



**U.S. DEPARTMENT OF COMMERCE**

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**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION**

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**ENVIRONMENTAL DATA AND INFORMATION SERVICE**

Margaret E. Courain, Acting Director

# Solar - Geophysical Data

NO. 455 JULY 1982

Part I (Prompt Reports)

DATA FOR  
JUNE 1982  
MAY 1982

## NATIONAL GEOPHYSICAL DATA CENTER

For obtaining bulletins on a data exchange basis, send request to: World Data Center A for Solar-Terrestrial Physics, NOAA/EDIS/NGSDC, 0631, 325 Broadway, Boulder, Colorado 80303.

For sale through the National Geophysical and Solar-Terrestrial Data Center, NOAA/EDIS, 0631, 325 Broadway, Boulder, Colorado 80303. Subscription Price: \$64.00 annually for both part I (Prompt Reports) and part II (Comprehensive Reports) or \$32.00 annually for either part. Annual supplement containing explanation is included. For foreign mailing add \$42.00 for both parts or \$21.00 for either part. Single issue price is \$3.00 for either part and \$2.50 for the extra issue. Make checks and money orders payable to: Department of Commerce, NOAA/NGSDC. Note: \$4.00 handling charge per order.

To standardize referencing these reports in the open literature, the following format is recommended:  
Solar-Geophysical Data, 450 Part I (or Part II), pages, February 1982, U.S. Department of Commerce (Boulder, Colorado, U.S.A. 80303).

# SOLAR-GEOPHYSICAL DATA

No. 455

*Issued in two parts*

Helen E. Coffey, Editor

Joe H. Allen, Chief  
Solar-Terrestrial Physics Division

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DETAILED COVERAGE FOR 1981-82 PUBLISHED IN "SOLAR-GEOPHYSICAL DATA"

Table with columns for years (1981, 1982) and months (Jun, Jul, Aug, Sep, Oct, Nov, Dec, Jan, Feb, Mar, Apr, May, Jun) and rows for various solar and geophysical phenomena categories (A.1 to H.60).

Notes:

"444A 52" listed under 1981 Jun means that the sunspot drawings for Jun 1981 were contained in Solar-Geophysical Data Number 444 - Part I, beginning on page 52.

A = Part I, B = Part II.

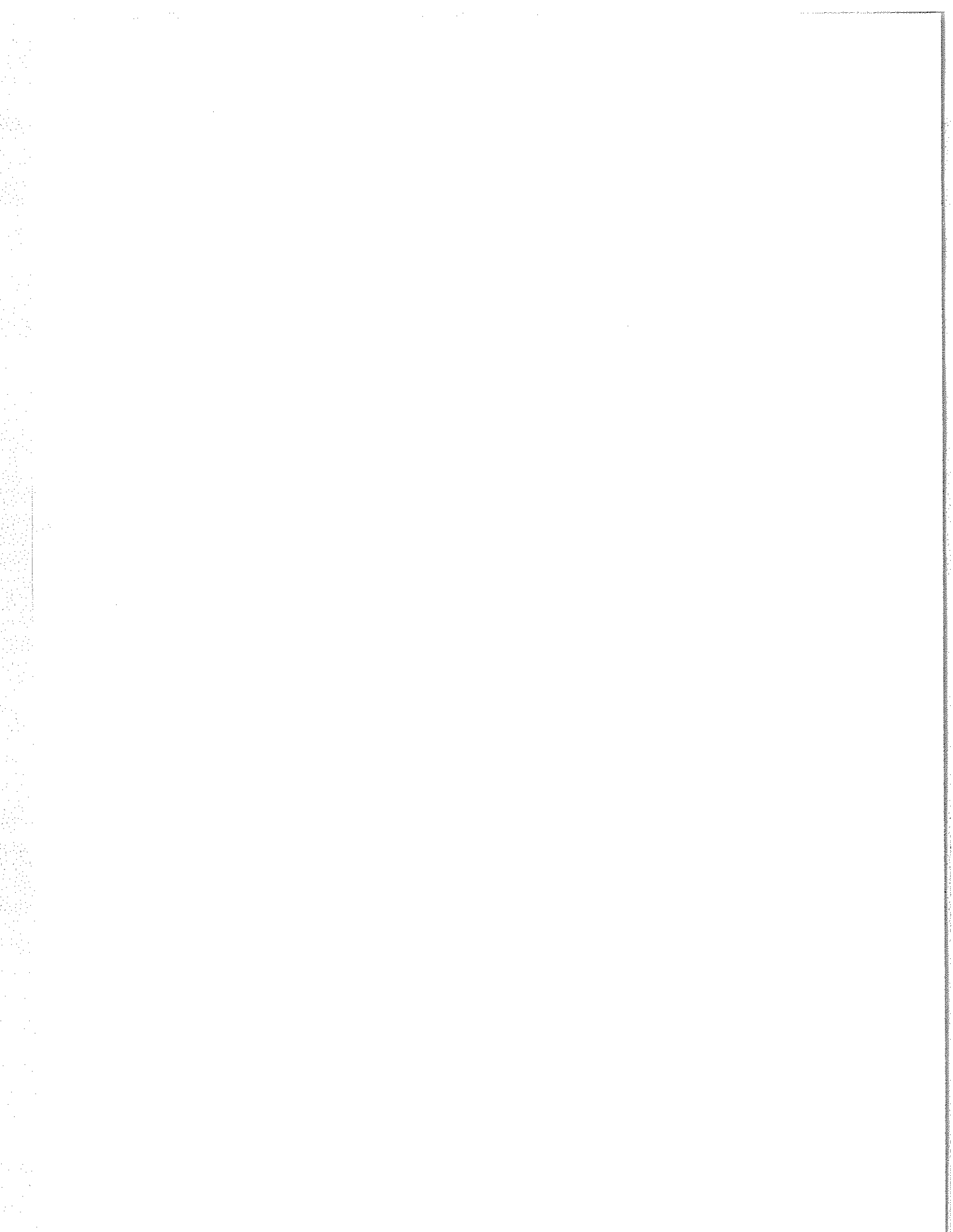
----- = no data available. blank = data not yet received.

SGD 455 Part I (Prompt)

JUNE 1982 DATA

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ALERT PERIODS  
INTERNATIONAL URSIGRAM  
AND WORLD DAYS SERVICE

SUMMARY OF THE GEOALERT WWA MESSAGES

JUNE 1982

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions				Outstanding events	Forecasts			Alert Situations									
						Location		No of Flares			Date	Location	Desc*										
						Lat-Long	Total	M	X						Lat-Long								
152	01	31	123	133	026	S21W64	3	1	0		01	S21W64	Q	SOLNIL MAGQUIET									
						S15W32	0	0	0			S15W32	Q										
						S03W19	0	0	0			S03W19	E										
						S15W08	6	0	0			S15W08	Q										
						S04E31	3	0	0			S04E31	Q										
						N19E50	0	0	0			N19E50	Q										
						N09E73	7	0	0			N09E73	Q										
N14E76	0	0	0	N14E76	Q																		
153	02	01	108	130	015	S16W46	0	0	0		02	S16W46	Q	SOLQUIET MAGQUIET									
						S05W32	0	0	0			S05W32	E										
						S16W20	1	0	0			S16W20	Q										
						N18E37	0	0	0			N18E37	Q										
						N08E59	7	0	0			N08E59	E										
						N14E63	0	0	0			N14E63	Q										
						N19E67	1	0	0			N19E67	Q										
						S09E88	0	0	0			S09E88	Q										
						154	03	02	137			131	015		S15W60	0	0	0	Presto Tenflare 240 Flux Units 02/1525Z Duration 9 Minutes. Soflare M9/1B S08E83 02/1508Z Duration 34 Minutes.	03	S15W60	Q	SOLQUIET MAGQUIET
S04W46	0	0	0	S04W46	E																		
S15W34	1	0	0	S15W34	E																		
S08E12	0	0	0	S08E12	Q																		
N18E21	4	0	0	N18E21	Q																		
N10E45	3	0	0	N10E45	E																		
N14E49	0	0	0	N14E49	Q																		
N21E54	2	0	0	N21E54	Q																		
S08E73	9	1	0	S08E73	E																		
155	04	03	141	138	013					S04W59	0			0	0	Presto Strong Type 1V Observed Behind NW Limb Start 0401Z Tenflare 2700 Flux Units 03/1141Z Duration 20 Minutes Soflare X8/2B S09E72 03/1140Z Duration 15 Minutes	04	S04W59			E	SOLALERT 04/XX MAGALERT	
						S03W05	0	0	0	S03W05	Q												
						S08W03	0	0	0	S08W03	Q												
						N18E08	3	0	0	N18E08	Q												
						N10E32	0	0	0	N10E32	E												
						N14E36	0	0	0	N14E36	Q												
						N20E38	1	0	0	N20E38	Q												
						S08E61	20	3	1	S08E61	A												
156	05	04	177	152	008	S03W72	2	0	0	Presto Tenflare 100 Flux Units 03/0830Z Duration 15 Minutes. Soflare X2/2B S10E54 04/ 1415Z Duration 20 Minutes. Soflare X1/1B S10E54 04/ 0501Z Duration 25 Minutes. Soflare X5/2B S10E54 04/ 1313Z Duration 25 Minutes. Soflare M2/2B S10E50 04/ 1914Z Duration 21 Minutes.	05	S03W72	E	SOLALERT MAGALERT 06/07									
						N13W27	0	0	0			N13W27	Q										
						S02W20	0	0	0			S02W20	Q										
						S07W16	0	0	0			S07W16	Q										
						N20W07	0	0	0			N20W07	E										
						N10E18	0	0	0			N10E18	Q										
						N14E21	0	0	0			N14E21	E										
						N21E26	2	0	0			N21E26	E										
						S07E47	15	8	3			S07E47	A										
						157	06	05	171			152	010		S05W83	0	0	0	Presto Soflare X1/5B S07E45 05/ 0612Z Duration 16 Minutes. Tenflare 310 Flux Units 05/ 0616Z Duration 40 Minutes. Tenflare 150 Flux Units 05/ 0613Z Duration 10 minutes.	06	S05W83	Q	MAJOR FLARE ALERT 05/11 MAGALERT 06/07
															S08W31	0	0	0			S08W31	Q	
															S09W02	0	0	0			S09W02	Q	
															N10E05	0	0	0			N10E05	E	
N14E09	0	0	0	N14E09	Q																		
N22E12	0	0	0	N22E12	E																		
S08E34	18	5	1	S08W34	A																		
158	07	06	190	152	020	S08W15	0	0	0	Presto Soflare X12/3B S11E26 06/ 1630Z Duration 25 minutes. Tenflare 3300 Flux Units 06/ 1631Z Duration 10 minutes. Tenflare 1100 Flux Units 06/ 1803Z Duration 12 minutes. Tenflare 1800 Flux Units 06/ 1815Z Duration 10 Minutes. Tenflare 1000 Flux Units 06/ 1825Z Duration 11 Minutes. Tenflare 640 Flux Units 06/ 1836Z Duration 72 Minutes.	07	S08W15	Q	SOLALERT 07/09 MAGALERT 07/09									
						N10W07	0	0	0			N10W07	Q										
						N14W04	0	0	0			N14W04	Q										
						N21W02	1	0	0			N21W02	Q										
						S09E21	15	3	1			S09E21	A										
						S08W46	0	0	0			S08W46	Q										
						N03E73	0	0	0			N03E73	Q										
						159	08	07	195			151	023		S08W30	0	0	0	Presto Tenflare 230 Flux Units 07/ 0826Z Duration 15 Minutes.	08	S08W30	Q	SOLALERT 08/XX MAGALERT 08/09
															N10W20	0	0	0			N10W20	E	
															N14W16	0	0	0			N14W16	Q	
N21W15	0	0	0	N21W15	Q																		
S09E08	12	3	0	S09E08	A																		

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Jun 82

ALERT PERIODS  
INTERNATIONAL URSIGRAM  
AND WORLD DAYS SERVICE

JUNE 1982

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions			Outstanding events	Forecasts		Alert Situations											
						Location	No of Flares			Date	Location		Desc*										
							Lat-Long	Total						M	X	Lat-Long							
160	09	08	195	162	008	N10E54	0	0	0		09	N10E54	Q	SOLALERT 09/10 MAGALERT MINOR 09									
						S18E60	0	0	0			S18E60	Q										
						N03E61	0	0	0			N03E61	Q										
						S07W42	0	0	0			S07W42	Q										
						N10W32	0	0	0			N10W32	Q										
						N14W30	0	0	0			N14W30	Q										
						N22W29	0	0	0			N22W29	Q										
						S07W06	6	4	0			S07W06	A										
						N11E41	0	0	0			N11E41	Q										
						S17E47	0	0	0			S17E47	E										
						N04E48	0	0	0			N04E48	Q										
						S03E66	0	0	0			S03E66	Q										
						N19E80	2	0	0			N19E80	Q										
161	10	09	230	172	018	S09W56	0	0	0	Presto Tenflare 256 Flux Units 09/1125Z Duration 19 Minutes	10	S09W56	Q	SOLALERT 10/XX MAGALERT MINOR 09									
						N14W43	0	0	0			N14W43	Q										
						N21W43	0	0	0			N21W43	Q										
						S09W20	10	2	0			S09W20	A										
						S11E14	0	0	0			S11E14	Q										
						N09E27	0	0	0			N09E27	Q										
						S18E33	2	0	0			S18E33	E										
						N02E34	0	0	0			N02E34	Q										
						S03E52	1	0	0			S03E52	Q										
						N19E64	1	0	0			N19E64	E										
						S14E74	3	0	0			S14E74	Q										
						N08E83	0	0	0			N08E83	Q										
						162	11	10	210			188	035		S08W72	0	0	0	Presto Soflare M5/2B S08W22 10/0053Z Duration 15 Minutes. Magstorm Begins 10/0156Z. Tenflare 310 Flux Units 10/1940Z Duration 28 Minutes. Proton Event 09/0040Z 11 Protons start, Maximum 31 Protons cm <sup>2</sup> /sec/ster at greater than 10 MEV.	11	S08W72	Q	SOLALERT 11/XX MAGALERT MINOR 11
N21W56	1	0	0	N21W56	Q																		
N15W55	0	0	0	N15W55	Q																		
S08W34	10	4	0	S08W34	A																		
N08E12	0	0	0	N08E12	Q																		
S18E20	3	0	0	S18E20	E																		
N02E21	0	0	0	N02E21	Q																		
S03E39	0	0	0	S03E39	E																		
N18E53	1	0	0	N18E53	E																		
S14E60	4	0	0	S14E60	E																		
N07E71	0	0	0	N07E71	E																		
163	12	11	247	221	022					S10W82	0			0	0	Presto Tenflare 230 Flux Units 11/0224Z DURATION 70 Minutes.	12	S10W82			Q	SOLALERT 12/15 MAGALERT MINOR	
										N15W69	0			0	0			N15W69			Q		
						N21W68	0	0	0	N21W68	Q												
						S08W47	11	2	0	S08W47	A												
						S26W12	0	0	0	S26W12	Q												
						N13W08	0	0	0	N13W08	A												
						S18E07	1	0	0	S18E07	E												
						N02E08	0	0	0	N02E08	Q												
						S03E25	0	0	0	S03E25	Q												
						N18E39	0	0	0	N18E39	E												
						S13E46	0	0	0	S13E46	E												
						N07E59	0	0	0	N07E59	E												
						N13E82	0	0	0	N13E82	Q												
164	13	12	209	256	028	S15W82	0	0	0	Presto Tenflare 200 Flux Units 12/0245Z Duration 10 Minutes. Soflare X3/1B N10E83 12/0509Z Duration 47 Minutes.	13	S15W82	Q	MAJOR FLARE ALERT 17312 13/15 MAGALERT 13/15									
						S09W61	10	0	0			S09W61	A										
						S26W25	0	0	0			S26W25	Q										
						N12W23	0	0	0			N12W23	Q										
						S18W07	1	0	0			S18W07	E										
						N02W06	0	0	0			N02W06	Q										
						S03E12	0	0	0			S03E12	E										
						N19E26	1	0	0			N19E26	E										
						S13E32	2	0	0			S13E32	E										
						N08E46	1	0	0			N08E46	E										
						N12E73	17	9	1			N12E73	A										
						165	14	13	223			233	037		S10W75	12	2	0	Presto Soflare X3/1B N12E75 13/0950Z Duration 54 Minutes. Suspected Proton Flare. Tenflare 750 Flux Units 13/0944Z Duration 53 Minutes Tenflare 270 Flux Units 13/2320Z Duration 15 Minutes	14	S10W75	E	PROTON FLARE ALERT 16213 14/18 MAGALERT 14/16
															N12W36	0	0	0			N12W36	Q	
S18W21	8	0	0	S18W21	E																		
N02W19	0	0	0	N02W19	Q																		
S03W01	0	0	0	S03W01	Q																		
N19E13	2	0	0	N19E13	E																		
S13E20	1	0	0	S13E20	E																		
N08E33	4	0	0	N08E33	E																		
S23E33	0	0	0	S23E33	Q																		
N13E62	12	2	1	N13E62	A																		
166	15	14	227	233	027					S10W87	14			5	1	Presto Tenflare 1650 Flux Units 14/0616Z Duration 60 Minutes. Soflare M1/2B S13W71 14/0009Z Duration 68 Minutes. Soflare X1/2B S12W77 14/0623Z Duration	15	S10W87			A	SOLALERT 15/XX MAGALERT MINOR 15/17	
										S17W33	2			0	0			S17W33			E		
										N02W32	0			0	0			N02W32			Q		
						S03W14	0	0	0	S03W14	Q												
						N19W00	2	0	0	N19W00	Q												
						S12E07	2	0	0	S12E07	Q												
						S23E19	1	0	0	S23E19	Q												
						N09E20	4	0	0	N09E20	E												
						N13E47	12	2	0	N13E47	A												

ALERT PERIODS  
INTERNATIONAL URSIGRAM  
AND WORLD DAYS SERVICE  
JUNE 1982

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	IO cm solar flux	A index	Active Regions			Outstanding events	Forecasts			Alert Situations	
						Location		No. of Flares		Date	Location	Desc <sup>m</sup>		
						Lat-Long	Total							M
167	16	15	196	229	025	S17E76	0	0	0	42 Minutes.Soflare X1/1B N10E65 14/0625Z Duration 42 Minutes. Tenflare 1000 Flux Units 14/0621Z Duration 51 Minutes.	S17E76	Q	SOLALERT 16/XX MAGALERT 16/18	
						N03W45	0	0	0	Presto Soflare	16	N03W45		Q
						S18W45	1	0	0	X2/1B N10E46		S18W45		E
						S03W27	0	0	0	15/0226Z Duration		S03W27		Q
						N19W13	3	0	0	10 Minutes.Tenflare		N19W13		Q
						S13W06	0	0	0	810 Flux Units		S13W06		Q
						S22E05	0	0	0	15/0031Z Duration		S22E05		Q
						N08E07	3	0	0	10 Minutes.Soflare		N08E07		Q
						N13E32	15	3	2	X3/3B N13E47		N13E32		P
						S18E63	5	1	1	15/1016Z Duration 28 Minutes.Soflare X1/2B S22E66 15/1507Z Duration 13 Minutes.Tenflare 460 Flux Units 15/1510Z Duration 10 Minutes. Tenflare 230 Flux Units 15/0805Z Duration 36 Minutes.		S18E63		E
168	17	16	215	209	012	N03W58	0	0	0	Presto Tenflare	17	N03W58	Q	SOLALERT 17/XX MAGALERT MINOR 18
						S17W58	0	0	0	310 Flux Units		S17W58	Q	
						S03W40	0	0	0	16/0210Z Duration		S03W40	Q	
						N19W26	0	0	0	10 Minutes.Soflare		N19W26	Q	
						S13W19	0	0	0	X2/2B N11E35		S13W19	Q	
						N08W07	0	0	0	16/0208Z Duration		N08W07	Q	
						S24W06	0	0	0	22 Minutes.		S24W06	Q	
						N13E21	13	1	1			N13E21	P	
						S19E48	6	0	0			S19E48	E	
						N16E62	0	0	0			N16E62	Q	
169	18	17	213	202	010	N03W72	0	0	0	Presto Tenflare	18	N03W72	Q	SOLALERT 18 MAGALERT MINOR 18
						S18W71	0	0	0	620 Flux Units		S18W71	Q	
						S18W59	0	0	0	17/1048Z Duration		S18W59	Q	
						S03W53	0	0	0	36 Minutes. Soflare		S03W53	Q	
						N19W41	0	0	0	M5/2B N10E22		N19W41	Q	
						S15W33	0	0	0	17/1047Z Duration		S15W33	Q	
						N07W21	2	0	0	15 Minutes.		N07W21	Q	
						N12E08	8	3	0			N12E08	A	
						S20E35	2	0	0			S20E35	E	
						N15E44	0	0	0			N15E44	Q	
N16E71	0	0	0			N16E71	Q							
170	19	18	211	201	009	S18W85	5	0	0	Presto Tenflare	19	S18W85	Q	SOLALERT 19/21 MAGNIL
						N03W84	0	0	0	280 Flux Units		N03W84	Q	
						S18W73	4	0	0	18/1513Z DURATION		S18W73	Q	
						N08W34	0	0	0	7 Minutes.		N08W34	Q	
						N16W06	12	1	0			N16W06	A	
						S19E24	4	0	0			S19E24	Q	
						N16E31	2	0	0			N16E31	Q	
N15E63	3	0	0			N15E63	Q							
171	20	19	188	201	015	S19W85	0	0	0	Presto Tenflare	20	S19W85	Q	SOLALERT 20/22 MAGQUIET
						N02W52	0	0	0	130 Flux Units		N02W52	Q	
						N08W47	0	0	0	19/0046Z Duration		N08W47	Q	
						N13W19	13	1	0	12 Minutes. Soflare		N13W19	A	
						S19E09	0	0	0	M2/2B N14N25		S19E09	Q	
						N16E17	7	0	0	19/1947Z Duration		N16E17	Q	
						N15E50	5	0	0	20 Minutes.Tenflare 430 Flux Units 19/0820Z Duration 13 Minutes.		N15E50	Q	
						N09W61	0	0	0			N09W61	Q	
172	21	20	198	201	021	N15W30	9	5	0	Presto Tenflare	21	N15W30	A	SOLALERT 21/22 MAGQUIET
						S19W02	0	0	0	20/0020Z Duration		S19W02	Q	
						N16E02	14	4	0	10 Minutes. Tenflare		N16E02	Q	
						N23E05	0	0	0	1200 Flux Units		N23E05	Q	
						N15E39	2	0	0	20/0147Z Duration 10 Minutes.Soflare M5/2B N13W17 20/0146Z Duration 24 Minutes.Tenflare 230 Flux Units 20/0114Z DURATION 10 Minutes.Tenflare 540 Flux Units 20/0403Z Duration 1 minute.		N15E39	Q	
						N08W76	0	0	0	Presto Soflare	22	N08W76	Q	
S05W75	0	0	0	M3/2B N13W00		S05W75	Q							
N13W47	5	0	0	21/0058Z Duration		N13W47	A							

ALERT PERIODS  
INTERNATIONAL URSIGRAM  
AND WORLD DAYS SERVICE  
JUNE 1982

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	IO cm solar flux	A index	Active Regions			Outstanding events	Forecasts		Alert Situations											
						Location	No. of Flares			Date	Location		Desc*										
						Lat-Long	Total	M		X	Date			Lat-Long									
174	23	22	196	206	015	S19W16	2	0	0	104 Minutes. Softlare X2/1B N15W12 21/2306Z Duration 62 Minutes.  Presto Tenflare 200 Flux Units 21/2301Z Duration 8 Minutes.	23	S19W16	Q	SOLALERT 23/24 MAGALERT MINOR 23/25									
						N16W11	13	7	1			N16W11	E										
						N24W08	0	0	0			N24W08	Q										
						N16E26	6	0	0			N16E26	Q										
						N07W90	0	0	0			N07W90	Q										
						N13W62	2	0	0			N13W62	A										
						S18W30	2	0	0			S18W30	Q										
N16W24	7	4	0	N16W24	A																		
S01W13	0	0	0	S01W13	Q																		
N16E13	4	0	0	N16E13	E																		
175	24	23	176	181	022	N13W77	6	0	0		24	N13W77	A	SOLALERT 24/25 MAGALERT MINOR 24/26									
						S18W44	0	0	0			S18W44	A										
						N16W38	12	7	0			N16W38	A										
						N24W36	0	0	0			N24W36	Q										
						S02W27	0	0	0			S02W27	E										
						S22W26	0	0	0			S22W26	Q										
						N15E01	2	0	0			N15E01	E										
						N07E62	0	0	0			N07E62	Q										
						N13W90	3	0	0			N13W90	E										
						S18W58	0	0	0			S18W58	Q										
176	25	24	194	163	017	N15W52	11	3	0		25	N15W52	A	SOLALERT 25/26 MAGALERT MINOR 25/26									
						N23W49	1	0	0			N23W49	Q										
						S02W41	1	0	0			S02W41	Q										
						S23W39	0	0	0			S23W39	Q										
						N13W28	0	0	0			N13W28	E										
						N16W14	3	0	0			N16W14	E										
						N07E48	1	0	0			N07E48	Q										
						N13W90	3	0	0			N13W90	E										
						S18W58	0	0	0			S18W58	Q										
						N15W52	11	3	0			N15W52	A										
177	26	25	169	156	016	S19W71	0	0	0	Presto Softlare M2/2B N17W56 24/1939Z Duration 9 Minutes. Softlare M7/1B N17W61 25/2129Z Duration 23 Minutes. Tenflare 330 Flux Units 25/2131Z Duration 10 Minutes.	26	S19W71	Q	SOLALERT 26/27 MAGALERT MINOR 26/XX									
						N15W65	14	2	0			N15W65	A										
						N23W62	1	0	0			N23W62	Q										
						S02W55	2	0	0			S02W55	Q										
						S23W52	1	0	0			S23W52	Q										
						N13W41	0	0	0			N13W41	Q										
						N16W27	2	0	0			N16W27	E										
						N07E36	0	0	0			N07E36	Q										
						S14E36	0	0	0			S14E36	Q										
						178	27	26	129			138	012		S19W84	0	0	0	Presto Softlare X1/2B N16W64 26/0041Z Duration 18 Minutes. Tenflare 202 Flux Units 26/0044Z Duration 20 Minutes. Softlare X2/2B N15W73 26/1917Z Duration 18 Minutes.	27	S19W84	Q	SOLALERT 27/XX MAGALERT MINOR 27/XX
N19W79	6	2	2	N19W79	A																		
S07W69	0	0	0	S07W69	Q																		
S23W64	0	0	0	S23W64	Q																		
N13W56	0	0	0	N13W56	Q																		
N15W42	1	0	0	N15W42	Q																		
S15E24	0	0	0	S15E24	Q																		
N07E23	0	0	0	N07E23	Q																		
N15W92	1	1	0	N15W92	E																		
S02W83	0	0	0	S02W83	Q																		
179	28	27	073	123	026	N16W55	0	0	0		28	N16W55	Q	SOLALERT 27/XX MAGALERT MINOR 27/XX									
						N06E09	0	0	0			N06E09	Q										
						S15E11	0	0	0			S15E11	Q										
						N16W68	1	0	0			N16W68	E										
						S12W03	0	0	0			S12W03	Q										
						S13E26	0	0	0			S13E26	Q										
						N07E66	0	0	0			N07E66	Q										
						N15W83	1	0	0			N15W83	Q										
						S14W16	0	0	0			S14W16	Q										
						180	29	28	056			119	026		S13E11	0	0	0		29	S13E11	Q	SOLNIL MAGNIL
N07E54	0	0	0	N07E54	Q																		
S09E77	0	0	0	S09E77	Q																		
N08W33	2	0	0	N08W33	Q																		
S14W31	0	0	0	S14W31	Q																		
S13W00	0	0	0	S13W00	Q																		
N07E39	1	0	0	N07E39	Q																		
S08E63	0	0	0	S08E63	Q																		
181	30	29	067	108	013					N15W83	1			0	0		29	N15W83			Q	SOLQUIET MAGQUIET	
										S14W16	0			0	0			S14W16			Q		
						S13E11	0	0	0	S13E11	Q												
						N07E54	0	0	0	N07E54	Q												
						S09E77	0	0	0	S09E77	Q												
182	01	30	073	105	029	N08W33	2	0	0		30	N08W33	Q	SOLQUIET MAGQUIET									
						S14W31	0	0	0			S14W31	Q										
						S13W00	0	0	0			S13W00	Q										
						N07E39	1	0	0			N07E39	Q										
						S08E63	0	0	0			S08E63	Q										

ALERT PERIODS  
INTERNATIONAL URSIGRAM  
AND WORLD DAYS SERVICE

JUNE 1982

## PRESTO MESSAGES (THE RAPID REPORT OF MAJOR EVENTS)

02 JUNE 1982 BOULDER 02/1559Z SOFLARE M9/1B S11E82 02/1525Z DURATION IN PROGRESS  
02 JUNE 1982 BOULDER 02/1559Z TENFLARE 240 FLUX UNITS 02/1545Z DURATION IN PROGRESS  
03 JUNE 1982 SYDNEY 03/0440Z STRONG TYPE IV OBSERVED BEHIND NW LIMB START 0401Z, IN PROGRESS  
03 JUNE 1982 SYDNEY 03/0330Z CULGOORA WEAK TYPE II AND VERY WEAK TYPE IV EVENT BEHIND NW LIMB START 0235Z END 0242Z  
03 JUNE 1982 MOSCOW 03/1156Z TENFLARE 800 FLUX UNITS 03/1145Z IN PROGRESS  
03 JUNE 1982 BOULDER 03/1306Z SOFLARE X8/2B S09E72 03/1140Z DURATION 15 MINUTES  
03 JUNE 1982 BOULDER 03/1306Z TENFLARE 2700 FLUX UNITS 03/1141Z DURATION 20 MINUTES  
04 JUNE 1982 TOYOKAWA 04/0110Z TENFLARE 100 FLUX UNITS 03/0830Z  
04 JUNE 1982 BOULDER 04/1515Z SOFLARE X2/2B S10E54 04/1415Z DURATION 20 MINUTES  
04 JUNE 1982 BOULDER 04/1515Z SOFLARE X1/1B S10E54 04/0501Z DURATION 25 MINUTES  
04 JUNE 1982 BOULDER 04/1515Z SOFLARE X5/2B S10E54 04/1313Z DURATION 25 MINUTES  
04 JUNE 1982 BOULDER 04/1932Z SOFLARE M2/2B S10E50 04/1914Z DURATION 21 MINUTES  
05 JUNE 1982 BOULDER 05/0645Z SOFLARE X1/SB S07E49 05/0612Z DURATION 16 MINUTES  
05 JUNE 1982 BOULDER 05/0645Z TENFLARE 310 FLUX UNITS 05/0616Z DURATION 40 MINUTES  
06 JUNE 1982 TOYOKAWA 06/0030Z TENFLARE 150 FLUX UNITS 05/0613Z DURATION 10 MINUTES  
06 JUNE 1982 BOULDER 06/1700Z SOFLARE X12/3B S11E26 06/1630Z DURATION 25 MINUTES  
06 JUNE 1982 BOULDER 06/1700Z TENFLARE 3300 FLUX UNITS 06/1631Z DURATION 10 MINUTES  
07 JUNE 1982 BOULDER 07/0130Z TENFLARE 1100 FLUX UNITS 06/1803Z DURATION 12 MINUTES  
07 JUNE 1982 BOULDER 07/0130Z TENFLARE 1000 FLUX UNITS 06/1825Z DURATION 11 MINUTES  
07 JUNE 1982 BOULDER 07/0130Z TENFLARE 1800 FLUX UNITS 06/1815Z DURATION 10 MINUTES  
07 JUNE 1982 BOULDER 07/0130Z TENFLARE 640 FLUX UNITS 06/1836Z DURATION 72 MINUTES  
07 JUNE 1982 TOYOKAWA 07/0850Z TENFLARE 240 FLUX UNITS 07/0825Z DURATION 7 MINUTES  
07 JUNE 1982 BOULDER 07/1352Z TENFLARE 230 FLUX UNITS 07/0826Z DURATION 15 MINUTES  
09 JUNE 1982 BOULDER 09/1415Z TENFLARE 256 FLUX UNITS 09/1125Z DURATION 19 MINUTES  
09 JUNE 1982 BOULDER 09/0631Z PROTON EVENT 09/0040Z 11 PROTONS START WITH 31 PROTONS/CM2/SEC/STER AT GREATER THAN 10 MEV AT 09/0510Z.  
10 JUNE 1982 BOULDER 10/0112Z SOFLARE M5/2B S08W22 10/0053Z DURATION 15 MINUTES  
10 JUNE 1982 SYDNEY 10/0350Z MAGSTORM BEGINS 10/0156Z  
10 JUNE 1982 BOULDER 10/2130Z TENFLARE 310 FLUX UNITS 10/1940Z DURATION 28 MINUTES  
11 JUNE 1982 TOYOKAWA 11/0303Z TENFLARE 230 FLUX UNITS 11/0224Z DURATION 10 MINUTES  
12 JUNE 1982 TOYOKAWA 12/0300Z TENFLARE 200 FLUX UNITS 12/0245Z DURATION 10 MINUTES  
12 JUNE 1982 BOULDER 12/1435Z SOFLARE M3/1B N10E83 12/0509Z DURATION 47 MINUTES  
13 JUNE 1982 BOULDER 13/1030Z SOFLARE X2/1B N12E75 13/0950Z DURATION 54 MINUTES  
13 JUNE 1982 BOULDER 13/1030Z TENFLARE 750 FLUX UNITS 13/0944Z DURATION 53 MINUTES  
14 JUNE 1982 TOYOKAWA 14/0015Z TENFLARE 270 FLUX UNITS 13/2320Z DURATION 15 MINUTES  
14 JUNE 1982 TOYOKAWA 14/0727Z TENFLARE 1650 FLUX UNITS 14/0616Z DURATION 60 MINUTES  
14 JUNE 1982 BOULDER 14/0300Z SOFLARE M1/2B S13W71 14/0009Z DURATION 68 MINUTES  
14 JUNE 1982 MOSCOW 14/0620Z SOFLARE 2B N13E57 14/0620Z  
14 JUNE 1982 MOSCOW 14/0620Z SOFLARE 2B S10W79 14/0623Z  
14 JUNE 1982 BOULDER 14/0730Z SOFLARE X1/2B S12W77 14/0623Z DURATION 42 MINUTES  
14 JUNE 1982 BOULDER 14/0730Z SOFLARE X1/1B N10E65 14/0625Z DURATION 42 MINUTES  
14 JUNE 1982 BOULDER 14/0730Z TENFLARE 1000 FLUX UNITS 14/0621Z DURATION 51 MINUTES  
15 JUNE 1982 TOYOKAWA 15/0117Z TENFLARE 1260 FLUX UNITS 15/0031Z DURATION 15 MINUTES  
15 JUNE 1982 BOULDER 15/0251Z TENFLARE 810 FLUX UNITS 15/0031Z DURATION 10 MINUTES  
15 JUNE 1982 BOULDER 15/0251Z SOFLARE X2/1B N10E46 15/0226Z DURATION 10 MINUTES  
15 JUNE 1982 SYDNEY 15/0320Z SOFLARE CULGOORA 2B START 0255Z REGION 3776 N10E46 STRONG LONG LASTING SWF  
15 JUNE 1982 BOULDER 15/1300Z SOFLARE X3/2B N13E47 15/1016Z DURATION 28 MINUTES  
15 JUNE 1982 BOULDER 15/1545Z SOFLARE X1/2B S22E66 15/1507Z DURATION 13 MINUTES  
15 JUNE 1982 TOYOKAWA 15/0938Z TENFLARE 230 FLUX UNITS 15/0805Z DURATION 36 MINUTES  
16 JUNE 1982 TOYOKAWA 16/0233Z TENFLARE 310 FLUX UNITS 16/0210Z DURATION 10 MINUTES  
16 JUNE 1982 BOULDER 16/0245Z SOFLARE X2/2B N11E35 16/0208Z DURATION 22 MINUTES  
16 JUNE 1982 SYDNEY 16/0225Z SOFLARE CULGOORA 2B 600 MIL START 0209Z MAX 0214Z IN RGN 3776 N11E35 PARALLEL RIBBONS SOUTH OF MAIN SPOT SWF AND MICROWAVE 2695 MHZ 120 FLUX UNITS LEARMOUTH  
17 JUNE 1982 BOULDER 17/1150Z TENFLARE 620 FLUX UNITS 17/1048Z DURATION 36 MINUTES  
17 JUNE 1982 BOULDER 17/1150Z SOFLARE M5/2B N10E22 17/1047Z DURATION 15 MINUTES  
18 JUNE 1982 BOULDER 18/1615Z TENFLARE 280 FLUX UNITS 18/1513Z DURATION 7 MINUTES  
19 JUNE 1982 BOULDER 19/2020Z SOFLARE M2/2B N14W25 19/1947Z DURATION 20 MINUTES  
20 JUNE 1982 TOYOKAWA 20/0024Z TENFLARE 430 FLUX UNITS 19/0820Z DURATION 13 MINUTES  
19 JUNE 1982 TOYOKAWA 19/0115Z TENFLARE 130 FLUX UNITS 19/0046Z DURATION 12 MINUTES  
20 JUNE 1982 TOYOKAWA 20/0109Z TENFLARE 210 FLUX UNITS 20/0020Z DURATION 10 MINUTES  
20 JUNE 1982 BOULDER 20/0313Z SOFLARE M5/2B N13W17 20/0146Z DURATION 24 MINUTES  
20 JUNE 1982 BOULDER 20/0313Z TENFLARE 230 FLUX UNITS 20/0114Z DURATION 10 MINUTES  
20 JUNE 1982 TOYOKAWA 20/0232Z TENFLARE 100 FLUX UNITS 20/0113Z DURATION 6 MINUTES  
20 JUNE 1982 TOYOKAWA 20.0235Z TENFLARE 1200 FLUX UNITS 20/0147Z DURATION 10 MINUTES  
20 JUNE 1982 BOULDER 20/0608Z TENFLARE 540 FLUX UNITS 20/0403Z DURATION 1 MINUTE  
21 JUNE 1982 BOULDER 21/1300Z SOFLARE M3/2B N13W00 21/0058Z DURATION 104 MINUTES  
21 JUNE 1982 BOULDER 21/2318Z SOFLARE X2/1B N15W12 21/2232Z DURATION 15 MINUTES  
22 JUNE 1982 TOYOKAWA 22/0030Z TENFLARE 200 FLUX UNITS 21/2301Z DURATION 8 MINUTES  
25 JUNE 1982 BOULDER 25/2023Z SOFLARE N17W56 25/1939Z DURATION 7 MINUTES  
25 JUNE 1982 BOULDER 25/2144Z TENFLARE 250 FLUX UNITS 25/2134Z DURATION 10 MINUTES  
26 JUNE 1982 TOYOKAWA 26/0010Z TENFLARE 330 FLUX UNITS 25/2131Z DURATION 10 MINUTES  
26 JUNE 1982 TOYOKAWA 26/0130Z TENFLARE 200 FLUX UNITS 26/0044Z DURATION 20 MINUTES  
26 JUNE 1982 BOULDER 26/0130Z SOFLARE X1/2B N16W64 26/0041Z DURATION 18 MINUTES  
26 JUNE 1982 BOULDER 26/0130Z TENFLARE 170 FLUX UNITS 26/0046Z DURATION 12 MINUTES  
26 JUNE 1982 BOULDER 26/2015Z SOFLARE X2/2B N17W74 26/1908Z DURATION 7 MINUTES  
26 JUNE 1982 BOULDER 26/2015Z TENFLARE 500 FLUX UNITS 26/1910Z DURATION 18 MINUTES



RELATIVE SUNSPOT NUMBERS  
INTERNATIONAL, R<sub>1</sub>

DAY	1981 FINAL						1982 PROVISIONAL					
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1	149	121	205	216	165	193	92	258	168	145	63	70
2	140	105	183	206	222	197	94	241	174	115	57	83
3	140	112	160	219	218	212	112	232	175	151	46	94
4	112	109	170	189	221	212	109	221	177	137	58	104
5	112	113	195	195	233	219	112	219	163	112	63	111
6	85	102	220	169	199	234	86	230	165	117	64	108
7	66	107	205	171	192	244	94	226	146	130	69	115
8	62	115	208	185	184	249	97	232	140	131	89	127
9	65	121	190	177	134	258	98	211	116	132	47	142
10	99	138	196	144	147	253	85	181	122	138	53	147
11	130	136	164	131	146	263	46	158	119	152	58	138
12	139	140	138	123	160	240	52	156	135	142	75	144
13	153	134	132	171	158	185	51	162	155	148	78	139
14	145	140	148	187	178	159	58	142	153	136	58	137
15	150	153	129	212	139	113	81	134	140	127	52	125
16	161	134	138	223	126	66	76	111	156	122	69	128
17	171	125	129	219	103	80	111	120	180	108	76	136
18	161	148	145	210	108	79	139	103	168	91	89	134
19	151	175	156	189	90	74	143	107	167	87	110	134
20	145	188	137	183	82	57	134	119	160	93	112	139
21	122	222	175	145	82	65	134	120	153	91	98	143
22	129	220	172	145	73	75	121	100	146	109	121	146
23	162	200	137	118	65	86	93	97	144	138	107	116
24	196	178	135	109	59	68	70	120	122	145	110	112
25	213	189	142	101	60	62	82	128	152	149	88	92
26	206	215	153	92	60	100	119	136	147	150	117	94
27	218	222	181	75	77	104	125	154	182	126	130	49
28	208	214	195	92	130	136	168	163	179	90	108	36
29	159	194	191	131	148	132	216	169	85	102	32	32
30	156	233	190	152	165	112	211	162	75	66	38	38
31	152	216		156		126	237		132		89	
MEAN	143.8	158.7	167.3	162.4	137.5	150.1	111.2	163.6	153.8	122.5	81.4	110.4

1981 YEARLY MEAN = 140.4

\* ZURICH R<sub>2</sub> SUNSPOT NUMBER REPLACED BY INTERNATIONAL R<sub>1</sub> SUNSPOT NUMBER BEGINNING WITH JANUARY 1981 DATA.

DAILY SOLAR FLUX AT 2800 MHz  
OTTAWA ARO  
FLUX ADJUSTED TO 1 A.U., S<sub>d</sub>

DAY	1981						1982					
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1	175.4	183.9	248.3	210.6*	222.5*	230.7*	179.9	284.8*	231.3	172.2*	151.7	134.2
2	168.9	182.6	242.8	204.8*	241.3*	230.3*	177.2	279.7*	228.3	172.0*	147.4	135.1
3	163.3*	192.4	229.0	196.5	255.3*	238.6	176.1	272.9*	230.1	169.9	147.7	141.5
4	165.9	190.6*	233.4	191.1	263.1	241.7	170.4	252.8*	238.3*	158.2	144.7	158.2*
5	152.5	178.8	248.7	193.6*	254.1	260.0	165.5	245.2	245.4*	159.9*	148.7	156.6*
6	148.7	179.6	263.2*	200.3	244.6	262.1	166.8	245.2	230.0*	165.2	153.0	149.6*
7	149.8	173.0	262.5*	204.1*	241.4	275.6*	166.9*	239.9	228.3	164.0*	151.0	158.6*
8	152.4	178.4	266.3*	200.7*	234.7*	287.8	156.9	245.1*	207.1*	162.1*	150.8	167.3
9	150.0*	180.5	256.5	205.4*	232.6	292.4*	164.4	231.7	192.2	167.3*	139.8	177.4
10	156.5*	182.0	247.6	213.4	231.0*	278.7	145.7	213.7	178.9*	177.1*	130.7	196.0*
11	167.4	206.4	240.8	220.0	217.0	266.7*	136.3	211.1*	178.2	178.7*	132.3	224.2
12	167.7*	209.0*	234.2	236.8*	223.5	254.2*	132.4	204.0*	181.2	177.5*	132.3	238.3*
13	174.2*	208.7	230.2	256.2	215.9	218.9	127.5	194.9*	185.5	170.9	129.8	240.2
14	184.2	208.2	228.7*	275.6	207.4	193.0	130.5	185.3	201.3	157.9	132.2	240.8
15	194.5*	225.1	230.4	287.1	191.2	172.6	136.3	180.3	207.6*	152.2	132.1	235.8
16	205.3*	221.8*	227.5	302.4	181.2	157.4	146.7	170.5	227.7	148.2	139.0	210.6*
17	200.8*	228.7	218.2*	302.9	172.7	144.2	152.6	162.5	230.4	145.9*	142.2*	206.0*
18	204.7*	244.1	216.5*	296.5*	160.8*	136.3*	167.6	165.7	226.8	147.0	146.8	200.7*
19	220.3	254.6*	210.5*	278.6	157.0	129.7	169.4	170.9*	219.7*	145.1	155.9	207.5
20	234.7*	269.8	200.1	257.8*	152.0	133.9	167.0	171.3	217.0	144.2	155.6*	207.1
21	228.1*	267.1*	191.2	238.2	153.9	142.2	163.3	165.2	212.4	145.2	165.4*	210.7
22	235.9	262.2*	183.0	218.6	152.7	145.9	152.9	163.7	213.7	156.9*	158.8	197.2*
23	254.7*	254.8	183.8	208.2	151.9	153.0	148.0	173.1	202.4	175.2	155.7*	187.3
24	261.6*	258.9	182.2	201.1	150.4	156.1*	149.1	185.9*	189.0	181.0	144.8*	168.2
25	259.7	254.8	182.0	186.0	159.1	162.1	169.3*	184.1	189.9	182.6*	145.7	159.1*
26	273.1*	272.9*	188.8	172.0	178.3*	166.2	182.7*	204.0	192.8*	178.3	158.0	142.3
27	255.8*	281.6*	202.8	171.2	190.3	176.8	197.2	222.1	195.4*	167.3	171.5*	127.6
28	223.6	275.3	200.9	182.4	206.4*	183.0	234.7	224.0	200.6	161.0*	171.3*	123.1
29	213.3	259.1	204.5	187.5	226.5*	183.6	267.0		198.0	155.6	170.9*	111.7
30	204.2*	265.1	203.8	201.5	231.6	185.7	284.5		194.5*	149.8*	142.8	108.5
31	197.6	256.0*		207.1		182.8	289.1		184.1		136.7	
MEAN	198.2	226.0	221.9	222.8	203.3	201.4	173.4	208.9	208.3	162.9	147.9	177.4

\* adjusted for burst  
A = interpolated data point

DAILY SOLAR INDICES

JUNE 1982

DAY OF MONTH	YEAR DAY	BARTELS 27-DAY CYCLE NUMBER	PROVISIONAL SUNSPOT NUMBERS		OBSERVED FLUX OTTAWA 2800	SOLAR FLUX ADJUSTED TO 1 A.U.									
			R <sub>I</sub>	R <sub>A</sub>		AFGL 15400	AFGL 8800	AFGL 4995	OTTAWA 2800	AFGL 2695	AFGL 1415	AFGL 606	AFGL 410	AFGL 245	
1	152	10	70	67	130.4	580	253	156	134.2	121	125	84	46	14	
2	153	11	83	85	131.3	483	231	151	135.1	120	128	75	40	30	
3	154	12	94	94	137.5	595	278	178	141.5	128	128	85	43	12	
4	155	13	104	107	153.7*				158.2*						
5	156	14	111	113	152.0*	604	312	205	156.6*	153	132	79	40	14	
6	157	15	108	109	145.2*	591	307	181	149.6*	140	123	76	45	41	
7	158	16	115	119	154.0*	588			158.6*			71	43	16	
8	159	17	127	130	162.4	599	296	200	167.3	151	141	84	46	15	
9	160	18	142	145	172.1	607	290	211	177.4	150	139	87	48	23	
10	161	19	147	146	190.1*	609	306	226	196.0*	186	144	91	54	28	
11	162	20	138	150	217.5	646	342	263	224.2	198	166	99	62	35	
12	163	21	144	148	231.1*	683	405	314	238.3*	223	177	107	67	0	
13	164	22	139	145	232.8	641	400	273	240.2	220	169	103	56	39	
14	165	23	137	148	233.3	630	408	266	240.8	216	175	91	51	18	
15	166	24	125	143	228.5	619	352	253	235.8	212	174	111	63	36	
16	167	25	128	130	204.1*	592	340	241	210.6*	195	159	104	69	37	
17	168	26	136	136	199.6*	557	307	240	206.0*	190	159	88	56	61	
18	169	27	134	141	194.3*	591	323	224	200.7*	187	159	109	68	41	
19	170	01	134	141	200.9	594	325	231	207.5	189	170	103	62	20	
20	171	02	139	152	200.5	610	317	235	207.1	185	167	104	71	53	
21	172	03	143	153	204.0	591	343	235	210.7	194	164	109	77	18	
22	173	04	146	142	190.9*	614	309	225	197.2*	184	158	102	58	28	
23	174	05	116	131	181.3	594	291	200	187.3	176	150	103	59	33	
24	175	06	112	114	162.8	588	289	183	168.2	157	146	102	54	23	
25	176	07	92	103	154.0*	514	229	167	159.1*	145	137	91	49	20	
26	177	08	94	87	137.6	572	273	167	142.3	133	123	93	37	18	
27	178	09	49	45	123.4	580	260	150	127.6	113	115	89	34	16	
28	179	10	36	35	119.1	577	261	148	123.1	112	107	83	33	18	
29	180	11	32	35	108.0	550	261	133	111.7	123	104	81	32	15	
30	181	12	38	42	104.9	576	239	131	108.5	111	109	81	33	12	
MEAN			110.4	114.5	171.9	592	305	206	177.4	165	145	93	51	36	

\*Adjusted for burst.  
NOTE: Data gaps in AFGL Sagamore Hill data are due to equipment problems.

OBSERVED AND PREDICTED SOLAR ACTIVITY INDICES

Date	SUNSPOT NUMBERS						2800 MHz FLUX Adjusted to 1 AU Sa	
	Rz or R <sub>I</sub>		Ra		Rs		Monthly Mean	Smoothed
	Monthly Mean	Smoothed	Monthly Mean	Smoothed	Monthly Mean	Smoothed		
Jul 79	159.4	155	140.5	145	123.1	145	171.4	192
Aug	142.2	155	125.1	144	129.2	145	177.0	192
Sep	188.4	156	184.0	143	156.5	144	202.3	191
Oct	186.2	158	178.2	144	171.7	145	216.4	192
Nov	183.3	162	176.5	149	182.9	149	226.8	196
Dec	176.3	164	157.6	152	151.0	152	197.2	199
Jan 80	159.6	164	145.3	153	153.6	154	199.6	200
Feb	155.0	163	133.9	154	148.7	155	195.1	200
Mar	126.2	161	107.9	153	117.8	153	166.5	200
Apr	164.1	159	138.5	151	164.0	152	209.3	198
May	179.7	156	172.3	149	185.4	151	229.1	197
Jun	157.3	155	153.6	149	153.2	151	199.3	198
Jul	136.3	153	136.0	144	144.1	151	190.8	197
Aug	135.4	150	133.0	144	121.9	150	170.3	196
Sep	155.0	150	150.0	146	138.8	152	185.9	198
Oct	164.7	150	160.8	149	157.1	154	202.9	200
Nov	147.9	148	149.9	149	168.5	153	213.4	199
Dec	174.4	143	167.5	145	174.3	150	218.8	196
Jan 81	114.0	140	115.4	144	120.5	149	169.0	195
Feb	141.3	142	143.7	146	153.5	152	199.5	198
Mar	135.5	143	149.2	149	157.5	156	203.2	202
Apr	156.4	143	169.2	149	180.7	158	224.7	204
May	127.5	143	141.3	149	152.8	159	198.9	204
Jun	90.9	142	99.0	147	112.9	158	161.9	203
Jul	143.8	140*	154.3	146	152.1	157	198.2	203
Aug	158.7	141*	170.4	147	182.1	158	226.0	203
Sep	167.3	143*	174.5	148	177.7	158	221.9	204
Oct	162.4	142*	157.0	146	178.6	156	222.8	202
Nov	137.5	139*	138.8	142	157.6	151	203.3	197
Dec	150.1	138*	145.0	138	155.5	149	201.4	195
Jan 82	110.7†	133(+ 5)*	110.4	133	124.2	144	173.4	---
Feb	162.6†	129(+ 8)*	161.0	129	163.6	139	208.9	---
Mar	153.7†	126(+ 8)*	155.5	126	163.0	136	208.3	---
Apr	122.5†	123(+ 8)*	121.9	123	113.9	133	162.9	---
May	81.4†	119(+ 9)*	82.6	119	97.7	129	147.9	---
Jun	110.4†	115(+12)*	---	115	129.6	124	177.4	---
Jul	---	110(+12)*	---	110	---	119	---	---
Aug	---	105(+11)*	---	105	---	112	---	---
Sep	---	99(+10)*	---	100	---	106	---	---
Oct	---	93(+10)*	---	93	---	99	---	---
Nov	---	89(+10)*	---	89	---	94	---	---
Dec	---	85(+11)*	---	85	---	90	---	---

\*An asterisk denotes either a value of the observed 12-month running mean or a predicted 12-month average that is based on preliminary observations of the Zurich and International relative sunspot numbers (R<sub>Z</sub> and R<sub>I</sub>). Parentheses enclose the 90% confidence limits. Shaded boxes enclose the most recent smoothed values; boxes not shaded enclose predicted values. Ra is the new symbol for R<sub>A</sub>'. All tabulated entries of Ra are final values.

†R<sub>I</sub> replaces R<sub>Z</sub> as of January 1981.

## SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS FOR CYCLE 21

MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1976	15	13	12	13	13	12	13	14	14	13	14	15
1977	17	18	20	22	24	26	29	33	39	46	52	57
1978	61	65	70	77	83	89	97	104	108	111	113	118
1979	124	131	137	141	147	153	155	155	156	158	162	165*
1980	164	163	161	159	156	155	153	150	150	150	148	143
1981	140	142	143	143	143	142	140	141	143	142	139	138
1982	133 ( 5)	129 ( 8)	126 ( 8)	123 ( 8)	119 ( 9)	115 (12)	110 (12)	105 (11)	99 (10)	93 (10)	89 (10)	85 (11)
1983	81 (11)	78 (11)	77 (11)	75 (12)	72 (14)	70 (16)	69 (17)	68 (19)	66 (21)	66 (22)	66 (23)	65 (23)
1984	63 (24)	61 (24)	56 (25)	52 (27)	50 (28)	50 (29)	48 (30)	46 (30)	44 (29)	42 (28)	41 (27)	39 (27)
1985	37 (27)	37 (26)	36 (25)	36 (25)	35 (25)	33 (24)	32 (22)	31 (21)	30 (21)	29 (22)	28 (23)	28 (23)
1986	28 (23)	27 (23)	25 (23)	24 (22)	22 (21)	20 (21)	18 (20)	17 (19)	17 (18)	16 (16)	16 (15)	15 (13)
1987	15 (12)	15 (12)	15 (12)	16 (13)	16 (14)	18 (15)	19 (15)					

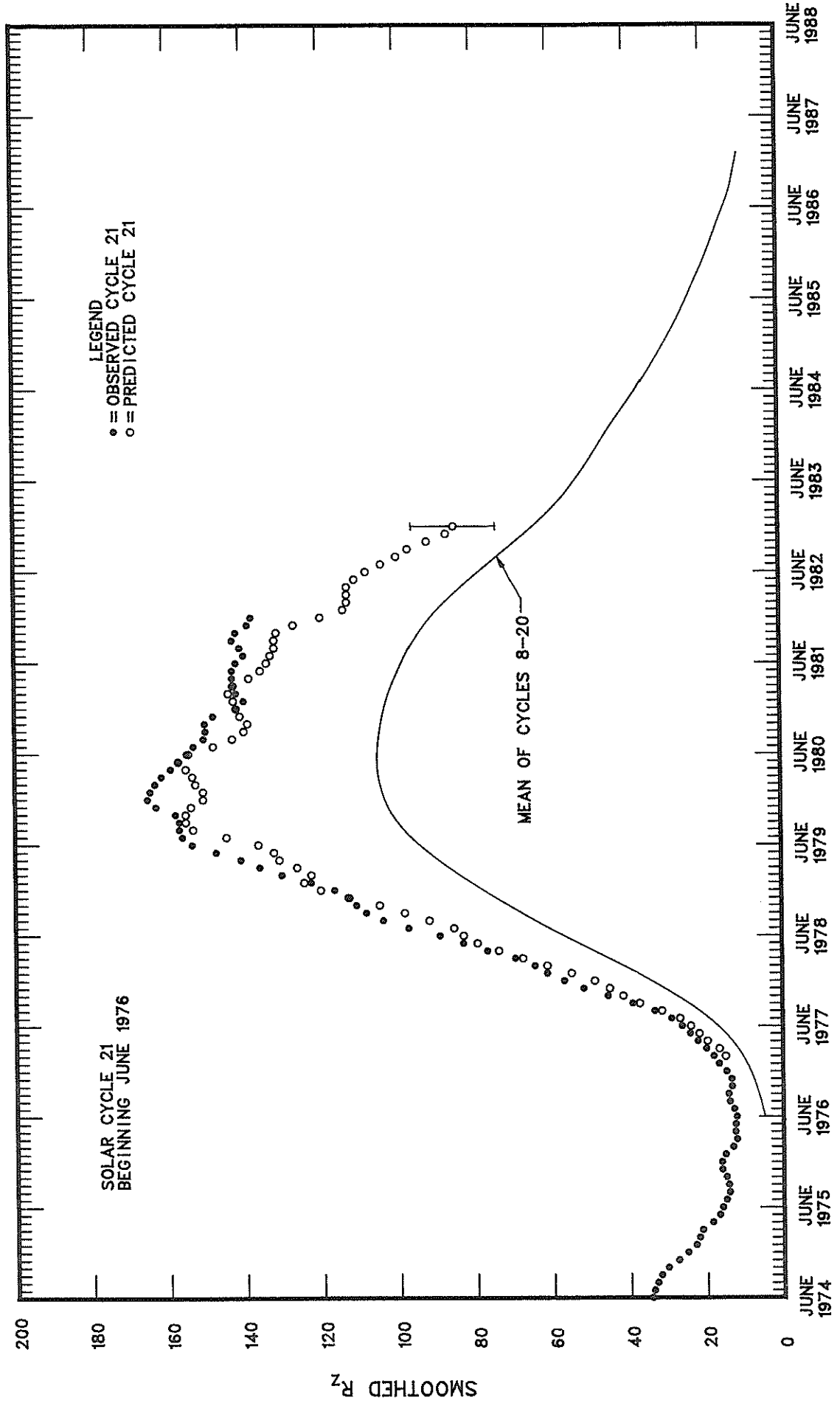
For the current solar cycle, this table gives observed smoothed sunspot numbers up to the one calculated from the last measured value. These observed values are based on final Zurich numbers through 1980, on final international numbers through 1981, and on provisional international numbers thereafter. Some table entries after the June 1976 number will change slightly when final data for 1982 are incorporated.

The entries with numbers in parentheses below them are predictions by the McNish-Lincoln method. (See page 10 in the February 1982 edition of the supplement to Solar-Geophysical Data.) Parentheses enclose the absolute value of the 90% confidence interval--an interval that indicates the window of uncertainty above and below each predicted number.

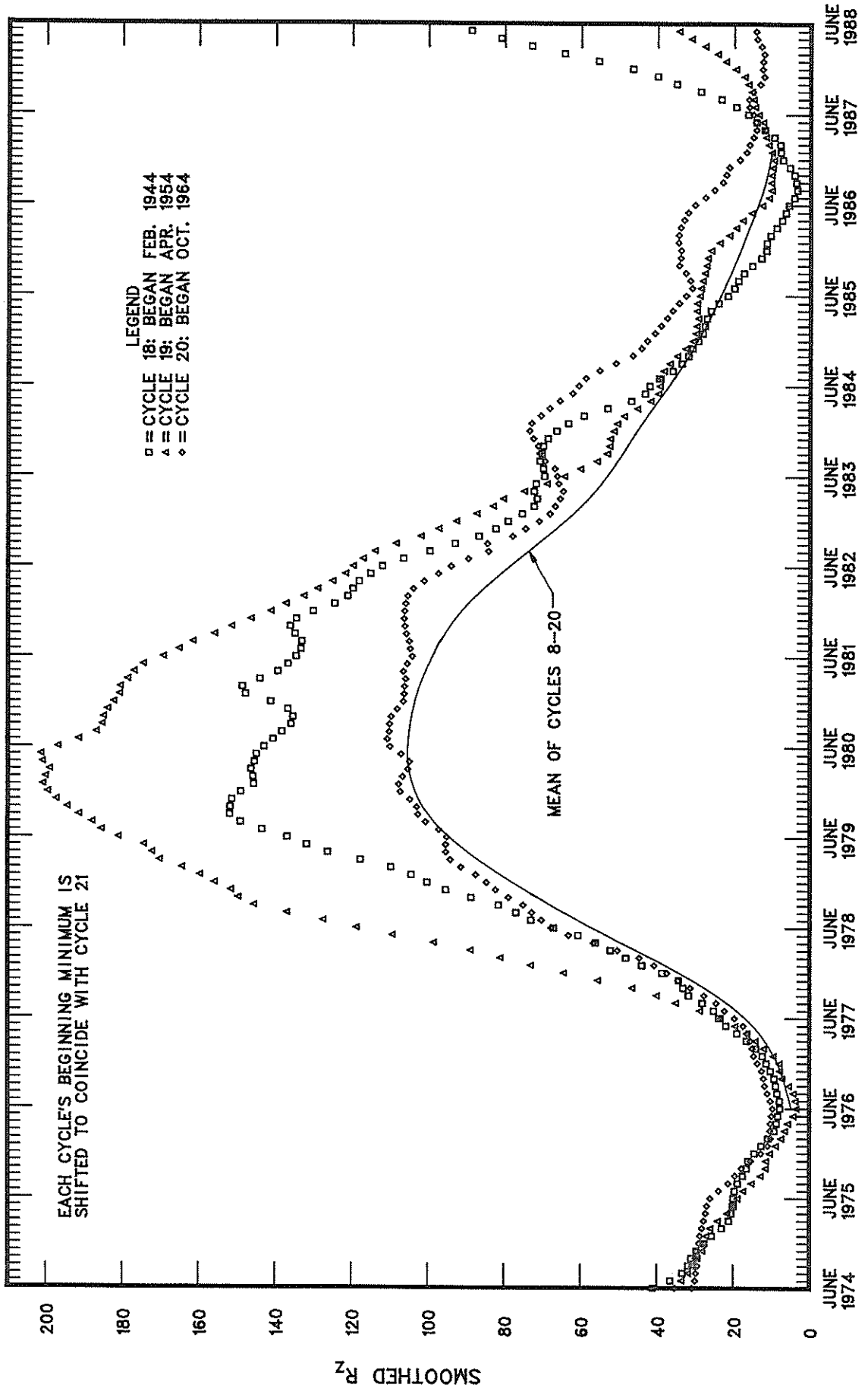
The McNish-Lincoln prediction method generates meaningful estimates of smoothed sunspot numbers for no more than 12 months ahead. Beyond a year the predictions regress rapidly toward the mean of all 13 cycles of data used in the computation. Furthermore, the method is very sensitive to the date defined as the beginning of the current sunspot cycle, that is, to the date of the most recent sunspot minimum. In Solar-Geophysical Data, issues 390-401, we based the current cycle predictions on March 1976 as the end of cycle 20 and the onset of the new cycle 21. Later studies, including one published by M. Waldmeier, showed that June 1976 was more appropriately the minimum epoch. We therefore generated this table using the June 1976 date.

\*MAXIMUM OF SUNSPOT CYCLE 21. The maximum smoothed sunspot number occurred in December 1979.

# OBSERVED AND ONE-YEAR-AHEAD PREDICTED SMOOTHED SUNSPOT NUMBERS



# SUPERPOSITION OF CYCLES 18, 19, AND 20



H - ALPHA SOLAR FLARES

JUNE 1982

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo Day	Duration (Min)	Imp	Obs See Type	Area Measurement			Remarks
												Time (UT)	Apparent (10 <sup>-6</sup> Disk)	Corr (Sq Deg)	
PEKG 01	0317E	0317	0322	N08	E69			06 6.31	5D	SN	P	0317	42		E
WEND 01	0758	0807	0817	S10	E23			06 3.06	19	SN	C	0807	144	1.6	G
WEND 01	1523	1527	1540	S10	E18			06 2.99	17	SN	C	1527	81	.9	G
WEND 01	1644	1652	1700	N08	E65			06 6.57	16	SN	C	1652	63		
WEND 01	1742	1757	1815	S15	W21			05 31.15	33	1B	C	1757	263	3.0	
PEKG 02	0112E	0112	0112D	S09	E13			06 3.03	33D	SN	P	0112	84	.9	EU
PEKG 02	0112E	0112	0138D	N09	E59			06 6.48	26D	SN	P	0112	67	1.3	E
PEKG 02	0112E	0138	0138D	N09	E59			06 6.48	26D	SF	P	0138	42	.9	E
PEKG 02	0138E	0138	0142	S09	E13			06 3.04	4D	SN	P	0138	109	1.2	EU
PEKG 02	0300E	0303	0307D	S09	E11			06 2.95	7D	SB	P	0303	63	.7	E
PEKG 02	0301	0303	0307	N09	E58			06 6.48	6	SN	P	0303	67	1.3	E
YUNN 02	0305E	0305U	0311	S08	E12			06 3.03	6D	SN	P	0305	96	1.0	EG
BUCA 02	0655	0705	0716D	S04	W36			05 30.60	21D	SF	C	0705	129	1.6	
WEND 02	0658	0704	0730	S04	W35			05 30.67	32	1B	C	0704	350	4.4	
PEKG 02	0700E	0701	0711	S03	W38			05 30.45	11D	1N	P	0701	202	2.6	FZ
ISTA 02	0706		0736	S04	W37			05 30.53	30	SF					
WEND 02	0738	0740	0742	N09	E55			06 6.45	4	SF	C	0740	44	.8	
ISTA 02	0815		0830	S03	W40			05 30.35	15	SF					
YUNN 02	0836	0847	0900	S07	E81			06 8.43	24	2N	C		177		A
YUNN 02	0841	0845	0854	S02	W39			05 30.45	13	SN	C		16	.2	E
YUNN 02	0845	0854	0900	N16	E30			06 4.64	15	SN	C		32	.4	DG
YUNN 02	0917E	0917U	0925	S06	E78			06 8.23	8D	2N	P	0917	193		A
YUNN 02	0925	0933U	0933D	N18	E29			06 4.60	8D	SN	P	0933	48	.6	G
WEND 02	0943	0949	0953	N17	E29			06 4.61	10	SF	C	0949	31	.4	G
WEND 02	1253	1300	1318	N17	E28			06 4.67	25	SN	C	1300	69	.8	G
WEND 02	1543	1545	1556	S09	E80			06 8.66	13	SB	C	1545	75		
WEND 02	1643	1644	1652	N11	E51			06 6.54	9	SB	C	1644	75	1.3	
PURP 03	0045E	0045	0054	N17	E20			06 4.55	9D	SN	C	0045	21	.2	
PEKG 03	0215	0218U	0230D	S10	E73			06 8.58	15D	SF	C	0218	8		D
PEKG 03	0323	0330U	0357D	S10	E72			06 8.55	34D	SB	P	0330	50		D
YUNN 03	0334E	0335U	0336D	S09	E76			06 8.86	2D	SN	P	0335	32		D
PEKG 03	0432E	0434	0437	S09	E73			06 8.67	5D	SF	P	0434	42		D
PEKG 03	0447	0449	0504	S10	E73			06 8.69	17	SF	C	0449	42		DK
PEKG 03	0447	0457	0504	S10	E73			06 8.69	17	SF	C	0457	29		D
PEKG 03	0601E	0603	0615	S10	E73			06 8.74	14D	SN	C	0603	42		D
PEKG 03	0701	0704	0713	S09	E73			06 8.77	12	SF	C	0704	25		D
YUNN 03	0823	0828	0835	N17	E17			06 4.64	12	SN	C		48	.5	
LEAR 03	0824	0828	0839	N16	E17			06 4.64	15	SN	3 C		57		3758
YUNN 03	0830	0834	0835D	S08	E74			06 8.91	5D	1N	P		80		
LEAR 03	0830	0837	0909	S09	E71			06 8.69	39	1B	3 C		122		FE 3763
PEKG 03	0853E	0855	0908	S10	E71			06 8.71	15D	SN	C	0855	34		DT
RAMY 03	1141	1148	1326	S09	E72			06 8.89	105	2B	3 C				3763
HOLL 03	1340	1342	1353	S10	E67			06 8.61	13	SF	3 C		25		3763
HOLL 03	1436	1437	1448	S10	E69			06 8.80	12	SF	3 C		28		F 3763
RAMY 03	1442	1443	1450	S08	W06			06 3.16	8	SF	3 C		65		F 3754
HOLL 03	1442	1443	1451	S09	W07			06 3.09	9	SF	3 C		52		F 3754
HOLL 03	1500	1512	1513D	S10	E69			06 8.81	13D	SB	3 C		114		FE 3763
RAMY 03	1505	1510	1511D	S07	E69			06 8.80	6D	SB	3 C		167		FE 3763
HOLL 03	1601	1602	1619	S07	E64			06 8.46	18	SN	3 C		41		F 3763
RAMY 03	1620	1624	1704	S07	E60			06 8.18	44	SN	3 C		30		3763
HOLL 03	1624	1624	1634	S08	E61			06 8.26	10	SF	3 C		23		F K 3763
HOLL 03	1624	1633	1634	S08	E61			06 8.26	10	SF	3 C		13		K 3763
RAMY 03	1711	1739	1739D	S07	E59			06 8.14	28D	SB	3 C		88		3763
HOLL 03	1712	1712	1722	S10	E65			06 8.60	10	SF	3 C		23		3763
PALE 03	1714	1731	1807	N23	E44			06 7.11	53	SN	3 C		46		3762
PALE 03	1714	1739	1815	S07	E61			06 8.29	61	SB	3 C		67		E K 3763
PALE 03	1714	1749	1815	S07	E61			06 8.29	61	SB	3 C		88		K 3763
RAMY 03	1731	1732	1747	N21	E43			06 7.03	16	SF	3 C		22		3762
HOLL 03	1756E	1757U	1807	S10	E69			06 8.94	11D	SF	3 C		96		3763
HOLL 03	1811	1817	1820	S07	E68			06 8.85	9	SF	3 C		12		F 3763
PALE 03	2011E	2015	2031D	N18	E10			06 4.60	20D	SN	3 C		35		E 3758
HOLL 03	2057	2106	2111	S13	E62			06 8.55	14	SF	3 C		27		3763
PALE 03	2115E	2118U	2204	S11	E63			06 8.63	49D	SN	3 C		55		E 3763
HOLL 03	2124	2129	2149	S10	E64			06 8.70	25	SN	3 C		46		F 3763
PALE 03	2203	2205	2222	N17	E09			06 4.60	19	SF	3 C		60		3758
HOLL 03	2250	2259	2307	S05	E60			06 8.44	17	SF	3 C		14		3763
PALE 03	2257	2303	2339	S03	E61			06 8.52	42	SN	3 C		41		E 3763
MANI 03	2300E	2300U	2308D	S05	E59			06 8.37	8D	SF	1 V		20	.4	
HOLL 03	2310	2328	2337	S09	E64			06 8.77	27	SN	3 C		44		3763

H - ALPHA SOLAR FLARES

JUNE 1982

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	Cmd	Hale Plage Region	CMP Mo Day	Duration (Min)	Imp	See	Obs Type	Time (UT)	Area Measurement Apparent (10 <sup>-6</sup> Disk)	Corr (Sq Deg)	Remarks	
[	HOLL	03	2341	0029	0124D	S12 E60		06	8.51	103D	SB	3	C				
	HOLL	03	2341	2344	0124D	S12 E60		06	8.51	103D	SN	3	C	131		FEK 3763	
	PALE	03	2357	0017	0333D	S08 E62		06	8.65	216D	SB	3	C	34		K 3763	
	PALE	03	2357	0030	0333D	S08 E62		06	8.65	216D	1B	3	C	85		EFK 3763	
														221		K 3763	
[	MANI	04	0015E	0015U	0047D	S12 E62		06	8.68	32D	SN	1	V				
	MANI	04	0015E	0025U	0047D	S12 E62		06	8.68	32D	SB	1	V		35		FE
	PURP	04	0025E	0034	0036D	S11 E61		06	8.61	11D	SB		P	0034	70	1.4	FE
	PEKG	04	0045E	0045	0100	S09 E60		06	8.54	15D	SB		P	0045	57	1.3	E
	YUNN	04	0215	0216	0231	S04 E60		06	8.58	16	SN		C		50	1.0	F
	PEKG	04	0244E	0244	0254	S02 W65		05	30.26	10D	SN		P	0244	80		E
	PEKG	04	0257	0303	0314	S10 E63		06	8.86	17	1N		C	0303	55	1.3	E
	YUNN	04	0258	0305	0315	S08 E62		06	8.78	17	SN		C		126	2.8	FU
	PEKG	04	0345E	0347	0350	S01 W66		05	30.22	5D	SF		P	0347	64	1.4	F
	PEKG	04	0416	0439	0500	N20 E38		06	7.09	44	1N		P	0439	46		D
	PEKG	04	0510	0512	0519	S11 E58		06	8.58	9	1B		C	0514	202	2.8	F
	MANI	04	0522E	0523U	0530D	S09 E60		06	8.73	8D	1B	1	V		118	2.3	F
	YUNN	04	0537E	0538	0540	S08 E59		06	8.66	3D	1B		P		150	2.8	FE
	PEKG	04	0538	0548	0604	S09 E60		06	8.74	26	1N		P	0548	113	2.3	F
	MANI	04	0553E	0555U	0558D	S09 E60		06	8.75	5D	SN	1	V		252	4.9	F
	YUNN	04	0555E	0555U	0605	S08 E60		06	8.75	10D	SB		P	0555	70	1.3	F
	PEKG	04	0631	0632	0639	S06 E54		06	8.32	8	1B		C	0632	48	1.0	E
	MANI	04	0633E	0636U	0638D	S06 E59		06	8.69	5D	1B	1	V		126	2.2	E
	BUCA	04	0634	0635	0644	S04 E55		06	8.39	10	SN		C	0635	200	3.7	FZ
	YUNN	04	0639E	0639U	0641D	S05 E55		06	8.39	2D	SN		P	0639	107	1.9	D
														64	1.2	D	
	PEKG	05	0012	0013	0021D	S12 E45		06	8.40	9D	SN		C	0013	105	1.6	FZ
	MANI	05	0127E	0131U	0133D	S09 E48		06	8.67	6D	1N	1	V		250	3.9	FZ
	YUNN	05	0232E	0235	0245	S10 E42		06	8.26	13D	1N		P		177	2.5	F
	YUNN	05	0325	0331	0355	S07 E47		06	8.67	3D	2N		C		804	12.2	F
	MANI	05	0512E	0514U	0514D	S09 E47		06	8.75	2D	SN	1	V		50	.8	F
	BUCA	05	0615	0622	0715	S10 E40		06	8.27	6D	1N		C	0622	322	4.4	F
	ISTA	05	0655		0715	S12 E43		06	8.53	2D	3B						
	ISTA	05	0729		0741	S08 E46		06	8.76	12	3B						F
	BUCA	05	0730	0732	0755	S07 E48		06	8.91	25	2N		C	0732	537	8.4	F
	HOLL	05	1721	1739	1824	S10 E38		06	8.58	63	1B	3	C		186		EH 3763
	HOLL	05	1839	1841	1848	S10 E35		06	8.41	9	SF	3	C		29		F 3763
	HOLL	05	1852	1855	1902	S09 E36		06	8.49	10	SN	3	C		74		F 3763
	HOLL	05	1904	2013	2120	S08 E35		06	8.42	136	1B	3	C		198		UEK 3763
	HOLL	05	1904	2052	2120	S08 E35		06	8.42	136	1B	3	C		280		K 3763
	PEKG	05	2318E	2324	2328	S12 E32		06	8.38	10D	1N		P	2324	239	3.0	FZ
	HOLL	05	2320	2320	2330D	S13 E32		06	8.39	10D	SB	3	C		166		E 3763
[	PEKG	06	0216E	0216	0235	S07 E33		06	8.57	19D	SN		P	0216	84	1.0	F
	LEAR	06	0219	0219	0229	S07 E33		06	8.57	10	SN	3	C		29		F 3763
	PURP	06	0220E	0220	0223D	S07 E32		06	8.50	3D	SF		P	0220	57	.7	
	LEAR	06	0250	0312	0342	S10 E32		06	8.52	52	SB	3	C		95		FE 3763
	PEKG	06	0301E	0303	0335	S09 E31		06	8.45	34D	SN		C	0303	168	2.0	FZ
	MANI	06	0303E	0308	0337D	S10 E33		06	8.61	34D	SB	1	V		90	1.1	F
	LEAR	06	0347	0351	0404	S12 E28		06	8.27	17	SB	3	C		62		FE 3763
	PEKG	06	0348	0350	0405	S09 E30		06	8.41	17	1N		C	0350	315	3.8	FIZ
	PEKG	06	0423	0425	0431	S08 W37		06	3.41	8	SF		P	0425	101	1.3	E
	LEAR	06	0507	0509	0552	S09 E29		06	8.39	45	SN	3	C		50		K 3763
	LEAR	06	0507	0528	0552	S09 E29		06	8.39	45	SB	3	C		99		FEK 3763
	LEAR	06	0508	0509	0515	N20 E11		06	7.06	7	SF	3	C		28		3762
	PEKG	06	0515	0527	0545	S11 E29		06	8.40	30	SN		C	0527	168	2.0	F
	LEAR	06	0636	0639	0720	S09 E29		06	8.45	44	SB	3	C		51		FE 3763
	ISTA	06	0914		0922	S09 E31		06	8.71	8	SF						
	LEAR	06	0915	0915	0918D	S07 E27		06	8.41	3D	SN	3	C		29		3763
	WEND	06	1341E		1358D	S12 E26		06	8.53	17D	SN		C	1341	62	.7	
	HOLL	06	1357E	1431	1530	S10 E25		06	8.46	93D	1B	2	C		388		E 3763
	WEND	06	1424	1437	1528D	S10 E24		06	8.40	64D	SB		C	1437	181	2.0	
	RAMY	06	1519E	1522U	1553D	S10 E25		06	8.52	34D	2N	3	C		687		3763
	HOLL	06	1613	1617	1620	S10 E21		06	8.25	7	SN	2	C		23		F 3763
	HOLL	06	1630E	1654U	1912D	S09 E25		06	8.57	162D	3B	2	C		1265		UE 3763
	RAMY	06	1632	1649	1654D	S11 E26		06	8.65	22D	2B	3	C		1127		3763
	HOLL	06	1921E	1934U	1944	S11 E26		06	8.76	23D	SF	3	C		34		3763
	MANI	06	2354	2355U	2358D	S12 E20		06	8.50	4D	SN	1	V		40	.4	
	PEKG	07	0106	0111	0116	S10 E18		06	8.40	10	SN		C	0111	126	1.4	F
	PEKG	07	0523	0527	0535	S13 E16		06	8.43	12	SN		C	0527	93	1.0	E



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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat CMD	Hale Plage Region	CMP Mo Day	Duration (Min)	Imp	Obs See	Type	Area Measurement			Remarks	
												Time (UT)	Apparent ( $10^{-6}$ Disk)	Corr (Sq Deg)		
ISTA	07	0630E		0652	S20 E72		06	12.78	22D	SF					D	
ISTA	07	0750		0808	S14 E20		06	8.84	18	SB					D	
PEKG	07	0758E	0758	0758D	S11 E18		06	8.69	18D	SN	P	0758	168	1.9	FI	
PEKG	07	0821	0829	0855	S08 E12		06	8.25	34	1B	C	0829	421	4.5	FK	
PEKG	07	0821	0843	0855	S09 E11		06	8.17	34	1N	C	0843	336	3.6	F	
ISTA	07	0826		0902	S10 E13		06	8.33	36	3B					FZR	
BUCA	07	0827	0832	0912	S08 E10		06	8.10	45	2N	C	0832	859	9.0		
HOLL	07	1241E	1312	1432	S10 E10		06	8.28	111D	1B	3	C	296			K 3763
HOLL	07	1241E	1334	1432	S10 E10		06	8.28	111D	1B	3	C	462			ZFK 3763
RAMY	07	1305	1317	1419	S09 E12		06	8.45	74	2B	3	C	585			K 3763
RAMY	07	1305	1347	1419	S09 E12		06	8.45	74	2B	3	C	509			K 3763
HOLL	07	1521	1524	1542	S13 E12		06	8.55	21	SN	3	C	50			F 3763
HOLL	07	1603	1610	1622	S09 E11		06	8.49	19	SB	3	C	189			E 3763
HOLL	07	1628	1656	1741	S08 E09		06	8.36	73	1B	3	C	226			FE 3763
PALE	07	1745E	1809	1931	S07 E09		06	8.41	106D	SB	3	C	179			E 3763
HOLL	07	1808	1812	1846	S09 E08		06	8.36	38	1B	3	C	286			FE 3763
PALE	07	2018	2025	2031	S07 E07		06	8.37	13	SN	3	C	40			
PALE	07	2037	2039	2059	S09 E07		06	8.38	22	SN	3	C	50			F 3763
PALE	07	2116	2121	2148	S12 E09		06	8.56	32	1B	3	C	227			E 3763
HOLL	07	2117	2121	2142	S14 E08		06	8.49	25	SN	3	C	136			F 3763
PALE	08	0133	0302	0405D	S14 E10		06	8.82	152D	1B	3	C	237			FEK 3763
PALE	08	0133	0320	0405D	S14 E10		06	8.82	152D	SB	3	C	184			K 3763
MANI	08	0555E	0556	0602	S10 E11		06	9.07	7D	SN	1	V	130		1.4	F
ISTA	08	0615		0648	S09 E03		06	8.49	33	1N						F
ISTA	08	0624		0627	N20 E90		06	15.16	3	SF						D
PALE	08	1746	1747	1755	N19 E89		06	15.54	9	SF	3	C				
PALE	08	1755	1803	1900D	S07 W09		06	8.07	65D	1B	3	C	398			UF 3763
HOLL	08	1802E	1802U	1823	S08 W09		06	8.08	21D	1B	3	C	395			UE 3763
HOLL	08	1957E	2004	2108D	S11 W10		06	8.08	71D	1B	3	C	359			FE 3763
PALE	08	2004E	2004U	2040	S10 W08		06	8.23	36D	1B	3	C	334			FE 3763
PALE	08	2110	2112	2115	S10 W10		06	8.13	5	SN	3	C	56			3763
PALE	08	2124	2126	2129	S12 E90		06	15.68	5	SF	3	C				
PALE	08	2220	2221	2231	N19 E83		06	15.27	11	SN	3	C				3772
HOLL	08	2335	2344	0042D	S06 W02		06	8.83	67D	2B	3	C	558			UF 3763
MANI	08	2337E	2344	0001D	S07 E02		06	9.13	24D	1N	1	V	400		4.2	FE
PALE	08	2337	2342	2344D	S07 W02		06	8.83	7D	1B	3	C	402			UF 3763
MANI	09	0233E	0233U	0237D	S12 E86		06	15.59	4D	1N	1	V				
BUCA	09	0726	0729	0755	S05 W07		06	8.79	29	1N		C	0729	430	4.5	
MANI	09	0728	0730	0755	S08 W04		06	9.01	27	1B	1	V	370		3.8	FE
MANI	09	0839E	0840U	0844D	S19 E47		06	12.95	5D	SF	1	V	60		.9	
HOLL	09	1214	1218	1231	S07 W14		06	8.46	17	SB	2	C	75			FEK 3763
HOLL	09	1214	1227	1231	S07 W14		06	8.46	17	SN	2	C	125			K 3763
RAMY	09	1318	1321	1410	S10 W15		06	8.43	52	SN	3	C	57			F 3763
RAMY	09	1413	1513	1520	S10 W16		06	8.39	67	SB	3	C	50			3763
HOLL	09	1510	1518	1533	S09 W16		06	8.43	23	SF	3	C	22			3763
HOLL	09	1714	1714	1718	S19 E37		06	12.54	4	SF	3	C	24			3770
RAMY	09	1836	1845	1904	S11 E73		06	15.27	28	SN	3	C				3773
RAMY	09	1837	1837	1853	S09 W17		06	8.50	16	SN	3	C	31			F 3763
HOLL	09	1921	1922	1934	N17 E68		06	14.98	13	SF	3	C	29			3772
HOLL	09	2212	2225	0032D	S08 W21		06	8.35	140D	1B	3	C	234			K 3763
HOLL	09	2212	2327	0032D	S08 W21		06	8.35	140D	1B	3	C	210			FEK 3763
PALE	09	2220	2232	0014D	S09 W20		06	8.43	114D	1B	1	C	460			FE 3763
MANI	09	2327	2329	2345D	S10 W21		06	8.40	18D	SN	1	V	120		1.3	F
PEKG	10	0026E	0028U	0033	S07 W16		06	8.82	7D	SN		P	0028	109	1.2	E
HOLL	10	0053	0100	0136D	S08 W22		06	8.39	43D	2B	3	C	631			FE 3763
MANI	10	0055	0059	0115	S10 W22		06	8.38	20	2B	1	V	675		7.6	FE
PALE	10	0058	0059	0204D	S10 W21		06	8.46	66D	2B	1	C	700			FE 3763
PEKG	10	0216E	0216	0224	S09 W22		06	8.44	8D	SN		C	0216	176	2.0	E
MANI	10	0216E	0218	0225D	S10 W21		06	8.52	9D	SB	1	V	70		.8	FE
PALE	10	0218E	0218U	0309D	S10 W21		06	8.52	51D	SB	1	C	100			FE 3763
PEKG	10	0251E	0253	0312	S10 W28		06	8.01	21D	SN		P	0253	155	1.8	E
PEKG	10	0320E	0320	0322	S19 E32		06	12.58	2D	SF		P	0322	50	.7	E
PEKG	10	0320E	0325	0327	N18 E65		06	15.09	7D	SN		P	0325	84		E
PEKG	10	0351	0352	0430	S12 W22		06	8.50	39	SN		P	0352	177	2.0	EK
PEKG	10	0427E	0427	0427D	S09 W23		06	8.46	39D	1N		P	0427	218	2.5	F
PEKG	10	0450E	0453	0457D	S09 W23		06	8.47	7D	1N		P	0453	193	2.2	F
PEKG	10	0544E	0545	0547	S09 W24		06	8.44	3D	1N		P	0545	202	2.3	FT
PEKG	10	0550	0610	0630	S10 W24		06	8.44	40	1N		P	0610	235	2.7	FT

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo Day	Duration (Min)	Imp	Obs See	Type	Time (UT)	Area Measurement		Remarks	
														Apparent (10 <sup>-6</sup> Disk)	Corr (Sq Deg)		
BUCA	10	0600E	0617	0705	S09	W25		06	8.37	65D	1N		P	0617	430	4.9	
ISTA	10	0625E		0707	S08	W24		06	8.47	42D	1N						BZ
BUCA	10	0730		0750	S14	W21		06	8.72	20	SN		C	0735	107	1.2	E
RAMY	10	1147E	1147	1237	S07	W23		06	8.77	50D	1B	3	C		460		FE 3763
RAMY	10	1309	1310	1313	S20	E24		06	12.38	4	SF	3	C		26		3770
WEND	10	1312	1314	1320	N18	E60		06	15.12	8	SF		C	1314	50	1.1	
HOLL	10	1501	1504	1516	N17	E58		06	15.04	15	SN	3	C		43		3772
HOLL	10	1502	1508	1519	S07	W29		06	8.45	17	SF	3	C		45		F 3763
HOLL	10	1643	1645	1655	N22	W51		06	6.77	12	SF	3	C		32		3762
HOLL	10	1713	1713	1747	S20	E21		06	12.32	34	SF	3	C		25		K 3770
HOLL	10	1713	1737	1747	S20	E21		06	12.32	34	SF	3	C		68		F K 3770
PALE	10	1720	1722	1754	S13	E61		06	15.33	34	SN	3	C		75		3773
PALE	10	1720	1739	1808	S18	E22		06	12.40	48	SF	3	C		76		E 3770
HOLL	10	1720	1722	1728	S14	E62		06	15.41	8	SF	3	C		53		3773
PALE	10	1755	1800	1815	S13	E63		06	15.50	20	SB	3	C		127		3773
HOLL	10	1757	1800	1813	S15	E63		06	15.52	16	SN	3	C		81		3773
PALE	10	1802	1831	1907D	S10	W35		06	8.12	65D	SB	3	C		129		ZFK 3763
PALE	10	1802	1837	1907D	S10	W35		06	8.12	65D	SB	3	C		148		K 3763
PALE	10	1819	1820	1827	S18	E21		06	12.36	8	SN	3	C		34		3770
HOLL	10	1830	1831	2111	S10	W35		06	8.14	161	SB	3	C		125		ZE 3763
PALE	10	1835	1840	1852	S12	E59		06	15.22	17	SB	3	C		50		3773
HOLL	10	1836	1841	1849	S14	E61		06	15.39	13	SN	3	C		43		F 3773
HOLL	10	2002	2002	2011	S14	E64		06	15.68	9	SF	3	C		13		3773
LEAR	11	0432	0435	0448	S07	W36		06	8.49	16	SN	3	C		109		3763
ISTA	11	0635		0830	S09	W38		06	8.42	115	2N						F
LEAR	11	0643	0644	0656	S10	W38		06	8.42	13	SN	3	C		25		F 3763
ISTA	11	0655		0805	S08	E14		06	12.34	70	SF						
HOLL	11	1345	1348	1354	S19	E05		06	11.95	9	SN	3	C		77		F 3770
HOLL	11	1456	1500	1520	S08	W48		06	8.02	24	1B	3	C		303		UF 3763
HOLL	11	1628	1630	1650	S07	W44		06	8.39	22	SN	3	C		43		3763
HOLL	11	1821	1823	1837	S09	W47		06	8.23	16	SF	3	C		26		3763
HOLL	11	1854	1855	1903	S09	W47		06	8.26	9	SF	3	C		29		F 3763
HOLL	11	2118	2121	2127	S12	W46		06	8.42	9	SF	3	C		71		3763
HOLL	11	2128	2131	2135	S08	W46		06	8.44	7	SF	3	C		64		3763
HOLL	11	2138	2144	2214	S08	W47		06	8.38	36	SF	3	C		58		3763
LEAR	12	0237	0250	0307	N15	E81		06	18.25	30	SB	3	C				FE 3776
LEAR	12	0427	0430	0501	N06	E59		06	16.60	34	SF	3	C		19		3774
LEAR	12	0436	0437	0504	S19	E05		06	12.57	28	SN	3	C		81		F 3770
LEAR	12	0454	0454	0459	N09	E84		06	18.51	5	SF	3	C				3776
LEAR	12	0512	0514	0633D	N10	E83		06	18.46	81D	SN	3	C		37		K 3776
LEAR	12	0512	0544	0633D	N10	E83		06	18.46	81D	1B	3	C				YFK 3776
ISTA	12	0850		0900	N17	E36		06	15.11	10	SF						
RAMY	12	1239E	1301	1348	S13	W54		06	8.45	69D	SF	3	C		83		3763
RAMY	12	1302	1303	1313	N19	E34		06	15.14	11	SF	3	C		21		3772
HOLL	12	1307	1333	1345	N09	E76		06	18.25	38	SF	3	C		38		F 3776
RAMY	12	1356	1357	1405	S13	W54		06	8.50	9	SF	3	C		20		3763
RAMY	12	1407	1410	1413	S13	W54		06	8.51	6	SF	3	C		30		3763
HOLL	12	1448	1453	1455	S11	W54		06	8.55	7	SF	3	C		28		3763
HOLL	12	1454	1455	1507	N08	E80		06	18.62	13	SN	3	C				3776
HOLL	12	1457	1457	1504	S11	W54		06	8.56	7	SN	3	C		26		3763
HOLL	12	1536	1537	1539D	N14	E76		06	18.40	3D	1N	3	C				F 3776
RAMY	12	1547	1907	2040	N11	E78		06	18.53	293	2N	3	C		293		K 3776
RAMY	12	1547	1622	2040	N11	E78		06	18.53	293	1B	3	C				K 3776
HOLL	12	1613	1619	1647	N09	E83		06	18.91	34	SN	3	C				3776
HOLL	12	1736	1739	1739D	N09	E90		06	19.49	3D	1N	3	C				F 3776
RAMY	12	2008	2018	2040	S13	W58		06	8.46	32	SN	3	C		49		3763
HOLL	12	2016	2016	2025	S11	W57		06	8.55	9	SN	3	C		20		3763
RAMY	12	2042	2045	2047D	S08	W59		06	8.44	5D	SN	3	C		91		3763
HOLL	12	2148	2151	2153	N09	E78		06	18.77	5	SF	3	C				3776
HOLL	12	2158	2205	2207	N09	E78		06	18.77	9	SF	2	C				3776
PALE	12	2217E	2217U	2228D	N11	E76		06	18.65	11D	SN	2	C				3776
PALE	12	2314	2318	2324	S08	W61		06	8.39	10	SF	2	C		13		3763
PALE	12	2314E	2321U	2335	N11	E77		06	18.77	21D	SN	2	C				3776
PALE	12	2337E	0005U	0017	N11	E77		06	18.78	40D	SN	2	C				3776
PALE	12	2340E	2359U	0017D	S14	E19		06	14.42	37D	SF	2	C		58		3773
HOLL	12	2343	0012D	0012	S11	W60		06	8.47	29	SF	3	C		41		F 3763
PALE	12	2359E	0006U	0012D	S13	W60		06	8.47	13D	SF	2	C		17		3763
HOLL	13	0004	0005	0009	N09	E75		06	18.64	5	SN	3	C				3776

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	Duration		Obs See	Type	Area Measurement			Remarks	
								Mo	Day			Time (UT)	Apparent (10 <sup>-6</sup> Disk)	Corr (Sq Deg)		
HOLL	13	0024	0039	0042	N09	E76		06	18.72	18	SF	3	C			3776
HOLL	13	0036	0042	0053	S18	W09		06	12.34	17	SF	3	C			3770
HOLL	13	0053	0054	0058	N10	E73		06	18.53	5	SF	3	C			3776
PEKG	13	0255	0259	0301	S17	W11		06	12.28	6	SN		C	0259		
LEAR	13	0454	0501	0520	N10	E75		06	18.84	26	SN	3	C			3776
ISTA	13	0613		0618	S18	W15		06	12.12	5	SF		C			
PEKG	13	0729E	0731	0732	S14	E15		06	14.45	30	SF		P	0731		
RAMY	13	1231	1232	1233	N11	E65		06	18.42	2	SF	3	C			3776
RAMY	13	1242	1244	1257	N09	E67		06	18.56	15	SN	3	C			3776
HOLL	13	1403	1408	1436	S11	W65		06	8.69	33	SN	3	C			3763
RAMY	13	1407	1407	1436	S13	W67		06	8.53	29	SN	3	C			3763
HOLL	13	1418	1419	1429	S18	W13		06	12.61	11	SF	3	C			3770
HOLL	13	1446	1447	1509	N16	E59		06	18.09	23	SN	3	C			3776
HOLL	13	1448	1452	1504	N10	E40		06	16.62	16	SF	3	C			3774
HOLL	13	1510	1518	1525	S11	W67		06	8.59	15	SF	3	C			3763
HOLL	13	1521	1543	1614	N10	E39		06	16.57	53	SF	3	C			3774
HOLL	13	1630	1631	1642	N18	E19		06	15.14	12	SF	3	C			3772
HOLL	13	1652	1656	1707	S07	W69		06	8.53	15	SF	3	C			3763
RAMY	13	1701	1701	1718	N09	E37		06	16.49	17	SB	3	C			3774
HOLL	13	1702	1702	1712	N07	E38		06	16.56	10	SB	3	C			3774
RAMY	13	1707	1710	1726	N14	E62		06	18.40	19	SF	3	C			3776
RAMY	13	1709	1719	1734	S20	W17		06	12.41	25	SF	3	C			3770
HOLL	13	1818	1819	1904	N12	E60		06	18.29	46	SB	3	C			3776
RAMY	13	1822E	1822	1829D	N12	E59		06	18.21	70	1B	3	C			3776
HOLL	13	1911	1911	1918	N07	E36		06	16.50	7	SF	3	C			3774
HOLL	13	1922	1925	1931	S15	E07		06	14.34	9	SF	3	C			3773
HOLL	13	1924	1924	1929	S19	W14		06	12.74	5	SF	3	C			3770
PALE	13	1942E	1946U	2006D	S13	W68		06	8.69	24D	SN	2	C			3763
HOLL	13	1958	2007	2014	S11	W68		06	8.71	16	SN	3	C			3763
HOLL	13	2025	2026	2029	S19	W19		06	12.40	4	SF	3	C			3770
HOLL	13	2025	2030	2031	N18	E19		06	15.30	6	SF	3	C			3772
HOLL	13	2054	2055	2100	S11	W69		06	8.68	6	SF	3	C			3763
HOLL	13	2102	2105	2125	S11	W69		06	8.68	23	1B	3	C			3763
HOLL	13	2127	2127	2132	S11	W69		06	8.70	5	SF	3	C			3763
HOLL	13	2147	2149	2222	S11	W71		06	8.56	35	SB	3	C			3763
HOLL	13	2147	2202	2222	S11	W71		06	8.56	35	SN	3	C			3763
HOLL	13	2209	2212	2216	N09	E65		06	18.80	7	SN	3	C			3776
MANI	13	2229	2230	2233D	S19	W19		06	12.49	4D	SN	1	V			3770
HOLL	13	2231	2231	2234	S19	W15		06	12.79	3	SF	3	C			3763
HOLL	13	2250	2252	2300	S12	W70		06	8.67	10	SF	3	C			3776
HOLL	13	2326	2328	0038	N08	E62		06	18.63	72	SN	3	C			3776
PEKG	13	2335E	2336	2344	N09	E65		06	18.86	9D	1N		C	2336		3776
PEKG	13	2336	0001	0035	N10	E62		06	18.65	59	2N		C	0001		3776
PEKG	13	2352	0030U	0050	S12	W74		06	8.42	58	2B		C	0030		3776
HOLL	13	2358	2359	0004	S11	W70		06	8.73	6	SF	3	C			3763
PALE	14	0009E	0055U	0117D	N10	E60		06	18.52	68D	SB	2	C			3776
HOLL	14	0009	0033	0052	S12	W71		06	8.65	43	2B	3	C			3763
PALE	14	0017E	0017	0108	N20	E16		06	15.24	51D	SF	2	C			3772
PALE	14	0017E	0055U	0108	N20	E16		06	15.24	51D	SF	2	C			3772
PALE	14	0017E	0035U	0117D	S13	W71		06	8.65	60D	2B	2	C			3763
PALE	14	0017E	0055U	0117D	S23	E33		06	16.56	60D	SF	2	C			3779
PALE	14	0035E	0045U	0059D	S13	E18		06	15.38	24D	SF	2	C			3773
HOLL	14	0053	0104	0112	N08	E58		06	18.39	19	SB	3	C			3776
PEKG	14	0101E	0103	0110	N09	E59		06	18.47	9D	1B		C	0103		3776
HOLL	14	0117	0120	0123	S11	W71		06	8.71	6	SF	3	C			3763
PEKG	14	0135E	0135U	0142	S11	W75		06	8.42	7D	SN		P	0135		3763
HOLL	14	0135	0136	0139	S10	W72		06	8.65	4	SN	3	C			3763
LEAR	14	0138E	0138U	0152	S12	W73		06	8.56	14D	SN	3	C			3763
PEKG	14	0141	0144	0146	N08	E59		06	18.50	5	SN		P	0144		3776
LEAR	14	0142	0142	0204	N09	E59		06	18.50	22	SN	3	C			3776
PEKG	14	0143	0144	0151	S07	W80		06	8.08	8	SN		P	0144		3776
PEKG	14	0151	0156	0201D	S04	W85		06	7.72	10D	SF		P	0156		3776
PEKG	14	0207	0209	0212	N09	E58		06	18.44	5	SN		P	0209		3776
PEKG	14	0208	0218U	0240	S08	W76		06	8.39	32	SN		P	0218		3776
PEKG	14	0252	0253	0259	N10	E65		06	19.01	7	SN		P	0253		3776
PEKG	14	0317	0320	0324	S13	W73		06	8.62	7	SN		P	0320		3776
LEAR	14	0318	0321	0327	S14	W74		06	8.54	9	SN		C			3763
LEAR	14	0339	0340	0343	N09	E56		06	18.36	4	SN	3	C			3776
PEKG	14	0340E	0340	0359	N09	E57		06	18.43	19D	SN		P	0340		3776
PEKG	14	0403	0423	0545	S08	W76		06	8.47	102	SN		C	0423		3776



JUNE 1982

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo Day	Duration (Min)	Imp	Obs See	Type	Time (UT)	Area Measurement		Remarks
														Apparent (10 <sup>-6</sup> Disk)	Corr (Sq Deg)	
PALE 15	0246	0246U	0305D	N20	W00		06	15.12	19D	SF	3	C		21		3772
LEAR 15	0325	0329	0331	S12	W90		06	8.36	6	SF	3	C				3763
LEAR 15	0331	0331	0334	S12	W90		06	8.36	3	SF	3	C		11		3763
LEAR 15	0414	0415	0420	S14	W90		06	8.37	6	SF	3	C				3763
LEAR 15	0559	0602	0625	S19	E75		06	20.98	26	SF	3	C		37		3780
LEAR 15	0716	0717	0723	S13	W90		06	8.51	7	SF	3	C				3763
YUNN 15	0740E	0744	0752	S21	E71		06	20.77	12D	SN		P		16		D
YUNN 15	0802	0826	0842D	S21	E71		06	20.78	40D	2B		P		193		KT
LEAR 15	0806	0813	0902D	S21	E69		06	20.63	56D	1B	3	C		175		K 3780
LEAR 15	0806	0819	0902D	S21	E69		06	20.63	56D	1B	3	C		130		FEK 3780
LEAR 15	0846	0846	0902D	N10	E41		06	18.45	16D	SF	3	C		29		K 3776
LEAR 15	0846	0901	0902D	N10	E41		06	18.45	16D	SN	3	C		36		F K 3776
RAMY 15	1204E	1204U	1207D	N11	E42		06	18.66	3D	1N	3	C		405		FE 3776
HOLL 15	1245	1249	1254	N10	E40		06	18.54	9	SF	3	C		25		3776
RAMY 15	1257	1259	1305	N19	W07		06	15.00	8	SF	3	C		21		3772
HOLL 15	1301	1301	1315	N13	E31		06	17.88	14	SF	3	C		39		F 3776
HOLL 15	1305	1305	1316	S21	E66		06	20.61	11	SF	3	C		13		3780
RAMY 15	1335	1417	1513	N13	E36		06	18.28	98	1B	3	C		387		FE 3776
HOLL 15	1335	1422	1508	N13	E36		06	18.28	93	1B	3	C		353		ZU 3776
RAMY 15	1352	1354	1357	N19	W07		06	15.04	5	SF	3	C		20		3772
HOLL 15	1355	1357	1413	S21	E66		06	20.64	18	SF	3	C		19		3780
HOLL 15	1423	1423	1450	S22	E65		06	20.60	27	SF	3	C		12		3780
RAMY 15	1425	1512	1651	S21	E66		06	20.66	146	2B	3	C		712		3780
HOLL 15	1446	1447	1453	S12	W90		06	8.83	7	SF	3	C				3763
HOLL 15	1509	1512	1558	S22	E66		06	20.71	49	2B	3	C		343		Z 3780
RAMY 15	1602	1645	1654	N14	E40		06	18.69	52	SF	3	C		190		3776
RAMY 15	1746	1747	1753	N14	E43		06	18.99	7	SF	3	C		23		3776
PALE 15	1836	1841	1906	N18	E29		06	17.99	30	1B	3	C		283		FE 3776
RAMY 15	1836	1841	1908	N16	E31		06	18.13	32	SB	3	C		143		FE 3776
HOLL 15	1836	1841	1859	N16	E30		06	18.05	23	SB	3	C		121		FE 3776
PALE 15	2017	2021	2208D	N12	E33		06	18.33	111D	SB	3	C		84		K 3776
PALE 15	2017	2100	2208D	N12	E33		06	18.33	111D	1B	3	C		368		FEK 3776
HOLL 15	2102E	2104	2151D	N12	E34		06	18.44	49D	1B	3	C		152		E 3776
HOLL 15	2238	2240	2248	S14	W41		06	12.84	10	SF	3	C		23		3770
PALE 15	2240E	2254U	2307	S20	W45		06	12.50	27D	SN	3	C		30		3770
LEAR 16	0104	0109	0120	S21	E63		06	20.88	16	SF	3	C		19		3780
LEAR 16	0209	0214	0348	N11	E35		06	18.72	99	2B	3	C		578		FEK 3776
LEAR 16	0209	0228	0348	N11	E35		06	18.72	99	2B	3	C		700		K 3776
LEAR 16	0226	0226	0237	S17	E61		06	20.74	11	SN	3	C		26		3780
LEAR 16	0708	0710	0722	N16	E24		06	18.12	14	SN	3	C		96		F 3776
BUCA 16	0710E		0725	N17	E26		06	18.28	15D	1N		P	0710	322	3.9	
PEKG 16	0721	0725	0728	N12	E30		06	18.57	7	SF		P	0725	13	.1	D
PEKG 16	0721	0725	0735	N16	E25		06	18.20	14	SF		P	0725	46	.5	E
LEAR 16	0850	0859	0912D	N17	E22		06	18.04	22D	SN	3	C		110		F 3776
RAMY 16	1145E	1145U	1159	N12	E31		06	18.83	14D	SN	3	C		25		F 3776
RAMY 16	1327	1339	1406	N08	E29		06	18.74	39	SB	3	C		102		F 3776
HOLL 16	1456	1458	1506	S22	E53		06	20.70	10	SF	3	C		33		F 3780
RAMY 16	1458	1458	1509	S19	E52		06	20.59	11	SN	3	C		37		3780
HOLL 16	1531	1531	1556	N10	E26		06	18.60	25	SF	3	C		23		K 3776
HOLL 16	1531	1544	1556	N10	E26		06	18.60	25	SF	3	C		69		F K 3776
HOLL 16	1537	1540	1603D	S22	E51		06	20.57	26D	SN	3	C		88		F 3780
RAMY 16	1538	1542	1615	S18	E51		06	20.54	37	SN	3	C		102		3780
RAMY 16	1540	1543	1548	N12	E26		06	18.61	8	SN	3	C		46		3776
RAMY 16	1626	1640	1640D	N12	E19		06	18.12	14D	1B	3	C		214		UF 3776
RAMY 16	1753	1806	1807	N12	E22		06	18.40	14	SF	3	C		20		3776
RAMY 16	1856	1923	1924	N17	E22		06	18.46	28	SF	3	C		24		3776
HOLL 16	1902E	1908	1925	N15	E25		06	18.69	23D	SF	2	C		90		F 3776
HOLL 16	1922	1926	1935	N11	E27		06	18.84	13	SN	2	C		70		F 3776
HOLL 16	1950	1953	2025D	N11	E27		06	18.86	35D	SN	2	C		120		F 3776
HOLL 16	2023	2340	0047	N10	E19		06	18.28	264	1N	3	C		323		3776
HOLL 16	2030E	2039	2121	S22	E51		06	20.78	51D	1B	2	C		260		YF 3780
HOLL 16	2117E	2119U	2150	N11	E27		06	18.92	33D	SN	2	C		140		F 3776
MANI 16	2319	2338	0004	N12	E23		06	18.71	45	1N	1	V		300	3.4	FE
HOLL 16	2339	2340	0047	N10	E19		06	18.41	68	1N	3	C		323		3776
LEAR 17	0238	0243	0332	N11	E23		06	18.84	54	1B	3	C		269		FE 3776
LEAR 17	0417	0418	0430	N15	E24		06	19.00	13	SN	3	C		62		F 3776
ISTA 17	0819		0836	N10	E20		06	18.85	17	SF						E
BERN 17	1052E	1052	1109	N12	E18		06	18.81	17D	2B		C				DIGITAL
BERN 17	1307	1308	1310	N11	E15		06	18.68	3	SN		C				DIGITAL

H - ALPHA SOLAR FLARES

JUNE 1982

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat CMD	Hale Plage Region	CMP		Duration (Min)	Imp	Obs See	Type	Time (UT)	Area Measurement		Remarks
							Mo	Day						Apparent (10 <sup>-6</sup> Disk)	Corr (Sq Deg)	
BERN	17	1338	1339	1344	N13 E23		06	19.30	6	SN		C				DIGITAL
HOLL	17	1339E	1340	1655D	N11 E10		06	18.32	196D	SB	3	C		192		F 3776
RAMY	17	1456	1458	1536	N20 E19		06	19.08	40	SN	3	C		37		3776
RAMY	17	1622	1624	1635	N16 E17		06	18.97	13	SB	3	C		68		3776
RAMY	17	1633	1634	1638	S17 E38		06	20.58	5	SN	3	C		69		3780
RAMY	17	1634	1643	1717	N08 W15		06	16.56	43	SN	3	C		144		3774
HOLL	17	1835	1836	1922	N13 E16		06	18.98	47	SN	3	C		175		F 3776
HOLL	17	1901	1902	1946	S19 E43		06	21.08	45	SN	3	C		127		F 3780
LEAR	18	0123	0134	0241	N13 E75		06	23.72	78	SF	2	C				K 3782
LEAR	18	0123	0156	0241	N13 E75		06	23.72	78	2N	2	C				F K 3782
PEKG	18	0200E	0200	0220	N13 E75		06	23.75	20D	SN		P	0200	67		E
PEKG	18	0348	0351	0355	N11 E09		06	18.84	7	SF		P	0351	34	.3	D
PEKG	18	0348	0351	0401	N15 E41		06	21.26	13	SF		P	0351	58	.8	E
LEAR	18	0352	0358	0402	N15 E42		06	21.34	10	SN	3	C		23		3781
YUNN	18	0358	0359	0402	N15 E42		06	21.35	4	SN		C		32	.5	D
PEKG	18	0427E	0427	0430	N13 E75		06	23.85	3D	SN		P	0427	50		E
PURP	18	0430	0436	0458	N16 E73		06	23.73	28	SF		P	0436	49		
LEAR	18	0520	0522	0533	S19 W77		06	12.34	13	SF	3	C				3770
YUNN	18	0524	0526	0530	S17 W70		06	12.90	6	SN		C		48		H
LEAR	18	0546	0550	0635	S23 E35		06	20.94	49	SN	3	C		96		S 3780
YUNN	18	0547	0551	0554	N15 E42		06	21.42	7	SN		C		32	.5	H
YUNN	18	0547	0551	0554D	S21 E33		06	20.77	7D	SN		P		32	.4	S
PEKG	18	0550	0601	0615	S23 E35		06	20.94	25	SN		P	0601	63	.9	D
PURP	18	0552E	0553	0610	S21 E36		06	21.01	18D	SN		C	0553	31	.4	
WEND	18	0611E	0611	0618	S22 E36		06	21.03	7D	SF		C	0611	31	.4	
LEAR	18	0718	0720	0727	S19 W80		06	12.19	9	SN	3	C				3770
WEND	18	0718	0720	0727	S18 W80		06	12.21	9	SN		C	0720	38		
YUNN	18	0720E	0720U	0725	S18 W83		06	11.98	5D	1N		P	0720	64		H
LEAR	18	0751	0751	0759	S18 W65		06	13.37	8	SF	3	C		12		3783
LEAR	18	0752	0759	0827	N14 E71		06	23.70	35	SN	3	C		56		3782
WEND	18	0752	0758	0803D	N14 E78		06	24.23	11D	SF		C	0758	19		
YUNN	18	0758	0805	0826	N13 E71		06	23.69	28	SN		C		32		D
RAMY	18	1254	1255	1309	N12 E04		06	18.84	15	SF	3	C		26		3776
RAMY	18	1254E	1326	1326	S19 W67		06	13.42	32D	SN	3	C		100		3783
RAMY	18	1255	1255	1328	S20 W83		06	12.19	33	SN	3	C				3770
RAMY	18	1327	1327	1507	S19 W68		06	13.37	100	SN	3	C		90		F 3783
RAMY	18	1333	1335	1339	N13 E04		06	18.87	6	SN	3	C		27		3776
RAMY	18	1410	1411	1416	S22 E27		06	20.67	6	SF	3	C		26		3780
RAMY	18	1435	1436	1438	S20 E32		06	21.06	3	SF	3	C		23		3780
RAMY	18	1513	1514	1538	N13 W08		06	18.03	25	SB	3	C		95		UF 3776
RAMY	18	1547	1551	1612	N11 W01		06	18.58	25	SN	3	C		62		3776
RAMY	18	1903	1903	1910	S19 E29		06	21.01	7	SN	3	C		36		3780
RAMY	18	1947	2008	2038	N12 W07		06	18.30	51	SN	3	C		71		3776
RAMY	18	1958	2008	2123	S20 W80		06	12.71	85	SN	3	C		30		3770
RAMY	18	2103	2105	2114	N10 W03		06	18.65	11	SF	3	C		43		3776
RAMY	18	2137	2138	2141D	N19 W10		06	18.14	4D	SB	3	C		141		FE 3776
HOLL	18	2138	2139	2229	N19 W11		06	18.06	51	1B	3	C		226		F 3776
PALE	18	2209E	2209U	2235D	N19 W12		06	18.01	26D	SN	2	C		72		F 3776
MANI	18	2323E	2324	2335D	N16 E34		06	21.56	12D	SF	1	V		40	.5	
LEAR	19	0006	0007	0012	N06 W02		06	18.85	6	SF	3	C		54		3776
LEAR	19	0019	0020	0044	N10 W04		06	18.71	25	SF	3	C		35		F 3776
LEAR	19	0048	0049	0051D	N14 W01		06	18.96	3D	1B	3	C		307		FE 3776
MANI	19	0048	0049	0055D	N15 W01		06	18.96	7D	1B	1	V		210	2.2	FE
HOLL	19	0048	0049	0056	N14 W02		06	18.88	8	1B	3	C		215		FE 3776
LEAR	19	0249	0251	0317	N15 W03		06	18.89	28	SN	3	C		44		3776
LEAR	19	0415	0418	0435	N16 E25		06	21.07	20	SF	3	C		29		F 3781
YUNN	19	0425	0426	0432	N15 E26		06	21.15	7	SN		C		32	.4	E
LEAR	19	0502	0505	0509	N13 W03		06	18.98	7	SN	3	C		23		3776
LEAR	19	0709	0709	0720	N09 W11		06	18.47	11	SN	3	C		47		3776
YUNN	19	0711	0725	0732	N14 E68		06	24.44	21	1N		P		80		
YUNN	19	0711	0725	0732	N17 E23		06	21.05	21	SN		C		80	.9	D
LEAR	19	0715	0715	0722	N13 E64		06	24.13	7	SF	3	C		26		3782
ISTA	19	0750		0754	N11 W09		06	18.65	4	SF		C				
LEAR	19	0750	0753	0813	N10 W10		06	18.57	23	SN	3	C		51		F 3776
ISTA	19	0825		0843	N12 W11		06	18.52	18	SF		C				
ISTA	19	0825		0905	N18 W02		06	19.20	40	SF		C				
LEAR	19	0825	0831	0905D	N13 W08		06	18.75	40D	1N	3	C		241		F 3776
YUNN	19	0827	0834	0858	N12 W12		06	18.45	31	SF		C		64	.7	E
RAMY	19	1330E	1331U	1353	N09 W15		06	18.44	23D	SN	3	C		89		3776

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat CMD	Hale Plage Region	CMP Mo Day	Duration (Min)	Imp	Obs See	Type	Time (UT)	Area Measurement		Remarks
													Apparent (10 <sup>-6</sup> Disk)	Corr (Sq Deg)	
HOLL	19	1515	1518	1546	N13 E60		06 24.17	31	SB	3	C		97		3782
RAMY	19	1517	1519	1551	N16 E60		06 24.19	34	SB	3	C		104		3782
HOLL	19	1610	1611	1619	N14 W09		06 18.99	9	SN	3	C		58		3776
HOLL	19	1616	1631	1723	N15 E18		06 21.04	67	SN	3	C		116		F K 3781
HOLL	19	1616	1645	1723	N15 E18		06 21.04	67	SN	3	C		148		K 3781
HOLL	19	1632	1633	1639	N13 W10		06 18.93	7	SN	3	C		30		3776
HOLL	19	1649	1656	1659	N13 W13		06 18.72	10	SF	3	C		104		3776
HOLL	19	1709	1720	1808	N14 W12		06 18.81	59	1B	3	C		264		E 3776
PALE	19	1719	1722	1748	N14 W11		06 18.89	29	1B	2	C		283		3776
PALE	19	1757	1757	1805	N15 E56		06 23.99	8	SN	2	C		22		3782
PALE	19	1814	1814	1840	N17 E17		06 21.05	26	SN	3	C		21		E 3781
PALE	19	1816	1817	1824	N15 W11		06 18.93	8	SB	3	C		158		3776
HOLL	19	1816	1818	1832	N15 W11		06 18.93	16	SN	3	C		147		H 3776
PALE	19	1826	1836	1847	N14 W17		06 18.48	21	SN	3	C		25		E 3776
HOLL	19	1833	1835	1839	N13 W12		06 18.87	6	SF	3	C		35		3776
HOLL	19	1919	1930	2027	N14 W24		06 17.99	68	SN	3	C		121		K 3776
HOLL	19	1919	1955	2027	N14 W24		06 17.99	68	2B	3	C		537		UEK 3776
PALE	19	1920	1920	1957D	N13 W25		06 17.92	37D	SN	3	C		63		K 3776
PALE	19	1920	1956	1957D	N13 W25		06 17.92	37D	2B	3	C		536		FEK 3776
PALE	19	1941	1955	1957D	N17 E18		06 21.19	16D	SN	3	C		47		E 3781
HOLL	19	1956	1956	1959	N16 E19		06 21.27	3	SF	3	C		28		3781
HOLL	19	1956	1959	2015	N13 E56		06 24.06	19	SB	3	C		42		F 3782
HOLL	19	1959	2007	2029	N16 E18		06 21.20	30	SN	3	C		45		F 3781
HOLL	19	2106	2110	2114	N16 E16		06 21.09	8	SF	3	C		26		3781
HOLL	19	2143	2147	2153	N16 E14		06 20.97	10	SN	3	C		47		3781
LEAR	20	0014	0021	0100	N13 W14		06 18.95	46	1B	3	C		203		FE 3776
MANI	20	0015	0020	0035	N14 W14		06 18.95	20	1B	1	V		195	2.1	FE
HOLL	20	0015	0020	0050	N14 W15		06 18.88	35	SB	3	C		183		FE 3776
MANI	20	0017	0025	0045	N15 E14		06 21.07	28	SB	1	V		95	1.0	FE
HOLL	20	0018	0025	0053	N15 E15		06 21.15	35	SB	3	C		97		FE 3781
LEAR	20	0020	0026	0057	N16 E13		06 21.00	37	SB	3	C		81		FE 3781
YUNN	20	0024	0027	0033	N15 E14		06 21.08	9	SN		P		161	1.8	F
YUNN	20	0024	0027	0039	N13 W15		06 18.88	15	SN		P		96	1.1	U
YUNN	20	0113	0114	0115D	N13 W27		06 18.01	2D	SN		P		96	1.1	
HOLL	20	0113	0113	0118	N12 W26		06 18.09	5	SB	3	C		54		3776
LEAR	20	0114	0114	0121	N11 W26		06 18.09	7	SB	3	C		81		3776
LEAR	20	0147	0148	0200	N17 E17		06 21.37	13	SN	3	C		39		3781
LEAR	20	0150	0155	0308	N12 W15		06 18.95	78	1B	3	C		316		3776
MANI	20	0151	0153	0200D	N14 W17		06 18.79	9D	2B	1	V		875	9.5	FE
YUNN	20	0155E	0157	0240	N11 W19		06 18.65	45D	2B		P		852	9.4	FK
YUNN	20	0230	0231	0237	N16 E17		06 21.39	7	SN		C		32	.4	D
LEAR	20	0230	0230	0249	N16 E17		06 21.39	19	SN	3	C		26		3781
LEAR	20	0250	0255	0308	N12 W15		06 18.99	18	1B	3	C		316		3776
YUNN	20	0252	0255	0257	N14 W17		06 18.83	5	SN		C		80	.9	
LEAR	20	0334	0336	0342	N18 E14		06 21.22	8	SF	3	C		39		3781
LEAR	20	0358	0401	0417	N13 E13		06 21.15	19	SN	3	C		105		F 3781
LEAR	20	0400	0404	0411	N11 W28		06 18.06	11	SB	3	C		181		3776
YUNN	20	0404E	0407	0410	N12 W29		06 17.98	6D	SN		P		48	.6	
LEAR	20	0429	0429	0437	N13 E51		06 24.04	8	SF	3	C		19		3782
LEAR	20	0442	0443	0448	N11 W18		06 18.84	6	SN	3	C		28		F 3776
LEAR	20	0452	0459	0507	N16 E13		06 21.19	15	SN	3	C		63		3781
LEAR	20	0533	0534	0536	N14 E12		06 21.14	3	SN	3	C		50		3781
LEAR	20	0552	0553	0615	N11 W30		06 17.99	23	SN	3	C		46		K 3776
LEAR	20	0552	0608	0615	N11 W30		06 17.99	23	SB	3	C		62		FEK 3776
LEAR	20	0629	0630	0646	N12 E11		06 21.10	17	SN	3	C		43		F 3781
LEAR	20	0633	0637	0646	N11 W30		06 18.01	13	1B	3	C		300		FE 3776
ISTA	20	0634		0640	N15 W31		06 17.92	6	1N						D
PURP	20	0634	0635	0638D	N13 W33		06 17.78	4D	SN		P	0635	84	1.1	
LEAR	20	0651	0659	0726	N13 E11		06 21.12	35	SN	3	C		117		F 3781
ISTA	20	0655		0711	N13 E11		06 21.12	16	SF						E
HOLL	20	1209E	1209U	1232	N18 E13		06 21.50	23D	SN	3	C		85		F 3781
HOLL	20	1416	1420	1427	N13 E08		06 21.20	11	SN	3	C		48		F 3781
WEND	20	1712E	1712	1727D	N13 E08		06 21.32	15D	SB	3	C	1712	162	1.7	
PALE	20	1724E	1724U	1830	N13 E06		06 21.18	66D	1B	3	C		267		FE 3781
PALE	20	1842	1849	1901	N15 E41		06 23.89	19	SN	3	C		24		E 3782
HOLL	20	2041E	2042U	2100	N15 E02		06 21.01	19D	SN	3	C		90		F 3781
HOLL	20	2224	2232	2250D	N16 E01		06 21.01	26D	1B	3	C		298		FE 3781
LEAR	21	0058	0128	0242	N13 W00		06 21.04	104	2B	3	C		531		UF 3781
YUNN	21	0110	0113	0116	N15 E02		06 21.20	6	SN		C		80	.9	E





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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo Day	Duration (Min)	Imp	Obs See Type	Time (UT)	Area Measurement		Remarks	
													Apparent (10 <sup>-6</sup> Disk)	Corr (Sq Deg)		
HOLL	22	1540	1555	1612	N14	E18		06 24.01	32	SF	3	C		50		3782
PALE	22	1732	1734	1750	N16	W21		06 21.14	18	SF	3	C		37		3781
PALE	22	1817	1818	1828	N15	E12		06 23.67	11	SB	3	C		52		F 3782
HOLL	22	1829	1837	2015D	N16	W22		06 21.10	106D	1B	3	C		319		E 3781
PALE	22	1830	1833	1937	N17	W22		06 21.10	67	SB	3	C		188		FE 3781
HOLL	22	1837	1846	1916	N11	W56		06 18.56	39	SN	3	C		105		3776
PALE	22	1845	1846	1859	N09	W55		06 18.65	14	SB	3	C		60		FE 3776
HOLL	22	2336	0007	0110	N18	W24		06 21.15	94	1B	3	C		252		3781
PEKG	22	2340E	0009	0050	N18	W24		06 21.16	70D	1B		P	0009	336	3.9	FT
LEAR	23	0009E	0009	0043	N16	W25		06 21.11	34D	SB	3	C		178		FE 3781
HOLL	23	0049	0050	0104	N16	E08		06 23.64	15	SN	3	C		36		3782
PEKG	23	0050	0055	0108	N16	E09		06 23.72	18	SN		C	0055	42	.4	D
LEAR	23	0050	0050	0101	N16	E09		06 23.72	11	SN	3	C		23		3782
PEKG	23	0129	0135	0148	N11	W60		06 18.54	19	SN		C	0135	50	1.1	D
PEKG	23	0130	0134	0158D	N14	E13		06 24.05	28D	SN		C	0134	46	.5	D
LEAR	23	0232	0236	0259	N18	W20		06 21.58	27	SN	3	C		58		F 3781
PEKG	23	0235E	0235U	0305	N18	W22		06 21.43	300	1N		C	0235	210	2.4	E
PEKG	23	0310	0314	0320	N16	E07		06 23.66	10	SN		C	0314	76	.8	E
PEKG	23	0315	0316	0318	N11	W69		06 17.94	3	SN		C	0316	42		D
PEKG	23	0327	0335	0404	N18	W26		06 21.16	37	SN		C	0335	168	2.0	E
LEAR	23	0329	0335	0356	N17	W26		06 21.17	27	SN	3	C		70		F 3781
LEAR	23	0339	0342	0352	N12	W69		06 17.95	13	SN	3	C		121		F 3776
PEKG	23	0340	0344	0350	N13	W70		06 17.87	10	1B		C	0344	147		E
PEKG	23	0350E	0350U	0350D	N15	E12		06 24.07	10D	SF		C	0350	126	1.4	E
LEAR	23	0443	0504	0556	N17	W27		06 21.14	73	SN	3	C		107		F 3781
PEKG	23	0444E	0456U	0530D	N17	W27		06 21.14	46D	SN		P	0456	126	1.5	E
PEKG	23	0550	0610	0619D	N17	W29		06 21.04	29D	SN		P	0610	84	1.0	E
ISTA	23	0628		0731	N17	W30		06 20.99	63	3B						F
LEAR	23	0630	0630	0638	N07	W61		06 18.70	8	SN	3	C		23		F 3776
LEAR	23	0630	0643	0828	N17	W28		06 21.14	118	SB	3	C		88		K 3781
LEAR	23	0630	0653	0828	N17	W28		06 21.14	118	1B	3	C		234		FEK 3781
BUCA	23	0631	0657	0800D	N17	W30		06 20.99	89D	2N		C	0657	967	11.9	
PEKG	23	0634	0652U	0755D	N17	W30		06 20.99	81D	2N		C	0652	421	5.2	FK
PEKG	23	0634	0725U	0755D	N16	W32		06 20.84	81D	2N		C	0725	505	6.3	FI
LEAR	23	0801	0802	0809	N08	W61		06 18.76	8	SN	3	C		16		3776
LEAR	23	0838	0840	0856	N11	W61		06 18.77	18	SN	3	C		41		3776
PEKG	23	0906	0914	0930D	N16	W32		06 20.95	24D	SN		C	0914	109	1.3	F
LEAR	23	0908	0911	0918D	N14	W35		06 20.73	10D	SN	3	C		35		3781
PEKG	23	1001	1007	1010	N17	W29		06 21.21	9	SF		C	1007	92	1.1	ET
RAMY	23	1145E	1159	1408	N17	W31		06 21.13	143D	2B	3	C		575		3781
HOLL	23	1235E	1235U	1314	N15	W31		06 21.18	39D	SF	3	C		57		F 3781
RAMY	23	1236	1238	1242	N13	W70		06 18.24	6	SF	3	C		35		3776
HOLL	23	1546	1548	1623	N15	W28		06 21.54	37	SF	3	C		75		F 3781
RAMY	23	1711	1717	1737	N18	W33		06 21.20	26	SB	3	C		77		F 3781
HOLL	23	1716	1717	1740	N18	W31		06 21.36	24	SN	3	C		48		F 3781
PALE	23	1717	1717	1734	N17	W32		06 21.29	17	SF	3	C		39		F 3781
HOLL	23	1751	1802	1822	N17	W36		06 21.01	31	SN	3	C		31		3781
PALE	23	1754	1800	1827	N16	W36		06 21.01	33	SF	3	C		24		F 3781
PALE	23	1811	1811	1815	N11	W71		06 18.41	4	SF	3	C		21		3776
PALE	23	1811	1812	1829	N15	E02		06 23.91	18	SF	3	C		53		3782
HOLL	23	1839	1843	2050	N15	W35		06 21.13	131	SN	3	C		117		K 3781
HOLL	23	1839	1909	2050	N15	W35		06 21.13	131	1B	3	C		315		K 3781
PALE	23	1840	1842	2057D	N16	W37		06 20.97	137D	1B	3	C		232		F 3781
HOLL	23	1859	1903	1909	N14	W70		06 18.50	10	SF	3	C		22		3776
HOLL	23	2333	2336	0106D	N15	W38		06 21.10	93D	1B	3	C		363		3781
PEKG	23	2348	2349	0042	N19	W38		06 21.09	54	1N		P	2349	210	2.9	FT
LEAR	24	0207	0207	0224	N17	W76		06 18.31	17	SN	3	C				3776
PEKG	24	0210	0213	0214	N18	W79		06 18.07	4	SN		P	0213	21		E
PEKG	24	0235	0240	0245	N14	W37		06 21.31	10	SF		P	0240	13	.2	D
PEKG	24	0310	0317	0331	N17	W37		06 21.32	21	SF		P	0317	29	.4	D
PEKG	24	0410	0416	0425	N12	W50		06 20.40	15	1B		C	0416	189	3.1	E
LEAR	24	0412	0415	0437	N09	W50		06 20.42	25	1B	3	C		220		FE 3781
PEKG	24	0415	0417	0425	N19	W43		06 20.89	10	SN		C	0417	88	1.3	D
YUNN	24	0415E	0417	0420	N11	W51		06 20.34	5D	1N		P		129	2.1	F
LEAR	24	0445	0445	0452	N11	W81		06 18.10	7	SF	3	C				3776
LEAR	24	0516	0528	0617	N16	W40		06 21.18	61	1B	3	C		176		FE 3781
YUNN	24	0528E	0528U	0553	N18	W51		06 20.34	25D	1B		P	0528	177	2.5	F
WEND	24	0551E		0617	N18	W44		06 20.89	26D	SN		C	0553	119	1.8	E
LEAR	24	0746	0746	0751	N15	W42		06 21.14	5	SF	3	C		20		3781

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat CMD	Hale Plage Region	GMP Mo Day	Duration (Min)	Imp	Obs See Type	Time (UT)	Area Apparent (10 <sup>-6</sup> Disk)	Measurement Corr (Sq Deg)	Remarks
LEAR	24	0907	0911	0916	N17 W40		06 21.34	9	SF	3 C		31		3781
RAMY	24	1300	1302	1309	N18 W45		06 21.11	9	SN	3 C		81		F 3781
RAMY	24	1431	1432	1436	N19 W12		06 23.69	5	SF	3 C		24		3782
RAMY	24	1441	1453	1518	N20 W11		06 23.77	37	SN	3 C		59		F 3782
HOLL	24	1450	1457	1517	N19 W11		06 23.78	27	SF	4 C		29		3782
RAMY	24	1509	1510	1525	N17 W42		06 21.44	16	SF	3 C		27		3781
HOLL	24	1518	1528	1534	N18 W42		06 21.44	16	SF	3 C		18		3781
PALE	24	1706	1715	1724	N04 E49		06 28.38	18	SF	3 C		19		3788
PALE	24	1710	1711	1724	N25 W48		06 21.00	14	SF	3 C		16		3785
PALE	24	1717	1722	1725	N11 W82		06 18.55	8	SN	3 C		15		3776
RAMY	24	1725	1726	1732	S02 W37		06 21.96	7	SB	3 C		122		3787
PALE	24	1726	1726	1738	S04 W41		06 21.66	12	SB	3 C		108		F 3787
HOLL	24	1727	1727	1737	S03 W41		06 21.66	10	SN	4 C		114		F 3787
HOLL	24	1849	1849	1854	N15 W46		06 21.30	5	SF	3 C		20		F 3781
HOLL	24	2040E	2042U	2115	N15 W11		06 24.03	35D	SN	3 C		25		F 3782
HOLL	24	2119	2119	2140	N14 W54		06 20.80	21	SF	3 C		28		F K 3781
HOLL	24	2119	2130	2140	N14 W54		06 20.80	21	SF	3 C		17		K 3781
HOLL	24	2238	2301	2355	N16 W49		06 21.22	77	SN	3 C		104		K 3781
HOLL	24	2238	2323	2355	N16 W49		06 21.22	77	SB	3 C		137		FEK 3781
LEAR	25	0003E	0006	0046	N16 W52		06 21.06	43D	SN	3 C		51		3781
HOLL	25	0003	0010	0037	N15 W47		06 21.44	34	SN	3 C		30		3781
PURP	25	0026	0028	0038	N14 W48		06 21.39	12	SN	C	0028	98	1.5	
LEAR	25	0106	0106	0114	N22 W49		06 21.28	8	SF	3 C		17		3785
HOLL	25	0109	0109	0114	N24 W49		06 21.26	5	SF	3 C		18		3785
LEAR	25	0328	0329	0334	S01 W48		06 21.56	6	SF	3 C		35		3787
LEAR	25	0329	0331	0359	N14 W57		06 20.83	30	SF	3 C		57		3781
LEAR	25	0530	0539	0608	N15 W50		06 21.44	38	SB	3 C		142		FE 3781
MANI	25	0535E	0538U	0542D	N16 W48		06 21.59	7D	SB	1 V		90	1.4	FE
YUNN	25	0537E	0541U	0542D	N14 W51		06 21.38	5D	SN	P	0541	64	1.1	E
PURP	25	0538E	0540U	0605	N15 W52		06 21.29	27D	1B	P	0540	154	2.6	
MANI	25	0554E	0555U	0600D	N16 W49		06 21.53	6D	SB	1 V		40	.6	F
YUNN	25	0557E	0557U	0558D	N15 W51		06 21.38	1D	SN	P	0557	48	.8	E
LEAR	25	0651	0651	0659	N13 W60		06 20.75	8	SF	3 C		17		3781
WEND	25	0957	1000	1012	N14 W63		06 20.65	15	SN	C	1000	38	.9	
RAMY	25	1255	1309	1339	N15 W22		06 23.87	44	SN	3 C		149		F 3782
HOLL	25	1255	1310	1335	N17 W21		06 23.94	40	SN	3 C		154		F 3782
RAMY	25	1316	1324	1336	N14 W60		06 21.01	20	SF	3 C		41		3781
RAMY	25	1403	1403	1422	N13 W64		06 20.75	19	SF	3 C		17		3781
HOLL	25	1403	1404	1408	N14 W65		06 20.67	5	SF	3 C		16		F 3781
HOLL	25	1413	1417	1423	N14 W64		06 20.75	10	SF	3 C		20		F 3781
HOLL	25	1426	1431	1436	N15 W65		06 20.68	10	SF	3 C		14		3781
HOLL	25	1520	1520	1527	N14 W65		06 20.72	7	SF	3 C		19		F 3781
HOLL	25	1612	1657	1722	N14 W67		06 20.61	70	SN	3 C		85		F 3781
HOLL	25	1813E	1822	1835	N17 W55		06 21.58	22D	SN	3 C		31		3781
HOLL	25	1837	1841	1858	N17 W59		06 21.29	21	SN	3 C		62		3781
PALE	25	1838	1840	1852	N17 W29		06 23.57	14	SN	3 C		39		3782
HOLL	25	1838	1840	1851	N16 W25		06 23.88	13	SN	3 C		49		3782
HOLL	25	1903	1905	1915	N16 W64		06 20.94	12	SF	3 C		31		3781
HOLL	25	1941	1945	2010	N17 W56		06 21.56	29	2B	3 C		419		EH 3781
HOLL	25	2134E	2141	2251	N17 W61		06 21.26	77D	1B	3 C		302		ZU 3781
HOLL	26	0039	0048	0200D	N16 W64		06 21.17	81D	2B	3 C		496		ZU 3781
LEAR	26	0042	0047	0208	N16 W65		06 21.10	86	2B	3 C		709		3781
YUNN	26	0059E	0100U	0102D	N16 W66		06 21.03	3D	1N	P	0100	193		BHI
YUNN	26	0154	0200	0214D	N21 W62		06 21.32	20D	SN	P		80	1.8	D
LEAR	26	0204	0209	0235	N16 W26		06 24.11	31	1B	3 C		359		FE 3782
YUNN	26	0205	0208	0214D	N16 W27		06 24.04	9D	1N	P		193	2.3	F
YUNN	26	0244E	0247U	0248D	N19 W60		06 21.53	4D	SN	P	0247	32	.7	D
LEAR	26	0408	0408	0413	N13 W73		06 20.66	5	SN	3 C				3781
LEAR	26	0654	0656	0707	N16 W63		06 21.51	13	SN	3 C		44		3781
YUNN	26	0655	0700	0703	N16 W65		06 21.35	8	SN	P		32	.8	D
HOLL	26	1846	1853	1902	N17 W70		06 21.46	16	SN	3 C		70		3781
PALE	26	1853	1853	1901	N15 W72		06 21.33	8	SB	3 C				3781
HOLL	26	1908	1912	1915D	N17 W74		06 21.17	7D	2B	3 C		377		3781
PALE	26	1909	1917	2013	N15 W73		06 21.27	64	2B	3 C				FEK 3781
PALE	26	1909	1926	2013	N15 W73		06 21.27	64	2B	3 C		290		K 3781
HOLL	27	0025	0030	0037	N25 W74		06 21.28	12	SF	3 C				3785
LEAR	27	0026	0027	0033	N23 W74		06 21.31	7	SF	3 C				H 3785
LEAR	27	0133	0134	0138	N17 W79		06 21.06	5	SF	3 C				F 3781

H - ALPHA SOLAR FLARES

JUNE 1982

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	Duration (Min)	Imp	Obs See	Type	Time (UT)	Area Measurement		Remarks	
														Apparent (10 <sup>-6</sup> Disk)	Corr (Sq Deg)		
LEAR	27	0430	0431	0444	N14	W58		06	22.80	14	SF	3	C		30		3790
YUNN	27	0547	0557	0611	N16	W60		06	22.69	24	SN				16	.3	D
PALE	27	1814	1815	1826	N14	W66		06	22.77	12	SF	3	C		30		F 3790
HOLL	27	1815	1816	1820	N17	W67		06	22.66	5	SF	3	C		19		F 3790
PEKG	28	0821E	0821U	0850	S06	E04		06	28.65	29D	SN		P	0821	34	.3	D
PALE	28	2319	2336	0052	N17	W66		06	23.95	93	2N	3	C		346		3782
HOLL	28	2329	2329	0015D	N19	W74		06	23.33	46D	1B	3	C				S 3782
LEAR	29	0250	0251	0258	N15	W68		06	23.97	8	SN	3	C		50		3782
YUNN	29	0947E	0948	0954	S13	W08		06	28.80	7D	SF		P		32	.3	E
RAMY	30	1147E	1148	1158	N05	W25		06	28.62	11D	SF	3	C		64		3788
HOLL	30	1448	1450	1505	N07	W26		06	28.67	17	SF	3	C		65		F 3788
PALE	30	2236	2240	2246	S13	W03		06	30.72	10	SN	3	C		26		3792

"REMARKS":

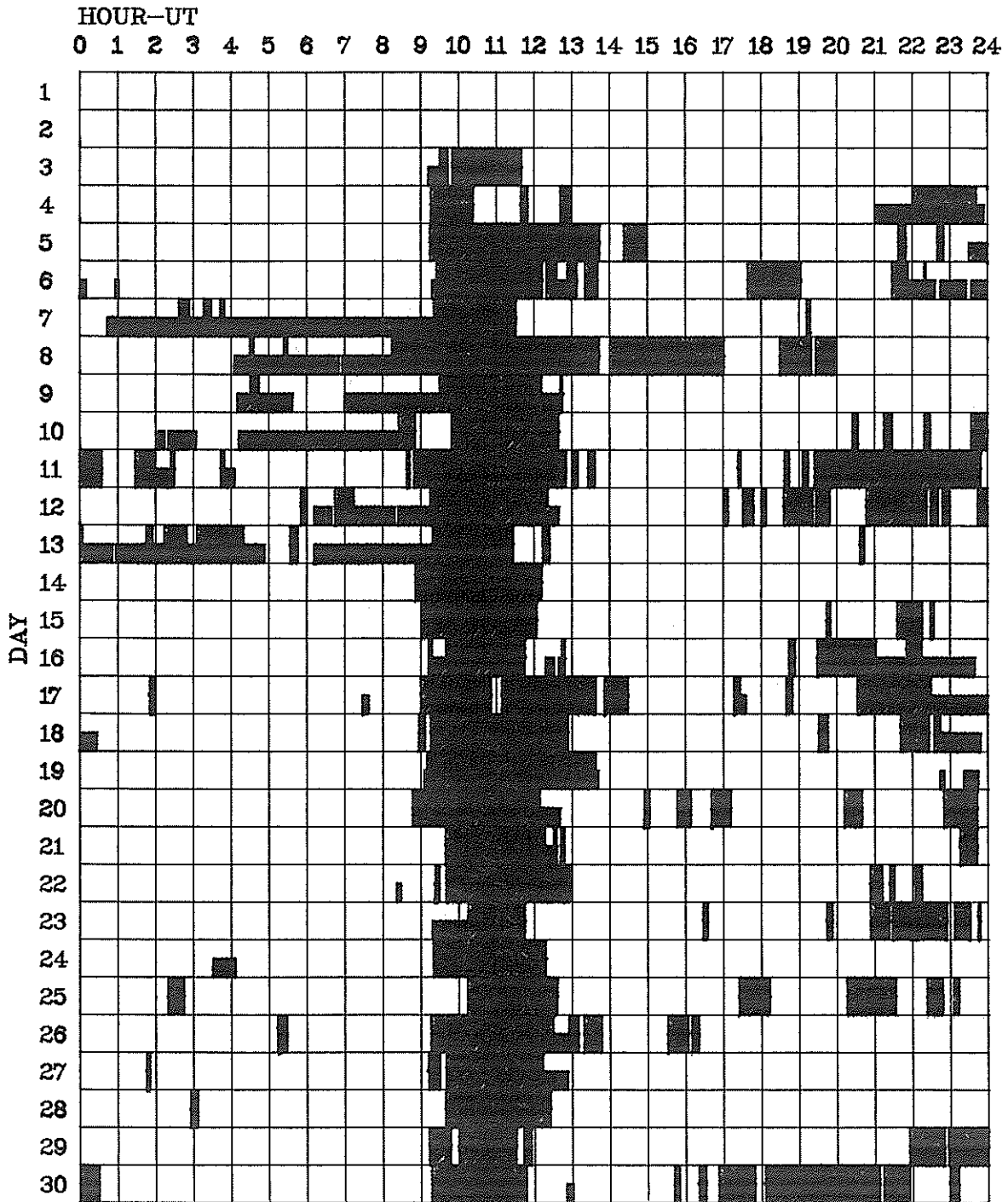
- A = Eruptive prominence whose base is less than 90° from central meridian.
- B = Probably the end of a more important flare.
- C = Invisible 10 minutes before.
- D = Brilliant point.
- E = Two or more brilliant points.
- F = Several eruptive centers.
- G = No visible spots in the neighborhood.
- H = Flare accompanied by high-speed dark filament.
- I = Active region very extended.
- J = Distinct variations of plage intensity before or after the flare.
- K = Several intensity maxima.
- L = Existing filaments show signs of sudden activity.
- M = White-light flare.
- N = Continuous spectrum shows effects of polarization.

- O = Observations have been made in the H and K lines of Call.
- P = Flare shows helium D3 in emission.
- Q = Flare shows Balmer continuum in emission.
- R = Marked asymmetry in H-alpha line suggests ejection of high-velocity material.
- S = Brightness follows disappearance of filament in same position.
- T = Region active all day.
- U = Two bright branches, parallel or converging.
- V = Occurrence of an explosive phase: important, expansion within roughly 1 minute that often includes a significant intensity increase.
- W = Great increase in area after time of maximum intensity.
- X = Unusually wide H-alpha line.
- Y = System of loop-type prominences.
- Z = Major sunspot umbra covered by flare.

The 4-digit number appearing under "Remarks" denotes the calcium plage region number assigned by the Space Environment Services Center in Boulder, Colorado.

# INTERVALS OF NO FLARE PATROL OBSERVATION FOR PRECEDING SOLAR FLARE TABLE

JUNE 1982



Observatories included in total patrol:

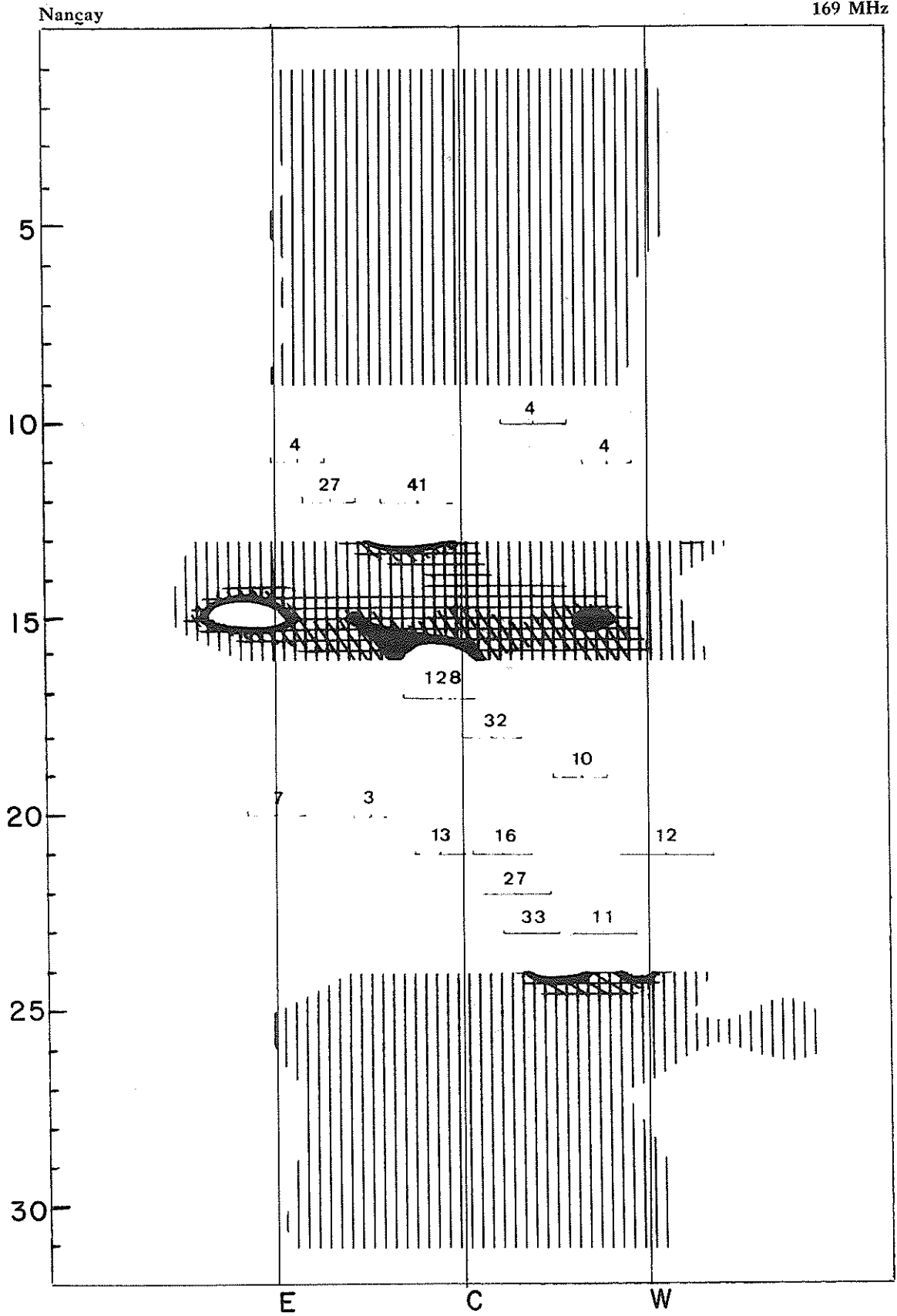
Bern	Holloman	Learmonth	Palehua	Ramey
Bucharest	Istanbul	Manila	Peking	Wendelstein
			Purple Mt.	Yunnan

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).

30  
Jun 82

# SOLAR RADIO EMISSION INTERFEROMETRIC OBSERVATION

JUNE 1982

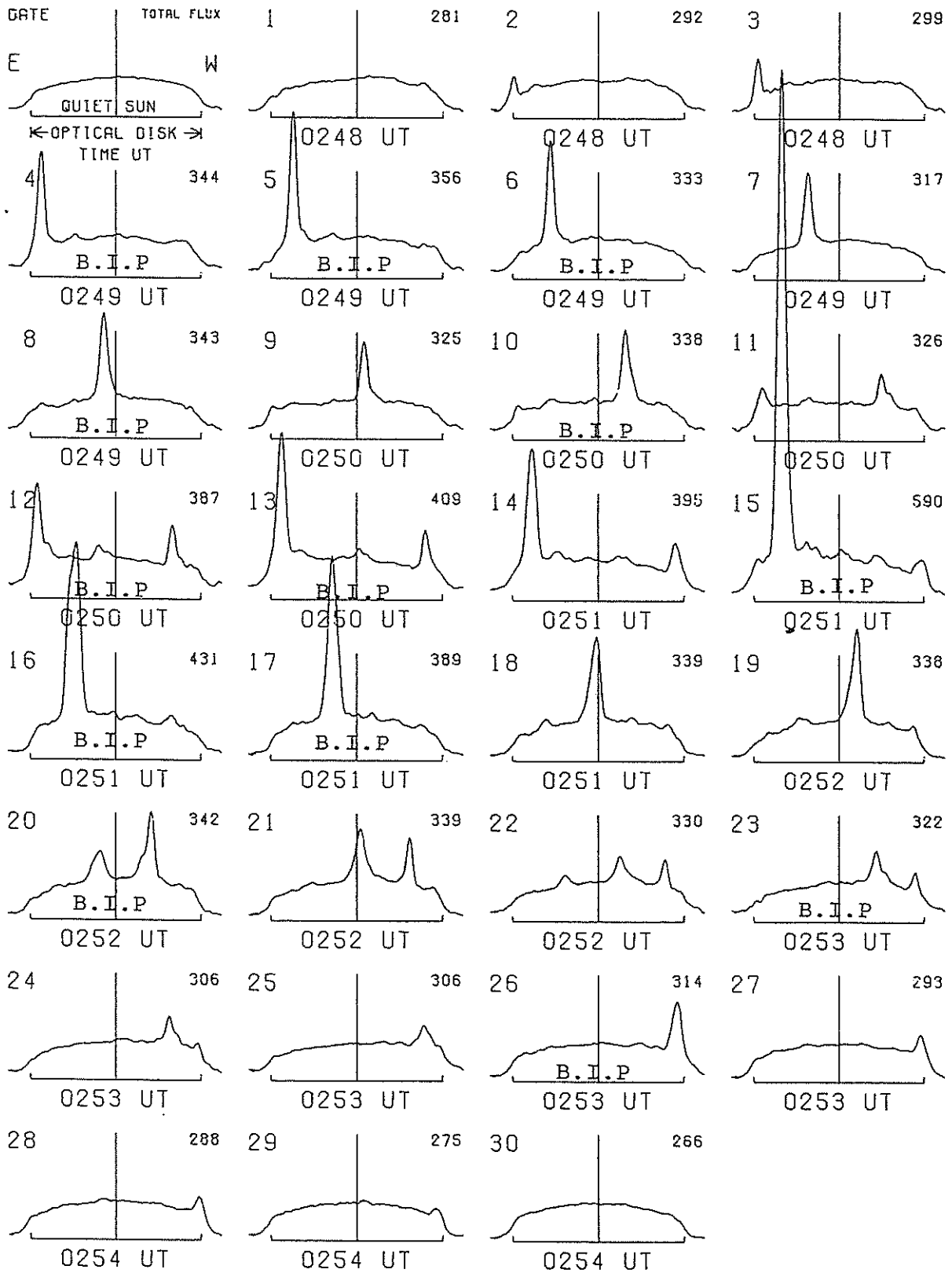


# EAST-WEST SOLAR SCANS

JUNE 1982

TOYOKAWA, JAPAN

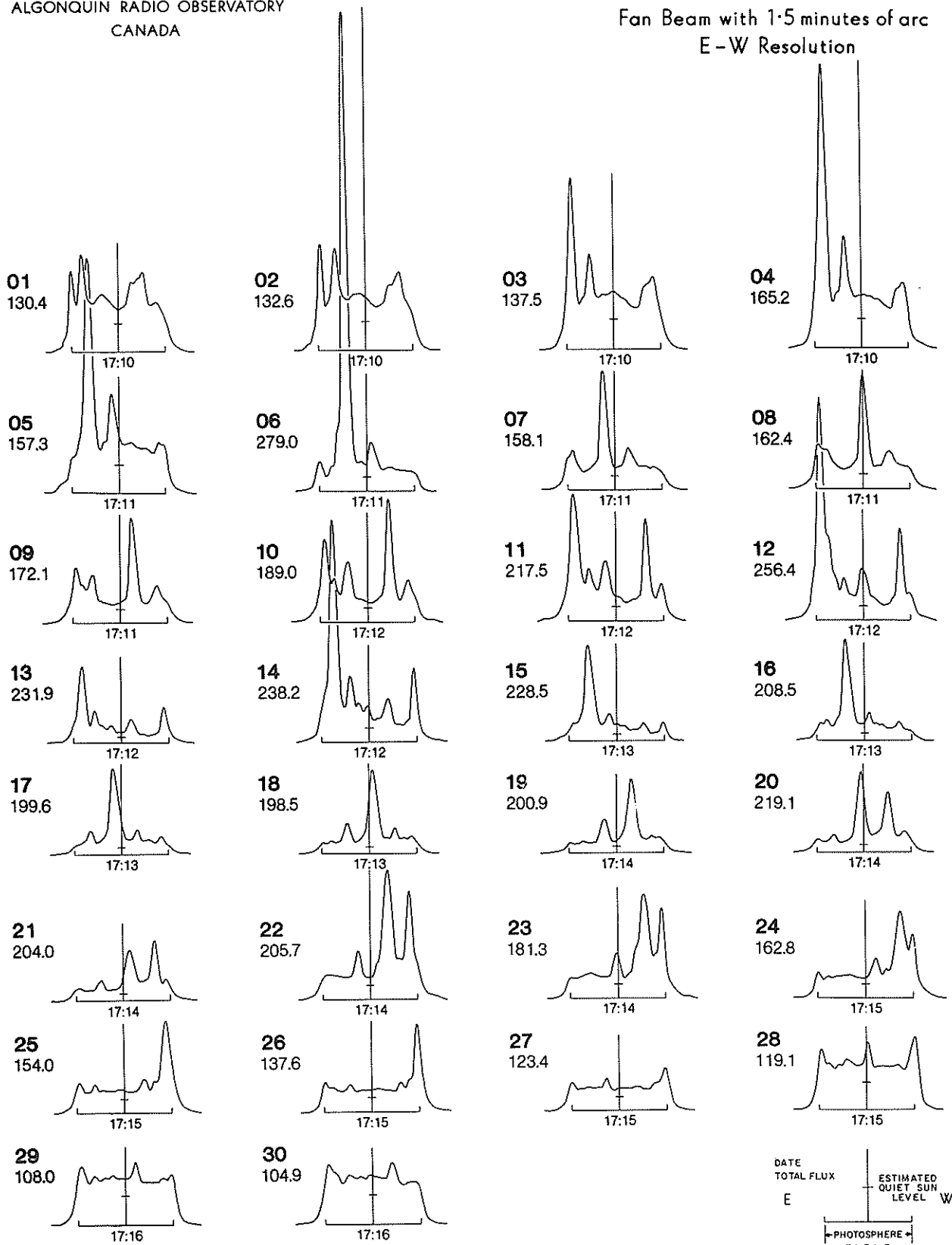
3 CM  
FAN BEAM WITH 1.1 MINUTES OF ARC



EAST-WEST SOLAR SCANS  
JUNE 1982

ALGONQUIN RADIO OBSERVATORY  
CANADA

10.7 cm  
Fan Beam with 1.5 minutes of arc  
E-W Resolution

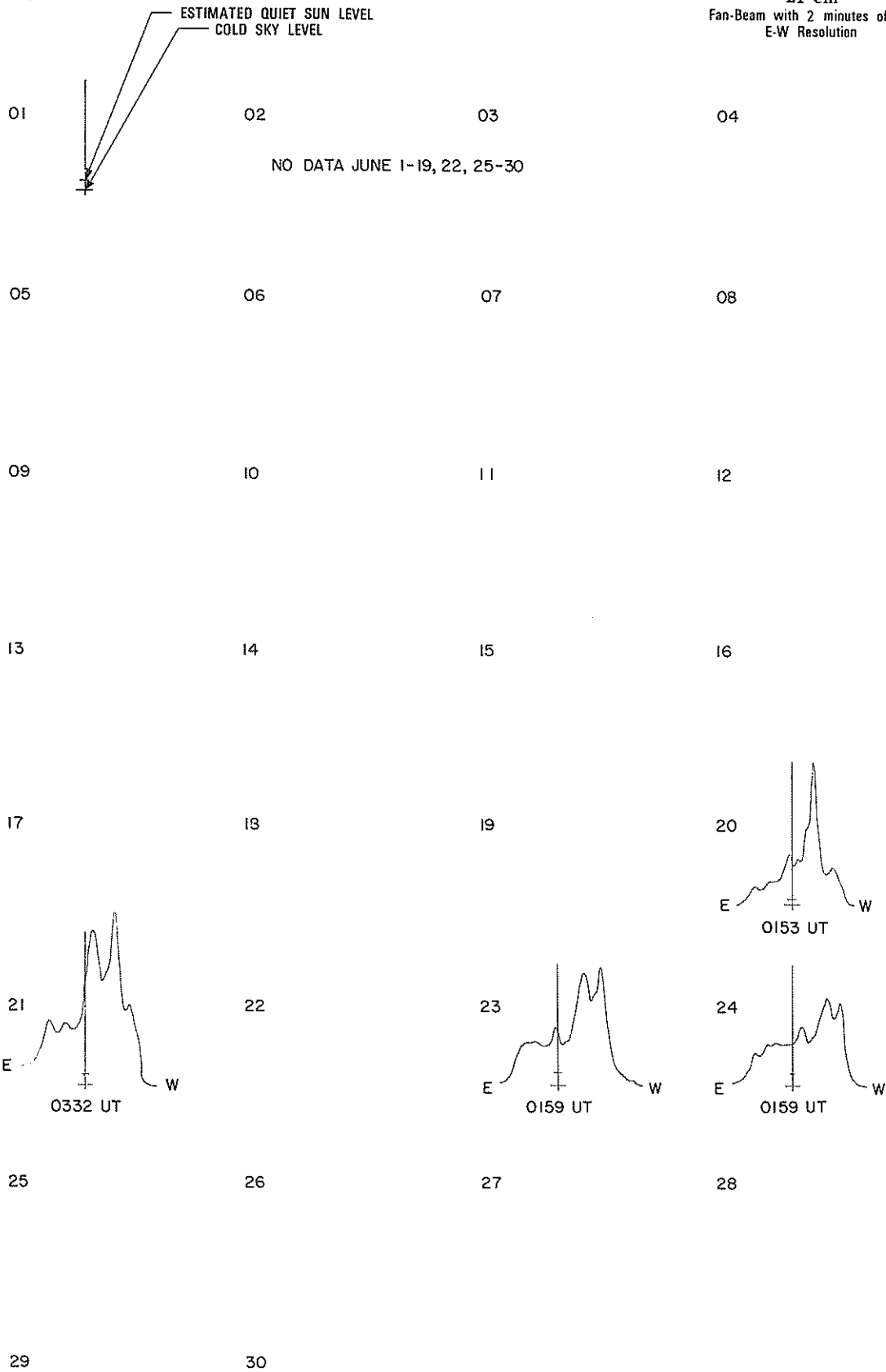


### EAST-WEST SOLAR SCANS

JUNE 1982

Fleurs, Australia

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





SOLAR RADIO EMISSION  
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Flux Density Mean	Int	Remarks
01	2695	MANI	20 GRF	0658.2	0659.6	10.8	28.0	9.3		
	2800	OTTA	240 R	1620.0	1640.0	20.0	2.2	1.1		
	2800	OTTA	21 GRF	1720.0	1810.0	140.0	9.8	4.4		
	2800	OTTA	8 S	1726.3	1726.5	.7	.4			
	2800	OTTA	20 GRF	1950.0	2005.0	70.0	2.8	1.4		
02	2800	OTTA	28 PRE	1540.0		3.5	2.6	1.8		
	2800	OTTA	3 S	1543.5	1546.0	11.5	251.0	58.0		
	2800	OTTA	30 PBI	1555.0	1555.0	40.0	9.4	2.4		
	2800	OTTA	1 S	1625.0	1626.0	3.0	1.6	1.1		
	2800	OTTA	1 S	1643.2	1643.6	1.0	4.8	2.4		
	2800	OTTA	1 S	1853.8	1854.0	2.5	1.6	1.0		
	2800	OTTA	1 S	1859.0	1859.3	4.0	2.4	1.2		
	2695	PENT	1 S	2005.5	2006.5	4.0	2.4	2.0		
	2800	OTTA	4 S/F	2255.0	2256.0	10.0	87.0	16.4		
	2695	MANI	3 S	2255.1	2256.5	4.9	78.4	26.1		
8800	MANI	3 S	2255.6	2256.5	1.6	70.1	23.4			
03	8800	MANI	3 S	0327.5	0327.7	1.5	90.4	30.1		
	8800	MANI	3 S	0448.8	0449.8	3.2	180.8	60.3		
	2695	MANI	1 S	0449.0	0450.7	2.5	6.2	2.1		
	2695	MANI	46 C	0830.0	0837.8	11.5	77.4	25.8		
	8800	MANI	46 C	0830.0	0839.5	15.0	343.2	114.4		
	8800	LEAR	47 GB	0831.5	0833.8	10.8	79.0			QL=6 ST=3 TYP=5
	8400	BERN	45 C	0832.0	0839.5	28.0	300.0			
	2695	LEAR	47 GB	0832.3	0833.5	8.8	20.0			QL=6 ST=3 TYP=5
	8800	LEAR	8 S	0848.1	0848.3	.2	11.0			QL=6 ST=2 TYP=3
	8800	SGMR	4 S/F	1125.6	1126.0	2.9	32.0			QL=6 ST=2 TYP=3
	2800	OTTA	47 GB	1141.0	1143.5	29.0	2245.0	239.0		
	8800	SGMR	49 GB	1141.1	1143.3	30.4	6000.0			QL=6 ST=2 TYP=7
	2695	SGMR	49 GB	1142.0	1143.3	27.3	2699.0			QL=6 ST=2 TYP=7
	8400	BERN	47 GB	1142.0	1145.8U	36.0	3790.0D			
	2800	OTTA	29 PBI	1210.0	1210.0	15.0	10.6	2.7		
	2800	OTTA	21 GRF	1500.0	1518.0	50.0	2.6			
	8400	BERN	4 S/F	1505.5	1509.8	7.0D	159.0			
	2800	OTTA	4 S/F	1505.5	1510.0	11.0	45.0	16.4		
	2695	SGMR	47 GB	1506.3	1508.6	6.8	39.0			QL=6 ST=3 TYP=5
	8800	SGMR	47 GB	1507.1	1508.6	6.4	56.0			QL=6 ST=3 TYP=5
	2800	OTTA	1 S	1532.0	1538.5	9.0	4.6	2.3		
	2800	OTTA	240 R	1820.0	1955.0	95.0	12.0	6.0		
	8800	PALE	8 S	1855.1	1855.6	1.0	22.0			QL=6 ST=2 TYP=3
	8800	PALE	47 GB	1919.0	1921.1	2.1	58.0			QL=6 ST=2 TYP=5
	2695	SGMR	8 S	1928.1	1929.8	1.7	20.0			QL=6 ST=2 TYP=3
2800	OTTA	20 GRF	2000.0	2030.0	100.0	4.0	2.0			
8800	SGMR	8 S	2002.1	2002.6	.5	21.0			QL=6 ST=2 TYP=3	
8800	PALE	8 S	2101.3	2101.8	.8	36.0			QL=6 ST=2 TYP=3	
8800	PALE	47 GB	2128.1	2128.5	1.2	100.0			QL=6 ST=2 TYP=5	
8800	SGMR	47 GB	2128.3	2128.5	.8	58.0			QL=6 ST=2 TYP=5	
2695	PENT	240 R	2235.0	2300.0	25.0	3.0	1.5			
04	2695	PENT	21 GRF	0010.0	0110.0	100.0D	13.8			
	2695	PENT	45 C	0011.0	0016.9	7.0	8.2	3.0		
	2695	PENT	40 F	0014.0	0032.0	24.0	148.0			
	8800	MANI	4 S/F	0029.3	0032.2	4.7	266.9	88.9		
	2695	MANI	4 S/F	0029.5	0033.0	4.9	201.5	67.2		
	2695	PENT	1 S	0106.0	0108.0	9.0	9.2	4.0		
	8800	MANI	3 S	0257.0	0259.0	5.0	175.2	58.4		
	8400	BERN	45 C	0501.0	0512.4	15.0	334.0U			
	8800	MANI	46 C	0502.8	0513.1	13.2	379.6	126.5		
	2695	MANI	46 C	0503.0	0507.7	14.0	52.4	17.5		
	8400	BERN	3 S	0543.0	0546.2	11.0	78.0			
	2695	MANI	4 S/F	0544.0	0547.0	7.0	24.8	8.3		
	8800	MANI	4 S/F	0544.5	0547.0	8.5	116.8	38.9		
	8800	MANI	4 S/F	0627.5	0628.7	2.2	163.5	54.5		
	2695	MANI	4 S/F	0627.5	0628.8	3.5	37.3	12.4		
	8400	BERN	4 S/F	0631.0	0632.1	3.0	154.0			
	8400	BERN	47 GB	0902.0	1033.7	180.0D	703.0			
	2800	OTTA	28 PRE	1312.5	1313.0	11.5	8.0			
8400	BERN	47 GB	1312.5	1328.4	51.0	2366.0				
2800	OTTA	47 GB	1324.0	1328.5	23.0	595.0	113.0			

SOLAR RADIO EMISSION  
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Flux Density Mean (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Int	Remarks
04	2800	OTTA	30 PBI	1347.0	1347.0	253.0	18.4			
	2800	OTTA	3 S	1351.0	1351.8	3.0	63.0	20.0		
	2800	OTTA	4 S/F	1419.0	1421.5	17.0	405.0	71.0		
	8400	BERN	47 GB	1419.4	1420.8	15.0	1363.0			
	2800	OTTA	29 PBI	1436.0	1436.0	50.0	4.6	2.3		
	2800	OTTA	1 S	1540.5	1541.5	1.5	3.0	1.5		
	2800	OTTA	3 S	1549.0	1550.2	5.0	11.6	4.0		
	2800	OTTA	4 S/F	1651.2	1651.2	5.8	180.0	45.0		
	8400	BERN	4 S/F	1651.4	1652.8	8.0D	374.0			
	2800	OTTA	30 PBI	1657.0	1657.0	60.0	11.4	6.4		
	2800	OTTA	40 F	1740.0	1742.2	2.5	19.4			
	2800	OTTA	32A ABS	1802.0	1935.0	140.0	-9.0	-5.0		
	2800	OTTA	46F C	1913.5	1917.8	17.0	290.0	27.0		
	2800	OTTA	23 GRF	2024.0		120.0	6.2			
	2800	OTTA	2 S/F	2025.0	2026.0	1.8	9.0	4.5		
	2800	OTTA	1 S	2028.7	2029.5	3.3	6.0	3.0		
	2800	OTTA	3 S	2116.0	2116.7	3.0	15.4	5.1		
	2800	OTTA	40 F	2144.5	2145.2	2.5	152.0			
	2800	OTTA	21 GRF	2230.0	2305.0	120.0	4.6	2.0		
	2800	OTTA	1 S	2244.0	2244.5	2.0	3.0	1.5		
05	8800	MANI	3 S	0125.1	0129.5	6.9	343.2	114.4		
	2695	PENT	4 S/F	0128.5	0128.8	2.0	15.2	4.0		
	2695	MANI	3 S	0128.9	0129.4	1.0	28.9	9.6		
	2695	MANI	3 S	0249.0	0250.7	3.5	28.7	9.5		
	8800	MANI	3 S	0249.1	0250.5	2.9	48.4	16.1		
	8800	MANI	23 GRF	0413.0	0417.3	8.0	62.9	21.0		
	2695	MANI	4 S/F	0413.8	0417.3	4.2	15.1	5.0		
	8400	BERN	47 GB	0614.0	0616.1	4.0D	1417.0			
	8800	LEAR	49 GB	0614.1	0616.1	18.0	1300.0			QL=6 ST=2 TYP=6
	8800	MANI	47 GB	0614.7	0616.8	8.1	1742.4	580.8		
	2695	LEAR	47 GB	0615.6	0615.8	3.5	310.0			QL=6 ST=2 TYP=5
	2695	MANI	4 S/F	0616.0	0616.3	7.0	354.9	118.3		
	2695	MANI	4 S/F	0727.1	0728.5	4.9	214.4	71.5		
	8800	MANI	47 GB	0727.5	0728.5	5.5	1321.3	440.4		
	2800	OTTA	23 GRF	1130.0		90.0	3.0	2.3		
	2800	OTTA	8 S	1151.2	1151.4	.8	3.0	1.5		
	2800	OTTA	4 S/F	1205.7	1206.0	1.0	42.0			
	2800	OTTA	8 S	1325.8	1325.8	.1	4.4			
	2800	OTTA	23 GRF	1355.0	1530.0	325.0	14.8			
	8400	BERN	46 C	1400.0U	1514.0	180.0D	95.0			
	2800	OTTA	8 S	1449.0	1449.5	.8	2.4	1.2		
	2800	OTTA	45 C	1457.3	1457.7	2.0	11.0	4.0		
	2800	OTTA	46F C	1511.5	1513.1	3.0	12.6	4.8		
	2800	OTTA	1 S	1528.0	1528.5	1.0	7.4	3.4		
	2800	OTTA	1 S	1531.6	1531.9	1.0	4.8	2.4		
	2800	OTTA	46F C	1729.0	1739.7	17.0	64.0	15.2		
	2695	SGMR	47 GB	1738.6	1740.3	3.0	50.0			QL=6 ST=2 TYP=5
	2695	PALE	47 GB	1740.3	1740.5	2.0	64.0			QL=6 ST=2 TYP=5
	8800	PALE	47 GB	1753.8	1755.1	1.5	78.0			QL=6 ST=2 TYP=5
	8800	PALE	47 GB	1819.6	1819.8	.2	62.0			QL=5 ST=2 TYP=5
	8800	PALE	47 GB	1827.6	1827.8	.4	93.0			QL=5 ST=2 TYP=5
	8800	PALE	49 GB	1911.8	1912.3	.8	2000.0			QL=5 ST=2 TYP=6
2800	OTTA	3 S	1949.8	1950.0	2.5	12.0	4.0			
2695	PALE	8 S	1949.8	1950.1	1.0	13.0			QL=6 ST=2 TYP=3	
2695	SGMR	4 S/F	2001.1	2002.6	2.4	17.0			QL=6 ST=2 TYP=3	
8800	PALE	4 S/F	2002.5	2002.8	5.6	38.0			QL=6 ST=2 TYP=3	
2800	OTTA	1 S	2110.0	2110.3	1.0	9.6	4.8			
2800	OTTA	1 S	2113.0	2113.5	2.0	3.0	1.4			
2695	MANI	4 S/F	2317.0	2320.1	8.7	85.6	28.5			
2695	SGMR	47 GB	2318.3	2319.1	2.2	55.0			QL=6 ST=2 TYP=5	
2695	LEAR	47 GB	2318.5	2319.0	2.8	95.0			QL=5 ST=2 TYP=5	
2695	PALE	47 GB	2318.6	2318.8	.7	93.0			QL=6 ST=2 TYP=5	
06	8800	LEAR	4 S/F	0307.1	0308.8	8.5	19.0			QL=6 ST=2 TYP=3
	2695	PALE	8 S	0351.0	0351.3	1.0	41.0			QL=6 ST=2 TYP=3
	2695	MANI	3 S	0352.3	0352.9	3.2	52.7	17.6		
	8800	LEAR	4 S/F	0504.5	0508.5	5.6	17.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0516.0	0517.0	5.3	13.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0522.0	0529.1	11.0	13.0			QL=6 ST=2 TYP=3

SOLAR RADIO EMISSION  
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 -22 W/m 2 Hz)	Mean (2 Hz)		
06	8400	BERN	41 F	0636.0	0637.4	18.0	48.0			
	8800	LEAR	4 S/F	0636.3	0637.5	4.7	36.0			QL=6 ST=2 TYP=3
	8800	ATHN	4 S/F	0636.6	0638.0	2.7	21.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0650.8	0651.5	2.2	20.0			QL=6 ST=2 TYP=3
	8800	ATHN	4 S/F	0911.6	0912.6	12.2	15.0			QL=6 ST=2 TYP=3
	8800	SGMR	4 S/F	1048.3	1049.3	7.8	30.0			QL=3 ST=2 TYP=3
	2800	OTTA	2 S/F	1051.6	1052.2	9.0	9.0	3.0		
	2800	OTTA	1 S	1104.2	1105.0	3.0	2.4	1.2		
	2800	OTTA	23 GRF	1210.0	1435.0	220.0	16.4	5.5		
	8800	SGMR	4 S/F	1248.5	1250.3	5.6	29.0			QL=3 ST=2 TYP=3
	8400	BERN	41 F	1325.0U	1429.4	115.0U	122.0			
	8800	SGMR	4 S/F	1325.8	1326.3	9.5	44.0			QL=3 ST=2 TYP=3
	8800	ATHN	4 S/F	1325.8	1326.6	5.8	28.0			QL=6 ST=3 TYP=3
	2800	OTTA	1 S	1326.0	1326.3	2.0	3.0	1.5		
	8800	SGMR	47 GB	1420.5	1422.6	17.1	91.0			QL=3 ST=2 TYP=5
	2800	OTTA	4 S/F	1421.0	1424.0	15.0	27.0	12.0		
	2695	ATHN	4 S/F	1421.8	1424.5	16.0	21.0			QL=6 ST=2 TYP=3
	8800	ATHN	47 GB	1421.8	1429.8	21.2	80.0			QL=6 ST=2 TYP=5
	2695	SGMR	4 S/F	1422.3	1424.1	15.3	32.0			QL=3 ST=2 TYP=3
	8800	ATHN	49 GB	1629.0	1632.6	67.6	2300.0			QL=6 ST=2 TYP=6
	2695	ATHN	49 GB	1629.0	1635.1	67.6	3500.0			QL=6 ST=2 TYP=6
	8800	SGMR	49 GB	1629.8	1634.0	12.0	3399.0			QL=6 ST=2 TYP=7
	2800	OTTA	47 GB	1630.0	1634.5	180.0	2815.0			
	8400	BERN	47 GB	1630.5	1637.8U	14.0D	2561.0D			
	2695	SGMR	49 GB	1630.8	1634.1	11.0	3300.0			QL=6 ST=2 TYP=7
	8800	SGMR	47 GB	1653.3	1655.3	17.7	110.0			QL=6 ST=2 TYP=5
	2695	SGMR	47 GB	1654.5	1655.3	16.5	110.0			QL=6 ST=2 TYP=5
	2695	SGMR	47 GB	1711.0	1711.3	10.8	69.0			QL=6 ST=2 TYP=5
	8800	SGMR	4 S/F	1711.3	1711.3	10.5	20.0			QL=6 ST=2 TYP=3
	2695	SGMR	47 GB	1725.3	1725.6	9.7	130.0			QL=6 ST=2 TYP=5
	2695	SGMR	47 GB	1746.3	1746.5	16.3	62.0			QL=6 ST=2 TYP=5
	8800	SGMR	47 GB	1755.6	1802.6	7.0	280.0			QL=6 ST=2 TYP=5
	8800	SGMR	49 GB	1802.6	1804.8	12.2	470.0			QL=6 ST=2 TYP=6
	2695	SGMR	49 GB	1802.6	1804.8	12.2	1100.0			QL=6 ST=2 TYP=6
	2695	SGMR	49 GB	1814.8	1815.0	9.8	1800.0			QL=6 ST=2 TYP=6
8800	SGMR	49 GB	1814.8	1815.0	9.8	770.0			QL=6 ST=2 TYP=6	
2695	SGMR	49 GB	1824.6	1824.8	11.4	1000.0			QL=6 ST=2 TYP=6	
8800	SGMR	47 GB	1824.6	1825.0	11.4	370.0			QL=6 ST=2 TYP=5	
2695	SGMR	49 GB	1836.0	1836.1	71.8	640.0			QL=6 ST=2 TYP=6	
8800	SGMR	47 GB	1836.0	1836.1	33.5	210.0			QL=6 ST=2 TYP=5	
2800	OTTA	29 PB1	1930.0	1930.0	90.0	26.0	8.6			
2800	OTTA	20 GRF	2235.0	2242.0	19.0	4.2	2.4			
2800	OTTA	1A S	2236.0	2237.3	2.0	2.4	1.2			
2695	SGMR	20 GRF	2307.0	2308.3	3.6	20.0			QL=6 ST=2 TYP=2	
07	8800	PALE	8 S	0112.1	0112.5	2.0	21.0			QL=6 ST=3 TYP=3
	8400	BERN	41 F	0824.0	0826.9	50.0	464.0			
	8800	ATHN	47 GB	0824.0	0826.5	10.1	320.0			QL=6 ST=2 TYP=5
	2695	ATHN	47 GB	0824.3	0826.5	4.7	280.0			QL=6 ST=2 TYP=5
	2695	MANI	4 S/F	0824.6	0827.0	5.4	225.5	75.2		
	8800	MANI	47 GB	0824.6	0827.0	5.9	579.1	193.0		
	8800	LEAR	47 GB	0824.8	0827.0	17.3	400.0			QL=6 ST=2 TYP=5
	2695	LEAR	47 GB	0825.6	0826.8	15.0	230.0			QL=6 ST=2 TYP=5
	2695	MANI	4 S/F	0838.7	0838.9	4.3	37.8	12.6		
	8800	MANI	4 S/F	0839.0	0840.3	4.5	135.4	45.1		
	2695	ATHN	4 S/F	0928.0	0928.6	2.5	24.0			QL=6 ST=2 TYP=3
	8800	ATHN	4 S/F	0928.0	0928.6	3.3	21.0			QL=6 ST=2 TYP=3
	8800	ATHN	4 S/F	1011.3	1011.8	3.7	11.0			QL=6 ST=2 TYP=3
	8400	BERN	3 S	1140.0	1141.1	2.0	50.0			
	8800	ATHN	4 S/F	1140.1	1140.8	6.2	31.0			QL=6 ST=2 TYP=3
	2800	OTTA	1 S	1140.8	1141.0	1.0	4.8			
	2800	OTTA	20 GRF	1235.0	1312.0	205.0	18.4	6.6		
	8400	BERN	20 GRF	1240.0	1344.6	130.0	139.0			
	8800	ATHN	47 GB	1300.3	1307.3	54.3	31.0			QL=6 ST=2 TYP=5
	8400	BERN	3 S	1606.8	1607.1	4.0	123.0			
	2800	OTTA	21 GRF	1635.0	1650.0	70.0	5.0	2.3		
	8800	ATHN	4 S/F	1643.6	1646.1	12.7	31.0			QL=5 ST=2 TYP=3
	8400	BERN	21 GRF	1644.0	1653.1	45.0	56.0			
2800	OTTA	1 S	1645.0	1646.0	3.0	6.4	2.2			
2800	OTTA	1 S	1700.0	1701.0	2.0	3.6	1.8			

SOLAR RADIO EMISSION  
SELECTED FIXED FREQUENCY EVENTS

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JUNE 1982

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Mean		
07	2800	OTTA	1 S	1732.0	1733.0	3.0	8.0	3.6		
	8800	PALE	47 GB	1808.8	1809.1	.8	63.0			QL=6 ST=2 TYP=5
	2800	OTTA	21 GRF	2114.0	2138.0	135.0	6.0	3.0		
	2800	OTTA	45 C	2117.5	2119.1	10.5	19.4	5.8		
	2695	PALE	8 S	2118.5	2119.6	1.3	20.0			QL=6 ST=2 TYP=3
	8800	PALE	47 GB	2118.8	2119.6	3.8	24.0			QL=6 ST=2 TYP=5
08	2695	PENT	20 GRF	0120.0	0145.0	30.0D	9.6			
	2695	MANI	3 S	0259.0	0301.2	5.5	138.8	46.3		
	2695	PALE	47 GB	0300.1	0300.6	2.2	119.0			QL=6 ST=2 TYP=5
	2695	LEAR	47 GB	0300.1	0300.6	2.2	130.0			QL=6 ST=2 TYP=5
	8800	LEAR	47 GB	0300.1	0300.6	1.2	139.0			QL=3 ST=2 TYP=5
	8800	MANI	3 S	0300.2	0301.2	2.3	148.8	49.6		
	8800	PALE	47 GB	0300.5	0300.6	.3	200.0			QL=6 ST=2 TYP=5
	8800	LEAR	4 S/F	0427.1	0427.6	4.9	40.0			QL=3 ST=2 TYP=3
	8400	BERN	3 S	0540.0	0550.9	15.0	86.0			
	2695	LEAR	4 S/F	0549.8	0550.8	6.8	19.0			QL=6 ST=2 TYP=3
	2695	MANI	3 S	0550.0	0551.0	2.5	15.6	5.2		
	8800	LEAR	47 GB	0550.1	0550.8	2.5	69.0			QL=6 ST=2 TYP=5
	2695	ATHN	8 S	0550.1	0551.0	2.0	6.0			QL=6 ST=2 TYP=3
	8800	ATHN	47 GB	0550.1	0551.0	3.0	68.0			QL=6 ST=2 TYP=5
	8800	MANI	3 S	0550.2	0551.0	1.8	80.8	26.9		
	2695	SGMR	4 S/F	1212.8	1214.3	3.0	13.0			QL=6 ST=2 TYP=3
	8800	SGMR	8 S	1213.8	1214.3	.8	30.0			QL=6 ST=2 TYP=3
	8400	BERN	3 S	1214.0	1214.4	1.0	82.0			
	8800	ATHN	8 S	1214.0	1214.5	2.0	11.0			QL=5 ST=2 TYP=3
	2695	ATHN	8 S	1214.0	1214.5	2.0	9.0			QL=5 ST=2 TYP=3
	2800	OTTA	1 S	1214.0	1214.6	1.5	9.8	4.8		
	2800	OTTA	20 GRF	1445.0	1453.0	15.0	4.0	1.8		
	2800	OTTA	20 GRF	1530.0	1555.0	80.0	44.0	14.8		
	2695	SGMR	20 GRF	1544.6	1547.8	23.4D	31.0			QL=6 ST=3 TYP=2
	2800	OTTA	3 S	1801.0	1802.3	3.0	68.0	023.0		
	2695	SGMR	47 GB	1801.5	1802.3	2.6	60.0			QL=6 ST=2 TYP=5
	8800	PALE	8 S	1802.0	1802.3	.8	30.0			QL=6 ST=2 TYP=3
	8800	SGMR	8 S	1802.0	1802.5	1.8	25.0			QL=6 ST=2 TYP=3
	2695	PALE	8 S	1802.1	1802.3	.4	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	29 PBI	1804.0	1804.0	22.0	5.0	2.7		
	2800	OTTA	31 ABS	1826.0	1835.0	30.0	-6.6	-3.3		
	2695	PALE	47 GB	1958.8	2000.3	5.2	16.0			QL=6 ST=2 TYP=5
2800	OTTA	28 PRE	1959.0	2000.9	2.2	11.8				
2695	SGMR	47 GB	2000.0	2002.1	4.3	119.0			QL=6 ST=2 TYP=5	
2695	PENT	4 S/F	2001.2	2002.2	3.8	133.0	44.0			
8800	SGMR	47 GB	2001.8	2002.1	2.2	119.0			QL=6 ST=2 TYP=5	
8800	PALE	47 GB	2001.8	2002.1	1.5	119.0			QL=6 ST=2 TYP=5	
2800	OTTA	30 PBI	2005.0	2005.0	135.0	6.6	2.8			
2695	PENT	3 S	2007.0	2009.2	6.5	30.0	7.8			
2695	PALE	4 S/F	2007.5	2009.1	2.8	33.0			QL=6 ST=2 TYP=3	
2800	OTTA	1 S	2058.0	2058.3	1.5	6.0	3.0			
2695	PENT	21 GRF	2335.0	2343.0	55.0	7.8	2.6			
2695	PENT	2 S/F	2337.0	2339.0	2.0	6.0	4.5			
8800	LEAR	4 S/F	2342.1	2342.1	2.2	32.0			QL=3 ST=2 TYP=3	
2695	PENT	8 S	2342.4	2342.4	.1	5.0				
8800	PALE	4 S/F	2344.6	2344.6	4.9	40.0			QL=6 ST=2 TYP=3	
09	2695	PENT	45 C	0038.0	0038.2	7.0	18.0	4.5		
	8800	MANI	3 S	0321.3	0322.2	1.9	53.5	17.8		
	8400	BERN	21 GRF	0724.0	0727.0	90.0	73.0			
	2695	MANI	4 S/F	0724.4	0726.0	5.4	54.0	16.2		
	8800	MANI	4 S/F	0724.4	0726.3	4.6	44.6	14.9		
	8400	BERN	3 S	0956.5	0956.9	4.0	44.0			
	8800	ATHN	49 GB	1123.3	1126.3	26.7	680.0			QL=6 ST=2 TYP=6
	2695	ATHN	47 GB	1124.0	1126.5	26.0	320.0			QL=6 ST=2 TYP=5
	2800	OTTA	3 S	1124.5	1128.0	13.5	307.0	92.0		
	8400	BERN	47 GB	1124.7	1127.2	6.0D	926.0			
	8800	SGMR	49 GB	1125.6	1126.8	15.5	710.0			QL=6 ST=2 TYP=6
	2695	SGMR	47 GB	1125.6	1127.3	14.2	310.0			QL=6 ST=2 TYP=5
	2800	OTTA	30 PBI	1138.0	1138.0	100.0	16.2	5.4		
8800	ATHN	4 S/F	1211.5	1214.0	9.6	16.0			QL=6 ST=2 TYP=3	
2800	OTTA	4 S/F	1213.0	1215.0	5.0	20.0	9.6			
2695	SGMR	47 GB	1213.1	1215.0	28.7	32.0			QL=6 ST=2 TYP=5	

SOLAR RADIO EMISSION  
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Mean (W/m <sup>2</sup> Hz)		
09	8800	SGMR	4 S/F	1213.3	1213.8	2.7	26.0			QL=6 ST=2 TYP=3
	2800	OTTA	3 S	1229.5	1231.6	7.5	48.0	20.3		
	8800	PALE	8 S	1836.6	1836.8	.4	26.0			QL=5 ST=2 TYP=3
	2800	OTTA	20 GRF	1920.0	1934.0	120.0	4.8	1.6		
	2800	OTTA	21 GRF	2217.0	0022.0	210.00	36.0			
	2800	OTTA	1 S	2218.0	2218.5	1.8	6.0	2.0		
	8800	SGMR	47 GB	2220.8	2224.1	10.8	230.0			QL=6 ST=2 TYP=5
	2800	OTTA	1 S	2220.9	2221.0	1.0	5.4	2.7		
	8800	MANI	4 S/F	2221.0	2224.3	7.0	397.8	136.2		
	8800	PALE	47 GB	2222.5	2224.1	2.6	280.0			QL=5 ST=2 TYP=5
	2695	MANI	4 S/F	2222.5	2224.2	2.6	69.9	23.3		
	2800	OTTA	4 S/F	2222.9	2224.0	2.2	40.0	20.0		
	2695	SGMR	47 GB	2223.0	2224.0	1.5	63.0			QL=6 ST=2 TYP=5
	2695	PALE	47 GB	2223.1	2224.0	2.0	72.0			QL=5 ST=2 TYP=5
	2695	PENT	3 S	2224.8	2225.0	3.0	81.0	14.0		
	8800	SGMR	47 GB	2235.5	2235.8	.5	61.0			QL=6 ST=2 TYP=5
	2800	OTTA	3 S	2235.5	2235.9	1.5	28.0	9.4		
	2695	SGMR	8 S	2235.6	2235.8	.5	33.0			QL=6 ST=2 TYP=3
	2695	PALE	8 S	2235.8	2236.0	1.2	26.0			QL=5 ST=2 TYP=3
	8800	PALE	47 GB	2235.8	2236.0	1.2	70.0			QL=5 ST=2 TYP=5
	2800	OTTA	3 S	2252.0	2257.0	12.0	13.8	5.7		
	2695	SGMR	8 S	2324.8	2324.8	1.3	35.0			QL=4 ST=2 TYP=3
	8800	LEAR	47 GB	2325.0	2325.1	22.0	94.0			QL=3 ST=3 TYP=5
	2695	LEAR	47 GB	2325.0	2325.1	68.0	68.0			QL=3 ST=3 TYP=5
	8800	MANI	3 S	2325.0	2325.2	1.5	107.6	35.9		
	2695	MANI	3 S	2325.0	2325.2	1.5	92.0	30.6		
	8800	LEAR	4 S/F	2337.3	2337.3	220.0	41.0			QL=3 ST=3 TYP=3
2695	LEAR	8 S	2337.3	2337.5	.2	20.0			QL=3 ST=3 TYP=3	
10	8800	LEAR	49 GB	0057.0	0059.0	11.1	1000.0			QL=6 ST=2 TYP=6
	8800	PALE	49 GB	0057.6	0059.0	11.4	1000.0			QL=6 ST=2 TYP=6
	2695	LEAR	8 S	0057.8	0058.1	.3	18.0			QL=6 ST=2 TYP=3
	2695	PALE	8 S	0057.8	0058.1	.3	13.0			QL=6 ST=2 TYP=3
	2695	MANI	4 S/F	0058.0	0058.2	2.3	33.1	11.0		
	8800	MANI	47 GB	0058.0	0059.2	3.0	1174.7	391.6		
	8800	LEAR	8 S	0213.8	0214.8	2.0	13.0			QL=6 ST=2 TYP=3
	8800	LEAR	20 GRF	0247.6	0249.8	5.0	5.0			QL=6 ST=2 TYP=2
	2695	MANI	3 S	0248.5	0249.5	3.3	11.2	3.7		
	2695	LEAR	20 GRF	0249.0	0249.3	.3	7.0			QL=6 ST=2 TYP=3
	8800	LEAR	8 S	0427.3	0427.5	.2	23.0			QL=6 ST=2 TYP=3
	2695	LEAR	8 S	0427.3	0427.6	.7	5.0			QL=6 ST=2 TYP=3
	2695	MANI	3 S	0429.4	0429.8	1.2	14.9	5.0		
	8800	LEAR	8 S	0505.0	0505.3	.8	10.0			QL=6 ST=2 TYP=3
	8800	ATHN	47 GB	0541.6	0543.0	6.9	58.0			QL=6 ST=2 TYP=5
	8800	LEAR	4 S/F	0551.1	0552.3	4.0	10.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0603.1	0604.0	4.2	36.0			QL=6 ST=2 TYP=3
	2695	ATHN	4 S/F	0609.8	0611.1	5.0	6.0			QL=6 ST=2 TYP=3
	8800	ATHN	4 S/F	0609.8	0611.1	5.7	30.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0610.1	0612.3	7.0	35.0			QL=6 ST=2 TYP=3
	2800	OTTA	21 GRF	1135.0	1148.0	40.0	10.4	5.2		
	2800	OTTA	3 S	1141.0	1142.9	5.0	66.0	22.0		
	8800	ATHN	47 GB	1141.3	1142.6	6.8	110.0			QL=6 ST=2 TYP=5
	2695	ATHN	47 GB	1141.5	1142.6	6.6	52.0			QL=6 ST=2 TYP=5
	2695	SGMR	47 GB	1142.0	1142.8	2.6	59.0			QL=6 ST=2 TYP=5
	8400	BERN	3 S	1142.0	1143.0	20.0	147.0			
	8800	SGMR	47 GB	1142.1	1142.8	2.5	130.0			QL=6 ST=2 TYP=5
	2695	ATHN	4 S/F	1201.3	1204.0	4.0	18.0			QL=6 ST=2 TYP=3
	8400	BERN	41 F	1202.0	1204.4	6.0	118.0			
	2800	OTTA	45 C	1202.2	1203.5	4.0	14.4	5.0		
8800	ATHN	47 GB	1203.1	1204.5	3.4	65.0			QL=6 ST=2 TYP=5	
8800	SGMR	47 GB	1203.1	1204.5	1.5	94.0			QL=6 ST=2 TYP=5	
2695	SGMR	8 S	1203.3	1203.3	.2	13.0			QL=6 ST=2 TYP=3	
8800	ATHN	8 S	1544.1	1544.5	1.2	16.0			QL=6 ST=2 TYP=3	
2800	OTTA	240AR	1615.0	1710.0	55.0	6.6	3.3			
2800	OTTA	20 GRF	1657.0	1701.0	12.0	5.0	2.5			
2800	OTTA	21 GRF	1755.0	2125.0	465.0	41.0	19.7			
2695	SGMR	8 S	1759.5	1800.0	.5D	20.0			QL=6 ST=2 TYP=3	
2800	OTTA	46F C	1829.5	1838.5	12.0	23.6	11.8			
2695	SGMR	4 S/F	1830.1	1830.3	10.4	29.0			QL=6 ST=2 TYP=3	
8800	SGMR	47 GB	1830.1	1830.3	10.4	110.0			QL=6 ST=2 TYP=5	

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Jun 82

JUNE 1982

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Mean		
10	8800	PALE	47 GB	1830.1	1830.3	2.0	119.0			QL=6 ST=2 TYP=5
	2695	PALE	4 S/F	1830.1	1830.3	4.0	22.0			QL=6 ST=2 TYP=3
	2695	PALE	20 GRF	1834.1	1834.3	.2	13.0			QL=6 ST=2 TYP=2
	8800	PALE	8 S	1834.6	1834.8	.2	13.0			QL=6 ST=2 TYP=3
	2695	PALE	8 S	1848.8	1849.8	1.00	13.0			QL=6 ST=2 TYP=3
	8800	PALE	47 GB	1849.5	1849.8	2.8	16.0			QL=6 ST=2 TYP=5
	2800	OTTA	1 S	1851.0	1852.0	2.0	3.2	1.6		
	2800	OTTA	1 S	1904.0	1907.0	6.0	4.8	2.6		
	2800	OTTA	1 S	1912.0	1914.2	8.0	8.4	4.0		
	2695	SGMR	47 GB	1925.8	1926.6	9.5	37.0			
	2800	OTTA	3 S	1931.0	1945.0	70.0	305.0	103.0		
	2695	PALE	47 GB	1932.1	1932.3	10.0	13.0			
	8800	SGMR	47 GB	1933.8	1934.3	1.5	74.0			
	8800	PALE	47 GB	1933.8	1938.6	8.3	78.0			
	2695	SGMR	47 GB	1939.8	1941.8	27.8	310.0			
	8800	SGMR	47 GB	1939.8	1941.8	27.8	180.0			
	8800	PALE	47 GB	1942.1	1942.3	21.5	119.0			
	2695	PALE	47 GB	1942.1	1943.5	21.5	280.0			
	8800	SGMR	47 GB	2007.6	2007.8	29.7	73.0			
	2695	SGMR	47 GB	2007.6	2007.8	30.4	110.0			
2800	OTTA	3 S	2156.8	2156.9	2.2	24.0	10.0			
11	2695	MANI	3 S	0224.1	0224.5	2.9	233.5	77.8		
	8800	MANI	3 S	0224.1	0224.5	1.4	88.2	29.4		
	2695	LEAR	47 GB	0224.1	0224.6	3.0	219.0			QL=6 ST=2 TYP=5
	2695	PALE	47 GB	0224.1	0224.6	1.9	200.0			QL=6 ST=2 TYP=5
	8800	PALE	47 GB	0224.1	0224.6	1.2	87.0			QL=6 ST=2 TYP=5
	8800	LEAR	8 S	0225.3E	0225.3	1.80	22.0			QL=5 ST=2 TYP=3
	8800	LEAR	8 S	0448.0	0448.1	1.5	16.0			QL=6 ST=2 TYP=3
	8800	MANI	3 S	0645.0	0645.4	.7	28.1	9.4		
	8800	ATHN	4 S/F	0645.1	0646.0	2.7	16.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0645.3	0645.6	2.7	26.0			QL=6 ST=2 TYP=3
	2800	OTTA	21 GRF	1100.0	1254.0	295.0	18.4	7.6		
	8400	BERN	4 S/F	1108.0	1109.3	9.0	120.0			
	8800	SGMR	47 GB	1109.0	1109.3	1.8	100.0			QL=6 ST=2 TYP=5
	8800	ATHN	47 GB	1109.0	1109.5	7.0	100.0			QL=6 ST=2 TYP=5
	2695	SGMR	8 S	1140.8	1141.3	.50	13.0			QL=6 ST=2 TYP=3
	8800	ATHN	4 S/F	1249.3	1251.6	5.8	10.0			QL=6 ST=2 TYP=3
	2800	OTTA	1 S	1346.2	1347.5	2.0	8.4	3.0		
	2695	ATHN	8 S	1347.1	1347.8	.9	11.0			QL=6 ST=2 TYP=3
	2800	OTTA	45 C	1455.0	1458.8	10.0	80.0	26.2		
	8400	BERN	4 S/F	1456.0	1500.5	20.0	119.0			
	2695	SGMR	47 GB	1456.5	1459.1	6.5	99.0			QL=6 ST=2 TYP=5
	8800	SGMR	47 GB	1458.3	1500.6	7.7	110.0			QL=6 ST=2 TYP=5
	2695	ATHN	47 GB	1458.5	1459.1	5.8	61.0			QL=6 ST=2 TYP=5
	8800	ATHN	47 GB	1458.5	1500.5	22.8	100.0			QL=6 ST=2 TYP=5
	2800	OTTA	22 GRF	1617.0	1635.0	45.0	4.0	2.0		
	2800	OTTA	3 S	1718.3	1718.9	1.5	13.8	4.8		
	2695	SGMR	8 S	1718.8	1719.0	.3	18.0			QL=6 ST=2 TYP=3
	2800	OTTA	21 GRF	1755.0	1848.0	245.0	44.0	19.6		
	2800	OTTA	3 S	1814.0	1817.2	7.0	83.0	27.8		
	2695	SGMR	47 GB	1815.0	1817.1	11.8	92.0			QL=6 ST=2 TYP=5
	2695	PALE	47 GB	1815.3	1817.3	4.0	64.0			QL=6 ST=2 TYP=5
	8800	PALE	47 GB	1816.3	1817.1	2.5	76.0			QL=6 ST=2 TYP=5
	8800	SGMR	47 GB	1816.6	1817.1	1.2	57.0			QL=6 ST=2 TYP=5
	2695	PALE	4 S/F	1839.8	1843.6	11.2	28.0			QL=6 ST=2 TYP=3
	2800	OTTA	1 S	1840.0	1842.5	4.5	9.6	6.4		
8800	PALE	4 S/F	1841.1	1842.1	7.5	28.0			QL=6 ST=2 TYP=3	
2695	SGMR	8 S	1842.3	1843.1	1.3	17.0			QL=6 ST=2 TYP=3	
2800	OTTA	8 S	2021.1	2021.3	.8	2.6	1.3			
2800	OTTA	1 S	2027.0	2027.5	2.0	3.0	1.5			
8800	PALE	8 S	2124.1	2124.3	.2	19.0			QL=6 ST=2 TYP=3	
2800	OTTA	1 S	2146.7	2146.7	2.0	3.8	1.6			
8800	MANI	4 S/F	2205.0	2206.7	3.0	52.4	17.5			
2800	OTTA	3 S	2205.5	2206.1	5.0	21.0	7.0			
8800	SGMR	4 S/F	2205.5	2206.1	2.3	32.0			QL=6 ST=2 TYP=3	
2695	SGMR	4 S/F	2205.8	2206.1	2.5	22.0			QL=6 ST=2 TYP=3	
2695	MANI	3 S	2206.1	2206.7	2.2	21.4	7.1			
2800	OTTA	40 F	2239.0	2243.0	6.0	3.8				
8800	PALE	4 S/F	2327.3	2329.1	2.5	33.0			QL=6 ST=2 TYP=3	

SOLAR RADIO EMISSION  
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Mean (2 Hz)		
11	2695	PENT	1 S	2327.5	2328.0	5.0	8.4	2.8		
12	2695	PENT	1 S	0001.9	0002.0	1.0	4.6			
	2695	PENT	20 GRF	0005.0	0040.0	65.0	8.6	4.3		
	2695	PENT	8 S	0006.7	0007.1	.8	23.4	11.7		
	2695	PENT	1 S	0018.0	0019.0	3.0	5.6	2.7		
	2695	PENT	26 FAL	0040.0	0110.0	30.0	-7.0	-3.5		
	2695	MANI	3 S	0150.5	0151.0	2.0	30.4	10.1		
	8800	MANI	3 S	0150.7	0151.0	1.3	109.2	36.4		
	2695	MANI	3 S	0207.5	0209.0	3.0	12.2	4.1		
	8800	MANI	3 S	0218.1	0218.2	1.0	26.0	8.7		
	2695	MANI	3 S	0218.1	0218.2	2.9	28.9	9.6		
	8800	LEAR	8 S	0228.3	0228.6	1.3	50.0			QL=6 ST=2 TYP=3
	8800	PALE	8 S	0228.3	0228.8	.7	47.0			QL=3 ST=2 TYP=3
	8800	MANI	4 S/F	0245.0	0247.7	5.5	239.2	79.7		
	2695	LEAR	47 GB	0245.5	0247.8	4.1	160.0			QL=6 ST=2 TYP=5
	8800	PALE	47 GB	0245.8	0247.8	3.3	300.0			QL=3 ST=2 TYP=5
	8800	LEAR	47 GB	0245.8	0247.8	3.5	300.0			QL=6 ST=2 TYP=5
	2695	PALE	47 GB	0247.3	0247.8	2.0	139.0			QL=3 ST=2 TYP=5
	8800	LEAR	8 S	0436.1	0436.8	1.9	15.0			QL=6 ST=2 TYP=3
	8800	LEAR	47 GB	0501.0	0524.1	106.3	270.0			QL=6 ST=2 TYP=5
	8400	BERN	22 GRF	0510.0	0524.4	60.0	226.0			
	8800	ATHN	47 GB	0510.0	0515.3	35.1	180.0			QL=2 ST=2 TYP=5
	8800	MANI	22 GRF	0510.5	0524.8	19.5	270.4	90.1		
	2695	ATHN	4 S/F	0512.0	0516.1	29.0	31.0			QL=6 ST=2 TYP=3
	8400	BERN	3 S	1110.0	1112.9	25.0	254.0			
	8800	ATHN	47 GB	1111.0	1113.3	35.0	239.0			QL=6 ST=2 TYP=5
	8800	SGMR	47 GB	1111.8	1112.8	16.8	300.0			QL=6 ST=2 TYP=5
	2800	OTTA	3 S	1112.0	1132.0	20.00	15.8	5.6		
	2695	ATHN	4 S/F	1112.6	1113.3	33.4	28.0			QL=6 ST=2 TYP=3
	2695	SGMR	8 S	1112.8	1113.1	.30	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	20 GRF	1120.0	1130.0	40.0	8.2	4.1		
	2800	OTTA	40 F	1246.7	1247.2	1.3	4.8			
	8800	ATHN	4 S/F	1258.8	1301.3	10.3	28.0			QL=6 ST=2 TYP=3
	8400	BERN	3 S	1259.0	1300.0	9.0	20.0			
	8800	SGMR	4 S/F	1259.6	1300.3	3.2	37.0			QL=6 ST=2 TYP=3
	2800	OTTA	46F C	1329.0	1332.0	6.5	17.4	7.4		
	8800	ATHN	4 S/F	1329.0	1332.6	7.0	16.0			QL=6 ST=2 TYP=3
	2695	ATHN	4 S/F	1329.0	1334.0	6.1	19.0			QL=6 ST=2 TYP=3
	2695	SGMR	8 S	1329.3	1329.3	.2	20.0			QL=6 ST=2 TYP=3
	8800	SGMR	8 S	1331.6	1332.0	.5	22.0			QL=6 ST=2 TYP=3
	2800	OTTA	1 S	1432.0	1434.0	4.0	9.6	4.8		
	8800	SGMR	4 S/F	1432.1	1432.8	2.5	32.0			QL=6 ST=2 TYP=3
	2695	SGMR	8 S	1432.6	1433.3	1.2	21.0			QL=6 ST=2 TYP=3
	8400	BERN	46 C	1450.0	1626.4	120.00	178.0			
	8800	ATHN	47 GB	1453.6	1454.6	12.7	50.0			QL=2 ST=2 TYP=5
	8800	SGMR	47 GB	1453.8	1454.3	1.2	52.0			QL=6 ST=2 TYP=5
	2695	SGMR	8 S	1454.3	1456.3	2.0	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	3 S	1508.0	1512.8	10.0	135.0	42.4		
	2695	SGMR	47 GB	1510.3	1512.8	7.5	130.0			QL=6 ST=2 TYP=5
	2695	ATHN	47 GB	1510.6	1513.3	21.0	110.0			QL=6 ST=2 TYP=5
	8800	ATHN	47 GB	1510.6	1513.3	13.7	66.0			QL=6 ST=2 TYP=5
	8800	SGMR	47 GB	1511.3	1512.8	4.5	90.0			QL=6 ST=2 TYP=5
	2800	OTTA	30 PBI	1518.0	1518.0	30.0	19.2	9.2		
	8800	ATHN	47 GB	1535.3	1538.1	11.8	78.0			QL=6 ST=2 TYP=5
	2800	OTTA	46F C	1535.5	1537.7	9.0	77.0	24.0		
	2695	ATHN	47 GB	1536.3	1538.1	7.5	79.0			QL=6 ST=2 TYP=5
	2800	OTTA	21 GRF	1605.0	1705.0	130.0	28.0	14.6		
	8800	ATHN	47 GB	1612.1	1626.8	23.2	100.0			QL=6 ST=2 TYP=5
	2695	ATHN	4 S/F	1612.6	1626.8	22.2	13.0			QL=6 ST=2 TYP=3
	2800	OTTA	3A S	1623.0	1629.0	10.0	12.0	6.6		
	2800	OTTA	4 S/F	1625.5	1626.4	1.8	14.4	7.2		
	8800	SGMR	8 S	1627.8E	1628.8	1.00	20.0			QL=6 ST=2 TYP=3
	2695	SGMR	8 S	1628.0E	1629.5	1.50	19.0			QL=6 ST=2 TYP=3
	8800	SGMR	8 S	1642.6	1643.3	.70	19.0			QL=6 ST=2 TYP=3
	2800	OTTA	45 C	1736.0	1741.6	10.0	69.0	18.2		
	2800	OTTA	29 PBI	1746.0	1746.0	20.0	8.6	4.3		
	2800	OTTA	21 GRF	1820.0	1900.0	95.0	13.6	6.8		
	2800	OTTA	3A S	1852.0	1854.0	12.0	16.8	8.4		
	2800	OTTA	3 S	1854.5	1855.7	2.0	12.0	5.6		

SOLAR RADIO EMISSION  
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Mean		
12	2695	PENT	240 R	2300.0	2315.0	15.0	4.6	2.3		
	2695	PENT	1 S	2319.0	2319.3	1.0	4.6	2.3		
	8800	PALE	47 GB	2319.0	2319.3	.6	58.0			
	2695	PENT	27 RF	2335.0		95.0	7.0	5.5		QL=6 ST=2 TYP=5
	2695	PENT	24 R	2335.0	2345.0	10.0	7.0	3.5		
	2695	PENT	24 R	2345.0		55.0	7.0			
13	2695	LEAR	8 S	0006.6	0007.1	1.0	30.0			QL=6 ST=2 TYP=3
	2695	LEAR	20 GRF	0145.1	0151.1	11.9	28.0			QL=6 ST=2 TYP=2
	8800	LEAR	4 S/F	0148.6	0150.6	7.7	40.0			QL=6 ST=2 TYP=3
	2695	PALE	8 S	0149.1	0150.6	1.5D	20.0			QL=6 ST=2 TYP=3
	2695	LEAR	8 S	0259.1	0259.8	1.7	18.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0321.3	0322.1	4.7	18.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0349.8	0350.0	3.3	22.0			QL=6 ST=2 TYP=3
	2695	LEAR	8 S	0349.8	0350.0	2.0	10.0			QL=6 ST=2 TYP=3
	8800	ATHN	4 S/F	0449.5	0452.6	25.5	11.0			QL=6 ST=2 TYP=3
	8800	MANI	22 GRF	0450.5	0508.3	20.5	91.1	30.4		QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0450.8	0452.8	6.0	23.0			QL=6 ST=2 TYP=3
	2695	MANI	22 GRF	0451.0	0505.3	17.0	23.8	7.9		QL=6 ST=2 TYP=3
	2695	LEAR	4 S/F	0452.6	0453.0	4.2	13.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0501.8	0504.1	7.2	37.0			QL=6 ST=2 TYP=3
	2695	ATHN	4 S/F	0925.6	0930.0	11.4	36.0			QL=6 ST=2 TYP=3
	8800	ATHN	4 S/F	0927.0E	0929.0	13.0D	39.0			QL=6 ST=2 TYP=3
	8800	ATHN	49 GB	0943.6	0946.0	23.4	1899.0			QL=2 ST=2 TYP=6
	8400	BERN	47 GB	0944.3	0947.4U	50.0	2520.0D			
	2695	SGMR	47 GB	0944.3	0946.3	5.5	189.0			QL=4 ST=3 TYP=5
	2695	ATHN	49 GB	0944.3	0946.5	22.7	750.0			QL=6 ST=2 TYP=6
	8800	SGMR	47 GB	0944.3	0955.0	18.0	230.0			QL=4 ST=3 TYP=5
	8800	MANI	47 GB	0944.5	0945.1	3.5	851.0	283.7		
	2695	MANI	4 S/F	0944.5	0945.4	3.5	149.8	49.9		
	8800	ATHN	47 GB	1009.0	1014.5	92.5	189.0			QL=6 ST=2 TYP=5
	2695	ATHN	47 GB	1009.0	1014.5	92.5	119.0			QL=6 ST=2 TYP=5
	2800	OTTA		1050.0		150.0D	51.0			
	2800	OTTA	1 S	1400.0	1405.0	5.0D	2.5			
	8800	SGMR	8 S	1406.3	1406.5	.3	24.0			QL=6 ST=2 TYP=3
	2695	PENT	1 S	1408.0	1410.5	4.0	3.6	1.6		
	2695	ATHN	4 S/F	1441.5	1445.6	10.1	18.0			QL=6 ST=2 TYP=3
	2800	OTTA	4 S/F	1442.0	1445.5	8.0	12.2	3.0		
	8800	ATHN	4 S/F	1443.8	1445.6	4.5	9.0			QL=6 ST=2 TYP=3
	8800	SGMR	8 S	1444.1	1445.3	2.0	26.0			QL=6 ST=2 TYP=3
	2695	SGMR	8 S	1445.0	1445.5	1.0	21.0			QL=6 ST=2 TYP=3
	2800	OTTA	20 GRF	1545.0	1550.0	25.0	3.2	1.7		
	2800	OTTA	20 GRF	1615.0	1633.0	30.0	8.4	4.0		
	2800	OTTA	1 S	1650.0	1653.2	10.0	7.4	2.5		
	2800	OTTA	260 FAL	1700.0	1745.0	45.0	-5.8	-2.9		
	8800	SGMR	8 S	1700.6	1700.8	2.0	18.0			QL=6 ST=2 TYP=3
	2800	OTTA	4 S/F	1815.0	1818.2	15.0	53.0	24.1		
	8800	SGMR	49 GB	1815.1	1817.8	19.7	540.0			QL=6 ST=2 TYP=7
	8800	PALE	49 GB	1816.1	1817.5	9.5	610.0			QL=6 ST=2 TYP=7
	2695	SGMR	49 GB	1816.1	1818.1	18.0	70.0			QL=6 ST=2 TYP=7
	2695	PALE	49 GB	1816.8	1818.5	6.3	66.0			QL=6 ST=2 TYP=7
	2800	OTTA	29 PBI	1830.0	1830.0	30.0	8.4	3.8		
	2800	OTTA	20 GRF	1910.0	1920.0	25.0	3.6	1.4		
	2800	OTTA	21 GRF	1945.0	2010.0	70.0	8.4	3.8		
	2800	OTTA	1 S	1948.0	1951.0	6.0	5.0	2.5		
8800	SGMR	8 S	1950.1	1950.6	.7	26.0			QL=6 ST=2 TYP=3	
8800	SGMR	8 S	2103.1	2103.5	.4D	20.0			QL=6 ST=2 TYP=3	
2800	OTTA	20 GRF	2110.0	2117.0	25.0	3.2	1.6			
2800	OTTA	21 GRF	2144.0	2223.0	205.0	32.0	10.6			
2800	OTTA	46F C	2145.0	2147.0	5.0	28.0	11.2			
2695	SGMR	4 S/F	2145.0	2147.0	2.8	36.0			QL=6 ST=2 TYP=3	
8800	SGMR	47 GB	2145.0	2147.0	3.1	80.0			QL=6 ST=2 TYP=5	
8800	PALE	47 GB	2145.0	2147.1	3.6	100.0			QL=6 ST=2 TYP=5	
2695	PALE	4 S/F	2145.1	2147.1	2.5	39.0			QL=6 ST=2 TYP=3	
2800	OTTA	8 S	2154.1	2154.3	.3	5.0				
2695	SGMR	4 S/F	2156.8	2158.8	6.3	32.0			QL=6 ST=2 TYP=3	
2695	PALE	4 S/F	2156.8	2158.8	3.8	32.0			QL=6 ST=2 TYP=3	
2800	OTTA	3 S	2157.0	2159.0	5.0	12.6	5.0			
2695	PENT	28 PRE	2313.0	2315.5	8.0	14.6	10.4			
8800	PALE	8 S	2315.1	2316.8	2.0	24.0			QL=6 ST=3 TYP=3	



SOLAR RADIO EMISSION  
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 -22 W/m <sup>2</sup> Hz)	Mean (2 Hz)		
13	2695	PENT	3 S	2321.0	2326.0	13.0	159.0	54.0		
	2695	MANI	3 S	2321.0	2326.4	12.0	180.0	60.0		
	8800	PALE	49 GB	2322.3	2325.8	32.8	630.0			QL=6 ST=2 TYP=6
	2695	PALE	47 GB	2322.8	2326.1	20.5	189.0			QL=6 ST=2 TYP=5
	8800	MANI	3 S	2323.5	2326.0	6.0	281.1	93.7		
	2695	SGMR	47 GB	2323.8	2325.8	4.5	60.0			QL=4 ST=2 TYP=5
	8800	LEAR	49 GB	2324.6E	2325.8	6.4D	740.0			QL=3 ST=2 TYP=6
	2695	LEAR	47 GB	2324.6E	2326.3	3.2D	200.0			QL=3 ST=2 TYP=5
	8800	SGMR	47 GB	2324.8	2325.8	3.5	200.0			QL=4 ST=2 TYP=5
	2695	PENT	29 PBI	2334.0	2334.0	30.0	27.0	17.1		
14	2695	PENT	3 S	0132.5	0133.0	4.0	31.0	7.8		
	2695	LEAR	4 S/F	0132.6	0132.8	4.9	46.0			QL=6 ST=2 TYP=3
	2695	PALE	8 S	0132.6	0132.8	.5	49.0			QL=6 ST=2 TYP=3
	2695	MANI	3 S	0132.8	0133.3	1.3	64.9	21.6		
	8800	PALE	8 S	0142.8	0143.3	.8	36.0			QL=6 ST=2 TYP=3
	8800	LEAR	8 S	0414.6	0415.1	1.2	16.0			QL=6 ST=3 TYP=3
	8800	LEAR	20 GRF	0416.6	0420.3	8.0	24.0			QL=6 ST=2 TYP=2
	8800	ATHN	8 S	0423.3	0423.6	1.7	19.0			QL=6 ST=2 TYP=3
	8800	ATHN	47 GB	0455.0	0457.1	11.6	50.0			QL=6 ST=2 TYP=5
	8800	LEAR	47 GB	0455.3	0457.0	24.8	88.0			QL=6 ST=2 TYP=5
	2695	ATHN	4 S/F	0455.3	0457.1	12.3	48.0			QL=6 ST=2 TYP=3
	2695	MANI	4 S/F	0455.5	0457.0	2.7	55.3	18.4		
	2695	LEAR	47 GB	0455.6	0457.1	24.5	60.0			QL=6 ST=2 TYP=5
	8400	BERN	3 S	0456.5D	0457.0U	1.0D	53.0			ONLY PAPER REC
	8800	MANI	4 S/F	0456.5	0457.0	1.1	78.0	25.0		
	2695	ATHN	49 GB	0612.1	0625.3	79.2	1199.0			QL=6 ST=2 TYP=6
	8800	ATHN	49 GB	0613.8	0625.8	77.5	1500.0			QL=2 ST=2 TYP=6
	8800	LEAR	49 GB	0620.1	0625.1	52.5	2399.0			QL=6 ST=2 TYP=6
	8800	MANI	47 GB	0621.0	0624.9	23.3	2350.0	868.0		
	2695	MANI	47 GB	0621.2	0624.5	23.8	2050.0	796.0		
	2695	LEAR	49 GB	0622.5	0624.8	50.1	1000.0			QL=6 ST=2 TYP=6
	8400	BERN	47 GB	0623.0U	0625.0U	30.0U	828.0D			ONLY PAPER REC
	8400	BERN	3 S	0847.0U	0848.0U	1.0D	36.0			ONLY PAPER REC
	8800	SGMR	20 GRF	1129.8	1133.5	15.0	44.0			QL=5 ST=2 TYP=2
	2800	OTTA	3 S	1135.0	1135.5	1.0	12.0	6.0		
	2800	OTTA	29 PBI	1136.0	1136.0	4.5	4.8	-2.4		
	2800	OTTA	21 GRF	1225.0	1315.0	125.0	26.8	10.0		
	2800	OTTA	4 S/F	1234.0	1235.5	6.0	12.4	5.0		
	2695	SGMR	8 S	1235.3	1235.5	1.5	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	2 S/F	1253.5	1254.2	2.5	5.8	2.6		
	8400	BERN	4 S/F	1300.0U	1309.2	35.0D	130.0			
	8800	ATHN	47 GB	1305.0	1307.6	19.1	119.0			QL=6 ST=2 TYP=5
	2800	OTTA	4 S/F	1306.0	1307.5	7.5	21.6	10.4		
	2695	ATHN	4 S/F	1306.5	1307.6	17.6	24.0			QL=6 ST=2 TYP=3
8800	SGMR	47 GB	1307.0	1309.1	11.6	180.0			QL=6 ST=2 TYP=5	
2695	SGMR	4 S/F	1307.3	1307.6	6.5	34.0			QL=6 ST=2 TYP=3	
2800	OTTA	1 S	1355.9	1356.0	1.0	6.2	2.6			
8800	ATHN	47 GB	1437.5	1441.1	13.8	100.0			QL=6 ST=2 TYP=5	
8400	BERN	3 S	1440.0	1441.6	4.0U	93.0				
2695	ATHN	4 S/F	1440.3	1441.1	2.5	17.0			QL=6 ST=2 TYP=3	
2800	OTTA	3 S	1440.5	1441.5	4.0	14.8	5.0			
8800	SGMR	47 GB	1440.5	1441.6	7.6	110.0			QL=6 ST=2 TYP=5	
2695	SGMR	8 S	1441.1	1442.6	1.5D	26.0			QL=6 ST=2 TYP=3	
2800	OTTA	22 GRF	1455.0	1506.0	85.0	18.4	6.2			
8400	BERN	3 S	1628.0	1628.6	1.0U	34.0				
8800	ATHN	8 S	1628.1	1628.8	1.4	28.0			QL=6 ST=2 TYP=3	
2800	OTTA	23 GRF	1700.0	1930.0	435.0	44.0	18.2			
8800	SGMR	47 GB	1812.0	1816.6	16.0	239.0			QL=6 ST=2 TYP=5	
8800	PALE	47 GB	1812.1	1817.0		290.0			QL=6 ST=3 TYP=5	
2800	OTTA	3 S	1814.0	1817.0	9.0	58.0	17.0			
2695	SGMR	47 GB	1815.3	1816.8	10.2	60.0			QL=6 ST=2 TYP=5	
2695	PALE	47 GB	1816.3	1816.8		67.0			QL=6 ST=3 TYP=5	
2800	OTTA	3 S	1845.0	1846.2	9.0	12.0	5.6			
2695	SGMR	8 S	1845.8	1846.0	2.0	16.0			QL=6 ST=2 TYP=3	
8800	PALE	8 S	2042.8	2043.6	1.0	26.0			QL=6 ST=2 TYP=3	
8800	SGMR	8 S	2137.0	2137.1	.1	18.0			QL=6 ST=2 TYP=3	
8800	SGMR	47 GB	2158.0	2158.3	3.3	89.0			QL=6 ST=2 TYP=5	
8800	PALE	47 GB	2158.1	2158.6	2.7	89.0			QL=6 ST=2 TYP=5	
15	8800	PALE	49 GB	0030.3	0030.6	6.5	1100.0			QL=6 ST=2 TYP=6

SOLAR RADIO EMISSION  
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks	
							Peak (10 -22 W/m <sup>2</sup> Hz)	Mean			
15	8800	LEAR	49 GB	0030.3	0030.6	10.8	1000.0			QL=6 ST=2 TYP=6	
	2695	PALE	49 GB	0030.5	0031.3	7.1	810.0			QL=6 ST=2 TYP=6	
	2695	LEAR	49 GB	0030.5	0031.3	19.1	810.0			QL=6 ST=2 TYP=6	
	2695	PENT	47 GB	0030.5	0031.5	13.0	850.0	230.0			
	8800	MANI	47 GB	0030.8	0031.1	6.2	2800.0	1057.0			
	2695	MANI	47 GB	0030.8	0031.6	12.2	810.3	270.1			
	2695	PENT	29 PBI	0043.5	0043.5	65.0D	22.2				
	2695	LEAR	4 S/F	0151.3	0154.1	6.2	43.0				QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0151.6	0154.3	7.9	27.0				QL=6 ST=2 TYP=3
	2695	MANI	3 S	0153.3	0154.1	3.7	37.8	12.6			
	8800	LEAR	47 GB	0217.6	0219.3	72.7	300.0				QL=6 ST=2 TYP=5
	8800	MANI	3 S	0217.7	0219.7	6.8	294.3	98.1			
	8800	PALE	47 GB	0217.8	0219.5	54.3	330.0				QL=6 ST=2 TYP=5
	2695	MANI	3 S	0218.0	0220.1	7.0	39.3	13.1			
	2695	LEAR	4 S/F	0218.6	0219.6	8.0	39.0				QL=6 ST=2 TYP=3
	2695	PALE	8 S	0219.6	0219.6	.2	36.0				QL=6 ST=2 TYP=3
	2695	MANI	3 S	0326.4	0326.6	1.6	22.7	7.6			
	2695	LEAR	8 S	0326.8	0326.8	1.2	22.0				QL=6 ST=2 TYP=3
	2695	LEAR	20 GRF	0453.8	0455.5	1.7D	16.0				QL=6 ST=2 TYP=2
	8800	LEAR	20 GRF	0500.3	0501.0	.7D	11.0				QL=6 ST=2 TYP=2
	8800	ATHN	47 GB	0601.8	0603.8	30.2	88.0				QL=6 ST=2 TYP=5
	8800	MANI	3 S	0602.0	0603.5	2.5	104.6	34.9			
	2695	LEAR	4 S/F	0602.5	0603.6	3.3	10.0				QL=6 ST=2 TYP=3
	8800	LEAR	47 GB	0602.5	0603.8	13.3	110.0				QL=6 ST=2 TYP=5
	2695	ATHN	4 S/F	0602.6	0604.1	9.2	5.0				QL=6 ST=2 TYP=3
	8400	BERN	3 S	0711.7	0712.4	2.0	12.0				
	8800	LEAR	8 S	0711.8	0712.5	1.2	28.0				QL=6 ST=2 TYP=3
	8400	BERN	4 S/F	0751.7	0816.4	70.0D	236.0				
	2695	ATHN	47 GB	0805.0	0819.3	67.1	239.0				QL=6 ST=2 TYP=5
	8800	ATHN	47 GB	0808.0	0816.3	69.8	200.0				QL=6 ST=2 TYP=5
	2695	MANI	46 C	0808.0	0819.0	33.5	161.6	53.9			
	2695	LEAR	47 GB	0808.8	0811.3	12.0	88.0				QL=6 ST=2 TYP=5
	8800	MANI	46 C	0809.0	0818.9	21.0	287.8	95.9			
	8800	LEAR	47 GB	0809.1	0811.1	11.7	76.0				QL=6 ST=2 TYP=5
	8800	LEAR	47 GB	0820.8	0820.8	12.8	260.0				QL=6 ST=2 TYP=5
	2695	LEAR	47 GB	0820.8	0820.8	12.8	200.0				QL=6 ST=2 TYP=5
	8800	LEAR	47 GB	0850.1	0851.0	2.7	57.0				QL=6 ST=2 TYP=5
	8800	LEAR	4 S/F	0859.1	0859.3	27.0	13.0				QL=6 ST=2 TYP=3
	8800	SGMR	49 GB	1018.0	1020.3	18.3	2199.0				QL=6 ST=2 TYP=6
	8400	BERN	47 GB	1018.5	1020.8U	120.0	2054.0D				
	2695	SGMR	47 GB	1018.6	1020.6	17.7	189.0				QL=6 ST=2 TYP=5
	8800	SGMR	47 GB	1036.3	1037.5	41.7	239.0				QL=6 ST=2 TYP=5
	2695	SGMR	47 GB	1036.3	1038.3	41.7	92.0				QL=6 ST=2 TYP=5
	2800	OTTA	21 GRF	1040.0	1100.0	265.0D	88.0				
	8800	ATHN	47 GB	1331.6	1335.6	6.7	67.0				QL=6 ST=2 TYP=5
	8400	BERN	20 GRF	1332.5	1335.2	17.0	38.0				
	8800	SGMR	47 GB	1336.3	1336.6	3.8	60.0				QL=6 ST=2 TYP=5
	8800	ATHN	47 GB	1349.8	1351.1	10.0	219.0				QL=6 ST=2 TYP=5
	8400	BERN	3 S	1350.0	1351.0	14.0	170.0				
	2800	OTTA	3 S	1350.0	1351.1	2.0	11.4	5.0			
2695	ATHN	8 S	1350.6	1351.1	1.4	16.0				QL=6 ST=2 TYP=3	
8800	ATHN	49 GB	1405.3	1414.8	38.5	890.0				QL=6 ST=2 TYP=6	
2695	PENT	28 PRE	1406.0	1409.0	7.0	14.2	7.1				
8800	SGMR	49 GB	1407.6	1408.5	22.0	50.0				QL=6 ST=2 TYP=7	
2695	ATHN	47 GB	1407.6	1414.8	25.4	250.0				QL=6 ST=2 TYP=5	
2695	SGMR	49 GB	1411.0	1416.0	16.6	219.0				QL=6 ST=2 TYP=7	
2800	OTTA	4 S/F	1413.0	1416.0	9.0	213.0	66.0				
8400	BERN	47 GB	1413.5	1415.9	7.0	1187.0					
2800	OTTA	30 PBI	1422.0	1422.0	35.0	25.0	8.0				
2800	OTTA	21 GRF	1444.0	1447.0	14.0	7.8	3.7				
2800	OTTA	1 S	1444.5	1445.0	1.5	5.2	2.6				
2800	OTTA	4 S/F	1509.0	1513.8	10.0	475.0	155.0				
2695	ATHN	49 GB	1509.3	1513.3	18.5	510.0				QL=6 ST=2 TYP=6	
8800	ATHN	49 GB	1509.6	1512.5	34.2	2199.0				QL=2 ST=2 TYP=6	
2695	SGMR	49 GB	1510.1	1511.5	14.9	400.0				QL=6 ST=2 TYP=7	
8400	BERN	47 GB	1510.3	1512.6U	40.0	2360.0D					
8800	SGMR	49 GB	1510.8	1512.0	6.0	1000.0				QL=6 ST=2 TYP=7	
2800	OTTA	30 PBI	1519.0	1519.0	15.0	20.8	10.4				
2800	OTTA	3 S	1521.2	1523.0	6.0	14.0	6.8				
2800	OTTA	21 GRF	1835.0	1843.5	19.0	5.2	2.0				

SOLAR RADIO EMISSION  
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Mean (2 Hz)		
15	2800	OTTA	8 S	1835.2	1835.5	.8	4.8	1.6		
	2800	OTTA	4 S/F	1839.0	1840.5	3.0	26.0	8.6		
	2695	SGMR	8 S	1839.8	1840.6	1.0	29.0			QL=6 ST=2 TYP=3
	2695	PALE	8 S	1840.3	1840.5	.3	27.0			QL=6 ST=2 TYP=3
	2800	OTTA	260 FAL	1855.0	1905.0	10.0	-5.4	-2.7		
	8800	SGMR	4 S/F	2028.8	2031.1	3.3	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	20 GRF	2057.0	2102.0	50.0	4.2	2.3		
	8800	SGMR	47 GB	2057.3	2101.5	19.5	87.0			QL=6 ST=2 TYP=5
	8800	PALE	47 GB	2057.6	2101.6	17.5	100.0			QL=6 ST=2 TYP=5
16	2695	PENT	1 S	0042.0	0042.5	1.0	6.2			
	8800	PALE	8 S	0158.1	0158.1	.2	32.0			QL=6 ST=2 TYP=3
	8800	LEAR	8 S	0158.1	0158.3	1.2	30.0			QL=6 ST=2 TYP=3
	8800	MANI	47 GB	0207.0	0212.4	20.0	865.2	288.4		
	8800	LEAR	49 GB	0207.3	0212.3	45.0	790.0			QL=6 ST=2 TYP=6
	8800	PALE	49 GB	0207.8	0212.3	21.7	900.0			QL=6 ST=2 TYP=6
	2695	MANI	3 S	0209.8	0212.4	9.2	129.6	43.2		
	2695	LEAR	47 GB	0211.1	0212.3	37.2	119.0			QL=6 ST=2 TYP=5
	2695	PALE	47 GB	0211.3	0212.1	18.2	100.0			QL=6 ST=2 TYP=5
	8800	PALE	47 GB	0229.5	0232.3	6.6	139.0			QL=6 ST=2 TYP=5
	2695	PALE	20 GRF	0229.5	0232.3	6.6	36.0			QL=6 ST=2 TYP=2
	8800	PALE	47 GB	0258.8	0259.1	2.3	71.0			QL=6 ST=2 TYP=5
	2695	PALE	8 S	0300.5	0301.0	.5	30.0			QL=6 ST=2 TYP=3
	2695	LEAR	4 S/F	0502.0	0503.8	2.8	11.0			QL=6 ST=2 TYP=3
	2695	LEAR	20 GRF	0724.6	0726.3	6.0	13.0			QL=6 ST=2 TYP=2
	8800	LEAR	4 S/F	0724.8	0725.1	5.8	21.0			QL=6 ST=2 TYP=3
	2695	ATHN	4 S/F	1036.5	1039.1	8.5	30.0			QL=6 ST=2 TYP=3
	8800	ATHN	47 GB	1036.6	1039.1	6.5	150.0			QL=6 ST=2 TYP=5
	8800	SGMR	8 S	1132.0	1132.3	.5	44.0			QL=6 ST=2 TYP=3
	2800	OTTA	20 GRF	1315.0	1330.0	20.0	4.0	1.7		
	2800	OTTA	21 GRF	1615.0	1640.0	70.0	11.0	5.5		
	8800	SGMR	47 GB	1637.5	1640.1	10.3	160.0			QL=6 ST=2 TYP=5
	8400	BERN	45 C	1637.5	1641.3	13.0D	231.0			
	2695	SGMR	4 S/F	1637.6	1640.1	6.5	34.0			QL=6 ST=2 TYP=3
	2800	OTTA	46F C	1637.7	1641.2	9.0	36.0	13.2		
	2695	PALE	4 S/F	1638.8	1640.0	3.2	28.0			QL=6 ST=2 TYP=3
	8800	PALE	47 GB	1639.3	1640.1	3.5	400.0			QL=6 ST=2 TYP=5
	8800	PALE	47 GB	1919.3	1919.5	2.8	90.0			QL=6 ST=2 TYP=5
	2800	OTTA	20 GRF	1925.0	1930.0	20.0	2.6	1.3		
	8800	PALE	47 GB	1926.1	1926.3	.4	66.0			QL=6 ST=2 TYP=5
	8800	PALE	8 S	1933.3	1935.3	2.0D	46.0			QL=6 ST=2 TYP=3
	8800	PALE	8 S	1951.1	1951.8	1.0	30.0			QL=6 ST=2 TYP=3
	2800	OTTA	21 GRF	2027.0		70.0	10.2			
2800	OTTA	40 F	2031.0	2038.1	25.0	46.0				
2695	SGMR	4 S/F	2031.1	2033.1	3.2	28.0			QL=6 ST=2 TYP=3	
2695	PALE	8 S	2032.1	2032.3	1.0	21.0			QL=6 ST=2 TYP=3	
8800	PALE	47 GB	2032.1	2032.3	21.5	50.0			QL=6 ST=2 TYP=5	
8800	SGMR	47 GB	2034.1	2036.1	6.0	119.0			QL=6 ST=2 TYP=5	
2695	SGMR	47 GB	2034.5	2036.6	6.1	42.0			QL=6 ST=2 TYP=5	
2695	PENT	21 GRF	2325.0	2350.0	100.0	12.0	5.4			
8800	PALE	47 GB	2332.8	2333.5	18.0	200.0			QL=6 ST=2 TYP=5	
8800	LEAR	47 GB	2332.8	2333.5	9.8	150.0			QL=5 ST=2 TYP=5	
8800	MANI	3 S	2333.3	2333.8	2.5	192.5	64.2			
17	8800	MANI	4 S/F	0240.5	0246.0	12.5	365.7	121.9		
	8800	LEAR	47 GB	0241.6	0242.6	24.5	189.0			QL=6 ST=2 TYP=5
	8800	PALE	47 GB	0241.8	0242.5	10.3	200.0			QL=6 ST=2 TYP=5
	2695	LEAR	8 S	0242.1	0242.6	1.0	11.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0313.5	0315.1	4.6	22.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0645.0	0649.8	6.1	17.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0707.1	0707.5	2.9	18.0			QL=6 ST=2 TYP=3
	8400	BERN	47 GB	1029.2	1051.0U	56.0	2340.0D			
	8800	SGMR	47 GB	1029.3	1029.8	1.8	63.0			QL=6 ST=2 TYP=5
	2695	ATHN	49 GB	1047.1	1050.6	14.4	620.0			QL=6 ST=2 TYP=6
	8800	ATHN	49 GB	1047.8	1048.8	17.2	420.0			QL=6 ST=2 TYP=6
	8800	SGMR	49 GB	1047.8	1050.8	21.5	2100.0			QL=6 ST=2 TYP=7
	2800	OTTA	4 S/F	1048.0	1051.0	12.0	435.0	-45.0		
	2695	SGMR	49 GB	1048.6	1050.8	8.5	500.0			QL=6 ST=2 TYP=7
	2800	OTTA	29 PBI	1100.0	1100.0	25.0	32.6	16.3		
2800	OTTA	1A S	1203.0	1204.5	3.0	4.0	2.2			

S O L A R   R A D I O   E M I S S I O N  
S E L E C T E D   F I X E D   F R E Q U E N C Y   E V E N T S

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Jun 82

JUNE            1982

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Mean (2 Hz)		
17	2695	SGMR	8 S	1203.6	1203.6	.2	30.0			QL=6 ST=2 TYP=3
	2800	OTTA	8 S	1203.7	1203.8	.6	24.0			
	8800	ATHN	47 GB	1306.3	1306.6	2.5	110.0			QL=6 ST=2 TYP=5
	8800	SGMR	47 GB	1307.5	1307.6	.5	91.0			QL=6 ST=2 TYP=5
	8400	BERN	3 S	1307.5	1307.8	3.0	94.0			
	2800	OTTA	21 GRF	1325.0	1407.0	70.0	5.0			
	8400	BERN	3 S	1338.0	1339.0	7.0D	183.0			
	8800	ATHN	47 GB	1338.3	1339.0	5.7	160.0			QL=6 ST=2 TYP=5
	2800	OTTA	3 S	1338.5	1339.0	2.0	33.0	16.5		
	2695	SGMR	8 S	1338.5	1339.0	1.1	40.0			QL=6 ST=2 TYP=3
	2695	ATHN	8 S	1338.5	1339.1	2.0	30.0			QL=6 ST=2 TYP=3
	8800	SGMR	47 GB	1338.6	1338.8	1.2	139.0			QL=6 ST=2 TYP=5
	2800	OTTA	20 GRF	1453.0	1458.0	75.0	16.8	5.6		
	2800	OTTA	21 GRF	1605.0	1630.0	70.0	5.6	2.8		
	8800	ATHN	20 GRF	1606.8	1607.8	6.2	13.0			QL=6 ST=2 TYP=2
	8800	SGMR	8 S	1608.1	1608.3	.2	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	1 S	1612.7	1613.1	1.0	4.8	2.0		
	8800	ATHN	4 S/F	1621.8	1622.6	2.7	11.0			QL=6 ST=2 TYP=3
	2800	OTTA	2 S/F	1622.0	1623.0	2.0	4.0	2.0		
	2800	OTTA	2 S/F	1637.5	1638.0	3.0	2.8	2.0		
	2800	OTTA	4 S/F	1655.0	1656.5	4.0	16.2	7.4		
	2800	OTTA	2 S/F	1719.0	1719.2	1.0	2.8			
	2800	OTTA	22 GRF	1720.0	1725.0	25.0	2.2			
	8800	PALE	47 GB	1824.6	1824.8	.2	300.0			QL=6 ST=2 TYP=5
	2800	OTTA	21 GRF	1834.0	1900.0	240.0	12.2	4.0		
	2800	OTTA	3 S	1834.5	1835.5	3.0	19.2	6.4		
	8800	SGMR	47 GB	1834.6	1835.3	6.9	189.0			QL=6 ST=2 TYP=5
	8800	PALE	47 GB	1834.8	1835.3	5.0	219.0			QL=6 ST=2 TYP=5
	2695	SGMR	8 S	1835.0	1835.3	1.0	28.0			QL=6 ST=2 TYP=3
	2695	PALE	8 S	1835.1	1835.8	1.0	27.0			QL=6 ST=2 TYP=3
	2800	OTTA	4 S/F	1849.5	1851.8	4.5	15.4	3.9		
	8800	SGMR	4 S/F	1849.8	1851.6	7.0	47.0			QL=6 ST=2 TYP=3
	8800	PALE	47 GB	1849.8	1851.8	5.0	58.0			QL=6 ST=2 TYP=5
2695	PALE	8 S	1851.3	1851.8	1.0	22.0			QL=6 ST=2 TYP=3	
2695	SGMR	8 S	1851.3	1851.8	.7	22.0			QL=6 ST=2 TYP=3	
2800	OTTA	3 S	1900.5	1902.2	7.0	18.0	6.0			
2695	SGMR	8 S	1901.3	1902.1	1.2	23.0			QL=6 ST=2 TYP=3	
2800	OTTA	3 S	2131.8	2132.4	2.0	13.0	6.5			
2695	SGMR	8 S	2132.3	2133.0	.7D	19.0			QL=6 ST=2 TYP=3	
8800	SGMR	8 S	2132.8	2133.1	.3	47.0			QL=6 ST=2 TYP=3	
18	8800	LEAR	4 S/F	0213.6	0216.3	9.5	10.0			QL=6 ST=2 TYP=3
	8800	MANI	3 S	0236.0	0236.3	.6	43.9	14.6		
	2695	MANI	1 S	0236.0	0236.3	1.2	7.2	2.4		
	8800	LEAR	8 S	0236.5	0236.6	1.3	38.0			QL=6 ST=2 TYP=3
	2695	LEAR	4 S/F	0236.5	0236.6	3.1	18.0			QL=6 ST=2 TYP=3
	8400	BERN	46 C	0940.0	1001.9	26.0U	142.0			
	8800	ATHN	47 GB	0940.1	0940.6	2.5	60.0			QL=6 ST=2 TYP=5
	8800	ATHN	4 S/F	0945.5	0946.1	7.3	48.0			QL=6 ST=2 TYP=3
	2695	ATHN	4 S/F	0945.5	0946.6	4.5	23.0			QL=6 ST=2 TYP=3
	8800	ATHN	47 GB	1001.0	1001.6	4.1	139.0			QL=6 ST=2 TYP=5
	8800	SGMR	47 GB	1001.1	1001.8	4.5	189.0			QL=4 ST=2 TYP=5
	8800	ATHN	4 S/F	1041.3	1041.5	2.3	22.0			QL=6 ST=2 TYP=3
	8800	SGMR	8 S	1041.6	1042.3	2.0	34.0			QL=4 ST=2 TYP=3
	8400	BERN	46 C	1101.5	1103.8	6.0U	256.0			
	8800	SGMR	47 GB	1102.1	1103.6	3.2	200.0			QL=3 ST=2 TYP=5
	2695	SGMR	8 S	1103.6	1103.6	.2	20.0			QL=3 ST=2 TYP=3
	2800	OTTA	22 GRF	1155.0	1210.0	115.0	7.6	3.8		
	8800	ATHN	8 S	1213.8	1214.1	1.2	13.0			QL=6 ST=2 TYP=3
	8800	SGMR	8 S	1214.1	1214.3	.5	28.0			QL=3 ST=2 TYP=3
	2800	OTTA	21 GRF	1420.0	1550.0	200.0	15.4	5.0		
	8400	BERN	3 S	1511.0	1514.0	30.0	354.0			
	8800	ATHN	47 GB	1511.8	1514.0	10.2	300.0			QL=6 ST=2 TYP=5
	2800	OTTA	4 S/F	1512.0	1514.0	8.0	260.0	66.6		
	2695	ATHN	47 GB	1512.3	1514.0	7.7	280.0			QL=6 ST=2 TYP=5
2800	OTTA	29 PBI	1520.0	1520.0	15.0	12.0	4.0			
2800	OTTA	4 S/F	1626.5	1628.5	13.0	16.2	5.4			
8800	SGMR	8 S	1659.3	1659.5	.5	30.0			QL=6 ST=2 TYP=3	
2695	SGMR	4 S/F	1803.1	1804.3	2.7	33.0			QL=6 ST=2 TYP=3	
2800	OTTA	3 S	1828.5	1830.0	5.0	11.2	3.8			

SOLAR RADIO EMISSION  
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Mean		
18	2800	OTTA	4 S/F	1902.5	1902.8	1.0	15.4	3.8		
	8800	SGMR	47 GB	1948.3	1949.6	14.3	130.0			QL=6 ST=2 TYP=5
	2695	SGMR	47 GB	1949.0	1949.8	13.6	73.0			QL=6 ST=2 TYP=5
	2800	OTTA	3 S	2101.0	2101.2	1.0	14.6	5.0		
	8800	PALE	8 S	2101.1	2101.3	.2	49.0			QL=6 ST=2 TYP=3
	2800	OTTA	4 S/F	2136.5	2140.2	5.5	77.0	30.0		
	2695	SGMR	47 GB	2137.1	2140.3	17.2	76.0			QL=6 ST=2 TYP=5
	2695	PALE	47 GB	2137.1	2140.3	15.2	90.0			QL=6 ST=2 TYP=5
	8800	PALE	47 GB	2138.0	2140.3	14.3	96.0			QL=6 ST=2 TYP=5
	2800	OTTA	30 PBI	2142.0	2142.0	90.0	22.2	10.0		
	2800	OTTA	40 F	2142.8	2147.7	5.5	16.2			
	8800	PALE	20 GRF	2152.3	2152.5	10.7	59.0			QL=6 ST=2 TYP=2
	2695	PALE	20 GRF	2152.3	2152.6	8.8	28.0			QL=6 ST=2 TYP=2
	2800	OTTA	8 S	2255.0	2255.0	.1	4.8			
19	8800	LEAR	8 S	0019.1	0019.6	1.7	11.0			QL=6 ST=2 TYP=3
	2695	PENT	3 S	0019.9	0020.5	9.1	245.0	61.0		
	2695	LEAR	47 GB	0046.1	0048.8	7.4	100.0			QL=6 ST=2 TYP=5
	2695	PENT	4 S/F	0046.5	0049.0	6.0	90.0	22.4		
	8800	LEAR	47 GB	0046.8	0048.8	3.8	100.0			QL=6 ST=2 TYP=5
	2695	MANI	4 S/F	0047.0	0049.1	4.0	139.2	46.4		
	8800	PALE	47 GB	0047.1	0048.8	5.2	119.0			QL=6 ST=2 TYP=5
	8800	MANI	4 S/F	0047.2	0049.2	5.0	84.0	28.0		
	2695	PALE	47 GB	0048.3	0048.8	1.5	89.0			QL=6 ST=2 TYP=5
	2695	PENT	29 PBI	0052.5	0052.5	7.0	5.0	2.5		
	8800	LEAR	4 S/F	0337.5	0339.3	3.5	20.0			QL=6 ST=2 TYP=3
	2695	LEAR	4 S/F	0338.8	0340.0	2.2	5.0			QL=6 ST=2 TYP=3
	2695	LEAR	20 GRF	0744.5	0746.1	4.5	13.0			QL=6 ST=2 TYP=2
	8400	BERN	4 S/F	0749.0	0750.9	7.0	26.0			
	8800	ATHN	4 S/F	0749.6	0751.3	6.9	15.0			QL=5 ST=2 TYP=3
	8800	LEAR	4 S/F	0750.8	0750.8	3.2	23.0			QL=6 ST=2 TYP=3
	2695	MANI	4 S/F	0822.0	0826.9	10.0	199.9	66.6		
	2695	ATHN	47 GB	0822.3	0827.8	16.2	300.0			QL=6 ST=2 TYP=5
	2695	LEAR	47 GB	0822.6	0827.1	15.7	189.0			QL=6 ST=2 TYP=5
	8400	BERN	3 S	0823.0	0827.6	18.0	26.0			
	8800	MANI	3 S	0824.0	0826.6	6.5	11.1	3.7		
	8800	ATHN	47 GB	0824.8	0827.8	13.7	71.0			QL=6 ST=2 TYP=5
	8800	LEAR	47 GB	0825.0	0827.1	8.5	44.0			QL=6 ST=2 TYP=5
	2800	OTTA	23 GRF	1100.0	1254.0	215.0	21.6	10.0		
	8400	BERN	41 F	1101.0	1103.4	14.0	80.0			
	8800	ATHN	47 GB	1102.5	1103.5	2.8	51.0			QL=6 ST=2 TYP=5
	2695	ATHN	4 S/F	1102.8	1103.5	2.5	31.0			QL=6 ST=2 TYP=3
	2800	OTTA	3 S	1103.0	1103.5	2.5	37.0	18.6		
	8800	SGMR	47 GB	1103.1	1103.3	.5	69.0			QL=6 ST=2 TYP=5
	2695	SGMR	8 S	1103.1	1103.5	.9	40.0			QL=6 ST=2 TYP=3
	8800	ATHN	4 S/F	1108.0	1108.3	2.6	32.0			QL=6 ST=3 TYP=3
	2800	OTTA	3 S	1108.0	1108.3	4.0	51.0	12.6		
	2695	ATHN	4 S/F	1108.1	1108.5	3.5	49.0			QL=6 ST=3 TYP=3
	2695	SGMR	4 S/F	1108.1	1108.6	2.4	46.0			QL=6 ST=2 TYP=5
	2800	OTTA	45 C	1147.0	1148.3	11.0	13.4	-3.8		
	2800	OTTA	20 GRF	1223.0	1228.0	19.0	11.2	5.2		
2800	OTTA	1 S	1323.0	1325.0	9.0	4.8	2.3			
2800	OTTA	1 S	1347.2	1347.3	2.0	7.4	3.4			
2800	OTTA	21 GRF	1516.0	1523.0	18.0	3.2	1.8			
2800	OTTA	1 S	1518.5	1519.0	1.2	3.4	1.7			
2800	OTTA	46F C	1715.0	1717.5	8.0	110.0	32.0			
2695	ATHN	47 GB	1715.6	1717.8	13.4	100.0			QL=5 ST=2 TYP=5	
8800	ATHN	47 GB	1715.8	1717.5	13.2	78.0			QL=5 ST=2 TYP=5	
8400	BERN	3 S	1716.0	1717.4	10.0	126.0				
2695	SGMR	47 GB	1716.5	1717.5	5.3	110.0			QL=6 ST=2 TYP=5	
2695	PALE	47 GB	1716.6	1717.5	5.4	119.0			QL=6 ST=2 TYP=5	
8800	SGMR	47 GB	1716.8	1717.3	1.3	100.0			QL=6 ST=2 TYP=5	
8800	PALE	47 GB	1717.1	1717.3	1.2	139.0			QL=6 ST=2 TYP=5	
2800	OTTA	29 PBI	1723.0	1723.0	40.0	11.2	3.8			
2800	OTTA	4 S/F	1816.0	1816.8	1.5	32.0	13.0			
8800	SGMR	4 S/F	1816.1	1816.8	3.9	33.0			QL=6 ST=2 TYP=3	
2695	SGMR	8 S	1816.6	1816.8	1.2	27.0			QL=6 ST=2 TYP=3	
2695	PALE	8 S	1816.6	1817.0	.5	30.0			QL=6 ST=3 TYP=3	
2800	OTTA	29 PBI	1817.5	1817.5	6.0	6.6	2.2			
2800	OTTA	1 S	1825.5	1826.0	9.0	6.6	2.2			

SOLAR RADIO EMISSION  
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Mean		
19	2800	OTTA	21 GRF	1905.0	1940.0	95.0	13.0	6.5		
	2800	OTTA	1 S	1910.0	1911.0	3.0	2.6	1.3		
	2695	SGMR	4 S/F	1916.6	1919.3	3.9	17.0			QL=6 ST=2 TYP=3
	2800	OTTA	1 S	1918.0	1919.5	7.0	8.6	4.3		
	8800	SGMR	8 S	1919.0	1920.1	1.6	28.0			QL=6 ST=2 TYP=3
	8800	PALE	8 S	1919.0	1920.1	1.6	28.0			QL=6 ST=2 TYP=3
	2800	OTTA	1 S	1928.0	1930.2	4.0	6.6	3.3		
	2800	OTTA	4 S/F	1948.0	1950.1	12.0	82.0	31.4		
	8800	SGMR	47 GB	1948.3	1949.6	14.3	130.0			QL=6 ST=2 TYP=5
	8800	PALE	47 GB	1948.6	1949.6	12.7	169.0			QL=6 ST=2 TYP=5
	2695	SGMR	47 GB	1949.0	1949.8	13.6	73.0			QL=6 ST=2 TYP=5
	2695	PALE	47 GB	1949.1	1949.8	6.2	80.0			QL=6 ST=2 TYP=5
	2800	OTTA	29 PBI	2000.0	2000.0	30.0	13.0	6.5		
	2695	PALE	47 GB	2007.1	2007.1	1.0	219.0			QL=6 ST=2 TYP=5
	8800	PALE	47 GB	2007.1	2007.1	1.0	320.0			QL=6 ST=2 TYP=5
20	2695	PALE	47 GB	0019.8	0020.6	13.0	300.0			QL=6 ST=2 TYP=5
	2695	LEAR	47 GB	0019.8	0020.6	13.8	290.0			QL=6 ST=2 TYP=5
	8800	LEAR	47 GB	0019.8	0020.6	16.3	119.0			QL=6 ST=2 TYP=5
	8800	PALE	47 GB	0019.8	0020.6	1.8	119.0			QL=6 ST=2 TYP=5
	2695	MANI	3 S	0021.4	0022.3	8.6	399.6	133.2		
	8800	MANI	3 S	0021.4	0022.3	6.6	189.4	63.1		
	2695	PENT	29 PBI	0029.0	0029.0	30.0	19.6	7.0		
	2695	PALE	8 S	0053.1	0053.5	.4D	27.0			QL=6 ST=2 TYP=3
	8800	LEAR	8 S	0105.1	0105.1	1.9	30.0			QL=6 ST=2 TYP=3
	8800	LEAR	49 GB	0113.1	0113.3	1.7	520.0			QL=6 ST=2 TYP=7
	8800	PALE	49 GB	0113.1	0113.3	2.0	640.0			QL=6 ST=2 TYP=7
	2695	PENT	3 S	0113.2	0113.5	8.0	129.0	32.2		
	2695	LEAR	49 GB	0113.3	0113.5	4.0	130.0			QL=6 ST=2 TYP=7
	2695	PALE	49 GB	0113.3	0113.5	4.0	130.0			QL=6 ST=2 TYP=7
	2695	MANI	3 S	0114.5	0115.2	5.5	230.8	77.0		
	8800	MANI	47 GB	0114.8	0115.1	2.7	631.4	210.5		
	2695	PENT		0147.0	0150.0	5.0D	1230.0			
	8800	LEAR	49 GB	0147.5	0150.1	46.6	2000.0			QL=6 ST=2 TYP=6
	2695	PALE	49 GB	0147.6	0150.1	14.5	770.0			QL=6 ST=2 TYP=6
	2695	LEAR	49 GB	0147.6	0150.1	42.0	770.0			QL=6 ST=2 TYP=6
	8800	PALE	49 GB	0147.6	0150.1	12.2	2699.0			QL=6 ST=2 TYP=6
	8800	MANI	47 GB	0148.6	0151.7	16.4	2525.6	841.9		
	2695	MANI	47 GB	0149.0	0151.4	39.0	3539.2	1179.7		
	8800	LEAR	8 S	0252.1	0252.3	1.0	20.0			QL=6 ST=2 TYP=3
	2695	LEAR	8 S	0252.8	0253.1	.3D	13.0			QL=6 ST=2 TYP=3
	2695	MANI	4 S/F	0253.3	0254.1	2.3	34.2	11.4		
	8800	MANI	4 S/F	0253.5	0254.1	1.5	68.9	22.9		
	8800	MANI	3 S	0402.4	0403.3	1.8	432.8	144.3		
	8800	LEAR	47 GB	0402.6	0403.0	2.5	490.0			QL=6 ST=2 TYP=5
	8800	ATHN	47 GB	0402.6	0403.3	6.0	400.0			QL=6 ST=2 TYP=5
	2695	ATHN	47 GB	0402.6	0403.3	6.0	490.0			QL=6 ST=2 TYP=5
	2695	LEAR	49 GB	0402.8	0403.0	1.3	540.0			QL=6 ST=2 TYP=6
	2695	PALE	47 GB	0402.8	0403.0	.5	440.0			QL=3 ST=2 TYP=5
	2695	MANI	47 GB	0403.0	0403.2	3.5	707.8	235.9		
	8800	LEAR	8 S	0559.3	0559.3	.5	13.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0604.1	0604.3	2.2	13.0			QL=6 ST=2 TYP=3
	8400	BERN	46 C	0632.0	0632.4	15.0	69.0			
	8800	LEAR	47 GB	0632.1	0632.3	8.0	62.0			QL=6 ST=2 TYP=5
	8800	ATHN	47 GB	0632.3	0632.6	9.3	55.0			QL=6 ST=2 TYP=5
	2800	OTTA	23 GRF	1100.0	1345.0	320.0	15.4	7.7		
8800	SGMR	47 GB	1159.5	1200.3	2.8	310.0			QL=6 ST=2 TYP=5	
8800	ATHN	47 GB	1159.6	1200.6	7.7	260.0			QL=6 ST=2 TYP=5	
8400	BERN	4 S/F	1159.8	1200.3	5.0	323.0				
2800	OTTA	3 S	1200.0	1200.3	3.0	51.0	17.0			
2695	SGMR	8 S	1200.0	1200.3	1.0	50.0			QL=6 ST=2 TYP=3	
2695	ATHN	4 S/F	1200.1	1200.6	4.5	43.0			QL=6 ST=2 TYP=3	
8800	ATHN	4 S/F	1542.5	1543.6	2.8	35.0			QL=6 ST=2 TYP=3	
8800	SGMR	47 GB	1542.8	1543.1	1.0	53.0			QL=6 ST=2 TYP=5	
8400	BERN	3 S	1543.0	1543.2	4.0	40.0				
2800	OTTA	21 GRF	1700.0	1735.0	310.0	24.2	8.6			
2800	OTTA	40 F	1705.0	1707.8	22.0	18.0				
8800	PALE	4 S/F	1706.8	1707.5	20.5	34.0			QL=6 ST=2 TYP=3	
2695	PALE	4 S/F	1706.8	1707.6	12.3	33.0			QL=6 ST=2 TYP=3	
2695	SGMR	20 GRF	1707.1	1707.6	15.0	24.0			QL=6 ST=2 TYP=2	

SOLAR RADIO EMISSION  
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Mean		
20	8800	SGMR	20 GRF	1707.1	1708.3	15.0	20.0			QL=6 ST=2 TYP=2
	2800	OTTA	20 GRF	2040.0	2042.0	25.0	8.4	3.8		
	2695	SGMR	4 S/F	2040.5	2042.0	3.8	18.0			QL=6 ST=2 TYP=3
	8800	SGMR	20 GRF	2041.1	2044.1	3.7	26.0			QL=6 ST=2 TYP=2
	2800	OTTA	21 GRF	2225.0	2315.0	155.00	22.2			
	8800	SGMR	47 GB	2225.3	2225.8	3.0	70.0			QL=6 ST=2 TYP=5
	2800	OTTA	3 S	2225.3	2226.0	1.5	16.2	8.1		
	2695	SGMR	8 S	2225.6	2225.8	.5	28.0			QL=6 ST=2 TYP=3
21	2695	PENT	23 GRF	0110.0	0126.0	40.00	16.3			
	2695	MANI	22 GRF	0111.3	0123.8	18.7	71.3	23.8		
	8800	LEAR	4 S/F	0112.1	0113.6	5.7	38.0			QL=6 ST=2 TYP=3
	2695	LEAR	4 S/F	0112.6	0113.5	7.0	34.0			QL=6 ST=2 TYP=3
	2695	PENT	3 S	0112.7	0113.5	3.0	26.6	13.0		
	2695	PALE	8 S	0113.3	0113.5		30.0			QL=6 ST=3 TYP=3
	2695	PENT	3 S	0120.0	0120.8	5.0	21.2	7.0		
	2695	LEAR	4 S/F	0122.6	0123.8	4.2	29.0			QL=6 ST=2 TYP=3
	2695	PALE	8 S	0123.1	0123.6	1.0	33.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0123.5	0124.0	10.5	20.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0247.5	0247.6	5.1	21.0			QL=6 ST=2 TYP=3
	2695	LEAR	4 S/F	0248.0	0248.6	4.6	10.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0448.1	0450.1	10.2	30.0			QL=6 ST=2 TYP=3
	2695	ATHN	4 S/F	0448.5	0455.3	19.1	37.0			QL=6 ST=2 TYP=3
	8800	ATHN	4 S/F	0448.5	0455.3	19.1	49.0			QL=6 ST=2 TYP=3
	2695	LEAR	4 S/F	0448.8	0450.1	8.2	10.0			QL=6 ST=2 TYP=3
	8800	MANI	4 S/F	0450.5	0456.4	7.3	62.9	21.0		
	2695	MANI	4 S/F	0450.5	0456.4	7.3	30.0	10.0		
	8400	BERN	21 GRF	0452.0	0454.7	10.00	80.0			
	8800	LEAR	4 S/F	0501.1	0502.3	6.2	7.0			QL=6 ST=2 TYP=3
	2695	LEAR	4 S/F	0501.1	0505.3	5.9	11.0			QL=6 ST=2 TYP=3
	8800	ATHN	8 S	0551.6	0551.8	.5	24.0			QL=6 ST=2 TYP=3
	2695	LEAR	20 GRF	0557.3	0643.0	79.8	86.0			QL=6 ST=2 TYP=2
	8800	LEAR	20 GRF	0609.0	0642.8	48.1	24.0			QL=6 ST=2 TYP=2
	2695	ATHN	47 GB	0625.6	0643.5	33.4	68.0			QL=6 ST=2 TYP=5
	2695	MANI	22 GRF	0627.0	0643.2	29.5	74.9	25.0		
	8800	MANI	22 GRF	0633.0	0642.5	16.5	68.5	22.8		
	8800	ATHN	4 S/F	0635.0	0639.6	4.8	9.0			QL=6 ST=2 TYP=3
	2800	OTTA	21 GRF	1050.0	1125.0	300.00	21.6			
	2800	OTTA	2 S/F	1113.0	1114.0	3.0	9.2	4.6		
	8800	SGMR	4 S/F	1113.1	1114.1	5.2	16.0			QL=6 ST=2 TYP=3
	2695	SGMR	4 S/F	1113.3	1114.8	3.3	21.0			QL=6 ST=2 TYP=3
	2800	OTTA	40 F	1221.0	1223.0	25.0	10.4			
	2800	OTTA	1 S	1323.0	1324.0	4.0	4.0	2.0		
	8800	SGMR	8 S	1323.6	1324.0	1.0	23.0			QL=6 ST=2 TYP=3
	8800	ATHN	4 S/F	1323.6	1324.8	3.5	13.0			QL=6 ST=2 TYP=3
	2695	ATHN	4 S/F	1324.0	1324.8	2.8	6.0			QL=6 ST=2 TYP=3
	2800	OTTA	1 S	1425.0	1426.0	6.0	4.0	2.0		
	2800	OTTA	21 GRF	1605.0	1615.0	40.0	16.0			
	8800	ATHN	47 GB	1608.6	1615.3	17.5	100.0			QL=6 ST=2 TYP=5
	2695	ATHN	4 S/F	1609.1	1616.3	14.7	38.0			QL=6 ST=2 TYP=3
	8800	SGMR	47 GB	1610.6	1612.8	8.9	37.0			QL=6 ST=2 TYP=5
	2695	SGMR	47 GB	1610.8	1614.5	6.3	23.0			QL=6 ST=2 TYP=5
	2800	OTTA	3 S	1612.0	1612.7	1.0	10.0	5.0		
	8400	BERN	21 GRF	1612.0	1614.8	40.0	132.0			
2800	OTTA	4 S/F	1614.0	1615.8	4.0	37.4	21.0			
8400	BERN	3 S	1652.5	1653.1	1.0	40.0				
8800	SGMR	8 S	1652.6	1653.0	.5	36.0			QL=6 ST=2 TYP=3	
2695	SGMR	8 S	1723.5	1723.6	.3	41.0			QL=6 ST=2 TYP=3	
2800	OTTA	40 F	1744.0	1745.2	12.0	5.2				
8800	SGMR	8 S	1808.1	1808.3	.7	36.0			QL=6 ST=2 TYP=3	
8800	PALE	8 S	1808.3	1808.6	.5	30.0			QL=6 ST=2 TYP=3	
2800	OTTA	26A FAL	1920.0	1945.0	25.0	-4.4	-2.2			
2800	OTTA	1 S	1932.0	1932.2	1.0	2.8	1.4			
2800	OTTA	23 GRF	2200.0	2227.0	230.00	25.4				
2800	OTTA	8 S	2226.7	2226.9	.3	18.0				
8800	PALE	47 GB	2259.8	2302.1	12.0	320.0			QL=6 ST=2 TYP=5	
2695	PENT	4 S/F	2300.8	2302.0	9.0	162.0	31.0			
2695	PALE	47 GB	2301.5	2302.1	3.8	180.0			QL=6 ST=2 TYP=5	
2695	MANI	3 S	2301.8	2302.5	2.8	167.4	55.8			
22	2695	PENT	1 S	0005.0	0005.6	1.0	4.2	3.2		

SOLAR RADIO EMISSION  
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 -22 W/m <sup>2</sup> Hz)	Mean		
22	8800	LEAR	8 S	0012.3	0013.1	1.5	13.0			QL=6 ST=3 TYP=3
	2695	PENT	3 S	0048.5	0049.0	2.0	20.8	7.0		
	8800	ATHN	47 GB	0520.1	0534.3	39.9	82.0			QL=6 ST=2 TYP=5
	8400	BERN	22 GRF	0528.0	0533.9	50.0U	91.0			
	8800	LEAR	47 GB	0528.6	0533.8	12.2	82.0			QL=6 ST=2 TYP=5
	2695	LEAR	4 S/F	0530.3	0532.1	10.5	20.0			QL=6 ST=2 TYP=3
	2695	ATHN	4 S/F	0531.6	0534.0	12.0	8.0			QL=6 ST=2 TYP=3
	2800	OTTA	20 GRF	1105.0	1120.0	40.0	4.2	2.8		
	2800	OTTA	4 S/F	1154.0	1154.2	1.0	10.0	5.0		
	2800	OTTA	21 GRF	1200.0	1300.0	110.0	6.4	4.0		
	2800	OTTA	1 S	1217.5	1220.5	4.5	5.6	2.8		
	8400	BERN	20 GRF	1219.0	1220.3	30.0	28.0			
	2800	OTTA	23 GRF	1425.0	1457.0	270.0	24.6	13.2		
	2800	OTTA	1 S	1845.0	1845.5	1.2	9.6	4.4		
	2695	PENT	32 ABS	2240.0	2315.0	60.0	-5.6	-3.0		
2695	PENT	21 GRF	2341.0	0015.0	90.0	8.4	4.2			
23	8800	LEAR	47 GB	0005.0	0005.5	10.1	71.0			QL=6 ST=2 TYP=5
	8800	MAN I	3 S	0005.0	0006.0	2.9	82.8	27.6		
	8800	PALE	47 GB	0005.1	0005.5	8.7	81.0			QL=6 ST=2 TYP=5
	2695	MAN I	3 S	0005.1	0005.9	2.7	20.8	6.9		
	2695	PALE	8 S	0005.3	0005.6	1.7	18.0			QL=6 ST=2 TYP=3
	2695	LEAR	8 S	0005.3	0005.8	2.0	11.0			QL=6 ST=2 TYP=3
	2695	MAN I	3 S	0048.5	0048.7	1.3	36.0	8.7		
	8800	LEAR	8 S	0048.6	0049.0	1.2	10.0			QL=6 ST=2 TYP=3
	2695	LEAR	8 S	0048.6	0049.1	1.2	21.0			QL=6 ST=2 TYP=3
	2695	LEAR	20 GRF	0227.3	0235.8	13.7	18.0			QL=6 ST=2 TYP=2
	8800	ATHN	4 S/F	0640.1	0642.6	7.9	25.0			QL=6 ST=2 TYP=3
	8800	ATHN	47 GB	0649.6	0655.5	57.7	50.0			QL=6 ST=2 TYP=5
	2695	LEAR	4 S/F	0649.8	0652.6	55.2	13.0			QL=6 ST=2 TYP=3
	8400	BERN	41 F	1003.0	1022.9	60.0U	59.0			
	8800	ATHN	4 S/F	1021.1	1023.3	15.2	41.0			QL=6 ST=3 TYP=3
	8800	SGMR	8 S	1022.6	1022.8	.2	22.0			QL=6 ST=2 TYP=3
	2800	OTTA	21 GRF	1135.0	1235.0	280.0	13.4	6.7		
	8800	ATHN	4 S/F	1155.1	1156.5	2.7	13.0			QL=6 ST=2 TYP=3
	8800	SGMR	8 S	1155.6	1155.8	.9	26.0			QL=6 ST=2 TYP=3
	8400	BERN	41 F	1222.0	1223.3U	2.0	14.0U			
	8800	SGMR	8 S	1222.1	1222.3	.4	23.0			QL=6 ST=2 TYP=3
	8800	ATHN	4 S/F	1222.5	1223.0	2.6	9.0			QL=6 ST=2 TYP=3
	8800	ATHN	8 S	1434.3	1434.6	1.2	9.0			QL=6 ST=2 TYP=3
	2800	OTTA	1 S	1545.0	1546.2	7.0	8.6	4.0		
	2800	OTTA	240 R	1620.0	1644.0	24.0	3.8	1.9		
	8800	SGMR	8 S	1716.1	1716.1	.2	32.0			QL=6 ST=2 TYP=3
	2695	SGMR	8 S	1716.8	1717.0	.3	47.0			QL=6 ST=2 TYP=3
	2695	SGMR	47 GB	1719.8	1720.1	.5	51.0			QL=6 ST=2 TYP=5
	2695	SGMR	8 S	1738.6	1738.8	.2	23.0			QL=6 ST=2 TYP=3
	2800	OTTA	20 GRF	1815.0	1821.5	20.0	18.0	5.0		
	2695	SGMR	4 S/F	1818.5	1820.3	4.8	41.0			QL=6 ST=2 TYP=3
	2800	OTTA	23 GRF	1840.0	1905.0	140.0	20.4	9.6		
	8800	PALE	8 S	1856.6	1857.3	2.0	37.0			QL=6 ST=2 TYP=3
	8800	SGMR	20 GRF	1856.6	1906.0	13.4	51.0			QL=6 ST=2 TYP=2
	2695	SGMR	47 GB	1856.8	1857.6	23.7	26.0			QL=6 ST=2 TYP=5
2800	OTTA	1 S	1857.0	1857.5	1.5	6.6	3.3			
2800	OTTA	3 S	1902.5	1906.0	11.0	77.0	28.4			
8800	PALE	47 GB	1903.3	1906.0	12.3	60.0			QL=6 ST=2 TYP=5	
2695	PALE	47 GB	1904.0	1906.1	6.8	70.0			QL=6 ST=2 TYP=5	
2800	OTTA	260 FAL	2210.0	2245.0	35.0	-6.2	-3.1			
8800	LEAR	47 GB	2329.3	2331.6	3.0	97.0			QL=5 ST=2 TYP=5	
2695	PENT	4 S/F	2329.5	2331.5	3.5	19.0	8.0			
8800	MAN I	4 S/F	2329.5	2332.0	3.2	134.0	44.7			
2695	LEAR	4 S/F	2329.6	2331.6	2.7	27.0			QL=5 ST=2 TYP=3	
8800	PALE	47 GB	2330.0	2331.6	6.0	89.0			QL=6 ST=2 TYP=5	
24	8800	LEAR	47 GB	0206.3	0206.8	1.3	83.0			QL=6 ST=2 TYP=5
	8800	PALE	47 GB	0206.6	0206.8	1.4	83.0			QL=6 ST=2 TYP=5
	8800	LEAR	8 S	0232.5	0232.8	1.8	22.0			QL=6 ST=2 TYP=3
	8800	LEAR	8 S	0303.3	0303.8	1.8	15.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0307.6	0308.3	2.7	16.0			QL=6 ST=2 TYP=3
	2695	LEAR	47 GB	0410.6	0412.0	7.0	62.0			QL=6 ST=2 TYP=5
	8800	LEAR	47 GB	0411.0	0411.8	8.8	56.0			QL=6 ST=2 TYP=5



SOLAR RADIO EMISSION  
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Density Mean (2 Hz)	Int	Remarks
24	2695	PALE	47 GB	0411.1	0412.1	3.4	83.0			QL=6 ST=2 TYP=5
	2695	MANI	3 S	0411.5	0412.5	6.0	57.0	19.0		
	8800	MANI	3 S	0411.5	0412.5	2.0	22.8	7.6		
	8800	ATHN	4 S/F	0414.6	0416.0	3.5	35.0			QL=2 ST=2 TYP=3
	2695	PALE	8 S	0415.6	0416.0	1.9	33.0			QL=6 ST=2 TYP=3
	8800	MANI	3 S	0420.0	0424.6	6.5	167.2	55.7		
	2695	MANI	3 S	0420.6	0425.0	5.9	234.0	78.0		
	8800	LEAR	8 S	0444.6	0444.8	.2	17.0			QL=6 ST=2 TYP=3
	8400	BERN	3 S	0520.0	0524.4	30.0U	147.0			
	2695	LEAR	4 S/F	0521.0	0523.3	4.8	36.0			QL=6 ST=2 TYP=3
	8800	LEAR	47 GB	0521.5	0523.3	11.1	68.0			QL=6 ST=2 TYP=5
	8800	ATHN	47 GB	0525.3	0529.0	27.0	110.0			QL=6 ST=3 TYP=5
	2800	OTTA	1 S	1129.0	1129.2	1.5	6.0	2.6		
	2800	OTTA	240 R	1150.0	1250.0	60.0	4.0	2.0		
	2800	OTTA	20 GRF	1340.0	1455.0	200.0	6.0	3.6		
	2800	OTTA	1 S	1725.0	1726.2	2.0	2.6	1.3		
	2800	OTTA	21 GRF	1900.0	2305.0	360.0D	29.0			
	2800	OTTA	46F C	1913.5	1926.6	60.0	74.0	26.0		
	2695	SGMR	20 GRF	1923.8	1926.3	4.8	50.0			QL=6 ST=2 TYP=2
	2695	PALE	4 S/F	1940.3	1943.6	5.7	49.0			QL=6 ST=2 TYP=3
	2695	SGMR	20 GRF	1942.5	1943.6	2.3	47.0			QL=6 ST=2 TYP=2
	8800	SGMR	20 GRF	1942.6	1943.6	1.2	22.0			QL=6 ST=2 TYP=2
	2800	OTTA	20 GRF	2035.0	2100.0	40.0	6.4	3.6		
	2800	OTTA	3 S	2253.0	2259.0	9.0	15.6	6.0		
	8800	PALE	4 S/F	2254.1	2255.1	14.0	24.0			QL=6 ST=2 TYP=3
	2695	SGMR	4 S/F	2256.6	2258.3	2.5	22.0			QL=6 ST=2 TYP=3
	2695	PALE	4 S/F	2257.1	2258.8	3.0	23.0			QL=6 ST=2 TYP=3
	8800	PALE	4 S/F	2309.3	2310.3	3.3	32.0			QL=6 ST=2 TYP=3
	2695	PENT	1 S	2310.0	2311.0	4.5	6.0	2.6		
	2695	PENT	1 S	2323.0	2324.5	4.0	3.4	1.7		
25	8800	LEAR	8 S	0506.8	0507.0	.3	5.0			QL=6 ST=2 TYP=3
	8800	ATHN	4 S/F	0522.5	0531.6	53.6	38.0			QL=6 ST=2 TYP=3
	2695	LEAR	4 S/F	0530.0	0531.3	6.3	48.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0530.3	0531.5	5.3	16.0			QL=6 ST=2 TYP=3
	8400	BERN	41 F	0956.7	0957.1	4.0U	44.0			
	8400	BERN	4 S/F	1045.5	1047.6	8.0	133.0			
	8800	SGMR	47 GB	1045.6	1047.5	5.7	119.0			QL=6 ST=2 TYP=5
	2695	SGMR	4 S/F	1045.8	1047.5	2.8	42.0			QL=6 ST=2 TYP=3
	2800	OTTA	1 S	1655.5	1655.9	1.0	5.4	2.7		
	2800	OTTA	29 PBI	1656.5	1656.5	14.0	2.4	1.2		
	2800	OTTA	21 GRF	1939.0	1942.0	11.0	3.6	2.5		
	2800	OTTA	3 S	1943.5	1944.3	1.8	51.0	25.0		
	2695	SGMR	8 S	1943.6	1944.3	1.0	40.0			QL=6 ST=2 TYP=3
	2695	PALE	47 GB	1943.8	1944.3	1.8	51.0			QL=6 ST=2 TYP=5
	8800	SGMR	8 S	1943.8	1944.6	.8	23.0			QL=6 ST=2 TYP=3
	2800	OTTA	31 ABS	1950.0	2015.0	50.0	-5.0	-3.0		
	2800	OTTA	22 GRF	2050.0	2100.0	25.0	3.0	1.5		
	8800	SGMR	8 S	2055.8	2056.0	.2	19.0			QL=6 ST=2 TYP=3
	2695	SGMR	8 S	2055.8	2056.0	.2	17.0			QL=6 ST=2 TYP=3
	2800	OTTA	4 S/F	2131.0	2134.6	14.0	320.0	105.0		
8800	SGMR	47 GB	2131.1	2134.1	11.4	590.0			QL=6 ST=2 TYP=5	
2695	SGMR	47 GB	2131.8	2134.3	11.0	300.0			QL=6 ST=2 TYP=5	
2695	PALE	47 GB	2132.8	2134.5	8.0	239.0			QL=6 ST=2 TYP=5	
8800	PALE	49 GB	2133.1	2134.3	6.5	600.0			QL=6 ST=2 TYP=6	
2800	OTTA	29 PBI	2145.0	2145.0	95.0	25.0	9.0			
26	8800	LEAR	4 S/F	0014.6	0014.8	2.7	13.0			QL=6 ST=2 TYP=3
	8800	PALE	47 GB	0043.8	0046.3	13.8	370.0			QL=3 ST=2 TYP=5
	8800	MANI	22 GRF	0044.0	0047.0	14.5	351.5	117.2		
	2695	PENT	46F C	0044.0	0049.5	21.0	182.0	69.4		
	2695	PALE	47 GB	0045.8	0047.8	11.8	169.0			QL=3 ST=2 TYP=5
	2695	MANI	22 GRF	0046.0	0050.0	12.5	166.6	55.5		
	2695	PENT	29 PBI	0105.0	0105.0	23.0	14.6	7.3		
	2695	PENT	31 ABS	0122.0	0135.0	30.0	7.2	4.4		
	2695	LEAR	4 S/F	0206.0	0208.1	2.8	40.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0206.5	0208.1	4.0	38.0			QL=6 ST=2 TYP=3
	8800	ATHN	4 S/F	0918.6	0920.3	4.7	29.0			QL=6 ST=2 TYP=3
	2695	ATHN	4 S/F	0918.8	0920.3	5.5	15.0			QL=6 ST=2 TYP=3
	8800	LEAR	8 S	0919.3	0920.6	1.8	30.0			QL=5 ST=2 TYP=3

SOLAR RADIO EMISSION  
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Mean		
26	2695	LEAR	8 S	0919.8	0920.1	.5	22.0			QL=5 ST=2 TYP=3
	2695	ATHN	47 GB	0938.8	0940.6	4.5	84.0			QL=6 ST=2 TYP=5
	8800	ATHN	47 GB	0939.3	0940.1	3.8	100.0			QL=6 ST=2 TYP=5
	2695	MANI	3 S	0939.8	0941.0	2.2	88.5	29.5		
	2695	PENT	32 ABS	1325.0	1352.0	55.0	-6.6	-3.3		
	2800	OTTA	21 GRF	1909.0	1931.0	260.0	26.0	12.0		
	2800	OTTA	4 S/F	1909.5	1912.5	9.5	435.0	174.0		
	8800	PALE	49 GB	1909.8	1912.1	19.3	930.0			QL=6 ST=2 TYP=6
	8800	SGMR	49 GB	1909.8	1912.1	18.0	660.0			QL=6 ST=2 TYP=6
	2695	SGMR	47 GB	1909.8	1912.3	18.0	500.0			QL=6 ST=2 TYP=5
	2695	PALE	47 GB	1909.8	1912.3	19.3	470.0			QL=6 ST=2 TYP=5
	2800	OTTA	29 PBI	1919.0	1919.0	10.0	14.6			
27	2800	OTTA	21 GRF	1720.0	1906.0	480.0D	21.0			
	2800	OTTA	21 GRF	1924.0	1937.0	50.0	16.2	8.1		
	2800	OTTA	1 S	1925.5	1927.5	4.5	6.4	3.2		
	2800	OTTA	1 S	2039.0	2040.0	7.0	4.8	2.4		
	2800	OTTA	21 GRF	2039.0	2105.0	60.0	3.2	1.8		
28	2800	OTTA	20 GRF	1305.0	1420.0	235.0	5.4	2.7		
	2695	PENT	20 GRF	2325.0	0000.0	120.0	4.2	2.2		

Observatories:

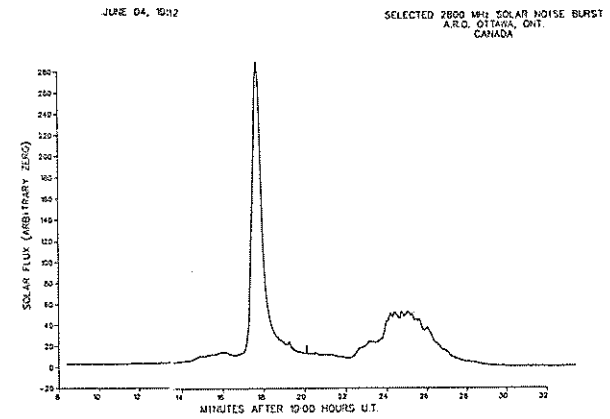
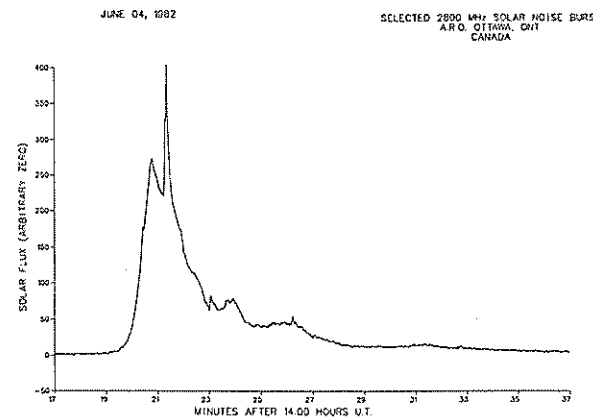
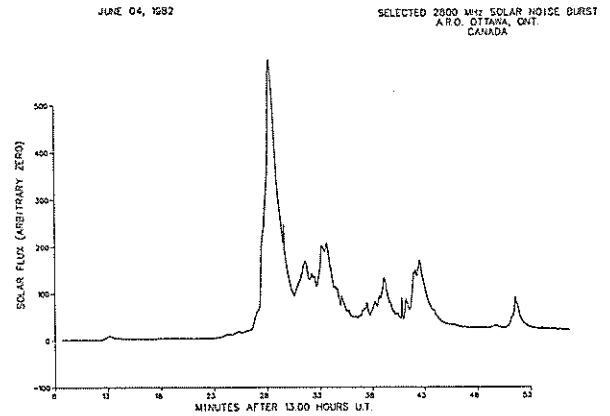
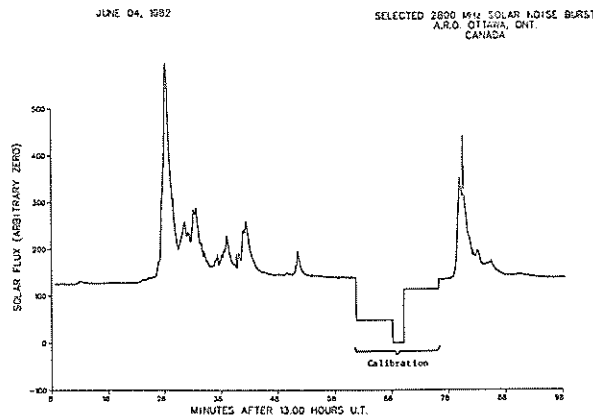
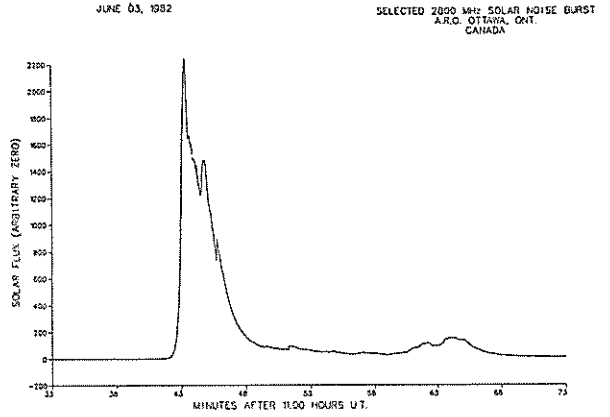
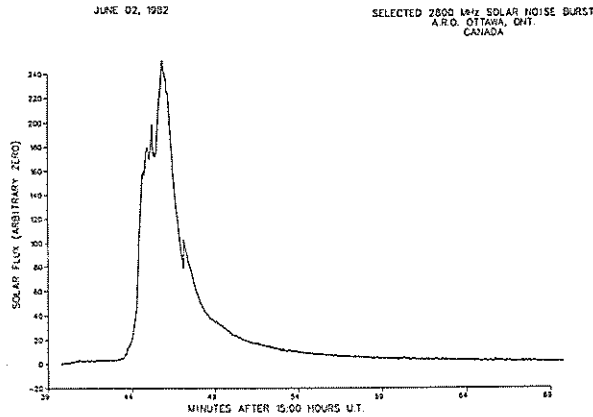
BERN = Berne      MANI = Manila      OTTA = Ottawa ARO      PENT = Penticton      SGMR = Sagamore Hill  
 LEAR = Learmonth      ATHN = Athens      PALE = Palehua

Explanation of Type Code:

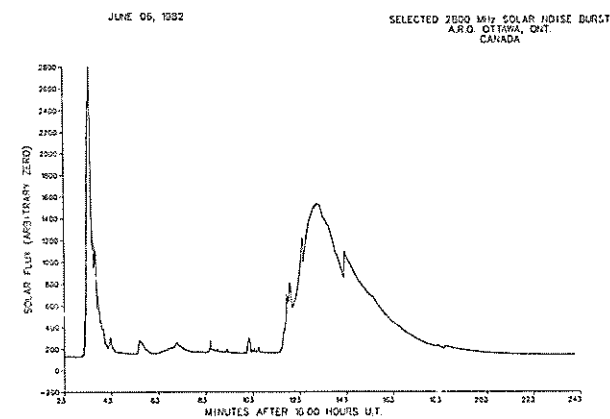
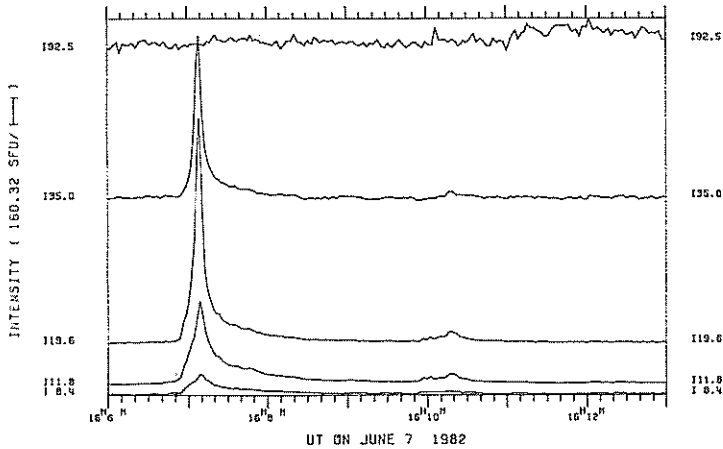
1 Simple 1	7 Minor +	24 Rise	30 Post Burst Increase A	43 Onset on Noise Storm
2 Simple 1F	8 Spike	25 Rise A	31 Post Burst Decrease	44 Noise Storm in Progress
3 Simple 2	20 Simple 3	26 Fall	32 Absorption	45 Complex
4 Simple 2F	21 Simple 3A	27 Rise and Fall	40 Fluctuation	46 Complex F
5 Simple	22 Simple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

# SELECTED SOLAR NOISE BURSTS

JUNE 2-6, 1982

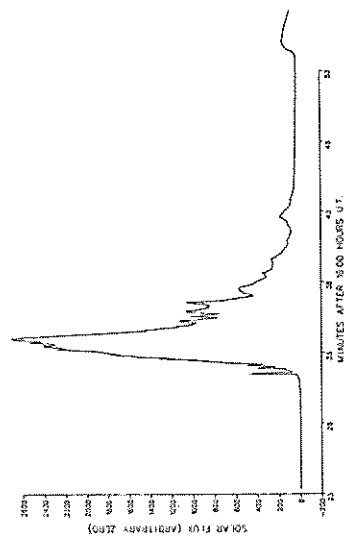


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INTEGRATION TIME = 2000 NS

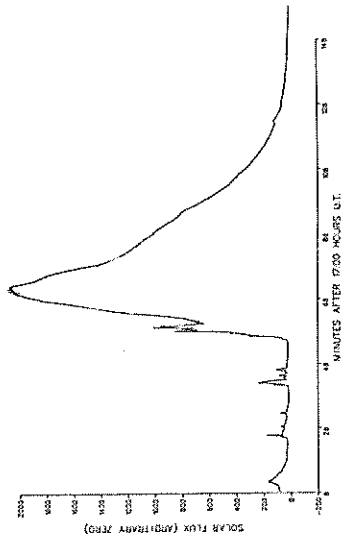


SELECTED SOLAR NOISE BURSTS  
JUNE 6-15, 1982

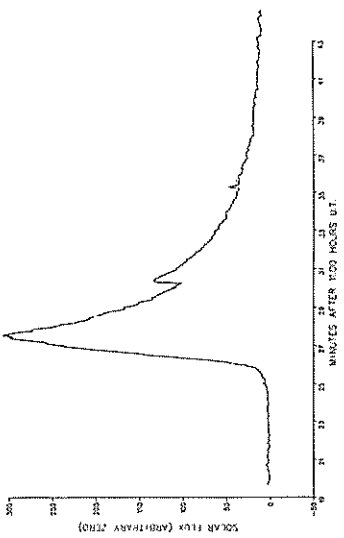
JUNE 05, 1982  
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AFCO CHANNEL 011  
CANADA



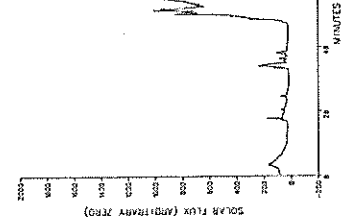
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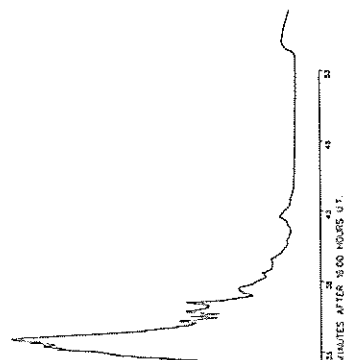
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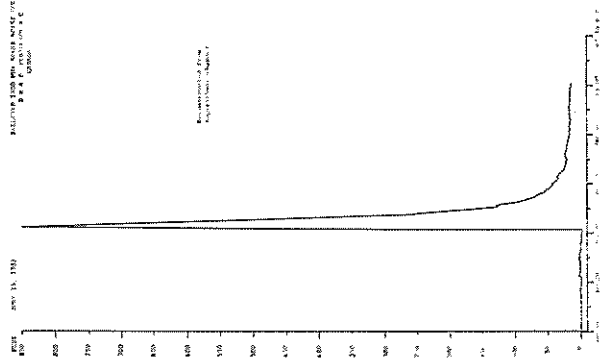
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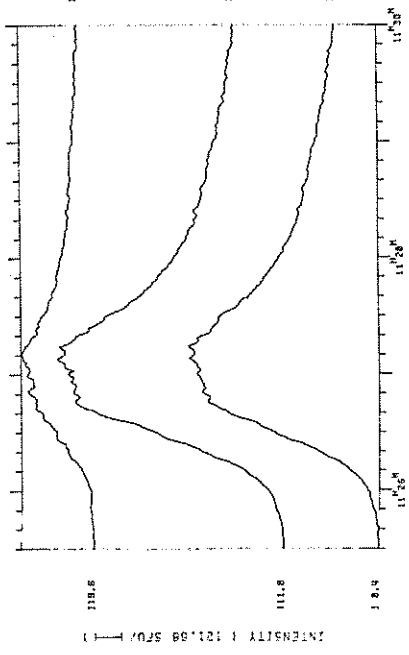
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CANADA



JUNE 15, 1982  
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AFCO CHANNEL 011  
CANADA

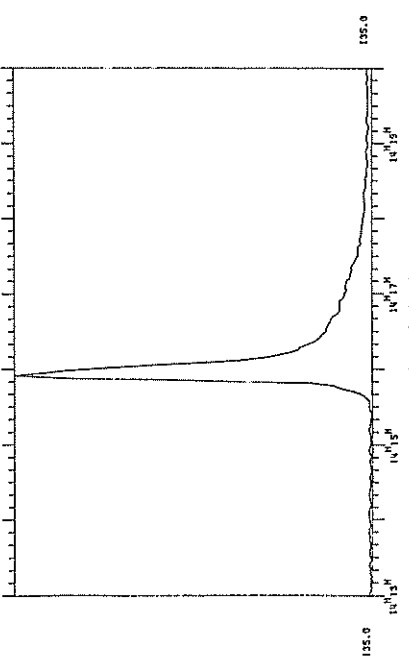


INSTITUTE OF APPLIED PHYSICS, UNIVERSITY OF BERN, SWITZERLAND  
INTEGRATION TIME: 1000 MS



UT ON JUNE 9, 1982

INSTITUTE OF APPLIED PHYSICS, UNIVERSITY OF BERN, SWITZERLAND  
INTEGRATION TIME: 2000 MS



UT ON JUNE 15, 1982

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
2015	DEC 26																											
2016	JAN 22	TA			AT T*																							
2017	FEB 18			AT	TA								TA		TA											TA		TA
2018	MAR 17							AT											TA								TA	AT
2019	APR 13	TA													TA				* AT									
2020	MAY 10				TA AT	TA				TA			TA									*						
2021	JUN 6			*							AT				TA													
2022	JUL 3																											
2023	JUL 30																		TA	TA						AT		
2024	AUG 26																											
2025	SEP 22																											
2026	OCT 19	AT	TA	TA																								
2027	NOV 15																											
2028	DEC 12	TA																										
2029	JAN 8																											
2030	FEB 4																											
2031	MAR 3																											
2032	MAR 30																											
2033	APR 26																											
2034	MAY 23																											
2035	JUN 19																											

= 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. The Thule magnetometer ceased operating in August 1981.

STANFORD MEAN SOLAR 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
2020	MAY 5	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2021	JUN 1	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2022	JUN 28	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2023	JUL 25	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2024	AUG 21	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2025	SEP 17	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2026	OCT 14	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2027	NOV 10	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2028	DEC 7	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2029	1982 JAN 3	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2030	JAN 30	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2031	FEB 26	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2032	MAR 25	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2033	APR 21	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2034	MAY 18	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2035	JUN 14	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

POLARITY OF THE MEAN SOLAR MAGNETIC FIELD:  = FIELD >2μT,  = 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 that affect the Earth during the given Bartels Rotation.

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA )

1982

1981

day	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE
01	53	-49	-134	-27	94	41	15	-20	-19	.	-6	.
02	49	.	-87	11	82	34	-6	-44	-9	.	-6	33
03	41	-72	-56	70	55	49	-17	-29	-20	.	23	38
04	14	-80	-21	104	-1	-3	.	-3	-39	-17	43	54
05	-17	-67	-7	115	-19	.	-10	9	-44	3	48	80
06	-62	-48	11	104	-36	-12	-5	19	-21	38	16	82
07	.	-33	26	28	-29	.	-4	43	.	60	41	77
08	-93	-26	30	25	-23	.	25	64	-2	57	69	79
09	-56	-19	33	-7	-16	.	23	.	.	24	74	68
10	-43	-7	32	.	11	.	36	15	16	.	70	54
11	.	16	4	8	34	.	45	24	34	61	65	50
12	.	58	-29	32	.	.	35	33	35	46	79	58
13	-9	68	-47	43	.	.	16	.	.	.	82	.
14	-7	81	-37	64	105	.	-7	.	.	.	77	78
15	9	68	-24	103	.	57	-6	.	.	86	72	51
16	0	49	-32	115	.	17	-12	14	21	93	51	-13
17	38	49	-24	167	48	-5	-1	16	.	71	38	-51
18	59	42	-8	218	3	.	-3	5	4	46	27	-93
19	66	16	11	193	-28	-37	33	15	20	28	-15	-184
20	.	12	85	115	-45	.	.	27	31	-6	-57	-237
21	108	31	135	65	.	-39	.	38	25	-38	-68	-225
22	107	38	124	9	-65	-11	.	48	22	-78	-93	-170
23	73	52	60	-62	.	-2	9	41	14	-113	-132	-123
24	34	67	6	-107	-43	35	25	28	-2	-107	-158	-69
25	29	92	-79	-128	-20	4	35	10	-26	-93	-151	-56
26	34	64	-115	.	58	39	42	-3	.	-104	-118	-39
27	28	15	-138	-61	83	17	36	-34	-61	-117	-26	11
28	33	-12	-144	-60	96	29	.	.	-56	-122	-26	37
29	43	-64	-121	-19	59	.	15	.	-53	-77	-10	46
30	38	-84	-75	67	55	24	0	.	.	-26	19	59
31	1	-143	87	87	.	.	-10	.	.	.	46	.

DOT SYMBOL INDICATES NO DATA AVAILABLE FOR THE DAY.

## PIONEER XII (VENUS ORBITER)

## Solar Wind

JUNE 1982

DATE	TIME	ESV	$U_{H^+}$	$N_{H^+}$	$T_{H^+}$
Jun '82	(UT)	(°)	(km/s)	( $H^+$ /cc)	( $\times 10^6$ K)
1	0332	080.	399.	22.6	0.13
2	0456		404.	30.5	.126
3	0703		652.	9.4	.168
4	0420		1081.	21.7	.3
5	0412		680.	9.	.26
6	0349		650.	8.3	.199
7	0403		772.	6.3	.356
8	0412		686.	9.4	.162
9	0703		601.	12.3	.275
10	0224		520.	15.6	.12
11	0347		498.	17.2	.257
12	0422		360.	55.6	.043
13	0409		413.	36.5	.12
14	0414		321.	31.4	.062
15	0430	089.	310.	25.	.085
16	0511		415.	25.4	.173
17	0650		451.	19.4	.239
18	0409		448.	13.6	.191
19	0416		331.	20.	.03
20	0450		360.	62.6	.118
21	0430		440.	24.7	.151
22	0335		493.	14.2	.251
23	1429		409.	26.2	.167
24	0325		344.	24.5	.039
25	0359		522.	28.5	.091
26	0324		355.	16.3	.036
27	0441		315.	27.	.054
28	0401		260.	9.4	.029
29	0204		383.	39.5	.024
30	2335		373.	38.2	.328



Boulder Geomagnetic Substorm Log

JUNE 1982

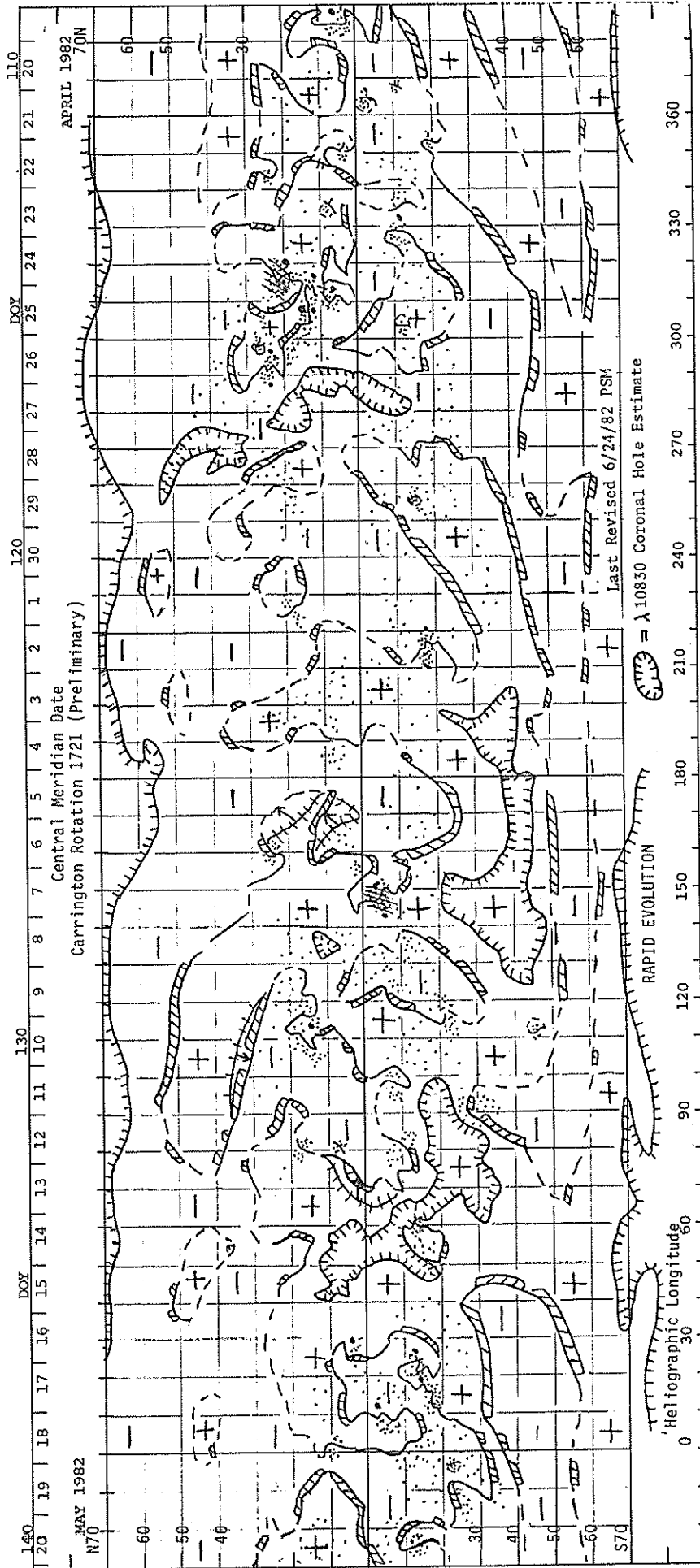
DATE	ONSET TIME	DIR	COMMENTS	DATE	ONSET TIME	DIR	COMMENTS
06/01			Field active through 1100 UT. Field active at Polar Cap stations after 1700 UT.	06/16	1300	West	Field unsettled all day.
	0320	East		06/17			Field intermittently unsettled.
	0500	East			0450	East	Several injections with recovery near 0700 UT.
	0625	East			1040	West	Several minor injections with recovery near 1500 UT.
	0925		Localized SS College to Anchorage.	06/18			Field intermittently unsettled with no distinctive SS activity.
06/02	0040		Field unsettled all day. Boulder in partial Ring Current Sector.	06/19			Field active after 0700 UT.
	0245	East			0720	East	
	0705	West	Several injections with recovery near 1000 UT.		1310	West	Slow onset, numerous minor injections with recovery near 1800 UT.
06/03			Field intermittently unsettled.		1810		Localized SS, Norman Wells to Inuvik.
	0310	East		06/20			Field unsettled all day.
	0340	East			0730		Localized SS vicinity College.
	0600	West			0815		Localized SS vicinity College.
	0650	West			1510		Localized SS vicinity College.
06/04			Field intermittently unsettled with no distinctive SS activity.	06/21			Field intermittently unsettled.
06/05			Field slightly unsettled.		0615	East	Weak SS, Norman Wells to Inuvik.
06/06	0243	SSC	Only unsettled field conditions follow with no distinctive SS activity.		0745		
06/07			Field unsettled all day.		1220		
	0620	West		06/22			Field unsettled all day with no distinctive SS activity.
	0745		Localized SS College to Anchorage.	06/23			Field slightly active through 1800 UT.
	0930	West	Several injections with recovery near 1130 UT.		0615	East	
06/08			Field unsettled after 1200 UT. Localized SS College to Anchorage.	06/24			Field unsettled all day. Boulder in partial Ring Current Sector.
	1220				2105		
	1625		Localized SS Norman Wells to Inuvik.	06/25			Field intermittently unsettled.
06/09	0040	SSC	Moderately unsettled field conditions follow through 1500 UT with no distinctive SS activity.		0705	East	
06/10			Magstorm conditions between 0200-1700 UT.	06/26			Field intermittently unsettled with no distinctive SS activity.
06/11	0450	East		06/27			Field intermittently active.
	0700	West			0105	East	
	1115				0640	West	
	1750		Strong SS Polar Cap stations.		0835	West	
06/12	1442	SSC	Magstorm follows.		1205	West	
06/13			Magstorm conditions continue all day.	06/28			Field slightly active all day.
06/14			Field intermittently active.		0440	East	
	0350	East			0950	West	Moderate SS
	0545	East		06/29			Field unsettled all day
	0750	West	Multiple injections with recovery near 1230 UT.		1025	West	Moderate SS
06/15			Field unsettled all day. Moderate SS	06/30			Field intermittently active along Auroral Oval.
	0625	West			0210		Moderate positive Bays, H and D components, Boulder-Tucson.
	1315	West	Several minor injections with recovery near 1530 UT.		0505	= center	Strong response Boulder-Tucson.
	1720		Polar Cap SS, Inuvik to Sachs Harbour.		1110		Localized SS vicinity College.
					1720		Polar Cap SS, Inuvik to Cape Parry.

## MAY 1982 DATA

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# He SYNOPTIC CHART CARRINGTON ROTATION 1721 (PRELIMINARY)

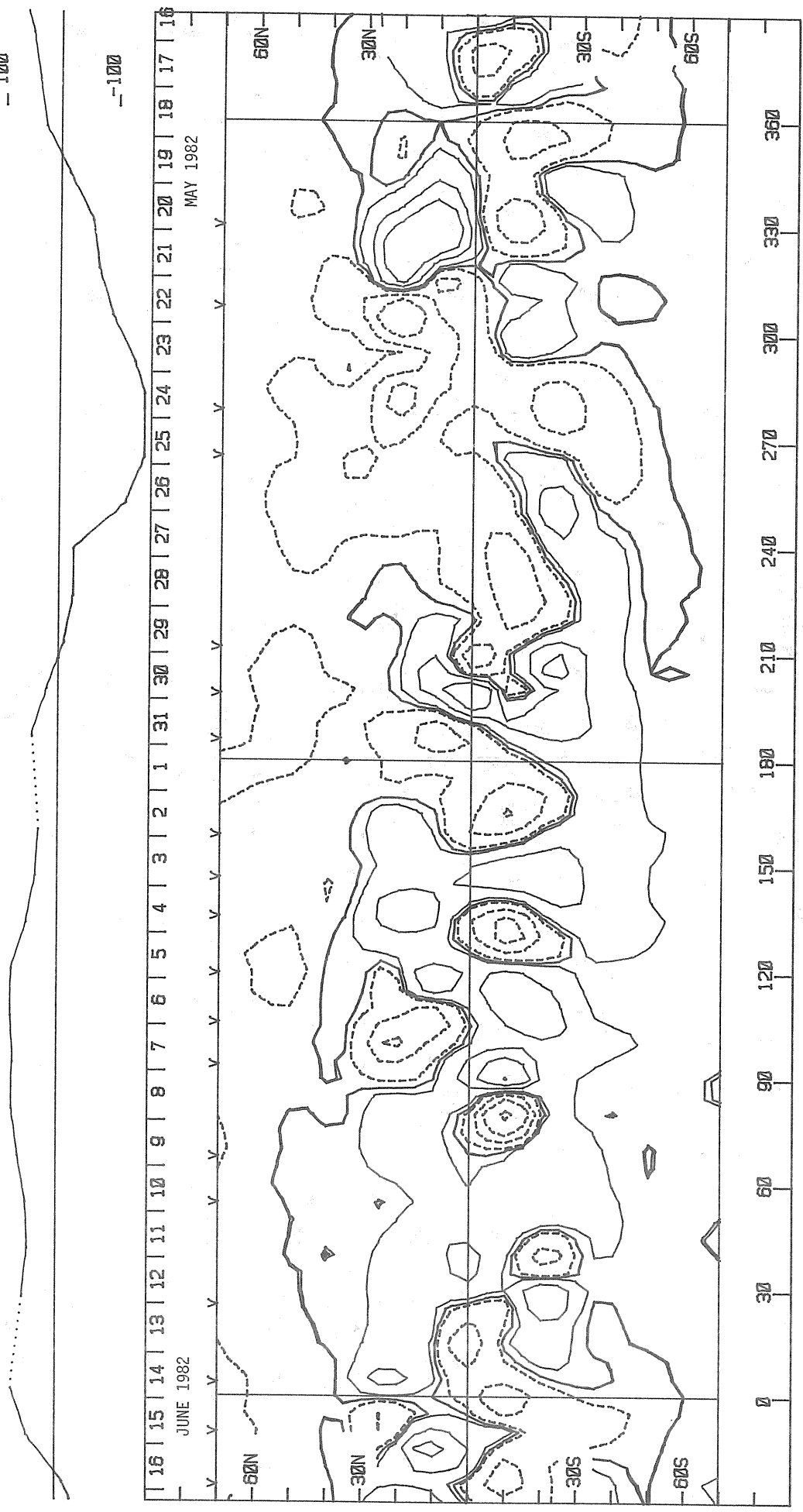


# SOLAR MAGNETIC FIELD SYNOPTIC CHART

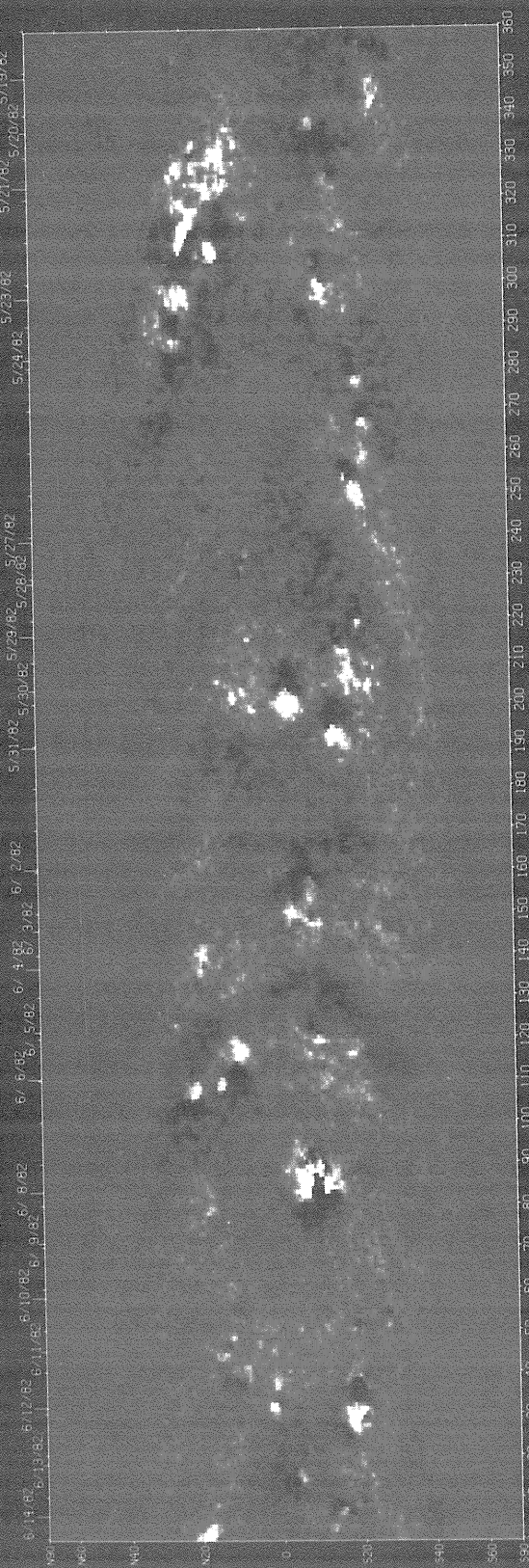
## CARRINGTON ROTATION 1722

Stanford Solar Observatory

0, ±100, 200, 500, ...  $\mu T$   
-1000



CARRINGTON ROTATION 1722 FLUX



KPNO SOLAR MAGNETIC FIELD SYNOPTIC CHART



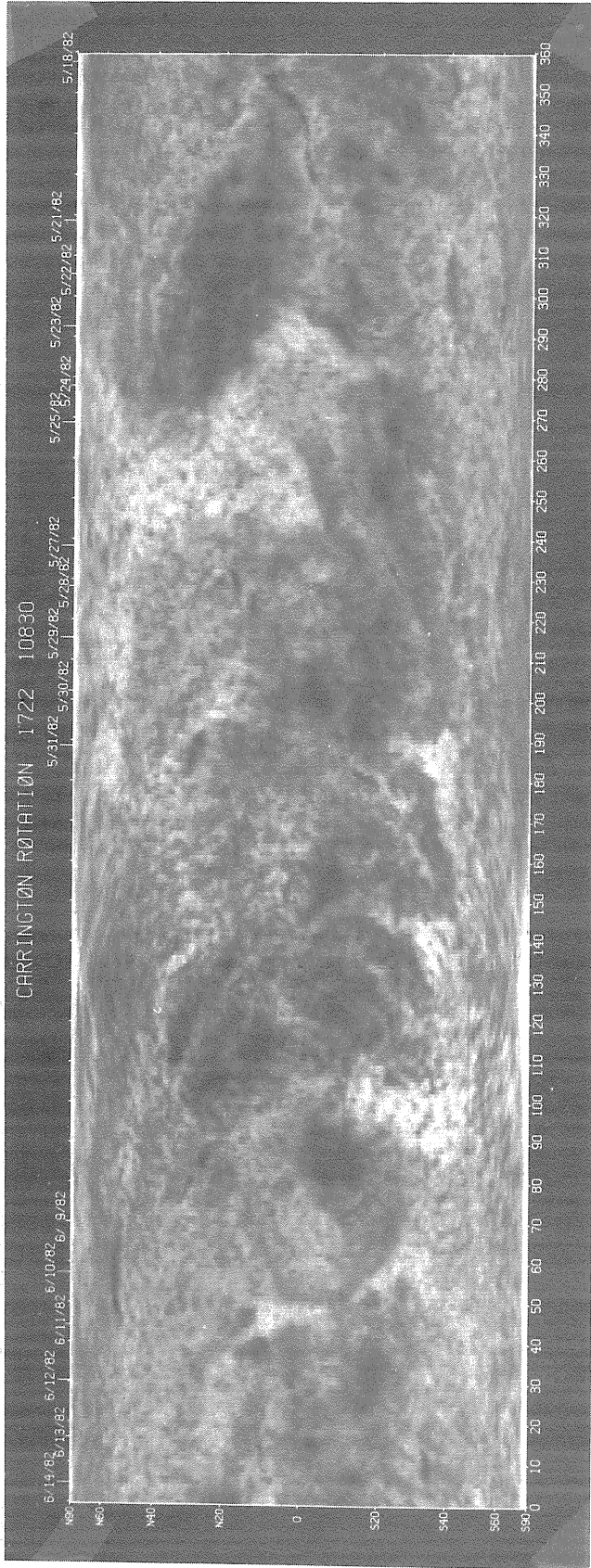
KPNO SYN VTCRITY 06/23/82 13.22.02 NPICL= 2

1305+00



# HELIUM 10830Å SYNOPTIC MAPS CARRINGTON ROTATION 1722

KITT PEAK NATIONAL OBSERVATORY

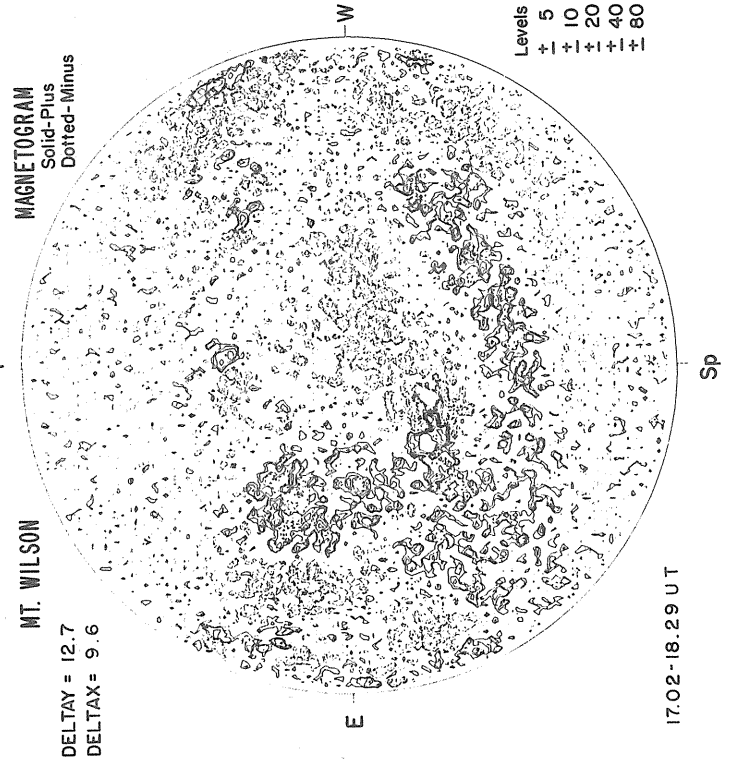
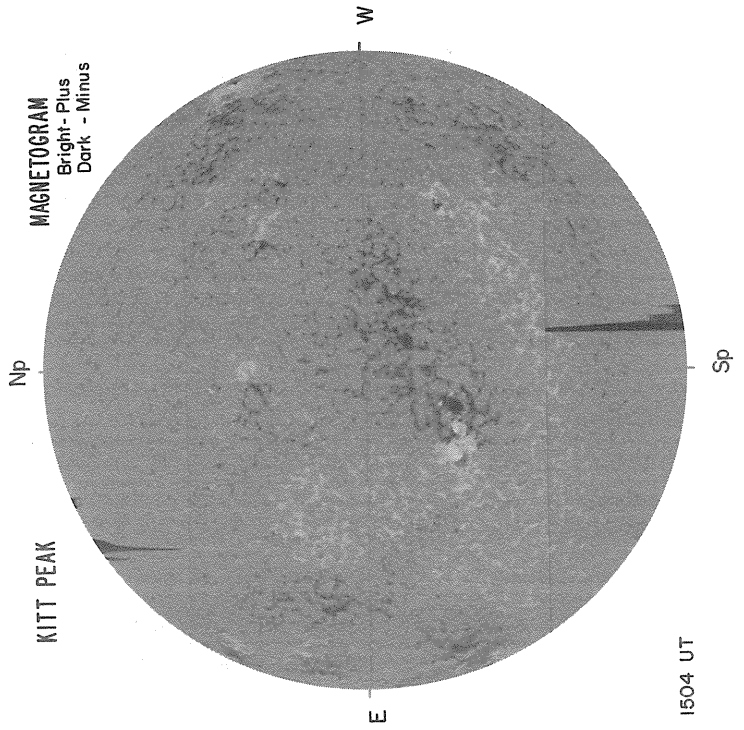


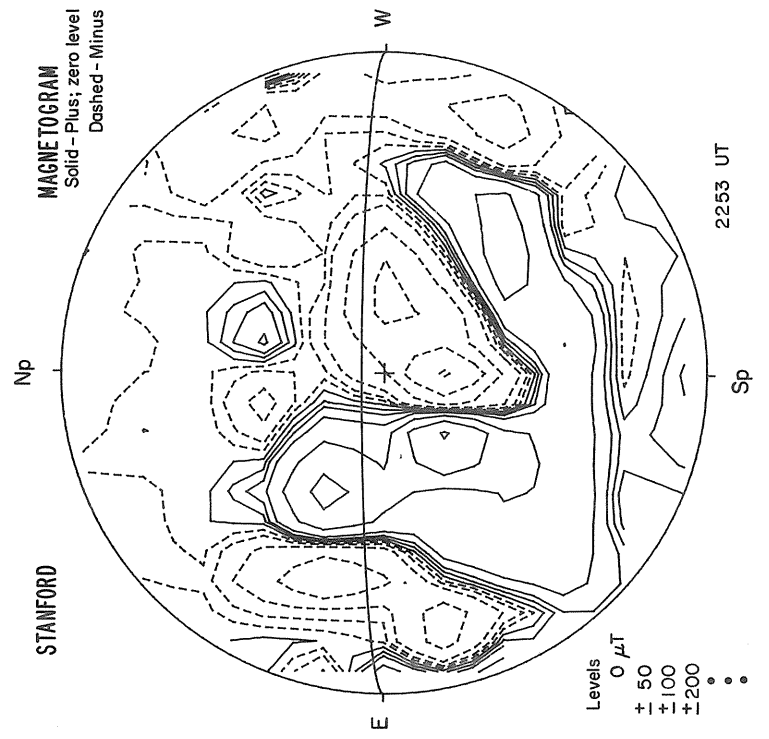
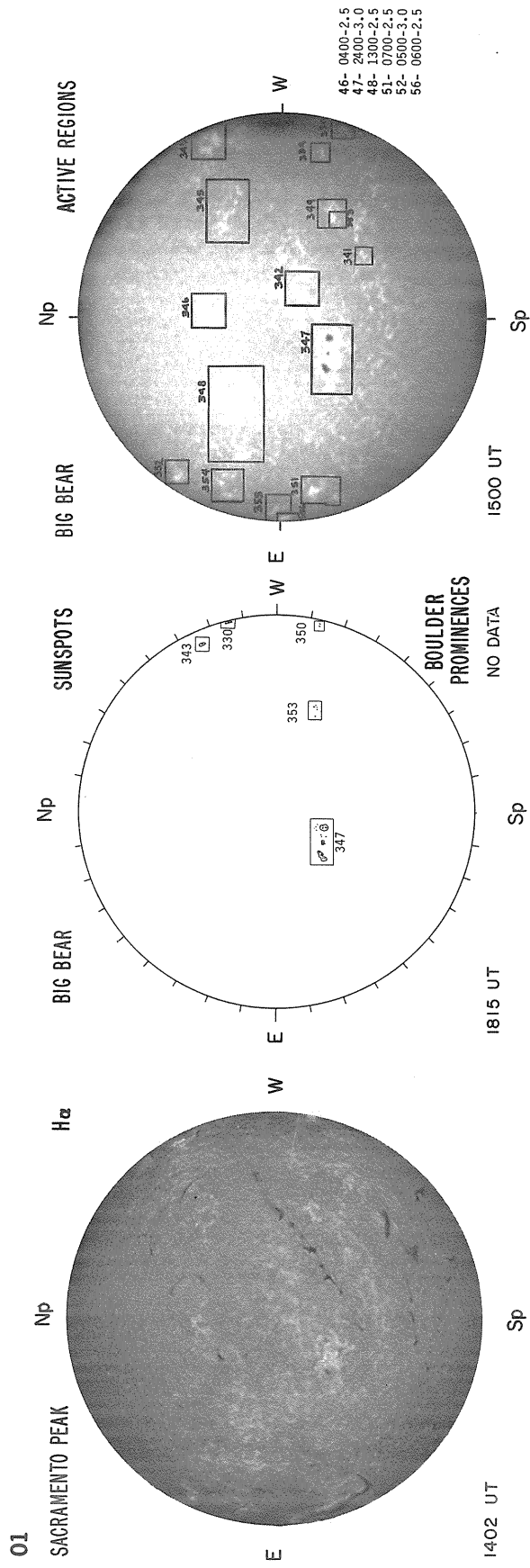
MAY 1, 1982 (P=-24.23, B<sub>0</sub>=-4.17, L<sub>0</sub>=235.21)

SACRAMENTO PEAK Np CORONA 5303 Å

E NO DATA MAY 1, 2, 4, 5, 18, 22, 27 W

1.15 R<sub>0</sub>  
1.35 R<sub>0</sub>  
1.55 R<sub>0</sub>







MAY 2, 1982 (P=-24.05, B<sub>0</sub>=-4.07, L<sub>0</sub>= 222.00)

SACRAMENTO PEAK  
CORONA  
5303 Å

Np

NO DATA

E

NO DATA

W

1.15 R<sub>0</sub>  
1.35 R<sub>0</sub>  
1.55 R<sub>0</sub>

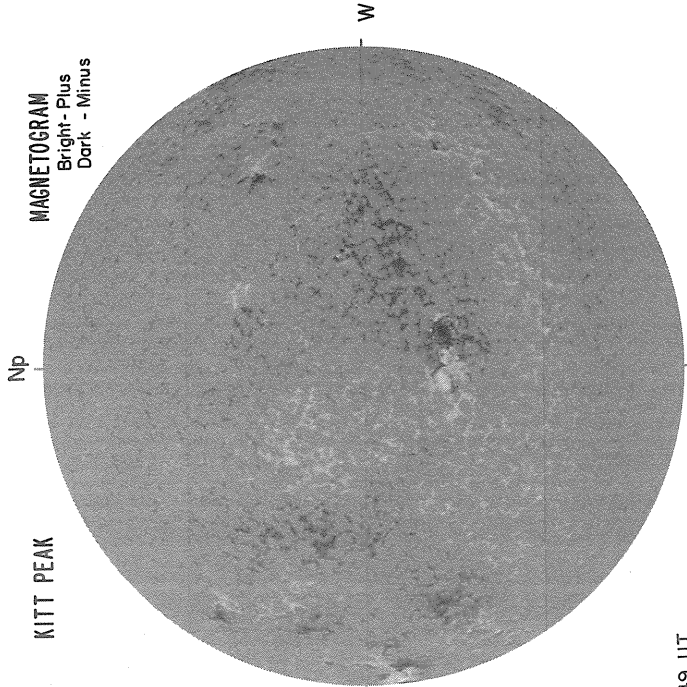
Sp

Np

KITT PEAK

Np

MAGNETOGRAM  
Bright- Plus  
Dark - Minus



MT. WILSON

DELTA TAY =  
DELTA TAX =

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

NO DATA MAY 2, 4, 8, 9, 10, 11, 22, 23, 27, 28

E

W

Levels  
± 5  
± 10  
± 20  
± 40  
± 80

1449 UT

Sp

E

02

SACRAMENTO PEAK

Np

H $\alpha$

BIG BEAR

Np

SUNSPOTS

NO DATA

W

E

Sp

1715 UT

BOULDER PROMINENCES

NO DATA

W

E

Sp

1610 UT

BIG BEAR

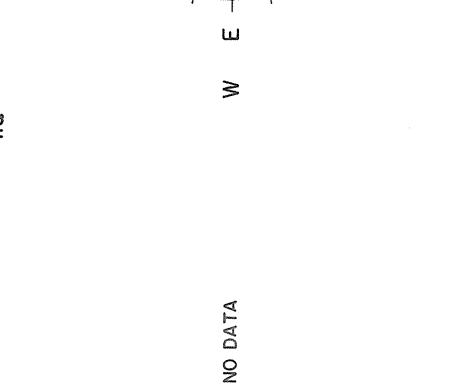
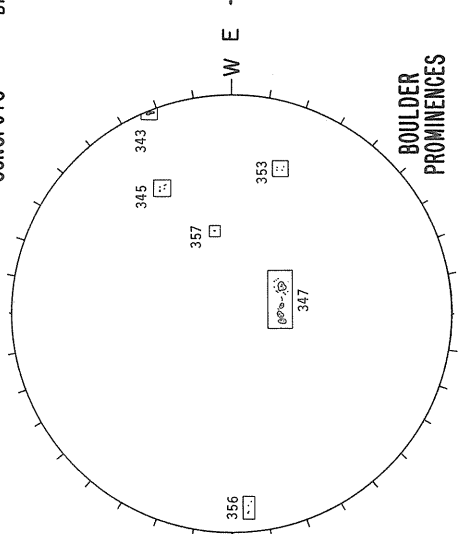
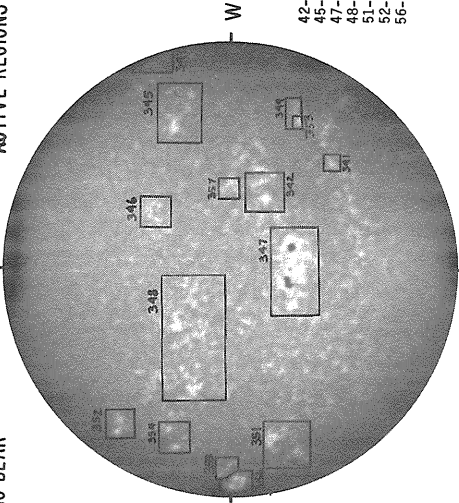
Np

ACTIVE REGIONS

W

Sp

- 42- 0400-2.5
- 45- 0500-2.5
- 47- 2600-3.0
- 48- 1500-2.5
- 51- 1700-2.5
- 52- 0500-3.0
- 56- 1200-2.5



STANFORD

Np

MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus

E

W

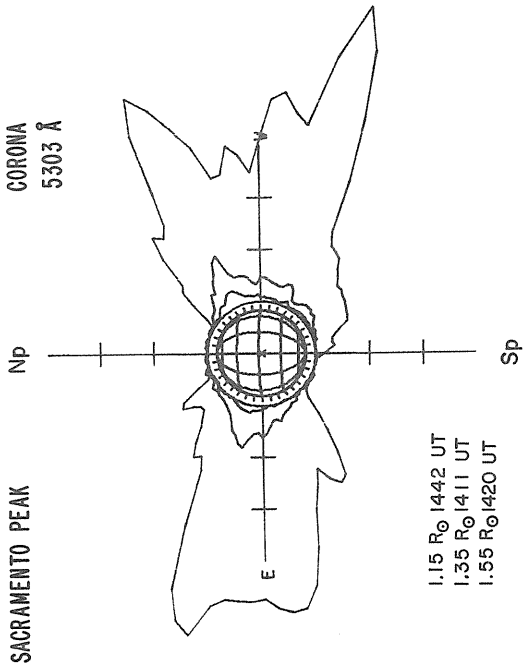
Sp

2125 UT

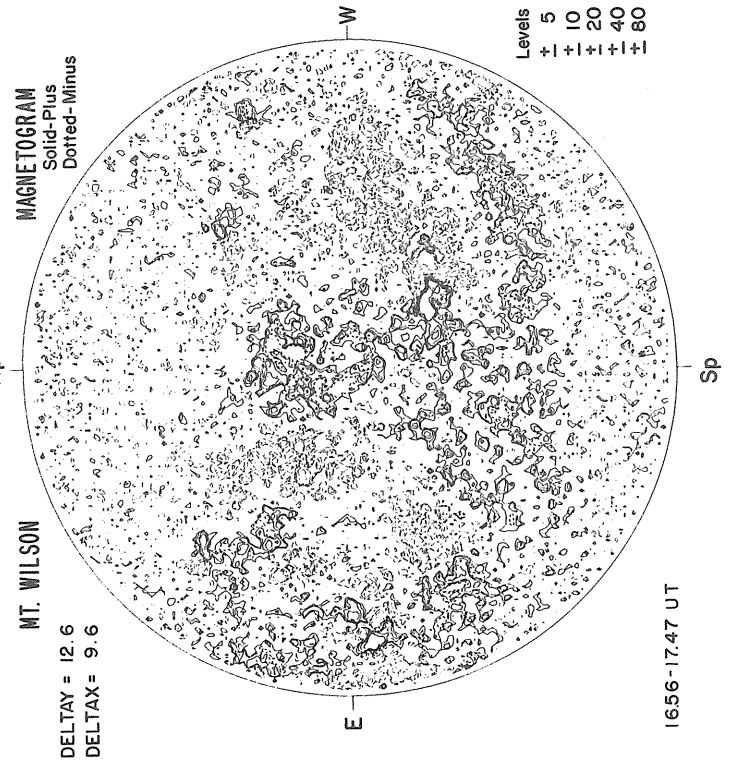
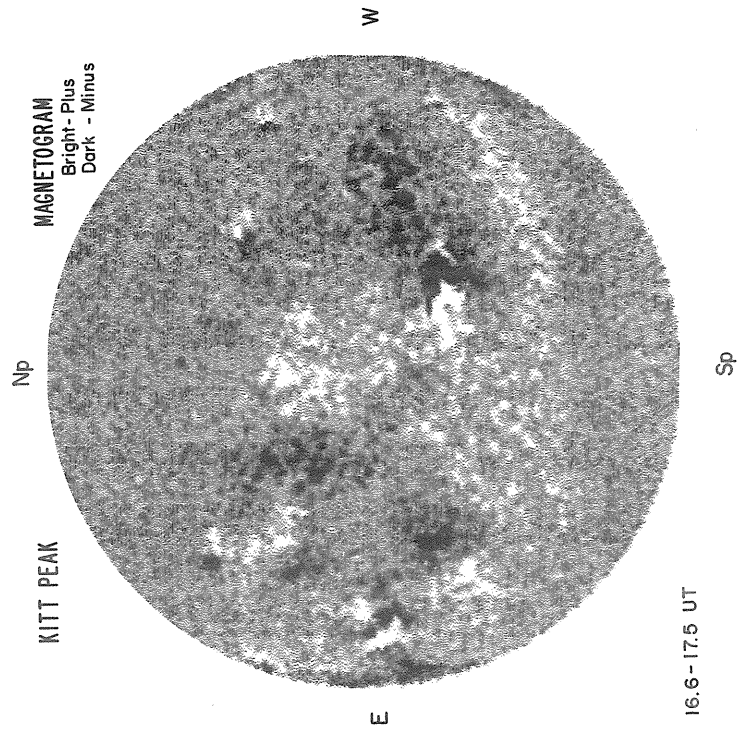
- Levels  $\mu T$
- 0
  - + 50
  - + 100
  - + 200
  - 
  -

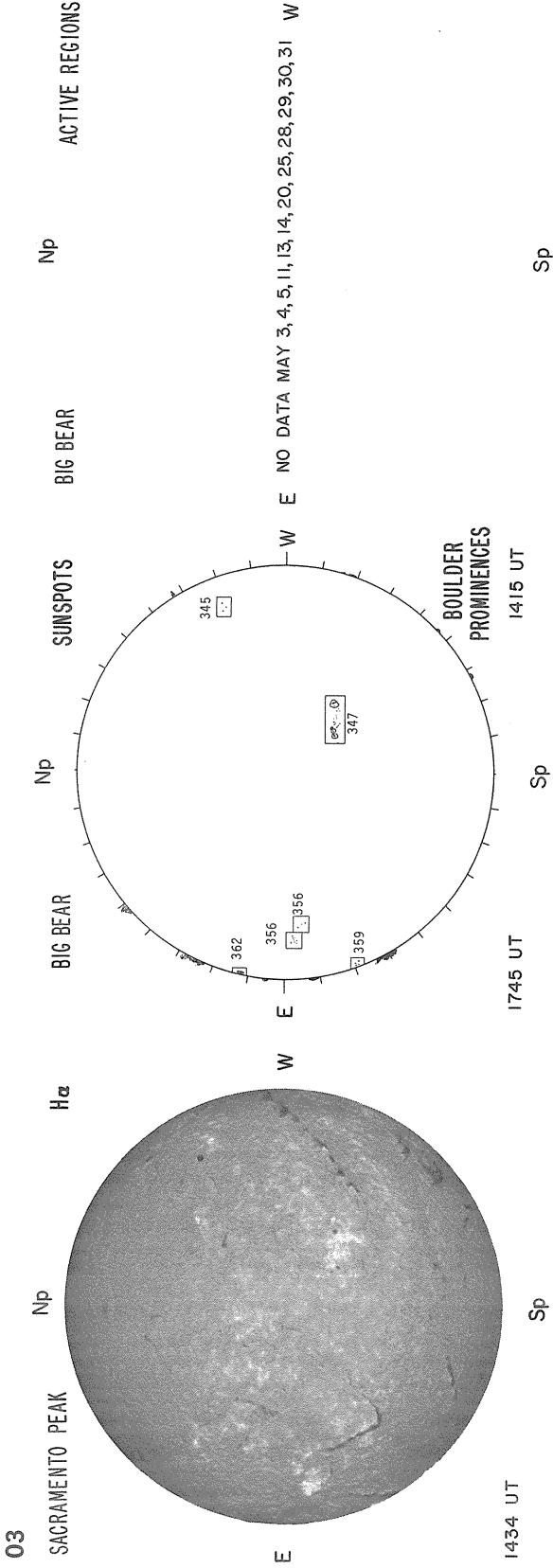


MAY 3, 1982 (P=-23.87, B<sub>o</sub> = -3.97, L<sub>o</sub> = 208.78)



1.15 R<sub>⊙</sub> 1442 UT  
1.35 R<sub>⊙</sub> 1411 UT  
1.55 R<sub>⊙</sub> 1420 UT





MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus

E NO DATA MAY 3, 4, 5, 15, 16, 17, 18, 19, 21, 23, 26, 27, 28 W

Levels  
0  $\mu$ T  
± 50  
± 100  
± 200  
•  
•

Sp

MAY 4, 1982 (P=-23.67, B<sub>o</sub>=-3.87, L<sub>o</sub>=195.56)

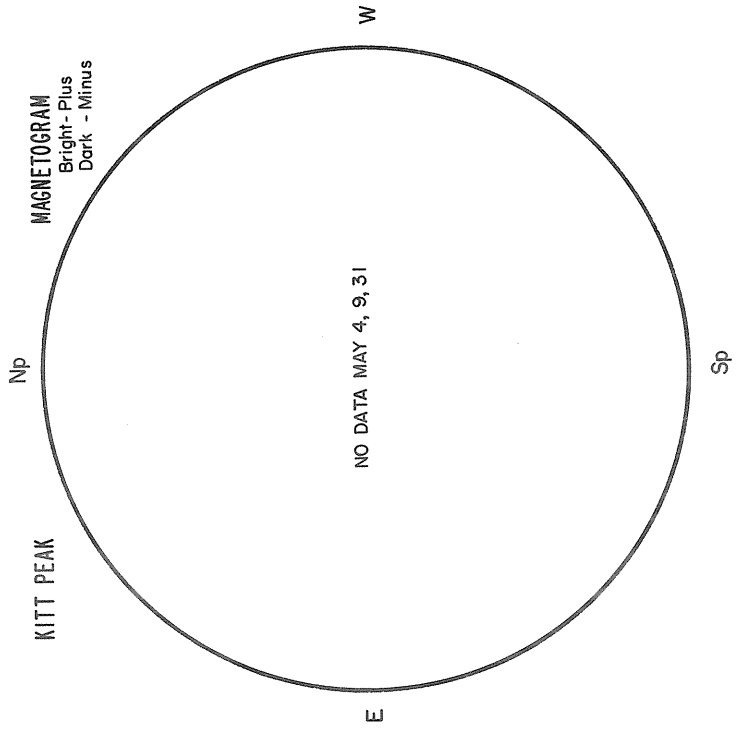
SACRAMENTO PEAK  
Np  
CORONA  
5303 Å

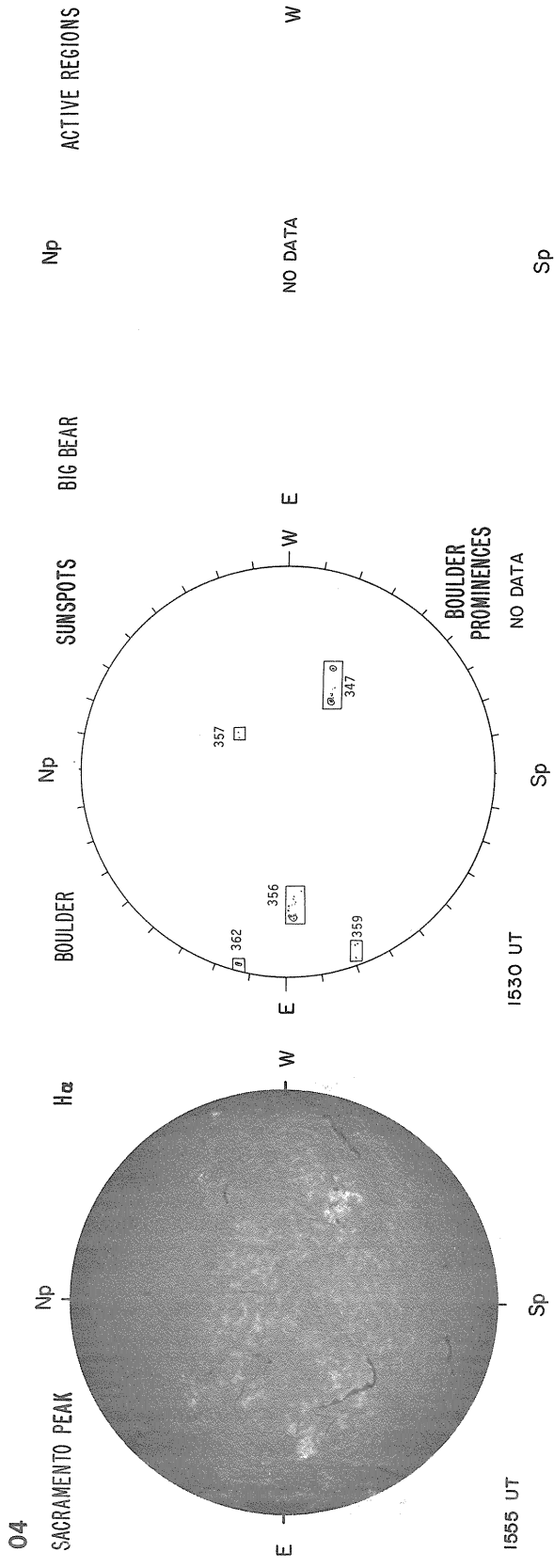
NO DATA  
E  
W

1.15 R<sub>0</sub>  
1.35 R<sub>0</sub>  
1.55 R<sub>0</sub>

Sp  
Np

MT. WILSON  
DELTA =  
DELTA =  
MAGNETOGRAM  
Solid-Plus  
Dotted-Minus





**STANFORD**  
Np  
Sp

**BOULDER PROMINENCES**  
NO DATA  
Sp

**MAGNETOGRAM**  
Solid - Plus; zero level  
Dashed - Minus  
Np  
Sp

ACTIVE REGIONS  
NO DATA  
BIG BEAR  
SUNSPOTS  
NO DATA  
BOULDER  
NO DATA  
STANFORD  
NO DATA  
MAGNETOGRAM  
NO DATA

Levels  
0  $\mu$ T  
+ 50  
 $\pm$  100  
 $\pm$  200  
•  
•

Sp

MAY 5, 1982 (P=-23.47, B<sub>0</sub>=-3.76, L<sub>0</sub>=182.34)

SACRAMENTO PEAK  
CORONA  
5303 Å

Np

NO DATA

E

W

E

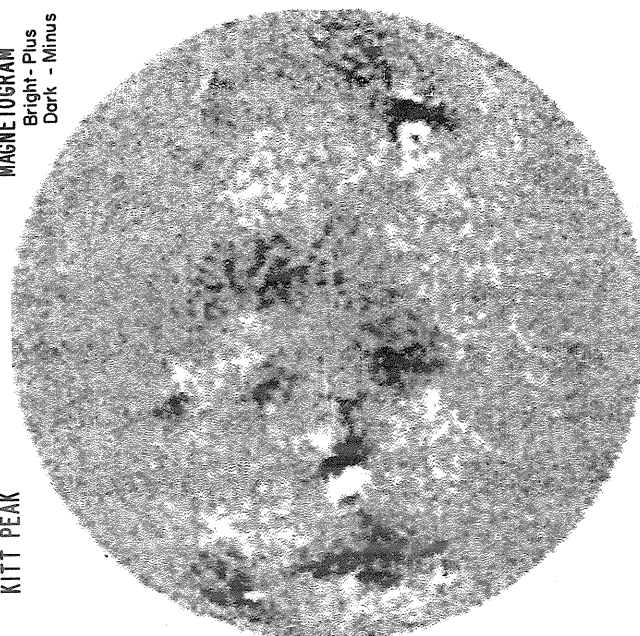
W

1.15 R<sub>0</sub>  
1.35 R<sub>0</sub>  
1.55 R<sub>0</sub>

KITT PEAK

Np

MAGNETOGRAM  
Bright- Plus  
Dark - Minus



E

W

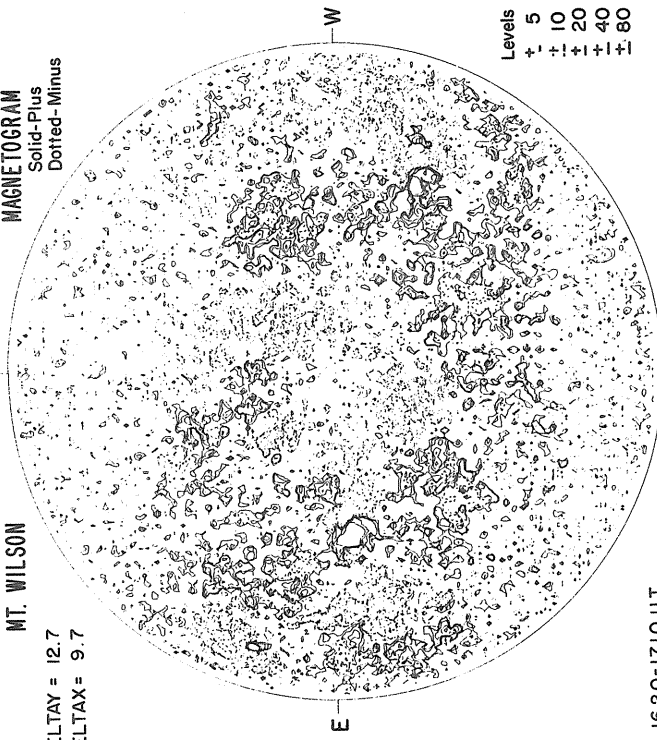
16.2-17.1 UT

Sp

MT. WILSON

Sp  
Np

MAGNETOGRAM  
Solid- Plus  
Dotted- Minus



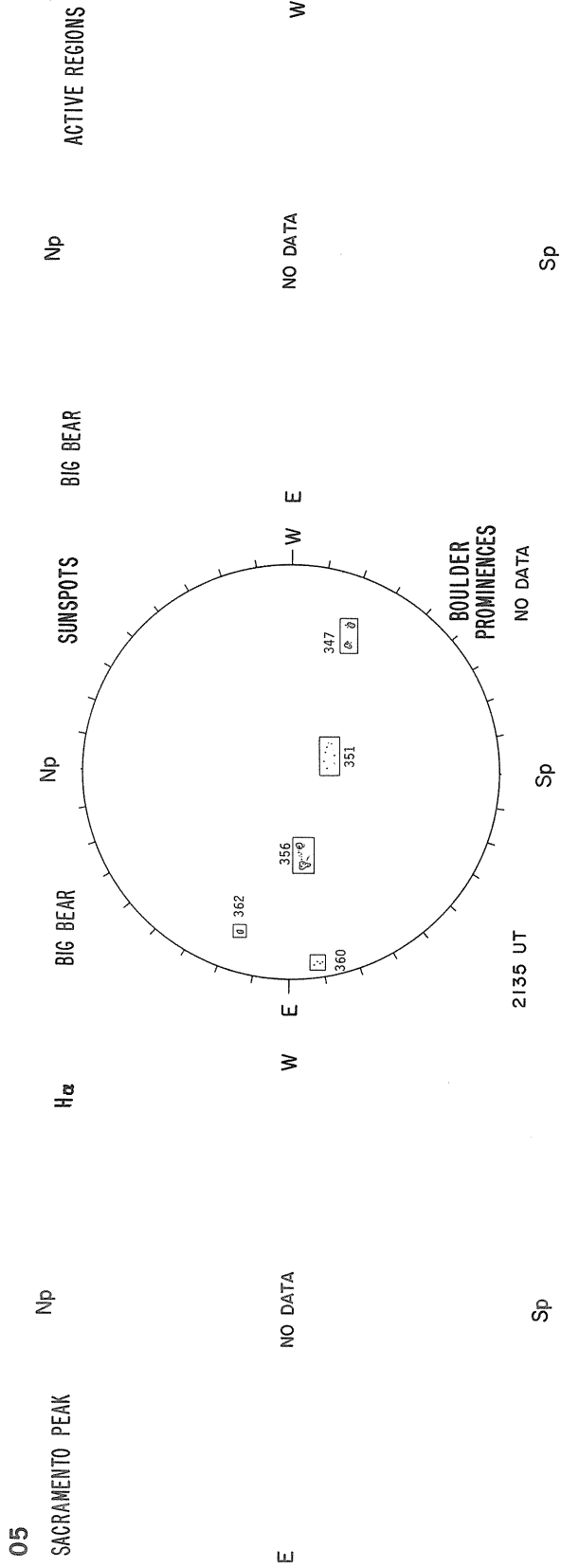
E

W

16.20-17.10 UT

Sp

Levels  
+ 5  
+ 10  
+ 20  
+ 40  
+ 80



STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus

E

NO DATA

W

Levels

0  $\mu$ T

+ 50

+ 100

+ 200

•

•

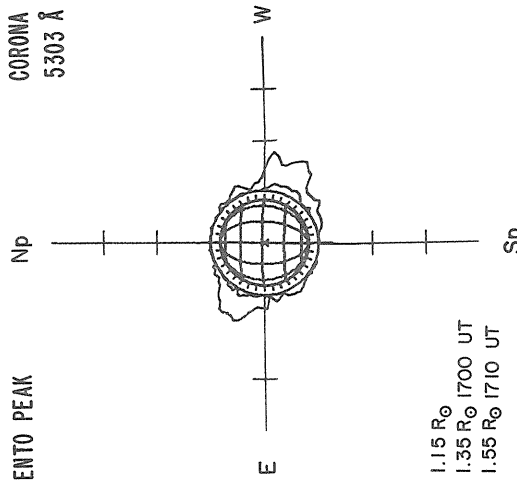
•

Sp

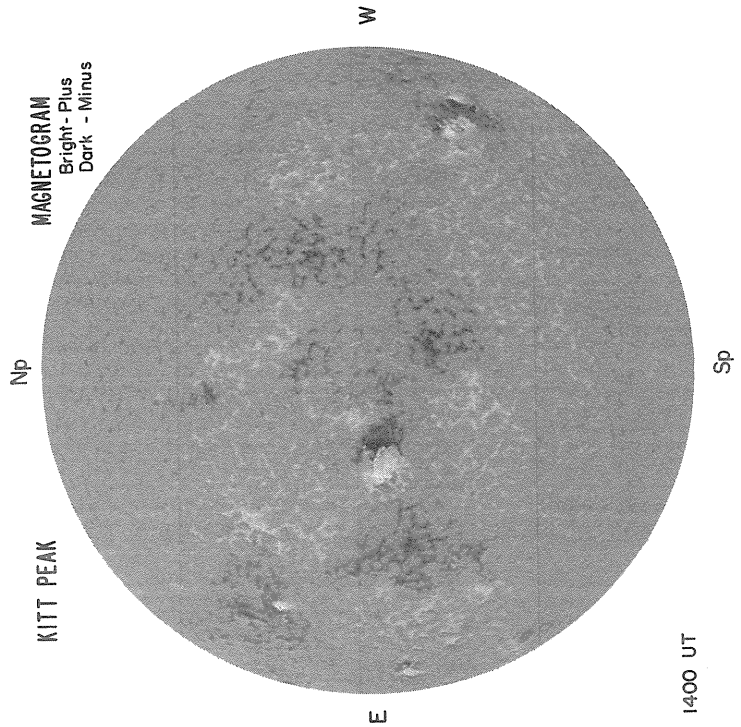


MAY 6, 1982 (P=-23.27, B<sub>0</sub>=-3.66, L<sub>0</sub>=169.12)

SACRAMENTO PEAK  
CORONA  
5303 Å

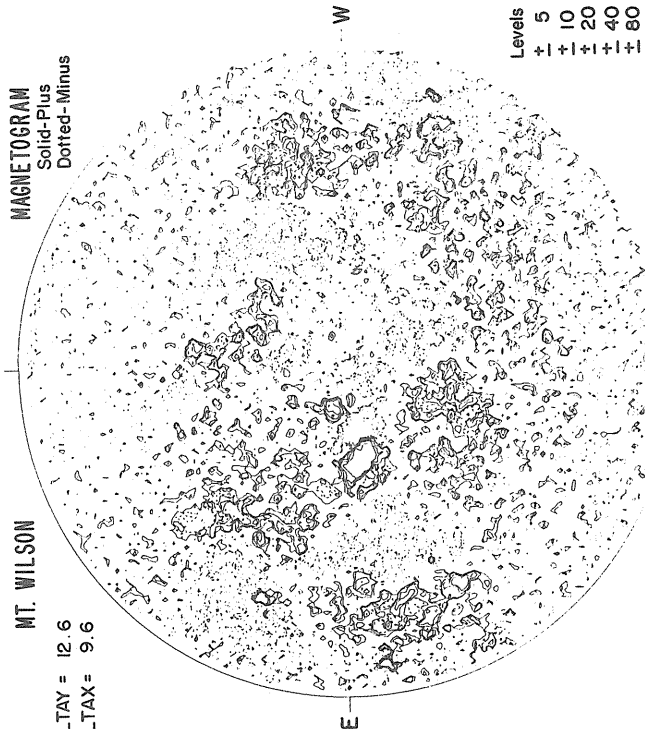


1.15 R<sub>⊙</sub>  
1.35 R<sub>⊙</sub> 1700 UT  
1.55 R<sub>⊙</sub> 1710 UT



MAGNETOGRAM  
Bright- Plus  
Dark - Minus

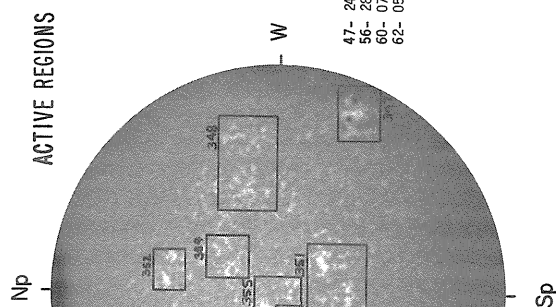
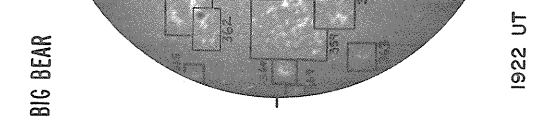
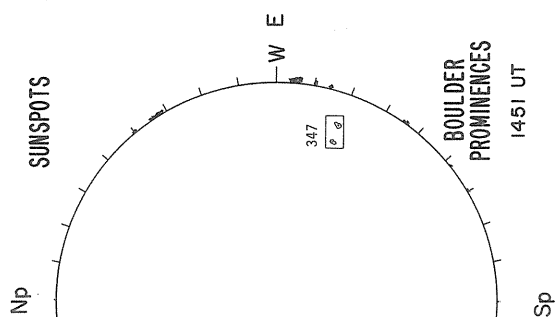
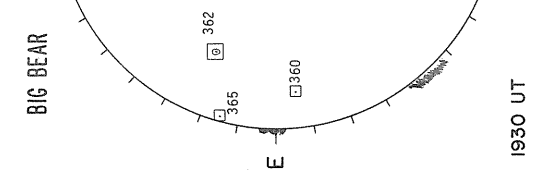
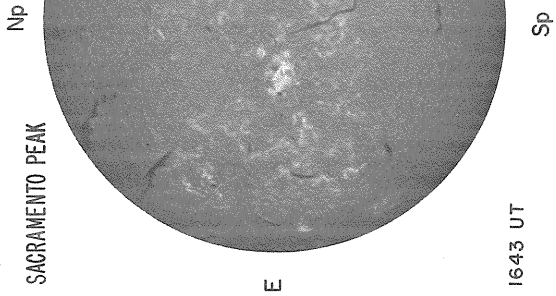
MT. WILSON  
DELTA = 12.6  
DELTA = 9.6



MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

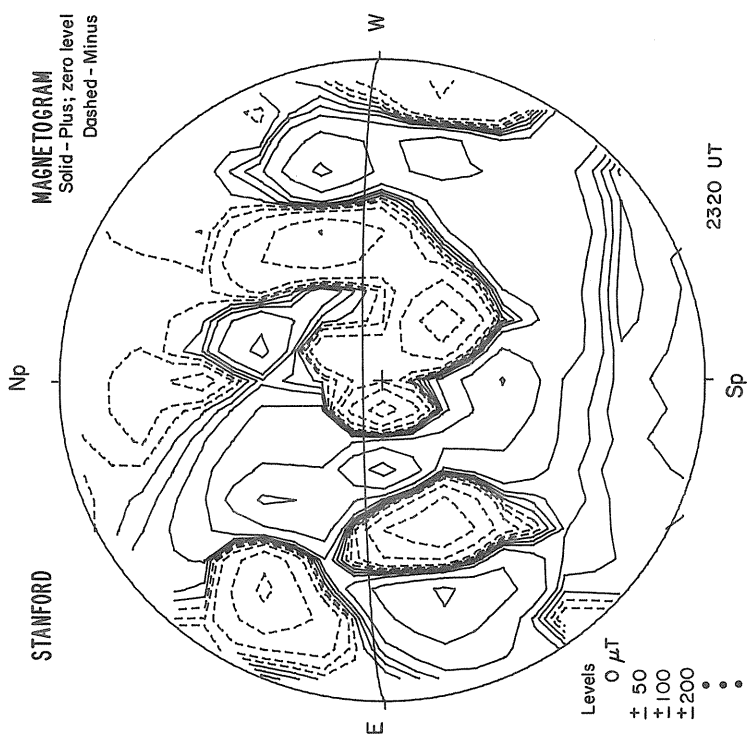
Levels  
± 5  
± 10  
± 20  
± 40  
± 80

06

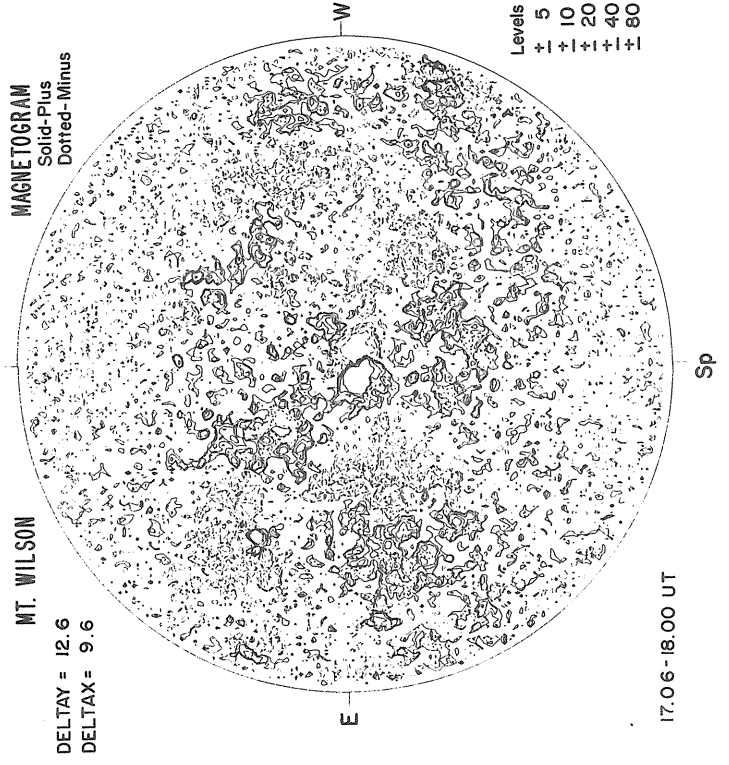
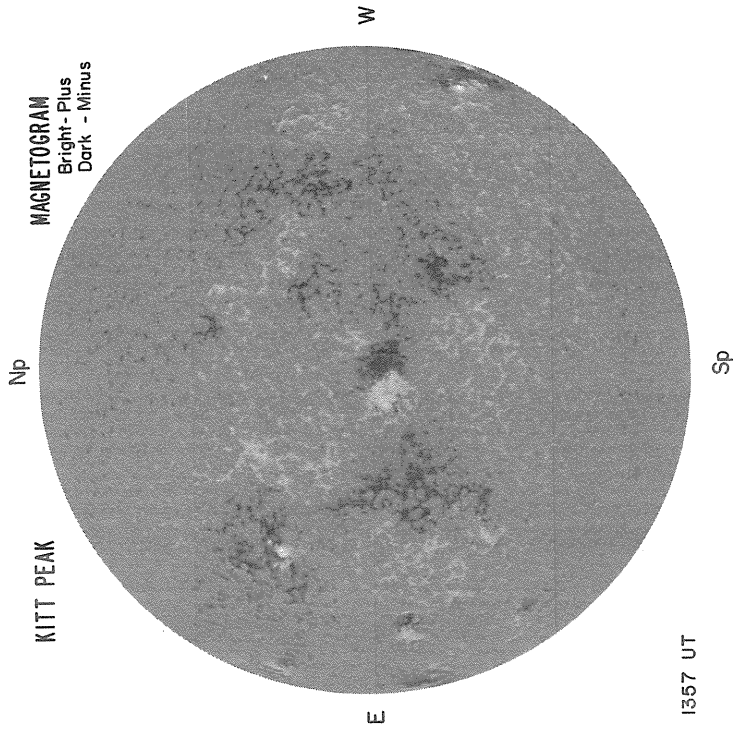
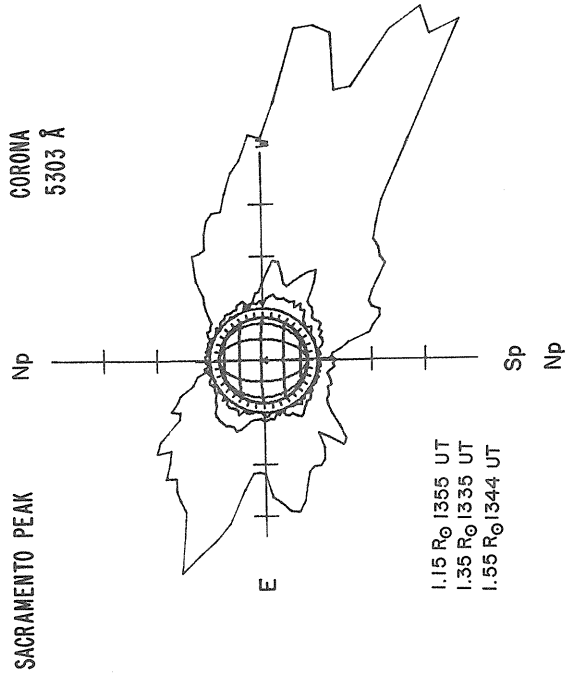


47- 2000-2.5  
56- 2800-3.5  
60- 0700-2.5  
62- 0500-2.5

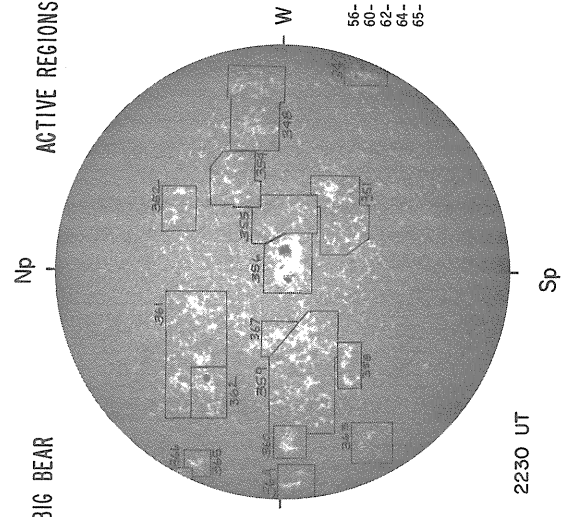
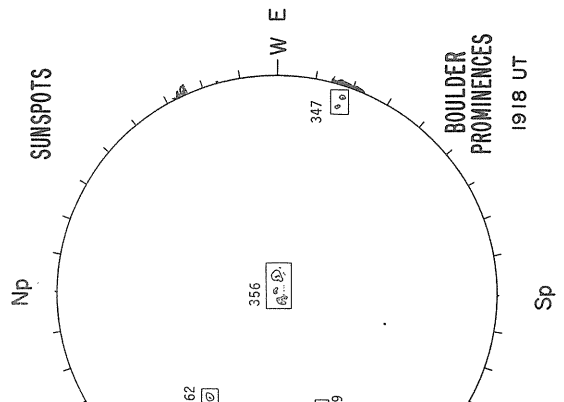
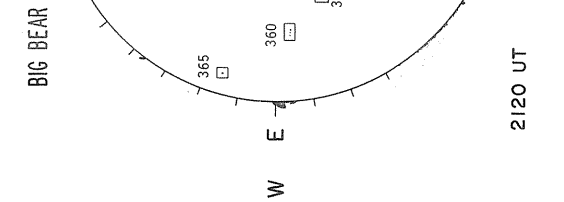
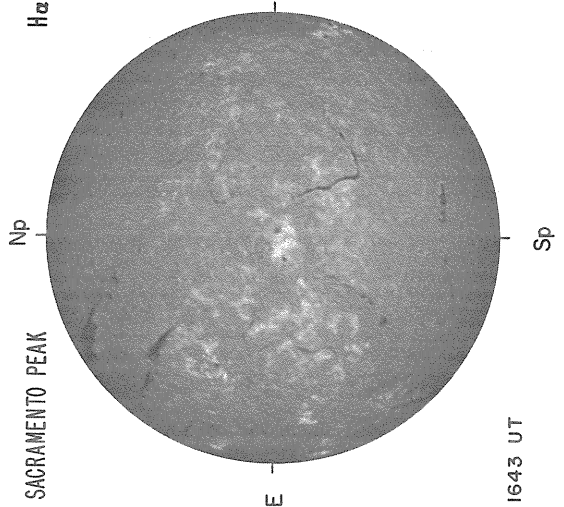
BOULDER PROMINENCES



MAY 7, 1982 (P=-23.05, B<sub>0</sub>=-3.55, L<sub>0</sub>=155.90)

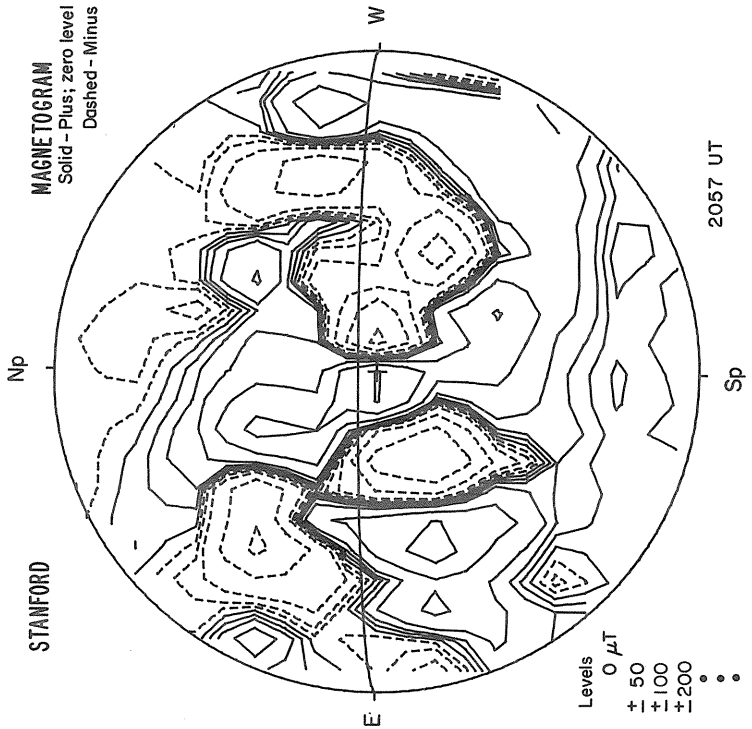


07



56- 3000-3.5  
60- 1100-2.5  
62- 0900-2.5  
64- 1200-2.5  
65- 0500-2.5

BOULDER PROMINENCES



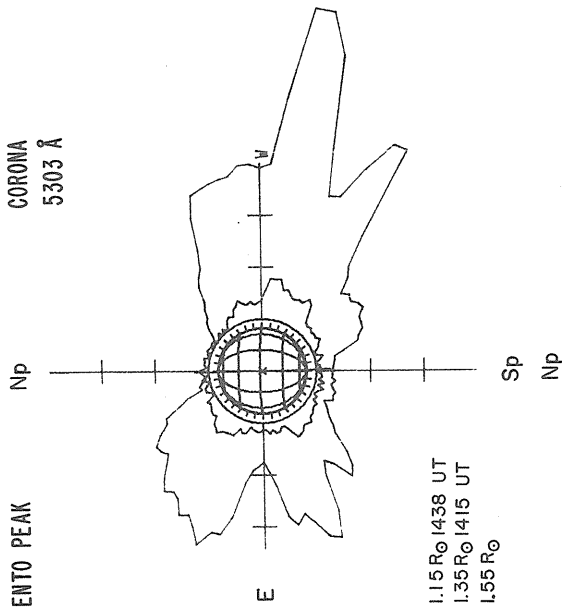
MAGNETOGRAM

Solid - Plus; zero level  
Dashed - Minus

Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200  
•  
•  
•

MAY 8, 1982 (P=-22.83, B<sub>o</sub>=-3.44, L<sub>o</sub>=142.68)

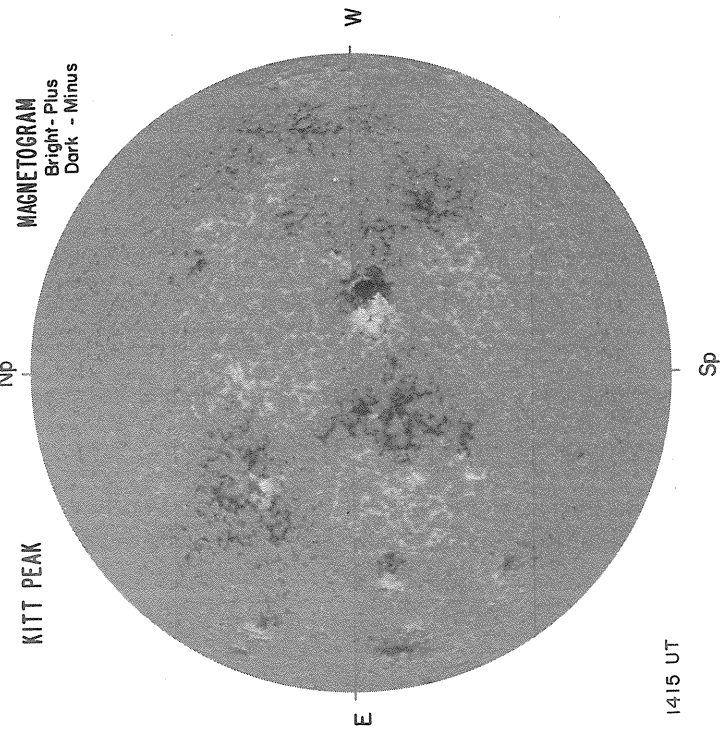
SACRAMENTO PEAK  
CORONA  
5303 Å



I.15 R<sub>o</sub> 1438 UT  
I.35 R<sub>o</sub> 1415 UT  
I.55 R<sub>o</sub>

MT. WILSON

DELTA =  
DELTA =



MAGNETOGRAM  
Bright - Plus  
Dark - Minus

KITT PEAK

1415 UT

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

NO DATA

E

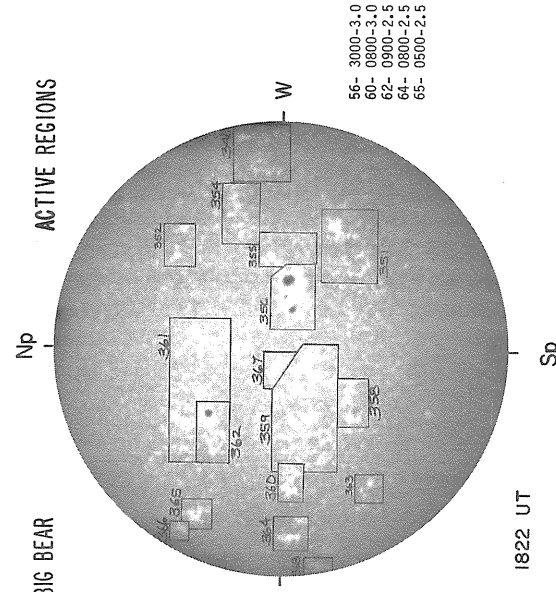
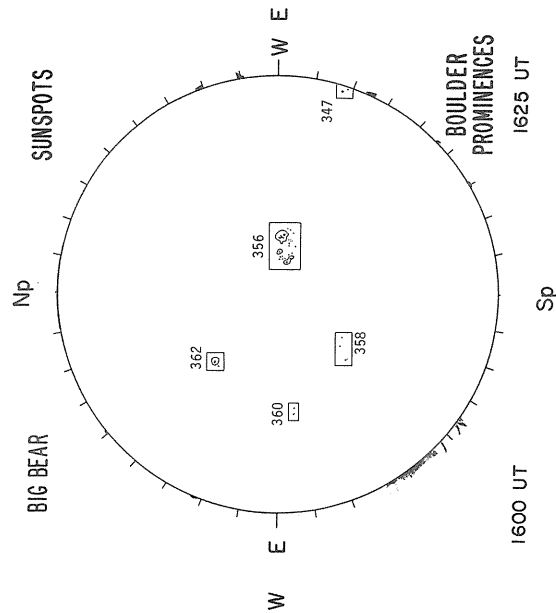
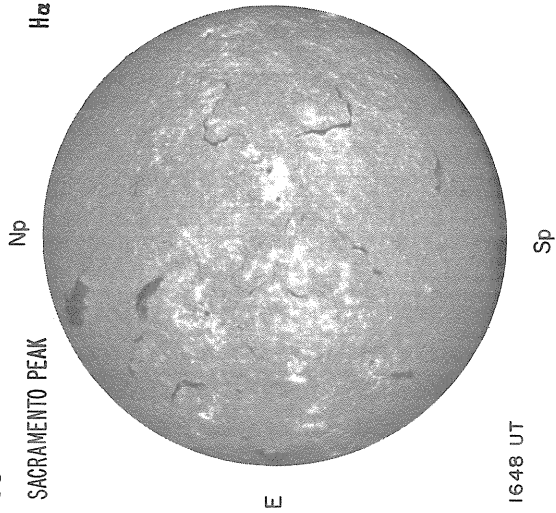
W

Levels  
+ 5  
+ 10  
+ 20  
+ 40  
+ 80

Sp

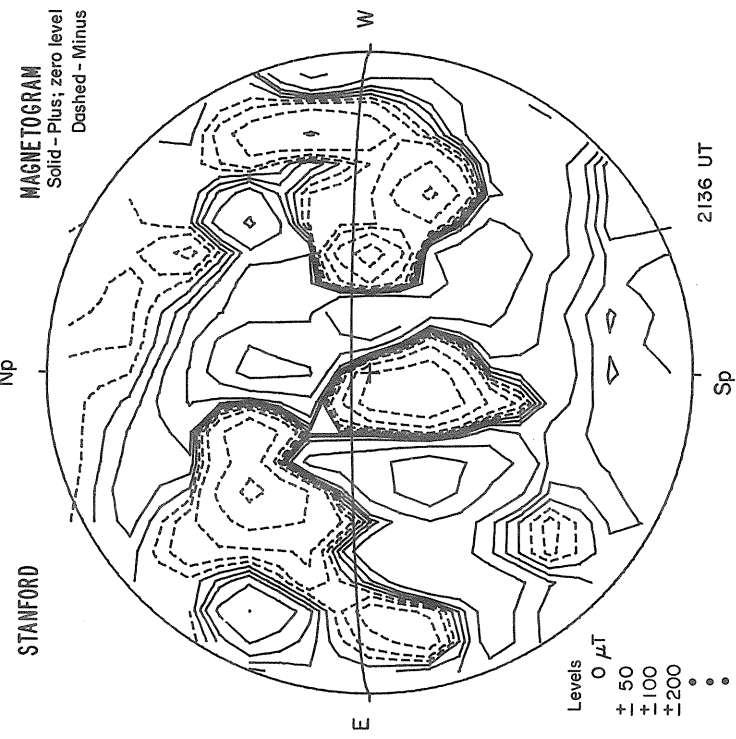
1415 UT

08



56- 3000-3.0  
60- 0800-3.0  
62- 0900-2.5  
64- 0800-2.5  
65- 0500-2.5

BOULDER PROMINENCES

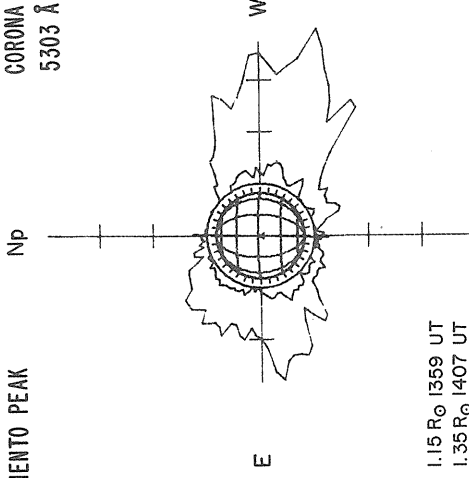


MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus

Levels  
0  $\mu$ T  
± 50  
± 100  
± 200  
•••

MAY 9, 1982 (P=-22.60, B<sub>0</sub>=-3.34, L<sub>0</sub>=129.46)

SACRAMENTO PEAK  
CORONA  
5303 Å



1.15 R<sub>0</sub> 1359 UT  
1.35 R<sub>0</sub> 1407 UT  
1.55 R<sub>0</sub>

Sp  
Np

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

MT. WILSON

DELTA Y =  
DELTA X =

Np

MAGNETOGRAM  
Bright-Plus  
Dark-Minus

KITT PEAK

W

NO DATA

E

W

NO DATA

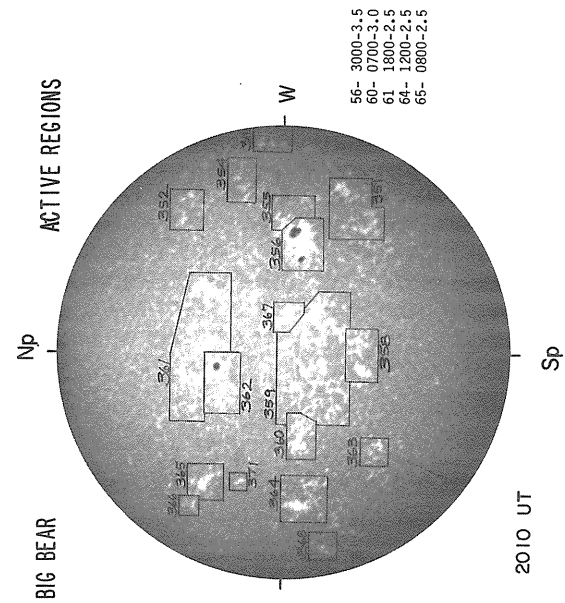
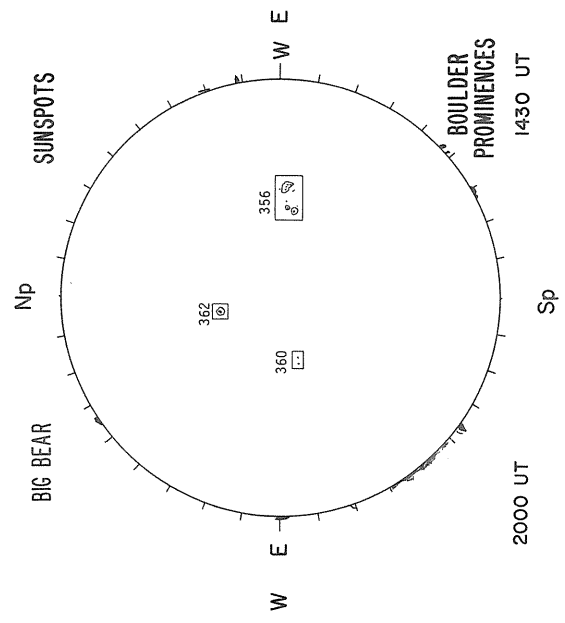
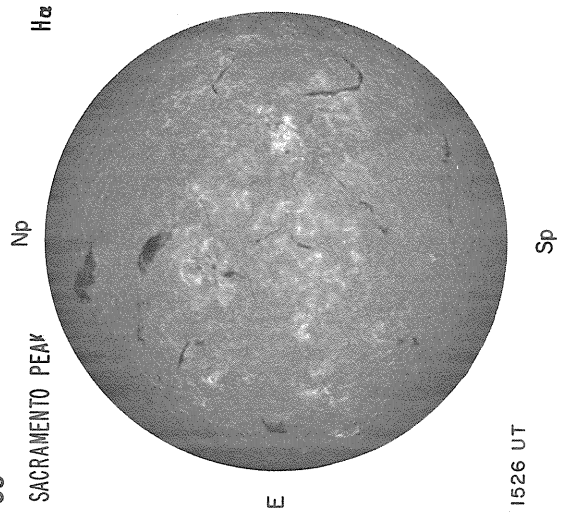
E

Levels  
+ 5  
+ 10  
+ 20  
+ 40  
+ 80

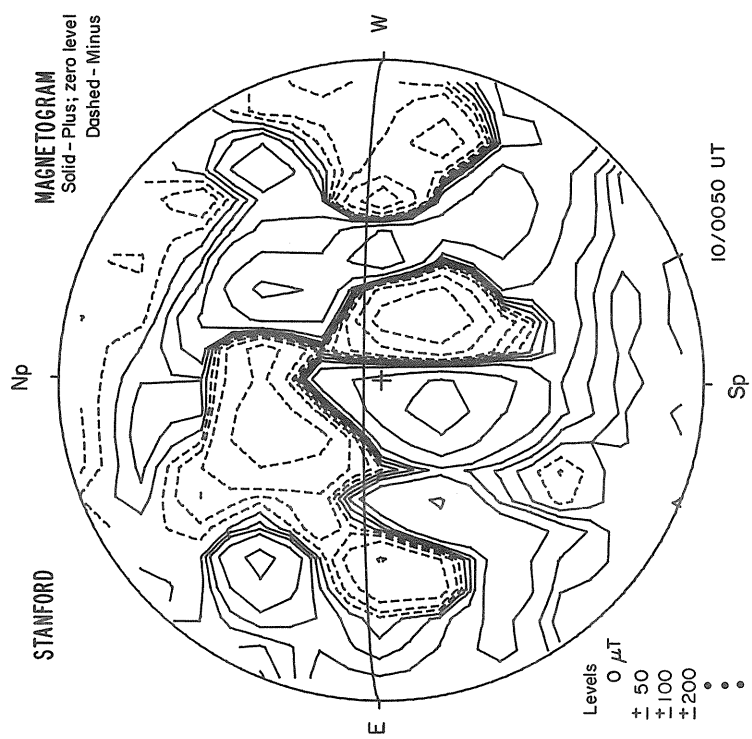
Sp

Sp

09



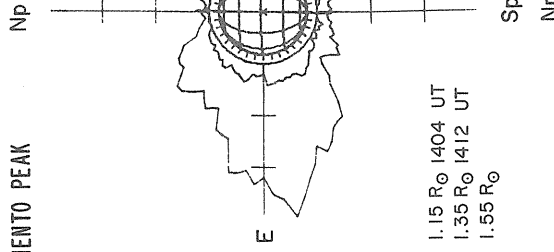
BOULDER PROMINENCES





MAY 10, 1982 (P=-22.37, B<sub>0</sub>=-3.23, L<sub>0</sub>=116.24)

CORONA  
5303 Å

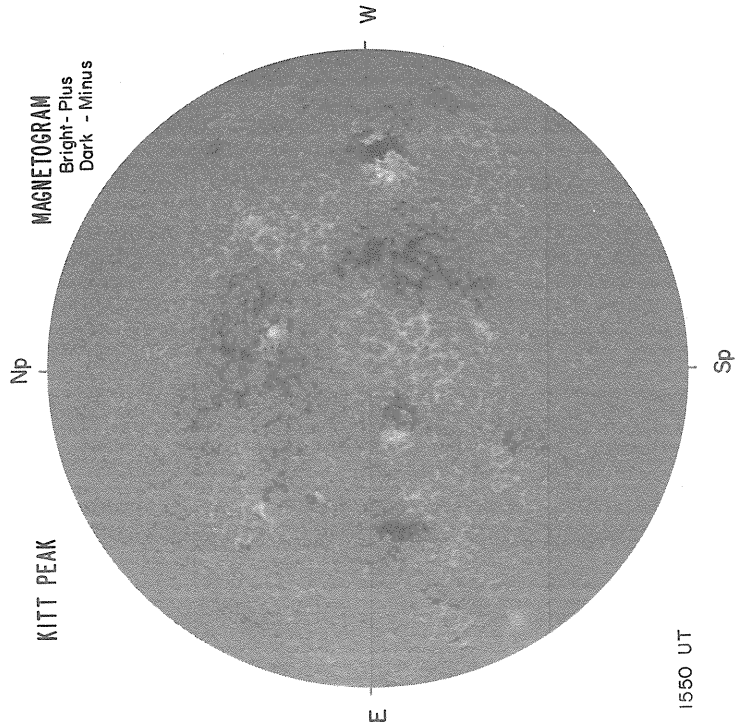


1.15 R<sub>0</sub> 1404 UT  
1.35 R<sub>0</sub> 1412 UT  
1.55 R<sub>0</sub>

MT. WILSON

DELTA =  
DELTA =

MAGNETOGRAM  
Bright - Plus  
Dark - Minus



1550 UT

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

W

NO DATA

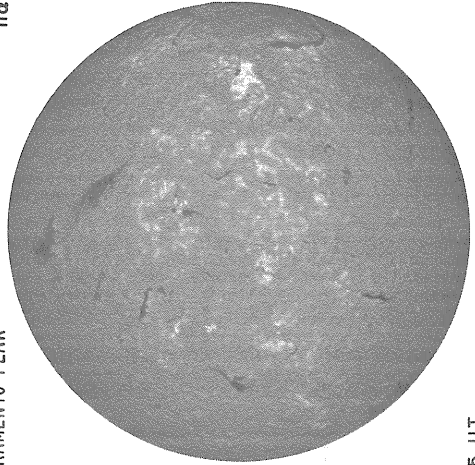
E

Levels  
± 5  
± 10  
± 20  
± 40  
± 80

Sp

10

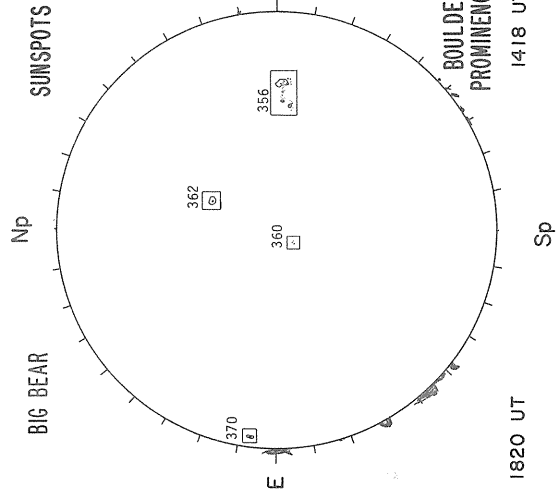
SACRAMENTO PEAK



1605 UT

H $\alpha$

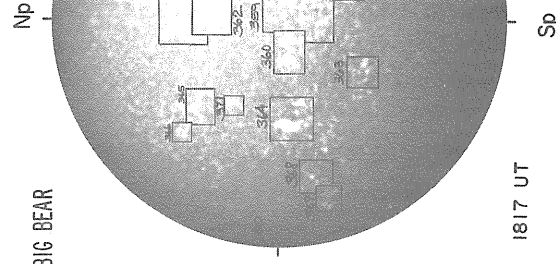
BIG BEAR



1820 UT

BOULDER PROMINENCES

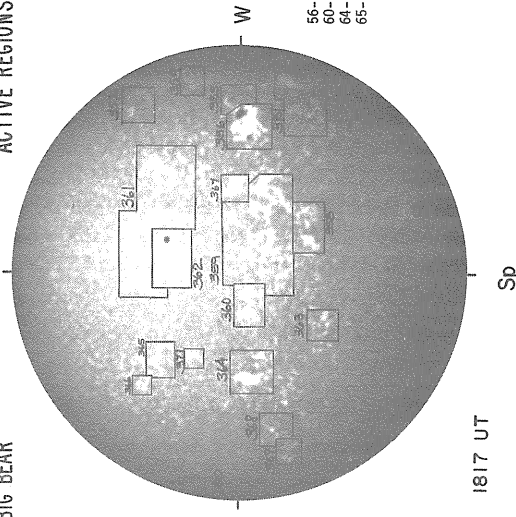
SUNSPOTS



1817 UT

BIG BEAR

ACTIVE REGIONS

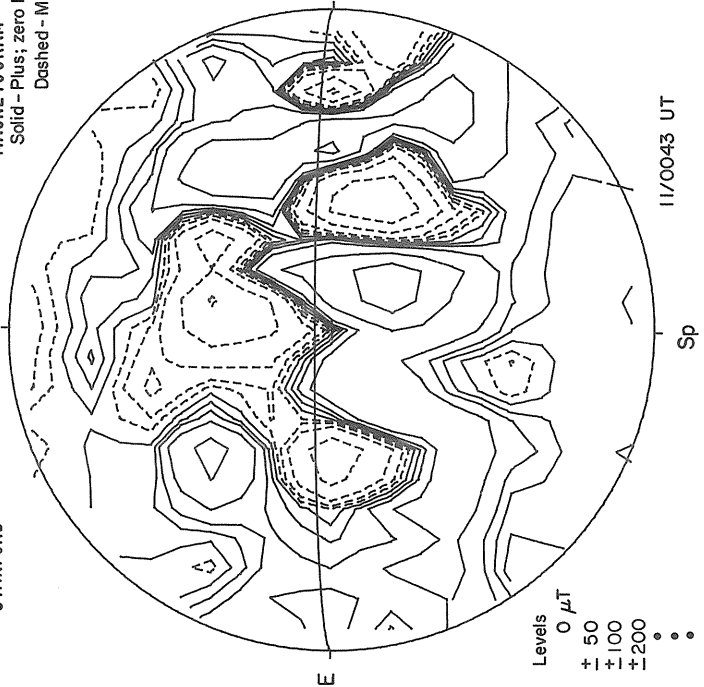


56- 2600-3.0  
60- 0500-2.5  
64- 1200-2.5  
65- 0600-3.0

STANFORD

MAGNETOGRAM

Solid - Plus; zero level  
Dashed - Minus

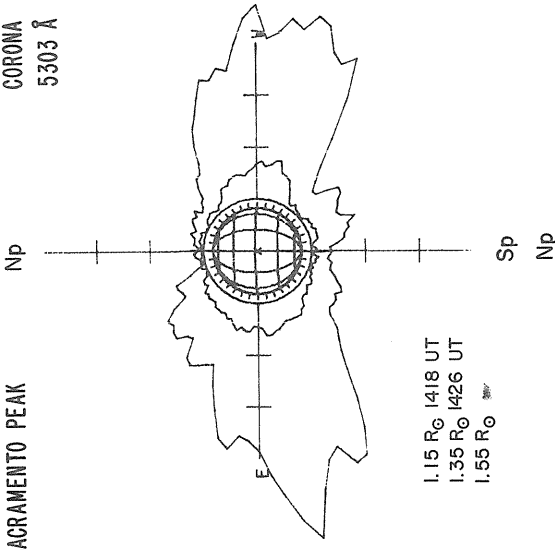


11/0043 UT

Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200  
• • •

MAY 11, 1982 (P=-22.13, B<sub>0</sub>=-3.12, L<sub>0</sub>=103.01)

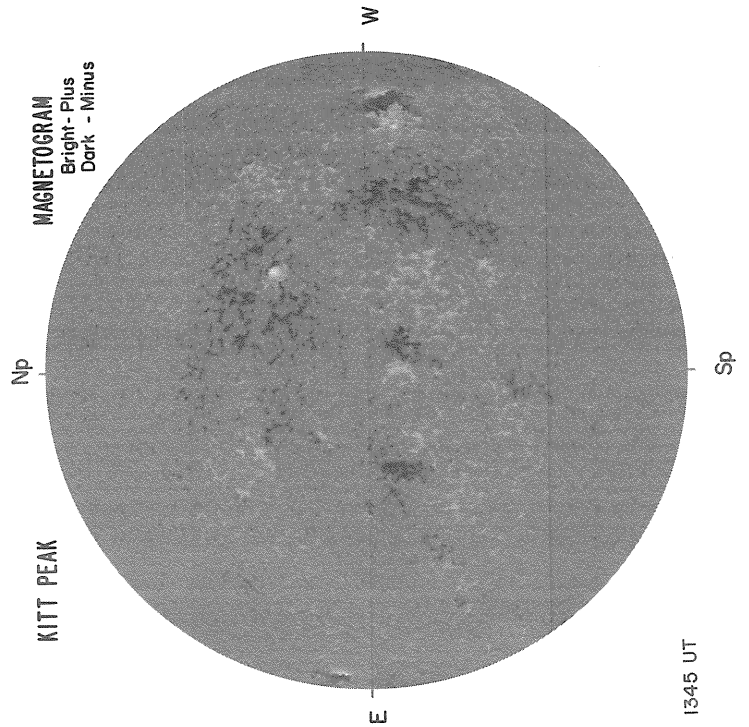
SACRAMENTO PEAK  
CORONA  
5303 Å



1.15 R<sub>⊙</sub> 1418 UT  
1.35 R<sub>⊙</sub> 1426 UT  
1.55 R<sub>⊙</sub> 1434 UT

MT. WILSON

DELTA Y =  
DELTA X =



NO DATA

Levels  
+ 5  
+ 10  
+ 20  
+ 40  
+ 80

Sp

11  
SACRAMENTO PEAK

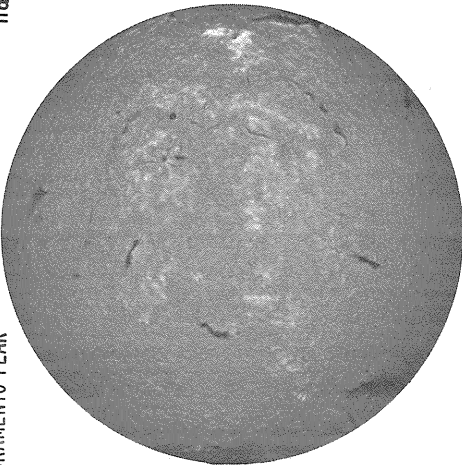
Np ACTIVE REGIONS

SUNSPOTS

Np

BOULDER

H $\alpha$



W

NO DATA

W E

NO DATA

W E

E

1436 UT

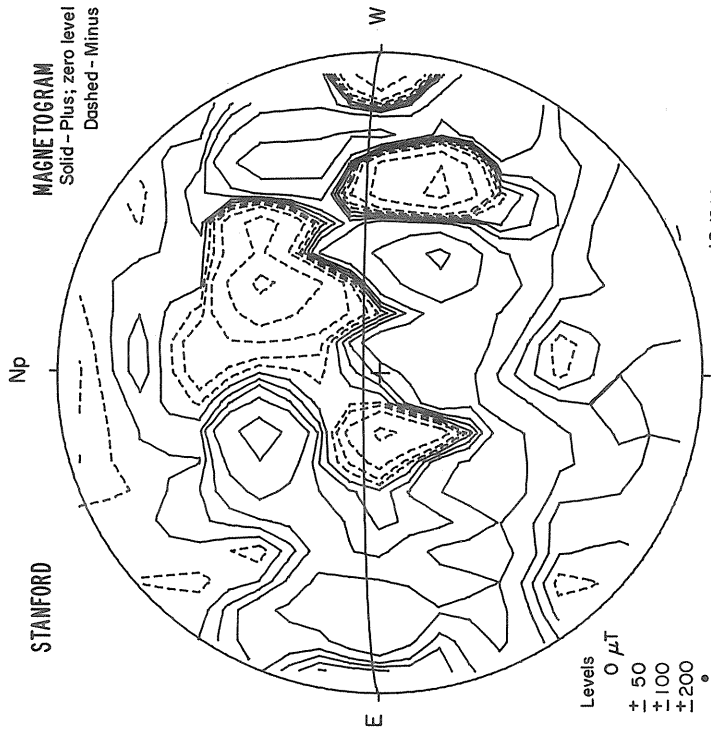
BOULDER  
PROMINENCES

Sp

Sp

MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus

STANFORD



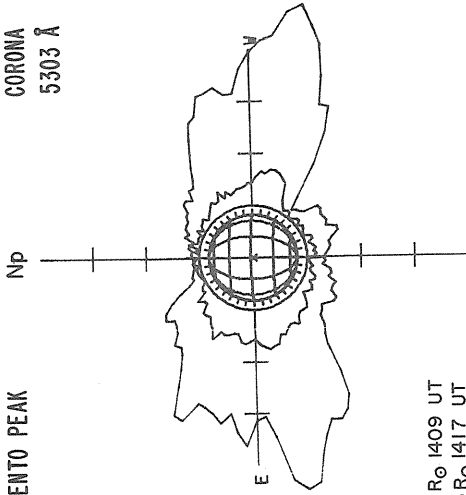
Levels  
0  $\mu$ T  
± 50  
± 100  
± 200

12/0123 UT

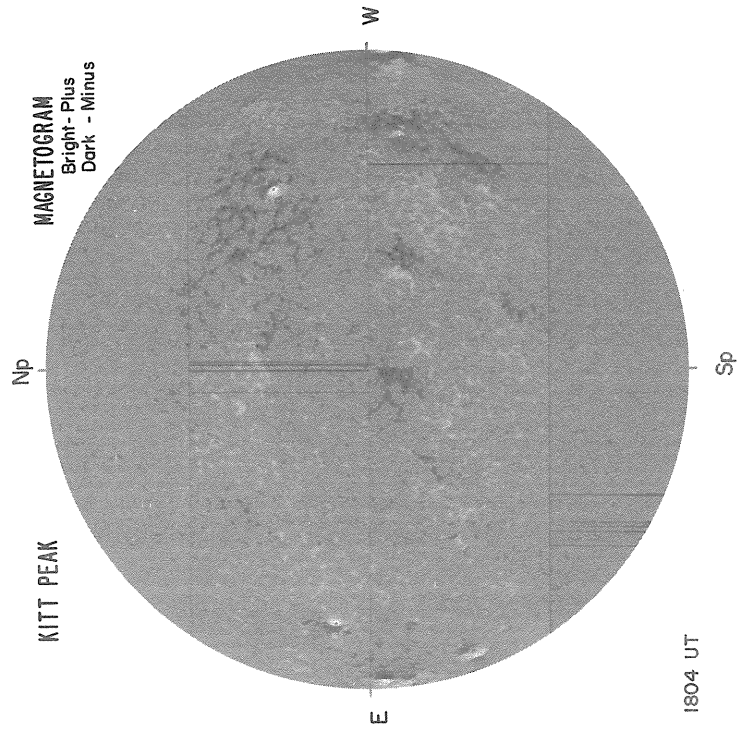
Sp

MAY 12, 1982 (P=-21.88, B<sub>0</sub>=-3.01, L<sub>0</sub>=89.79)

SACRAMENTO PEAK  
CORONA  
5303 Å

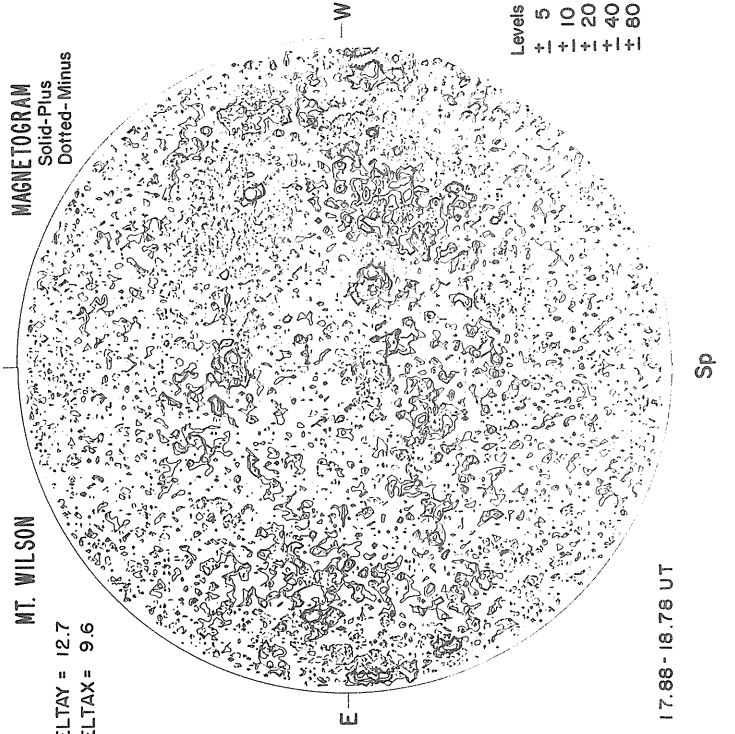


1.15 R<sub>0</sub> 1409 UT  
1.35 R<sub>0</sub> 1417 UT  
1.55 R<sub>0</sub>

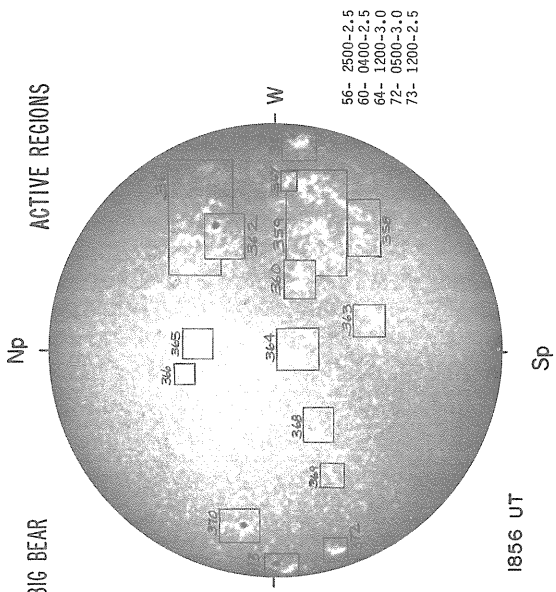
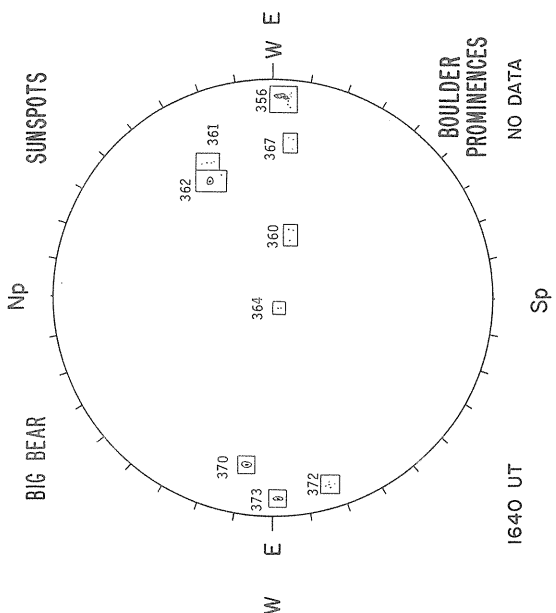
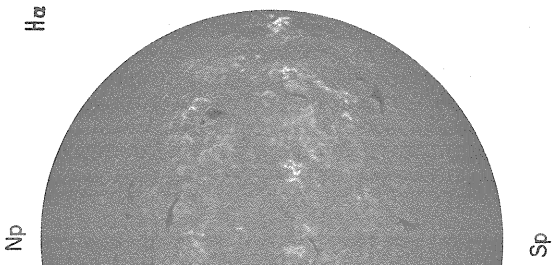
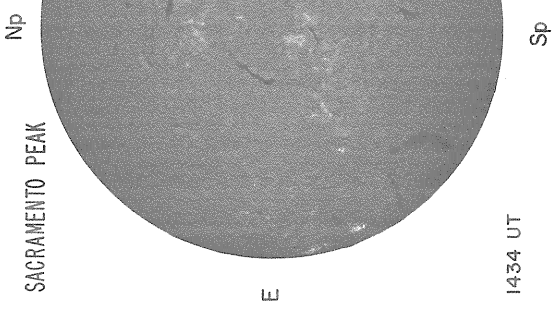


MT. WILSON

DELTA = 12.7  
DELTA X = 9.6

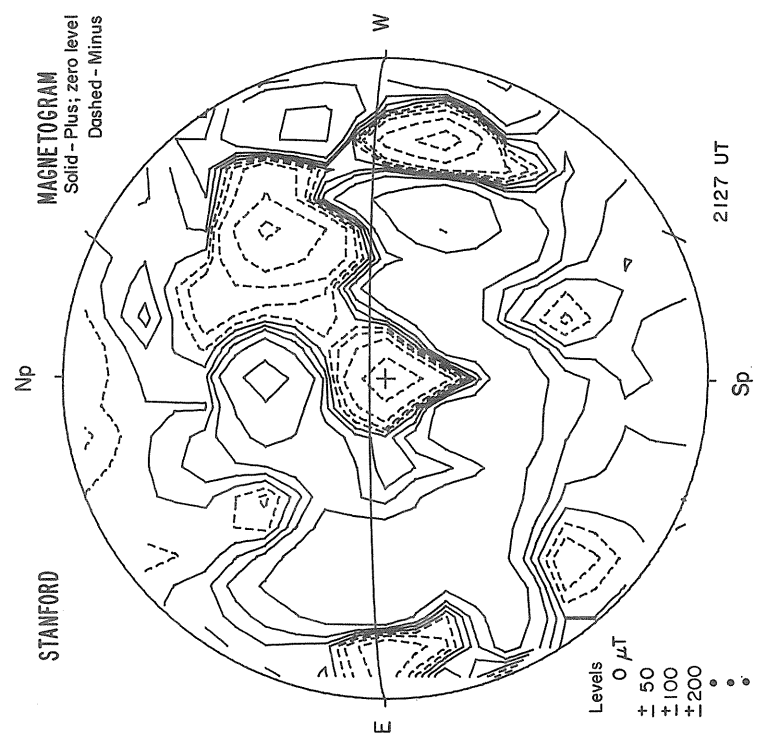


12

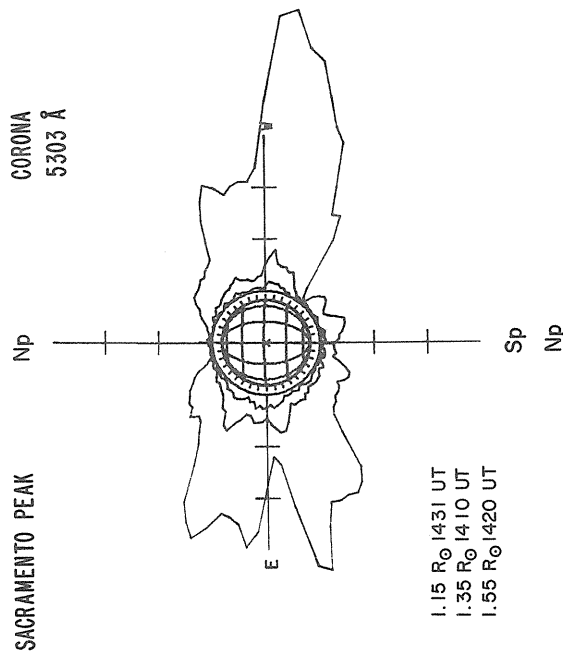


BOULDER PROMINENCES

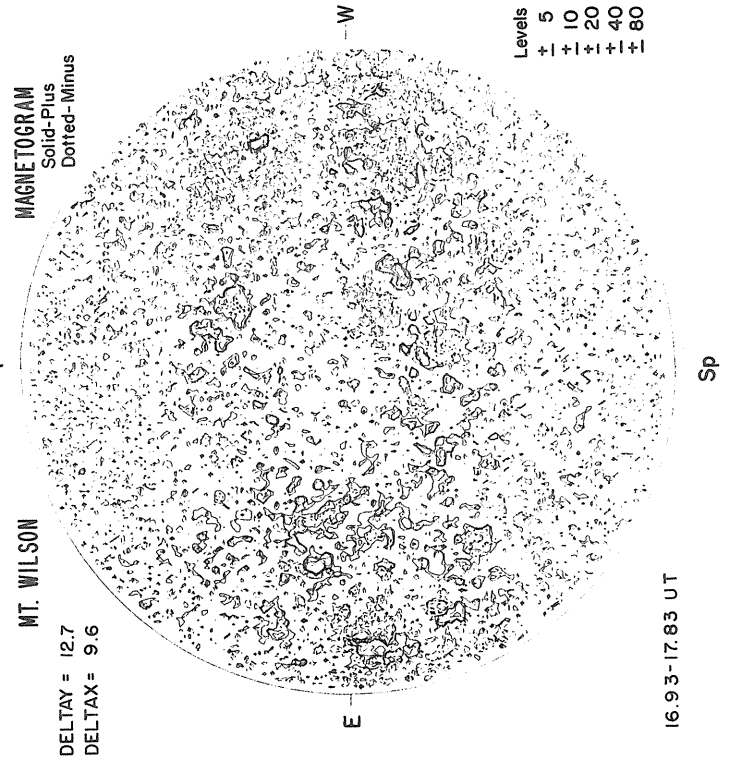
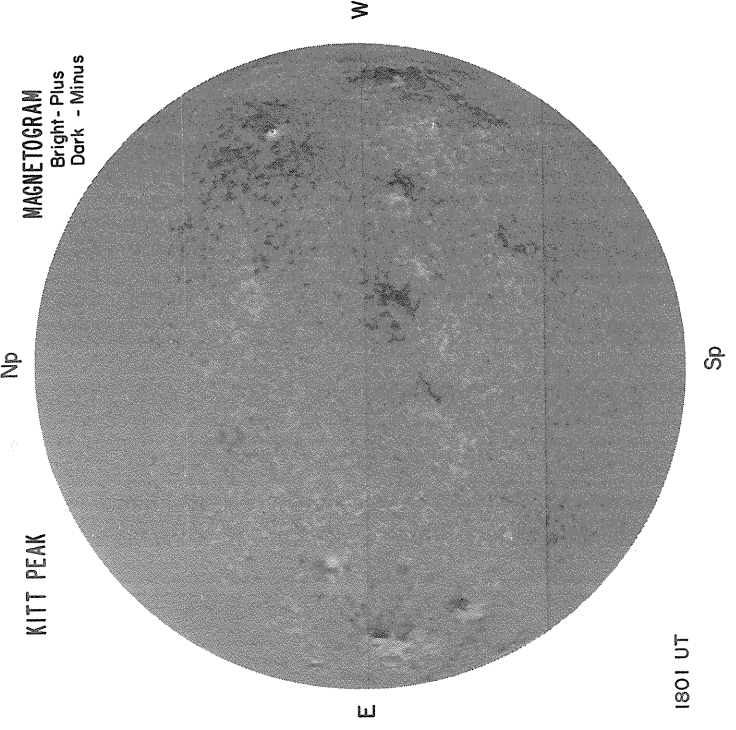
NO DATA



MAY 13, 1982 (P=-21.62, B<sub>0</sub>=-2.90, L<sub>0</sub>=76.56)



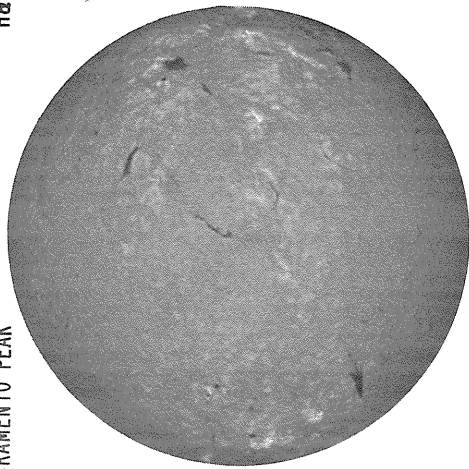
1.15 R<sub>⊙</sub> 1431 UT  
1.35 R<sub>⊙</sub> 1410 UT  
1.55 R<sub>⊙</sub> 1420 UT



13

SACRAMENTO PEAK

H $\alpha$



Np

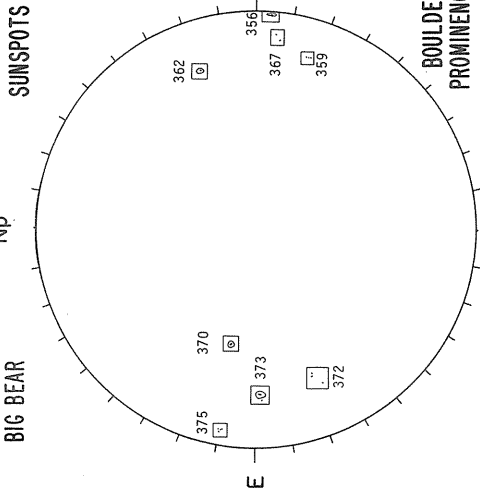
Sp

1434 UT

BIG BEAR

Np

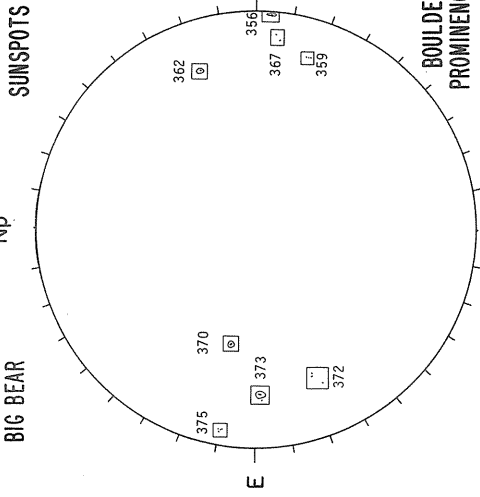
SUNSPOTS



BIG BEAR

Np

SUNSPOTS



BIG BEAR

Np

ACTIVE REGIONS



Np

ACTIVE REGIONS



BOLDER PROMINENCES

NO DATA

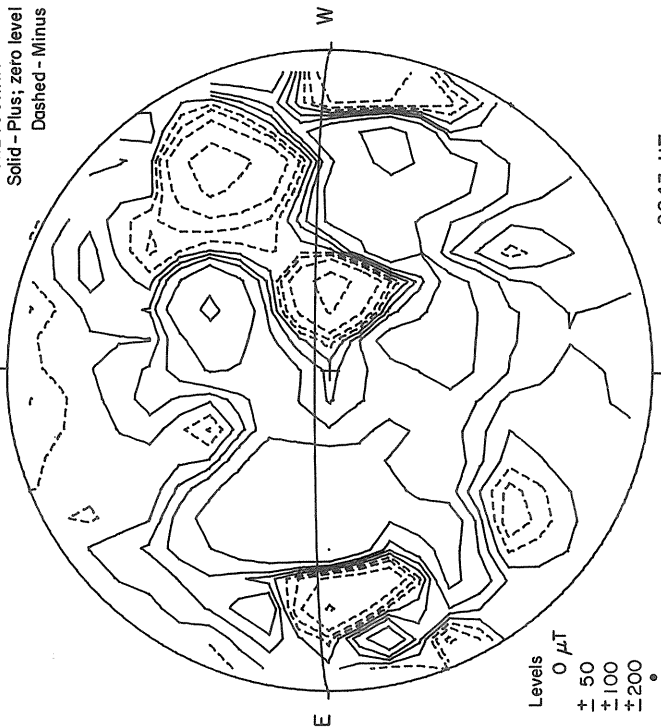
0018 UT

Sp

STANFORD

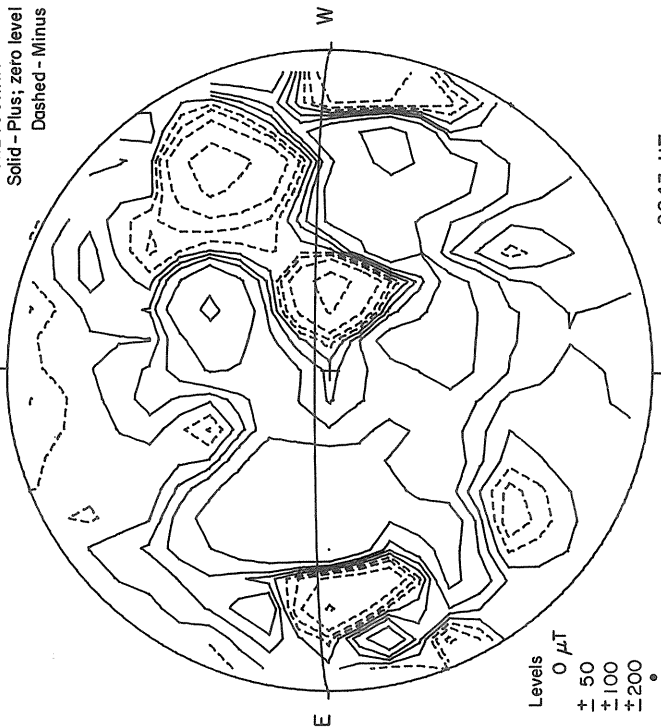
Np

MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus



Np

MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus



Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200  
•••

2243 UT

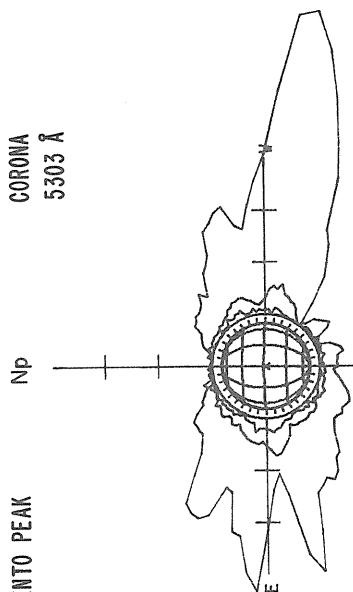
Sp



MAY 14, 1982 (P=-21.36, B<sub>0</sub>=-2.78, L<sub>0</sub>=63.34)

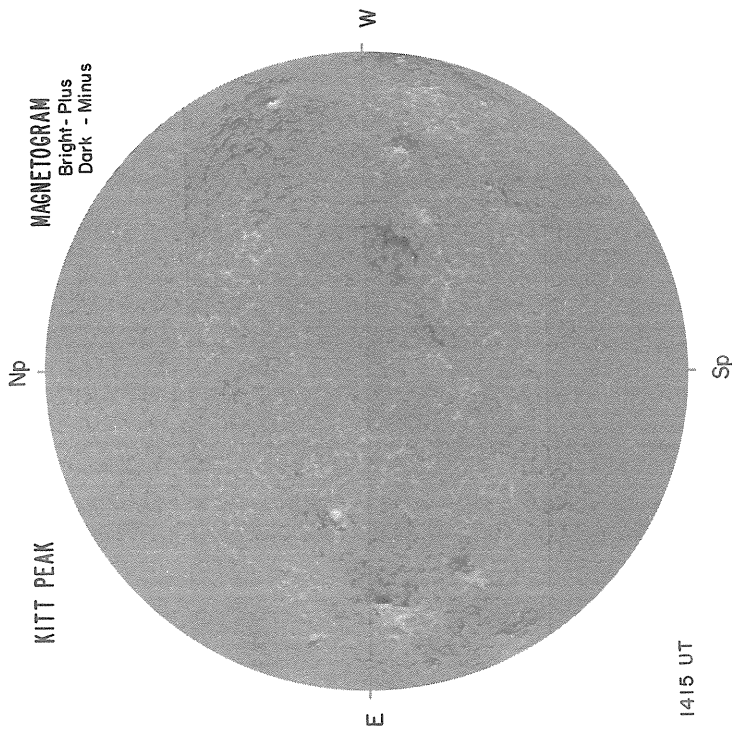
SACRAMENTO PEAK

CORONA  
5303 Å



1.15 R<sub>0</sub> 1426 UT  
1.35 R<sub>0</sub> 1417 UT  
1.55 R<sub>0</sub> 1434 UT

KITT PEAK

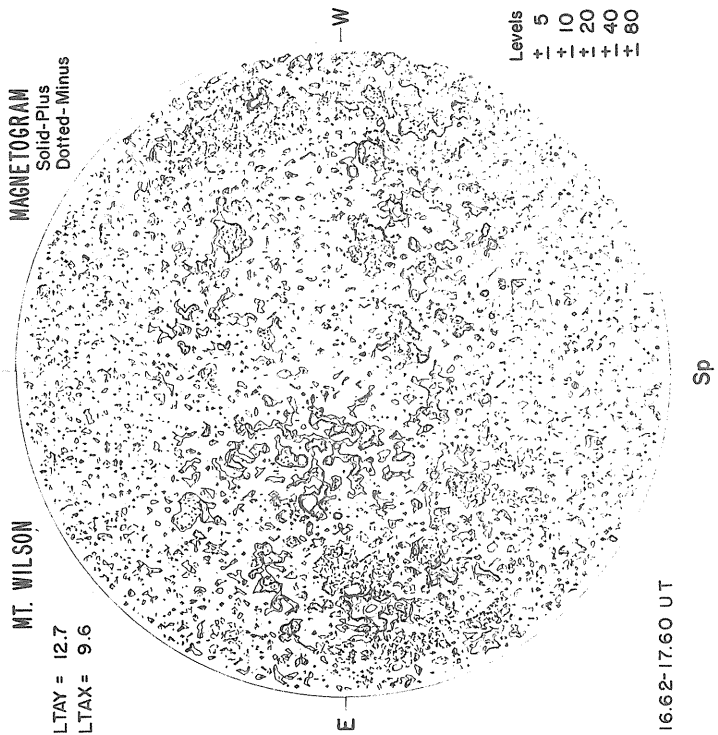


MAGNETOGRAM  
Bright-Plus  
Dark-Minus

1415 UT

MT. WILSON

DELTA Y = 12.7  
DELTA X = 9.6



MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

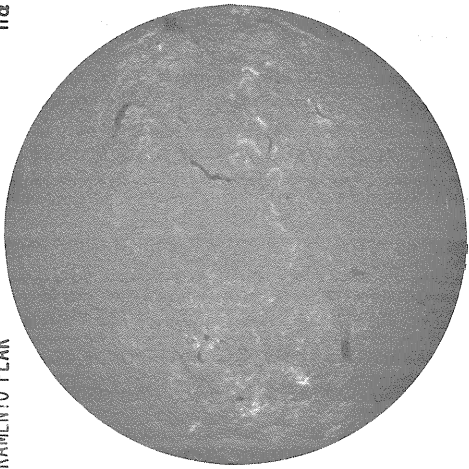
Levels  
+ 5  
+ 10  
+ 20  
+ 40  
+ 80

16.62-17.60 UT

14

SACRAMENTO PEAK

Np



E

1434 UT

H $\alpha$

BIG BEAR

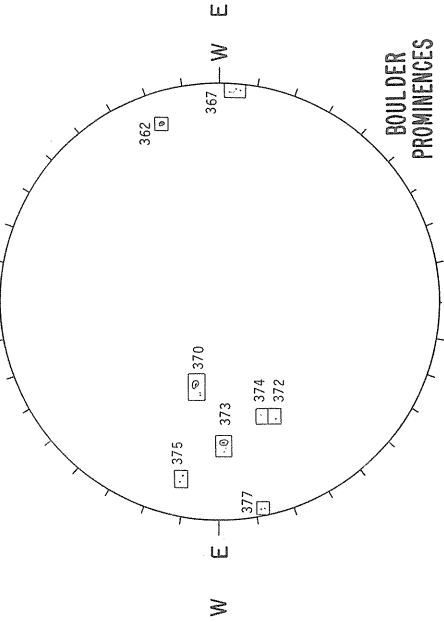
Np

SUNSPOTS

BIG BEAR

Np

ACTIVE REGIONS



NO DATA

W

BOULDER PROMINENCES

NO DATA

1730 UT

Sp

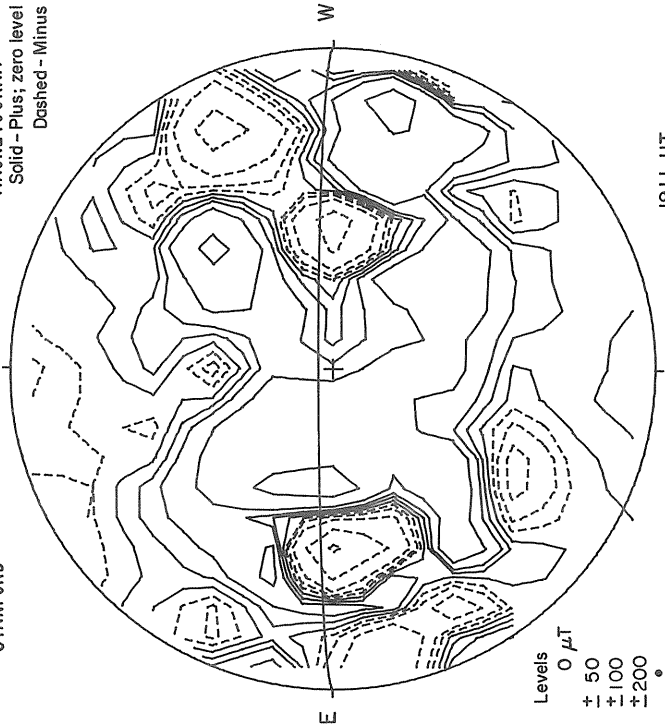
Sp

STANFORD

Np

MAGNETOGRAM

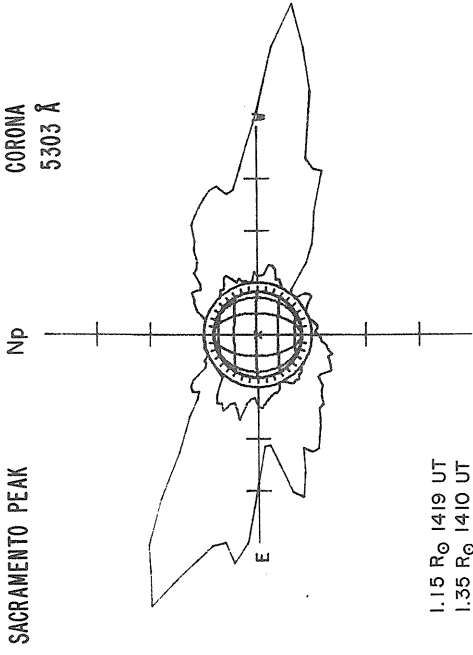
Solid - Plus; zero level  
Dashed - Minus



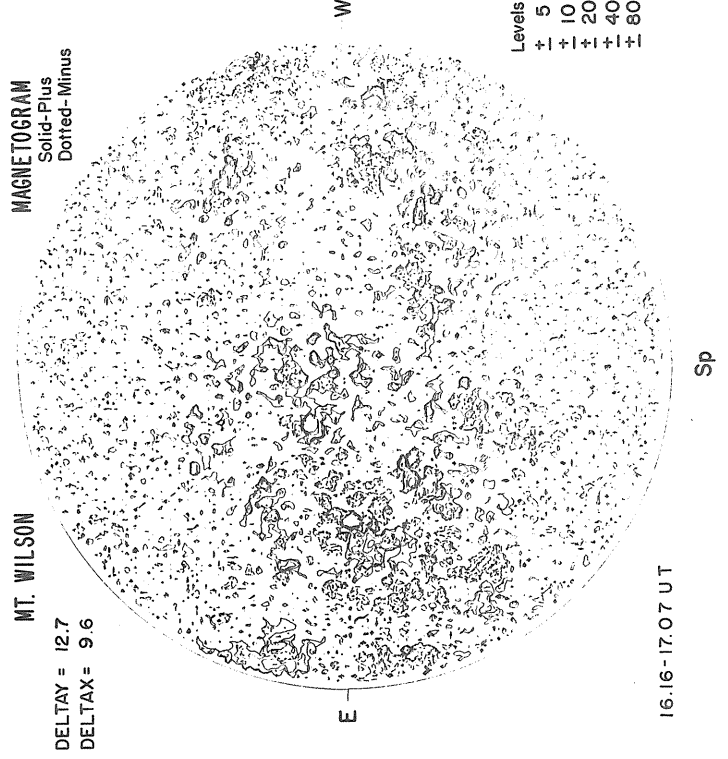
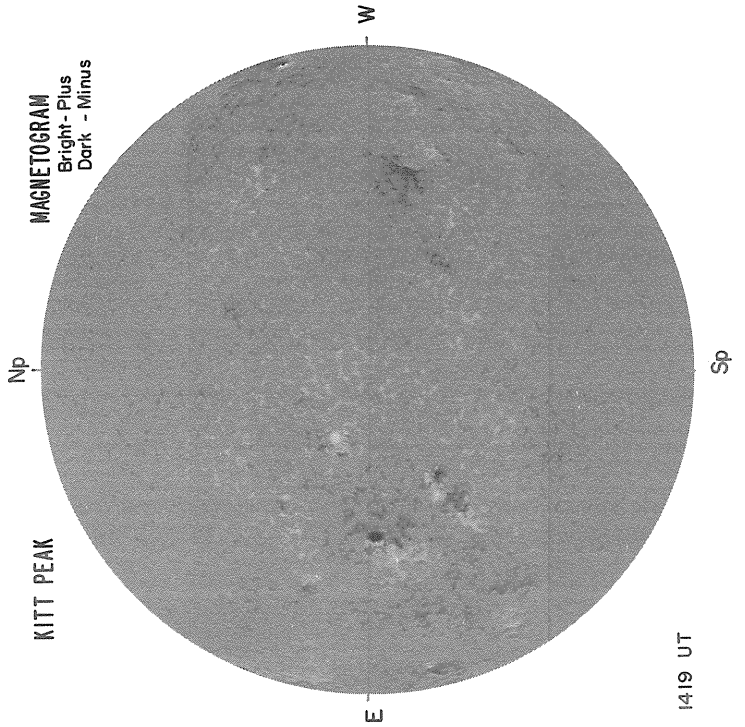
1911 UT

Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200  
•  
•

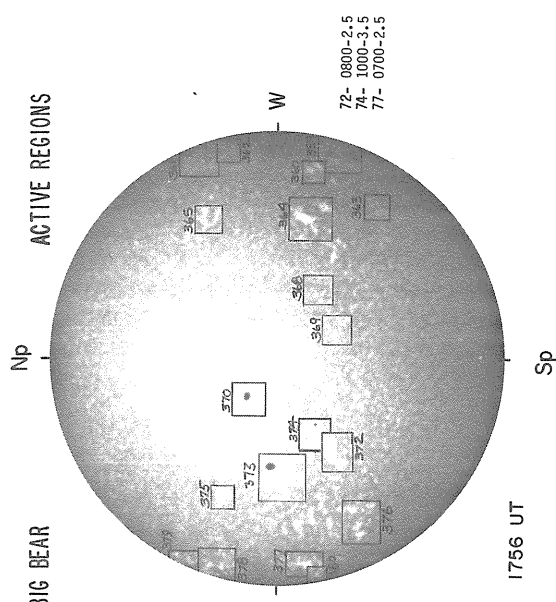
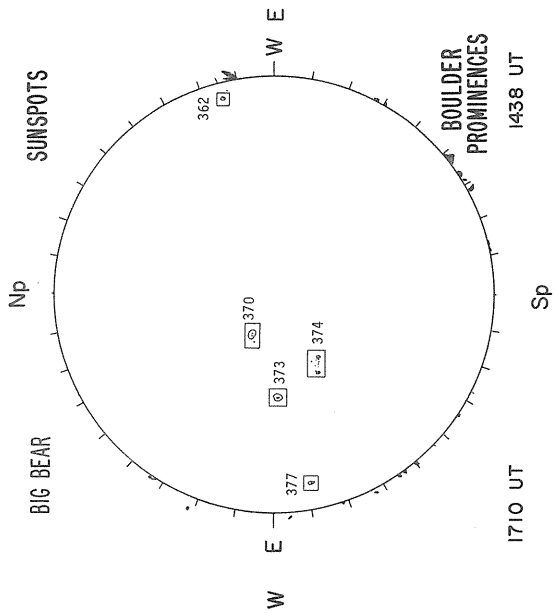
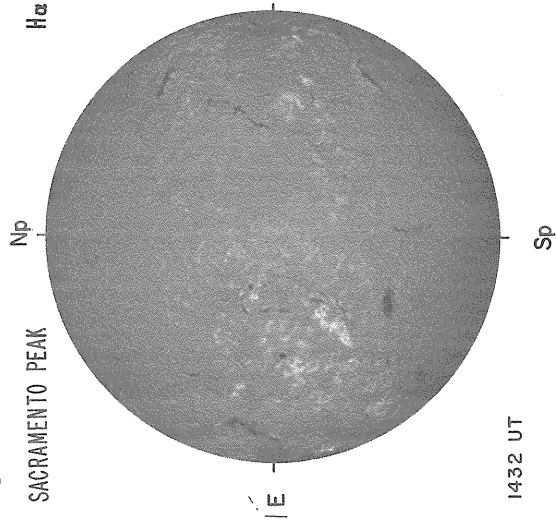
MAY 15, 1982 (P=-21.09, B<sub>0</sub>=-2.67, L<sub>0</sub>=50.11)



1.15 R<sub>0</sub> 1419 UT  
1.35 R<sub>0</sub> 1410 UT  
1.55 R<sub>0</sub>



15



STANFORD

Np

**BOULDER PROMINENCES**

MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus

1438 UT

1756 UT

E

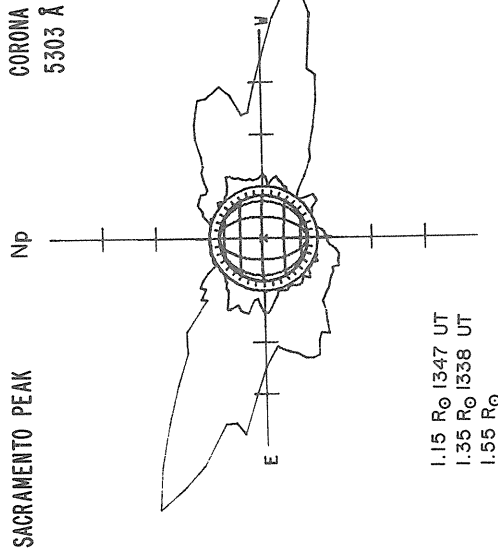
NO DATA

W

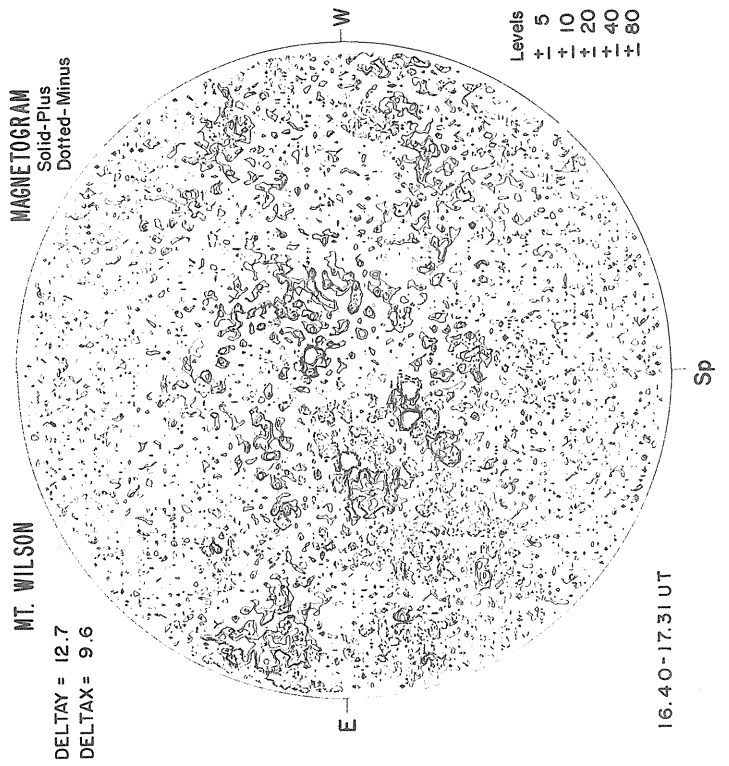
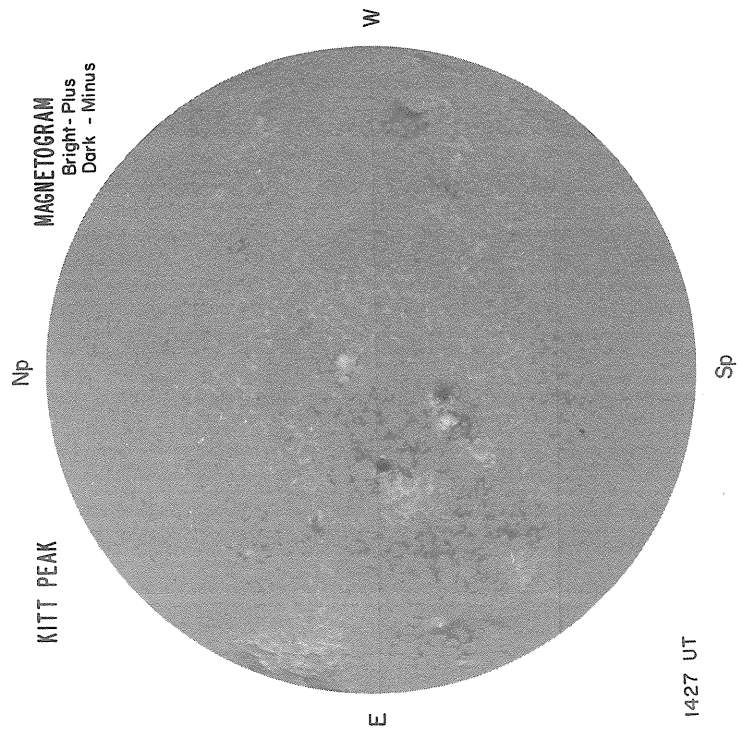
Levels  
0  $\mu$ T  
± 50  
± 100  
± 200  
•  
•

Sp

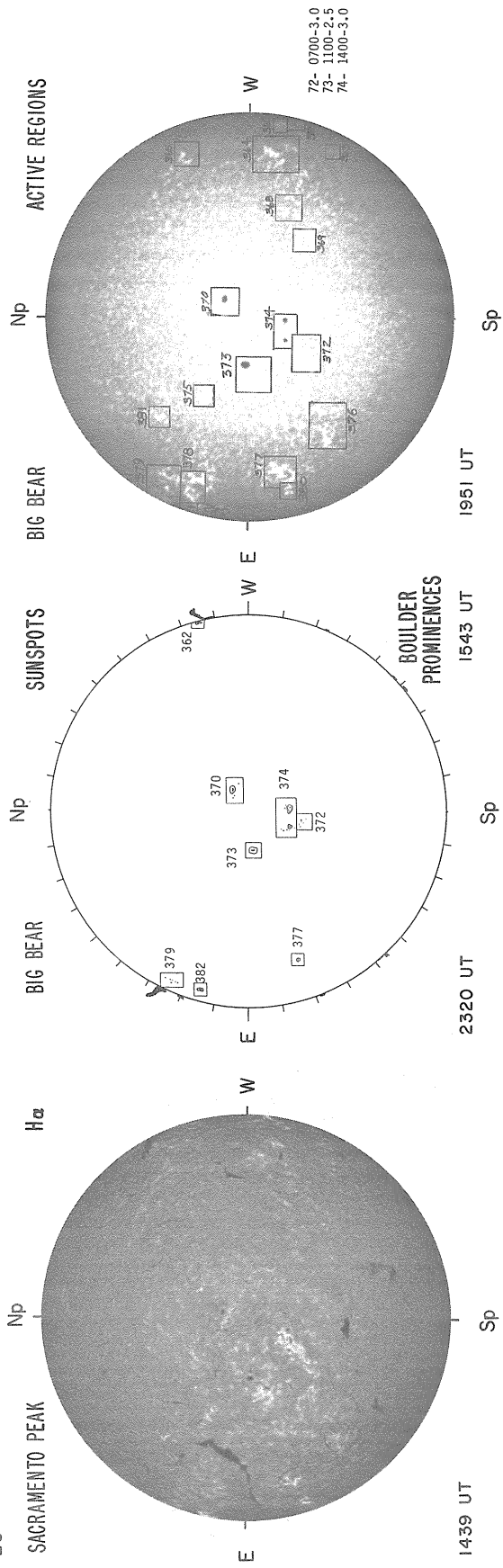
MAY 16, 1982 (P=-20.82, B<sub>0</sub> = -2.56, L<sub>0</sub> = 36.89)



1.15 R<sub>0</sub> 1347 UT  
1.35 R<sub>0</sub> 1338 UT  
1.55 R<sub>0</sub>



16



72- 0700-3.0  
73- 1100-2.5  
74- 1400-3.0

**MAGNETOGRAM**  
Solid - Plus; zero level  
Dashed - Minus

**STANFORD**

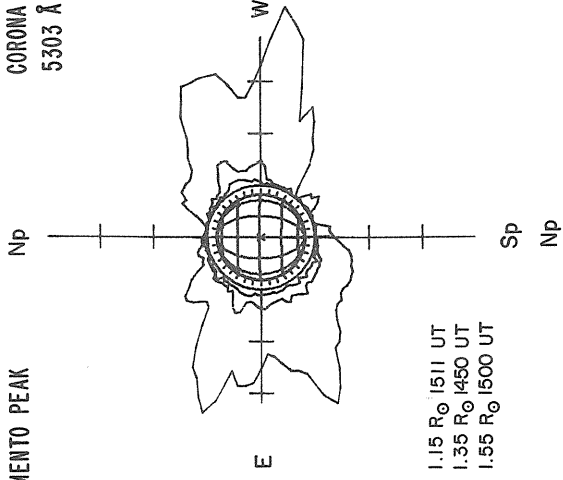
E NO DATA W

Levels  
0  $\mu$ T  
+ 50  
 $\pm$  100  
 $\pm$  200  
•  
•

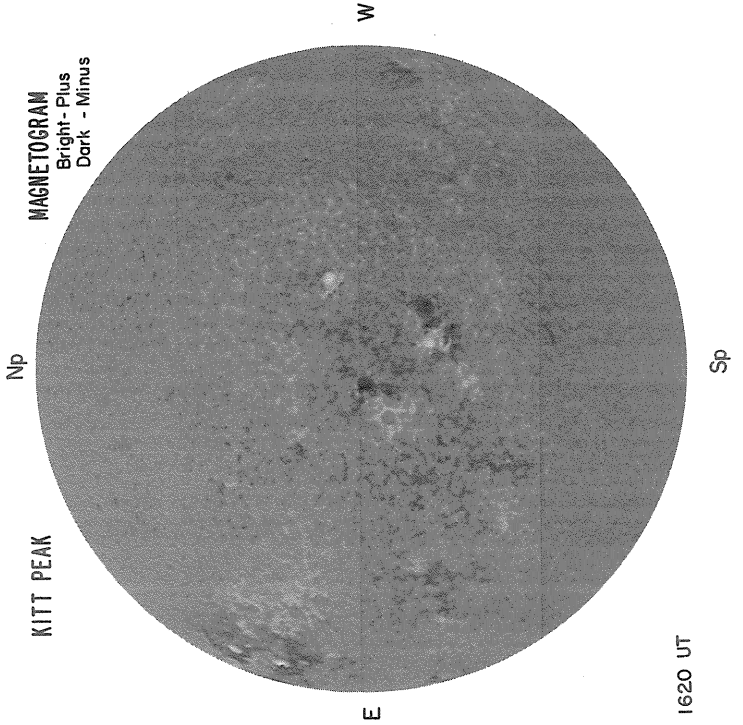
Sp

MAY 17, 1982 (P=-20.53, B<sub>o</sub> = -2.44, L<sub>o</sub> = 23.66)

SACRAMENTO PEAK  
CORONA  
5303 Å

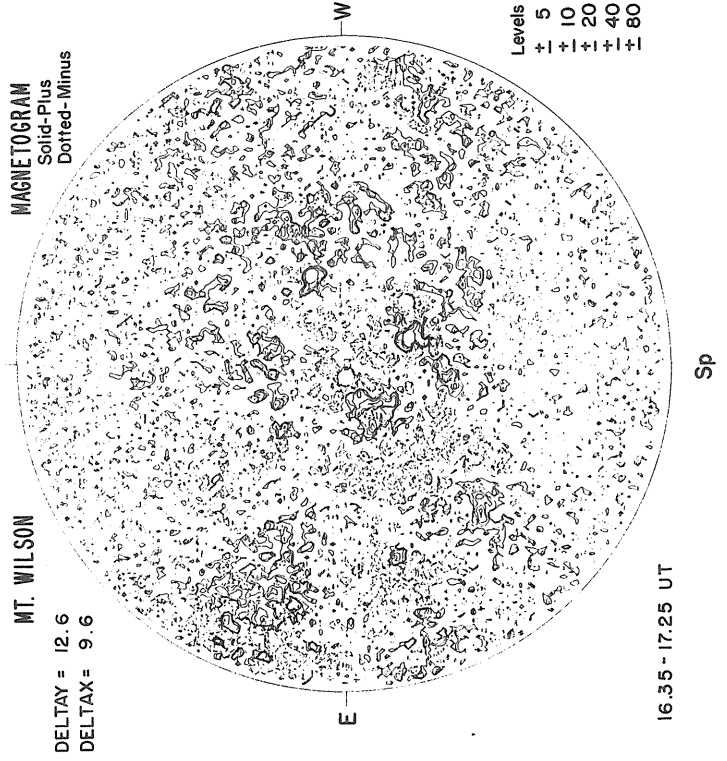


1.15 R<sub>⊙</sub> 1511 UT  
1.35 R<sub>⊙</sub> 1450 UT  
1.55 R<sub>⊙</sub> 1500 UT



MAGNETOGRAM  
Bright - Plus  
Dark - Minus

1620 UT

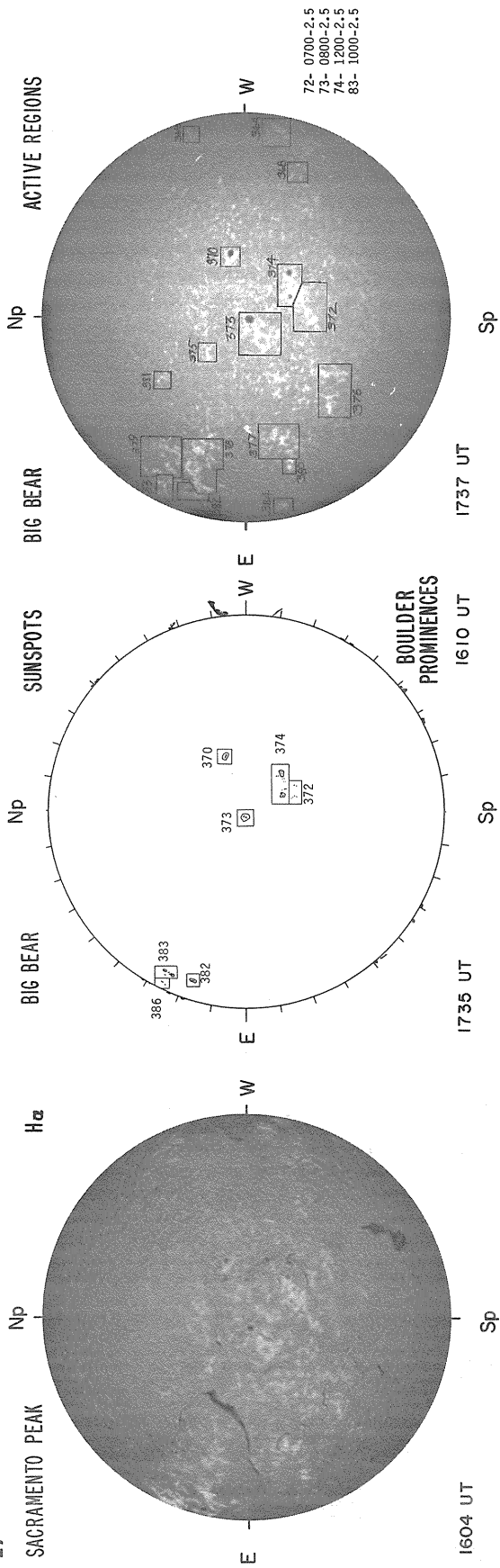


MT. WILSON

DELTA Y = 12.6  
DELTA X = 9.6

16.35 - 17.25 UT

17



STANFORD

Np

Sp

W

NO DATA

E

Levels  
 0  $\mu$ T  
 + 50  
 + 100  
 + 200  
 •  
 •

Sp

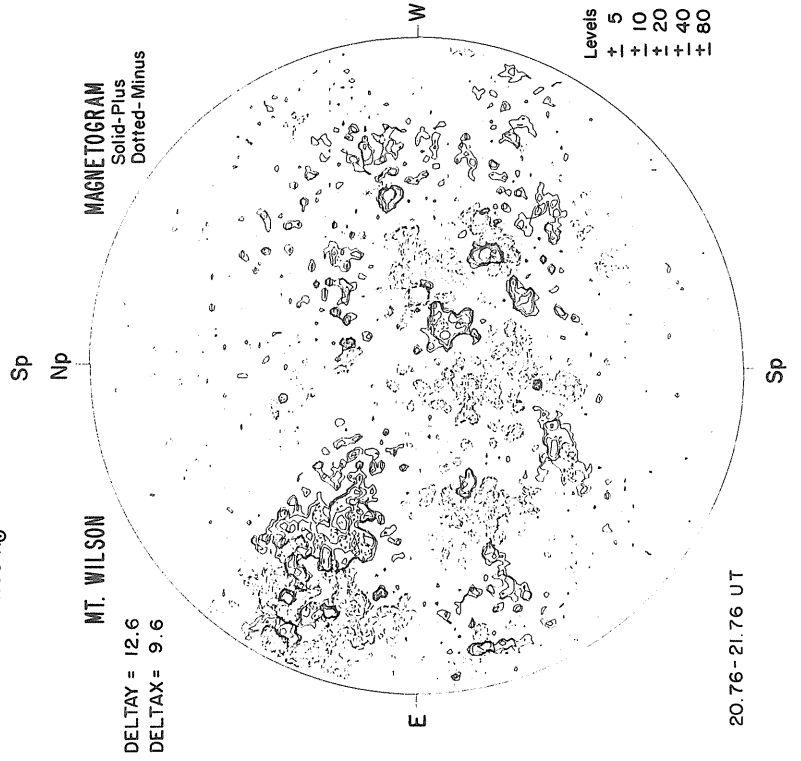
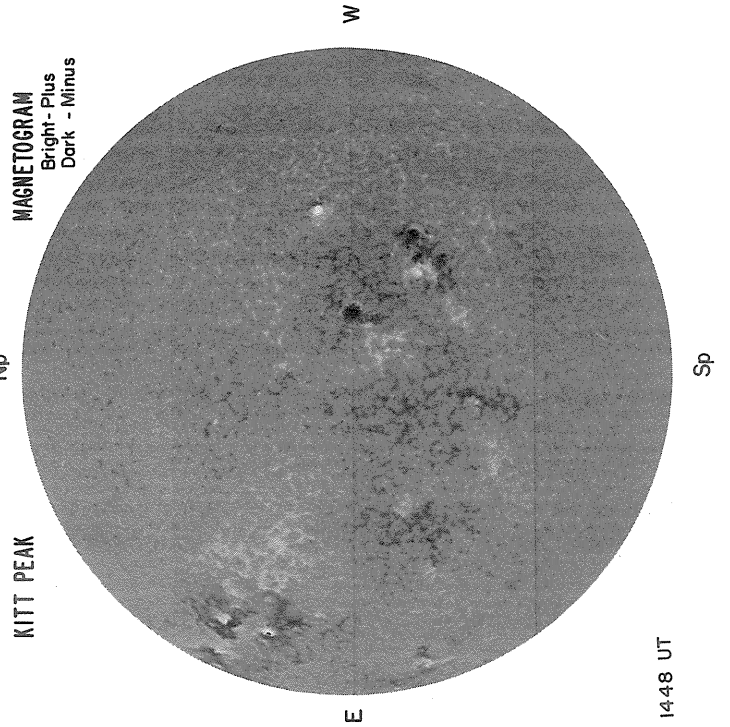


MAY 18, 1982 (P=-20.25, B<sub>0</sub>=-2.33, L<sub>0</sub>=10.43)

SACRAMENTO PEAK Np CORONA  
5303 Å

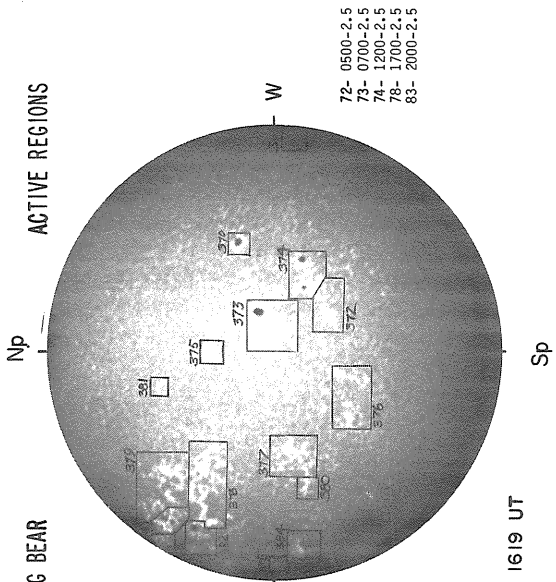
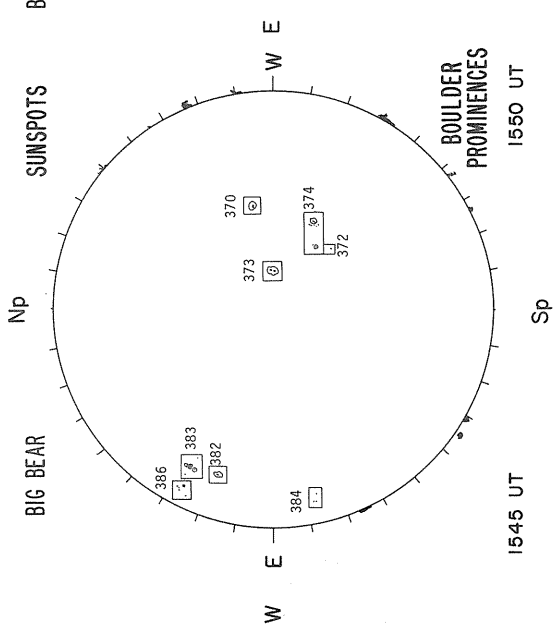
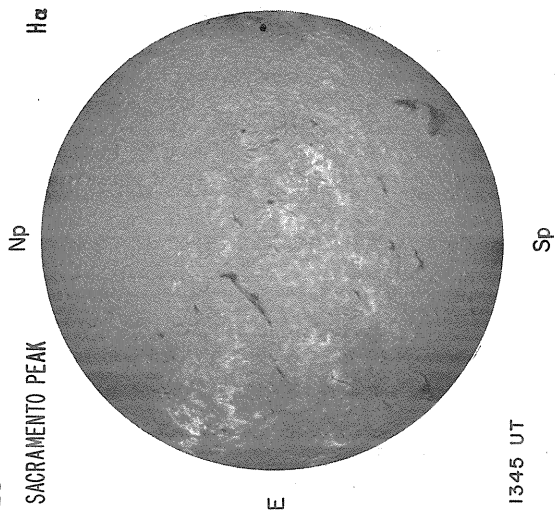
E NO DATA W

1.15 R<sub>0</sub>  
1.35 R<sub>0</sub>  
1.55 R<sub>0</sub>



DELTA TAY = 12.6  
DELTA TAX = 9.6

18



**BOULDER PROMINENCES**

**MAGNETOGRAM**  
Solid - Plus; zero level  
Dashed - Minus

**STANFORD**

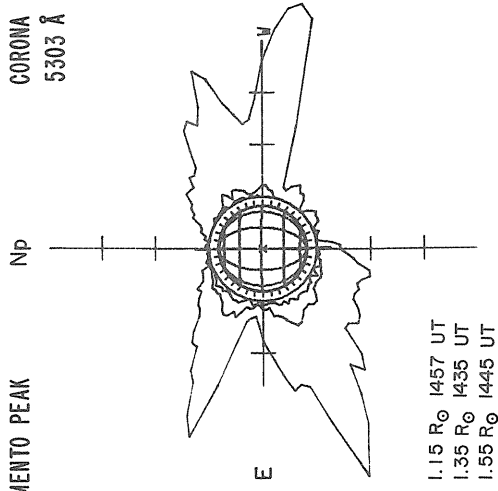
E NO DATA W

Levels  
0  $\mu$ T  
+ 50  
 $\pm$  100  
 $\pm$  200  
•  
•

Sp

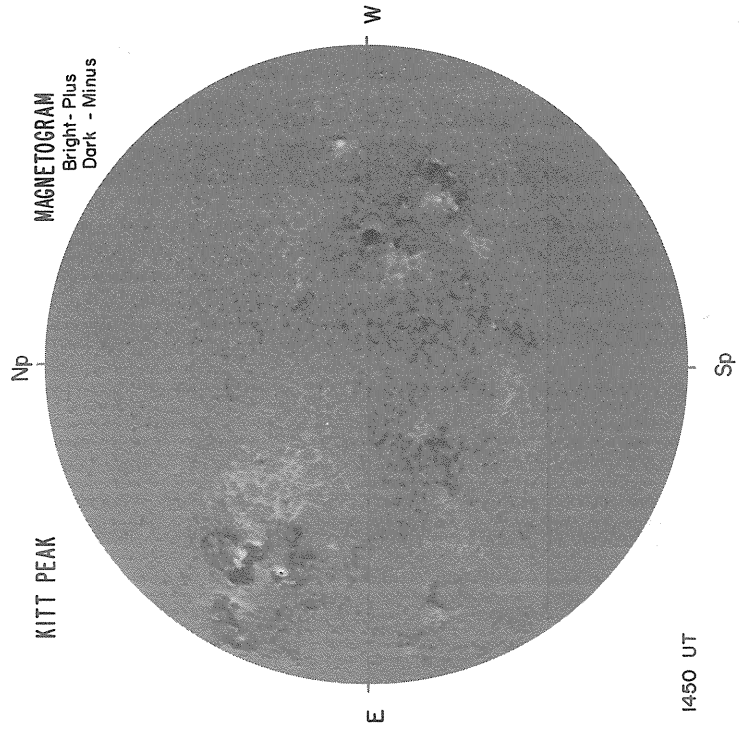
MAY 19, 1982 (P=-19.95, B<sub>0</sub>=-2.21, L<sub>0</sub>=357.21)

SACRAMENTO PEAK  
CORONA  
5303 Å



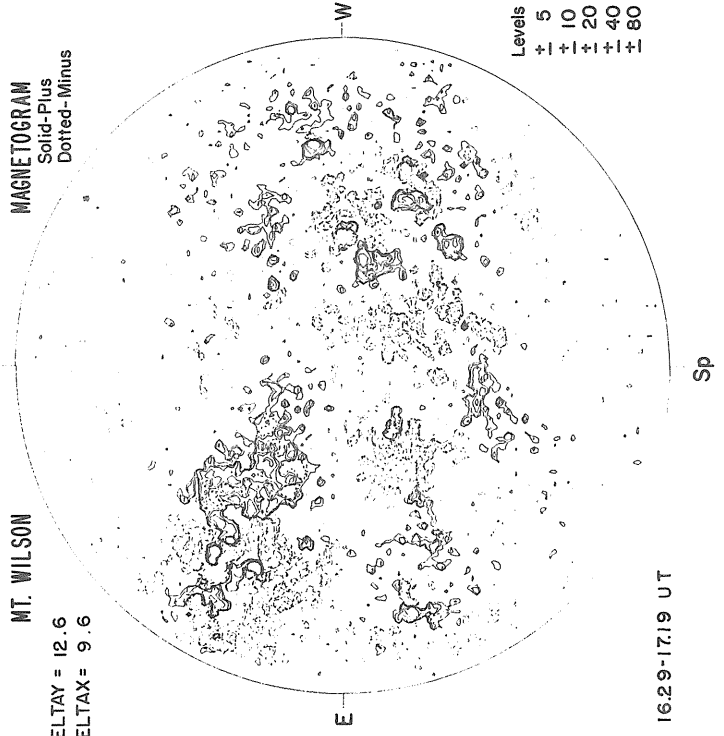
1.15 R<sub>0</sub> 1457 UT  
1.35 R<sub>0</sub> 1435 UT  
1.55 R<sub>0</sub> 1445 UT

KITT PEAK



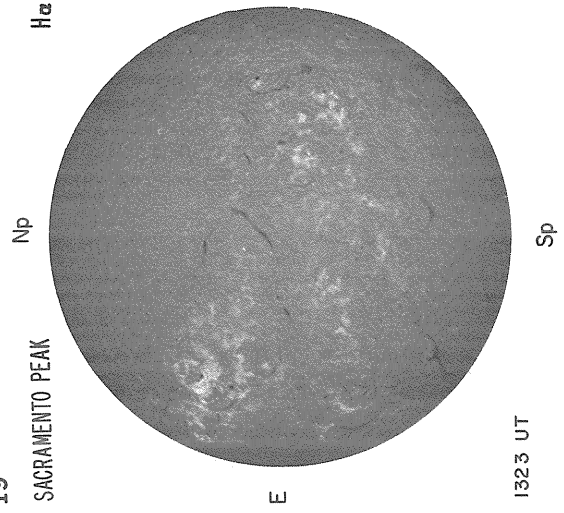
MT. WILSON

DELTA Y = 12.6  
DELTA X = 9.6

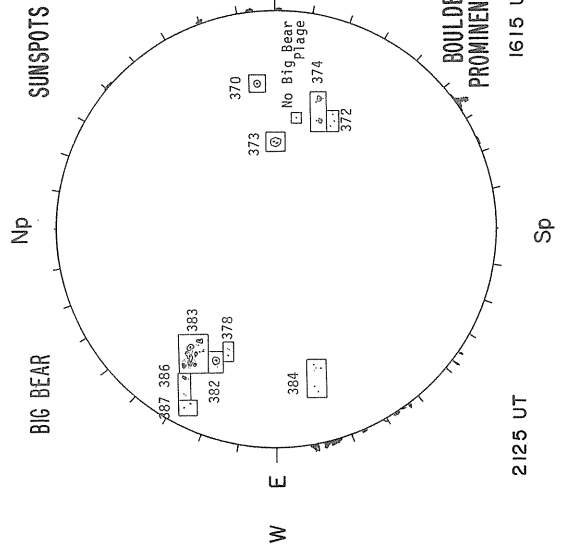


19

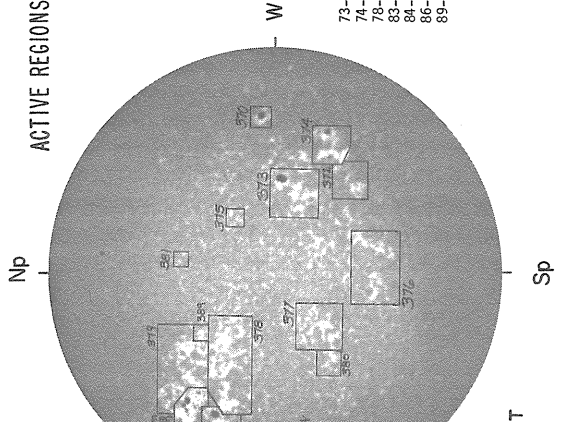
SACRAMENTO PEAK



BIG BEAR



BIG BEAR



- 73- 0700-2.5
- 74- 0900-3.0
- 78- 2300-2.5
- 83- 2800-3.5
- 84- 1100-2.5
- 86- 1800-2.5
- 89- 0100-2.5

BOULDER PROMINENCES

STANFORD

Np

MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus

E

NO DATA

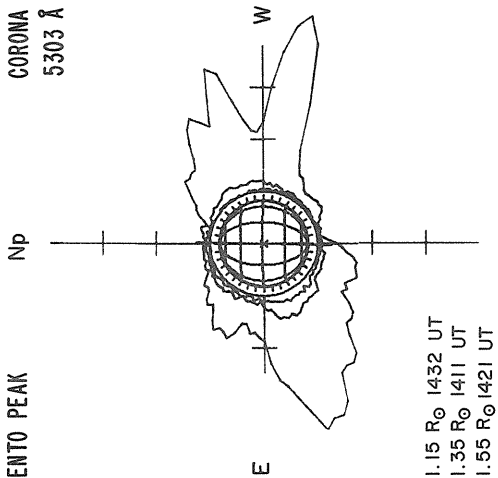
W

- Levels
- 0  $\mu$ T
  - $\pm$  50
  - $\pm$  100
  - $\pm$  200
  - 
  -

Sp

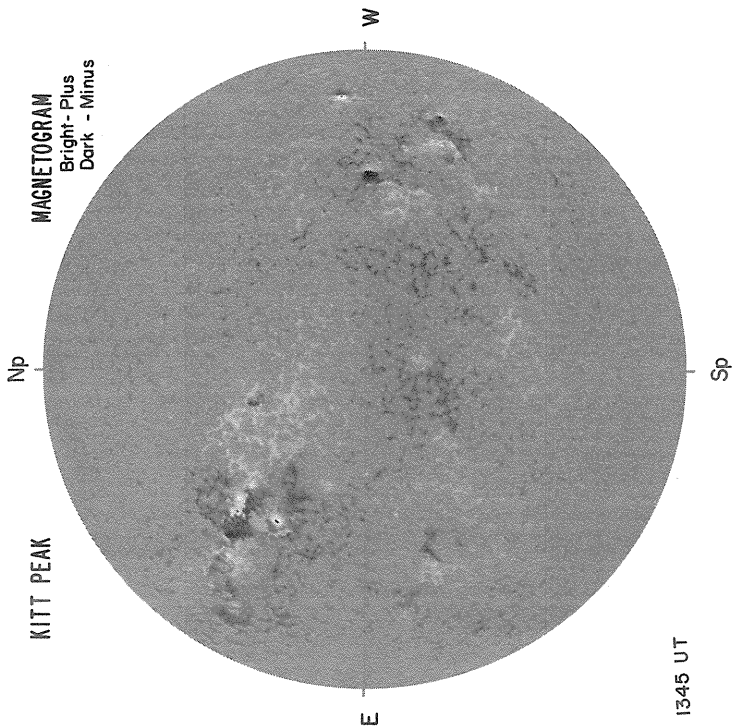
MAY 20, 1982 (P = -19.65, B<sub>0</sub> = -2.10, L<sub>0</sub> = 343.98)

SACRAMENTO PEAK  
CORONA  
5303 Å



1.15 R<sub>⊙</sub> 1432 UT  
1.35 R<sub>⊙</sub> 1411 UT  
1.55 R<sub>⊙</sub> 1421 UT

KITT PEAK

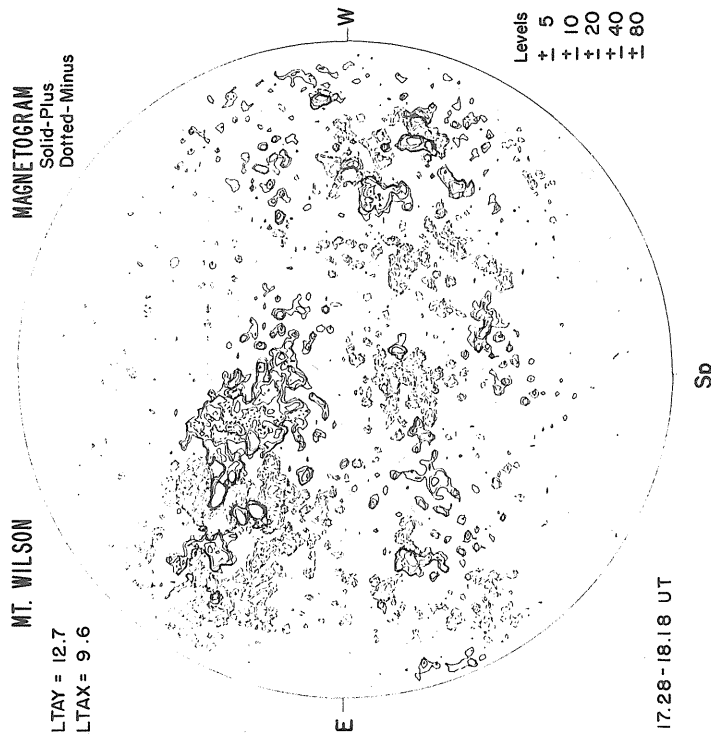


1345 UT

MAGNETOGRAM  
Bright - Plus  
Dark - Minus

MT. WILSON

DELTA TAY = 12.7  
DELTA TAX = 9.6



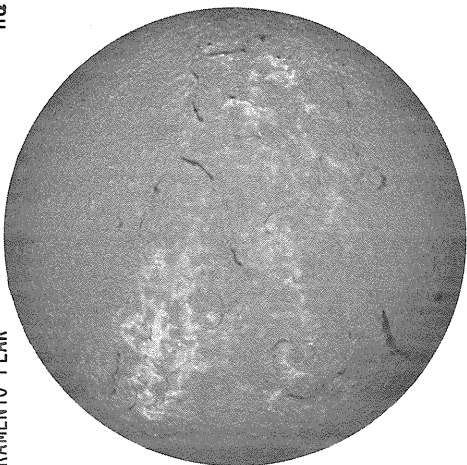
Levels  
+ 5  
+ 10  
+ 20  
+ 40  
+ 80

17.28-18.18 UT

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

20

SACRAMENTO PEAK



H $\alpha$

BIG BEAR

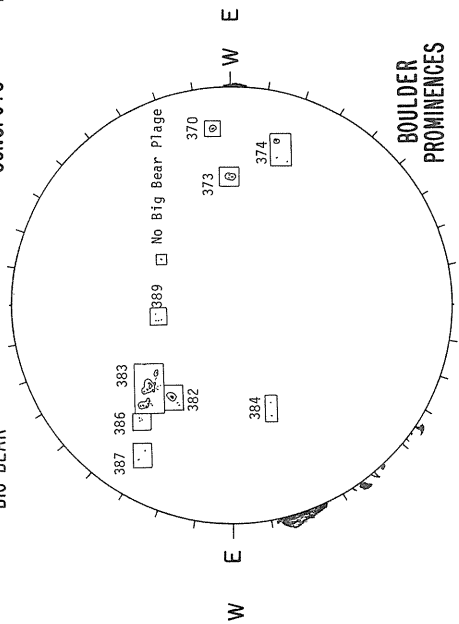
Np

SUNSPOTS

BIG BEAR

Np

ACTIVE REGIONS



BOULDER PROMINENCES

1445 UT

1705 UT

1443 UT

NO DATA

W

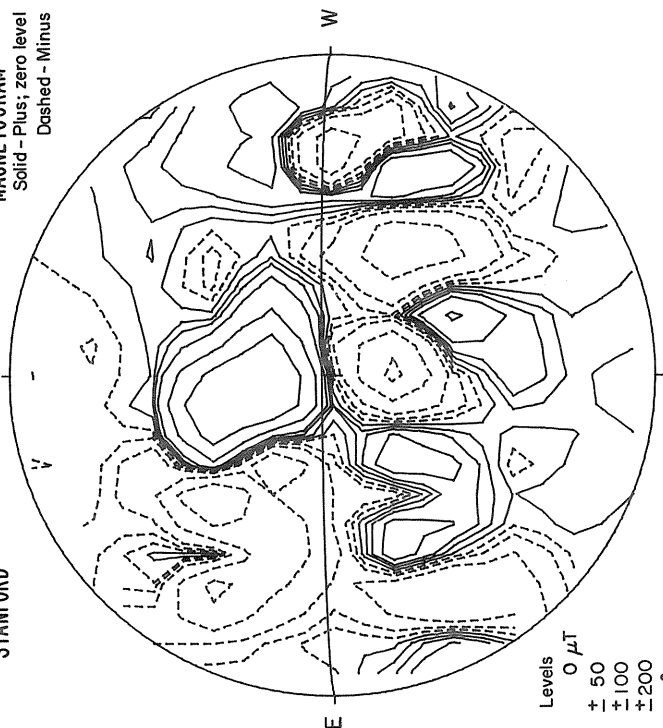
Sp

Sp

STANFORD

Np

MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus



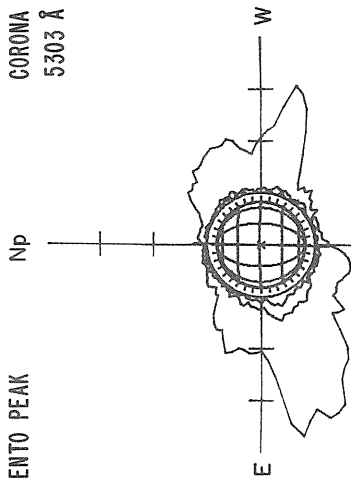
Levels  
0  $\mu$ T  
± 50  
± 100  
± 200

2316 UT

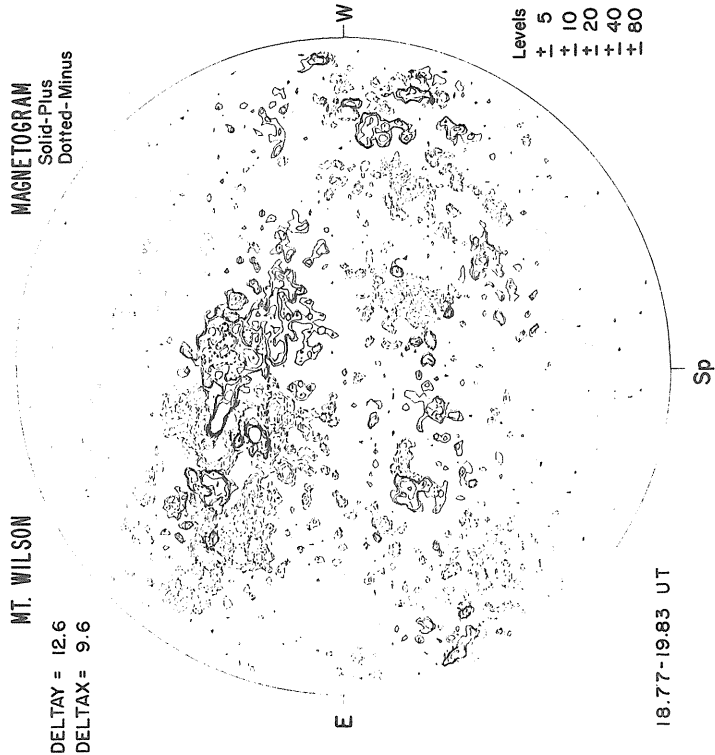
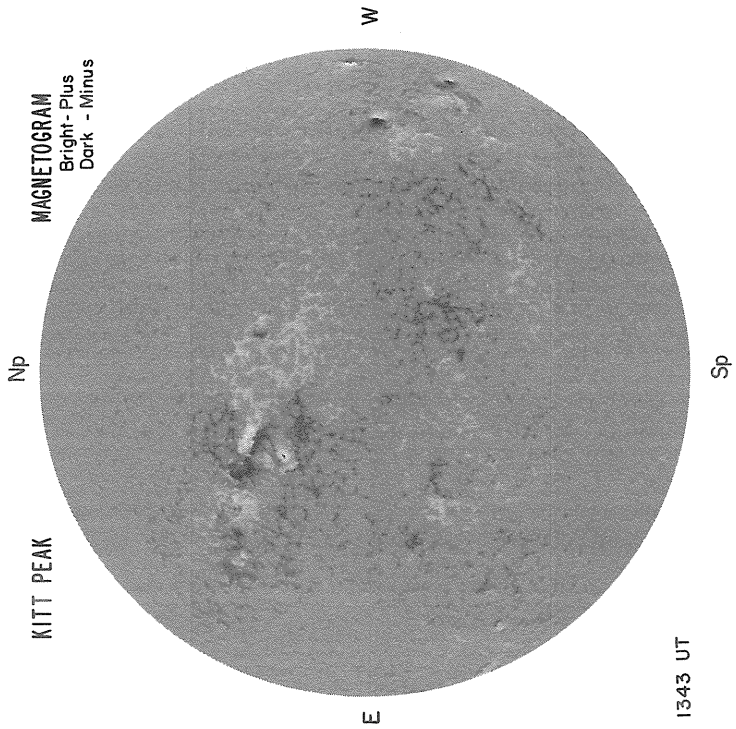
Sp

MAY 21, 1982 (P=-19.34, B<sub>0</sub>=-1.98, L<sub>0</sub>=330.75)

SACRAMENTO PEAK  
CORONA  
5303 Å

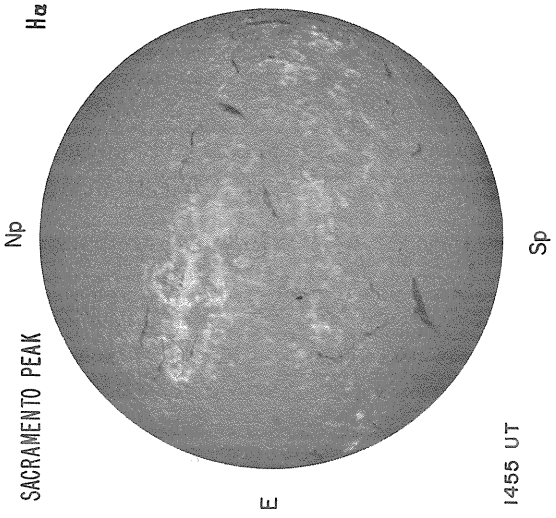


1.15R<sub>0</sub> 1403 UT  
1.35R<sub>0</sub> 1344 UT  
1.55R<sub>0</sub> 1353 UT

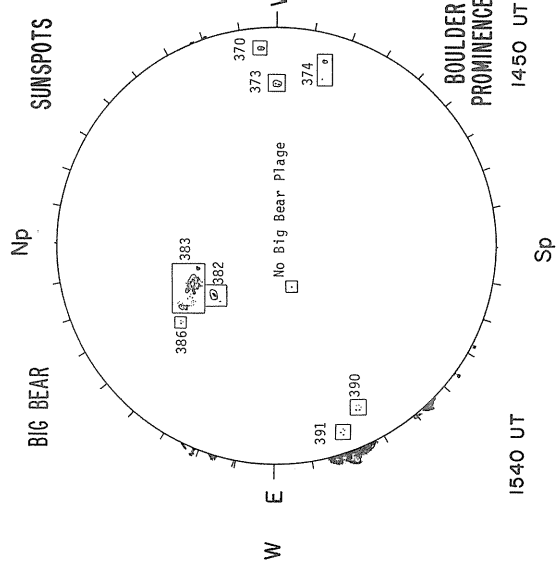


21

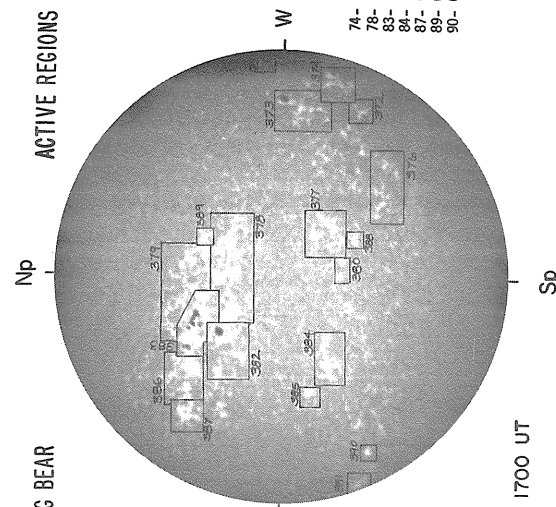
SACRAMENTO PEAK



BIG BEAR



BIG BEAR



ACTIVE REGIONS

- 74- 0900-2.5
- 78- 3000-2.5
- 83- 3000-3.5
- 84- 0800-2.5
- 87- 0700-2.5
- 89- 0100-2.5
- 90- 0200-3.0

STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level  
Dashed - Minus

BOULDER PROMINENCES

1450 UT

1700 UT

E

NO DATA

W

Levels  
0  $\mu$ T

$\pm$  50

$\pm$  100

$\pm$  200

•••

Sp



MAY 22, 1982 (P = -19.03, B<sub>0</sub> = -1.86, L<sub>0</sub> = 317.52)

CORONA  
5303 Å

Np

SACRAMENTO PEAK

W

NO DATA

E

1.15 R<sub>☉</sub>  
1.35 R<sub>☉</sub>  
1.55 R<sub>☉</sub>

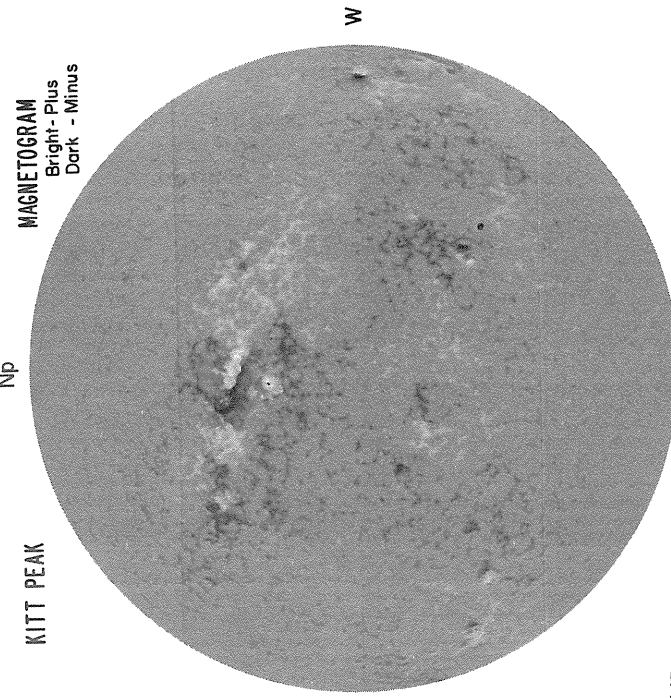
Sp

Np

KITT PEAK

Np

MAGNETOGRAM  
Bright - Plus  
Dark - Minus



MT. WILSON

DELTA Y =  
DELTA X =

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

NO DATA

E

W

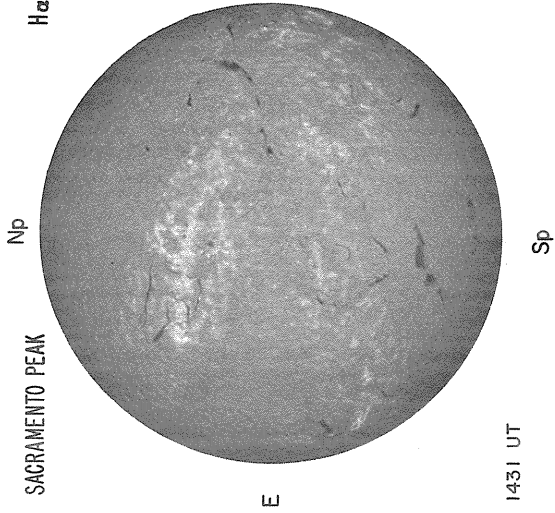
Levels  
+ 5  
+ 10  
+ 20  
+ 40  
+ 80

1343 UT

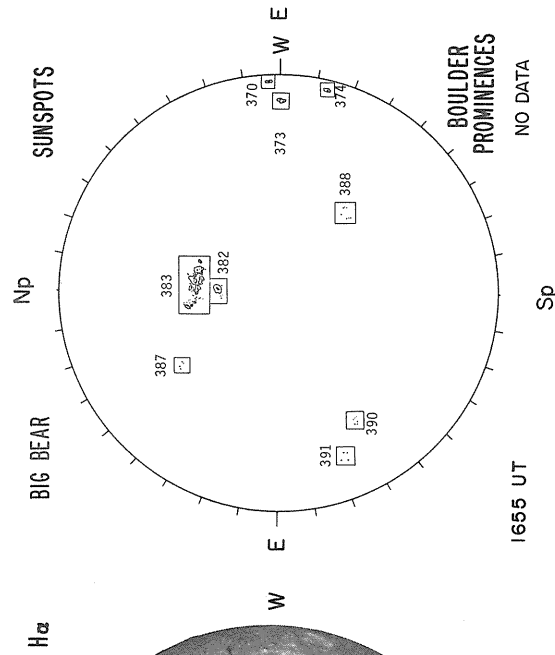
Sp

22

SACRAMENTO PEAK

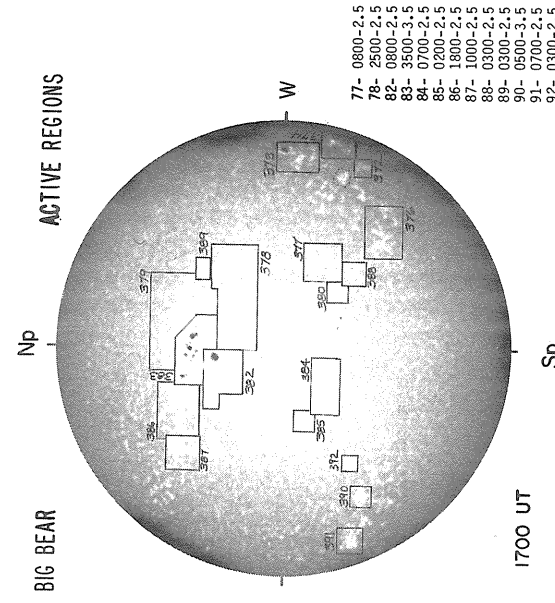


BIG BEAR



BIG BEAR

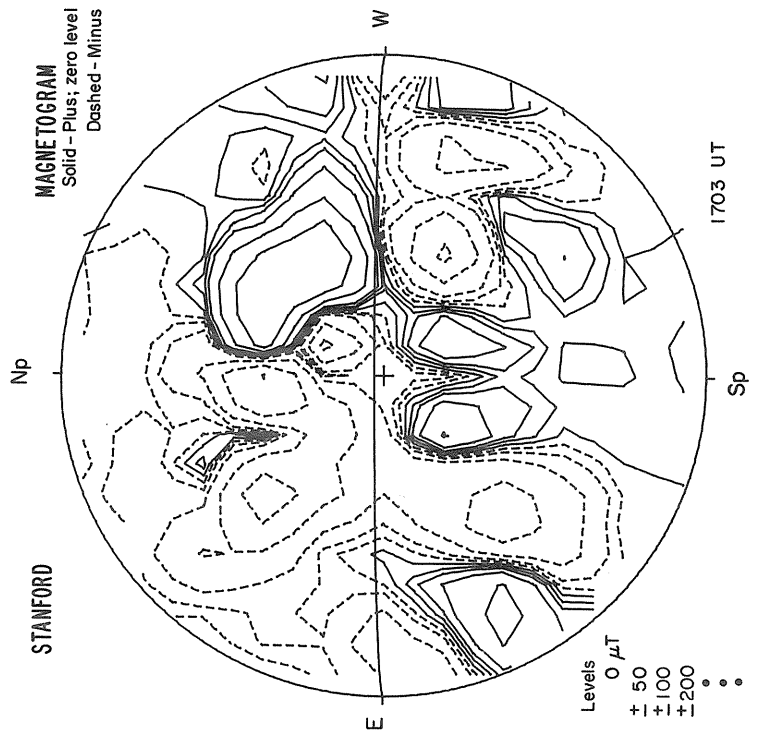
ACTIVE REGIONS



- 77- 0800-2.5
- 78- 2500-2.5
- 82- 0500-2.5
- 83- 3500-3.5
- 84- 0700-2.5
- 85- 0200-2.5
- 86- 1600-2.5
- 87- 1000-2.5
- 88- 0300-2.5
- 89- 0500-3.5
- 91- 0700-2.5
- 92- 0300-2.5

BOULDER PROMINENCES

NO DATA

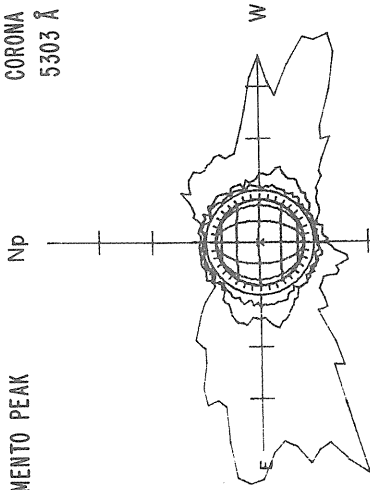


MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus

Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200  
•  
•

MAY 23, 1982 (P=-18.7I, B<sub>0</sub>=-1.74, L<sub>0</sub>=304.29)

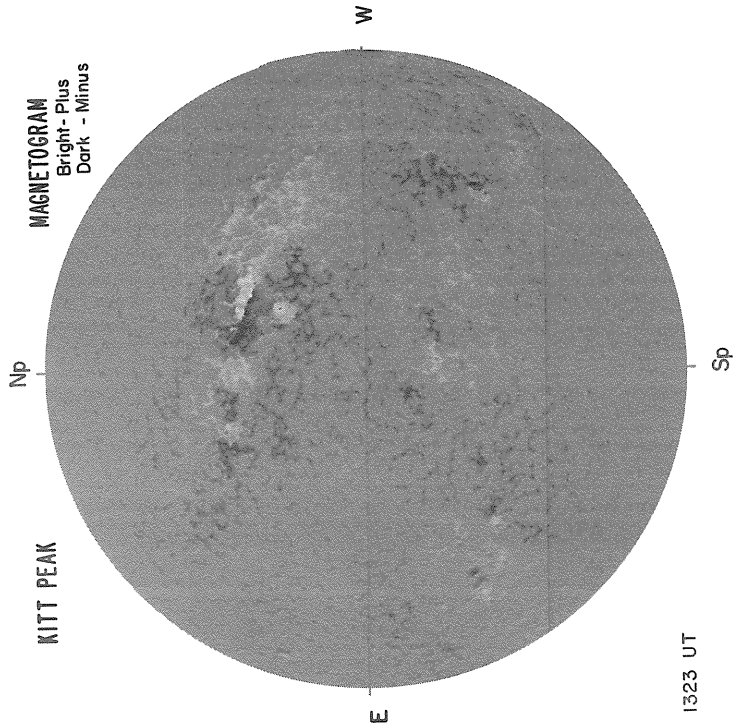
SACRAMENTO PEAK  
CORONA  
5303 Å



1.15 R<sub>0</sub> 1553 UT  
1.35 R<sub>0</sub> 1524 UT  
1.55 R<sub>0</sub> 1534 UT

MT. WILSON

DELTA TAY =  
DELTA TAX =



MAGNETOGRAM  
Bright - Plus  
Dark - Minus

MAGNETOGRAM  
Solid - Plus  
Dotted - Minus

W

NO DATA

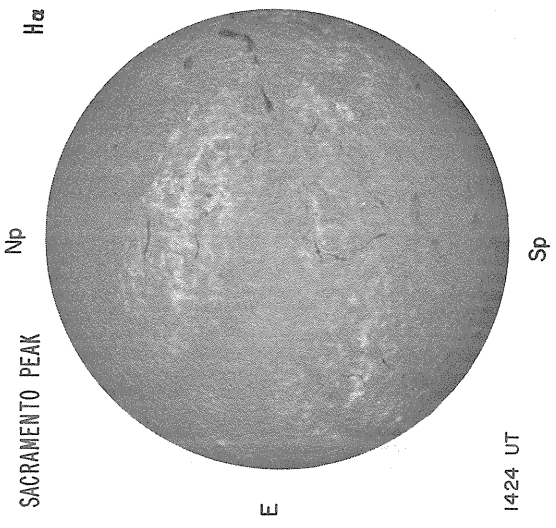
E

Levels  
± 5  
± 10  
± 20  
± 40  
± 80

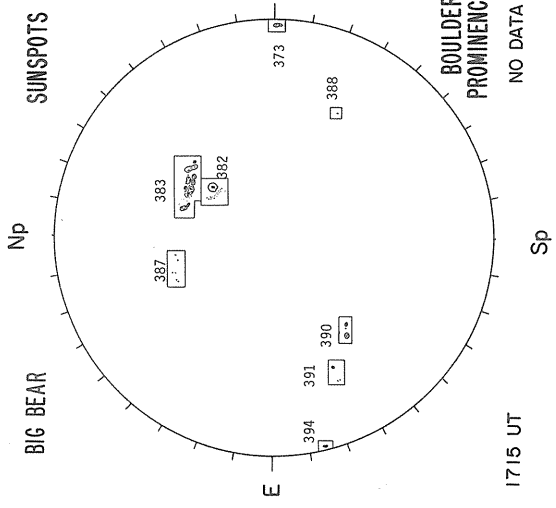
Sp

23

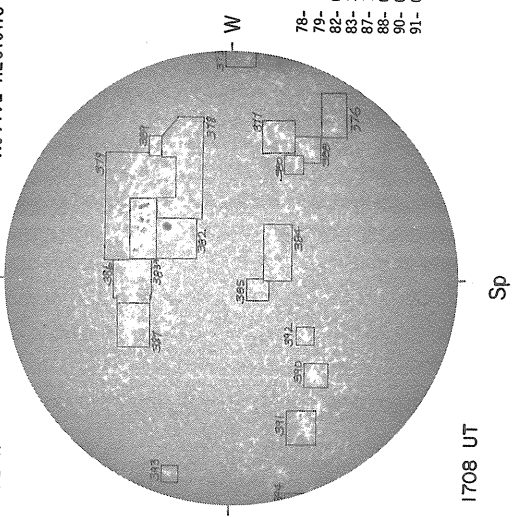
SACRAMENTO PEAK



BIG BEAR



BIG BEAR



- 78- 2500-2.5
- 79- 2400-2.5
- 82- 0600-2.5
- 83- 3200-3.5
- 87- 1100-2.5
- 88- 0400-2.5
- 90- 0600-3.5
- 91- 0700-2.5

BOULDER PROMINENCES

NO DATA

STANFORD

Np

MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus

E

NO DATA

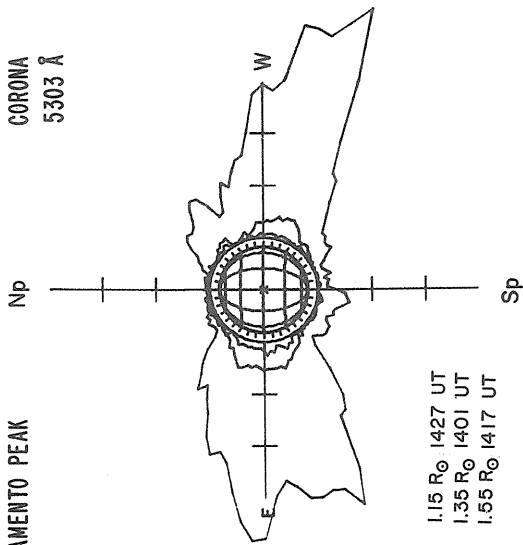
W

- Levels
- 0  $\mu$ T
  - + 50
  - $\pm$  100
  - + 200
  - 
  -

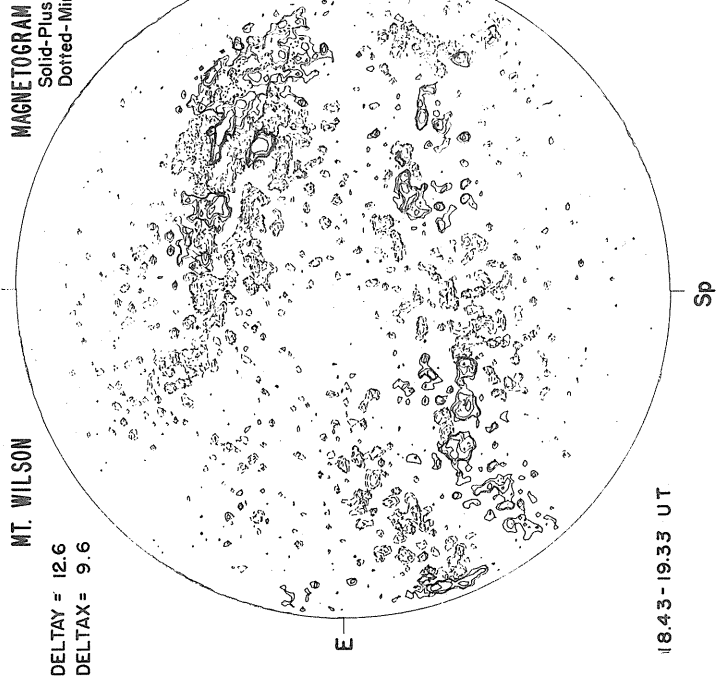
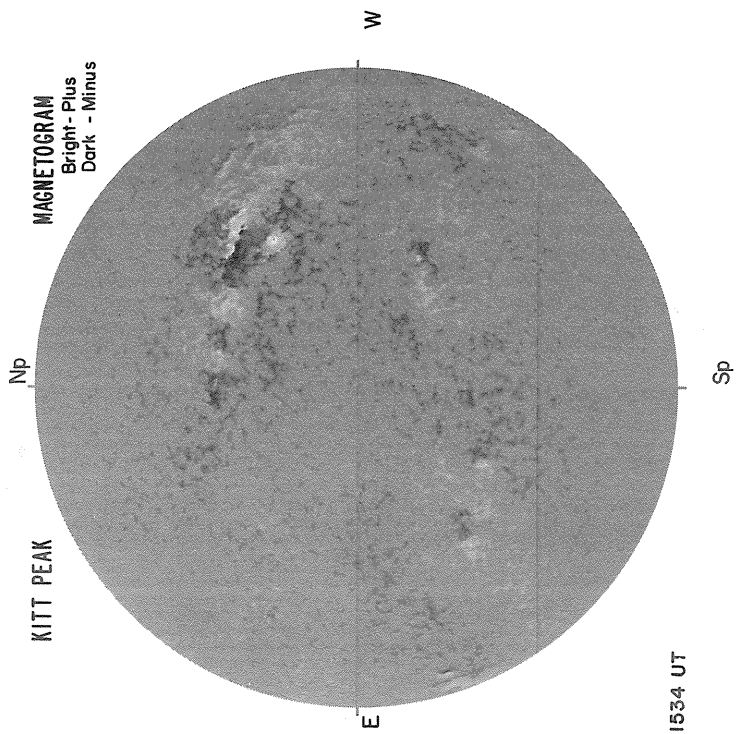
Sp

MAY 24, 1982 (P=-18.38, B<sub>0</sub>=-1.63, L<sub>0</sub>= 291.06)

SACRAMENTO PEAK  
CORONA  
5303 Å

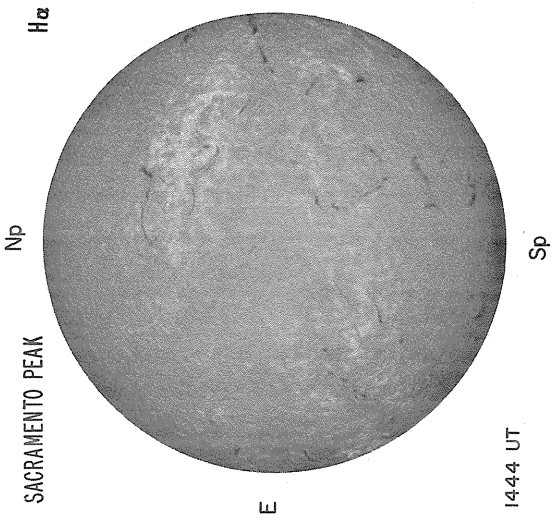


1.15 R<sub>0</sub> 1427 UT  
1.35 R<sub>0</sub> 1401 UT  
1.55 R<sub>0</sub> 1417 UT



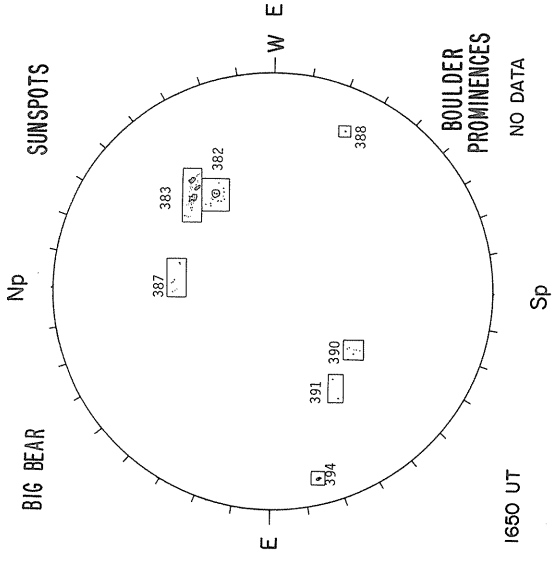
24

SACRAMENTO PEAK



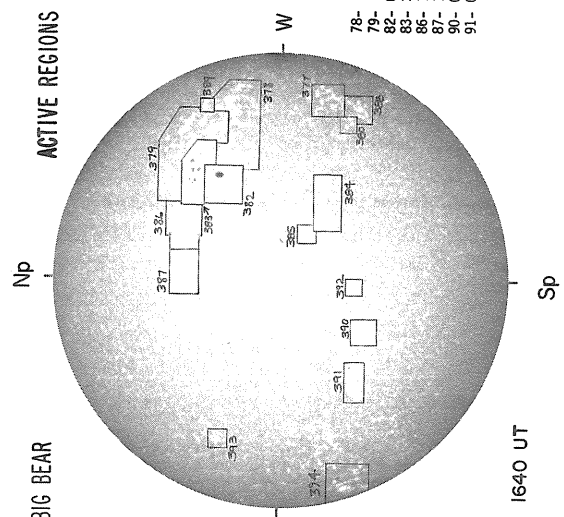
H $\alpha$

BIG BEAR



SUNSPOTS

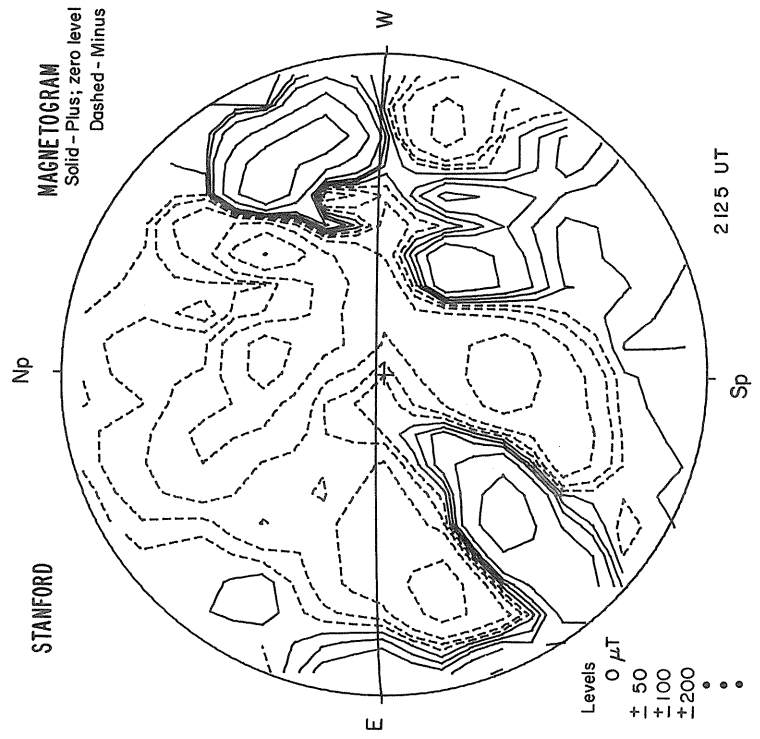
BIG BEAR



ACTIVE REGIONS

- 78- 2500-3.0
- 79- 2500-2.5
- 82- 0800-2.5
- 83- 3400-3.5
- 86- 1800-2.5
- 87- 1000-2.5
- 90- 0600-2.5
- 91- 0700-2.5

STANFORD



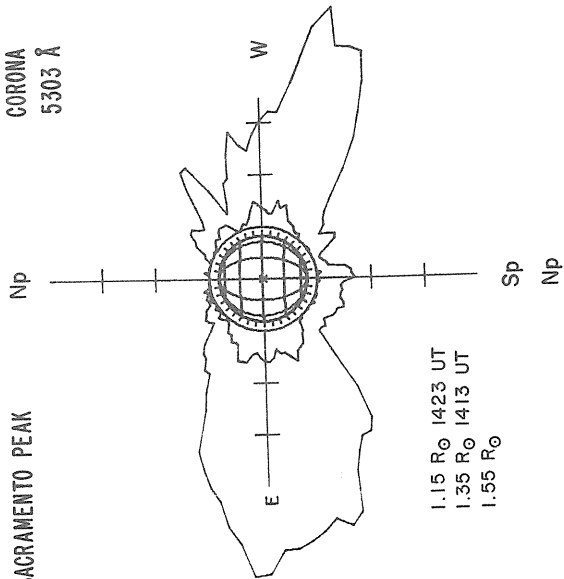
MAGNETOGRAM

- Solid - Plus; zero level
- Dashed - Minus

- Levels
- 0  $\mu$ T
  - $\pm$  50
  - $\pm$  100
  - $\pm$  200

MAY 25, 1982 (P=-18.05, B<sub>0</sub>=-1.51, L<sub>0</sub>=277.83)

SACRAMENTO PEAK  
CORONA  
5303 Å

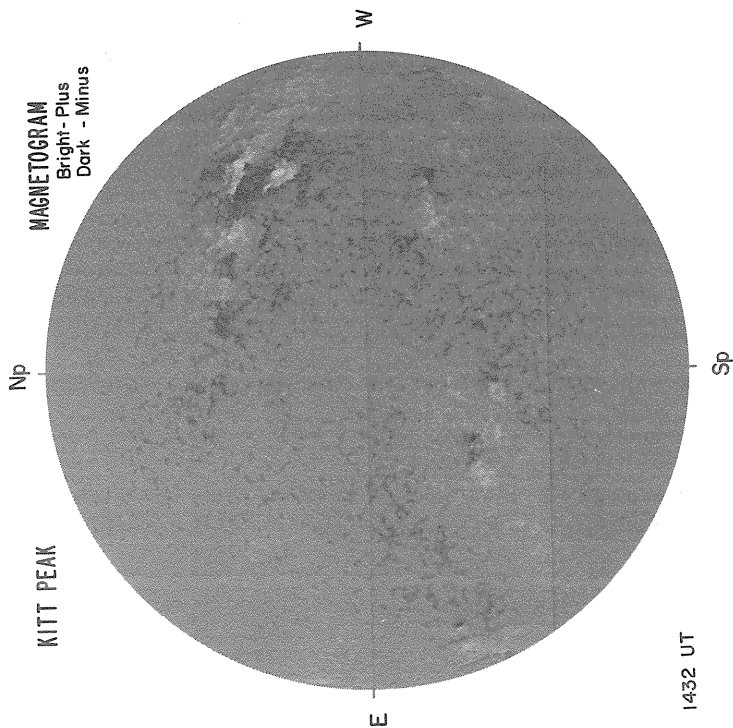


1.15 R<sub>⊙</sub> | 423 UT  
1.35 R<sub>⊙</sub> | 413 UT  
1.55 R<sub>⊙</sub>

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

MT. WILSON

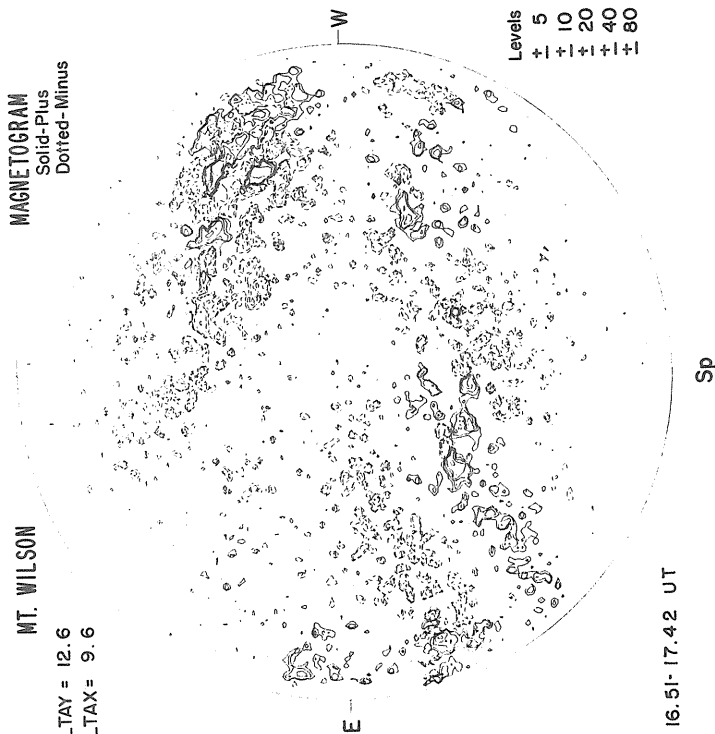
DELTA Y = 12.6  
DELTA X = 9.6



MAGNETOGRAM  
Bright - Plus  
Dark - Minus

KITT PEAK

1432 UT



MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

MT. WILSON

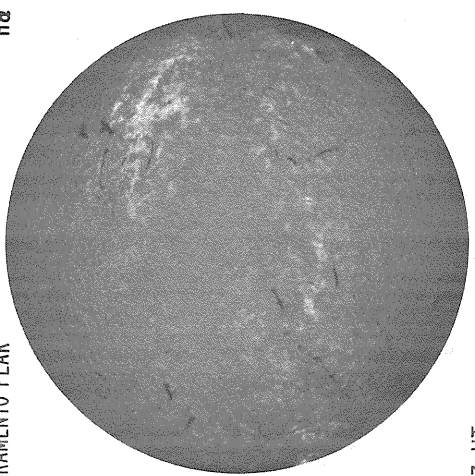
DELTA Y = 12.6  
DELTA X = 9.6

16.51-17.42 UT

25

SACRAMENTO PEAK

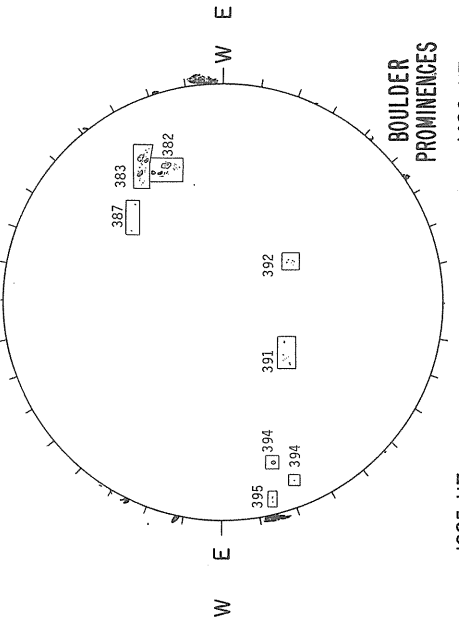
Np



H $\alpha$

BIG BEAR

Np



SUNSPOTS

BOULDER PROMINENCES

BIG BEAR

Np

NO DATA

W

ACTIVE REGIONS

1433 UT

1605 UT

1420 UT

Sp

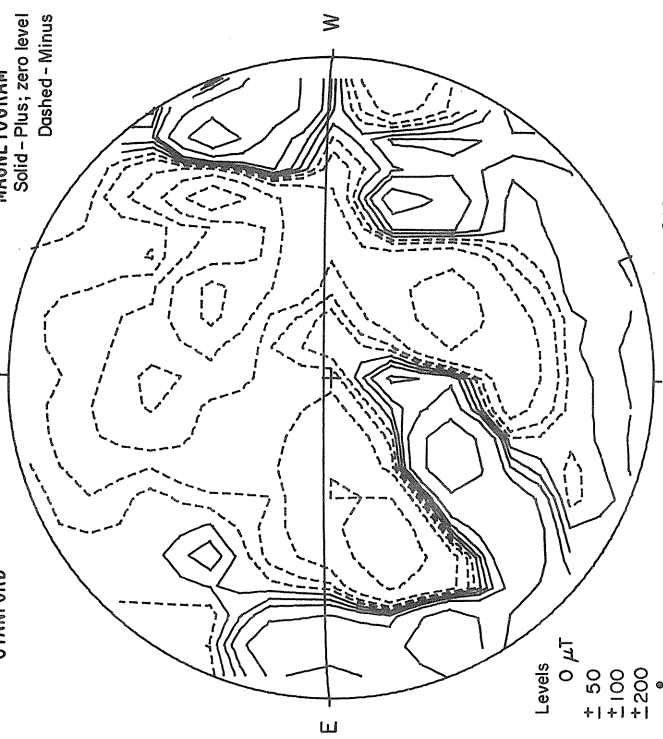
Sp

Sp

STANFORD

Np

MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus



Levels  
0  $\mu$ T  
± 50  
± 100  
± 200  
•••

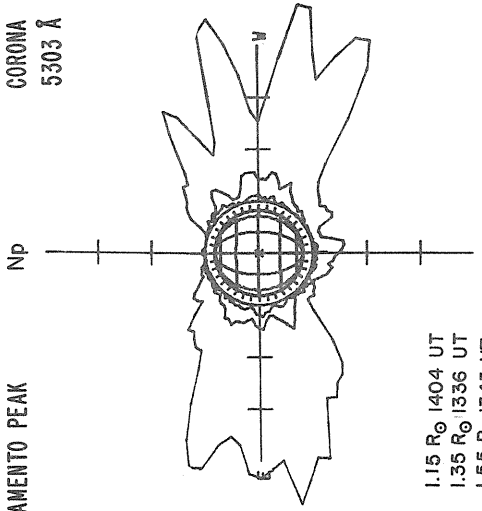
2121 UT

Sp

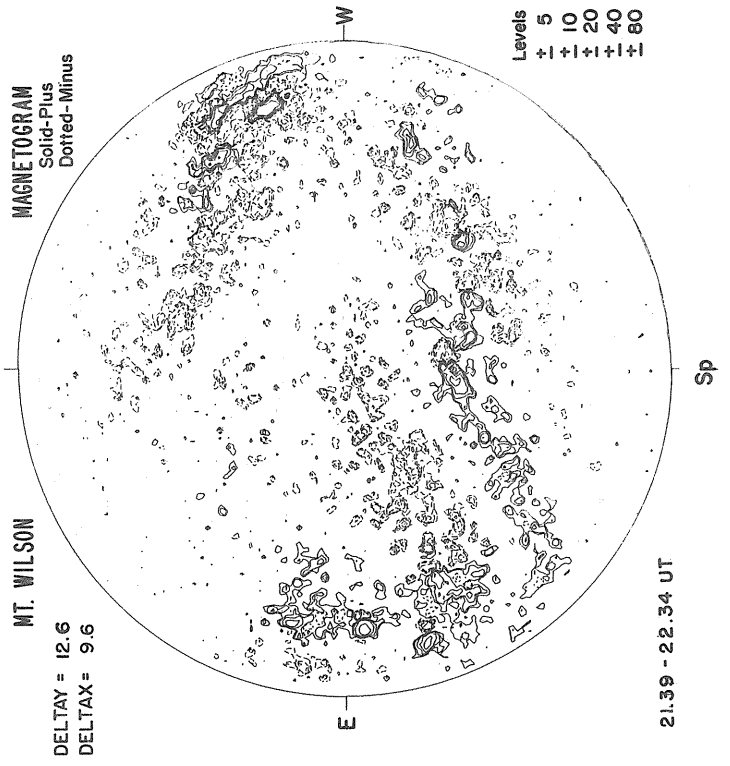
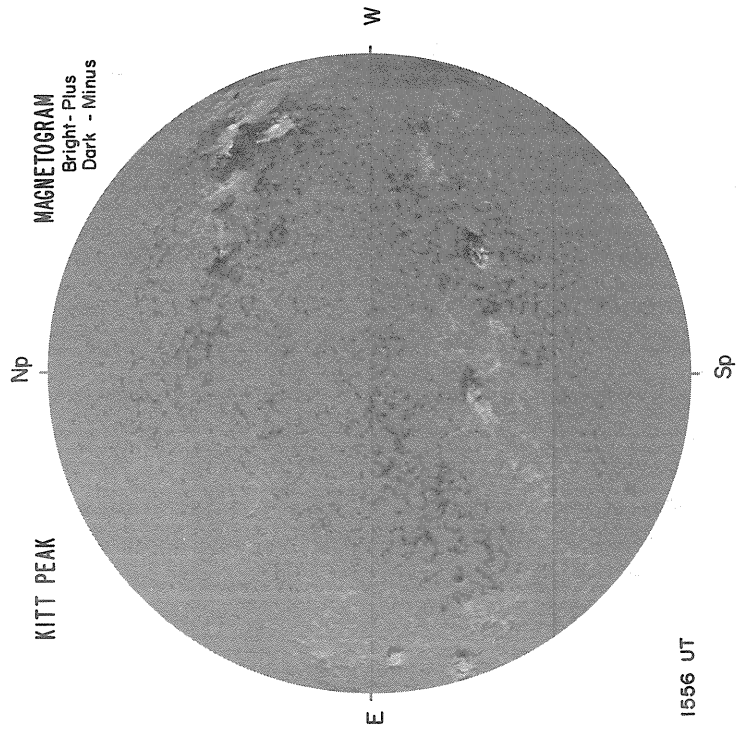


MAY 26, 1982 (P = -17.72, B<sub>0</sub> = -1.39, L<sub>0</sub> = 264.60)

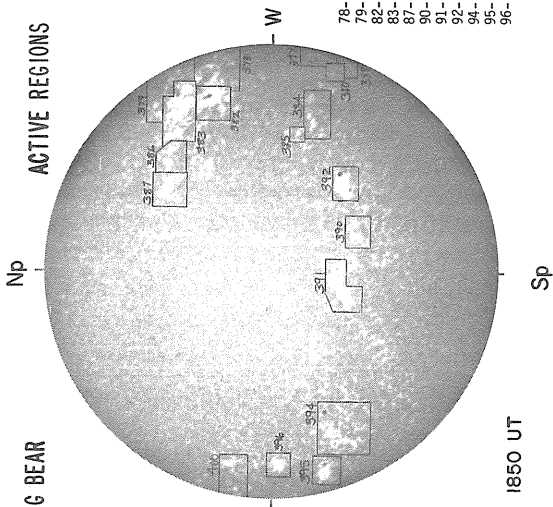
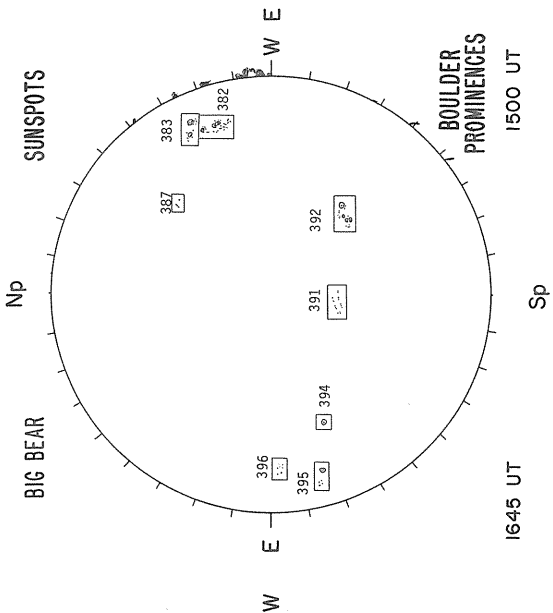
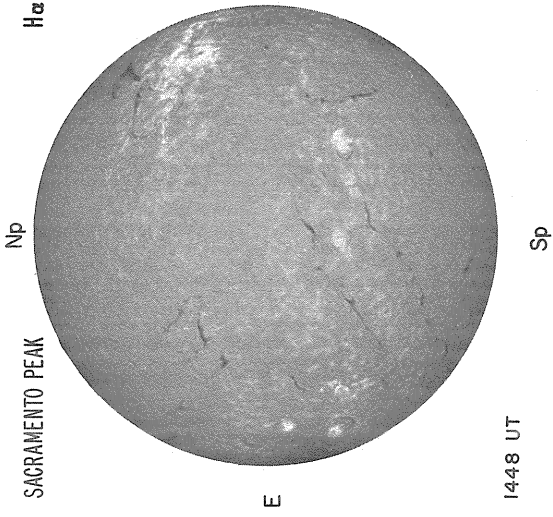
SACRAMENTO PEAK  
CORONA  
5303 Å



1.15 R<sub>0</sub> 1404 UT  
1.35 R<sub>0</sub> 1336 UT  
1.55 R<sub>0</sub> 1345 UT



26



- 78- 1700-2.5
- 79- 1500-2.5
- 82- 1500-3.0
- 83- 3500-3.5
- 87- 1100-2.5
- 90- 0700-2.5
- 91- 1300-3.0
- 92- 1000-3.5
- 94- 1600-2.5
- 95- 1000-4.0
- 96- 1000-3.5

STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level  
Dashed - Minus

E

NO DATA

W

Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200  
•  
•

Sp

MAY 27, 1982 (P=-17.37, B<sub>0</sub>=-1.27, L<sub>0</sub>= 25 I.37)

CORONA  
5303 Å

Np

SACRAMENTO PEAK

NO DATA

E

W

1.15 R<sub>0</sub>  
1.35 R<sub>0</sub>  
1.55 R<sub>0</sub>

Sp

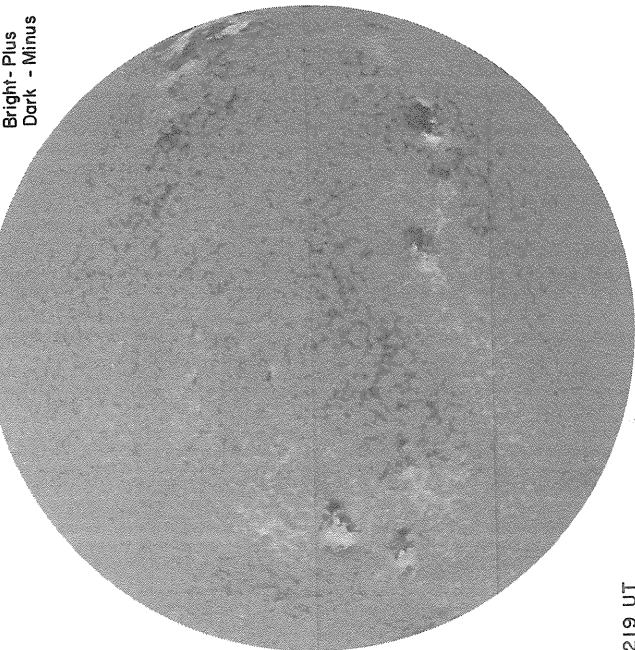
Np

MT. WILSON

MAGNETOGRAM  
Bright-Plus  
Dark - Minus

Np

KITT PEAK



W

NO DATA

E

W

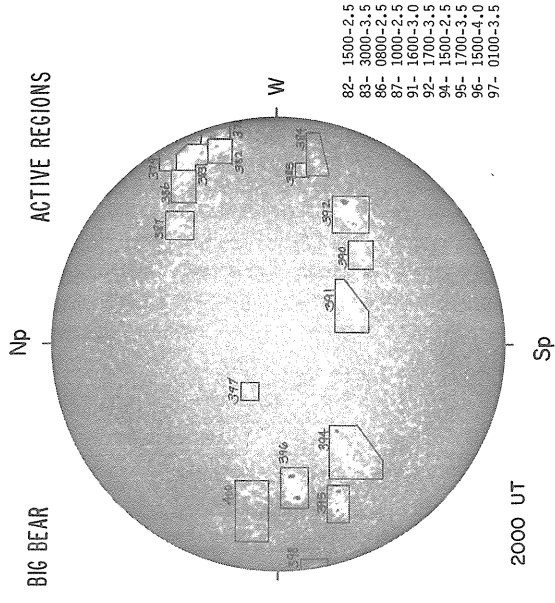
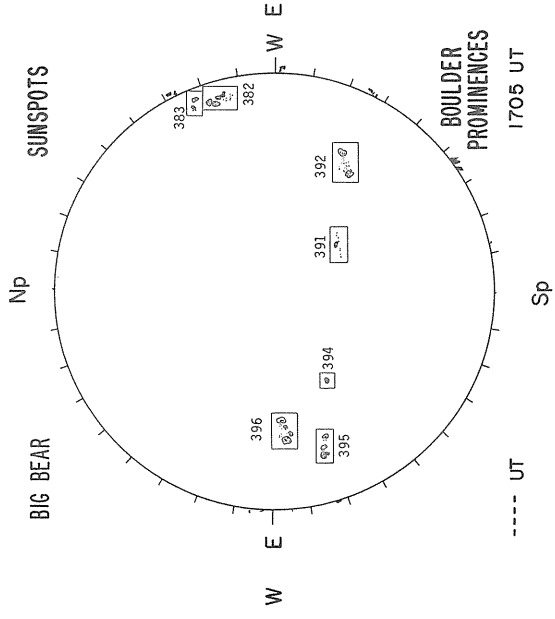
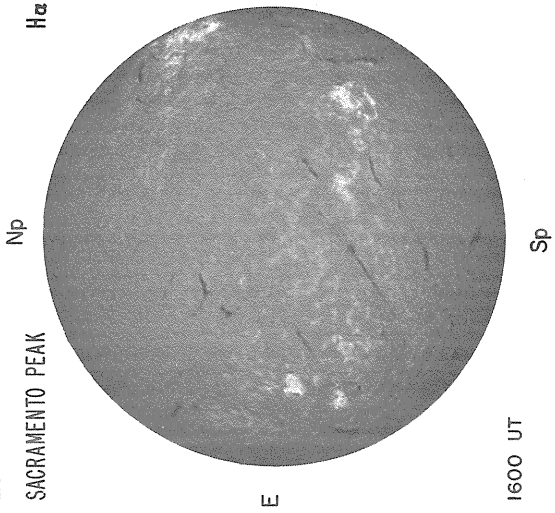
E

Levels  
+ 5  
+ 10  
+ 20  
+ 40  
+ 80

2219 UT

Sp

27



STANFORD

Np

**MAGNETOGRAM**  
Solid - Plus; zero level  
Dashed - Minus

E

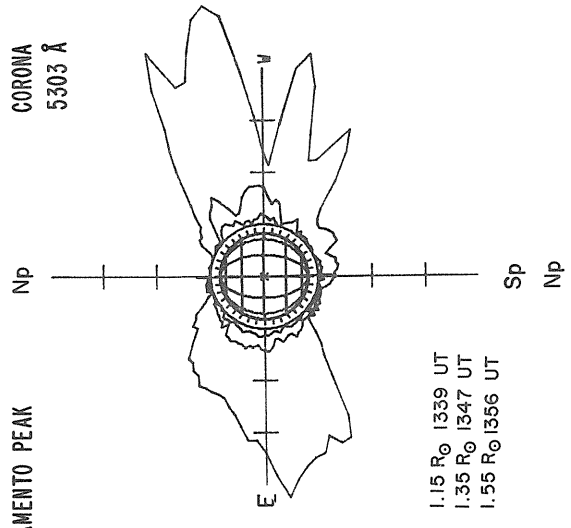
NO DATA

W

Levels  
0  $\mu T$   
+ 50  
+ 100  
+ 200  
•  
•

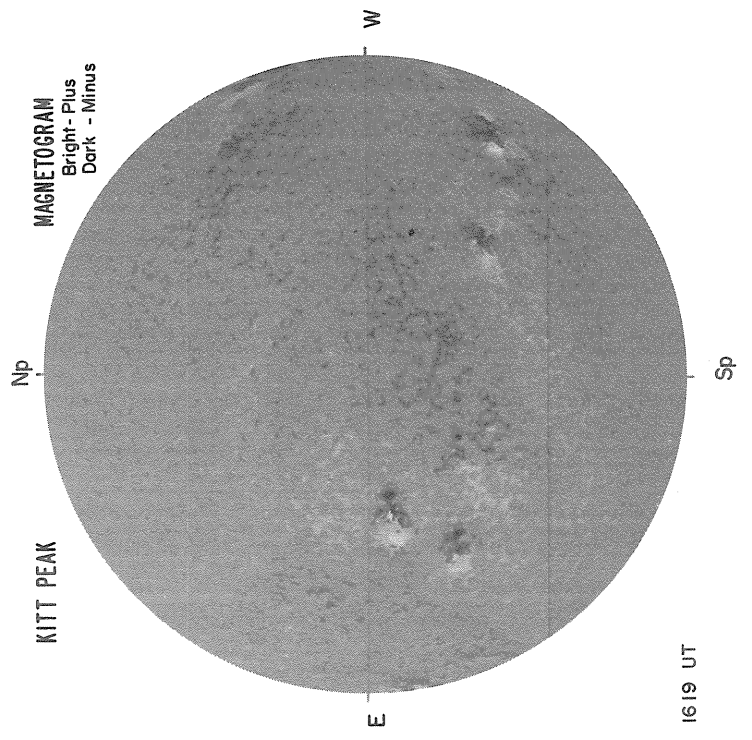
Sp

MAY 28, 1982 (P=-17.02, B<sub>0</sub>=-1.15, L<sub>0</sub>=238.14)



1.15 R<sub>⊙</sub> 1339 UT  
1.35 R<sub>⊙</sub> 1347 UT  
1.55 R<sub>⊙</sub> 1356 UT

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus



DELTA =  
DELTA =

MAGNETOGRAM  
Bright-Plus  
Dark - Minus

NO DATA

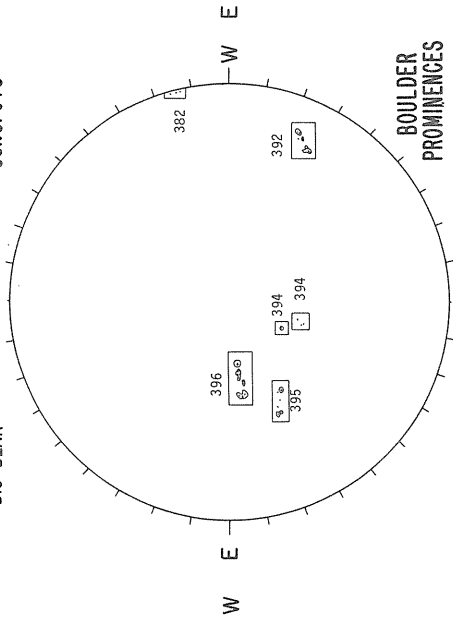
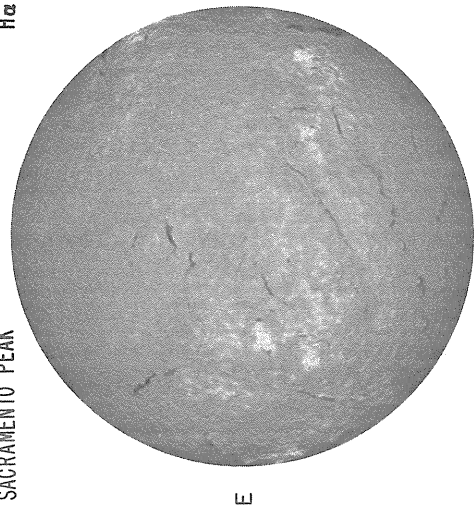
Levels  
5  
± 10  
± 20  
± 40  
± 80

1619 UT

Sp

28

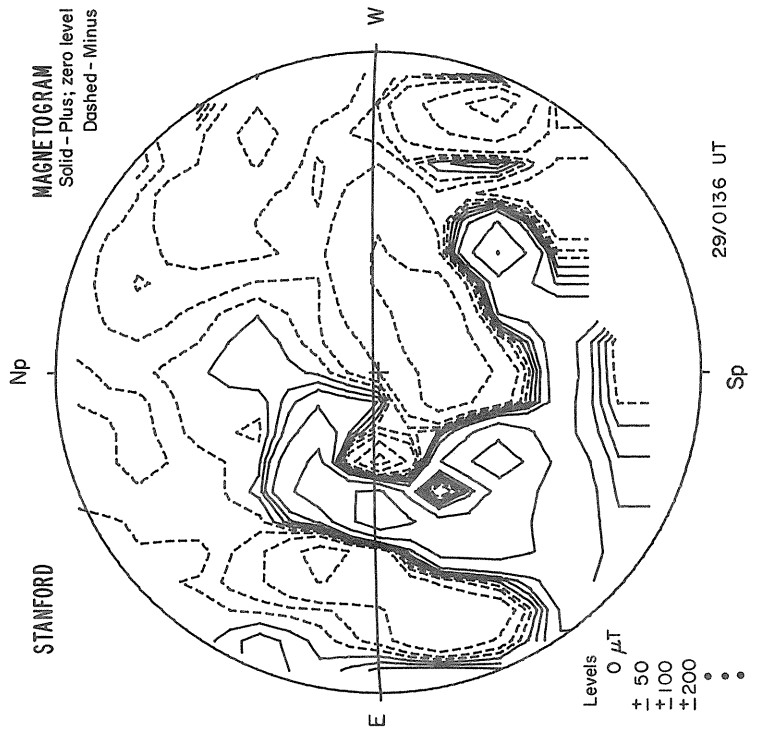
SACRAMENTO PEAK Np ACTIVE REGIONS  
 H $\alpha$  Np BIG BEAR SUNSPOTS BIG BEAR Np  
 E W E W E W



BOULDER PROMINENCES

NO DATA

1513 UT Sp 2255 UT Sp 29/0136 UT Sp



MAGNETOGRAM

Solid - Plus; zero level  
Dashed - Minus

Levels  
 0  $\mu$ T  
 $\pm$  50  
 $\pm$  100  
 $\pm$  200

STANFORD Np Sp  
 29/0136 UT Sp

MAY 29, 1982 (P=-16.67, B<sub>0</sub>=-1.03, L<sub>0</sub>=224.91)

SACRAMENTO PEAK Np CORONA  
5303 Å

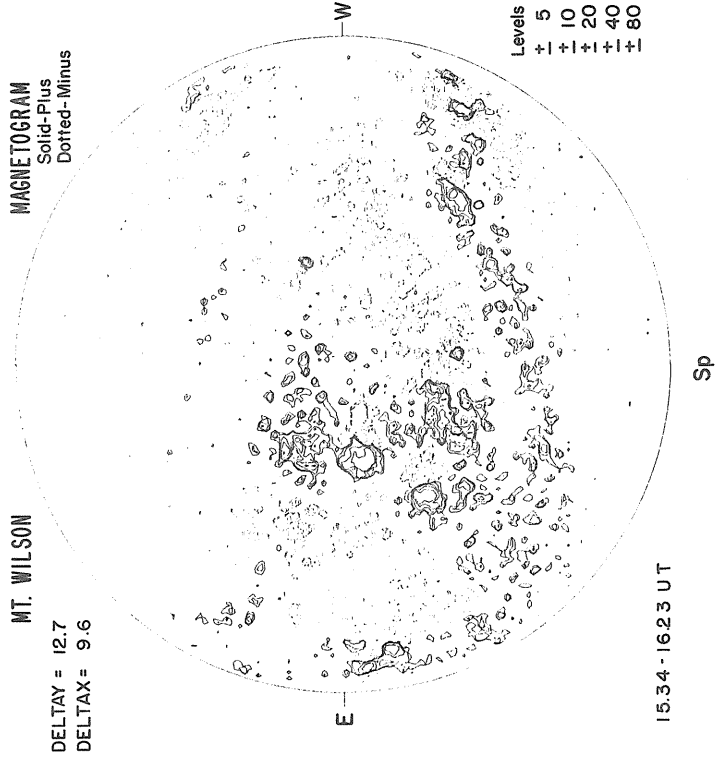
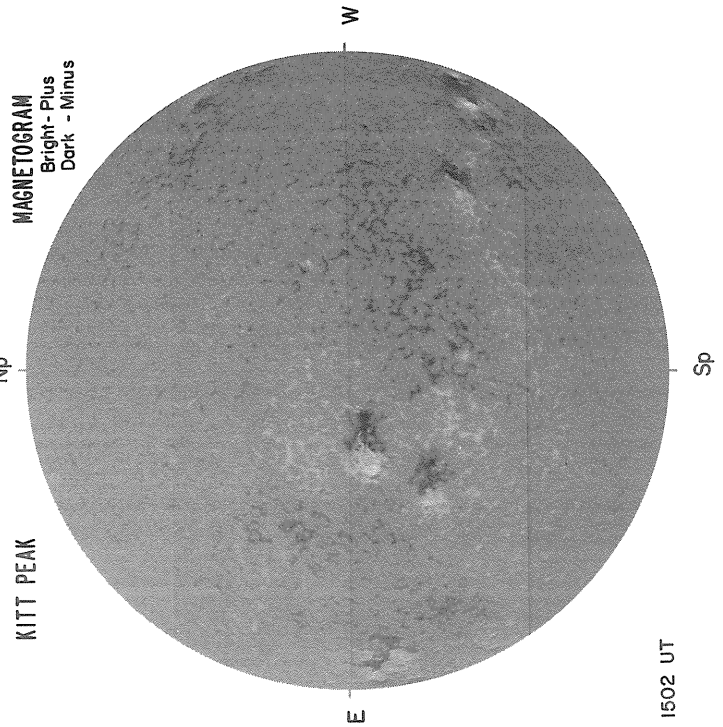
E NO DATA W

1.15 R<sub>0</sub>  
1.35 R<sub>0</sub>  
1.55 R<sub>0</sub>

Sp Np

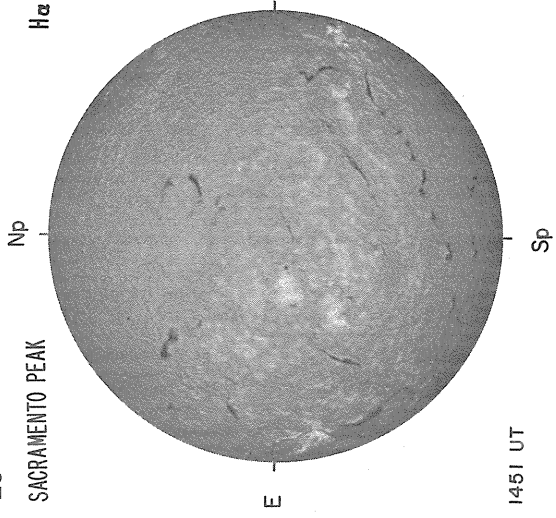
MT. WILSON

DELTA Y = 12.7  
DELTA X = 9.6

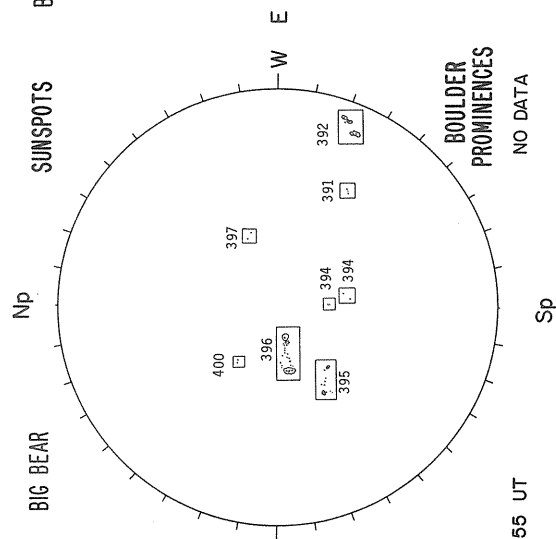


29

SACRAMENTO PEAK



BIG BEAR



Np

ACTIVE REGIONS

NO DATA

W

BOLDER PROMINENCES

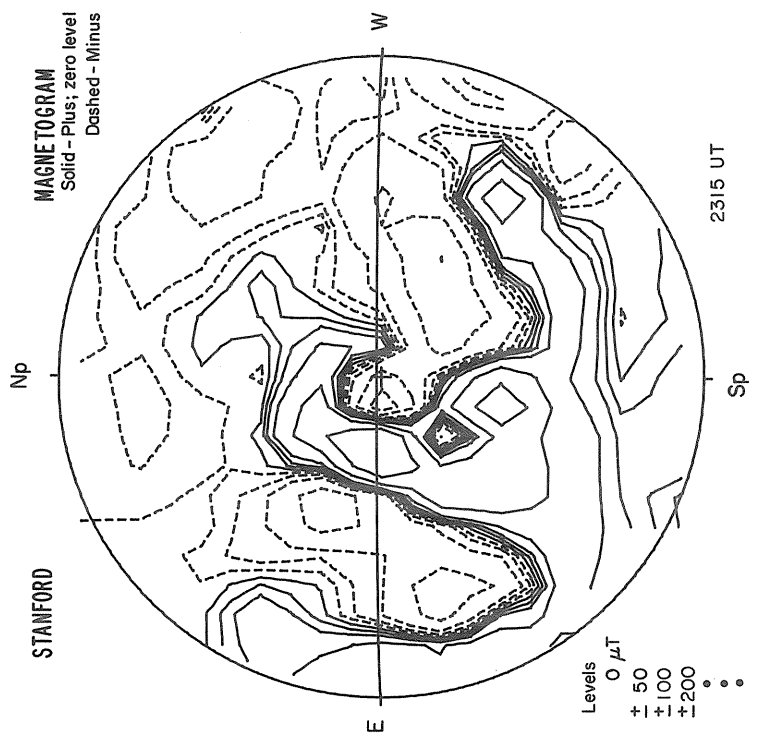
NO DATA

Sp

1455 UT

1451 UT

STANFORD



MAGNETOGRAM

Solid - Plus; zero level  
Dashed - Minus

Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200  
• • •

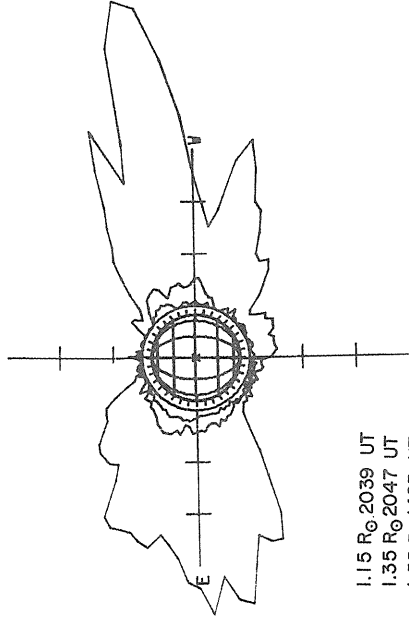
2315 UT



MAY 30, 1982 (P=-16.31, B<sub>0</sub> = -0.91, L<sub>0</sub> = 211.68)

SACRAMENTO PEAK  
CORONA  
5303 Å

Np



1.15 R<sub>0</sub> 2039 UT  
1.35 R<sub>0</sub> 2047 UT  
1.55 R<sub>0</sub> 1403 UT

Sp

Np

MT. WILSON

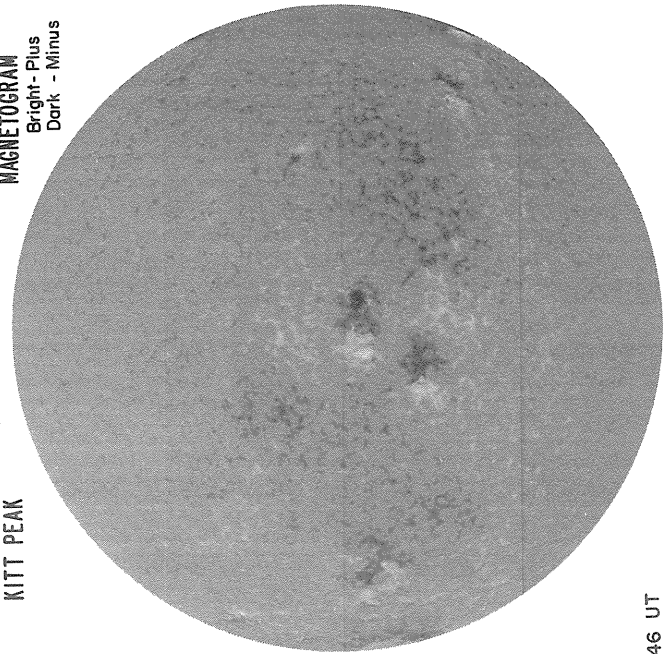
MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

DELTA = 12.6  
DELTA X = 9.6

Np

KITT PEAK

MAGNETOGRAM  
Bright-Plus  
Dark - Minus



1446 UT

W

E

E

W

Levels  
+ 5  
+ 10  
+ 20  
+ 40  
+ 80

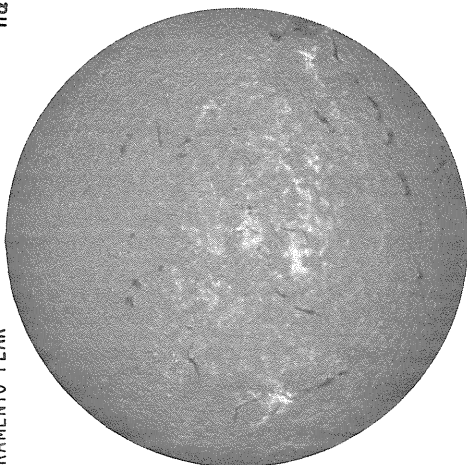
17.14 - 18.09 UT

Sp

Sp

30

SACRAMENTO PEAK



Np

Sp

H $\alpha$

BIG BEAR

Np

SUNSPOTS

BIG BEAR

Np

ACTIVE REGIONS

E

W

E

W

E

NO DATA

W

BOULDER PROMINENCES

NO DATA

1700 UT

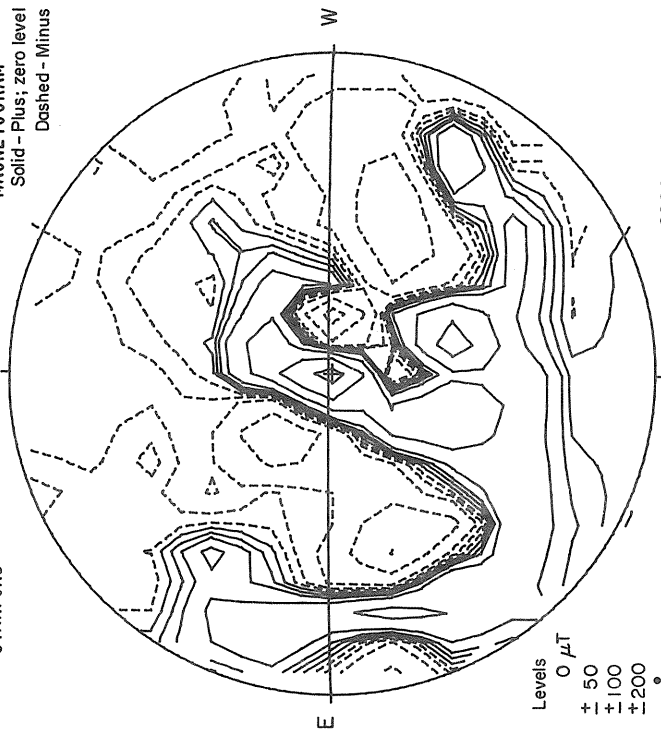
1430 UT

STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level  
Dashed - Minus



Levels  
0  $\mu$ T  
± 50  
± 100  
± 200

2220 UT

Sp

E

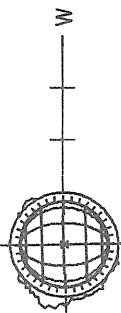
W

MAY 31, 1982 (P=-15.95, B<sub>0</sub> = -0.79, L<sub>0</sub> = 198.44)

CORONA  
5303 Å

SACRAMENTO PEAK

Np



E W

1.15 R<sub>0</sub>  
1.35 R<sub>0</sub>  
1.55 R<sub>0</sub> 14:12 UT

KITT PEAK

Np

MAGNETOGRAM  
Bright - Plus  
Dark - Minus

DELTA Y = 12.6  
DELTA X = 9.6

MT. WILSON

Np

MAGNETOGRAM  
Solid - Plus  
Dotted - Minus

E

NO DATA

W



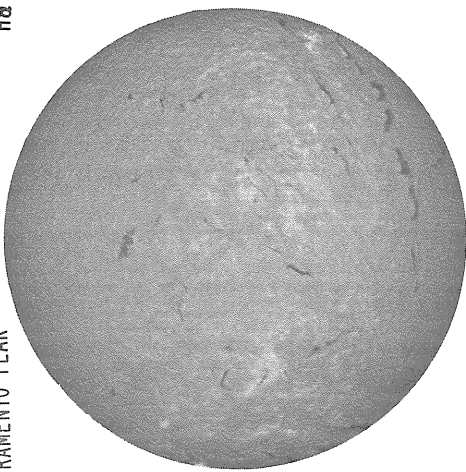
Sp

16:29-17:19 UT

Levels  
+ 5  
+ 10  
+ 20  
+ 40  
+ 80

31

SACRAMENTO PEAK



H $\alpha$

BIG BEAR

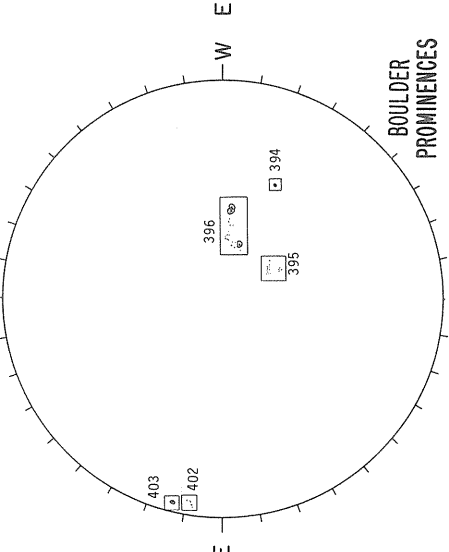
Np

SUNSPOTS

BIG BEAR

Np

ACTIVE REGIONS



E

1456 UT

W

E

W

E

W

E

W

E

W

E

W

E

W

E

W

E

W

E

W

E

W

E

BOULDER PROMINENCES

NO DATA

----- UT

Sp

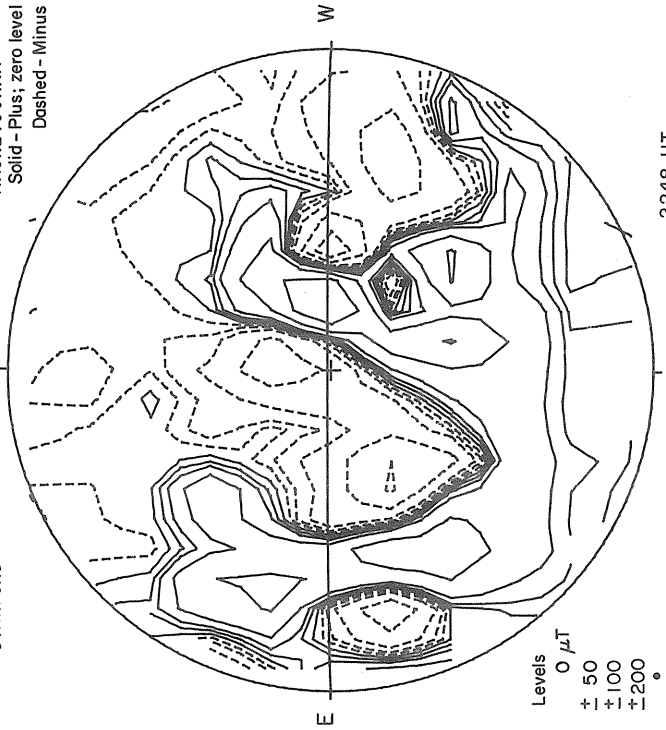
Sp

STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level  
Dashed - Minus



Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200  
•  
•

2248 UT

Sp

W

Sp

Sp

W

E

REGIONS OF SOLAR ACTIVITY

MAY 1982

HALE REGION 18342

CMP DATE 1.1

CALCIUM				PLAGE DATA				SUNSPOT DATA										
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	04	24	18342	S05	E78	241	100	1.0										
82	04	25	18342	S06	E68	238	800	1.5										
82	04	26	18342	S06	E55	237	800	1.0										
82	04	27	18342	S07	E43	233	600	1.0										
82	04	28	18342	S07	E35	231	500	1.0										
82	04	30	18342	S07	E08	233	400	1.5										
82	05	1	18342	S07	W07	233	400	2.0										
82	05	2	18342	S08	W20	233	400	2.5										

HALE REGION 18346

CMP DATE 1.5

CALCIUM				PLAGE DATA				SUNSPOT DATA										
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	04	26	18346	N16	E67	225	600	3.0							H			1 AXX
82	04	27	18346	N16	E49	227	700	3.0		N17	E58				R	10	1	AXX
82	04	28	18346	N17	E40	226	600	3.0										
82	04	30	18346	N17	E15	226	500	3.0										
82	05	1	18346	N17	W02	228	400	2.5										
82	05	2	18346	N17	W15	228	400	2.0										

HALE REGION 18347

CMP DATE 2.4

CALCIUM				PLAGE DATA				SUNSPOT DATA										
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	04	26	18347	S20	E78	214	800	3.5		S17	E74				B	10	2	BX0
82	04	27	18347	S18	E63	213	1200	3.5	23112	S18	E65	214	B	3	H	20	9	BX0
82	04	28	18347	S18	E53	213	1300	3.5	23112	S17	E52	214	(B)	4	H	190	14	DAO
82	04	29	18347						23112	S18	E39	214	(B)	4	B	120	23	DAI
82	04	30	18347	S18	E26	215	2000	3.5	23112	S18	E24	215	(B)	4	B	340	21	EKI
82	05	1	18347	S17	E10	216	2400	3.0	23112	S18	E10	216	(B)	4				
82	05	2	18347	S17	W03	216	2600	3.0	23112	S17	W02	215	(D)	5				
82	05	3	18347						23112	S17	W15	215	(D)	4	H	510	26	EAI
82	05	4	18347							S18	W39			H	420	16	ESO	
82	05	5	18347						23112	S18	W40	213	(BY)	5	M	650	7	ESO
82	05	6	18347	S18	W56	214	2400	2.5	23112	S18	W53	213	(B)	4	H	200	6	ESO
82	05	7	18347	S18	W70	213	1500	2.0	23112	S18	W66	213	(B)	4	H	240	5	DAO

HALE REGION 18348

CMP DATE 4.2

CALCIUM				PLAGE DATA				SUNSPOT DATA										
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	04	27	18348	N09	E70	206	700	1.0										
82	04	28	18348	N09	E60	206	700	1.0										
82	04	30	18348	N07	E46	195	1000	1.0										
82	05	1	18348	N07	E30	196	1300	2.5										
82	05	2	18348	N07	E18	195	1500	2.5										
82	05	4	18348							N09	W10				B	10	1	BX0
82	05	6	18348	N07	W34	192	1500	1.5										
82	05	7	18348	N07	W47	190	1500	1.5										
82	05	8	18348	N07	W60	192	1500	1.0										
82	05	9	18348	N06	W73	191	1100	1.0		N10	W68				L		1	AXX











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HALE REGION 18369

CMP DATE 15.0

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	9	18369	S18 E74	44	500	1.0									
82	05	10	18369	S17 E57	49	400	1.0									
82	05	12	18369	S17 E33	46	200	1.5									
82	05	15	18369	S18 W10	50	100	1.0									
82	05	16	18369	S18 W24	50	100	1.0									

HALE REGION 18370

CMP DATE 16.5

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	10	18370	N08 E73	33	200	1.0							80	1	HSX
82	05	11	18370					23129	N04 E66	29	(AP)	4	H	220	1	HAX
82	05	12	18370	N07 E50	29	400	2.0	23129	N04 E52	30	(AP)	5	H	130	1	HSX
82	05	13	18370					23129	N04 E39	29	(AP)	5	H	120	1	HHX
82	05	14	18370					23129	N03 E26	29	(BP)	5	P	180	3	DSO
82	05	15	18370	N06 E10	30	800	2.0	23129	N04 E12	29	(AP)	5	H	190	7	CSO
82	05	16	18370	N05 W04	30	700	2.0	23129	N03 W02	30	(BY)	5	B	80	1	HSX
82	05	17	18370	N04 W17	31	500	2.0	23129	N03 W15	31	(BP)	5	H	140	3	CSO
82	05	18	18370	N04 W28	29	300	1.5	23129	N03 W28	30	(AP)	5	H	120	1	HSX
82	05	19	18370	N04 W42	30	200	1.5	23129	N03 W42	31	(AP)	5	H	80	1	HSX
82	05	20	18370					23129	N03 W57	32	(AP)	5	H	100	1	HSX
82	05	21	18370	N04 W68	29	300	1.0	23129	N03 W70	32	(AP)	5	H	110	1	HSX
82	05	22	18370					23129	N03 W75	24	(AP)	4	H	100	1	HSX

HALE REGION 18374

CMP DATE 17.1

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	15	18374	S13 E18	22	1000	3.5	23139	S14 E21	20	(B)	5	H	90	13	DAI
82	05	16	18374	S13 E04	22	1400	3.0	23139	S14 E07	21	(BY)	5	H	260	35	DAO
82	05	17	18374	S13 W07	21	1200	2.5	23139	S15 W07	23	(BY)	4	H	190	14	DAO
82	05	18	18374	S14 W20	21	1200	2.5	23139	S13 W21	23	(BY)	4	H	140	10	DSO
82	05	19	18374	S14 W33	21	900	3.0	23139	S13 W34	23	(B)	5	H	70	9	DSO
82	05	20	18374					23139	S13 W47	22	(B)	4	H	90	2	CAO
82	05	21	18374	S14 W58	19	900	2.5	23139	S13 W66	28	(AP)	4	H	90	2	CSO
82	05	22	18374	S15 W73	21	800	2.0	23139	S13 W79	28	(AP)	4	H	40	1	HSX

HALE REGION 18372

CMP DATE 17.6

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	12	18372	S17 E63	16	500	3.0	23133	S18 E66	16	(B)	3	H	10	3	AXX
82	05	13	18372					23133	S19 E53	15	(BP)	4	H	30	5	CRO
82	05	14	18372					23133	S18 E38	17	(AP)	4	P	10	3	BX0
82	05	15	18372	S18 E24	16	800	2.5	23133	S18 E26	15	(B)	3	H	20	4	BX0
82	05	16	18372	S18 E10	16	700	3.0	23133	S19 E13	15	(B)	2	H		1	AXX
82	05	17	18372	S18 W02	16	700	2.5	23133	S19 W05	21	(B)	4	H	10	7	BX0
82	05	17	18372	S18 W02	16	700	2.5	23144	S21 E05	11	(AF)	3	H		1	AXX
82	05	18	18372	S20 W12	13	500	2.5	23133	S18 W17	19	(AP)	2	H		1	AXX
82	05	19	18372	S20 W25	13	500	2.0	23133	S17 W31	20	(B)	4	H	20	6	BX0
82	05	21	18372	S20 W50	11	300	1.5		S19 W59				H		1	AXX



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HALE REGION 18389

CMP DATE 20.9

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	19	18389	N18 E17	331	100	2.5	23148	N17 E17	332	{ B }	3	B	10	1	HRX
82	05	20	18389					23148	N17 E05	330	{ B }	3	H	10	5	BXO
82	05	21	18389	N18 W10	331	100	2.5	23148	N17 W13	335	{ AP }	3	H	30	5	BXO
82	05	22	18389	N18 W24	332	300	2.5		N17 W25				H		1	AXX
82	05	23	18389	N18 W37	332	200	1.5									
82	05	24	18389	N18 W50	332	100	1.5									

HALE REGION 18377

CMP DATE 21.0

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	14	18377					23138	S12 E80	335	{ AF }	2	P	20	1	HAX
82	05	15	18377	S10 E66	334	700	2.5	23138	S11 E65	336	{ B }	3	H	10	2	BXO
82	05	16	18377	S12 E52	334	800	2.0	23138	S12 E51	337	{ AF }	4	H	30	2	CRO
82	05	17	18377	S11 E40	334	700	2.0									
82	05	18	18377	S10 E29	332	700	2.0									
82	05	19	18377	S12 E15	333	1100	2.0									
82	05	21	18377	S12 W10	331	800	2.0									
82	05	22	18377	S13 W25	333	800	2.5									
82	05	23	18377	S13 W38	333	600	2.0		S17 W40				P	10	2	HRX
82	05	24	18377	S13 W52	334	500	1.5		S16 W53				P	10	1	AXX
82	05	26	18377	S13 W78	333	400	1.0									

HALE REGION 18388

CMP DATE 21.1

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	21	18388	S20 W08	329	100	1.5	23150	S20 W12	334	{ AP }	3	P		1	AXX
82	05	22	18388	S20 W23	331	300	2.5	23150	S21 W23	332	{ B }	4	H	50	7	CAO
82	05	23	18388	S22 W36	331	400	2.5	23150	S20 W37	332	{ AP }	4	H	10	3	BXO
82	05	24	18388	S22 W50	332	400	1.5	23150	S20 W51	334	{ AP }	2	H		1	AXX
82	05	26	18388	S22 W76	331	200	1.0									

HALE REGION 18378

CMP DATE 21.6

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	15	18378	N12 E70	330	700	1.5									
82	05	16	18378	N13 E60	326	1300	2.0									
82	05	17	18378	N13 E50	324	1700	2.0									
82	05	18	18378	N12 E38	323	1700	2.5									
82	05	19	18378	N12 E25	323	2300	2.5									
82	05	21	18378	N12 W01	322	3000	2.5									
82	05	22	18378	N11 W16	324	2500	2.5									
82	05	23	18378	N11 W30	325	2500	2.5									
82	05	24	18378	N11 W43	325	2500	3.0									
82	05	26	18378	N13 W67	322	1700	2.5									
82	05	27	18378	N13 W80	320	1200	1.5									

HALE REGION 18380

CMP DATE 21.7

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	15	18380	S14 E75	325	200	1.0									
82	05	16	18380	S14 E62	324	200	1.5									
82	05	17	18380	S14 E50	324	100	2.0									
82	05	18	18380	S14 E38	323	200	2.0		S13 E47				M		1	AXX
82	05	19	18380	S14 E24	324	200	2.0									
82	05	21	18380	S15 W00	321	200	2.0									

CONT

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HALE REGION 18380 (CONT) CMP DATE 21.7

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	22	18380	S16 W17	325	100	1.5									
82	05	23	18380	S17 W30	325	100	1.0									
82	05	24	18380	S18 W44	326	100	1.0									
82	05	26	18380	S18 W69	324	100	1.0									

HALE REGION 18379 CMP DATE 22.0

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	15	18379	N20 E75	325	500	1.0									
82	05	16	18379	N24 E63	323	700	1.5									
82	05	17	18379	N24 E50	324	2200	2.0									
82	05	18	18379	N24 E40	321	2000	2.0									
82	05	19	18379	N23 E30	318	2300	2.0									
82	05	21	18379	N24 E04	317	2300	2.0									
82	05	22	18379	N24 W10	318	2200	2.0									
82	05	23	18379	N23 W22	317	2400	2.5									
82	05	24	18379	N21 W35	317	2500	2.5									
82	05	26	18379	N24 W65	320	1500	2.5									
82	05	27	18379	N24 W78	318	500	2.0									

HALE REGION 18383 CMP DATE 22.6

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	16	18383					23142	N23 E80	308	(AP)	2	H	70	1	HSX
82	05	17	18383	N23 E70	304	1000	2.5	23142	N21 E68	308	(BP)	3	H	150	7	DSO
82	05	18	18383	N23 E55	306	2000	2.5	23142	N21 E54	308	(B)	4	H	270	10	DSI
82	05	19	18383	N23 E40	308	2800	3.5	23142	N21 E40	309	(D)	5	H	300	27	EAI
82	05	20	18383					23142	N21 E29	306	(D)	5	H	1000	37	EKI
82	05	21	18383	N23 E15	306	3000	3.5	23142	N21 E13	309	(D)	5	H	740	49	EKI
82	05	22	18383	N22 W02	310	3500	3.5	23142	N21 W01	310	(B)	4	H	580	62	EKI
82	05	23	18383	N21 W14	309	3200	3.5	23142	N21 W13	308	(BY)	5	H	570	42	EAC
82	05	24	18383	N20 W27	309	3400	3.5	23142	N21 W26	309	(B)	4	H	300	42	EAC
82	05	25	18383					23142	N21 W40	309	(B)	4	H	310	27	EKI
82	05	26	18383	N22 W52	307	3500	3.5	23142	N21 W53	309	(B)	4	H	70	15	DAI
82	05	27	18383	N20 W65	305	3000	3.5	23142	N21 W65	308	(BY)	4	B	40	5	CRO
82	05	28	18383					23142	N15 W78	308	X	3	H	270	15	DKI

HALE REGION 18382 CMP DATE 23.1

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	16	18382	N15 E77	309	500	1.5	23143	N14 E80	308	(AP)	2	H	190	1	HSX
82	05	17	18382	N15 E66	308	700	1.5	23143	N13 E67	309	(AP)	4	H	160	1	HSX
82	05	18	18382	N14 E58	303	700	1.5	23143	N14 E55	307	(AP)	5	H	230	1	HHX
82	05	19	18382	N14 E45	303	900	1.5	23143	N13 E40	309	(B)	5	H	140	6	CSO
82	05	20	18382					23143	N13 E28	307	(BP)	5	H	230	4	CHO
82	05	21	18382	N14 E20	301	900	2.0	23143	N13 E13	309	(AP)	5	H	230	3	CHO
82	05	22	18382	N14 E05	303	800	2.5	23143	N13 E01	308	(AP)	5	H	200	2	CSO
82	05	23	18382	N13 W10	305	600	2.5	23143	N14 W13	308	(AP)	5	H	210	7	CSO
82	05	24	18382	N13 W24	306	800	2.5	23143	N14 W26	309	(BP)	5	H	240	7	CSO
82	05	25	18382					23143	N14 W38	307	(B)	5	H	210	22	DSI
82	05	26	18382	N13 W52	307	1500	3.0	23143	N14 W52	308	(BY)	5	H	100	27	DSI
82	05	27	18382	N13 W65	305	1500	2.5		N16 W64				B	180	15	DAI

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HALE REGION 18384

CMP DATE 23.3

				CALCIUM PLAGE DATA				SUNSPOT DATA										
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	17	18384	S13	E77	297	200	1.5	23145	S12	E77	299	(B)	2	H	10	2	AXX
82	05	18	18384	S13	E65	296	800	2.0	23145	S12	E62	300	(B)	3	H	20	6	BX0
82	05	19	18384	S13	E49	299	1100	2.5	23145	S13	E47	302	(B)	3	H	30	5	CRO
82	05	21	18384	S13	E24	297	800	2.5		S12	E22			B		2		BX0
82	05	22	18384	S13	E08	300	700	2.5										
82	05	23	18384	S13	W06	301	500	2.0		S12	W09			H			2	AXX
82	05	24	18384	S13	W20	302	600	2.0	23155	S12	W24	307	(AP)	3	H	10	3	BX0
82	05	26	18384	S13	W46	301	400	2.0										
82	05	27	18384	S13	W60	300	400	1.5										

HALE REGION 18386

CMP DATE 23.8

				CALCIUM PLAGE DATA				SUNSPOT DATA										
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	18	18386	N25	E75	286	1200	2.0	23146	N24	E68	294	(B)	4	H	60	1	HSX
82	05	19	18386	N25	E56	292	1800	2.5	23146	N22	E60	289	(B)	4	H	40	3	CSO
82	05	20	18386						23146	N23	E35	300	(AP)	4	H	30	5	BX0
82	05	21	18386	N25	E30	291	1500	2.0										
82	05	22	18386	N25	E15	293	1800	2.5										
82	05	23	18386	N25	E01	294	1500	2.0										
82	05	24	18386	N25	W13	295	1800	2.5										
82	05	26	18386	N25	W36	291	900	1.5										
82	05	27	18386	N24	W50	290	800	2.5										

HALE REGION 18385

CMP DATE 23.9

				CALCIUM PLAGE DATA				SUNSPOT DATA										
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	18	18385	S05	E74	287	200	1.0										
82	05	19	18385	S06	E59	289	100	1.0										
82	05	21	18385	S06	E33	288	100	1.5										
82	05	22	18385	S07	E17	291	200	2.5										
82	05	23	18385	S07	E03	292	100	2.0										
82	05	24	18385	S07	W11	293	200	2.0										
82	05	26	18385	S09	W39	294	100	1.5										
82	05	27	18385	S09	W52	292	100	1.0										

HALE REGION 18387

CMP DATE 24.5

				CALCIUM PLAGE DATA				SUNSPOT DATA										
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	19	18387	N24	E65	283	600	2.0	23149	N22	E63	286	(AP)	4	H	40	3	CSO
82	05	20	18387						23149	N22	E49	286	(B)	3	H	30	5	BX0
82	05	21	18387	N24	E42	279	700	2.5	23149	N23	E22	300	(AP)	4	H	30	5	BX0
82	05	22	18387	N24	E27	281	1000	2.5	23153	N23	E25	284	(B)	3	H	40	7	BX0
82	05	23	18387	N24	E12	283	1100	2.5	23153	N23	E11	284	(B)	4	H	10	5	BX0
82	05	24	18387	N24	W02	284	1000	2.5	23153	N23	W01	284	(BF)	4	H	30	9	CRO
82	05	25	18387						23153	N23	W23	292	(B)	3	H		1	AXX
82	05	26	18387	N25	W25	280	1100	2.5	23153	N23	W25	281	(B)	2	H	10	4	BX0
82	05	27	18387	N24	W36	276	1000	2.5		N26	W30			L		10	4	BX0







NOTE: Return of region information and contiguous plage information not available at time of publication. This information should appear as an addendum in the next issue.

No solar magnetograms were made at Kitt Peak National Observatory on May 3-5, 9, and 31, 1982.  
No Mt. Wilson sunspot data were available for May 4, and 8-10, 1982.

### DAILY CALCIUM PLAGE INDEX

MAY 1982

YR	MO	DAY	INDEX	YR	MO	DAY	INDEX	YR	MO	DAY	INDEX
82	5	1	15.8	82	5	11	*	82	5	21	34.1
82	5	2	19.1	82	5	12	18.0	82	5	22	39.2
82	5	3	*	82	5	13	*	82	5	23	34.2
82	5	4	*	82	5	14	*	82	5	24	33.8
82	5	5	*	82	5	15	13.9	82	5	25	*
82	5	6	27.0	82	5	16	15.7	82	5	26	31.6
82	5	7	31.0	82	5	17	15.7	82	5	27	31.0
82	5	8	29.9	82	5	18	18.9	82	5	28	*
82	5	9	32.4	82	5	19	30.0				
82	5	10	25.5	82	5	20	*				

\* NO OBSERVATIONS

SUDDEN IONOSPHERIC DISTURBANCES

MAY 1982

DAY	UNIVERSAL TIME				WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE							KNOWN FLARE	HALE REGION
	START	END	MAX	IMP		SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD		
01	2307	0006	2320	1-	3				1		2		2301	18347
02	0338	0500	0359	1-	1				1				0332	18350
02	1517	1735	1530	2+	5	4		1	1		13		1514E	18347
02	1721	1745	1727	1-	3						2		1721	18347
03	0435	0506	0442	1-	1				1				0422	No data
03	0622	0643	0628	1-	3				1		1		NF	
03	1615	1725	1628	1-	5	2			1		8		1616	No data
03	1837	1900	1845	1-	5				1		10		1831	No data
03	1900	1953	1912	1-	5	2			2		13		1900	No data
03	2033	2122	2041	1-	3	1			1		4		2032	No data
03	2347	0002D	2352	1-	3				1		2		2347	No data
04	0006	0032	0010	1-	1				1				0003	No data
04	0232	0416	0306	1	1				1				NF	
05	2206	2220	2210	1	1	1							*	
06	0337	0445	0400	2	3						2		NF	
06	0524	0552	0532	1-	1				1				0524E	18356
07	0917	1020	0926	1-	5	2		1	1		3		*	
08	1055	1110	1100	1-	3						2		*	
10	1310	1335	1320	1-	5	1		1			5		1312E	18356
11	1734	1845	1750	3	1	1							*	
12	0158	0338	0210	2	3	1			1		4		0159	18356
14	1619	1733	1636	1-	5				1		11		*	
16	0704E	0814	0721	1-	3				1		1		NF	
17	1030	1125	1045	1-	3				1		1		NF	
17	2320	0048	2330	1-	5	1			1		6		2321	18382
18	0205	0425	0230	2	3				1		5		0206	18384
18	0956	1105	1007	1-	3				1		3		*	
18	1213	1350	1230	1	5	3			1		11		NF	
18	2123	2200	2130	1	3						2		NF	
19	0520	0709	0547	2+	3	2			1		2		NF	
19	1735	1850	1751	1-	5	1			1		7		1733	18383
19	1812	1855	1821	1-	5				1		9		NF	
19	1938	2000	1945	1-	3						2		1933	18383
19	2046	2136	2058	1-	5	1			1		7		2041E	18383
20	0146	0256	0200	1+	3	1			1		4		NF	
20	0326	0418	0342	1-	3			1	1				NF	
20	0533	0716	0544	2	5	2			1		3		0533	No data
20	1414	1649	1427	3	5	2		1	1		13		1410	No data
20	2114	2203	2130	1-	3	1					3		2111	No data
21	0242	0306D	0251	1-	1				1				0240	18386
21	0306E	0454	0336	1+	3			1	1				0307E	18383
21	0925	1016	0942	1-	3				2		2		NF	
21	1413	1625	1437	3	5	3			2		15		1418E	18383
21	1858	1915	1900	1-	1						1		1855	18383
21	1957	2106	2011	1-	5	1			1		12		1943	18383
21	2152	2305	2208	1	5	2			1		11		2156	18383
22	0032	0213	0050	2	3	1			1		7		0035	18383
22	0223	0249D	0230	1-	3			1	1		2		NF	
22	0250E	0356	0305	2	3	1			1		5		NF	
22	0434	0533	0447	1-	3				1		1		0435	18383
22	0539	0640	0548	1+	3	1			1				*	
22	0715	0844	0723	2+	5	2		1	1		8		0722E	18383
22	0858	1009	0907	1-	3				1		2		NF	
22	1150	1223	1155	1-	3				1		3		*	
22	1440	1520	1436	1-	5				1		11		1435	18383
22	1700	1836	1708	2+	5	4			1		15		NF	

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May 82

SUDDEN IONOSPHERIC DISTURBANCES

MAY 1982

DAY	UNIVERSAL TIME				WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE							KNOWN FLARE	HALE REGION
	START	END	MAX	IMP		SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD		
23	0212	0243D	0229	1-	3				1	1			0211	18383
23	0243E	0400	0256	2+	3					1			NF	
23	1240	1417	1255	1+	5	2				1		5	1244	18383
23	1626	1720	1638	1-	5	1				1		11	1528	18383
23	1843	1950	1849	1	5	2						16	1843	18383
23	2123	2152	2130	1-	1					1			2125	18383
25	1247	1333	1300	1-	3	1				1		6	1235E	No data
25	1903	1933	1908	1-	3					1		5	1905	No data
26	0136	0224	0152	1-	1					1			0138	18382
26	0345	0454	0353	1-	3					1		1	0335	18388
26	0703E	0835	0709	2+	5	2		1		1		8	0700	18382
26	1208	1326	1234	1-	3	1				1		4	*	
26	1725	1800	1738	1-	3					1		12	NF	
26	1823	1827D	1827	1-	1					1			1822	18382
26	1845	1907	1850	1-	3					1		2	1847	18395
26	2107	2203	2123	1-	3					1		1	2107	18379
27	0346	0426	0358	1-	1					1			0348	18392
27	0649	0724	0655	1-	1					1			0643	18383
27	0823	0915	0839	1-	1					1			0824	18395
27	0938	1030	0945	1-	3					2		3	*	
27	1158	1245	1207	1-	3					1		1	*	
27	1327	1346	1330	1-	3					1		1	1331E	18396
27	1607	1642	1614	1-	3					1		6	NF	
27	1840	1900	1845	1-	3							2	1826	18396
28	0111	0220	0118	2+	3	1				1		5	0104	No data
28	0221	0302	0232	1-	3					1		2	0222	No data
28	0303	0444	0311	1+	3					1		5	0303	No data
28	0330	0350	0337	1-	3							4	0327	No data
28	0454	0538	0511	1-	1					1			0448	No data
28	1234	1308	1245	1-	3	1						3	1232E	No data
28	1422	1445	1427	1-	3					1		14	1423	No data
28	1527	1550	1529	2	5	1				1		18	1529	No data
28	1637	1650	1640	1-	3					1		4	1636	No data
28	1705	1820	1714	2	5	2				1		16	1706	No data
28	1825	1850	1828	1-	3							5	1823	No data
28	1920	2006	1928	1-	3					1		9	1921	No data
28	2216	2256	2223	1-	1					1			2217	No data
28	2340	0054	2351	1-	3					1		5	NF	
29	0131	0204	0136	1-	3					1		3	0131E	No data
29	0204	0300	0214	2	3	1			1	1		2	0204	No data
29	0304	0354	0325	1-	3					1		1	0302	No data
29	0401	0444	0410	1-	3					1		1	0356	No data
29	0518	0544	0523	1-	1					1			0504	No data
29	0605	0828	0618	2+	5	2				1		7	*	
29	0851	0942	0859	1-	3	1				1		1	0847	No data
29	1021	1044	1025	1-	3					1		2	*	
29	1257	1318	1305	1-	1							9	NF	
29	1320	1345	1328	1	5	2				1		13	*	
29	1410	1445	1415	1-	3					1		2	NF	
29	1650	1745	1702	2	3	4						15	NF	
29	2022	2056D	2028	1-	5					1		14	NF	
29	2056E	2146D	2108	1	5	1				1		14	NF	
29	2146E	0004	2208	3	5	2				1		15	2144	No data
29	2310	2330	2313	1-	3							2	NF	
30	0114	0148	0121	1	3	1				1		6	0116	No data
30	0335	0457	0345	3	3	1				1		4	0340	No data
30	0546	0750	0606	3	5	3				1		8	NF	
30	1013	1225	1027	2+	5	3				1		7	*	
30	1932	2105	1954	1-	5	1				1		13	*	
30	2235	2356	2252	2	5	2				1		14	*	
31	0304	0424	0316	2+	3	1				1			0310E	No data
31	1425	1450	1432	1-	1					1			1356	No data

SUDDEN IONOSPHERIC DISTURBANCES

MAY 1982

OBSERVATORIES REPORTING FOR MAY 1982:

Ayrshire, Scotland (AY)	SES	Mayfield, Village, Ohio USA (A28)	SES
Darmstadt, GFR (DA)	SWF	Missoula, Montana USA (A31)	SES, SWF
Edenvale, South Africa (A52)	SES	Panska Ves, Czechoslovakia (PU)	SEA, SWF, SFA
Eureka, Montana USA (A55)	SES	Paterson, New Jersey USA (A46)	SES
Farsta, Sweden (FS)	SES	Portage, Michigan USA (A51)	SES
Frenchtown, Montana USA	SES	Roswell, New Mexico USA (RW)	SES
Glenorchy, Tasmania, Australia (GN)	SES, SWF	San Antonio, Texas USA (SA)	SES
Hicksville, New York USA (HV)	SES	Sao Paulo, Brasil (UM)	SES, SPA
Hiraiso, Japan (HI)	SWF	Simi Valley, California USA (A57)	SES
Hobart, Tasmania, Australia (TA)	SEA	St. Cloud, Minnesota USA (SC)	SES
Houston, Texas USA (A50)	SES	Sofia, Bulgaria (SF)	SEA
Huancayo, Peru (HU)	SWF	Tavares, Florida USA (A49)	SES
Inubo, Japan (IN)	SPA	Trenton, New Jersey USA (NJ)	SES
Kasugai, Japan (KA)	SPA	Tucson, Arizona USA (A9)	SES
Lake Hiawatha, New Jersey USA (A32)	SES	Upice, Czechoslovakia (UI)	SEA
Latrobe, Pennsylvania USA (A19)	SES	Valley Cottage, New York USA (A1)	SES
Louisville, Kentucky USA (A26)	SES	Vsetin, Czechoslovakia (VS)	SEA
Maui, Hawaii USA (MI)	SWF		

\* No Flare Patrol  
 NF No Flare Reported  
 Observations are not necessarily continuous for each reporting station.

SIDs BY HALE REGION

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	28	29	30	31	
REGION																																
18347	1	2																														
18350		1																														
18356							1				1	1																				
18379																																
18382																		1									1					
18383																		1		3		5	4	5			3	1				
18384																		1														
18386																			1													
18388																						1										
18392																										1						
18395																										1	1					
18396																										1	1					
																												2				
NO FLARE																																
			1	1		1										1	1	2	2	2	1	4	1				1	1	1	6	1	
NO FLARE PATROL																																
					1		1	1			1				1				1			2					1	2		3	3	
NO DATA																																
		6	1																			3				2			13	7	2	2
EVENT TOTALS																																
	1	3	7	2	1	2	1	1		1	1	1		1	1	2	4	5	5	7	10	6			2	8	8	14	16	6	2	

**PIONEER XII (VENUS ORBITER)**  
**Interplanetary Magnetic Field Magnitudes**

**MAGNETIC FIELD MAGNITUDES**

MAY 1982

DAY	TIME	BMAG (GAMMAS)
1	13:40:50	1.92
2	13:41:50	16.14
3	13:36:00	15.46
4	13:36:30	14.03
5	13:36:30	13.69
6	13:36:20	18.77
7	13:35:50	16.24
8	13:35:50	10.11
9	13:36:00	9.06
10	13:41:50	11.31
11	13:35:40	7.86
12	13:35:50	3.85
13	13:36:40	15.71
14	13:35:50	11.92
15	13:40:30	9.63
16	13:41:10	7.64
17	13:35:50	13.01
18	13:36:10	15.99
19	13:35:40	20.50
20	13:35:40	14.36
21	13:36:50	10.31
22	13:36:10	15.67
23	13:35:50	11.04
24	13:36:10	11.19
25	13:35:50	10.27
27	13:36:20	8.98
28	13:36:10	9.20
29	13:35:50	15.12
30	13:36:00	14.07
31	13:36:00	16.92

# SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

MAY 1982

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE	
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT		
01	0000	0729	CULG				0240	0240.5					IIIG,W	
			CULG	0544.5	0545	2							DCIM	
	1306	2250	CULG				0557						IIIB,W	
			HARV				1955		1				IIIB	
		HARV				2002		2				IIIG		
		HARV				2002		2				IIIG		
	2030	2400	CULG				2227.5						IIIB,W	
			CULG				2242.5	2243					IS,W	
02	0000	0729	CULG				0328.5	0329.5	3	0328.5	0329	2	IIIG	
			LEAR				0328.7	0334.2	2				V	
			PALE				0328.8	0332.2	2				G	
			CULG				0329.5	0335	2				IIIGG,U	
			CULG				0339.5	0433					IIIN,W	
			CULG				0349	0350	1				IIIG	
			LEAR				0349.7	0349.8	1				III	
			LEAR				0358.7	0408.0	2				CONT	
			LEAR				0419.7	0419.8	1				III	
		0442	0608	WEIS										
				CULG				0645						IIIB,W
				HARV	1523	1526	1							IV
		1253	2300	HARV	1523		2	1525	1528	1				IIIG
		1047	1758	WEIS				1523.8	1528.3	2				IIIG
				HARV				1534	1537	2				UNCLF
				WEIS				1539.9	1540	2				IIIG
				HARV				1626		1	1626		1	IIIB
				WEIS				1626.1	1626.3	2				IIIB
				HARV				1700		1	1700		1	IIIB
				WEIS				1700.1	1700.3	2				IIIB
			HARV				1819		2				IIIG	
			HARV				1902		2				IIIB	
	2029	2400	CULG				2124.5		1				IIIB	
			CULG	2327.5	2328								DCIM,W	
03	0000	0729	CULG				0121	0124					IIIN,W	
	0515	1722	WEIS				0935.2	0935.3	1				IIIB	
			WEIS				0946.9	0947.9	1				IIIG	
			WEIS				1011.1	1011.2	1				IIIB	
			WEIS				1422.0	1422.2	2				IIIB	
		1253	2255	HARV	1621	1640	1							INW
	0000	2400	CULG				2151	2256					IIIN,W	
04	0000	0729	CULG	0231	0252.5	1							IN	
			CULG				0231	0250					IN,W	
			CULG				0233.5	0310					IIIS,W	
			CULG	0234	0252.5								IIIN,W	
			LEAR				0235.3	0255.2	1				G	
			CULG				0235.5	0355	1				IIIN	
			CULG				0250	0321	1				IS	
			CULG				0254.5		2				IIIB	
			LEAR				0255.2	0330.0	1				CONT	
			LEAR				0302.6	0302.7	1				III	
			CULG				0310	0355					IIIN,W	
			CULG				0321	0355					IS,W	
			CULG	0455	0708	1							IN	
		0515	1758	WEIS										
	1253	2245	HARV				1311	1713	1				INW	
			HARV	1651	1653	2			2				IIIG	
	2029	2400	CULG	2041	2357	1							IN	
			CULG				2053	2144					IIIN,W	
05	0000	0647	CULG	0038.5	0110								IN,W	
			CULG	0106.5	0107.5		0107	0107.5					IIIG,W	
	0438	1203	WEIS				0608	1324	1				IN	
	1206	1801	WEIS											
	1253	2250	HARV				1549	1634	1				IN	
	2100	2400	CULG	2227	2400	1	2244	2400	1				IS	
			CULG				2244	2344					IIIN,W	
06			CULG				0000	0575	1				IN	

# SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

MAY 1982

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE				
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND							
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT					
06	0000	0729	CULG	0000	0729		0000	0629					IS,W				
			CULG				0005	0720					IIIN,W				
			CULG				0205	0315					IS				
	0434	1803	LEAR				0209.0	0330.0					CONT				
			WEIS				0502	1751					IS				
			CULG				0515	0729					IS				
			WEIS				0630	1803					CONT				
			WEIS				0720	1641					IIIN				
	1254	2245	HARV				2040	2400					IS,C,DC				
			CULG				2040	2400					1	IS			
			CULG											2056	2400		IIIS,W
			CULG											2105.5	2341	1	IIIN
			CULG				2159	2400					1	2140	2200	2	IIIS
			CULG											2235		2	CONT
07	0000	0729	CULG	0000	0727.5	1	0000	0105					IS,C,DC				
			CULG				0000	0055					IIIS,W				
			CULG				0008	0245.5					1	IIIN			
	0507	1810	LEAR				0024.0	0938.0					CONT				
			CULG				0036.5						2	IIIB			
			CULG				0055	0200						IIIN,W			
			CULG				0105	0205					1	IS,C			
			CULG				0200	0505						IIIS,W			
			CULG				0205	0500					2	IS,C,DC			
	1253	2300	CULG				0250	0330					IIIS				
			CULG				0500	0705					1	IS,DC			
			CULG				0505	0729						IIIN,W			
			WEIS				0514	1200					2	IN			
			WEIS				0515	1725					1	IIIN			
			HARV				1253	1425					1	IN			
2029	2400	HARV				1356	2255					INW					
		HARV				1425	1654					2	I				
		HARV				1654	2012					1	IN				
		HARV				2012	2052					2	I				
		CULG				2039	2400					1	IS,C				
		CULG											2039	2336	1	IS,DC	
08	0000	0728	CULG	0000	0150	1	0000	0135					IN,W				
			CULG				0001	0706					IIIN,W				
			CULG				0135	0706					1	IS			
	0430	1202	WEIS				0431	1415					IS				
			WEIS				0702	1800					2	IIIN			
			LEAR				0717.1	0718.9					1	III			
			HARV				1304	2112					1	IN			
			HARV				1322	1913					1	INW			
			HARV				1723	1724					2	IIIB			
	1253	2255	HARV				1759						IIIG				
			HARV				1805	1806					2	IIIB			
			HARV				1936.2	1936.5					2	III			
			PALE				1936.2	1936.5					2	III			
			CULG				2039	2110					1	IS,DC			
			CULG											2040	2130	1	IIIN,W
2029	2400	CULG				2041.5	2400					IIIB					
		CULG				2048						2	IIIB				
		CULG				2110	2400						2130	2400		IN,W	
		CULG											2205.5		1	IIIG	
09	0000	0728	CULG				0000	0505					IN,W				
			CULG				0000	0650					IIIN,W				
			CULG				0525	0728					1	IS,DC			
	0531	1807	WEIS				2040	2310					IN,W				
			HARV				2040	2310						IS			
			CULG				2029	2400						IIIN,W			
1253	2240	CULG				2042	2400					IS					
		CULG				2043	2312					1	IIIN,W				
		CULG				2310	2400						IS,W				





# SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

MAY 1982

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
15	0443	1443	WEIS				0445	1656	2				IN,DC
			CULG	0446	0715	1	0503	0655					IS
	1502	1810	WEIS				1206.4	1206.5	1				IIIN,W
			CULG										IIIB
	1259	2250	HARV	1310	1315	1							IIIG
			HARV	1340	1420	1							INW
	2028	2400	HARV				1344	2224	2				IIIN
			HARV				1345	2250	1				IN
			HARV	1531	1532	2							IIIG
			HARV				1617	1620	2				IIIGG
			CULG				2044	2400	1				IS
			CULG				2047	2250					IN,W
			CULG				2054.5	2330					IIIN,W
			HARV	2107		1							IIIB
			CULG	2244.5	2245	1	2244.5	2245	1				IIIG
HARV						2245		2				IIIG	
16	0000	0728	CULG				0000	0015					IIIS,W
			CULG	0000	0015		0000	0025					IS,W
			CULG	0015	0054		0025	0146					IN,W
			CULG				0015	0041					IIIN,W
			CULG	0349	0530								IN,W
			CULG	0538	0542	2							IIIN
	1124	1811	WEIS										IN
			HARV	1622	2208	1							INW
	1259	2240	HARV				1922	1925	2				IIIGG
			HARV				1928	2223	1				INW
	2028	2400	HARV	2015	2016	2							IIIG
			CULG	2044	2137	1							IS
			CULG	2114	2341	1							IIIN
			CULG	2137	2301.5	1							IN
			HARV	2217	2226	2							IIIGG
CULG			2225	2225.5	1							DCIM	
17	0606	1612	CULG				2235.5						IIIB,W
			CULG				2244		1				IIIB
			CULG										
	1259	2300	WEIS	0021.5	0022	2	0005	0211					IN,W
			CULG	0026	0030								IIIG
			CULG	0027.5	0028	3							IIIN,W
			CULG				0125	0126	3				IIIG
			CULG	0400	0615								IN,W
			CULG	0441	0540								IIIN,W
2028	2400	WEIS				1729		1				IIIB	
		HARV	2030	0030.5	3	2105.5	2157					IIIG	
		CULG	2111			2111						IIIN,W	
18	0717	CULG	2111		2	2319.6	2325.5	1				IIIB,W	
		HARV										III	
		LEAR											
0509	0528	CULG	0506	0614								IN,W	
		WEIS											
		WEIS											
		HARV	2103		1	1728	1729	2	1728	1729	1	IIIG	
1259	2250	HARV	2103		1							IIIB	
		CULG										DCIM	
19	0728	CULG	0236	0346								IS,W	
		CULG				0554	0650					IS,W	
		WEIS											
1223	1816	WEIS											
		HARV	1931	2229	1							INW	
		CULG											
20	0728	CULG											
		HARV				1358		1				IIIG	





# SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

MAY 1982

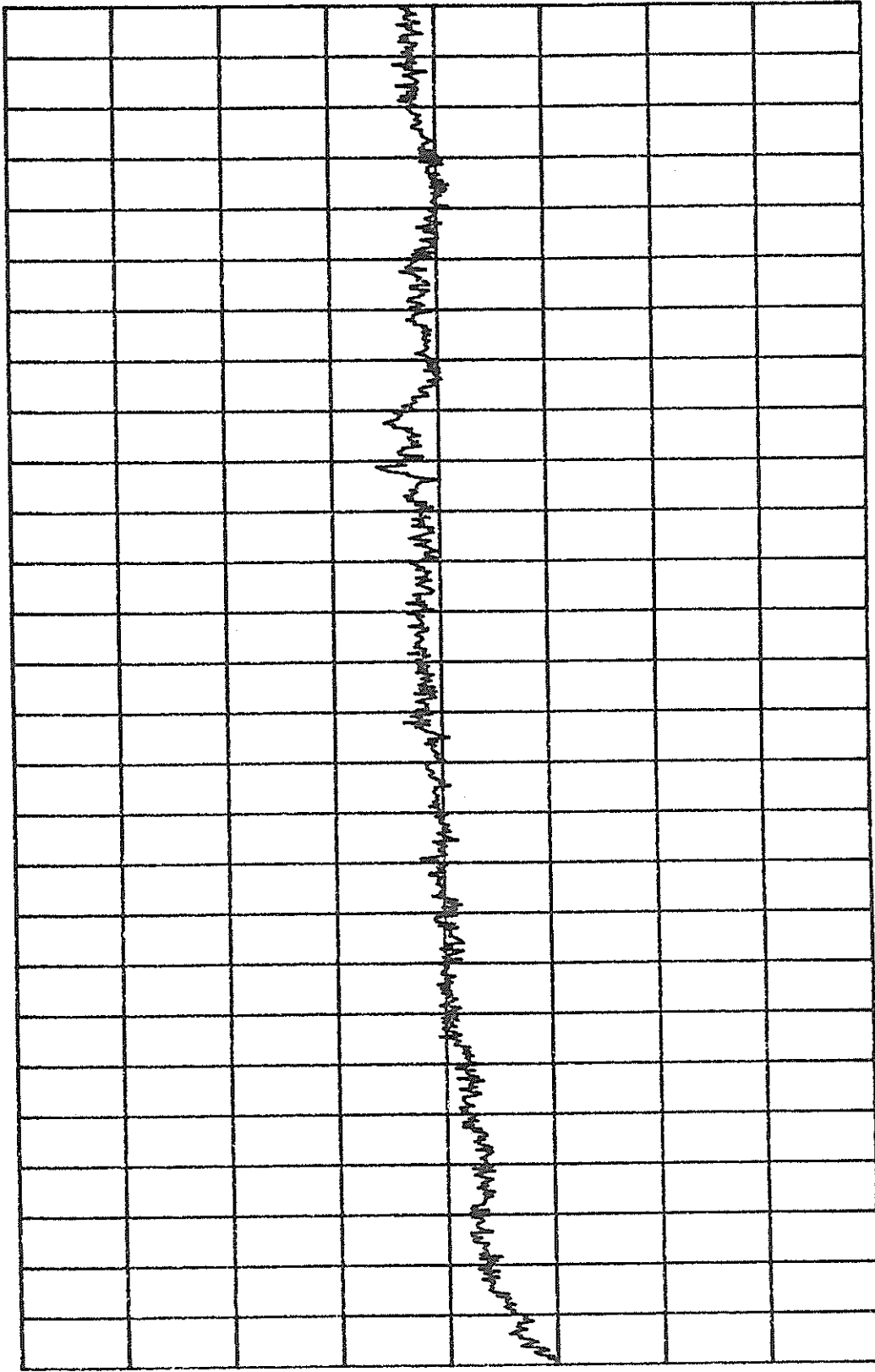
	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE	
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT		
29	0410 1220	1828 2320	CULG	0314	0342.5		0314	0342.5					IIIN,W	
			WEIS											
			HARV	1309	2234	1								INW
	2030 2400	2400	HARV				1323		2				IIIB,U	
			HARV				1648	1649	1				IIIBW	
			HARV				1742		1				IIIBW	
			CULG									IIIGW		
			HARV	2216	2217	2	2110	2113	1				IIIG	
30			CULG							0339	0347		SWF,W	
			CULG	0429	0448.5								IN,W	
	1221	2250	HARV	1832	2238	1							INW	
	2030	2254	CULG											
	2321	2400	CULG											
31	0000	0729	CULG	0012.5	0013	2							DCIM	
	0030	2400	CULG											
			CULG	0034	0125	1							IN	
			CULG	0309	0311	3	0309.5	0310.5	1				IIIGG,U	
			CULG				0623	0643					IN,W	
		1221	2310	HARV	1223	1307	1						I	

The symbols used under the column heading SPECTRAL TYPE have the following definitions:

- |  |   |
|--|---|
| <p>B = Single burst<br/> G = Small group (&lt; 10) of bursts<br/> GG = Large group (&gt; 10) of burst<br/> C = Underlying continuum (particularly with Type I)<br/> S = Storm in the sense of intermittent but apparently connected activity<br/> N = Intermittent activity in this period<br/> U = U-shaped burst of Type III</p> | <p>RS = Reverse slope burst<br/> DP = Drifting pairs<br/> DC = Drifting Chains<br/> H = Herringbone<br/> W = Weak<br/> P = Pulsations<br/> CONT = Continuum<br/> UNCLF = Unclassified activity<br/> DCIM = Fast drift</p> |
|--|---|

# THULE NEUTRON MONITOR

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



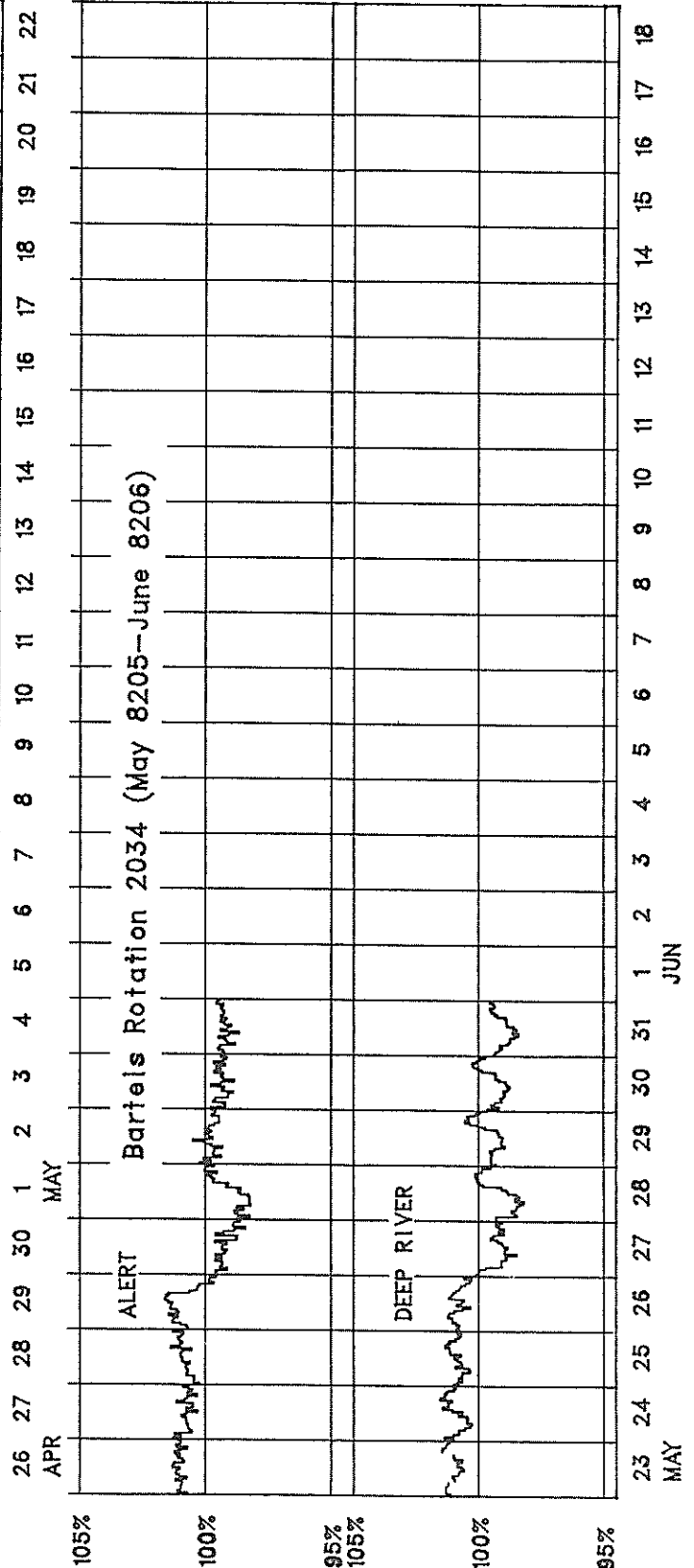
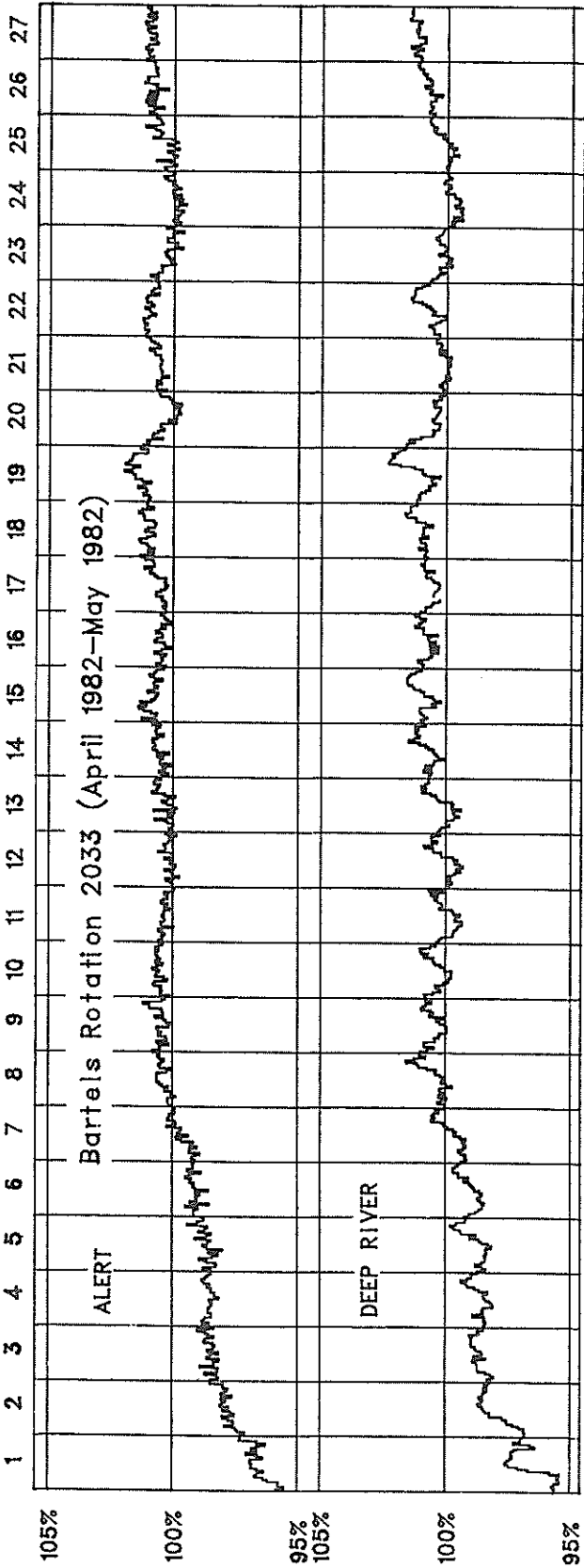
105%  
100%  
95%

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

MAY 1982

## BARTELS ROTATION 2033

COSMIC RAY INDICES  
(Neutron Monitor)



COSMIC RAY INDICES  
(Neutron Monitors)

MAY 1982

May 1982	THULE Average (cts/h)/100	ALERT Average (cts/h)/100	DEEP RIVER Average (cts/h)/300
1	4127	6740.9	6391.5
2	4148	6774.3	6437.7
3	4165	6823.9	6483.0
4	4161	6834.3	6487.3
5	4172	6837.9	6479.4
6	4173	6822.3	6453.3
7	4185	6808.9	6456.7
8	4193	6822.3	6468.3
9	4202	6837.9	6507.5
10	4211	6856.9	6521.8
11	4205	6830.5	6508.6
12	4200	6840.0	6498.2 (22)
13	4224	6871.2	6524.9
14	4235	6894.3	6538.6
15	4193	6822.8	6495.9
16	4199	6842.8	6463.0
17	4210	6866.8	6504.8
18	4182	6817.1	6470.0
19	4171	6795.2	6440.5
20	4198	6825.3	6465.1
21	4215	6857.8	6505.9
22	4219	6866.6	6535.6
23	4230	6897.8	6545.3 (20)
24	4222	6879.0	6538.1
25	4224	6884.2	6533.4
26	4233	6885.9	6530.6
27	4173	6773.1	6426.7
28	4171	6758.3	6422.3
29	4197	6811.5	6450.9
30	4192	6783.7	6438.0
31	4188	6777.2	6414.2
MEAN	4194	6830.4	6481.9

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

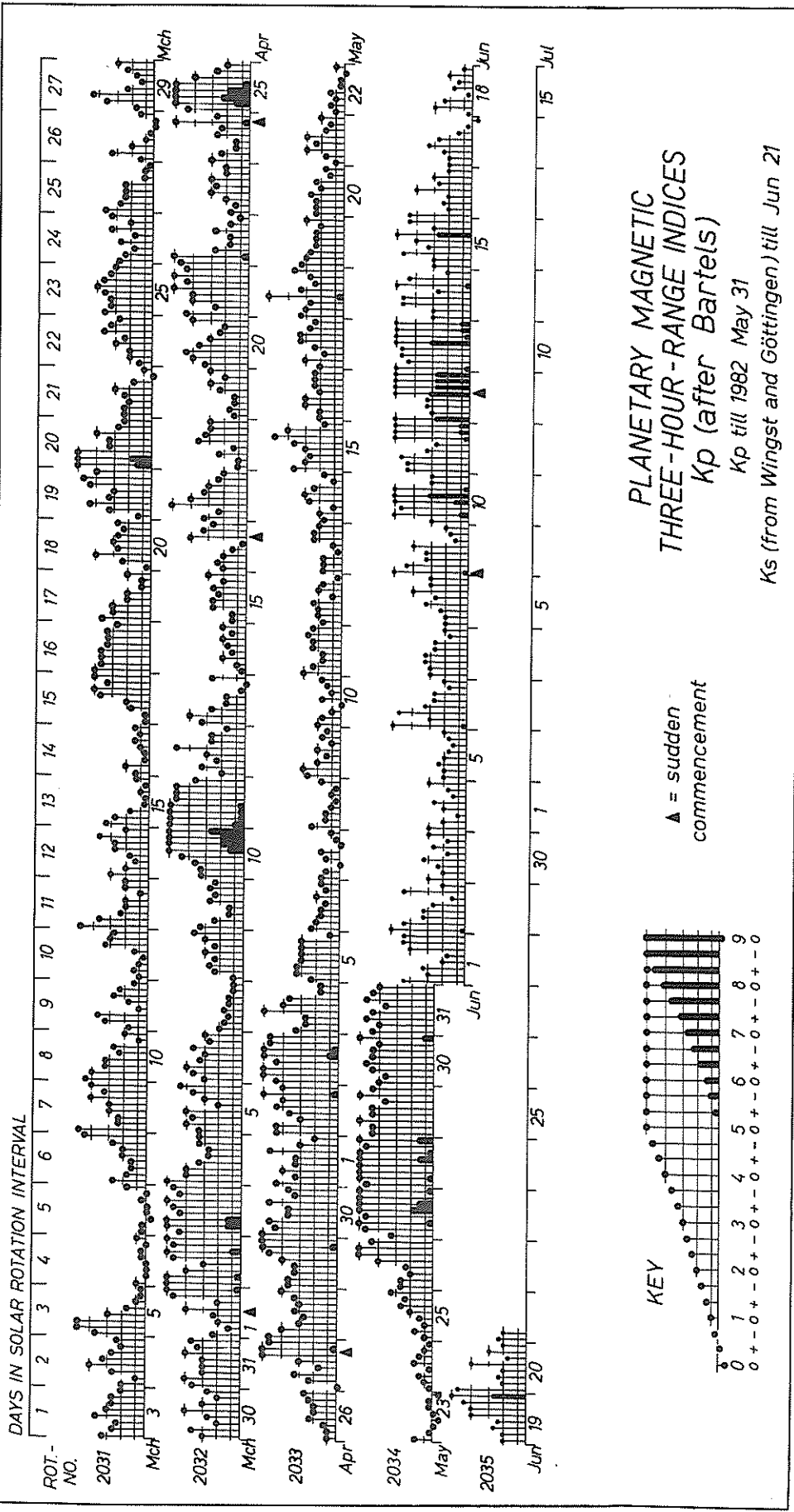




DAILY AVERAGE INDICES Ap

DAY	1982											
	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY
1	7	17	18	5	9	7	6	9	41	68	20	22
2	7	22	15	18	22	5	9	9	60	107	42	30
3	16	9	18	9	36	8	8	20	35	13	48	45
4	5	9	11	11	17	6	10	12	49	12	22	19
5	6	12	15	17	7	11	9	4	37	16	21	14
6	14	19	14	8	6	9	4	10	39	3	18	6
7	50	14	10	5	32	19	3	12	26	3	5	4
8	16	8	4	10	25	27	15	9	18	11	12	5
9	4	6	7	11	21	4	10	4	15	20	10	8
10	4	4	16	9	27	13	9	4	35	16	61	5
11	6	13	15	21	46	31	6	5	45	10	47	9
12	4	20	9	10	12	39	23	2	41	8	15	6
13	5	9	9	12	17	5	12	4	54	13	11	6
14	4	7	8	10	73	27	6	3	42	11	6	8
15	11	4	13	10	20	20	6	12	18	7	10	20
16	21	8	8	7	8	17	4	17	6	4	11	10
17	10	29	25	4	18	32	7	10	30	14	19	12
18	10	10	23	18	6	26	14	13	34	20	12	20
19	10	9	10	38	23	14	10	3	36	10	8	12
20	10	12	8	9	67	13	6	6	26	12	20	8
21	7	6	14	7	33	15	6	14	21	23	32	8
22	5	24	13	13	72	11	3	27	51	38	18	4
23	5	37	56	4	27	20	6	22	29	8	9	2
24	13	13	28	7	18	9	10	21	24	12	15	4
25	15	134	16	13	18	27	8	9	42	20	52	8
26	14	78	8	32	10	9	6	7	43	11	7	24
27	10	24	25	21	10	4	6	13	12	9	24	54
28	9	8	18	6	19	6	12	17	10	6	21	56
29	33	5	18	14	12	4	32	11		13	31	35
30	14	9	17	15	12	1	30	27		15	30	35
31		12	15	4			18	34		20		31
MEAN	12	19	15	12	23	15	10	12	33	18	22	17

# GEOMAGNETIC ACTIVITY INDICES



PRINCIPAL MAGNETIC STORMS

MAY 1982

OBS. 3 letter code	GEO-MAG- NETIC LATI- TUDE	COMMENCEMENT			SC - AMPLITUDES			MAXIMUM 3 HOUR - INDEX K		RANGES			UT END	
		DAY	hr min (UT)	TYPE	D(γ)	H(γ)	Z(γ)	DAY (3 HOUR PERIOD)	K	D(γ)	H(γ)	Z(γ)	DAY	HOURL
SIT	60.0N	01	00--	..	..	..	..	03(3)	7	60	570	640	04	02
IRK	41.0N	02	01--	..	..	..	..	03(2,3,4,5,8)	5	19	120	54	04	17
JAI	17.3N	02	0500	..	..	..	..		-	9	120	44	04	01
SHL	14.7N	02	0500	..	..	..	..		-	9	143	44	04	01
UJJ	13.5N	02	0500	..	..	..	..		-	8	122	39	04	01
ABG	09.5N	02	0500	..	..	..	..	03(4,5)	5	7	128	48	04	01
HYB	07.6N	02	0100	..	..	..	..	03(4,5)	5	7	144	34	04	17
GUA	04.0N	02	2218	..	..	..	..	03(5)	5	10	120	20	04	06
ANN	01.5N	02	0500	..	..	..	..		-	6	159	78	04	01
PMG	18.6S	02	....	..	..	..	..	03(5)	5	5	120	50	04	17
HUA	00.6S	03	0458	..	..	..	..	03(6)	6	7	265	44	04	01
HUA	00.6S	15	0042	..	..	..	..	05(5,6,7)	5	5	187	42	15	23
HYB	07.6N	17	1200	..	..	..	..	18(4)	6	6	117	23	19	03
PMG	18.6S	18	....	..	..	..	..	18(4)	5	3	110	50	19	18
HER	33.7S	18	09--	..	..	..	..	18(4)	5	15	80	38	18	12
GNA	43.2S	18	10..	..	..	..	..	18(4)	5	7	80	70	20	12
HYB	07.6N	25	0200	..	..	..	..	26(6) 27(5,8) 30(3)	5	9	197	48	31	19
FRD	49.6H	26	11--	..	..	..	..	26(6,7,8) 27(3,5,7) 28(2,3,5,7,8) 29(3,4,7,8) 30(8) 31(1,2,3,7) 01(8) 02(1)	5	28	218	95	02	--
COL	60.6N	26	00--	..	..	..	..	28(4) 29(3) 31(3)	7	282	1650	1110	02	16
SIT	60.0N	26	16--	..	..	..	..	27(3)	7	--	--	--	01	11
NEW	55.1H	26	08..	..	..	..	..	27(3) 28(2,3)	6	49	196	241	03	08
IRK	41.0N	26	07--	..	..	..	..	26(6) 27(5,6)	6	29	238	61	31	18
SJG	29.9N	26	1100	..	..	..	..	26(5)	5	12	177	32	29	10
JAI	17.3N	26	0700	..	..	..	..		-	12	93	44	27	03
SHL	14.7N	26	0700	..	..	..	..		-	8	105	34	27	03
UJJ	13.5N	26	0700	..	..	..	..		-	10	97	44	27	03
ABG	09.5N	26	0700	..	..	..	..	26(6)	6	10	106	46	27	03
ANN	01.5N	26	0700	..	..	..	..		-	7	129	36	27	03
HUA	00.6S	26	0956	..	..	..	..	26(6)	7	8	264	28	27	01
PMG	18.6S	26	....	..	..	..	..	26(6) 27(2,3) 30(3)	5	5	140	50	31	16
HER	33.7S	26	11--	..	..	..	..	28(8)	5	37	134	101	30	05
GNA	43.2S	26	15..	..	..	..	..	27(5)	6	25	120	100	31	18
KGL	56.5S	26	17--	..	..	..	..	27(5,6,8) 28(2) 30(8)	6	53	383	262	01	08
JAI	17.3N	27	0500	..	..	..	..		-	9	93	52	30	01
SHL	14.7N	27	0500	..	..	..	..		-	--	--	--	30	01
UJJ	13.5N	27	0500	..	..	..	..		-	8	104	53	30	01
ABG	09.5N	27	0500	..	..	..	..	27(5,8)	5	7	121	71	30	01
GUA	04.0N	27	0459	..	..	..	..	27(3)	5	10	120	30	28	18
ANN	01.5N	27	0500	..	..	..	..		-	7	232	91	30	01
HUA	00.6S	27	0806	..	..	..	..	28(5)	6	10	216	39	31	24
HUA	00.6S	27	0806	..	..	..	..	27(5,6,7)	5	9	278	53	31	24
GUA	04.0N	28	1805	..	..	..	..	28(8)	5	10	70	30	29	14
GUA	04.0N	29	2115	..	..	..	..	29(8)	5	10	80	40	31	18
HER	33.7S	30	21--	..	..	..	..	30(8)	5	16	75	57	01	03

REPORTS WERE RECEIVED FROM THE FOLLOWING OBSERVATORIES:

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

Errata: Principal Magnetic Storms

Conversion in 1979 to a new computer with different word size caused values of the Z (gamma) vertical range to be truncated if they exceeded 99; the machine read and printed only the two least significant digits. Correct values of the affected data are listed below.

Date	Sta	Lat	Time	Z Range	Date	Sta	Lat	Time	Z Range
Feb. 6, 1980	COL	64.6N	0320UT	1090	May 14, 1981	COL	64.6N	09--UT	1070
Apr. 9, 1980	COL	64.6N	05--UT	1150	Jun. 29, 1981	COL	64.6N	05--UT	1230
Oct. 22, 1980	COL	64.6N	03--UT	1020	Jul. 24, 1981	COL	64.6N	21--UT	1720
Feb. 5, 1981	COL	64.6N	04--UT	1010	Jul. 25, 1981	NEW	55.1N	0515UT	1134
Mar. 4, 1981	COL	64.6N	2033UT	1330	Oct. 19, 1981	COL	64.6N	04--UT	1160
Apr. 11, 1981	NEW	55.1N	1339UT	1134	Oct. 22, 1981	COL	64.6N	05--UT	1520
Apr. 26, 1981	COL	64.6N	02--UT	1090	Feb. 10, 1982	COL	64.6N	09--UT	1110
May 9, 1981	COL	64.6N	00--UT	1150	Feb. 21, 1982	COL	64.6N	17--UT	1190

Errata to SGD, 452 Part I, page 155, April 1982 issue:

Feb. 6, 1982 KGL 56.5S 1751 UT H (gamma) horizontal amplitude should be 180, not 18.0.

Feb. 10, 1982 SIT 60.6N 1106 UT H (gamma) horizontal amplitude should be -373, not -37.3.  
Z (gamma) vertical amplitude should be -237, not -23.7.

# RADIO PROPAGATION QUALITY INDICES

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May 82

MAY 1982

DAY	TOKYO	NEW YORK	TEHERAN	OSLO	BRACKNELL
1	3.4	3.7	6.4	5.3	4.8
2	3.5	4.1	6.1	4.3	2.8
3	1.8	2.2	5.8	2.8	1.8
4	3.7	4.5	6.1	4.7	5.5
5	4.0	4.3	3.5	5.0	1.9
6	5.4	5.6	6.5	5.4	3.7
7	7.0	8.1	7.9	5.7	4.9
8	6.2	6.6	7.0	6.3	6.0
9	6.5	6.8	6.0	6.6	7.6
10	6.1	7.8	7.1	5.7	5.9
11	6.1	5.9	8.0	5.7	7.2
12	5.9	6.9	6.6	5.7	6.6
13	6.2	7.3	6.6	5.4	5.6
14	6.6	7.2	5.9	5.8	4.7
15	5.4	6.5	6.5	6.1	7.3
16	4.3	5.6	6.1	7.1	5.5
17	5.4	6.0	5.8	6.7	5.1
18	5.2	4.2	3.5	4.3	4.8
19	5.2	4.9	5.5	5.3	5.2
20	5.5	4.6	5.8	6.3	4.5
21	6.2	5.4	5.8	6.0	5.3
22	6.5	6.1	6.4	6.3	5.6
23	6.5	8.3	6.1	6.3	6.3
24	6.2	6.5	5.7	8.4	7.8
25	7.5	7.4	6.4	9.9	9.9
26	4.1	6.0	5.3	5.5	6.5
27	0.0	1.3	2.3	3.1	3.4
28	3.1	0.7	1.1	2.5	3.1
29	2.0	2.4	1.9	2.6	2.2
30	2.5	2.0	2.3	4.8	5.8
31	0.8	1.7	2.0	2.3	3.4
MEAN	4.8	5.2	5.4	5.4	5.2

## CALCULATION OF QUALITY INDICES (Q)

From all 24 hourly field strength values and from all frequencies of the same circuit a median field strength value is calculated (FD). This daily value is compared with the average value (FA) of the preceding 27 days (1 sun rotation).

$$Q = 6.0 + 20 \log(FD/FA)/3.0$$

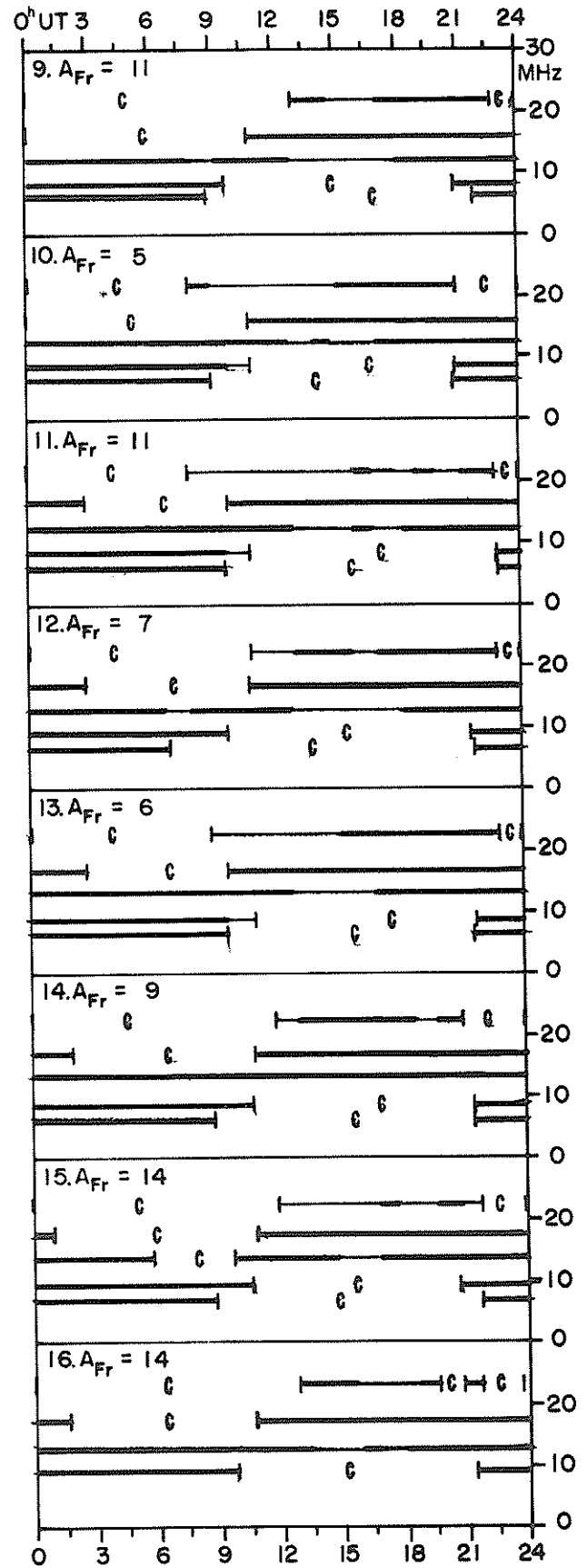
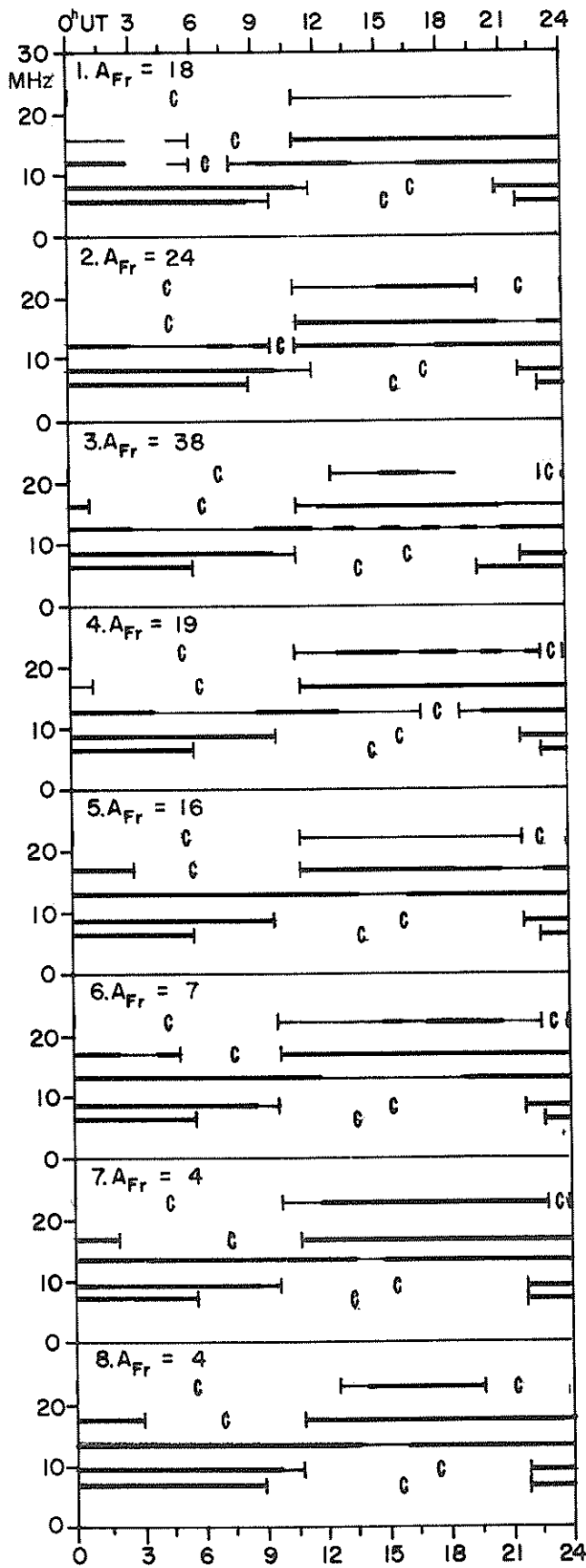
The quality indices vary from 0.0 to 9.9 where 6.0 is normal. Conditions are "normal" (index = 6.0), if they correspond to the average of the preceding 27 days.

### Scale for Quality Indices

- 0.0 - 1.0 = very poor
- 1.1 - 3.0 = poor
- 3.1 - 5.0 = fair
- 5.1 - 7.0 = normal
- 7.1 - 9.0 = good
- 9.1 - 9.9 = very good

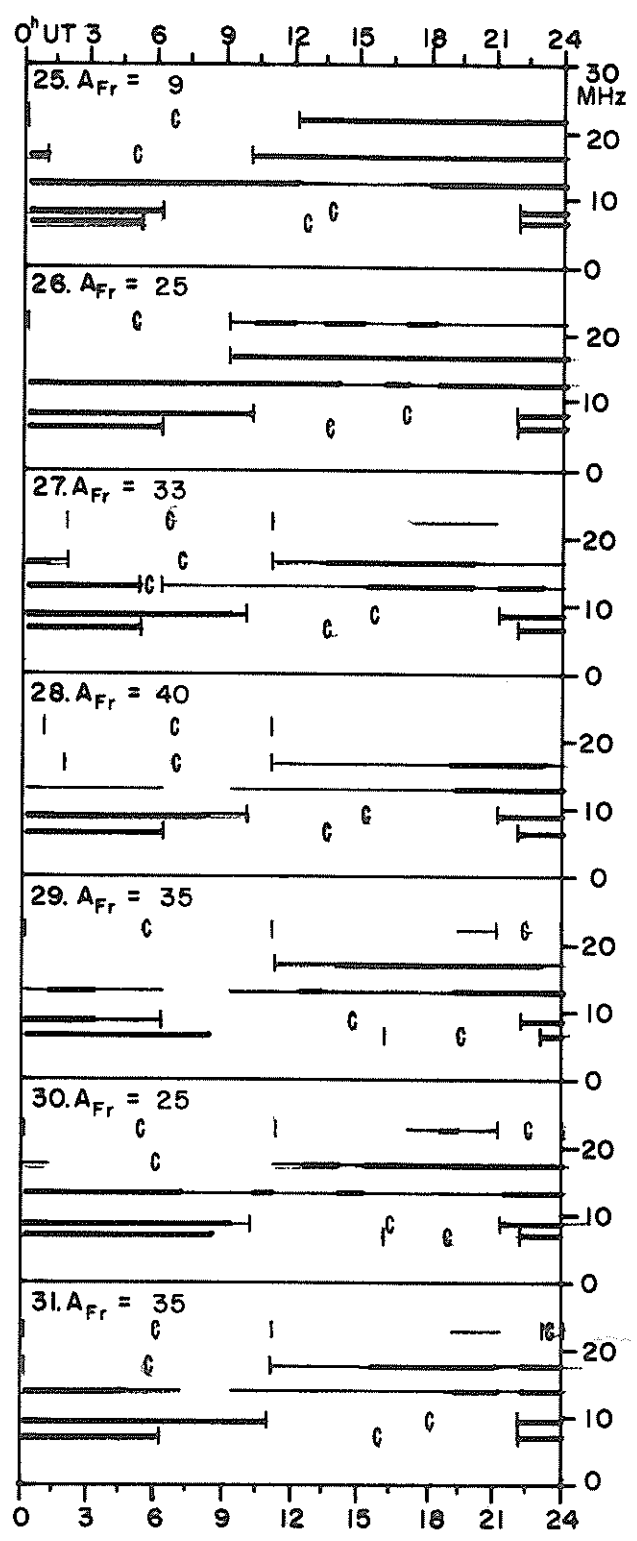
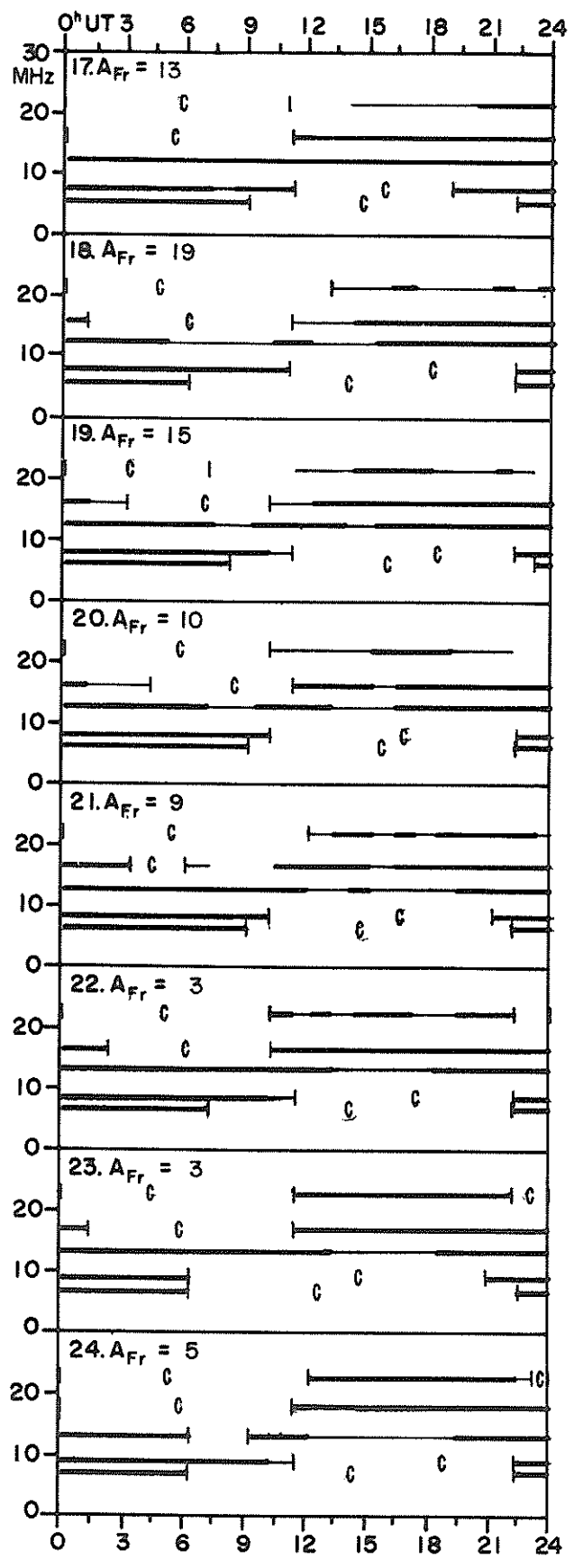
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

MAY 1982

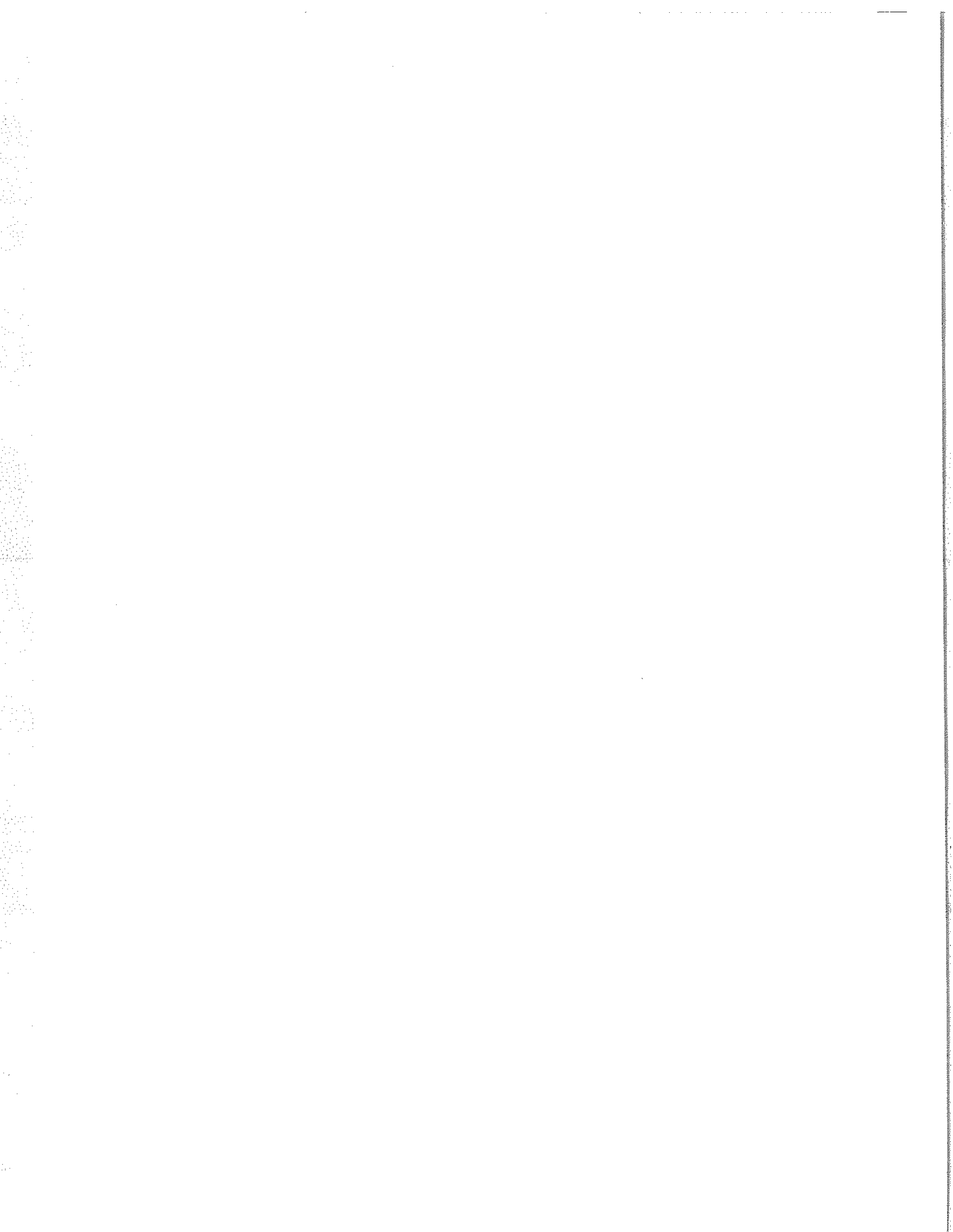


# TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

MAY 1982



Field strengths from five frequencies, 6.4, 8.6, 13.0, 17.0 and 22.5 MHz, observed on a Lüchow New York circuit are represented above. Heavy solid lines represent field strengths  $\geq -12$  dB above  $1 \mu\text{V/m}$  (transmitter power reduced to 1 kW). Observed field strengths between  $-12$  dB above  $1 \mu\text{V/m}$  and  $-40$  dB above  $1 \mu\text{V/m}$  are represented by the fine line.



SGD 455 Part I (Prompt)

## LATE DATA

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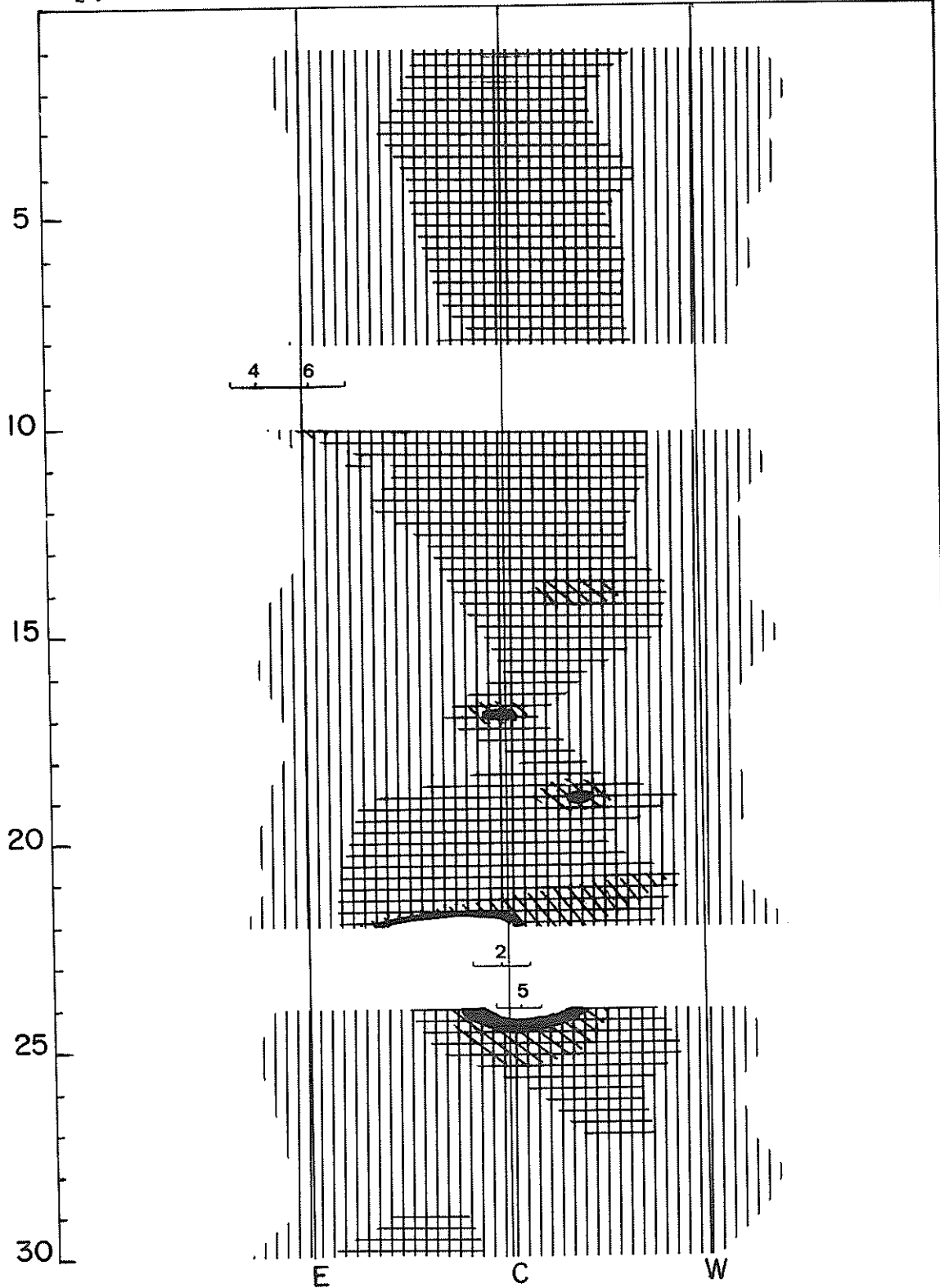
162  
Late  
Apr 82

# SOLAR RADIO EMISSION INTERFEROMETRIC OBSERVATION

APRIL 1982

Nangay

169 MHz



# SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

MARCH 1982

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		INT	START UT	END UT	INT	START UT	END UT	INT			
01	0000	0745	CULG				0000	0745	1				IS,C,DC
			CULG				0000	0745					IIIS,W
			CULG	0007	0008	2							IIIG
			CULG				0038.5		1	0038.5		1	IIIB
			CULG				0052	0053	2	0052	0053	1	
	2045	2400	CULG	0301	0745	1							IIIN
			CULG	0446	0447								IN
			CULG	0545	0627	1							IIIN,W
			CULG				0704	0706	2				IS,DC
			CULG	2045	2400	1	2045	2400	1				IIIG
02	0000	0744	CULG										IS,C
			CULG				0000	0744	1				SCINT
			CULG	0000	0744		0000	0015					IS,W,C
			CULG	0129	0129.5	1	0109.5	0744	1				IIIN
			CULG				0546	0548	2	0546	0548	1	DCIM
2045	2400	CULG				2045	2400	2				IIIG	
		CULG	2055.5	2057	1	2055	2057.5	2				IIIN,W	
		CULG	2057	2400	1							IIIG	
		CULG				2113	2354	1				IN,DC	
		CULG										IIIN	
03	0000	0744	CULG				0000	0744					IIIN,W
			CULG	0023	0744	1							IN
			CULG	0219.5	0221.5	2							DC
			CULG	0625.5	0626	2	0322.5		1				IIIB,U
			CULG	2044	2400		0625.5		1				IIIG,U
04	0000	0744	CULG				2222	2400					IN,W
			CULG				2342.5	2344	3	2343	2344	2	IIIN,W
			CULG										IIIG,V
			CULG	0000	0650								IN,W
			CULG	0054	0058	1							IS
2125	2400	CULG	0055.5	0059.5	2	0054	0101	3	0057	0059	1	IIIGG,U,V	
		CULG				0107.5	0112.5	1					
		CULG				0211.5	0213	2	0211.5	0213	2	IIIG,U	
		CULG	0411	0412	2	0411	0412	1				IIIG,U	
		CULG	0413	0413.5		0413	0413.5					IIIG,W	
05	0000	0744	CULG	0427.5	0428	1							DCIM
			CULG				0510.5	0624	1				IIIN
			CULG				0558	0559.5	2				IIIG,V
			CULG	0600	0601.5	2	0600.5	0602.5	3	0600.5	0602	1	IIIGG,V
			CULG				2232	2356					IIIN,W
06	0000	0743	CULG				0107.5	0108	1				IIIB
			CULG				0125.6	0413					IIIN,W
			CULG							0245	0305		S.W.F,W
			CULG	2044	2400		0341	0420					IS,W
			CULG				2112.5	2113	2				IN,W
07	0000	0744	CULG	2127	2235	1	2113.5	2114	2				IIIG
			CULG										IS
			CULG	0000	0743								IN,W
			CULG				0019						IIIB,W
			CULG				0148.5						IIIB,W
08	0000	0744	CULG				0724						IIIB,W
			CULG				2044	2350					IIIN,W
			CULG	2055	0147	1							IS
			CULG				2116	2117	1				IIIG
			CULG				2150	2205	1				IIIN
09	0000	0744	CULG	0245	0413	2							IV
			CULG	0250	0410	2	0307	0744	2				IS,DC
			CULG							0306	0335	2	S.W.F
			CULG				0306	0331	3	0310.5	0320	2	
			CULG	0413	0635	1	0308	0425	2				II



# SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

MARCH 1982

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
15	2041	2400	CULG				0644.5	0645	1				IIIG
			CULG				0656						IIIB,W
			CULG				0657	0658	1				IIIG
			CULG				0713		1				IIIB
			CULG	0715.5	0718	2							DCIM
			CULG	2041	2400		2041	2400					IN,W
			CULG				2114	2116.5	1				IIIG
			CULG				2114		1				IIIB
			CULG				2239	2321	1				DC,N
			CULG				2325.5		1	2325.5		1	IIIB
			CULG				2341	2357	1				II
			CULG				2345	2345.5	1				IIIG
			CULG				2358	2400					IV,W
16	0000	0741	CULG	0000	0741	1							IN
			CULG				0000	0741	1				IS
			CULG				0000	0741	1				IV
			CULG				0011.5	0014					POSS II
			CULG				0018	0741					RSDP,N
			CULG				0058.5	0739.5					IIIN,W
			CULG				0148		1	0148		1	IIIB,U
			CULG				0158		1	0158		1	IIIB
			CULG				0222.5	0223.5	2				IIIG
			CULG	0347	0347.5	1	0346	0347.5	2	0347	0347.5	2	IIIG
			CULG				0421	0510	1				DC,N
			CULG				0547		1				IIIB
			CULG				2041	2342					IIIN,W
			CULG	2041	2400		2041	2400	1				IS,S,DC
			CULG				2046	2306	1				IN,W
CULG				2047	2113	1				RSDP,N			
CULG										IIIN			
17	0000	0740	CULG				0000	0740	1				IS,C,DC
			CULG	0026	0027							DCIM	
			CULG				0043	0740	1				RSDP,N
			CULG	0105	0105.5	1						DCIM	
			CULG				0120	0641.5		0121.5		1	IIIN,W
			CULG										IIIB
			CULG	0154	0725								IN,W
			CULG	0306.5	0307.5	1							DCIM
			CULG	2041	2400	1							IN
			CULG				2041	2400	1				IS,C
			CULG				2110.5		1				IIIB
			CULG	2203	2205	1							DCIM,N
18	0000	0740	CULG	0000	0740		0000	0740	1				IS,C
			CULG	0236		1						IN,W	
			CULG				0321						DCIM
			CULG				0339	0339.5	2	0339	0339.5	1	IIIB,W
			CULG	0403	0403.5	1							IIIG
			CULG	0410.5	0411.5								DCIM
			CULG	0436	0437.5	1	0437	0438.5	2	0437	043.8	2	DCIM,W
			CULG	0445.5	0446.5	1	0444	0447.5	1	0445.5	0446.5	1	IIIG
			CULG	0526.5	0528	1	0527	0530	2	0527	0529	1	IIIG
			CULG	0624.5	0625	1							IIIGG
			CULG				0707.5		1				IIIG
			CULG	2040	2400	1	2040	2400	1				IIIB
			CULG				2040	2240	1				IS,DC
			CULG				2135		1				CONT
			CULG				2137.5	2138.5	2				IIIB
CULG										IIIG,V			
19	0000	0740	CULG	0000	0140	1	0000	0155	1				IS
			CULG				0124.5						IIIB,W
			CULG	0140	0240								IS,W,C
			CULG				0155	0513	1				IS,C,DC
			CULG	0240	0740	1							IN
			CULG	0425	0425.5	1	0426	0427	1				IIIG,V
			CULG				0513	0740					IN,W
CULG				0725						IIIB,W			



SOLAR RADIO EMISSION  
SPECTRAL OBSERVATIONS

MARCH 1982

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
	START UT	END UT		DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
				START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
25	0503	0738	CULG				0000.5	0002	3	0000.5	0001.5	2	IIIG,V
			CULG				0008	0257	1	0008	0151	1	IIIN
			CULG				0110	0203	2	0110	0203	2	IIIN
			CULG				0118.5	0119.5	3	0118.5	0119	3	IIIG,V
			CULG							0142	0151		SWF,W
			CULG				0508	0726					IIIN,W
			CULG				0508		3				IIIB
			CULG	0519.5	0520								IIIG,W
			CULG	0532	0738								IN,W
			CULG				0550.5		2				IIIB
			CULG	0646.5	0647	3							DCIM
			CULG				2039	2341					IIIN,W
			CULG	2039	2400	1	2039	2400	1				IS,DC
			CULG				2043	2054	1				IIIN
			CULG				2308	2309.5	1				IIIG,U
			CULG				2309		1				IIIB,V
			CULG				2309.5	2310	2	2309.5	2310	2	IIIB
CULG				2344.5		2				IIIB			
26	0000	0738	CULG	0000	0738	1							IS
			CULG				0000	0738					IIIN,W
			CULG				0000	0154					IN,W
			CULG	0032.5	0033	3	0032	0034.5	3	0032	0033.5	3	IIIG,V,U
			CULG				0034	0725.5	1				IIIN
			CULG				0154	0235	1				IS,C
			CULG				0206.5	0207.5	2	0206.5	0207	1	IIIG
			CULG				0235	0314					IN,W
			CULG				0340	0340.5	1				UNCLF
			CULG				0422	0422.5	1	0422	0422.5	1	IIIG
			CULG	0422	0422.5	2							DCIM
			CULG	0547.5	0547.5	3	0547.5	0550.5	3				IIIG,V,Z,
			CULG							0550	0554		SWF,W
			CULG				0555.5	0558.5					II,W
			CULG	0706	0707	1	0706.5	0707.5	3				IIIG,U
			CULG				0735		2				IIIB
			CULG	2038	2210	1	2038	2400	1				IS,C,DC
			CULG				2038	2400					IIIN,W
			CULG				2047	2047.5	2				IIIG
			CULG				2123	2329	1				IIIN
			CULG	2137	2138.5	2	2138	2138.5	2				IIIG
			CULG				2143		3				IIIB
			CULG				2147		2				IIIB
CULG				2154		2				IIIB			
CULG				2159	2200	2				IIIG			
CULG	2210	2400								IN,W			
CULG	2240	2256	2							IIIN			
CULG				2247		3	2247		1	IIIB			
27	0000	0738	CULG				0000	0730					IIIN,W
			CULG										IS,W
			CULG				0000	0300	1				IS,C,DC
			CULG				0007	0725	1				IIIN
			CULG	0021	0242	1							DCIM,N
			CULG				0023.5	0724	2	0024	0311	1	IIIN
			CULG				0030.5	0031.5	3	0031	0031.5	1	IIIG
			CULG	0211.5	0216	1							CONT
			CULG				0300	0738	1				IN
			CULG	0302	0302.5	2							DCIM
			CULG	0330	0738	1							IS
			CULG	0408.5	0411	2	0407.5	0412.5	3	0407.5	0411.5	2	IIIGG,V
			CULG	0414	0414.5	2	0414	0414.5	2				IIIG
CULG				0638.5	0641.5	1				RSDC			
CULG	2038	2250								IN,W			
CULG				2038	2400					IIIN,W			
CULG				2038	2400	1				IS,C			
CULG	2230	2231	1							IIIG			
CULG				2253		1				IIIB			
28	0000	0737	CULG				0000	0447					IS,W
			CULG				0000	0412.5	1				IN

# SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

MARCH 1982

	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
28	2037	2400	CULG				0018	0726					IIIN,W	
			CULG				0029.5	0030	1				IIIG	
			CULG	0145	0156	1							IIIN	
			CULG				0147.5	0149	2	0147.5	0148	1	IIIG	
			CULG				0150	0151.5	1				IIIG	
			CULG	0304	0307.5	1	0304	0308	3	0305.5	0308	2	IIIGG,V	
			CULG				0310.5	0314	1					II
			CULG				0357.5		2	0357.5		1	IIIB	
			CULG	0432	0434	1							CONT	
			CULG	0433	0737	1							IN	
			CULG	0433.5	0434.5	1	0431.5	0431.5	2				IIIGG	
			CULG				0438.5	0443	1				IIIN	
			CULG				0519	0657	2				IIIG,N	
			CULG	0617	0721.5	2	0617	0721.5	3				IIIN	
			CULG	2041	2307		2037	2400					IIIN,W	
			CULG				2043	2237.5	2				IIIN	
			CULG				2047.5	2158	1				IIIN	
			CULG	2150	2400								IN,W	
CULG	2201	2201.5	1	2201	2201.5	2				IIIG				
CULG				2305	2306.5	1				DC				
29	0000	0736	CULG	0000	0736		0006	0736					IN,W	
			CULG	0140.5	0141.5	3	0140.5	0142.5	3	0140.5	0142.5	3	IIIN,W	
			CULG				0142.5		1	0142.5		1	IIIG,V	
			CULG				0159	0200	2	0159.5	0200	2	IIIB	
			CULG				0345	0724	1				IIIG,U	
			CULG				0346.5	0738	2				IIIN	
			CULG	0415	0417	2	0415.5	0417	2	0416	0417	2	IIIN	
			CULG	0420	0458	1							IIIG	
			CULG	0423	0424	3	0423	0424.5	3	0423.5	0424	3	IIIN	
			CULG				0430.5	0433	1				IIIG,V	
			CULG				2039	2307						II
			CULG	2105	2300	2							IIIN,W	
			CULG				2115.5		1				IIIN	
			CULG	2223	2223.5	3							IIIB	
			CULG	2241	2400								IIIG	
			CULG	2330.5	2331.5	1							IS,W	
			CULG				2357		1	2357		1	DCIM	
			CULG										IIIB	
30	0000	0737	CULG				0002	0245					IIIN,W	
			CULG				0050	0050.5	2				IIIG,U	
			CULG	0112.5	0113	2							IIIG	
			CULG	0121	0530	1							IN	
			CULG	0233	0244.5	1							IIIS	
			CULG	0238.5	0239	3	0237.5	0241	3	0238.5	0240.5	2	IIIG,V	
			CULG							0240	0244		SWF,W	
			CULG	0305.5	0306	1							IIIG	
			CULG				0435.5		1				IIIB	
			CULG	0510.5	0511	2							IIIG	
			CULG	0522	0528	1							DCIM,N	
			CULG				0527.5		1				IIIB	
			CULG	0529	0737	3				0537	0550	2	IV	
			CULG										SWF	
			CULG	0537.5	0542	3	0537.5	0558	3				II	
			CULG				0539	0739	3				IV	
			CULG				2037	2400						
			CULG				2056	2057.5	1					IIIN,W
CULG	2056.5	2057	1							IIIG				
CULG	2056.5	2356	1	2056	2107	1				DCIM				
CULG				2058	2100	3				IN				
CULG	2058.5	2100	3							IIIGG				
CULG				2145.5	2357	1				DCIM				
CULG	2250.5	2253	1							IIIN				
CULG				2252	2253	3				DCIM				
CULG				2331.5		2				IIIG				
CULG				2346		1	2346.6		1	IIIB				
CULG				2355.5	2357	2				IIIB				
CULG										IIIG				
31	0000	0736	CULG				0005	0627					IIIN,W	

# SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

MARCH 1982

	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	2036	2400	CULG				0012	0152	1				IIIN	
			CULG				0022.5	0023.5	2				IIIG	
			CULG	0029	0142	3								DCIM,N
			CULG				0041.5	0043.5	3	0041.5	0043.5	2		IIIG,V
			CULG	0131	0131.5	3	0130.5	0131.5	3	0130.5	0131	3		IIIG,V
			CULG				0133.5	0135.5	3	0133.5	0135	2		IIIGG
			CULG	0145.5	0205	1								IIIN
			CULG				0410	0728	2					IIIN
			CULG				0420	0421.5	3	0420.5	0421	2		IIIG,V
			CULG	0420	0421	1								DCIM
			CULG				0428							IIIB,U
			CULG	0533	0533.5	1								DCIM
			CULG				0533	0535	3	0533.5	0534	2		IIIG,V
			CULG	0554	0555	2								IIIG
			CULG				0735	0736	3					IIIG
			CULG				2040	2400						IIIN,W
			CULG				2146.5	2147.5	2					IIIG
			CULG	2147.5		3	2147.5		3					IIIB
			CULG				2148	2351	1					IIIN
			CULG				2224.5		2					IIIG
CULG	2224.5	2225	3								DCIM			
										2225.5	2230	SWF,W		

The symbols used under the column heading SPECTRAL TYPE have the following definitions:

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>B = Single burst</li> <li>G = Small group (&lt; 10) of bursts</li> <li>GG = Large group (&gt; 10) of burst</li> <li>C = Underlying continuum (particularly with Type I)</li> <li>S = Storm in the sense of intermittent but apparently connected activity</li> <li>N = Intermittent activity in this period</li> <li>U = U-shaped burst of Type III</li> </ul> | <ul style="list-style-type: none"> <li>RS = Reverse slope burst</li> <li>DP = Drifting pairs</li> <li>DC = Drifting Chains</li> <li>H = Herringbone</li> <li>W = Weak</li> <li>P = Pulsations</li> <li>CONT = Continuum</li> <li>UNCLF = Unclassified activity</li> <li>DCIM = Fast drift</li> </ul> |
|---|--|



170  
Late  
Apr 82

# SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

APRIL 1982

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE			
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND						
	START UT	END UT			START UT	END UT	INT	START UT	END UT	INT	START UT	END UT		INT		
01	0000	0736	CULG				0005		2				IIIB			
			CULG				0011	0532					IIIN,W			
			CULG	0237	0245	1							IS			
			CULG				0245.5	0256.5	1				IIIN			
			CULG				0250.5	0252	2				IIIG			
			CULG				0253	0253.5	3	0253	0253.5	1	IIIB			
			CULG				0511.5	0513					IIIG,W			
			CULG	0511.5	0513	2							IIIG			
			CULG				2036	2123					IN,W			
			CULG				2129.5	2130	1				IIIG			
			CULG	2201	2202	2							IIIG			
										2240	2245.5	1		IIIS		
02	0000	0736	CULG	0012.5	0013.5	1							IS			
			CULG				0029	0715					IIIN,W			
			CULG	0037		2							IIIB			
			CULG				0117.5	0118.5	1				IIIG,U			
			CULG	0220	0220.5	3	0220	0220.5	2				IIIG			
			CULG	0220.5		1							IIIB			
			CULG				0222		2				IIIB			
			CULG	0304	0625	1							IN			
			CULG	0342	0342.5	1							IIIG			
			CULG				0636		2				IIIB,U			
							0720	0720.5	1					IIIG		
			2036	2400	CULG	2116	2300	1							IN	
CULG						2133.5	2349					IIIN,W				
CULG	2323.5	2324			2							IIIG				
CULG	2348	2348.5			1							IIIG				
						2348		1					IIIB			
03	0000	0735	CULG				0039	0143.5					IIIN,W			
			CULG				0241	0242.5	2				IIIG			
			CULG				0515.5		1				IIIB,U			
			CULG	0536	0613	1							IIIN			
			CULG				0545	0647					IIIN,W			
			CULG	0636.5	0716.5	2							IIIN			
			CULG				0643.5	0644.5	3				IIIG			
			CULG	0646.5	0647	1							DCIM			
			2036	2400	CULG				2149	2343					IIIN,W	
					CULG				2157.5		1				IIIB	
			04	0000	0735	CULG	0119	0254	1							IN
CULG							0124.5	0615.5	1				IIIN			
CULG							0147	0619					IIIN,W			
CULG	0320	0320.5				1	0320	0320.5	1				IIIG			
CULG	0435	0435.5				1							IIIG			
CULG	0554.5					2							IIIB			
CULG	0613.5	0628				1							IIIN			
CULG							0618	0618.5	2				IIIG			
CULG							0707		2				IIIB			
2035	2400	CULG														
05	0000	0735	CULG				0118.5						IIIB,W			
			CULG	0119	0120.5									IIIG,W		
			CULG	0126.5		1								IIIB		
			CULG	0151.5	0154	2	0152	0159	1				IIIS			
			CULG				0155		2					IIIB		
			CULG	0203	0203.5	1							DCIM			
			CULG	0301	0305		0301	0304.5					IIIG,W			
			CULG				0603	0604						IN		
			CULG	0603	0735	1								IIIB		
			2035	2400	CULG	0610.5		1							IS,W	
					CULG	2035	2220									IIIG
					CULG	2102.5	2104.5	1							IIIG,W	
CULG						2103	2104						IIIG,W			
CULG	2130.5	2133			2	2130.5	2133	1				IIIGG				
CULG	2220	2400										IN,W				
				2300	2300.5	1					IIIG					
06	0000	0735	CULG	0207.5	0210	1						IIIN				



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Late  
Apr 82

# SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

APRIL 1982

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE	
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT			START UT	END UT	INT	START UT	END UT	INT	START UT	END UT		INT
12	2034 2400	CULG	0632	0635									CONT	
		CULG				2034	2334						IN,W	
		CULG				2046	2254						IIIN,W	
		CULG				2052.5	2053	2					IIIG	
		CULG	2104.5	2105		2104.5	2105							IIIG,W
		CULG				2228.5	2229	3						IIIG
		CULG	2239	2312										IS,W
		CULG	2239.5		1	2239.5		1					IIIB	
13	0000 0722	CULG				0003	0330						IIIN,W	
		CULG				0010.5	0030						IN,W	
		CULG	0117.5		1								IIIB,U	
		CULG				0335.5		2					IIIB,U	
		CULG				0621	0621.5	2						IIIG
	2034 2400	CULG				0632.5	0634	3						IIIG
		CULG	2037	2400	1									IS
		CULG				2037	2037.5							IIIG,W
		CULG	2039.5	2040		2039.5	2040							IIIG,W
		CULG				2114		1						IIIB,U
		CULG				2115	2116.5							IIIG,W
		CULG				2143	2144						IIIG,W	
		CULG				2250	2400	1					IS	
14	0000 0733	CULG	0000	0525	1	0000	0200	1					IS,DC	
		CULG				0008	0733						IIIN,W	
		CULG	0043			0043							IIIB,W	
		CULG	0100	0102	1	0100.5	0101.5	3	0100	0101.5	2		IIIG	
		CULG				0105.5		2	0105.5		2		IIIB	
		CULG				0200	0225							IN,W
		CULG				0233	0250	2						P
		CULG				0234	0302	2	0235	0258	2	2		IIIS
	CULG	0235	0310	1	0233	0430	1						CONT	
	CULG				0239	0247.5	3						IIIN	
	CULG				0310.5		1						IIIB	
	CULG				0515	0730							IS,W	
	CULG	0525	0733	1									IN	
	CULG	0604	0605	1	0604	0605	1						IIIG	
	2033 2400	CULG	2033	2346	1									IN
		CULG				2039	2349							IIIN,W
CULG					2142	2142.5	1						IIIG	
CULG					2216		2						IIIB	
CULG		2348.5	2349	1									IIIG	
15		0000 0733	CULG	0025	0733									IN,W
			CULG				0032	0526						IIIN,W
			CULG				0145	0145.5	1					IIIG
	CULG					0430	0606						IN,W	
	2033 2400	CULG				0448	0449	3						IIIG,U
		CULG	0457	0520	1									CONT
		CULG				2104.5	2105.5							IIIG,W
		CULG	2216		1									IIIB
		CULG	2226	2226.5		2226.5							IIIG,W	
		CULG	2327	2356		2327	2354						IIIN,W	
16	0000 0732	CULG				0021	0726						IIIN,W	
		CULG	0226.5	0227.5	1	0227	0227.5	1					IIIG	
		CULG	0228.5	0230	2	0228.5	0230	2					IIIG	
	2032 2400	CULG	2032	2340		2032	2145							IN,W
		CULG				2045	2346							IIIN,W
		CULG	2055.5	2127.5	2									DC,N
		CULG	2141.5	2147.5	2	2142		2					IIIG	
17	0000 0732	CULG				0132	0732						IS,W	
		CULG	0512	0732										IN,W
		CULG				0514		1						IIIB
		CULG				0514	0732							IIIN,W
	2032 2400	CULG	2032	2220	1	2032	2125	1						IS
		CULG				2036	2255							IIIN,W
		CULG				2205.5		1						IIIB
		CULG				2230	2400	1						IS

# SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

APRIL 1982

DAY	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	
17			CULG	2255	2400		2318	2349	1						IIIS,W
			CULG				2325	2325.5	2						IIIN
			CULG												IIIG
18	0000	0025	CULG				0000	0025							IS,W
	0131	0720	CULG				0000	0025							IIIS,W
			CULG				0131	0720							IS,W
			CULG				0131	0137	1						IIIS
			CULG	0134.5		1	0134.5		2						IIIB
			CULG	0135.5		2	0135.5		2						IIIB
			CULG	0136.5	0137	2	0136.5	0137	2	0136.5	0137	1			IIIG
			CULG				0137	0204							IIIN,W
			CULG				0204	0220	1						IIIS
			CULG	0219.5		2	0219.5		3	0219.5		2			IIIB
			CULG				0220	0720							IIIN,W
			CULG	0241.5	0552	1	0241.5	0552	2	0241.5	0341	1			IIIN
			CULG				0245	0526	2						IIIG,N
			CULG	0318	0720										IN,W
			CULG	0327.5		1	0327.5	0328.5	3	0328		2			IIIG
			CULG	0358	0405	2	0357.5	0405	3						IIIS
			CULG	0541	0541.5	2	0541	0541.5	3						IIIG
			CULG	0545.5	0547.5	3	0545.5	0547.5	3						IIIGG
			CULG	0555.5		1	0555.5		3						IIIB
			CULG	0649.5	0652	1	0649.5	0652	3						IIIGG
	2035	2400	CULG				2119	2337							IIIN,W
			CULG				2119		2						IIIB
			CULG				2132	2340	1						IS
			CULG				2144	2325	1						IIIN
			CULG				2156	2157.5	3						IIIG
			CULG				2312	2315	3						IIIG
			CULG				2315	2328	2						IIIN
19	0000	0740	CULG				0419	0425	2						IIIGG
	2030	2400	CULG				2210	2211	1						IIIG
20	0000	0700	CULG				0210.5								IIIB,W
	2110	2400	CULG				2121	2157.5							IIIN,W
21	0000	0730	CULG				0027.5								IIIB,W
			CULG				0058		2						IIIB
	2115	2400	CULG				2240	2400							IIIN,W
			CULG				2249	2400	1						IIIN
22	0000	0730	CULG				0002	0719							IIIN,W
			CULG				0043	0650	1						IIIN
			CULG				0401.5	0545							IIIN,W
			CULG				0402	0403	2						IIIG
			CULG				0450	0730	1						IS,DC
			CULG				0528		2						IIIB
	2040	2400	CULG				2040	2400	2						IS,C,DC
			CULG				2059	2237							IIIN,W
			CULG				2146		1						IIIB
23	0000	0730	CULG				0000	0100	2						IS,C
			CULG				0003		2						IIIG
			CULG				0100	0730	1						IS,C
	2032	2400	CULG	2032	2400	1	2032	2400	1						IN,C
			CULG				2036	2141	1						DC,N
			CULG				2047	2400							IIIN,W
24	0000	0730	CULG												IIIN
			CULG												IN,W
			CULG	0000	0730										IS,W
			CULG	0000	0730										IS,W
			CULG	0635.5	0637										DCIM,W
	2030	2400	CULG	2035	2305		2040	2254							IN,W
			CULG				2042	2350							IIIN,W
25	0000	0730	CULG				0026.5	0231							IIIN,W
			CULG				0158.5	0159	2	0158.5	0159	1			IIIG



PIONEER XII (VENUS ORBITER)  
Interplanetary Magnetic Field Magnitudes  
MARCH 1982

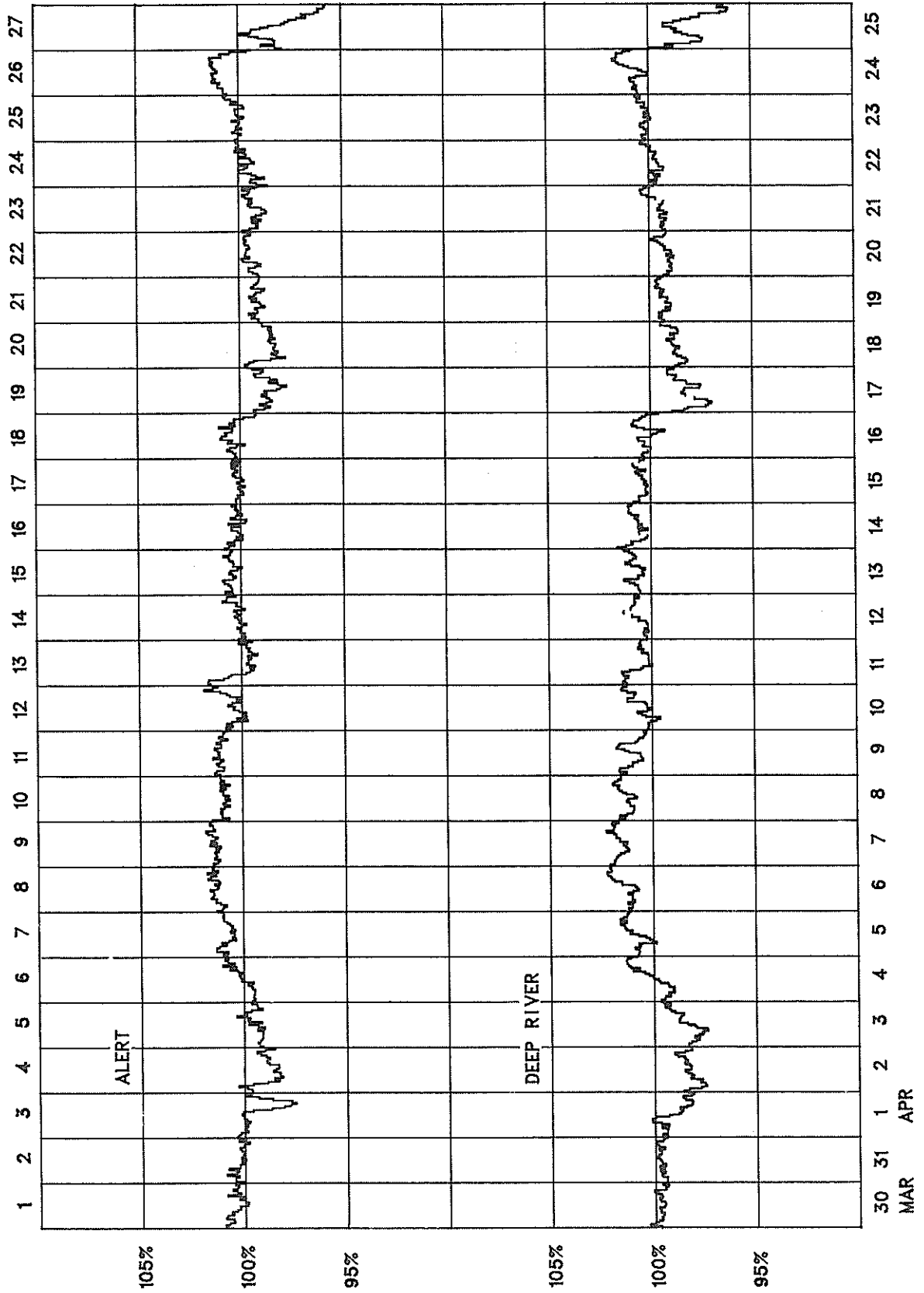
DAY	TIME	BMAG (GAMMAS)
1	13:39:30	13.80
2	13:39:50	10.10
3	13:39:40	12.20
4	13:39:40	8.30
5	13:39:40	6.50
6	13:40:00	12.60
7	13:39:50	18.20
8	13:40:00	15.20
9	13:39:50	25.20
10	13:40:30	8.00
11	13:40:40	9.10
12	13:40:50	25.10
13	13:40:40	15.00
14	13:41:00	16.30
15	13:41:20	10.98
16	13:41:20	9.35
17	13:41:00	13.19
18	13:41:10	17.67
19	13:41:50	14.92
20	13:41:20	11.00
21	13:41:30	16.60
22	13:41:40	12.50
23	13:41:40	11.50
24	13:41:40	17.60
25	13:41:30	15.51
26	13:41:00	14.12
27	13:41:20	10.44
28	13:41:20	10.37
29	13:41:00	7.82
30	13:41:50	11.67
31	13:41:40	7.28

APRIL 1982

DAY	TIME	BMAG (GAMMAS)
1	13:40:50	27.85
2	13:41:30	11.02
3	13:41:10	11.59
4	13:40:50	14.08
5	13:40:30	13.21
6	13:40:50	14.82
7	13:41:30	15.70
8	13:41:20	11.00
9	13:40:50	12.45
10	13:41:10	12.60
11	13:41:20	10.65
12	13:41:10	9.81
13	13:41:20	10.73
14	13:41:10	12.43
15	13:41:00	21.05
16	13:41:50	13.72
17	13:41:00	10.98
18	13:41:20	10.68
19	13:41:20	9.41
20	13:40:40	16.90
21	13:41:20	16.12
22	13:40:50	17.73
23	13:41:40	16.99
24	13:40:50	9.42
25	13:41:00	11.58
26	13:41:10	10.10
27	13:41:50	6.07
28	13:41:20	7.02
29	13:41:10	6.64
30	13:42:20	6.32

### COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2032 (March 1982-April 1982)



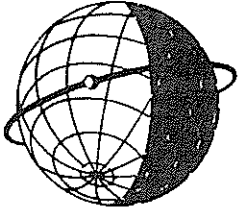
COSMIC RAY INDICES  
(Neutron Monitors)

APRIL 1982

April 1982	ALERT Average (cts/h)/100	DEEP RIVER Average (cts/h)/300
1	6749.5	6372.9
2	6710.9	6322.1
3	6745.3	6334.6
4	6788.7	6441.0
5	6840.2	6495.8
6	6876.2	6526.0
7	6880.8	6545.0
8	6848.7	6521.9
9	6860.1	6497.8
10	6819.1	6470.6
11	6785.5	6478.0
12	6796.8	6472.6 (22)
13	6818.8	6485.5 (23)
14	6801.8	6484.2 (23)
15	6794.8	6463.7 (23)
16	6808.0	6452.9 (23)
17	6697.9	6321.0 (23)
18	6691.8	6355.6
19	6728.4	6394.3
20	6752.5	6381.9
21	6738.7	6408.9 (23)
22	6758.6	6418.8
23	6792.9	6450.0
24	6852.0	6492.0
25	6639.1	6302.0
26	6565.1	6234.2
27	6650.0	6325.3
28	6694.9	6369.2
29	6700.7	6367.0
30	6707.5	6378.1
Mean	6763.2	6418.8

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





**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."