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NO. 415 MARCH 1979

Part I (Prompt Reports)

DATA FOR
FEBRUARY 1979
JANUARY 1979

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BOULDER, COLORADO

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SOLAR-GEOPHYSICAL DATA

No. 415

Issued in two parts

Helen E. Coffey, Editor

J. Virginia Lincoln, Chief
Solar-Terrestrial Physics Division

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---- = no data available.
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FEBRUARY 1979 DATA

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AND WORLD DAYS SERVICE
FEBRUARY 1979

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						S25W56	5	0	0			S25W56	Q	
						S23W46	0	0	0			S23W46	Q	
						N17E28	0	0	0			N17E28	Q	
						N06E53	2	0	0			N06E53	Q	
						N20E37	0	0	0			N20E37	Q	
						S14E54	1	0	0			S14E54	Q	
						S38E34	0	0	0			S38E34	Q	
						N13E42	0	0	0			N13E42	Q	
						N18W15	0	0	0			N18W15	Q	
						S21E68	0	0	0			S21E68	Q	
033	02	01	128	190	008	S26W71	0	0	0	PRESTO BOULDER	02	S26W71	Q	SOLQUIET MAGQUIET
						S24W58	1	0	0	01/1743Z SOFLARE		S24W58	Q	
						N15E13	0	0	0	M2/2B S20E55		N15E13	Q	
						N08E22	6	0	0	01/0600Z DURATION		N08E22	Q	
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						S13E41	4	1	0			S13E41	E	
						N14E27	1	0	0			N14E27	Q	
						S18E56	0	0	0			S18E56	Q	
034	03	02	190	190	005	S25W85	0	0	0		03	S25W85	Q	SOLQUIET MAGQUIET
						S23W70	0	0	0			S23W70	Q	
						N16W01	0	0	0			N16W01	Q	
						N07E08	1	0	0			N07E08	CA	
						N20E06	0	0	0			N20E06	Q	
						S13E28	0	0	0			S13E28	CA	
						N13E11	0	0	0			N13E11	Q	
						S18E43	0	0	0			S18E43	Q	
						N14E75	0	0	0			N14E75	Q	
						N37E76	0	0	0			N37E76	Q	
						S21E80	0	0	0			S21E80	Q	
035	04	03	200	196	006	S23W84	0	0	0		04	S23W84	Q	SOLQUIET MAGQUIET
						N07W07	2	0	0			N07W07	A	
						N20W07	0	0	0			N20W07	Q	
						S14E14	2	0	0			S14E14	A	
						N13E02	0	0	0			N13E02	Q	
						S20E30	1	0	0			S20E30	Q	
						N13E63	1	0	0			N13E63	CA	
						N35E52	1	0	0			N35E52	Q	
						S22E65	0	0	0			S22E65	Q	
						N15E73	1	0	0			N15E73	CE	
036	05	04	227	193	016	N16W24	1	0	0		05	N16W24	Q	SOLQUIET MAGQUIET
						N07W19	3	0	0			N07W19	E	
						N20W21	3	0	0			N20W21	Q	
						S13E01	4	0	0			S13E01	CA	
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037	06	05	171	203	010	N18W36	0	0	0	PRESTO TOYOKAWA	06	N18W36	Q	SOLQUIET MAGQUIET
						N07W32	6	0	0	05/0750Z TENFLARE		N07W32	E	STRATWARM /TUESDAY/ STRATWARM EXISTS.
						S12E12	1	0	0	190 FLUX UNITS		S12E12	Q	STRONG WARMING IN MID STRATOSPHERE
						N14W25	0	0	0	05/0638Z DURATION		N14W25	Q	OVER NORTHERN SIBERIA.
						N36E27	0	0	0	07 MINUTES		N36E27	Q	
						S20E40	9	1	0			S20E40	A	
						N16E42	3	0	0			N16E42	E	

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038	07	06	264	212	015	N19W49	0	0	0		07	N19W49	Q	SOLQUIET MAGQUIET
						N08W45	3	1	0			N08W45	E	STRATWARM /WEDNESDAY/ STRATWARM
						S13W24	1	0	0			S13W24	D	EXISTS. STRONG WARMING IN MID
						N14W38	1	0	0			N14W38	Q	STRATOSPHERE OVER SIBERIA MOVING
						S22W09	0	0	0			S22W09	Q	NORTHEASTWARD.
						N36E15	0	0	0			N36E15	Q	
						S20E27	8	0	0			S20E27	A	
						N16E29	3	0	0			N16E29	Q	
						N19E10	0	0	0			N19E10	Q	
						N19W33	0	0	0			N19W33	Q	
						S19E40	0	0	0			S19E40	Q	
						S16E79	0	0	0			S16E79	Q	
039	08	07	297	209	009	N15W59	0	0	0		08	N15W59	Q	SOLQUIET MAGQUIET
						N08W59	1	0	0			N08W59	Q	
						S13W36	0	0	0			S13W36	Q	
						N15W52	0	0	0			N15W52	Q	
						S25W24	0	0	0			S25W24	Q	
						N35E03	1	0	0			N35E03	Q	
						S20E13	2	1	0			S20E13	A	
						N14E16	1	0	0			N14E16	Q	
						N15E03	0	0	0			N15E03	Q	
						N20W45	0	0	0			N20W45	Q	
						S18E28	1	0	0			S18E28	Q	
						S19E65	2	0	0			S19E65	Q	
040	09	08	241	216	009	N15W73	0	0	0	PRESTO TOYOKAWA	09	N15W73	Q	SOLQUIET MAGQUIET
						N08W72	1	0	0	08/0224Z TENFLARE		N08W72	Q	STRATWARM /FRIDAY/ STRATWARM EXISTS.
						S12W51	0	0	0	140 FLUX UNITS		S12W51	CE	STRATOSPHERIC WARMING SPREADING OVER
						S20W33	0	0	0	08/0201Z IN PRO-		S20W33	Q	POLAR AREA.
						S19E01	2	1	0	GRESS 25 PER-		S19E01	A	
						N16E04	4	1	0	CENT EAST		N16E04	A	
						N15W08	0	0	0			N15W08	Q	
						S19F13	1	0	0			S19E13	CE	
						S19E51	1	0	0			S19E51	CE	
						S35E64	0	0	0			S35E64	Q	
						N12E76	0	0	0			N12E76	Q	
						N15W68	2	1	0			N15W68	Q	
041	10	09	187	204	006	N08W86	1	0	0		10	N08W86	DA	SOLQUIET MAGQUIET
						S12W66	0	0	0			S12W66	Q	STRATWARM /SATURDAY/ STRATWARM EXISTS.
						S20W12	4	0	0			S20W12	A	STRATOSPHERIC WARMING SPREADING OVER
						N16W10	13	1	0			N16W10	A	POLAR REGION.
						N16W22	0	0	0			N16W22	O	
						S19E01	2	0	0			S19E01	E	
						S18E38	0	0	0			S18E38	E	
						S36E51	0	0	0			S36E51	O	
						N11E63	0	0	0			N11E63	Q	
042	11	10	179	204	005	S14W84	0	0	0		11	S14W84	Q	SOLALERT MAGQUIET
						S20W25	3	0	0			S20W25	DA	
						N16W27	10	1	0			N16W27	DP	
						S20W12	0	0	0			S20W12	DE	
						S17E23	0	0	0			S17E23	CE	
						S36E39	0	0	0			S36E39	DE	
						N11E05	0	0	0			N11E05	Q	
						S22E42	0	0	0			S22E42	Q	
						N17E62	0	0	0			N17E62	Q	
043	12	11	255	210	007	S21W38	1	0	0		12	S21W38	E	SOLALERT 12/XX MAGQUIET
						N15W40	7	1	0			N15W40	A	
						S20W25	1	0	0			S20W25	CE	
						S16E10	1	0	0			S16E10	E	
						S35E25	1	0	0			S35E25	E	
						N11E37	0	0	0			N11E37	Q	
						S22E31	0	0	0			S22E31	Q	
						N12E47	0	0	0			N12E47	Q	
						S16W41	0	0	0			S16W41	Q	
						S13E08	0	0	0			S13E08	Q	
						S10E32	0	0	0			S10E32	Q	
						N19E78	0	0	0			N19E78	Q	

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044	13	12	257	199	018	S22W52	0	0	0	PRESTO BOULDER	13	S22W52	0	SOLALERT MINOR 13 MAGQUIET
						N15W52	4	2	0	SOFLARE M2/1B		N15W52	A	
						S20W38	1	0	0	S35E16 12/1946Z		S20W38	0	
						S17W02	1	0	0	DURATION 22 MINUTES		S17W02	E	
						S36E12	2	1	0	TENFLARE 250 FLUX		S36E12	A	
						N10E24	0	0	0	UNITS 12/1950Z		N10E24	0	
						S18W56	0	0	0	DURATION 5 MINUTES		S18W56	0	
						S12W05	0	0	0			S12W05	0	
						S11E18	0	0	0			S11E18	Q	
						N19E65	1	0	0			N19E65	E	
						N27W18	0	0	0			N27W18	Q	
						S27E23	0	0	0			S27E23	0	
						N20E27	0	0	0			N20E27	Q	
						N02E68	0	0	0			N02E68	0	
045	14	13	219	202	005	S21W64	0	0	0		14	S21W64	Q	SOLALERT MINOR 14 MAGQUIET
						N15W68	3	1	0			N15W68	A	
						S19W53	0	0	0			S19W53	Q	
						S17W16	2	1	0			S17W16	Q	
						S37W00	3	0	0			S37W00	E	
						N11E10	0	0	0			N11E10	Q	
						S23E05	0	0	0			S23E05	Q	
						S17W70	0	0	0			S17W70	0	
						S13W18	0	0	0			S13W18	Q	
						S10E04	0	0	0			S10E04	0	
						N19E51	3	1	0			N19E51	A	
						N22E13	0	0	0			N22E13	Q	
						N03E56	0	0	0			N03E56	Q	
						S16E47	0	0	0			S16E47	0	
						N16E72	0	0	0			N16E72	Q	
046	15	14	236	229	003	N15W83	3	1	0		15	N15W83	A	SOLALERT MINOR 15 MAGQUIET
						S18W70	0	0	0			S18W70	Q	
						S17W30	0	0	0			S17W30	Q	
						S36W12	0	0	0			S36W12	Q	
						N11W02	0	0	0			N11W02	Q	
						N19E37	2	0	0			N19E37	Q	
						N22E01	0	0	0			N22E01	Q	
						N03E43	2	0	0			N03E43	Q	
						S16E34	1	0	0			S16E34	Q	
						N16E61	5	1	0			N16E61	A	
						S18W21	0	0	0			S18W21	Q	
						S22E09	0	0	0			S22E09	Q	
						N18E76	0	0	0			N18E76	E	
						S27E77	0	0	0			S27E77	Q	
047	16	15	232	216	010	S18W83	0	0	0		16	S18W83	Q	PROTON FLARE ALERT 16/XX MAGALERT
						S17W44	0	0	0			S17W44	0	MAJOR 17/18
						S38W30	0	0	0			S38W30	Q	
						N11W16	0	0	0			N11W16	Q	
						N18E25	1	0	0			N18E25	E	
						N22W10	0	0	0			N22W10	Q	
						N01E31	1	0	0			N01E31	E	
						S15E21	0	0	0			S15E21	Q	
						N16E46	6	1	0			N16E46	P	
						S18W37	0	0	0			S18W37	Q	
						N15E54	1	0	0			N15E54	E	
						S28E64	0	0	0			S28E64	0	
048	17	16	183	214	006	S17W56	0	0	0	PRESTO BOULDER	17	S17W56	0	SOLALERT 17/XX MAGALERT MINOR 17/18
						S38W44	0	0	0	16/0310Z SOFLARE		S38W44	0	
						N11W28	0	0	0	X2/2B N15E48		N11W28	0	
						N19E12	2	1	0	16/0141Z DURATION		N19E12	A	
						N22W24	0	0	0	40 MINUTES		N22W24	Q	
						N01E18	0	0	0	TENFLARE 780 FLUX		N01E18	Q	
						S19E09	0	0	0	UNITS 16/2234Z		S19E09	0	
						N16E34	2	1	1	DURATION 5 MIN-		N16E34	CP	
						N16E43	0	0	0	UTES		N16E43	Q	
						S27E50	2	0	0	TENFLARE 48000 FLUX UNITS 16/0143Z DURATION 30 MINUTES. TOKYO REPORTED 1250 FLUX UNITS AT 16/0141Z, MANILA REPORTED 80000 FLUX UNITS AT 16/0144Z, PALEHUA REPORTED 480000 FLUX UNITS AT 16/0141Z		S27E50	E	

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049	18	17	316	215	008	S15W69	0	0	0	PRESTO TENFLARE	18	S15W69	Q	SOLALERT 18/XX MAGALERT 18/19
						S39W52	0	0	0	17/0019Z 270 FLUX		S39W52	Q	
						N10W40	0	0	0	UNITS. DURATION 5		N10W40	Q	
						N18W02	8	2	0	MINUTES. TENFLARE		N18W02	A	
						N21W36	0	0	0	17/0232Z 500 FLUX		N21W36	Q	
						N02E04	1	0	0	UNITS DURATION 5		N02E04	E	
						S16W04	0	0	0	MINUTES.		S16W04	Q	
						N17E24	9	0	0	PROTON EVENT BEGAN		N17E24	A	
						S22W30	0	0	0	AT 17/1930Z 20		S22W30	Q	
						S24E38	2	0	0	PROTON/CM²/SEC/STER		S24E38	E	
						N08W08	2	0	0	AT >10 MEV. MAX		N08W08	E	
						N22E58	0	0	0	AT 17/2130Z. END		N22E58	Q	
						S24E82	0	0	0	17/2310Z.		S24E82	Q	
050	19	18	292	220	013	S16W81	0	0	0	PRESTO SOFLARE	19	S16W81	Q	PROTON FLARE ALERT 19/XX MAGALERT 20/XX
						S39W66	0	0	0	X1/SB N16E13		S39W66	Q	
						N10W53	0	0	0	18/0639Z DURATION		N10W53	Q	
						N18W18	6	0	1	17 MINUTES		N18W18	A	
						N21W49	0	0	0	SOFLARE X1/2B		N21W49	Q	
						N02W09	1	0	0	N17W13 18/1633Z		N02W09	Q	
						S15W17	0	0	0	DURATION 19 MINUTES		S15W17	Q	
						N17E10	9	1	1	TENFLARE 690 FLUX		N17E10	A	
						S21W46	0	0	0	UNITS 18/1632Z DU-		S21W46	Q	
						S27E24	0	0	0	RATION 5 Minutes		S27E24	E	
						N08W21	0	0	0			N08W21	E	
						N22E44	0	0	0			N22E44	Q	
						S24E69	0	0	0			S24E69	Q	
						N27E56	0	0	0			N27E56	Q	
051	20	19	309	243	016	S38W79	0	0	0		20	S38W79	Q	SOLALERT 20/XX MAGALERT MINOR 20/21
						N18W31	4	1	0			N18W31	A	
						N22W66	0	0	0			N22W66	Q	
						N02W23	0	0	0			N02W23	E	
						S16W31	0	0	0			S16W31	Q	
						N16W02	6	1	0			N16W02	A	
						S27E11	0	0	0			S27E11	E	
						N08W35	0	0	0			N08W35	Q	
						N22E32	0	0	0			N22E32	Q	
						S25E56	0	0	0			S25E56	Q	
						N26E45	0	0	0			N26E45	Q	
						S16E36	1	0	0			S16E36	Q	
						S21W22	0	0	0			S21W22	Q	
						S25E71	0	0	0			S25E71	Q	
052	21	20	241	238	004	N18W45	6	2	0	PRESTO TOYOKAWA	21	N18W45	A	SOLALERT 21/XX MAGALERT MINOR 21/XX
						N21W80	1	0	0	20/2320Z TENFLARE		N21W80	E	
						N03W37	2	1	0	200 FLUX UNITS		N03W37	Q	
						S15W45	0	0	0	20/2216Z DURATION		S15W45	Q	
						N16W16	13	3	0	5 MINUTES		N16W16	A	
						S27W01	0	0	0			S27W01	Q	
						N08W48	0	0	0			N08W48	Q	
						N22E20	1	0	0			N22E20	Q	
						S25E44	0	0	0			S25E44	Q	
						N26E34	0	0	0			N26E34	Q	
						S25E58	0	0	0			S25E58	Q	
						N36E65	0	0	0			N36E65	Q	
053	22	21	250	230	036	N19W57	0	0	0	PRESTO BOULDER	22	N19W57	E	SOLALERT 22/24 MAGALERT 22/24
						S14W57	0	0	0	21/1450Z		S14W57	Q	
						N17W29	8	2	1	SOFLARE X1/1B N17W28		N17W29	A	
						S27W12	0	0	0	21/1413Z DURATION		S27W12	Q	
						N09W61	0	0	0	32 MINUTES		N09W61	E	
						N20E07	0	0	0			N20E07	Q	
						S25E31	0	0	0			S25E31	Q	
						S16E10	0	0	0			S16E10	Q	
						S21W48	1	0	0			S21W48	Q	
						S26E45	0	0	0			S26E45	Q	
						N35E52	0	0	0			N35E52	Q	
						S15W46	0	0	0			S15W46	Q	
054	23	22	219	230	044	N19W70	5	0	0	PRESTO BOULDER	23	N19W70	A	SOLALERT 23/25 MAGALERT 23/25 STRATWARM /FRIDAY/ STRATOSPHERIC POLAR VORTEX SPLIT WITH EASTERLIES OVER POLAR REGION, FURTHER WARMING LIKELY.
						N17W43	11	5	0	22/1430Z		N17W43	A	
						S27W26	0	0	0	SOFLARE M9/1B		S27W26	Q	
						N09W75	2	0	0	N17W35 22/0507Z		N09W75	E	
						N22W05	0	0	0	18 MINUTES DURATION		N22W05	Q	
						S25E18	0	0	0	TENFLARE 240 FLUX		S25E18	Q	
						S16W03	0	0	0	UNITS 22/0506Z		S16W03	Q	
						S21W61	0	0	0	DURATION 22 MINUTES		S21W61	Q	
						S26E32	0	0	0			S26E32	Q	
						N35E39	0	0	0			N35E39	Q	
						S15W61	0	0	0			S15W61	Q	

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055	24	23	223	201	021	N19W84	0	0	0		24	N19W84	E	SOLALERT 24/25 MAGALERT 24
						N18W57	14	2	0			N18W57	DP	STRATWARM /SATURDAY/ STRATWARM
						S27W40	0	0	0			S27W40	Q	EXISTS. INCREASING RIDGING ACROSS
						N09W89	0	0	0			N09W89	Q	POLE WITH RENEWED WARMING OVER ARCTIC
						S25E06	0	0	0			S25E06	Q	SIBERIA.
						S15W15	0	0	0			S15W15	Q	STRATWARM /TUESDAY/ STRATWARM
						S26E19	0	0	0			S26E19	Q	EXISTS. CONTINUED WARMING OVER
						N35E27	0	0	0			N35E27	Q	ARCTIC SIBERIA AND RIDGING ACROSS
						S15W73	0	0	0			S15W73	Q	POLE.
						S20W03	0	0	0			S20W03	Q	
						S22W33	0	0	0			S22W33	Q	
						S22E73	0	0	0			S22E73	Q	
						S21W74	0	0	0			S21W74	Q	
						N12E69	0	0	0			N12E69	Q	
056	25	24	157	186	014	N18W73	9	1	0		25	N18W73	CA	SOLALERT 25 MAGALERT 25/26
						S27W53	0	0	0			S27W53	Q	
						S25W08	0	0	0			S25W08	Q	
						S27E06	2	0	0			S27E06	Q	
						N35E14	0	0	0			N35E14	Q	
						S20W16	1	0	0			S20W16	Q	
						S21W46	0	0	0			S21W46	Q	
						N10E55	1	0	0			N10E55	Q	
						S22E60	1	0	0			S22E60	Q	
						N12E05	0	0	0			N12E05	Q	
057	26	25	158	170	009	N18W85	1	0	0		26	N18W85	A	SOLALERT 26/27 MAGNIL
						S26W64	0	0	0			S26W64	Q	
						S25W19	0	0	0			S25W19	Q	
						S26W04	1	0	0			S26W04	Q	
						N36E02	0	0	0			N36E02	Q	
						S19W28	1	0	0			S19W28	Q	
						S21E48	2	1	0			S21E48	E	
						S33W11	1	0	0			S33W11	A	
						S12W44	1	0	0			S12W44	Q	
						S24E72	1	0	0			S24E72	Q	
058	27	26	171	171	018	S25W76	0	0	0		27	S25W76	Q	SOLNIL MAGQUIET
						S23W33	0	0	0			S23W33	Q	STRATWARM /WEDNESDAY/ STRATWARM
						S26W18	0	0	0			S26W18	Q	EXISTS. WARMING AND ANTICYCLONIC
						N36W12	0	0	0			N36W12	Q	CIRCULATION INTENSIFYING OVER ARCTIC
						S18W41	0	0	0			S18W41	Q	REGION.
						S21E35	3	0	0			S21E35	Q	
						S33W23	1	0	0			S33W23	Q	
						S12W55	0	0	0			S12W55	Q	
						S26E64	9	0	0			S26E64	Q	
						S19E03	0	0	0			S19E03	Q	
						S27E37	0	0	0			S27E37	Q	
059	28	27	152	166	015	S22W88	0	0	0		28	S22W88	Q	SOLQUIET MAGQUIET
						S22W44	0	0	0			S22W44	Q	
						S24W30	0	0	0			S24W30	Q	
						N37W21	1	0	0			N37W21	Q	
						S23E25	0	0	0			S23E25	Q	
						S32W36	2	0	0			S32W36	Q	
						S27E51	0	0	0			S27E51	Q	
						S18W11	4	0	0			S18W11	Q	
						N07E73	0	0	0			N07E73	Q	
						S23E81	1	0	0			S23E81	Q	
060	01	28	143	167	013	S25W56	0	0	0		01	S25W56	Q	SOLQUIET MAGQUIET
						S26W43	0	0	0			S26W43	Q	STRATWARM /THURSDAY/ STRATWARM
						N36W35	0	0	0			N36W35	Q	EXISTS. WARMING AND ANTICYCLONIC
						S21E12	0	0	0			S21E12	Q	CIRCULATION OVER ARCTIC REGION.
						S32W48	0	0	0			S32W48	Q	
						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	

* 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

DAY	1978 FINAL JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	1979 PROVISIONAL JAN	FEB
1	90	128	102	70	85	119	64	42	136	96	109	110	158	116
2	94	120	92	68	89	98	61	48	167	112	122	110	158	127
3	104	130	95	71	93	78	51	38	159	105	125	117	191	148
4	103	142	98	75	92	60	48	62	162	100	129	115	157	123
5	91	137	84	94	89	51	54	74	177	73	121	104	146	134
6	79	129	75	92	85	31	63	66	177	74	108	122	173	146
7	55	122	90	88	75	39	84	58	147	95	112	138	163	144
8	39	90	99	105	63	45	105	62	120	103	118	148	172	142
9	36	97	94	126	62	36	108	64	109	121	108	152	165	139
10	15	102	92	125	60	29	115	67	99	149	120	144	163	137
11	20	112	88	120	63	57	127	58	84	158	118	170	157	137
12	26	115	78	109	66	62	111	71	72	158	99	188	159	138
13	33	96	73	105	74	62	114	93	92	156	90	165	159	152
14	37	82	72	91	74	64	109	93	113	170	78	150	162	163
15	34	65	74	90	78	89	102	77	133	166	59	140	178	161
16	27	64	74	95	91	94	110	52	143	163	77	143	164	159
17	26	58	74	99	86	103	98	50	136	143	92	146	164	160
18	14	57	74	103	89	115	84	50	156	135	93	132	146	162
19	8	56	65	111	84	109	77	42	159	154	86	95	138	166
20	8	58	59	115	74	109	76	30	163	151	76	84	177	169
21	19	65	77	114	76	154	77	30	171	144	68	68	181	171
22	28	73	84	115	74	158	48	36	148	125	77	63	178	155
23	40	76	88	119	73	158	38	45	156	116	55	59	188	127
24	40	91	85	106	82	154	38	48	163	104	61	65	209	99
25	38	94	74	136	85	135	30	55	168	96	85	81	209	88
26	49	90	60	115	88	152	13	45	152	102	101	93	173	108
27	67	85	52	99	97	143	22	57	142	115	118	110	162	97
28	78	88	49	83	93	130	31	57	126	117	118	122	157	95
29	90		48	78	103	115	48	59	122	137	111	135	153	
30	103		45	75	107	103	39	72	94	128	103	159	149	
31	118		58		113		36	100		111		177	130	
MEAN	51.9	93.6	76.5	99.7	82.7	95.1	70.4	58.1	138.2	125.1	97.9	122.7	165.8	138.0

1978 yearly mean = 92.5

DAILY SOLAR FLUX AT 2800 MHz
OTTAWA ARO

FLUX ADJUSTED TO 1 A.U., S_a

DAY	1978 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	1979 JAN	FEB
1	126.9*	139.1	136.3	130.0	181.4	149.1	142.9	106.0	159.8	139.0	152.0	166.6	194.1*	185.8
2	133.9	152.6	141.1	129.8	183.0	147.0*	127.6	106.0	171.7*	137.8	159.0	167.6	200.1	185.6
3	130.2	156.6*	146.6	134.5	182.2A	130.8	116.5	109.6	167.0	131.7	169.9	164.2	203.5*	187.4*
4	124.8	154.0	148.4	143.3*	178.4	118.6	117.4	112.3	174.4*	132.0*	177.4	165.3	192.7*	187.7
5	119.2	159.0	154.5	146.7*	173.9*	116.9	118.9	117.6	179.4	138.7*	181.2	169.5	194.9	197.4
6	118.7*	156.1	162.8	145.3*	173.1	109.8	119.3*	122.6	181.1	137.4	172.2*	164.5	190.9	206.5
7	111.6	157.3	165.2	146.9	162.6*	110.6	128.9	128.2	177.5	141.6	174.6	178.5*	186.2	203.4
8	102.8	157.0*	168.7	148.6	143.4	109.3	135.9	130.6	167.1	150.1	168.0*	189.9	200.1	207.2*
9	97.0	155.2	163.7	156.1	135.1	106.5	147.1*	128.1*	157.6*	155.8	164.9*	189.6	192.6	198.7
10	93.5	148.7	179.1	155.4	129.5	108.4	156.0*	127.5	149.8	162.3	166.3	204.7	186.2	198.4*
11	93.1	154.2	175.2	162.8*	133.8	113.2	163.2*	121.7	141.5	171.6*	163.7	210.5	179.5	202.2*
12	92.1	159.0	169.8	156.2	138.2	116.4*	174.2*	124.5	138.5	177.2	150.4	217.3	174.5	195.4
13	90.3	151.2	160.9	145.6	140.2	120.3*	165.5	134.9	138.0	178.5	145.3	210.6*	193.9	195.4
14	88.6	148.4	160.5	139.1	143.7	126.4*	163.1	132.7	143.5*	180.1	136.3	197.0	200.0*	204.2*
15	89.6	136.8	154.2	141.4	146.1	132.5	169.5	130.0*	152.6	182.0	133.8	192.7	192.1*	205.0*
16	86.4	130.2	143.3	137.6	147.8*	139.5*	163.4	123.6	161.5	176.7*	128.8	180.5	189.9*	209.2
17	83.8	125.9	135.4	133.4	143.8	149.0	159.5	119.3*	161.8	171.5	128.1	177.7	175.7	213.1
18	84.7	124.9	132.3	134.1	135.6	153.5*	154.1*	115.6	169.3*	169.4	127.4	161.5	177.6	237.7
19	85.4	119.1	128.1	139.5*	133.6	162.0*	148.6	111.6	168.8*	170.4	128.9	152.9	187.8	237.8
20	87.0	122.2	125.3	138.1	132.3*	174.2	142.9*	107.5	168.6	171.0	134.9	138.1	197.2	230.1*
21	91.4	122.2	118.2	138.4*	132.7	185.4*	140.2	104.8	172.5	166.9*	126.0	132.1*	210.3	225.1
22	96.9	127.7	117.0	146.4	135.7*	190.3	127.0	106.0	171.5*	161.4	127.1	132.7	226.9	223.3
23	99.6	131.8	116.4	162.9	142.9*	196.7	123.4*	104.1	165.5*	161.4	121.9	133.4	225.1	196.0
24	100.4	135.6	117.5	159.8	146.5*	194.8	118.5	105.4	158.9	156.9	123.5	135.2*	208.5	182.8
25	103.3	139.3	118.2	159.1*	147.6	183.5	113.7	104.2	157.2	156.1	124.7*	138.0	206.1	167.5
26	112.7	134.8	112.5	166.7	152.8	182.4*	112.2	100.7	148.5	154.4	132.7	144.2	192.9	166.0
27	116.4	137.5	114.1	172.8	150.6*	179.5	110.8	107.3*	146.2*	150.7	144.4*	148.7*	205.4	162.7
28	127.7*	135.4	112.7	176.6*	147.1*	174.1	109.9	107.7*	147.8	148.4*	154.1	164.1	209.6	163.6
29	132.2*		111.1	165.2	148.6	167.4	109.2	116.2	148.1	149.8	162.2	166.2	209.3	
30	134.9		115.4*	182.1*	147.2*	154.6*	109.2	124.1	142.6	146.5	167.8	181.7	194.1*	
31	133.3*		124.5		152.6		108.8	133.9*		144.0		195.1	193.7	
MEAN	106.1	141.8	140.3	150.5	149.7	146.8	135.4	116.9	159.6	157.1	148.2	170.0	196.5	199.1

* adjusted for burst
A = interpolated data point

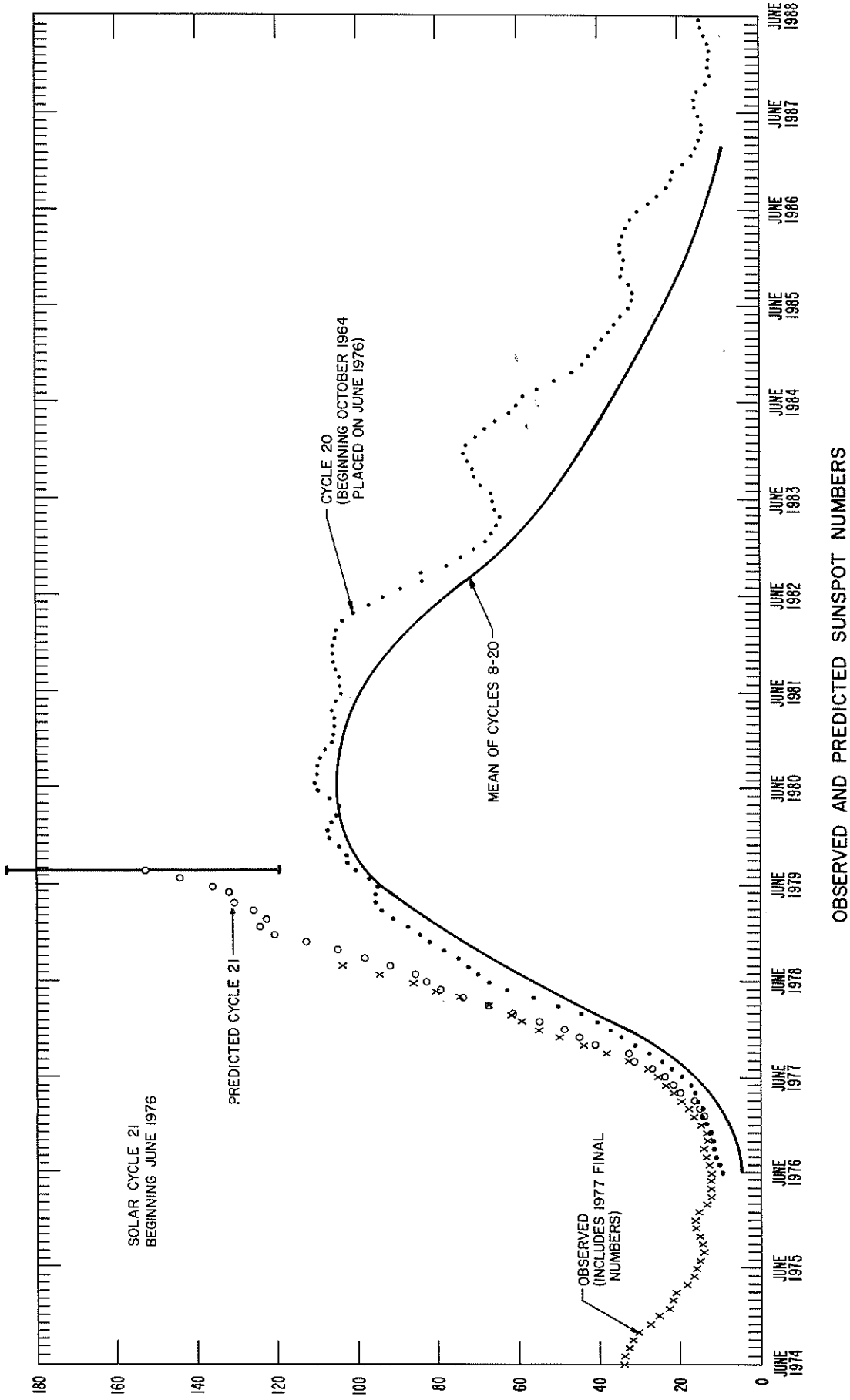
DAILY SOLAR INDICES

FEBRUARY 1979

FEB 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	32	9	116	110	191.4	590	375	208	185.8	197.2	148.2	85.2	37.6	17.0
2	33	10	127	108	191.1	612	374	224	185.6	193.6	146.2	82.1	19.9	10.5
3	34	11	148	142	193.0*	610	367	224	187.4*	196.9	141.7	81.6	26.2	10.0
4	35	12	123	129	193.1	601	367	217	187.7	194.3	134.0	91.4	25.4	12.4
5	36	13	134	111	203.1	609	365	226	197.4	211.6	151.2	86.9	39.0	12.2
6	37	14	146	140	212.4	608	376	238	206.5	220.8	154.8	86.5	37.6	12.4
7	38	15	144	149	209.0	602	372	231	203.4	220.5	156.4	87.3	39.6	12.3
8	39	16	142	140	213.0*	614	383	233	207.2*	227.5	158.0	89.1	28.9	13.3
9	40	17	139	140	204.2	610	389	223	198.7	203.9	151.6	82.2	37.9	13.5
10	41	18	137	129	203.7*	625	419	240	198.4*	207.6	155.2	88.9	38.3	12.9
11	42	19	137	135	207.6*	631	429	249	202.2*	216.5	156.7	88.8	43.2	15.1
12	43	20	138	129	200.6	613	406	242	195.4	206.5	143.6	84.6	31.0	35.3
13	44	21	152	129	200.4	623	401	243	195.4	213.2	142.6	82.8	37.6	13.4
14	45	22	163	150	209.4*	645	433	261	204.2*	231.5	140.2	83.9	42.6	12.9
15	46	23	161	154	210.3*	612	404	247	205.0*	228.0	143.1	83.2	38.4	14.2
16	47	24	159	158	214.3	615	425	260	209.2	235.5	149.5	88.4	38.6	24.4
17	48	25	160	178	218.3	628	423	254	213.1	230.0	150.3	92.3	46.1	31.3
18	49	26	162	192	243.3	656	U448	289	237.7	256.1	160.0	101.0 U	62.6	
19	50	27	166	184	243.4	634	445	285	237.8	249.6	164.5	91.2 U	44.3	33.2
20	51	1	169	194	235.3*	618	422	278	230.1*	232.5	154.0		28.4	19.7
21	52	2	171	190	230.2	629	414	265	225.1	234.0	145.1	71.7	24.8	27.6
22	53	3	155	135	228.3	629	421	253	223.3	212.7			24.7	14.8
23	54	4	127	113	200.2	609	386	232	196.0	195.1	112.6	76.9	27.9	14.1
24	55	5	99	97	186.7	601	367	214	182.8	179.0	108.9	79.8	22.9	11.7
25	56	6	88	88	170.9	596	347	201	167.5	165.8	104.6	78.5	26.2	13.1
26	57	7	108	97	169.4	585	328	195	166.0	154.4	109.3	80.6	40.5	13.8
27	58	8	97	102	165.9	574	320	179	162.7	155.9				
28	59	9	95	108	166.8	599	352	194	163.6	170.1	102.9	78.4	21.8	11.7
MEAN			138.0	136.8	204.1	614	391	236	199.1	208.6	141.7	84.9	34.5	16.6

* 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	108.7	112.5	116.8	122.8
									(3)	(5)	(6)	(9)
1979	127.8	132.2	136.5	139.2	141.7	146.2	150.5	153.4	155.6	156.9	157.3*	156.9
	(12)	(14)	(17)	(22)	(26)	(29)	(32)	(34)	(35)	(35)	(36)	(37)
1980	155.4	153.8	152.9	153.4	152.8	149.4	145.6	142.5	140.7	139.6	138.1	136.7
	(37)	(36)	(35)	(34)	(36)	(38)	(40)	(41)	(41)	(43)	(44)	(47)
1981	136.5	136.1	133.7	130.6	127.9	125.0	123.6	123.3	122.2	120.5	117.9	114.7
	(50)	(49)	(47)	(46)	(46)	(46)	(45)	(44)	(44)	(44)	(43)	(41)
1982	111.7	108.5	106.0	104.1	102.0	99.8	96.1	91.5	87.3	82.6	79.2	75.5
	(38)	(37)	(36)	(35)	(32)	(30)	(28)	(26)	(24)	(21)	(20)	(20)
1983	71.1	68.0	65.8	63.4	60.9	58.3	56.0	54.1	52.3	51.2	50.4	49.6
	(20)	(20)	(21)	(22)	(22)	(23)	(24)	(26)	(28)	(30)	(31)	(31)
1984	48.5	46.6	43.7	40.4	37.9	36.8	35.9	34.3	32.7	31.4	30.1	28.5
	(31)	(30)	(29)	(29)	(30)	(31)	(32)	(32)	(31)	(29)	(28)	(27)
1985	27.4	26.6	25.8	25.4	24.7	23.7	23.0	22.3	21.6	20.8	19.9	19.3
	(27)	(27)	(26)	(26)	(26)	(25)	(23)	(23)	(23)	(23)	(24)	(24)
1986	18.7	17.9	17.1	16.2	14.8	13.5	12.6	12.0	11.8	11.6	11.5	11.5
	(25)	(24)	(24)	(23)	(22)	(21)	(20)	(19)	(17)	(16)	(15)	(13)
1987	12.0	12.7	13.6	14.7	15.8	17.0	18.1					
	(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

FEBRUARY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE FEB	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.	
CATA	01	0805	0815	0905D	S21	E55	.822	15800	5.5	60D	2B	2	P	0815	534	9.6	
MONT	01	0812	0812	0858	S22	E59	.858	15800	5.8	46	2N		C	0812	1000		B
CATA	01	0905	0905	0905D	S21	E90	.999	15008	8.1		1F	2	P	0905	84		
RAMY	01	1618	1618	1636	N 7	E24	.458		3.5	18	SN	3	C		30		
RAMY	01	1646	1653	1700	N 7	E24	.458		3.5	14	SN	3	C		26		
RAMY	01	1646	1648	1649	N 7	E24	.458		3.5	3	SN	3	C		26		
RAMY	01	1702	1705	1719	S15	E46	.720		5.2	17	SN	3	C		49		F
MCMA	01	1749	1755	1805	S12	E48	.740	15740	5.3	16	SF		C	1755	30	.5	E
MCMA	01	1805	1808	1825	N08	E26	.492	15802	3.7	20	SF		C	1808	30	.3	EH
MCMA	01	1847	1857	1910	N21	E21	.559	15796	3.4	23	SN		C	1857	60	.7	E
PALE	01	1849E		1906D	N21	E26	.604		3.7	17D	SN	2	C		0		DE
MCMA	01	1928	1938	2000	S12	E46	.717	15804	5.3	32	SN		C	1938	25	.4	D
RAMY	01	1933	1934	1950	S13	E46	.717		5.3	17	SB	3	C		52		F
RAMY	01	2033	2033	2038	N 9	E26	.499		3.8	5	SB	3	C		24		F
PALE	01	2333	2333	2342	S13	E42	.669		5.1	9	SN	3	C		35		DE
MITK	02	0015	0022	0032	N05	E15	.320		3.1	17	SN		C	0022			E
MANI	02	0018E	0021	0022D	N 5	E15	.320		3.1	4D	SB	2	C		110		F
PALE	02	0026	0026	0033	N 7	E21	.418		3.6	7	SB	3	C		120		F
MANI	02	0042E	0044	0104D	N 8	E25	.479		3.9	22D	SB	2	C		80		F
MITK	02	0047E	0105	0145	N10	E23	.469		3.8	58D	SN		C	0105			E
MITK	02	0155	0208	0240D	N11	E30	.565	15802	4.3	45D	1N		C	0208	180	2.2	
MITK	02	0200	0207	0224	N09	E20	.423	15802	3.6	24	1F		C	0207	220	2.5	
MITK	02	0428E		0434D	N09	E22	.448		3.8	6D	SN		P	0428			E
KAND	02	0655E	0706	0711	S12	E43	.680		5.5	16D	SN		C		125		
KAND	02	0655E	0707	0730	S20	E90	.999		9.0	35D	SN		C				
KAND	02	0718	0725	0743	N10	E21	.444		3.9	25	SF		C		73		
ISTA	02	0835E		0841	N09	E20	.423		3.9	6D	SF						E
ISTA	02	0858E		0903	S35	E14	.525		3.4	5D	SF						D
CATA	02	1258	1258	1304D	S20	E83	.989	15808	8.8	6D	2N	1	P	1258	168		
MCMA	02	1800	1803	1805D	S13	E36	.590	15804	5.5	5D	SN		C	1803	35	.4	D
PALE	03	0049	0049	0052	N 7	E 7	.257		3.6	3	SN	3	C		22		DE
RAMY	03	1627	1627	1631	S15	E20	.367		5.2	4	SN	2	C		26		
RAMY	03	1714	1714	1720	N 6	W 4	.221		3.4	6	SN	3	C		30		
RAMY	04	1532	1535	1539	N21	W14	.507		3.6	7	SN	3	C		24		
MCMA	04	1623E		1625D	N18	W20	.519	15796	3.2	2D	SF		C	1625	50	.6	E
RAMY	04	1626	1626	1632	N21	W14	.507		3.6	6	SN	3	C		28		
RAMY	04	1632	1644	1652	N21	W14	.507		3.6	20	SN	3	C		30		
RAMY	04	1708	1708	1714	S14	E 6	.170		5.2	6	SN	3	C		31		
HOLL	04	1708	1708	1717	S15	E 7	.193		5.2	9	SN	3	C		34		
HOLL	04	1724	1725	1740	S20	E57	.838		9.0	16	SB	3	C		91		U E
RAMY	04	1724	1726	1739	S20	E56	.829	15808	8.9	15	1B	3	C		108		
RAMY	04	1754	1754	1802	S14	E 6	.170		5.2	8	SN	3	C		27		
HOLL	04	1754	1754	1812	S15	E 6	.183		5.2	18	SB	3	C		33		F
HOLL	04	1822	1828	1847	S15	E 6	.183		5.2	25	SB	3	C		172		F
RAMY	04	1822	1828	1847	S14	E 5	.160		5.1	25	SB	3	C		197		DE
BIGB	04	1823	1828	1841	S13	E16	.295		6.0	18	SN	2	C	1828	180	1.9	
MCMA	04	1823	1827	1847	S13	E05	.146	15804	5.1	24	SB		C	1827	120	1.3	E
RAMY	04	1835	1905	1927	N 6	W16	.344	15802	3.6	52	1B	3	C		201		F
MCMA	04	1842	1855	1925D	N08	W15	.352	15802	3.7	43D	SN		C	1855	110	1.2	E
BIGB	04	1847	1907	1921	N10	W15	.375		3.7	34	SN	3	C	1907	180	1.9	E
HOLL	04	1849	1858	1920	N 6	W16	.344		3.6	31	SB	3	C		47		FDE
RAMY	04	1857	1903	1931	N13	W 9	.362		4.1	34	SN	3	C		55		
HOLL	04	1859	1903	1928	N13	W 9	.362		4.1	29	SN	3	C		42		
BIGB	04	2120	2123	2133	S19	E55	.819		9.0	13	SN	3	C	2123	65	1.8	E
RAMY	04	2121	2123	2129	S20	E54	.810		8.9	8	SN	2	C		46		
HOLL	04	2122	2124	2126	S20	E53	.801		8.9	4	SN	3	C		55		
HOLL	04	2150E	2151	2156	N 4	W18	.353		3.6	6D	SN	2	C		37		F
BIGB	04	2255	2257	2313	S26	E90	.999		11.7	18	SN	3	C	2257	30		
BIGB	04	2301	2309	2318	N16	W26	.559		3.0	17	SN	3	C	2309	30	.3	
HOLL	04	2303	2304	2323	N17	W24	.547		3.2	20	SN	2	C		26		
PALE	05	0124E	0125	0200	N 7	W20	.406		3.6	36D	SB	3	C		141		FDE
PALE	05	0204	0206	0224	N 7	W20	.406		3.6	20	SN	3	C		32		DE
RAMY	05	1153E	1155U	1211	S20	E46	.727		8.9	18D	SB	3	C		95		F
RAMY	05	1228	1228	1233	S20	E46	.727		9.0	5	SN	3	C		42		F
RAMY	05	1237	1238	1246	S20	E46	.727		9.0	9	SB	3	C		37		F
RAMY	05	1505	1506	1513	S14	W 6	.169		5.2	8	SB	3	C		32		
RAMY	05	1610	1612	1618	S20	E44	.705		9.0	8	SB	3	C		32		
MCMA	05	1640	1642	1654	N07	W34	.594	15802	3.1	14	SB		C	1642	40	.5	DH

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-POR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE FEB	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.	
RAMY	05	1641	1643	1649	N 6	W28	.508		3.6	8	SB	3	C		42		
RAMY	05	1701	1704	1708	N14	E46	.765		9.2	7	SN	3	C		26		
RAMY	05	1725	1727	1731	N14	E45	.755		9.1	6	SN	3	C		24		
RAMY	05	1731	1732	1735	N14	E45	.755		9.1	4	SN	3	C		22		
BIGB	05	1907	1910	1913	N17	W35	.665		3.2	6	SN	3	C	1910	65	.8	
MCMA	05	1908	1910	1925	N07	W35	.607	15802	3.2	17	SB		C	1910	30	.4	DH
RAMY	05	1908	1910	1913	N 6	W30	.535		3.5	5	SB	3	C		38		
RAMY	05	2047	2047	2054	N 6	W31	.549		3.5	7	SN	3	C		23		
RAMY	05	2103	2104	2110	S20	E41	.670		9.0	7	SN	2	C		20		
RAMY	05	2107	2110	2119	N 6	W31	.549		3.6	12	SB	2	C		54		
BIGB	05	2107	2110	2117	N09	W29	.540		3.7	10	SN	1	C	2110	60	.9	E
RAMY	05	2115	2121	2123D	S20	E41	.670	15808	9.0	8D	1B	2	C		437		FDE
BIGB	05	2119	2121	2149	S19	E42	.679	15808	9.0	30	1B	1	C	2121	180	2.5	
BIGB	05	2119	2121	2123	S15	E47	.730		9.4	4	SN	1	C	2121	130	2.0	E
BIGB	05	2149	2152	2159	S23	E45	.724		9.3	10	SN	1	C	2152	100	1.5	E
BIGB	05	2236	2252	2315	N16	E45	.764		9.3	39	SN	1	C	2252	70	1.0	E
BIGB	05	2302	2347	2347D	S19	E56	.828		10.2	45D	SN	2	P	2347	50	.9	
BIGB	05	2306	2307	2312	S23	E44	.713		9.3	6	SN	2	C	2307	50	1.0	
MANI	05	2308E	2308U	2317D	S22	E44	.710		9.3	9D	SN	2	C		40		
MITK	06	0435	0503	0543	N17	E37	.687	15807	9.0	68	1N		C	0503	270	3.7	E
MANI	06	0638E	0639	0644	N 8	W41	.686		3.2	6D	SN	3	C		15		
MONT	06	0800E	0805	0826	S19	E35	.592		9.0	26D	SF		C	0805	70		D
MONT	06	0822	0825	0858	N06	W34	.589		3.8	36	SF		C	0825	70		D
MONT	06	0917	0918	0923	N06	W34	.589		3.8	6	SN		C	0918	200		
RAMY	06	1156	1238	1243	S20	E34	.584		9.0	47	SN	3	C		28		
RAMY	06	1255	1301	1306	N 6	W40	.666		3.5	11	SB	3	C		71		H
RAMY	06	1347	1347	1352	S14	W18	.330		5.2	5	SN	3	C		20		
RAMY	06	1348	1353	1406	S20	E33	.571		9.1	18	SB	3	C		139		
RAMY	06	1432	1434	1457	N15	E34	.641		9.2	25	SB	3	C		48		
RAMY	06	1432	1432	1459	S20	E33	.571		9.1	27	SN	3	C		31		
RAMY	06	1508	1509	1522	S20	E33	.571		9.1	14	SN	3	C		20		
RAMY	06	1525	1528	1540	S20	E32	.558		9.0	15	SN	3	C		52		
RAMY	06	1544	1548	1550	S20	E32	.558		9.1	6	SN	3	C		23		
RAMY	06	1605	1620	1635	N 6	W41	.679	15802	3.6	30	2B	3	C		472		F H
RAMY	06	1605	1605	1613	N13	W34	.628		4.1	8	SN	3	C		26		
BIGB	06	1753	1755	1755D	S24	E34	.603		9.3	20	SN	2	P	1755	20	.2	
RAMY	06	1810E	1812	1819	S20	E30	.532		9.0	9D	SN	3	C		39		
RAMY	06	1815	1817	1827	S20	E44	.705		10.1	12	SF	3	C		20		
BIGB	06	2005	2007	2035	S16	E29	.500		9.0	30	SN	3	C	2007	120	1.4	
RAMY	06	2012E	2012U	2014D	N14	E28	.566		8.9	2D	SN	2	C		43		F
BIGB	06	2037	2043	2050	S19	E90	.999		13.6	13	SN	3	C	2043	120	1.4	
BIGB	06	2037		2156	N12	E27	.538	15807	8.9	79	1N	2	P	2102	240	2.8	
BIGB	06	2048	2058	2104	S27	E72	.946		12.3	16	SN	2	P	2058	50		
BIGB	06	2049	2050	2104	S17	W16	.324		5.7	15	SN	2	C	2050	120	1.3	
BIGB	06	2056	2108	2147	N12	E34	.622		9.4	51	SN	2	C	2108	60	.7	
PALE	06	2059E	2101	2130D	N14	E31	.600	15807	9.2	31D	1B	3	C		217		DE
BIGB	06	2258	2306	2320	S20	E30	.532		9.2	22	SN	2	C	2306	40	.5	
MITK	07	0351	0354	0417	S19	E28	.500	15808	9.3	26	1F		C	0354	410	4.9	EH
MANI	07	0352E	0355	0406	S19	E27	.487		9.2	14D	SB	2	C		120		F
CATA	07	1010	1010	1015	S17	E75	.960	15813	13.0	5	1N	2	C	1010	84		
CATA	07	1110	1118	1122D	S21	E22	.435	15808	9.1	12D	1B	1	P	1118	393	4.5	
RAMY	07	1149E	1149U	1155	N35	E 9	.673		8.2	6D	SN	2	C		22		
RAMY	07	1158	1159U	1225	N 7	W53	.815		3.5	27	SN	3	C		34		
RAMY	07	1204	1204	1214	S22	E68	.922		12.6	10	SN	3	C		26		
RAMY	07	1250	1253	1300	S22	E67	.916		12.6	10	SN	3	C		36		
BIGB	07	1707	1709	1725	S20	E35	.596		10.3	18	SN	1	C	1709	75	.9	
RAMY	07	1708	1710	1717	S20	E32	.558		10.1	9	SB	2	C		85		
BIGB	07	1804	1812	1830	S18	E74	.955	15813	13.3	26	1N	1	C	1812	150		
HOLL	07	1843	1843	1848	N14	E19	.466		9.2	5	SN	3	C		21		
BIGB	07	1859	1902	1910	N14	W56	.859		3.6	11	SN	3	C	1902	50	.9	
HOLL	07	1900	1905	1909	S20	E18	.377		9.1	9	SN	3	C		55		F
BIGB	07	2058	2100	2111	N09	E31	.567		10.2	13	SN	2	C	2100	50	.9	G
BIGB	07	2135	2158	2244	S24	E17	.407		9.2	69	SN	1	C	2158	70	.8	E
BIGB	07	2210	2255	2337	N13	E18	.445		9.3	87	SN	1	C	2255	150	1.6	
BIGB	08	0029	0031	0031D	N20	E52	.844		11.9	2D	SN	2	P	0031	40	.6	
MANI	08	0205	0208	0347D	S18	E14	.307	15808	9.1	102D	1B	3	C		380		FDE
MITK	08	0210E		0335	S19	E19	.380	15812	9.5	85D	1N		C	0210	390	4.3	E
MITK	08	0409	0411	0446	N16	E09	.409		8.8	37	SN		C	0411			E
MONT	08	0800E	0800	0848	N12	E15	.403		9.5	48D	SN		C	0800	220		

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-POR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE FEB	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.	
MONT	08	0838	0845	0901	N16	E08	.404		9.0	23	SF		C	0845	50		E
MONT	08	0932	0935	0941	N26	W74	.980		2.8	9	SF		C	0935	40		D
MCMA	08	1405	1416	1438	N11	E03	.304	15807	8.8	33	SB		C	1416	100	1.1	E
MCMA	08	1410	1430	1455	S18	E58	.844	15813	12.9	45	SB		C	1430	70	1.5	EV
RAMY	08	1413	1414	1434	N11	E 4	.308		8.9	21	SB	3	C		72		F
RAMY	08	1421	1423	1447	S18	E57	.835		12.9	26	SB	3	C		62		F
MCMA	08	1446	1449	1510D	S18	E04	.211	15808	8.9	24D	SB		C	1449	125	1.3	E
RAMY	08	1448	1448	1502	S19	E 7	.246		9.1	14	SB	3	C		119		F
MCMA	08	1458	1530	1630D	N17	W63	.917	15802	3.9	92D	1B		C	1530	150	3.6	FLWV
RAMY	08	1505	1506	1509	N12	W59	.879		4.2	4	SN	3	C		16		
RAMY	08	1518	1524	1602	N12	W59	.879	15802	4.2	44	1B	3	C		241		U F
RAMY	08	1621	1621	1632	N13	E 6	.348		9.1	11	SN	3	C		28		F
MCMA	08	1646E	1650	1703D	S16	W79	.977	15814	2.8	17D	SN		C	1650			E
MCMA	08	1838E		1843	N15	W70	.954	15802	3.5	5D	SN		C	1838			D
BIGB	08	1905	1938	1948	S36	E74	.958		14.3	43	SN	2	C	1938	40		
BIGB	08	1955	2018	2032	S35	E73	.953		14.3	37	SN	3	P	2018	50		E
BIGB	08	2040	2105	2142	S36	E72	.949		14.3	62	SN	3	P	2105	60		E
BIGB	08	2057	2058	2059	S19	E18	.367		10.2	2	SN	3	C	2058	10	.1	D
BIGB	08	2107	2125	2142	N24	W84	.999		2.6	35	SN	3	C	2125	50		
BIGB	08	2111	2132	2137	N36	W88	1.001		2.3	26	SN	3	P	2132	50	.6	A
BIGB	08	2112	2132	2202	N13	E04	.340		9.2	50	SN	3	C	2132	100	1.0	
BIGB	08	2113	2115	2135	S19	E16	.342		10.1	22	SN	3	C	2115	80	.9	
RAMY	08	2115	2115	2117D	S19	E15	.329		10.0	2D	SN	2	C		55		F
HOLL	08	2116	2116	2121	S19	E15	.329		10.0	5	SN	3	C		47		
BIGB	08	2159	2214	2214D	S36	E72	.949		14.3	15D	SN	3	C	2214	70		E
BIGB	08	2220	2318	2330	N14	E05	.359	15807	9.3	70	1N	3	C	2318	300	3.1	
BIGB	08	2347	2348	2355	S20	E57	.837		13.3	8	SN	3	C	2348	70	1.1	E
MANI	09	0639E	0642	0646D	S20	E 0	.233		9.3	7D	SN	3	C		100		F
MANI	09	0750	0757	0807D	N15	W 4	.373	15807	9.0	17D	1B	2	C		300		F
CATA	09	0810E	0810	0840D	N11	W05	.313	15807	9.0	30D	2B	2	P	0810	618	6.7	
CATA	09	0825	0825	0830	N05	W90	1.000	15802	2.6	5	1F	2	C	0825	56		
RAMY	09	1234	1235	1314	N13	W 8	.360		8.9	40	SN	3	C		42		F
RAMY	09	1234	1256	1314	N13	W 8	.360		8.9	40	SB	3	C		94		F
RAMY	09	1249	1250	1311	S19	E 6	.238		10.0	22	SB	3	C		46		F
RAMY	09	1339	1344	1427	N15	W 7	.385		9.0	48	SB	3	C		95		F
RAMY	09	1443	1444	1452	N15	W 7	.385		9.1	9	SB	3	C		30		F
RAMY	09	1542	1555	1603	N15	W 8	.390		9.1	21	SB	3	C		115		F
RAMY	09	1542	1546	1603	N15	W 8	.390		9.1	21	SN	3	C		40		F
HOLL	09	1554	1555	1604	N14	W10	.388		8.9	10	SB	3	C		75		F
BIGB	09	1618	1620	1633	N14	W17	.447		8.4	15	SN	1	C	1620	60	.6	E
HOLL	09	1619	1619	1640D	N14	W10	.388		8.9	21D	SB	3	C		89		F
RAMY	09	1619	1620	1640	N13	W 7	.354		9.2	21	SB	3	C		80		DE
RAMY	09	1621	1624	1627	S19	W 7	.245		9.2	6	SB	3	C		36		F
HOLL	09	1622	1623	1634	S19	W 7	.245		9.2	12	SB	3	C		34		F
HOLL	09	1711	1732	1743	N14	W11	.395		8.9	32	SB	3	C		64		F
RAMY	09	1719	1723	1725	N13	W 8	.360		9.1	6	SB	3	C		47		
RAMY	09	1726	1733	1737	N13	W 8	.360		9.1	11	SB	3	C		34		
BIGB	09	1727	1729	1741	S20	W10	.286		9.0	14	SN	1	C	1729	120	1.3	
RAMY	09	1728	1730	1741	S19	W 8	.254		9.1	13	SB	3	C		94		
HOLL	09	1728	1731	1743	S19	W 8	.254		9.1	15	SB	3	C		100		F
BIGB	09	1845	1846	1852	S21	W11	.308		9.0	7	SN	2	C	1846	60	.6	
RAMY	09	1846	1846	1855	S19	W 9	.263		9.1	9	SN	3	C		24		
BIGB	09	1852	1929	1942	S36	E60	.883		14.3	50	SN	1	C	1929	50	1.0	
BIGB	09	1900	1918	1918D	S24	E72	.945		15.2	18D	SN	2	P	1918	15		D
HOLL	09	1902	1908	2246D	N14	W13	.411		8.8	224D	SB	3	C		142		F
MCMA	09	1905		1945D	N13	W10	.373	15807	9.0	40D	SN		C	1930	120	1.4	EK
RAMY	09	1920	1920	1922	S20	E 3	.238		10.0	2	SN	3	C		46		
RAMY	09	1928	1932	1940	N13	W 9	.366		9.1	12	SB	3	C		71		
RAMY	09	1942	1942	1945	N13	W 9	.366		9.1	3	SN	3	C		22		
RAMY	09	1951	1951	2002	N13	W 9	.366		9.2	11	SN	3	C		31		
RAMY	09	2016	2022	2024	N13	W10	.373		9.1	8	SB	2	C		23		
RAMY	09	2032	2032	2038	N13	W10	.373		9.1	6	SB	2	C		23		F
BIGB	09	2138	2210	2231	N16	W15	.454		8.8	53	SF	3	C	2210	80	.9	
BIGB	09	2200	2205	2217	N17	W13	.451		8.9	17	SF	3	C	2205	70	.7	
BIGB	09	2235	2237	2240	N18	W14	.472		8.9	5	SF	3	C	2237	60	.6	
HOLL	09	2323	2323	2334	N14	W14	.419		8.9	11	SN	3	C		52		
RAMY	10	1154	1154	1205	S19	W18	.366		9.1	11	SN	3	C		32		F
RAMY	10	1155	1210	1223	S36	E49	.804		14.2	28	SN	3	C		21		F
RAMY	10	1241	1249	1330	N13	W19	.457		9.1	49	SB	3	C		140		DE F
MCMA	10	1400E		1500	N18	W17	.496	15807	9.3	60D	SN		C	1405	70	.8	E

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE FEB	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.	
RAMY	10	1430	1432	1435	N13	W20	.468		9.1	5	SB	3	C		40		F
MCMA	10	1430	1433	1442	N15	W22	.510	15807	9.0	12	SN		C	1433	30	.4	D
RAMY	10	1607	1609	1648	N13	W21	.479		9.1	41	SB	3	C		84		
HOLL	10	1626	1658	1947	N13	W24	.513	15807	8.9	201	1B	3	C		302		F
MCMA	10	1630E		1638D	S36	E41	.739	15816	13.8	8D	SF		C	1635	40	.6	E
RAMY	10	1631	1635	1637	S36	E47	.788		14.2	6	SB	3	C		22		
BIGB	10	1654	1658	1752	N17	W23	.541		9.0	58	SN	1	P	1658	50	.6	
RAMY	10	1656	1702	1719	N13	W21	.479		9.1	23	SB	3	C		63		
RAMY	10	1758	1759	1805	N13	W22	.490		9.1	7	SB	3	C		37		
BIGB	10	1800	1805	1812	S37	E39	.728		13.7	12	SN	1	C	1805	20	.3	
HOLL	10	1814	1814	1820	S21	W21	.421		9.2	6	SN	3	C		24		
MCMA	10	1853	1855	1910	N17	W24	.551	15807	9.0	17	SN		C	1855	50	.6	E
BIGB	10	1853	1905	1912	N17	E24	.551		12.6	19	SN	2	C	1905	30	.3	E
BIGB	10	2037	2039	2059	N13	W14	.407		9.8	22	SN	2	C	2039	130	1.4	
BIGB	10	2101	2103	2107	S37	E38	.720		13.7	6	SN	3	C	2103	30	.3	
MITK	11	0311	0313	0326	N17	W31	.625		8.8	15	SN		C	0313			
MITK	11	0601	0606	0635	S24	W25	.494		9.4	34	SN		C	0606			
MANI	11	0646E	0646U	0650D	N23	W28	.647		9.2	4D	SN	3	V		15		
MANI	11	0646E	0646U	0650D	N13	W28	.560		9.2	4D	SN	3	C		15		
MANI	11	0813E	0814	0835D	N14	W31	.602		9.0	22D	SN	3	C		30		F
MANI	11	0857E	0857U	0908D	N15	W24	.532		9.6	11D	SN	3	C		60		F
RAMY	11	1206	1207	1213	S20	W19	.387		10.1	7	SN	3	C		25		
CATA	11	1225E	1250	1250D	N12	W33	.612	15807	9.0	25D	1B	2	P	1250	224	2.9	
RAMY	11	1225	1233	1349	N13	W32	.607	15807	9.1	84	1B	3	C		243		DE F
RAMY	11	1438	1528	1604	N16	W34	.650		9.1	86	SB	3	C		106		
RAMY	11	1438	1440	1456	S18	E18	.357		13.0	18	SN	3	C		29		
MCMA	11	1507E	1523	1616D	N16	W28	.585	15807	9.5	69D	1N		C	1523	250	3.3	F
HOLL	11	1509	1529	1555	N13	W36	.653		8.9	46	SB	3	C		91		F H
HOLL	11	1509	1510	1555	N13	W36	.653		8.9	46	SN	3	C		65		F H
RAMY	11	1712	1712	1714	S19	W34	.578		9.2	2	SB	3	C		20		
RAMY	11	1733	1734	1739	N16	W35	.661		9.1	6	SB	3	C		33		
MCMA	11	1912E		1913D	S22	W34	.591	15808	9.3	1D	SN		P	1913	100	1.5	E
HOLL	11	2036	2044	2057	S33	E30	.620		14.1	21	SB	3	C		73		F
MITK	12	0000		0250	N17	W34	.658	15807	9.5	170	2N		C	0018	420	5.8	EF
MANI	12	0005	0017	0110	N15	W37	.677	15807	9.2	65	1B	3	C		200		FDE
MANI	12	0012E	0018	0105D	N15	W36	.666	15807	9.3	53D	1B	3	C		170		FDE
PALE	12	0018E	0020U	0130D	N16	W36	.672		9.3	72D	SB	1	C		100		DE
MITK	12	0211	0217	0245	S35	E27	.611		14.1	34	SB		C	0217			D
MANI	12	0213	0215	0240	S35	E27	.611		14.1	27	SB	3	C		50		
MITK	12	0238	0243	0301	S25	W37	.640	15812	9.3	23	1F		C	0243	170	2.2	E
MITK	12	0546	0549	0611	N16	W38	.694	15807	9.4	25	1F		C	0549	210	3.0	E
MANI	12	0548	0555	0600	N15	W38	.688		9.4	12	SB	3	C		100		
BIGB	12	1613	1618	1622	S16	E56	.824		16.9	9	SN	1	C	1618	50	.9	
HOLL	12	1739	1740	1753	N13	W51	.813		8.9	14	SN	3	C		18		
BIGB	12	1814	1837	1915	N19	W32	.652		10.4	61	SF	2	C	1837	40	.5	
BIGB	12	1820	1825	1833	N16	W34	.651		10.2	13	SF	2	C	1825	10	.1	D
RAMY	12	1948E	1951U	1951D	S36	E17	.548		14.1	3D	SB	2	C		164		FDE
HOLL	12	1948	1956	2031	S34	E15	.510	15816	14.0	43	1B	3	C		226		U
RAMY	12	1948E	1948U	1951D	N19	E64	.928		17.6	3D	SB	2	C		33		
MCMA	12	2010E		2017D	S34	E16	.516	15816	14.0	7D	SB		P	2012	50	.6	D
BIGB	12	2025	2043	2101	S32	E35	.660		15.5	36	SN	3	C	2043	80	1.0	
HOLL	12	2208E	2233	2254	S37	E13	.538		13.9	46D	SB	2	C		132		U F
HOLL	12	2208E	2215U	2237	S14	E 0	.127		12.9	29D	SN	2	C		45		
HOLL	12	2208E	2219	2254	S37	E13	.538		13.9	46D	SN	2	C		52		U F
HOLL	12	2214E	2214U	2235	N21	E39	.734		15.9	21D	SN	2	C		18		
HOLL	12	2221	2226	2235	S19	W40	.653		9.9	14	SN	2	C		34		
HOLL	12	2225	2228	2234	N16	W50	.813		9.2	9	SN	2	C		15		
BIGB	12	2355U	0013U	0013D	N15	E35	.655	15819	15.6	18D	1N	2	P	0013	260	3.3	
BIGB	13	0018	0020	0036	N13	W64	.917	15807	8.2	18	1N	3	C	0020	110	2.6	
MANI	13	0222E	0225	0234D	S35	E17	.534		14.4	12D	SB	3	C		60		
MITK	13	0445	0453	0506	S35	E12	.505	15816	14.1	21	1B		C	0453	210	2.5	E
KAND	13	1038E	1038	1046	N22	E22	.587		15.1	8D	SN		C		52		
KAND	13	1138E	1141	1150	N19	E54	.858		17.5	12D	SN		C		42		
KAND	13	1138	1157	1157D	N19	E90	1.001		20.2	19D	SN		C				
KAND	13	1150	1155	1204	N24	E90	1.001		20.2	14	SN		C				
KAND	13	1206	1211	1225	N19	E90	1.001		20.3	19	SN		C				
KAND	13	1230	1233	1241	N19	E54	.858		17.6	11	SN		C		73		
KAND	13	1257	1323	1323D	N22	E21	.578		15.1	26D	SF		C				
KAND	13	1316	1318	1322	N15	W60	.893		9.1	6	SN		C		62		

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-POR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE FEB	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	13	1614	1615	1625	N15	E55	.854		17.8	11	SN	1	C	1615	30	3.0	
BIGB	13	1708	1711	1725	N13	E60	.889		18.2	17	SN	1	C	1711	80	1.6	
HOLL	13	1709	1712	1729	N14	W58	.876		9.4	20	SB	3	C		101		F
BIGB	13	1715	1718	1719	N16	E74	.973		19.3	4	SN	1	C	1718	20		
BIGB	13	1715	1723	1741	N16	E89	1.000	15830	20.4	26	1N	2	C	1723	80	.8	
BIGB	13	1843	1852	1900	S18	E12	.280		14.7	17	SN	2	C	1852	80	.8	
HOLL	13	1847	1850	1905	S18	W10	.257		13.0	18	SN	4	C		48		F
RAMY	13	1849	1850	1856	S18	W10	.257		13.0	7	SN	2	C		44		F
HOLL	13	1849	1849	1903	N14	W59	.884		9.4	14	SB	4	C		14		
BIGB	13	1903	1908	1930	N13	W60	.889		9.3	27	SN	3	C	1908	60	1.2	
RAMY	13	1905	1908	1923	N15	W55	.854		9.7	18	SB	2	C		77		
HOLL	13	1907	1909	1918	N14	W59	.884		9.4	11	SB	4	C		22		F
BIGB	13	1922	1927	1937	N16	E90	1.001	15830	20.6	15	1N	3	C	1927	80		
BIGB	13	1923	1924	1925	N17	W65	.930		8.9	2	SN	3	C	1924	10	.2	DC
HOLL	13	1934	1955	2018	S18	W11	.268		13.0	36	SN	4	C		30		F
RAMY	13	1937	1938	1945	S18	W10	.257		13.1	8	SN	2	C		35		
RAMY	13	1956	1958	2008	N18	E53	.847		17.8	12	SB	2	C		91		
BIGB	13	1956	1958	2015	N18	W50	.821		10.1	19	SN	3	C	1958	80	1.4	
HOLL	13	1957	1958	2007	N17	E55	.860		18.0	10	SB	4	C		62		DE
BIGB	13	2008	2011	2013	S26	E90	.999		20.6	5	SN	3	C	2011	10		
BIGB	13	2014	2016	2018	N14	E90	1.000		20.6	4	SN	3	C	2016	40		
BIGB	13	2042	2051	2108	N14	W62	.906		9.2	26	SN	3	C	2051	60	1.3	E
HOLL	13	2043	2051	2104	N16	W63	.916		9.1	21	SB	4	C		48		F
BIGB	13	2049	2058	2111	N21	E55	.872		18.0	22	SN	3	C	2058	40	.7	
HOLL	13	2058	2059	2106	N17	E55	.860		18.0	8	SB	4	C		29		
HOLL	13	2115	2115	2132	N21	E26	.611		15.8	17	SN	4	C		21		
HOLL	13	2125	2128	2137	N17	E54	.852		17.9	12	SB	4	C		109		U F
BIGB	13	2151	2158	2215	N16	E90	1.001		20.7	24	SN	3	C	2158	40		
BIGB	13	2153	2200	2202	N15	W78	.986		8.1	9	SN	3	C	2200	50		
BIGB	13	2155	2158	2206	N12	E90	1.000		20.7	11	SN	3	C	2158	40		
BIGB	13	2207	2211	2223	S25	E90	.999		20.7	16	SN	3	C	2211	40		
BIGB	13	2209	2221	2248	N15	W65	.927		9.0	39	SN	3	C	2221	40	.9	
BIGB	13	2249	2254	2300	S25	E90	.999		20.7	11	SN	3	C	2254	40		
BIGB	13	2338	2343	2350	S25	E90	.999		20.7	12	SN	3	C	2343	20		
HOLL	14	0018	0020	0028D	N16	W65	.929		9.1	10D	SB	3	C		80		U F
MANI	14	0020	0022	0030	N12	W62	.902		9.4	10	SB	3	C		100		F
MANI	14	0020	0027	0030	N12	W62	.902		9.4	10	SB	3	C		100		F
MANI	14	0106	0109	0113	N17	E82	.995		20.2	7	SB	2	C		60		
MANI	14	0107E	0108	0112	N16	E80	.991		20.0	5D	SB	3	C		80		
MANI	14	0653	0655	0710	N17	E85	.999		20.7	17	SB	2	C		50		
KAND	14	0802E	0807	0818	N17	E75	.977		20.0	16D	SN		C				
KAND	14	0808	0820	0820D	N15	W70	.955		9.1	12D	SN		C				
MANI	14	0819	0823	0840	N 3	E55	.827		18.5	21	SN	2	C		30		F
KAND	14	0820	0824	0901	N04	E54	.819		18.4	41	SN		C		42		
KAND	14	0845	0850	0901	N16	E90	1.001		21.1	16	SN		C				
HOLL	14	1548	1604	1656	N15	W75	.976		9.0	68	SB	3	C		0		FOE
BIGB	14	1709	1712	1719	N22	E43	.777		17.9	10	SN	2	C	1712	40	.6	
BIGB	14	1747	1800	1815	N21	E44	.781		18.0	28	SN	2	C	1800	90	1.3	
BIGB	14	1810	1814	1818	N16	E38	.694		17.6	8	SF	2	C	1814	10	.1	
BIGB	14	1831	1833	1840	N13	E65	.924		19.6	9	SN	2	C	1833	50	.9	
BIGB	14	1955	2014	2053	N16	E41	.726		17.9	58	SN	2	C	2014	140	1.5	
BIGB	14	2118	2120	2123	N25	E06	.535		15.3	5	SF	3	C	2120	50	.5	
BIGB	14	2143	2148	2152	N30	E80	.996		20.9	9	SF	3	C	2148	10		D
BIGB	14	2147	2150	2205	N16	E70	.956		20.2	18	SF	2	C	2150	40		
BIGB	14	2211	2222	2240	N16	E69	.951	15830	20.1	29	1N	3	C	2222	130		
BIGB	14	2222	2233	2243	N13	E75	.975		20.6	21	SF	3	C	2233	10		D
HOLL	14	2226	2235	2252	N16	E65	.929		19.8	26	SN	3	C		24		
BIGB	14	2226	2230	2236	N30	E80	.996		20.9	10	SF	3	C	2230	10		D
MANI	15	0118	0123	0129	N17	E70	.957		20.3	11	SB	2	C		90		
MANI	15	0135	0140	0150	S19	W26	.470		13.1	15	SB	2	C		50		
MANI	15	0141	0143	0149	N16	E34	.652		17.6	8	SB	2	C		30		
MANI	15	0246	0248	0303	N16	E68	.946		20.2	17	SB	2	C		80		
CATA	15	0725E	0725	0725D	N10	W90	1.000	15807	8.6		1N	2	P	0725	112		A
CATA	15	0845	0845	0850	N18	E65	.932	15830	20.2	5	1N	2	C	0845	84		
CATA	15	0955	0955	1000D	N23	E01	.498		15.5	5D	SB	2	P	0955	84	1.0	H
KAND	15	1046	1057	1057D	N15	W90	1.000		8.7	11D	SF		C				
KAND	15	1118	1128	1138	N15	W90	1.000		8.7	20	SF		C				
BIGB	15	1558	1600	1603	N02	E39	.642		18.6	5	SN	1	C	1600	20	.7	
BIGB	15	1713	1715	1723	N16	E50	.814		19.5	10	SN	2	C	1715	80	.9	
BIGB	15	1807	1809	1822	N10	E59	.876		20.2	15	SN	3	C	1809	10	.1	D

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-POR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE FEB	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	15	2016	2020	2024	N14	W90	1.000	15807	9.1	8	1N	2	C	2020	60		
BIGB	15	2133	2137	2202	N04	E60	.873		20.4	29	SN	3	C	2137	10	.2	D
BIGB	15	2149	2154	2154D	N14	E67	.938		20.9	5D	SN	3	C	2154	20		
BIGB	15	2152	2157	2157D	S26	E65	.903		20.8	5D	SN	3	C	2157	60	1.1	
MITK	16	0144	0152	0319	N16	E59	.889	15830	20.5	95	3B		C	0152	930	20.2	FH
PALE	16	0145	0152	0248	N15	E48	.792	15830	19.7	63	2B	3	C		653		U F
MITK	16	0314	0317	0344	N16	E59	.889	15830	20.6	30	2B		C	0317	320	6.7	F
MITK	16	0357	0405	0413	S20	W90	.999	15812	9.4	16	1F		C	0405	110		
MITK	16	0552	0557	0613	N15	W90	1.000	15807	9.5	21	1N		C	0557	130		EG
MCMA	16	1624	1630	1715	N13	E51	.813	15830	20.5	51	SB		C	1630	60	1.1	E
MCMA	16	1718	1755	1840	N19	E10	.465	15823	17.5	82	SB		C	1755	100	1.2	
MCMA	16	1718	1725	1840	N19	E10	.465	15830	17.5	82	SB		C	1725	100	1.2	
MCMA	16	1718	1742	1840	N19	E10	.465	15823	17.5	82	SB		C	1742	125	1.5	EK
MCMA	16	1750	1755	1810	N13	E36	.655	15830	19.4	20	SN		C	1755	75	1.0	EH
BIGB	16	1750	1753	1814	N12	E37	.661		19.5	24	SN	2	C	1753	90	1.2	
BIGB	16	1750	1756	1817	N19	E11	.470		17.6	27	SN	2	C	1756	70	.8	
BIGB	16	1758	1759	1815	N19	E46	.790		20.2	17	SN	2	C	1759	20	.3	E
BIGB	16	1808	1814	1817	N14	E41	.716		19.8	9	SN	2	C	1814	20	.3	E
BIGB	16	1810	1812	1821	N18	E37	.697		19.5	11	SN	2	C	1812	20	.3	E
MCMA	16	1852	1901	1940	N19	E10	.465	15823	17.5	48	SB		C	1901	60	.7	D
BIGB	16	1932	1937	1944	N18	E36	.687		19.5	12	SN	2	C	1937	20	.3	E
MCMA	16	1951	1954	2013D	N19	E10	.465	15823	17.6	22D	SN		C	1954	50	.6	E
BIGB	16	1953	2001	2008	N19	E11	.470		17.7	15	SN	2	C	2001	10	.1	D
MANI	16	2307E	2307U	2318D	N20	E11	.484		17.8	11D	SN	2	V		30		
MITK	17	0004	0007	0041	N18	E08	.440		17.6	37	SF		C	0007			DZ
MANI	17	0011E	0015	0050D	N20	E10	.479		17.8	39D	SB	3	C		40		F
MANI	17	0011E	0024	0050D	N20	E10	.479		17.8	39D	SN	3	C		80		F
MANI	17	0805E	0809U	0814D	N18	E 4	.426		17.6	9D	SN	2	C		40		
MANI	17	0809E	0809U	0814D	N17	E30	.617		19.6	5D	SN	2	C		30		
RAMY	17	1155	1156	1158	N18	E 4	.426		17.8	3	SN	2	C		31		
RAMY	17	1201	1204	1209	N16	E33	.641		20.0	8	SN	2	C		35		
RAMY	17	1214	1528	1618	N16	E31	.620		19.8	244	SB	3	C		183		F
RAMY	17	1219	1220	1224	N18	E 4	.426		17.8	5	SB	2	C		44		
RAMY	17	1333	1333	1348	S27	E43	.713		20.8	15	SN	3	C		18		
MCMA	17	1343	1344	1415	N14	E42	.727	15830	20.7	32	SN		C	1344	40	.6	E
RAMY	17	1415	1417	1434	S27	E43	.713		20.8	19	SN	3	C		20		
RAMY	17	1430	1435	1447	N 7	W 3	.246		17.4	17	SF	3	C		22		
RAMY	17	1431	1443	1606	N18	E 2	.422	15823	17.8	95	1B	3	C		253		F
MCMA	17	1436	1439	1505	N18	E01	.422	15823	17.7	29	SB		C	1439	120	1.3	ET
MCMA	17	1545	1555	1610	N18	E01	.422	15823	17.7	25	SN		C	1555	75	.8	E
MCMA	17	1706		1735D	N18	E01	.422	15823	17.8	29D	SN		C	1720	110	1.2	E
HOLL	17	1710E	1711	1744	N16	E27	.576		19.7	34D	SN	2	C		39		F
HOLL	17	1710E	1733	1744	N16	E27	.576		19.7	34D	SF	2	C		38		F
RAMY	17	1720	1723	1757	N16	E22	.524		19.4	37	SB	3	C		31		
MCMA	17	1721	1726	1742	N17	E25	.565	15830	19.6	21	SN		C	1726	60	.7	E
BIGB	17	1722	1729	1738	N19	E23	.565		19.4	16	SN	1	C	1729	10	.1	D
MCMA	17	1740	1743	1800	N18	E00	.421	15823	17.7	20	SN		C	1743	110	1.2	E
RAMY	17	1742	1745	1747	N18	W 0	.421		17.7	5	SB	3	C		23		
HOLL	17	1742	1743	1745	N18	E 4	.426		18.0	3	SB	3	C		47		U
HOLL	17	1751	1757	1800	N16	E27	.576		19.8	9	SN	3	C		53		F
BIGB	17	1805	1806	1810	N07	W04	.250		17.5	5	SN	1	C	1806	30	.3	
RAMY	17	1805	1807	1821	N 7	W 6	.261		17.3	16	SN	3	C		47		
MCMA	17	1805	1808	1813	N07	W04	.250	15836	17.5	8	SN		C	1808	30	.3	D
HOLL	17	1825	1910	1915D	N16	E28	.587	15830	19.9	50D	1B	3	V		262		F
MCMA	17	1835	1845	1900D	N18	E00	.421	15823	17.8	25D	SN		C	1845	100	1.3	E
MCMA	17	1842	1850	1903	N17	E25	.565	15830	19.7	21	SN		C	1850	40	.5	E
RAMY	17	1843	1850	1919D	N16	E22	.524		19.4	36D	SB	3	C		53		
BIGB	17	1844	1848	1859	N18	E23	.555		19.5	15	SN	2	C	1848	20	.2	E
MCMA	17	1900	1905	1915D	N18	W01	.422	15823	17.7	15D	SN		C	1905	125	1.4	E
BIGB	17	1905	1908	1921	N17	E18	.497		19.1	16	SN	3	C	1908	90	1.0	
MCMA	17	1905	1908	1925D	N15	E28	.579	15830	19.9	20D	SN		C	1908	100	1.3	E
HOLL	17	1909E	1910	1952	N16	E28	.587	15830	19.9	43D	1B	3	C		202		F
MCMA	17	1915	1916	1924	N18	W01	.422	15823	17.7	9	SN		C	1916	60	.7	E
MCMA	17	1931	1932	1940	N15	E28	.579	15830	19.9	9	SN		C	1932	100	1.3	
MCMA	17	1945	1954	2000	N18	W01	.422	15823	17.7	15	SN		C	1954	60	.7	E
BIGB	17	2014	2030	2045	N17	W04	.410		17.5	31	SN	2	C	2030	80	.8	
HOLL	17	2029	2032	2217	N17	W 2	.407	15823	17.7	108	1B	3	C		196		F
HOLL	17	2030	2037	2040	N16	E27	.576	15830	19.9	10	1N	3	C		50		
BIGB	17	2110	2125	2140	N17	W04	.410		17.6	30	SN	1	P	2125	70	.7	
HOLL	17	2126	2130	2313	N16	E26	.566		19.8	107	SB	3	C		116		DE

Hα SOLAR FLARES

FEBRUARY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-PORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE FEB	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	17	2126	2128	2128D	N18	E20	.527		19.4	2D	SN	1	P	2128	140	1.5	
HOLL	17	2127	2130	2153	N 1	E 6	.172		18.3	26	SN	3	C		58		
BIGB	17	2215	2224	2230	N18	E19	.518		19.4	15	SN	1	C	2224	40	.4	
HOLL	17	2218	2219	2239	N 1	E 5	.163		18.3	21	SB	3	C		66		
BIGB	17	2218	2219	2225	N02	E07	.196		18.5	7	SN	1	C	2219	40	.4	
BIGB	17	2230	2241	2306	N18	E26	.584		19.9	36	SN	1	C	2241	40	.4	E
BIGB	17	2301	2303	2306	N18	E19	.518		19.4	5	SN	1	C	2303	30	.3	
HOLL	17	2304	2306	2319	S27	E39	.670		20.9	15	SN	3	C		26		
MITK	18	0142	0143	0149	N18	W07	.436		17.5	7	SN		C	0143			E
MITK	18	0637	0644	0725	N19	E16	.505	15830	19.5	48	1B		C	0644	360	4.3	F
MANI	18	0649E	0649U	0656D	N16	E13	.443		19.3	7D	SB	1	C		150		F
CATA	18	0705E	0710	0720D	N18	E17	.501	15830	19.6	15D	1B	2	P	0710	168	2.0	
CATA	18	0940	0950	1030D	S31	W38	.681	15818	15.6	50D	1N	2	P	0950	168	2.3	
CATA	18	1200E	1215	1245D	N14	W05	.367		18.1	45D	SN	2	P	1215	168	1.8	
HOLL	18	1527	1543	1550	N 1	W 4	.154		18.3	23	SN	3	C		49		
HOLL	18	1538	1539	1623	N17	W12	.450		17.8	45	SB	3	C		130		F
HOLL	18	1615	1629	1800	N16	E16	.468	15830	19.9	105	1B	3	C		330		U F
HOLL	18	1615	1642	1800	N16	E16	.468	15830	19.9	105	2B	3	C		576		U F
BIGB	18	1620	1639U	1655	N10	E20	.441		20.2	35	SN	1	C	1639	180	.2	
MCMA	18	1625E		1647D	N12	E20	.461	15830	20.2	22D	1B		C	1630	200	2.3	E
MCMA	18	1628	1642	1647D	N18	W16	.493	15823	17.5	19D	1B		C	1642	200	2.4	EX
HOLL	18	1636	1651	1809	N17	W13	.457	15823	17.7	93	2B	3	C		494		U F
HOLL	18	1636	1638	1809	N17	W13	.457	15823	17.7	93	1B	3	C		290		U F
BIGB	18	1636	1642	1704	N27	W14	.596	15823	17.6	28	1B	1	C	1642	230	2.4	
BIGB	18	1639	1643	1656	N19	E19	.530		20.1	17	SN	1	C	1643	60	.6	
MCMA	18	1641	1642	1647D	N19	E20	.538	15830	20.2	6D	SN		C	1642	110	1.3	E
HOLL	18	1652	1705	1731	N 6	W17	.364		17.4	39	SB	3	C		50		F
BIGB	18	1807	1732	1747	N18	W26	.585	15823	16.8	***	1N	2	C	1732	240	2.7	
HOLL	18	1831	1840	1856	N16	E15	.459		19.9	25	SB	3	C		43		F
BIGB	18	1837	1847	1854	N18	E11	.457		19.6	17	SN	1	C	1847	50	.5	E
BIGB	18	1838	1852	1906	N18	W15	.485		17.7	28	SN	3	C	1852	40	.4	
HOLL	18	1842	1842	1856	N17	W16	.480		17.6	14	SB	3	C		30		F
HOLL	18	1900	1904	1913	N16	E14	.451		19.8	13	SB	3	C		25		F
BIGB	18	1928	2015	2052	N18	E10	.451		19.6	84	SN	3	P	2015	160	1.7	
HOLL	18	1928	1929	1937	N16	E14	.451		19.9	9	SN	3	C		44		F
HOLL	18	1947	1956	2044	N16	E14	.451		19.9	57	SB	3	C		108		FDE
HOLL	18	1954	1954	2006	N17	W16	.480		17.6	12	SB	3	C		29		F
BIGB	18	1954	1957	2007	N18	W17	.501		17.6	13	SN	3	C	1957	50	.5	
BIGB	18	2055	2122	2158	N17	E18	.497		20.2	63	SN	3	C	2122	50	.8	B
HOLL	18	2056	2057	2105	N16	E13	.443		19.8	9	SB	3	C		29		F
BIGB	18	2103	2112	2131	S15	E50	.762		22.6	28	SN	3	C	2112	40	.4	E
BIGB	18	2115	2117	2123	N15	E15	.446		20.0	8	SN	3	C	2117	50	.5	
HOLL	18	2115	2122	2142	N17	W17	.489		17.6	27	SB	3	C		94		U F
HOLL	18	2119	2122	2124	N16	E13	.443		19.9	5	SB	3	C		22		F
BIGB	18	2132	2137	2139	N17	E08	.426		19.5	7	SN	3	C	2137	10	.7	D
HOLL	18	2143	2145	2146	N16	E13	.443		19.9	3	SN	3	C		20		
BIGB	18	2156	2209	2241	N18	E10	.451	15830	19.7	45	1N	3	C	2209	180	2.2	
HOLL	18	2156	2156	2201	N16	E13	.443		19.9	5	SB	3	C		35		
BIGB	18	2203	2210	2245U	N18	W21	.536	15823	17.3	42U	1N	3	C	2210	250	4.7	E
HOLL	18	2205	2209	2244	N16	E13	.443		19.9	39	SB	3	C		185		U F
HOLL	18	2206	2211	2246	N17	W18	.497	15823	17.6	40	1B	3	C		232		U F
HOLL	18	2206	2216	2246	N17	W18	.497		17.6	40	SB	3	C		189		U F
BIGB	18	2324	2342	0001	N18	W19	.518		17.6	37	SN	3	C	2342	80	.8	
HOLL	18	2329	2339	0013	N17	W18	.497		17.6	44	SB	3	C		97		U F
MANI	18	2335	2339	0006D	N19	W20	.538	15823	17.5	31D	1B	3	V		200		F
MITK	18	2336E		2344D	N18	W19	.518	15823	17.6	8D	SB		P	2340			EZ
BIGB	18	2342	2353	2353D	N17	E14	.464		20.0	11D	SN	1	C	2353	70	.7	
HOLL	18	2343	2348	0018D	N16	E12	.436		19.9	35D	SB	2	C		131		U F
MANI	18	2350	2350	0006D	N18	E10	.451		19.7	16D	SB	3	V		120		F
BIGB	18	2352	2354	2358	N16	W18	.486		17.6	6	SN	1	C	2354	10	.2	D
MITK	18	2356E		2416	N18	W19	.518	15823	17.6	20D	SN		C	2404			EZ
MITK	18	2356E		2424	N18	E13	.470		20.0	28D	SN		C	2359			E
MANI	19	0357E	0357U	0357D	N19	W21	.548		17.6		SB	2	V		100		F
MCMA	19	1500	1533	1720D	N19	W28	.614	15823	17.5	140D	1B		C	1533	200	2.7	EV
HOLL	19	1524	1534	1637	N17	W27	.586	15823	17.6	73	1B	2	C		235		U F
HOLL	19	1524	1526	1637	N17	W27	.586		17.6	73	SB	2	C		117		U F
RAMY	19	1525E	1527	1649	N19	W25	.585	15823	17.8	84D	1B	3	C		230		FDE
RAMY	19	1602	1603	1609	N15	E 3	.378		19.9	7	SB	3	C		58		
RAMY	19	1634	1636	1659	N15	E 3	.378		19.9	25	SN	2	C		22		
RAMY	19	1755	1814	1854	N15	E 2	.376	15830	19.9	59	1B	3	C		491		F

Hα SOLAR FLARES

FEBRUARY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-POR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE FEB	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP DAY	MIN.		COND.	TYPE	TIME — UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
MCMA	19	1758	1820	1959D	N20	E02	.455	15830	19.9	121D	2B		C	1820	500	5.6	FILW
HOLL	19	1805	1814	1906	N16	E 2	.392	15830	19.9	61	1B	3	C		466		U F
MCMA	19	1959	2006	2014D	N20	E04	.458	15830	20.1	15D	SN		C	2006	80	.9	E
HOLL	19	2002	2004	2046	N16	E 1	.391		19.9	44	SB	3	C		65		FDE
RAMY	19	2018E	2018U	2035D	N15	E 1	.375		19.9	17D	SB	2	C		51		F
HOLL	19	2026	2034	2054	S16	E40	.645		22.9	28	SB	3	C		119		F
RAMY	19	2033	2035	2035D	S17	E42	.672		23.0	2D	SB	2	C		29		
HOLL	19	2138	2140	2144	N16	W 0	.390		19.9	6	SB	3	C		31		F
HOLL	19	2207	2211	2220	N16	W 1	.391		19.8	13	SB	3	C		22		
HOLL	19	2221	2225	2240	N16	W 1	.391		19.9	19	SB	3	C		145		DE H
HOLL	19	2329	2339	0013	N17	W18	.498		18.6	44	SB	3	C		97		U F
HOLL	19	2343	2348	0018D	N16	E12	.436		20.9	35D	SB	2	C		131		U F
MITK	20	0447	0451	0515	N18	W07	.438	15830	19.7	28	1F		C	0451	190	2.2	E
CATA	20	0750E	0750	0805	N16	W15	.460	15830	19.2	15D	1B	2	P	0750	196	2.2	
RAMY	20	1214	1217	1220	N20	W39	.730		17.6	6	SN	3	C		20		
RAMY	20	1230	1232	1235D	N17	W17	.490		19.2	5D	SB	3	V		58		
RAMY	20	1246	1247	1251	N17	W16	.481		19.3	5	SB	3	C		44		F
RAMY	20	1257	1302	1305	N17	W12	.451		19.6	8	SB	3	C		34		F
RAMY	20	1319	1322	1323D	N17	W12	.451		19.7	4D	SB	3	V		57		F
RAMY	20	1344	1344	1405	N21	E27	.623		22.6	21	SB	3	C		25		F
RAMY	20	1349	1351	1416D	N20	W39	.730		17.7	27D	SN	3	V		57		F
MCMA	20	1350E		1510	N19	W41	.744	15823	17.5	80D	1B		P	1439	150	2.3	EL
HOLL	20	1604	1618	1714	N16	W10	.423	15830	19.9	70	1B	3	C		223		FDE
HOLL	20	1604	1649	1714	N16	W10	.423	15830	19.9	70	1B	3	C		305		FDE
MCMA	20	1610	1615	1705	N15	W04	.380	15830	20.4	55	1B		C	1615	180	2.0	E
HOLL	20	1638	1650	1659	N17	W41	.733		17.6	21	SB	3	C		33		F
HOLL	20	1643	1643	1647	N22	W77	.987		14.9	4	SN	3	C		0		F
MCMA	20	1644	1649	1705	N16	W20	.505	15830	19.2	21	1B		C	1649	170	2.0	DL
MCMA	20	1708	1710	1715	N16	W20	.505	15830	19.2	7	SN		C	1710	30	.4	D
MCMA	20	1716	1721	1746	N20	W16	.519	15830	19.5	30	SN		C	1721	25	.3	D
MCMA	20	1721	1746	1845	N03	W32	.552	15828	18.3	84	1B		C	1746	220	2.7	EU
RAMY	20	1724	1744	1903D	N 1	W33	.558	15828	18.3	99D	2B	3	C		595		U
HOLL	20	1729	1737	1833	N 3	W32	.552	15828	18.3	64	1B	3	C		275		U
MCMA	20	1745	1808	2010D	N20	W25	.595	15830	18.9	145D	2B		C	1808	600	8.0	IL
RAMY	20	1750	1756	1757	N17	W11	.444		19.9	7	SB	3	C		29		F
RAMY	20	1759	1804	1903D	N16	W20	.505	15830	19.2	64D	1B	3	C		353		U F
RAMY	20	1759	1802	1803D	N17	W11	.444	15830	19.9	4D	1B	3	V		281		F
HOLL	20	1800E	1804	1932	N16	W20	.505	15830	19.3	92D	1B	3	C		336		U F
HOLL	20	1802	1804	1810	N17	W42	.743		17.6	8	SN	3	C		19		
MCMA	20	2003	2009	2010D	N16	W22	.525	15830	19.2	7D	SN		C	2009	35	.4	D
HOLL	20	2007	2010	2013	N16	W15	.460		19.7	6	SB	3	C		32		UDE
MANI	20	2348	2350	2354	N18	W20	.528		19.5	6	SN	3	V		150	1.8	
MITK	21	0045	0049	0117	N17	W24	.556		19.2	32	SF		C	0049			E
MITK	21	0228	0237	0253	N19	W22	.558		19.5	25	SF		C	0237			D
RAMY	21	1334	1335	1344	N17	W31	.629		19.2	10	SB	3	C		35		
RAMY	21	1418E	1421U	1429D	N17	W28	.597	15830	19.5	11D	1B	3	V		311		U F
RAMY	21	1442	1443	1454	N17	W32	.639		19.2	12	SB	3	C		25		
RAMY	21	1555E	1557	1613	N17	W32	.639		19.3	18D	SB	3	C		60		
RAMY	21	1627	1629	1651	N18	W34	.667		19.1	24	SB	3	C		68		F
RAMY	21	1627	1634	1651	N18	W34	.667		19.1	24	SB	3	C		111		F
RAMY	21	1723	1726	1732D	N15	W30	.602		19.5	9D	SB	3	C		34		
RAMY	21	1853E	1905	1910D	N15	W30	.602		19.5	17D	SB	3	C		41		
RAMY	21	1939	1953	2128	N15	W31	.613		19.5	109	SB	3	C		126		F
RAMY	21	2052	2053	2112	S21	W49	.758		18.2	20	SN	3	C		28		
RAMY	21	2113	2126	2132	N 1	W48	.750		18.3	19	SN	3	C		16		
MANI	21	2348	2350	2354	N18	W20	.528		20.5	6	SB	3	V		150		
MANI	22	0005E	0005U	0011	N17	W34	.661	15830	19.5	6D	1B	3	C		250		Z
MITK	22	0124	0126	0135	N16	W37	.686		19.3	11	SB		C	0126			D
MANI	22	0125	0130	0135	N17	W35	.671	15830	19.4	10	1B	3	C		200		Z
MANI	22	0505	0510	0527	N17	W36	.682	15830	19.5	22	1B	3	C		430		Z U
MANI	22	0915	0917	0921	N16	W40	.717		19.4	6	SB	3	C		60		F
RAMY	22	1151	1151	1221	N15	W40	.712		19.5	30	SB	2	C		44		F
RAMY	22	1214	1220	1242	N19	W65	.934		17.6	28	SB	3	C		97		
RAMY	22	1253	1255	1324	N15	W40	.712	15830	19.5	31	1B	3	C		233		
MCMA	22	1406E		1435	N16	W45	.768	15830	19.2	29D	SN		C	1406	50	.8	E
MCMA	22	1526	1530	1555	N16	W45	.768	15830	19.3	29	SF		C	1530	40	.6	E
MCMA	22	1534	1537	1550	N10	W72	.960	15836	17.2	16	SF		C	1537	30		E
MCMA	22	1556	1607	1633	N38	E44	.874	15840	26.0	37	SN		C	1607	50	1.0	E
RAMY	22	1558	1609	1632	N35	E42	.846		25.8	34	SB	3	C		114		

Hα SOLAR FLARES

FEBRUARY 1979

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE FEB	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
MCMA	22	1622	1627	1645	N10	W72	.960	15836	17.3	23	SF		C	1627	20		E
RAMY	22	1625	1628	1649	N 7	W72	.957		17.3	24	SB	3	C		16		
MCMA	22	1631	1635	1735	N16	W46	.778	15830	19.2	64	1B		C	1635	110	2.0	EHRX
RAMY	22	1633	1637	1709	N15	W42	.733		19.5	36	SB	3	C		164		
MCMA	22	1710	1716	1735	N21	W70	.962	15823	17.5	25	1B		C	1716	50	2.0	D
RAMY	22	1713	1715	1737	N19	W67	.945		17.7	24	SB	3	C		86		
RAMY	22	1808	1810	1847	N15	W43	.743		19.5	39	SB	3	C		104		FDE
RAMY	22	1857	1859	1923	N15	W43	.743	15830	19.6	26	1B	3	C		198		FDE
RAMY	22	1948	1948	2014	N19	W69	.955		17.7	26	SN	3	C		11		
MANI	23	0820E	0835	0846D	N17	W55	.861		19.2	26D	SN	3	C		30		
RAMY	23	1252	1252	1255	N16	W52	.833		19.6	3	SB	3	C		18		
HOLL	23	1452	1453	1502	N17	W53	.845	15830	19.6	10	1B	3	C		163		F
HOLL	23	1452	1453	1502	N17	W48	.801		20.0	10	SB	3	C		121		F
RAMY	23	1454E	1454	1507	N16	W53	.842	15830	19.6	13D	1B	3	C		168		
HOLL	23	1534	1630	1747	N17	W54	.853		19.6	133	SN	3	C		95		FDE
HOLL	23	1534	1621	1747	N17	W54	.853		19.6	133	SB	3	C		139		FDE
RAMY	23	1619	1621	1626	N16	W54	.850		19.6	7	SB	3	C		29		
RAMY	23	1725	1735	1742	N16	W55	.858		19.6	17	SB	3	C		97		DE H
RAMY	23	1805	1805	1824	N16	W55	.858		19.6	19	SN	3	C		35		
HOLL	23	1815	1830	1954D	N17	W54	.853	15830	19.7	99D	1B	3	C		157		F
RAMY	23	1825	1830	1849	N16	W55	.858	15830	19.6	24	1B	3	C		278		DE
PALE	23	1838E	1838U	1852	N18	W62	.914	15830	19.1	14D	1B	2	V		132		DE
RAMY	23	1849	1921	2017	N16	W56	.866		19.6	88	SB	3	C		47		
PALE	23	1856	1920	1936	N18	W62	.914		19.1	40	SN	2	C		64		DE
HOLL	23	1938	1953	2057	N17	W55	.861		19.7	79	SB	3	C		80		
PALE	23	1945E	1955U	2118D	N18	W63	.921		19.1	93D	SN	2	C		40		F
RAMY	23	2032	2051	2056	N16	W56	.866		19.7	24	SB	3	C		19		
RAMY	24	1208	1209	1212	N16	W65	.929		19.6	4	SB	3	C		17		
RAMY	24	1235	1241	1301	N16	W65	.929		19.6	26	SB	3	C		26		
RAMY	24	1333	1333	1336	N16	W65	.929		19.7	3	SN	3	C		20		
RAMY	24	1436	1437	1440	S21	E65	.900		1.5	4	SN	3	C		24		
RAMY	24	1547	1547	1558	N16	W70	.956		19.4	11	SB	3	C		26		
HOLL	24	1547	1547	1558	N16	W60	.897		20.2	11	SB	3	C		29		
RAMY	24	1636	1637	1656	N16	W68	.946		19.6	20	SB	3	C		34		
RAMY	24	1724	1726	1731	N16	W68	.946		19.6	7	SB	3	C		28		
RAMY	24	1933	1934	1937	S20	W13	.309		23.8	4	SN	3	C		21		
RAMY	24	2025	2026	2028	N16	W69	.952		19.7	3	SB	3	C		23		
HOLL	24	2025	2026	2030	N17	W69	.953		19.7	5	SB	3	C		28		
HOLL	24	2029	2031	2043D	S25	E 9	.339		25.5	14D	SN	3	C		50		F
RAMY	24	2030	2030	2037	S28	E13	.410		25.8	7	SN	3	C		28		F
HOLL	24	2100	2110	2124	N17	W69	.953		19.7	24	SN	3	C		40		
HOLL	24	2140	2140	2157	S25	E 9	.339		25.6	17	SN	3	C		35		F
HOLL	24	2149	2150	2155	N11	E63	.908		1.6	6	SN	3	C		20		
MITK	24	2314E	2338	2508	N20	W64	.930	15830	20.2	114D	1F		C	2338	130		
MITK	25	0638		0654D	S20	E63	.885	15847	2.0	16D	1N		P	0654	210	4.6	
MANI	25	0643E	0652	0719D	S20	E58	.844	15849	1.6	36D	1B	3	C		150		F
RAMY	25	1428	1429	1434	S25	E 1	.307		25.7	6	SB	3	C		68		
RAMY	25	1438	1445	1453	N16	W78	.986		19.8	15	SB	3	C		0		
BIGB	25	2010	2015	2028	S17	W38	.621		23.0	18	SN	2	C	2015	20	.2	
HOLL	25	2012	2024	2033	S14	W44	.691		22.5	21	SN	3	C		33		F
RAMY	25	2014	2014	2018	S16	W37	.605		23.1	4	SF	3	C		20		
PALE	25	2032	2032	2040	S33	W 8	.452		25.3	8	SF	3	C		30		DE F
BIGB	25	2047	2053	2102	S20	E53	.797		1.8	15	SN	2	C	2053	50	.6	
HOLL	25	2049	2052	2104	S21	E51	.779		1.7	15	SN	3	C		36		
RAMY	25	2050	2053	2100	S20	E52	.787		1.8	10	SN	3	C		23		
HOLL	25	2122	2129	2146	S20	W28	.500		23.8	24	SN	3	C		37		F
BIGB	25	2156	2213	2246	S21	E90	.999	15850	4.7	50	1N	2	C	2213	70		
HOLL	25	2206	2209	2228	S22	E83	.987		4.1	22	SN	3	C		0		F
BIGB	25	2223	2241	2254	N38	E08	.716		26.5	31	SF	2	C	2241	30	.3	
BIGB	25	2315	2317	2322	N40	W02	.734		25.8	7	SF	3	C	2317	30	.3	
PALE	26	0252	0254	0257	N17	W79	.989		20.2	5	SN	3	C		23		F
KAND	26	0814E	0838	0838D	N15	W90	1.001		19.6	24D	SN		C				
KAND	26	0903	0918	0918D	S33	W15	.490		25.3	15D	SF		C		52		
ISTA	26	0943E		0945	S24	E74	.954		4.0	2D	SF						D
CATA	26	1045	1050	1050D	S23	W25	.481		24.6	5D	SN	2	P	1050	84	.9	
MONT	26	1046	1047	1058	S22	W25	.474		24.6	12	SF		C	1047	50		E
MONT	26	1117	1122	1129	N16	W69	.952		21.3	12	SN		C	1122	110		G
MONT	26	1227	1234	1253	S32	W15	.477		25.4	26	SF		C	1234	60		E

Hα SOLAR FLARES

FEBRUARY 1979

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE FEB	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	26	1638	1639	1655	S31	W31	.609		24.4	17	SN	1	C	1639	30	.3	E
PALE	26	1735	1739	1751	S25	E63	.887		3.5	16	SN	3	C		25		DE
PALE	26	1800	1801	1824	S25	E63	.887		3.5	24	SN	3	C		35		DE
MCMA	26	1850E	1852	1857	N09	E90	1.000	15855	5.5	7D	SF		C	1852			
RAMY	26	1853	1853	1920D	N 5	E84	.996		5.1	27D	SF	3	C		0		
BIGB	26	1900	1923	1928	S13	E70	.933		4.0	28	SN	2	C	1923	10		
RAMY	26	1903	1906	1919	S27	E68	.922		3.9	16	SB	3	C		20		
MCMA	26	1905	1910	1915	S23	E68	.920	15854	3.9	10	SN		C	1910	50	1.4	E
PALE	26	1908	1909	1916	S24	E67	.914		3.8	8	SN	3	C		22		DE
MCMA	26	1923	1925	1933	S23	E68	.920	15854	3.9	10	SN		C	1925	50	1.4	E
RAMY	26	1924	1926	1937	S27	E68	.922		3.9	13	SB	3	C		55		
PALE	26	1925	1926	1929	S25	E63	.887		3.5	4	SN	3	C		30		DE
BIGB	26	1941	1942	1957	N07	E90	1.000		5.6	16	SN	3	C	1942	40		
BIGB	26	1955	2018	2046	S25	E68	.921	15854	3.9	51	1N	3	C	2018	150		
BIGB	26	2000	2003	2007	S21	E42	.680		2.0	7	SN	3	C	2003	20	.3	
RAMY	26	2001	2002	2009	S22	E40	.660		1.8	8	SN	3	C		34		
RAMY	26	2011	2013	2015	S27	E67	.916		3.9	4	SN	3	C		13		
RAMY	26	2025	2028	2032D	S27	E66	.909		3.8	7D	SN	3	C		13		
RAMY	26	2030	2031	2032D	S22	E38	.636		1.7	2D	SN	3	C		49		
BIGB	26	2109	2125	2125D	S25	E68	.921	15854	4.0	16D	1N	3	C	2125	130		
HOLL	26	2201E	2205U	2238	S23	E83	.987		5.1	37D	SN	2	C		0		
HOLL	26	2242	2246	2254	S23	E65	.901		3.8	12	SN	2	C		0		
HOLL	26	2309	2311	2326	S23	E65	.901		3.8	17	SN	2	C		0		
HOLL	26	2333	2333	2338	S23	E65	.901		3.9	5	SN	2	C		0		
RAMY	27	1535	1538	1541	S22	E85	.992		6.0	6	SN	3	C		20		
MCMA	27	1536	1537	1540	S20	E88	.997	15856	6.2	4	SN		C	1537			D
MCMA	27	1632	1635	1705	S32	W32	.626	15851	25.3	33	SN		C	1635	40	.5	E
MCMA	27	1634	1635	1644	S17	W07	.207	15852	27.2	10	SN		C	1635	25	.3	D
RAMY	27	1634	1637	1703	S36	W34	.674		25.1	29	SB	3	C		112		F
RAMY	27	1634	1635	1644	S20	W 6	.243		27.2	10	SN	3	C		44		
HOLL	27	1635	1640	1647	S34	W32	.641		25.3	12	SB	3	C		26		F
HOLL	27	1834	1834	1839	S20	W 7	.250		27.2	5	SN	3	C		48		F
RAMY	27	1834	1834	1843	S20	W 7	.250		27.2	9	SN	3	C		51		
HOLL	27	1908	1908	1912	N36	W19	.728		26.4	4	SN	3	C		22		
BIGB	27	2045	2047	2058	S17	W08	.217		27.3	13	SN	2	C	2047	40	.4	
HOLL	27	2047	2047	2056	S20	W 8	.258		27.3	9	SN	3	C		61		F
BIGB	27	2054	2102	2117	S18	W55	.815		23.7	23	SN	2	C	2102	100	1.8	
HOLL	27	2243	2246	2255	S20	W 9	.267		27.3	12	SN	3	C		27		
BIGB	27	2335	2345	2353	S18	W10	.251		27.2	18	SN	2	C	2345	80	.8	
HOLL	27	2335	2336	2354	S20	W 9	.267		27.3	19	SB	2	C		80		F
MITK	28	0028	0034	0042	N09	E70	.949	15855	5.3	14	1B		C	0034			
PALE	28	0032E	0034U	0045D	N 8	E63	.904	15855	4.7	13D	1B	3	C		141		F
PALE	28	0228	0228	0233	N 6	E66	.922		5.1	5	SN	3	C		37		F
KANO	28	0656E	0656	0711	N08	E67	.930		5.3	15D	SN		C				
KANO	28	0737	0743	0755	N08	E67	.930		5.3	18	SN		C				
ISTA	28	0741E		0745	S19	E78	.972		6.2	4D	SF						D
KANO	28	0809	0809	0826	N08	E67	.930		5.4	17	SN		C				
RAMY	28	1318	1321	1345	N 9	E62	.898		5.2	27	SN	3	C		35		
MCMA	28	1351E		1406	N09	E67	.932	15855	5.6	15D	SF		C	1351			EH
HOLL	28	1611	1741	1812	S24	E42	.689		3.8	121	SN	3	C		34		
RAMY	28	1611	1615	1620	N 8	E62	.896		5.3	9	SN	3	C		26		
HOLL	28	1613	1614	1620	N 8	E63	.904		5.4	7	SN	3	C		14		
HOLL	28	1628	1628	1635	S22	E70	.932		5.9	7	SN	3	C		17		
HOLL	28	1638	1651	1655	S22	E70	.932		5.9	17	SN	3	C		16		
RAMY	28	1650	1652	1656	S20	W19	.382		27.3	6	SB	3	C		33		
HOLL	28	1709	1712	1729	S22	E70	.932		6.0	20	SN	3	C		18		
HOLL	28	1730	1735	1818	S22	E70	.932		6.0	48	SB	3	C		38		
BIGB	28	1734	1735	1739	S22	E71	.938		6.1	5	SN	3	C	1735	10		
HOLL	28	1837	1840	1855	S22	E69	.926		6.0	18	SN	3	C		17		

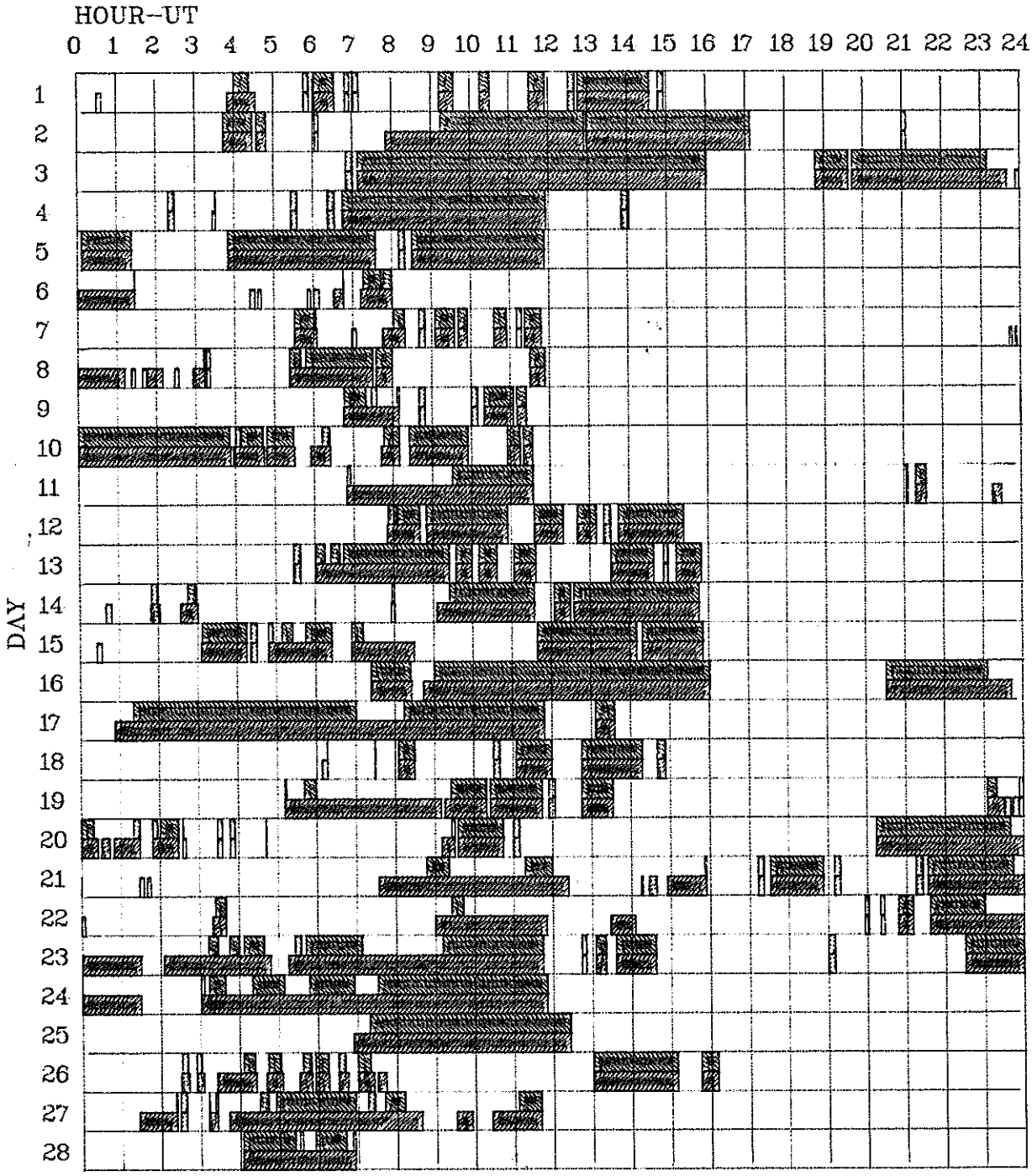
"Remarks":

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

FEBRUARY 1979



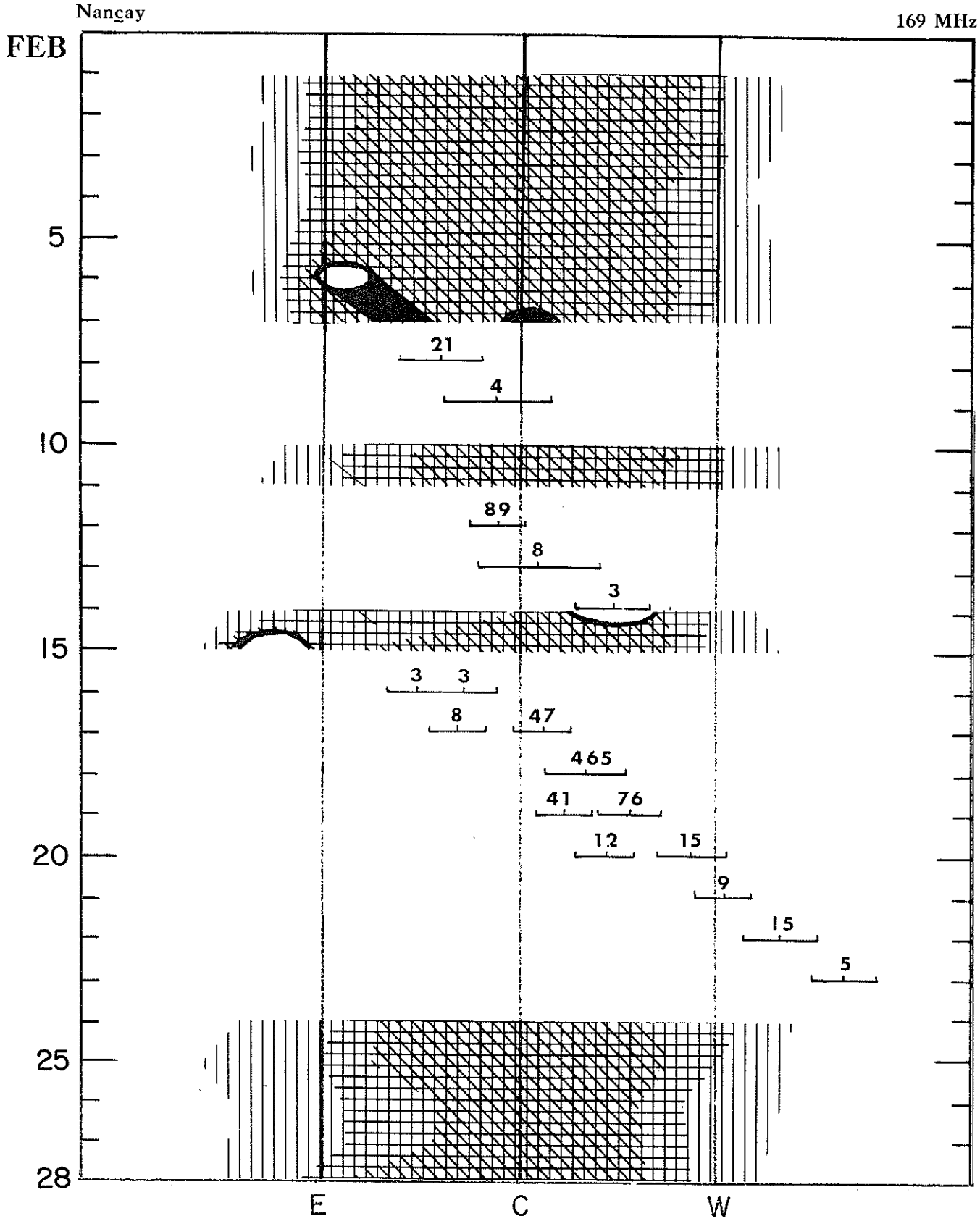
Observatories included in total patrol:

Big Bear	Holloman	Manila	Mitaka	Palehua	Upice
Bucharest	Istanboul	McMath-Hulbert	Monte Mario	Ramey	Wendelstein
Catania	Kandilli				

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

FEBRUARY 1979

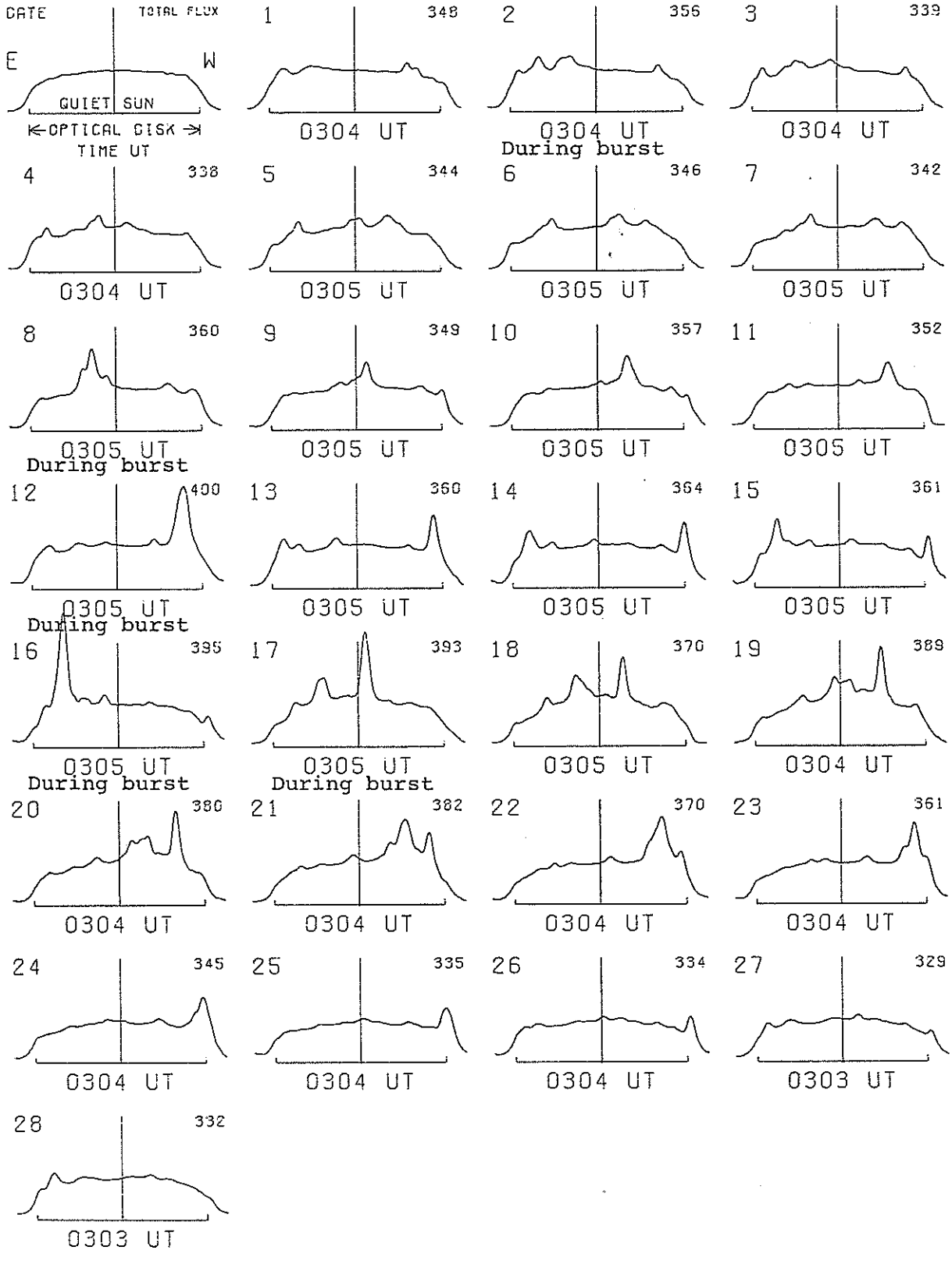


26
Feb 79

EAST-WEST SOLAR SCANS
FEBRUARY 1979

TOYOKAWA, JAPAN

3 CM
FAN BEAM WITH 1.1 MINUTES OF ARC

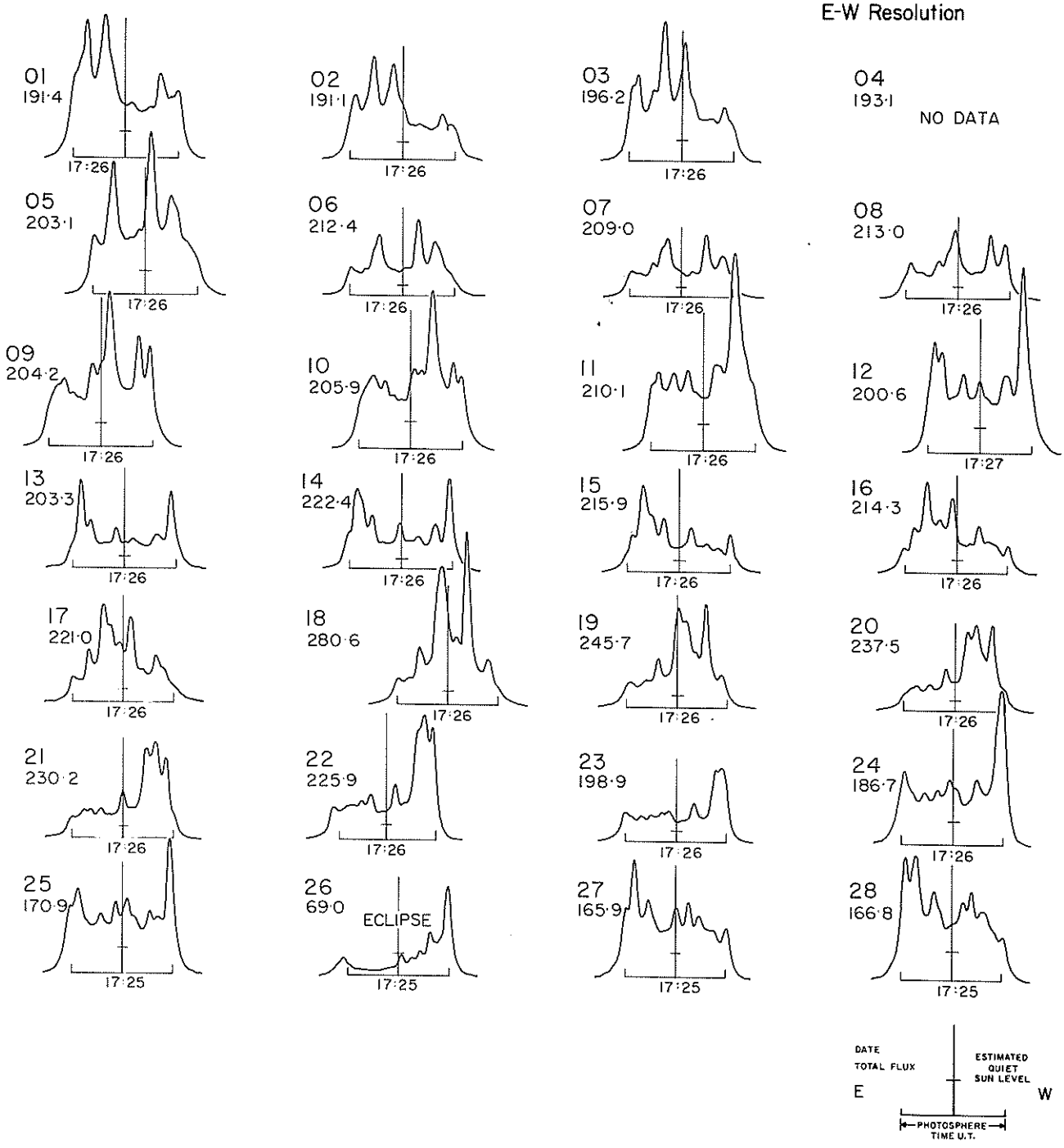


EAST-WEST SOLAR SCANS

FEBRUARY 1979

ALGONQUIN RADIO OBSERVATORY
CANADA

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

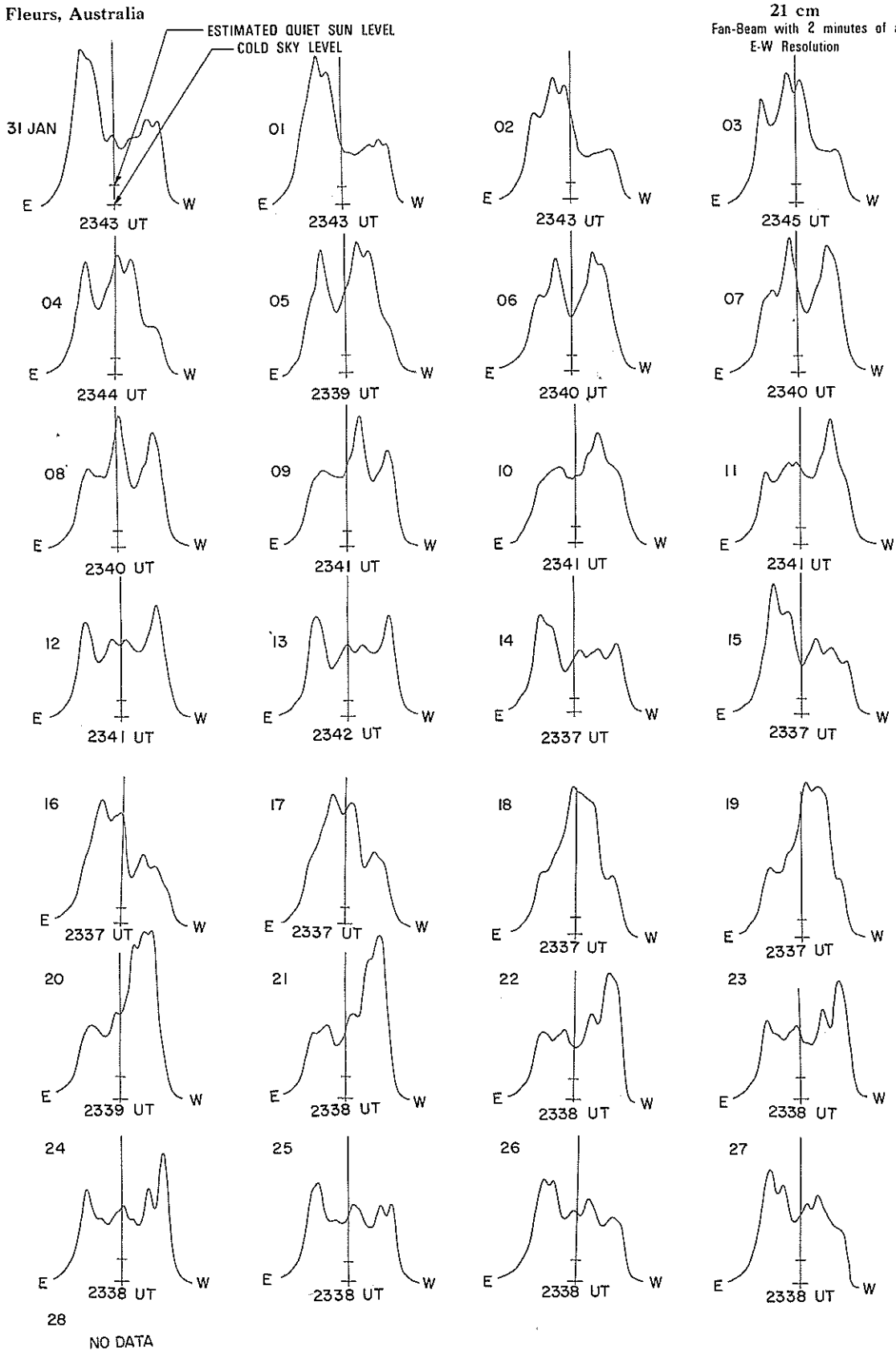


EAST-WEST SOLAR SCANS

FEBRUARY 1979

Fleurs, Australia

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



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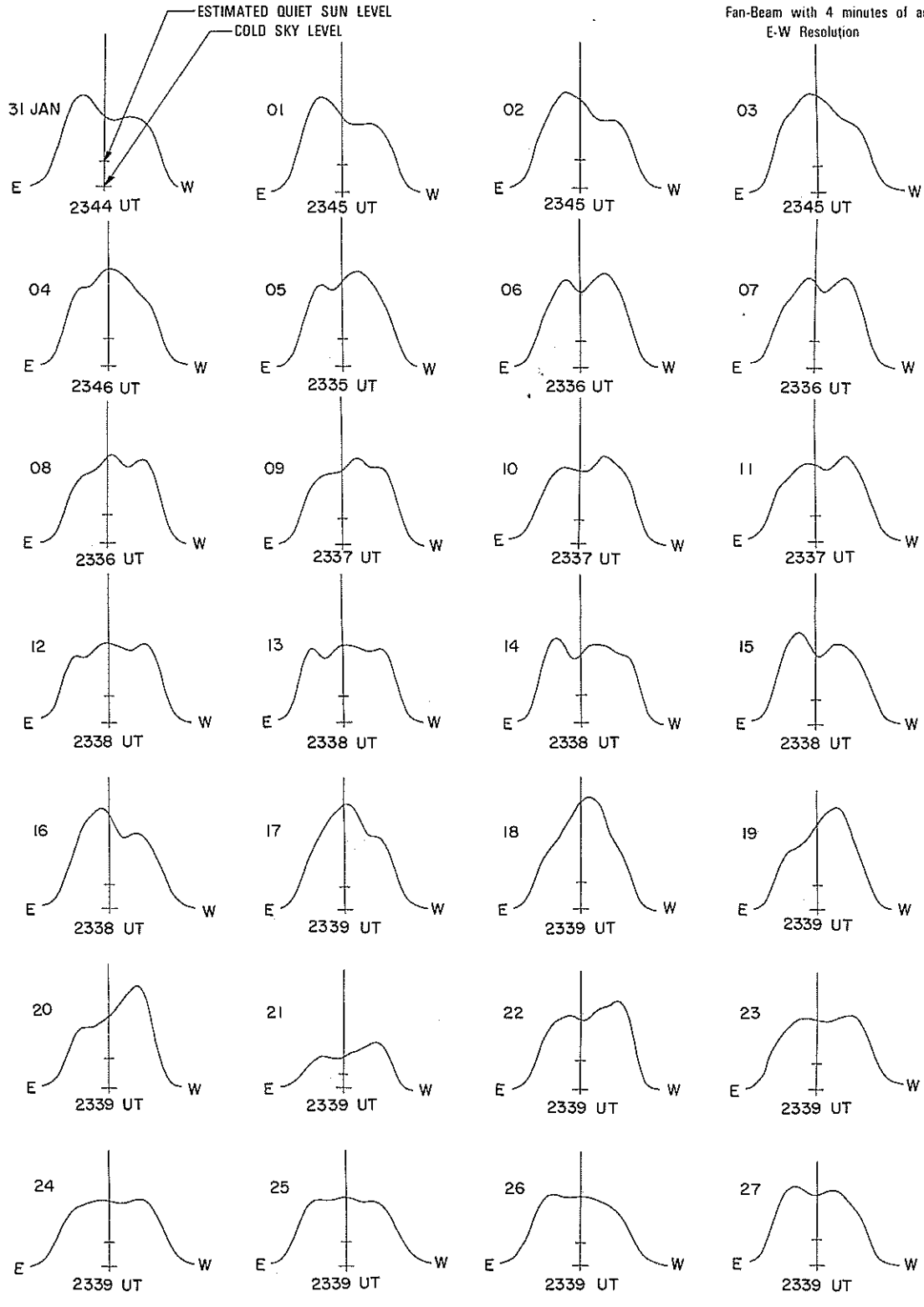
NO DATA

EAST-WEST SOLAR SCANS

FEBRUARY 1979

Fleurs, Australia

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



28

NO DATA

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

FEBRUARY 1979

FEB 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	2695	MANI	4 S/F	0805.9	0808.5	4.6	93.7	17.9		
	2800	OTTA	20 GRF	1848	1850	20	1.8			
	2800	OTTA	20 GRF	2030	2033	20	2.2	1.1		
2	8800	SGMR	20 GRF	1428.2	1438.2	22.3	4.6	1.4		
	2695	SGMR	20 GRF	1429.4	1444.5	25.6	9.4	2.8		
	2800	OTTA	20 GRF	1430	1435	30	4.6	2.3		
	2695	SGMR	1 S	1759.3	1800.1	2.7	6.1	1.8		
	8800	SGMR	3 S	1759.3	1800.1	2.7	11.3	3.4		
	2800	OTTA	1 S	1759	1800	2	5.4	2.9		
	2800	OTTA	8 S	2024	2024.2	.5	5.4			
	2695	PENT	21 GRF	2050	2152	150 D	5.8			
	2695	PENT	1 S	2302	2302.7	2	3.4	1.7		
3	2800	OTTA	20 GRF	1600	1645	170	4	2		
	2800	OTTA	8 S	1755.6	1755.6	.5	3.2	1.6		
4	8400	BERN	22	0826.6	0827.7	4.5	15			OPR
	2800	OTTA	3 S	1724	1724.9	2	10.2	2.6		
	2800	OTTA	21 GRF	1823	1855	95	7	3.3		
	2800	OTTA	1 S	1826.8	1828	2	4	2		
	2800	OTTA	2 S/F	1837.2	1837.5	1	6	3		
	2800	OTTA	8 S	1849.5	1849.5	.1	2			
	2800	OTTA	1 S	1901.5	1903	4	4	2		
5	2695	MANI	4 S/F	0637.7	0640.8	7.3	63.6	21.2		
	8800	MANI	47 GB	0638	0640.8	5.5	675	147		I
	8400	BERN	22	1144.5	1147.3	5.5	29			7L
	2800	OTTA	21 GRF	1725	1850	155	5.6	2.8		
	2800	OTTA	8 S	1908.2	1908.5	.5	7.2			
	2800	OTTA	240AR	2014	2024	10	3.4			
	2800	OTTA	1 S	2019	2021	3	4	2		
	2800	OTTA	4 S/F	2119	2121	8	66	21.4		
	2695	BOUL	4 SF	2120.5E	2122	3.5D	84	28		
	2695	BOUL	29 PBI	2124	2124	39 J	26	9		
	2800	OTTA	30 PBI	2127	2127	35	4.8	2.4		
	2800	OTTA	4 S/F	2130	2132.2	6	80	21.6		
	2695	BOUL	4 SF	2131 E	2133	3 D	108	36		
	2695	PENT	46F C	2148.2	2149.3	3.8	24	10.9		
	2695	BOUL	45 C	2149.5E	2151.5	2.5D	40	13		
	2695	PENT	29 PBI	2152	2152	4	4	2		
6	2695	MANI	1 S	0240.8	0241.4	2.5	8.2	2.7		
	2695	MANI	4 S/F	0444.4	0445.3	2.3	11.4	3.8		IG
	8400	BERN	4	0914.8	0915.4	3	42			3L
	8400	BERN	20	1259.1	1300.9	6	11			
	2800	OTTA	21 GRF	1340		120	8.2			
	8400	BERN	4	1347	1348.1	5	52			16L
	2695	SGMR	3 S	1347.4	1349	6.6	42.9	12.9		3G
	8800	SGMR	3 S	1347.4	1348.4	3.6	45.2	13.5		3G
	2800	OTTA	3 S	1347	1348.2	3.5	40.4	10.1		
	2800	OTTA	1 S	1352.5	1352.8	1.5	3.4	1.8		
	2800	OTTA	21 GRF	1555	1627	65	6.2	3.1		
	2695	SGMR	3 S	1600.2	1601	4.8	39.9	16		3G,SWF
	2800	OTTA	45 C	1600	1600.6	10	19.8	5		
	2695	BOUL	4 SF	1601 E	1602	2 D	26	9		
	2800	OTTA	4 S/F	1618	1618.3	8	20.2	5.2		
	2695	SGMR	3 S	1619	1619.7	6	29.5	11.8		SWF
	2695	BOUL	3 S	1619.5E	1620.5	1.5D	47	16		
	2800	OTTA	1 S	1645.5	1647.7	5	2	1.5		
	2800	OTTA	21 GRF	1750	1810	120	2.8	1.4		
	2800	OTTA	1 S	1752.2	1752.5	2	3.8	1.9		
	2800	OTTA	23 GRF	2000	2104	200	10.8	5.4		
	2695	PENT	22 GRF	2005	2010	12	2.8	1.4		
	2695	PENT	1 S	2018.8	2019.5	2	1.2	.6		
	2800	OTTA	1 S	2031.5	2033.2	3	3.8	1.8		
	2800	OTTA	4 S/F	2036	2037	2	39	7		
	2695	BOUL	3 S	2037.5E	2038	1 D	34	11		
	2800	OTTA	45 C	2054.5	2055.5	4	6.2	3.1		
7	2695	MANI	4 S/F	0352.2	0354	3.6	101.6	67.8		
	8800	MANI	4 S/F	0352.7	0354	3	109.1	72.7		
	8400	BERN	1	1125.5	1125.9	1	28			
	2800	OTTA	20 GRF	1618	1624	27	2.6	1.3		
	2800	OTTA	1 S	1842	1843	2	2.6	1.3		
	2695	PENT	20 GRF	1957	2002	15	1.8			
	2800	OTTA	20 GRF	2020	2024	20	1.8	1		
	2695	PENT	22 GRF	2120	2250	140	7			
8	2695	MANI	4 S/F	0203.8	0206.2	10	102.4	68.3		
	2695	MANI	4 S/F	0225.2	0244	32.3	56	37.3		
	2800	OTTA	240 R	1347	1349	2	2.2	1.1		
	8400	BERN	2	1447.2	1448.1	10	46			14L
	8800	SGMR	3 S	1447.6	1448.3	4.6	29	2		SWF

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FEB 1979	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY $10^{-22}Wm^{-2}Hz^{-1}$ PEAK	FLUX DENSITY MEAN	INT	REMARKS
	2800	OTTA	3 S	1447	1446.2	13	25	8.2		
	2695	SGMR	3 S	1448	1448.4	4.2	31	6		SWF
	2800	OTTA	21 GRF	1518	1545	125	8.6	4.3		
	2800	OTTA	4 S/F	1519	1522.4	6	17.6	5.9		
	8800	SGMR	3 S	1520.2	1523.1	3.9	15	3		
	8400	BERN	46	1522.1	1523	7	18			
	2800	OTTA	26 FAL	1920	2010	50	-3.4			
	2800	OTTA	1 S	2053.5	2053.9	1	2.2	1.1		
	2800	OTTA	1 S	2114	2115.2	2	3.6	1.8		
	2800	OTTA	29 PBI	2116	2116	25	1.8	1.3		
	2695	PENT	8 S	2237.8	2237.9	.2	3.6	1.8		
	2695	PENT	21 GRF	2242	2300	50	3.4	1.7		
	2695	PENT	3 S	2249	2249.5	3	32	7.8		
	2695	BOUL	3 S	2250 E	2251	1.5D	41	14		
	2695	PENT	8 S	2314.7	2314.8	.7	8.4	2.1		
	2695	PENT	8 S	2327.8	2327.9	.5	7.2			
9	2695	MANI	1 S	0024	0024.2	.6	9.2	3.1		
	8400	BERN	1	1334.7	1335.1	2	11			
	8800	SGMR	3 S	1618.7	1618.9	1.3	15.5	4.7		
	2800	OTTA	20 GRF	1625	1630	25	3	1.7		
	2800	OTTA	1 S	1728	1728.8	2	2.6	1.3		
	2800	OTTA	1 S	1732	1736	8	2.2	1.1		
	2800	OTTA	24 R	1812	1817	5	3	2		
	2800	OTTA	27F RF	1812		63	3	2.7		
	2800	OTTA	24P R	1817		50	3			
	2800	OTTA	26 FAL	1907	1915	8	-3	-1.5		
	2800	OTTA	1 S	1918	1920	5	2.2	1.1		
	2800	OTTA	20 GRF	2005	2030	45	2.4	1.2		
	2695	PENT	20 GRF	2054	2055	30	2	1.2		
	2695	PENT	20 GRF	2148	2200	35	6.6	3.3		
10	8400	BERN	20	0956.7	0957.3	7	18			
	8400	BERN	20	1243	1248.4	38	15			
	2800	OTTA	20 GRF	1427	1520	80	3	2.3		
	8400	BERN	20	1428.9	1430	4	56			8R
	8800	SGMR	3 S	1429.7	1430	1.8	71.5	21.5		
	2800	OTTA	20 GRF	1645	1652	25	2			
	2800	OTTA	20 GRF	1740	1840	120	3	1.8		
	2800	OTTA	3 S	2036.5	2037.5	3	14.6	7.2		
	2695	SGMR	3 S	2037.2	2037.7	6.8	13.7	5.5		
	2695	BOUL	3 S	2037.5E	2038	2 D	13	4		
	2800	OTTA	32 ABS	2050	2140	115	-6.6	-3.3		
11	8400	BERN	21	1141	1238.3	96	57			
	8400	BERN	21	1141	1211.2	96	13			
	8400	BERN	21	1141	1142.1	96	8			
	2800	OTTA	21 GRF	1320	1440	190	9.4			
	2800	OTTA	1 S	1551	1551.6	1.2	2.6	1.3		
	2800	OTTA	20 GRF	1655	1755	205	7	4.5		
	8800	SGMR	3 S	2034.4	2034.5	9.6	33.3	13.3		
	2695	SGMR	3 S	2034.6	2036.5	9.4	22.2	8.9		
	2800	OTTA	4 S/F	2034	2036.2	4	22	12		
	2695	BOUL	45 C	2035 E	2036	3.5D	26	9		
	2800	OTTA	29 PBI	2038	2038	5	2.4			
	2695	PENT	26 FAL	2050	2100	10	-3.6	-1.8		
	2695	PENT	32 ABS	2130	2205	70	-3.6	-1.8		
12	2695	MANI	4 S/F	0024.2	0026.4	6.4	52.9	17.6		
	2695	MANI	4 S/F	0213	0213.7	5.3	16.1	10.7		I
	8400	BERN	46	0810.5	0812.9	3.5	40			8R
	2695	MANI	4 S/F	0811.6	0813.3	3.8	13.4	4.5		I
	8400	BERN	2	0918.9	0919.6	4	24			7R
	8400	BERN	22	0957	1143.6	113	21			
	2800	OTTA	4 S/F	1430	1438.5	10	15	4		
	8400	BERN	2	1435.4	1438.7	22	21			
	8800	SGMR	1 S	1437.8	1439.1	4.2	8.6	3.4		SWF
	2695	SGMR	3 S	1438.1	1438.9	1.8	18.9	7.6		SWF
	2800	OTTA	21 GRF	1735	1840	105	3			
	2800	OTTA	1 S	1835	1835.3	1	3.4	1.7		
	8800	SGMR	3 S	1946	1950.1	6	39.1	15.6		5,SWF
	2800	OTTA	46F C	1946.4	1951	8.6	126	21.4		
	2695	SGMR	3 S	1946.8	1951.3	5.2	148	59.2		5,SWF
	2695	BOUL	45 C	1947 E	1948	1.5D	33	11		
	2695	BOUL	28 PRE	1950.5E	1951	1 D	26	9		
	2695	BOUL	8 S	1951.5E	1952	1.5D	132	44		
	2695	BOUL	29 PBI	1953 E	1953.5	1 D	40	13		
	2800	OTTA	29 PBI	1955	1955	8	3.6	1.8		
	2800	OTTA	1 S	2128.9	2129	3	3	1.5		
	2695	PENT	21 GRF	2146	2210	95	4.6	2.3		
	2800	OTTA	4 S/F	2147	2149.2	3.5	30	12		
	2695	BOUL	4 SF	2149 E	2149.5	2 D	54	18		
	2695	PENT	1 S	2205	2207	4	3	1.4		
	2695	PENT	1 S	2231	2231.9	2	7.8	2.6		
13	2695	MANI	2 S/F	0034.7	0037	3.5	7.2	4.9		I

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FEB 1979	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY $10^{-22}Wm^{-2}Hz^{-1}$ PEAK	FLUX DENSITY MEAN	INT	REMARKS
	8400	BERN	3	0742.1	0744.1	4	25			
	8400	BERN	27	1030	1102	132	26			
	2800	OTTA	21 GRF	1330	1355	155	2.2	1.1		
	8400	BERN	3	1418.6	1420.1	7	28			
	2800	OTTA	1 S	1501.5	1503	2.5	2.4	1		
	2800	OTTA	1 S	1506	1506.5	2	1.4	.7		
	2800	OTTA	20 GRF	1540	1543	20	2.2	1.1		
	2800	OTTA	240 R	1620	1627	7	2	1		
	2695	PENT	240 R	1707	1720	13	2.6	1.3		
	2800	OTTA	21 GRF	1740	1940	230	9.2	6		
	2800	OTTA	20 GRF	1750	1755	15	3.4	1.9		
	2800	OTTA	1 S	1904	1904.5	1	2.6	1.3		
	2800	OTTA	2 S/F	1956.5	1959.9	2.5	9.8	4.8		
	2695	BOUL	3 S	1958 E	1959	2 D	13	4		
	2695	PENT	21 GRF	2200	2230	75	5.2	2.6		
	2695	PENT	22 GRF	2215	2219.5	12	6.8	3.4		
14	8400	BERN	21	1140.5	1201.8	85	10			
	2800	OTTA	2 S/F	1306.5	1306.7	1.5	4.4			
	2695	SGMR	3 S	1341.5	1341.9	.7	17.2	5.2		
	2800	OTTA	1 S	1358	1358.5	1	2.2	1		
	2800	OTTA	21 GRF	1515	1641	285	23.8	11.1		
	2800	OTTA	40 F	1537.5	1602	35	12.6			
	2695	SGMR	45 C	1545.5	1549.1	142.5	9.4	5.2		SWF
	2695	SGMR	45 C	1545.5	1636.4		17.6			SWF
	8800	SGMR	45 C	1548.7	1635		20.5			SWF
	8800	SGMR	45 C	1548.7	1553	139.3	9.5	6.2		SWF
	2695	BOUL	20 GRF	1549 E	1645 U	101 D	19	6		
	2800	OTTA	2 S/F	1756	1756	3	3.4	.8		
15	2800	OTTA	23 GRF	1522	1619.4	155	15.2	6.6		
	8800	SGMR	3 S	1714.2	1714.9	3.8	80.9	32.4		SWF
	2695	SGMR	3 S	1714.2	1716.3	4.3	139	55.6		SWF
	2800	OTTA	45 C	1714	1716.3	10	130	31		
	2695	BOUL	45 C	1715 E	1717	7.50	132	44		
	2695	BOUL	3 S	1715 E	1716	1 U	47	16		
	2800	OTTA	29 PBI	1724	1724	8	5.6	2.8		
	2800	OTTA	20 GRF	2030	2053	52	5	2.5		
	2695	PENT	22 GRF	2128	2157	92	14.6	5.7		
16	2695	MANI	47 GB	0141.8	0229.3	134	30000	7000		
	8800	MANI	4 S/F	0148.4	0151.6	10.90	465 D	154.20		IG,SCNA
	2800	OTTA	4 S/F	1254	1257	8	122.4	32.4		
	2695	SGMR	3 S	1255	1257.2	6.4	175	70		5
	8800	SGMR	3 S	1255.8	1256.6	6.8	478	191		5
	2800	OTTA	20 GRF	1325	1335.5	40 D	6.6			
	2800	OTTA	1 S	1445.2	1446	2	4.4	2.2		
	2800	OTTA	1 S	1504	1504.5	1	4.4	2.2		
	2695	BOUL	3 S	1520.5E	1520.5	.5D	13	4		
	2800	OTTA	1 S	1534.5	1535	1	3.4	1.7		
	2800	OTTA	20 GRF	1620	1628.5	40	9.6	3.2		
	2800	OTTA	40 F	1721	1735	15	56.8			
	8800	SGMR	45 C	1722	1722.3	51.6	27	31		3S,SWF
	8800	SGMR	45 C	1722	1734.7		102			3S,SWF
	2695	SGMR	45 C	1722.4	1722.7	50.6	14	11		3S,SWF
	2695	SGMR	45 C	1722.4	1754.3		46			3S,SWF
	2695	SGMR	45 C	1722.4	1735.2		56			3S,SWF
	2695	BOUL	3 S	1722.5E	1723	1 D	20	7		
	2695	BOUL	8 S	1735 E	1735.5	1 D	71	24		
	2800	OTTA	4 S/F	1751	1755.1	6	29.4	7.6		
	2695	BOUL	4 SF	1755.5E	1756	1.5D	35	12		
	2800	OTTA	30 PBI	1758	1758	19	4.4	2.4		
	2800	OTTA	40 F	1805.8	1809	7	79			
	2800	OTTA	31 ABS	1818	1827	26	-4.2	-2.1		
	8800	SGMR	3 S	1900.1	1900.4	1.7	46.2	18.5		
	2695	SGMR	3 S	1900.2	1900.6	1.7	14.8	5.9		
	2800	OTTA	3 S	1900	1900.4	2	13.6	4.6		
	2695	BOUL	3 S	1901 E	1901.5	1.5D	14	5		
	2800	OTTA	1 S	1952	1952.7	1	4.4	2.2		
	2695	SGMR	3 S	1954	1954.9	3.5	25.2	10.1		5
	8800	SGMR	3 S	1954.8	1955.7	2.7	80.9	32.4		5
	2800	OTTA	4 S/F	1955.5	1956	3	26.2	11.4		
	2695	BOUL	3 S	1956.5E	1957.5	2 D	28	9		
	2800	OTTA	4 S/F	2050.3	2051.5	2.5	56.8	19		
	2800	OTTA	21 GRF	2050	2113	40	3.8	2		
	2695	SGMR	2 S	2051	2052	1.9	57	12		
	2695	BOUL	4 SF	2051.5E	2052.5	1.5D	81	27		
	2800	OTTA	1 S	2055	2055.5	1.5	2.6	1.3		
	8800	SGMR	3 S	2139.5	2140.9	12.5	104	21		3S
	2800	OTTA	40 F	2140.2	2140.3	1.5	12.2			
	2800	OTTA	21 GRF	2140	2142	20	4.6	2.3		
	2695	SGMR	3 S	2143.1	2144.2	4.8	98	20		3S
	2800	OTTA	4 S/F	2143.2	2143.9	3	102	19		
	2695	BOUL	8 S	2144 E	2144.5	1 D	136	35		
	2695	PENT	4 S/F	2150.2	2150.5	3	13.2	4.4		

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FEB 1979	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22}Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
	2695	PENT	1 S	2158.8	2159.2	1	5.6			
	2695	PENT	8 S	2214.2	2214.2	.1	6.8			
	2695	PENT	40 F	2218	2221.8	10	166			
	2695	BOUL	40 F	2219 E	2222.5	8 D	149	50		
	2695	MANI	4 S/F	2235.3	2235.6	.6	128.1	85.4		IG
	2695	PENT	3 S	2235	2235.7	1	189	94		
	2695	BOUL	8 S	2236 E	2236.5	1 D	165	55		
	2695	PENT	40 F	2252.5	2254.7	13	56			
	2695	BOUL	42 SER	2253.5E	2256	12 D	50	17		
17	2695	PENT	8 S	0021	0021	.1	24.6			
	2695	PENT	4 S/F	0022.7	0023.8	2	430	132.8		
	2695	MANI	4 S/F	0234.7E	0235.2	11.8D	461.9	150		
	8800	MANI	4 S/F	0234.7E	0237.7	5.4D	265.8	105		IG
	2695	MANI	4 S/F	0311.6	0312	1.4	163.9	109.2		
	2695	MANI	4 S/F	0436.7	0437.3	3.3	28.6	9.5		
	8400	BERN	23	0802	0819.6	26	56			9R
	2695	MANI	4 S/F	0810.6	0810.9	1.4	28.6	9.5		
	8400	BERN	1	1218.6	1219.3	5	10			
	8400	BERN	23	1240.3	1253.2	40	15			
	2800	OTTA	21 GRF	1320	1450	200	9.2			
	8400	BERN	45	1436.4	1438.2	53	29			
	8800	SGMR	3 S	1437.2	1438.5	3	42.1	12.6		5,SWF
	2800	OTTA	45 C	1438.1	1439.1	1.5	40	13		
	2695	BOUL	45 C	1438.5E	1440	2 D	36	12		
	2695	SGMR	3 S	1438.5	1439.8	1.6	140	42		5,SWF
	2800	OTTA	240 R	1717	1725	8	3.2	2		
	2800	OTTA	240 R	1822	1825	3	2.4	1.2		
	2800	OTTA	40 F	1839.5	1848	11	7.8			
	2800	OTTA	24 R	1839	1851	12	3.2			
	2800	OTTA	27A RF	1839		180	3.2	2.6		
	2800	OTTA	24P R	1851		129	3.2			
	2800	OTTA	3 S	1905.5	1905.6	1	11.6	2.9		
	2800	OTTA	40 F	2022.6	2022.7	1	11			
	2800	OTTA	40 F	2031.8	2031.8	1.5	46			
	2695	SGMR	3 S	2032.1	2032.6	2.1	37.4	11.2		CONT
	2695	BOUL	45 C	2032 E	2032.5	1.5D	42	14		
	2800	OTTA	26 FAL	2100	2140	40	-3.2	-1.6		
	2800	OTTA	20 GRF	2126	2130	13	1.8	1		
	2695	PENT	20 GRF	2223	2235	35	3			
18	2695	MANI	4 S/F	0448.4	0449	5	52.8	17.6		I
	2695	MANI	4 S/F	0637.7	0645.6	12.3	173.6	115.8		
	8800	MANI	47 GB	0638.2	0645.8	12.3	670	266		I,SCNA
	8400	BERN	2	0804.9	0810.4	8	19			5R
	8400	BERN	21	1114	1424	202	16			
	8400	BERN	23	1114	1306.1	202	25			24R
	8400	BERN	21	1114	1241.5	202	19			
	8400	BERN	21	1114	1216.4	202	40			34R
	2695	SGMR	45 C	1209	1231.8		70.9			CONT
	2695	SGMR	45 C	1209	1215.7	28.8	130	39		CONT
	8800	SGMR	2 S	1212.4	1216.2	25.6	30.4	12.2		CONT
	2800	OTTA	20 GRF	1310	1325	40	7	3.5		
	2800	OTTA	240 R	1435	1445	10	4.6	2.3		
	8400	BERN	1	1504	1505	2	9			10R
	2800	OTTA	1 S	1504.5	1505	1.5	2.4	1.2		
	8400	BERN	45	1537.6	1539.2	40 D	39			10R
	2800	OTTA	2 S/F	1538	1538.9	1.2	6	3.1		
	2800	OTTA	8 S	1539.5	1539.7	.3	4.6	2.3		
	2800	OTTA	28 PRE	1616	1634.7	18.7	15.4	7		
	2695	BOUL	28 PRE	1621.5E	1637	15 D	29	10		
	8800	SGMR	47 GB	1628	1636.5	72	705	333		4,SWF
	8800	SGMR	47 GB	1628	1709.9		324			4,SWF
	8800	SGMR	47 GB	1628	1703.9		278			4,SWF
	8800	SGMR	47 GB	1628	1641.5		2350			4,SWF
	2800	OTTA	47 GB	1634.7	1641	12.3	1945	313		
	2695	SGMR	47 GB	1634.9	1637.3	66.7	900	688		4,SWF
	2695	SGMR	47 GB	1634.9	1710.4		185			4,SWF
	2695	SGMR	47 GB	1634.9	1704.4		363			4,SWF
	2695	SGMR	47 GB	1634.9	1641.6		3000			4,SWF
	2695	BOUL	47 GB	1637	1642	7	2979	993		
	2695	BOUL	29 PBI	1644	1644	67	163	54		
	2800	OTTA	30 PBI	1647	1647	150	69	22.2		
	2695	PENT	45 C	1701.5	1704.2	14.5	236	56		
	2695	BOUL	45 C	1702.5	1705	4	342	114		
	2695	BOUL	3 S	1710.5	1711	3	192	61		
	2800	OTTA	1 S	1838	1840	4	2.4	1.2		
	2800	OTTA	40 F	1852	1857.6	7	6.7			
	2800	OTTA	1 S	1927	1929	4	3.2	1.6		
	2800	OTTA	46F C	1950	1955.5	14	39	20.6		
	2695	SGMR	3 S	1952.3	1954.8	11.6	38	7		CONT,SWF
	8800	SGMR	3 S	1953.3	1954.7	8.2	103	31		CONT,SWF
	2695	BOUL	21 GRF	1954 E	1957	13 D	36	12		
	2800	OTTA	30 PBI	2004	2004	55	12	8		
	2695	PENT	2 S/F	2007	2008.2	9	7	3		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS
FEBRUARY 1979

FEB 1979	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
	8800	SGMR	3 S	2121.3	2121.9	5.2	182	36		CONT
	2695	PENT	21 GRF	2125		100	10			
	2695	PENT	1 S	2136	2137	7	3.2	1.7		
	2695	PENT	46F C	2205	2207	15	55	23		
	2695	BOUL	45 C	2207 E	2211	7.5D	58	19		
19	8400	BERN	3	0754.1	0758.4	10	17			
	8400	BERN	21	0811.5	0820.4	18	28			
	8400	BERN	45	1007.3	1032.8	33	95			4R
	8400	BERN	3	1220.3	1220.8	9	73			16R
	8400	BERN	46	1515	1525.7	70	227			4R
	2800	OTTA	23 GRF	1515	1522	90	19	7.6		
	2695	SGMR	3 S	1521	1527	15.5	57.4	23		3G,CONT,SHF
	8800	SGMR	3 S	1521	1526.4	15	307	123		3G,CONT,SHF
	2695	BOUL	28 PRE	1522 E	1525 U	4 D	21	7		
	2800	OTTA	4 S/F	1525	1525.8	6	41.8	15.4		
	2695	BOUL	3 S	1526	1527.5	2 D	65	22		
	2695	BOUL	29 PBI	1528	1528	10 U	21	7		
	2800	OTTA	21 GRF	1557	1605	23	4.2	2.1		
	2800	OTTA	1 S	1602	1603	2.5	6.2	2.1		
	2800	OTTA	24 R	1755	1806.5	11.5	11	5		
	2800	OTTA	27A RF	1755		280	11	9.1		
	2695	SGMR	3 S	1758	1809.1	42	130	52		SHF
	2800	OTTA	1 S	1758	1801.5	5	7.6	4		
	8800	SGMR	3 S	1759	1808.5	41	286	114		SHF
	2800	OTTA	24P R	1806.5		183.5	11			
	2800	OTTA	4 S/F	1807	1809	4	112	47.2		
	2695	BOUL	45 C	1808.5E	1810	3 D	106	35		
	2695	BOUL	29 PBI	1811.5	1815	43 U	43	14		
	2800	OTTA	29 PBI	1811	1811	80	35.6	19		
	2695	PENT	1 S	2003	2006	7	3	1.5		
	2800	OTTA	26 FAL	2110	2235	85	-11	-5		
	2695	PENT	1 S	2148	2150	10	2.6	1.3		
	2695	PENT	40 F	2221	2225.5	8	6.6			
	2695	PENT	40 F	2246	2246.5	11	7.8			
20	8400	BERN	1	0849.5	0850.1	4	11			OPR
	2695	MANI	4 S/F	0850.4	0851.1	2.5	18	6		I
	8400	BERN	46	1042.3	1054.1	23	46			11R
	8400	BERN	1	1123	1124.2	14	35			17R
	8400	BERN	2	1145.3	1146	18	51			21R
	8400	BERN	2	1228.5	1232.6	12	37			15R
	8400	BERN	41	1316.6	1327.1	19	28			17R
	8400	BERN	41	1316.6	1320.9	19	21			5R
	8400	BERN	41	1316.6	1317.1	19	15			6R
	2800	OTTA	1 S	1317	1317.1	1	4.8	2.4		
	2800	OTTA	1 S	1320.7	1321	1	4.8	2		
	8800	SGMR	1 S	1326.9	1327.8	1.7	8.5	3.4		
	2695	SGMR	3 S	1327.1	1327.4	2	39.6	15.8		
	2800	OTTA	3 S	1327	1327.3	2.5	38	9.6		
	8400	BERN	1	1347.9	1348.4	9	20			10R
	8400	BERN	46	1411.1	1416	49	79			9R
	8800	SGMR	3 S	1412.2	1415.7	7	94	28		
	2695	SGMR	3 S	1414.8	1416.5	5	43	13		
	2800	OTTA	20 GRF	1420	1503	80 D	7.2			
	2800	OTTA	240 R	1603	1610	7	3.6	1.8		
	8400	BERN	1	1610	1614.3	12	40			18R
	2695	SGMR	3 S	1613.3	1614.9	15.7	72	28.8		
	8800	SGMR	3 S	1613.5	1614.5	15.5	28.1	11.2		
	2800	OTTA	3 S	1613	1614.5	5	59	26.6		
	2695	BOUL	3 S	1614 E	1615.5	3.5D	76	25		
	2695	BOUL	29 PBI	1617.5	1617.5	41 U	29	10		
	2800	OTTA	30 PBI	1618	1618	50	11.8			
	2800	OTTA	46F C	1646.5	1648.5	8	96	24		
	2695	BOUL	45 C	1647.5	1648.5	2.5D	109	36		
	2800	OTTA	21 GRF	1720	1820	420 D	68			
	2695	BOUL	28 PRE	1736 E	1756.5	20.5D	44	15		
	2695	SGMR	47 S	1748	1805	100	162	49		5
	8800	SGMR	3 S	1755.8	1811.4	92.2	50	15		5
	2800	OTTA	4 S/F	1755	1804.6	23	95	45		
	2695	BOUL	40 F	1756.5	1806	19	172	57		
	2695	BOUL	29 PBI	1816	1816	35 U	76	25		
	2800	OTTA	4 S/F	1848.5	1849	2	15.2	7.6		
	2800	OTTA	1 S	1935	1935.6	2	2.4	.8		
	2695	PENT	40 F	2001	2010	11	2.2			
	2800	OTTA	1 S	2104	2104.7	1.2	2.6	1.3		
	2800	OTTA	21 GRF	2115	2230	165	21	12.8		
	2695	PENT	1 S	2117	2118	2	2.6	1.3		
	8800	SGMR	3 S	2128	2129.7	9.3	87	34.8		5
	2800	OTTA	46F C	2128.5	2130	9	44.2	11		
	2695	SGMR	3 S	2128.6	2130	11.4	25	10		5
	2695	BOUL	42 SER	2129 E	2131	6.5U	47	16		
	2800	OTTA	4 S/F	2144	2148	6	30	14		
	2695	BOUL	3 S	2148 E	2149	2.5D	31	10		
	2695	PENT	4 S/F	2156	2202	11	30	9.2		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

FEBRUARY 1979

FEB 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
	2695	BOUL	45 C	2202 E	2205	3.50	63	21		
	2695	PENT	4 S/F	2213.5	2216.5	13	188	25.4		
	2695	BOUL	4 SF	2216 E	2217	3.50	230	77		
	2695	MANI	4 S/F	2345.4	2346.5	9.8	70.4	46.9		I
	2695	PENT	46F C	2345	2346.7	9	75.6	17		
	2695	BOUL	45 C	2346.5E	2347.5	7.50	119	40		
21	8400	BERN	4	0930.3	0933.4	14	283			4R
	8400	BERN	4	1022	1215.5	128	49			
	2800	OTTA	21 GRF	1358		132	13.2			
	8400	BERN	4	1411.1	1420.2	100	206			3R
	8800	SGMR	3 S	1415.1	1420.1	20.1	288	86.4		SWF
	2695	SGMR	3 S	1417	1420.6	7	58.4	17.5		SWF
	8400	BERN	3	1555.3	1556.8	21	348			4R
	8800	SGMR	47 GB	1556.2	1556.8	11.9	560	112		5,SWF
	2695	SGMR	3 S	1556.8	1557.3	11.4	250	50		5,SWF
	2800	OTTA	3 S	1556	1557	3	178	55		
	2695	BOUL	45 C	1557 E	1557.5	10 D	229	76		
	2800	OTTA	30 PBI	1559	1559	10	13.2	4.4		
	2800	OTTA	4 S/F	1600	1601	2	10.4	5.4		
	2800	OTTA	4 S/F	1605	1605.6	2	17	8		
	2800	OTTA	20 GRF	1622	1628	30	7	3		
	2800	OTTA	1 S	1751	1752.2	3	2.8	1.4		
	2800	OTTA	1 S	1840.5	1841.3	1.5	6.4	3		
	8800	SGMR	3 S	1909.4	1912	8.5	160	48		
	2800	OTTA	1 S	1938	1943	10	3.8	1.9		
	2800	OTTA	21 GRF	1950	2059	225	13.8	6.9		
	8800	SGMR	3 S	2012.1	2017	5.5	167	33		
	2800	OTTA	1 S	2023.8	2024.3	1	2.2	1		
	2800	OTTA	1 S	2131.9	2132	1	3.4	1.7		
	2695	PENT	21 GRF	2245	2247	40	6.8	3		
	2695	PENT	1 S	2247.8	2248.5	2	3.8	1.9		
	2695	PENT	1 S	2357	2357.8	2	4.2	2		
22	2695	MANI	4 S/F	0504.3	0507.5	9.9	74.4	24.8		
	8800	MANI	4 S/F	0505.3	0507.5	6.9	266.5	103.1		
	2695	MANI	4 S/F	0657.8	0658.2	1.4	49	16.3		
	8400	BERN	46	0911	0914.2	13	96			17R
	8400	BERN	46	0911	0912.2	13	117			10R
	2695	MANI	3 S/F	0911.4	0912.3	1.6	65.4	39.4		
	8400	BERN	20	1110.8	1124.2	55	42			OPR
	8800	SGMR	3 S	1252.3	1253.6	2.3	106	21.2		CONT,SWF
	2800	OTTA	4 S/F	1252.5	1253.8	4	55	19.2		
	2695	SGMR	3 S	1252.7	1254.1	6.3	73.6	14.7		CONT,SWF
	2800	OTTA	21 GRF	1320	1340	35	8.2	4.2		
	2800	OTTA	1 S	1400.5	1401	1.5	3.8	1.9		
	2800	OTTA	20 GRF	1510	1515	12	2.8	1.6		
	2800	OTTA	3 S	1531	1534.6	9	18.6	6.2		
	8800	SGMR	3 S	1533.3	1535	6.7	66.5	26.6		CONT,SWF
	2695	SGMR	3 S	1533.4	1540	3.4	20	8		CONT,SWF
	2800	OTTA	22 GRF	1555	1602.5	15	9.8	3.4		
	2800	OTTA	45 C	1631	1636.5	9	35	19		
	2695	SGMR	3 S	1632	1637	9.6	80.3	32.1		CONT,SWF
	8800	SGMR	3 S	1632.4	1636.4	6.6	118	47.2		CONT,SWF
	2695	BOUL	45 C	1632.5E	1637.5	7.50	92	31		
	2800	OTTA	29 PBI	1640	1640	15	4.8	2.4		
	2800	OTTA	21 GRF	1800	1810	90	7.2	3.6		
	8800	SGMR	3 S	1806.5	1809.5	8.5	33.7	13.5		CONT,SWF
	2800	OTTA	3 S	1857.2	1858.5	3.8	78	20		
	8800	SGMR	3 S	1857.5	1858.3	4.5	194	77.6		CONT,SWF
	2695	SGMR	3 S	1857.5	1858.8	5.5	73.8	29.5		CONT,SWF
	2695	BOUL	45 C	1858 E	1859.5	3.50	81	27		
	2800	OTTA	29 PBI	1901	1901	28	4.8	2.4		
	2800	OTTA	26A FAL	2000	2120	80	-10.4	-5.2		
	2800	OTTA	1 S	2109	2109.5	1	6.8	2.3		
	2695	PENT	1 S	2224	2225	2	4.2	1.4		
23	8800	SGMR	3 S	1450.7	1451	2.3	101	20.2		SWF
	2800	OTTA	26 FAL	1900	1920	20	-2.6	-1.3		
	2800	OTTA	20 GRF	1935	1943	15	3.8	1.9		
	2800	OTTA	20 GRF	2033	2037	12	2.8	1.4		
24	8400	BERN	3	1546.6	1547.7	3	21			
	2800	OTTA	1 S	2139.2	2140	1	2.6	1.3		
25	2695	MANI	4 S/F	0640.4	0655.2	21.6	63.2	42.1		
	2695	MANI	4 S/F	0711	0719	18.2	110.6	73.7		
	8400	BERN	3	0842.6	0843.1	5	26			OPR
	2800	OTTA	8 S	1428	1428.3	.5	2.2	1.1		
	2800	OTTA	1 S	1500.5	1501.2	1.5	1	.5		
	2800	OTTA	8 S	1509.8	1509.9	.2	2.4	1.2		
26	8800	SGMR	3 S	1840.5	1841.7	4.1	113 U	33.9U		
	2800	OTTA	4 S/F	1840.8	1842	5.2	30	12		
	2695	SGMR	3 S	1841.1	1842.5	7	31.5U	9.5U		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

FEBRUARY 1979

FEB 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		
	2695	BOUL	4 SF	1841.5E	1842.5	2.50	27	9		
	2800	OTTA	2G GRF	1900	2040	240	6.6	3.3		
27	2800	OTTA	20 GRF	1633	1635	19	1.6	.8		
28	2695	PENT	8 S	0031.2	0031.7	.8	12.4	6.2		

Observatories:

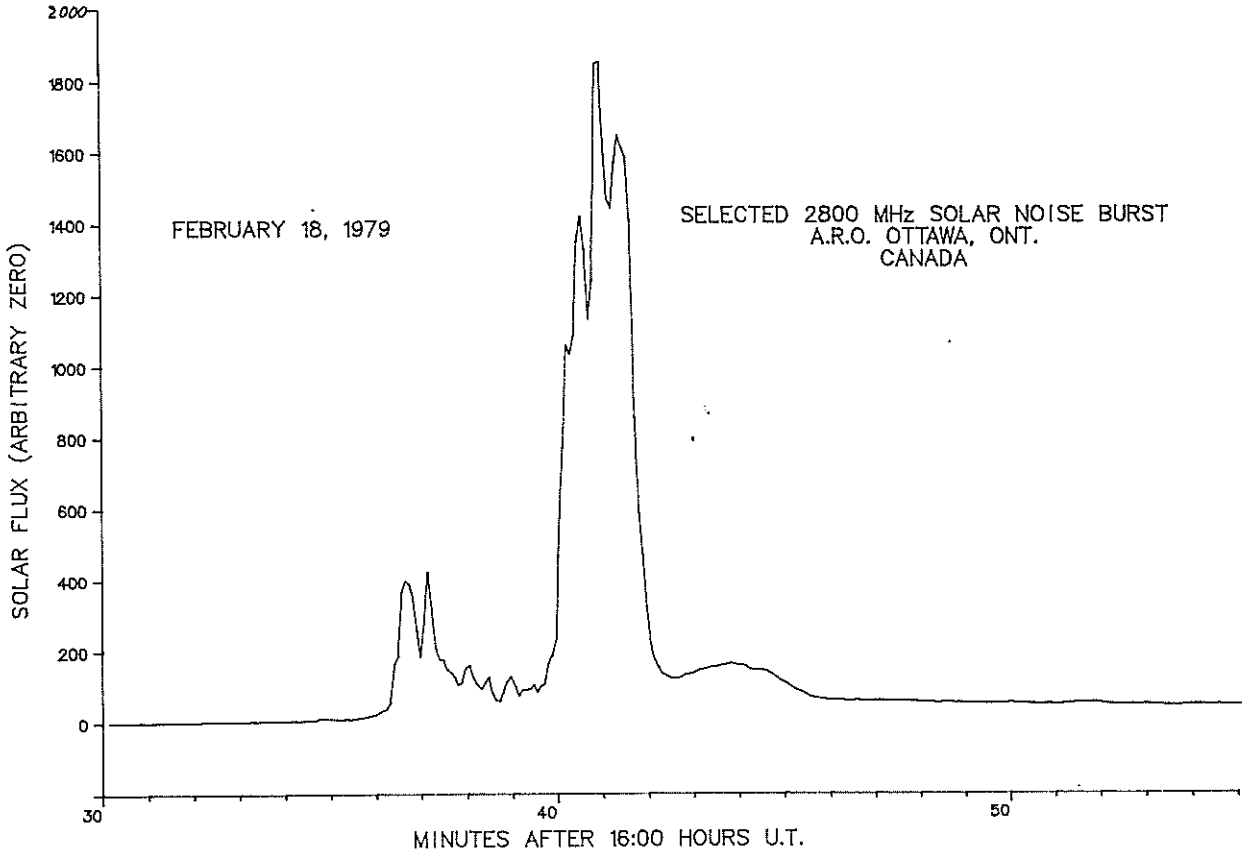
BERN = Berne BOUL = Boulder MANI = Manila OTTA = Ottawa ARO PENT = Penticton SGMR = Sagamore Hill

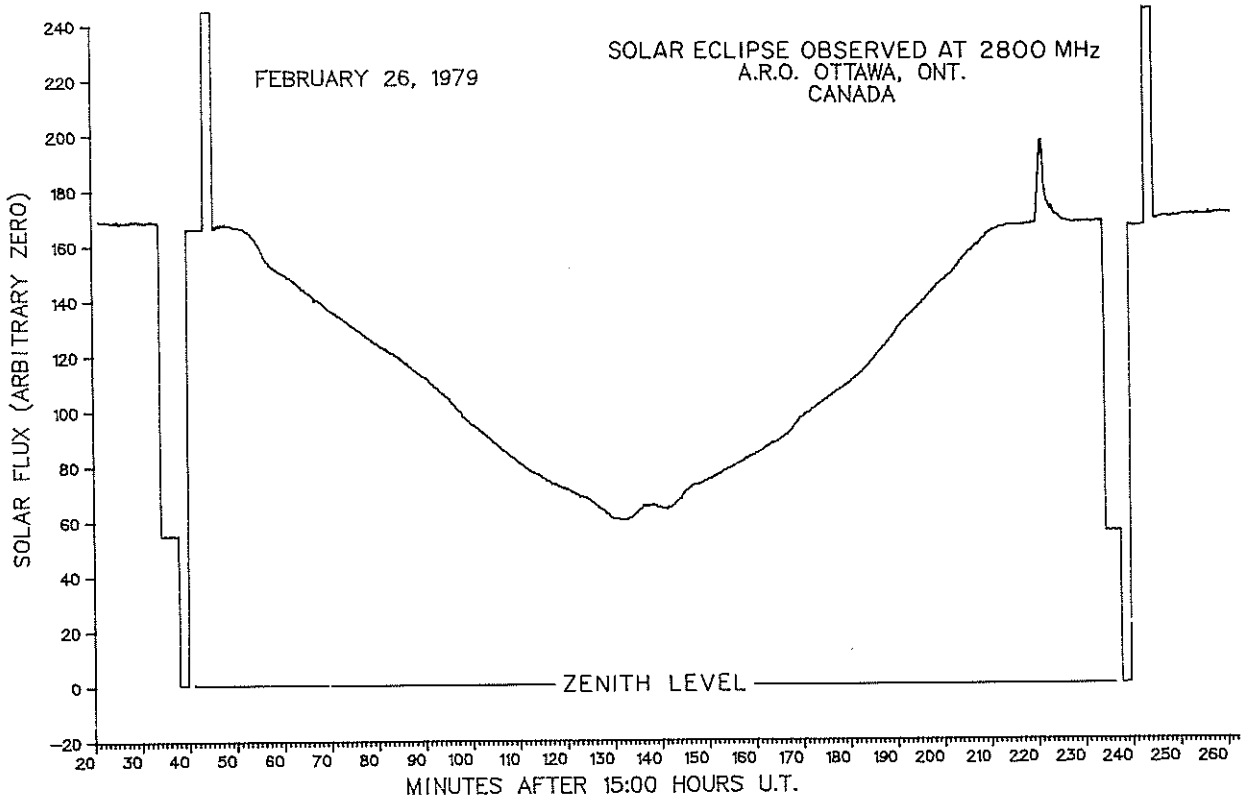
Explanation of Type Code:

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 BURST

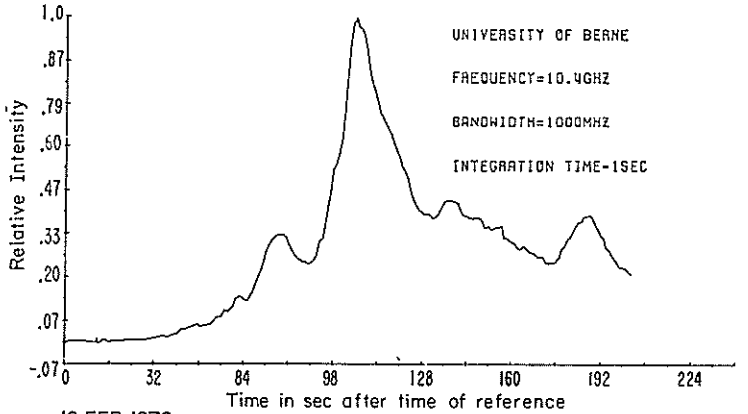
FEBRUARY 1979





SELECTED SOLAR NOISE BURSTS

FEBRUARY 1979



16 FEB 1979
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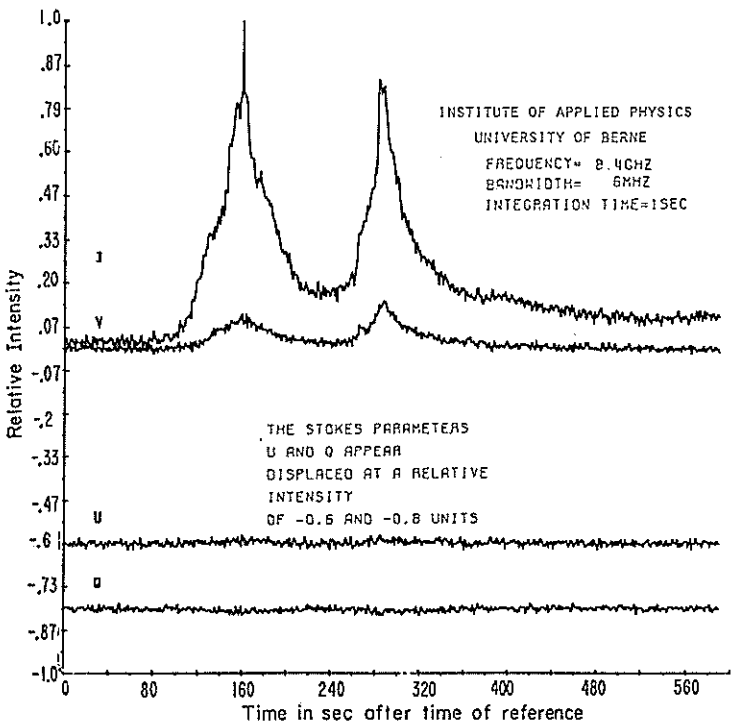

22 FEB 1979 0909:30 UT
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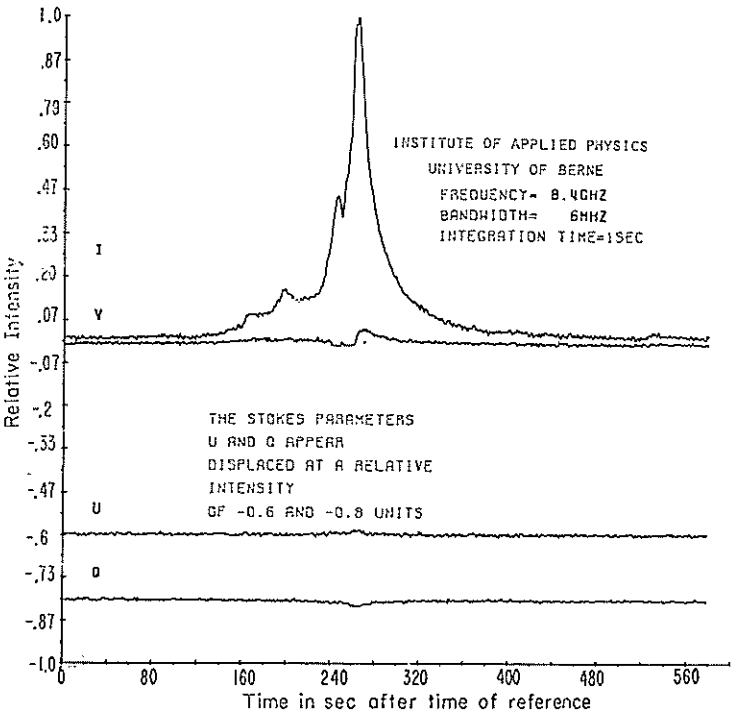


21 FEB 1979
1 UNIT = 283 SFU

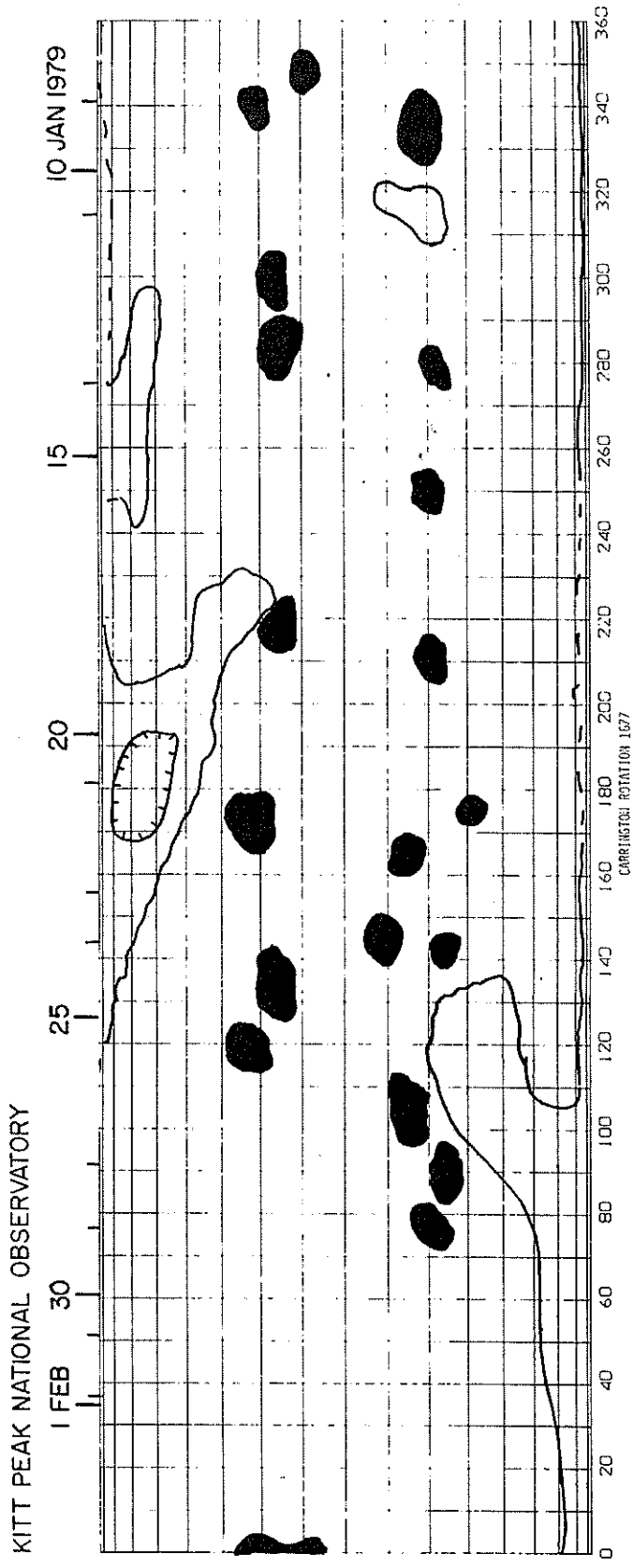
PIONEER XII

FEBRUARY 1979

DATE Feb '79	TIME (UT)	ESV (°)	U_{H^+} (Km/sec)	N_{H^+} (H^+/CC)	T_{H^+} ($\times 10^{6}$°K)
1	1316	051	480.	8.	0.145
2	1224		417.	10.4	.089
3	1408		376.	11.8	----
4	1021		378.	18.6	.083
5	1216		370.	16.8	.108
6	0906		392.	14.8	.066
7	1152		298.	25.1	.085
8	1329		281.	25.3	.043
9	1137		307.	20.6	.033
10	1007		413.	35.2	.122
11	1456		329.	22.1	.092
12	1116		352.	22.7	.065
13	1234		283.	23.4	.064
14	1206		305.	39.9	.020
15	0655		349.	23.6	.159
16	1427	060	---	---	---
17	1219		332.	19.1	.126
18	1208		275.	---	.056
19	1241		344.	18.6	----
20	1007		381.	16.3	.047
21	1407		500.	9.1	.232
22	0901		523.	14.6	.315
23	1125		542.	9.2	.367
24	1202		485.	6.1	.074
25	0907		448.	12.5	.142
26	1111		349.	7.2	.030
27	1154		434.	28.9	.055
28	1311	067	393.	4.4	.033

HELIUM 10830Å SYNOPTIC MAPS

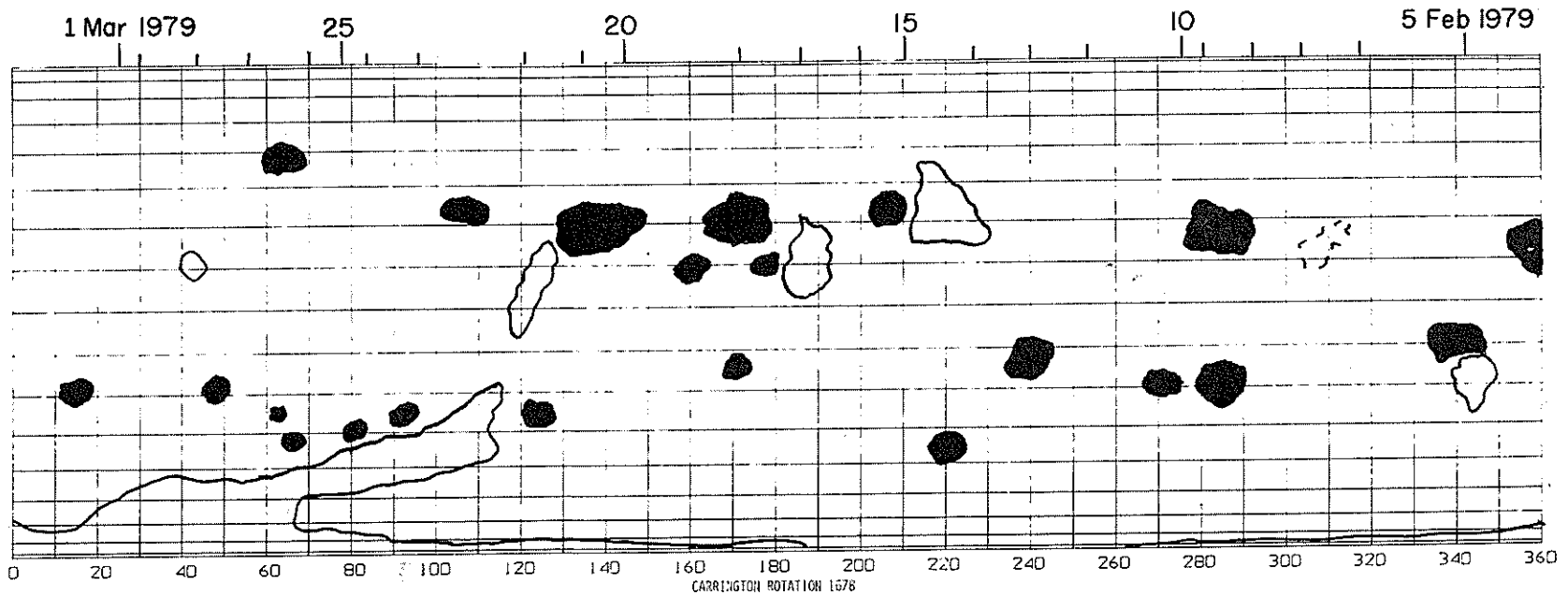
CARRINGTON ROTATION 1677



HELIUM 10830Å SYNOPTIC MAPS

CARRINGTON ROTATION 1678

KITT PEAK NATIONAL OBSERVATORY



INFERRED IP MAGNETIC FIELD

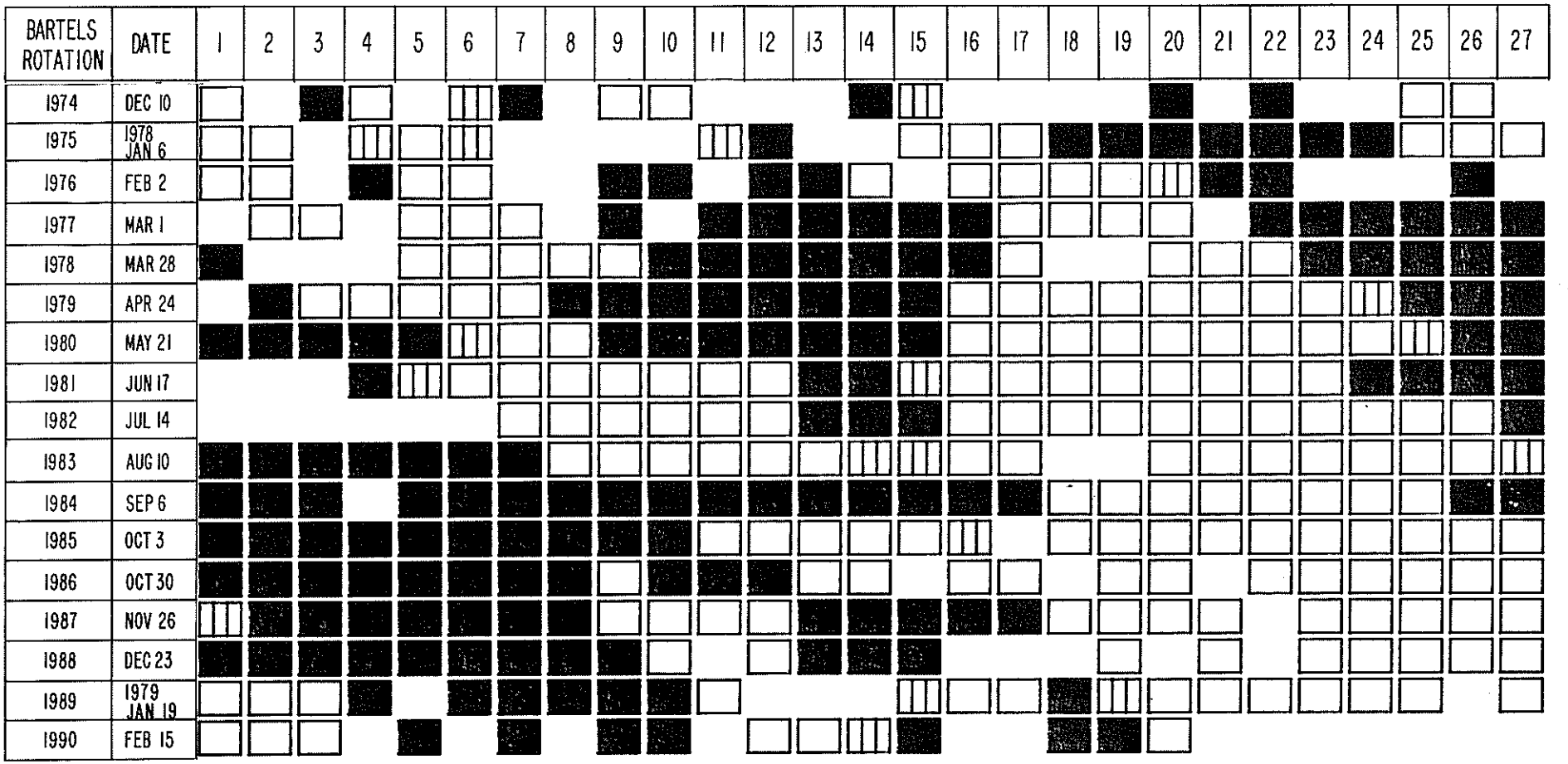
BARTELS ROTATION	DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1974	DEC 15				-	-	-		AT -		AT				AT	AT		AT		TA		TA		TA			*	
1975	1978 JAN 11			*	*				*		*	*							*		TA	-	AT			-		-
1976	FEB 7						*	TA				-			-						-		*			TA	A*	TA	
1977	MAR 6	TA			-				AT			T*	*					TA			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	-	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.

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

	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.
DAY												
01	.	52	-12	-28	1	40	26	-11	-18	-72	11	.
02	22	46	-34	-22	13	39	32	-20	-21	-39	.	-1
03	12	43	-27	-12	15	42	15	-14	-36	-7	15	30
04	.	13	-27	-5	18	39	18	-8	-28	17	-6	27
05	8	4	-29	6	24	31	2	-3	-19	19	-25	-13
06	11	-15	-27	5	43	29	-24	-7	-12	9	-26	1
07	4	-32	-23	21	42	30	-12	-20	3	5	.	50
08	.	-53	-12	33	36	17	-7	-29	-6	-15	.	88
09	-31	-52	3	41	16	-11	.	-37	-17	-26	.	59
10	.	-41	24	40	-11	-10	-35	-29	-3	-37	27	39
11	-70	-32	41	23	-17	-15	-34	-32	5	-19	.	40
12	-78	-4	50	12	-12	-22	-42	-14	9	-16	27	30
13	-56	22	47	8	-38	-33	-36	2	.	13	.	.
14	-49	.	30	0	.	-43	-27	7	16	31	45	78
15	-28	.	16	-24	.	-31	-26	8	20	43	21	62
16	-3	58	5	-38	.	-9	-36	9	.	65	36	27
17	18	37	1	.	.	5	-48	5	34	.	48	6
18	54	11	-29	.	.	13	-44	-1	42	59	59	.
19	48	-9	-49	.	.	7	-50	.	.	30	37	-52
20	24	-30	-75	-16	23	7	-33	4	55	18	18	.
21	.	-49	-79	0	21	5	-21	3	35	32	9	-86
22	-23	-50	-59	24	16	4	-14	19	40	27	-15	.
23	-49	-62	-37	51	6	-1	5	20	28	-3	.	-80
24	-69	.	-21	52	3	1	31	25	27	-20	-54	-52
25	-79	-13	-9	48	3	5	43	23	18	-26	-64	.
26	-73	10	1	30	-7	18	42	24	2	-32	-70	19
27	-53	13	27	12	-13	.	40	29	-17	-63	-64	10
28	-28	6	14	3	-6	.	29	30	-48	-51	-27	0
29	.	13	-10	-5	14	41	15	17	-61	-36	12	
30	.	18	-20	-10	27	41	2	-3	-65	-22	.	
31	.		-27		33	35		-16		-21	.	

DOT SYMBOL ENTRY INDICATES NO DATA AVAILABLE FOR THE DAY.

SOLAR WIND

Interplanetary Scintillations

FEBRUARY 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	368	4	496	24							376	29			308	26
2	430	13														
3	407	20											288	5		
4	450	*	424	21			518	17			627	132	411	8	333	16
5	354	38	373	7	500	26	465	62			440	9	408	27	360	30
6	392	53														
7	312	35									384	3	398	17		
8			388	27							420	13	381	8		
9											481	53	344	21	366	10
10	373	10									507	66	408	6	422	24
11	533	16	504	13			500	26			492	7				
13	295	19					353	10							459	13
14	379	5	378	11			315	10			405	19				
15	365	9					310	4					442	21		
16	452	6					313	6					325	19		
17	456	20	342	37	405	25							344	4		
17	479	32														
18			529	10	487	8	385	17								
19	520	10					478	30								
21	446	8											635	42		
22	552	53	549	15												
23			600	8	688	36	631	10					659	9		
24	385	24	353	26			387	30					472	7		
25	474	85														
26	489	98	339	35			270	19								
27	435	20	376	123									361	79		
28	413	29	406	60			263	5					405	78		

FEBRUARY 5	UT	LAT	DIST	DLON
3C48	1.	1.	0.99	-16.
3C144	4.	-5.	1.20	-12.
3C147	4.	0.	1.20	-10.
3C161	6.	-12.	1.22	-8.
3C237	9.	-7.	1.29	3.
3C273	11.	-5.	1.22	11.
3C298	13.	-1.	1.12	14.
3C459	22.	10.	0.58	-52.

15	UT	LAT	DIST	DLON
	24.	2.	0.94	-19.
	4.	-6.	1.17	-13.
	3.	0.	1.16	-11.
	5.	-13.	1.20	-10.
	9.	-7.	1.30	1.
	11.	-5.	1.25	9.
	13.	-2.	1.16	13.
	21.	15.	0.43	-61.

25	UT	LAT	DIST	DLON
	23.	6.	0.87	-27.
	3.	-6.	1.12	-15.
	2.	0.	1.13	-13.
	5.	-14.	1.16	-12.
	8.	-7.	1.30	-1.
	10.	-6.	1.27	7.
	12.	-2.	1.20	11.
	21.	26.	0.28	-68.

NOTE:

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

3C48 observed at 0 hr. U.T. before February 17th and at 23 hrs. U.T. after February 17.

BOULDER GEOMAGNETIC SUBSTORM LOG

FEBRUARY 1979

DATE	ONSET TIME	DIRECTION	COMMENTS
01	0830	West	Slow onset, weak SS
	0925	West	
02			Generally unsettled field throughout the day
	0930	West	Weak SS
03			Positive impulse H-Component of low latitude stations at 1820 UT. Field disturbed at mid and low latitude and at stations above the auroral oval until 2300 UT.
04	1000	West	
	1300		Beginning of a series of substorm injections lasting through 1835 UT. Major injections within network were at College at 1455 UT, 1525 UT, and 1555 UT.
05	0525	East	
	0955	West	1st of multiple onset
	1025	West	2nd of multiple onset
	1040	West	3rd of multiple onset
	1100	West	4th of multiple onset
06	0330	East	Slow onset
	1010	West	Moderate SS
	1230	West	Moderate SS
			Field unsettled at mid latitude and stations above auroral oval 1615-2300 UT.
	2140		Boulder in partial ring current sector
07	1205	West	Weak SS, slow onset
08	0950		SS moderate along oval stations, very little deflection among other network stations
	1545		Weak SS, slow onset
09	1455	West	
10			Field slightly unsettled, no distinct SS activity
11	0150		Positive impulse H-component of low and mid latitude stations. Ring current established through 0500 UT.
	0930	West	Weak SS
12	0515	East	
	0630	East	
	0740	West	1st of double onset
	0815	West	2nd of double onset
	1020	West	1st of multiple onset leading to strong total SS
	1040	West	2nd of multiple onset
	1110	West	3rd of multiple onset
	1215	West	SS in recovery phase
13			Quiet day
14			Quiet day
15	0845	West	Field unsettled 0700-1800 UT. No other distinct network SS activity.
16	0410	East	Weak SS
	1010	West	Weak SS
	1125	West	Weak SS
17	1010		Weak SS, response confined to oval stations.
18	0304		Sharp positive impulse H-component mid and low-latitude stations. Field disturbed balance of day.
	0835	∿ Center	
	1030	West	1st of multiple response
	1100	West	2nd of multiple response
	1125	West	3rd of multiple response
	1310	West	Weak SS
	1400	West	
19	0345	East	
	0425	East	
	0730	West	
	1010	West	Weak SS
	1240	West	Slow onset, 1st of double onset
	1330	West	Sharp onset, strong SS, 2nd of double onset
20	1030		Weak SS, localized Artic Village-Inuvik
	1200		Weak SS, localized Ft. Yukon-Inuvik
21	0302		Sudden positive impulse H-component mid and low latitude stations. Field disturbed balance of day. Ring current established 0440-1145 UT.
	0625	East	1st of multiple onset, strong total SS
	0650	∿ Center	2nd of multiple onset, strong total SS
	0715	West	3rd of multiple onset, strong total SS
	1549		Positive impulse H-component mid and low latitude stations. Ring current established 1810-2240 UT.
22	0040		SC - minor mag storm conditions 0530-1630 UT. Field remained disturbed through 23/1345 UT.
	0600	East	
	0735	West	Strong SS
	1010	West	Strong SS
23	0730	West	
	1145	West	Substorm in progress. Missing network data 0925-1145 UT.
24	0615		Substorm localized Rankin Inlet to Gillam
	0905	West	Substorm centered Inuvik-Norman Wells
	1255	West	
	1500		Slow onset
25	0525	East	1st of double onset
	0550	East	2nd of double onset
	0810	West	1st of double onset
	0830	West	2nd of double onset
	1145		
26	0325	East	Slow onset
			Numerous small substorms 0845-1900 UT.
	1030		Weak SS along Auroral oval
	1120	West	
	1345	West	
	1545		
27	0045	East	Abrupt discharge, strongest response at Lynn Lake
	0410	East	
	0725	Center	
	1035	West	Slow onset
	1400		
	1635		
28	0030	East	
	0810	West	Weak SS, field unsettled balance of day
	1505		1st of double onset, strong SS
	1555		2nd of double onset, weak injection
	1725		

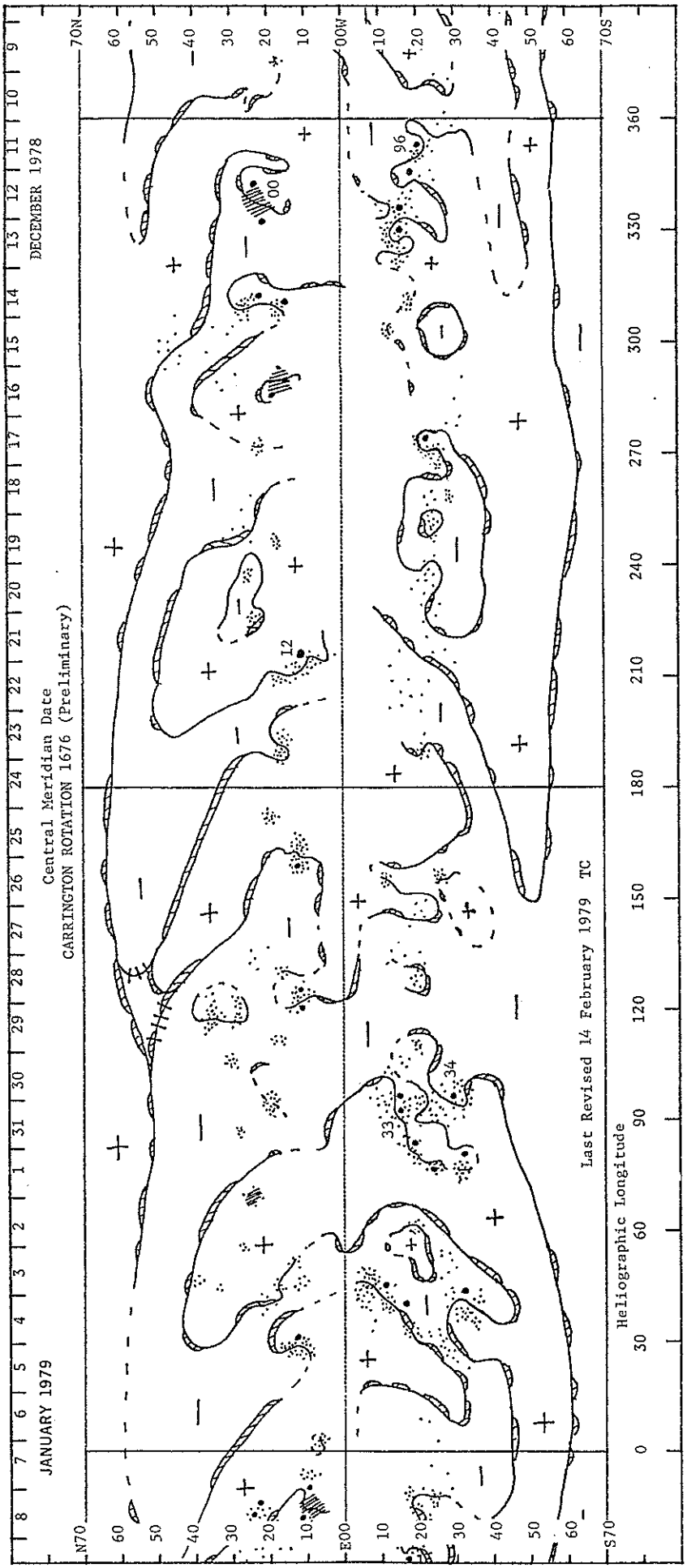
SGD 415 Part I (Prompt)

JANUARY 1979 DATA

Contents

Hα SYNOPTIC CHART

CARRINGTON ROTATION 1676 (PRELIMINARY)

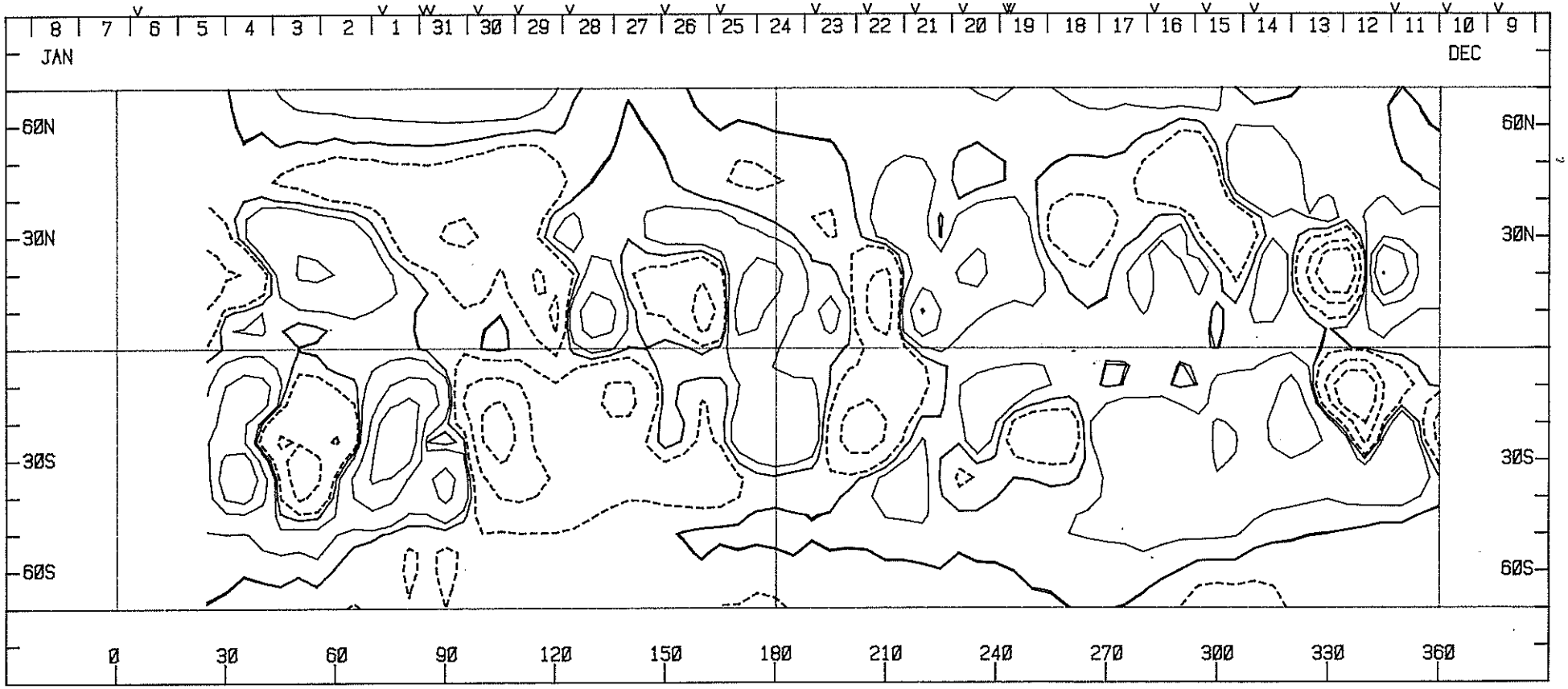


SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION 1676

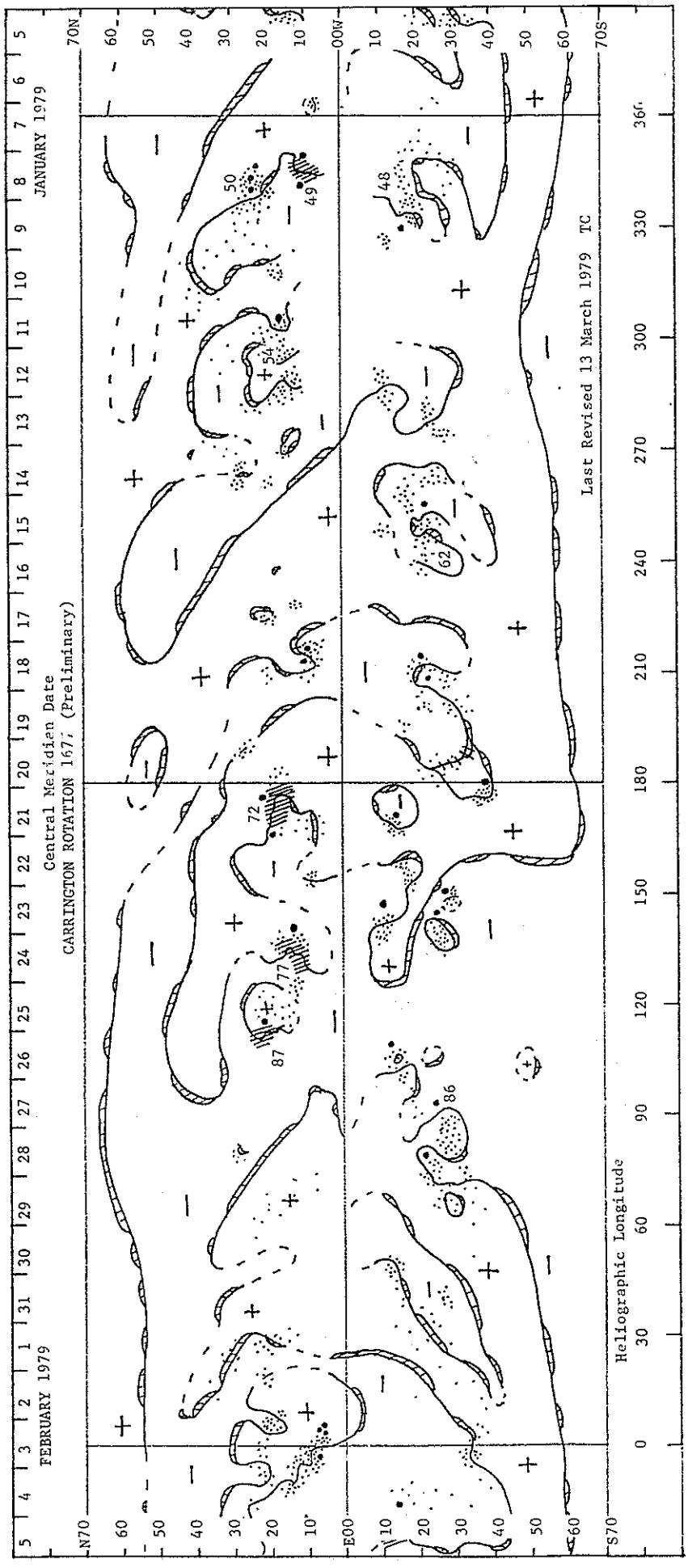
Stanford Solar Observatory

0, ±100, 200, 500... μT



Hα SYNOPTIC CHART

CARRINGTON ROTATION 1677 (PRELIMINARY)

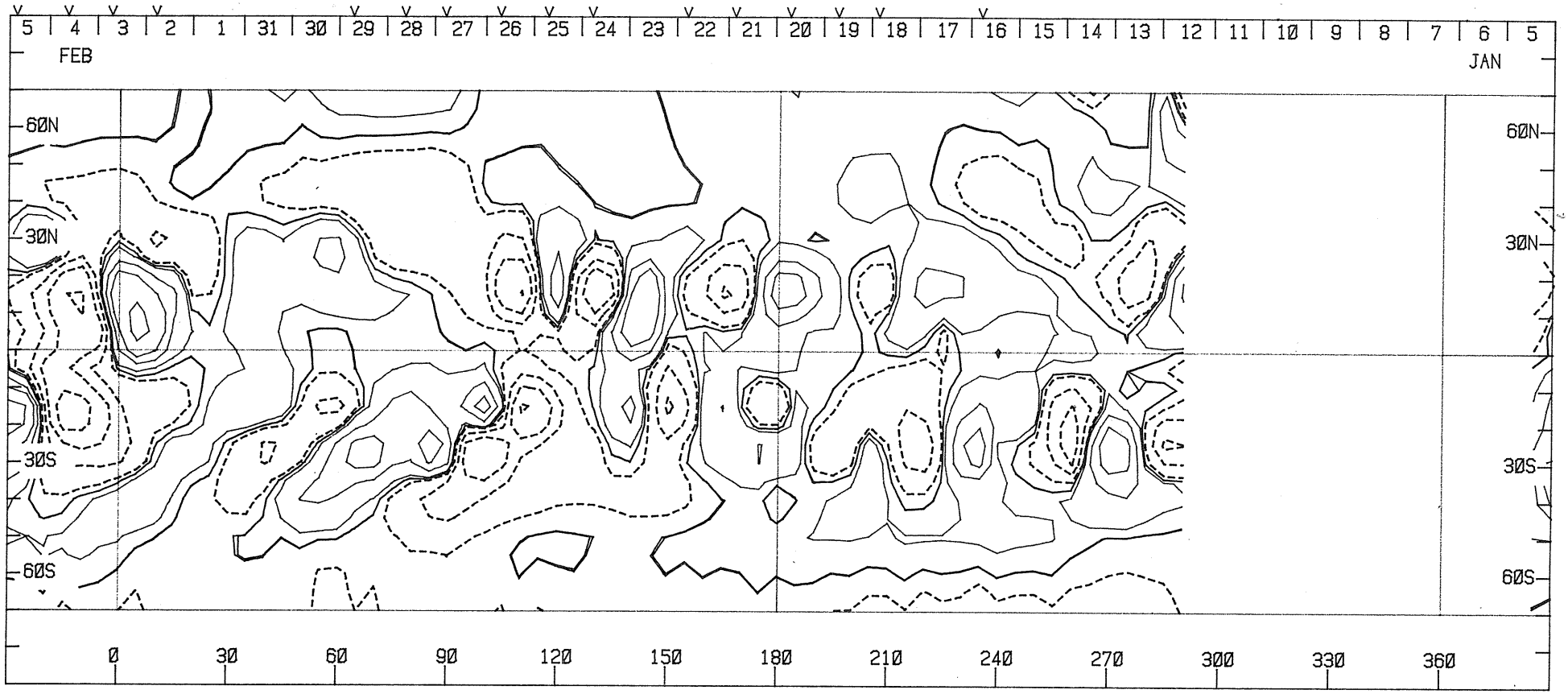


SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION 1677

Stanford Solar Observatory

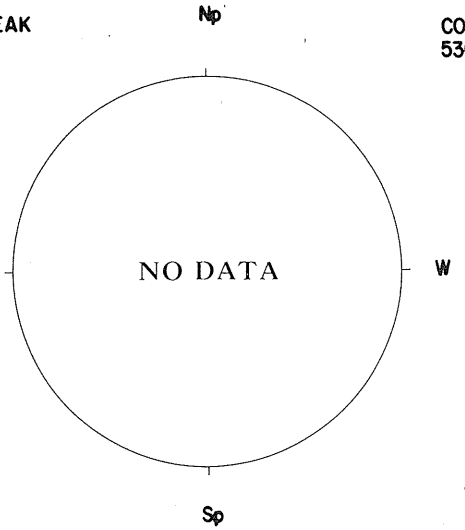
0, ±100, 200, 500... μT

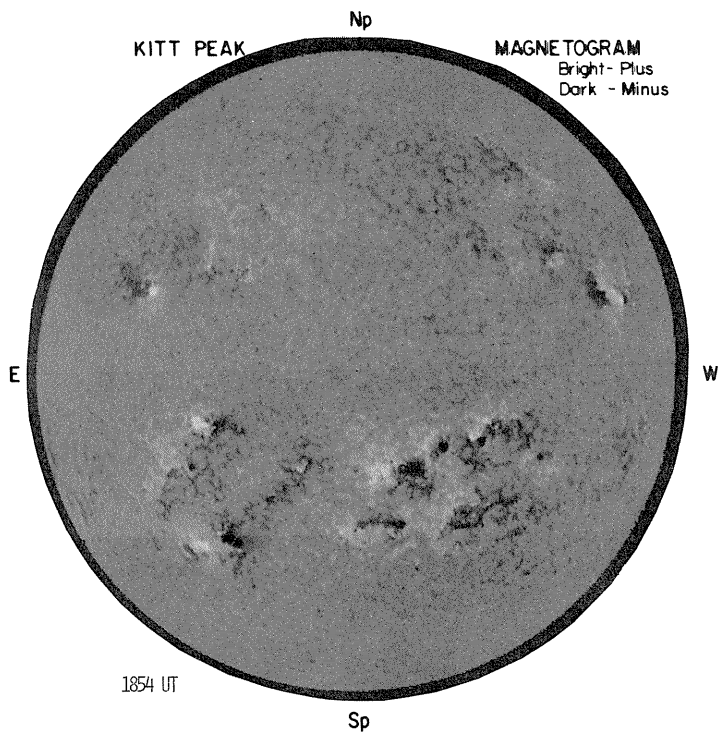


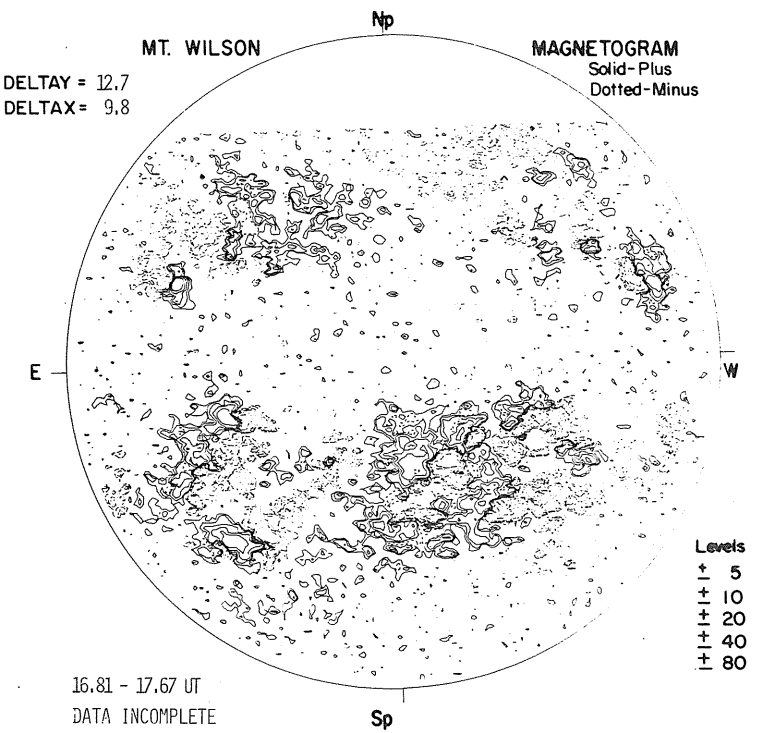
JANUARY 1, 1979 (P = 2.31, B_o = -3.00, L_o = 82.76)

SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å

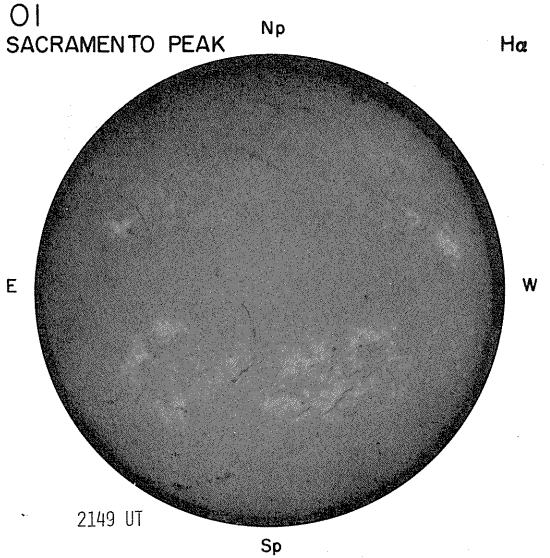




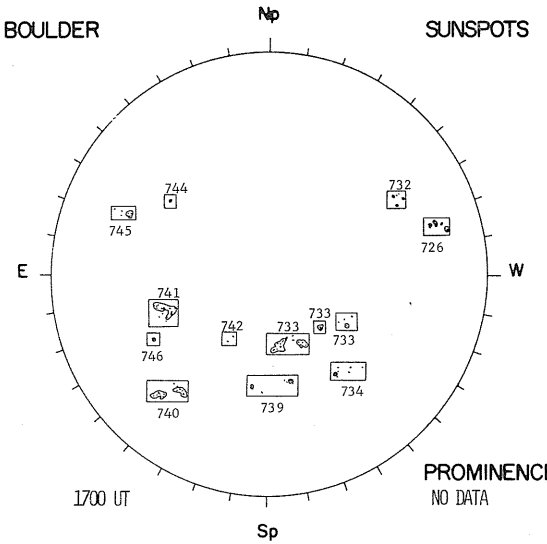


01

SACRAMENTO PEAK

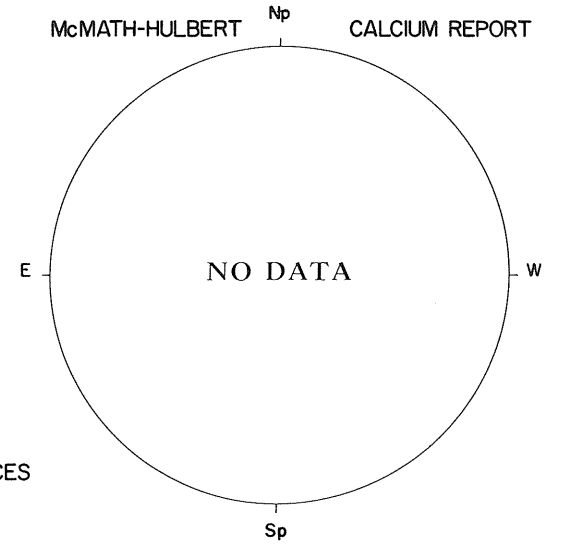


BOULDER SUNSPOTS

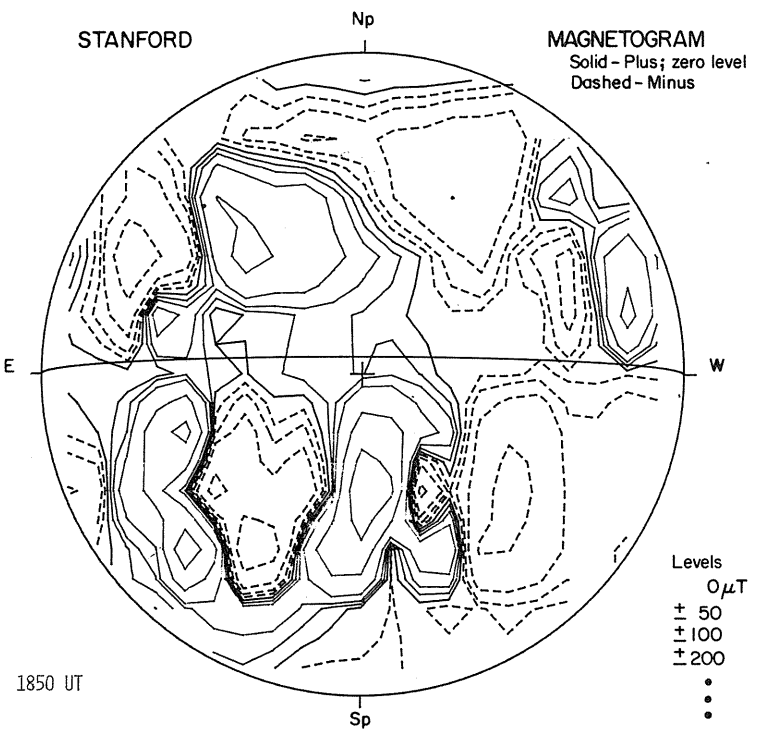


PROMINENCES
NO DATA

McMATH-HULBERT CALCIUM REPORT



STANFORD MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus



JANUARY 2, 1979 (P = 1.83, B_o = -3.12, L_o = 69.59)

SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å

Np

E — NO DATA — W

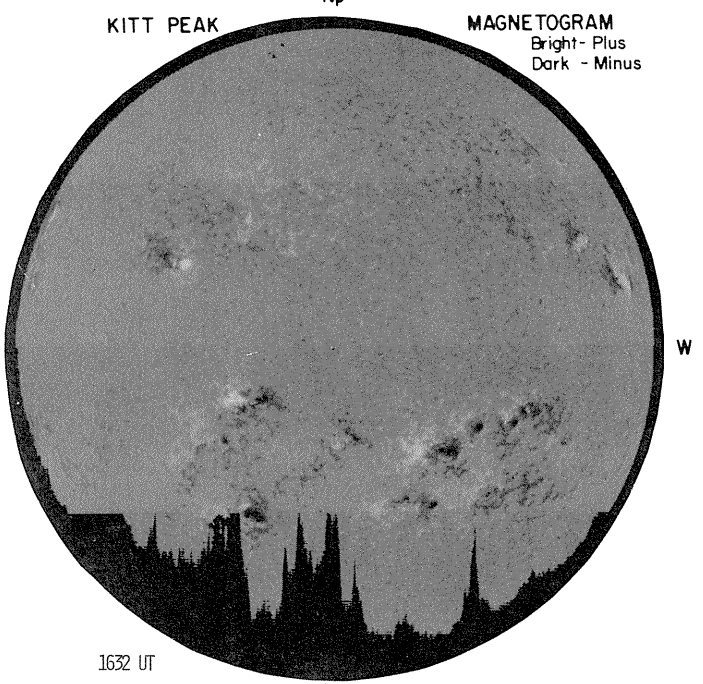
Sp

KITT PEAK

MAGNETOGRAM
Bright - Plus
Dark - Minus

Np

E



W

1632 UT

Sp

MT. WILSON

DELTAY =
DELTAX =

MAGNETOGRAM
Solid - Plus
Dotted - Minus

Np

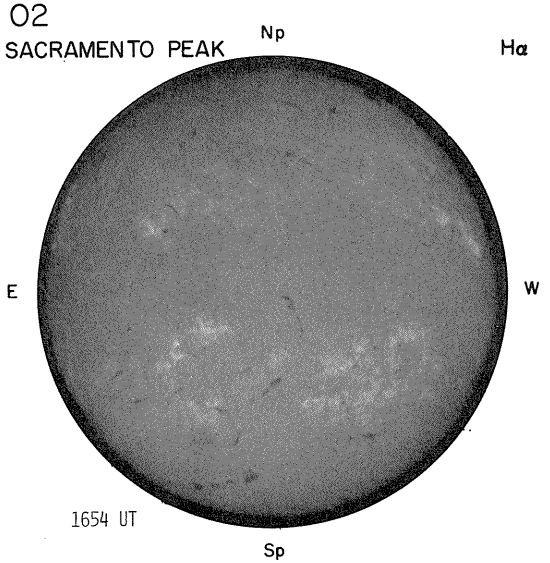
E — NO DATA — W

Sp

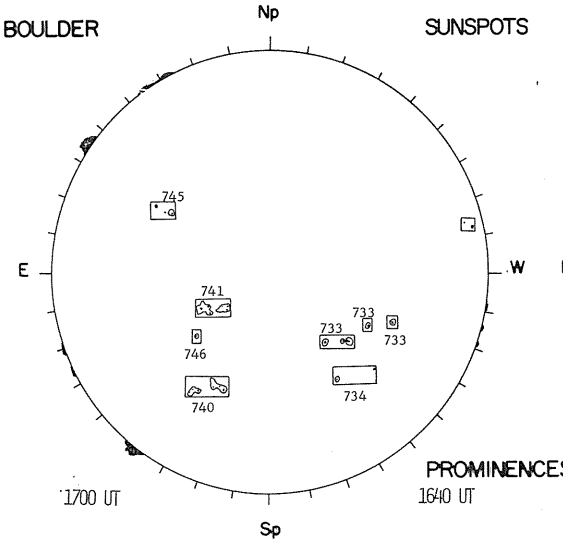
Levels
± 5
± ± 10
± ± ± 20
± ± ± 40
± ± ± 80

02

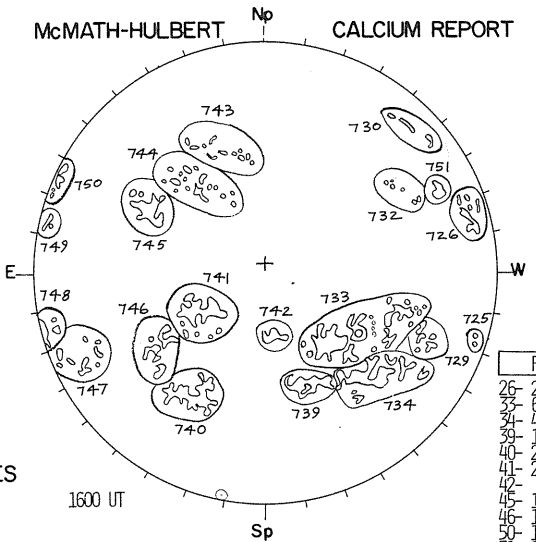
SACRAMENTO PEAK



BOULDER SUNSPOTS



McMATH-HULBERT CALCIUM REPORT



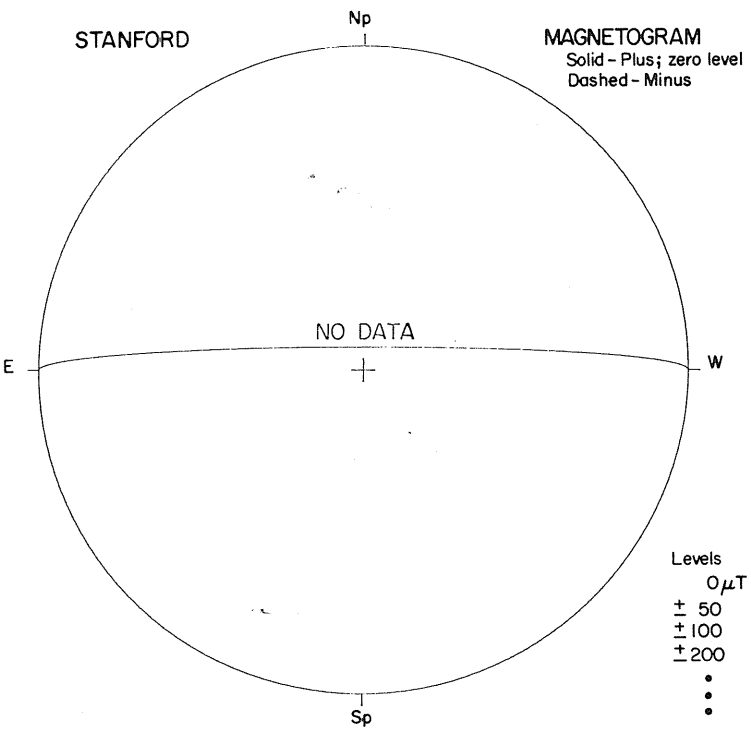
FAIR	S
26- 2100	3.5
33- 6300	3.0
34- 4600	2.5
39- 1800	2.5
40- 2800	2.5
41- 2300	3.0
42- 800	2.5
45- 1900	3.0
46- 1800	3.0
50- 1000	3.0
51- 0800	3.0

PROMINENCES

1640 UT

STANFORD MAGNETOGRAM

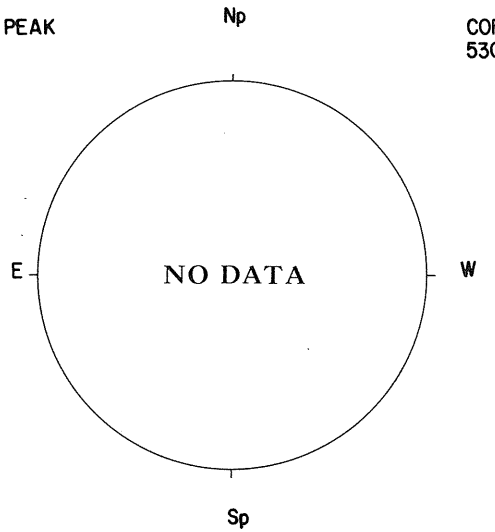
Solid - Plus; zero level
Dashed - Minus



JANUARY 3, 1979 (P = 1.34, B_o = -3.23, L_o = 56.42)

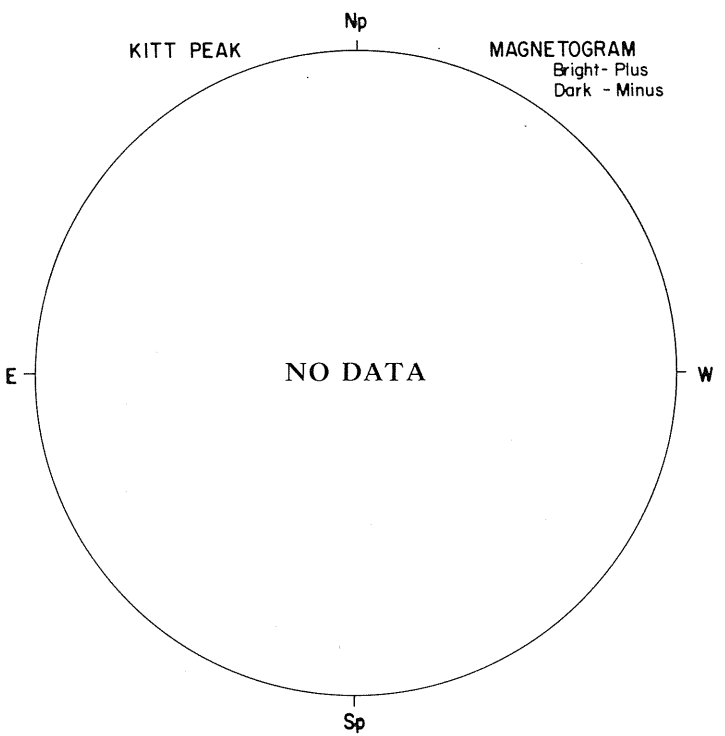
SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å



KITT PEAK

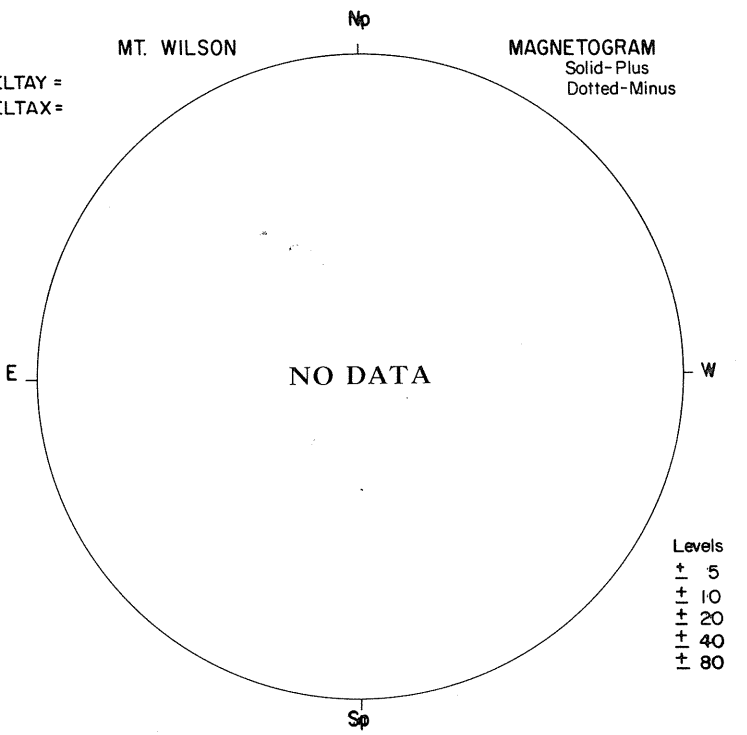
MAGNETOGRAM
Bright - Plus
Dark - Minus



MT. WILSON

DELTAY =
DELTAX =

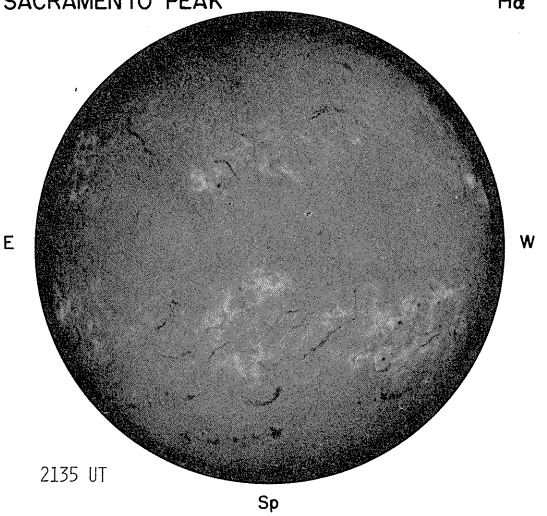
MAGNETOGRAM
Solid - Plus
Dotted - Minus



Levels
± 5
± 10
± 20
± 40
± 80

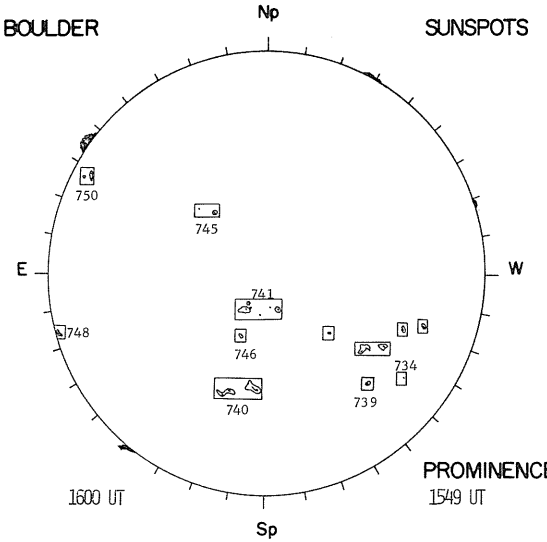
03

SACRAMENTO PEAK Hα



2135 UT

BOULDER SUNSPOTS

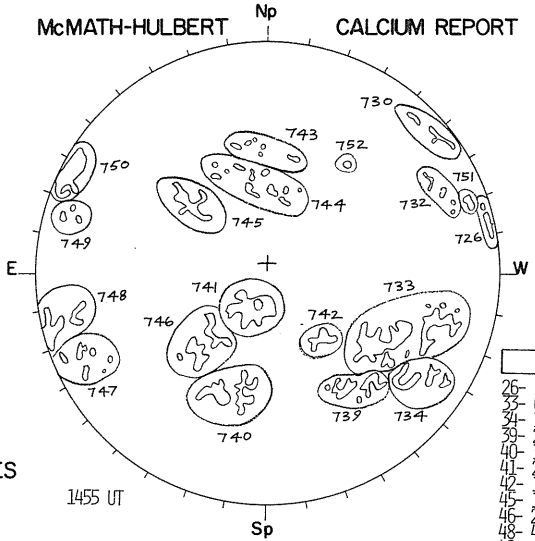


1600 UT

PROMINENCES

1549 UT

McMATH-HULBERT CALCIUM REPORT

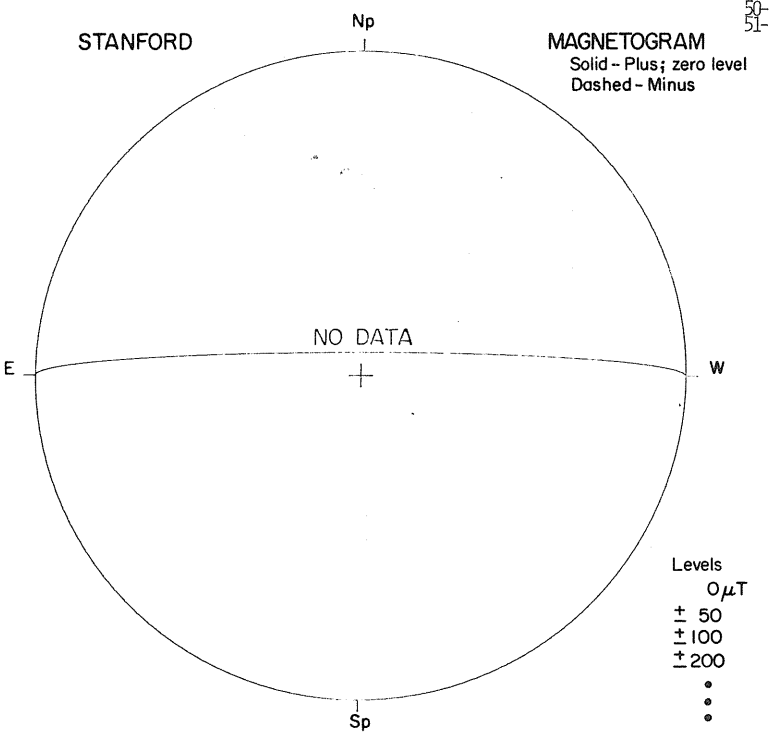


	POOR	S
26-	1800	2.5
33-	6500	3.0
34-	3570	2.5
39-	2000	2.5
40-	3400	3.0
41-	2800	3.0
42-	1000	2.5
45-	1800	3.0
46-	2100	2.5
48-	4200	3.0
49-	800	3.0
50-	4000	2.5
51-	1100	3.5

1455 UT

STANFORD MAGNETOGRAM

Solid – Plus; zero level
Dashed – Minus



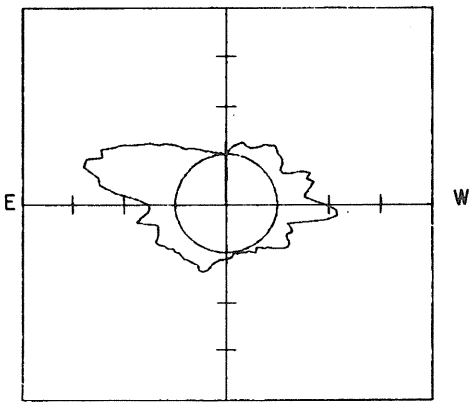
57
Jan 79

JANUARY 4, 1979 (P = 0.85, B_o = - 3.35, L_o = 43.25)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å



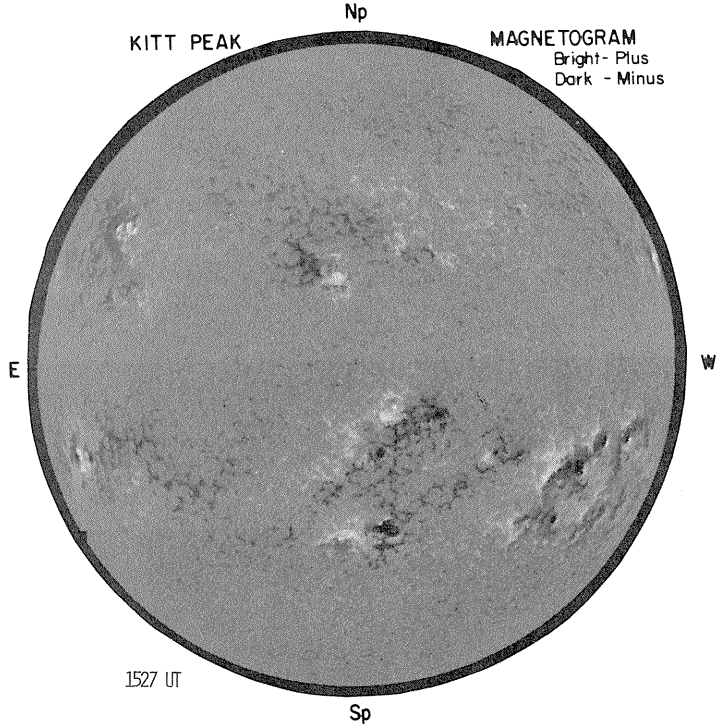
2256 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus



1527 UT

Sp

MT. WILSON

Np

MAGNETOGRAM
Solid - Plus
Dotted - Minus

DELTAY =
DELTAX =

E

NO DATA

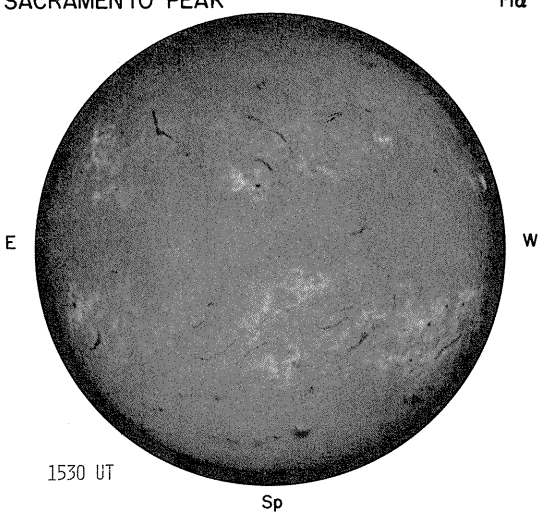
W

Levels
± 5
± 10
± 20
± 40
± 80

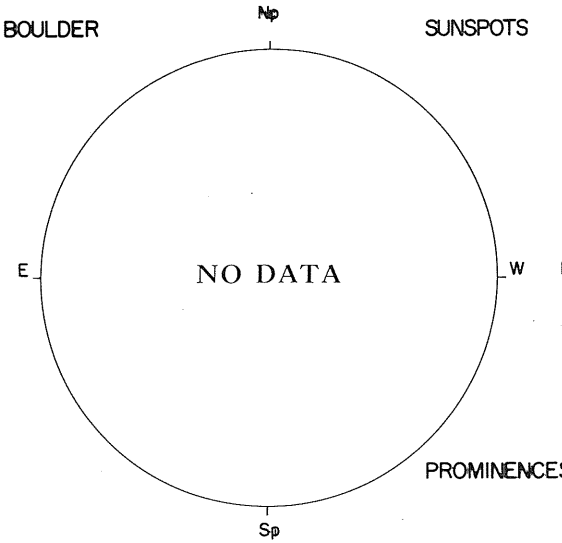
Sp

04

SACRAMENTO PEAK Hα

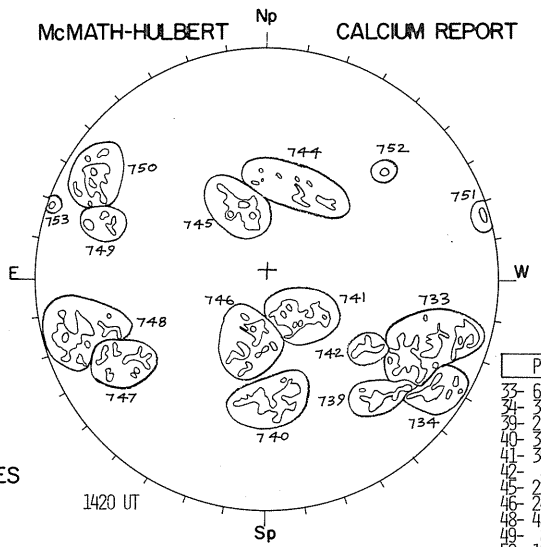


BOULDER SUNSPOTS



PROMINENCES

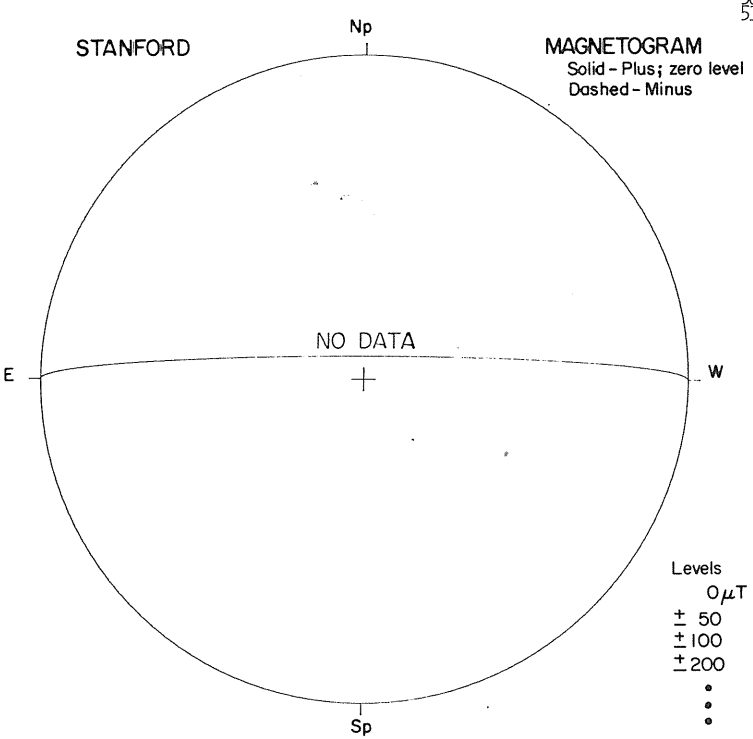
McMATH-HULBERT CALCIUM REPORT



POOR	D
33- 6100	3.0
34- 3000	2.5
39- 2000	2.5
40- 3400	3.0
41- 3000	2.5
42- 800	2.5
45- 2200	2.5
46- 2400	2.5
48- 4800	3.0
49- 800	3.0
50- 1000	2.5
51- 1000	3.0

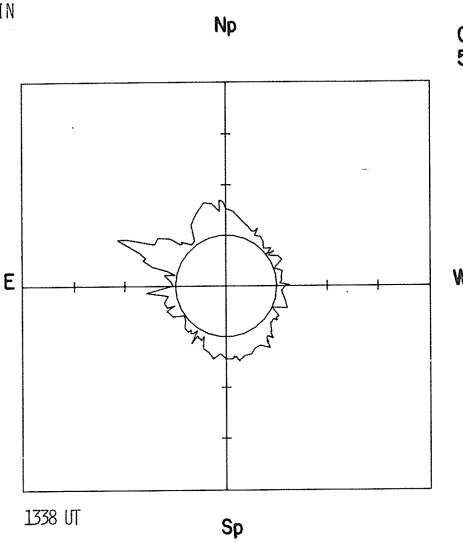
STANFORD MAGNETOGRAM

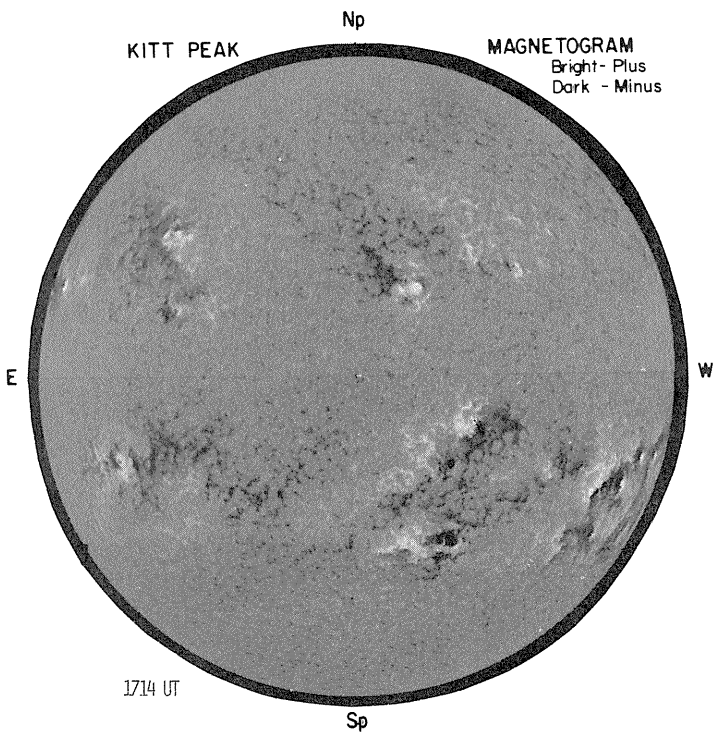
Solid - Plus; zero level
Dashed - Minus

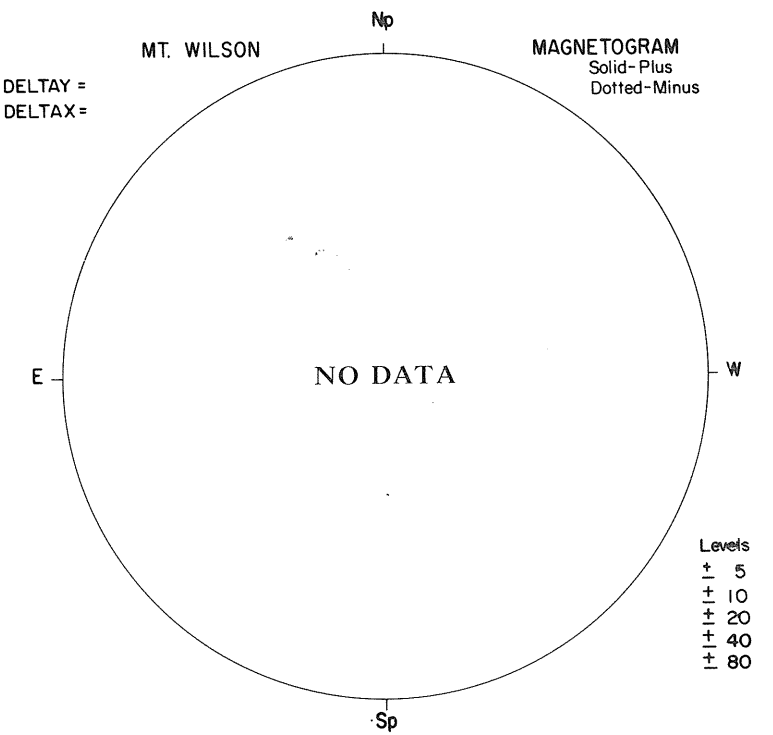


JANUARY 5, 1979 (P = 0.37, B_o = -3.46, L_o = 30.08)

WENDELSTEIN

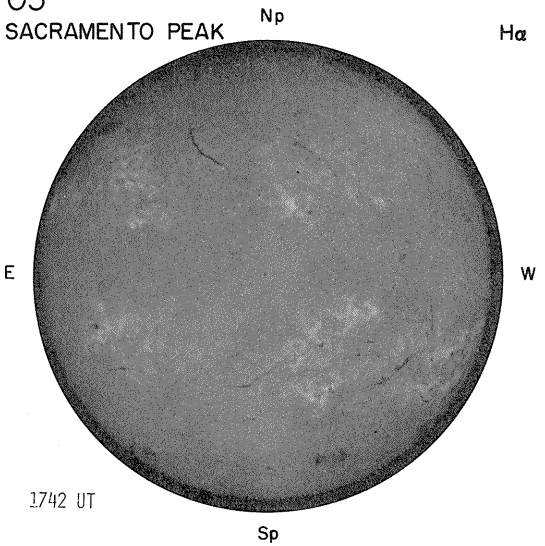




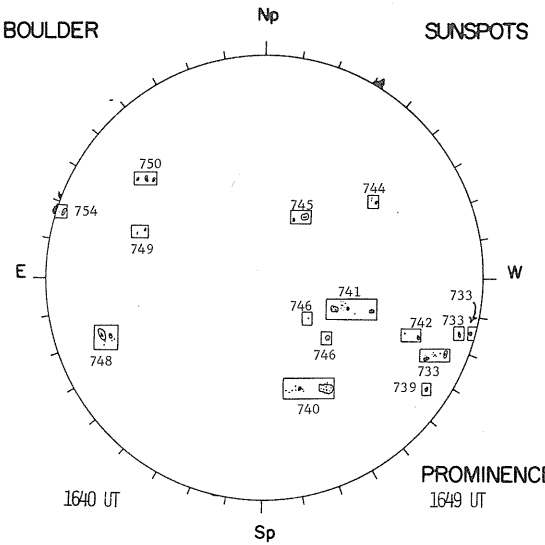


05

SACRAMENTO PEAK



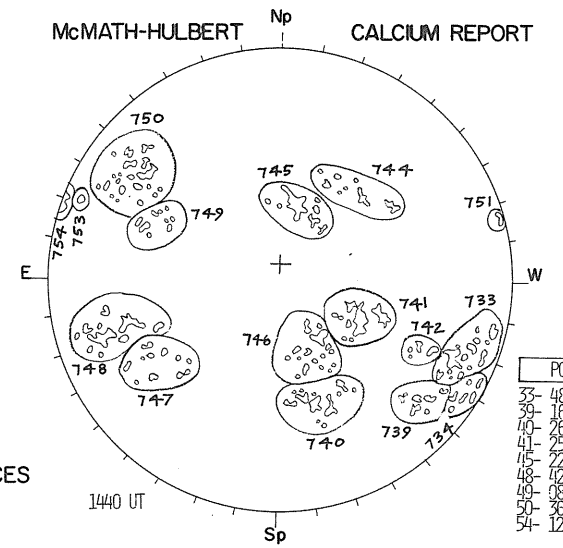
BOULDER SUNSPOTS



PROMINENCES

1649 UT

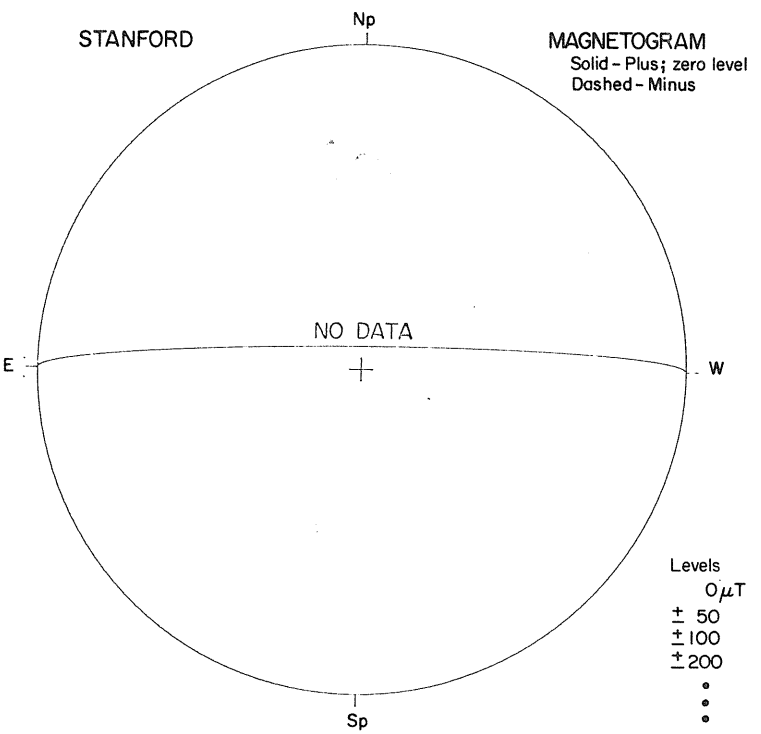
McMATH-HULBERT CALCIUM REPORT



POOR	D
33- 4800-3.0	
39- 1600-2.5	
40- 2600-3.0	
41- 2500-2.5	
45- 2200-2.5	
48- 4200-3.0	
49- 0800-3.0	
50- 3600-2.5	
54- 1200-3.0	

STANFORD MAGNETOGRAM

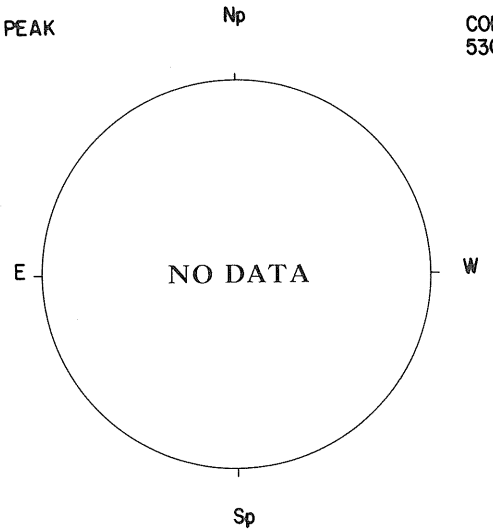
Solid - Plus; zero level
Dashed - Minus



JANUARY 6, 1979 (P =-0.12, B_o =-3.57, L_o = 16.91)

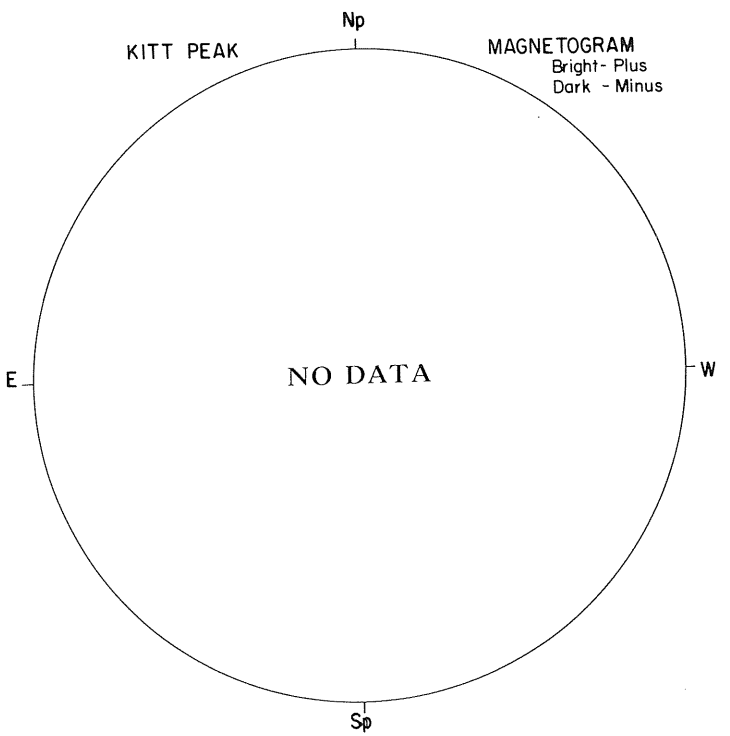
SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å



KITT PEAK

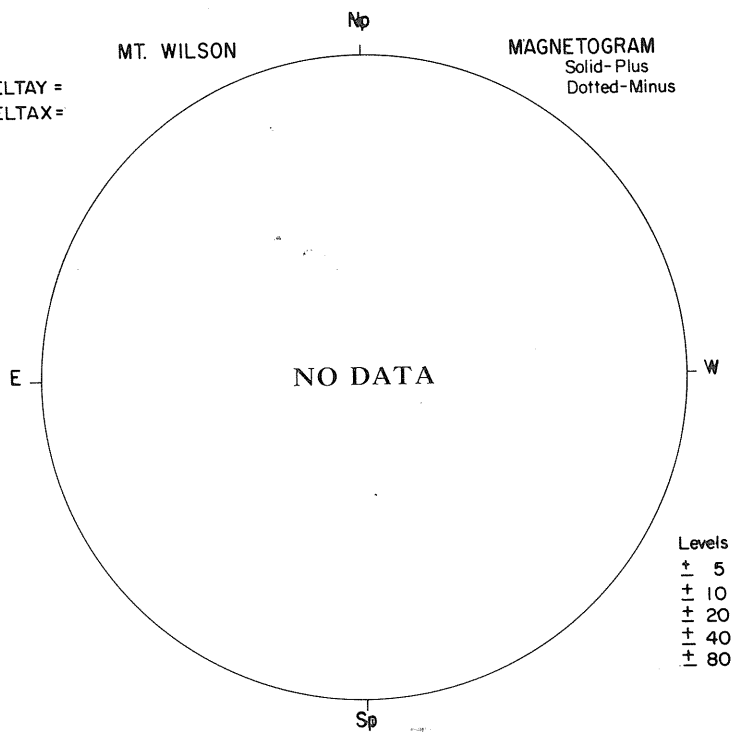
MAGNETOGRAM
Bright- Plus
Dark - Minus

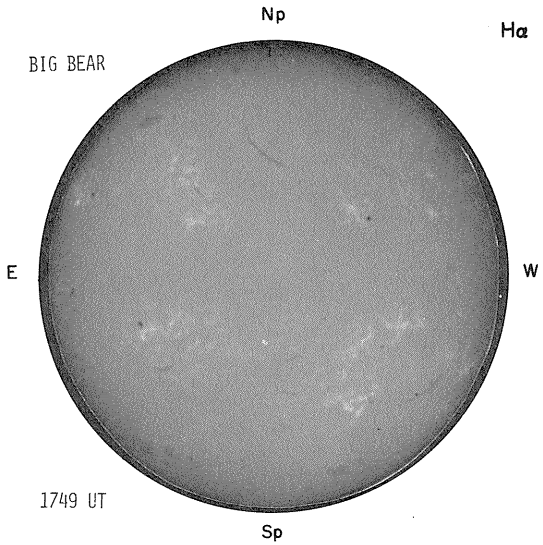


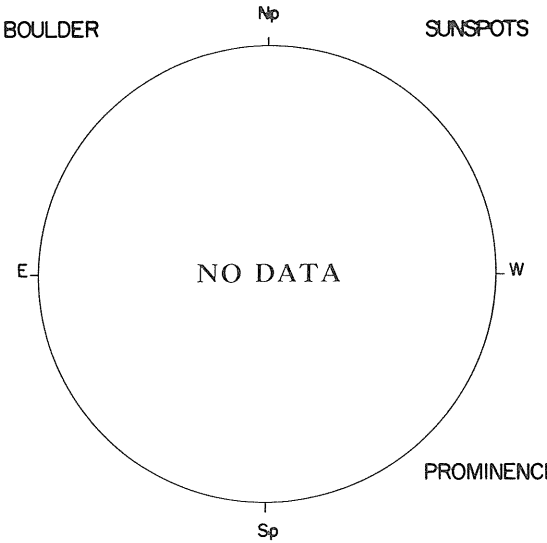
MT. WILSON

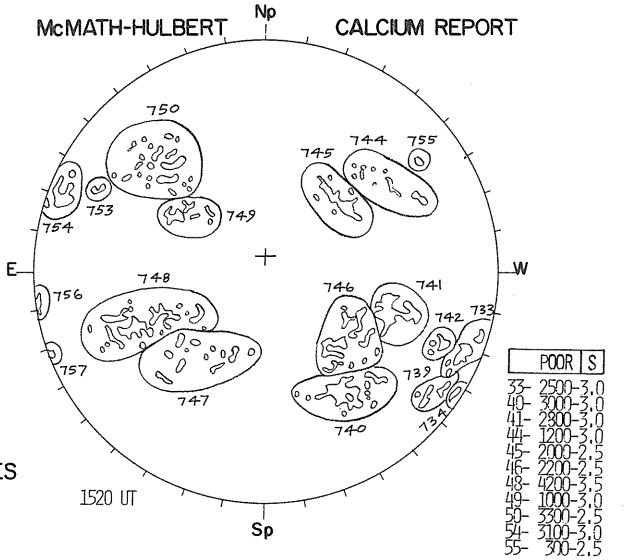
DELTAY =
DELTAX =

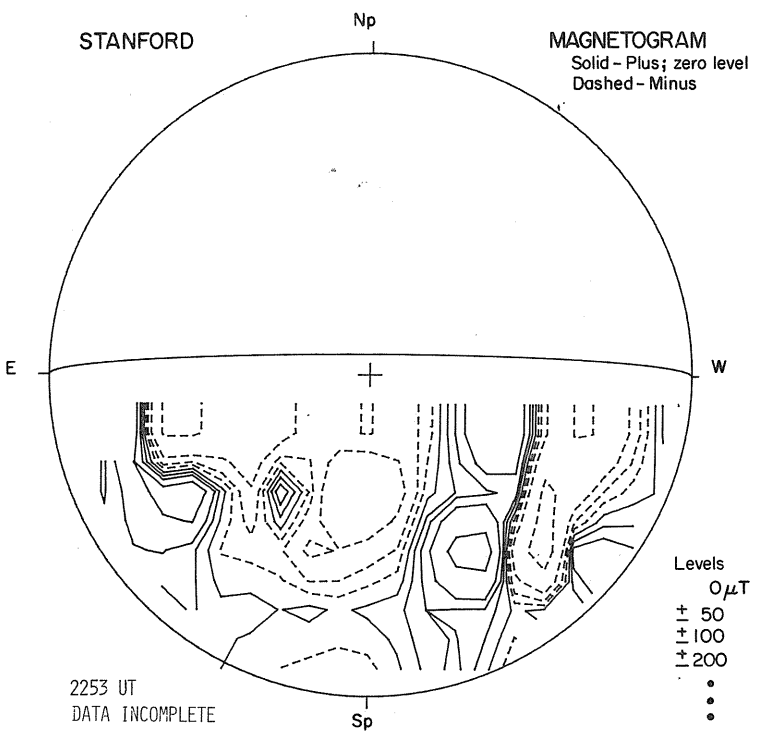
MAGNETOGRAM
Solid- Plus
Dotted-Minus




Np
Hα
BIG BEAR
E
W
1749 UT
Sp

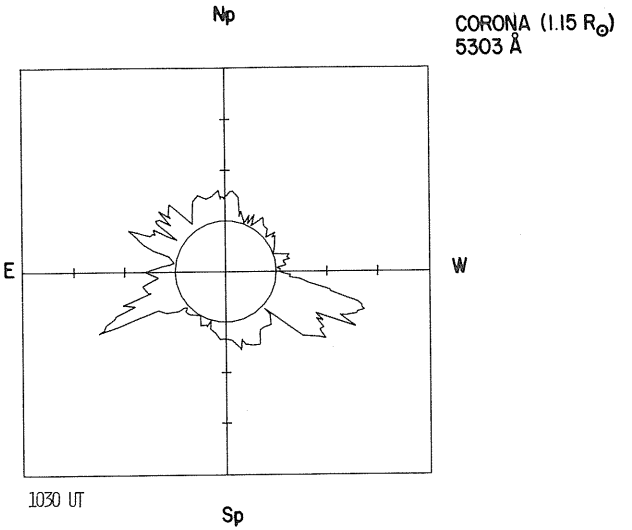

Np
BOULDER
SUNSPOTS
E
NO DATA
W
PROMINENCES
Sp

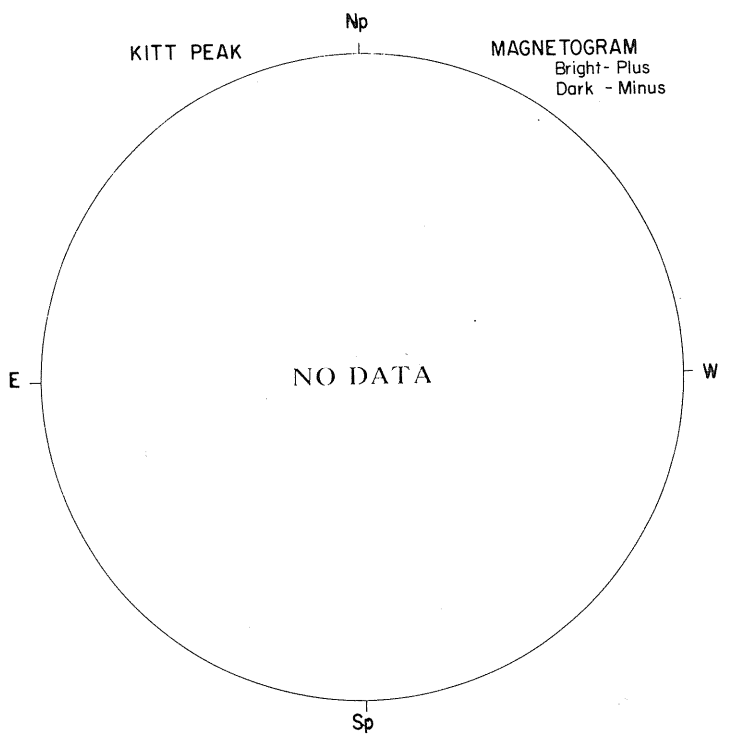

Np
McMATH-HULBERT
CALCIUM REPORT
750
744
755
745
753
754
749
E
W
748
756
746
741
742
733
757
739
747
740
734
1520 UT
Sp
POOR | S
33- 2500-3.0
50- 3000-3.0
51- 2800-3.0
52- 1200-3.0
53- 2000-2.5
54- 2200-2.5
55- 4200-3.5
56- 1000-3.0
57- 3300-2.5
58- 3100-3.0
59- 300-2.5

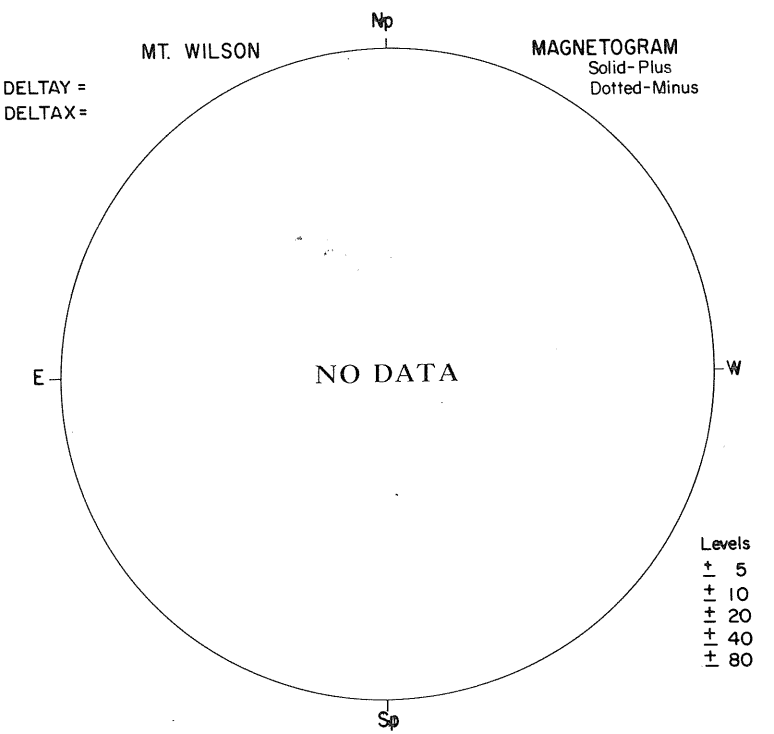

Np
STANFORD
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Levels
0 μT
± 50
± 100
± 200
2253 UT
DATA INCOMPLETE
Sp

JANUARY 7, 1979 (P =-0.60, B_o =-3.68, L_o = 3.74)

WENDELSTEIN

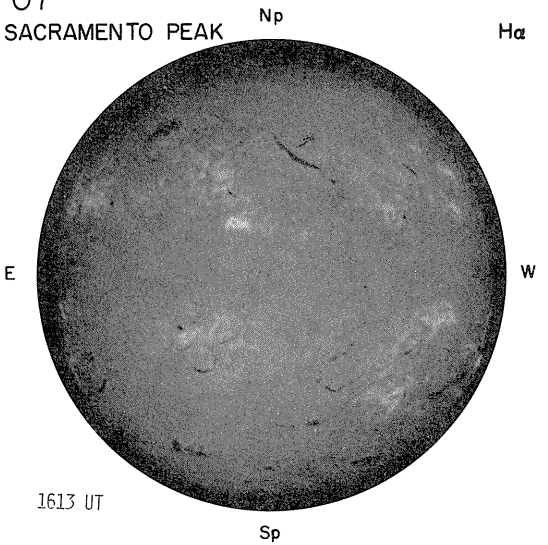




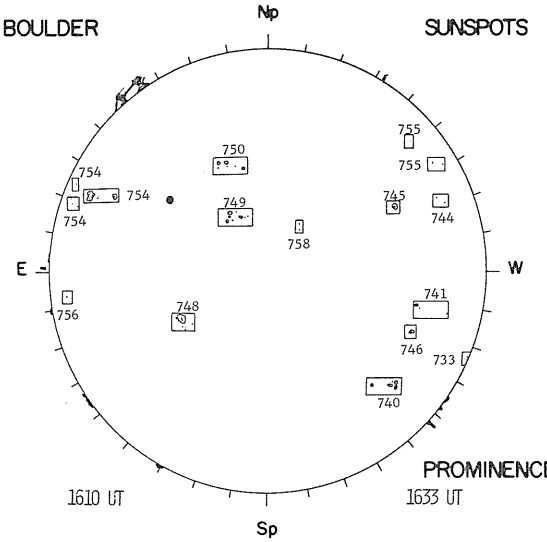


07

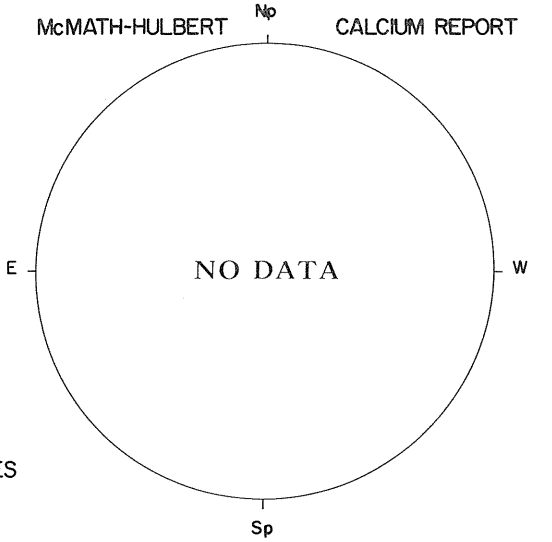
SACRAMENTO PEAK



BOULDER SUNSPOTS



McMATH-HULBERT CALCIUM REPORT



PROMINENCES

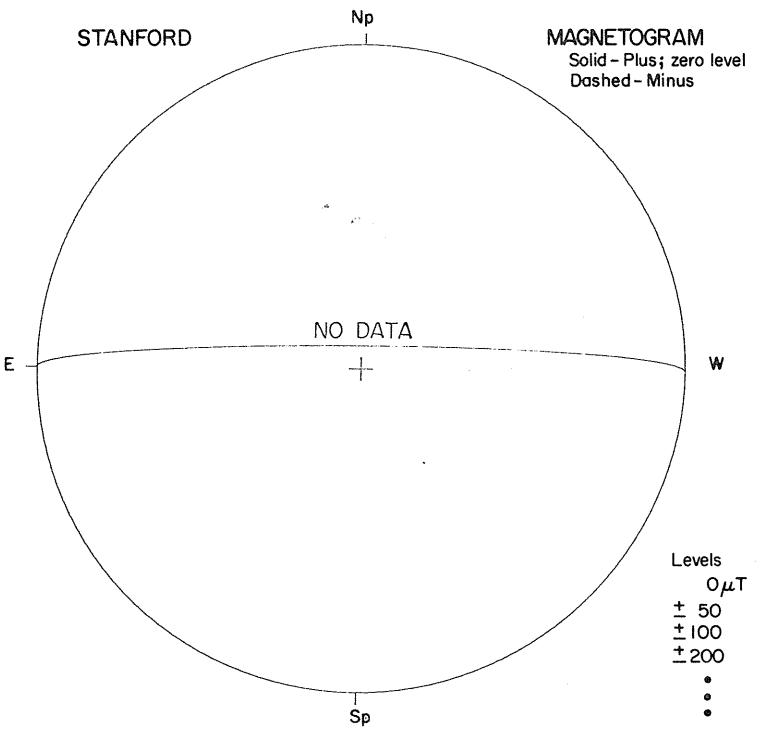
1633 UT

STANFORD

MAGNETOGRAM

Solid – Plus; zero level

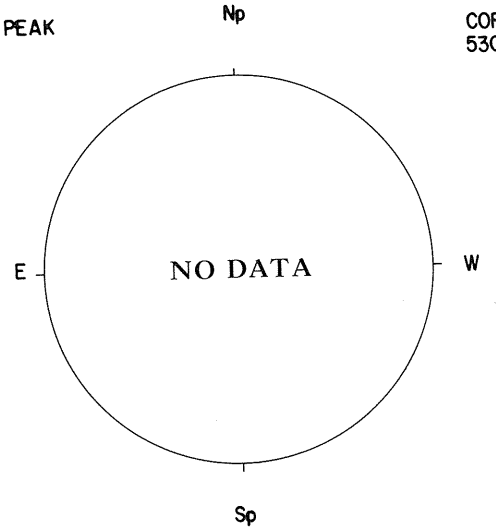
Dashed – Minus

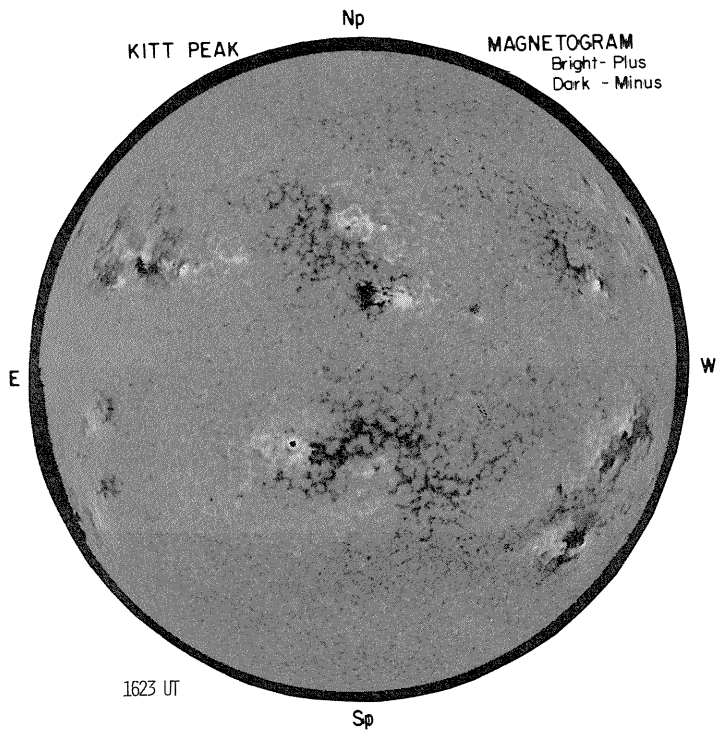


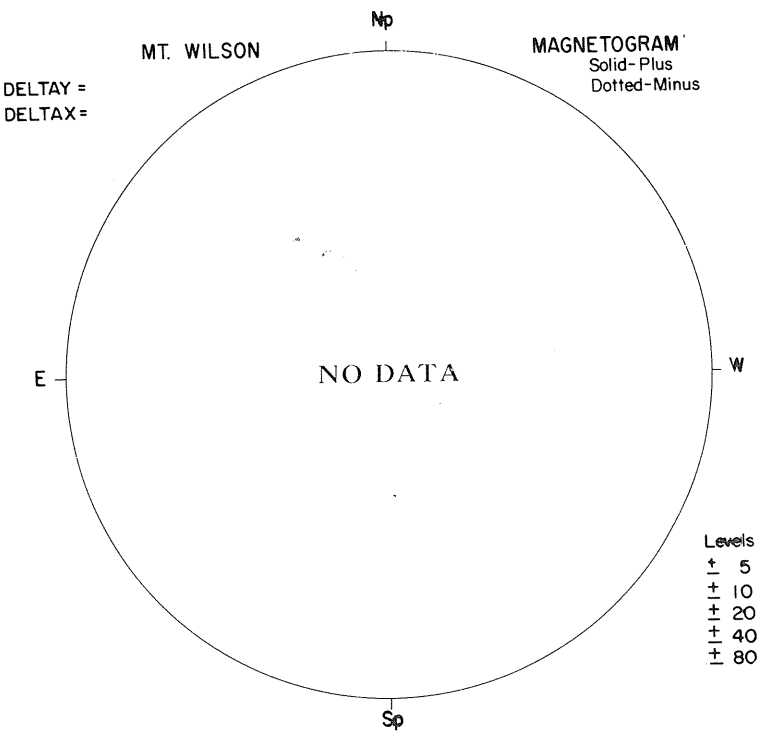
JANUARY 8, 1979 (P =-1.08, B_o =-3.80, L_o = 350.57)

SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å



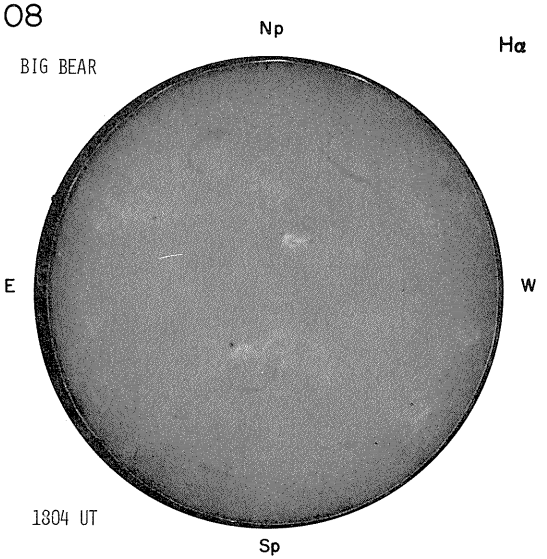




08

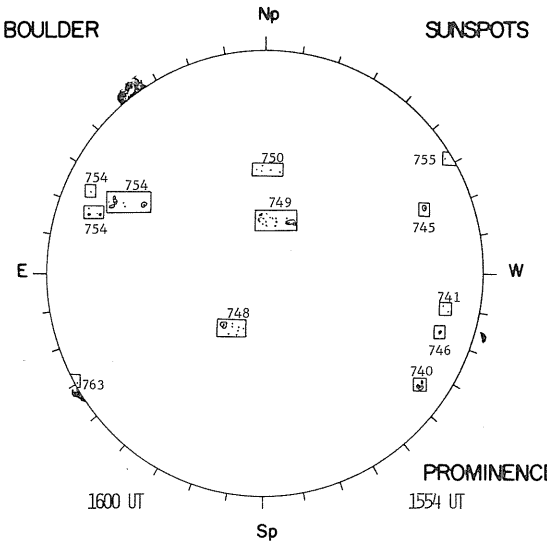
BIG BEAR

Hα



1804 UT

BOULDER SUNSPOTS

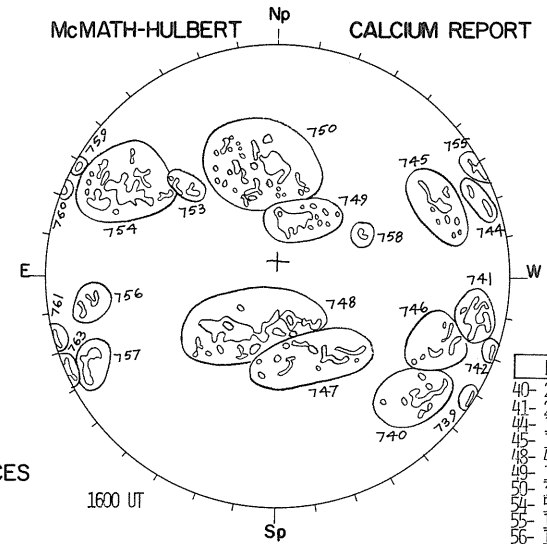


1600 UT

PROMINENCES

1554 UT

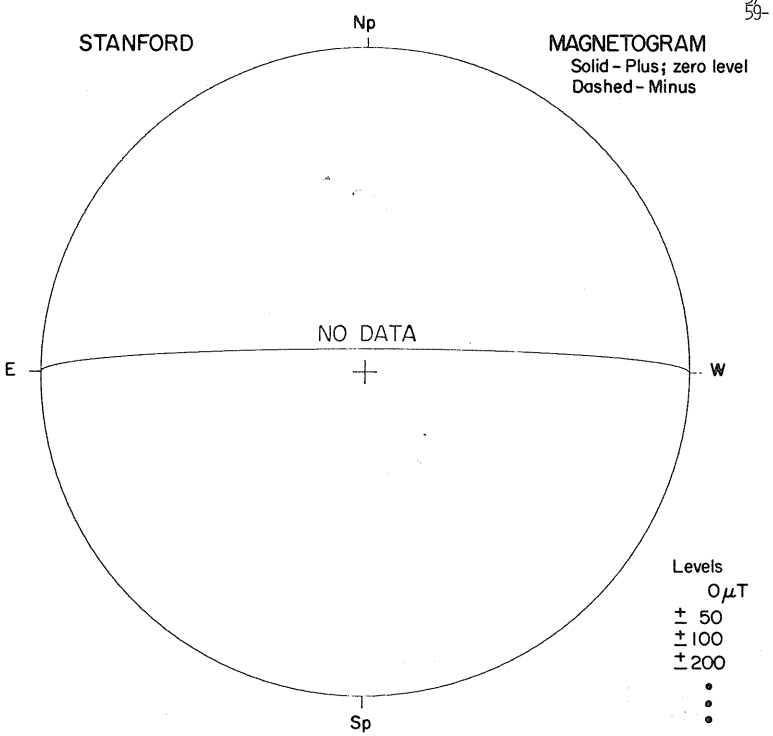
McMATH-HULBERT CALCIUM REPORT



FAIR	S
40- 2600	2.5
41- 2800	2.5
44- 1200	3.0
45- 1800	2.5
48- 4400	3.0
49- 1900	3.0
50- 3200	2.5
54- 5000	3.0
55- 1000	2.5
56- 1000	3.0
57- 2000	3.5
59- 500	2.5

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus



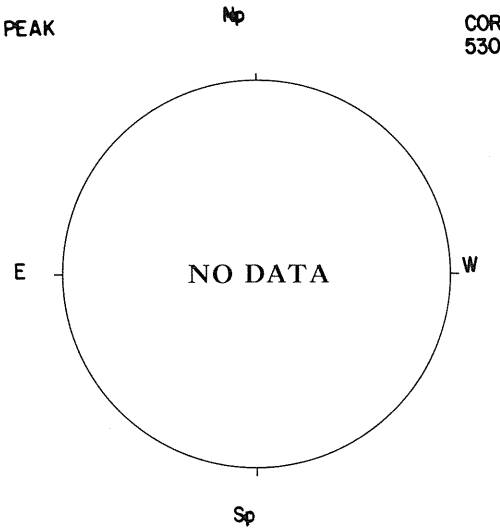
Levels
0 μT
± 50
± 100
± 200
•
•
•

67
Jan 79

JANUARY 9, 1979 (P =-1.57, B_o =-3.90, L_o = 337.40)

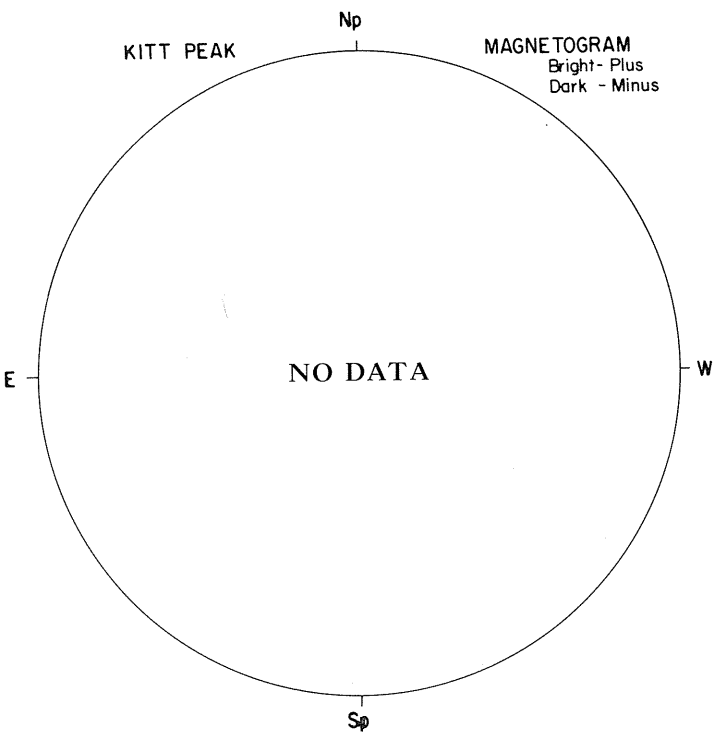
SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å



KITT PEAK

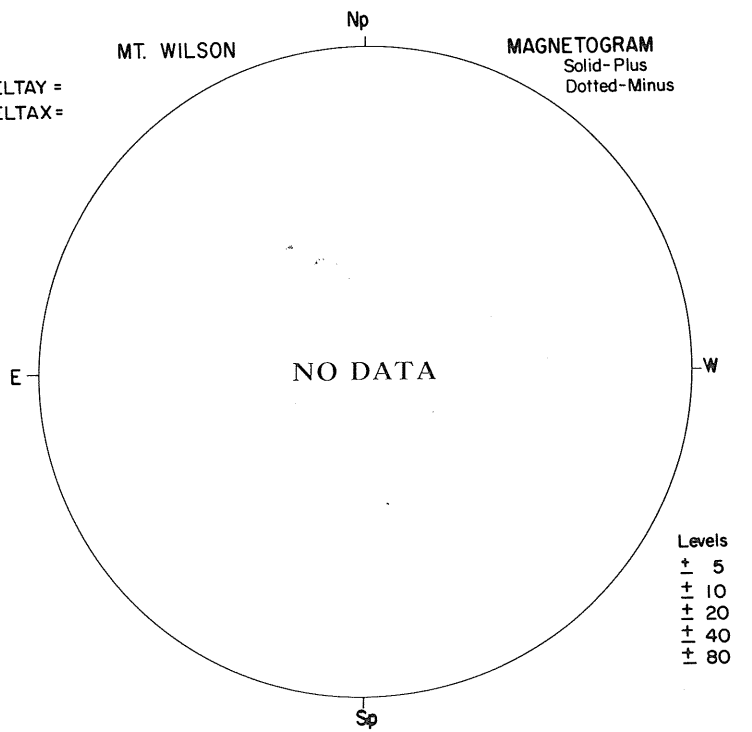
MAGNETOGRAM
Bright- Plus
Dark - Minus



MT. WILSON

DELTAY =
DELTAX =

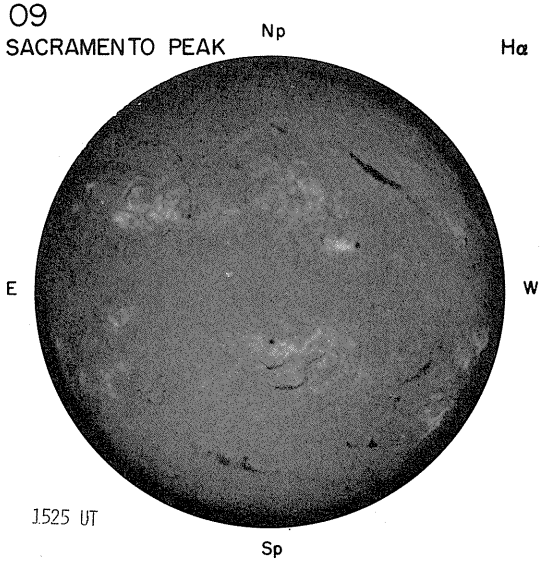
MAGNETOGRAM
Solid-Plus
Dotted-Minus



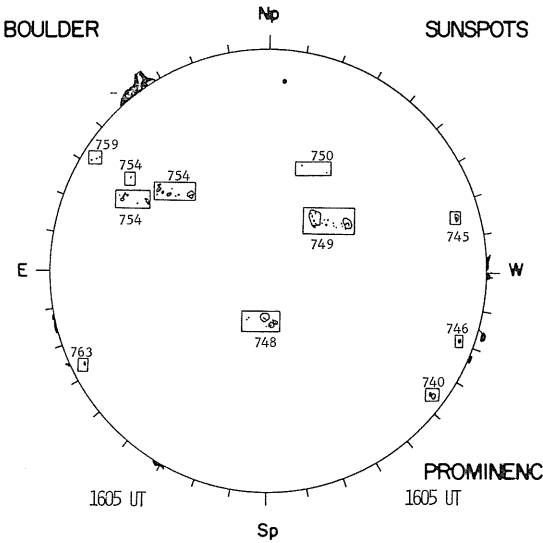
Levels
± 5
± 10
± 20
± 40
± 80

09

SACRAMENTO PEAK



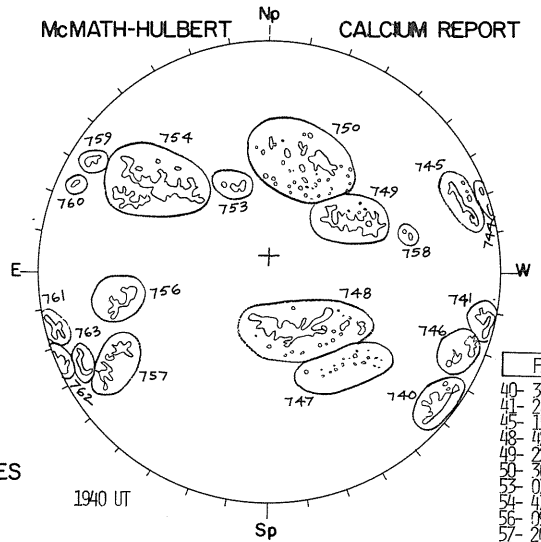
BOULDER SUNSPOTS



PROMINENCES

1605 UT

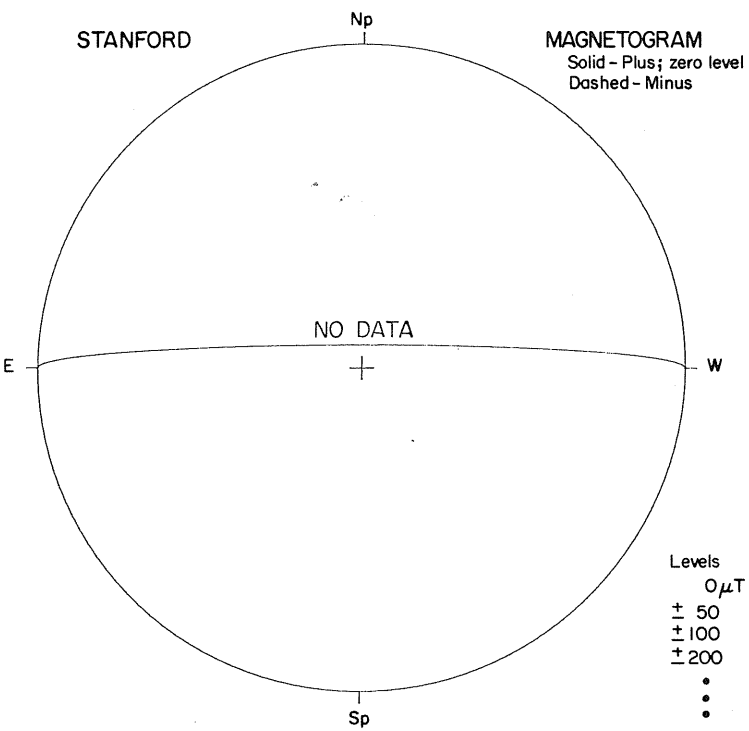
McMATH-HULBERT CALCIUM REPORT



	FAIR	M
40-	3000	3.0
41-	2800	2.5
45-	1500	2.5
48-	1200	3.5
49-	2200	3.5
50-	3600	2.5
53-	0700	2.5
54-	4700	3.0
56-	0900	3.5
57-	2000	3.0
59-	0800	3.0

STANFORD MAGNETOGRAM

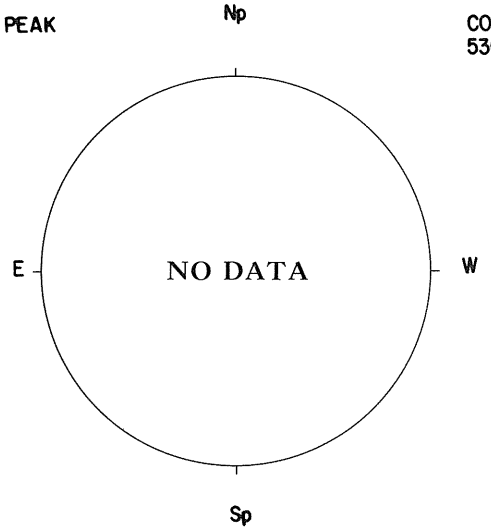
Solid - Plus; zero level
Dashed - Minus

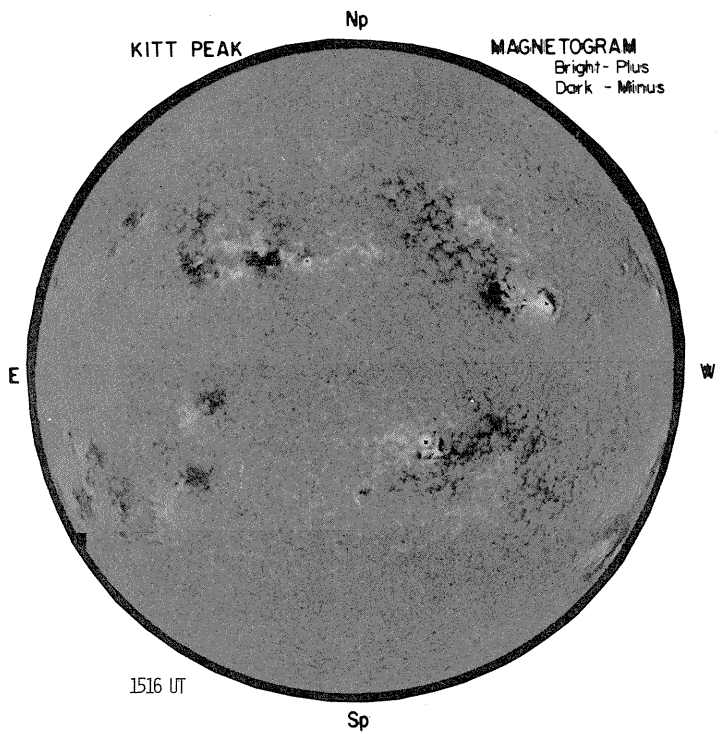


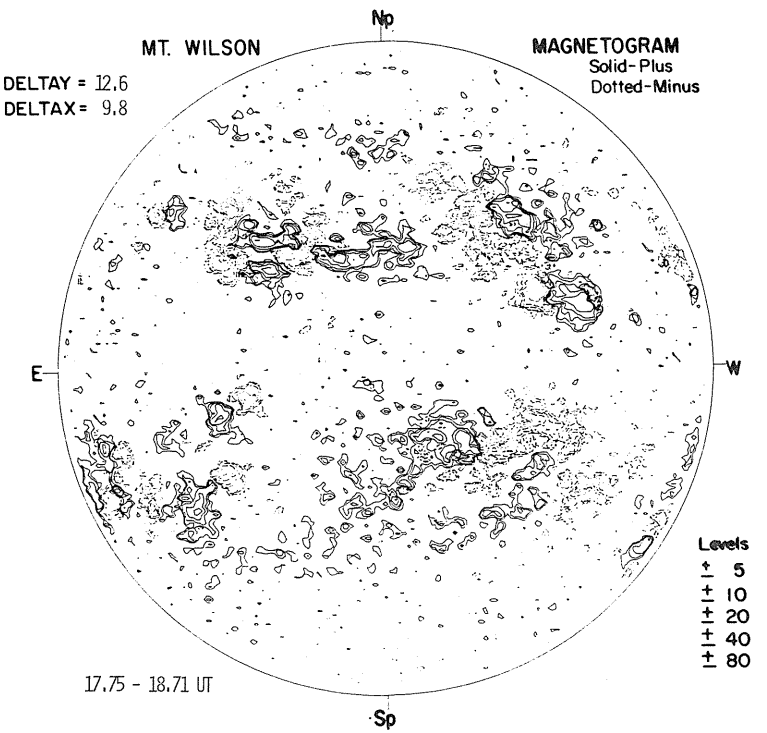
JANUARY 10, 1979 (P =-2.05, B_o =-4.01, L_o = 324.23)

SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å



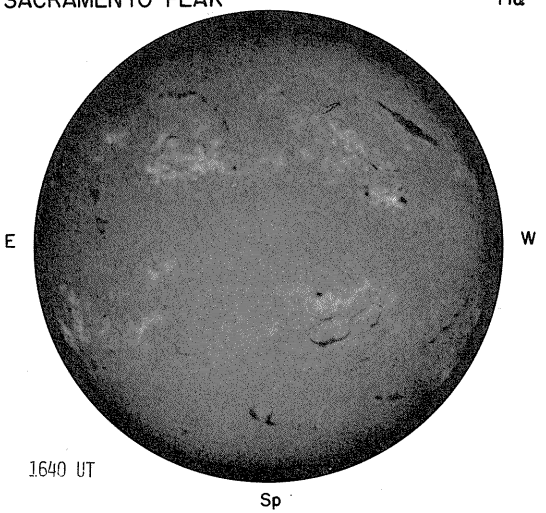




10

SACRAMENTO PEAK

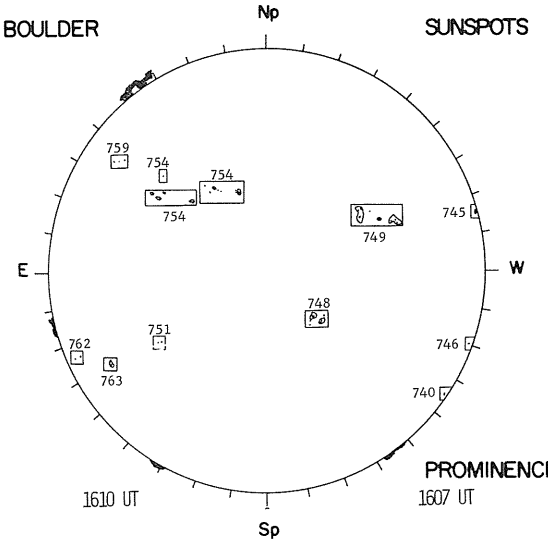
Hα



1640 UT

BOULDER

SUNSPOTS



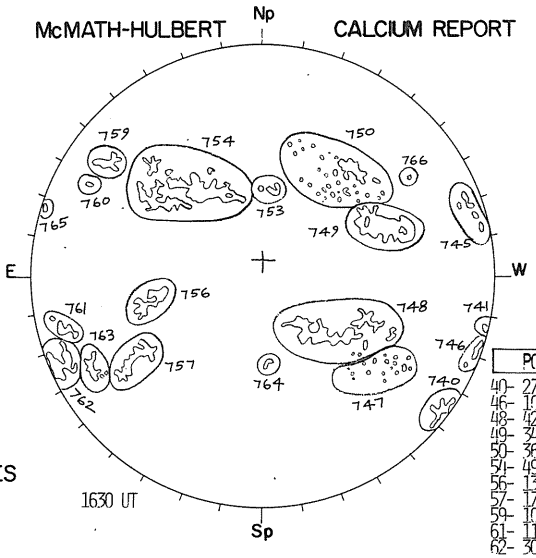
1610 UT

PROMINENCES

1607 UT

McMATH-HULBERT

CALCIUM REPORT



POOR	M
40-	2700-3.0
46-	1900-2.5
48-	4200-2.5
49-	3400-3.0
50-	3600-2.0
51-	4900-3.5
56-	1300-3.0
57-	1700-3.0
59-	1090-3.0
61-	1100-2.5
62-	3000-3.0

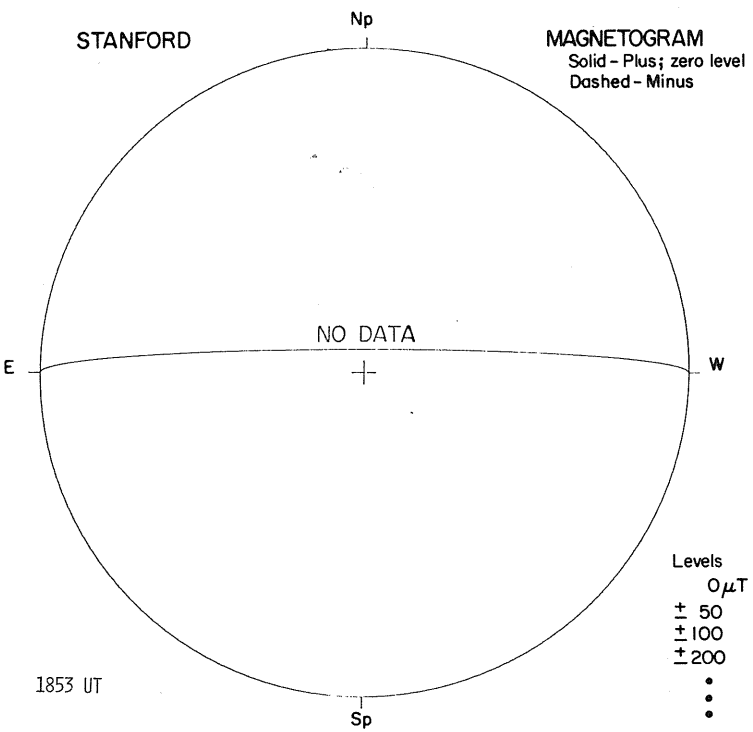
1630 UT

STANFORD

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus

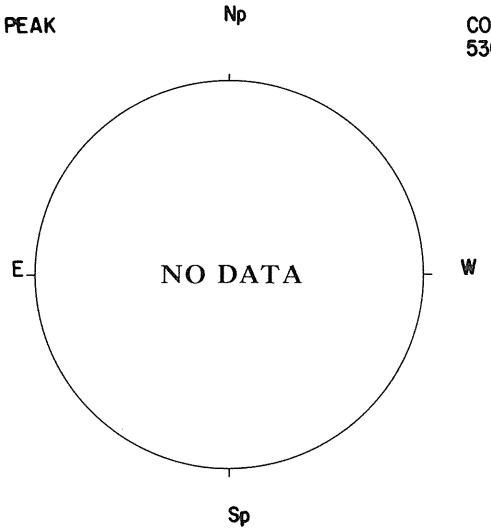


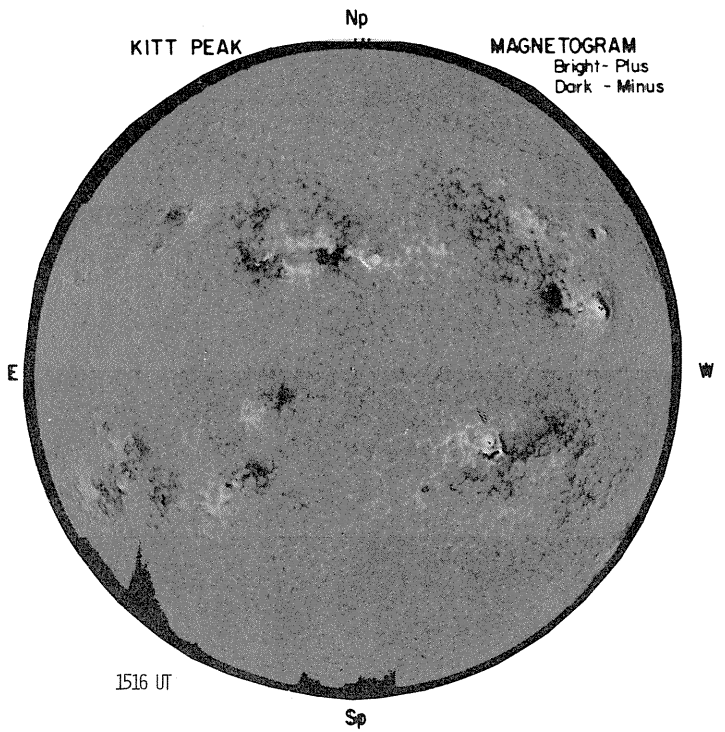
1853 UT

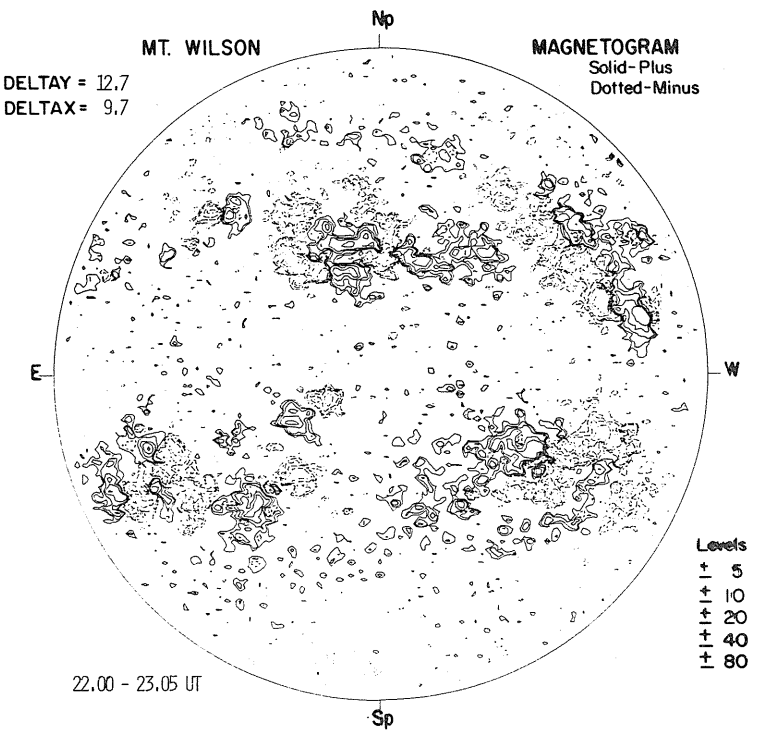
JANUARY 11, 1979 (P =-2.53, B_o =-4.12, L_o = 311.06)

SACRAMENTO PEAK

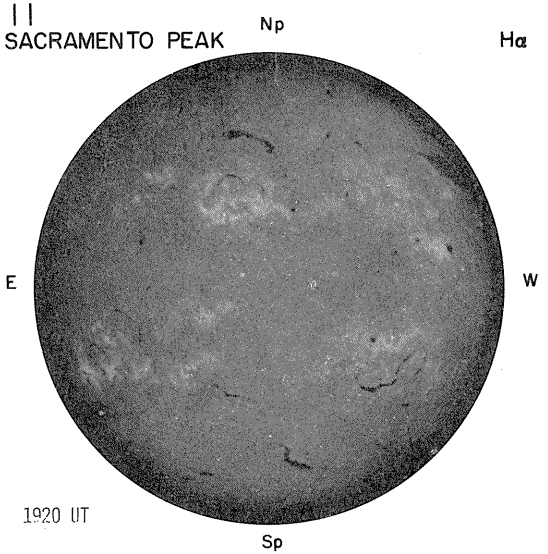
CORONA (1.15 $R_\odot$)
5303 Å



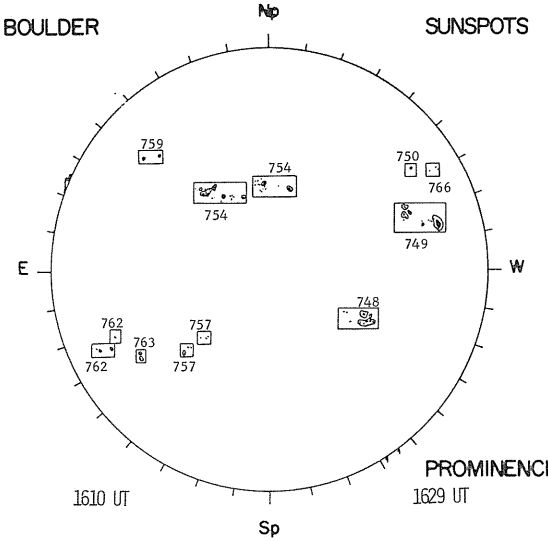




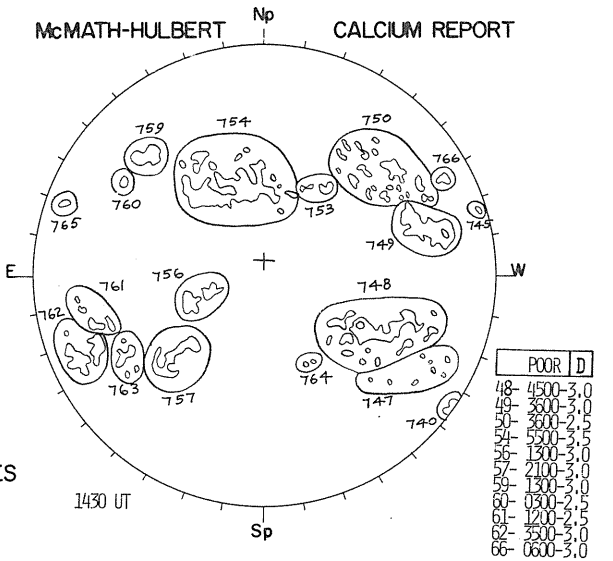
SACRAMENTO PEAK



BOULDER SUNSPOTS



McMATH-HULBERT CALCIUM REPORT

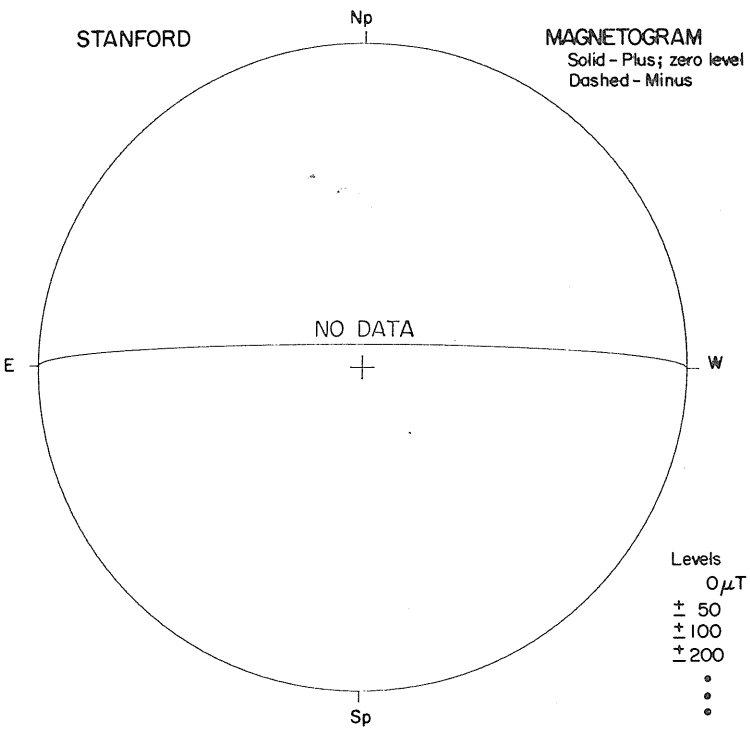


POOR	D
48- 4500-3.0	
49- 3600-3.0	
50- 3600-2.5	
54- 5500-3.5	
56- 1300-3.0	
57- 2100-3.0	
59- 1300-3.0	
60- 0300-2.5	
61- 1200-2.5	
62- 3500-3.0	
66- 0600-3.0	

PROMINENCES

STANFORD MAGNETOGRAM

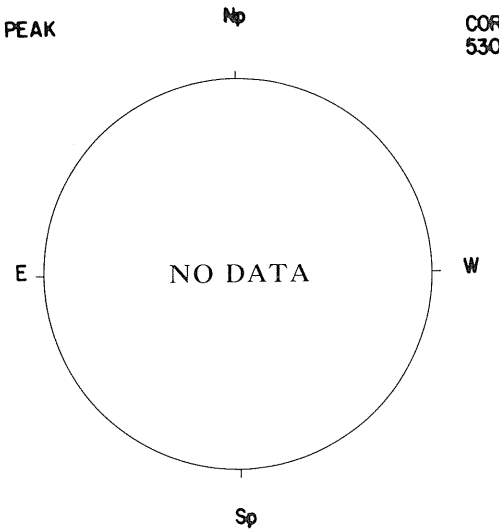
Solid - Plus; zero level
Dashed - Minus



JANUARY 12, 1979 (P =-3.00, B_o =-4.22, L_o =297.89)

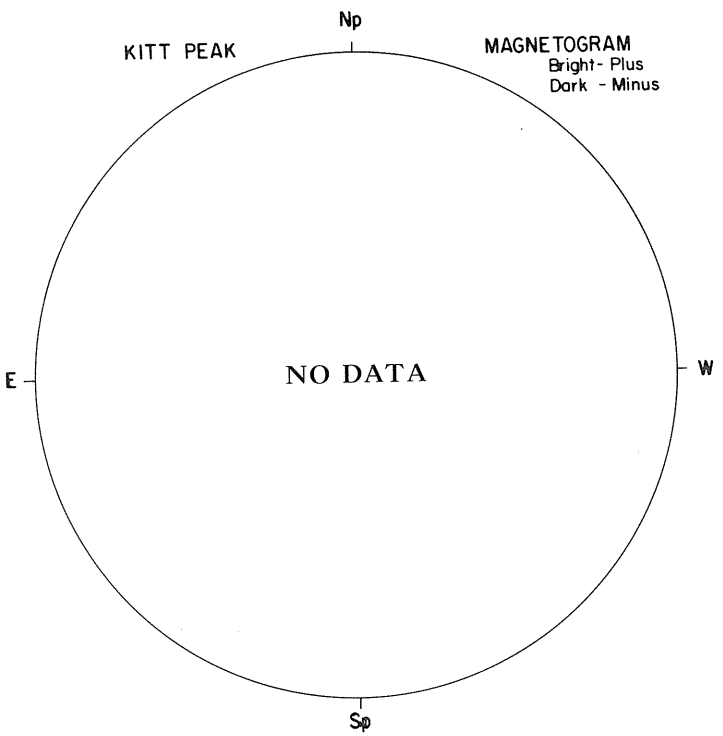
SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å



KITT PEAK

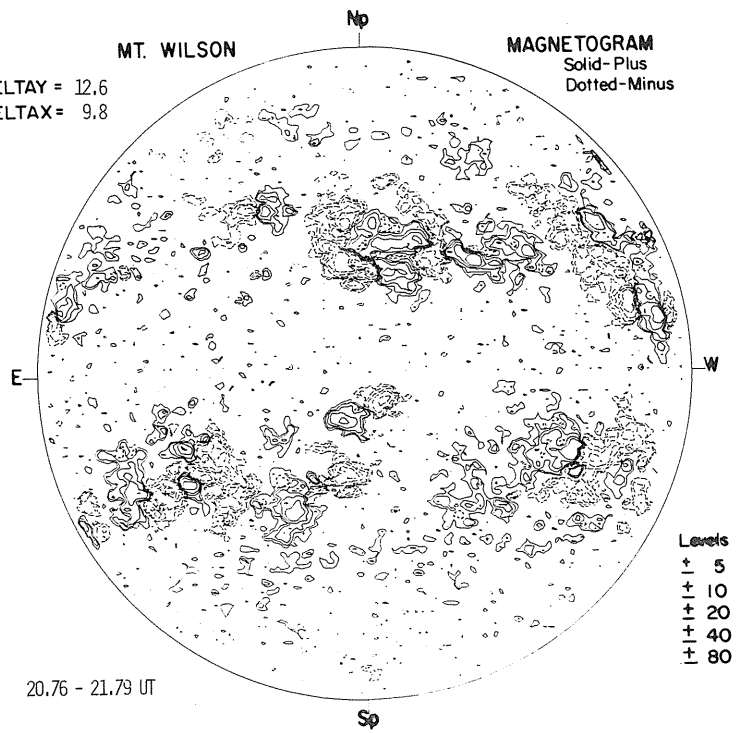
MAGNETOGRAM
Bright- Plus
Dark - Minus



MT. WILSON

MAGNETOGRAM
Solid- Plus
Dotted- Minus

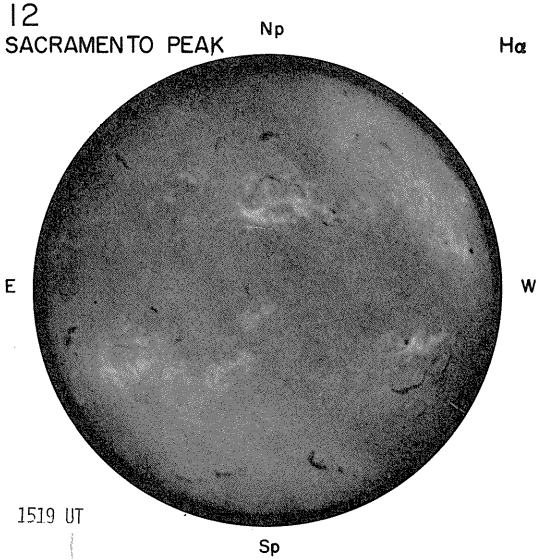
DELTAY = 12.6
DELTAX = 9.8



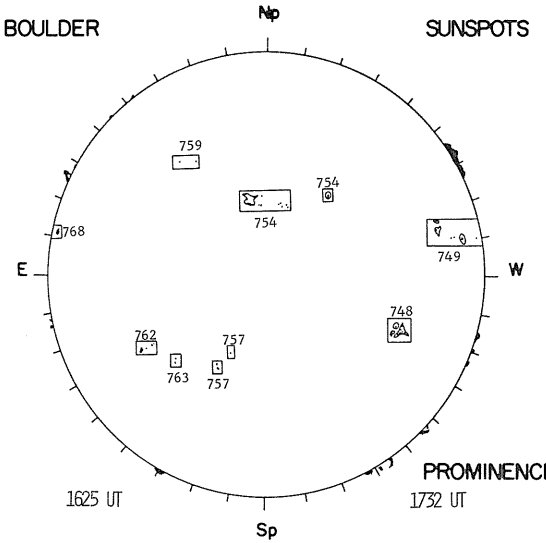
20.76 - 21.79 UT

12

SACRAMENTO PEAK



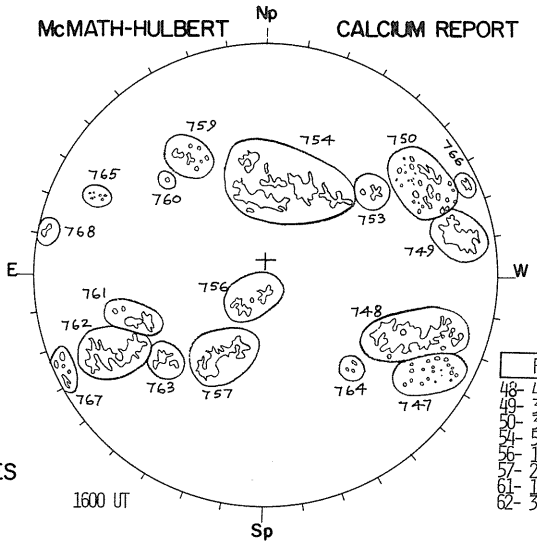
BOULDER SUNSPOTS



PROMINENCES

1732 UT

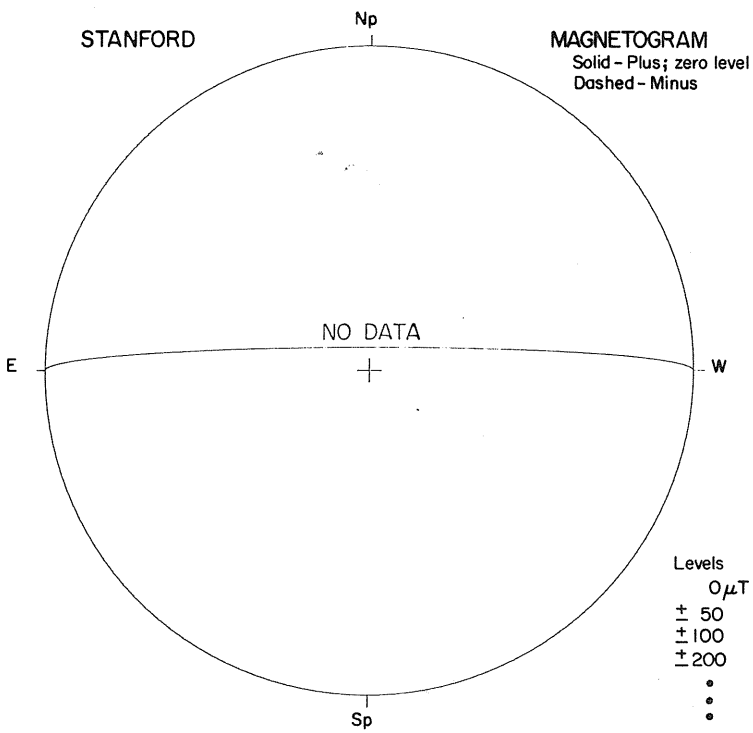
McMATH-HULBERT CALCIUM REPORT



	FAIR	M
48-	4200	3.0
49-	3500	3.0
50-	3200	2.5
54-	5500	3.0
55-	1300	2.5
57-	2100	2.5
61-	1400	2.5
62-	3700	3.0

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus

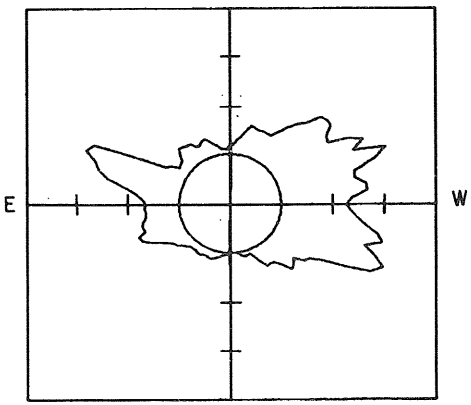


JANUARY 13, 1979 (P =-3.48, B_o =-4.33, L_o = 284.73)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å



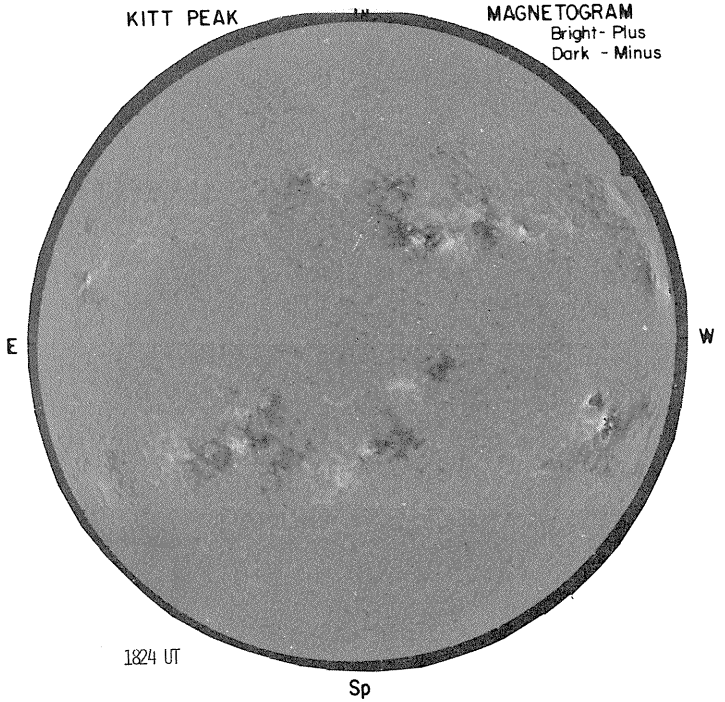
1959 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright- Plus
Dark - Minus



1824 UT

Sp

MT. WILSON

Np

MAGNETOGRAM
Solid- Plus
Dotted- Minus

DELTAY =
DELTAX =

E

NO DATA

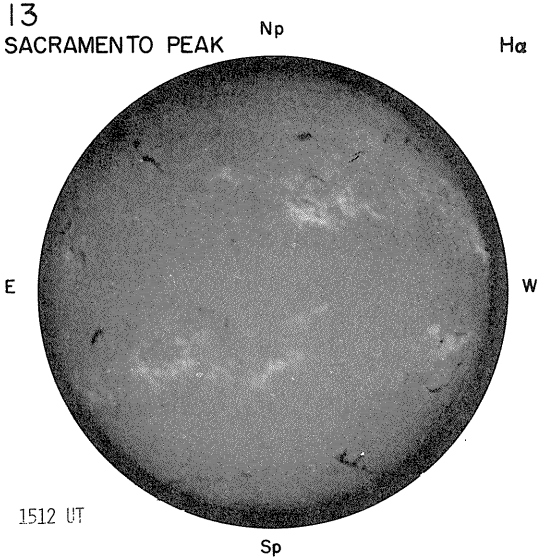
W

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

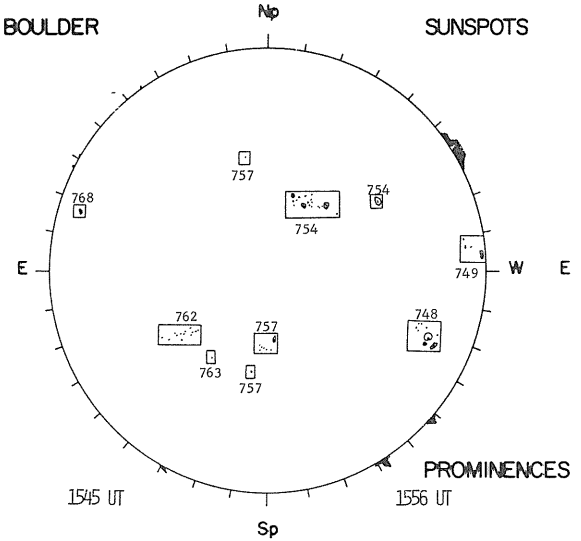
Sp

13

SACRAMENTO PEAK

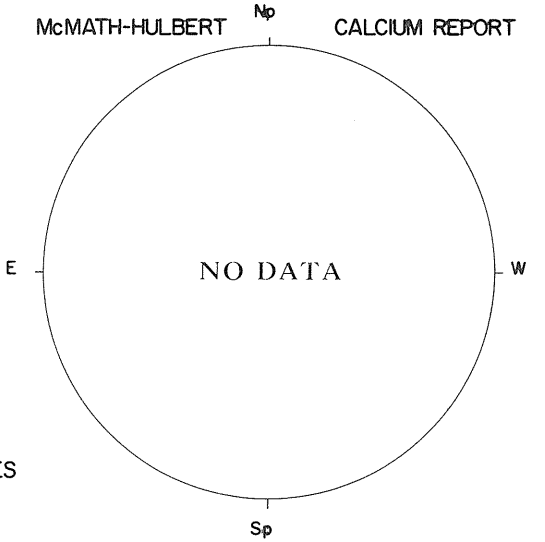


BOULDER SUNSPOTS



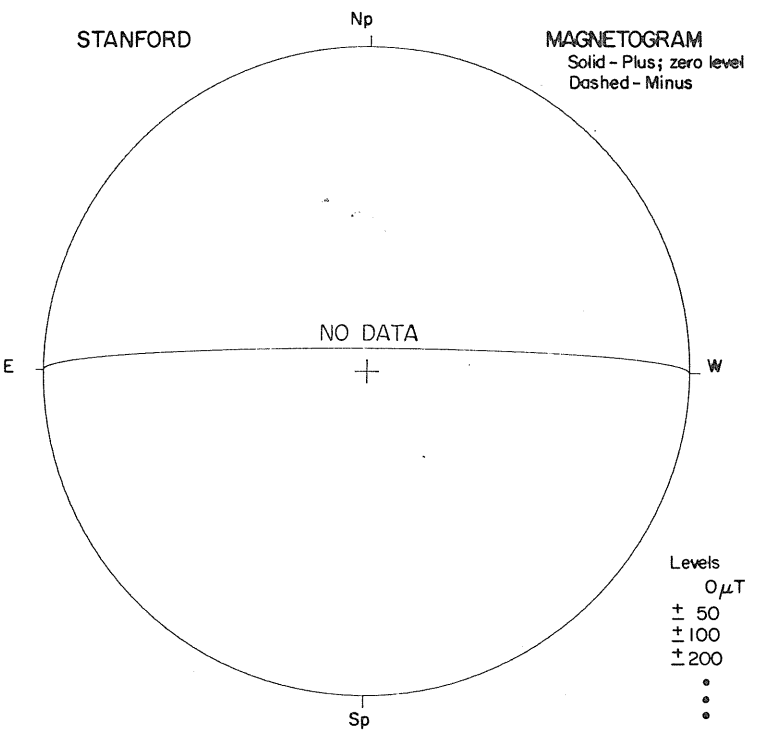
PROMINENCES

McMATH-HULBERT CALCIUM REPORT



STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus

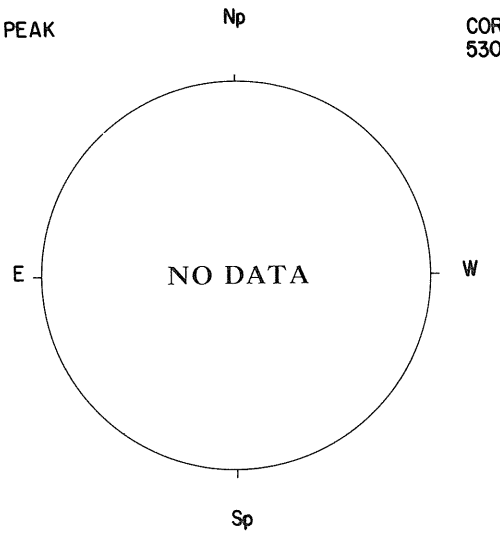


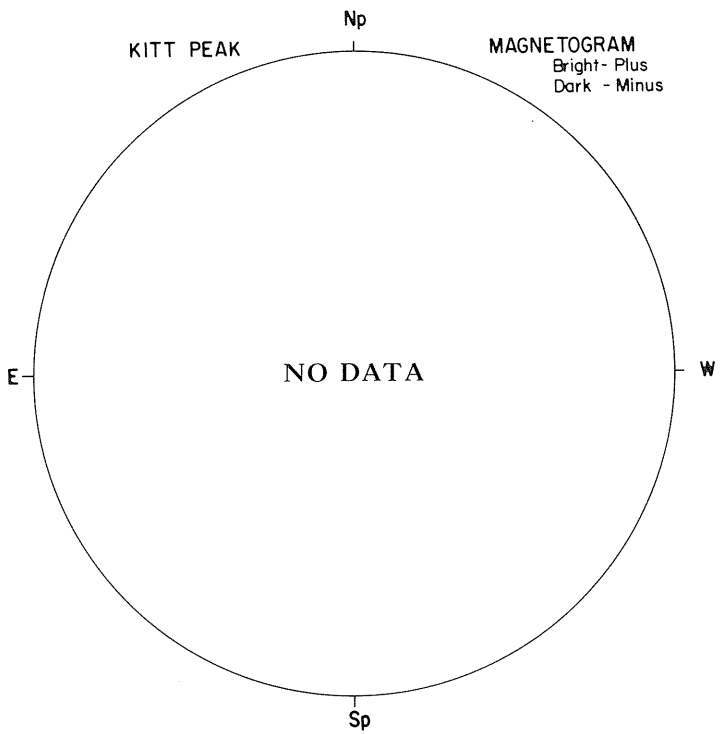
77
Jan 79

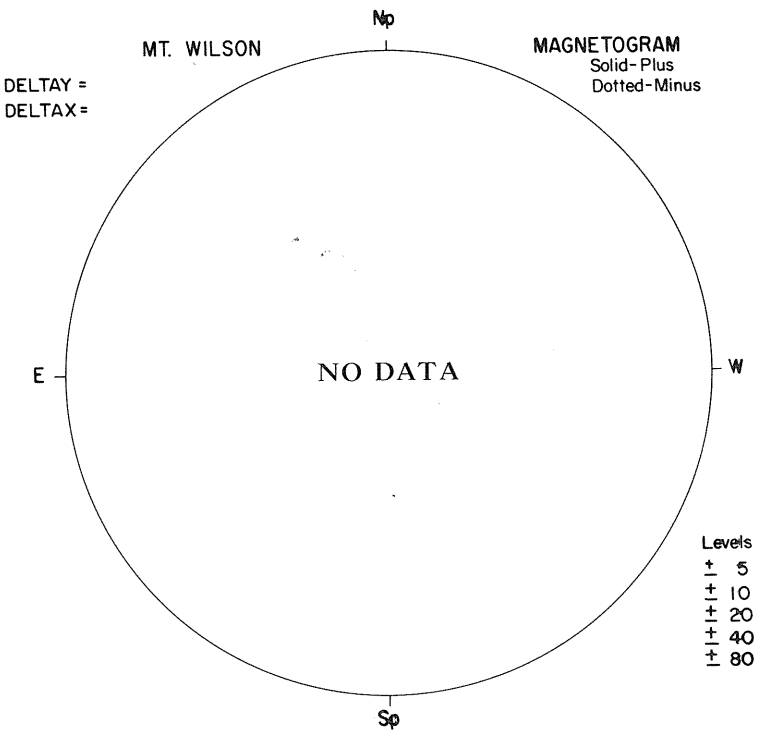
JANUARY 14, 1979 (P =-3.95, B_o =-4.43, L_o =271.56)

SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å

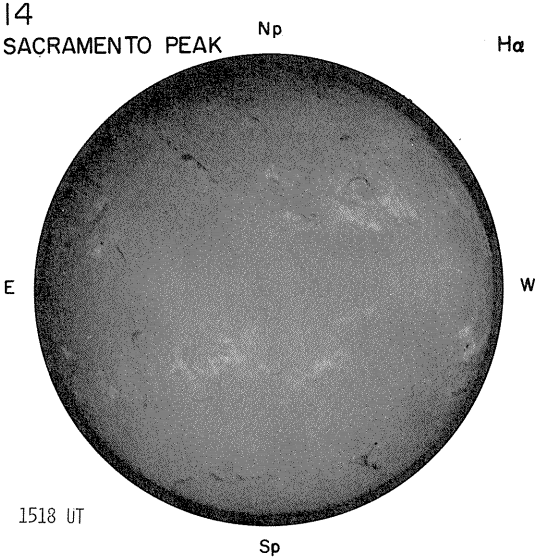




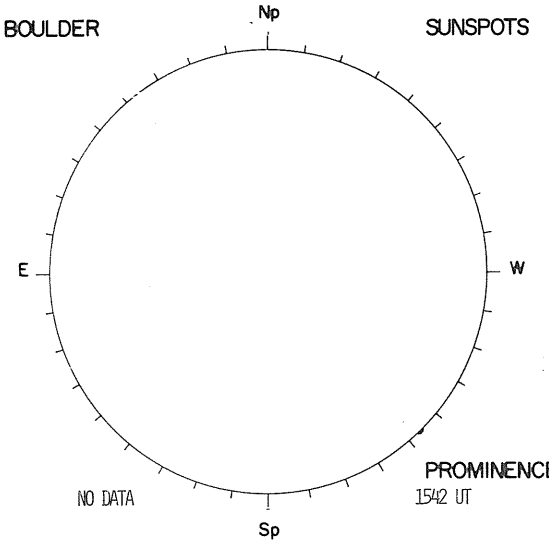


14

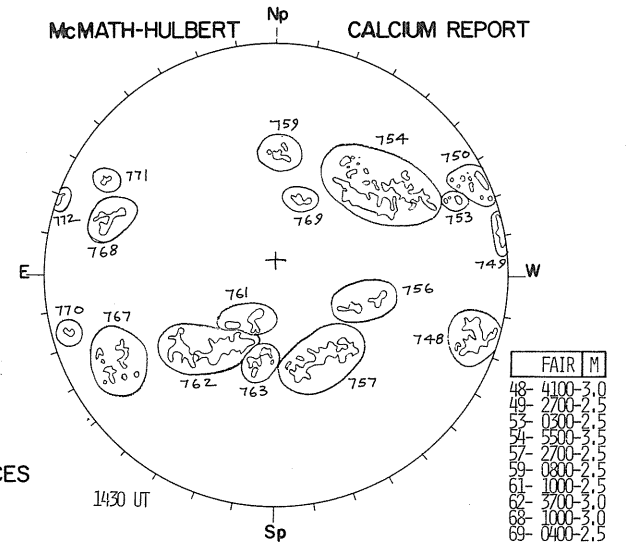
SACRAMENTO PEAK Hα



BOULDER SUNSPOTS



McMATH-HULBERT CALCIUM REPORT

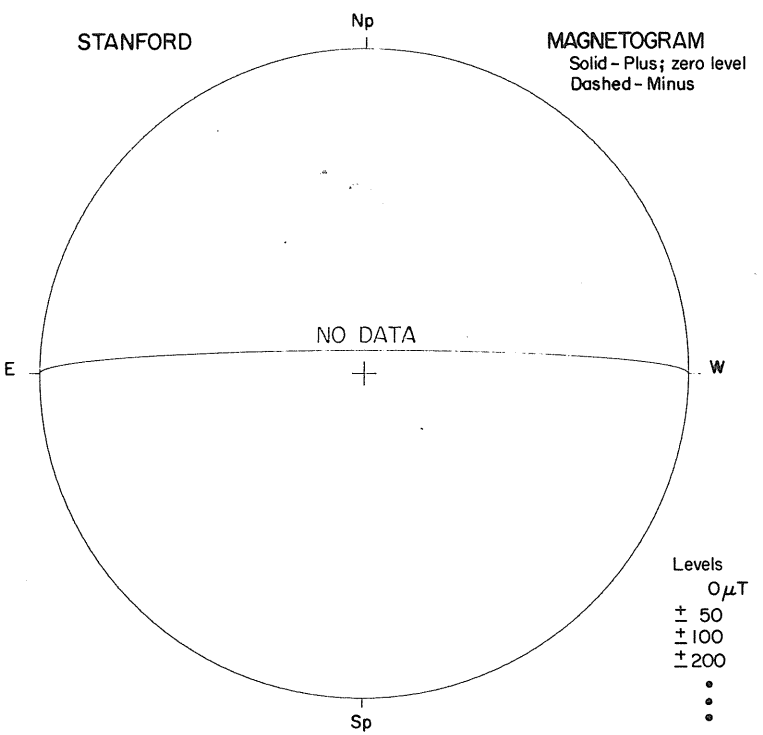


FAIR	M
48- 4100-3.0	
49- 2700-2.5	
52- 0300-2.5	
54- 5500-3.5	
57- 2700-2.5	
59- 0800-2.5	
61- 1000-2.5	
62- 3700-3.0	
68- 1000-3.0	
69- 0400-2.5	

PROMINENCES

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus

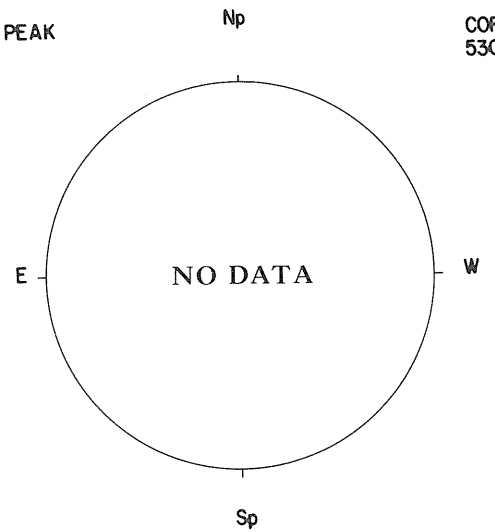


79
Jan 79

JANUARY 15, 1979 (P = -4.42, B_o = -4.53, L_o = 258.39)

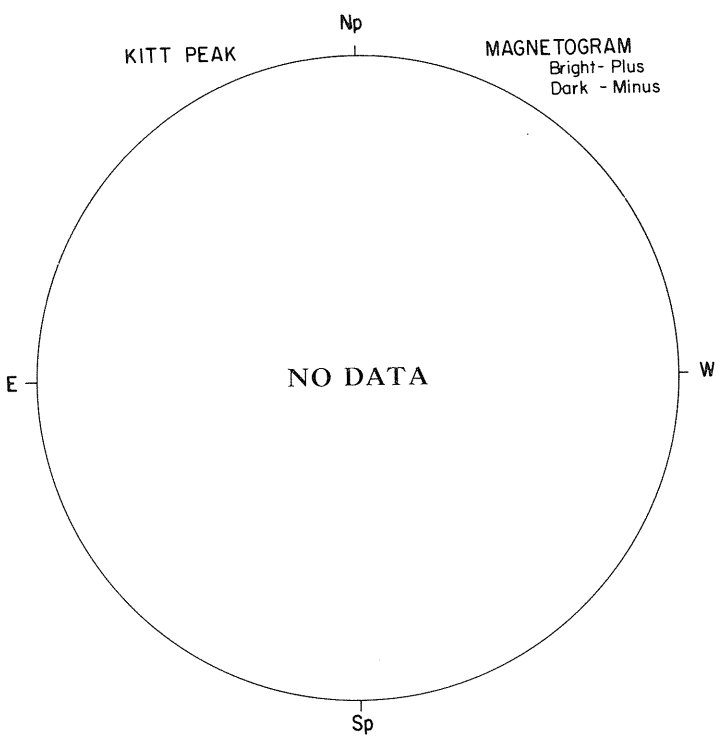
SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å



KITT PEAK

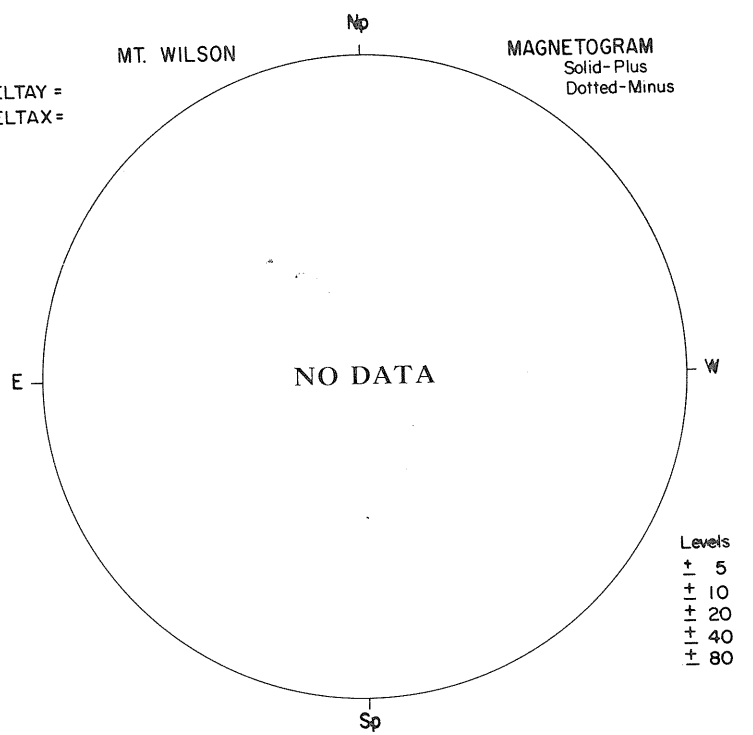
MAGNETOGRAM
Bright - Plus
Dark - Minus



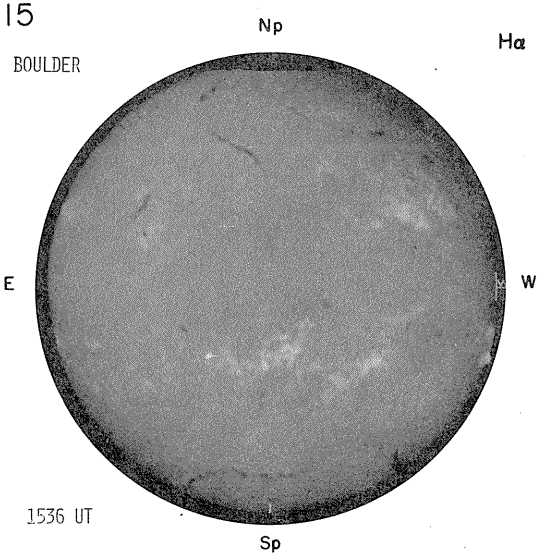
MT. WILSON

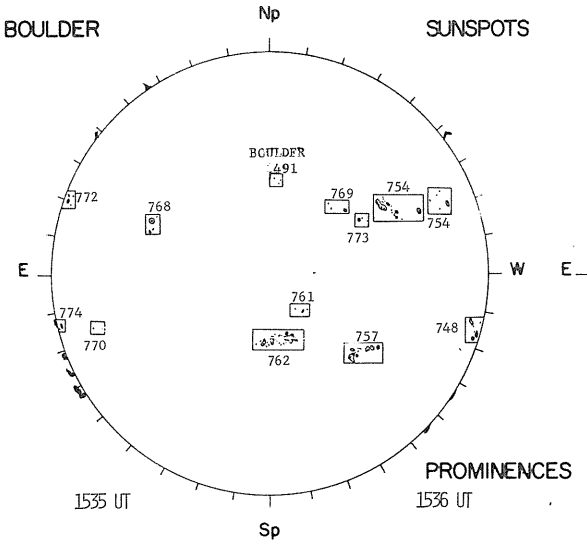
DELTAY =
DELTAX =

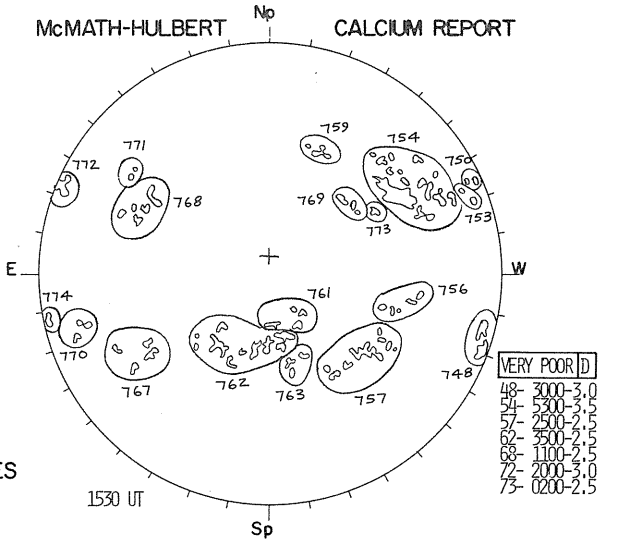
MAGNETOGRAM
Solid - Plus
Dotted - Minus



15

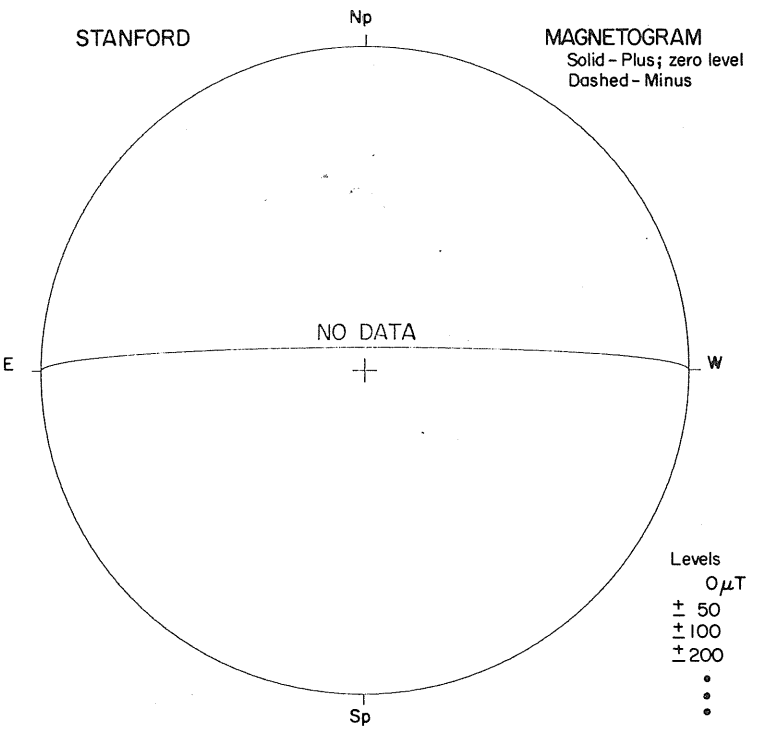






PROMINENCES

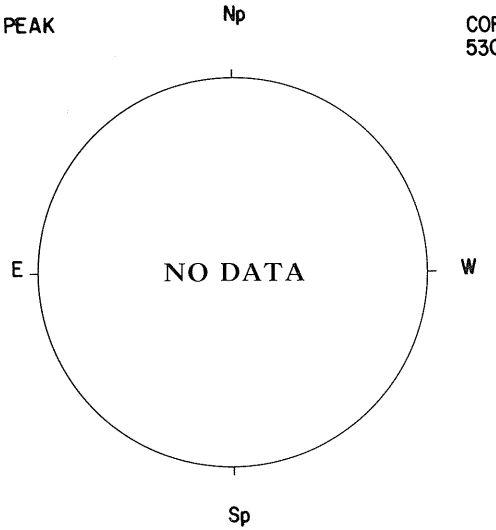
1536 UT

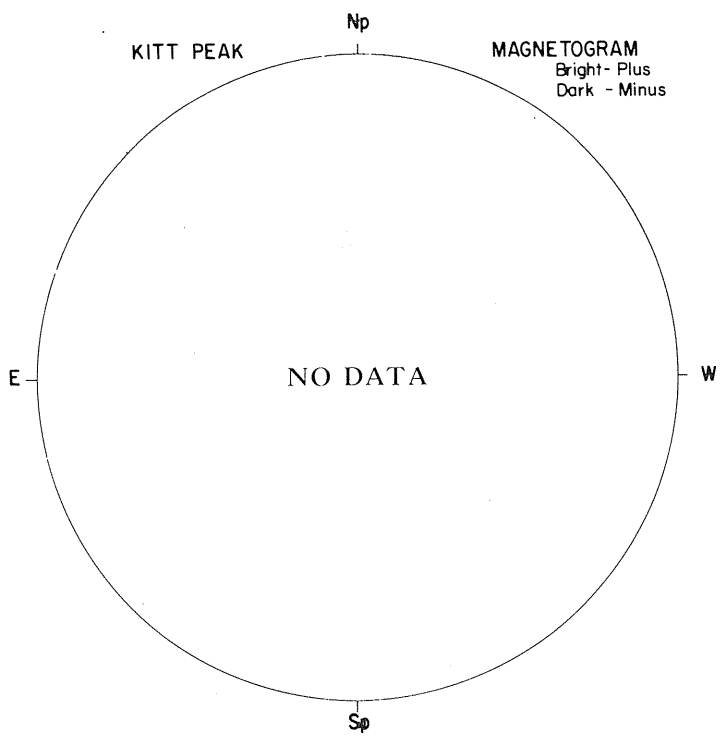


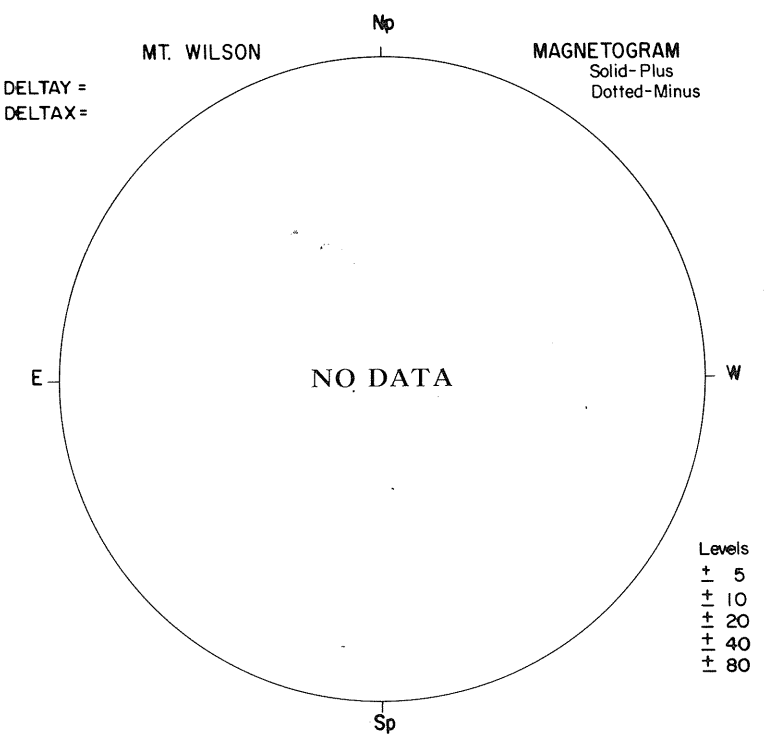
JANUARY 16, 1979 (P =-4.89, B_o =-4.63, L_o = 245.22)

SACRAMENTO PEAK

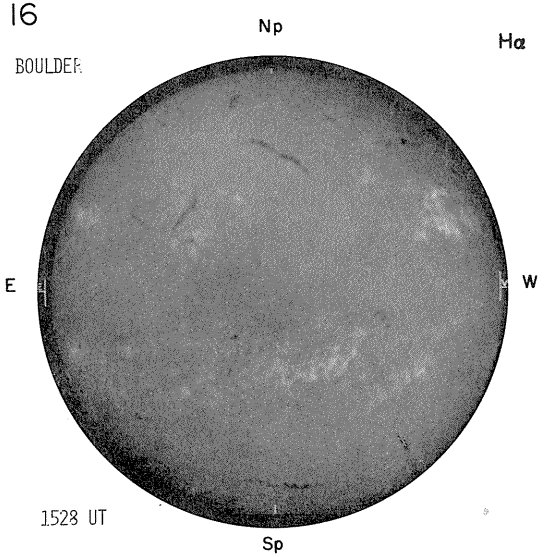
CORONA (1.15 $R_\odot$)
5303 Å

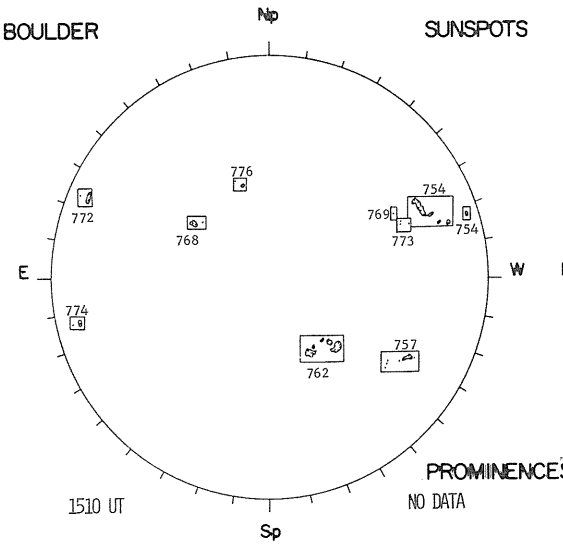


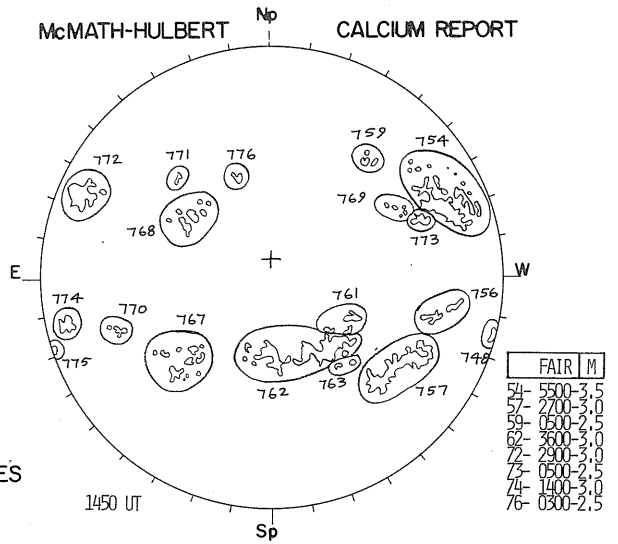


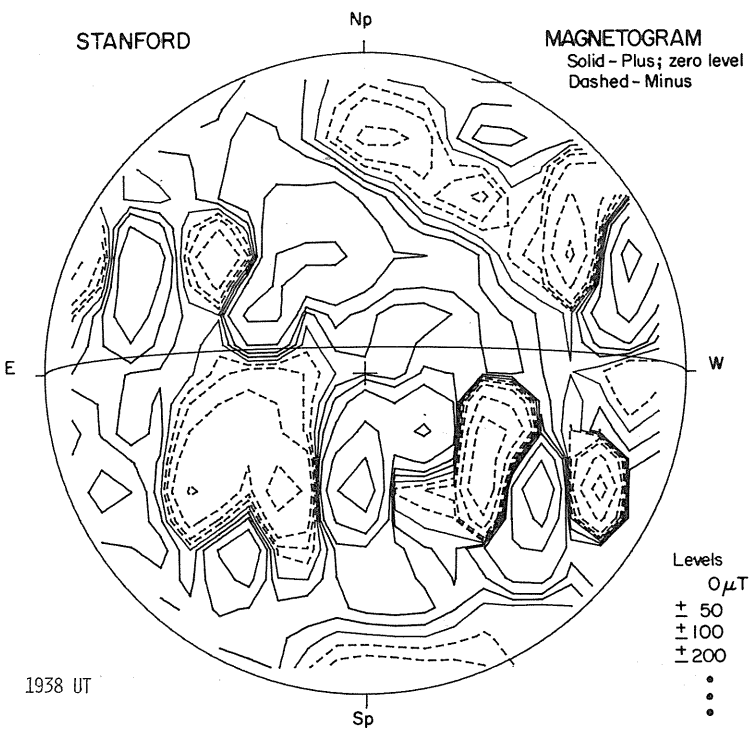


16


Np
BOULDER
Hα
E
W
Sp
1528 UT


BOULDER
SUNSPOTS
Np
776
772
768
754
769
773
754
774
757
762
E
W
Sp
1510 UT
PROMINENCES
NO DATA

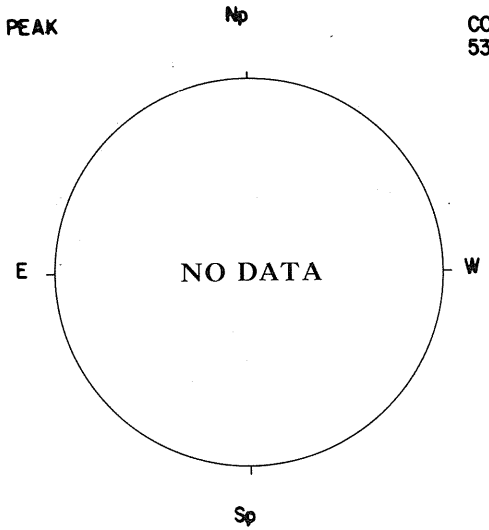

McMATH-HULBERT
CALCIUM REPORT
Np
772
771
776
759
754
769
768
773
774
770
767
761
756
775
762
763
757
748
E
W
Sp
1450 UT
FAIR | M
54- 5500-3.5
57- 2700-3.0
59- 0500-2.5
62- 3600-3.0
72- 2900-3.0
73- 0500-2.5
74- 1400-3.0
76- 0300-2.5


STANFORD
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
Np
E
W
Sp
1938 UT
Levels
0 μT
± 50
± 100
± 200

JANUARY 17, 1979 (P =-5.36, B_o =-4.73, L_o = 232.05)

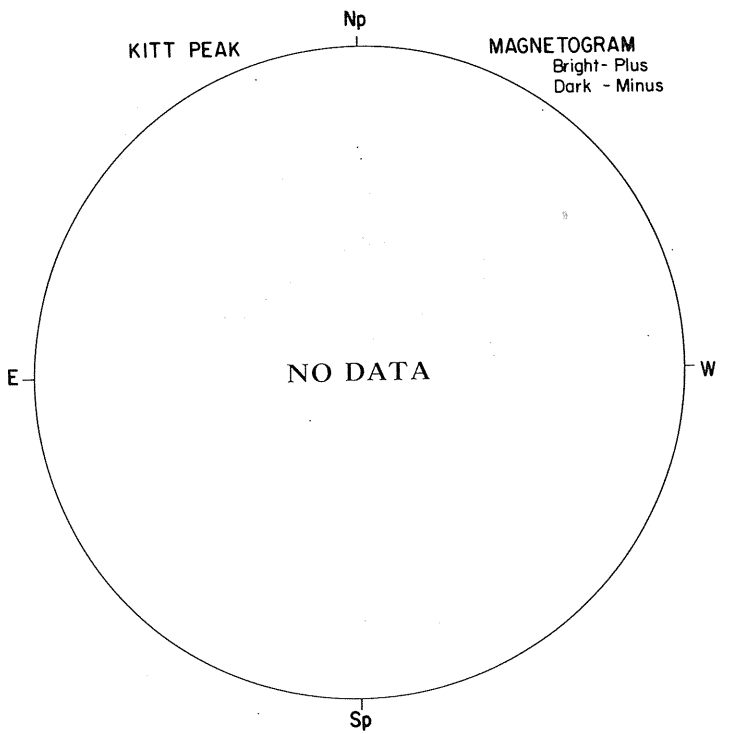
SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å



KITT PEAK

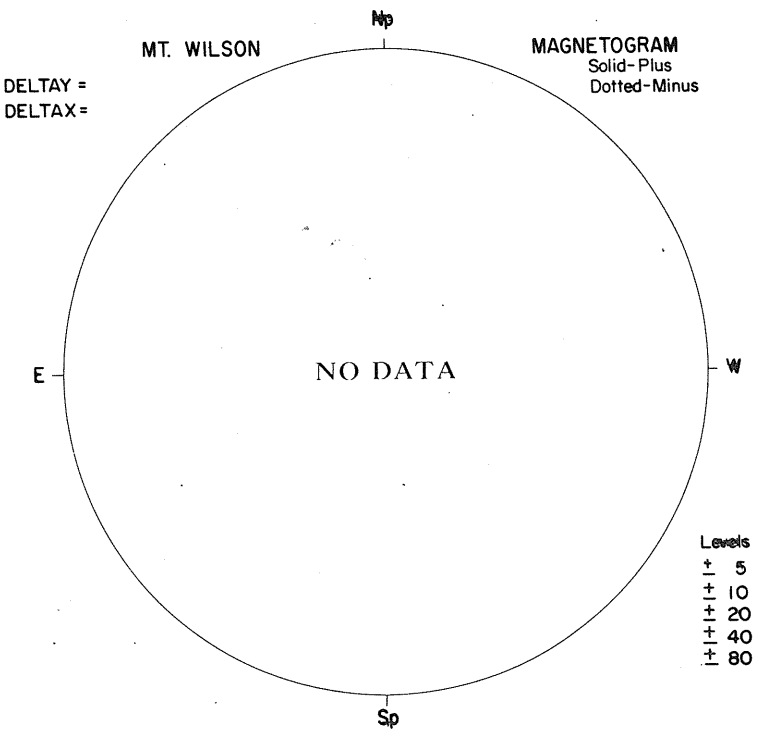
MAGNETOGRAM
Bright- Plus
Dark - Minus



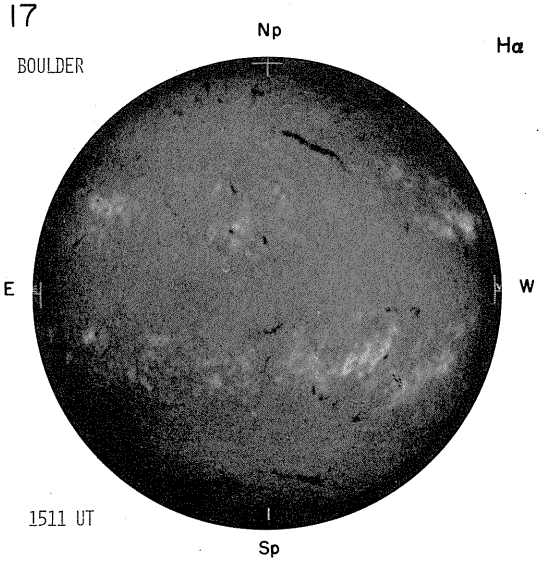
MT. WILSON

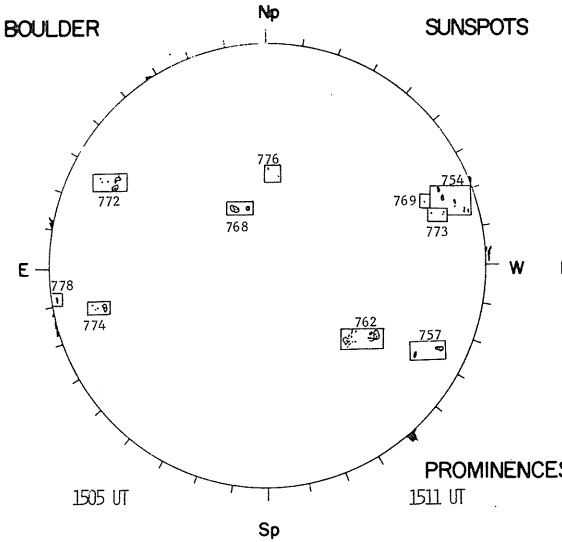
DELTAY =
DELTAX =

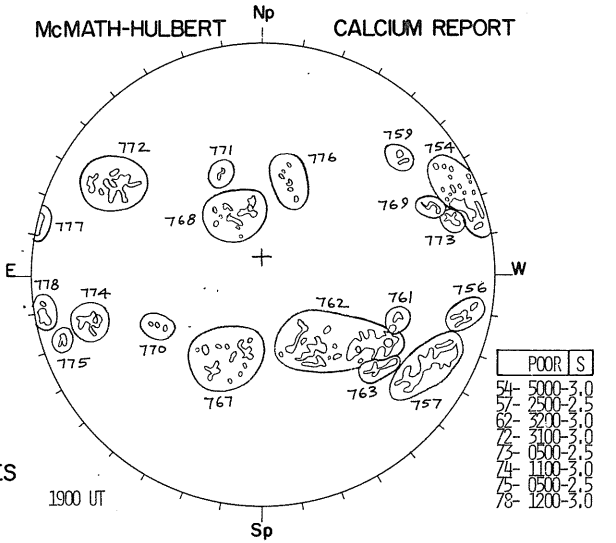
MAGNETOGRAM
Solid- Plus
Dotted-Minus

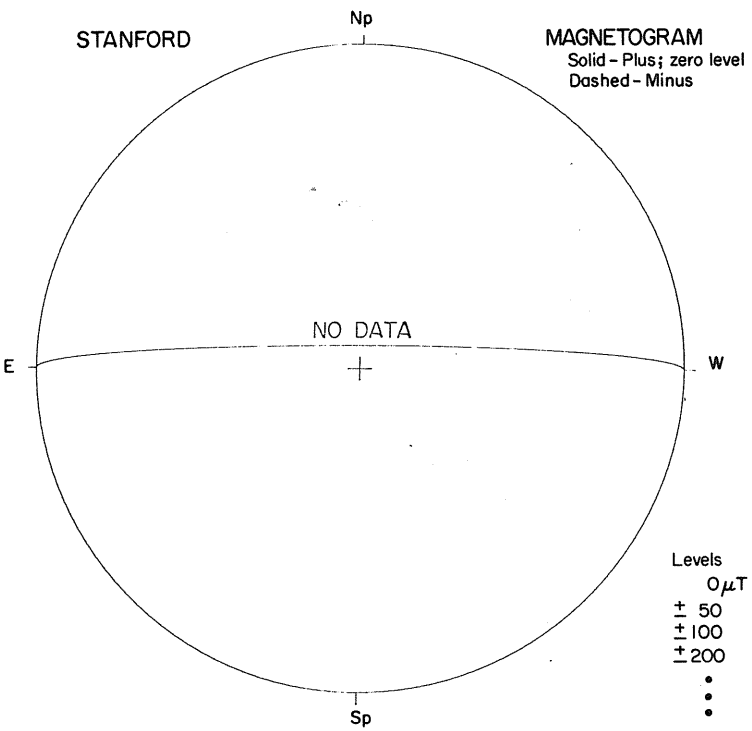


17


BOULDER
Hα
Np
E
W
Sp
1511 UT

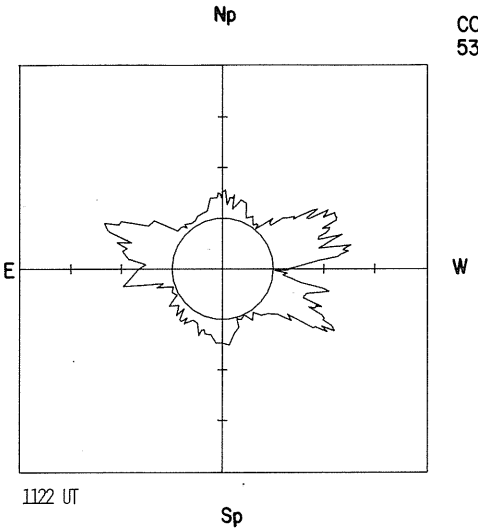

BOULDER
SUNSPOTS
Np
E
W
Sp
772
776
768
769
754
773
778
774
762
757
1505 UT
PROMINENCES
1511 UT

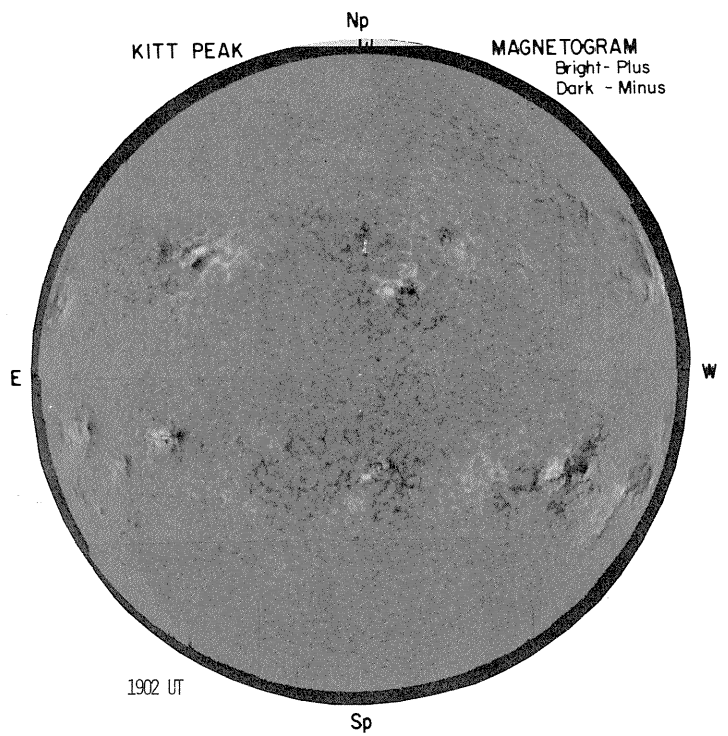

McMATH-HULBERT
CALCIUM REPORT
Np
E
W
Sp
772
771
776
759
754
777
768
769
773
778
774
762
761
756
770
775
767
763
757
1900 UT
POOR | S
54- 5000-3.0
57- 2500-2.5
62- 3200-3.0
72- 3100-3.0
73- 0500-2.5
74- 1100-3.0
75- 0500-2.5
78- 1200-3.0

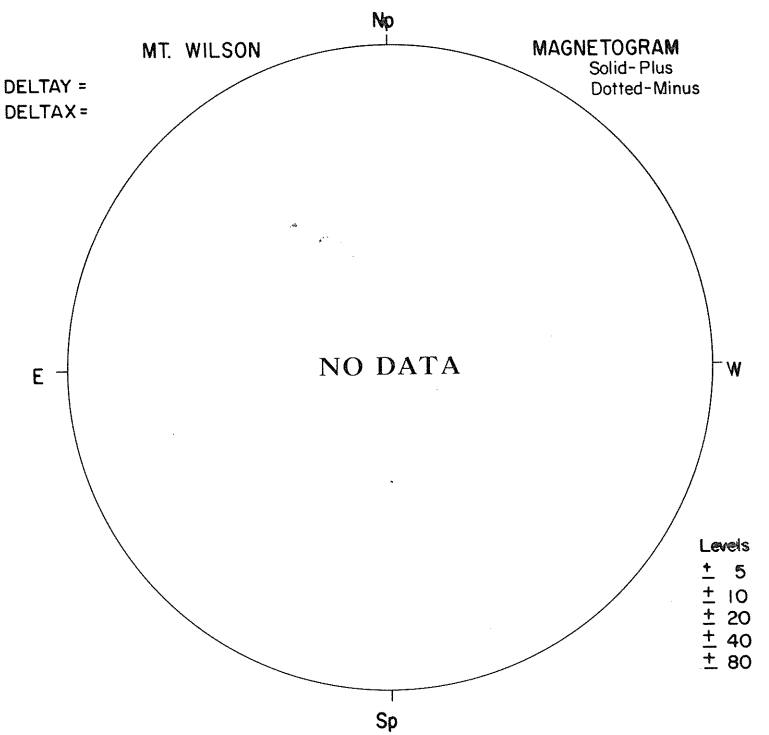

STANFORD
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
Np
NO DATA
E
W
Sp
Levels
0 μT
± 50
± ±100
± 200

JANUARY 18, 1979 (P =-5.83, B_o =-4.83, L_o = 218.89)

WENDELSTEIN

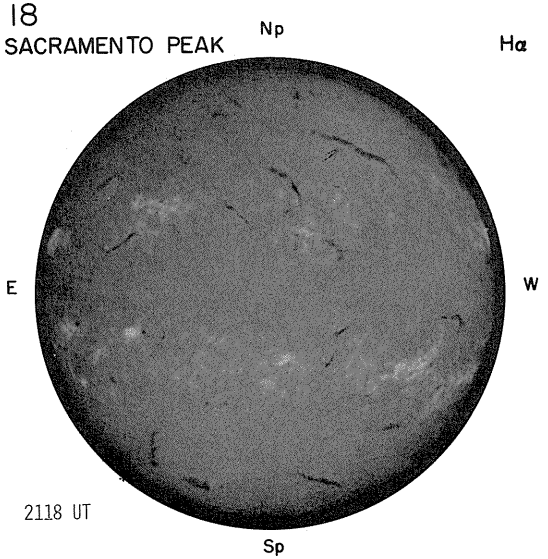




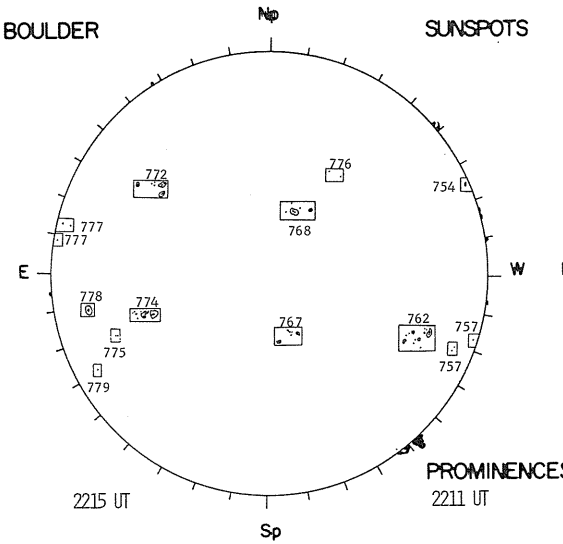


18

SACRAMENTO PEAK



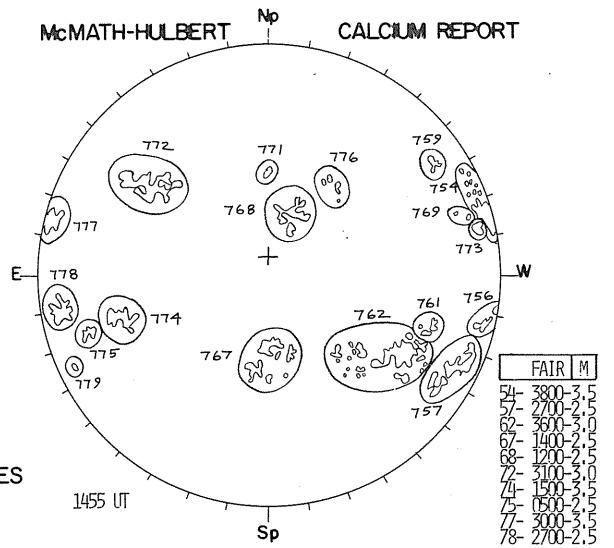
BOULDER SUNSPOTS



PROMINENCES

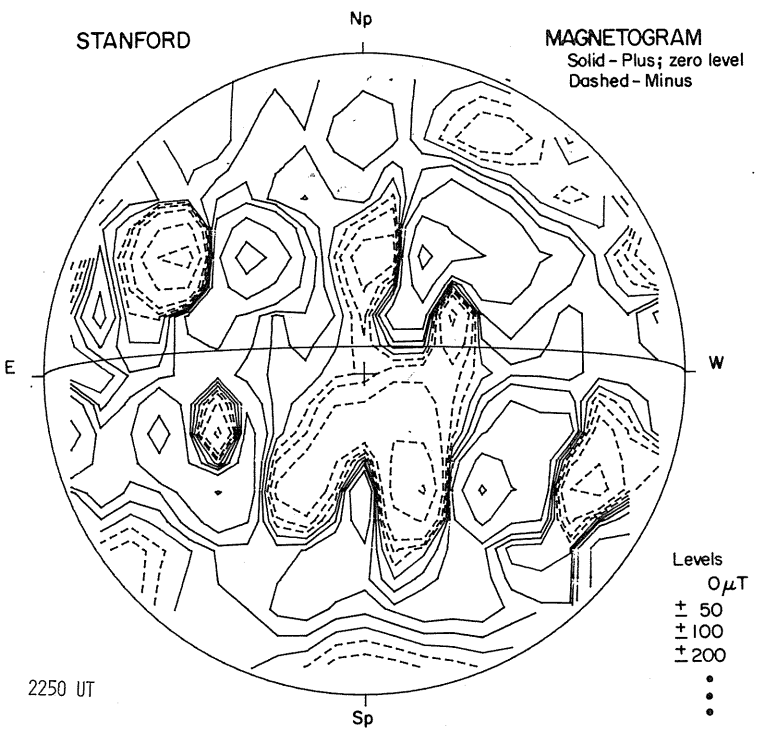
2211 UT

McMATH-HULBERT CALCIUM REPORT



STANFORD MAGNETOGRAM

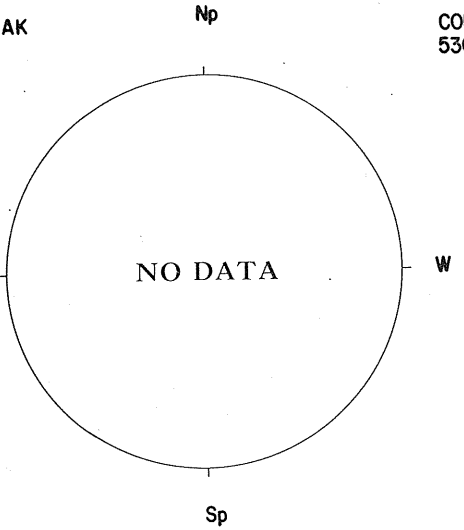
Solid - Plus; zero level
Dashed - Minus

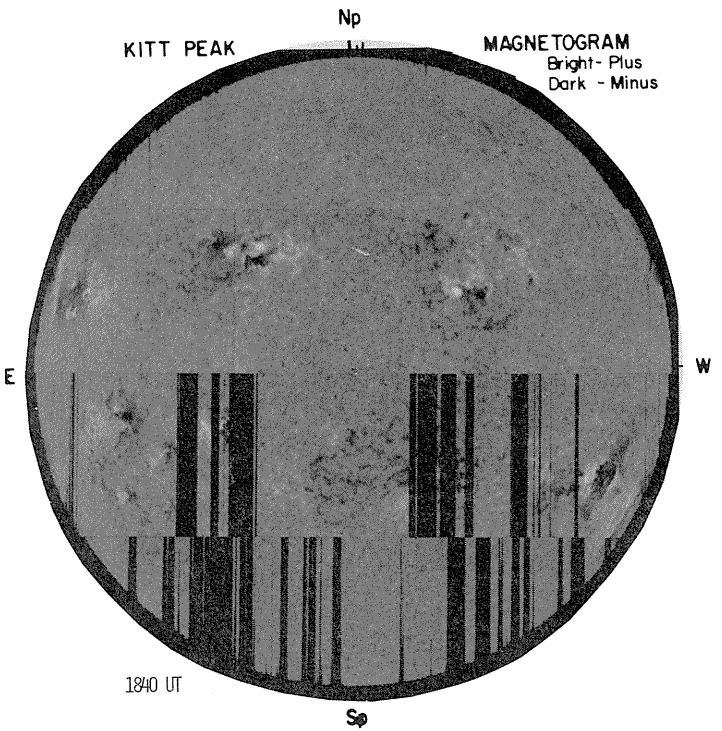


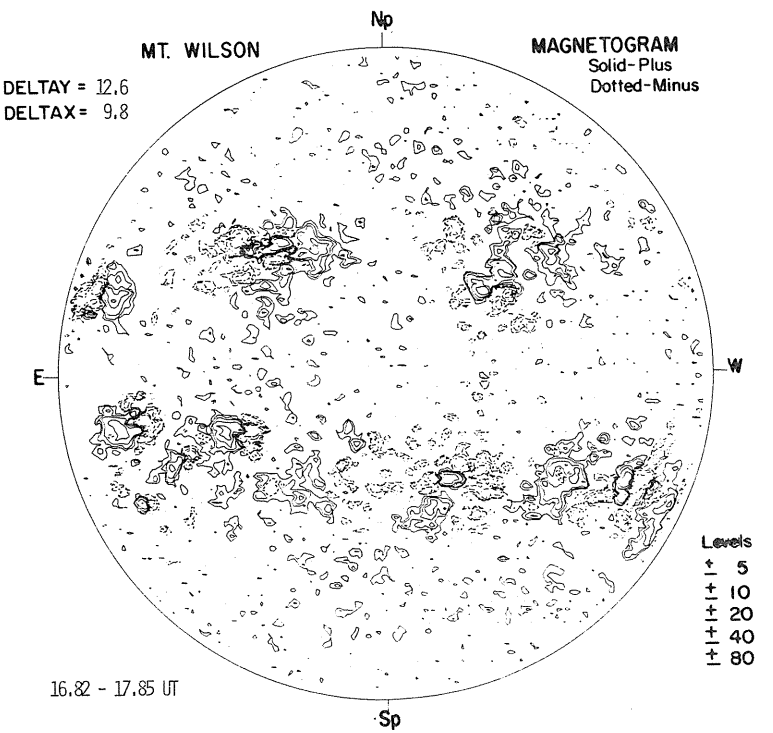
87
Jan 79

JANUARY 19, 1979 (P =-6.29, B_o =-4.92, L_o = 205.72)

SACRAMENTO PEAK

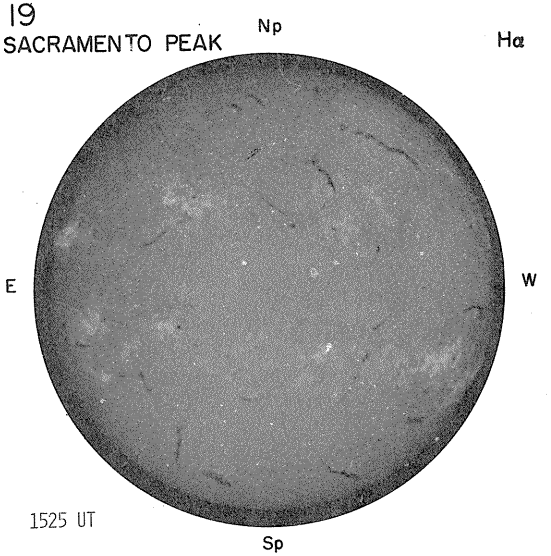




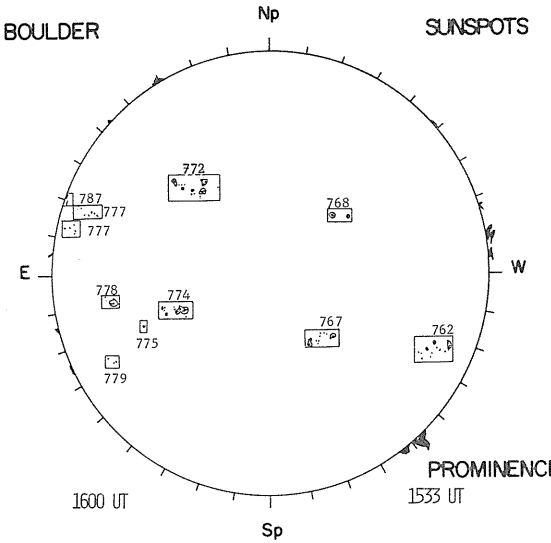


19

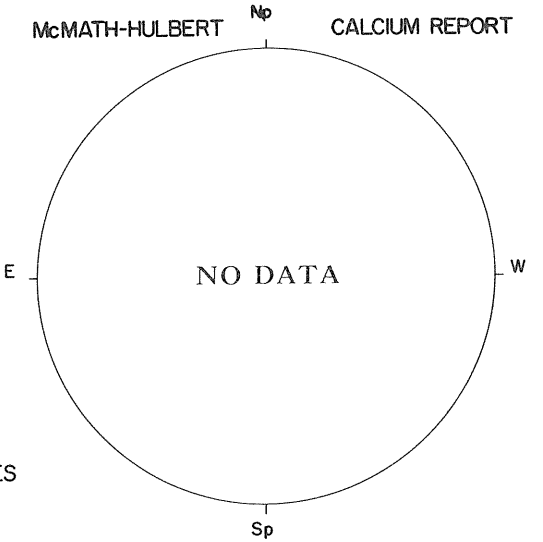
SACRAMENTO PEAK



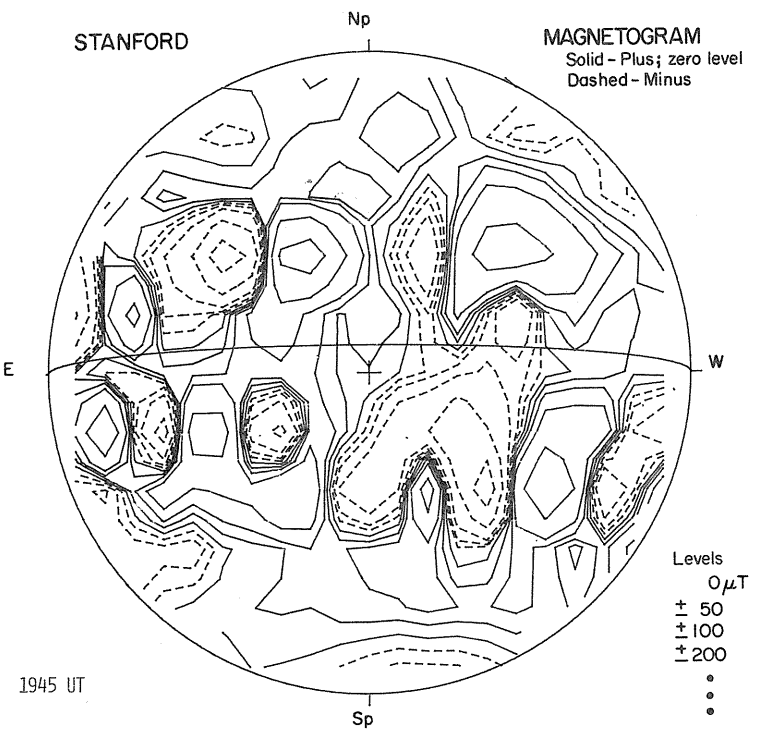
BOULDER



McMATH-HULBERT



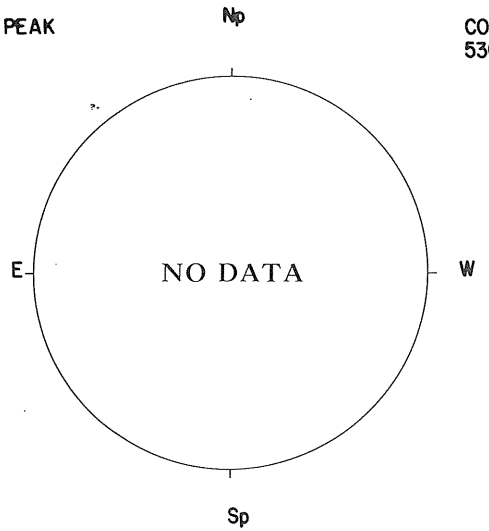
STANFORD

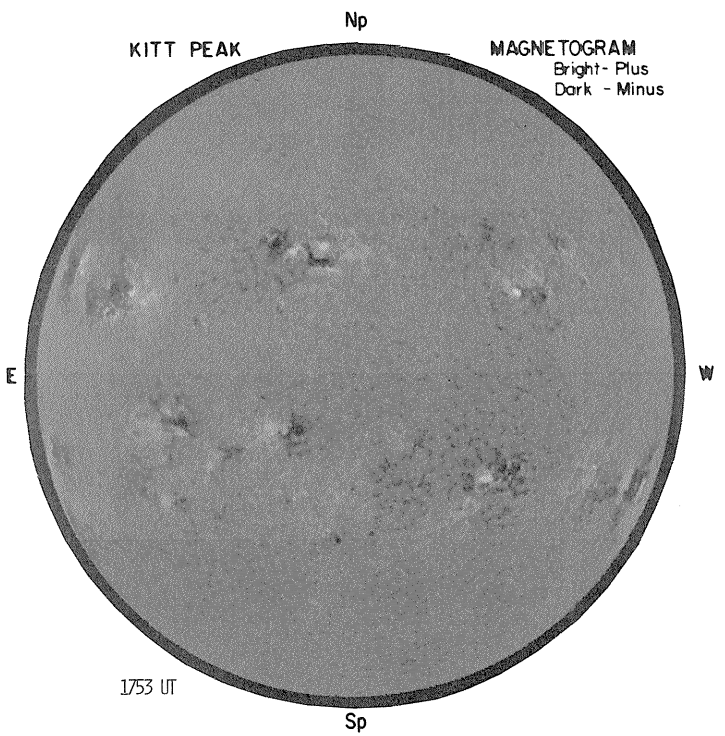


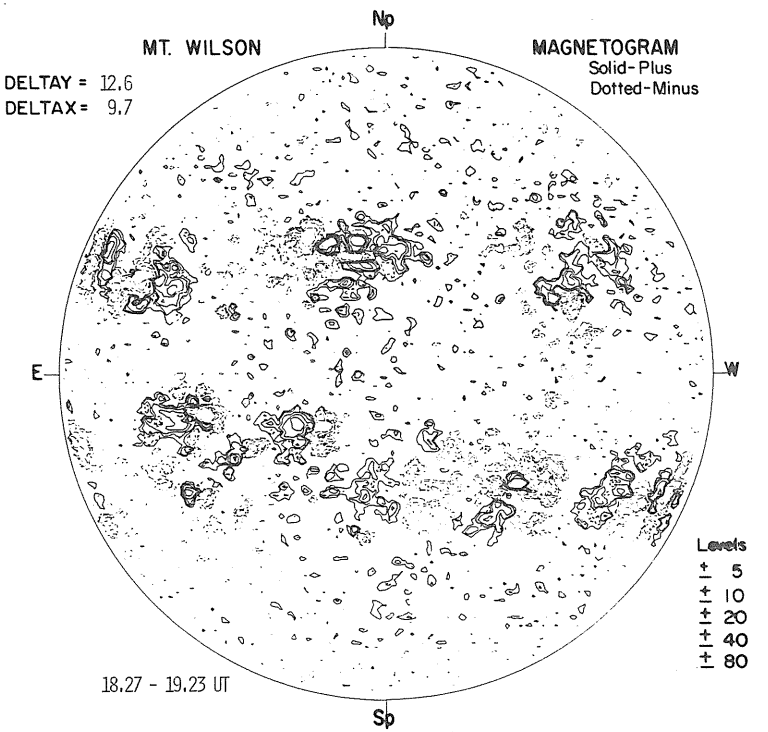
JANUARY 20, 1979 (P =-6.75, B_o =-5.02, L_o =192.55)

SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å

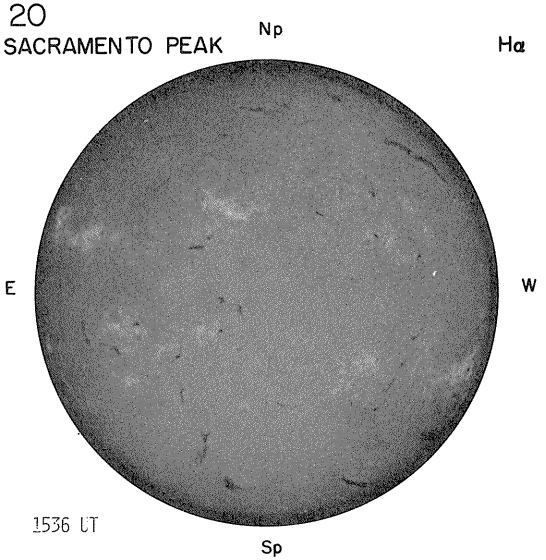






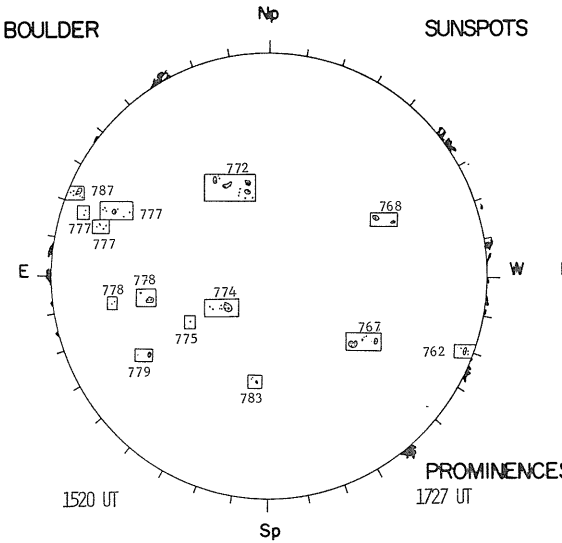
20

SACRAMENTO PEAK Hα



1536 UT

BOULDER SUNSPOTS

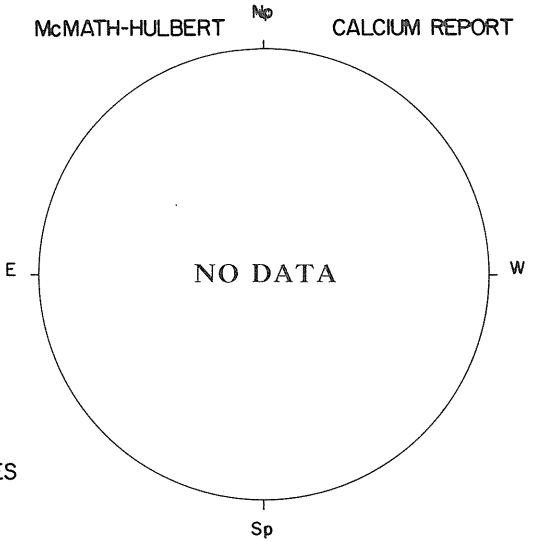


1520 UT

PROMINENCES

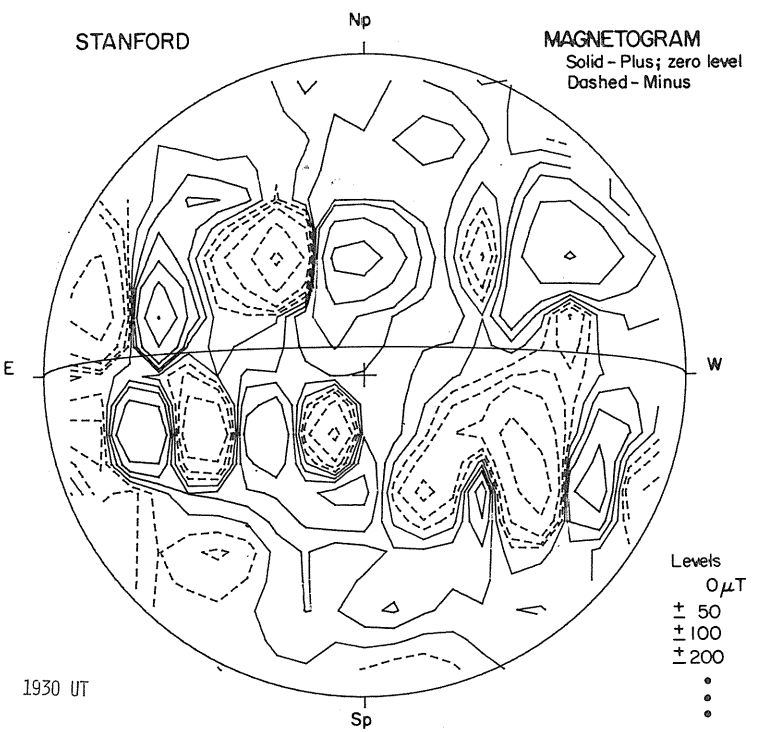
1727 UT

McMATH-HULBERT CALCIUM REPORT



STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus

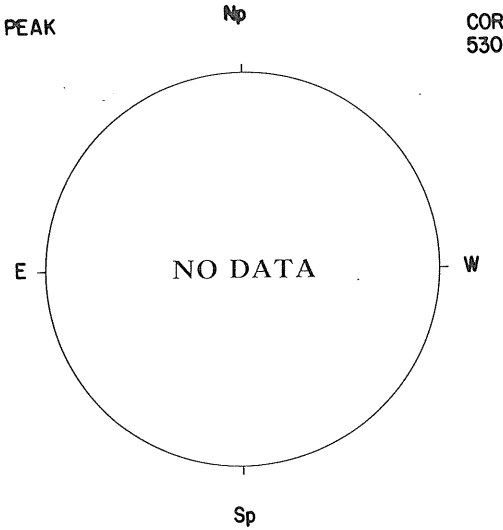


1930 UT

JANUARY 21, 1979 (P =-7.20, B_o =-5.11, L_o =179.39)

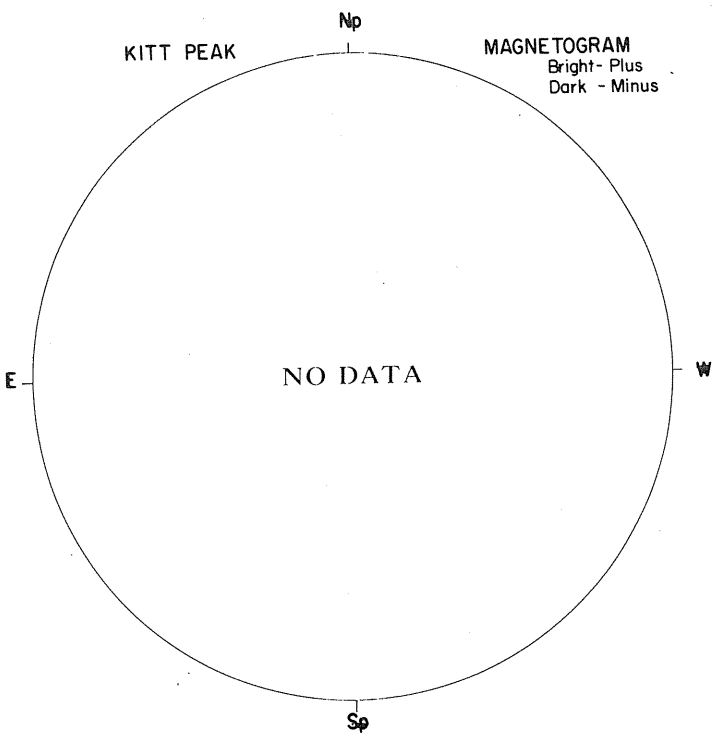
SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å



KITT PEAK

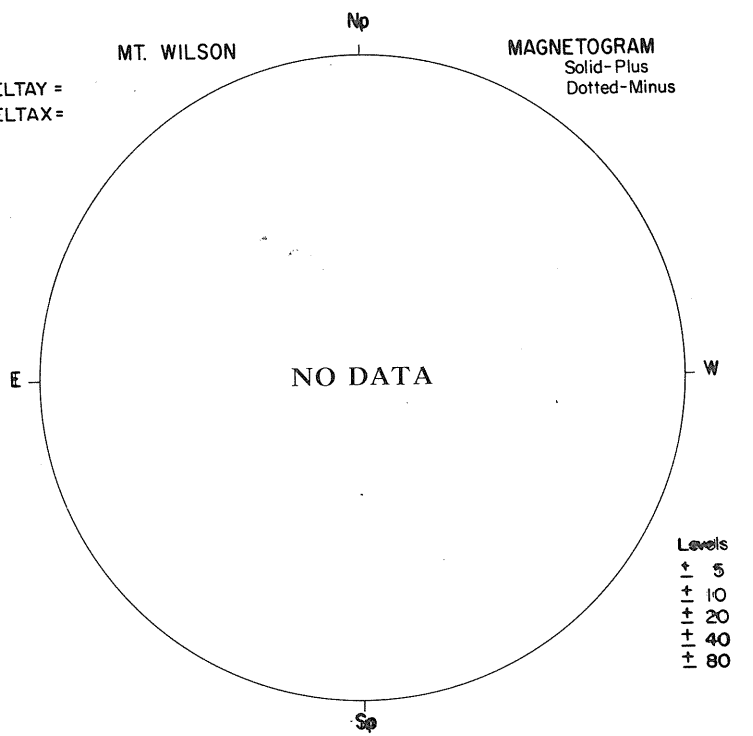
MAGNETOGRAM
Bright- Plus
Dark - Minus



MT. WILSON

DELTAY =
DELTAX =

MAGNETOGRAM
Solid- Plus
Dotted- Minus



21

SACRAMENTO PEAK

Np

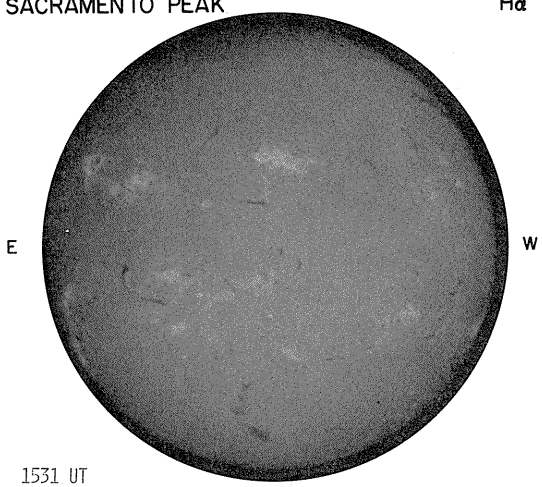
Hα

E

W

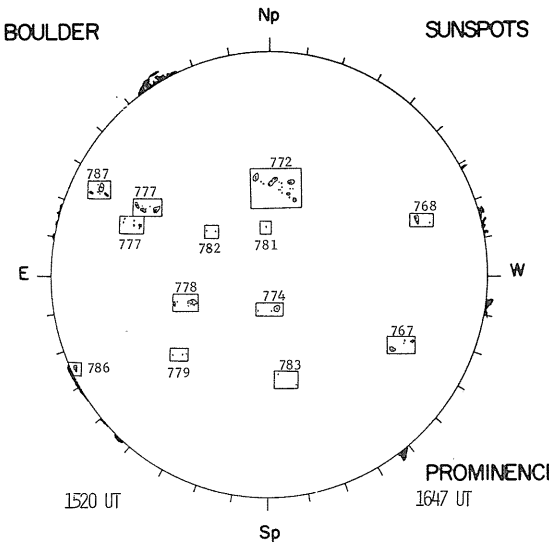
Sp

1531 UT



BOULDER

SUNSPOTS



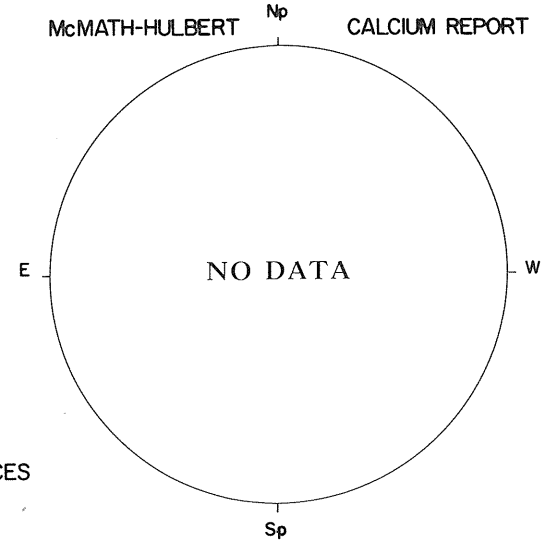
1520 UT

PROMINENCES

1647 UT

McMATH-HULBERT

CALCIUM REPORT

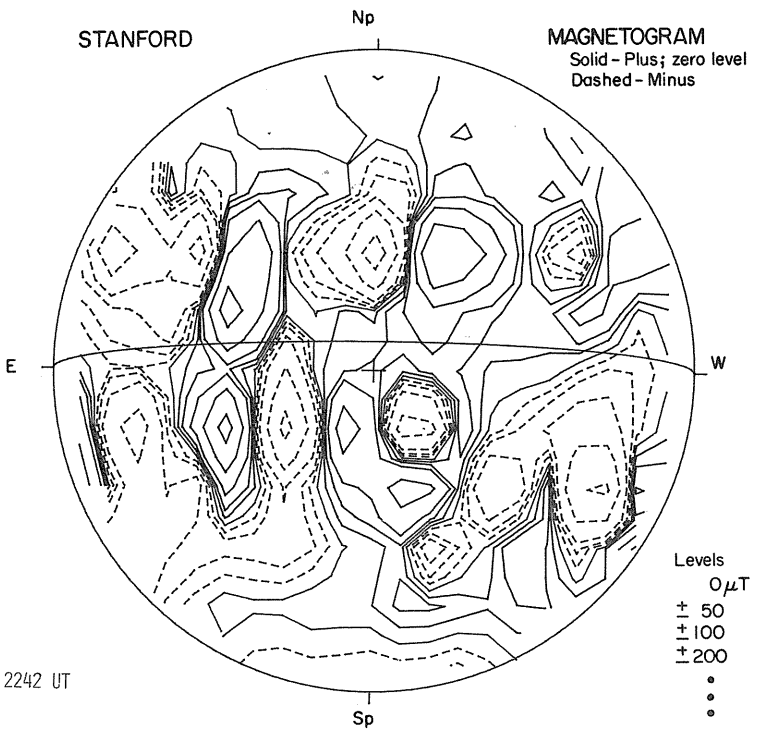


STANFORD

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



2242 UT

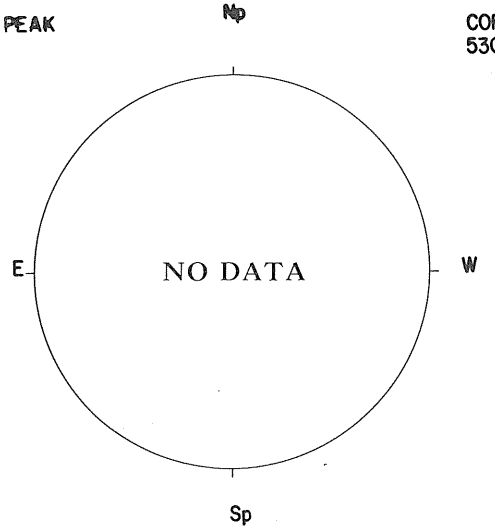
93

Jan 79

JANUARY 22, 1979 (P =-7.65, B_o =-5.20, L_o = 166.22)

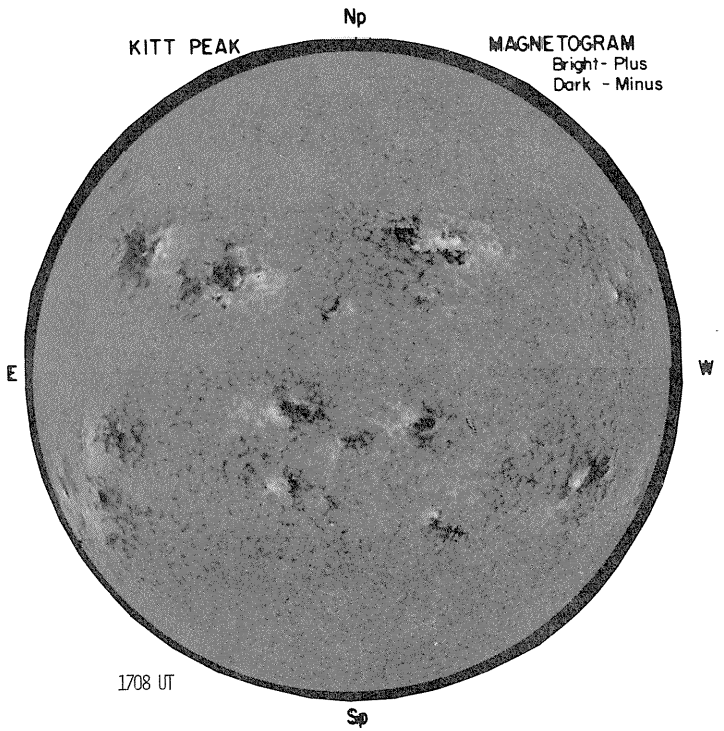
SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å



KITT PEAK

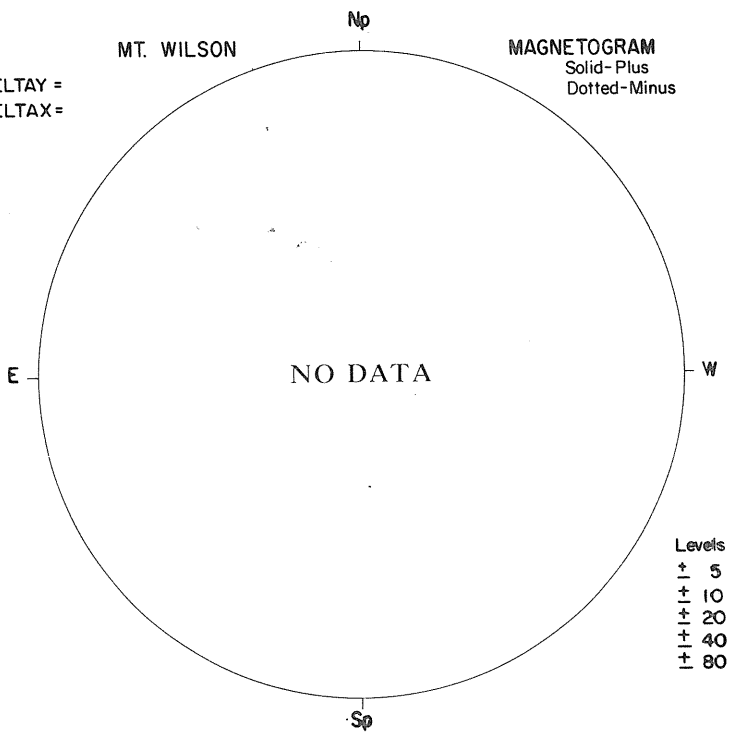
MAGNETOGRAM
Bright - Plus
Dark - Minus



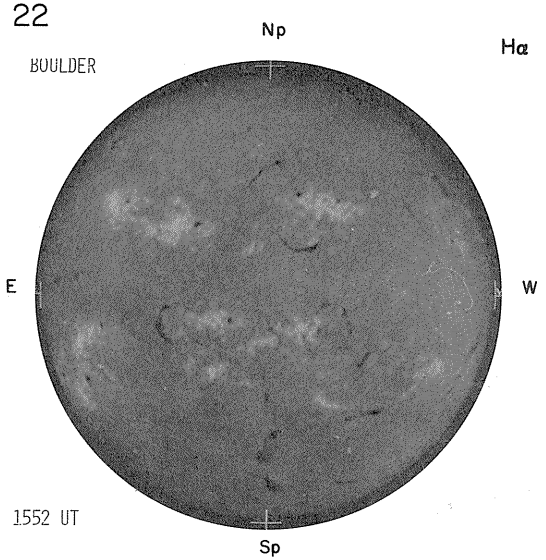
MT. WILSON

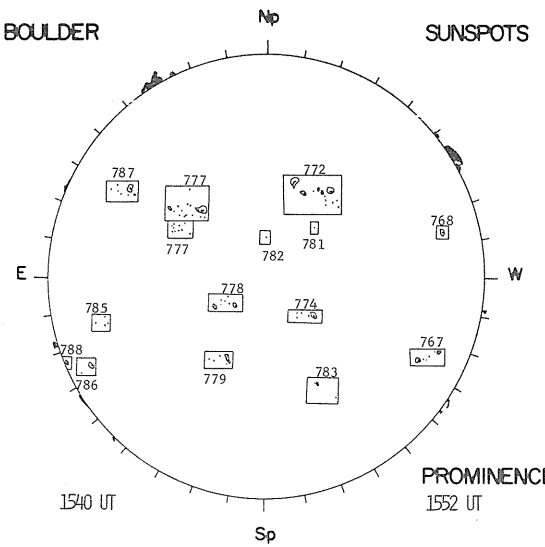
DELTAY =
DELTAX =

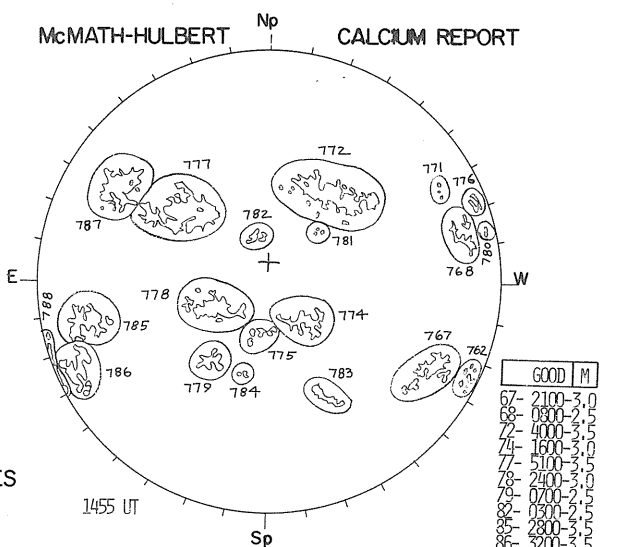
MAGNETOGRAM
Solid - Plus
Dotted - Minus

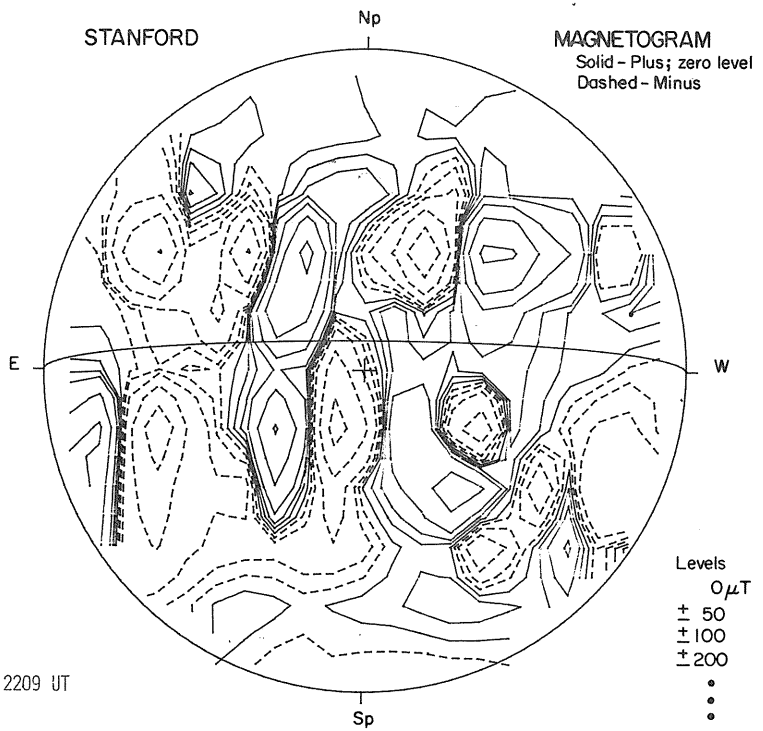


22


BOULDER
Np
Hα
E
W
Sp
1552 UT


BOULDER
SUNSPOTS
Np
E
W
Sp
1540 UT
787
777
772
768
781
782
778
774
785
788
786
779
767
783


McMATH-HULBERT
CALCIUM REPORT
Np
E
W
Sp
1455 UT
PROMINENCES
1552 UT
GOOD | M
67- 2100-3.0
68- 0800-2.5
72- 4000-3.5
74- 1600-3.0
77- 5100-3.5
78- 2400-3.0
79- 0700-2.5
82- 0300-2.5
85- 2800-3.5
86- 3200-3.5
87- 3700-3.5


STANFORD
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
Np
E
W
Sp
2209 UT
Levels
0μT
± 50
± ±100
± 200

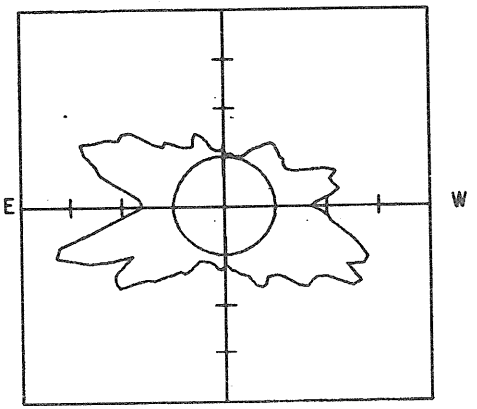
95
Jan 79

JANUARY 23, 1979 (P =-8.10, B_o =-5.29, L_o = 153.05)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å



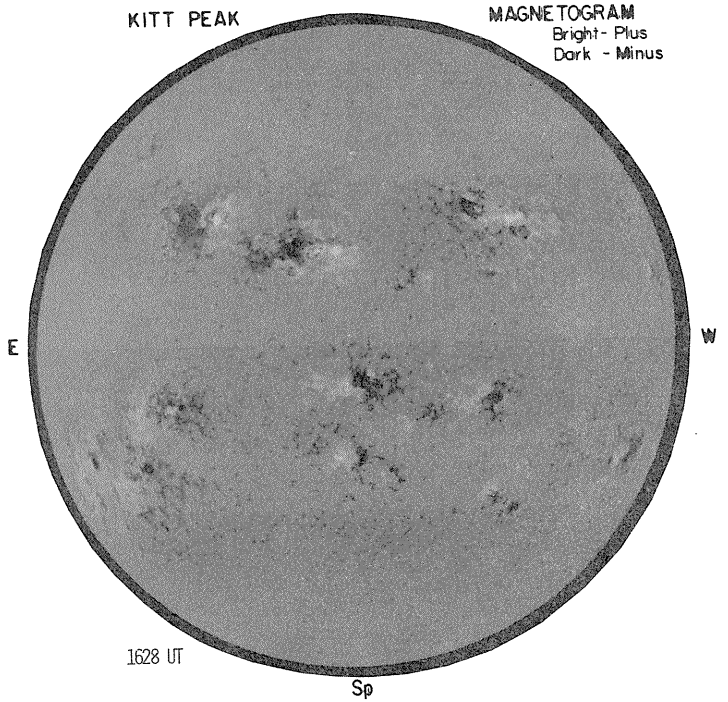
1800 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus



1628 UT

Sp

MT. WILSON

Np

MAGNETOGRAM
Solid - Plus
Dotted - Minus

DELTAY =
DELTAX =

E

NO DATA

W

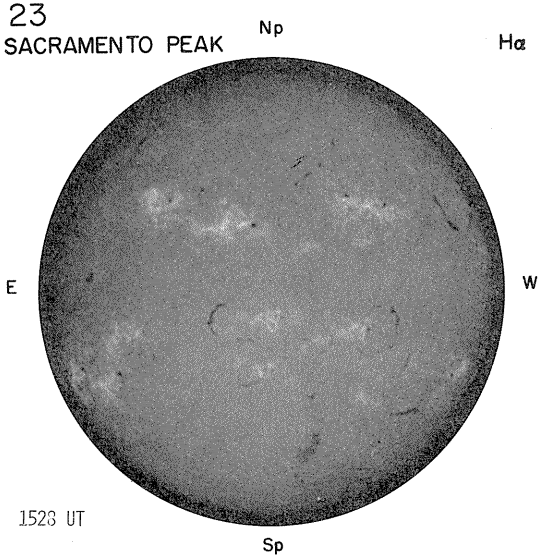
Levels
± 5
± 10
± 20
± 40
± 80

Sp

23

SACRAMENTO PEAK

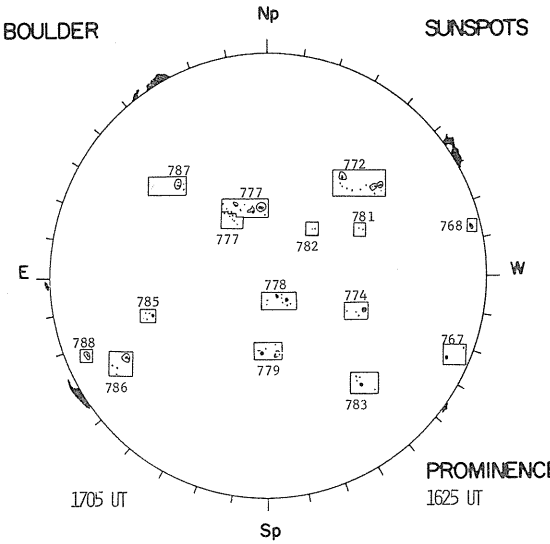
Hα



1528 UT

BOULDER

SUNSPOTS



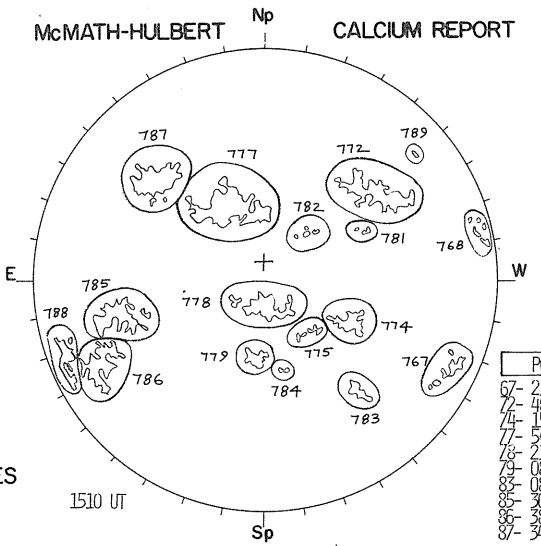
1705 UT

PROMINENCES

1625 UT

McMATH-HULBERT

CALCIUM REPORT



1510 UT

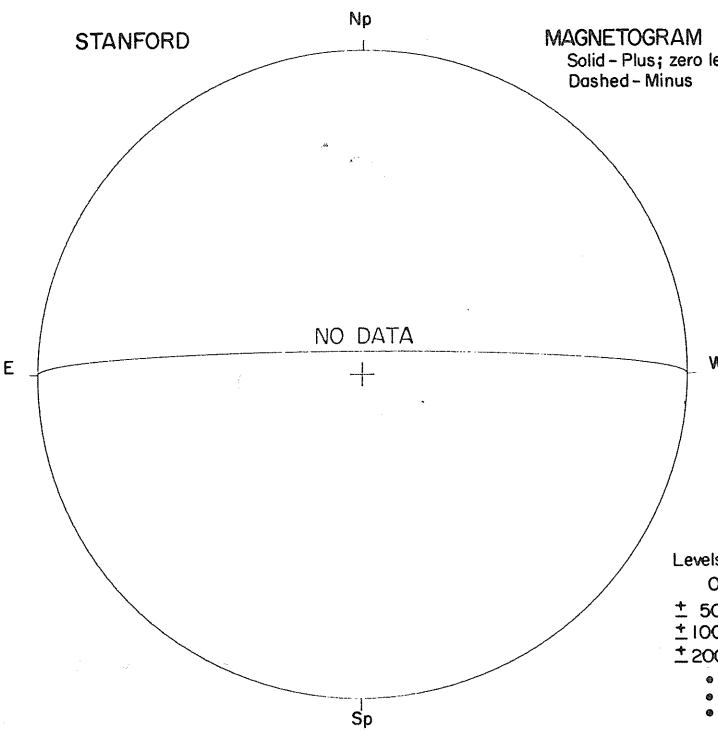
POOR	M
67-	2100-3.0
72-	4000-3.0
74-	1500-3.0
77-	5400-3.0
78-	2100-3.0
79-	0800-3.0
83-	0800-2.5
85-	3000-3.0
86-	3900-3.5
87-	3400-3.0

STANFORD

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



Levels

0 μT

± 50

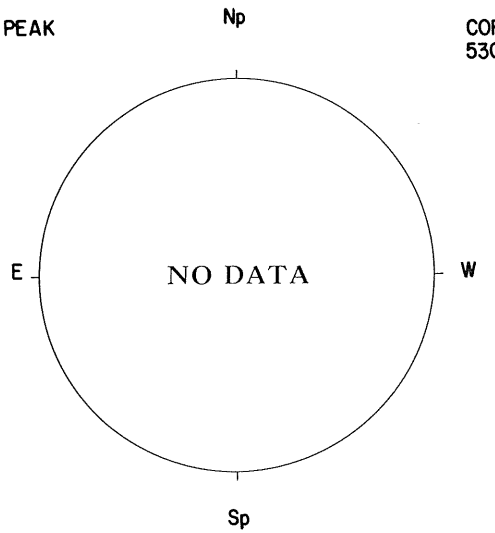
± ± 100

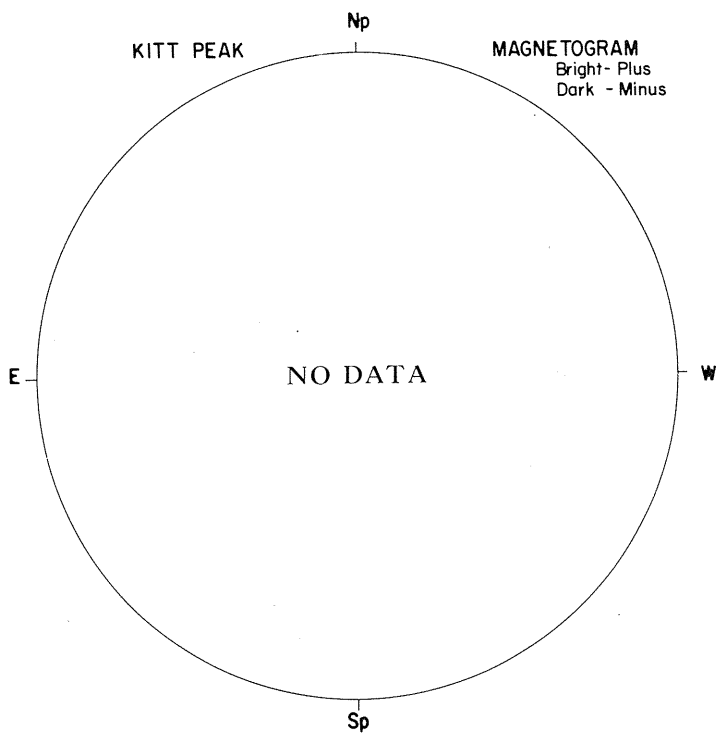
± ± 200

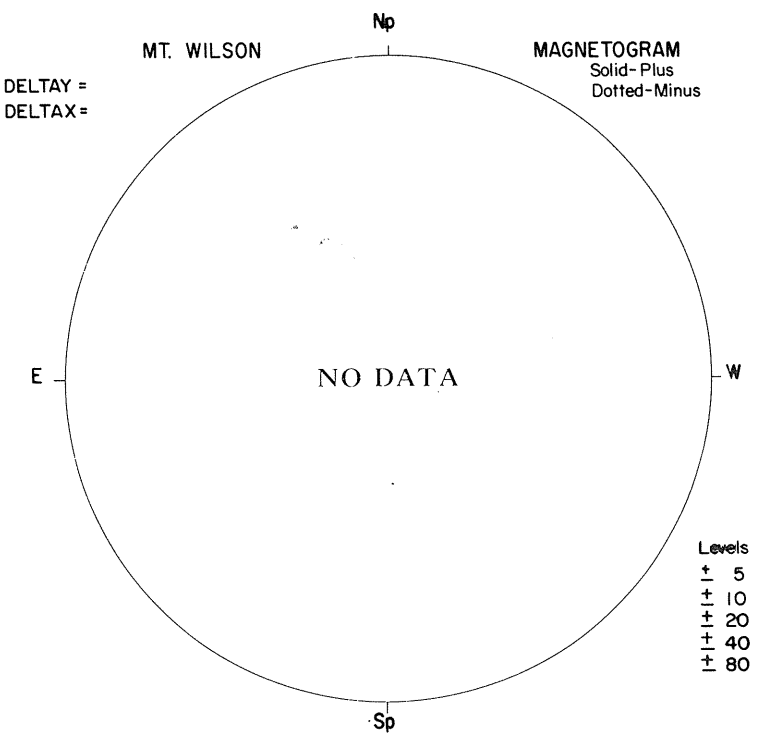
• • •

JANUARY 24, 1979 (P =-8.55, B_o =-5.37, L_o =139.89)

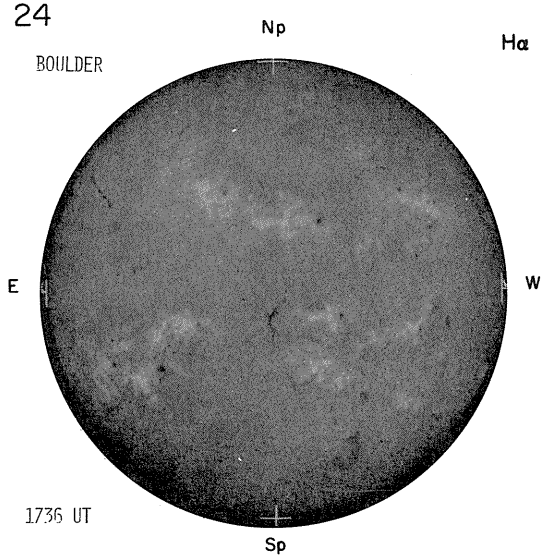
SACRAMENTO PEAK

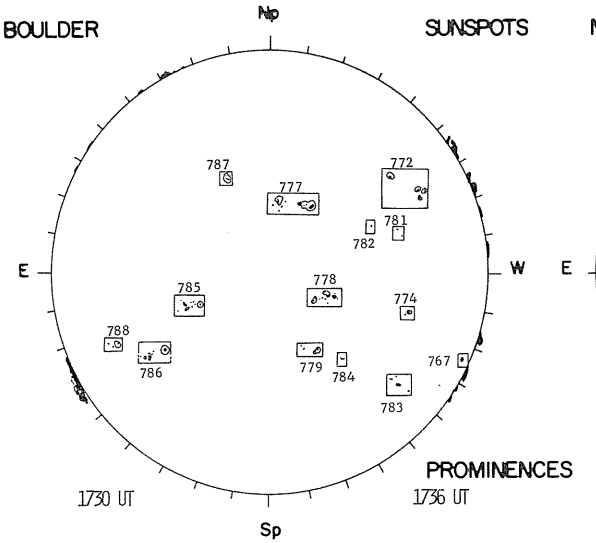


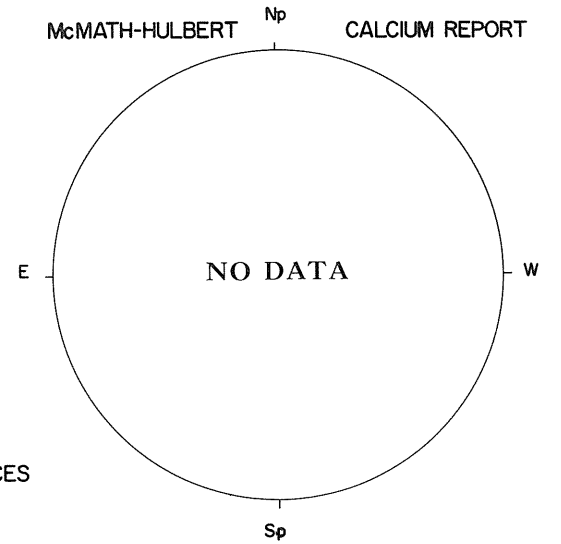


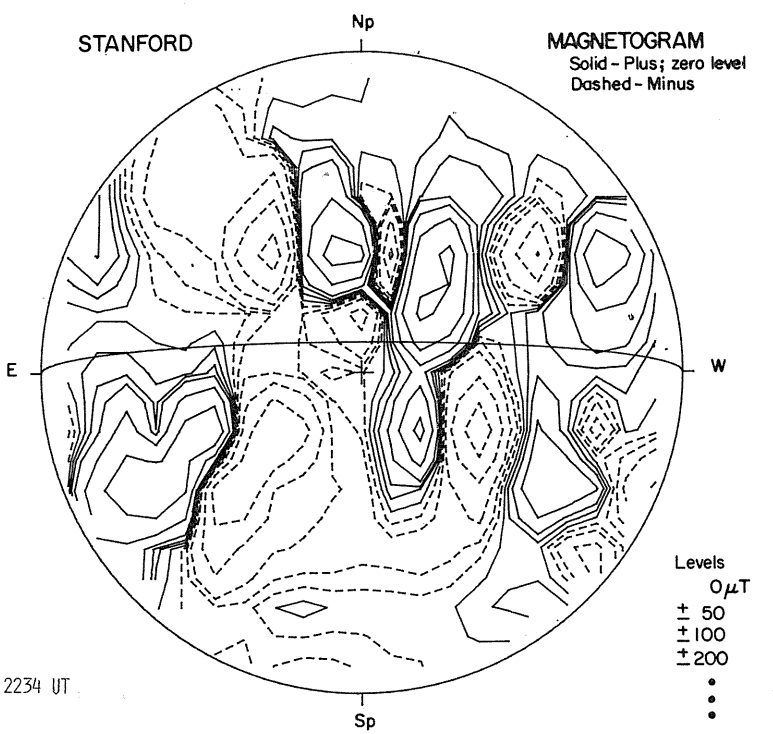


24


BOULDER
Hα
Np
E
W
Sp
1736 UT


BOULDER
SUNSPOTS
Np
E
W
Sp
787
777
772
781
782
778
785
774
788
786
779
784
767
783
1730 UT
PROMINENCES
1736 UT

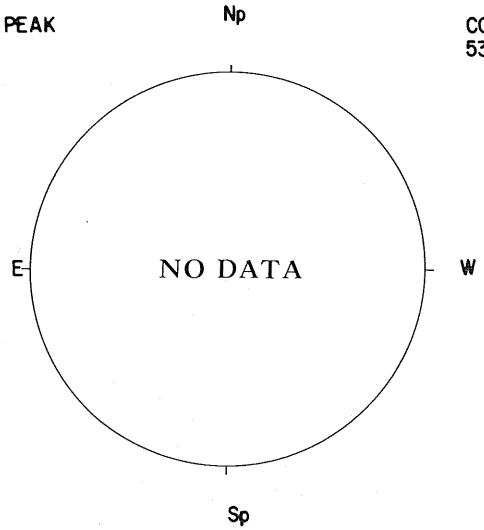

McMATH-HULBERT
CALCIUM REPORT
Np
E
W
Sp
NO DATA


STANFORD
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
Np
E
W
Sp
2234 UT
Levels
0 μT
± 50
± 100
± 200

JANUARY 25, 1979 (P =-8.99, B_0 =-5.46, L_0 =126.72)

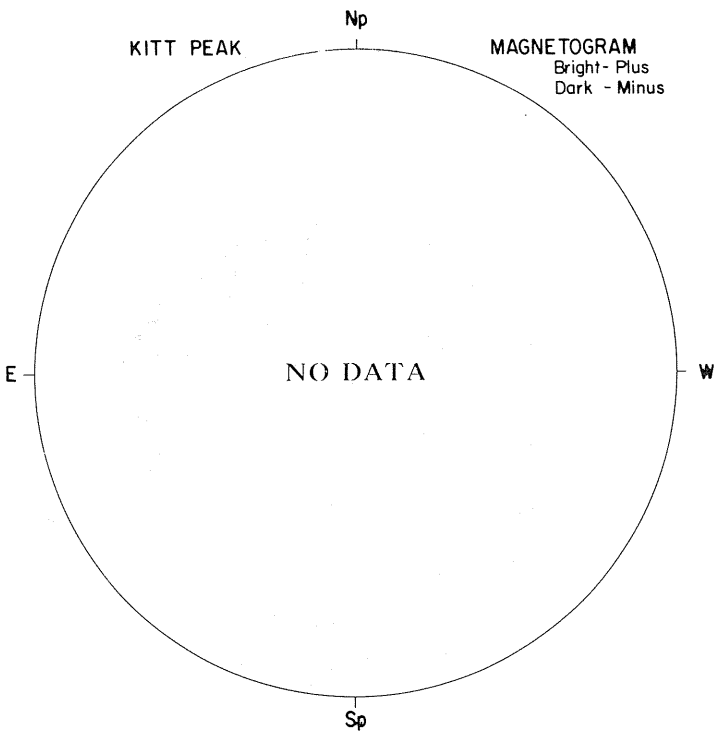
SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å



KITT PEAK

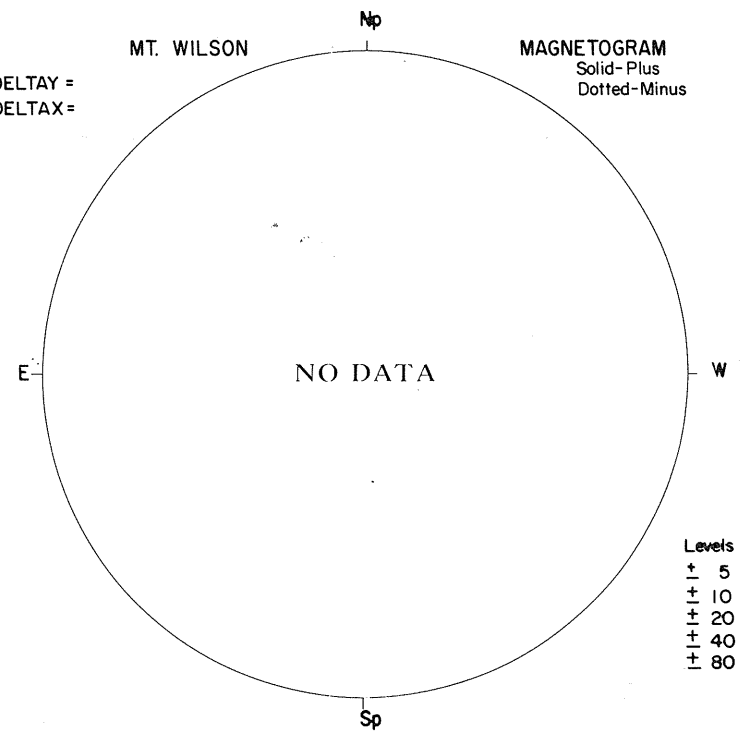
MAGNETOGRAM
Bright - Plus
Dark - Minus



MT. WILSON

DELTAY =
DELTAX =

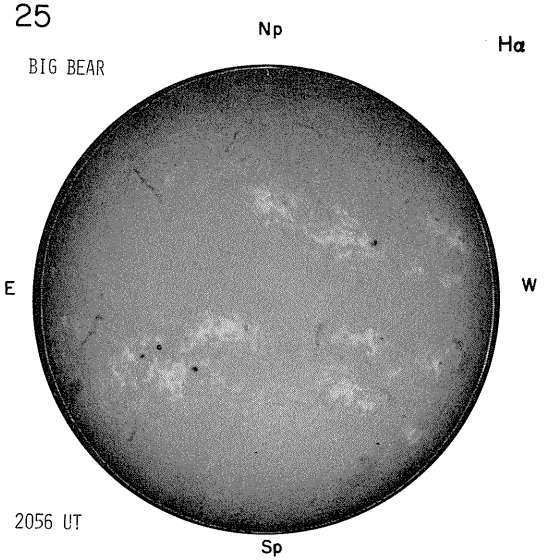
MAGNETOGRAM
Solid - Plus
Dotted - Minus



25

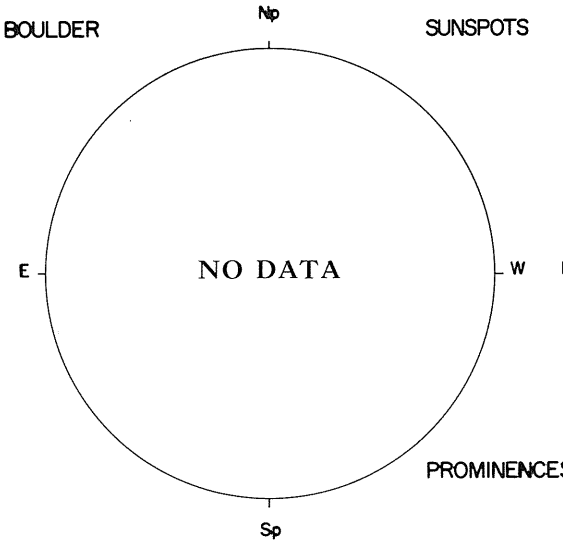
BIG BEAR

Hα

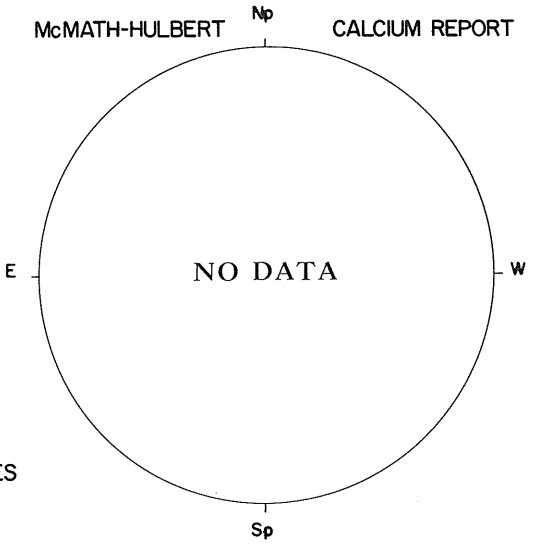


2056 UT

BOULDER SUNSPOTS



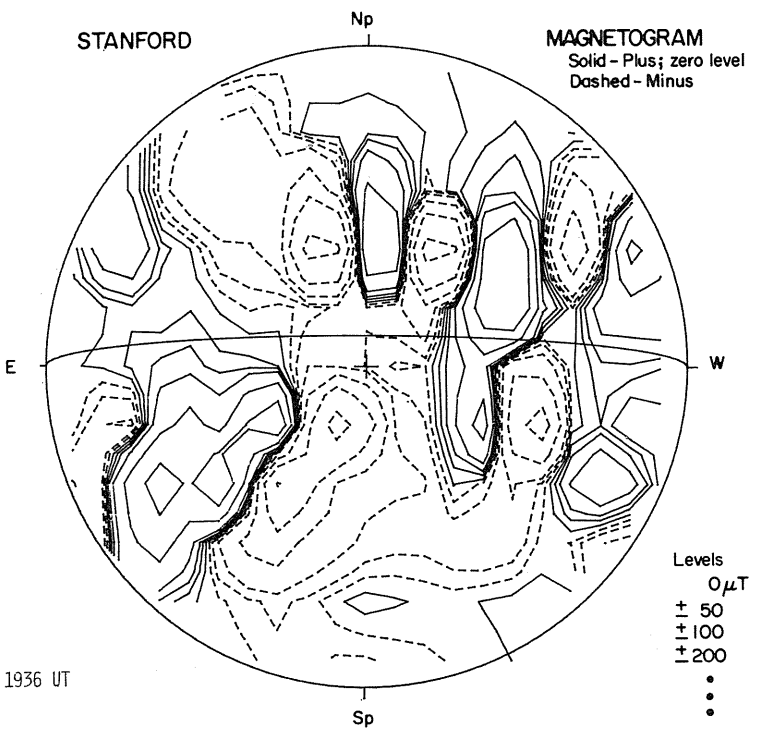
McMATH-HULBERT CALCIUM REPORT



PROMINENCES

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus

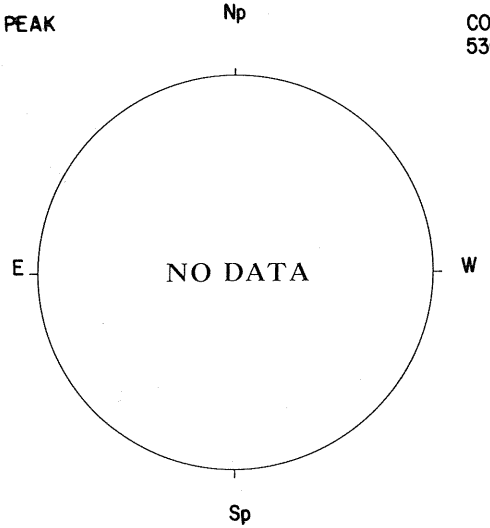


1936 UT

JANUARY 26, 1979 (P =-9.43, B_o =-5.54, L_o = 113.55)

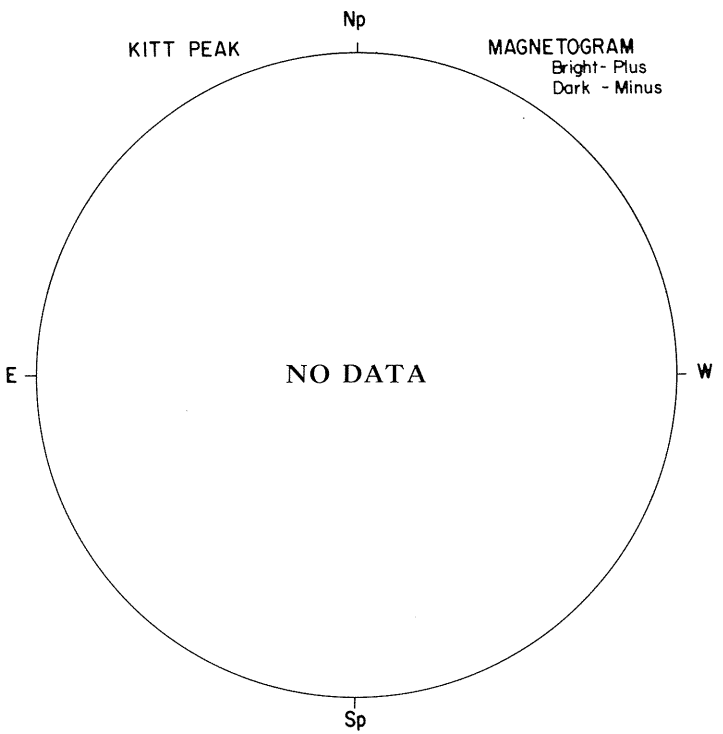
SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å



KITT PEAK

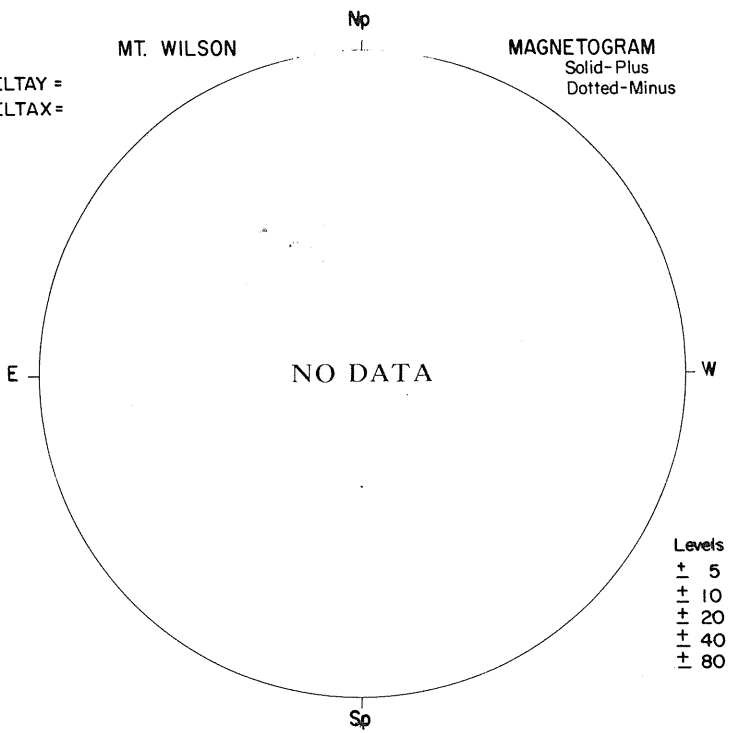
MAGNETOGRAM
Bright- Plus
Dark - Minus



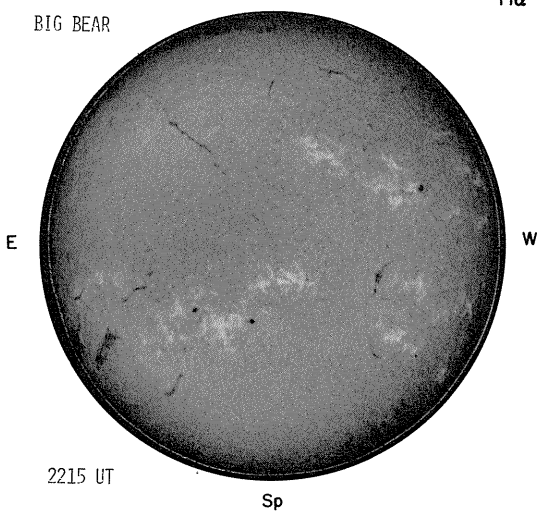
MT. WILSON

DELTAY =
DELTAX =

MAGNETOGRAM
Solid- Plus
Dotted-Minus

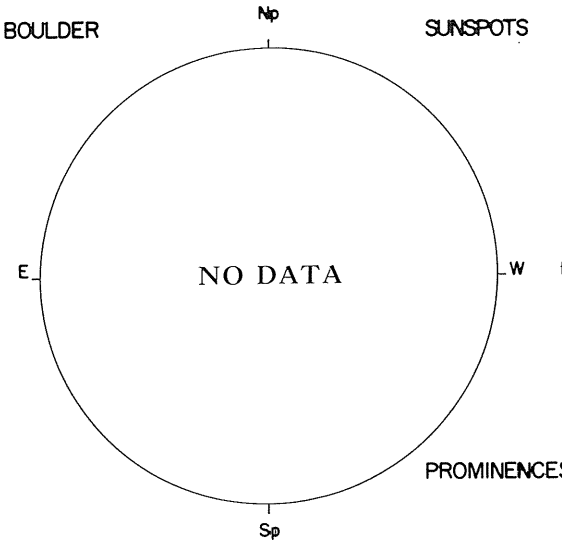


BIG BEAR Hα



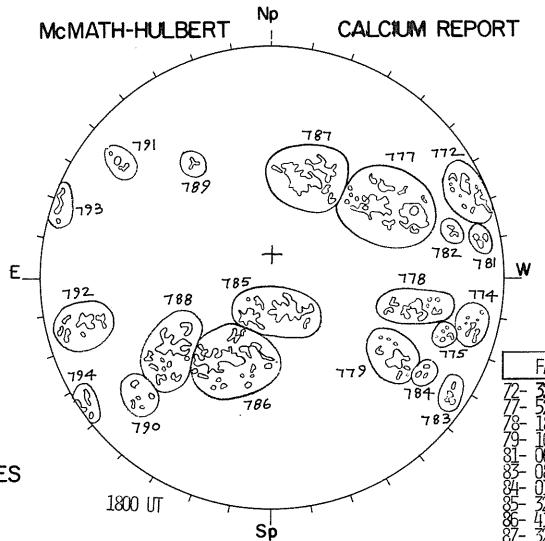
2215 UT

BOULDER SUNSPOTS



PROMINENCES

McMATH-HULBERT CALCIUM REPORT

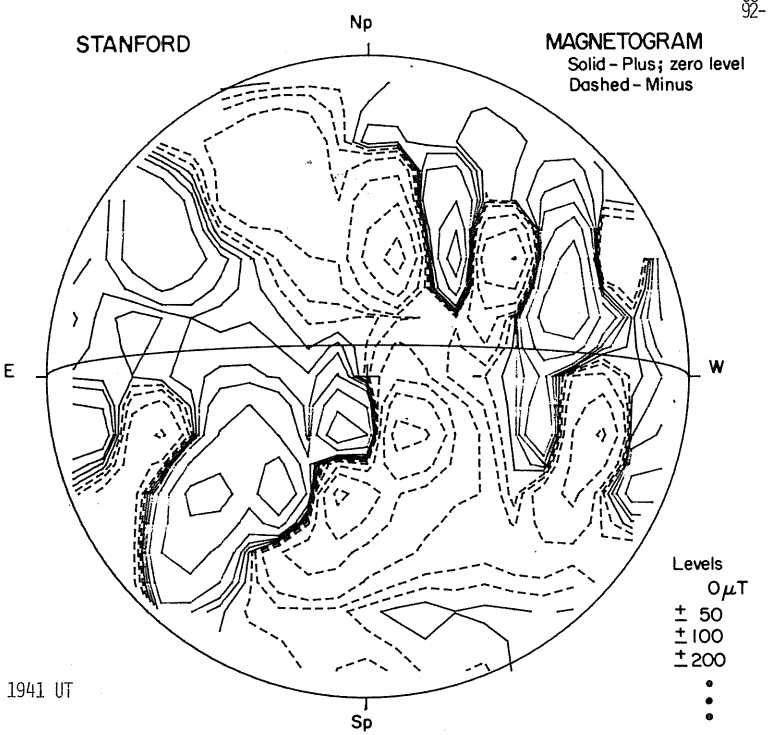


1800 UT

FAIR	D
72-	3200-3.0
77-	5200-3.0
78-	1800-3.0
79-	1000-3.5
81-	0600-2.5
83-	0800-3.0
84-	0300-3.5
85-	3200-3.0
86-	4100-3.5
87-	3200-3.5
88-	2700-2.5
92-	1500-2.5

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus



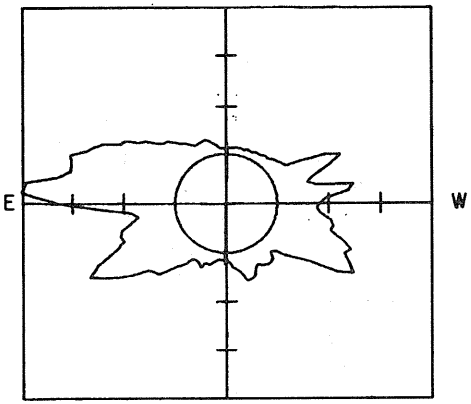
1941 UT

JANUARY 27, 1979 (P =-9.86, B_o =-5.63, L_o = 100.39)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å



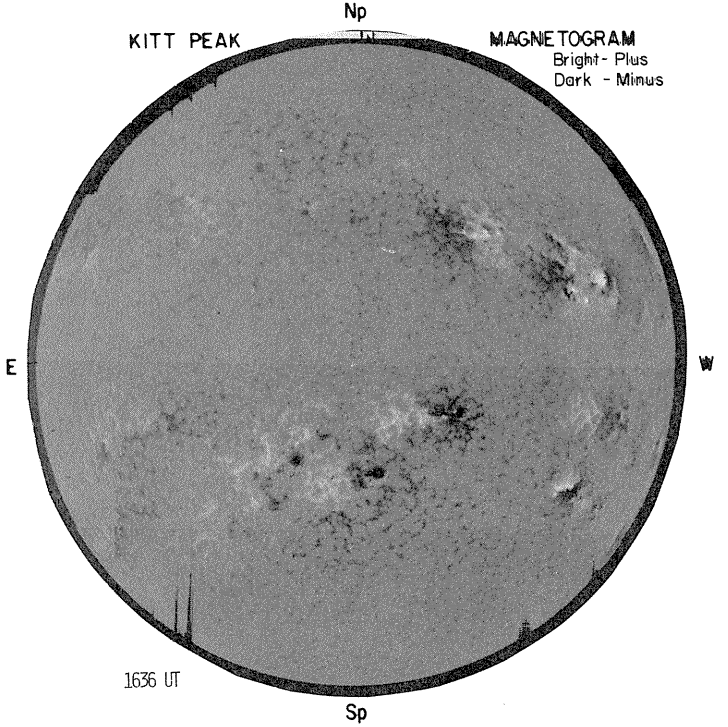
1607 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus



1636 UT

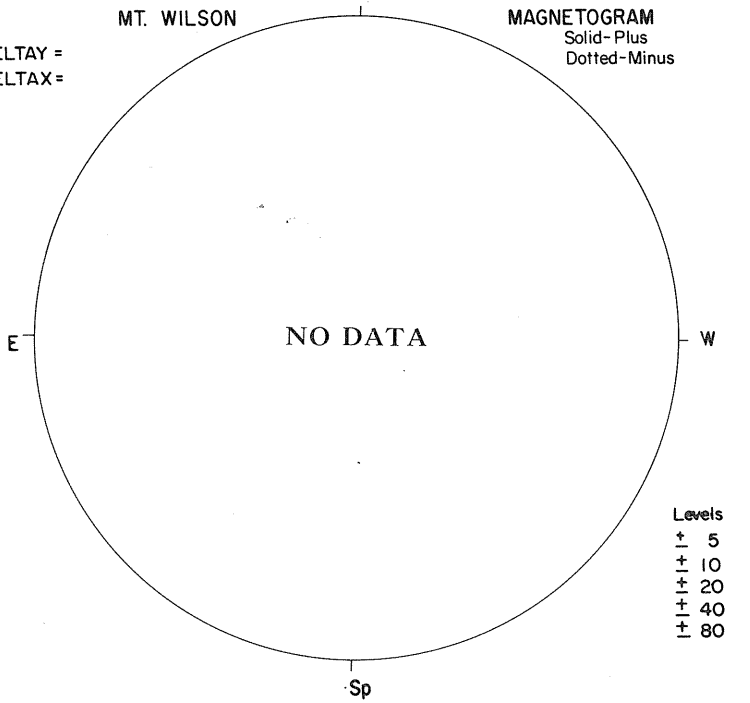
Sp

MT. WILSON

Np

MAGNETOGRAM
Solid - Plus
Dotted - Minus

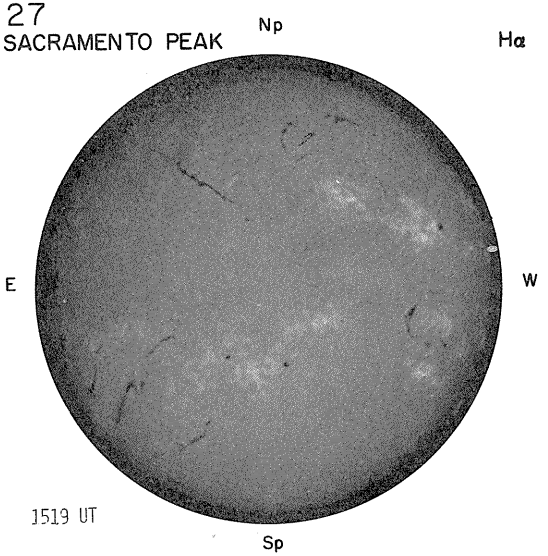
DELTAY =
DELTAX =



Sp

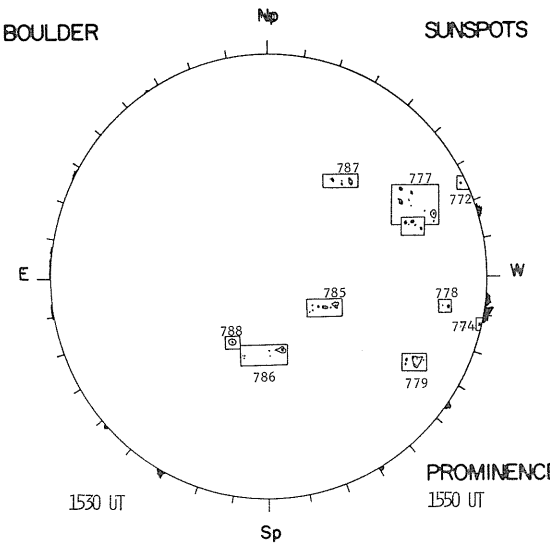
27

SACRAMENTO PEAK



1519 UT

BOULDER SUNSPOTS

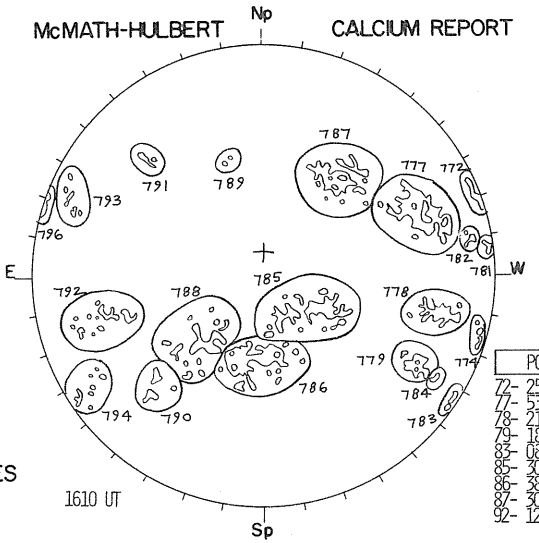


1530 UT

PROMINENCES

1550 UT

McMATH-HULBERT CALCIUM REPORT



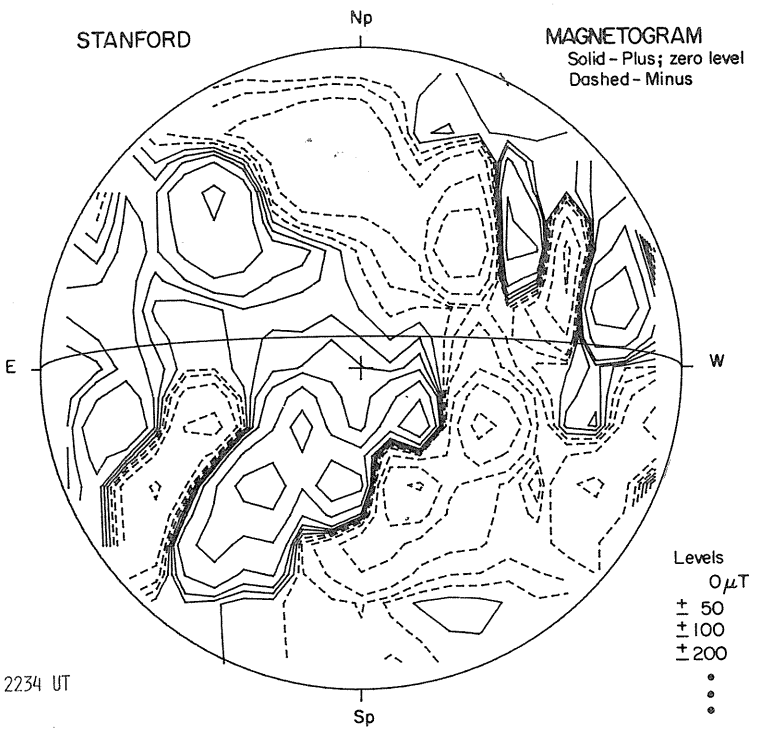
1610 UT

	POOR	S
72- 2500-2.5		
77- 5300-3.0		
78- 2100-3.0		
79- 1800-3.0		
83- 0800-2.5		
85- 3000-3.0		
86- 3800-3.0		
87- 3000-3.5		
92- 1200-2.5		

STANFORD MAGNETOGRAM

Solid - Plus; zero level

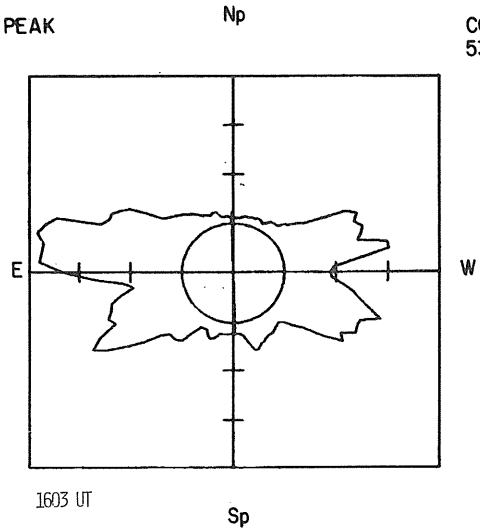
Dashed - Minus

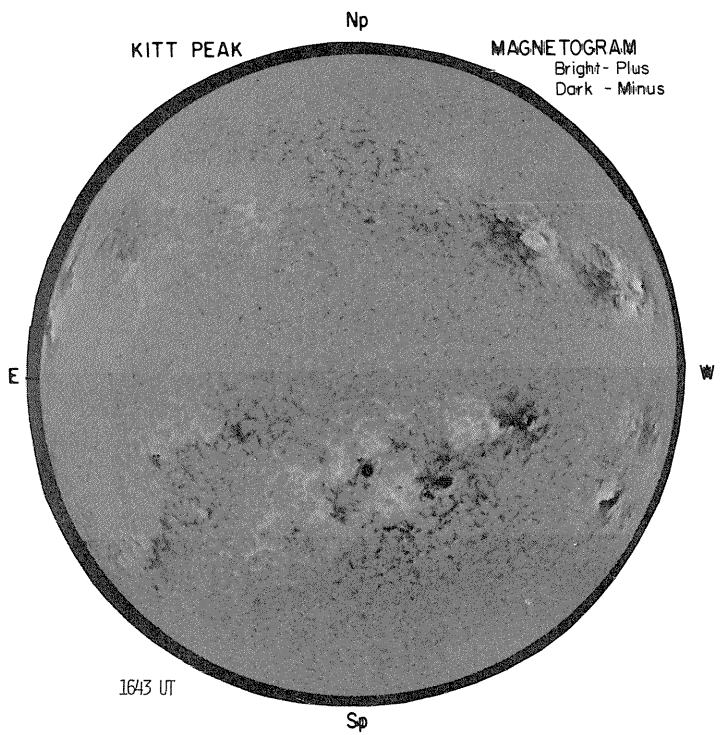


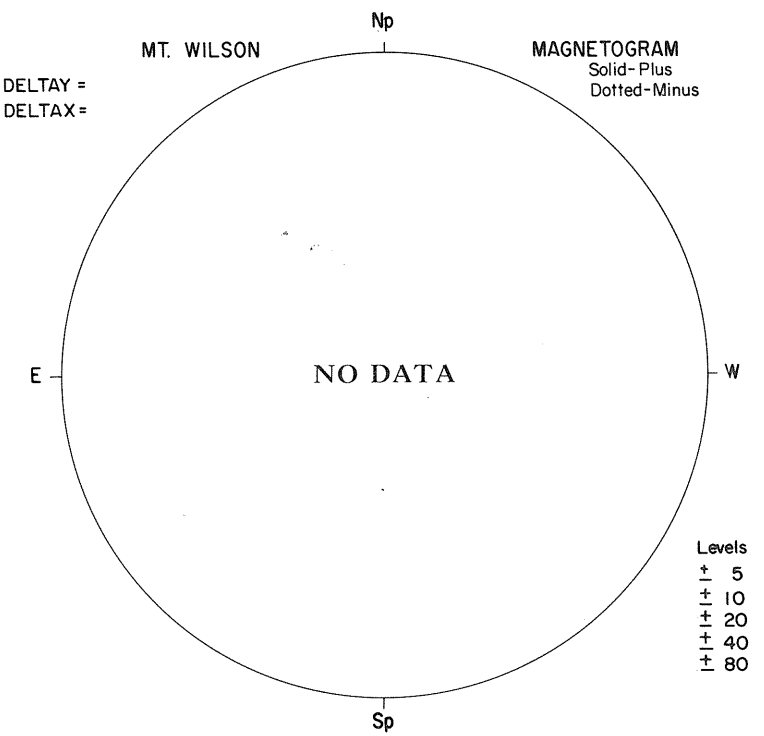
2234 UT

JANUARY 28, 1979 (P =-10.29, B_o =-5.71, L_o = 87.22)

SACRAMENTO PEAK

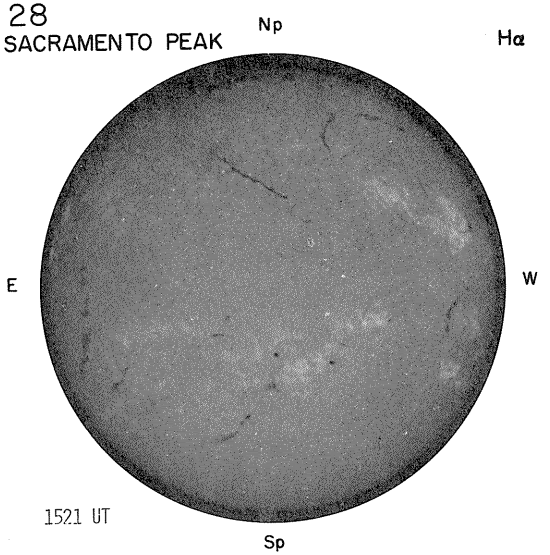






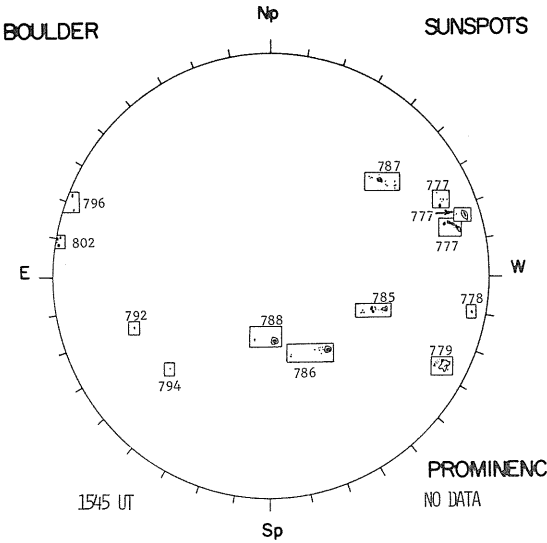
28

SACRAMENTO PEAK



1521 UT

BOULDER



1545 UT

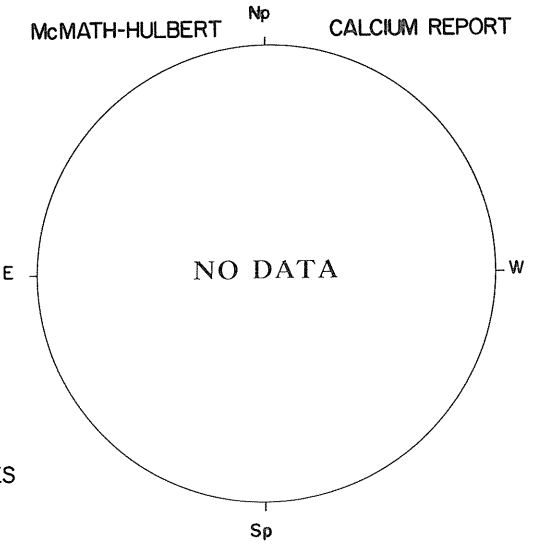
SUNSPOTS

PROMINENCES

NO DATA

McMATH-HULBERT

CALCIUM REPORT

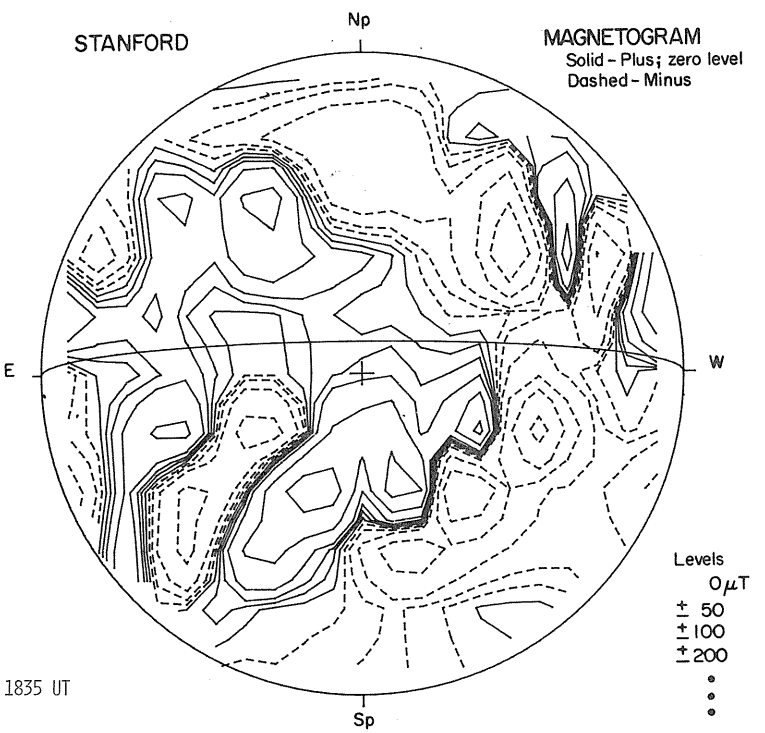


STANFORD

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus

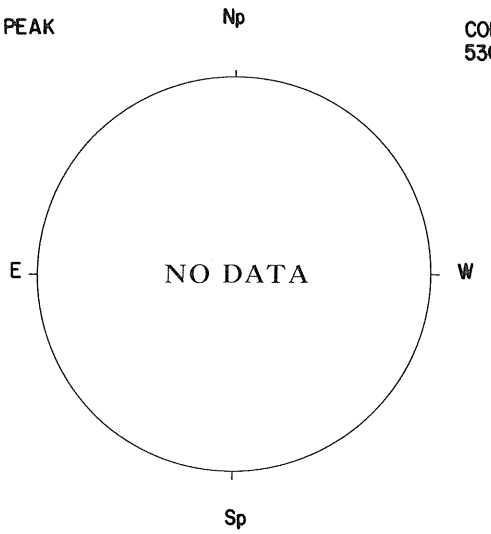


1835 UT

JANUARY 29, 1979 (P =-10.72, B_o =-5.79, L_o = 74.06)

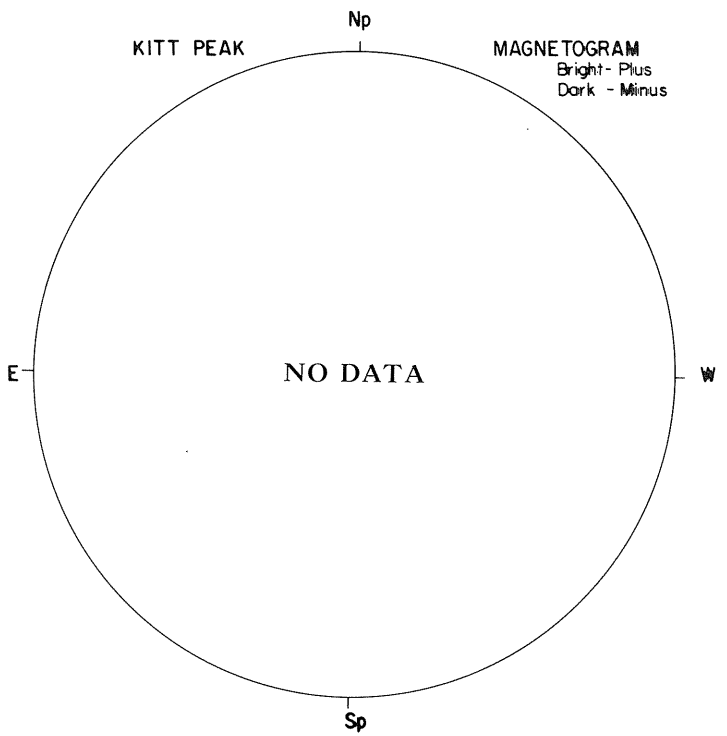
SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å



KITT PEAK

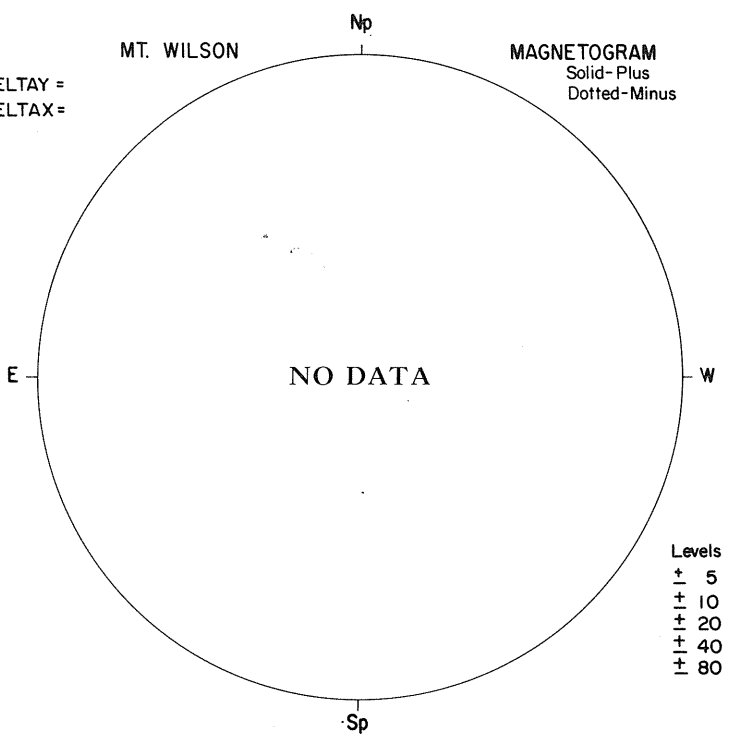
MAGNETOGRAM
Bright - Plus
Dark - Minus



MT. WILSON

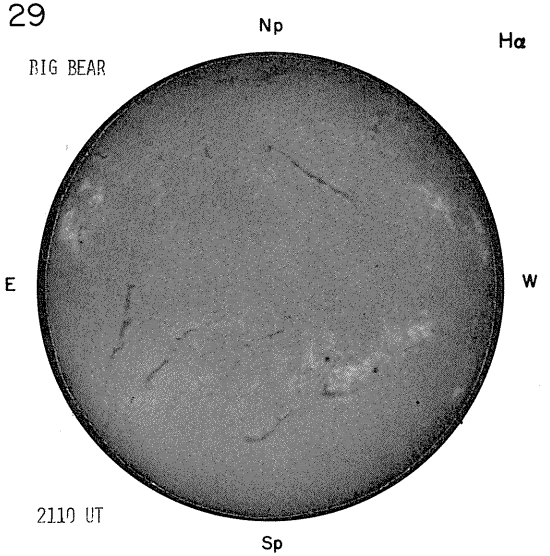
DELTAY =
DELTAX =

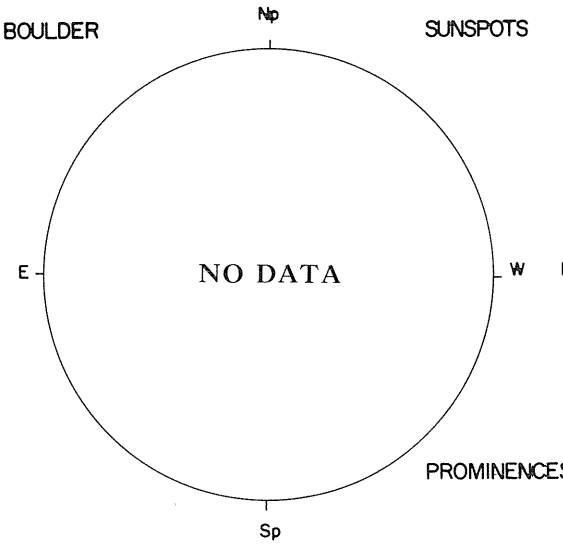
MAGNETOGRAM
Solid - Plus
Dotted - Minus



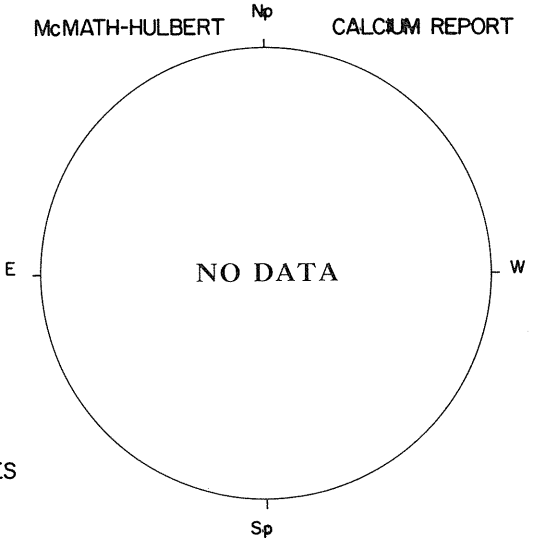
Levels
± 5
± 10
± 20
± 40
± 80

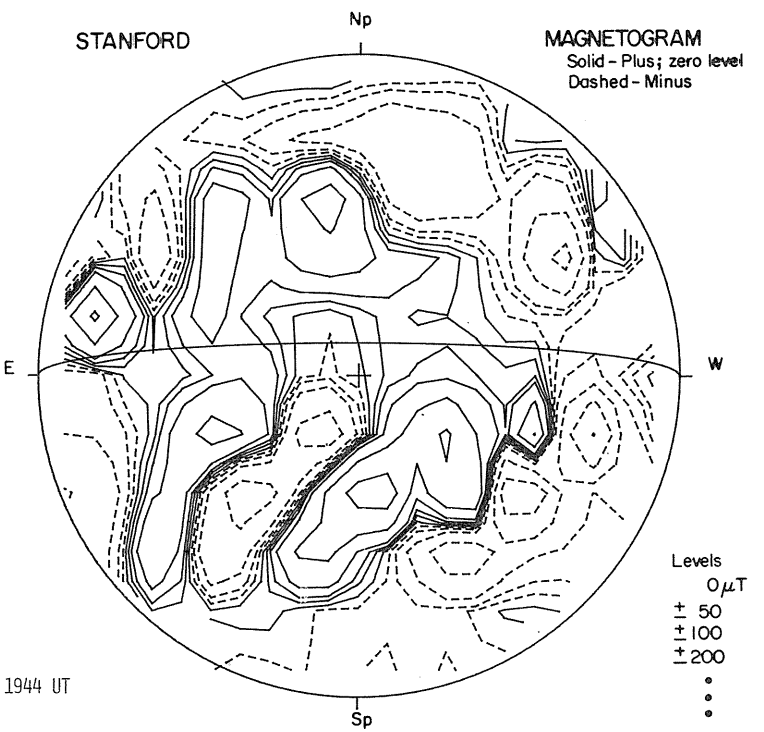
29





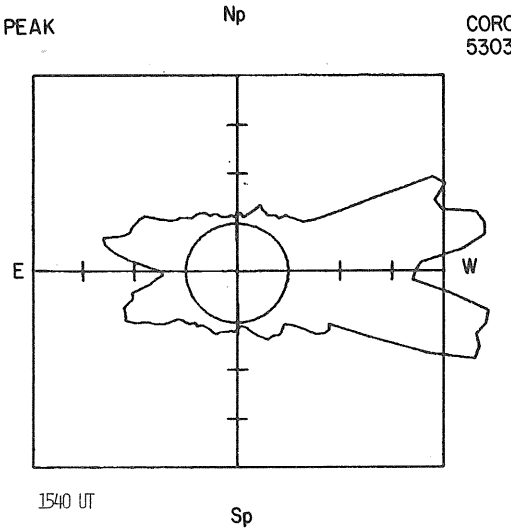
PROMINENCES

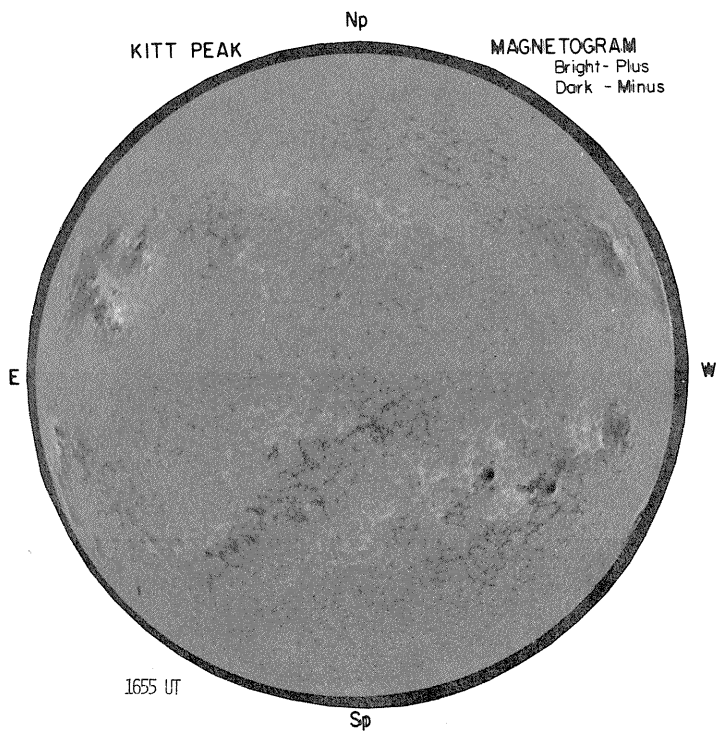


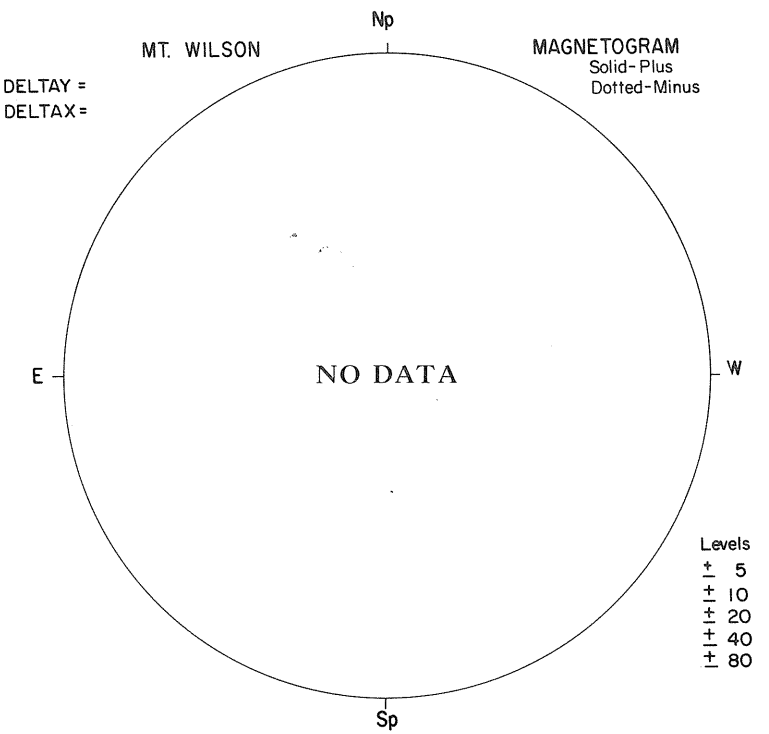


JANUARY 30, 1979 (P = -11.14, B_o = -5.86, L_o = 60.89)

SACRAMENTO PEAK

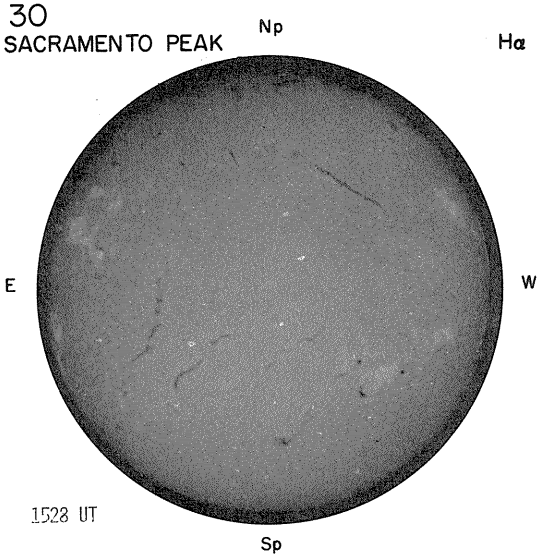




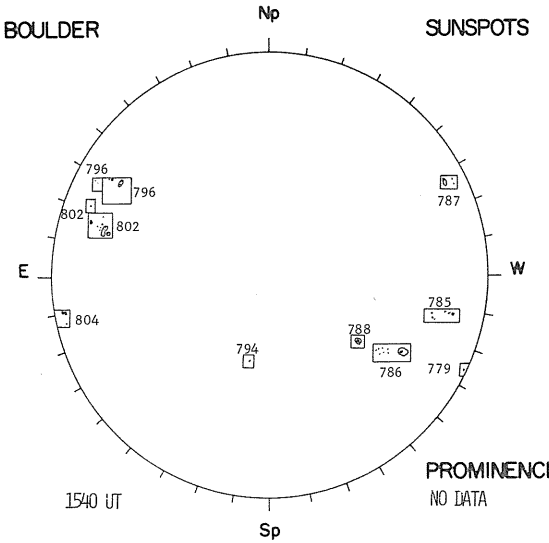


30

SACRAMENTO PEAK



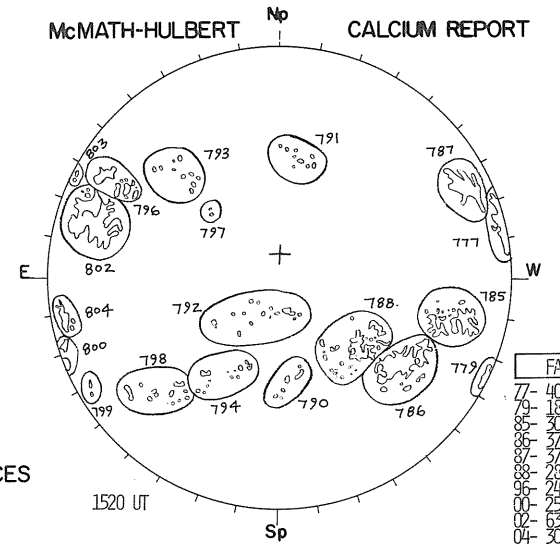
BOULDER SUNSPOTS



PROMINENCES

NO DATA

McMATH-HULBERT CALCIUM REPORT

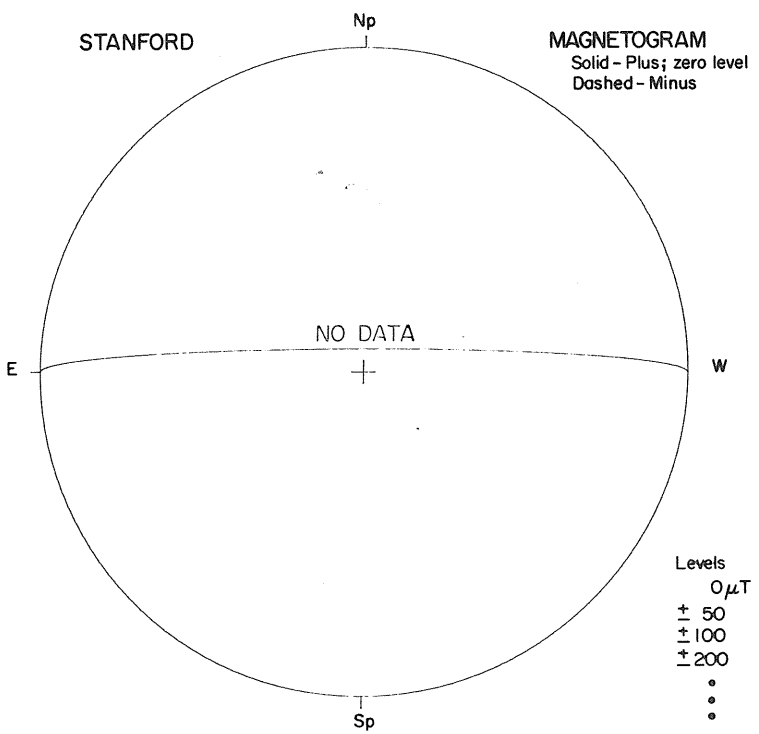


FAIR	M
77- 4000-2.5	
79- 1800-3.0	
85- 3000-3.5	
86- 3700-3.5	
87- 3700-3.5	
88- 2800-2.5	
96- 2400-3.5	
00- 2500-3.0	
02- 6300-3.5	
04- 3000-3.0	

STANFORD MAGNETOGRAM

Solid - Plus; zero level

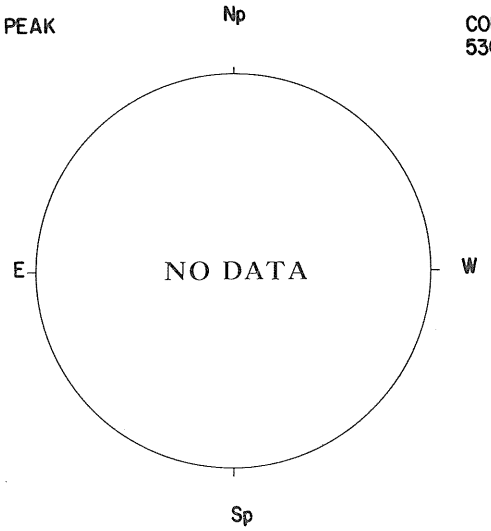
Dashed - Minus



JANUARY 31, 1979 (P = -11.56, B_o = -5.94, L_o = 47.72)

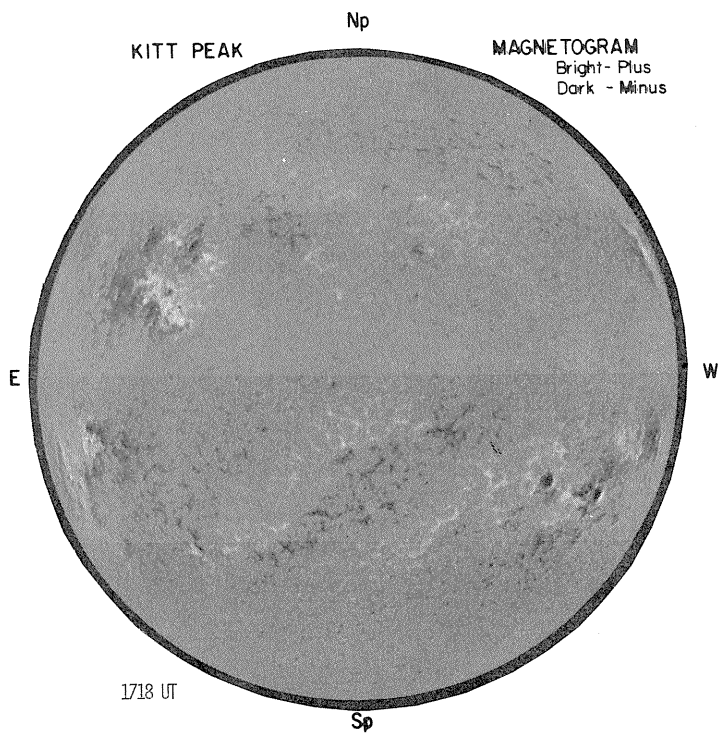
SACRAMENTO PEAK

CORONA (1.15 $R_\odot$)
5303 Å



KITT PEAK

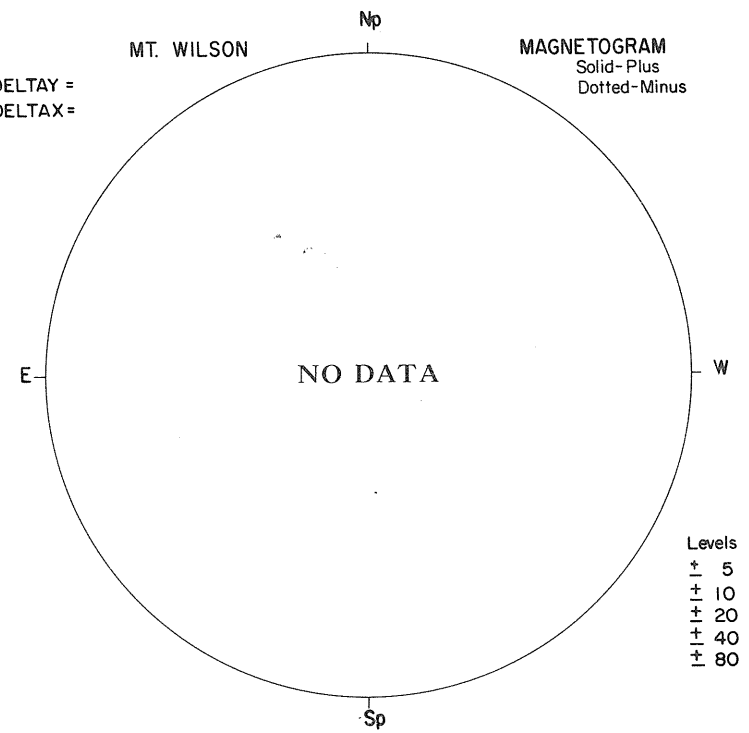
MAGNETOGRAM
Bright - Plus
Dark - Minus



MT. WILSON

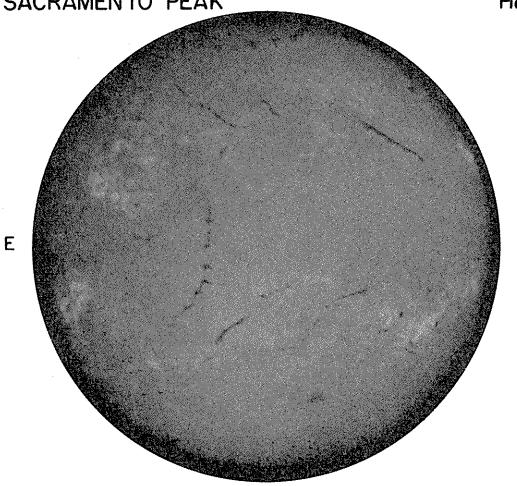
DELTAY =
DELTAX =

MAGNETOGRAM
Solid - Plus
Dotted - Minus



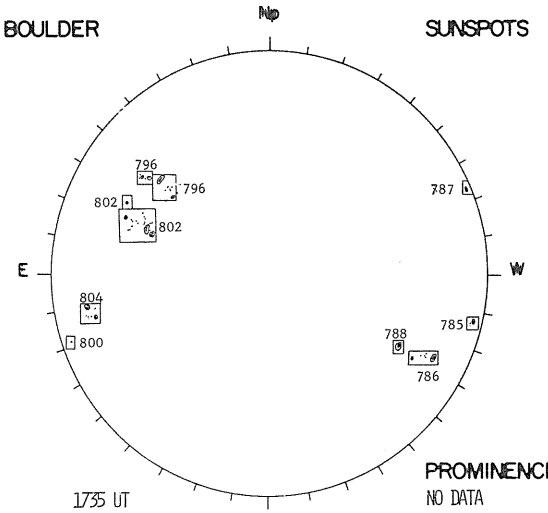
31

SACRAMENTO PEAK



1554 UT

BOULDER SUNSPOTS

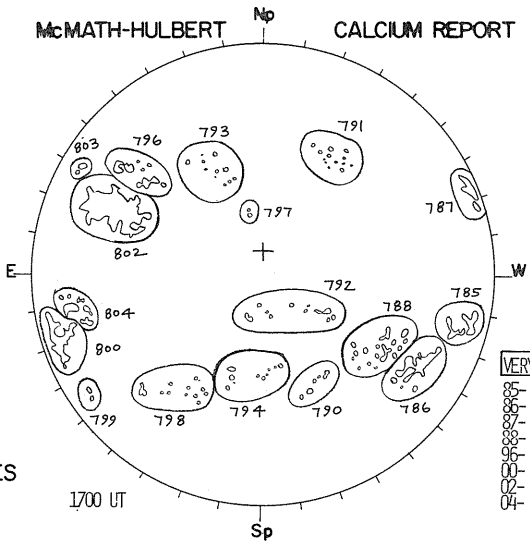


1735 UT

PROMINENCES

NO DATA

McMATH-HULBERT CALCIUM REPORT

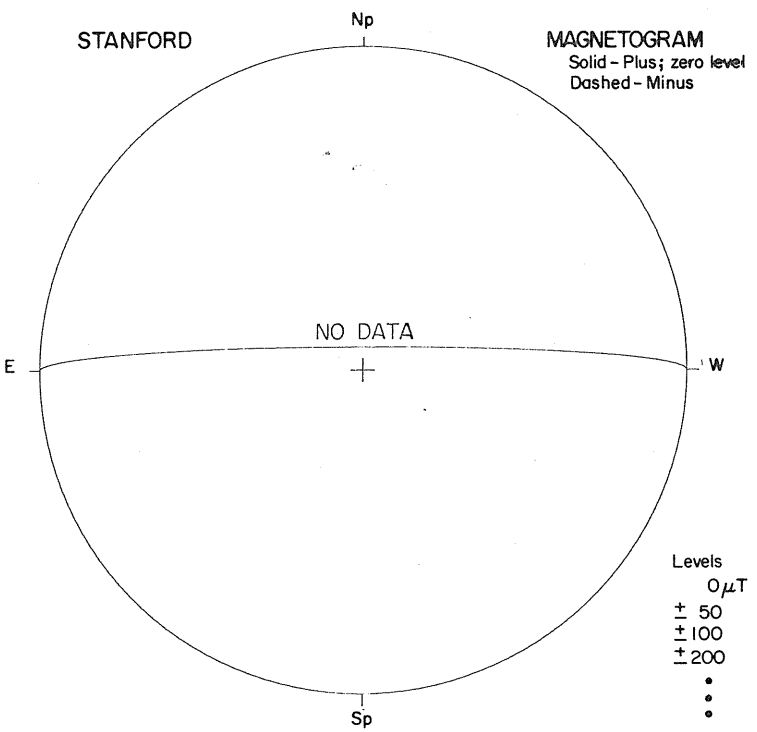


1700 UT

VERY POOR	M
85- 2700-3.0	
86- 3500-3.0	
87- 3400-3.0	
88- 2600-2.5	
96- 2200-3.0	
00- 3500-3.0	
02- 6500-3.0	
04- 3000-3.0	

STANFORD MAGNETOGRAM

Solid – Plus; zero level
Dashed – Minus



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MCMATH REGION 15739 CMP DATE 1.6

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
78	12	27	15739	S33 E66	72	400	2.5									
78	12	28	15739	S33 E53	73	1000	3.5		S31 E49				B	70	2	CAO
78	12	29	15739					20377	S33 E38	74	(B)	3	M	100	9	DSO
78	12	30	15739					20377	S33 E25	75	(BY)	4	B	210	11	DAI
78	12	31	15739					20377	S32 E12	75	(B)	3	R	180	15	DAO
79	1	2	15739	S33 W14	74	1800	2.5	20377	S32 W16	75	BP	4	M	240	14	EKO
79	1	3	15739	S33 W28	75	2000	2.5		S33 W40				M	70	1	HSX
79	1	4	15739	S33 W40	75	2000	2.5	20377	S32 W47	80	(AP)	4				
79	1	5	15739	S33 W51	72	1600	2.5									
79	1	6	15739	S33 W60	68	1800	2.5	20377	S32 W72	80	(AP)	3	R	60	1	HSX
79	1	8	15739	S33 W85	67	300	1.0									

MCMATH REGION 15752 CMP DATE 1.9

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	1	3	15752	N25 W23	70	200	2.0		N26 W27				M	10	1	AXX
79	1	4	15752	N25 W36	71	200	2.0		N26 W39				M	10	1	AXX

MCMATH REGION 15742 CMP DATE 2.4 (PROBABLY NEW)

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	15742	S20 W03	63	800	2.5	20385	S20 W03	62	B	3	M	30	6	DRO
79	1	3	15742	S20 W15	62	1000	2.5		S20 W18				M	40	5	DRO
79	1	4	15742	S20 W28	63	800	2.5	20385	S19 W30	63	(BP)	3	M	40	4	DRO
79	1	5	15742	S20 W41	62	700	1.5		S18 W43				B	20	2	CSO
79	1	6	15742	S20 W54	62	700	2.0	20385	S20 W60	68	(AP)	3	R	20	4	BXO
79	1	8	15742	S20 W81	63	500	1.5									

MCMATH REGION 15755 CMP DATE 3.1

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	1	6	15755	N26 W47	55	300	2.5	20389	N26 W49	57	(AP)	2	R	20	3	BXO
79	1	7	15755						N27 W61				B	10	2	CRO
79	1	8	15755	N26 W77	59	1000	2.5	20389	N26 W69	51	B	3				

MCMATH REGION 15743 CMP DATE 3.7 POSSIBLY RETURN OF REGION 15688 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	2	15743	N29 E13	47	500	1.0									
79	1	3	15743	N29 E01	46	500	1.5									

MCMATH REGION 15741 CMP DATE 3.8

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
78	12	28	15741	S12 E85	41	500	3.0									
78	12		15741					20380	S11 E70	42	AP	2	M	40	1	HSX
78	12		15741					20381	S18 E75	37	(AP)	2	M	90	1	HSX
78	12		15741					20380	S12 E59	41	(AF)	3	B	80	6	DSI
78	12		15741					20381	S18 E61	39	(AP)	3	B	60	1	HSX
78	12		15741					20383	N14 E70	30	(AP)	3	B	100	1	HHX
78	12		15741					20380	S12 E44	43	(B)	4	R	90	12	DSO
78	12		15741					20381	S19 E48	39	(AP)	3				
78	12		15741					20383	N13 E60	27	(AP)	3	R	100	9	CSO
79	1	2	15741	S13 E16	44	2300	3.0	20380	S12 E15	44	B	4	M	200	26	DKI
79	1	3	15741	S13 E03	44	2800	3.0		S12 E00				M	320	32	EKI
79	1	4	15741	S13 W08	43	3000	2.5	20380	S12 W11	44	(BF)	4	M	280	27	EKI
79	1	5	15741	S13 W21	42	2500	2.5		S12 W24				B	200	16	EAO
79	1	6	15741	S13 W33	41	2800	3.0	20380	S13 W37	45	(B)	3	R	120	18	EAO
79	1	7	15741						S13 W52				B	460	4	ESO
79	1	8	15741	S13 W63	45	2800	2.5	20380	S13 W61	43	B	3				
79	1	9	15741	S13 W76	43	2800	2.5									
79	1	10	15741	S13 W89	44	700	2.0									

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MCMATH REGION 15744 CMP DATE 4.0 RETURN OF PART OF REGION 15691 ROTATION 5

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	2	15744	N19 E20	40	900	2.0	20379	N17 E16	43	AP	2	M	20	1	HRX
79	1	3	15744	N20 E05	42	1200	2.0									
79	1	4	15744	N19 W10	45	1100	2.0									
79	1	5	15744	N19 W21	42	1200	2.0		N17 W32				B	30	3	CSO
79	1	6	15744	N18 W38	46	1200	3.0	20388	N16 W43	51	(BF)	4	R	60	11	DRO
79	1	8	15744	N18 W68	50	1200	3.0	20388	N16 W70	52	AP	2	M	40	3	CRO
79	1	9	15744	N18 W81	48	800	1.0									

MCMATH REGION 15740 CMP DATE 4.4

				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
78	12	29	15740					20382	S35 E71	41	(BY)	3	M	450	7	EKO
78	12	30	15740					20382	S35 E60	40	(B)	3	B	530	8	EKI
78	12	31	15740					20382	S35 E47	40	(B)	4	R	400	24	EKO
79	1	2	15740	S35 E22	38	2800	2.5	20382	S35 E21	38	B	4	M	360	10	EKI
79	1	3	15740	S35 E10	37	3400	3.0		S35 E05				M	380	27	EKI
79	1	4	15740	S35 W03	38	3400	3.0	20382	S35 W03	36	(B)	4	M	380	21	EKI
79	1	5	15740	S35 W14	35	2600	3.0		S33 W18				B	330	17	EKO
79	1	6	15740	S35 W26	34	3000	3.0	20382	S35 W30	38	BP	4	R	290	20	CKO
79	1	7	15740						S33 W43				B	150	9	EKO
79	1	8	15740	S33 W52	34	2600	2.5	20382	S34 W56	38	AP	4	M	160	5	EAO
79	1	9	15740	S34 W65	32	3000	3.0	20382	S35 W75	40	B	4	B	80	4	DAO
79	1	10	15740	S35 W77	32	2700	3.0	20382	S35 W82	38	B	3	B	20	1	HRX
79	1	11	15740	S35 W88	32	800	1.5									

MCMATH REGION 15746 CMP DATE 4.9 RETURN OF REGION 15634 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	2	15746	S22 E30	30	1800	3.0									
79	1	3	15746	S21 E17	30	2100	2.5									
79	1	4	15746	S21 E04	31	2400	2.5									
79	1	5	15746	S21 W08	29	2000	2.0									
79	1	6	15746	S20 W21	29	2200	2.5									
79	1	8	15746	S20 W51	33	2400	2.0		S12 W52				M	80	4	DRO
79	1	9	15746	S20 W65	32	2100	2.0		S20 W70				B	60	1	HSX
79	1	10	15746	S20 W78	33	1000	2.5									

MCMATH REGION 15745 CMP DATE 5.1

				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	1	2	15745	N14 E32	28	1900	3.0	20383	N13 E31	28	BP	4	M	140	9	DSO
79	1	3	15745	N15 E20	27	1800	3.0		N13 E14				M	150	6	CSO
79	1	4	15745	N14 E06	29	2200	2.5	20383	N13 E03	30	(AP)	4	M	180	7	CSO
79	1	5	15745	N14 W05	26	2200	2.5		N12 W10				B	170	3	CHO
79	1	6	15745	N14 W18	26	2000	2.5	20383	N13 W23	31	(AP)	5	R	110	1	HSX
79	1	7	15745						N13 W37				B	110	2	HSX
79	1	8	15745	N15 W46	28	1800	2.5	20383	N12 W49	31	(AP)	4	M	180	1	HSX
79	1	9	15745	N15 W60	27	1500	2.5	20383	N13 W67	32	(AP)	3	B	120	1	HSX
79	1	10	15745	N15 W73	28	1100	1.5	20383	N13 W75	31	AP	4	B	60	1	AHX
79	1	11	15745	N16 W75	19	200	1.0									

MCMATH REGION 15758 CMP DATE 7.1

				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	1	8	15758	N07 W21	3	200	2.0									
79	1	9	15758	N07 W36	3	100	1.0									

MCMATH REGION 15766 CMP DATE 7.4

				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	10	15766	N23 W44	359	100	1.0									
79	1	11	15766	N23 W58	2	600	3.0	20401	N23 W54	357	(BP)	2	B	40	3	CRO

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MCMATH REGION 15766 (CONT) CMP DATE 7.4

			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	12	15766	N24 W70	359	600	2.0									

MCMATH REGION 15747 CMP DATE 7.7 RETURN OF REGION 15696 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	2	15747	S25 E63	358	1200	1.5									
79	1	3	15747	S25 E58	350	1500	2.0									
79	1	4	15747	S24 E44	352	1400	2.0									
79	1	5	15747	S24 E33	349	1200	1.5									
79	1	6	15747	S25 E16	353	1200	1.5									
79	1	8	15747	S25 W13	355	1200	1.0									
79	1	9	15747	S25 W23	350	800	1.0									
79	1	10	15747	S25 W36	351	800	1.0									
79	1	11	15747	S25 W50	354	700	1.0									
79	1	12	15747	S25 W61	350	600	1.0									

MCMATH REGION 15749 CMP DATE 8.3 RETURN OF REGION 15715 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	2	15749	N13 E77	344	700	2.0									
79	1	3	15749	N12 E62	346	800	3.0									
79	1	4	15749	N12 E48	348	800	3.0									
79	1	5	15749	N12 E35	347	800	3.0		N09 E35				B	20	3	CSO
79	1	6	15749	N11 E22	347	1000	3.0	20390	N08 E23	346	B	3	R	50	10	CRO
79	1	7	15749						N10 E08				B	140	14	DAI
79	1	8	15749	N11 W05	347	1900	3.0	20390	N10 W04	346	(B)	4	M	230	30	DAI
79	1	9	15749	N10 W20	347	2200	3.0	20390	N10 W23	348	(B)	5				
79	1	10	15749	N10 W32	347	3400	3.0	20390	N10 W32	348	(B)	4	B	850	9	EKI
79	1	11	15749	N10 W46	350	3600	3.0	20390	N10 W46	349	(B)	4	B	750	17	EKI
79	1	12	15749	N10 W58	347	3500	3.0	20390	N10 W60	347	(B)	4	B	430	7	FSO
79	1	13	15749					20390	N10 W70	346	(B)	4	B	160	4	CSI
79	1	14	15749	N10 W83	347	2700	2.5		N10 W78				M	930	4	EKI

MCMATH REGION 15748 CMP DATE 8.9 RETURN OF REGION 15697 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	15748	S17 E80	341	1100	1.5									
79	1	3	15748	S17 E73	335	4200	3.0		S16 E72				M	240	6	DAO
79	1	4	15748	S16 E59	337	4800	3.0	20387	S17 E63	331	BF	4	M	270	12	DSO
79	1	5	15748	S16 E46	336	4200	3.0		S17 E49				B	340	7	DAI
79	1	6	15748	S16 E33	336	4200	3.5	20387	S17 E38	331	BF	5	R	290	16	DHO
79	1	7	15748						S17 E23				B	200	8	DHO
79	1	8	15748	S17 E03	339	4400	3.0	20387	S17 E13	329	BF	5				
79	1	9	15748	S17 W10	337	4200	3.0	20387	S18 W05	330	(BF)	5	B	250	8	DHO
79	1	10	15748	S17 W22	337	4200	2.5	20387	S18 W14	330	(Y)	5	B	260	7	DHI
79	1	11	15748	S17 W34	338	4500	3.0	20387	S17 W28	331	Y	5	B	310	11	DKI
79	1	12	15748	S17 W46	335	4200	3.0	20387	S18 W43	330	(Y)	4	B	310	12	DKI
79	1	13	15748					20387	S17 W52	328	(Y)	4	B	290	12	DSI
79	1	14	15748	S17 W70	334	4100	3.0		S17 W59				M	680	12	EKC
79	1	15	15748	S17 W82	332	3000	3.0		S17 W79				B	560	8	EAI
79	1	16	15748	S16 W90	327	800	2.0									

MCMATH REGION 15750 CMP DATE 8.9 RETURN OF REGION 15700 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	15750	N25 E82	339	1000	3.0		N23 E80				M	280	6	DAO
79	1	3	15750	N25 E77	331	4000	2.5		N23 E68				M	210	7	DAO
79	1	4	15750	N24 E55	341	1000	2.5	20386	N25 E52	342	B	4	M	170	10	DAO
79	1	5	15750	N24 E44	338	3600	2.5		N23 E37				B	140	3	DAI
79	1	6	15750	N24 E31	338	3300	2.5	20386	N25 E26	343	B	3	R	120	12	DRO
79	1	7	15750						N24 E11				B	90	7	DSI
79	1	8	15750	N24 E03	339	3200	2.5	20386	N25 W01	343	B	3	M	100	13	DSO
79	1	9	15750	N24 W10	337	3600	2.5	20386	N25 W19	344	(AP)	3	B	10	2	BXO
79	1	10	15750	N24 W22	337	3600	2.0	20386	N25 W27	343	(B)	2				
79	1	11	15750	N24 W35	339	3600	2.5		N24 W43				B	30	1	HSX
79	1	12	15750	N24 W47	336	3200	2.5									
79	1	14	15750	N24 W68	332	2500	2.0									

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MCMATH REGION 15750 (CONT) CMP DATE 8.9 RETURN OF REGION 15700 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	15	15750	N24 W78	328	600	1.0									

MCMATH REGION 15753 CMP DATE 10.6

				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	1	4	15753	N17 E78	318	300	2.0		N17 E87				M	280	1	HSX
79	1	5	15753	N18 E67	315	500	2.0		N17 E77				B	140	2	CSO
79	1	6	15753	N18 E50	319	400	2.0									
79	1	8	15753	N18 E25	317	700	2.0									
79	1	9	15753	N18 E10	317	700	2.5									
79	1	10	15753	N18 W02	317	400	2.0									
79	1	11	15753	N18 W16	320	400	2.0									
79	1	12	15753	N18 W28	317	300	1.5									
79	1	14	15753	N18 W54	318	300	2.5									
79	1	15	15753	N18 W66	316	300	1.5		N16 W54				B	100	4	CSO

MCMATH REGION 15764 CMP DATE 10.6

				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	1	10	15764	S27 W01	316	200	1.5	20399	S27 W01	317	B	2				
79	1	11	15764	S26 W13	317	200	1.5									
79	1	12	15764	S26 W26	315	100	1.0									

MCMATH REGION 15754 CMP DATE 12.2 RETURN OF REGIONS 15704 AND 15717 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	5	15754	N19 E86	296	1200	3.0									
79	1	6	15754	N18 E70	299	3100	3.0	20391	N17 E68	301	AP	4	R	290	9	EHO
79	1	8	15754	N19 E44	298	5000	3.0	20391	N17 E36	306	(AP)	5	M	210	26	ESO
79	1		15754					20393	N18 E51	291	B	4	M	260	13	ESO
79	1	9	15754	N19 E32	295	4700	3.0	20391	N17 E23	302	(BP)	5	B	220	14	ESI
79	1		15754					20393	N17 E40	285	(B)	4	B	120	9	DSO
79	1	10	15754	N19 E20	295	4900	3.5	20391	N17 E14	302	(BP)	4	B	100	10	ESI
79	1		15754					20393	N16 E27	289	(B)	3	B	160	4	EAO
79	1	11	15754	N19 E08	296	5500	3.5	20391	N18 W01	304	(BP)	4	B	170	14	ESO
79	1		15754					20393	N17 E14	289	(B)	3	B	260	24	EKI
79	1		15754					20402	N17 E18	285	(D)	3				
79	1	12	15754	N19 W05	294	5500	3.0	20391	N17 W20	307	(AP)	3	B	100	1	HSX
79	1		15754					20393	N15 W05	292	BP	3				
79	1		15754					20402	N16 E03	284	(AP)	3	B	340	20	EKO
79	1	13	15754					20391	N17 W31	307	(AP)	4	B	130	1	HSX
79	1		15754					20393	N14 W17	293	(AP)	4				
79	1		15754					20402	N16 W09	285	(Y)	4	B	240	23	EAC
79	1	14	15754	N18 W30	294	5500	3.5		N17 W33				M	90	5	CSO
79	1	15	15754	N18 W42	292	5300	3.5		N15 W37				B	420	22	EKI
79	1	16	15754	N18 W55	292	5500	3.5		N14 W49				B	350	9	EKI
79	1	17	15754	N18 W69	290	5000	3.0		N15 W65				B	340	10	EAI
79	1	18	15754	N18 W80	290	3800	3.5	20402	N16 W75	285	B	3				

MCMATH REGION 15756 CMP DATE 13.0

				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	1	6	15756	S09 E87	282	900	2.0		S10 E84				R	10	1	AXX
79	1	7	15756						S07 E68				B	10	1	AXX
79	1	8	15756	S11 E58	284	1000	3.0	20392	S08 E53	289	AP	3	M	10	2	AXX
79	1	9	15756	S10 E42	285	900	3.0									
79	1	10	15756	S10 E30	285	1300	3.0									
79	1	11	15756	S10 E16	288	1300	3.0		S12 E19				B	10	3	BXO
79	1	12	15756	S10 E04	285	1300	2.5									
79	1	14	15756	S10 W22	286	1500	2.0									
79	1	15	15756	S10 W35	285	1200	2.0									
79	1	16	15756	S10 W48	285	1200	2.0									
79	1	17	15756	S10 W62	283	1200	2.0									
79	1	18	15756	S11 W74	284	1200	1.5									

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MCMATH REGION 15773 CMP DATE 13.5

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT
79	1	15	15773	N12	W28	278	200	2.5
79	1	16	15773	N12	W41	278	500	2.5
79	1	17	15773	N12	W56	277	500	2.5
79	1	18	15773	N12	W68	278	500	2.0

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	N10	W27				B	30	3	CSO
	N10	W40				B	20	3	CRO
	N10	W54				B	20	3	CRO

MCMATH REGION 15757 CMP DATE 13.6 RETURN OF REGION 15707 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT
79	1	6	15757	S21	E85	284	300	1.0
79	1	8	15757	S25	E70	272	2000	3.5
79	1	9	15757	S26	E52	275	2000	3.0
79	1	10	15757	S25	E38	277	1700	3.0
79	1	11	15757	S25	E25	279	2100	3.0
79	1	12	15757	S23	E12	277	2100	2.5
79	1	13	15757					
79	1	14	15757	S24	W12	276	2700	2.5
79	1	15	15757	S24	W25	275	2500	2.5
79	1	16	15757	S26	W39	276	2700	3.0
79	1	17	15757	S26	W52	273	2500	2.5
79	1	18	15757	S26	W63	273	2700	2.5
79	1		15757					

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20395	S23	E42	283	B	2				
20395	S23	E34	282	(AP)	2	B	10	2	BXC
20395	S24	E26	277	B	3	B	30	3	CSO
20395	S27	E12	275	B	3				
20395	S27	W01	277	(Y)	3	B	50	9	CRI
	S23	W08				M	60	13	DSO
	S24	W28				B	260	16	DAI
	S26	W41				B	110	9	EAO
	S26	W55				B	220	7	EKO
20395	S22	W78	288	AP	4				
20405	S25	W64	274	AP	3				

MCMATH REGION 15769 CMP DATE 14.1

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT
79	1	14	15769	N16	W06	270	400	2.5
79	1	15	15769	N15	W20	270	500	2.0
79	1	16	15769	N15	W34	271	400	1.0
79	1	17	15769	N15	W49	270	200	1.0
79	1	18	15769	N14	W60	270	100	1.0

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	N15	E01				M	30	3	CRO
	N14	W19				B	40	3	DSO
	N13	W36				B	0	1	AXX
	N13	W50				B	10	1	AXX
	N15	W65				M	30	2	BXO

MCMATH REGION 15759 CMP DATE 14.6

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT
79	1	8	15759	N28	E80	262	500	2.5
79	1	9	15759	N28	E63	264	800	3.0
79	1	10	15759	N28	E50	265	1000	3.0
79	1	11	15759	N28	E36	268	1300	3.0
79	1	12	15759	N28	E24	265	900	2.0
79	1	13	15759					
79	1	14	15759	N28	E00	264	800	2.5
79	1	15	15759	N28	W13	263	600	2.0
79	1	16	15759	N28	W27	264	500	2.5
79	1	17	15759	N28	W42	263	400	2.0
79	1	18	15759	N28	W54	264	400	1.5

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	N22	E72				M	50	1	HRX
20396	N28	E60	265	(B)	3	B	10	3	BXO
20396	N27	E51	265	(B)	3	B	30	3	BXI
20396	N27	E37	266	(B)	2	B	60	2	DSO
20396	N27	E22	265	B	2	B	10	2	BXO
20396	N27	E09	267	(AP)	2	B	10	1	AXX
	N27	E04				M	10	2	BXO

MCMATH REGION 15760 CMP DATE 14.8

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT
79	1	8	15760	N21	E85	257	300	1.0
79	1	9	15760	N21	E67	260	200	1.5
79	1	10	15760	N21	E54	261	100	1.5
79	1	11	15760	N21	E40	264	300	2.5
79	1	12	15760	N21	E28	261	100	1.0

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	N18	E70				M	160	6	CRO

MCMATH REGION 15763 CMP DATE 15.0 RETURN OF REGION 15709 ROTATION 4

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT
79	1	8	15763	S25	E80	262	1000	1.5
79	1	9	15763	S26	E66	261	800	2.0
79	1	10	15763	S26	E55	260	900	2.0
79	1	11	15763	S25	E41	263	1000	2.0

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20394	S27	E80	262	AP	4				
20394	S27	E65	260	(AP)	3	B	50	1	HSX
20394	S27	E55	261	(AP)	3	B	80	1	HAX
20394	S27	E41	262	AP	3	B	50	2	DSO

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MCMATH REGION 15763 (CONT) CMP DATE 15.0 RETURN OF PART OF REGION 157Ø9 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	12	15763	S25 E29	260	1000	1.5	20394	S27 E28	259	AP	2	B	10	2	AXX
79	1	13	15763					20394	S27 E17	259	(AP)	2	B	10	1	AXX
79	1	14	15763	S25 E05	259	700	1.5		S26 W03				M	20	3	BXO
79	1	15	15763	S27 W07	257	600	1.5									
79	1	16	15763	S27 W21	258	400	1.5									
79	1	17	15763	S27 W35	256	500	1.5									

MCMATH REGION 15761 CMP DATE 15.4

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	8	15761	S16 E85	257	600	1.0									
79	1	9	15761	S15 E76	251	1400	2.0	20397	S12 E75	250	AP	2				
79	1	10	15761	S15 E63	252	1100	2.5	20397	S13 E67	249	AP	2				
79	1	11	15761	S15 E50	254	1200	2.5		S19 E49				B	0	1	AXX
79	1	12	15761	S15 E36	253	1400	2.5									
79	1	14	15761	S14 E10	254	1000	2.5		S17 E15				M	20	3	BXO
79	1	15	15761	S16 W04	254	700	2.0		S13 W09				B	20	3	CSO
79	1	16	15761	S15 W20	257	600	2.0									
79	1	17	15761	S15 W36	257	400	2.0									
79	1	18	15761	S15 W47	257	400	2.0									

MCMATH REGION 15762 CMP DATE 16.2 RETURN OF REGIONS 15714 AND PART OF 157Ø9 ROTATIONS 2 AND 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	9	15762	S24 E82	245	1700	2.0	20398	S23 E80	245	AP	3				
79	1	10	15762	S24 E73	242	3000	3.0	20398	S20 E61	255	AP	2				
79	1		15762					20400	S23 E69	247	AP	3	B	0	2	BXI
79	1	11	15762	S23 E59	245	3500	3.0	20400	S24 E55	248	B	2	B	70	3	DSO
79	1	12	15762	S24 E47	242	3700	3.0	20400	S22 E35	252	(B)	3	B	70	4	CRI
79	1	13	15762					20400	S22 E24	252	(B)	3	B	100	14	BXC
79	1	14	15762	S24 E20	244	3700	3.0		S24 E22				M	110	20	DSI
79	1	15	15762	S24 E07	243	3500	2.5									
79	1	16	15762	S24 W08	245	3600	3.0		S23 W16				B	470	20	EKI
79	1	17	15762	S23 W24	245	3200	3.0		S24 W29				B	410	18	EKI
79	1	18	15762	S23 W35	245	3600	3.0	20400	S22 W43	253	BP	4				
79	1	19	15762					20400	S22 W56	253	B	4				
79	1	20	15762					20400	S22 W70	254	BP	4				
79	1	22	15762	S23 W87	244	1400	1.0									

MCMATH REGION 15765 CMP DATE 16.8

				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	1	10	15765	N17 E80	235	200	1.5									
79	1	11	15765	N17 E66	238	500	1.0	20403	N16 E61	242	(AP)	2				
79	1	12	15765	N17 E55	234	200	1.0									

MCMATH REGION 15780 CMP DATE 16.3

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	22	15780	N13 W75	232	300	2.0									

MCMATH REGION 15776 CMP DATE 17.4

				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	16	15776	N21 E10	227	300	2.5		N19 E06				B	30	2	CSO
79	1	17	15776	N20 W06	227	400	1.5		N20 W03				B	20	2	BXX
79	1	18	15776	N20 W17	227	400	1.5	20406	N20 W19	229	B	2	M	20	2	CRO
79	1	22	15776	N20 W69	226	400	2.0									

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MCMATH REGION 15768 CMP DATE 18.3 RETURN OF REGION 15712 ROTATION 5

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT
79	1	12	15768	N10	E78	211	700	1.5
79	1	13	15768					
79	1	14	15768	N10	E50	214	1000	3.0
79	1	15	15768	N12	E36	214	1100	2.5
79	1	16	15768	N12	E22	215	1200	2.0
79	1	17	15768	N12	E07	214	1200	2.0
79	1	18	15768	N11	W05	215	1200	2.5
79	1	19	15768					
79	1	20	15768					
79	1	22	15768	N10	W58	215	800	2.5
79	1	23	15768	N11	W72	216	800	1.5

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20404	N10	E73	214	(AP)	3				
20404	N10	E61	215	(AP)	4	B	90	1	HSX
	N10	E58				M	140	3	CSO
	N09	E35				B	120	4	DSO
	N09	E20				B	150	3	CSO
	N10	E08				B	170	3	DHO
20404	N10	W07	217	BF	4	M	150	9	DAO
20404	N10	W19	216	(B)	3				
20404	N10	W33	217	(BF)	4				
20404	N10	W56	213	(AP)	4				
20404	N11	W70	214	(AP)	3				

MCMATH REGION 15767 CMP DATE 16.5

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT
79	1	12	15767	S25	E77	212	1500	1.5
79	1	14	15767	S25	E53	211	1900	1.5
79	1	15	15767	S25	E40	210	1200	2.0
79	1	16	15767	S25	E26	211	1500	2.0
79	1	17	15767	S25	E10	211	1300	1.5
79	1	18	15767	S25	W01	211	1400	2.5
79	1	19	15767					
79	1	20	15767					
79	1	22	15767	S24	W53	210	2100	3.0
79	1	23	15767	S24	W65	209	2100	3.0

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20407	S22	W01	211	B	3	M	100	11	DSO
20407	S23	W14	211	(B)	3				
20407	S23	W27	211	(BF)	4				
20407	S23	W54	211	(B)	4				
20407	S23	W66	210	(B)	3				

MCMATH REGION 15771 CMP DATE 16.7

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT
79	1	14	15771	N22	E54	210	400	1.5
79	1	15	15771	N22	E41	209	300	1.5
79	1	16	15771	N22	E27	210	300	1.5
79	1	17	15771	N22	E12	209	300	1.5
79	1	18	15771	N22	E00	210	200	1.5
79	1	22	15771	N22	W51	208	100	1.0

SUNSPOT DATA

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

MCMATH REGION 15789 CMP DATE 19.9

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT
79	1	23	15789	N30	W49	206	100	1.0
79	1	26	15789	N25	E22	95	300	2.0
79	1	27	15789	N25	E10	94	200	2.0

SUNSPOT DATA

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

MCMATH REGION 15770 CMP DATE 20.0 RETURN OF REGION 15721 ROTATION 4

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT
79	1	14	15770	S16	E70	194	400	2.0
79	1	15	15770	S16	E58	192	500	2.0
79	1	16	15770	S16	E45	192	500	1.5
79	1	17	15770	S16	E29	192	300	1.0

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	S17	E55				B	20	2	BXO

MCMATH REGION 15783 CMP DATE 21.2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT
79	1	20	15783					
79	1	22	15783	S33	W19	176	800	2.0
79	1	23	15783	S33	W31	175	800	2.5
79	1	25	15783					
79	1	26	15783	S33	W70	174	800	3.0
79	1	27	15783	S33	W80	171	800	2.5

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20414	S36	E06	178	(B)	2				
20414	S34	W20	177	(B)	3				
20414	S34	W34	178	(BF)	3				
20414	S34	W55	172	(AP)	2				

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MCMATH REGION 15772 CMP DATE 21.3 RETURN OF REGIONS 15722 AND 15723 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	14	15772	N18 E84	180	700	1.5									
79	1	15	15772	N20 E72	178	2000	3.0		N19 E75				B	70	4	DSI
79	1	16	15772	N20 E60	177	2900	3.0		N19 E64				B	210	3	CKO
79	1	17	15772	N20 E45	176	3100	3.0		N19 E50				B	300	6	CAO
79	1	18	15772	N20 E35	175	3100	3.0	20408	N19 E36	174	BP	4	M	3150	11	EXX
79	1	19	15772					20408	N19 E25	172	(Y)	3				
79	1	20	15772					20408	N19 E16	168	(B)	4				
79	1		15772					20413	N18 E08	176	(Y)	4				
79	1	22	15772	N19 W18	175	4000	3.5	20408	N19 W09	166	(D)	4				
79	1		15772					20413	N18 W18	175	(Y)	4				
79	1	23	15772	N19 W31	175	4000	3.0	20408	N20 W23	167	(BF)	4				
79	1		15772					20413	N18 W31	175	(Y)	4				
79	1	25	15772					20408	N22 W49	166	(AF)	3				
79	1		15772					20413	N18 W60	177	(AP)	3				
79	1	26	15772	N19 W70	174	3200	3.0	20408	N22 W61	166	(AF)	3				
79	1		15772					20413	N19 W75	180	(AP)	2				
79	1	27	15772	N19 W83	174	2500	2.5	20408	N21 W75	166	AF	3				

MCMATH REGION 15781 CMP DATE 21.6

				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	1	22	15781	N09 W13	170	100	1.5	20419	N08 W14	171	(AP)	2				
79	1	23	15781	N09 W26	170	100	1.5	20419	N08 W25	169	(AF)	2				
79	1	25	15781					20419	N07 W50	167	(B)	2				
79	1	26	15781	N09 W67	171	600	2.5	20419	N08 W61	166	(AF)	2				
79	1	27	15781	N08 W81	172	400	1.5									

MCMATH REGION 15774 CMP DATE 21.9 RETURN OF REGION 15737 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	15	15774	S13 E82	168	900	2.0		S14 E79				B	60	2	CSO
79	1	16	15774	S14 E68	169	1400	3.0		S14 E66				B	90	2	CSO
79	1	17	15774	S15 E53	168	1100	3.0		S13 E53				B	170	6	CHO
79	1	18	15774	S14 E41	169	1500	3.5	20409	S15 E40	170	BP	5	M	160	17	DSO
79	1	19	15774					20409	S14 E29	168	(B)	3				
79	1	20	15774					20409	S14 E15	169	(BP)	4				
79	1	22	15774	S15 W10	167	1600	3.0	20409	S15 W13	170	(BP)	3				
79	1	23	15774	S15 W23	167	1500	3.0	20409	S14 W27	171	(AP)	4				
79	1	25	15774					20409	S14 W54	171	(AP)	2				
79	1	26	15774	S15 W65	169	1200	2.0	20409	S14 W68	173	(AP)	3				
79	1	27	15774	S16 W79	170	700	2.0	20409	S14 W80	171	(AP)	2				

MCMATH REGION 15775 CMP DATE 22.8

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	16	15775	S18 E85	152	500	1.0									
79	1	17	15775	S18 E68	153	500	2.5									
79	1	18	15775	S18 E56	154	500	2.5	20411	S18 E53	157	AP	2	M	30	3	CRO
79	1	19	15775					20411	S18 E38	159	AP	2				
79	1	20	15775					20411	S17 E24	160	(AP)	2				
79	1	22	15775	S18 E03	154	400	2.0									
79	1	23	15775	S18 W11	155	400	2.0									
79	1	26	15775	S18 W53	157	400	1.5									

MCMATH REGION 15782 CMP DATE 22.8

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	22	15782	N07 E03	154	300	2.5	20420	N06 E02	155	(AP)	2				
79	1	23	15782	N08 W10	154	200	1.5	20420	N07 W13	157	(AP)	2				
79	1	26	15782	N09 W52	156	400	2.0									
79	1	27	15782	N08 W66	157	400	2.0									

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MCMATH REGION 15784 CMP DATE 23.2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	1	22	15784	S29 E07	150	100	1.0
79	1	23	15784	S29 W05	149	100	1.0
79	1	25	15784				
79	1	26	15784	S29 W47	151	300	3.5
79	1	27	15784	S30 W60	151	300	2.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H
20425	S28 W33	150	(B)	2
20425	S28 W39	144	(AP)	2
20425	S28 W62	153	(AP)	2

MCMATH REGION 15778 CMP DATE 23.7

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	1	17	15778	S11 E80	141	1200	3.0
79	1	18	15778	S11 E68	142	2700	2.5
79	1	19	15778				
79	1	20	15778				
79	1		15778				
79	1	22	15778	S12 E15	142	2400	3.0
79	1	23	15778	S12 E01	143	2100	3.0
79	1	25	15778				
79	1	26	15778	S12 W38	142	1800	3.0
79	1	27	15778	S13 W52	143	2100	3.0
79	1	28	15778				

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	S09 E80				B	140	1	HSX
20410	S11 E63	147	AP	5	M	150	3	CSO
20410	S11 E49	148	(AP)	4				
20410	S12 E37	147	(BP)	4				
20416	S13 E48	136	(AF)	2				
20410	S12 E12	145	(Y)	4				
20410	S11 E00	144	(B)	4				
20410	S12 W27	144	(B)	3				
20410	S12 W40	145	(B)	3				
20410	S12 W58	149	(AP)	4				
20410	S12 W72	150	AP	2				

MCMATH REGION 15779 CMP DATE 23.9

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	1	18	15779	S25 E70	140	300	2.0
79	1	20	15779				
79	1	22	15779	S25 E17	140	700	2.5
79	1	23	15779	S25 E04	140	800	3.0
79	1	25	15779				
79	1	26	15779	S25 W35	139	1000	3.5
79	1	27	15779	S26 W49	140	1800	3.0
79	1	28	15779				
79	1	29	15779				
79	1	30	15779	S26 W69	141	1800	3.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	S27 E66				M	10	1	AXX
20415	S27 E41	143	(B)	3				
20415	S26 E14	143	(B)	3				
20415	S26 E02	142	(B)	3				
20415	S25 W25	142	(B)	3				
20415	S25 W37	142	(Y)	3				
20415	S26 W47	138	(D)	3				
20415	S27 W62	140	Y	4				
20415	S26 W72	137	(D)	2				

MCMATH REGION 15777 CMP DATE 24.5 RETURN OF REGION 15726 ROTATION 3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	1	17	15777	N13 E85	136	800	2.0
79	1	18	15777	N14 E77	133	3000	3.5
79	1	19	15777				
79	1	20	15777				
79	1		15777				
79	1	22	15777	N14 E24	133	5100	3.5
79	1		15777				
79	1		15777				
79	1	23	15777	N15 E11	133	5400	3.0
79	1		15777				
79	1		15777				
79	1	25	15777				
79	1	26	15777	N15 W30	134	5200	3.0
79	1		15777				
79	1	27	15777	N15 W44	135	5300	3.0
79	1		15777				
79	1		15777				
79	1	28	15777				
79	1		15777				
79	1		15777				
79	1	29	15777				
79	1		15777				
79	1		15777				
79	1	30	15777	N14 W84	136	4000	2.5

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	N11 E75				M	60	4	BXO
20412	N12 E62	135	AP	2				
20412	N13 E50	134	(B)	4				
20417	N09 E53	131	(BP)	3				
20412	N13 E23	134	(BP)	4				
20417	N09 E25	132	(B)	2				
20421	N18 E23	134	(AP)	3				
20412	N12 E08	136	(BP)	4				
20417	N10 E11	133	(B)	3				
20421	N18 E08	136	AP	2				
20412	N14 W19	136	(BP)	4				
20412	N14 W33	138	(BP)	4				
20427	N09 W29	134	(B)	2				
20412	N15 W45	136	(Y)	4				
20427	N09 W43	134	(B)	3				
20428	N17 W42	133	(B)	3				
20412	N15 W60	138	Y	4				
20427	N09 W58	136	B	3				
20428	N18 W55	133	B	2				
20412	N13 W78	143	(AP)	3				
20427	N09 W72	137	(BP)	2				
20428	N17 W70	135	(B)	2				

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JANUARY 1979

MCMATH REGION 15787 CMP DATE 26.1 RETURN OF REGION 15751 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	20	15787					20418	N19 E70	114	(AP)	3			
79	1	22	15787	N20 E45	112	3700	3.5	20418	N19 E41	116	(BP)	4			
79	1	23	15787	N22 E32	112	3400	3.0	20418	N19 E30	114	(BP)	4			
79	1	25	15787					20418	N20 E04	113	(BP)	4			
79	1		15787					20426	N25 E35	82	(AP)	2			
79	1	26	15787	N20 W08	112	3200	3.5	20418	N21 W08	113	(B)	3			
79	1	27	15787	N20 W21	112	3000	3.5	20418	N20 W19	110	(B)	3			
79	1	28	15787					20418	N20 W36	114	B	3			
79	1	29	15787					20418	N20 W47	112	(B)	3			
79	1	30	15787	N20 W60	112	3700	3.5								
79	1	31	15787	N20 W74	112	3400	3.0								
79	2	01	15787	N21 W87		1300	2.5								

MCMATH REGION 15785 CMP DATE 26.7 RETURN OF POSSIBLE PART OF REGION 15733 OR NEW ROTATIONS 1 OR 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	22	15785	S14 E56	101	2800	3.5	20422	S14 E55	102	(AP)	2			
79	1	23	15785	S14 E43	101	3000	3.0	20422	S14 E36	108	(Y)	3			
79	1	25	15785					20422	S13 E09	108	(Y)	4			
79	1	26	15785	S14 W01	105	3200	3.0	20422	S13 W03	108	(B)	3			
79	1	27	15785	S14 W13	104	3000	3.0	20422	S14 W15	106	(BP)	4			
79	1	28	15785					20422	S14 W29	107	BP	3			
79	1	29	15785					20422	S14 W42	107	(BP)	2			
79	1	30	15785	S15 W52	104	3000	3.5								
79	1	31	15785	S15 W65	103	2700	3.0								
79	2	01	15785	S15 W77		2300	2.5								

MCMATH REGION 15786 CMP DATE 27.7 (PROBABLY NEW)

				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	22	15786	S25 E68	89	3200	3.5	20423	S25 E61	96	(BP)	4			
79	1	23	15786	S25 E54	90	3800	3.5	20423	S25 E47	97	(AP)	4			
79	1	25	15786					20423	S25 E24	93	(AP)	5			
79	1	26	15786	S25 E12	92	4100	3.5	20423	S25 E11	94	(AP)	4			
79	1	27	15786	S27 E00	91	3800	3.0	20423	S26 E03	88	(BP)	4			
79	1	28	15786					20423	S26 W13	91	BP	4			
79	1	29	15786					20423	S26 W25	90	(BP)	3			
79	1	30	15786	S26 W38	90	3700	3.5								
79	1	31	15786	S26 W50	88	3500	3.0								
79	2	01	15786	S26 W63		2700	3.0		S27 W62				B	138	2 C
79	2	02	15786	S27 W76		2800	2.0		S25 W81				B	80	1 H

MCMATH REGION 15789 CMP DATE 28.2

				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	23	15789	N30 W49	206	100	1.0								
79	1	26	15789	N25 E22	95	300	2.0								
79	1	27	15789	N25 E10	94	200	2.0								

MCMATH REGION 15809 CMP DATE 28.5

				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	02	15809	N14 W68		100	1.0								

MCMATH REGION 15788 CMP DATE 29.0 RETURN OF PART OF REGION 15733 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	22	15788	S21 E88	69	2800	2.0	20424	S22 E78	79	(AP)	3			
79	1	23	15788	S23 E73	71	2900	2.0	20424	S22 E64	80	(AP)	3			
79	1	25	15788					20424	S23 E38	79	(AP)	4			
79	1	26	15788	S23 E30	74	2700	2.5	20424	S23 E25	80	(AP)	4			
79	1	27	15788	S23 E18	73	2800	2.0	20424	S23 E12	79	(AP)	4			

CONTD

REGIONS OF SOLAR ACTIVITY

JANUARY 1979

MCMATH REGION 15788 (CONT) CMP DATE 29.0 RETURN OF REGION 15733 ROTATION 4

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	1	28	15788				
79	1	29	15788				
79	1	30	15788	S23 W22	74	2800	2.5
79	1	31	15788	S23 W35	73	2600	2.5
79	2	01	15788	S23 W47		2600	2.5
79	2	02	15788	S23 W61		2200	2.0
78	2	03	15788				
79	2	04	15788	S23 W90		500	1.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
20424	S23 E03	75	BP	4			
20424	S24 W13	78	(BP)	4			
	S24 W51			B	163	1	H
	S23 W66			B	130	1	H
	S23 W84			B	50	1	H

MCMATH REGION 15791 CMP DATE 30.3 RETURN OF REGION 15755 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	1	26	15791	N26 E49	55	400	1.5
79	1	27	15791	N25 E35	56	400	1.5
79	1	30	15791	N26 W04	56	400	1.0
79	1	31	15791	N25 W19	57	300	1.0
79	2	01	15791	N25 W32		300	1.0
79	2	02	15791	N25 W45		400	1.0

SUNSPOT DATA

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

MCMATH REGION 15790 CMP DATE 30.4 RETURN OF REGION 15739 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	1	26	15790	S35 E45	59	400	2.0
79	1	27	15790	S34 E35	56	600	1.5
79	1	30	15790	S34 W03	55	500	1.5
79	1	31	15790	S34 W16	54	300	1.5
79	2	01	15790	S34 W27		400	1.0
79	2	02	15790	S34 W41		300	1.0
79	2	04	15790	S34 W66		300	1.0
79	2	05	15790	S34 W79		300	1.0

SUNSPOT DATA

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

MCMATH REGION 15792 CMP DATE 31.1 RETURN OF REGION 15741 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	1	26	15792	S15 E60	44	1500	2.5
79	1	27	15792	S15 E46	45	1200	2.5
79	1	28	15792				
79	1	30	15792	S15 E06	46	800	2.0
79	1	31	15792	S15 W08	46	800	2.0
79	2	01	15792	S15 W19		900	1.5
79	2	02	15792	S15 W32		700	1.0
79	2	04	15792	S15 W58		600	1.0
79	2	05	15792	S15 W71		500	1.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
20429	S18 E42	36	AP	3			

MCMATH REGION 15797 CMP DATE 31.9

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	1	30	15797	N10 E19	33	100	1.0
79	1	31	15797	N10 E03	35	100	1.0
79	2	01	15797	N09 W09		100	1.0
79	2	02	15797	N09 W22		100	1.0
79	2	04	15797	N09 W49		200	1.0
79	2	05	15797	N10 W62		200	1.5

SUNSPOT DATA

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

NOTE: NO CALCIUM SPECTROHELIOGRAMS WERE SECURED AT THE MCMATH-HULBERT OBSERVATORY ON JANUARY 1,7,13, 19,20,21,24,25,28 AND 29, 1979.
NO SUNSPOT OBSERVATIONS WERE MADE AT MT. WILSON ON JANUARY 3,5,7,14,15,16,17,21,24,30 AND 31, 1979

DAILY CALCIUM PLAGE INDEX

JANUARY 1979

YR	MO	DAY	INDEX
79	1	1	*
79	1	2	59.8
79	1	3	63.9
79	1	4	59.0
79	1	5	50.5
79	1	6	56.5
79	1	7	*
79	1	8	55.6
79	1	9	55.0
79	1	10	55.7
79	1	11	65.0
79	1	12	55.7
79	1	13	*
79	1	14	50.3
79	1	15	39.9
79	1	16	42.4
79	1	17	33.8
79	1	18	36.9
79	1	19	*
79	1	20	*
79	1	21	*
79	1	22	66.1
79	1	23	65.2
79	1	24	*
79	1	25	*
79	1	26	67.1
79	1	27	56.4
79	1	28	*
79	1	29	*
79	1	30	50.8
79	1	31	45.9

* NO OBSERVATIONS

SUDDEN IONOSPHERIC DISTURBANCES

JANUARY 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	0852	0909	0858	1-	3				1		1		0857E	15746
01	1450	1530	1508	1-	1				1		1		1446	15741
02	1030	1158	1106	1-	1			1					*	
02	1312	1323		1-	1			1					*	
02	1826	1857	1833	1-	5	1			1		1		1825	15750
02	1946	2031	1954U	1-	1				1				1945	15741
03	1139	1202	1144	1-	5			5	4		3		1135	15740
03	1256	1324	1259	1-	1			1					*	
03	1600	1715	1620	1-	5				2	1	1		1600	15750
03	1723	1752	1728	1-	1					1			1720	15750
03	1808	1832	1818	1-	1				1	1			1807	15741
03	2145	2222	2151	1-	5				3	1	1		2149E	15741
05	0107	0135	0114	1-	1				1				0114E	15746
05	1106	1150	1119	1+	5			6	4		3		NF	
05	1158	1207D	1207	1-	1				1		1		*	
05	1230	1300	1235	1-	5		1	1	1		1		*	
05	1515	1700	1534	1-	3				1	1	2		NF	
05	1645	1716	1650	1-	1					1			*	
05	1830	1930	1835	1-	5	1			1	3			1826	15740
05	2311	2346	2322	1-	1				1				2309	15745
08	0224	0409	0248	2+	3	1			1				0229	15754
08	0820	0845	0845	1-	1			1					*	
08	0936	1017		1-	1			1					*	
08	1408	1420	1412	1-	5	1		1	2		1		1407	15749
08	1443	1600	1455	1-	5	1			1	1	1		1442	15745
08	2234	2256	2241	1-	3				2				2232	15744
09	0849	1018	0905	1-	3			3					0844	15744
09	1909	1942	1917	1-	5	1			1		1		1906	15749
10	1110	1125	1115	1-	5			3	3		2		NF	
10	1620	1700	1631	1-	5				1		3		1616	15749
10	1853	1937	1902	1-	1					1			1851	15749
11	0742	0916	0749	3	5			2	1		1		0743	15746
11	1117	1122	1120	1	5	1		5	3		2		*	
11	1236	1400	1258	2	5	2		5	4		2		*	
11	1702	1717	1704	1-	3					1	1		1658	15745
11	1737	1805	1740	1-	3						2		1738	15749
12	0027	0232	0035	1+	5	1			2				0028E	15748
12	1105	1200	1117	1-	5	1		6	4		2		1102	15747
12	1330	1430	1340	1-	1				1				1328	15754
12	1622	1648	1627	1-	5	1			1	1	1		1628	15754
12	1845	1859	1847	1-	1				1	1			1841	15748
12	2155	2334	2225	1-	3				1	1			2153	15748
12	2215	2245	2228	1-	1				1				2214	15754
13	1151	1235	1159	1-	5	1		8	4		3		1144	15754
13	1235	1256D	1256	1-	5			4	1		1		1233	15748
13	1327	1340D	1340	1-	5	1		7	2		3		1322	15756
13	1343	1420	1348	1-	5			3	2		1		1349E	15770
13	1538	1630	1551	1-	1				1		1		1534	15754
13	1818	1858	1824	1-	5	1			2	1	3		1816	15748
13	1932	2114	1938	2-	5	2	1		2	1	3		1930	15754
13	2236	2356	2243	1	5				1	1	1		2236	15748
14	1155	1230	1158	1+	5	2		9	4		3		1203E	15754
14	1257	1430	1310	1 +	5	1		8	4		3		1255	15748
14	1442	1545	1503	1-	5			2	1		1		1444	15754
14	1634	1730	1645	1-	3				1	1	1		1633	15748
14	1703	1730	1707	1-	1					1			1701	15754
14	2306	0000	2314	1-	5	1			2				*	
15	1042	1230	1116	2	5			2	1		1		1039	15754
15	1101	1130	1105	2	3	2		7	2		2		1058	15748
15	1338	1410	1341	2	5	2		7	4		3		1332	15763
15	2008	2125	2015	1-	5	1	1		3	1	3		2008	15754
15	2228	2342	2244	1-	3				2				*	
16	0737	0920D	0749	1-	5			4	1		1		0738	15754
16	0848	0920	0854	1-	1						1		0848	15762
16	0920E	1033D	0927	1-	3			3	2				0915	15762
16	1038	1055	1039	3	5	3		8	2		2		1040E	15762
16	1416	1500	1430	1-	3			1	1		1		1410	15754
16	1634	1730	1645	1-	1						1		1633	15773
16	1759	1821	1804	1-	1					1			1803E	15762
16	1856	1940	1901	1-	5	1			1	1	1		1855	15754
17	1613	1730	1623	1-	1				1		1		1617	15772

SUDDEN IONOSPHERIC DISTURBANCES

JANUARY 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
18	0856	1037	0904	1-	5			5	2		1		0850	15762
18	0914	0925	0916	1-	1						1		0915	15754
18	1213	1253	1229	1-	1			1					1215	15754
18	1355	1408D	1408	1-	5			3	2		2		NF	
18	1418	1432D	1432	1-	5			1	2		1		1416	15754
18	1439	1510	1453	1-	5			2	2		1		1446E	15754
18	1528	1620	1535	1-	3	1			1		1		1525	15774
18	1814	1829D	1818	1-	1					1			1812	15774
18	1829	1843D	1834	1-	1					1			1831	15774
18	1846	1913	1854	1-	1				1				1851	15767
18	2001	2013	2006	1-	1					1			2001	15754
19	0240	0310	0246	1-	1				1				0239	15777
19	0424E	0541D	0442	1-	3	1			1				*	
19	1231	1300	1237	1	5			2	2		1		NF	
19	1340	1400	1345	1-	5	1		4	3		1		1338	15762
19	1958	2058D	2021	1-	1				1	1			2001	15777
19	2233	0008	2300	1-	3				2	1			2228	15767
20	1105	1205	1121	1-	5	1		4	3		3		NF	
20	1643	1735	1652	1-	1				1		1		1644E	15785
21	0836	1036	0939	1-	3			2	1				*	
21	0930	1000	0936	1-	5	1		4	3		3		*	
21	1048	1110	1053	1-	5			4	3		2		*	
21	1159	1230	1208	1-	3				1		2		*	
21	1313	1430	1327	2	5	3	1	9	5		3		1312	15762
21	1511	1620	1520	1-	5			1	2		1		1511	15774
22	0524	0606D	0531	1-	1				1				0519	15761
22	0606E	0708	0625	1-	1				1				0611	15787
22	1001	1051	1014	1-	3			1	1		1		*	
22	1004	1251	1111U	1-	3			2					*	
22	1459	1615	1523	1-	1				1		1		1454E	15785
22	1823	1900	1039	1-	3				2	1	1		1823	15788
23	0635	0707	0643	1-	1				1				0635E	15772
23	1820	1838	1822	1-	1					1			1820	15786
23	2007	2023	2010	1-	3	1			1	1			2006	15777
24	0141	0218	0152	1-	1				1				0137	15777
24	0416	0533	0428	1-	1				1				0416	15786
24	0816	0914D	0826	1-	3				1		1		0818E	15786
24	0914E	0932	0922	1-	1				1				0910	15778
24	1223	1345	1239	1	5	2		8	3		2		1225	15786
24	1911	1935	1920	1-	1	1							1912	15785
24	2256	0000	2313	1-	3				2				*	
25	0321	0526	0331	3	3	1			1				0318	15785
25	1418	1600	1429	1	5	2		7	3	1	2		1417	15786
26	0856	0937	0908	1-	1				1				0853	15779
26	1143	1230	1152	1-	5				2		2		1143	15785
27	0829	0919	0838	1-	3				1		1		0833E	15787
27	1037	1115	1045	1-	5			1	3		2		NF	
27	1850	1917	1854	1-	3	1			1	1			1849	15777
28	0916	0951	0920	1-	1				1				0915	15777
28	1309	1350	1313	1	5	3	1	5	5		3		1304	15777
28	1422	1437	1427	1-	5	1		3	2		2		1411	15777
28	1733	1804D	1739	1-	1					1			1733E	15785
28	1804E	1843	1812	1-	3	1			1	1			1804	15785
28	1903	1947	1915	1-	1				1	1			1905	15779
29	1523	1537D	1537	1	1				1		1		1522	15802
29	1605	1645	1613	1-	1				1		1		1602	15800
30	0018	0056	0026	1-	1				1				0019	15786
30	1110	1145	1118	1-	5		1	4	4		2		1113E	15786
30	1432	1454	1447	1-	1	1							1425	15802
31	0736	0839		1-	1			1					0735	15804
31	0932	1130	0940	1-	1						1		0929	15800
31	1446	1500	1451	1-	5			1	2	1	1		1444	15786
31	1617	1715	1626	1-	3				1	1	1		1614	15786

SUDDEN IONOSPHERIC DISTURBANCES

JANUARY 1979

PERIODS OF NO OBSERVATIONS:

DATE	TIME (UT) and STATION
02	0000-2400 TN
07	1830-2230 UM (13 kHz)
10	2043-2100 TM
11	1200-1400 UM (10 kHz and 13 kHz)
12	0945-1030 UM (10 kHz and 13 kHz)
16	1000-1400 UM (16 kHz)
20	0000-2400 TN
22-24	0000-2400 TN
23	1000-1215 UM (16 kHz)
24	1235-1900 UM (16 kHz)
30	0812-1017 TM, 1000-1400 UM (16 kHz)

STATIONS REPORTING FOR JANUARY 1979

CHILWORTH (CL) (SCNA)
DARMSTADT (DA) (SWF)
HERSTMONCEUX (HC) (SEA)
HIRAISO (HI) (SWF)
HUANCAYO (HU) (SWF)
HUMAIN (HM) (SEA)
INUBO (IN) (SPA)
JULIUSRUH (JH) (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)
SOFIA (SF) (SEA)
ST CLOUD (SC) (SES)
TABLE MOUNTAIN (TM) (SPA, LF-SPA)
TORINO (TN) (SPA)
UCCLE (UC) (SEA)
UPICE (UI) (SEA)
VSETIN (VS) (SEA)
ZILINA (ZL) (SEA)

SIDs BY McMATH REGION

JANUARY 1979

DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
REGION																															
15740			1		1																										
15741	1	1	2																												
15744								1	1	1																					
15745					1			1			1																				
15746	1				1						1																				
15747												1																			
15748												3	3	2	1																
15749								1	1	3	1																				
15750		1	2																												
15754								1				3	3	3	2	3		5													
15756													1																		
15761																						1									
15762																4		1	2		1										
15763															1																
15767																		1													
15770													1																		
15772																	1						1								
15773																1															
15774																		3			1										
15777																			2				1	1			1	3			
15778																								1							
15779																										1		1			
15785																				1		1		1	1	1		2			
15786																							1	3	1					2	2
15787																						1					1				
15788																						1									
15800																													1		1
15802																													1	1	
15804																															1
X-RAY																															
UNKNOWN					2						1							1	1	1							1				
NO FP	5	1		3			2			2				1	1				1		4	2		1							

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JANUARY 1979

JAN 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
01	0000	0734	CULG				0000	0500					IIIN,W
			CULG				0029	0032.5	3	0029.5	0032.5	3	IIIGG,V
			CULG				0221	0224		0221.5	0222.5		IIIG,W
			CULG	0226		1							FAST DRIFT
			CULG				0249	0251.5	2	0249.5	0250	2	POSSII
			CULG				0249	0251.5	2	0249.5	0250	2	IIIGG,RS
			CULG				0252.5	0253.5	1				IIIG
			CULG	0316.5	0317								IIIG,W
			CULG	0323	0325	1	0321.5	0329	2	0321.5	0329	1	IIIGG
			CULG				0325	0325.5	3	0325.5	0326	2	IIIG
			CULG				0348.5	0349.5	1				IIIG
			CULG				0407.5	0408	1				IIIG
			CULG	0419.5	0421	1	0419	0421.5	2	0419.5	0421	2	IIIGG
			CULG	0423	0423.5	1	0423	0423.5	1				IIIG
			CULG				0437	0438.5	1				IIIG,RS
			CULG				0440.5	0441.5					IIIG,W
			CULG				0449	0450	1				IIIG
			CULG				0500	0734					IIIS,W
			CULG				0534.5	0535	2				IIIB
			CULG				0623	0648					IS,W
			CULG				0648	0734	1				IS
			CULG				0652.5	0653	2				IIIG
	0722	1044	DURN				0723	0733	2				IIIGG
	1148	1520	DURN				1206.1	1207.7	3				IIIGG
	0758	1500	WEIS				1212.5	1219.3	2				IIIGG
	1218	2115	SGMR										
			WEIS				1233.7	1234.2	1				IIIG
			WEIS				1317.7	1318.7	1				IIIG
			DURN				1328.5	1328.5	2				III
			WEIS				1338.5	1338.6	2				IIIB
	2035	2400	CULG				2035	2400					IIIS,W
			CULG				2038		1				IIIB
			CULG				2039		2	2039		1	IIIB
			CULG				2139		3	2139		2	IIIB
	2219	2400	MANI										
02	0000	0909	MANI										
	0000	0735	CULG				0000	0216					IIIN,W
			CULG				0002.5	0006.5	1				RS,DP
			CULG				0004.5	0007	3	0005	0007.5	3	IIIG
			CULG	0005.5	0006	1	0002.5	0008	1	0003	0007.5	2	IIIGG
			CULG	0015.5	0016	1	0015.5	0016	1				IIIG
			CULG	0020	0020.5	1	0020	0020.5	2				IIIG
			CULG	0233	0735		0428	0604					IN,W
			CULG	0233	0233.5	1	0233	0234	1				IIIG
			CULG				0326						IIIB,W
			CULG				0447	0447.5	1				IIIG
			CULG	0553.5	0556.5	2	0553.5	0556.5	2				IIIGG
			CULG				0604	0735	1				IS
			CULG	0639	0639.5	2	0638.5	0640.5	2				IIIGG,V
			CULG	0642	0645	2	0642.5	0644.5	2				IIIG
			CULG				0721	0721.5					IIIB,W
	0724	1520	DURN				0724 E	1520 D	1				I,DC
			CULG				0728						IIIB,W
			CULG				0730.5	0731.5	2				IIIG
			WEIS				0802.5	1438.7	1				IN
	0758	0837	WEIS				0804.7	0805.3	2				IIIG
			DURN				0839.7	0840.0	3				IIIG
			DURN				0848.2	0848.2	1				III
	0842	1500	WEIS				0849.7	0805.1	2				IIIG
			WEIS				0858.1	0858.2	1				IIIG
			WEIS				0920.5	0921.5	2				IIIG
			WEIS				1123.5	1123.9	1				IIIG
			DURN				1129.6	1129.7	3				III
			WEIS				1139.6	1139.8	2				IIIG
			DURN				1151.5	1152.6	1				IIIG
			DURN	1158.0	1158.7	3							IIIGG
			WEIS				1201.3	1202.6	1				IIIG
			WEIS				1224.8	1225.3	1				IIIG
			DURN				1256.1	1258.9	3				IIIGG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JANUARY 1979

JAN 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
02			WEIS				1306.1	1308.8	3				IIIGG
			WEIS				1318.1	1318.3	1				IIIG
			DURN				1352.7	1352.9	1				IIIG
			DURN				1357.0	1358.7	3				IIIGG
			WEIS				1402.6	1402.9	1				IIIG
			WEIS				1406.9	1407.7	3				IIIGG
			DURN				1411.5	1421.5	3				IIIG,N
			WEIS				1420.6	1422.8	2				IIIGG
			WEIS				1425.6	1431.8	2				IIIGG
			DURN	1440.3	1440.5	3							IIIG
			DURN				1444.9	1444.9	2				III
			WEIS				1450.4	1450.5	2				IIIG
			WEIS				1454.9	1455.2	1				IIIG
			DURN				1514.9	1516.6	3				IIIG
	1218	2116	SGMR				1748.8	1749.1	1				IIIG
			SGMR				2021.0	2021.2	1				III
	2036	2400	CULG				2036	2138					IS,W
			CULG				2036	2400					IIIS,W
			CULG	2049	2051	3							FAST DRIFT
			CULG	2100.5	2101	1							FAST DRIFT
			CULG	2111	2111.5	3	2111	2112	3				IIIG
			CULG	2115.5	2116	1	2115.5	2116	3	2115.5	2116	2	IIIG
			CULG				2118	2119	1	2118	2118.5	1	IIIG
			CULG	2131.5	2132	2	2131.5	2132	2				IIIG
			CULG				2137.5		2	2137.5		1	IIIB
			CULG				2138	2224	1				IS
			CULG	2156.5	2203	2	2152	2203	2	2153	2203	2	IIIGG
			CULG				2200.5	2201	3				IIIB
			CULG				2206	2207	1	2206	2207	1	IIIG
			CULG	2217	2218	1	2217	2218	1				IIIG
			CULG				2224	2400					IS,W
			CULG	2239.5	2247.5	2	2239.5	2251	3	2241	2251	3	IIIGG,V
			CULG	2247	2329	1							IN
			CULG				2252.5	2305.5	3				II
			CULG							2255.5	2256	1	IIIG
			CULG				2323	2323.5	1				IIIG
	2228	2400	MANI							2331.6	2332.8	1	IIIG
			CULG	2331	2334	3	2331	2334	3	2330.5	2334.5	3	IIIGG,V
			CULG				2343.5	2345	2	2343.5	2345	1	IIIG
			CULG				2354	2355	2	2354.5	2355	1	IIIG
03			CULG	0000	0132		0000	0028					IS,W
	0000	0736	CULG				0000	0011					IIIS,W
			CULG				0002.5	0003	2	0003	0003.5	2	IIIG
			CULG	0006	0007.5	2	0006	0005	2	0006	0007.5	2	IIIGG,U
			CULG				0011	0736					IIIN,W
			CULG	0035.5	0039.5	2	0036.5	0039.5	1				IIIG
			CULG	0046	0047	1	0046		2				IIIG,U
			CULG				0050		2				IIIB
			CULG				0122.5	0123	1	0123	0123.5	2	IIIG
			CULG				0129	0133	1	0129	0133	2	IIIGG
			CULG	0135.5		1							FAST DRIFT
			CULG	0214	0526								IN,W
			CULG				0215.5	0216	2	0215.5	0216	2	IIIG
			CULG	0218	0219	1	0217.5	0221	2	0217.5	0221	2	IIIGG
			CULG	0246.5	0250.5	2							UNCLF
			CULG	0246.5	0250.5	2	0246.5	0249	2				IIIGG
			CULG				0256	0302	1				IS
			CULG				0302	0736					IN,W
			CULG	0323.5	0324	3	0323.5	0324	2				IIIG
			CULG	0327	0327.5	2							FAST DRIFT
			CULG				0341	0341.5	1	0341	0342	2	IIIG
			CULG				0400.5	0404	1	0401	0404	1	IIIGG
			CULG	0427		1							FAST DRIFT
			CULG				0433	0437	1				IIIG
			CULG	0442		2							FAST DRIFT
			CULG	0448	0449	1							FAST DRIFT
	0000	0905	MANI							0603.0	0605.0	1	III
			CULG	0603	0611	2	0602.5	0611	3	0602.5	0608	3	IIIGG,V
			CULG				0607.5	0636.5	3				II

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JANUARY 1979

JAN 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	
03			CULG				0615	0615.5	2				IIIG
			CULG	0619.5	0632	1							N,FASTDRIF
			CULG	0702	0702.5								W,FASTDRIF
	0723	1336	DURN				0724.7	0725.4	2				IIIG
			CULG	0734.5	0736	1							FAST DRIFT
			DURN	0914.2	0914.5	3							IIIG
			DURN				0922.1	0923.1					IIIG
	0756	1457	WEIS				0924.2	0924.5	1				I IIG
			WEIS				0932.1	0933.1	2				IIIG
			WEIS	1025.7	1025.8	2							IIIB
			DURN	1027.3	1027.3	2							IIIG
			DURN	1030.7	1031.1	3	1030.7	1031.1	3				IIIGG
			WEIS	1033.6	1033.7	1							IIIB
			WEIS	1037.2	1037.4	2							IIIG
			WEIS				1041.7	1042.3	3				IIIG,RS
			DURN				1049.9	1050.4	3				IIIG
			WEIS				1100.3	1101.4	2				IIIG
			WEIS	1110.4	1114.7	1							I IIGG
			DURN	1125.1	1132.2	3	1124.7	1132.2	3				IIIGG,RS
			WEIS				1126.3	1128.2	1				IIIG
			WEIS				1134.5	1135.7	2				IIIG
			WEIS				1139.0	1145.8	3				IIIGG,RS
			DURN	1206.7	1206.7	2							IIIG
			DURN	1227.0	1227.0	1	1227.0	1227.3	3				I IIG
			WEIS				1230.3	1231.1	2				IIIG
			DURN				1230.6	1230.8	1				IIIG
			WEIS	1234.7	1234.8	1							IIIB
			WEIS				1236.9	1237.8	2				IIIG
			WEIS				1240.6	1240.8	2				IIIG
			DURN				1245.9	1246.2	3				IIIG
			WEIS				1255.9	1256.3	2				IIIG
			WEIS				1304.6	1305.6	2				I IIG
	1218	2117	SGMR				1305.0	1305.7	1				IIIG
			WEIS	1407.7	1407.9	1							IIIG
			WEIS				1410.7	1413.5	2				I IIG
			SGMR				1410.9	1411.9	2				IIIS
			WEIS				1414.8	1416.3	2				IIIG
	1432	1520	DURN										
			SGMR				1625.5	1626.0	3				IIIG
			SGMR				1900.2	1902.8	2				I IIG
	2037	2400	CULG				2037	2114	1				IIIS
			CULG	2044.5	2045.5	1							FAST DRIFT
			CULG							2049	2400	1	IIIN
			CULG	2052.5	2054	1							FAST DRIFT
			CULG				2114	2400					IIIS,W
			CULG				2140.5	2141	3	2140.5	2141	2	IIIG
			CULG				2143	2143.5	1	2143.5	2144	1	IIIG
			CULG	2145	2146.5	2	2144	2147	3	2145.5	2147.5	3	IIIG,V,U
			CULG							2148	2210	1	S.W.F.
			CULG	2148	2148.5	2	2148	2153.5	2				II
			CULG	2149	2154	1							IIIG
			CULG	2211	2211.5	2							IIIG
			CULG	2219	2220.5	1	2219.5	2220.5	2	2220	2221	2	IIIG
	2220	2400	MANI										
			CULG	2223	2225	2	2223	2226	2	2223	2224	2	IIIGG
			CULG				2229	2400					IS,W
			CULG				2341.5	2342	2				IIIG
04	0000	0736	CULG				0000	0310					IIIS,W
	0000	0915	MANI										
			CULG				0039.5		1				IIIB
			CULG							0039	0310		IIIN,W
			CULG				0041	0041.5	2	0041.5	0042	1	IIIG
			CULG				0047	0047.5	2				IIIG
			CULG				0134		1				I IIB
			CULG				0137		1				IIIB
			CULG	0212	0212.5	1							I IIG
			CULG				0310	0736	1	0310	0510	1	IIIS
			CULG				0348.5	0349	2	0348.5	0349	2	IIIB
			CULG	0512.5	0513.5	2	0512.5	0513.5	2				IIIG

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JAN 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	
04			CULG	0547.5	0548								W,FASTORIF
			CULG	0554	0555	1	0554	0555	1				IIIG
			CULG	0604.5	0606	2	0604.5	0606	2				IIIG
			CULG	0652	0654	2							IIIGG
	0723	1520	DURN										
	0755	1440	WEIS				0806.0	1454	1				IIIN
	1444	1458	WEIS				1114.5	1118.3	2				IIIGG
	1218	2118	SGMR										
			WEIS				1323.6	1324.5	2				IIIG
	2032	2400	CULG				2032	2400	1				IIIN
			CULG							2032	2400	1	IIIS
			CULG	2042	2400		2059	2400					IN,W
			CULG	2104	2105	2							IIIG
			CULG				2128	2129	2	2128.5	2129	2	IIIG
			CULG	2136.5	2138	2	2136.5	2138	2	2136.5	2138	2	IIIGG
			CULG				2145	2145.5	2				IIIB
	2226	2400	MANI										
			CULG				2258	2315	1				IS
			CULG	2306.5	2307.5								IIIG,W
05			CULG							0000	0737	1	IIIN
			CULG				0000	0737	1				IIIS
	0000	0737	CULG				0000	0643					IS,W
			CULG	0002	0002.5	2	0002	0002.5	2				IIIG
			CULG	0014.5	0016.5	1							IIIG
			CULG	0017.5	0018	2							IIIG
			CULG	0019	0023								IIIG,W
			CULG				0022.5	0054.5	3	0027.5	0038	3	II
	0000	0918	MANI							0028.7	0030.4	1	IIIG
			CULG	0038	0038.5	1							IIIG
			CULG	0108	0311								IS,W
			CULG	0343	0346	1	0341.5	0348	2	0344	0348	2	IIIGG
			CULG	0501.5	0502	1							IIIG
			CULG	0511	0513.5	2	0511.5	0513	3	0512	0513	3	IIIGG,V
			MANI							0512.3-	0512.9	1	III
			CULG	0517	0521	1							IIIG
	0722	1243	DURN										
	0756	1500	WEIS				0852.0	1456.0	1				IIIN
			WEIS				1140.0	1456.0	1				IN
	1218	2119	SGMR										
	1310	1520	DURN										
			CULG				2037	2400	1	2056	2400	1	IIIS
			CULG	2049	2049.5	1							IIIG
			CULG				2117		2	2117		1	IIIB
			CULG				2144	2202					IS,W
	2037	2400	CULG	2213	2301	1	2037	2144	1				IS
	2222	2400	MANI										
			CULG	2301	2400								IN,W
			CULG	2311.5	2312	2							IIIG
06	0000	0736	CULG							0000	0103	1	IIIS
			CULG				0000	0736					IIIS,W
	0000	0915	MANI										
			CULG	0010.5	0101	1							IIIG
			CULG				0020	0038	2				II
			CULG	0027		1	0027		2				IIIB
			CULG	0040.5	0054								POSSIV,W
			CULG	0055	0055.5	2	0055	0055.5	2				IIIG
			CULG	0105.5	0106	3	0105.5	0106	2				IIIG
			CULG	0145.5	0525.5	1							IIIG,N
			CULG	0212	0213.5	2							IIIG
			CULG				0216		1	0216		2	IIIB
	0722	1520	DURN				0722 E	0800	1				I
	1055	1500	WEIS				1229	1415	1				IIIN
	1218	2120	SGMR				1636.3	1647.8	2				IIIG
			CULG	2039	2141								IN,W
			CULG				2039	2317	1				IS
	2039	2400	CULG				2039	2049	1				IIIS
			CULG				2049	2400					IIIS,W
			CULG	2141	2249								IS,W

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JAN 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
06			CULG							2148	2148.5	1	IIIB
	2231	2400	MANI										
07	0000	0253	CULG				0000	0253					IIIS,W
			CULG	0037	0253								IS,W
	0000	0911	MANI							0229.0	0229.6	1	III
			CULG				0229	0230	3	0229	0230	3	IIIG
			CULG	0316	0548		0514	0738					IS,W
	0316	0738	CULG				0316	0738					IIIS,W
	0722	1112	DURN										
	0754	1504	WEIS				1442.3	1443.4	2				IIIG
	1208	1520	DURN				1443.2	1443.8	3				IIIG
	1218	2121	SGMR				1443.6	1444.0	1				IIIG
	2038	2400	CULG				2038	2115					IIIS,W
			CULG				2043.5	2044.5	2				IIIG
	2216	2400	MANI										
			CULG				2338	2400					IIIN,W
			CULG				2358	2400					IS,W
08			CULG				0000	0738					IIIN,W
	0000	0913	MANI										
	0000	0738	CULG	0028	0738		0000	0035					IS,W
			CULG				0035	0738	1				IS
			CULG	0229	0244	2	0233	0304	2				IV
			CULG				0230.5	0254	3	0243	0252.5	2	II
			CULG							0235	0309	1	S.W.F.
	0754	0930	WEIS				0806.0	1327.0	1				IN
	1218	2122	SGMR										
	0934	1329	WEIS				1319.2	1319.4	1				IIIG
	1358	1500	WEIS										
	2039	2400	CULG	2039	2400		2039	2122					IS,W
			CULG				2053	2136					IIIN,W
			CULG				2136	2400					IIIS,W
	2226	2400	MANI										
			CULG	2312.5	2313	1	2312.5	2313	1				IIIG
			CULG				2316		1				IIIB
			CULG				2328.5	2329					IIIB,W
			CULG				2356	2357	2				IIIG
09			CULG	0000	0738		0255	0738					IS,W
	0000	0738	CULG				0000	0406					IIIN,W
			CULG				0017	0017.5		0017	0017.5		IIIG,W
			CULG				0018.5	0019	1	0018.5	0019	1	IIIB
			CULG				0021	0022	1	0021.5	0022	1	IIIG
			CULG	0046.5	0047	2	0046.5	0047	3	0046.5	0047	3	IIIG
			CULG				0048	0049	2				IIIG
			CULG				0123		1				IIIB
			CULG				0251		1	0251		1	IIIB
			CULG				0316.5	0317.5	2	0317	0317.5	1	IIIG
			CULG				0336	0337.5	2	0336.5	0337	2	IIIG
			CULG				0406	0738					IIIS,W
			CULG	0617.5	0618	1	0614	0622	3	0616	0618.5	3	IIIGG
	0000	0910	MANI							0617.5	0617.9	1	III
			CULG				0632.5		2				IIIB
			CULG				0729		1				IIIB
			CULG				0735.5	0736	3				IIIG
	0756	1502	WEIS				0803.7	1500	2				IIIN
	0935	1530	DURN				0935 E	1530 D	1				I,DC
			WEIS				1212.3	1212.4	2				IIIN,U
			WEIS				1217.7	1218.3	2				IIIG
	1218	2123	SGMR										
			WEIS				1323.5	1323.8	2				IIIG
	2040	2400	CULG				2040	2400					IIIN,W
			CULG	2056	2400		2040	2400					IS,W
	2230	2400	MANI										
			CULG	2233.5	2235	1							IIIG
			CULG	2239	2241.5	1							IIIG
10			CULG	0000	0739								IS,W
	0000	0739	CULG				0000	0739	1				IS,DC

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JAN 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
10	0000	0918	MANI										
			CULG				0002.5	0003.5	1				IIIG
			CULG				0016		1				IIIG
			CULG				0053	0739					IIIN,W
			CULG				0115.5	0116	1				IIIB
	0733	1540	DURN				0733 E	1540					I,DC
	0752	1509	WEIS				0757.0	1458.0	2				I I
			WEIS				0929.3	0929.5	2				IIIG
			WEIS				1012.5	1012.7	2				IIIG
	1217	2124	SGMR										
			WEIS				1348.3	1348.5	1				IIIB
			CULG				2040	2400	2				IS,DC
	2040	2400	CULG				2040	2255					IIIN,W
			CULG	2040	2400	1							IS
	2218	2400	MANI										
			CULG				2255	2400					IIIS,W
			CULG	2314	2315	1							IIIG
11	0000	0739	CULG	0000	0739	1	0000	0739	1				IS,DC
			CULG				0000	0739					IIIN,W
			CULG				0056.5	0101.5	2	0057	0101	2	IIIGG,V,U
	0000	0923	MANI							0057.2	0057.6	1	III
			CULG				0102.5	0112	2				II, H
			CULG	0648	0649	1							FAST DRIFT
	0733	1533	DURN				0733 E	1533 D	3				I,DC
			DURN	0742.7	0745.3	3							IIIGG
	1234	1509	WEIS				0810.0	1453.0	3				IDC
	0806	1225	WEIS				0815.2	0815.3	2				IIIB
			DURN	1125.4	1125.7	2							IIIG
			WEIS				1430.7	1430.8	2				I IIB
	1217	2125	SGMR				1716.4	1716.9	1				2II
			CULG				2040	2400					IIIS,W
	2040	2400	CULG	2040	2400	2	2040	2331	1				IS
	2223	2400	MANI										
			CULG				2230.5	2232.5	2	2231	2232	1	IIIG
12	0000	0740	CULG	0000	0740	1	0000	0740	1				IS
			CULG				0000	0740					I IIS,W
	0000	0919	MANI										
			CULG							0028	0043	1	S.W.F.
			CULG				0104	0237	2				IS,DC
			CULG				0450.5	0451	1	0450.5	0451	2	IIIB,U
			CULG				0716.5		1				IIIB
	0733	1535	DURN				0733 E	1535 D	3				I,DC
	0752	1510	WEIS				0756.0	1510.0	3				I I
			DURN	1034.2	1035.3	2							IIIGG
			DURN	1059.7	1059.8	3							I IIG
	1217	2127	SGMR										
			DURN	1227.6	1229.4	3							IIIGG
			DURN	1328.8	1331.1	3							IIIGG
			DURN	1526.1	1527.7	3	1526.1	1527.7	3				IIIGG
	2040	2400	CULG	2040	2224	1							IS
			CULG				2040	2238					I IIS,W
			CULG				2050		1				IIIB
			CULG				2121	2122	1				IIIG
			CULG	2126	2126.5	1	2126	2126.5	1				IIIG
			CULG	2133.5		2	2133.5		1				IIIB
			CULG	2134		1							IIIB
			CULG	2135.5		1	2135	2137	2				IIIGG
			CULG	2136	2137								IIIG,W
			CULG				2144	2144.5	1				I IIG
			CULG	2224	2400	2							IS
	2227	2400	MANI										
			CULG				2238	2341					IIIN,W
			CULG				2239		2				I IIB
			CULG				2244	2245	1				IIIG
13	0000	0740	CULG	0000	0249	1							IS
	0000	0915	MANI										
			CULG				0048	0505					IIIN,W

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JAN 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	
13			CULG				0214	0323					IS,W
			CULG				0232		1				IIIB,U
			CULG	0249	0740	2							IS
			CULG				0355.5	0359.5	3	0356	0357	1	IIIGG
			CULG				0402		1				IIIB
			CULG				0419	0623	1				IS
			CULG				0505	0740					IIIS,W
			CULG				0543		1				IIIB
			CULG				0623	0740	2				IS,DC
			CULG				0658	0658.5	1				IIIG
			CULG				0703	0703.5	1				IIIG
	0733	1539	DURN				0733 E	1539 D	3				I,DC
	0751	1511	WEIS				0758.0	1509.0	2				I S
			WEIS				0759.7	0801.3	1				IIIG
			WEIS				0803.5	0803.6	1				I IIB
			WEIS				0810.0	0810.4	1				IIIG
			WEIS				0830.7	0832.4	2				IIIG
			WEIS				0838.2	0838.3	1				IIIB
			WEIS				0913.9	0914.1	2				IIIB
			WEIS				0956.4	0957.3	1				I IIG
			WEIS				1001.7	1002.5	3				IIIG
			WEIS				1012.9	1013.7	1				IIIG
			WEIS				1022.4	1023.3	3				IIIG
			WEIS				1147.6	1148.4	2				IIIG
			DURN	1149.9	1151.0	3							IIIGG
			WEIS	1150.7	1150.9	1							IIIG
			DURN	1152.1	1152.1	2							I II
			DURN	1154.4	1156.2	3	1154.5	1156.3	3				IIIGG
			WEIS	1154.4	1155.3	3							IIIG
			WEIS				1158.2	1205.0	3				II, HARM
			WEIS				1203.5	1204.1	1				IIIG
	1216	2128	SGMR										
			WEIS				1406.4	1406.6	1				I IIG
			WEIS				1448.8	1449.0	1				IIIG
			CULG	2041	2400	1	2041	2323	1				IS
	2041	2400	CULG				2041	2203					IIIS,W
			CULG				2119.5	2120	1	2119.5	2120	1	IIIB
			CULG				2123		1				IIIB
			CULG	2154		2							I IIB
			CULG				2203	2400					IIIN,W
	2219	2400	MANI										
			CULG				2249.5		1	2249.5		1	IIIB
			CULG				2338		1				IIIB
			CULG				2354.5	2356.5	2	2355	2355.5	2	IIIG
14	0000	0740	CULG	0000	0151	1							IS
			CULG				0000	0740					IIIN,W
	0000	0915	MANI										
			CULG				0005.5		2				IIIB
			CULG				0104		1				IIIB
			CULG	0142		1	0142		1				IIIB
			CULG	0147	0147.5	2							IIIG
			CULG	0151	0450								IS,W
			CULG				0200	0330	1				IS
			CULG	0230	0232	1							IIIG
			CULG	0325		1							FAST DRIFT
			CULG	0333.5	0334	1							FAST DRIFT
			CULG	0339	0341.5	1							IIIG
			CULG	0430	0438.5	1							IIIG
			CULG	0450	0740	1							IS
			CULG				0457.5	0458.5	2				IIIG
			CULG				0458.5	0459.5	1				IIIG
			CULG				0508	0539	1				IS
			CULG				0539	0600	2				IS
			CULG	0618	0618.5	2	0618	0618.5	2				IIIG
			CULG				0622		1				IIIB
	0734	0953	DURN				0734 E	0953 D	1				I,DC
	0750	1015	WEIS				0754.0	1455.0	1				IN
	1031	1513	WEIS				0930.3	0930.5	1				IIIG
			WEIS	0944.5	0945.3	2							IIIG,RS

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JAN 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
14			OURN	0944.5	0945.3	3							IIIGG,RS
			WEIS				1154.3	1155.1	2				IIIG,RS
			WEIS				1156.3	1201.3	2				II, HARM
			WEIS				1225.5	1228.7	2				IIIG
	1216	2129	SGMR				1310.7	1311.2	1				222G
			WEIS				1311.4	1312.6	3				IIIG
			WEIS				1343.1	1343.3	2				IIIG
			WEIS				1357.3	1357.6	3				IIIG
	1459	1540	OURN				1459 E	1540 D	2				I,DC
	2041	2400	CULG				2041	2400	1				IS
			CULG	2041	2400								IS,W
			CULG				2047.5		1				IIIB,U
			CULG				2158						IIIB,W
			CULG				2159.5	2200					IIIG,W
			CULG				2224	2224.5					IIIG,W
	2225	2400	MANI										
			CULG	2228	2229.5	1	2227	2229.5	1				IIIGG
			CULG	2234	2234.5	2	2234	2236	3				IIIG,V,U
			CULG	2306	2309.5	1							FAST DRIFT
15			CULG				0000	0133	1				IS
	0000	0741	CULG	0000	0110								IS,W
	0000	0920	MANI										
			CULG				0105.5	0106	2				IIIB
			CULG	0105	0106	2							IIIG
			CULG				0106.5	0108	2	0107	0107.5	1	IIIG,U
			CULG				0120.5						IIIB,W
			CULG	0134.5	0136	2							IIIG
			CULG	0137.5	0138	1							IIIG
			CULG	0155.5	0156	1							IIIG,RS
			CULG				0227.5	0228	1				UNCLF
			CULG	0228	0232	1							IIIG
			CULG				0230.5	0232	1				UNCLF
			CULG	0251.5	0252								IIIG,W
			CULG				0407	0415	2				II
			CULG				0452						IIIG,W
			CULG	0454	0455	2							IIIG
			CULG	0500	0519	1							IS
			CULG	0519	0730								IN,W
			CULG				0533	0533.5					IIIG,W
			CULG				0540	0542.5	2	0540.5	0542	1	IIIG,V
			CULG				0546	0552					IIIS,W
	0734	1541	OURN										
	0749	1514	WEIS				0911.3	0912.0	2				IIIG
			WEIS				0931.1	0931.8	2				IIIG
			WEIS				0935.3	0935.8	2				IIIG
			WEIS				1101.5	1101.9	1				IIIG
			WEIS				1134.5	1134.7	2				IIIG,U
			WEIS				1238.4	1240.3	3				IIIG,RS
			WEIS				1325.6	1325.9	2				IIIG
			WEIS				1334.9	1337.9	3				IIIG/V,RS
	1216	2130	SGMR				1335.1	1337.0	2				IIIG
			WEIS				1338.7	1341.9	3				IIIG
	2041	2400	CULG				2041	2145					IS,W
			CULG				2053						IIIB,W
			CULG				2055.5		1				IIIB
			CULG	2124	2124.5	2	2124	2125	2				IIIG
			CULG	2125.5	2126	2	2125.5	2126	2				IIIG
			CULG				2139.5	2140	1				IIIB
			CULG	2142	2400								IS,W
			CULG				2144	2145					IIIG,W
			CULG	2145.5	2151.5	2	2149.5	2151.5	2	2150	2151	1	IIIG
			CULG				2145	2219	1				IS
	2226	2400	MANI										
			CULG	2233	2234	1	2233	2238.5	3	2233.5	2235	2	IIIGG,V
			CULG	2238	2241	1							IIIGG
			CULG	2309.5	2311	3							IIIG,RS
16	0000	0915	MANI										
	0000	0741	CULG	0052	0741								IN,W

SOLAR RADIO EMISSION
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JANUARY 1979

JAN 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	0121	0123.5	1							I IIG
			CULG				0128						IIIB,W
			CULG				0144	0354					IIIS,W
			CULG	0215.5	0216	2							IIIB
			CULG	0352	0353	1							FAST DRIFT
			CULG				0354	0414	1				IIIS
			CULG				0401	0741					IN,W
			CULG				0414	0615					IIIS,W
			CULG				0615	0626	1				IIIS
			CULG				0626	0741					IIIS,W
	0734	1542	OURN										
			CULG	0739	0739.5	3							IIIG
	0748	1512	WEIS				0938.3	0941.4	2				IIIGG
			WEIS				0953.7	0954.8	2				IIIG
			WEIS				1001.3	1001.4	1				IIIB
			WEIS				1019.2	1019.3	1				IIIB
			WEIS				1035.5	1040.3	1				IIIGG
	1215	2131	SGMR										
			WEIS				1348.4	1349.2	2				IIIG
			CULG				2042	2400					IIIN,W
	2042	2400	CULG				2042	2400	1				IS
			CULG				2055	2055.5	2				IIIB
			CULG	2244	2245	1							IIIG
	2246	2400	MANI										
			CULG	2305.5	2306	1	2305.5	2306	2				IIIG
			CULG				2336.5	2340	1				DC
			CULG				2340.5	2341.5	1				IIIG
17	0000	0742	CULG				0000	0429	1				IS
			CULG				0000	0507					IIIN,W
	0000	0915	MANI										
			CULG				0007	0008	1				IIIG
			CULG				0050.5		1				IIIB
			CULG	0110.5	0111								W,FASTDRIF
			CULG				0359.5	0401.5	1	0400.5	0402	1	IIIG
			CULG	0425	0742								IN,W
			CULG				0429	0742					IS,W
	0735	1543	OURN										
	0747	1518	WEIS										
	1215	2132	SGMR										
	2042	2400	CULG				2054	2330					IS,W
			CULG				2209.5		1				IIIB
			CULG				2213	2213.5					IIIG,W
			CULG				2214.5	2215					IIIG,W
			CULG				2235	2236					IIIG,W
			CULG				2239.5	2241	1				I IIG
			CULG				2310.5						IIIB,W
			CULG				2315.5						IIIB,W
			CULG				2353.5	2355	3	2354	2355	3	IIIG,V
	2226	2400	MANI							2354.4	2354.9	1	III
18	0000	0915	MANI										
			CULG	0000	0742								IS,W
	0000	0742	CULG				0000	0602					IN,W
			CULG				0158						IIIB,W
			CULG				0159.5		1				IIIB
			CULG							0159.5			IIIB,W
			CULG				0201						IIIB,W
			CULG				0221	0221.5					IIIG,W
			CULG				0326.5						IIIB,W
			CULG				0329		1	0329		1	IIIB
			CULG				0349.5	0350.5					IIIG,W
			CULG				0353	0355	1	0354.5	0355	1	IIIG
			CULG				0404.5	0405	2	0404.5	0405	1	IIIG
			CULG	0443.5	0444	1							FAST DRIFT
			CULG	0504	0505	2							IIIG
			CULG				0552						I IIB,W
			CULG				0553	0553.5	1				IIIG
			CULG				0602	0742	1				IS
			CULG				0633.5	0634	2	0633.5	0634	1	IIIG

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JANUARY 1979

JAN 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
18			CULG				0637.5	0639					IIIG,W
			CULG	0639.5	0641	1	0639.5	0641	3	0640	0640.5	2	IIIGG
			CULG				0659	0742					IIIS,W
	0734	1544	DURN				0734 E	0750	1				I
	0746	1519	WEIS				0827.7	0827.9	1				IIIG
			WEIS				0913.7	0913.9	1				IIIB
			WEIS				0919.6	0919.7	1				IIIG
			WEIS				0958.2	0958.3	1				IIIB
			WEIS				1102.6	1103.7	1				IIIG
	1214	2134	SGMR										
			WEIS				1353.1	1353.3	1				IIIB
	2042	2400	CULG				2042	2400					IN,W
			CULG				2042	2400					IIIN,W
			CULG				2106	2106.5	1				IIIG,U
	2226	2400	MANI										
19	0000	0929	MANI										
	0000	0742	CULG	0000	0742		0000	0042					IS,W
			CULG				0015	0742					IIIN,W
			CULG				0413		1				IIIB
			CULG				0537	0537.5					UNCLF,W
	0746	1202	WEIS				1003.9	1004.1	1				IIIB
			WEIS				1114.5	1115.3	1				IIIG,RS
	0734	1545	DURN	1114.6	1114.9	1	1114.5	1115.4	3				IIIG
	1213	2135	SGMR										
			WEIS				1238.7	1240.3	2				IIIG
			DURN				1238.6	1240.4	2				IIIG
			WEIS				1308.5	1308.9	1				IIIG
			DURN				1308.7	1309.1	1				IIIG
			WEIS				1327.9	1328.3	1				IIIB
			WEIS				1329.5	1518.5	1				IS
			WEIS				1330.5	1336.7	2				IIIGG
			WEIS				1340.0	1340.1	1				IIIB
			WEIS				1341.8	1344.8	2				IIIGG
			WEIS				1346.3	1346.7	1				IIIG
			DURN				1348.1	1350.4	2				IIIG,N
			WEIS				1348.4	1348.5	1				IIIG
			WEIS				1350.3	1350.6	2				IIIG
			WEIS				1353.6	1356.6	2				IIIGG
			WEIS				1427.4	1428.6	2				IIIG
			CULG				2042	2400					IIIN,W
	2042	2400	CULG				2042	2115	1				IS
			CULG				2115	2315					IS,W
	2230	2400	MANI										
			CULG	2245	2245.5	1							FAST DRIFT
			CULG				2315	2349	1				IS
			CULG				2349	2400					IS,W
20	0000	0309	CULG				0000	0018					IS,W
	0000	0917	MANI										
			CULG	0211.5	0212.5	1							IIIG
	0535	0743	CULG	0535	0743	1							IS
			CULG				0559.5		1				IIIB
			CULG				0600.5	0601					IIIG,W
			CULG				0621.5		1				IIIB
			CULG				0623.5	0624					IIIG,W
	0735	1545	DURN				0735 E	1203	1				I,OC
			CULG				0737						IIIG,W
			WEIS				0751.0	1045.0	1				IS
	0746	1521	WEIS				1202.7	1202.9	2				IIIG
	1213	2136	SGMR										
			WEIS				1357.2	1358.3	2				IIIG
	2223	2400	MANI										
21	0000	0320	MANI										
	0300	0743	CULG				0313	0314.5	2				IIIG
			CULG				0315.5						IIIB,W
			CULG				0412	0413.5	2				IIIG
			CULG				0415	0416					IIIG,W
	0744	1522	WEIS				0852.0	1520.0	1				IS

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JAN 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	0735	0930	DURN				0928	0930	2				I
	1017	1549	DURN				1017 E	1549 D	1				I,DC
			WEIS				1239.5	1240.6	2				IIIG
			DURN	1312.4	1313.5	3	1312.7	1316.1	3				IIIGG
			WEIS				1312.5	1315.0	3				IIIGG,RS
	1212	2137	SGMR				1313.4	1314.3	1				III
			WEIS				1314.5	1336.5	3				II
			SGMR				1334.4	1335.8	1				IIIG
			WEIS				1339.7	1339.8	1				IIIB
			WEIS				1352.9	1353.1	1				IIIB
			WEIS				1406.0	1406.4	2				IIIG
			WEIS				1510.8	1512.4	3				IIIG
			DURN				1511.2	1511.6	3				IIIG
			SGMR				1511.4	1511.9	2				IIIG
			SGMR				1705.0	1705.4	2				IIIG
	2045	2400	CULG	2045	2317		2045	2400					IS,W
			CULG				2124						IIIB,W
			CULG	2155.5	2156	1	2155.5	2156	1				IIIG
			CULG	2215.5	2216	1	2215.5	2216	1				IIIG
	2226	2400	MANI										
			CULG	2317	2327	1							IS
			CULG	2327	2400								IS,W
22	0000	0743	CULG	0000	0050		0000	0014					IS,W
	0000	0926	MANI										
			CULG	0009	0010	2	0009	0010	1				IIIG
			CULG				0014	0045	1				IS
			CULG	0016.5	0017	1							FAST DRIFT
			CULG				0041.5	0042					IIIG,W
			CULG				0045	0248					IS,W
			CULG				0243	0256					IIIS,W
			CULG				0248	0429	1				IS
			CULG				0249		1				IIIB
			CULG				0319	0743					IIIN,W
			CULG	0353	0600								IN,W
			CULG				0429	0525					IS,W
			CULG				0525	0743	1				IS
			CULG				0532.5	0533.5					IIIG,W
			CULG	0600	0743	1							IS
			CULG				0702.5	0705	1				DC
	0734	1355	DURN				0734 E	1355 D	1				I,DC
	0743	0901	WEIS				0825.3	0826.6	2				IIIGG
			WEIS				0837.0	1504.0	1				IS
			DURN	1002.1	1002.7								DCIM
	0906	1524	WEIS				1126.9	1127.3	1				IIIG
			WEIS				1127.0	1347.6	1				IIIN
	1211	2139	SGMR										
			DURN	1221.2	1221.5	1	1221.2	1221.5	3				IIIG
			CULG	2043	2130	1	2043	2400	1				IS
	2043	2400	CULG				2043	2122	2				IIIS
			CULG	2114	2114.5	2	2114	2114.5	2				IIIG
			CULG	2117	2118.5	3	2117.5	2118.5	2				IIIG
			CULG				2122	2400	1				IIIS
			CULG	2130	2400								IS,W
	2226	2400	MANI										
			CULG	2231.5	2232	2							IIIG
			CULG	2234	2234.5	2							IIIG
			CULG				2317.5	2318.5	1				RS,DP
			CULG				2321.5		2	2322		1	IIIB
			CULG				2321.5	2322	1				RS,DP
23	0000	0743	CULG				0000	0032	1				IIIS
			CULG	0000	0743								IS,W
			CULG				0000	0310	1				IS
			CULG				0032	0039	2	0035	0039	2	IIIS
			CULG				0039	0135	1				IIIS
			CULG				0135	0241					IIIS,W
			CULG				0241	0743					IIIN,W
			CULG				0310	0647					IS,W
			CULG				0357	0357.5	2	0357	0357.5	2	IIIG

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JAN 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	
23			CULG	0411	0411.5	2							FAST DRIFT
			CULG	0431	0431.5	1							IIIG
			CULG				0432.5	0434	3	0432.5	0433.5	3	IIIG,V
			CULG				0435	0717	2	0435	0558	1	IIIG,N
			CULG				0522.5	0523.5	3	0522.5	0523.5	3	IIIG
	0000	0925	MANI							0607.0	0607.6	1	III
			CULG				0607	0609	3	0607	0608.5	3	IIIG,V
			CULG				0647	0743	1				IS
			MANI							0655.3	0655.7	1	III
			CULG				0655	0657	3	0655.5	0656.5	2	IIIG
			CULG				0719.5	0720	3				IIIB
			CULG	0740	0740.5	2							FAST DRIFT
	0743	1526	WEIS				0753.0	1512.0	2				IIIS
			WEIS				0914.9	0917.1	2				IIIG
			WEIS				1021.9	1023.4	3				IIIG
			WEIS				1106.6	1107.9	2				IIIG,U
			WEIS				1202.7	1203.9	2				IIIG
			WEIS				1217.7	1217.9	2				IIIG
	1225	1430	DURN				1225 E	1430 D					I,DC
			WEIS				1226.5	1227.4	2				IIIG
			WEIS				1236.8	1238.2	3				IIIG
			WEIS				1310.0	1313.4	2				IIIG
			WEIS				1334.5	1336.0	2				IIIG
	1211	2140	SGMR				1334.6	1336.6	1				IIIG
			DURN	1410.1	1412.2	3							IIIGG
			WEIS				1416.5	1417.8	2				IIIG
			WEIS				1442.5	1444.9	3				IIIGG
			SGMR				1442.9	1444.8	2				IIIG
	1459	1553	DURN				1459 E	1553 D	1				I
			SGMR				1545.5	1547.2	1				IIIG
			SGMR				1718.0	1718.2	1				III
			SGMR				1755.1	2140.00	2				IIIS
			SGMR				1822.3	1824.4	3				IIIG
	2043	2400	CULG	2043	2316		2043	2400					IS,W
			CULG				2050.5	2051					IIIG,W
	2229	2400	MANI										
			CULG	2316	2400	1							IS
24	0000	0739	CULG	0000	0739		0000	0739					IS,W
			CULG				0045	0435					IIIN,W
			CULG	0251.5		1	0251.5		1	0251.5		1	IIIB
			CULG				0355.5		2				IIIB
			CULG	0415.5	0418	1	0415.5	0419	3	0416.5	0417.5	3	IIIGG
	0000	0920	MANI							0420.0	0421.3	2	IIIG
			CULG	0432.5	0433	1	0432.5	0433	2	0433		1	IIIG
			CULG	0433.5	0434	1							FAST DRIFT
			CULG	0434.5	0435	2							IIIG
			CULG				0435	0739					IIIS,W
			CULG	0451.5	0452	1							FAST DRIFT
			CULG				0518	0518.5	1				IIIG
			CULG				0536.5	0537	1				IIIG
			CULG	0604	0605	1							IIIG
			CULG				0636.5	0637		0636.5	0637		IIIG,W
			CULG				0714	0717	2				IIIG
	0734	1554	DURN				0734 E	1554 D	1				I
	0742	1332	WEIS				0814.8	1526.5	2				IIIN
			DURN	0907.1	0908.4	2							IIIG
			DURN	0912.3	0913.3	2							IIIG
			DURN				1016.3	1024.3	3				IIIG,N
			DURN				1155.6	1155.6	1				III
	1340	1527	WEIS				1158.5	1159.6	3				IIIG
			DURN				1158.6	1159.8	3				IIIGG
	1210	2141	SGMR										
			DURN	1224.2	1224.9	1							IIIG
			WEIS				1224.5	1226.3	3				IIIGG
			DURN				1255.0	1255.2	2				IIIG
			DURN	1300.1	1300.4	2							IIIG
			CULG	2044	2214	1							IS
	2044	2400	CULG				2044	2135					IN,W
			CULG				2054	2400					IIIN,W

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SPECTRAL OBSERVATIONS

JANUARY 1979

JAN 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	
24			CULG	2206.5		1							IIIB
	2221	2400	MANI										
			CULG	2226.5	2227	2							IIIG
			CULG	2250	2250.5	1							IIIB
25	0000	0743	CULG				0000	0743					IIIN,W
			CULG				0007	0048					IIIS,W
			CULG				0015.5	0016	2	0015.5	0016	2	IIIB
			CULG				0017	0017.5	1	0017	0017.5	1	IIIB
			CULG	0048.5	0049	2	0048.5	0049.5	3	0049	0049.5	2	IIIG
			CULG	0138	0144	1	0138	0144	2	0138	0143.5	1	IIIGG
			CULG				0146	0322	1				IS
			CULG				0149						RS,DP,W
			CULG				0240	0240.5	1				RS,DP
	0000	0921	MANI							0310.0	0310.3		III
			CULG	0310		1	0309.5	0310.5	3	0310	0310.5	3	IIIG,V
			CULG				0322	0743	2				IS,DC
			CULG							0324	0340	1	S.W.F.
			MANI							0327.3	0328.6	2	IIIG
			CULG	0327	0331	2	0327.5	0330	3	0327.5	0330.5	3	IIIGG,V
			CULG	0440.5	0442.5	2	0440.5	0443	2	0441	0442	2	IIIGG
			CULG	0518	0526	1							IS
			CULG	0724.5	0727	2	0724.5	0726	3	0725		2	IIIG
			MANI							0725.7	0726.0	1	III
			CULG	0728	0731.5	2	0728.5	0730	3				IIIGG
	0733	1410	DURN				0733	1410 D	1				I,DC
	0739	1531	WEIS				0746.0	1318.0	1				IN
			WEIS				0819.8	0821.3	1				IIIG
			WEIS				0943.4	0943.5	2				IIIB
			WEIS				0946.1	0946.2	1				IIIB
			WEIS				0950.4	0950.9	2				IIIG
			DURN				0951.1	0951.2	2				IIIG
			WEIS				0956.0	0958.0	3				IIIGG
			DURN				0956.5	0957.3	2				IIIGG
			WEIS				1005.9	1006.9	2				IIIG
			DURN	1016.4	1018.2	2	1016.4	1018.2	3				IIIGG
			WEIS				1016.5	1018.3	3				IIIG
			WEIS				1053.2	1053.5	1				IIIB
			WEIS				1055.9	1102.3	3				IIIGG
			DURN	1056.7	1102.2	3	1056.7	1102.2	3				IIIGG
			WEIS				1106.1	1106.3	2				IIIG
			WEIS				1107.8	1107.9	1				IIIB
			WEIS				1114.5	1117.9	1				IIIG
			WEIS				1149.8	1150.2	1				IIIB
			WEIS				1205.5	1206.7	2				IIIG
	1209	2142	SGMR										
			WEIS				1245.6	1247.3	2				IIIG
			DURN	1246.8	1247.0	3	1246.8	1247.0	1				IIIG
	1528	1555	DURN										
	2050	2353	CULG	2050	2140								IS,W
			CULG				2050	2353					IIIS,W
			CULG				2137.5		1				IIIB
			CULG				2140.5	2142	3	2141	2141.5	2	IIIG
			CULG				2157	2213					IS,W
	2225	2400	MANI										
			CULG				2236.5	2239	3	2237	2238.5	2	IIIG
			CULG				2245.5	2246	1	2245.5	2246	2	IIIG
			CULG				2317.5		3				IIIB,U
26	0000	0925	MANI										
	0540	0735	CULG	0540	0624	1							IS
			CULG				0540	0735					IIIS,W
	0734	1536	WEIS				0752.0	1511.0	2				IIIN
			WEIS				0842.0	1513.5	1				IN
			WEIS				1113.5	1114.8	2				IIIG
			WEIS				1135.7	1136.9	3				IIIG,U
			WEIS				1143.5	1143.9	3				IIIG
			WEIS				1206.9	1209.5	3				IIIG
			WEIS				1333.9	1334.5	2				IIIG
			WEIS				1337.9	1340.5	2				IIIGG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JANUARY 1979

JAN 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				1411.0	1415.2	3				IIIGG
	1208	2144	SGMR				1411.5	1415.4	3				IIIG
			WEIS				1434.3	1434.7	3				IIIB
			SGMR				1842.5	1844.1	1				IIIG
	2045	2400	CULG	2045	2400	1							IS
			CULG				2045	2400					IIIS,W
			CULG				2049		1				RS,DP
			CULG	2104	2107	1	2103.5	2107	2				IIIGG
			CULG				2113		1				RS,DP
			CULG				2119	2400	1	2119	2400	1	IIIG,N
			CULG				2120	2122.5	2	2120.5	2121	1	IIIGG
			CULG	2133.5		1	2133.5	2134	2	2133.5	2134	2	IIIG
			CULG				2145	2146	1	2145	2146	2	IIIG
			CULG				2147		2	2147		2	IIIG
			CULG				2149	2150	2				IIIG
			CULG	2205.5		1	2205.5	2206	3	2205.5	2206	3	IIIG
			CULG	2214	2214.5	1	2213.5	2214.5	2	2214	2214.5	2	IIIG
	2226	2400	MANI										
			CULG	2229.5		1	2229.5	2231.5	2	2230	2231.5	1	IIIG
			CULG				2259	2330					IS,W
			CULG				2316.5	2318.5	2	2317	2318	1	IIIGG
			CULG				2330	2400	1				IS
			CULG				2342	2342.5	2	2342.5	2343	1	IIIG
			CULG				2352	2352.5	1				IIIG
			CULG				2356.5	2357	1	2357	2357.5	1	IIIG
27	0000	0744	CULG				0000	0000.5	1	0000	0000.5	2	IIIB
			CULG				0000	0246	1				IS
			CULG	0000	0115								IS,W
			CULG				0000	0744					IIIS,W
			CULG				0010.5	0011	1	0010.5	0011	1	IIIG
			CULG				0054.5	0055.5	1	0054.5	0055	1	IIIG
			CULG	0115	0744	1							IS
			CULG				0122.5	0123	1	0122.5	0123.5	1	IIIG
			CULG				0126.5	0127	2	0127	0127.5	2	IIIG,V
			CULG				0200.5	0201	1	0200.5	0201	2	IIIG
			CULG				0208		1	0208		1	IIIB
			CULG	0219.5		1	0218.5	0221	2	0219	0221	2	IIIGG
	0000	0925	MANI							0221.0	0221.3	1	III
			CULG				0234.5		1	0234.5		1	IIIB
			CULG				0246	0328					IS,W
			CULG				0332	0744	1				IIIN
			CULG				0517.5		1	0517.5		1	IIIB
			CULG				0519	0521	2	0519.5	0521	1	IIIG
			CULG				0526		1	0526		1	IIIB
			CULG	0548.5	0549	2							IIIG
			CULG				0602	0603	2				IIIG
			CULG				0605.5	0607	3	0605.5	0606	1	IIIG
			MANI							0605.6	0605.8	1	III
			CULG	0625	0625.5	2							IIIG
			CULG				0627	0630	2				IIIG
			CULG	0636	0637	2							IIIG
			CULG	0638	0639.5	2	0637.5	0639.5	3	0637.5	0638	2	IIIG
			CULG				0641.5	0642	2				IIIG
			CULG				0651		2				IIIB
			CULG	0658	0659	1	0658	0659	3	0658.5	0659	1	IIIG
			CULG	0712.5	0713	2	0712.5	0713	1				IIIG
			CULG	0714.5	0715.5	3	0715.5		1				IIIG
			CULG	0716	0732	1							IIIN
			CULG	0723.5		2							IIIB
			WEIS				0742.0	0938.0	1				IS
	0733	0945	WEIS				0756.3	0757.5	2				IIIB
	1004	1538	WEIS				0802.8	0803.4	1				IIIG
			WEIS				0805.9	0806.9	3				IIIGG
			WEIS				0809.5	0809.7	1				IIIB
			WEIS				0838.2	0838.3	2				IIIG
			WEIS				0848.8	0849.7	2				IIIG
			WEIS				0853.9	0854.0	1				IIIB
			WEIS				0855.3	0856.2	1				IIIG
			WEIS				0857.9	0858.6	2				IIIG

SOLAR RADIO EMISSION
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JANUARY 1979

JAN 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
27			WEIS				0900.7	0900.9	2				IIIG
			WEIS				0924.8	0925.2	2				IIIG
			WEIS				1054.5	1055.6	2				IIIG
			WEIS				1112.0	1112.8	2				IIIG
			WEIS				1116.8	1123.0	3				IIIGG
	1205	1302	DURN				1205 E	1302 D	1				I,DC
			DURN				1209.7	1219.9	3				IIIGG,N
			WEIS				1209.8	1212.3	2				IIIG
			DURN	1212.2	1212.7	1							IIIGG
			WEIS				1214.6	1215.9	3				IIIGG
	1207	2145	SGMR				1214.8	1215.2	2				IIIG
			DURN	1217.4	1217.7	1							IIIG
			DURN				1252.1	1252.1	2				I II
			DURN				1259.4	1259.4	3				IIIG
	1345	1600	DURN				1345 E	1600	1				I
			DURN				1533.2	1533.4	2				IIIG
			DURN	1553.0	1558.6	3	1552.6	1558.6	3				IIIGG
			SGMR				1557.6	1559.9	3				IIIG
			SGMR				1725.9	1726.1	2				III
			SGMR				1729.9	1730.1	2				V
	2045	2400	CULG				2045	2400					IIIS,W
			CULG	2045	2400	1							IS
			CULG				2045	2400	1				IS
			CULG				2054		1	2054		1	IIIB
			CULG				2147.5	2148	1				IIIG
			CULG							2147.5			IIIG,W
			CULG				2150	2150.5	1	2150.5	2151	1	IIIG
			CULG				2152.5	2153	1	2152.5	2153	1	IIIG
			CULG				2155.5	2400	1				SCINTILLAT
			CULG	2241	2241.5	2	2241	2241.5	2				IIIG
	2241	2400	MANI										
			CULG				2249	2335.5	2	2249.5	2326	2	IIIGN
			CULG				2255	2359	1				SCINTILLAT
28	0000	0745	CULG	0000	0745	1	0000	0745	1				IS
			CULG				0000	0745					IIIS,W
			CULG				0000	0745	1				IIIN
			CULG				0111.5			0112			IIIB,W
			CULG							0128			IIIB,W
			CULG				0128	0128.5	1				IIIG
			CULG	0134	0134.5	1	0134	0134.5	2	0134	0134.5	3	IIIG
			CULG	0138		2							IIIB
			CULG	0220	0220.5	2	0220	0220.5	2	0220	0220.5	1	IIIG
			CULG				0244.5	0245	1				IIIG
			CULG	0251.5		1	0251.5		2				IIIB
			CULG	0306.5	0307.5	1							F/ST DRIFT
			CULG	0306.5	0307	1	0306.5	0307	3	0306.5	0307	2	IIIG
			CULG	0308	0310	2	0308	0310	2				IIIG
			CULG							0311.5	0315	2	IIIB,V
			CULG	0312.5			0312.5						IIIB,W
			CULG	0319	0319.5	2	0319	0319.5	2				IIIG
			CULG				0415	0416	3	0415	0416.5	3	IIIG,V
			CULG	0432.5	0433	1	0432	0434	2				IIIG
	0000	0925	MANI							0439.5	0439.6	1	I II
			CULG	0439	0439.5	2	0439	0439.5	3	0439	0439.5	3	IIIG
			CULG				0450.5	0451	2				IIIB
			CULG				0522.5	0525	3	0522.5	0525	3	IIIG,V
			MANI							0523.0	0523.2	1	III
			MANI							0613.7	0613.9	1	III
			CULG	0613	0613.5	2	0613	0614	3	0613.5	0614	3	IIIG
			CULG	0616	0617.5	2	0616	0617	2	0616.5	0617	1	IIIG
			CULG				0621.5	0634	1				SCINTILLAT
			CULG	0639.5	0640	1	0639.5	0640	2				IIIG
	0733	1601	DURN				0733 E	1601 D	1				I,DC
	0739	1539	WEIS				0757.7	0758.3	3				I IIG
			WEIS				0810.6	0810.7	1				IIIG
			DURN				0838.6	0839.9	2				IIIGG
			DURN	0957.5	0957.8	3	0957.4	0957.9	3				IIIGG
			DURN				1010.5	1010.6	2				IIIG
			DURN	1041.8	1042.0	2	1040.8	1042.0	3				IIIGG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JANUARY 1979

JAN 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
28			WEIS				1050.9	1051.6	3				IIIG
			DURN				1214.7	1228.3	3				IIIG,N
			DURN	1242.5	1243.0	2	1240.9	1243.0	3				IIIGG
			DURN	1250.7	1253.7	3	1249.5	1253.7	3				IIIGG
	1206	2146	SGMR				1351.0	1351.6	2				IIIG
			DURN	1421.8	1421.9	2							IIIG
			DURN				1435.0	1436.6	3				IIIGG
			DURN				1534.2	1534.5	3				IIIG
			DURN				1537.7	1538.8	3				IIIGG
	2045	2400	CULG				2045	2105	1				SCINTILLAT
			CULG				2045	2400					IIIN,W
			CULG				2045	2400	1				IS
			CULG	2045	2140								IS,W
			CULG	2140	2229	1							IS
			CULG				2143.5		1				IIIB
			CULG				2205		1				IIIB
			CULG	2229	2400								IS,W
	2233	2400	MANI										
			CULG				2235.5		1				IIIB
			CULG	2255.5		1							IIIB
			CULG	2301.5		1	2301.5		1				IIIB
			CULG	2319	2350	1							IIIN
29	0000	0745	CULG	0000	0115								IN,W
			CULG				0000	0745	1				IS
			CULG				0000	0343					IIIN,W
			CULG	0018.5		1							IIIG
			CULG	0024	0029	1							IIIN
			CULG				0040.5		2	0040.5		2	IIIB
			CULG				0054.5		2				IIIB
			CULG	0115	0735	1							IS
			CULG				0132	0132.5	1				IIIB
			CULG				0222	0223	2	0222.5	0223	1	IIIG
			CULG	0223	0224	2	0223	0224	2				IIIG
			CULG	0224.5	0227	1	0226	0227	2				IIIG
			CULG				0318.5	0319	2	0318.5	0319	1	IIIG
			CULG				0342.5	0745	1				IIIN
			CULG	0359	0402	1							IIIGG
			CULG	0407	0407.5	1	0407	0408	1				IIIG
			CULG	0413.5	0414	2	0414		1				IIIG
			CULG				0417.5	0418	3	0417.5	0418.5	3	IIIB,V
	0000	0925	MANI							0419.5	0419.8	1	III
			CULG				0521		2				IIIB
			CULG	0608.5	0609.5	2	0608.5	0609.5	1				IIIG
			CULG				0733.5		2				IIIB
	0733	1604	DURN				0733 E	1604 D	1				I,DC
			DURN				0837.1	0841.6	2				IIIGG
			DURN				0852.9	0853.0	2				IIIG
	0839	1541	WEIS				0926.7	0931.3	1				IIIG
			WEIS				0940.9	0941.0	2				IIIG
			DURN				1031.1	1031.2	2				III
			WEIS				1038.5	1038.7	2				IIIB
			WEIS				1048.5	1051.7	3				IIIG
			WEIS				1105.8	1106.1	1				IIIG
			DURN				1138.3	1138.6	3				IIIG
			DURN	1148.2	1150.4	3	1147.9	1149.8	3				IIIGG
			DURN				1205.7	1205.9	3				IIIG
			WEIS				1237.3	1239.1	2				IIIG
			WEIS				1249.6	1250.3	1				IIIG
			DURN				1334.6	1334.9	3				IIIG
	1205	2148	SGMR				1338.4	1339.1	2				IIIG
			DURN	1338.6	1338.9	3	1338.6	1338.9	3				IIIG
			SGMR				1349.7	1350.0	2				IIIG
			DURN	1407.4	1407.7	2	1407.4	1407.7	2				IIIG
			DURN				1550.2	1550.8	3				IIIGG,RS
			SGMR				1550.7	1551.1	2				IIIG
			SGMR				1933.3	1933.6	2				IIIG
			SGMR				1951.6	1952.0	2				IIIG
			SGMR				2004.7	2004.9	2				IIIG
			CULG				2045	2400					IIIN,W

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JANUARY 1979

JAN 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	
29	2045	2400	CULG				2045	2400					IN,W
			CULG	2053.5	2055	2	2053.5	2055	2				IIIGG
			CULG	2223	2400	1							IS,DC
	2225	2400	MANI										
			CULG				2235	2235.5	2				IIIG
			CULG	2302		1	2302		1				IIIB
			CULG	2331	2332.5	1	2331	2332.5	1				IIIG
30	0000	0745	CULG	0000	0040	1							IS
			CULG				0000	0540					IIIN,W
			CULG				0000	0112					IS,W
	0000	0924	MANI										
			CULG	0027.5	0028	2	0027.5	0028	1				IIIG
			CULG	0152		1							FAST DRIFT
			CULG	0156.5	0157	3	0156.5	0157	2				IIIG
			CULG				0214	0603					IS,W
			CULG	0349	0358.5	1							I
			CULG				0457		1				IIIB
			CULG	0502	0504	1							IIIG
			CULG	0536	0745								IN,W
			CULG				0540	0745					IIIS,W
			CULG				0603	0745	1				IS
	0741	1000	WEIS				0750.7	0750.9	2				IIIG
	1204	2149	SGMR										
	1204	1543	WEIS				1219.8	1220.1	1				IIIG
	0734	1606	DURN				1231.0	1231.1	2				III
			DURN	1425.0	1432.8	3	1425.0	1432.8	3				IIIG,N
			CULG				2045	2400					IIIS,W
	2045	2400	CULG				2045	2400	1				IS
			CULG	2049	2400								IN,W
			CULG	2054	2055	2							IIIGG
			CULG	2055	2124.5	1							IIIG,N
			CULG	2109	2109.5	2	2109	2110	2				IIIG
			CULG	2119.5	2120	2	2119.5	2120	1				IIIG
			CULG				2206.5	2207.5	3	2206.5	2207.5	3	IIIG,V
	2230	2400	MANI										
			CULG	2323	2324.5	2	2323	2323.5	1				IIIG
			CULG	2327	2328	2							IIIG
31			CULG				0000	0745	1				IS
	0000	0745	CULG				0000	0149					IIIS,W
	0000	0408	MANI										
			CULG	0011.5	0049								IS,W
			CULG	0033	0041	1							IIIG,N
			CULG	0051	0051.5	2							IIIG
			CULG				0149	0745					IIIN,W
			CULG	0339	0339.5	1							IIIG
			CULG				0353.5	0354	3	0353.4	0354	2	IIIG
			CULG				0445		1				IIIB
			CULG	0459	0512	1							IIIG,N
			CULG	0551	0554.5	2							IIIG
			CULG				0626.5	0627	2	0627	0627.5	2	IIIG
			CULG				0653	0654.5	1				IIIG
			CULG	0715	0717	1							IIIG
			CULG	0727	0727.5	1							IIIG
	0733	1608	DURN				0733 E	1608 D	1				I,DC
			DURN				0920.2	0920.7	2				IIIG
			DURN	1012.0	1012.2	3	1012.0	1012.2	3				IIIG
			DURN	1143.2	1143.6	3	1143.2	1143.6	3				IIIG
	1203	2150	SGMR										
			DURN				1528.6	1528.7	3				III
			DURN				1552.0	1552.1	2				III
	2045	2400	CULG				2045	2128	2				IS,C
			CULG				2045	2131					IIIS,W
			CULG	2124	2125	1							IIIGG
			CULG				2128	2400	1				IS
			CULG				2131		1				IIIB
			CULG				2159.5	2200	3	2159.5	2200	2	IIIB
			CULG				2159	2400					IIIN,W
			CULG				2209		2	2209		2	IIIB

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JANUARY 1979

JAN 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	
31	2229	2400	MANI										
			CULG				2242		2				IIIB
			CULG				2322.5	2323.5					IIIG,W
			CULG				2349		1				IIIB,U
			CULG				2354.5		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 burst
C = Underlying continuum (particularly with type I)
S = Storm in the sense of intermittent but apparently connected activity
N = Intermittent activity in this period
U = U-shaped burst of Type III

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

SELECTED SOLAR EVENTS

JANUARY 1979

Culgoora

UT Date 1979 JANUARY	HELIOGRAPH EVENT							Spectral Type	REMARKS
	Start (UT)	End (UT)	Freq. (MHz)	Positions: Central Dist. ($R_\odot$)	Positions: Position Angle (Deg.)	Polarization	Intensity (1-3)		
1	0029	0033	43.25)	1.0	)		3)		
			80)	1.5	) 315		2)	IIIGG,V	*
			160)	1.8	)		2)		
	0249	0251.5	43.25)	1.0	)		3)		
			80)	1.5	) 315		2)	IIIGG	
			160)	1.8	)		2)		
	0249	0251.5	43.25)	1.0	)		3)		
			80)	1.5	) 315		2)	Possible II	
			160)	1.8	)		2)		
	0251	0321	43.25)	1.0	)		2)		
			80)	1.5	) 315	R	1)	Possible V	
			160)	1.8	)		1)		
	0349	0351	80)	1.0	135		2)	IIIG	
			160)				2)		
	2340	2355	80)	1.0	) 330	R	2)	IS	
			160)	.8	)		1)		
2	2247	2251	43.25)	1.5	) 70		3)		
			80)	.7	) 75		2)	IIIGG,V	*
			160)	.5	) 80		1)		
	2253	2310	43.25)	1.5	) 70		3)		
			80)	.7	) 75		2)	II	
			160)	.5	) 80		1)		
	2330	2334	43.25)	1.0	25		3)	IIIGG,V	
			80)	0	315		)		
3	0003	0004	43.25)	1.6	) 320		3)	IIIG	
			80)	1.0	)		2)		
	0006	0008	43.25)	0	0		3)	IIIGG,U	
			80)				)		
	2300	2341	80)	1.5	) 225	R	2)	IS	
			160)	1.2	)		1)		
4	0047	0048	43.25)	1.8	)		3)		
			80)	1.2	) 45		2)	IIIG	*
			160)	.8	)		2)		
			80)	1.2	) 135		2)		
			160)	1.0	)		2)		

Days without Heliograph observations: Nil

* Other type III's observed from same position during the day.

UT Date 1979 JANUARY	HELIOGRAPH EVENT							Spectral Type	REMARKS
	Start (UT)	End (UT)	Freq. (MHz)	Positions: Central Dist. ($R_\odot$)	Positions: Position Angle (Deg.)	Polarization	Intensity (1-3)		
5	0021	0021.5	43.25)	.5	170		3)		
			80)	1.0	) 105	)	2)	IIIG,W	
			)	1.0	) 225	)	2)		
	0026	0033	43.25)	.5	170		3)	II	
			80)	1.0	105		2)		
	0342	0347	43.25)	2.0	300		3)		
			80)	1.5	) 270		3)		
			)	1.5	) 105		3)	IIIGG	*
			160)	1.5	) 265		2)		
			)	1.5	) 105		2)		
	0511.5	0513	43.25)		)		3)		
			80)	1.5	) 355		3)	IIIGG,V	
			160)		)		2)		
6	0023	0030	43.25	0	0		3	II	
	0027	0027.5	80)	1.0	) 225		3)	IIIB	
			160)	.8	) 315		)		
6/7	2300	0500	80)	1.0	) 230	Varying	2)	IS	Type I activity from this region persisted from 6th to 9th January.
			160)		)		2)		
	0229	0230	43.25)	0	) 0		3)		
			80)	1.0	) 225		3)	IIIG	
			160)	1.0	) 225		2)		
7/8	2300	0500	80)	.4	20	Varying	2)	IS	Type I activity from this region persisted until 14th.
			160)				)		
	0232	0310	43.25)	1.7	)		)		Complex source
			(A) 80)	1.2	) 45		3)	II ,IVM	Type IV moved from position (A) to position (B) at times indicated.
			160)	1.2	)		)		
			43.25)	3.0	) 45		3)		
			(B) 80)	2.0	)		)		
9	0046.5	0047	43.25)	1.4	)		)		
			80)	1.2	) 240		3)	IIIG	*
			160)	1.0	)		)		

Days without Heliograph observations: Nil

* Other type III's observed from same position during the day.

SELECTED SOLAR EVENTS

JANUARY 1979

Culgoora

UT Date 1979 JANUARY	HELIOGRAPH EVENT							Spectral Type	REMARKS
	Start (UT)	End (UT)	Freq. (MHz)	Positions: Central Dist. ($R_\odot$)	Positions: Position Angle (Deg.)	Polarization	Intensity (1-3)		
9	0250.5	0251.5	43.25)	2.0	) 55		3)	IIIB	
			80)	1.0	) 90		2)		
	0316.5	0318	43.25)	2.0	) 315		3)		
			80)	1.7	) 315		2)	IIIG	*
			160)	.5	) 0		2)		
10	0002.5	0003.5	80)	1.1	) 350		3)	IIIG	*
			160)	.7	)		2)		
	0115.5	0116	43.25)	1.2	)		)		
			80)	1.2	) 330		2)	IIIB	*
			160)	.8	)		)		
11	0056	0102	43.25)	2.0	) 65		3)	IIIGG,V,U	) Complex Source
			80)	1.5	)		)		)
	0104	0112	43.25)	2.0	) 45		3)	II	)
			80)	1.0	)		)		
13	0355.5	0400	43.25)	2.1	)		)		
			80)	1.4	) 350		3)	IIIGG	
			160)	1.1	)		)		
	2338.5		43.25)				2)		
			80)	0	0		2)	IIIB	
			160)				1)		
	2354.5	2356.5	43.25)	1.7	)		3)		
			80)	1.2	) 315		2)	IIIG	
			160)	1.2	)		2)		
14	0005.5		43.25)		)		3)		
			80)	.5	) 100		3)	IIIB	
			160)		)		2)		
14/15	2300	0500	80)	1.7	) 315	Varying	1)		Type I activity persisted from this region until 17th.
			160)	1.1	)		)		
	0105	0109	43.25)	1.5	)		3)		
			80)	1.5	) 280		3)	IIIG,U	*
			160)	1.1	)		2)		
	0407	0415	80)	2.0	) 240		1)	II	
			160)	1.6	) 280		)		

Days without Heliograph observations: Nil

* Other type III's observed from same position during the day.

UT Date 1979 JANUARY	HELIOGRAPH EVENT							Spectral Type	REMARKS
	Start (UT)	End (UT)	Freq. (MHz)	Positions: Central Dist. ($R_\odot$)	Positions: Position Angle (Deg.)	Polarization	Intensity (1-3)		
15/16	2300	0500	160)	.5	270	R	2	IS	Type I activity persisted from this region until 19th.
17	0007	0008	43.25)	1.9	) 45		3)	IIIG	
			80)	1.4	)		2)		
	0359	0402	43.25)	1.5	)		2)		
			80)	1.3	) 240		3)	III G	
			160)	1.0	)		2)		
17/18	2300	0500	160	.5	55	Varying	1	IS	Type I activity persisted from this region until 20th.
	0353	0355	43.25)	1.7	) 300		3)	IIIG	*
			80)	1.3	)		2)		
	0404.5	0405.5	43.25)	1.7	) 55		3)	IIIG	*
			80)	1.5	)		2)		
19	0415		43.25)	1.5	)		2)		
			80)	1.0	) 45		)	IIIB	
			160)	.6	)		)		
21	0313	0314	43.25)	2.0	) 45		3)	IIIG	
			80)	1.6	)		2)		
	0412	0414	80)	1.0	) 20		3)	IIIG	
			160)	.6	) 0		)		
21/22	2340	0500	80)	.5	45	Varying	1)	IS	Type I activity persisted from this region until 28th.
			160)						
23	0356	0357	43.25)	1.0	) 0		2)	IIIG	
			80)	.5	)		)		
	0432	0433	43.25)	1.5	) 55		3)	IIIG,V	*
			80)	1.5	)		)		
23/24	2340	0130	80)	0	) 0		1)	IS	Type I activity persisted from this region until 27th.
			160)						
23/24	2340	0416	80)	1.1	) 40		1)	IS	Type I activity persisted from this region until 26th.
			160)	.7	)		)		

Days without Heliograph observations: Nil

* Other type III's observed from same position during the day.

SELECTED SOLAR EVENTS

JANUARY 1979

Culgoora

UT Date 197.9 JANUARY	HELIOGRAPH EVENT							Spectral Type	REMARKS
	Start (UT)	End (UT)	Freq. (MHz)	Positions: Central Dist. ($R_\odot$)	Positions: Position Angle (Deg.)	Polarization	Intensity (1-3)		
23/24	0416	0419	43.25)	2.0	) 20		3)		
			80)	1.1	) 45		3)	IIIGG	*
			160)	.8	) 65		2)		
25	0327	0331	43.25)	1.7	)		)		
			80)	1.3	) 90		3)	IIIGG,V	*
			160)	.7	)		)		
	0440	0441.5	43.25)		)		)		
			80)	.9	) 205		3)	IIIGG	
			160)		)		)		
26	0030	0031.5	43.25)	0	0		)		
			80)	0	0		3)	IIIG	*
			160)	.2	270		)		
	0056	0100	43.25)	1.0	) 45		3)		
			80)	.5	) 135		2)	IIIG	
			160)	.5	) 145		2)		
26/27	2356	0001	80)	.7	) 190	R	1)	IS	Type I activity persisted from this region until 30th.
			160)				2)		
27	0054.5	0055.5	43.25	.5	0		3	IIIG	
	0122.5	0123	43.25)	2.0	) 50		3)	IIIG	
			80)	1.6	)		1)		
	0218.5	0225	43.25)	1.0	) 315		3)	IIIGG	
			80)	.4	)		)		
28	0101	0101.5	43.25)	1.5	315		2	IIIG	
	0308	0310	80)	.3	) 225		3)	IIIG	*
			160)		)		)		
29	0040	0041	43.25)	1.7	310		3	IIIB	
	0318.5	0319	43.25)	1.5	)		3)		
			80)	1.2	) 45		2)	IIIG	*
			160)	1.0	)		3)		
	0417.5	0418	43.25)		) 285		3)		
			80)	.8	) 255		3)	IIIB,V	*
			160)		) 225		2)		
30	0156.5	0157	43.25)	1.5	)		2)		
			80)	1.2	) 45		2)	IIIG	
			160)	1.0	)		3)		

Days without Heliograph observations: Nil

* Other type III's observed from same position during the day.

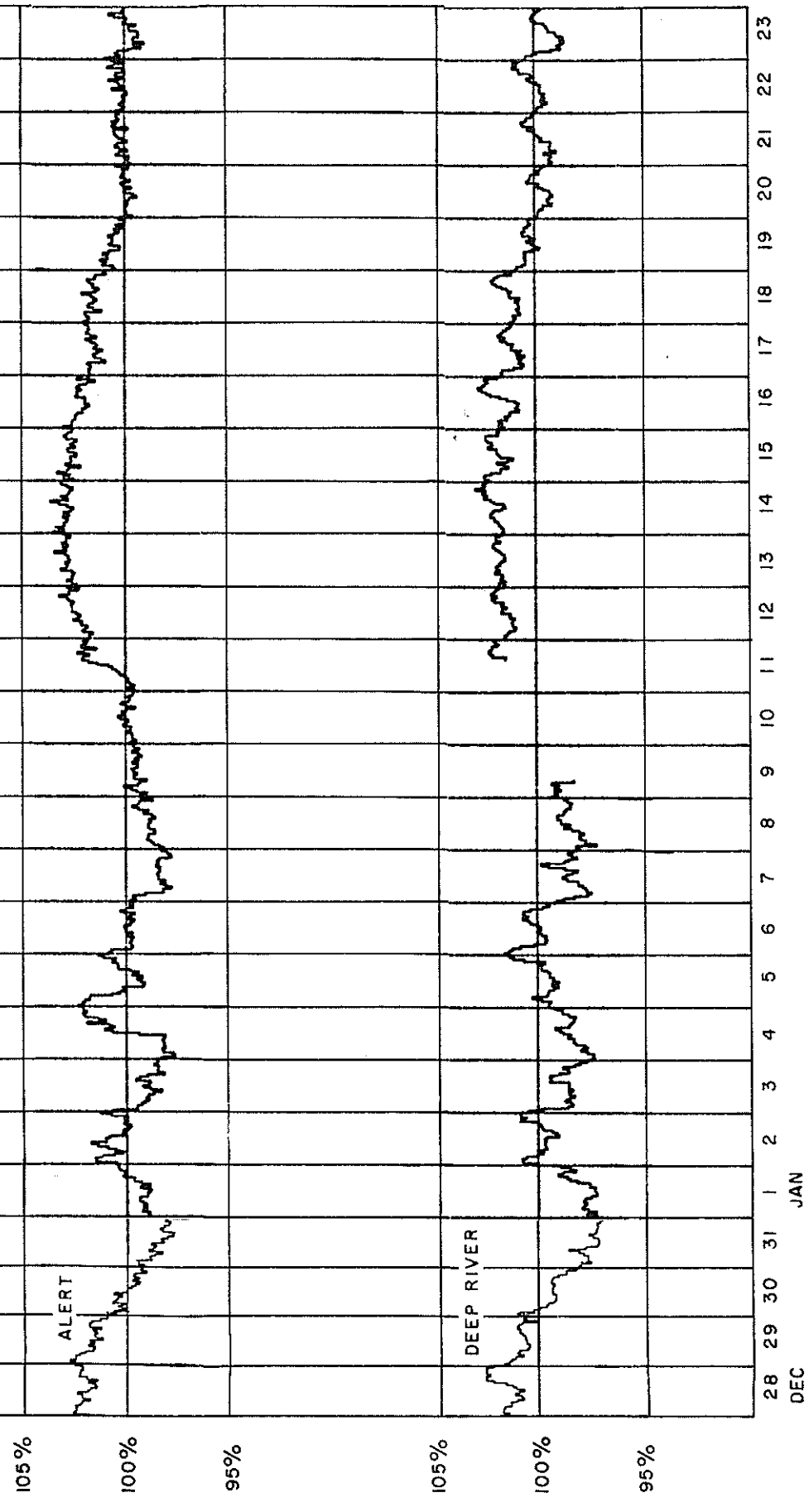
UT Date 197.9 JANUARY	HELIOGRAPH EVENT							Spectral Type	REMARKS
	Start (UT)	End (UT)	Freq. (MHz)	Positions: Central Dist. ($R_\odot$)	Positions: Position Angle (Deg.)	Polarization	Intensity (1-3)		
30/31	2320	0354	80)	1.2	) 25	L	2)	IS	Complex source
			160)	.8	)		2)		
31	0353.5	0354	43.25)	1.6	)		2)		
			80)	1.3	) 35		1)	IIIG	*
			160)	1.0	)		2)		

Days without Heliograph observations: Nil

* Other type III's observed from same position during the day.

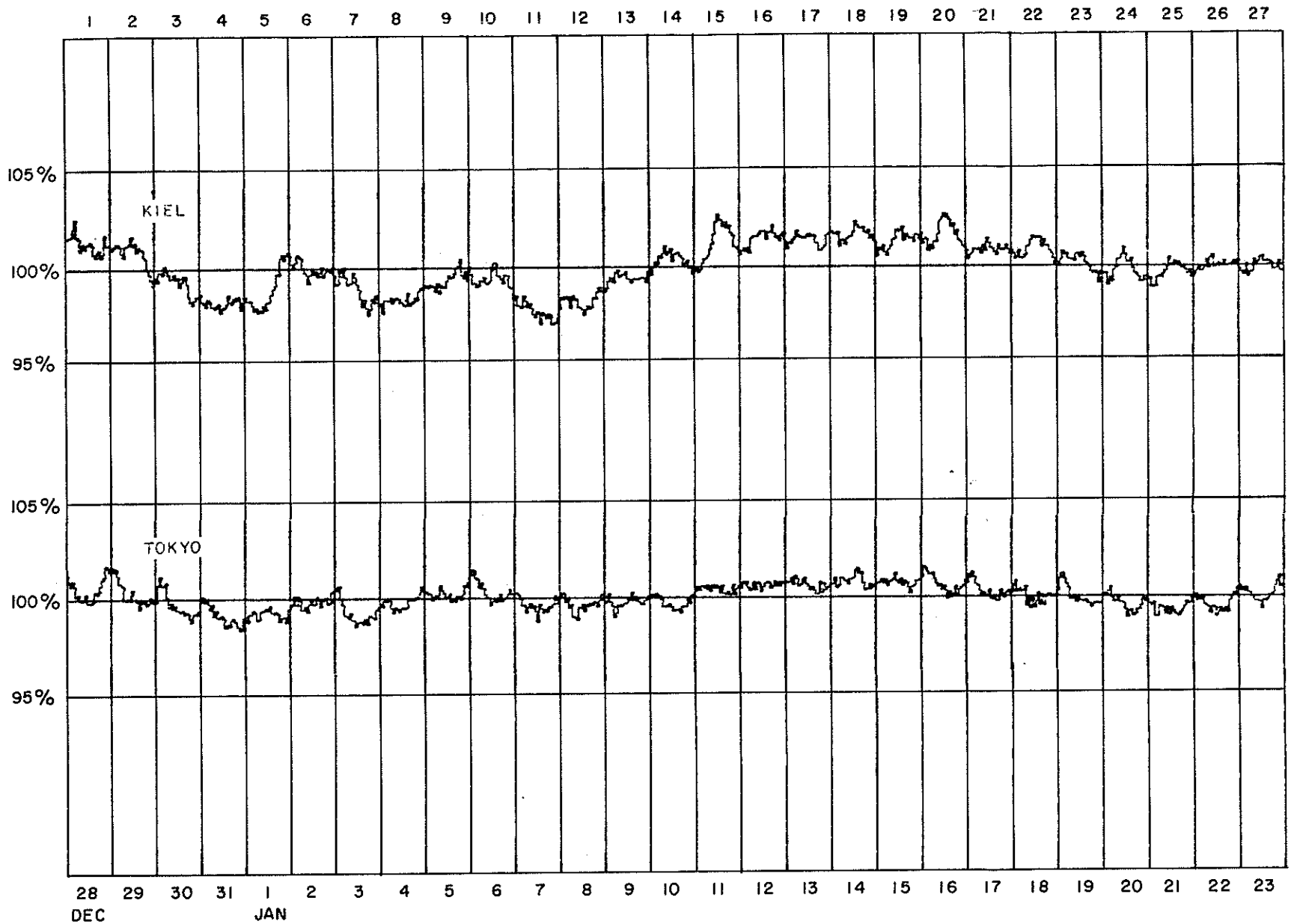
COSMIC RAY INDICES
(Neutron Monitors)

Bartels Rotation 1988 (December 1978 - January 1979)



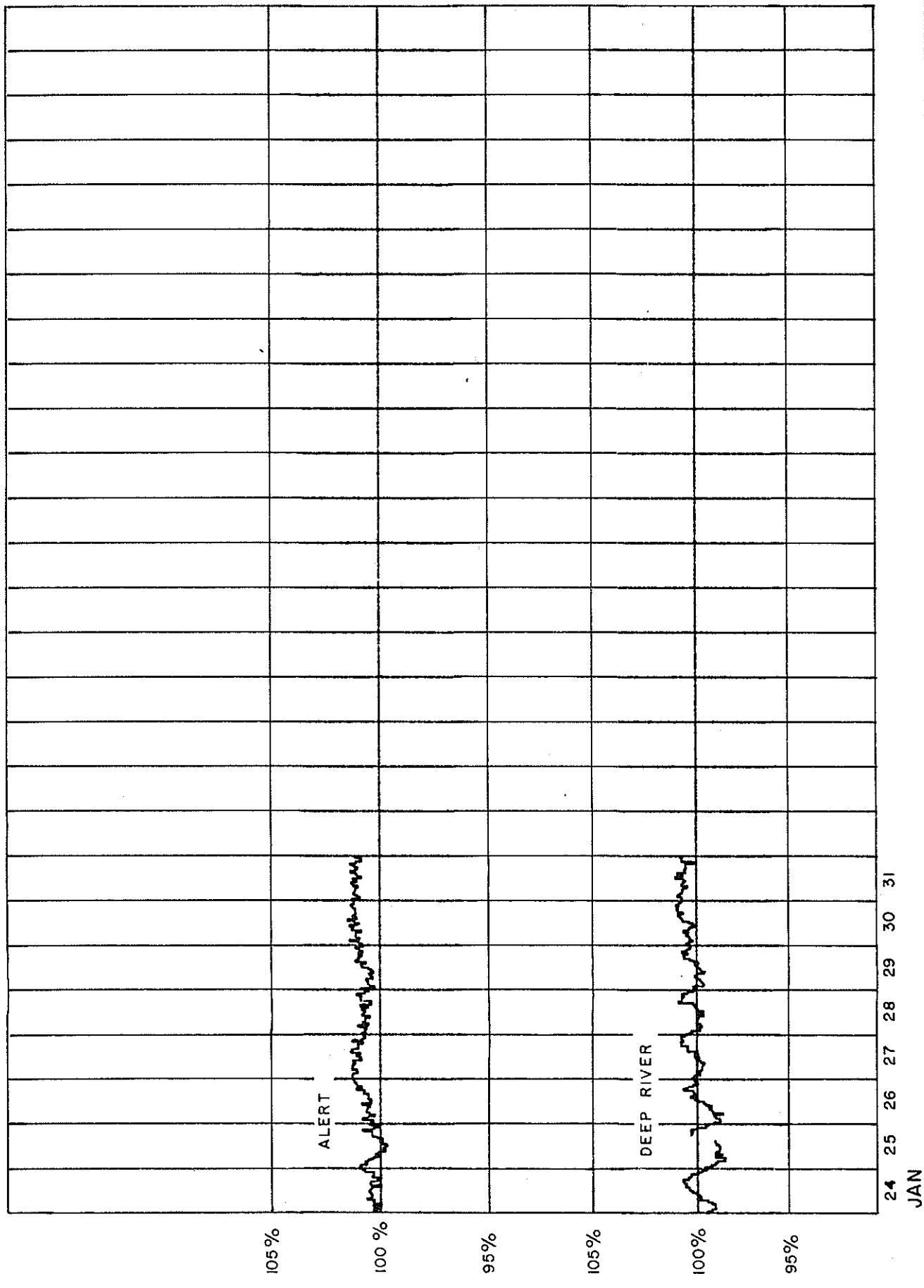
COSMIC RAY INDICES
(Neutron Monitors)

Bartel Rotation 1988 (December 1978 - January 1979)



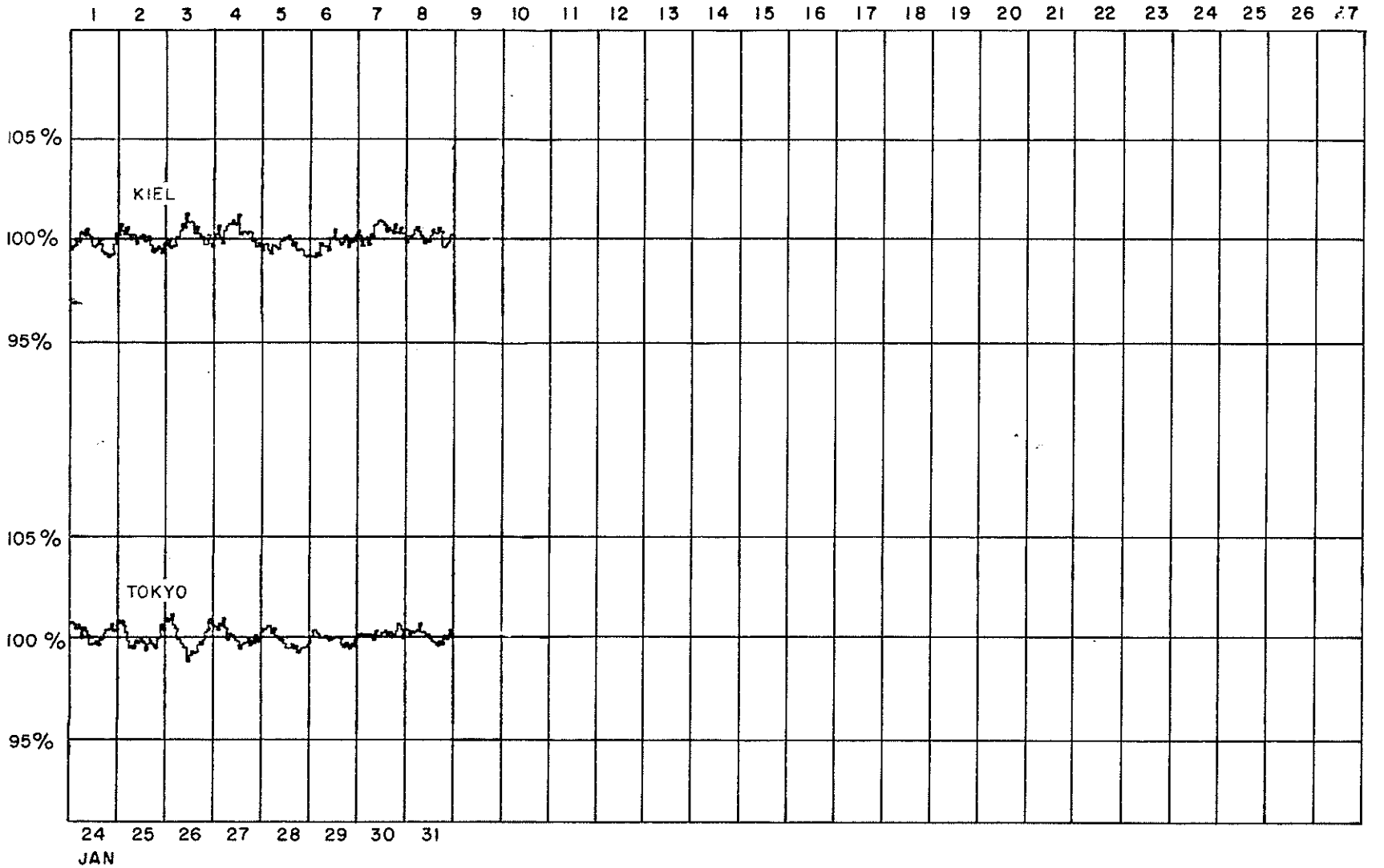
COSMIC RAY INDICES
(Neutron Monitors)

Bartels Rotation 1989 (January 1979)



COSMIC RAY INDICES
(Neutron Monitors)

Bartels Rotation 1989 (January 1979)



COSMIC RAY INDICES

(Neutron Monitors)

JANUARY 1979

Jan. 1979	THULE Average cts/hr	ALERT Average cts/hr	DEEP RIVER Average cts/hr	CALGARY Average cts/hr	SULPHUR MT. Average cts/hr	KIEL Average cts/hr	CLIMAX Average cts/hr	TOKYO Average cts/hr	KULA Average cts/hr
1	Data not available at time of publication	7093.3	6598.0	Data not available at time of publication	Data not available at time of publication	6023.4	Data not available at time of publication	3581.9	Data not available at time of publication
2		7177.5	6739.8			6093.4		3605.7	
3		7059.3	6653.6			6025.8		3583.7	
4		7122.4	6625.3			5991.2		3604.2	
5		7165.7	6720.4			6054.1		3619.7	
6		7126.1	6755.2			6058.5		3624.8	
7		7024.8	6631.5			5952.6		3597.8	
8		7055.5	6628.6			5984.9		3599.7	
9		7097.3	6673.0(8)			6057.5		3603.2	
10		7124.5				6116.1		3601.5	
11		7202.5	6876.7(9)			6169.9		3627.4	
12		7299.0	6842.3			6184.1		3635.1	
13		7329.3	6856.9			6179.3		3635.2	
14		7338.9	6878.1			6197.5		3642.3	
15		7319.3	6868.5			6174.8		3639.2	
16		7286.2	6854.1			6197.5		3636.5	
17		7243.7	6818.0			6145.8		3623.4	
18		7243.2	6823.0			6149.0		3612.8	
19		7172.2	6765.8			6104.2		3613.0	
20		7126.8	6720.3			6081.7		3599.0	
21		7148.0	6722.5			6073.3		3588.3	
22		7151.0	6745.8			6095.3		3597.9	
23		7124.3	6705.8			6090.9		3617.7	
24		7164.4	6736.7			6113.8		3617.8	
25		7156.7	6687.1(21)			6126.0		3607.9	
26		7193.7	6718.0			6139.2		3609.5	
27		7227.6	6756.0			6147.3		3611.5	
28		7196.4	6753.0			6105.0		3603.6	
29		7194.3	6748.7			6112.7		3605.0	
30		7233.5	6786.0			6150.9		3615.9	
31		7230.0	6792.3			6135.0		3612.0	
MEAN		7181.5	6749.4			6104.2		3612.0	

( ) 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.

GEOMAGNETIC ACTIVITY INDICES

JANUARY 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	Q7A	2	3	2-	2-	2+	1	1	4	17-	2	3-	1	1+	2+	1	1+	3	10	17	16	14	20		0.5
2		3-	1+	2-	3+	3+	4-	5-	4+	25	1+	1+	2-	3	3+	3+	4+	4+	19	37	35	18	55		1.0
3		4	4-	2+	3+	3	3	4	3+	27-	3	3-	2	3	3	3	4-	4-	19	31	28	27	33		1.0
4	D1	4+	5	5-	4-	5-	5+	6-	5+	39-	4-	3+	3+	3+	5-	5	6-	4+	45	71	54	42	84		1.5
5		5+	5	3+	3-	2	3+	3	3-	27+	4+	3+	3-	2	2-	3	3	2+	23	32	24	34	23		1.1
6		4-	2+	2+	3+	4+	4	3	2+	25+	3+	3-	3	3	4	4+	4-	3	18	32	47	34	46		1.0
7	D4	1+	1	2+	3+	5-	5+	6+	4	28+	2	2-	3	3-	5-	5	6	4-	32	56	50	22	84		1.3
8	D6A	3+	2+	3-	1	1-	1+	2	2+	16-	3+	3-	3-	2-	1-	2-	2	3-	8	14	14	18	10		0.5
9		3	5-	3+	2+	3-	3-	2+	2-	23-	3	5-	4-	2+	3	3+	3	3-	15	26	42	48	21		0.8
10	Q1	1+	1+	1-	0+	1-	0+	2	1	8-	2-	1	1	0	1	1	2	2-	4	7	6	7	7	CK	0.1
11	Q2	2	2-	1-	2+	2-	0+	0	0+	9	1-	1+	1-	2	2-	1-	0+	1-	4	8	7	11	4	CK	0.2
12	Q8A	1+	3-	2+	2	3-	2	2	3+	18+	1+	3-	3-	2-	3-	2+	2+	3	10	18	21	18	21	K	0.5
13	Q3K	3+	0	1-	1	1	1	1-	1-	8+	2+	1-	0+	1-	1	1+	1+	1	5	6	8	8	6	CK	0.2
14	Q5A	1-	2-	2+	2+	3-	3	1+	0+	14+	2-	2-	2-	2-	3	3	2-	1+	8	12	16	12	17		0.4
15		1	2	2	4-	3+	3	4	4-	23-	2+	2+	2	3	3+	3	4-	3	15	24	30	22	33		0.9
16		3+	4-	3	3-	3-	2-	1-	2-	19+	3-	3+	2+	2	2	1+	1-	2-	12	20	18	27	11		0.7
17	Q4A	0+	1	0+	2-	3-	2+	2+	3-	13+	1-	2-	1	2-	2+	3-	3-	3-	7	15	20	7	27		0.4
18	Q0A	3	3	1+	3-	3-	3	2+	2	20	2+	2-	1+	2+	3	3	3-	2+	11	18	18	17	20		0.6
19		4+	5	3-	3+	3-	2+	2+	3-	25+	4	4+	3-	3	2+	3-	3-	3	19	27	28	39	17		1.0
20		3	3	3	2+	2+	3-	3-	1+	20+	2-	3-	2+	2+	3-	3-	2+	2-	12	21	20	21	21		0.7
21	Q3A	3	3-	2	3	3	3-	2	2-	20	3	2	2-	3-	3	3-	2+	2-	11	18	21	23	17		0.6
22		0	1-	1+	2	3	1+	4+	5	18-	0+	1+	2-	2-	3	2-	4	5-	14	31	18	7	42		0.8
23	D5	3	2	2+	4+	4+	4	5+	5-	30	2	2-	2	4	4	4+	5-	5-	27	39	42	26	53		1.2
24		6-	5-	3-	3+	2+	3-	3-	3-	27-	4	3-	3-	3+	2+	3	3	3-	23	35	30	42	23		1.1
25	D2	6-	6-	4-	4-	4	4-	4	3+	34-	5-	4	3+	4	4+	4	4	3	34	52	52	58	46		1.3
26	D3	4+	4-	3	3+	3	4+	4+	5+	31+	3	3	3-	3-	2+	4+	4+	4+	28	52	39	31	60		1.2
27		4-	5	4-	3-	2+	3	4-	4+	28+	3	4	3-	3-	2	3+	3+	4-	23	41	36	36	41		1.1
28		2+	3	3-	3+	3	2+	3+	2	22	3-	2+	3-	3	2	2	3+	2	13	22	26	22	27		0.7
29		3	3	3-	2+	3+	2+	3-	3	22+	3-	2+	3-	1+	3	3-	3-	2+	13	26	25	22	29		0.8
30		3+	3-	3+	3	3+	2+	3	4	25	2+	2-	3-	3-	3	2+	3-	3+	16	36	22	30	29		0.9
31		3	3-	3-	3+	3	2-	3-	3-	22-	2	2	2-	3-	3	2-	3-	3-	13	22	19	21	21		0.7
																			16	28.0	27.0	27.5			0.80

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

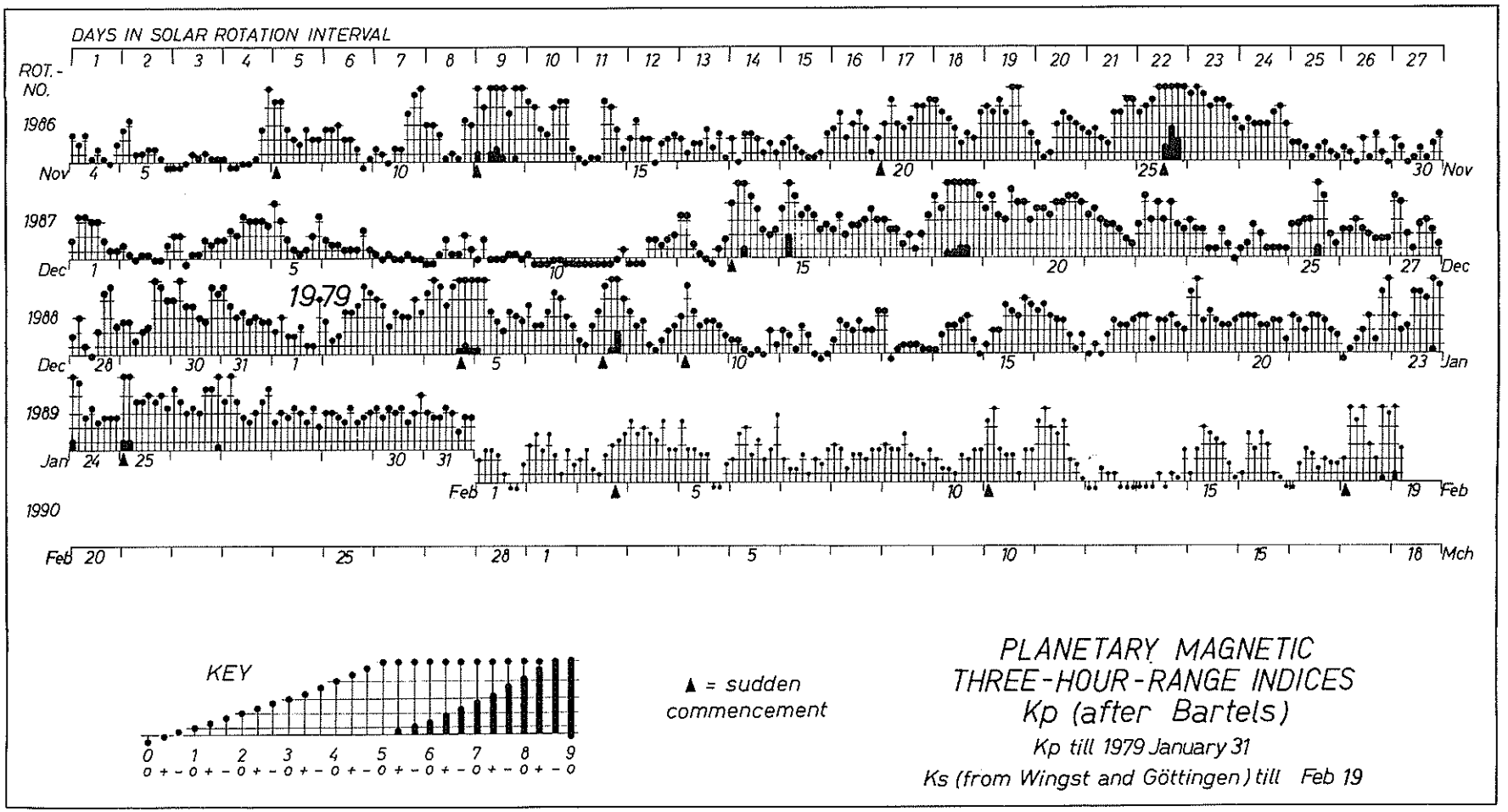
Quiet days (Q) and disturbed days (D), geomagnetic planetary three-hour-range indices (Kp) (integers alone are equivalent to those normally given with a small zero), magnetic character figures (Cp), and average amplitude (Ap) (unit 2γ) prepared by Geophysikalisches Institut at the University of Göttingen, 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	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN
1	15	33	12	88	9	6	4	21	13	13	11	10
2	14	27	15	94	82	5	4	20	12	10	3	19
3	14	15	41	83	31	11	16	11	8	12	5	19
4	11	3	55	96	26	80	30	8	17	5	12	45
5	17	6	21	7	38	53	22	7	8	6	10	23
6	14	7	9	5	8	13	16	14	4	2	5	18
7	7	9	5	7	11	14	7	6	4	9	2	32
8	10	20	5	16	10	14	6	24	5	14	3	8
9	16	14	6	85	4	8	5	31	11	8	3	15
10	7	12	36	10	24	10	6	12	15	16	1	4
11	5	7	64	30	17	6	11	12	5	10	1	4
12	10	3	29	18	10	4	21	13	14	53	4	10
13	8	12	24	11	7	20	13	6	8	22	7	5
14	11	10	51	9	4	48	6	5	5	11	28	8
15	48	17	19	5	6	6	3	3	5	8	28	15
16	11	24	8	7	6	6	4	6	4	6	14	12
17	10	25	7	8	9	6	9	8	5	6	9	7
18	10	24	19	5	11	18	24	3	32	5	48	11
19	12	15	38	4	17	11	11	2	22	13	24	19
20	12	9	23	8	11	5	3	5	9	22	26	12
21	12	7	9	26	33	6	6	9	13	16	12	11
22	22	13	8	24	15	8	6	12	10	28	19	14
23	6	15	22	24	18	8	4	11	6	12	7	27
24	5	6	48	26	19	6	4	10	5	18	6	23
25	12	3	17	10	24	8	9	36	7	60	21	34
26	37	49	18	7	46	5	4	36	18	33	8	28
27	42	70	16	5	15	4	29	51	23	17	14	23
28	46	17	12	7	12	6	124	50	14	5	14	13
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	16	23	25	20	13	17	18	12	15	13	16

GEOMAGNETIC ACTIVITY INDICES



PRINCIPAL MAGNETIC STORMS

JANUARY 1979

OBS. 3 letter IAGA code	GEOMAG-NETIC LATI-TUDE	COMMENCEMENT DAY	COMMENCEMENT hr min (UT)	TYPE	SC - AMPLITUDES D(')	SC - AMPLITUDES H(γ)	SC - AMPLITUDES Z(γ)	MAXIMUM 3 HOUR - INDEX K DAY(3 HOUR PERIOD)	K	RANGES D(')	RANGES H(γ)	RANGES Z(γ)	UT END DAY	UT END HOUR
NEW	55.1N	1	10--	..	..	..	..	05(2)	6	35	128	213	05	11
HYB	07.6N	1	2000	..	..	..	..	02(6,7)	5	3	88	29	03	01
GNA	43.3S	1	0127	SC*	- 2.2	- 6 *	- 6 *	07(8)	6	18	110	120	08	12
COL	64.6N	2	11--	..	..	..	..	04(6)	7	236	1660	870	05	20
SIT	60.1N	2	11--	..	..	..	..	04(5)	6	80	580	470	05	06
FRD	49.6N	2	20--	..				04(8) 05(1) 07(7)	5	25	124	54	08	00
JAI	17.3N	2	1000	..	..	..	..	--	-	5	123	47	06	02
SHL	14.6N	2	1000	..	..	..	..	--	-	5	114	56	06	02
UJJ	13.5N	2	1000	..	..	..	..	--	-	5	150	39	06	02
ABG	09.5N	2	1000	..	..	..	..	02(6,7)	5	4	128	42	06	02
ANN	01.4N	2	1000	..	..	..	..	21(4)	4	4	143	68	06	02
HUA	00.6S	2	1030	..	..	..	..	02(5,6,7)	5	13	277	42	03	05
TRD	01.2S	2	1000	..	..	..	..	--	-	2	174	90	06	02
TOO	46.7S	2	1100	..	..	..	..	04(5,7)	5	17	150	70	05	06
IRK	41.0N	3	10--	..	..	..	..	04(7)	6	21	130	43	05	12
HYB	07.6N	3	1100	..	..	..	..	04(5,7)	5	4	121	37	05	08
HUA	00.6S	3	1124	..	..	..	..	04(5,6,7,8)	5	14	350	84	05	21
KGL	56.5S	3	09--	..	..	..	..	04(7)	3	--	--	--	05	03
WIT	54.2N	4	1725	SC*	+15 *	+85 *	+ 2	04(6)	7	56	230	75	05	04
HER	33.7S	4	0300	..	..	..	..	04(7)	5	20	99	92	05	12
NEW	55.1N	6	2151	SC	1	9	--	07(6,7)	5	32	172	103	08	08
WIT	54.2N	6	2151	SC	- 1	+ 9	0	07(7)	6	33	165	85	08	03
IRK	41.0N	6	01--	..	..	..	..	07(5,6,7)	6	19	147	41	08	12
SJG	29.9N	6	2300	..	..	..	..	08(7)	6	12	130	32	08	08
JAI	17.3N	6	2330	SC	- .8	13	- 4	--	-	7	134	29	08	23
JAI	17.3N	6	0600	..	..	..	..	--	-	5	62	26	06	21
SHL	14.6N	6	2330	SC	- .6	11	3	--	-	5	139	32	08	23
SHL	14.6N	6	0600	..	..	..	..	--	-	3	55	16	06	21
UJJ	13.5N	6	2330	SC	- .6	16	- 4	--	-	5	--	--	08	23
UJJ	13.5N	6	0600	..	..	..	..	--	-	4	74	30	06	21
AEG	09.5N	6	2330	SC	- .6	12	- 6	06(6)	5	5	154	21	08	23
ABG	09.5N	6	0600	..	..	..	..	04(5,7)	5	3	87	38	06	21
HYB	07.6N	6	0100	..	..	..	..	06(6)	5	4	92	36	06	19
HYB	07.6N	6	2332	SC	- .5	+12	- 1	07(5,6,7)	6	5	167	35	08	11
GUA	04.0N	6	0138	..	..	..	..	07(5)	5	10	150	40	08	11
ANN	01.4N	6	0600	..	..	..	..	22(7)	5	3	148	78	06	21
ANN	01.4N	6	2330	SC	- .9	14	10	23(5,7,8)	5	4	219	75	08	23
HUA	00.6S	6	2151	SC*	1	13	2	07(7)	7	11	394	56	08	21
HUA	00.6S	6	0127	SC	--	15	3	06(5,6,7)	6	12	336	79	06	20
TRD	01.2S	6	0600	..	..	..	..	--	-	1	193	80	06	21
TRD	01.2S	6	2330	SC	- .2	12	14	--	-	3	260	125	08	23
PMG	18.6S	6	0126	..	..	..	..	07(4,5,6,7)	5	10	110	80	08	11
HER	33.7S	6	2300	..	..	..	..	07(5,6,7)	5	30	191	143	08	12
TOO	46.7S	6	0128	SC	+ 2	+ 4	--	06(5) 07(6,7)	5	20	130	50	08	00
KGL	56.5S	6	0647	SC	+16	+12	+ 1	07(7)	8	--	--	--	08	00
COL	64.6N	7	09--	..	..	..	..	07(7)	7	216	1270	710	08	07
SIT	60.1N	9	0341	SI*	- 8 *	+123 *	-13 *							
HON	21.1N	9	0339	SC	- 1	+31	+14	09(1)	4	4	31	14	10	00
JAI	17.3N	9	0340	SC	- .6	19	- 4	--	-	4	73	18	09	23
SHL	14.6N	9	0340	SC	.8	32	2	--	-	5	61	29	09	23
UJJ	13.5N	9	0340	SC	.1	14	2	--	-	4	77	25	09	23
ABG	09.5N	9	0340	SC	--	22	+ 2	07(5,6)	6	3	92	36	09	23
HYB	07.6N	9	0340	SC	- .2	+40	- 3	09(2)	5	4	94	29	09	23
GUA	04.0N	9	0340	SC*	+ 1	+56	-18	09(2)	5	--	80	50	09	23
ANN	01.4N	9	0340	SC	- 1.7	48	22	25(2,4)	5	5	117	68	09	23
HUA	00.6S	9	0340	SC	2	62	11	09(6)	6	8	180	38	10	02
TRD	01.2S	9	0340	SC	--	--	--	--	-	4	156	--	09	23
TOO	46.7S	9	0339	SC*	- 7 *	+90 *	+10	09(2,3)	5	7	120	60	09	16
KGL	56.5S	9	0339	SC	+64	+37	+12	09(2)	4	--	--	--	09	21
HUA	00.6S	14	1250	..	..	..	..	15(5,6)	6	17	323	70	15	23
HYB	07.6N	15	0200	..	..	..	..	15(4,5)	4	3	114	29	16	05
GUA	04.0N	15	0231	..	..	..	..	15(4)	5	--	130	30	16	06
JAI	17.3N	18	1300	..	..	..	..	--	-	6	72	37	21	18
SHL	14.6N	18	1300	..	..	..	..	--	-	5	75	30	21	18
UJJ	13.5N	18	1300	..	..	..	..	--	-	6	79	34	21	18
ABG	09.5N	18	1300	..	..	..	..	09(2,3)	5	5	95	42	21	18
ANN	01.4N	18	1300	..	..	..	..	--	-				21	18
TRD	01.2S	18	1300	..	..	..	..	--	-	6	143	84	21	18

PRINCIPAL MAGNETIC STORMS

JANUARY 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
GUA	04.0N	19	0013	..	..	..	..	19(1)	5	--	120	40	19	17
SIT	60.1N	22	09--	..	..	..	..	23(5)	7	60	570	530	28	01
WIT	54.2N	22	1900	..	..	..	..	22(7) 23(7)	6	33	145	70	24	04
JAI	17.3N	22	1800	..	..	..	..	--	-	7	134	32	29	01
SHL	14.6N	22	1800	..	..	..	..	--	-	5	141	30	29	01
UJJ	13.5N	22	1800	..	..	..	..	--	-	6	153	31	29	01
ABG	09.5N	22	1800	..	..	..	..	19(1,4)	4	6	149	49	29	01
HYB	07.6N	22	1800	..	..	..	..	23(5,6,7,8) 25(2)	5	5	163	31	25	22
ANN	01.4N	22	1800	..	..	..	..	--	-				29	01
TRD	01.2S	22	1800	..	..	..	..	--	-	--	--	--	29	01
HER	33.7S	22	1400	..	..	..	..	22(8) 26(7)	5	34	140	128	28	01
COL	64.6N	23	09--	..	..	..	..	23(4,5,6,7)	6	243	1426	780		
NEW	55.1N	23	05--	..	..	..	..	24(1)	6	41	150	181		
FRD	49.6N	23	09--	..				24(1) 25(1)	6	27	152	70	27	13
IRK	41.0N	23	04--	..	..	..	..	23(5)	6	30	96	46	24	06
HUA	00.6S	23	0929	..	..	..	..	06(6)	6	14	320	59	25	01
TOO	46.7S	23	09--	..	..	..	..	23(4) 25(5)	5	20	150	50	28	00
KGL	56.5S	23	09--	..	..	..	..	23(7,8) 24(1)	6	--	--	--	24	05
COL	64.6N	25	0139	SC*	-20	+138	-32	25(5)	6	--	--	--	27	24
NEW	55.1N	25	0139	SC	2	18	3	25(2)	5	32	110	194	28	06
WIT	54.2N	25	0140	SC*	- 2	+35 *	0	26(7,8)	6	30	180	70	27	22
GUA	04.0N	25	0140	SC*	--	+43	-18	25(1)	5	10	150	30	27	07
HUA	00.6S	25	0139	SC	1	30	5	25(6)	7	10	294	43	27	02
KGL	56.5S	25	0137	SC*	+41	-42	-11	25(5,6,7) 26(7)	6	--	--	--	27	09

Reports were received from the following observatories:

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

SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

JANUARY 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).

04	1725	A:	SOD	WNG	COI								
		B:	NGK	QUE									
		C:	CZT	(si:	A:	FUR	-bps:	B:	EBR	TOL)			
06	2330	A:	PMG										
		B:	KAK	KSA	QUE								
		C:	EBR	HAZ	KNY	(si:	C:	TOL)					
09	.0340	A:	SOD	ESK	WNG	DOU	VIC	FUR	EBR	TOL	ALM	PMG	KGL	DRV
		B:	AQU	COI										
		C:	NGK	HAD	(si:	A:	CZT	-pi2:	A:	MMB)				
25	0139	A:	COI	ALM	QUE	KGL								
		B:	SOD	WNG	DOU	VIC	MMB	AQU	EBR	TOL	DRV			
		C:	NGK	HAD	HAZ	CZT	(si:	A:	FUR	-pi1:	A:	FUR	MMB)	

Solar-flare effects (sfe)

Effects confirmed by ionospheric or solar observations are underlined.

16 1036 - .... WNG

21 1312 - 1330 WNG

Very unusual events

none

RADIO PROPAGATION QUALITY INDICES

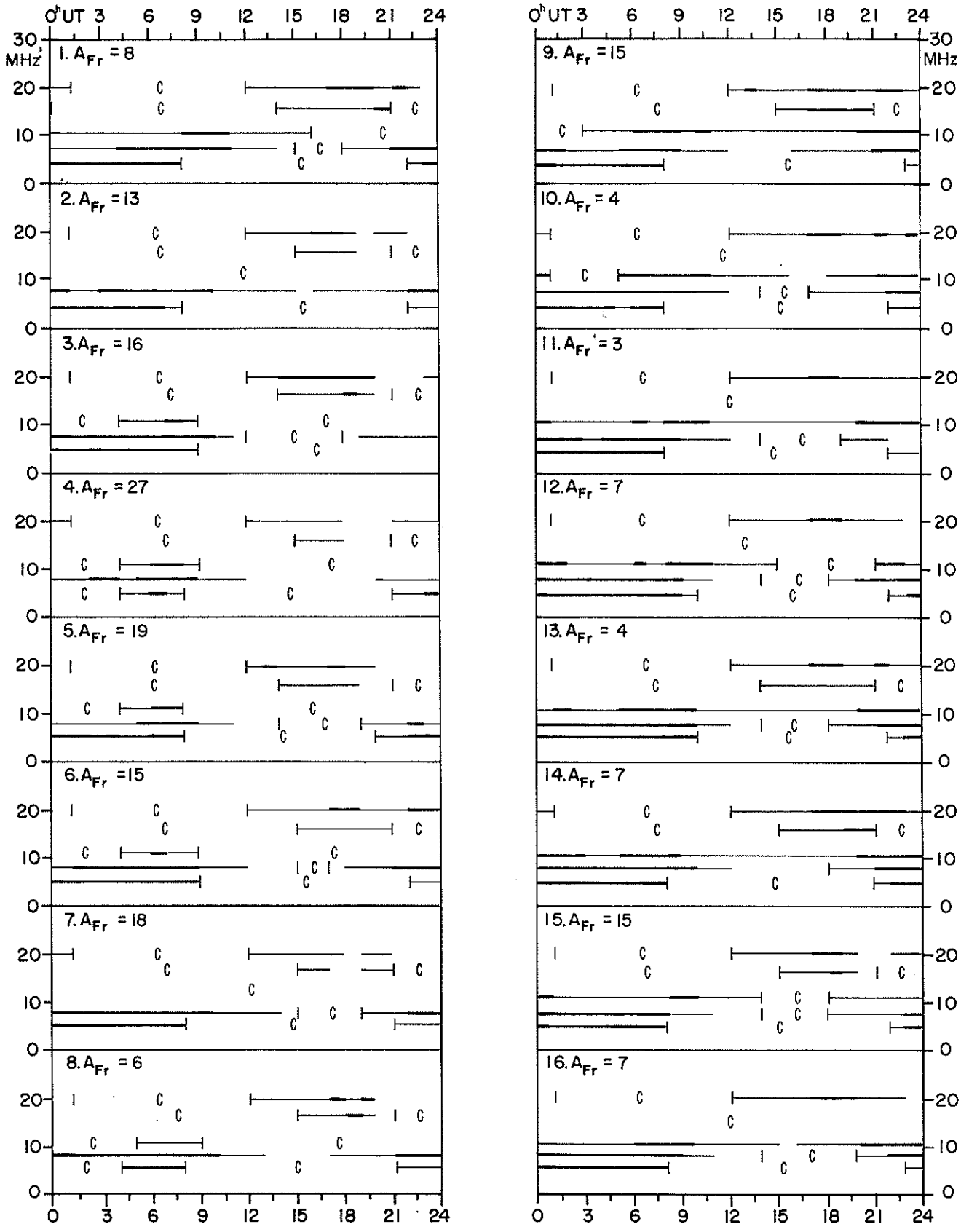
JANUARY 1979

Quality Indices calculated for reception at Luchow

DAY	TOKYO	NORFOLK	MOSCOW	CANBERRA	BRACKNELL
1	3.3	5.9	9.5	1.8	12.0
2	5.5	4.9	10.4	2.5	11.2
3	6.9	5.6	11.4	2.6	12.1
4	5.3	4.6	11.2	2.4	11.6
5	5.4	5.1	11.0	2.0	11.7
6	4.3	5.5	10.5	1.9	12.2
7	4.5	5.6	10.8	2.3	12.1
8	5.7	5.6	10.5	2.0	12.0
9	5.4	6.3	11.6	2.2	12.1
10	4.6	5.8	11.6	2.2	11.9
11	3.7	5.7	10.9	1.7	11.8
12	5.0	6.1	11.3	2.1	12.3
13	3.1	5.6	10.8	2.3	12.1
14	4.0	5.5	10.8	3.0	12.2
15	5.8	4.6	12.0	2.8	12.3
16	4.5	5.4	12.0	2.3	12.5
17	5.5	5.5	11.1	2.0	12.5
18	5.1	5.8	11.4	1.9	12.6
19	5.0	6.0	12.0	2.4	12.3
20	5.5	5.6	11.7	2.5	12.3
21	4.8	5.6	11.8	2.3	12.2
22	6.5	5.4	11.5	2.1	11.7
23	6.1	4.5	11.5	2.4	12.0
24	5.4	5.7	11.0	1.7	11.9
25	6.3	4.8	11.6	2.4	12.0
26	6.9	4.8	11.7	3.1	12.1
27	7.3	5.0	11.7	3.2	11.7
28	6.8	5.3	11.1	2.5	11.8
29	6.7	5.9	11.0	2.1	11.5
30	6.9	6.2	11.4	2.7	12.6
31	7.5	6.3	11.1	3.3	12.6
MEAN	5.5	5.5	11.2	2.3	12.1

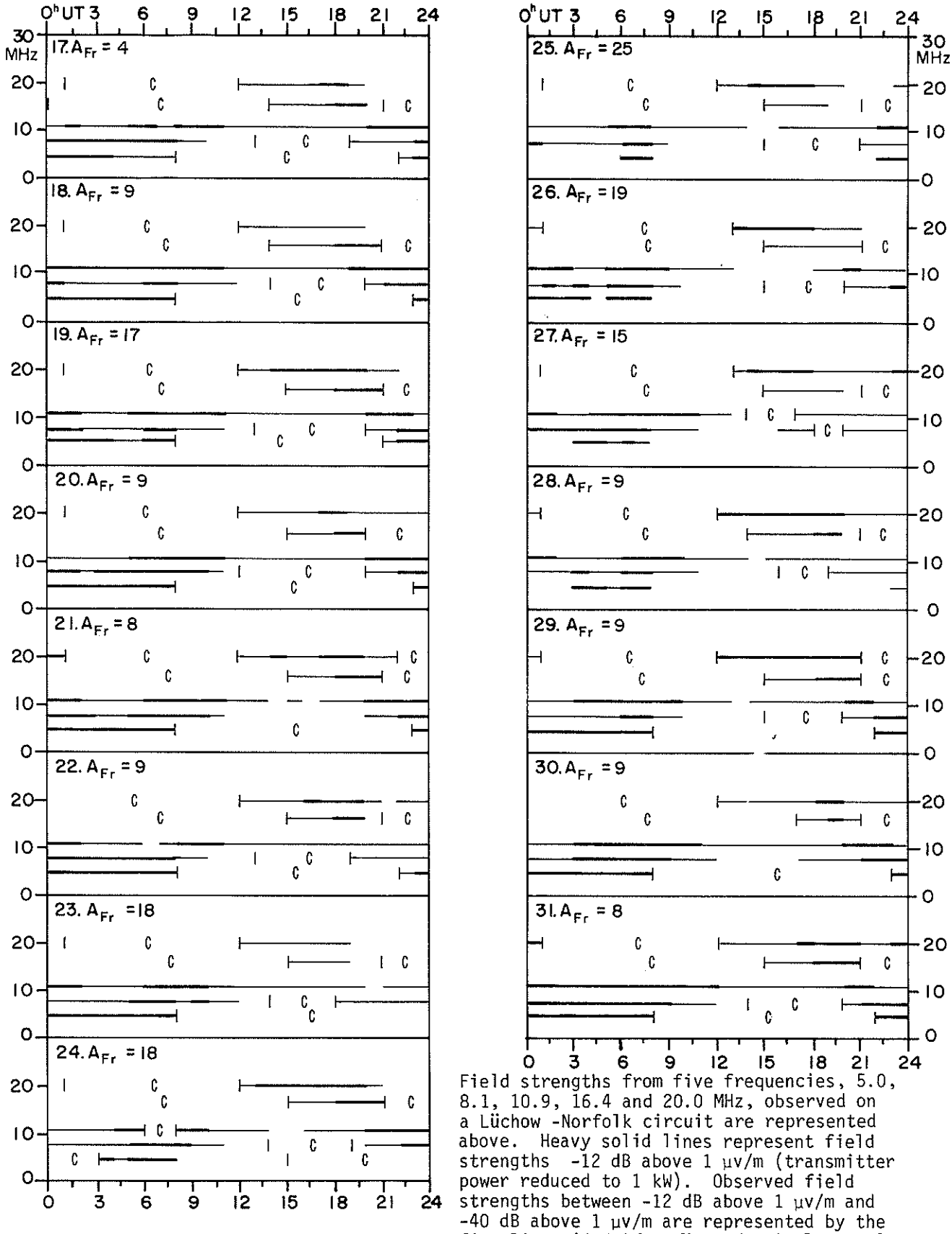
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

JANUARY 1979



TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

JANUARY 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 4/79/950

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."