Space Weather Highlights
30 May - 05 June 2022

SWPC PRF 2440
06 June 2022

Solar activity ranged from very low to low levels throughout the highlight period. On 30 May, Region 3019 (N11, L=042, class/area Cro/030 on 21 May) produced a C1.5 flare at 30/0027 UTC. Weak C-class activity was also observed from Region 3029 (S18, L=199, class/area Axx/010 on 04 Jun) on 02 Jun and 04 Jun. A 6 degree long filament erupted at 31/2351 UTC, centered near S11W08. A CME was detected in STEREO imagery, first visible at 01/0224 UTC, with a possible Earth-directed component. Another filament eruption was observed at 02/0500 UTC. This 20 degree long filament was centered near S35W35 with a subsequent CME detected in LASCO imagery at 02/0612 UTC and with a possible Earth-directed conponent.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at high levels through the period. A maximum of 9,720 pfu was observed at 03/1515 UTC.

Geomagnetic field activity was at quiet to unsettled levels. Isolated unsettled levels were observed on 30-31 May due to recurrent, negative polarity CH HSS influence. Quiet levels were observed on 01-05 Jun.

Space Weather Outlook
06 June - 02 July 2022

Solar activity is expected to be at very low to low levels through the outlook period. A chance for moderate levels exists on 08-24 Jun due to the return of old Regions 3014 (N22, L=104) and 3017 (N12, L=089), both M-class flare producers on their last transit.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to reach high levels on 26-30 Jun and 01-02 Jul due to CH HSS effects. Normal to moderate levels are anticipated on 06-25 Jun.

Geomagnetic field activity is expected to be at unsettled to active levels on 13-17 Jun and 23-26 Jun due to recurrent CH HSS influences. Mostly quiet conditions are expected to prevail throughout the remainder of the outlook period.

Daily Solar Data

Date	Radio Flux 10.7cm	Sun spot No.	Sunspot Area (10^{-6} hemi.)	X-ray Background Flux	Flares							
					X-ray			Optical				
					C	M	X	S	1	2	3	4
30 May	101	40	320	B2.0	2	0	0	3	0	0	0	0
31 May	98	39	270	B1.9	0	0	0	0	0	0	0	0
01 June	104	59	330	B2.3	0	0	0	9	0	0	0	0
02 June	101	59	430	B2.3	1	0	0	7	0	0	0	0
03 June	101	52	430	B1.8	0	0	0	0	0	0	0	0
04 June	101	75	420	B2.0	0	0	0	0	0	0	0	0
05 June	99	57	260	B1.5	2	0	0	0	0	0	0	0

Daily Particle Data

Date	Proton Fluence (protons/cm ^{2} -day -sr)		Electron Fluence (electrons/cm^2 -day -sr)
	>1 MeV	>10 MeV	>2MeV
30 May	6.2e+04	3.4e+04	1.7e+08
31 May	5.6e+04	3.4e+04	1.5e+08
01 June	4.2e+04	3.3e+04	2.8e+08
02 June	4.5e+04	3.4e+04	4.0e+08
03 June	4.3e+04	3.4e+04	4.2e+08
04 June	4.8e+04	3.4e+04	5.2e+08
05 June	5.9e+04	3.4e+04	1.9e+08

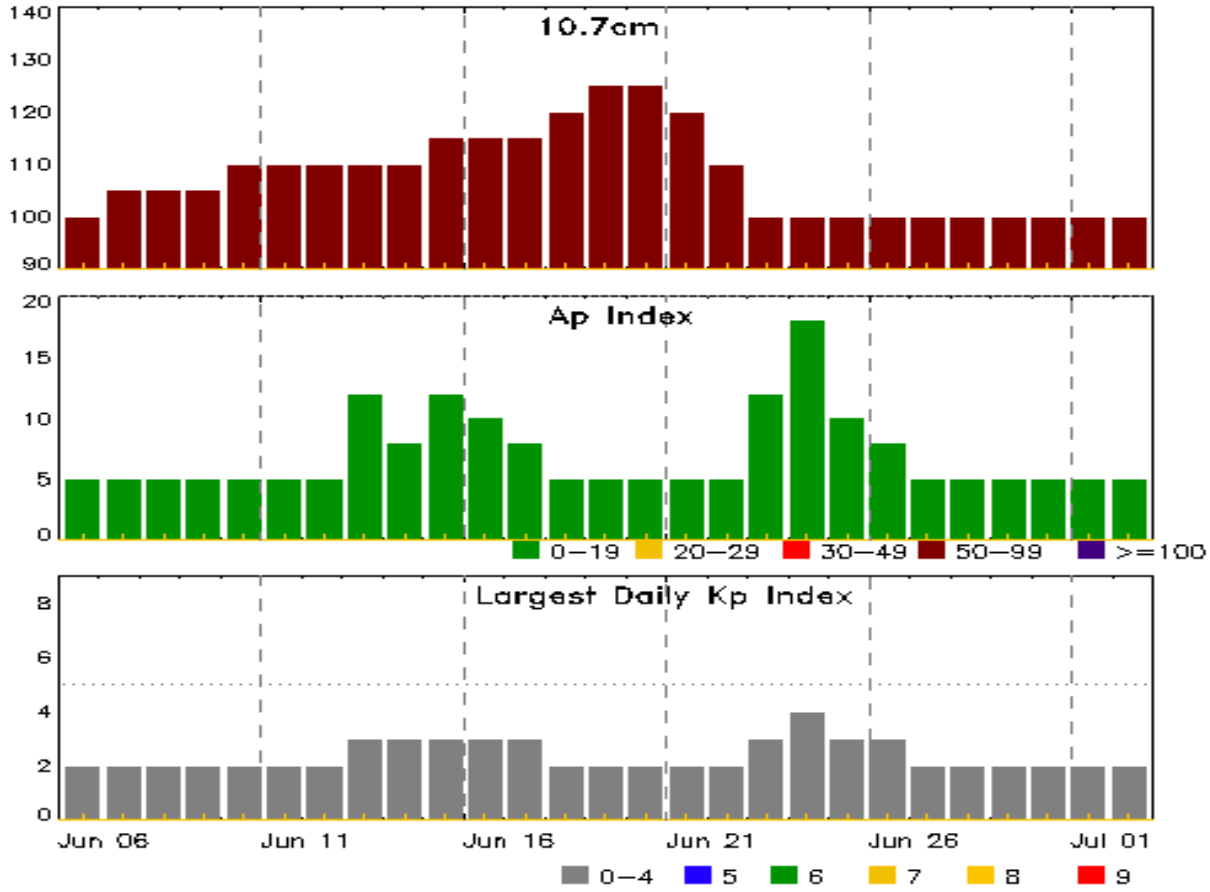
Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
30 May	8	3-2-1-2-2-2-2-2	10	3-3-3-2-1-3-1-2	9	3-3-2-2-1-2-2-2
31 May	8	3-2-2-2-2-2-2-2	21	3-4-4-3-4-5-2-1	9	3-2-2-2-2-2-3-1
01 June	8	2-3-2-3-2-1-1-1	8	3-3-2-3-2-1-0-1	6	2-2-2-2-1-1-0-1
02 June	5	1-1-0-2-2-2-2-2	8	1-0-1-4-4-0-1-1	5	1-1-1-2-1-1-1-2
03 June	4	0-1-2-2-2-1-1-1	3	1-1-1-2-1-0-1-0	4	1-1-2-1-1-1-1-1
04 June	4	0-2-2-1-2-1-1-0	1	0-0-1-0-1-0-0-0	4	1-1-2-1-1-1-1-1
05 June	5	0-1-1-2-3-1-2-1	2	0-1-1-2-0-0-1-0	4	1-1-1-1-1-1-1-1

Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
30 May 0206	ALERT: Electron 2MeV Integral Flux >= 1000pfu	30/0135
30 May 0810	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	30/0135
31 May 1032	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	30/0135
01 Jun 0501	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	30/0135
02 Jun 0459	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	30/0135
03 Jun 0501	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	30/0135
04 Jun 0639	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	30/0135
05 Jun 0556	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	30/0135

Twenty-seven Day Outlook



Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index	Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index
06 Jun	100	5	2	20 Jun	125	5	2
07	105	5	2	21	120	5	2
08	105	5	2	22	110	5	2
09	105	5	2	23	100	12	3
10	110	5	2	24	100	18	4
11	110	5	2	25	100	10	3
12	110	5	2	26	100	8	3
13	110	12	3	27	100	5	2
14	110	8	3	28	100	5	2
15	115	12	3	29	100	5	2
16	115	10	3	30	100	5	2
17	115	8	3	01 Jul	100	5	2
18	120	5	2	02	100	5	2
19	125	5	2				

Energetic Events

	Time			X-ray		Optical Information			Peak Radio Flux		Sweep Freq Intensity	
Date	Begin	Max	Half Max	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	245	2695	II	IV

No Events Observed

Flare List

	Time				Optical		
Date	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
30 May	0015	0023	0029	B3.4			3025
30 May	0050	0054	0058	B6.1			3021
30 May	0204	0227	0238	C1.5			3019
30 May	0204	0226	0328	C1.5			3019
30 May	B0543	0545	0546		SF	S16E10	3023
30 May	B0645	0646	0647		SF	N28W57	3025
30 May	1501	1509	1517	B6.3	SF	S31E10	3024
30 May	1615	1626	1640	B2.7			3025
30 May	1809	1813	1817	B2.9			3023
30 May	2029	2034	2042	B2.5			3025
31 May	1453	1508	1521	B6.1			3025
01 Jun	0355	0357	0401		SF	N16W26	
01 Jun	0420	0426	0437	B3.7	SF	N16W24	3026
01 Jun	0442	0442	0442		SF	N16W26	3026
01 Jun	0449	U0509	A0525		SF	N16W25	3026
01 Jun	0823	0824	0827		SF	N16W28	3026
01 Jun	0839	0857	0904		SF	N16W28	3026
01 Jun	0932	0942	0947	B3.3			3026
01 Jun	1137	1147	1151	B8.6	SF	N18W27	3026
01 Jun	1321	1327	1331	B4.6			3026
01 Jun	1400	1401	1405		SF	N19W28	3026
01 Jun	1443	1451	1455	B7.4	SF	N17W29	3026
02 Jun	B0000	0005	0014		SF	N16W38	3026
02 Jun	0015	0015	0019		SF	N16W38	3026
02 Jun	0031	0043	0044		SF	N16W38	3026
02 Jun	0259	0310	0322	B5.4			3023
02 Jun	0354	0403	0411	B7.8			3023
02 Jun	0456	0503	0519	B4.9			
02 Jun	0537	0900	0916		SF	N15W39	3026
02 Jun	0558	0621	0702	C1.2			
02 Jun	1225	1236	1242	B5.7	SF	N16W45	3026

Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
02 Jun	1316	1320	1322		SF	N15W45	3026
02 Jun	1337	1337	1339		SF	N15W45	3026
02 Jun	1418	1426	1432	B3.8			3026
02 Jun	1537	1544	1548	B3.3			3026
02 Jun	2037	2041	2046	B3.7			3026
03 Jun	0243	0248	0252	B8.1			3024
03 Jun	0711	0720	0725	B6.7			3024
04 Jun	0028	0040	0055	B4.2			
04 Jun	0115	0126	0140	B5.1			
04 Jun	1729	1802	1834	B7.0			3024
04 Jun	2350	0004	0014	B3.1			3028
05 Jun	1132	1200	1205	C1.3			3029
05 Jun	1205	1225	1234	C1.7			

Region Summary

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
			Region 3019												
19 May	N11E69	41	20	4	Cro	3	B								
20 May	N11E55	41	20	2	Cro	4	A	1				1			
21 May	N11E41	42	30	6	Cro	4	B								
22 May	N11E27	43	20	4	Cro	4	B								
23 May	N12E17	40	10	4	Bxo	4	B	1							
24 May	N14E05	39	10	3	Axx	4	A								
25 May	N14W09	39	plage					2			3				
26 May	N14W22	39	0	1	Axx	1	A								
27 May	N14W36	40	0	1	Axx	1	A								
28 May	N14W50	41	plage												
29 May	N14W64	41	plage												
30 May	N14W78	42	plage					2							
								6	0	0	3	1	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 39

			Region 3020												
22 May	S20E58	12	20	2	Hsx	1	A								
23 May	S21E44	13	40	1	Hsx	1	A								
24 May	S21E31	13	30	1	Hsx	1	A								
25 May	S21E18	12	30	1	Hsx	1	A								
26 May	S21E05	12	20	1	Hsx	1	A								
27 May	S21W09	13	20	1	Hrx	1	A								
28 May	S21W23	14	plage												
29 May	S21W37	14	plage												
30 May	S21W51	15	plage												
31 May	S21W65	16	plage												
01 Jun	S21W79	17	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 12

Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
			Region 3021												
22 May	N14E67	2	20	3	Cro	4	B								
23 May	N14E54	3	30	6	Dro	6	B								
24 May	N13E40	4	10	5	Bxo	5	B								
25 May	N13E28	2	10	4	Bxo	4	B								
26 May	N12E14	3	10	2	Bxo	2	B								
27 May	N13E02	3	10	3	Bxo	3	B	2			2				
28 May	N13W10	1	0		Axx	1	A	1			1				
29 May	N13W24	1	plage												
30 May	N13W38	2	plage												
31 May	N13W52	3	plage												
01 Jun	N13W66	4	plage												
02 Jun	N13W80	4	plage												
								3	0	0	3	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 3

			Region 3022												
24 May	S08E57	347	10	3	Bxo	5	B								
25 May	S08E43	347	0		Axx	1	A								
26 May	S08E29	348	plage												
27 May	S08E15	349	plage												
28 May	S08E01	350	plage												
29 May	S08W13	350	plage												
30 May	S08W27	351	plage												
31 May	S08W41	352	plage												
01 Jun	S08W55	353	plage												
02 Jun	S08W69	353	plage												
03 Jun	S08W83	354	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 350

Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
			Region 3023												
24 May	S12E76	328	plage					1							
25 May	S13E65	325	120	3	Hsx	2	A								
26 May	S14E50	327	180	3	Hax	2	A								
27 May	S14E38	326	120	3	Hax	2	A	1							
28 May	S13E25	325	110	3	Hax	2	A								
29 May	S12E12	325	110	3	Hax	3	A								
30 May	S13W01	324	130	3	Hax	2	A				1				
31 May	S13W14	324	110	2	Hax	2	A								
01 Jun	S14W27	324	120	2	Hax	2	A								
02 Jun	S14W41	325	110	2	Hsx	2	A								
03 Jun	S13W54	325	110	2	Hsx	2	A								
04 Jun	S14W67	325	110	3	Hsx	2	A								
05 Jun	S14W80	324	80	3	Hsx	2	A								
								2	0	0	1	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 324

			Region 3024												
25 May	S33E68	322	50	1	Hsx	1	A								
26 May	S33E54	323	80	2	Hsx	1	A								
27 May	S33E43	321	60	2	Hsx	1	A	2			2				
28 May	S33E31	320	70	2	Hsx	1	A								
29 May	S33E18	319	60	1	Hsx	1	A								
30 May	S33E05	318	40	1	Hsx	1	A				1				
31 May	S33W07	317	40	1	Hsx	1	A								
01 Jun	S33W19	316	70	1	Hsx	1	A								
02 Jun	S33W31	316	60	1	Hsx	1	A								
03 Jun	S33W44	315	70	3	Cso	4	B								
04 Jun	S35W57	315	60	3	Cso	4	B								
05 Jun	S35W68	313	60	2	Hsx	1	A								
								2	0	0	3	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 318

Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
			Region 3025												
29 May	N28W53	30	30	5	Cro	8	B				5				
30 May	N27W63	27	150	5	Dso	7	B				1				
31 May	N27W75	26	120	5	Dao	6	B								
								0	0	0	6	0	0	0	0

Died on Disk.
Absolute heliographic longitude: 30

			Region 3026												
01 Jun	N16W36	333	100	5	Dsi	11	B				8				
02 Jun	N15W49	333	190	7	Dao	13	B				7				
03 Jun	N16W63	334	190	7	Cso	4	B								
04 Jun	N16W80	337	160	7	Cso	4	B								
05 Jun	N15W93	338	80	6	Hsx	1	A								
								0	0	0	15	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 333

			Region 3027												
01 Jun	S17E03	294	40	4	Dso	5	B								
02 Jun	S17W10	294	70	5	Dso	3	B								
03 Jun	S16W23	294	60	5	Dao	2	B								
04 Jun	S17W39	297	70	5	Dao	3	B								
05 Jun	S17W50	295	30	4	Cro	2	B								
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 294

			Region 3028												
04 Jun	N14E52	206	10	1	Axx	1	A								
05 Jun	N14E38	207	plage												
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 207

Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
		Region 3029													
04 Jun	S18E59	199	10	1	Axx	1	A								
05 Jun	S17E48	197	10	1	Axx	1	A	1							
								1	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 197

Preliminary Report and Forecast of Solar Geophysical Data (The Weekly)

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Notice: The 27-day Outlook, Satellite Environment, X-ray and Proton plots have been redesigned. Comments and suggestions are welcome SWPC.Webmaster@noaa.gov

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