

Solar activity was at low to high levels throughout the period. Region 2322 (N11, L=116, class/area=Dac/60 on 21 April) grew and intensified as it rotated to the western limb; producing numerous low level C-class flares and five moderate level M-class flares on 21 April. Region 2322 also produced the largest flare of the period, an impulsive M4/Sf at 22/1545 UTC. Region 2322 continued to produce C-class and M-class flares until it rotated beyond the western limb by 24 April, including a long-duration M1 flare at 23/1007 UTC with an associated Type-II radio sweep and coronal mass ejection (CME) from the western limb as observed in SOHO/LASCO C2 imagery. The CME was not Earth-directed.

Regions 2325 (N05, L=050, class/area=Cai/220 on 19 April) and 2326 (N20, L=086, class/area=Cao/80 on 23 April) were the other most prolific flare producers during the period. Region 2325 produced an M1 flare at 21/2201 UTC and Region 2326 produced numerous C-class X-ray flares with the most notable being a C7 flare at 23/1203 UTC. Both flares were very impulsive and did not have any observed optical flares nor notable radio signatures.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at moderate to high levels during the week; reaching high levels on 20-21 April and 24 April with a peak flux of 2,620 pfu on 20 April.

Geomagnetic field activity was at quiet to unsettled levels on 20 April as Earth was in a background ambient solar wind environment. On 21 April, Earth came under the influence of an isolated positive coronal hole high speed stream (CH HSS) and solar wind speeds increased to over 600 km/s as measured at the ACE satellite. This CH HSS produced occasional periods of active levels of geomagnetic activity from 21-24 April. The CH HSS rotated out of a geo-effective alignment by midday on 24 April and the winds decreased to mainly nominal solar wind conditions of about 375 km/s, returning Earth to quiet to unsettled geomagnetic conditions.

During the week, ACE solar wind parameters measured a high wind speed of 628 km/s on 21/0632 UTC and a low wind speed of 291 km/s on 26/1123 UTC. Total field (Bt) ranged from about 1 to 14 nT, while the Bz component varied between +12 to -7 nT. The phi angle was generally in a positive (away from the Sun) orientation with a short period of negative (towards the Sun) sector to begin the week.

Space Weather Outlook

27 April - 23 May 2015

Solar activity is expected to be at very low to low levels through 03 May due to the low number of complex active regions. Solar activity levels are expected to increase to low levels; with a slight chance for moderate (R1-R2/minor-moderate) levels beginning 04 May with the return of Region 2322 (N11, L=116) and remain at low levels, but increase to a chance for moderate

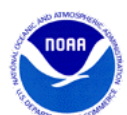


(R1-R2/minor-moderate) levels beginning 07 May as Region 2326 (N20, L=086) also rotates back onto the disc. Solar activity level is expected to decrease back to very low to low levels with the departure of Regions 2322 and 2326 beginning 17 May.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at normal to moderate levels from 27 April-06 May, normal levels from 07-12 May, moderate to high levels from 13-14 May, high levels from 15-18 May, moderate levels from 19-20 May, and moderate to high levels from 21-23 May.

Geomagnetic field activity is expected to be at quiet levels from 27-28 April and increase to quiet to unsettled levels beginning 29 April due to CH HSS effects. Field activity is expected to begin decreasing by 02 May, with overall quiet levels likely from 03-10 May. Field activity is expected to increase to unsettled to active levels beginning late on 11 May and likely reaching active levels on 12-13 May due to CH HSS effects. Field activity is expected to decrease to unsettled to active levels by 14 May as CH HSS effects begin to wane; and return to quiet to unsettled conditions from 15-17 May. Field conditions are expected to increase to unsettled to active levels on 18 May due to a CH HSS and return to quiet to unsettled conditions as the CH HSS rotates out of a geo-effective position by 21 May, and remain at quiet levels for 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
20 April	150	125	750	B5.6	3	0	0	9	1	0	0	0
21 April	154	153	670	B9.0	4	7	0	16	0	1	0	0
22 April	150	134	630	B9.0	9	1	0	13	1	0	0	0
23 April	141	110	630	B8.6	10	1	0	17	0	0	0	0
24 April	135	79	480	B7.1	10	0	0	14	0	0	0	0
25 April	126	77	550	B5.1	1	0	0	5	0	0	0	0
26 April	119	55	530	B3.8	2	0	0	1	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	>100 MeV	>0.6 MeV	>2MeV	>4 MeV
	20 April	6.7e+05	1.0e+04	2.4e+03		7.0e+07
21 April	5.7e+05	1.0e+04	2.4e+03		3.3e+07	
22 April	3.5e+05	1.6e+04	2.4e+03		2.8e+07	
23 April	9.0e+05	4.6e+04	2.3e+03		4.2e+07	
24 April	6.4e+05	5.0e+04	2.7e+03		5.1e+07	
25 April	9.5e+05	4.0e+04	2.3e+03		7.6e+07	
26 April	1.5e+06	3.3e+04	2.7e+03		6.9e+07	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	20 April	9	3-3-1-2-2-2-0-3	7	2-3-1-3-2-1-0-2	10
21 April	18	4-3-2-3-4-4-2-3	29	3-4-5-5-5-4-3-2	22	4-4-3-4-4-4-3-3
22 April	9	2-2-3-2-2-2-1-3	19	2-3-4-5-4-3-2-1	11	3-2-3-3-2-2-2-3
23 April	6	1-3-1-2-2-1-1-1	5	2-3-2-2-0-0-0-1	7	2-4-2-2-1-1-0-1
24 April	5	2-3-1-1-2-1-1-0	3	2-2-0-2-0-0-0-0	5	2-3-1-1-1-0-0-0
25 April	2	0-0-0-1-2-1-1-1	0	0-0-0-0-0-0-0-0	3	0-1-1-1-1-0-1-1
26 April	3	1-0-0-1-1-2-1-2	0	0-0-0-0-0-0-0-1	4	1-1-1-1-1-1-0-1

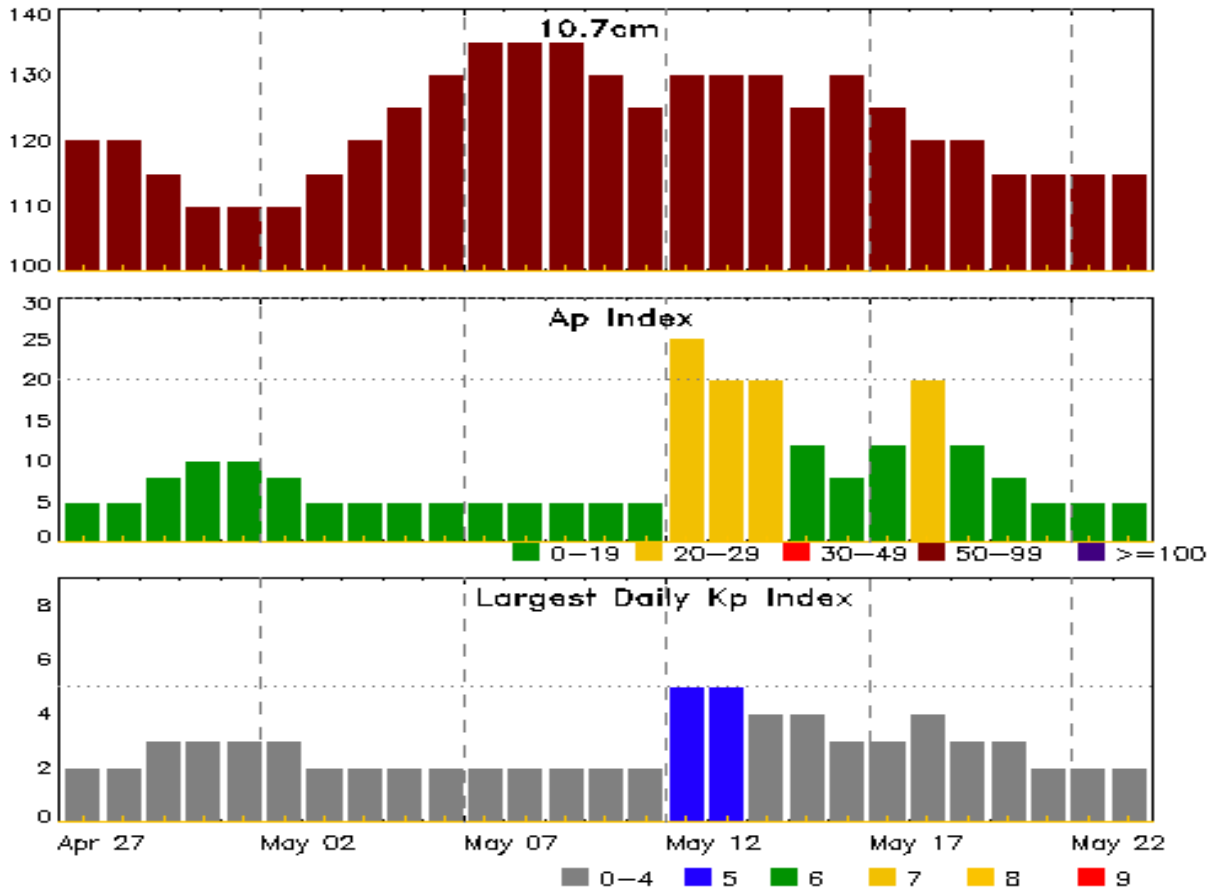


Alerts and Warnings Issued

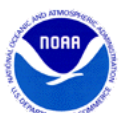
Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
20 Apr 0401	WARNING: Geomagnetic K = 4	20/0400 - 1300
20 Apr 1143	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	16/1330
21 Apr 0151	WARNING: Geomagnetic K = 4	21/0155 - 1600
21 Apr 0218	ALERT: Geomagnetic K = 4	21/0217
21 Apr 1412	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	16/1330
21 Apr 1437	WARNING: Geomagnetic K = 5	21/1436 - 1900
21 Apr 1555	EXTENDED WARNING: Geomagnetic K = 4	21/0155 - 2200
22 Apr 0735	WARNING: Geomagnetic K = 4	22/0735 - 1600
23 Apr 0514	WARNING: Geomagnetic K = 4	23/0515 - 1400
23 Apr 0606	ALERT: Geomagnetic K = 4	23/0559
23 Apr 0948	ALERT: Type II Radio Emission	23/0924
24 Apr 1612	ALERT: Electron 2MeV Integral Flux >= 1000pfu	24/1555
25 Apr 1116	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	24/1555
26 Apr 1046	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	24/1555



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
27 Apr	120	5	2	11 May	125	5	2
28	120	5	2	12	130	25	5
29	115	8	3	13	130	20	5
30	110	10	3	14	130	20	4
01 May	110	10	3	15	125	12	4
02	110	8	3	16	130	8	3
03	115	5	2	17	125	12	3
04	120	5	2	18	120	20	4
05	125	5	2	19	120	12	3
06	130	5	2	20	115	8	3
07	135	5	2	21	115	5	2
08	135	5	2	22	115	5	2
09	135	5	2	23	115	5	2
10	130	5	2				



Energetic Events

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	Half	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux		Intensity	
			Max						245	2695	II	IV
21 Apr	0708	0721	0727	M1.0	0.006	SF	N09W80	2322	210			
21 Apr	1017	1040	1059	M2.2	0.037							
21 Apr	1149	1157	1202	M2.2	0.011	SF	N10W84	2322				
21 Apr	1524	1545	1551	M4.0	0.023	SF	N10W84	2322				
21 Apr	1655	1700	1709	M2.1	0.012	SF	N13W84	2322				
21 Apr	2139	2145	2155	M1.8	0.011			2322				
21 Apr	2158	2201	2204	M1.2	0.003			2325				
22 Apr	0830	0844	0858	M1.1	0.012	SF	S09E05	2332				
23 Apr	0918	1007	1110	M1.1	0.057			2322				1

Flare List

Date	Time			X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
	Begin	Max	End				
20 Apr	0033	0052	0105	C1.0			
20 Apr	0351	0400	0522		1F	N11W59	2322
20 Apr	0526	0550	0646		SF	N11W60	2322
20 Apr	0643	0644	0647		SF	N22W06	2324
20 Apr	0652	0657	0707		SF	N10W61	2322
20 Apr	1140	U1141	1145		SF	N20W09	2324
20 Apr	1303	1310	1349		SF	N14W70	2322
20 Apr	1408	1429	1524		SF	N09W71	2322
20 Apr	1528	U1541	1548		SF	N09W71	2322
20 Apr	1627	1639	1642		SF	N12W69	2322
20 Apr	1951	1954	1958	C1.2			
20 Apr	2040	2116	2215	C2.4			2321
20 Apr	2111	2111	2121		SF	N09W44	2321
21 Apr	B0043	0148	0226		SF	N13W80	2322
21 Apr	0349	0354	0407	C1.2			2322
21 Apr	0510	0511	0514		SF	N20W22	2324
21 Apr	0536	0542	0552	C1.1	SF	N21W24	2324
21 Apr	0708	0721	0727	M1.0	SF	N09W80	2322
21 Apr	0802	U0803	0809		SF	N09W81	2322
21 Apr	0840	0840	0845		SF	N20W26	2324
21 Apr	0902	0903	0909		SF	N09W81	2322
21 Apr	0955	1002	1014	C2.4	SF	N09W84	2322



Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
21 Apr	1017	1040	1059	M2.2			
21 Apr	B1113	U1114	1122		SF	N10W84	2322
21 Apr	1141	1154	1226	M2.2	SF	N10W84	2322
21 Apr	1306	1313	1342		SF	N12W74	2322
21 Apr	1344	1347	1350		SF	N12W82	2322
21 Apr	1514	1514	1519		SF	S09W73	2329
21 Apr	1524	1545	1551	M4.0	SF	N10W84	2322
21 Apr	1655	1700	1709	M2.1			2322
21 Apr	1657	1657	1705		SF	N13W84	2322
21 Apr	1709	1709	1712		SF	N13W84	2322
21 Apr	2048	2056	2144	C5.0	2F	N03W18	2325
21 Apr	2139	2145	2155	M1.8			2322
21 Apr	2158	2201	2204	M1.2			2325
22 Apr	0009	0012	0036		SF	S10E09	2332
22 Apr	0111	0115	0119	C2.3			2325
22 Apr	0125	0126	0132		SF	N11W84	2322
22 Apr	0138	0144	0150	C3.7	1N	N23W32	2324
22 Apr	0200	0207	0215	C4.6			2325
22 Apr	0300	0305	0312	C2.8			2333
22 Apr	0314	0325	0334	C4.1	SF	N22W35	2324
22 Apr	0416	0423	0442		SF	N20W35	2324
22 Apr	0426	0428	0431		SF	N09W57	2321
22 Apr	0443	0452	0500		SF	N20W35	2324
22 Apr	0601	0611	0617	C2.3			
22 Apr	0704	0711	0718	C2.3	SF	S10E17	2327
22 Apr	0759	0806	0821	C3.8	SF	N21W37	2324
22 Apr	0830	0844	0858	M1.1	SF	S09E05	2332
22 Apr	0916	0917	0922		SF	N22W38	2324
22 Apr	1211	1215	1220	C1.4			
22 Apr	1226	1230	1232		SF	N21W36	2324
22 Apr	1322	1323	1328		SF	N21W59	2326
22 Apr	2147	2149	2154		SF	N08W68	2321
23 Apr	0000	0000	0010		SF	N15W59	2326
23 Apr	0043	0058	0100		SF	N20W67	2326
23 Apr	0114	0118	0120	C1.7			2321
23 Apr	0139	0140	0143		SF	N07E53	
23 Apr	0139	0140	0148		SF	S10E07	2327
23 Apr	0205	0209	0220	C2.2			2326



Flare List

Date	Time			Optical			Rgn #
	Begin	Max	End	X-ray Class	Imp/Brtns	Location Lat CMD	
23 Apr	0207	0207	0213		SF	N21E70	2333
23 Apr	0248	0255	0305		SF	N20W66	2326
23 Apr	0325	0329	0331	C1.5			2326
23 Apr	0506	0518	0523	C1.6	SF	N20W46	2324
23 Apr	0509	0510	0516		SF	N19E65	2333
23 Apr	0541	0544	0546		SF	N19W67	2326
23 Apr	0547	0555	0604		SF	N19W67	2326
23 Apr	0627	0632	0637	C1.5	SF	N19W67	2326
23 Apr	0731	0743	0752	C1.4	SF	N19W67	2326
23 Apr	0758	0804	0826		SF	N19W68	2326
23 Apr	0846	0846	0851		SF	N21E63	2333
23 Apr	0852	0858	0906		SF	N20W70	2326
23 Apr	0918	1007	1110	M1.1			2322
23 Apr	1158	1203	1208	C7.3			2326
23 Apr	1456	1520	1529	C3.1	SF	S02W39	2325
23 Apr	1742	1746	1748	C2.6			2326
23 Apr	1956	1959	2005	C3.0			2333
23 Apr	2310	2318	2326		SF	N20W53	2324
24 Apr	0102	0109	0122		SF	N20W81	2326
24 Apr	0135	0138	0144	C1.2	SF	N19W85	2326
24 Apr	0207	0208	0210		SF	N19W85	2326
24 Apr	0239	0251	0301	C1.4	SF	N19W85	2326
24 Apr	0409	0410	0412		SF	N19W87	2326
24 Apr	0501	0528	0541	C1.4			
24 Apr	0545	U0546	0556		SF	S12W23	2331
24 Apr	B0557	U0643	0714		SF	S11W25	2331
24 Apr	B0733	U0743	A0746		SF	S11W25	2331
24 Apr	B0748	U0759	A0827		SF	S11W25	2331
24 Apr	0839	0843	0847	C2.1			2326
24 Apr	0928	0933	0934		SF	N21E49	2333
24 Apr	1356	1424	1528		SF	S11W27	2331
24 Apr	1802	1811	1835	C1.0	SF	S10W29	2331
24 Apr	1905	1927	1940	C1.7	SF	N20W68	2324
24 Apr	2004	2023	2037	C1.6	SF	N08E27	
24 Apr	2125	2145	2205	C1.5			
24 Apr	2252	2259	2304	C1.3			2331
24 Apr	2328	2331	2338	C1.2			2326
25 Apr	B0203	0212	0224		SF	S10W35	2331



Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
25 Apr	B0230	0301	0321		SF	S10W35	2331
25 Apr	0622	0624	0628		SF	S10W36	2331
25 Apr	0651	0659	0710		SF	S09W37	2331
25 Apr	0706	0707	0718		SF	N22E34	2333
25 Apr	1232	1235	1237	B8.4			2324
25 Apr	1803	1849	1930	C1.9			
26 Apr	1144	1149	1153	C1.0	SF	S10W53	2331
26 Apr	1310	1314	1321	B6.5			2327
26 Apr	1347	1412	1421	B8.5			2331
26 Apr	1746	1751	1756	B6.6			2327
26 Apr	2051	2057	2103	C1.4			2331



Region Summary

Date	Location		Sunspot Characteristics					Flares																
	Lat	CMD	Helio Lon	Area 10 ⁶ hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical												
									C	M	X	S	1	2	3	4								
Region 2321																								
11 Apr	N12E68		93	200	11	Eac	5	BG	4				4											
12 Apr	N13E54		94	610	12	Ekc	11	BGD	6	1			4											
13 Apr	N13E40		95	620	13	Ekc	14	BGD	1				3											
14 Apr	N13E26		96	620	13	Ekc	14	BG					1											
15 Apr	N12E16		93	480	14	Ekc	20	BG	2				2								1			
16 Apr	N12E02		93	380	14	Ekc	16	BG	4				5	1										
17 Apr	N11W08		90	320	14	Ekc	17	BG					1											
18 Apr	N11W22		90	180	14	Eac	16	BG	2												2			
19 Apr	N11W36		92	130	14	Eai	33	BG	1															
20 Apr	N10W49		90	80	14	Cso	9	B	1				1											
21 Apr	N07W58		87	30	1	Hsx	1	A																
22 Apr	N07W73		89	30	1	Hsx	1	A														2		
23 Apr	N08W84		86	30	1	Hsx	1	A	1															
									22	1	0		23	3	1	0	0							

Crossed West Limb.

Absolute heliographic longitude: 93

Region 2322																								
11 Apr	N14E40		121	20	3	Cro	2	B					4											
12 Apr	N14E26		122	30	5	Dro	3	B																
13 Apr	N14E12		123	30	5	Dao	4	B	2				3											
14 Apr	N14W02		124	20	5	Bxo	3	B																
15 Apr	N14W13		121	10	5	Bxo	3	B					1											
16 Apr	N12W25		120	10	5	Bxo	2	B																
17 Apr	N12W39		121	plage																				
18 Apr	N16W50		118	10	2	Hrx	2	A																
19 Apr	N13W62		118	10	4	Bxo	3	B																
20 Apr	N11W71		112	30	3	Cro	3	B					6	1										
21 Apr	N11W87		116	60	9	Dac	10	B	2	5			12											
									4	5	0		26	1	0	0	0							

Crossed West Limb.

Absolute heliographic longitude: 124



Region Summary - continued

Date	Location		Sunspot Characteristics					Flares															
	Lat CMD	Lon	Helio 10 ⁶ hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical											
									C	M	X	S	1	2	3	4							
Region 2324																							
14 Apr	N19E59		62	390	4	Dki	11	B															
15 Apr	N18E46		62	430	4	Dko	7	B						1									
16 Apr	N18E34		61	300	5	Dkc	6	BG	2				7	1									
17 Apr	N19E23		58	250	6	Cki	9	B	3				3										
18 Apr	N19E08		60	330	5	Dko	6	BG					3										
19 Apr	N19W04		60	330	8	Cki	12	B	1														
20 Apr	N19W16		58	230	7	Dki	9	B					2										
21 Apr	N19W33		62	170	11	Cai	16	B	1				3										
22 Apr	N19W47		63	165	11	Cai	14	B	1				6	1									
23 Apr	N19W59		61	60	5	Hax	5	A	1				2										
24 Apr	N19W72		61	40	2	Hsx	1	A	1				1										
25 Apr	N19W86		62	10	1	Axx	1	A															
									10	0	0	28	2	0	0	0							

Crossed West Limb.
Absolute heliographic longitude: 60

Region 2325																							
14 Apr	N04E67		53	130	3	Hsx	1	A															
15 Apr	N05E56		52	200	9	Cso	4	B															
16 Apr	N05E44		51	200	5	Cso	4	B	1														
17 Apr	N04E32		49	140	6	Dai	8	B	3				3										
18 Apr	N05E18		50	160	11	Cai	9	B	1				1										
19 Apr	N05E06		50	220	10	Cai	12	B															
20 Apr	N05W09		51	220	10	Cko	8	B															
21 Apr	N06W24		53	210	4	Dao	8	B	1	1									1				
22 Apr	N06W39		55	205	5	Cao	7	B	2														
23 Apr	N05W52		54	240	4	Hsx	1	A	1				1										
24 Apr	N05W67		56	160	3	Hsx	1	A															
25 Apr	N04W79		55	220	3	Hsx	1	A															
26 Apr	N04W94		57	220	3	Hsx	1	A															
									9	1	0	5	0	1	0	0							

Still on Disk.
Absolute heliographic longitude: 50



Region Summary - continued

Date	Location		Sunspot Characteristics				Flares										
	Lat CMD	Helio Lon	Area 10 ⁶ hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical						
								C	M	X	S	1	2	3	4		
Region 2326																	
16 Apr	N15E12	83	30	5	Cao	7	B										
17 Apr	N15W02	83	30	5	Cri	6	B										
18 Apr	N15W16	85	10	5	Bxo	5	B										
19 Apr	N15W30	86	plage														
20 Apr	N15W41	82	10	1	Axx	1	A										
21 Apr	N15W55	84	plage														
22 Apr	N15W69	85	plage										1				
23 Apr	N20W83	86	80	7	Cao	7	B	6					9				
24 Apr	N19W96	85	10	4	Bxo	2	B	4					5				
								10	0	0		15	0	0	0	0	0

Crossed West Limb.
 Absolute heliographic longitude: 83

Region 2327																	
17 Apr	S10E70	12	140	3	Cso	3	B										
18 Apr	S09E57	11	140	3	Cso	2	B										
19 Apr	S09E44	12	140	3	Cso	5	B										
20 Apr	S09E30	12	110	4	Cso	4	B										
21 Apr	S10E17	12	90	3	Hsx	3	A										
22 Apr	S10E03	13	90	3	Hsx	3	A	1					1				
23 Apr	S08W10	12	90	3	Hsx	1	A						1				
24 Apr	S09W24	12	90	3	Hsx	1	A										
25 Apr	S10W37	12	80	2	Hsx	2	A										
26 Apr	S08W49	11	60	5	Cso	3	B										
								1	0	0		2	0	0	0	0	0

Still on Disk.
 Absolute heliographic longitude: 13

Region 2328																	
18 Apr	S02W69	137	10	5	Bxo	4	B										
19 Apr	S01W84	140	10	1	Axx	1	A										
								0	0	0		0	0	0	0	0	0

Crossed West Limb.
 Absolute heliographic longitude: 137



Region Summary - continued

Date	Location		Sunspot Characteristics				Flares								
	Lat	CMD	Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical			
			Lon	10 ⁻⁶ hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3

Region 2329

19 Apr	S08W48	104	40	6	Cso	6	B										
20 Apr	S08W62	104	40	6	Cro	8	B										
21 Apr	S08W79	108	50	8	Cro	9	B				1						
22 Apr	S08W93	109	50	8	Cro	8	B										
								0	0	0	1	0	0	0	0	0	

Crossed West Limb.
Absolute heliographic longitude: 104

Region 2330

20 Apr	N15E32	9	30	4	Dso	3	B										
21 Apr	N15E18	11	20	5	Cso	4	B										
22 Apr	N15E04	12	plage														
23 Apr	N15W10	12	plage														
24 Apr	N15W24	13	plage														
25 Apr	N15W38	14	plage														
26 Apr	N15W52	15	plage														
								0	0	0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 12

Region 2331

21 Apr	S10E10	19	30	3	Bxi	10	B										
22 Apr	S10W04	20	40	5	Dac	15	B										
23 Apr	S09W19	21	90	7	Dai	11	B										
24 Apr	S10W33	21	150	9	Dai	12	BG	2			6						
25 Apr	S09W47	22	220	8	Dai	18	BG				4						
26 Apr	S10W59	21	240	10	Dai	9	BG	2			1						
								4	0	0	11	0	0	0	0	0	

Still on Disk.
Absolute heliographic longitude: 20



Region Summary - continued

Date	Location		Sunspot Characteristics				Flares											
	Lat CMD	Lon	Helio 10 ⁻⁶ hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical						
									C	M	X	S	1	2	3	4		
Region 2332																		
21 Apr	S13W17	46	10	1	Bxo	2	B											
22 Apr	S13W31	47	20	2	Cro	5	B						2					
23 Apr	S13W43	45	10	2	Bxo	2	B											
24 Apr	S13W56	45	plage															
25 Apr	S13W70	46	plage															
26 Apr	S13W84	47	plage															
									0	0	0	2	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 46

Region 2333																		
22 Apr	N19E62	312	30	1	Hrx	1	A	1										
23 Apr	N20E51	311	30	2	Hax	2	A	1					3					
24 Apr	N20E37	312	30	2	Hax	2	A						1					
25 Apr	N20E25	310	20	2	Hax	5	A						1					
26 Apr	N20E12	310	10	1	Hrx	2	A											
									2	0	0	5	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 310

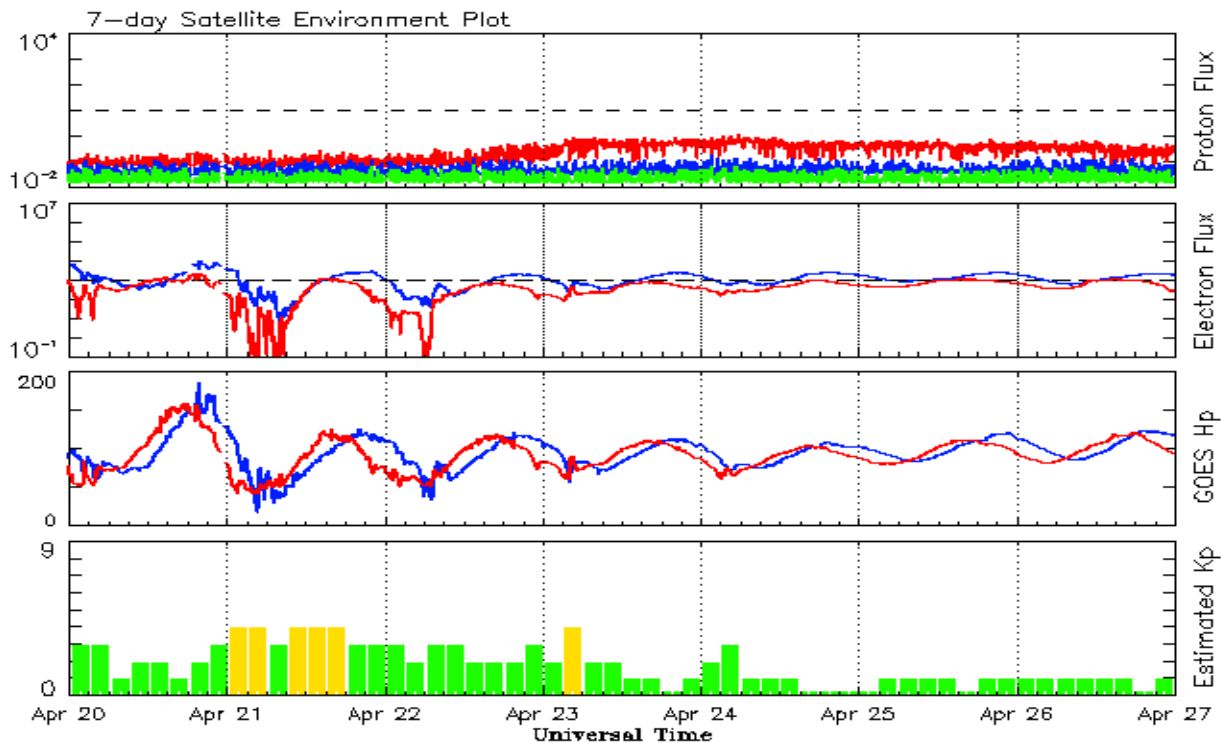


Recent Solar Indices (preliminary)
Observed monthly mean values

Month	Sunspot Numbers					Radio Flux		Geomagnetic	
	Observed values		Ratio	Smooth values		Penticton	Smooth	Planetary	Smooth
	SEC	RI	RI/SEC	SEC	RI	10.7 cm	Value	Ap	Value
2013									
April	112.8	72.4	0.64	86.7	57.9	125.0	116.6	5	7.2
May	125.5	78.7	0.63	90.5	59.9	131.3	118.1	10	7.0
June	80.1	52.5	0.66	94.4	62.6	110.2	120.9	13	7.1
July	86.1	57.0	0.66	97.9	65.5	115.6	123.9	9	7.3
August	90.2	66.0	0.73	103.7	68.9	114.7	127.9	9	7.6
September	55.0	37.0	0.67	111.0	73.0	102.7	132.3	5	7.8
October	127.1	85.6	0.67	114.3	74.9	132.3	134.7	7	7.8
November	125.7	77.6	0.62	114.6	75.3	148.4	135.4	5	7.9
December	118.2	90.3	0.76	115.4	75.9	147.7	135.9	5	7.5
2014									
January	125.9	81.8	0.65	117.7	77.3	158.6	137.3	6	7.1
February	174.6	102.3	0.59	119.5	78.3	170.3	138.6	12	6.9
March	141.1	91.9	0.65	123.2	80.8	149.9	140.8	6	7.2
April	130.5	84.7	0.65	124.8	81.9	144.3	143.5	9	7.5
May	116.8	75.2	0.64	122.3	80.5	130.0	144.7	7	7.9
June	107.7	71.0	0.66	121.4	79.7	122.2	145.5	7	8.4
July	113.6	72.4	0.64	120.4	78.5	137.3	145.2	5	8.8
August	106.2	74.6	0.70	115.1	75.5	124.7	142.8	9	8.9
September	127.4	87.6	0.69	107.4	70.8	146.1	140.1	11	9.3
October	92.0	60.6	0.66			153.7		10	
November	101.8	70.2	0.69			155.3		10	
December	120.0	76.7	0.65			158.7		12	
2015									
January	101.2	67.0	0.66			141.7		10	
February	70.6	44.8	0.63			128.8		10	
March	61.7	38.4	0.62			126.0		17	

Note: Values are final except for the most recent 6 months which are considered preliminary.
Cycle 24 started in Dec 2008 with an RI=1.7.





*Weekly Geosynchronous Satellite Environment Summary
Week Beginning 20 April 2015*

The proton flux plot contains the five-minute averaged integral proton flux (protons/cm²-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

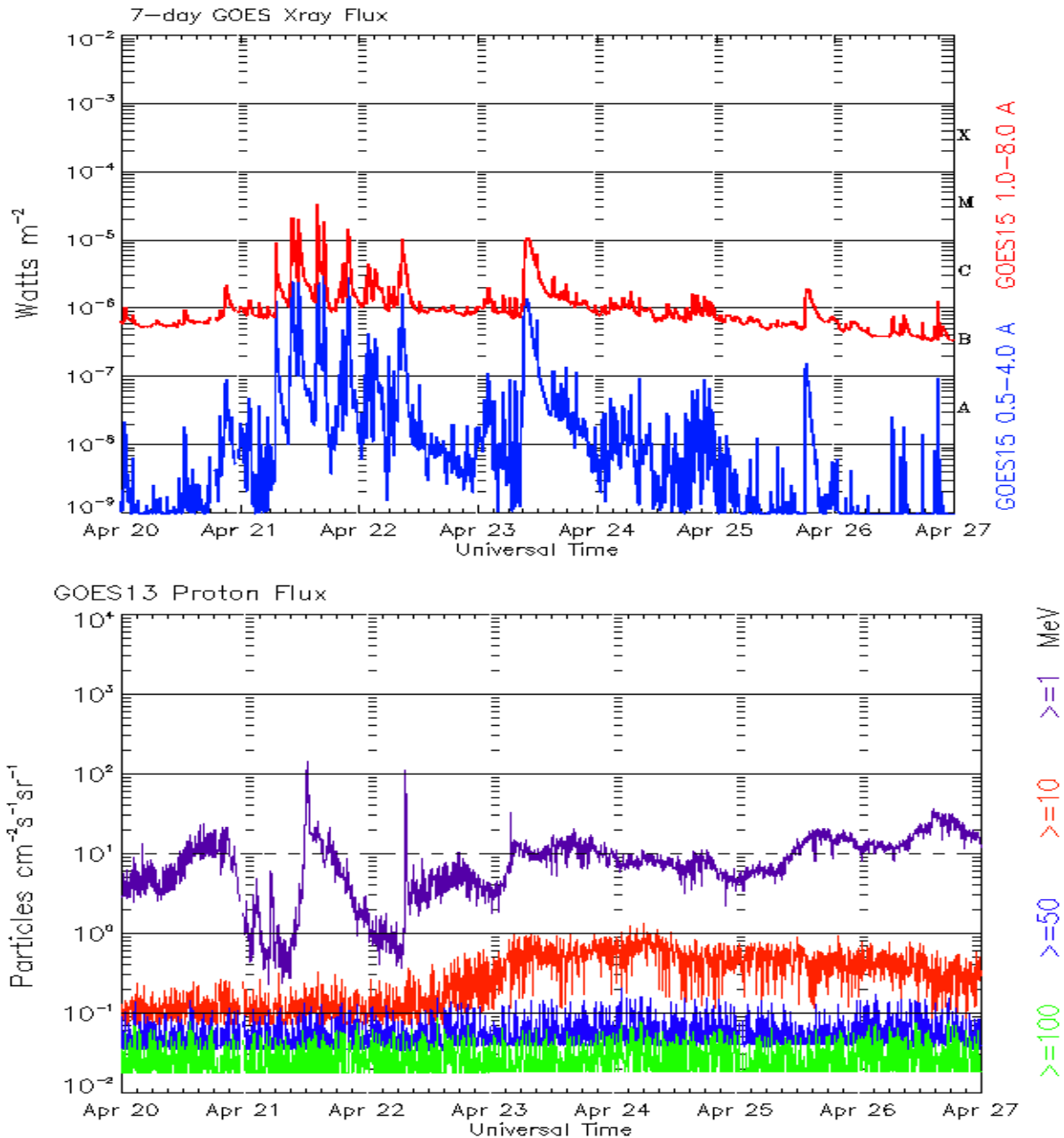
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

The Hp plot contains the five minute averaged Hp magnetic field component in nanoteslas (nT) as by the SWPC Primary GOES satellite. The Hp component is parallel to the spin axis of the satellite, which is nearly parallel to the Earth's rotation axis.

The Estimated 3-hour Planetary Kp-index is derived at the NOAA Space Weather Prediction Center using data from the following ground-based magnetometers: Boulder, Colorado; Chambon la Foret, France; Fredericksburg, Virginia; Fresno, California; Hartland, UK; Newport, Washington; Sitka, Alaska. These data are made available thanks to the cooperative efforts between SWPC and data providers around the world, which currently includes the U.S. Geological Survey, the British Geological Survey, and the Institut de Physique du Globe de Paris.

The data included here are those now available in real time at the SWPC and are incomplete in that they do not include the full set of parameters and energy ranges known to cause satellite operating anomalies. The proton and electron fluxes and Kp are 'global' parameters that are applicable to a first order approximation over large areas. H parallel is subject to more localized phenomena and the measurements generally are applicable to within a few degrees of longitude of the measuring satellite.

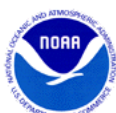




*Weekly GOES Satellite X-ray and Proton Plots
Week Beginning 20 April 2015*

The x-ray plots contains five-minute averages x-ray flux (Watt/m²) as measure by the SWPC primary GOES X-ray satellite, usually at West 105 longitude, in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

The proton plot contains the five-minute averaged intergral flux units (pfu = protons/cm² -sec -sr) as measured by the primary SWPC GOES Proton satellite for each of the energy thresholds: >1, >10, >30, and >100 MeV. The P10 event threshold is 10 pfu at greater than 10 MeV.



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

Published every Monday by the Space Weather Prediction Center.

U.S. Department of Commerce
NOAA / National Weather Service
Space Weather Prediction Center
325 Broadway, Boulder CO 80305

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

The Weekly has been published continuously since 1951 and is available online since 1997.

<http://spaceweather.gov/weekly/> -- Current and previous year

<http://spaceweather.gov/ftpmenu/warehouse.html> -- Online archive from 1997

<http://spaceweather.gov/ftpmenu/> -- Some content as ascii text

<http://spaceweather.gov/SolarCycle/> -- Solar Cycle Progression web site

<http://spaceweather.gov/contacts.html> -- Contact and Copyright information

http://spaceweather.gov/weekly/Usr_guide.pdf -- User Guide

