	IIIG
			CULG				2348	2351.5	2	2348	2351.5	2	IIIGG
11	0000	0746	CULG				0000	0746					IIIN,W
			CULG				0023.5	0025	1				IIIG
			CULG				0032	0034	2	0032	0033.5	1	IIIG
			CULG				0037	0039	3	0037.5	0038.5	2	IIIGG
			CULG	0108.5	0109	1	0108.5	0109	1				IIIG
			CULG				0153.5	0155	3	0154	0155	3	IIIGG
	0000	0758	MANI							0154.0	0154.5	1	III
			CULG				0155	0157	1	0156	0156.5	1	IIIG
			CULG	0224	0224.5	1	0224	0225	2				IIIG
			CULG				0336		1	0336		1	IIIB
			CULG				0418	0419	1				IIIG
			CULG	0515	0515.5	1	0515	0515.5	1				IIIG
			CULG				0536.5	0746	1				IIIG,N
			CULG	0600	0601	2							IIIG,U
			CULG	0604	0605	2							IIIG
			CULG				0632	0633	2				IIIG,V
			CULG				0711	0712	2				IIIG,U
	0713	1604	WEIS				0841.0	1600.0	1				IIIN
			WEIS				0910.8	0911.0	2				IIIB
			WEIS				0917.9	0918.0	2				IIIG
			WEIS				0924.7	0924.8	3				IIIB
			WEIS				1028.1	1028.3	3				IIIG
	0734	1624	DURN				1050	1624 D	1				I
			WEIS				1103.2	1103.8	3				IIIG
			DURN				1123.9	1123.9	1				III
	1151	2205	SGMR										
			WEIS				1222.5	1222.6	3				IIIU
			WEIS				1230.5	1238.9	2				IIIGG
	2046	2400	CULG				2046	2108					IIIS,W
			CULG				2046	2400	1				IS
			CULG	2046	2201								IN,W
			CULG				2108	2121	1				IIIS,U
			CULG				2132	2142	1				IIIS,U
			CULG				2142	2400					IIIN,W
			CULG	2158.5			2158.5						IIIB,W
			CULG				2205.5	2400	1				IIIG,N
			CULG	2344	2400	1							IS
	2345	2400	MANI										
12			CULG	0000	0127								IN,W
			CULG				0000	0046	1				IS
	0000	0746	CULG				0000	0043					IIIN,W
			CULG							0018	0250		S.W.F.,W
			CULG				0020	0021	2				IIIG
			CULG	0032.5	0033.5	1							I
			CULG				0033		2				IIIB
			CULG				0034.5	0035.5	1				IIIG

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12			CULG				0043	0236	2				IIIS
			CULG				0044	0746	1				N,RS,DP
			CULG				0046	0245	2				IS,C,DC
			CULG	0127	0148	1							IS
			CULG	0206.5	0207	2							IIIG
	0000	0927	MANI							0213.4	0214.7	2	III
			CULG	0213	0216	3	0213	0215.5	3	0213.5	0215.5	3	IIIG,V
			CULG				0220	0223	1				IIF OSSIBLE
			CULG				0231.5		3	0231.5		2	IIIB
			CULG				0232		2	0232		2	IIIB
			CULG	0235	0235.5	2							IIIG
			CULG				0236	0550					IIIN,W
			CULG	0242		1	0242		1				IIIB
			CULG				0245	0600	1				IS,DC
			CULG				0323		2				IIIB
			CULG				0323	0746	2				IIIN,U
			CULG				0323	0746	2				IIIN
			MANI							0344.0	0344.3	1	III
			CULG	0345	0345.5	1	0344.5	0346	3	0345.5	0346	2	IIIG,V
			CULG				0401.5	0402.5	2	0402	0402.5	1	IIIG
			CULG				0538.5	0540	2				IIIG,V
			CULG				0550	0746	1				IIIS
			CULG				0600	0746	2				IS,DC
			CULG				0657	0658	2				IIIG,V
	1121	1602	WEIS				0722.0	1529.0	3				IIIS
			CULG				0722	0725.5	3				IIIG,V
	0716	1116	WEIS				0730.0	1555.0	3				IS
	0733	1502	DURN				0733 E	1502 D	1				I,DC
			WEIS				0811.2	0814.7	3				IIIGG
			MANI							0811.4	0811.8	1	III
			DURN	0811.5	0813.0	3	0811.2	0814.8	3				IIIGG,RS
			WEIS				0919.9	0921.5	2				V
			DURN	1030.6	1031.2	1	1030.6	1031.2	2				IIIG
			WEIS				1103.0	1100.8	3				IIIG
			WEIS				1104.6	1105.0	3				IIIG
			WEIS				1153.4	1154.2	3				IIIG
	1149	2206	SGMR				1204.2	1205.9	2				IIIG
			WEIS				1204.4	1205.8	3				IIIG
			SGMR				1533.2	1533.9	1				IIIG
			SGMR				1946.9	1951.0	1				V
	2046	2122	CULG				2046	2122	1				IS
			CULG				2046	2122					IIIS,W
			CULG				2051	2053.5	2	2051.5	2053.5	2	IIIG
			CULG				2055	2056	2				IIIG
			CULG				2114.5	2115	3				IIIG
	2222	2400	MANI										
			CULG				2307	2400					IIIN,W
	2307	2400	CULG				2307	2400	1				IS,C
			CULG				2350.5	2353	2				IIIG,V
13	0000	0746	CULG				0000	0020	1				IS,C
			CULG				0000	0746					IIIN,W
			CULG				0002.5	0004	1				IIIG,V
			CULG				0020	0210	1				IS
	0000	0918	MANI							0025.4	0025.7	1	III
			CULG	0025.5	0026.5	1	0024	0028	3				IIIGG,V
			CULG	0030.5	0032	1	0031	0032	1				IIIG
			CULG	0035	0038	1	0035	0039	3	0035.5	0038.5	3	IIIGG,V
			MANI							0036.9	0037.7	1	III
			CULG				0140	0141	1				IIIG
			CULG	0146	0147.5								IIIG,W
			CULG				0153.5	0158	2	0156.5	0157	1	IIIGG
			MANI							0204.9	0205.1	1	III
			CULG				0204	0204.5	3	0204	0204.5	3	IIIG
			CULG				0210	0746					IS,W
			CULG				0212	0216	1	0214.5	0215	1	IIIG
			CULG	0230.5	0231	1	0230.5	0231	1				IIIG
			CULG				0234.5	0235.5	2	0235	0235.5	1	IIIG
			CULG	0238.5	0239.5	2	0238.5	0240.5	3	0239	0240.5	3	IIIG,V
			MANI							0238.8	0242.2	2	III

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				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	
13			CULG				0441	0746	1				IIIN
	0709	1439	WEIS				0754.0	1515.0	2				IIIN
	0656	1625	DURN				0805	0950	1				I,DC
			WEIS				0950.7	0951.2	3				IIIU
			WEIS				0952.7	0953.5	3				IIIG
			DURN				0952.7	0953.0	3				IIIG
			WEIS				1100.7	1101.4	3				IIIG,U
			WEIS				1131.5	1139.0	3				IIIGG,UUU
			DURN				1136.1	1137.8	3				IIIGG
	1148	1630	SGMR										
			WEIS				1155.4	1155.7	2				IIIU
			WEIS				1203.4	1205.6	3				IIIG
			DURN				1203.4	1204.9	2				IIIG
			DURN	1228.7	1230.1	3							IIIG
			WEIS				1229.0	1229.4	2				IIIU
	1441	1604	WEIS										
	2023	2208	SGMR										
			CULG				2046	2400					IN,W
	2046	2400	CULG				2046	2400					IIIS,W
			CULG				2117.5		1				IIIB
	2227	2400	MANI										
14	0000	0934	MANI										
	0000	0746	CULG				0000	0146					IS,W
			CULG				0000	0746					IIIS,W
			CULG				0019	0037	1				IIIN
			CULG	0134	0135.5	1							IIIG
			CULG				0136		1	0136		1	IIIB
			CULG				0307.5	0308	2				IIIG
			CULG				0534	0611	1				IIIG,N
			CULG				0613	0613.5	2				IIIG
	0654	0910	DURN										
	0707	1330	WEIS				0736.6	0736.7	1				IIIB
			WEIS				0750.4	0750.5	2				IIIB
			WEIS				0752.6	0753.7	3				IIIGG
			WEIS				0933.7	0935.2	3				IIIG
			WEIS				1136.8	1137.9	3				IIIG
			WEIS				1315.9	1316.2	2				IIIG
			WEIS				1325.2	1325.7	3				IIIG
	1147	2209	SGMR				1325.2	1325.7	2				V
	1408	1604	WEIS				1444.0	1444.2	1				IIIB
			WEIS				1518.0	1526.3	2				IIIGG
			WEIS				1537.6	1537.7	1				IIIB
			WEIS				1600.1	1602.2	2				IIIG
			SGMR				1852.0	1852.6	3				V
	2046	2400	CULG				2046	2400					IIIN,W
			CULG				2101	2102	3				IIIB,U
			CULG	2102.5		2	2102.5	2103	3				IIIB,U
			CULG				2136	2202	1				IS
			CULG				2139	2139.5	1				IIIG
			CULG				2142.5	2143.5	3	2142.5	2143	2	IIIG,U
	2221	2400	MANI										
			CULG				2222.5	2223	1				IIIG
			CULG							2222.5	2223		IIIG,W
			CULG				2224		1				IIIB
			CULG				2230.5		2	2230.5		1	IIIB
			CULG				2256.7	2257	1				IIIG
			CULG				2331		2				IIIB
			CULG				2337.5	2338.5	2				IIIG
			CULG	2356.5	2357.5	2							IIIG
15	0000	0920	MANI										
	0000	0746	CULG				0007	0008.5	1				IIIG
			CULG	0056.5		1							IIIB
			CULG				0102	0746					IIIN,W
			CULG				0103	0104	1				IIIG
			CULG	0106	0107	2							IIIG
			CULG				0114	0225	1				IS
			CULG				0139.5	0142.5	1	0140	0142.5	1	IIIG
			CULG				0205		1	0205	0205.5	1	IIIB

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FEB 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	
15			CULG				0225	0746	1				IN
			CULG							0246	0319		IIIN,W
			CULG				0246	0246.5	2				IIIG
			CULG				0310	0746	1				IIIG,N
			CULG	0325	0325.5	2							FAST DRIFT
			CULG	0338	0338.5	2							FAST DRIFT
			CULG	0339.5	0340	1							FAST DRIFT
			CULG				0355	0356.5	2				IIIG
			CULG				0414		2	0414		1	IIIB
			CULG				0415.5		2	0415.5		1	IIIB
			CULG	0419	0420	2	0419.5		1				IIIG
			CULG				0427		2	0427	0428	2	IIIB
			CULG	0453	0455.5	1							IIIG
			CULG				0547.5	0548	2				IIIG
			CULG	0633	0633.5	2							FAST DRIFT
			CULG	0637.5	0638	2							FAST DRIFT
	0700	1628	DURN				0735.0	0736.9	3				IIIG
	0705	1607	WEIS				0735.1	0736.8	1				IIIG
			CULG	0736.5	0737	2	0736.5	0737	1				IIIG
			WEIS				0749.4	0752.6	2				IIIGG
			WEIS				0800.7	0801.0	2				IIIG
			DURN				0803.4	0803.6	2				IIIG
			WEIS				0805.6	0808.6	2				IIIG
			WEIS				0825.3	0826.1	2				IIIG
			DURN				0850.2	0852.6	1				IIIG
			DURN	0857.6	0857.6	2							III
			WEIS				0924.5	0927.5	2				IIIG
			WEIS				0947.9	0948.1	2				IIIB
			WEIS				0950.6	0950.7	2				IIIB
			WEIS				0952.3	0958.3	2				IIIGG,RS
			DURN	0955.5	0955.6	3	0953.6	0956.1	3				IIIGG
			DURN				1139.2	1139.4	3				IIIG
			WEIS				1139.4	1139.5	2				IIIG
	1145	2210	SGMR										
			WEIS				1200.0	1202.4	2				IIIG
			WEIS				1210.3	1210.4	2				IIIB
			WEIS				1213.5	1213.6	2				IIIB
			WEIS				1307.6	1309.3	2				IIIG
	2205	2400	CULG				2205	2400					IIIS,W
	2217	2400	MANI										
			CULG				2231.5	2233	2	2232	2232.5	1	IIIGG
			CULG							2259	2259.5	1	IIIB
			CULG				2259						IIIB,W
			CULG				2314	2315	1				IIIG
			CULG				2348	2349	2				IIIG
			CULG				2358	2358.5	1				IIIG
16	0000	0746	CULG				0000	0442					IIIN,W
			CULG	0012.5		1							IIIB
			CULG				0023	0746	1				IS
			CULG				0037						IIIB,W
			CULG	0037		1							IIIB
			CULG				0106.5	0107	1				IIIB,U
			CULG	0110.5	0111.5	1	0110.5	0111.5	2				IIIG
			CULG	0113		1	0113	0114	3				IIIG
			CULG				0125	0126	2				IIIGG
			CULG	0148.5	0149	1	0148.5	0149	2				IIIG,U
			CULG							0148	0244	3	S.W.F.
			CULG	0149.5	0152	2	0149.5	0231.5	3	0154	0158	1	II, H IV
			CULG	0150.5	0152	1	0149.5	0328	1				
	0000	0925	MANI							0153.0	0203.2	2	IIIG
			CULG				0154.5	0156	2	0154.5	0155	2	IIIGG
			MANI							0211.8	0215.7	1	IIIG
			CULG	0220	0249	1							IV
			CULG	0302	0303.5	1	0301.5	0309	2	0303	0304	3	IIIGG
			MANI							0305.5	0306.0	1	III
			CULG				0337	0338	1				IIIG
			CULG				0344	0346.5	2				IIIGG
			CULG				0442	0746					IIIS,W
			CULG	0446	0446.5	2							FAST DRIFT

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FEB 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	
16			CULG	0525	0525.5	2							IIIG
			CULG				0534	0631	1				IIIG,N
			CULG	0617	0617.5	1	0616.5	0617.5	2				IIIG
			CULG				0621		2				IIIB
			CULG	0626	0627	1	0626	0627	2				IIIG
	0651	1111	DURN	0703.0	0703.4								IIIG
	0703	1530	WEIS				0745.7	0746.7	1				IIIG
			WEIS				0745.7	1630.0	1				IN
			DURN				0745	1111	1				I,DC
			WEIS				0753.2	0754.4	2				IIIG
			WEIS				0804.7	0805.1	1				IIIG
			DURN				0804.7	0804.8	2				III
			WEIS				0826.8	0827.0	1				IIIG
			WEIS				0925.8	0926.2	2				IIIG
			DURN	0925.9	0926.0	3	0925.9	0926.0	3				IIIG
			WEIS				0931.3	0931.5	1				IIIG
			WEIS				0959.5	0959.8	1				IIIG
			WEIS				1005.6	1007.1	3				IIIG
			DURN				1006.4	1006.6	2				IIIG
			WEIS				1040.5	1041.9	2				IIIG
			WEIS				1103.3	1114.3	3				IIIGG,U
			DURN				1103.6	1104.8	3				IIIG
			DURN				1107.7	1110.6	3				IIIGG
			DURN	1108.4	1108.6	3							DCIM
			DURN				1109.0	1110.6	3				IIIGG
			WEIS				1117.9	1120.5	2				IIIG,RS
	1140	1630	DURN				1140 E	1630 D	1				I
			WEIS				1215.4	1215.7	2				IIIG
			WEIS				1221.3	1221.4	2				IIIG
			WEIS	1225.9	1227.3	2	1225.9	1227.3	2				IIIG
			WEIS				1243.2	1259.2	3				IIIGG
			DURN	1247.3	1258.0								DCIM
	1144	2212	SGMR				1255.2	1258.9	2				V
			DURN				1255.4	1256.8	3				IIIGG
			WEIS				1314.8	1314.9	2				IIIB
			WEIS				1326.2	1329.3	2				IIIG
			WEIS				1333.2	1337.7	2				IIIG
			WEIS				1355.7	1355.8	1				IIIB
			WEIS				1401.4	1401.5	2				IIIB
			WEIS				1411.5	1413.4	3				IIIG
			DURN				1411.5	1411.5	2				IIIG
			WEIS				1444.6	1446.0	3				IIIG
			WEIS				1503.9	1504.2	3				IIIG
			SGMR				1504.0	1601.0	2				IIIS
			WEIS				1507.7	1507.9	2				IIIG
			WEIS				1509.4	1512.4	2				IIIGG,U
			WEIS				1519.6	1521.3	3				IIIG
			SGMR				1519.7	1521.0	3				V
			DURN	1519.8	1519.9	1	1519.6	1520.1	3				IIIG
			DURN	1525.8	1526.3	2	1525.8	1526.6	3				IIIGG
			WEIS				1525.8	1528.7	3				IIIGG,RS
			DURN	1529.9	1530.1	3	1529.9	1530.1	3				IIIG
			DURN	1535.1	1535.1	2							III
			SGMR				1722.0	1904.0	3				IIIS
			SGMR				1955.5	1956.2	3				V
	2046	2400	CULG				2046	2302	1				IIIS
			CULG	2050.5	2052	2							FAST DRIFT
			SGMR				2137.8	2153.2	2				IIIS
			CULG	2138	2226	2	2138	2225	3	2138	2225	2	IIIG,N
			CULG				2139	2400	1				IS
			CULG	2217.5	2228	2							FAST DRIFT
			CULG	2235	2236	3							FAST DRIFT
			CULG	2235	2256	2	2235	2304	3	2235	2304	3	IIIG,VN
	2220	2400	MANI							2245.3	2247.6	1	IIIG
			CULG	2254.5	2255.5	2							FAST DRIFT
			CULG				2302	2400	1				IIIS
			CULG	2302	2304.5	2							FAST DRIFT
			CULG	2314	2400	1							IS
			CULG				2332	2332.5	2				RS,DP
17			CULG				0000	0022	1				IIIS

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FEB 1979	TIMES OF OBSERVATION START UT	TIMES OF OBSERVATION END UT	STATION	EVENTS DECIMETRIC BAND START UT	DECIMETRIC BAND END UT	DECIMETRIC BAND INT	METRIC BAND START UT	METRIC BAND END UT	METRIC BAND INT	DEKAMETRIC BAND START UT	DEKAMETRIC BAND END UT	DEKAMETRIC BAND INT	SPECTRAL TYPE
17	0000	0022	CULG	0000	0022	1							IN
			CULG	0015	0015.5	2							I IIG
			CULG	0018	0019	1	0018	0019.5	2				IIIGG
	0000	0932	MANI							0030.2	0030.6	1	III
			MANI							0044.7	0044.8	1	III
			CULG				0113	0746	1				IIIS
	0113	0746	CULG	0113	0746	1	0113	0746	1				IS
			CULG				0205	0746	1				N,RS,DP
			CULG	0232.5	0241	1	0232.5	0242	3	0232.5	0242	3	I IIGG
			MANI							0232.7	0241.5	2	IIIG
			CULG	0233	0243	3							FAST DRIFT
			CULG							0234	0305	2	S.W.F.
			CULG	0247	0251	1	0247	0732	2				IIIG,N
			CULG	0312	0438	1							FDRIFT,N
			CULG	0345.5	0346	2	0345.5	0346	2	0345.5	0346	2	IIIG
			CULG				0403.5	0404.5	3	0403.5	0404	2	IIIG
			MANI							0403.9	0404.0	1	III
			CULG				0536.5		3				I IIB
			CULG				0627.5	0629	3				IIIG
			CULG				0648.5		2				IIIB
	0650	1631	DURN				0650 E	1631 D	2				I,DC
			DURN				0810.6	0811.0	3				UNCL
			DURN				0813.0	0813.8	3				IIIGG
	0913	1610	WEIS				0913.0	1609.0	2				IS,DC
			WEIS				0915.0	1558.0	2				IIIN
			WEIS				1130.7	1130.9	2				I IIG
			WEIS				1246.6	1248.8	2				IIIGG
	1142	2213	SGMR				1246.9	1247.8	1				V
			SGMR				1438.6	1439.8	1				V
			SGMR				1505.1	1508.9	1				IIIG
			SGMR				1905.6	1906.3	1				V
			SGMR				1925.9	2213.0D	1				CONT
	2046	2400	CULG				2046	2400	2				IIIS
			CULG				2046	2400	2				IS,C,DC
			CULG				2046	2400	1				RS,DP
			CULG	2110	2400	1							IS
	2220	2400	MANI										
18	0000	0746	CULG	0000	0216								IS,W
			CULG				0000	0746	2				IS,C,DC
			CULG				0000	0746	2				RS,DP
			CULG				0000	0746	2				IIIS
			CULG							0008	0746	1	IIIN
			CULG	0216	0746	1							IS
			CULG	0351.5		1	0351.5	0352	3	0351.5	0352	3	IIIB
	0000	0925	MANI							0351.7	0351.8	1	III
			MANI							0451.5	0451.6	1	III
			CULG	0525	0525.5	1							IIIG
			CULG	0533.5	0534	2	0533.5		2				IIIG
			CULG	0640.5	0641	1							FAST DRIFT
			CULG	0642	0644.5	2	0643	0704.5	3				IIH
			CULG							0644	0652	1	S.W.F.
			CULG	0645	0646	2							FAST DRIFT
	0650	1500	DURN				0650 E	1500 D	2				I,DC,C
			MANI							0652.6	0653.0	1	I II
			MANI							0658.0	0700.3	1	IIIG
	0659	1611	WEIS				0702	1609	2				IS,CONT
			WEIS				0705	1607	2				IIIS,DP
	1141	2214	SGMR				1141.0E	2214.0D	1				CONT
			DURN	1159	1233	2							OCIM,N
			SGMR				1637.0	1711.0	3				IV
			CULG				2046	2324	2				IS,C,DC
			CULG				2046	2324	2				RS,DP
	2046	2324	CULG				2046	2136	2				I IIS
			CULG	2136	2213	1							CONT
			CULG				2136	2220	3	2136	2233	3	IIIS
			CULG				2220	2324	2				IIIS
			CULG	2222.5	2223.5	3	2222.5	2223.5	3	2222.5	2223.5	3	IIIG
	2224	2400	MANI										
			CULG	2227.5	2230	2	2228.5	2230	3	2228.5	2230	3	IIIGG

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FEB 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	
18			CULG	2232	2233	2	2232.5		3	2232.5	2233	2	IIIG
			CULG	2239.5		2	2239.5		2				IIIB
			CULG							2309	2313	1	I IIG
	2324	2400	CULG				2324	2400	1				N,RS,DP
			CULG				2324	2400	1				IS,C
			CULG				2324	2400	2				IIIS
			CULG				2329	2332	3	2330	2332	2	IIIGG
			CULG							2334	2400	1	IIIN
19			CULG				0000	0646	2				IS,C
			CULG				0000	0646	2				IIIN
			CULG				0000	0646	1				I IIS
	0000	0646	CULG				0000	0646	1				N,RS,DP
	0000	0925	MANI										
			CULG				0056.5		2	0057		1	I IIB
	0658	0926	WEIS				0701	1607	2				IIIS
	0933	1613	WEIS				0701	1549	2				IS
	0724	1634	DURN	0725.3	0725.3	3	0725.3	0725.3	3				I II
			DURN	0812	1540	1	0844	1540	1				I
			DURN	0844.6	0844.6	3	0844.6	0844.6	3				III
			DURN	0944.5	0944.7	3	0944.5	0944.6	3				IIIG
			DURN	1149.8	1149.8	3							III
			DURN	1236.1	1237.4	1	1236.1	1237.4	3				I IIGG
			WEIS				1236.3	1239.2	3				IIIGG
	1139	2216	SGMR				1236.8	1238.0	2				IIIG
			DURN	1238.4	1239.1	3	1238.4	1239.1	3				IIIGG
			SGMR				1521.6	1533.0	3				IIIG
			WEIS				1525.2	1536.0	3				IIIGG
			SGMR				1530.0	1638.3	2				CONT
			DURN	1532.8	1535.1	1							DCIM
	2048	2400	CULG				2048	2400	1				IIIS
			CULG				2048	2400	1				IS,C
			CULG				2048	2400	2				IIIN
	2222	2400	MANI										
			CULG	2344.5	2345.5	2	2344	2346	3	2344	2346.5	3	IIIG
			CULG	2350		2	2350		2				IIIB
20			CULG				0000	0746	1				IS,C
	0000	0746	CULG				0000	0746	1				IIIS
			CULG				0019	0204	2				I IIN
			CULG	0112	0113	1	0112	0113.5	2	0112	0113	1	IIIG
			CULG				0155.5	0159.5	2	0155.5	0159	2	IIIGG
			CULG				0252	0253	3	0252	0253	2	IIIG
			CULG				0455.5	0501	3	0455.5	0501	2	I IIG
			CULG				0516		2				IIIB
	0000	0928	MANI							0524.6	0527.2	1	IIIG
			CULG				0524	0532.5	3	0524.5	0532	2	IIIGG
			CULG				0552.5	0558.5	2				IIIGG
			MANI							0700.0	0700.3	1	III
	0656	1616	WEIS				0701	1607	1				IN
			WEIS				0711	1538	2				IIIN
			WEIS				0715.6	0717.7	2				IIIGG
			CULG				0716	0718	3				IIIGG
			WEIS				0730.4	0731.8	3				IIIG
	0650	1408	DURN				0730.4	0730.8	3				IIIG,RS
			DURN	0746.7	0746.8	1							IIIG
			WEIS				0759.8	0801.0	3				IIIG
			WEIS				0850.9	0851.3	3				IIIG
			DURN				0850	1408 D	1				I,DC
			MANI							0851.0	0851.5	1	III
			WEIS				0930.8	0931.5	2				IIIG
			WEIS				0934.3	0947.0	2				II
			DURN				0943.2	0943.4	3				IIIG
			WEIS				1012.9	1016.5	3				I IIG
			WEIS				1053.3	1055.0	3				IIIGG
			DURN	1054.0	1054.3	3	1054.0	1054.3	3				IIIG
	1044	1514	DWIN	1054.0	1054.3	2							I IIG
			DWIN	1145.5	1146.0	2							IIIG
			DURN	1145.5	1147.0	3	1145.5	1146.0	3				IIIGG
			WEIS				1145.6	1147.3	3				IIIGG,V

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FEB 1979	TIMES OF OBSERVATION START UT	TIMES OF OBSERVATION END UT	STATION	EVENTS DECIMETRIC BAND START UT	DECIMETRIC BAND END UT	DECIMETRIC BAND INT	METRIC BAND START UT	METRIC BAND END UT	METRIC BAND INT	DEKAMETRIC BAND START UT	DEKAMETRIC BAND END UT	DEKAMETRIC BAND INT	SPECTRAL TYPE
20			WEIS				1229.2	1232.0	3				IIIG
			SGMR				1230.4	1231.8	3				V
	1138	2217	SGMR				1245.8	1246.8	2				V
			DURN	1316.9	1317.3	1	1317.2	1317.3	2				IIIG
			WEIS				1317.3	1317.7	3				IIIG
			SGMR				1317.5	1317.8	1				III
			DURN	1320.8	1320.9	3							IIIG
			DURN	1326.9	1327.1	2							IIIG
	1427	1640	DURN				1427 E	1640 D	1				I,DC
			DWIN	1452.4	1452.5	1							IIIG
			SGMR				1647.0	1648.5	3				V
			SGMR				1755.5	1756.0	1				V
			SGMR				1848.9	1850.1	3				V
			SGMR				1850.0	2217.00	1				CONT
			SGMR				2006.6	2007.8	3				V
	2122	2400	CULG				2122	2150	1				IS
			CULG				2122	2400					IIIS,W
			CULG	2129.5	2131.5	2	2129	2132	3	2129.5	2132.5	2	IIIGG,V
			CULG	2129.5	2400	1							FORIFT,N
			SGMR				2129.8	2131.8	3				V
			CULG	2135.5	2136	2	2135.5	2136	2				IIIG
			CULG				2137	2400	1				IIIN
			CULG				2150	2400	1				IS,C,DC
			CULG	2158.5	2159	1							IIIG
			CULG				2159.5	2201.5	2	2201.5	2202.5	1	IIIG
			CULG				2216.5	2218	3	2216.5	2218	2	IIIG
			CULG	2216.5	2220	1	2215	2203.5	1				IIIGG
			CULG							2220	2240	1	S.W.F.
			CULG				2231.5	2239	1				IIP OSSIBLE
			CULG				2232	2400	2				IS,C,DC
			CULG				2259		2	2259		2	IIIB
			CULG				2329.5	2330	1	2329.5	2330.5	2	IIIG
			CULG				2340.5		2				IIIB
			CULG	2342	2342.5	2	2342	2343	3	2342	2344	1	IIIG
			CULG	2345.5	2352.5	2							IIIGG
	2226	2400	MANI							2348.2	2349.1	1	III
			CULG	2348.5	2349.5	1							IIIG
			CULG				2348	2349.5	3	2348	2349	3	IIIG,V
			CULG	2351	2352	1	2351	2352	3	2351	2352	3	IIIG
			CULG				2353.5	2354	3	2353.5	2354	2	IIIG
			MANI							2358.6	2358.7	1	III
21			CULG				0000	0310	2				CONT
			CULG				0000	0310	2				IS,C,DC
			CULG	0000	0300								IN,W
	0000	0756	CULG				0000	0254	1				IIIS
			CULG				0047.5		2				IIIG
			CULG				0132	0254	1				IIIN
			CULG	0147	0148	1							IIIG
			CULG				0156.5		1	0156.5		1	IIIB
			CULG				0254	0313	2				IIIS
			CULG	0300	0756	1							IS
			CULG				0310	0756	1				IS,C,DC
			CULG				0310	0756	1				CONT
			CULG				0313	0738					IIIS,W
			CULG				0323	0738	1				IIIN
			CULG				0401.5		2				IIIB
			CULG				0513.5		2				IIIB
			CULG				0523.5		2				IIIB
			CULG				0528.5		2	0528.5		1	IIIB
	0000	0922	MANI							0535.9	0536.2	1	III
			CULG				0535	0536	3	0535.5	0536	3	IIIG
	0654	1043	WEIS				0658	1613	2				IN
			CULG				0701		2				IIIB
	1054	1617	WEIS				0718	1604	1				IIIN
			WEIS				0729.3	0729.5	2				IIIG
			CULG				0738	0756	1				IIIS
			CULG				0739	0739.5	2				IIIB
			CULG				0746.5	0747.5	2				IIIG
			WEIS				0927.4	0934.2	3				IIIGG,U

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

FEBRUARY 1979

FEB 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	
21			WEIS				0935.3	0938.5	3				IIIG
	0955	1333	DWIN	0959.9	1001.0	1							IVF
			DWIN	1026.8		1							IIIB
			WEIS				1105.4	1110.8	3				IIIGG
			DWIN	1106.9	1108.0	2							IIIG,MR
			WEIS				1123.9	1124.3	2				IIIG
			WEIS				1204.4	1209.8	3				IIIG
	1136	2218	SGMR				1208.9	1209.5	3				V
			WEIS				1212.5	1212.8	2				IIIG
			DWIN	1216.8		2							I IIB
	1408	1522	DWIN	1422.2	1422.3	2							IIIG
			SGMR				1459.1	1459.8	2				V
			WEIS				1459.4	1459.7	3				IIIB
	1524	1648	DURN				1524 E	1648 D	1				I
			WEIS				1525.9	1527.1	3				IIIG
			SGMR				1526.0	1527.3	3				V
			DURN	1526.9	1527.3	1	1526.9	1527.3	3				IIIGG
			WEIS				1556.7	1557.8	3				IIIG,RS
			SGMR				1557.0	1557.8	2				V
			DURN	1557.6	1602.3	3	1557.8	1558.7	3				IIIGG
			SGMR				1831.9	1832.0	2				III
			SGMR				2038.0	2045.9	2				IIIG
	2046	2400	CULG	2046	2047	3	2046	2047	3	2046	2047	3	IIIGG
			CULG				2046	2400					IIIS,W
			CULG	2046	2251	2	2046	2400	1				IS
			CULG				2104.5	2105.5	1				IIIG
			CULG				2113	2115	1				IIIG
			CULG				2129		1				IIIB
			CULG	2216		1	2216	2216.5	1	2216	2217	2	IIIG
	2220	2400	MANI										
			CULG	2229		1	2229		1				IIIB
			CULG	2237	2237.5	1	2237	2237.5	1				IIIG
			CULG				2241		1				IIIB
			CULG	2251	2400	1							IS
			CULG	2254	2254.5	2	2254	2254.5	2				IIIG
			CULG	2255	2255.5	1	2255	2255.5	1				IIIG
			CULG	2330.5	2331	1							IIIG
			CULG	2333	2333.5	2	2333	2333.5	2				IIIG
			CULG	2336	2337.5	2	2336	2336.5	2				IIIG
22			CULG	0000.5	0001	2	0000.5	0001	1				IIIG
			CULG				0000	0508					IIIN,W
	0000	0508	CULG	0000	0321	1	0000	0102	1				IS
	0000	0927	MANI										
			CULG	0004.5		1							IIIB
			CULG	0006.5	0007	2	0006.5	0007	3				IIIG
			CULG	0040	0040.5								IIIG,W
			CULG				0102	0346					IS,W
			CULG	0141.5	0142	1							IIIG
			CULG	0321	0425								IS,W
			CULG	0425	0444	1							IS
			CULG	0444	0508								IS,W
			CULG				0617	0726					IIIN,W
	0617	0753	CULG				0617	0622					IIIGG,W
			CULG	0617	0740								IS,W
			CULG				0617	0740	1				IS
	0643	1424	DURN				0643 D	1424 E	1				I,DC
			DURN	0657.8	0658.1	3	0657.8	0658.1	1				IIIGG
			CULG	0658	0658.5	2							IIIG
	0653	1619	WEIS				0720.0	1517	2				I I
			WEIS				0720	1542	2				IIIN
			CULG				0726	0753	1				IIIS
			CULG	0740	0753	1	0740	0753	2				IS
	0945	1517	DWIN	1011.3	1012.0	1							IIIG
			DWIN	1223.5	1223.9	2							IIIG
	1135	2219	SGMR				1236.8	2219.0D	1				CONT
			DURN	1253.6	1254.7	2							IIIG,U
			DWIN	1449.9	1450.0	2							IIIG
			WEIS				1457.7	1458.0	2				IIIG
	2046	2400	CULG	2104.5	2105	1							IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

FEBRUARY 1979

FEB 1979	TIMES OF OBSERVATION START UT	TIMES OF OBSERVATION END UT	STATION	EVENTS DECIMETRIC BAND START UT	DECIMETRIC BAND END UT	DECIMETRIC BAND INT	METRIC BAND START UT	METRIC BAND END UT	METRIC BAND INT	DEKAMETRIC BAND START UT	DEKAMETRIC BAND END UT	DEKAMETRIC BAND INT	SPECTRAL TYPE
22	2209	2400	MANI										
			CULG				2210.5	2212.5	3	2210.5	2211.5	3	IIIG
			CULG				2215.5	2216.5	1	2216	2216.5	1	IIIG
			CULG				2343.5						IIIB,W
			CULG				2353						IIIB,W
23	0000	0745	CULG				0006	0745					IIIN,W
			CULG	0040.5	0041.5								IIIG,W
			CULG	0041.5		2	0041.5		2				IIIB
			CULG				0043.5	0044	1				IIIB,U
			CULG	0101.5		2	0101.5		1	0101.5	0102	2	IIIB
			CULG	0106			0106	0108		0107.5			IIIG,W
			CULG	0211.5	0212	1	0210.5	0212	1	0211.5		1	IIIG
			CULG	0216.5		1	0216.5		1				IIIB
			CULG	0229.5	0230	1	0230		1				IIIB
			CULG	0553.5	0554	1							IIIG
			CULG	0643		1							IIIB,RS
	0650	1147	WEIS				0656.9	0658.4	2				IIIG
			CULG	0657		1	0657	0657.5	2	0657		1	IIIB,V
			CULG	0658	0658.5	1	0658	0658.5	2	0658	0658.5	2	IIIB,V,U
			WEIS				0700.3	0701.6	2				IIIG
	0000	0925	MANI							0700.4	0700.6	1	III
			CULG	0700.5	0701	1	0700.5	0702	2	0700.5		2	IIIG,V
			WEIS				0702.7	0703.6	2				IIIG
			CULG	0703.5	0704	1							IIIG
			CULG	0703		1							IIIB
			WEIS				0705.2	0707.3	3				IIIG,RS
			CULG				0705.5		2				IIIB
			CULG	0706.5	0707.5	2	0706.5	0708	2	0707	0707.5	2	IIIG,V
			MANI							0706.8	0707.0	1	III
			CULG	0708.5	0709								IIIG,W
			WEIS				0709.4	0709.7	3				IIIG
			CULG	0709.5	0710	1	0709.5	0710	2				IIIB,V
	1023	1516	DWIN										
			WEIS				1040.0	1540.0	2				IIIN
			WEIS				1142.5	1142.9	3				IIIG
	0728	1650	DURN				1200	1600	1				I,DC
	1133	2221	SGMR				1308.5	1309.1	2				V
			SGMR				1310.9	1311.5	2				V
			SGMR				1312.6	1316.0	2				V
	1326	1621	WEIS				1425.9	1427.3	3				IIIG
			SGMR				1426.0	1428.0	3				V
			DURN	1610.4	1610.6	2	1610.4	1610.6	2				IIIG
	2046	2133	CULG				2046	2133	1				IS
			CULG				2055		1				IIIB
	2220	2400	MANI										
	2305	2400	CULG	2348	2400								IS,W
24	0000	0923	MANI										
	0117	0745	CULG				0256	0314	1				IIIS
			CULG	0348	0549	1							IS
			CULG				0504	0729					IIIN,W
			CULG	0549	0633								IS,W
			CULG				0623		1				IIIB
			CULG				0626.5		2				IIIB
	0648	1622	WEIS				0754.4	0756.9	2				IIIG
			WEIS				1032.6	1033.3	2				IIIG
	0641	1642	DURN				1032.6	1033.4	3				IIIGG
	1132	2222	SGMR										
			WEIS				1242.4	1242.5	1				IIIU
	2045	2400	CULG				2057						IIIB,W
			CULG	2114	2117	2	2115	2117	2	2115.5	2116	1	IIIG
			CULG	2124	2201								IS,W
	2220	2400	MANI										
			CULG	2324	2340								IS,W
			CULG	2340	2400	1	2337	2400	1				IS
			CULG				2344	2400					IIIS,W
			CULG	2346.5	2347	1	2347	2347.5	2	2347	2347.5	2	IIIG
25			CULG				0000	0430	2				IS,C,DC

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

FEBRUARY 1979

FEB 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	
25	0000	0745	CULG	0000	0117	1							IS
			CULG				0000	0745					IIIN,W
	0000	0923	MANI										
			CULG				0022.5	0023	1				IIIB
			CULG	0117	0209								IS,W
			CULG				0250.5	0251	2	0250.5	0251	2	IIIB
			CULG				0343	0344	1				IIIG
			CULG				0427.5	0428	1	0427.5	0428	1	IIIG
			CULG				0452		1	0452	0452.5	1	IIIB
			CULG				0454		1	0454	0455	1	IIIG
			CULG				0507.5	0508.5	3	0508	0508.5	3	IIIB,V
			CULG				0510		2	0510	0510.5	2	IIIB,V
			CULG				0521		1				IIIB
	0638	1604	DURN				0638 E	0740	1				I
			CULG	0641	0642	1	0641	0649	2	0641	0643	2	IIIGG
			CULG				0648	0652	1				UNCLF
			WEIS				0650.3	0653.5	2				IIIG
			CULG				0654.5	0724	2				II
	0646	1425	WEIS				0654	0710	3				IIH ARM,DNI
			CULG				0713	0727	1				IV
			WEIS				0720.9	0723.2	2				IIIG
			CULG				0721	0721.5	2	0721	0721.5	1	IIIG
			CULG				0722.5	0723	2	0722.5	0723	1	IIIG
			WEIS				0731.0	0732.9	2				IIIG
			CULG				0731	0732.5	1				IIIG
			CULG	0735	0736	1							IIIG
			WEIS				0824.4	0824.6	2				IIIB
			WEIS				0959.6	1000.5	1				IIIG
			WEIS				1044.9	1045.4	1				IIIG
			WEIS				1050.1	1050.5	1				IIIG
			WEIS				1115.7	1117.6	2				IIIG
			WEIS				1322.7	1324.3	3				IIIG,RS
			DURN				1322.7	1324.0	3				IIIGG
	1130	2223	SGMR				1322.8	1323.1	1				V
			SGMR				1323.5	1324.1	1				V
			WEIS				1329.0	1329.3	1				IIIG
			WEIS				1418.3	1418.7	1				IIIG
			DURN				1425.5	1425.5	3				IIIG
	1434	1624	WEIS				1508.4	1511.7	3				IIIGG,RS
			SGMR				1509.0	1510.3	2				V
			DURN	1509.9	1510.1	3	1508.3	1511.7	3				IIIGG
			DURN				1602	1604 D	1				I ,DC
	1641	1650	DURN										
	2045	2400	CULG				2219	2221	2				IIIG
	2221	2400	MANI										
			CULG				2245.5						IIIB,W
			CULG				2249	2250.5	1				IIIG
			CULG	2331									IIIB,W
26	0000	0745	CULG				0016.5	0017					IIIG,W
			CULG				0152	0745					IIIN,W
			CULG				0217.5	0218	1				IIIG
			CULG				0227	0228	2				IIIG
			CULG	0246.5	0247								IIIG,W
			CULG	0252.5	0253.5		0253.5	0254					IIIG,W
			CULG							0308.5	0315		S.W.F.,W
			CULG				0308	0310.5	3	0308.5	0310.5	2	IIIGG
	0000	0924	MANI							0309.0	0309.3	1	III
			CULG	0429									IIIB,W
			CULG	0431.5									IIIB,W
			CULG				0432.5	0433	1				IIIG
			CULG				0454		1				IIIB,U
			CULG	0459.5	0500	1							IIIG
			CULG				0500						IIIB,W
			CULG	0517.5	0518.5	2	0517.5	0518.5	2	0517.5	0518	1	IIIG
	0635	1650	DURN										
			CULG	0654.5	0710								IIIG,N,W
	0645	1626	WEIS				0726.3	0727.3	2				IIIG,U
			CULG				0726	0727.5	1				IIIG
			WEIS				0810.3	0810.4	2				IIIG,U

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

FEBRUARY 1979

FEB 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	
26			WEIS				1116.0	1118.1	2				IIIGG
			WEIS				1125.3	1125.6	2				IIIB,U
	1155	2000	SGMR										
	2045	2400	CULG				2058.5	2101.5	2	2100	2102	1	IIIG,V
			CULG				2129	2130	2				IIIG,U
			CULG				2204	2205	2				IIIG
	2211	2400	MANI										
27	0000	0920	MANI										
	0000	0745	CULG				0039.5						IIIB,W
			CULG	0043		1	0042.5	0043	1				IIIG
			CULG				0418.5						IIIB,W
			CULG	0418.5	0419	1							IIIG
			CULG	0422			0422						IIIB,W
			CULG				0555	0556.5	1				IIIG
	0635	1650	DURN										
	0642	1516	WEIS				1122.5	1122.9	1				IIIG
	1128	2226	SGMR										
	1520	1627	WEIS										
	2045	2400	CULG				2046.5		1				IIIB
			CULG	2051	2123	1							IS
	2220	2400	MANI										
			CULG	2243	2318								IN,W
			CULG				2326.5		1				IIIB
28	0000	0934	MANI										
	0000	0745	CULG				0109.5						IIIB,W
			CULG	0110.5	0111								IIIG,W
			CULG	0147	0148	1							I
			CULG	0244	0745								IS,W
			CULG				0342.5	0343					IIIG,W
			CULG				0518.5	0519	1				IIIG
			CULG				0524	0525	1				IIIG,U
			CULG				0615.5	0616	2				IIIB
	0635	1650	DURN				0635 E	0800	1				I
			CULG				0731		1				IIIB
	1125	2227	SGMR										
			DURN	1453.3	1453.8	2	1453.5	1453.7	3				IIIG
	0641	1629	WEIS				1453.4	1453.7	1				IIIG,RS
	2217	2400	MANI										
	2045	2400	CULG				2239.5			2240			IIIB,W
			CULG	2247		1							IIIB

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)

FEBRUARY 1979

Feb. 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		7213.5	6784.9		6128.7	4075.9	3614.7		
2		7190.3	6764.5		6132.9	4079.0	3620.0		
3		7218.2	6786.3		6128.5	4076.6	3623.2		
4		7174.0	6730.4		6084.7	4043.0	3608.7		
5		7198.1	6743.9		6092.9	4048.0	3619.3		
6		7246.3	6790.7(21)		6128.2	4088.0	3638.8		
7		7263.9	6790.5(20)		6169.5	4091.0	3645.0		
8		7307.6	6827.7(19)		6174.9	4105.7	3651.7		
9		7347.4	6883.4(22)		6210.3	4132.9	3656.7		
10		7374.3	6934.0		6246.5	4157.4	3659.8		
11		7275.3	6843.4		6167.0	4112.5	3645.1		
12		7216.3	6790.9		6147.8	4095.9	3645.2		
13		7222.1	6798.0		6148.2	4051.3	3625.9		
14		7252.3	6835.0		6165.5	4098.0	3631.5		
15		7247.8	6780.0		6125.8	4082.6	3638.3		
16		7275.6	6800.6		6129.8	4085.4	3631.8		
17		7270.4	6804.6		6113.3	4080.9	3619.8		
18		7037.8	6640.8		6008.6	3974.4	3558.8		
19		6918.6	6552.2		5845.0	3920.9	3534.0		
20		6910.9	6461.1(23)		5852.7	3867.7	3517.9		
21		6850.4	6451.2		5821.9	3884.6	3537.0		
22		6924.3	6461.4		5876.3	3912.6	3558.3(19)		
23		6876.6	6453.4		5841.1	3873.2	3527.3		
24		6911.5	6479.5		5884.3	3918.3	3562.2		
25		7001.8	6596.5		5933.8	3952.3	3575.5		
26		7075.1	6627.9		6006.3	4001.0	3596.8		
27		7144.9	6703.9		6073.0	4071.7	3623.3		
28		7215.2	6735.7		6137.5	4085.0	3632.7		
MEAN		7148.5	6709.0		6063.4	4034.7	3607.5		

Data not available at time of publication. (THULE, CALGARY, KULA, HUANCAYO)

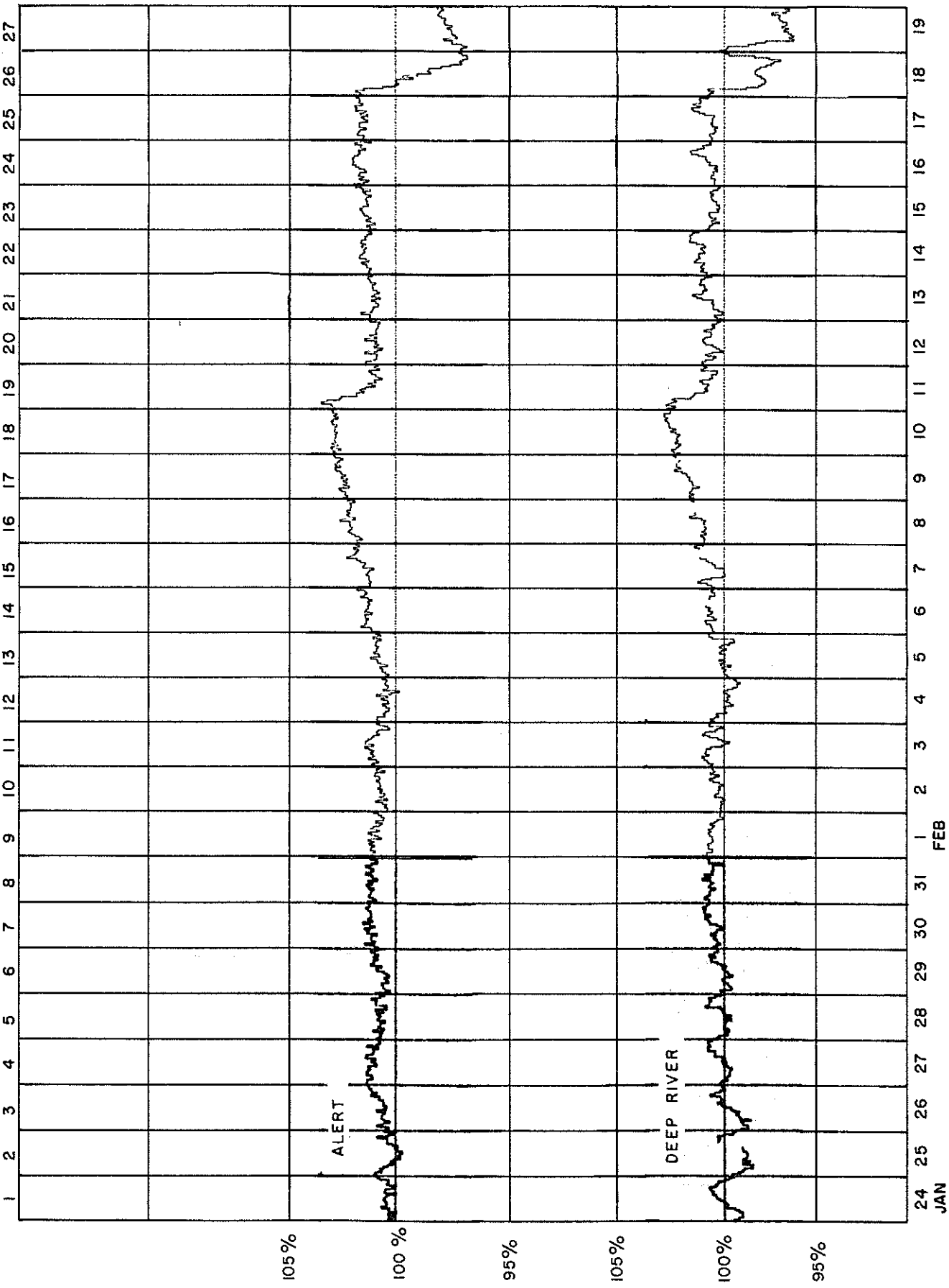
( ) is the number of hours for which data are available if less than 24. Number of Section Hours at Climax if sum of both sections is less than 40 hours.

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.

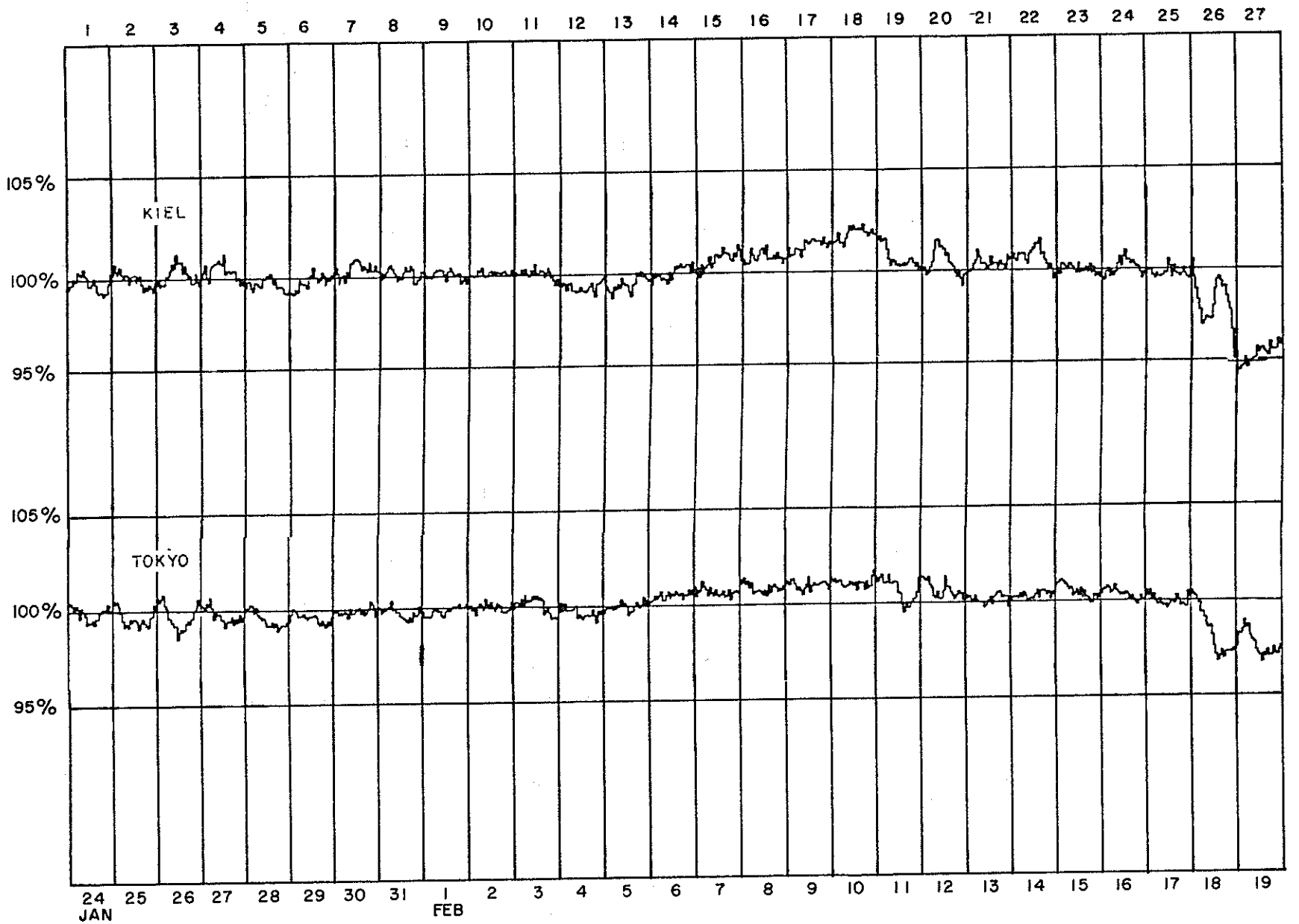
COSMIC RAY INDICES
(Neutron Monitors)

Bartel's Rotation 1989 (January-February 1979)



COSMIC RAY INDICES
(Neutron Monitors)

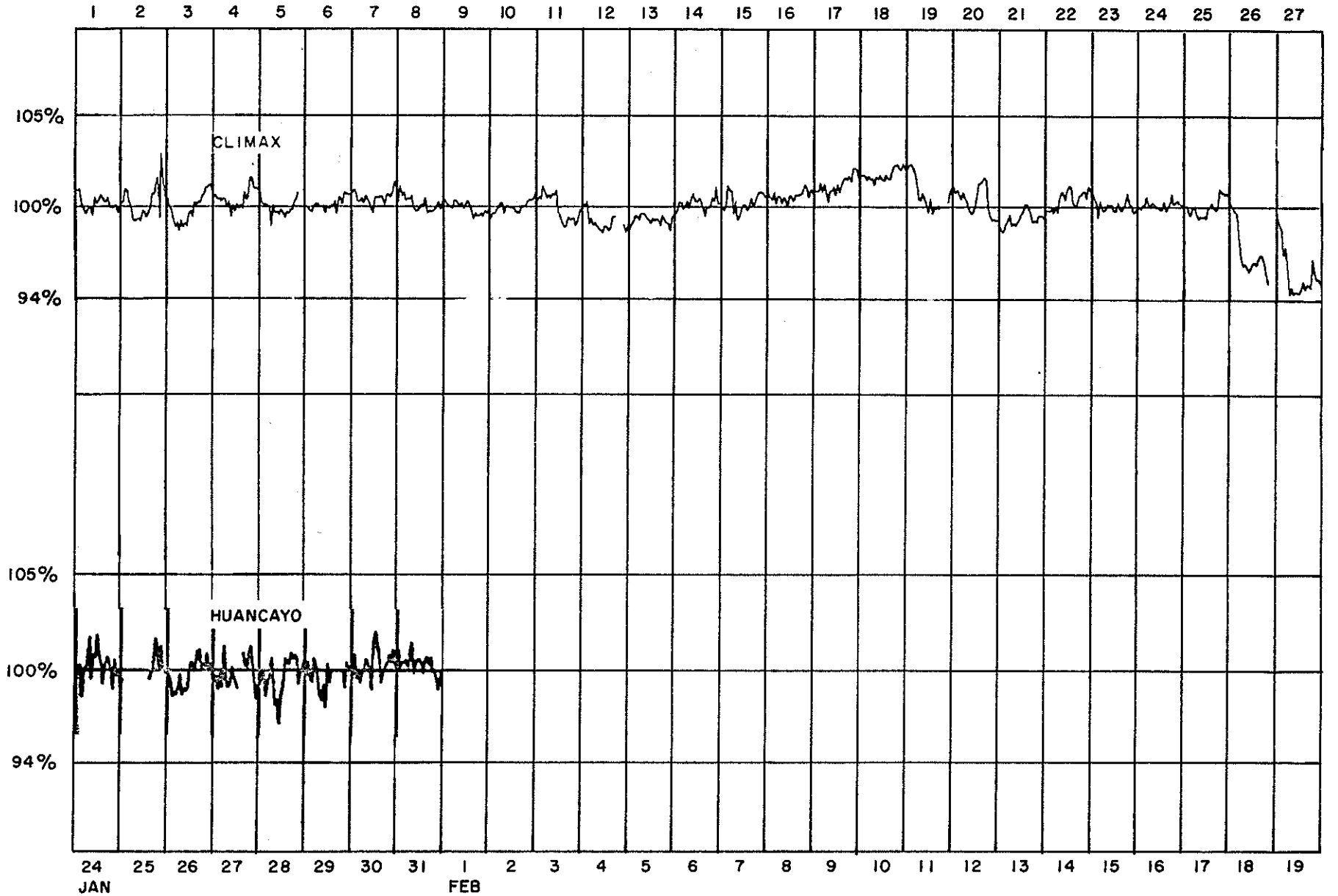
Bartel's Rotation 1989 (January-February 1979)



153
Feb 79

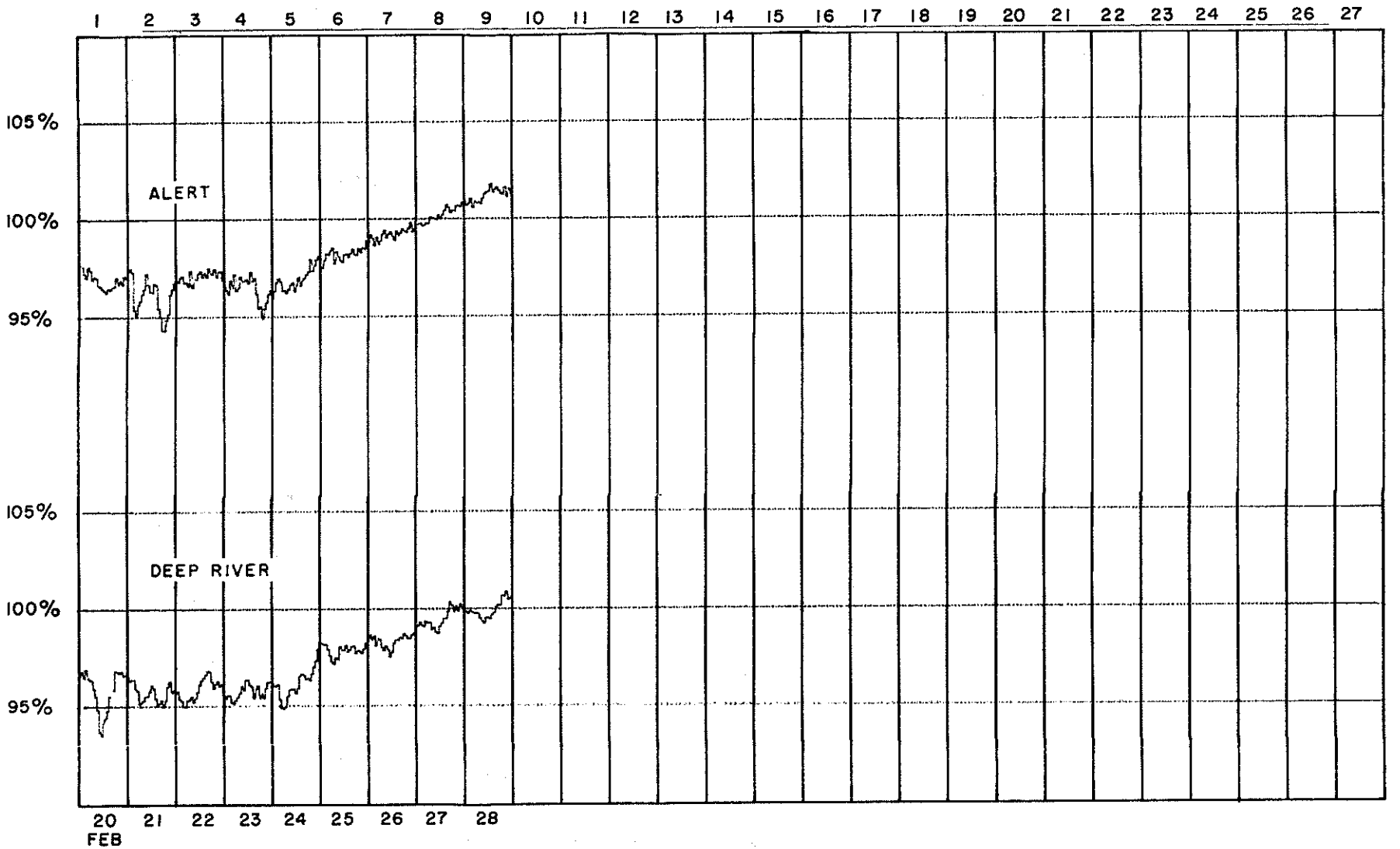
COSMIC RAY INDICES
(Neutron Monitors)

Bartel's Rotation 1989 (January - February 1979)



COSMIC RAY INDICES
(Neutron Monitors)

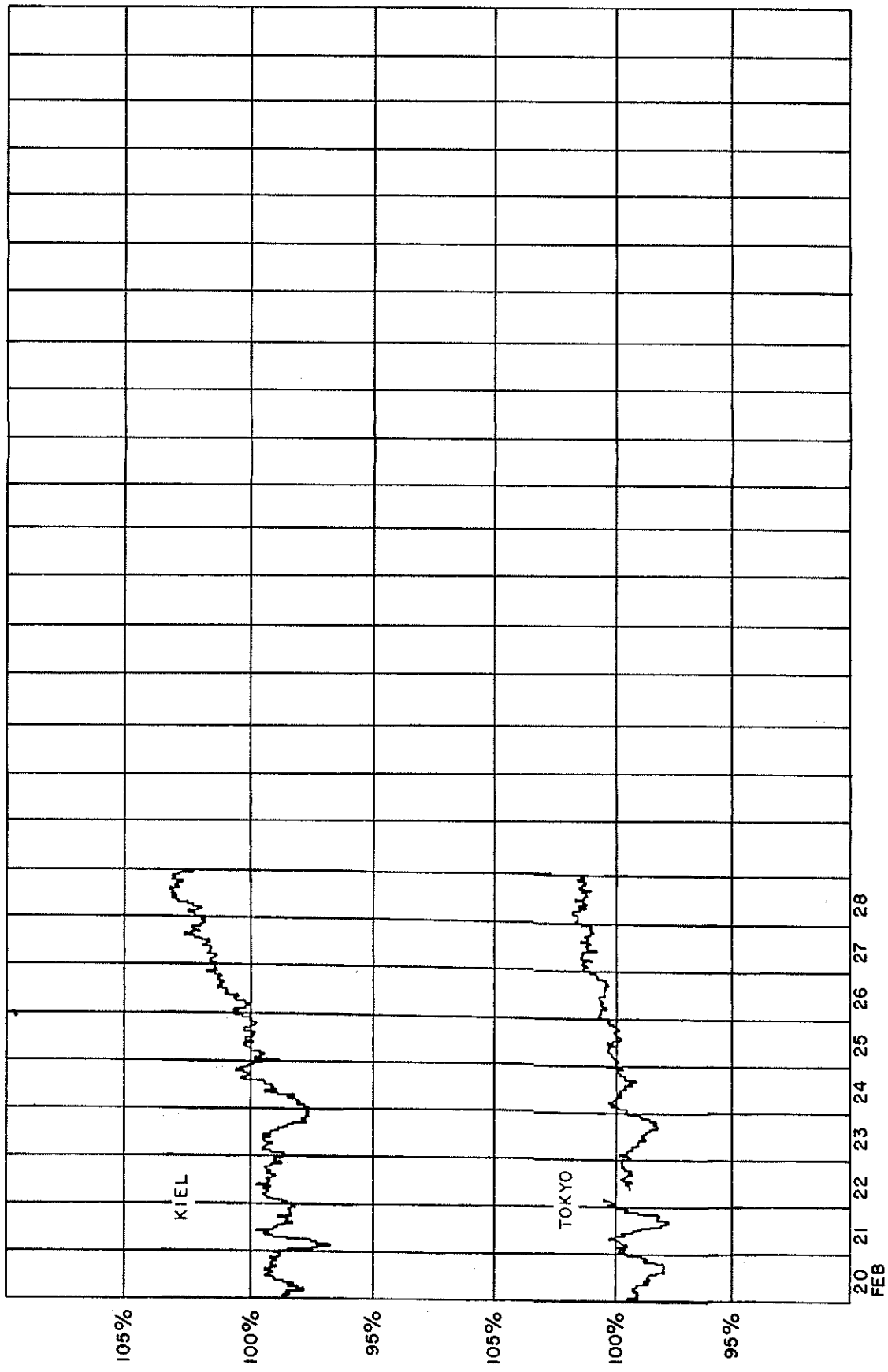
Bartel's Rotation 1990 (February 1979)



155
Feb 79

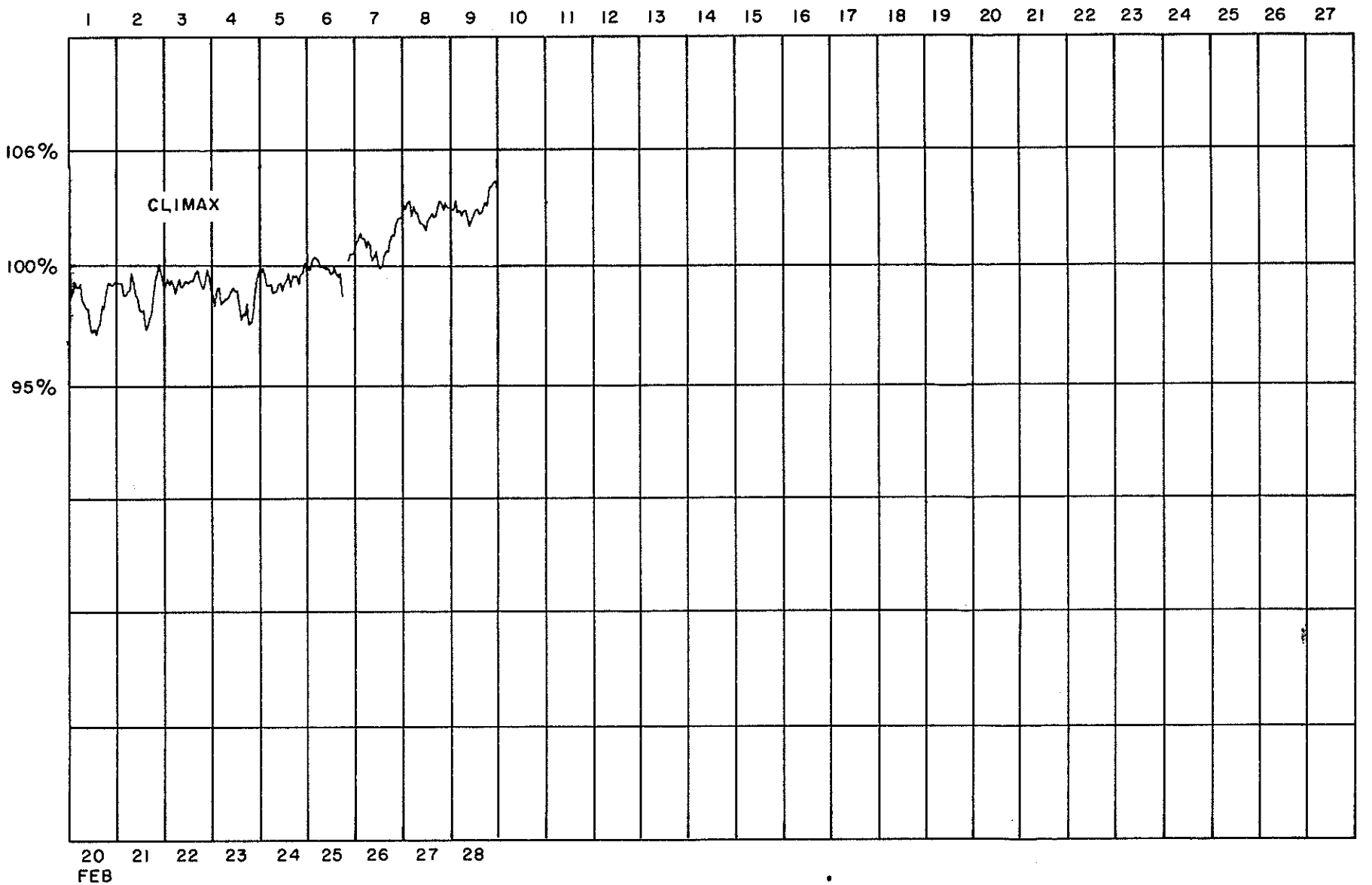
COSMIC RAY INDICES
(Neutron Monitors)

Bartel's Rotation 1990 (February 1979)



COSMIC RAY INDICES
(Neutron Monitors)

Bartel's Rotation 1990 (February 1979)



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Feb 79

GEOMAGNETIC ACTIVITY INDICES

FEBRUARY 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	Q7	2+	2+	2	2+	1+	1-	1-	2-	13+	2+	2-	2-	2	1+	1-	0+	2-	6	13	10	16	8	C	0.3
2		3-	3-	3-	3-	2-	2-	2+	2	18+	2+	2+	2	2+	2-	2-	3-	2	10	18	15	18	15		0.5
3	Q0A	2	2-	0+	0+	1+	2	4	3+	15	2-	1	0+	0+	1+	2-	4+	3	9	20	13	7	26		0.5
4		4-	4-	3	3+	3+	4+	3	2+	27-	4-	3+	3-	3	3+	4+	3-	2+	19	29	32	29	32		1.0
5		4-	2+	3-	3	2-	0+	0+	2	16	3	2+	2+	3	2	0+	0+	2-	9	12	12	17	7	K	0.5
6		2+	4	3	3-	3	2	3-	4	24-	2+	3	3-	3	3	2+	3	3+	16	22	25	22	25		0.9
7	Q6	2-	1	1-	2-	2-	2	2	2+	13	1+	1+	1+	1+	2-	2	2+	3-	6	8	14	9	14	C	0.3
8	Q9A	3-	2+	2-	3-	1+	2+	2+	2+	18-	2+	2-	2-	3-	1+	3-	2+	2	9	16	16	16	16		0.5
9		3-	2+	2	3-	2+	2+	2-	2	18	2+	2-	2-	2	2+	3-	1+	2+	9	14	17	15	16		0.5
10	Q5	2	2-	2-	1+	2	1+	2-	2-	13+	2-	1	1	1-	2-	2-	2	1+	6	11	12	10	13	C	0.3
11		4	4	2-	2+	2	1-	2	3-	19+	4-	3+	2-	2	2-	1-	2-	3-	12	26	14	28	13		0.7
12		4-	4	4-	4-	4	2+	1+	1-	23+	3+	3+	3+	4-	4-	2+	2-	1-	17	30	20	33	17		0.9
13	Q1	0+	0+	1	1	1-	0+	0+	0+	4+	0+	0+	1-	1	0+	0+	0	0	3	4	4	6	3	CK	0.0
14	Q2	0+	0	0	1	0	1-	1-	2-	4+	0	0	0	1-	0+	1-	1-	2-	2	5	4	3	5	CK	0.0
15		1+	2	4-	3	3	3	2	1-	19-	1+	2-	3-	3	2+	3	2	1+	11	16	19	19	17		0.6
16	Q8A	1+	3+	2	2+	2	1-	1	0+	13	2+	2+	2+	2	2-	0+	1	0+	7	11	13	20	5	KK	0.3
17	Q3	0+	1-	1+	1+	1	2	1+	2-	10-	0+	1-	1	1	1+	2	2	2	5	9	6	4	10	C	0.2
18		2-	4+	4-	4	3-	2+	4+	4+	27+	2+	4	4-	4-	3	3-	4-	4-	22	37	42	45	35		1.1
19		4+	3	3-	2+	4	2+	3-	2	23+	3+	3-	2	2+	4-	3-	3-	2	15	27	20	23	25		0.9
20	Q4	2-	2-	2-	1-	1-	1+	2	3-	12+	2-	1+	1	0+	1-	2-	2+	3-	6	12	12	10	15	C	0.3
21	Q1	2+	5+	7-	5	4+	5+	6+	6-	41	1+	4+	5+	4+	4	5+	6	5+	59	76	93	66	102		1.7
22	Q2	4+	4-	5-	5	5	5-	3+	3+	34	4+	4-	4	4+	4+	4+	3+	4-	33	48	59	54	53		1.3
23	Q3	5	5	5-	4	4	3	3+	4	33	5-	4+	4-	3+	4-	3	3+	4-	31	45	57	65	38		1.3
24		3+	3	3-	3+	3	4-	3+	3+	26-	3	2+	2	3-	3	3+	3	3+	17	31	21	22	31		0.9
25		2+	4	4-	2	3-	2-	3-	3+	22+	2+	3	3-	2	3-	2	3-	3	14	25	19	23	22		0.8
26	Q5	4-	4-	3-	3-	3+	4+	4+	4	29-	3	3	3-	3-	3+	4	4	4-	22	40	37	23	55		1.1
27	Q4	6-	5-	3	3+	4-	3+	2+	2	28	5-	4-	3-	3-	3	3	2	2+	24	32	22	32	23		1.2
28		4-	2	2-	3	4-	4+	4-	3-	25-	3+	2-	1+	3-	4-	4	3+	3	17	35	23	18	40		0.9
																			15	24.0	23.3	23.8			0.70

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	2	2-	1+	2	1	1-	0+	2-	3-	2-	2	2+	2-	1-	1-	2-
2	2+	2	2	2	2-	2-	3-	2-	3-	2+	2	2+	2-	2-	3-	2
3	1+	1+	0	0+	1+	2-	4	3	2-	1-	1-	0+	1+	2-	5-	3
4	3+	3	3-	3-	3+	5-	3-	2	4-	3+	3-	3	3+	4	3-	2+
5	3-	2+	2+	3+	2+	0	0	2	3	2	2+	3-	2-	1-	1-	2-
6	2	3	2+	3+	3+	2+	3	3+	3-	3+	3-	3-	3-	2+	3	4-
7	1	1-	1-	1	2-	2-	2	2+	1+	2-	2-	1+	2-	2+	3-	3
8	2+	1+	1+	2+	1+	3-	2+	2	2+	2	2	3	1+	3-	2+	2
9	2+	2-	2-	2	2+	2+	2-	2+	3-	2	2-	2	2+	3-	1+	2+
10	1+	1-	1	1-	1+	2-	2	1+	2	1+	1+	1-	2	2-	2+	1+
11	3	3+	1+	2	1+	1-	2	3-	4-	3+	2-	2	2	1-	1+	2+
12	3	3	3+	4-	4-	3-	1+	1-	3+	4-	3+	4-	3+	2+	2-	1-
13	0+	0	1-	1	0+	0+	0	0	0+	1-	1-	1+	1-	0+	0	0+
14	0	0	0	1-	0	1	1-	2-	0+	0	0	1-	0+	1-	1-	1+
15	1-	2-	3	3	2+	3	2	1	2-	2-	3-	3	2+	3	2+	2-
16	2-	2+	2	2	2	0+	1	0+	3-	3-	3-	2	2-	1-	1	0+
17	0+	1-	1	1	1+	2	2	2-	1-	1-	1+	1+	2-	2-	2-	2+
18	2-	4	3+	4-	3	2+	4	4-	3-	4	4	4	3	3-	3+	3+
19	3+	3-	2	2	4-	3-	3-	2	3	2+	2+	2+	4-	3-	3-	2
20	2-	1+	1	0+	1-	2	2	3-	2	2-	1-	1-	1-	1+	2+	3-
21	1+	4	6-	5-	4-	5	6-	5-	1+	5-	5+	4+	4	6-	7-	6-
22	4	3	4	5-	4+	4+	3	4-	4+	4	4	4	4+	4+	4-	4
23	4+	4	3+	3+	4-	3+	3	4-	5	5-	4	4-	3+	3-	3+	4-
24	3	2+	2+	3-	3	3+	3	3+	3	3-	2	2+	3-	3+	3	3+
25	2	3+	3	2	3-	2	2+	3	2+	3	3-	2	3-	2-	3-	3
26	3+	3	3-	3-	4-	4	4	4-	3	3	2+	2+	3+	4-	4+	4-
27	5-	4-	3	2+	3-	3-	2	2+	5-	4-	3-	3	3	3	2	2+
28	3+	1+	1+	3-	3+	4-	3+	3-	4-	2	2-	2+	4-	4	3+	3+

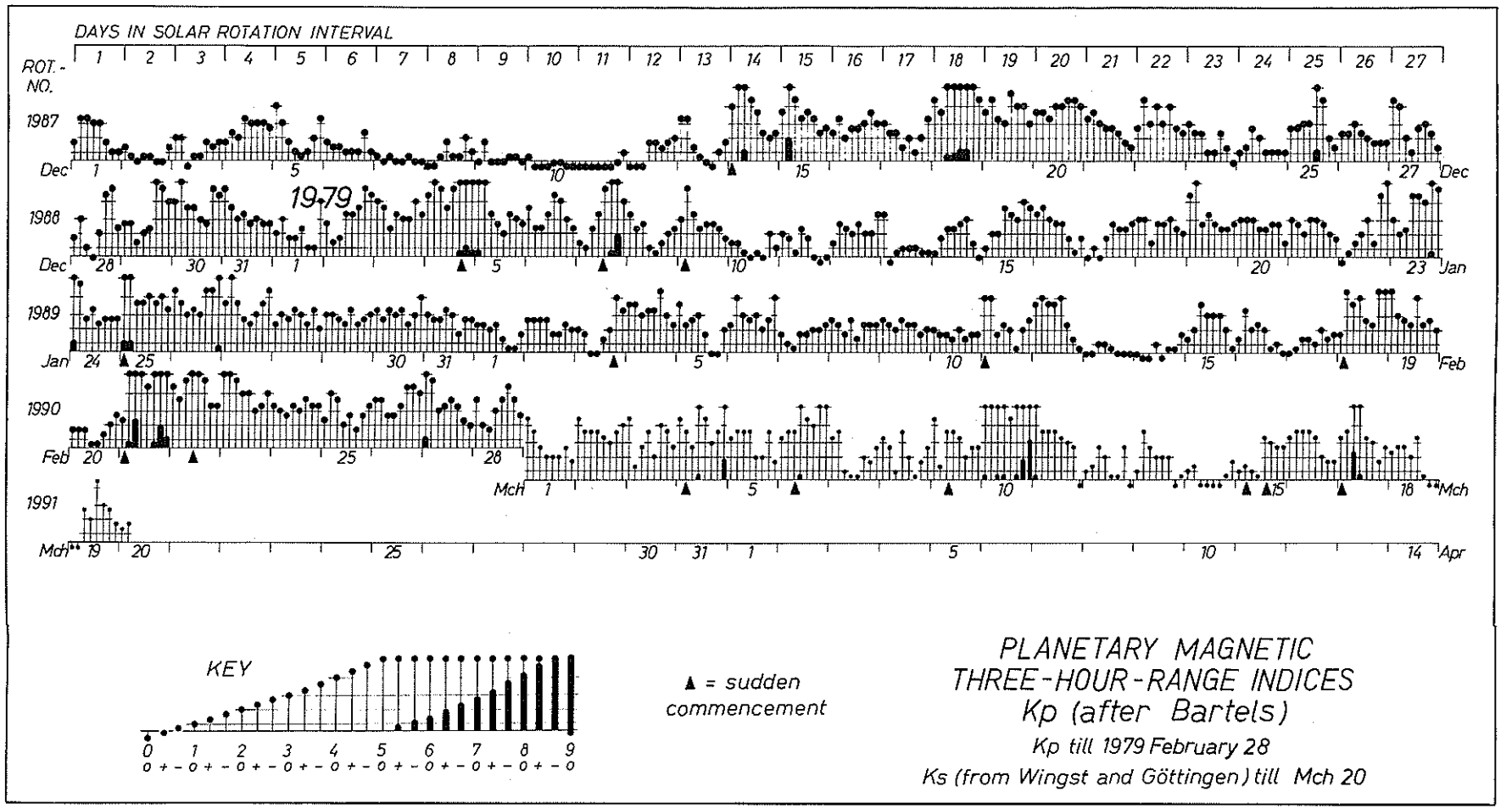
Quiet days (Q) and disturbed days (D), geomagnetic planetary three-hour-range indices (Kp) (integers alone are equivalent to those normally given with a small zero), magnetic character figures (Cp), and average amplitude (Ap) (unit 2γ) prepared by Geophysikalisches Institut at the University of Göttingen, 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), "antipodal", 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	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB
1	33	12	88	9	6	4	21	13	13	11	10	6
2	27	15	94	82	5	4	20	12	10	3	19	10
3	15	41	83	31	11	16	11	8	12	5	19	9
4	3	55	96	26	80	30	8	17	5	12	45	19
5	6	21	7	38	53	22	7	8	6	10	23	9
6	7	9	5	8	13	16	14	4	2	5	18	16
7	9	5	7	11	14	7	6	4	9	2	32	6
8	20	5	16	10	14	6	24	5	14	3	8	9
9	14	6	85	4	8	5	31	11	8	3	15	9
10	12	36	10	24	10	6	12	15	16	1	4	6
11	7	64	30	17	6	11	12	5	10	1	4	12
12	3	29	18	10	4	21	13	14	53	4	10	17
13	12	24	11	7	20	13	6	8	22	7	5	3
14	10	51	9	4	48	6	5	5	11	28	8	2
15	17	19	5	6	6	3	3	5	8	28	15	11
16	24	8	7	6	6	4	6	4	6	14	12	7
17	25	7	8	9	6	9	8	5	6	9	7	5
18	24	19	5	11	18	24	3	32	5	48	11	22
19	15	38	4	17	11	11	2	22	13	24	19	15
20	9	23	8	11	5	3	5	9	22	26	12	6
21	7	9	26	33	6	6	9	13	16	12	11	59
22	13	8	24	15	8	6	12	10	28	19	14	33
23	15	22	24	18	8	4	11	6	12	7	27	31
24	6	48	26	19	6	4	10	5	18	6	23	17
25	3	17	10	24	8	9	36	7	60	21	34	14
26	49	18	7	46	5	4	36	18	33	8	28	22
27	70	16	5	15	4	29	51	23	17	14	23	24
28	17	12	7	12	6	124	50	14	5	14	13	17
29	14	6	8	32	4	40	109	16	4	20	13	
30	16	58	18	31	3	31	11	25	5	27	16	
31	8		12		2	45		20		18	13	
MEAN	16	23	25	20	13	17	18	12	15	13	16	15

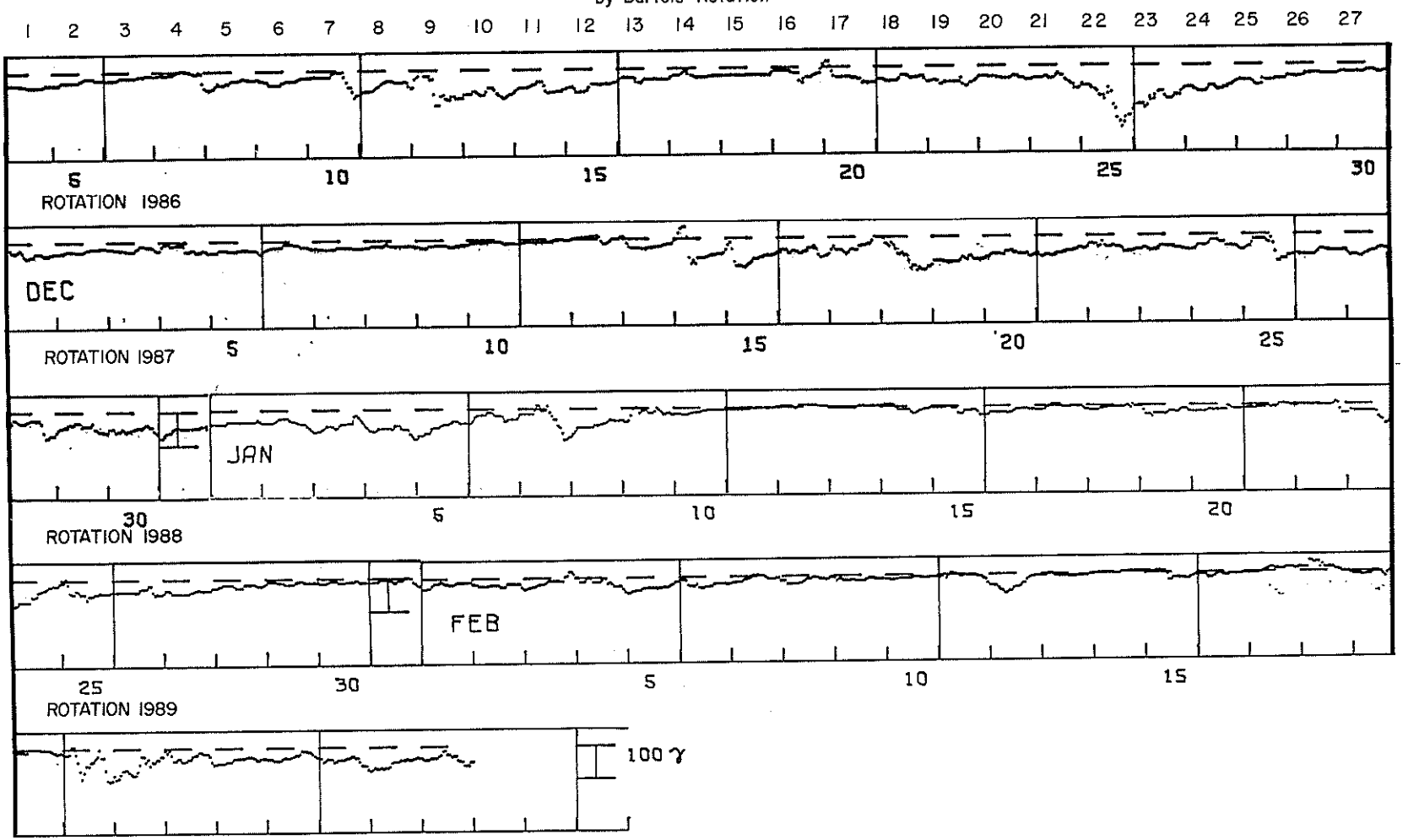
GEOMAGNETIC ACTIVITY INDICES



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.

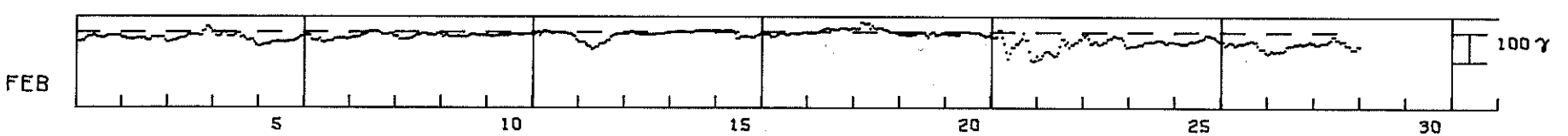
HOURLY EQUATORIAL Dst VALUES (PROVISIONAL)

FEBRUARY 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	-36	-34	-29	-29	-21	-15	-14	-13	-9	-15	-19	-20	-22	-20	-19	-14	-12	-12	-13	-12	-12	-12	-13	-20
2	-22	-22	-26	-27	-24	-24	-24	-20	-20	-21	-20	-23	-29	-31	-26	-18	-15	-17	-20	-17	-16	-20	-29	-36
3	-35	-30	-28	-26	-26	-22	-19	-18	-18	-15	-10	-9	-8	-10	-9	-11	-13	-12	2	6	16	15	9	0
4	-3	-13	-17	-12	-4	1	-6	-14	-14	-15	-13	-9	-3	-5	-20	-14	-22	-29	-26	-25	-26	-36	-44	-49
5	-47	-42	-40	-38	-38	-38	-34	-32	-31	-30	-35	-32	-34	-35	-34	-30	-29	-29	-27	-23	-20	-14	-14	-10
6	-8	-10	-13	-27	-31	-31	-29	-22	-33	-37	-33	-29	-30	-28	-27	-21	-19	-21	-20	-19	-20	-25	-25	-19
7	-17	-16	-16	-15	-14	-10	-8	-6	-3	3	4	2	0	1	-1	-5	-10	-10	-11	-8	-4	-8	-15	-13
8	-15	-24	-27	-23	-22	-23	-24	-20	-18	-14	-10	-8	-7	-4	-3	-5	-11	-12	-12	-13	-9	-4	-2	-9
9	-16	-10	-10	-16	-17	-16	-16	-13	-12	-18	-17	-15	-17	-14	-10	-7	-9	-10	-13	-13	-10	-10	-12	-14
10	-14	-16	-15	-13	-12	-10	-10	-10	-10	-12	-10	-8	-5	-5	-6	-10	-11	-10	-8	-6	-6	-5	-8	-11
11	-8	-3	2	-12	-2	6	1	-2	-3	-7	-6	-1	-1	-2	-1	-2	-4	-7	-9	-10	-13	-16	-26	-34
12	-36	-37	-37	-42	-48	-51	-58	-54	-48	-49	-40	-37	-37	-34	-28	-25	-16	-11	-7	-6	-4	-4	-4	-4
13	-4	-3	2	3	-3	-8	-8	-9	-10	-9	-7	-7	-10	-10	-9	-7	-5	-5	-4	-5	-4	-1	-1	1
14	0	2	2	3	1	1	2	1	-2	-3	-3	1	5	5	6	6	6	5	4	5	4	4	6	3
15	6	4	1	4	8	6	4	2	1	-5	-24	-23	-14	-15	-15	-17	-16	-18	-20	-16	-12	-9	-6	-5
16	-7	-7	-5	-11	-16	-16	-15	-10	-6	-2	-3	-10	-12	-9	-4	-4	-6	-7	-6	-4	-2	0	-3	-6
17	-5	-3	-2	-1	0	2	6	9	11	13	10	7	7	6	6	9	13	13	13	10	7	10	13	14
18	9	11	12	33	30	25	29	26	9	20	12	8	13	10	9	5	3	1	-3	0	-2	0	-7	-11
19	-11	-9	-9	-13	-10	-9	-8	-8	-3	-1	-1	-3	-2	-12	-18	-6	0	-3	-11	-9	-7	-3	-3	-6
20	-8	-11	-11	-9	-10	-13	-9	-1	2	2	1	-2	-4	-5	-3	-5	-5	-7	-11	-13	-17	-12	-10	-18
21	-20	-17	-14	7	4	-18	-40	-66	-90	-68	-49	-53	-38	-37	-30	-22	-1	-28	-27	-64	-93	-98	-92	-78
22	-90	-86	-76	-65	-62	-62	-70	-76	-81	-76	-67	-45	-22	-25	-41	-32	-52	-40	-42	-33	-33	-23	-25	-5
23	-14	-7	-22	-39	-36	-31	-32	-40	-43	-37	-32	-31	-23	-19	-18	-12	-15	-19	-18	-15	-25	-41	-50	-47
24	-45	-45	-45	-44	-40	-41	-40	-33	-31	-30	-30	-32	-33	-27	-25	-26	-30	-33	-38	-38	-31	-30	-34	-37
25	-34	-35	-40	-39	-39	-41	-34	-29	-33	-31	-28	-26	-22	-22	-18	-11	-10	-13	-16	-14	-21	-27	-32	-32
26	-35	-43	-39	-34	-35	-38	-45	-41	-37	-37	-37	-35	-32	-31	-27	-26	-34	-33	-43	-55	-57	-57	-66	-72
27	-66	-61	-66	-66	-61	-67	-61	-64	-58	-47	-43	-45	-42	-38	-38	-39	-35	-41	-41	-35	-34	-30	-37	-36
28	-41	-40	-41	-35	-34	-35	-34	-28	-24	-13	-12	-25	-25	-33	-28	-31	-41	-46	-48	-57	-59	-56	-47	-48



PRINCIPAL MAGNETIC STORMS

FEBRUARY 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	3	1824	SC*	- 8 *	+33 *	+13 *	06(6)	5	40	270	280	06	23
JAI	17.3N	3	1823	SC	- .7	27	- 6	--	-	4	96	40	05	03
SHL	14.6N	3	1823	SC	- .2	24	3	--	-	4	91	37	05	03
UJJ	13.5N	3	1823	SC	- .3	32	- 7	--	-	3	103	33	05	03
ABG	09.5N	3	1823	SC	- .6	25	- 5	03(7)	5	3	122	32	05	03
GUA	04.0N	3	1823	SC	--	+17	- 4	04(1)	5	--	110	40	04	18
ANN	01.4N	3	1823	SC	- 1.2	33	18	26(6,7)	5	3	172	50	05	03
HUA	00.6S	3	1824	SC	5	150	12	04(6)	6	12	398	42	04	23
TRD	01.2S	3	1823	SC	--	29	35	--	-	--	--	--	05	03
KGL	56.5S	3	1819	SC	+21	+45	+16	03(7)	5				04	09
SIT	60.1N	11	0148	SC	+ 2	-10	- 2	12(4)	6	50	370	340	12	20
NEW	55.1N	11	0147	SC*	2	18	3	12(3)	5	26	79	116	12	21
HON	21.1N	11	0148	SC*	- 1	+ 4	+ 2	11(1,2)	3	1	37	8	11	14
JAI	17.3N	11	2000	..	..	..	..	--	-	3	71	27	12	22
SHL	14.6N	11	2000	..	..	..	..	--	-	4	89	28	12	22
UJJ	13.5N	11	2000	..	..	..	..	--	-	2	66	27	12	22
ABG	09.5N	11	2000	..	..	..	..	04(5,6)	5	2	97	30	12	22
GUA	04.0N	11	0147	SC*	--	+33	-11							
ANN	01.4N	11	2000	..	..	..	..	28(2,4,5,6,7)	4	4	167	40	12	22
HUA	00.6S	11	0148	SC	1	22	4	12(5,6)	5	11	350	70	12	21
TRD	01.2S	11	2000	..	..	..	..	--	-	--	--	--	12	22
KGL	56.5S	11	0145	SC*	+33	-24	+16	11(1) 12(2,4)	4				12	21
HUA	00.6S	15	1347	..	..	..	..	15(5,6,7)	5	8	212	32	15	23
COL	64.6N	18	0304	SC*	-10	+52	-15	19(5)	6	74	820	380	19	17
JAI	17.3N	18	0306	SC	- .8	17	- 5	--	-	5	97	30	19	03
SHL	14.6N	18	0306	SC	--	--	--	--	-	5	103	32	19	03
UJJ	13.5N	18	0306	SC	--	46	-11	--	-	4	107	25	19	03
ABG	09.5N	18	0306	SC	--	--	--	11(1,2)	4	2	117	33	19	03
GUA	04.0N	18	0305	SC*	+ 1	+67	-21	18(2)	5	--	160	60	19	15
ANN	01.4N	18	0306	SC	- 2.3	80	29	--	-	4	180	73	19	03
TRD	01.2S	18	0306	SC	--	--	--	--	-	4	232	--	19	03
PMG	18.6S	18	0305	SC	+ .5	+48	+48	18(2)	5	9	130	90	19	00
HER	33.7S	18	0305	SC*	+ 6	+21	+23	18(4)	5	32	113	64	19	19
GNA	43.3S	18	0305	SC*	+ 3.5*	+35	+24 *	18(2)	5	19	90	100	19	18
TOO	46.7S	18	0305	SC	+30	+47	+11	18(3)	5	20	130	20	19	16
KGL	56.5S	18	0305	SC*	+49	+53	+22	18(4,7,8)	4				19	12
KGL	56.5S	18	2027	SC	- 8	+13		18(7,8)	4				19	12
COL	64.6N	21	0301	SC*	+17	+115	+30	21(3,7,8) 22(3,4) 23(4,5)	6	172	1210	780	24	18
SIT	60.1N	21	0303	SC*	- 4 *	+25 *	+ 4 *	22(4)	7	110	650	590	28	23
NEW	55.1N	21	0301	SC*	1	26	3	21(3) 22(4)	6	60	287	252	24	02
WIT	54.2N	21	0302	SC	- 6	+45		21(3,6,7)	6	38	225	65	23	14
FRD	49.6N	21	0302	SC	+ 2	+30	- 6	21(3)	6	25	171	85	28	17
SJG	29.9N	21	0302	SC	+ .5	+18	+ 4	21(7)	7	13	173	51	23	23
HON	21.1N	21	0301	SC	+ 1	+ 6	+ 3	21(3,7)	6	7	143	22	23	23
JAI	17.3N	21	0300	SC	- 1.0	17	- 5	--	-	7	181	53	24	04
SHL	14.6N	21	0300	SC	- .4	23	2	--	-	6	159	63	24	04
UJJ	13.5N	21	0300	SC	--	--	--	--	-	5	212	50	24	04
ABG	09.5N	21	0300	SC	- .8	17	- 6	18(3)	5	6	228	50	24	04
GUA	04.0N	21	0302	SC*	+ 1	+43	-12	23(1)	6	10	240	60	24	15
ANN	01.4N	21	0300	SC	- 1.3	21	9	--	-	5	324	108	24	04
HUA	00.6S	21	0302	SC	1	25	5	21(6,7)	8	20.	806	79	23	23
TRD	01.2S	21	0300	SC	--	--	--	--	-	--	--	--	24	04
API	16.0S	21	0302	SC	+ 1	+22	-10	21(3)	6	12	175	45	24	06
PMG	18.6S	21	0301	SC	+ .1	+22	+18	21(3)	7	11	190	120	24	00
HER	33.7S	21	0302	SC*	+ 2	+27	+18	21(6,7,8)	6	37	154	194	24	12
GNA	43.3S	21	0304	SC*	- 6.4*	-17 *	-28 *	21(7)	6	44	120	140	23	22
TOO	46.7S	21	0302	SC*	- 5	+31 *	+ 8	21(3,7)	6	34	180	100	23	23
KGL	56.5S	21	0302	SC*	+45	-48	-22	21(7)	8				24	09
KGL	56.5S	21	1550	SC	+41	+111	+33	21(7)	8				24	09
NEW	55.1N	25	11--	..	..	..	..	27(1)	5	34	146	174	28	04
JAI	17.3N	25	0400	..	..	..	..	--	-	7	89	44	28	03
SHL	14.6N	25	0400	..	..	..	..	--	-	5	75	86	28	03
UJJ	13.5N	25	0400	..	..	..	..	--	-	--	101	36	28	03
ABG	09.5N	25	0400	..	..	..	..	21(3,6,7,8)	6	6	110	36	28	03
ANN	01.4N	25	0400	..	..	..	..	--	-				28	03
TRD	01.2S	25	0400	..	..	..	..	--	-				28	03
COL	64.6N	26	05--	..	..	..	..	26(4)	6	148	930	530	27	18
GUA	04.0N	26	0022	..	..	..	..	27(1)	5	--	110	30	27	18
JAI	17.3N	28	0927	SC	- .2	8	- 1	--	-	4	82	24	01	03
SHL	14.6N	28	0927	SC	--	--	--	--	-	4	70	19	01	03
UJJ	13.5N	28	0927	SC	- .1	10	- 2	--	-	3	99	21	01	03
ABG	09.5N	28	0927	SC	- .1	8	- 1	22(4) 23(1,2,3)	6	3	105	24	01	03
ANN	01.4N	28	0927	SC	--	--	--	--	-				01	03
TRD	01.2S	28	0927	SC	--	--	--	--	-				01	03

Reports were received from the following observatories:

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

SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

FEBRUARY 1979

PRELIMINARY REPORT ON RAPID MAGNETIC VARIATIONS

The meaning of the station symbols is given in the IAGA-News nr. 16.
Times of ssc are mean values.

Sudden commencements followed by a magnetic storm or a period of storminess (ssc).

03	1823	A:	ESK	DOU	VIC	OTT	COI	TOL	LMM ;			
		B:	WNG	WIT	HAD	FUR	MMB	AQU	EBR	KSA	CZT	KGL	DRV?;
		C:	NGK	HAZ	KNY							
11	0148	A:	DOU	VIC	TOL	LMM ;						
		B:	SOD	WNG	WIT	FUR	AQU	EBR	COI	CZT	KGL	DRV
		C:	NGK	HAD	HAZ	(si:	A:	DOB)				
18	0304	A:	SOD	DOB	NUR	ESK	WNG	WIT	DOU	VIC	FUR	AQU	EBR
			TOL	KSA	LMM	KGL ;							
		B:	HAD	OTT	MMB	CZT	DRV ;						
		C:	NKG	HAZ	(si:	A:	KNY -	pil:	A:	MMB)			
21	0302	A:	SOD	DOB	NUR	ESK	WNG	WIT	HAD	DOU	VIC	FUR	DOU
			OTT	EBR	TOL	FRD	KSA	LMM	CZT	KGL ;			
		B:	NKG	HAD	MMB	AQU	KAK	HAZ	KNY	DRV ;			
21	1551	A:	KGL;										
		B:	WNG	EBR ;									
		C:	DRV	(si:	A:	VIC;	B:	LMM	-bs:	A:	KSA)		

Solar-flare effects (sfe)

Effects confirmed by ionospheric or solar observations are underlined.

08	0206	-0230	KNY	16	0146	-0315	MMB	KAK	HAZ	KNY	20	2349	-2357	HAZ	
10	1120	-1143	EBR ?	17	0232	0320	MMB				21	0043	-0054	HAZ	
10	1245	-1320	WNG	18	0641	-0705	HAZ	KNY			21	2355	-0010	HAZ	KNY
12	0211	-0230	HAZ	18	2340	-2359	HAZ				22	0033	-0105	MMB	HAZ KNY
12	1157	-1238	WNG	19	0354	-0403	HAZ				22	0505	-0530	HAZ	(KNY)
13	0448	-0512	HAZ KNY	19	0439	-0454	HAZ				23	0103	-0107	HAZ	
14	0104	-0124	HAZ	20	2303	-2314	HAZ								

Very unusual events : none

RADIO PROPAGATION QUALITY INDICES

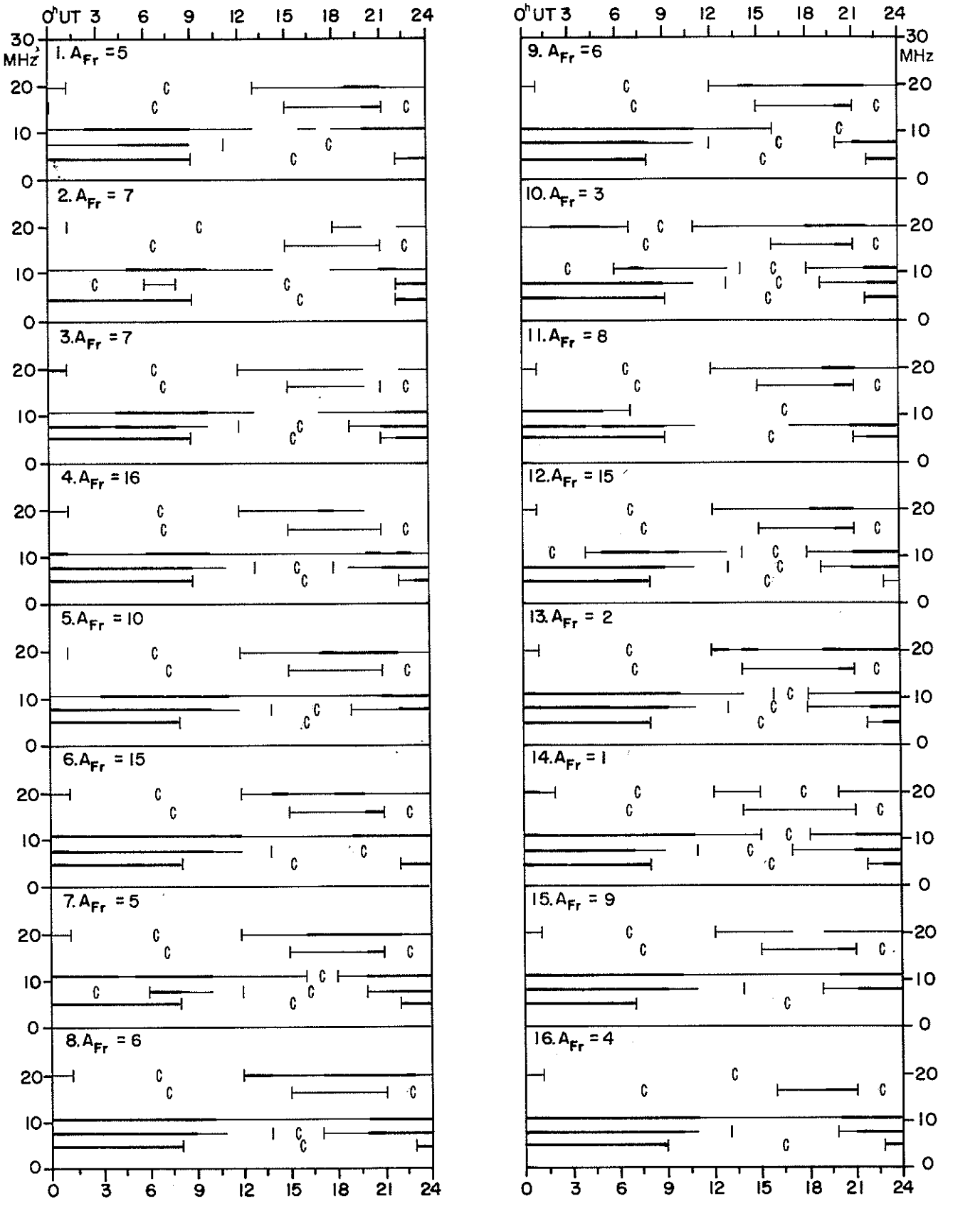
FEBRUARY 1979

Quality Indices calculated for reception at Lüchow

DAY	TOKYO	NORFOLK	MOSCOW	CANBERRA	BRACKNELL
1	5.4	5.1	11.7	2.7	12.7
2	5.6	5.1	12.0	2.7	12.6
3	5.8	5.1	12.0	3.1	12.6
4	5.8	5.2	12.3	3.3	12.7
5	4.5	5.9	12.9	3.0	13.1
6	5.4	5.8	13.0	3.6	12.7
7	6.2	6.0	12.7	3.6	12.7
8	6.4	6.0	12.7	3.4	13.0
9	6.2	5.9	12.2	3.6	13.1
10	6.7	5.3	12.2	4.1	13.1
11	7.0	5.4	12.4	3.0	13.1
12	6.5	5.6	12.7	3.5	13.0
13	6.6	5.3	12.0	3.8	12.7
14	7.2	6.1	12.2	4.8	13.3
15	7.1	6.0	12.8	5.1	13.1
16	6.6	6.1	12.2	4.4	13.1
17	6.6	5.8	12.6	4.6	13.2
18	6.4	5.8	12.3	4.4	13.2
19	6.5	6.2	12.7	3.8	13.0
20	7.1	6.4	12.8	4.4	13.1
21	4.7	5.1	12.1	2.7	12.7
22	5.0	5.4	12.4	3.2	11.8
23	7.6	6.3	12.9	4.0	12.9
24	8.3	6.4	12.5	4.2	12.5
25	7.4	6.2	11.8	3.9	12.7
26	5.9	5.7	12.2	2.9	12.4
27	5.5	6.1	12.4	3.1	12.5
28	6.4	6.4	11.9	4.1	12.5
MEAN	6.3	5.8	12.4	3.7	12.8

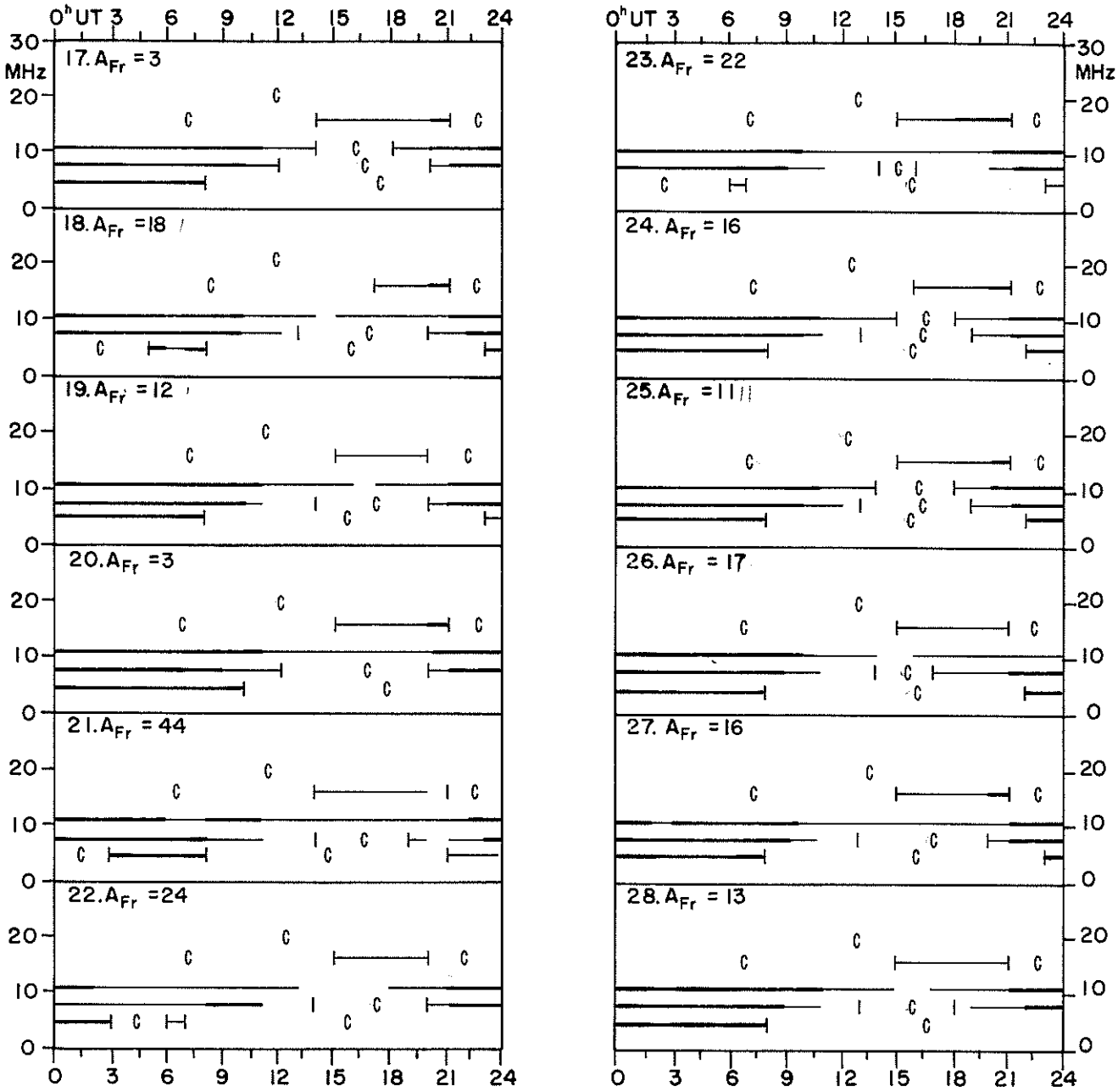
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

FEBRUARY 1979



TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

FEBRUARY 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

USCOMM-NOAA-Asheville, NC--5-79-950

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."