

Solar activity reached high levels as the period was dominated by M-class flare activity from active regions located in the southwest quadrant. In total 20 M-class flares were observed with two reaching the R2 (Moderate) radio blackout threshold. Four R1 (Minor) radio blackouts were observed from Region 2423 (S09, L=154, class/area=Dac/180 on 28 Sep) early in the period as the region transited the southwest limb, but once out of view Region 2422 (S18, L=102, class/area=Fkc/950 on 29 Sep) became the source of the remainder of M-class flare activity. Region 2422 was relatively benign until it reached central meridian and began a rapid growth phase where it increased significantly in magnetic complexity. Region 2422 produced a total of 14 R1 (Minor) radio blackouts and two R2 (Moderate) radio blackouts, the largest of which was an M7 flare observed at 28/1458 UTC. Numerous coronal mass ejections (CMEs) associated with the activity emanating from the southwest quadrant were observed throughout the period, but none were Earth-directed.

The greater than 10 MeV proton flux became slightly enhanced late on 30 Sep through midday on 01 Oct due to a pair of M1/1n flares from Region 2422 observed midday on 30 Sep. The greater than 10 MeV proton flux briefly reached a peak of 1.4 pfu at 01/0000 UTC but began a slow return to background levels shortly thereafter.

The greater than 2 MeV electron flux at geosynchronous orbit reached moderate levels on 28 Sep-01 Oct and was at normal levels on 02-04 Oct.

Geomagnetic field activity was at quiet levels on 28 and 30 Sep and quiet to unsettled levels on 29 Sep under a nominal solar wind regime. Quiet to active levels were observed on 01-03 Oct due to a combination of weak positive polarity coronal hole high speed stream influence, a period of prolonged southward Bz, and substorming. On 04 Oct active conditions were observed early and late in the period with an isolated period of G1 (Minor) geomagnetic storms were observed between 0600-0900 UTC. The geomagnetic field activity on 04 Oct was attributed to periods of southward Bz and localized substorms.

Space Weather Outlook **05 October - 31 October 2015**

Solar activity is expected to be at low to moderate levels throughout the period with likely C-class flare activity and a chance for M-class (R1-R2 (Minor-Moderate)) flare activity on 06-29 Oct due to the return of multiple active regions which produced event level activity last rotation.

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 08-15 Oct with moderate levels expected on 05-07 and 16-24 Oct. Normal levels are expected for the remainder of the period.



Geomagnetic field activity is expected to reach G1 (Minor) geomagnetic storm levels on 09 Oct with active levels expected on 05, 08, 10, 17, 20, 29, and 31 Oct due to recurrent coronal hole high speed stream effects. Quiet to unsettled levels are expected throughout the remainder of the 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
28 September	124	120	1050	C1.0	13	4	0	25	4	0	0	0
29 September	129	125	1170	C1.2	8	9	0	31	4	1	0	0
30 September	131	78	1090	C1.2	8	2	0	20	3	0	0	0
01 October	120	73	950	B8.6	7	1	0	12	3	0	0	0
02 October	107	58	670	B8.9	13	3	0	13	1	0	0	0
03 October	97	47	480	B5.3	10	0	0	0	0	0	0	0
04 October	88	18	150	B2.9	0	1	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	>100 MeV	>0.6 MeV	>2MeV	>4 MeV
	28 September		3.0e+05	1.2e+04	2.8e+03	
29 September		1.5e+05	1.1e+04	2.8e+03		2.5e+06
30 September		5.0e+05	1.9e+04	2.7e+03		3.3e+06
01 October		7.1e+06	3.3e+04	2.9e+03		6.7e+06
02 October		3.1e+06	1.3e+04	2.9e+03		1.3e+06
03 October		4.3e+05	1.1e+04	2.6e+03		7.6e+05
04 October		5.2e+05	1.1e+04	2.6e+03		1.9e+06

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	28 September	5	1-1-0-1-2-3-1-1	1	1-0-0-0-0-0-1-0	4
29 September	5	2-2-1-2-2-1-1-0	7	1-2-4-3-0-0-1-0	6	2-3-2-2-1-0-1-1
30 September	2	0-0-0-1-2-0-1-0	0	0-0-0-1-0-0-0-0	3	1-0-1-1-1-0-1-1
01 October	8	1-1-2-2-2-3-3-2	15	1-1-3-3-3-5-3-2	11	2-1-2-1-3-4-3-3
02 October	9	2-3-3-2-2-2-2-1	26	2-3-6-4-4-5-1-1	14	3-4-4-3-3-3-2-2
03 October	10	2-2-3-2-2-3-3-1	31	2-4-5-4-5-6-2-2	11	2-4-3-2-2-3-2-1
04 October	16	3-4-4-3-3-1-2-3	54	2-5-8-5-5-4-1-2	20	4-4-5-3-3-2-2-4

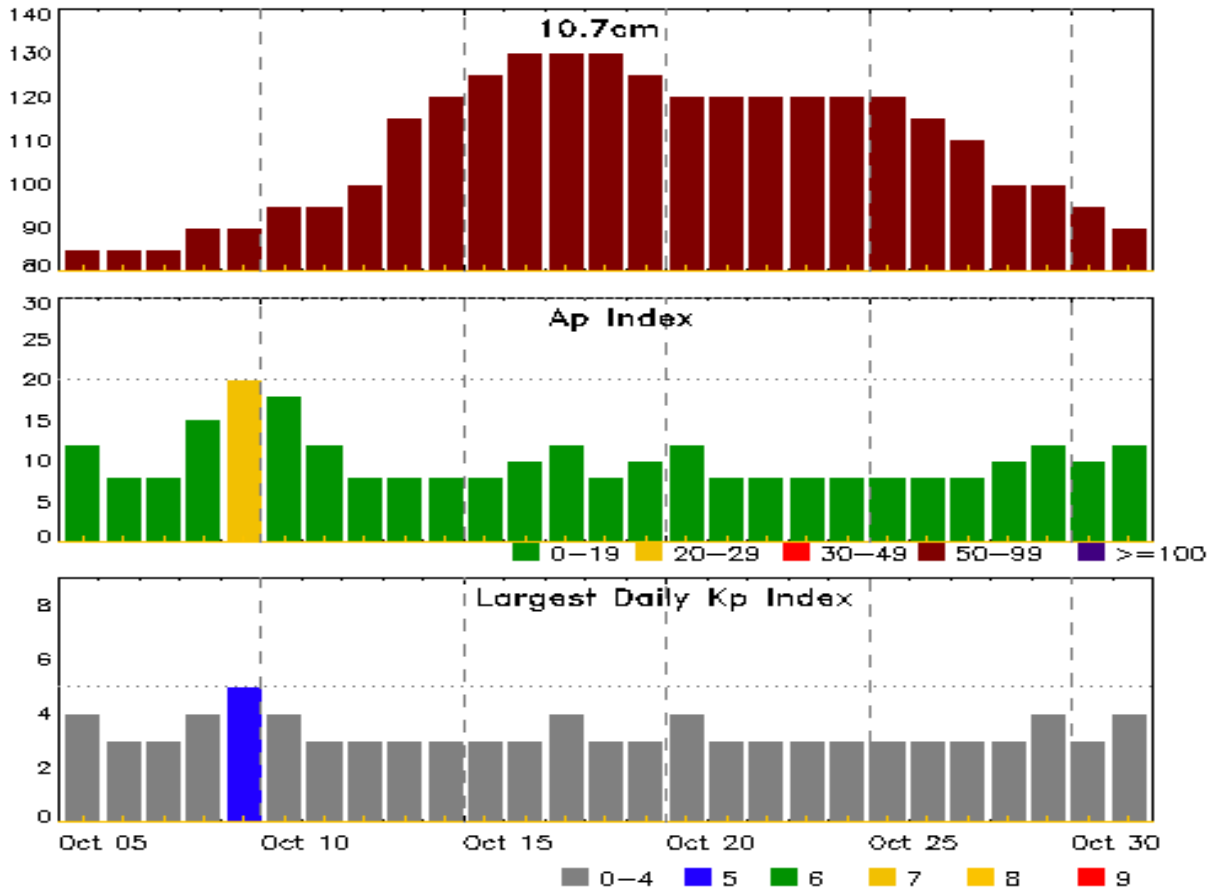


Alerts and Warnings Issued

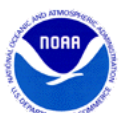
Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
28 Sep 1600	SUMMARY: X-ray Event exceeded M5	28/1453 - 1503
29 Sep 1944	ALERT: Type II Radio Emission	29/1930
30 Sep 2035	WATCH: Geomagnetic Storm Category G1 predicted	
01 Oct 1606	WARNING: Geomagnetic K = 4	01/1630 - 02/1300
01 Oct 1640	ALERT: Geomagnetic K = 4	01/1635
01 Oct 2058	WATCH: Geomagnetic Storm Category G1 predicted	
02 Oct 0014	ALERT: X-ray Flux exceeded M5	02/0012
02 Oct 0040	SUMMARY: X-ray Event exceeded M5	02/0012 - 0038
02 Oct 1255	EXTENDED WARNING: Geomagnetic K = 4	01/1630 - 03/1300
03 Oct 0541	WARNING: Geomagnetic K = 4	03/0540 - 1200
03 Oct 0603	ALERT: Geomagnetic K = 4	03/0559
04 Oct 0048	WARNING: Geomagnetic K = 4	04/0047 - 0900
04 Oct 0228	ALERT: Geomagnetic K = 4	04/0226
04 Oct 0606	WARNING: Geomagnetic K = 5	04/0605 - 1200
04 Oct 0606	EXTENDED WARNING: Geomagnetic K = 4	04/0047 - 1400
04 Oct 0830	ALERT: Geomagnetic K = 5	04/0830
04 Oct 1341	EXTENDED WARNING: Geomagnetic K = 4	04/0047 - 1900
04 Oct 2149	WARNING: Geomagnetic K = 4	04/2148 - 05/0600
04 Oct 2322	ALERT: Geomagnetic K = 4	04/2322



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
05 Oct	85	12	4	19 Oct	125	10	3
06	85	8	3	20	120	12	4
07	85	8	3	21	120	8	3
08	90	15	4	22	120	8	3
09	90	20	5	23	120	8	3
10	95	18	4	24	120	8	3
11	95	12	3	25	120	8	3
12	100	8	3	26	115	8	3
13	115	8	3	27	110	8	3
14	120	8	3	28	100	10	3
15	125	8	3	29	100	12	4
16	130	10	3	30	95	10	3
17	130	12	4	31	90	12	4
18	130	8	3				

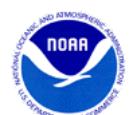


Energetic Events

Date	Time			X-ray	Optical Information				Peak		Sweep Freq	
	Begin	Max	Half	Class	Integ Flux	Imp/ Brtns	Location	Rgn #	Radio Flux		Intensity	
			Max						245	2695	II	IV
28 Sep	0345	0355	0359	M3.6	0.016	SF	S09W67		2423	270		
28 Sep	0727	0735	0746	M1.1	0.009	1N	S22W20		2422			
28 Sep	1301	1318	1329	M1.1	0.013	1N	S22W24		2422			
28 Sep	1453	1458	1503	M7.6	0.028				2422		100	
29 Sep	0311	0316	0331	M1.2	0.010	SF	S08W78		2423			
29 Sep	0341	0343	0353	M1.1	0.000	SF	S20W36		2422			
29 Sep	0505	0516	0523	M2.9	0.019	SF	S21W37		2422	410		
29 Sep	0533	0537	0539	M1.2	0.003	SF	S09W82		2423			
29 Sep	0553	0556	0604	M1.0	0.007				2422			
29 Sep	0639	0643	0646	M1.4	0.004	1N	S20W34		2422			
29 Sep	0846	0851	0855	M1.3	0.005	1N	S10W77		2423	200		
29 Sep	1109	1115	1120	M1.6	0.006	1B	S21W37		2422			
29 Sep	1920	1924	1927	M1.1	0.003	1B	S20W36		2422	330		
30 Sep	1049	1059	1113	M1.3	0.014	1N	S22W46		2422			
30 Sep	1318	1320	1321	M1.1	0.002	1N	S23W59		2422			
01 Oct	1303	1310	1314	M4.5	0.013	SN	S23W64		2422			
02 Oct	0006	0013	0017	M5.5	0.020	1N	S19W67		2422			
02 Oct	1219	1226	1231	M1.0	0.004				2422			
02 Oct	1708	1718	1723	M1.0	0.005	SF	S19W76		2422			
04 Oct	0234	0241	0248	M1.0	0.005				2422			

Flare List

Date	Time			X-ray Class	Optical		
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	Rgn #
28 Sep	0001	0008	0028		SF	S09W65	2423
28 Sep	0011	0011	0030		SF	S21W14	2422
28 Sep	0030	0047	0055		SF	S09W65	2423
28 Sep	0132	0136	0140		SF	S21W20	2422
28 Sep	0250	0251	0253		SF	S21W20	2422
28 Sep	0310	0315	0317		SF	N17E50	2427
28 Sep	0337	0339	0343		SF	N17E50	2427
28 Sep	0340	0340	0343		SF	S09W65	2423
28 Sep	0344	0356	0412	M3.6	SF	S09W67	2423
28 Sep	0414	0531	0558	C2.0			2423
28 Sep	0457	0458	0500		SF	N17E49	2427



Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
28 Sep	0548	0551	0554		SF	N20E48	2427
28 Sep	0557	U0655	A0844		SF	S12W68	2423
28 Sep	0558	0630	0635		SF	N20E48	2427
28 Sep	0621	0654	0708	C4.5			2423
28 Sep	0630	0649	0659		SF	S21W17	2422
28 Sep	0649	0650	0654		SF	N20E48	2427
28 Sep	0720	0733	0758	M1.1	1N	S22W20	2422
28 Sep	0820	0825	0830		SF	S09W69	2423
28 Sep	0847	0904	0912	C3.7			2423
28 Sep	1121	1132	1150	C8.5	1F	S22W24	2422
28 Sep	1152	1157	1200	C8.1			
28 Sep	1230	1236	1249	C5.4			
28 Sep	B1257	U1316	1356	M1.1	1N	S22W24	2422
28 Sep	1311	1313	1314		SF	N19E43	2427
28 Sep	1342	1342	1358		SF	N18E43	2427
28 Sep	1402	U1403	1406		SF	S22W24	2422
28 Sep	1412	1433	1445	C9.8	1N	S22W21	2422
28 Sep	1453	1458	1503	M7.6			2422
28 Sep	1642	1645	1647	C3.4			2422
28 Sep	1708	1711	1714	C2.8			2422
28 Sep	1722	1733	1738		SF	S19W25	2422
28 Sep	1822	1822	1825		SF	S05W60	2428
28 Sep	1825	1825	1828		SF	S20W25	2422
28 Sep	1837	1837	1840		SF	S20W27	2422
28 Sep	2015	2021	2040	C7.6	SF	S07W66	2423
28 Sep	B2132	2152	2200	C4.3	SF	S20W29	2422
28 Sep	2228	2232	2237	C2.4			
28 Sep	2341	2345	2347	C2.0			2422
29 Sep	0044	0052	0056	C2.4			2422
29 Sep	0311	0316	0331	M1.2	SF	S08W78	2423
29 Sep	0341	0342	0348	M1.1	SF	S20W36	2422
29 Sep	0355	0418	0432		SF	S20W30	2422
29 Sep	0441	0446	0455	C5.1	SF	S07W66	2428
29 Sep	0505	0516	0523	M2.9	SF	S21W37	2422
29 Sep	0533	0537	0539	M1.2	SF	S09W82	2423
29 Sep	0549	0618	0631		SF	S21W37	2422
29 Sep	0553	0556	0604	M1.0			2422
29 Sep	0615	0618	0623	C8.6			2422



Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
29 Sep	0634	0635	0644		SF	N18E34	2427
29 Sep	0635	0643	0711	M1.4	1N	S20W34	2422
29 Sep	B0705	U0705	A0735		2N	S21W32	2422
29 Sep	0815	0818	0824		SF	S20W34	2422
29 Sep	0846	0851	0855	M1.3	1N	S10W77	2423
29 Sep	0922	0926	0928	C5.2			2422
29 Sep	B1002	U1002	1012		SF	N21E36	2427
29 Sep	B1004	U1018	1031	C3.1	SF	S10W77	2423
29 Sep	1028	1037	A1046		SF	S21W35	2422
29 Sep	1035	1039	A1045		SF	N19E31	2427
29 Sep	1053	1053	1100		SF	S10W79	2423
29 Sep	1100	1101	1105		SF	N19E31	2427
29 Sep	1109	1115	1120	M1.6			2422
29 Sep	1109	1109	1116		SF	S10W79	2423
29 Sep	1110	1113	1154		1B	S21W37	2422
29 Sep	1216	1219	1225		SF	S20W37	2422
29 Sep	1226	1226	1232		SF	S20W39	2422
29 Sep	1254	1304	1323	C4.6	SF	S21W35	2422
29 Sep	1259	1301	1303		SF	S10W79	2423
29 Sep	1442	1449	1457		SF	S20W39	2422
29 Sep	B1532	U1532	A1536		SF	S18W38	2422
29 Sep	1539	1540	1542		SF	N18E29	2427
29 Sep	B1546	U1548	A1552		SF	S19W38	2422
29 Sep	1614	1614	1623		SF	N18E29	2427
29 Sep	1643	1643	1652		SF	N18E28	2427
29 Sep	1734	1742	1751	C5.0			2422
29 Sep	1908	1924	1934	M1.1	1B	S20W36	2422
29 Sep	1940	1944	1945		SF	S20W36	2422
29 Sep	2021	2024	2036		SF	S19W42	2422
29 Sep	2150	2150	2158		SF	S19W39	2422
29 Sep	2239	2302	2316		SF	S19W42	2422
29 Sep	2250	2306	2316	C3.7	SF	S19W42	2422
30 Sep	0005	0017	0032	C5.0			2423
30 Sep	0245	0302	0304	C6.7	SF	S22W44	2422
30 Sep	0326	0326	0333		SF	S20W44	2422
30 Sep	0426	0429	0431	C3.2	SF	S19W50	2422
30 Sep	0504	0509	0528		SF	S20W45	2422
30 Sep	0536	0558	0614		SF	N10W48	2422



Flare List

Date	Time			Optical			Rgn #
	Begin	Max	End	X-ray Class	Imp/Brtns	Location Lat CMD	
30 Sep	0610	0610	0612		SF	S20W51	2422
30 Sep	B0613	U0613	A0640		SF	N08W50	2420
30 Sep	B0613	U0618	A0640		SF	S22W46	2422
30 Sep	0647	0653	0738	C5.9	1F	S20W46	2422
30 Sep	B0736	U1054	A1102		1N	S22W46	2422
30 Sep	0743	0744	0752		SF	S19W49	2422
30 Sep	0811	0815	0842		SF	S19W47	2422
30 Sep	0959	U0959	1005		SF	N18E16	2427
30 Sep	1049	1059	1113	M1.3			2422
30 Sep	1136	1139	1141	C4.4			2422
30 Sep	B1213	U1217	A1225		SF	S23W57	2422
30 Sep	1314	U1320	1328	M1.1	1N	S23W59	2422
30 Sep	B1324	1341	1421		SF	S20W51	2422
30 Sep	B1344	U1344	A1349		SF	S26W45	2422
30 Sep	1507	1508	1513		SF	S21W51	2422
30 Sep	1843	1845	1851		SF	S18W51	2422
30 Sep	1907	1909	1911		SF	S18W52	2422
30 Sep	B2103	2121	2123		SF	S21W51	2422
30 Sep	2152	2201	2205	C1.4			2422
30 Sep	2206	2211	2217	C2.4	SN	S18W59	2422
30 Sep	2339	2343	2348	C1.7	SF	S19W64	2422
01 Oct	0146	0213	0225	C6.3	1F	S20W59	2422
01 Oct	0231	0231	0237		SF	S20W54	2422
01 Oct	0240	0241	0242		SF	S20W54	2422
01 Oct	0400	0401	0404		SF	S19W51	2422
01 Oct	0539	0553	0616	C1.6			2423
01 Oct	0653	0653	0657		SF	S23W66	2422
01 Oct	0701	0709	0714		SF	N10W59	2420
01 Oct	0815	0934	0956	C7.6			2422
01 Oct	0832	0835	0838	C3.5	SF	S23W65	2422
01 Oct	0919	0934	0952	C7.7	1F	S24W62	2422
01 Oct	1303	1310	1314	M4.5	SN	S23W64	2422
01 Oct	B1326	1326	1424		1F	S18W49	2422
01 Oct	1427	1430	1517		SF	S18W49	2422
01 Oct	1522	1530	1535		SF	S19W63	2422
01 Oct	1720	1732	1750	C1.6			
01 Oct	2110	2124	2147	C3.7	SF	S19W65	2422
01 Oct	2256	2304	2307		SF	S19W72	2422



Flare List

Date	Time			X-ray Class	Imp/ Brtns	Optical		Rgn #
	Begin	Max	End			Location Lat CMD		
01 Oct	2338	2339	2354		SF	S17W68		2422
02 Oct	0006	0013	0017	M5.5	1N	S19W67		2422
02 Oct	0025	0025	0030		SF	N18W02		2427
02 Oct	0126	0129	0131	C1.9				2422
02 Oct	0228	0231	0236	C1.5				2422
02 Oct	0408	0410	0435	C2.1	SF	S19W73		2422
02 Oct	0531	0539	0544		SF	S19W73		2422
02 Oct	0619	0624	0630	C4.0	SN	S19W73		2422
02 Oct	0654	0709	0723	C5.8	SF	S20W78		2422
02 Oct	0744	0749	0753	C4.8	SF	S21W68		2422
02 Oct	0800	0801	0805		SF	S19W72		2422
02 Oct	0830	0838	0845	C7.6	SF	S25W83		2422
02 Oct	0914	0917	0919	C3.0				2422
02 Oct	1137	1144	1154	C3.0				2422
02 Oct	1219	1226	1231	M1.0				2422
02 Oct	1331	1337	1349	C7.2	SF	S20W67		2422
02 Oct	1526	1532	1537	C8.8	SF	S20W73		2422
02 Oct	1708	1718	1723	M1.0	SF	S19W76		2422
02 Oct	1755	1800	1803	C8.1	SF	S19W77		2422
02 Oct	1845	1850	1901	C2.9	SF	S20W76		2422
03 Oct	0011	0019	0024	C2.5				2427
03 Oct	0314	0321	0327	C1.3				2427
03 Oct	0625	0633	0640	C3.3				2422
03 Oct	0815	1033	1042	C1.7				2422
03 Oct	1027	1032	1040	C1.7				
03 Oct	1132	1139	1145	C2.7				2422
03 Oct	1302	1308	1314	C2.1				2422
03 Oct	1512	1520	1526	C1.1				2422
03 Oct	1623	1644	1652	C1.1				2420
03 Oct	1804	1809	1815	C2.7				2420
03 Oct	2026	2032	2101	B7.9				2427
03 Oct	2307	2312	2318	B8.5				2427
04 Oct	0234	0241	0248	M1.0				2422
04 Oct	1613	1618	1630	B7.2				2427



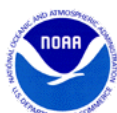
Region Summary

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 2420																				
20 Sep	N09E71	108	270	12	Ekc	12	BG		1											
21 Sep	N10E64	102	290	13	Ekc	16	BG	4				3								
22 Sep	N10E50	102	280	13	Ekc	13	BG					5								
23 Sep	N10E34	104	200	15	Eai	13	BG					1								
24 Sep	N09E22	103	200	14	Eai	19	BG													
25 Sep	N10E09	102	150	16	Fai	17	B													
26 Sep	N10W04	103	140	16	Fai	15	BG					1								
27 Sep	N11W17	103	110	16	Fai	11	B					2								
28 Sep	N11W31	105	100	15	Eso	9	B													
29 Sep	N11W44	104	50	16	Cso	12	B													
30 Sep	N12W57	104	40	16	Cso	2	B					1								
01 Oct	N10W70	104	20	15	Cro	3	B					1								
02 Oct	N11W84	105	10	3	Bxo	3	B													
03 Oct	N14W91	99	30	2	Hax	1	A	2												
								6	1	0	14	0	0	0	0	0				

Crossed West Limb.
Absolute heliographic longitude: 103

Region 2421																				
22 Sep	N15E32	120	10	4	Bxo	7	B													
23 Sep	N16E19	121	50	5	Cao	5	B													
24 Sep	N15E05	120	50	5	Cai	5	B	1				4								
25 Sep	N17W09	122	70	5	Dac	17	B					1								
26 Sep	N17W21	120	110	5	Dac	12	B													
27 Sep	N16W35	121	100	6	Dai	11	B					4								
28 Sep	N16W50	124	10	5	Bxo	4	B													
29 Sep	N16W64	124	plage																	
30 Sep	N16W78	125	plage																	
								1	0	0	9	0	0	0	0	0				

Crossed West Limb.
Absolute heliographic longitude: 120



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 2422																							
22 Sep	S20E49	103	10	4	Bxo	3	B																
23 Sep	S20E36	104	90	5	Dao	11	B	4					6										
24 Sep	S20E24	101	150	8	Dai	9	B	1					2										
25 Sep	S20E10	102	310	11	Eko	17	BG	1					6										
26 Sep	S20W03	102	410	13	Ekc	28	BGD	3					14										
27 Sep	S20W16	102	650	14	Ekc	25	BGD	11	2				18	3									
28 Sep	S20W30	104	690	16	Fkc	25	BGD	6	3				9	4									
29 Sep	S18W42	102	950	17	Fkc	35	BGD	6	6				17	3	1								
30 Sep	S18W55	102	860	18	Fkc	23	BGD	7	2				18	3									
01 Oct	S17W69	103	750	18	Fkc	18	BGD	5	1				11	3									
02 Oct	S20W83	104	480	16	Fkc	11	BGD	13	3				12	1									
03 Oct	S20W89	97	270	9	Dko	5	B	5															
								62	17	0	113	17	1	0	0								

Crossed West Limb.
Absolute heliographic longitude: 102

Region 2423

23 Sep	S09W09	149	10	3	Bxo	2	B															
24 Sep	S08W24	150	10	1	Cro	1	B															
25 Sep	S08W37	149	10	6	Bxo	4	B															
26 Sep	S09W51	150	20	6	Cri	5	B															
27 Sep	S09W65	152	100	6	Dai	14	BG	2					16	1								
28 Sep	S09W80	154	180	10	Dac	9	BG	4	1				7									
29 Sep	S08W90	151	10	2	Bxo	2	B	1	3				6	1								
								7	4	0	29	2	0	0	0							

Crossed West Limb.
Absolute heliographic longitude: 149

Region 2424

25 Sep	N12W30	142	20	3	Cro	3	B															
26 Sep	N12W44	143	20	3	Dro	3	B															
27 Sep	N12W58	144	10	1	Axx	1	A															
28 Sep	N12W72	146	plage																			
29 Sep	N12W86	146	plage																			
								0	0	0	0	0	0	0	0							

Crossed West Limb.
Absolute heliographic longitude: 142



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 2425																	
25 Sep	S06W01	114	10	3	Bxi	2	B										
26 Sep	S05W15	114	10	5	Bxo	3	B										
27 Sep	S05W27	114	0		Axx	1	A										
28 Sep	S05W42	116	plage														
29 Sep	S05W57	117	plage														
30 Sep	S05W72	119	plage														
01 Oct	S05W87	121	plage														
								0	0	0	0	0	0	0	0	0	

Crossed West Limb.
 Absolute heliographic longitude: 114

Region 2426																	
25 Sep	N16E48	64	10	4	Bxo	3	B										
26 Sep	N16E34	66	10	4	Cro	2	B										
27 Sep	N16E22	65	10	1	Axx	1	A				2						
28 Sep	N16E08	66	plage														
29 Sep	N16W06	66	plage														
30 Sep	N16W20	67	plage														
01 Oct	N16W34	68	plage														
02 Oct	N16W48	69	plage														
03 Oct	N16W62	70	plage														
04 Oct	N16W76	70	plage														
								0	0	0	2	0	0	0	0	0	

Still on Disk.
 Absolute heliographic longitude: 66

Region 2427																	
27 Sep	N18E49	37	30	4	Cro	10	B										
28 Sep	N18E35	39	60	6	Csi	9	B				8						
29 Sep	N18E23	37	140	8	Cai	22	B				7						
30 Sep	N18E09	38	180	9	Dsi	12	B				1						
01 Oct	N17W04	38	180	8	Dso	22	B										
02 Oct	N18W17	38	180	9	Cai	14	B				1						
03 Oct	N18W30	38	180	8	Dai	11	BG	2									
04 Oct	N18W44	38	150	9	Dai	8	B										
								2	0	0	17	0	0	0	0	0	

Still on Disk.
 Absolute heliographic longitude: 38



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 2428																	
28 Sep	S05W64	138	10	3	Bxo	4	B					1					
29 Sep	S04W76	136	20	2	Cro	4	B	1				1					
30 Sep	S04W92	139	10	1	Hrx	1	A										
								1	0	0	2	0	0	0	0	0	0

Crossed West Limb.
 Absolute heliographic longitude: 138

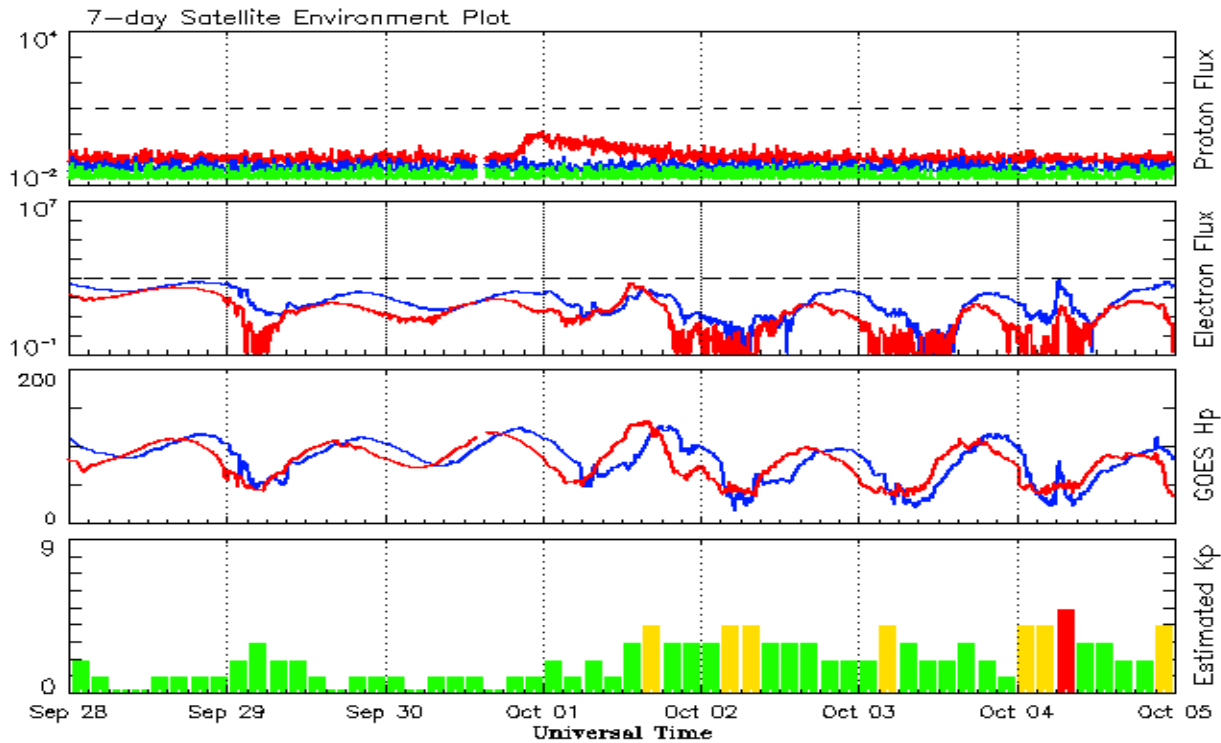


Recent Solar Indices (preliminary)
Observed monthly mean values

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									
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	101.7	67.3	153.7	138.4	10	9.9
November	101.8	70.2	0.69	97.9	65.4	155.3	137.4	10	10.1
December	120.0	76.7	0.65	95.2	56.0	158.7	137.0	12	10.5
2015									
January	101.2	67.0	0.66	92.1	53.9	141.7	135.8	10	11.0
February	70.6	44.8	0.63	88.3	52.0	128.8	133.8	10	11.5
March	61.7	38.4	0.62	84.2	49.3	126.0	131.2	17	12.0
April	72.5	54.4	0.75			129.2		12	
May	83.0	58.8	0.71			120.1		9	
June	77.3	41.0	0.53			123.2		14	
July	68.4	39.8	0.58			107.0		10	
August	61.6	38.8	0.63			106.2		16	
September	72.5	46.9	0.65			102.1		16	

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 28 September 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.

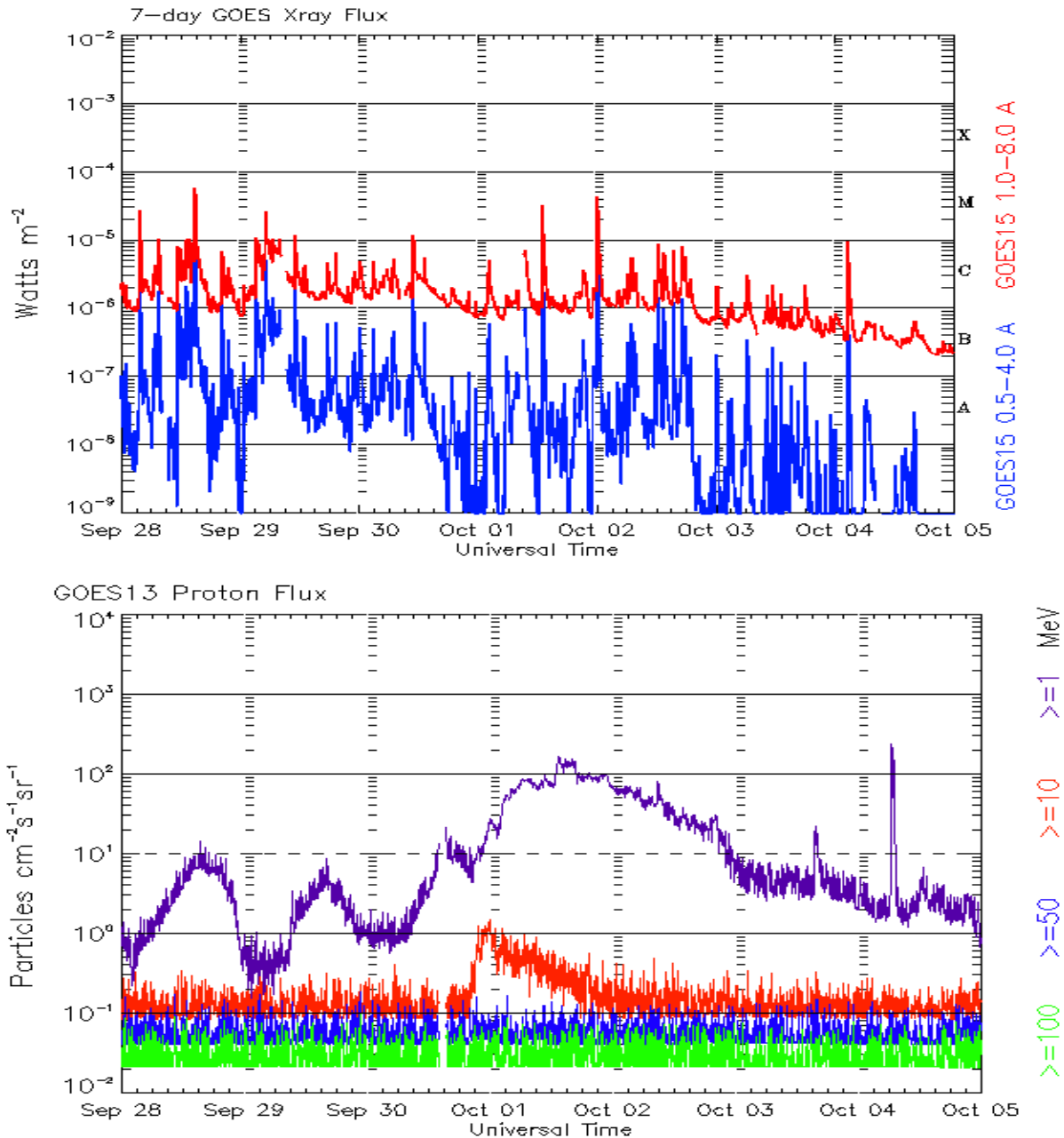
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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.

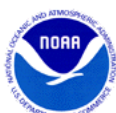




*Weekly GOES Satellite X-ray and Proton Plots
Week Beginning 28 September 2015*

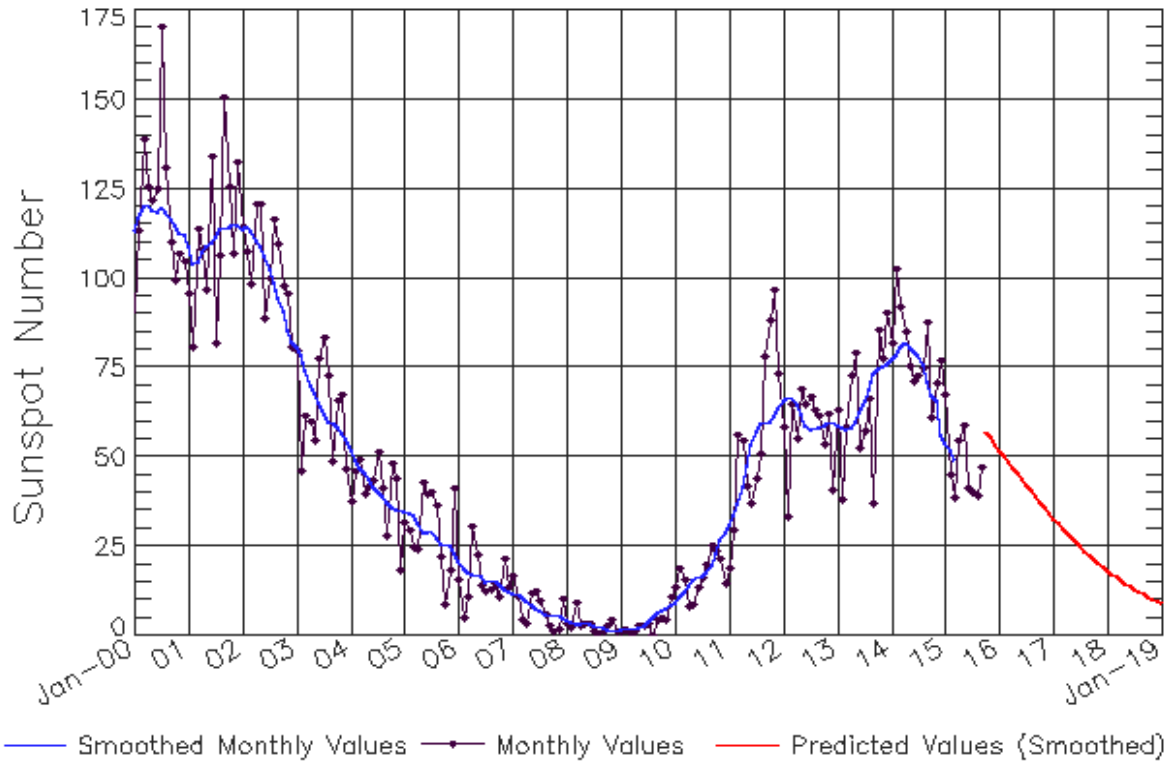
The x-ray plots contains five-minute averages x-ray flux (Watt/m²) as measure by the SWPC primary GOES X-ray satellite, usually at West 105 longitude, in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

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.



ISES Solar Cycle Sunspot Number Progression

Observed data through Sep 2015



Updated 2015 Oct 5

NOAA/SWPC Boulder, CO USA

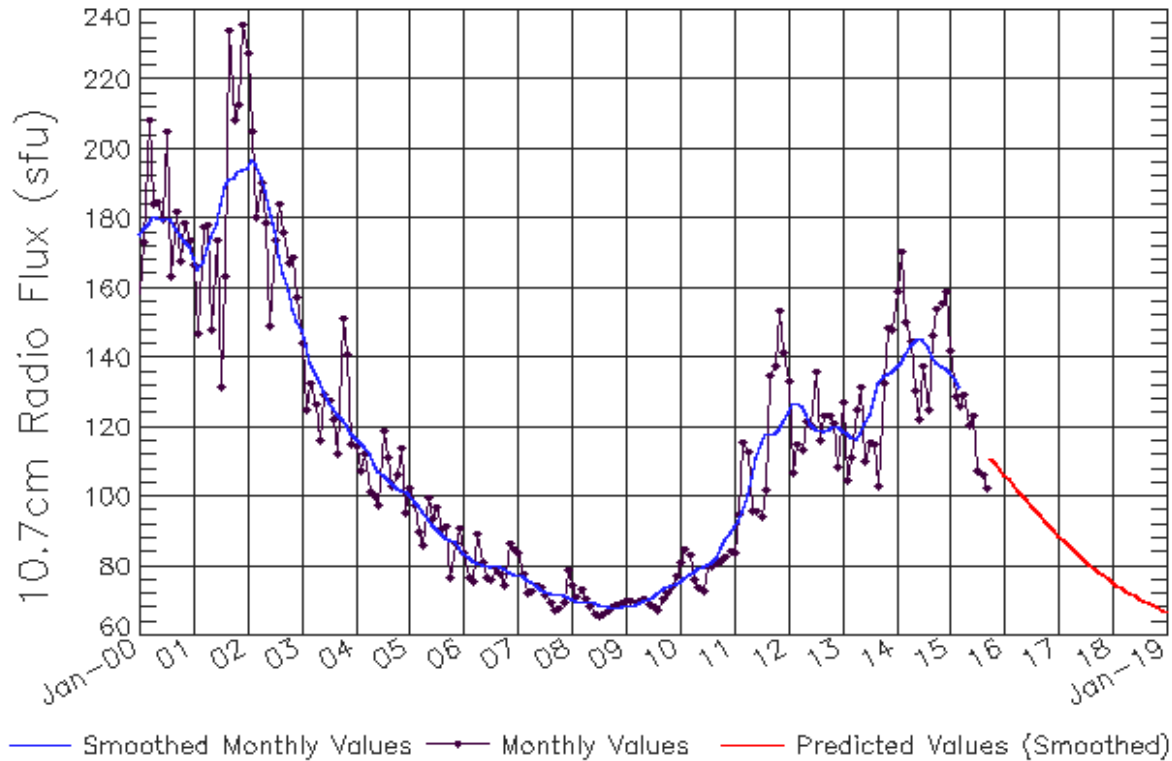
Smoothed Sunspot Number Prediction

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2010	9 (***)	11 (***)	12 (***)	14 (***)	16 (***)	16 (***)	17 (***)	17 (***)	20 (***)	23 (***)	27 (***)	29 (***)
2011	31 (***)	33 (***)	37 (***)	42 (***)	48 (***)	53 (***)	57 (***)	59 (***)	60 (***)	60 (***)	61 (***)	63 (***)
2012	66 (***)	67 (***)	67 (***)	65 (***)	62 (***)	59 (***)	58 (***)	58 (***)	58 (***)	59 (***)	60 (***)	60 (***)
2013	59 (***)	58 (***)	58 (***)	58 (***)	60 (***)	63 (***)	66 (***)	69 (***)	73 (***)	75 (***)	75 (***)	76 (***)
2014	77 (***)	78 (***)	81 (***)	82 (***)	81 (***)	80 (***)	79 (***)	76 (***)	71 (***)	67 (***)	65 (***)	56 (***)
2015	54 (***)	52 (***)	49 (***)	53 (1)	52 (2)	51 (3)	49 (5)	49 (5)	49 (6)	49 (7)	49 (7)	48 (8)
2016	48 (9)	48 (9)	48 (10)	47 (10)	45 (10)	44 (10)	42 (10)	40 (10)	39 (10)	37 (10)	36 (10)	34 (10)
2017	33 (10)	31 (10)	30 (10)	29 (10)	27 (10)	26 (10)	25 (10)	24 (10)	23 (10)	21 (10)	20 (10)	19 (10)
2018	18 (10)	17 (10)	16 (10)	15 (10)	15 (10)	14 (10)	13 (10)	12 (10)	12 (10)	11 (10)	10 (10)	10 (10)
2019	9 (10)	8 (10)	8 (10)	7 (10)	7 (10)	6 (10)	6 (10)	6 (10)	5 (10)	5 (10)	4 (10)	4 (10)



ISES Solar Cycle F10.7cm Radio Flux Progression

Observed data through Sep 2015



Updated 2015 Oct 5

NOAA/SWPC Boulder, CO USA

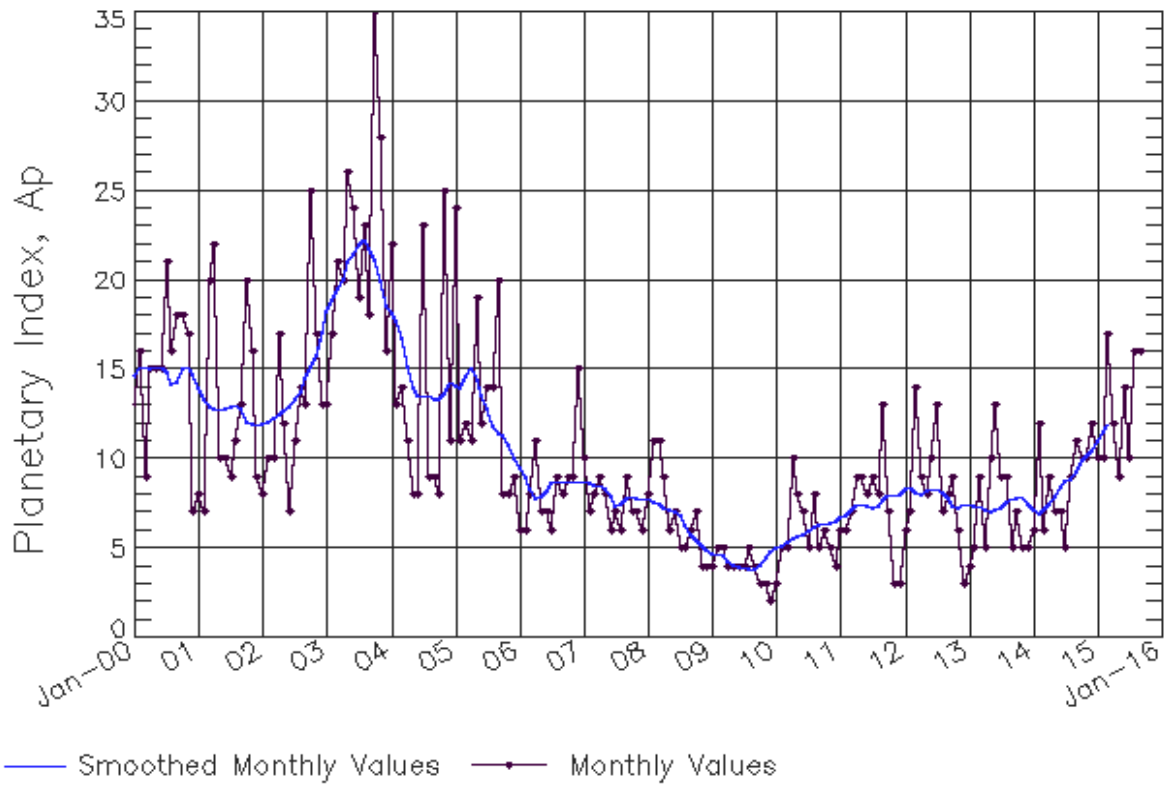
Smoothed F10.7cm Radio Flux Prediction

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2010	76 (**)	77 (**)	78 (**)	78 (**)	79 (**)	80 (**)	80 (**)	81 (**)	82 (**)	85 (**)	88 (**)	90 (**)
2011	91 (**)	93 (**)	96 (**)	100 (**)	106 (**)	111 (**)	115 (**)	118 (**)	118 (**)	118 (**)	120 (**)	122 (**)
2012	124 (**)	127 (**)	127 (**)	126 (**)	124 (**)	121 (**)	120 (**)	119 (**)	119 (**)	119 (**)	120 (**)	120 (**)
2013	119 (**)	118 (**)	117 (**)	117 (**)	118 (**)	121 (**)	124 (**)	128 (**)	132 (**)	135 (**)	135 (**)	136 (**)
2014	137 (**)	139 (**)	141 (**)	144 (**)	145 (**)	146 (**)	145 (**)	143 (**)	140 (**)	138 (**)	137 (**)	137 (**)
2015	136 (**)	134 (**)	131 (**)	128 (1)	124 (1)	120 (2)	116 (3)	114 (4)	112 (4)	110 (5)	108 (6)	106 (7)
2016	105 (8)	104 (8)	103 (9)	102 (9)	100 (9)	99 (9)	97 (9)	96 (9)	94 (9)	93 (9)	92 (9)	90 (9)
2017	89 (9)	88 (9)	86 (9)	85 (9)	84 (9)	83 (9)	82 (9)	80 (9)	79 (9)	78 (9)	77 (9)	76 (9)
2018	75 (9)	75 (9)	74 (9)	73 (9)	72 (9)	71 (9)	71 (9)	70 (9)	69 (9)	69 (9)	68 (9)	67 (9)
2019	67 (9)	66 (9)	66 (9)	65 (9)	65 (9)	65 (9)	64 (9)	64 (9)	63 (9)	63 (9)	63 (9)	63 (9)



ISES Solar Cycle Ap Progression

Observed data through Sep 2015



Updated 2015 Oct 5

NOAA/SWPC Boulder, CO USA

Solar Cycle Comparison charts are temporarily unavailable.



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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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<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

