

Solar activity was moderate. The week was dominated by low level C-class x-ray activity from Regions 1469 (S23, L=335, class/area Eso/140 on 02 May) and 1471 (S21, L=276, class/area=Eho/320 on 02 May) until 05 May. Then, Region 1476 (N10, L=188, class/area=Fhi/760 on 06 May) rotated onto the visible disk and produced three impulsive M-class flares in approximately 12 hours. The largest of these was an M1/Sn at 05/1323Z. Only one M1/In flare was observed the following day, also from Region 1476, at 06/1747Z.

Several coronal mass ejections (CMEs) were observed during the period, although only three were deemed to be potentially earth-directed. The first of the three occurred on 04 May and was observed in STEREO-Ahead COR2 coronagraph imagery around 0309Z. The second was associated with a C1 flare from Region 1469 at 04/2356Z. The third was associated with a long duration C2/Sf flare from Region 1470 (S15, L=286, class/area=Cro/30 on 05 May) at 05/0639Z and evidence of the eruption was observed in SDO AIA imagery at 05/0600 UTC. No significant radio emissions were observed with any of the CMEs.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at high levels (>1000 pfu) for the first three days (30 April-02 May). After a return to normal background levels on 03-04 May, flux reached moderate levels on 05 and 06 May.

Geomagnetic field activity was at predominantly quiet levels all week. Unsettled levels occurred late on 02 May into early 03 May associated with a prolonged period of negative Bz and again late on 03 May in response to a solar sector boundary change. Solar wind speed measured at the ACE spacecraft ranged from 300-400 km/s throughout the week.

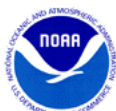
Space Weather Outlook **07 May - 02 June 2012**

Solar activity is expected to be low to moderate as Region 1476 makes its way across the visible solar disk.

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 11-14 May and again on 23-29 May in response to recurrent coronal hole high speed wind streams.

Geomagnetic field activity is expected to begin at unsettled levels for 07-08 May in response to a solar sector boundary crossing and CME arrival. The arrival of a recurrent coronal hole high speed stream will bring active levels on 09-11 May. After a brief return to quiet levels, unsettled conditions are expected in response to another coronal hole high speed stream on 14-15 May. Mostly quiet levels are then forecast until 19 May when unsettled to active conditions are expected to accompany the arrival of a coronal hole high speed stream. Active levels will persist



through 23 May followed by a return to quiet conditions through the end 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
30 April	114	104	710	B4.3	6	0	0	8	0	0	0	0
01 May	110	99	610	B3.3	3	0	0	7	1	0	0	0
02 May	116	96	590	B2.8	5	0	0	6	0	0	0	0
03 May	114	107	540	B3.4	3	0	0	11	0	0	0	0
04 May	114	101	510	B3.9	6	0	0	6	0	0	0	0
05 May	116	88	610	B6.7	17	2	0	8	1	0	0	0
06 May	117	104	1055	B5.4	15	2	0	9	1	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
	30 April	1.6e+05	1.2e+04	3.3e+03		3.6e+08
01 May	2.0e+05	1.2e+04	3.0e+03		3.9e+08	
02 May	1.5e+05	1.2e+04	3.1e+03		2.2e+08	
03 May	6.2e+04	1.2e+04	2.9e+03		9.2e+06	
04 May	6.9e+04	1.2e+04	2.9e+03		4.4e+06	
05 May	8.3e+04	1.2e+04	3.0e+03		1.6e+07	
06 May	7.3e+04	1.2e+04	3.0e+03		2.0e+07	

Daily Geomagnetic Data

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

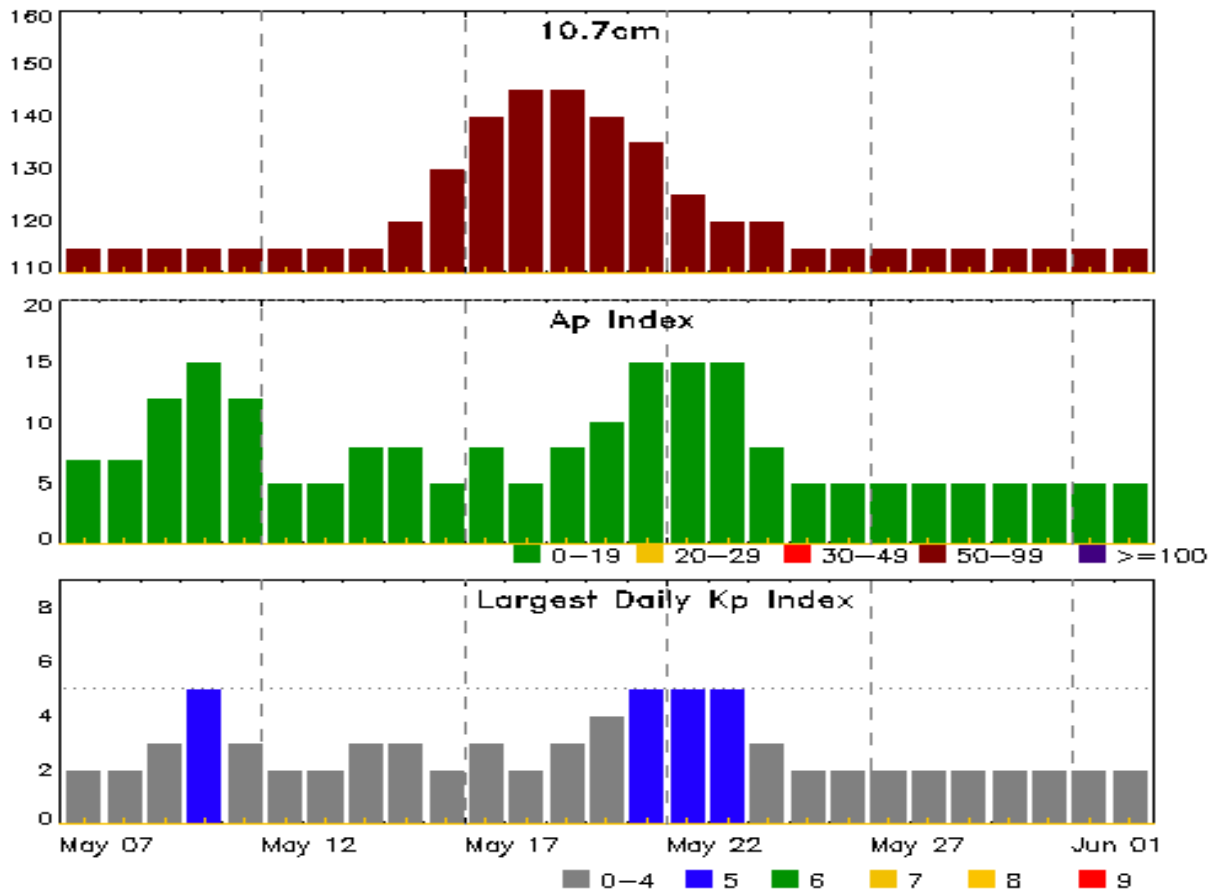


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
30 Apr 0504	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	25/0220
30 Apr 0802	ALERT: Type II Radio Emission	30/0727
01 May 0503	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	25/0220
02 May 0503	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	25/0220



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
07 May	115	7	2	21 May	135	15	5
08	115	7	2	22	125	15	5
09	115	12	3	23	120	15	5
10	115	15	5	24	120	8	3
11	115	12	3	25	115	5	2
12	115	5	2	26	115	5	2
13	115	5	2	27	115	5	2
14	115	8	3	28	115	5	2
15	120	8	3	29	115	5	2
16	130	5	2	30	115	5	2
17	140	8	3	31	115	5	2
18	145	5	2	01 Jun	115	5	2
19	145	8	3	02	115	5	2
20	140	10	4				



Energetic Events

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	Half Max	Class	Integ Flux	Imp/ Brtns	Location	Rgn #	Radio Flux		Intensity	
							Lat CMD		245	2695	II	IV
05 May	1319	1323	1329	M1.4	0.005	SN	N13E82	1476				
05 May	2256	2301	2304	M1.3	0.004	SF	N09E75	1476				
06 May	0112	0118	0120	M1.1	0.002			1476				
06 May	1741	1747	1752	M1.3	0.004	1N	N10E64	1476				

Flare List

Date	Time			X-ray Class	Imp/ Brtns	Location	Rgn #
	Begin	Max	End				
30 Apr	0003	0005	0013		SF	S30E42	1472
30 Apr	0029	0033	0035	B7.6			
30 Apr	0253	0259	0302	C2.4	SF	S24E63	1471
30 Apr	0505	0508	0512	B7.4			
30 Apr	0602	0606	0610	B8.9	SF	S22E62	1471
30 Apr	0656	0738	0819	C3.9			1465
30 Apr	0913	0917	0921	C2.4	SF	S24E60	1471
30 Apr	1021	1026	1032	C5.6	SF	S24E59	1471
30 Apr	1037	1041	1043	C6.0			
30 Apr	1430	1436	1441	C1.2	SF	S26E57	1471
30 Apr	1754	1756	1801		SF	S26E57	1471
30 Apr	2223	2226	2228		SF	S25E53	1471
01 May	0435	0443	0447	C3.9	1F	S19E38	1470
01 May	0515	0545	0552	C1.2			1465
01 May	1520	1522	1529		SF	S21W32	1469
01 May	1708	1715	1718	B5.7	SF	S20E38	1471
01 May	1759	1800	1808		SF	S25W17	1469
01 May	1812	1813	1817		SF	S20E38	1471
01 May	1826	1831	1836	B8.4	SF	S21W34	
01 May	2234	2235	2243	C1.2	SF	S20W37	1473
01 May	2248	2248	2251		SF	N10W78	1468
02 May	0131	0137	0141	C1.8	SF	N09W84	1468
02 May	1132	1139	1146	C3.2			
02 May	1354	1441	1531	B7.5	SF	S26W29	1469
02 May	1551	1620	1624		SF	S26W31	1469
02 May	1755	1805	1813	C2.2	SF	S25W32	1469
02 May	1855	1902	1911	C2.1	SF	S26W29	1469



Flare List

Date	Time			X-ray Class	Imp/ Brtns	Optical		Rgn #
	Begin	Max	End			Location Lat CMD		
02 May	2038	2050	2102	C1.9	SF	S27W33		1469
03 May	0028	0100	0118	B8.7				1475
03 May	0521	0526	0537	B7.6	SF	S22E23		1471
03 May	1037	1037	1040		SF	S28W41		1469
03 May	1042	1106	1123	C1.0	SF	S28W41		1469
03 May	1135	1137	1219		SF	S18E09		1471
03 May	1324	1432	1511	C1.6				1475
03 May	1348	1354	1412		SF	N07E74		1475
03 May	1415	1416	1418		SF	S26W44		1469
03 May	1423	1423	1434		SF	N07E74		1475
03 May	1529	1530	1542		SF	S28W45		1469
03 May	1639	1656	1723	C2.3				1475
03 May	1657	1703	1712		SF	S26W45		1469
03 May	1748	1749	1801		SF	S26W45		1469
03 May	2349	2349	2351		SF	S24E12		1471
04 May	0250	0255	0259	B7.6				1469
04 May	0448	0454	0458	C1.3	SF	S22W50		1469
04 May	0750	0754	0758	B7.4				
04 May	1423	1431	1437	C1.5	SF	S18W05		1471
04 May	1626	1629	1636		SF	S29W54		1469
04 May	1638	1640	1654		SF	S29W54		1469
04 May	1648	1652	1653		SF	S27W55		1469
04 May	1922	1928	1932	C1.8				1470
04 May	1934	1937	1940	C2.3				
04 May	2055	2059	2145	C1.6	SF	N14E47		1474
04 May	2350	2356	0002	C1.9				1469
05 May	0100	0105	0109	C1.6				
05 May	0257	0302	0305	C1.9				1476
05 May	0519	0522	0533	C1.0				
05 May	0555	0639	0701	C2.0	SF	S17W16		1470
05 May	0831	0838	0842	C2.1				1476
05 May	0930	0935	0940	C6.8	SF	N12E83		1476
05 May	1056	1059	1101	C2.3				
05 May	1312	1316	1318	C2.7				
05 May	1319	1323	1329	M1.4	SN	N13E82		1476
05 May	1347	1347	1350		SF	S17W25		1470
05 May	1642	1648	1651	C1.8				1476
05 May	1717	1721	1725	C2.8				



Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
05 May	1738	1746	1815		1F	N13E36	1474
05 May	1756	1807	1816	C3.4			1474
05 May	1757	1757	1804		SF	N09E83	1476
05 May	1824	1828	1830	C3.7			1476
05 May	2018	2020	2023		SF	N09E79	1476
05 May	2037	2114	2117	C1.2			1471
05 May	2124	2128	2131	C1.3			1476
05 May	2234	2238	2240	C1.0			
05 May	2241	2245	2249	C1.6			1476
05 May	2256	2301	2304	M1.3	SF	N09E75	1476
05 May	2323	2330	2333	C2.0	SF	N09E77	1476
06 May	0112	0118	0120	M1.1			1476
06 May	0246	0250	0255	C1.5			1469
06 May	0313	0325	0337	C2.9			1470
06 May	0431	0436	0443	C3.9			1476
06 May	0524	0530	0550	C1.2			1476
06 May	0701	0704	0707	C1.7			1476
06 May	0929	0931	0933		SF	N12E66	1476
06 May	1133	1142	1147	C1.4			1476
06 May	1337	1342	1346	C1.4	SF	N09E71	1476
06 May	1447	U1447	A1507		SF	N13E70	1476
06 May	1614	1620	1623	C1.1			
06 May	1639	1653	1659	C3.2	SF	N09E69	1476
06 May	1705	1709	1712	C3.0			
06 May	1725	1732	1736	C2.6	SF	N10E68	1476
06 May	1741	1747	1752	M1.3	1N	N10E64	1476
06 May	1835	1850	1858		SF	N10E64	1476
06 May	1917	1926	1935	C2.3	SF	N10E64	1476
06 May	2005	2015	2020	C4.3	SF	N11E64	1476
06 May	2125	2126	2129		SF	N11E62	1476
06 May	2227	2231	2238	C1.1			1476
06 May	2311	2314	2321	C1.1			1476



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 1465																				
20 Apr	S17E39		54	210	5	Dao	6	B	6			6	1							
21 Apr	S17E27		55	230	6	Dso	13	B				1	1							
22 Apr	S18E14		53	300	6	Dai	16	B	3			4								
23 Apr	S18W01		55	400	7	Dki	37	B	1											
24 Apr	S19W12		53	280	7	Dko	20	BGD												
25 Apr	S17W26		55	280	6	Dko	12	B												
26 Apr	S18W39		54	200	5	Dsi	11	B	1											
27 Apr	S17W53		56	180	5	Dai	11	BGD	1			2								
28 Apr	S18W66		55	130	5	Dai	12	BG												
29 Apr	S18W80		57	90	4	Cso	4	B	2			2								
									14	0	0	15	2	0	0	0				

Crossed West Limb.

Absolute heliographic longitude: 55

Region 1466

22 Apr	N12E29		39	60	6	Cso	11	B									
23 Apr	N11E14		40	120	7	Dao	14	B									
24 Apr	N12E01		40	190	8	Dso	8	B									
25 Apr	N11W12		41	150	7	Dao	8	B									
26 Apr	N12W26		41	90	7	Csi	9	B	1								
27 Apr	N11W38		41	90	7	Cso	8	B		1		3	1				
28 Apr	N12W51		40	70	5	Cso	6	B	1			9					
29 Apr	N13W65		42	140	7	Dso	6	B	1			1					
30 Apr	N12W80		41	190	6	Dso	3	B									
01 May	N10W90		38	100	9	Dso	4	B									
									3	1	0	13	1	0	0	0	

Crossed West Limb.

Absolute heliographic longitude: 40



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 1467																							
24 Apr	N14E72	330	10	1	Hsx	2	A	1															
25 Apr	N16E59	330	10		Bxo	4	B																
26 Apr	N14E45	330	10	1	Cso	1	B																
27 Apr	N11E32	331	50	3	Dso	4	B	1				1											
28 Apr	N12E18	331	50	4	Cso	6	B	2				2											
29 Apr	N12E04	333	20	1	Hrx	1	A																
30 Apr	N13W09	331	10	1	Bxo	3	B																
01 May	N12W21	329	10	3	Bxo	3	B																
02 May	N13W35	331	10	2	Bxo	3	B																
03 May	N13W49	332	plage																				
04 May	N13W63	333	plage																				
05 May	N13W77	334	plage																				
								4	0	0	3	0	0	0	0	0							

Died on Disk.

Absolute heliographic longitude: 333

Region 1468

24 Apr	N09E12	29	20	5	Dao	10	B														
25 Apr	N11W02	31	100	6	Dso	11	B														
26 Apr	N08W17	32	90	8	Dso	12	B														
27 Apr	N09W30	33	80	7	Dao	6	B														
28 Apr	N10W42	31	70	8	Dso	6	B														
29 Apr	N11W55	32	10	3	Bxo	2	B														
30 Apr	N11W69	32	plage																		
01 May	N11W83	33	plage									1									
								0	0	0	1	0	0	0	0	0					

Crossed West Limb.

Absolute heliographic longitude: 31



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	4
Region 1469																
24 Apr	S21E68		334	30	2	Cao	10	B	3				3			
25 Apr	S18E55		334	10	5	Bxo	6	B					1			
26 Apr	S24E41		333	20	4	Cso	3	B								
27 Apr	S24E28		335	50	10	Dso	6	B	1				1			
28 Apr	S19E14		335	90	7	Dsi	13	B	1				2			
29 Apr	S19W01		338	90	9	Dso	10	B	1				1			
30 Apr	S20W14		336	110	13	Eso	18	B								
01 May	S21W22		337	90	10	Dao	10	B					2			
02 May	S23W39		335	140	15	Eso	12	BG	3				5			
03 May	S26W51		335	100	10	Cao	10	B	1				6			
04 May	S25W62		332	80	5	Dao	5	B	2				4			
05 May	S26W77		333	60	4	Cso	2	B								
06 May	S26W90		333	40	3	Cso	2	B	1							
									13	0	0	25	0	0	0	0

Still on Disk.

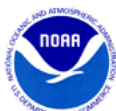
Absolute heliographic longitude: 338

Region 1470

27 Apr	S17E75		288	plage					1							
28 Apr	S17E61		288	40	3	Cso	3	B					1			
29 Apr	S16E47		290	40	4	Cso	3	B								
30 Apr	S15E32		289	10	2	Bxo	2	B								
01 May	S15E21		289	plage					1				1			
02 May	S15E07		289	plage												
03 May	S15W07		290	10	5	Bxo	10	B								
04 May	S15W20		290	20	5	Cro	7	B	1							
05 May	S15W31		287	10	2	Bxo	2	B	1				2			
06 May	S15W43		286	30	6	Cro	5	B	1							
									5	0	0	3	1	0	0	0

Still on Disk.

Absolute heliographic longitude: 289



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 1471																							
28 Apr	S23E70	279	120	4	Hsx	2	A						1										
29 Apr	S23E57	280	260	10	Cho	5	B	1					1										
30 Apr	S22E45	277	320	11	Eho	4	B	4					7										
01 May	S21E34	274	310	11	Eho	9	B						2										
02 May	S21E19	276	320	13	Eho	8	B																
03 May	S19E02	276	300	10	Cko	7	B						3										
04 May	S19W10	277	300	4	Hhx	7	A	1					1										
05 May	S19W24	280	150	6	Dao	8	B	1															
06 May	S19W36	279	210	5	Dao	8	B																
								7	0	0	0	15	0	0	0	0	0	0	0	0	0		

Still on Disk.

Absolute heliographic longitude: 276

Region 1472

29 Apr	S29E40	297	10	3	Bxo	3	B														
30 Apr	S28E27	295	70	7	Dao	14	B						1								
01 May	S28E14	295	60	8	Dao	7	B														
02 May	S28E01	295	50	11	Eso	7	B														
03 May	S28W12	295	10	12	Bxo	3	B														
04 May	S28W24	294	10	7	Bxo	2	B														
05 May	S28W38	295	plage																		
06 May	S28W52	296	plage																		
								0	0	0	0	1	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 295

Region 1473

01 May	S21W38	347	40	4	Cao	6	B	1					1								
02 May	S21W53	349	60	7	Dso	5	B														
03 May	S21W68	351	60	7	Cso	5	B														
04 May	S20W79	349	60	3	Dao	7	B														
05 May	S20W89	346	10	1	Axx	1	A														
								1	0	0	0	1	0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 347



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 1474																				
02 May	N14E71	230	10	1	Hsx	1	A													
03 May	N16E52	230	20	1	Hrx	1	A													
04 May	N14E40	229	20	1	Hrx	1	A	1				1								
05 May	N13E30	226	10	1	Axx	1	A	1					1							
06 May	N13E17	226	10	1	Hrx	3	A													
								2	0	0	1	1	0	0	0					

Still on Disk.

Absolute heliographic longitude: 226

Region 1475

03 May	N05E61	221	40		Hsx	1	A	2				2							
04 May	N06E49	220	20	1	Cao	2	B												
05 May	N04E39	217	10		Axx	1	A												
06 May	N05E25	217	5	1	Axx	1	A												
								2	0	0	2	0	0	0	0	0			

Still on Disk.

Absolute heliographic longitude: 217

Region 1476

05 May	N09E67	188	360	7	Dko	3	B	8	2			6							
06 May	N10E63	188	760	16	Fhi	25	BG	11	2			9	1						
								19	4	0	15	1	0	0	0				

Still on Disk.

Absolute heliographic longitude: 188

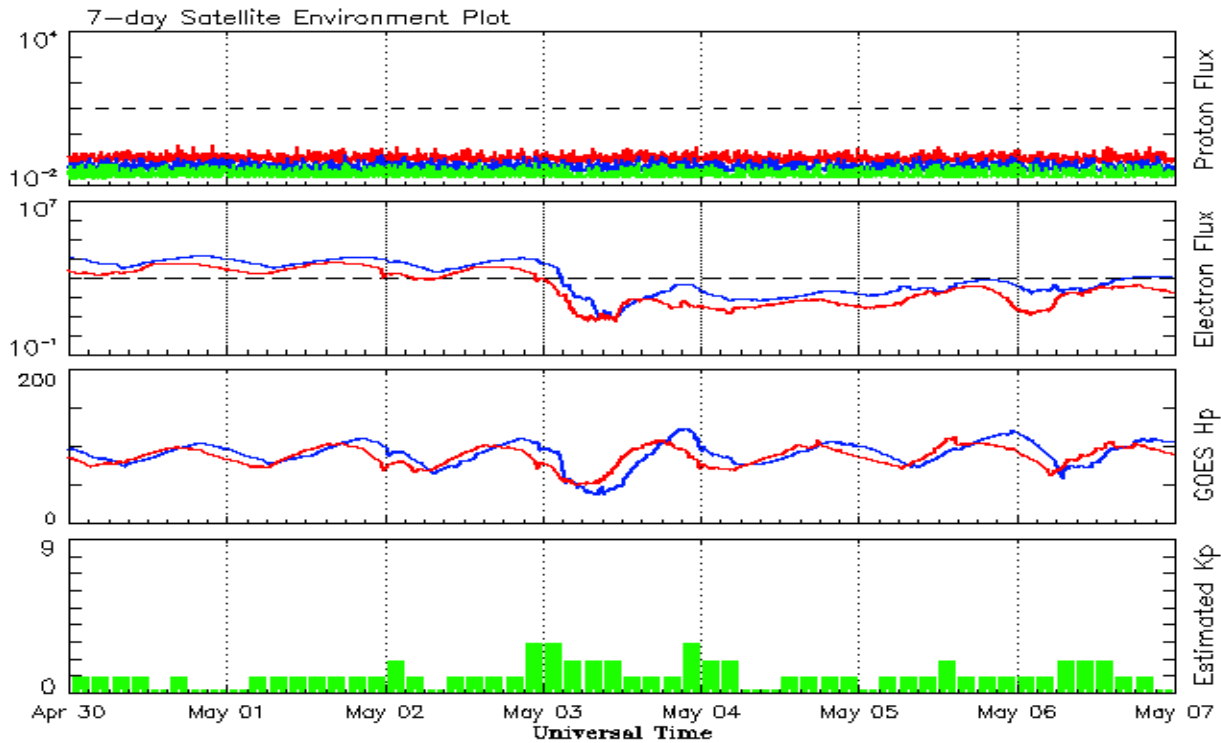


Recent Solar Indices (preliminary)
Observed monthly mean values

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
2010									
May	19.9	8.7	0.44	23.8	15.5	73.8	79.0	8	5.7
June	17.9	13.6	0.75	25.2	16.4	72.6	79.7	7	5.8
July	23.1	16.1	0.70	25.9	16.7	79.9	80.1	5	6.0
August	28.2	19.6	0.70	27.3	17.4	79.7	80.7	8	6.2
September	35.6	25.2	0.71	30.6	19.6	81.1	82.4	5	6.3
October	35.0	23.5	0.67	35.9	23.2	81.6	85.3	6	6.4
November	36.1	21.5	0.60	40.5	26.5	82.5	87.7	5	6.4
December	22.0	14.4	0.66	43.8	28.8	84.3	89.6	4	6.5
2011									
January	32.1	18.8	0.59	47.2	30.9	83.7	91.2	6	6.7
February	53.2	29.6	0.55	50.6	33.4	94.5	92.7	6	6.8
March	81.0	55.8	0.69	55.2	36.9	115.3	95.8	7	7.2
April	81.7	54.4	0.67	61.5	41.8	112.6	100.4	9	7.5
May	61.4	41.5	0.68	69.0	47.6	95.9	105.6	9	7.5
June	55.5	37.0	0.67	76.5	53.2	95.8	110.9	8	7.4
July	67.0	43.8	0.66	82.5	57.2	94.2	115.4	9	7.3
August	66.1	50.6	0.77	84.9	59.0	101.7	117.9	8	7.4
September	106.4	78.0	0.73	84.6	59.5	134.5	118.4	13	7.7
October	116.8	88.0	0.75	84.6	59.9	137.2	118.4	7	8.0
November	133.1	96.7	0.73			153.1		3	
December	106.3	73.0	0.69			141.2		3	
2012									
January	91.3	58.3	0.64			133.1		6	
February	50.1	33.1	0.66			106.7		7	
March	77.9	64.2	0.82			115.1		14	
April	84.4	55.2	0.65			113.1		9	

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 30 April 2012*

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.

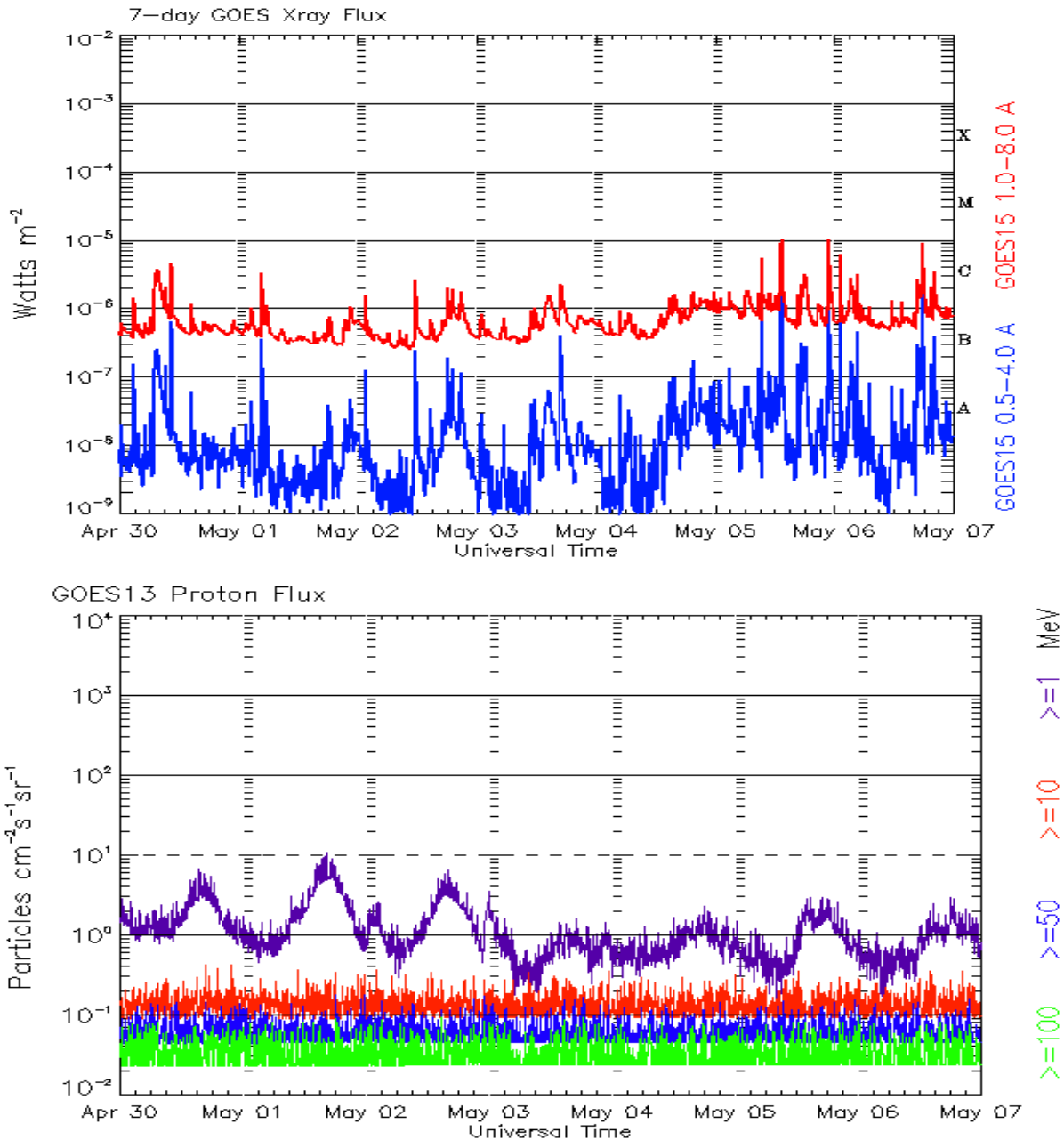
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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 30 April 2012*

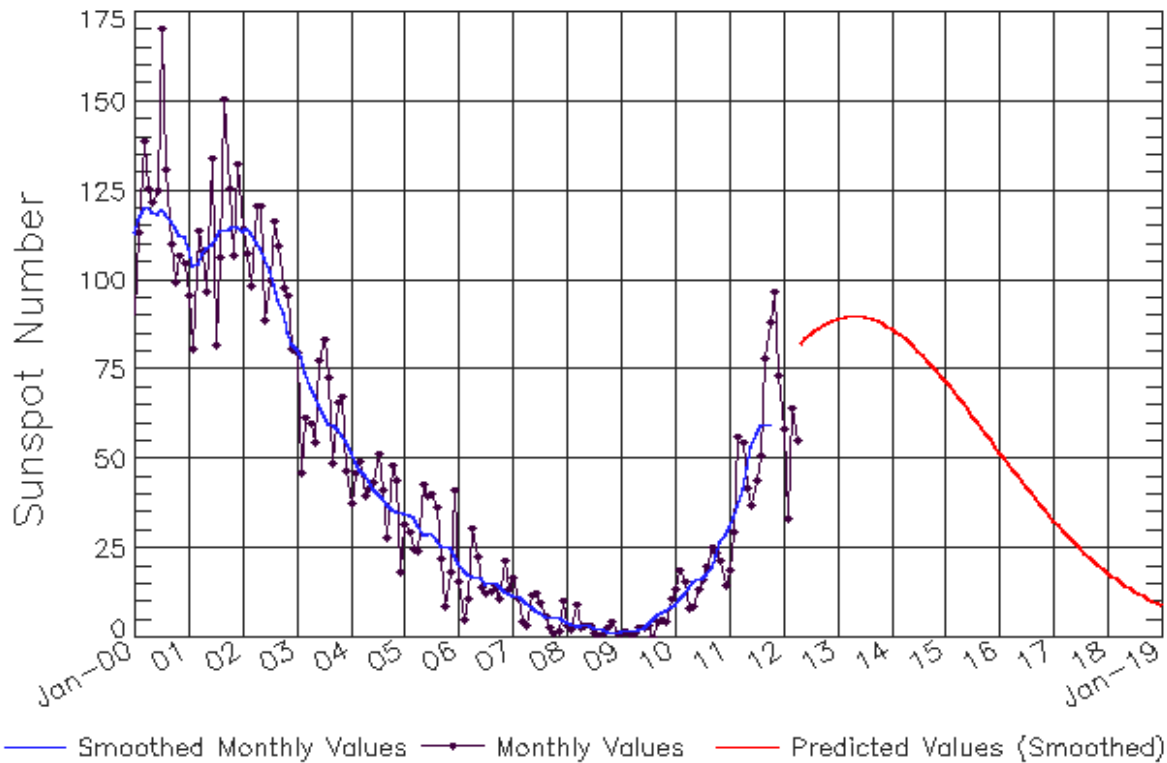
The x-ray plots contains five-minute averages x-ray flux (Watt/m²) as measure by the SWPC primary GOES X-ray satellite, usually at West 105 longitude, in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

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 Apr 2012



Updated 2012 May 7

NOAA/SWPC Boulder, CO USA

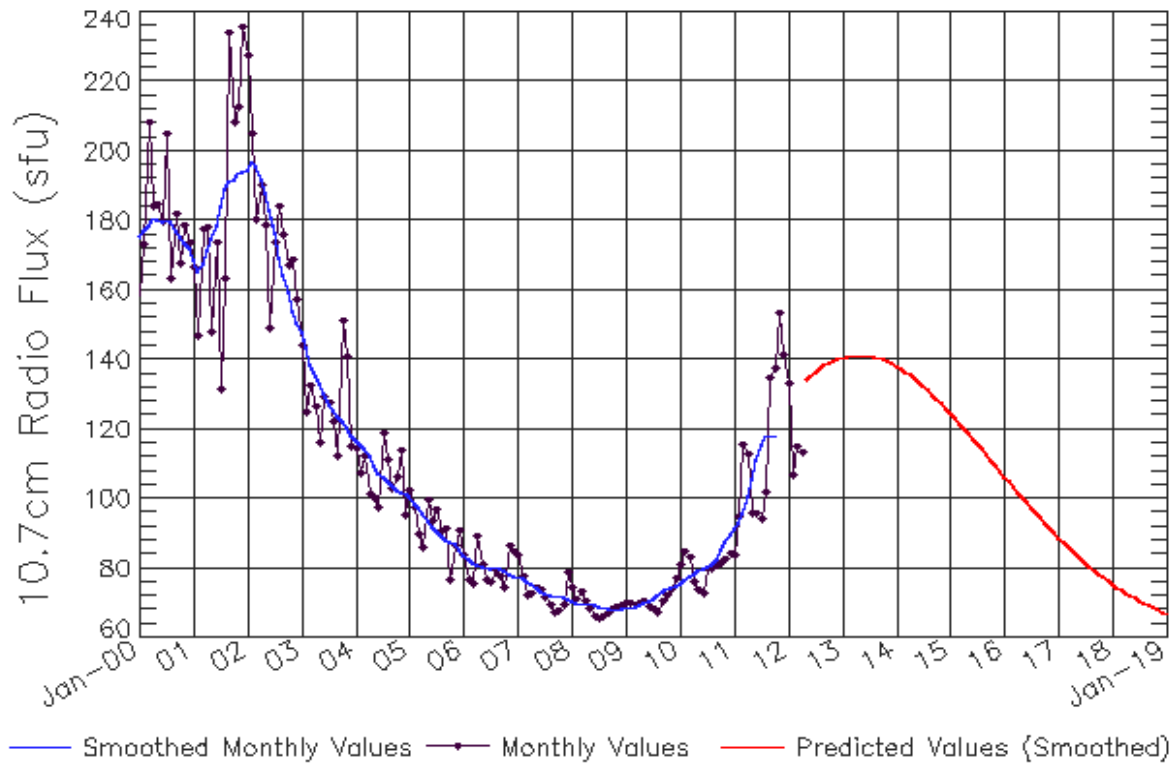
Smoothed Sunspot Number Prediction

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 (***)	62 (1)	65 (2)
2012	69 (3)	72 (5)	74 (5)	74 (6)	74 (7)	74 (7)	76 (8)	80 (9)	83 (9)	86 (10)	88 (10)	89 (10)
2013	89 (10)	90 (10)	90 (10)	90 (10)	90 (10)	90 (10)	90 (10)	89 (10)	89 (10)	89 (10)	88 (10)	87 (10)
2014	86 (10)	86 (10)	85 (10)	84 (10)	83 (10)	81 (10)	80 (10)	79 (10)	78 (10)	76 (10)	75 (10)	73 (10)
2015	72 (10)	70 (10)	69 (10)	67 (10)	65 (10)	64 (10)	62 (10)	60 (10)	59 (10)	57 (10)	55 (10)	54 (10)
2016	52 (10)	50 (10)	49 (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 Apr 2012



Updated 2012 May 7

NOAA/SWPC Boulder, CO USA

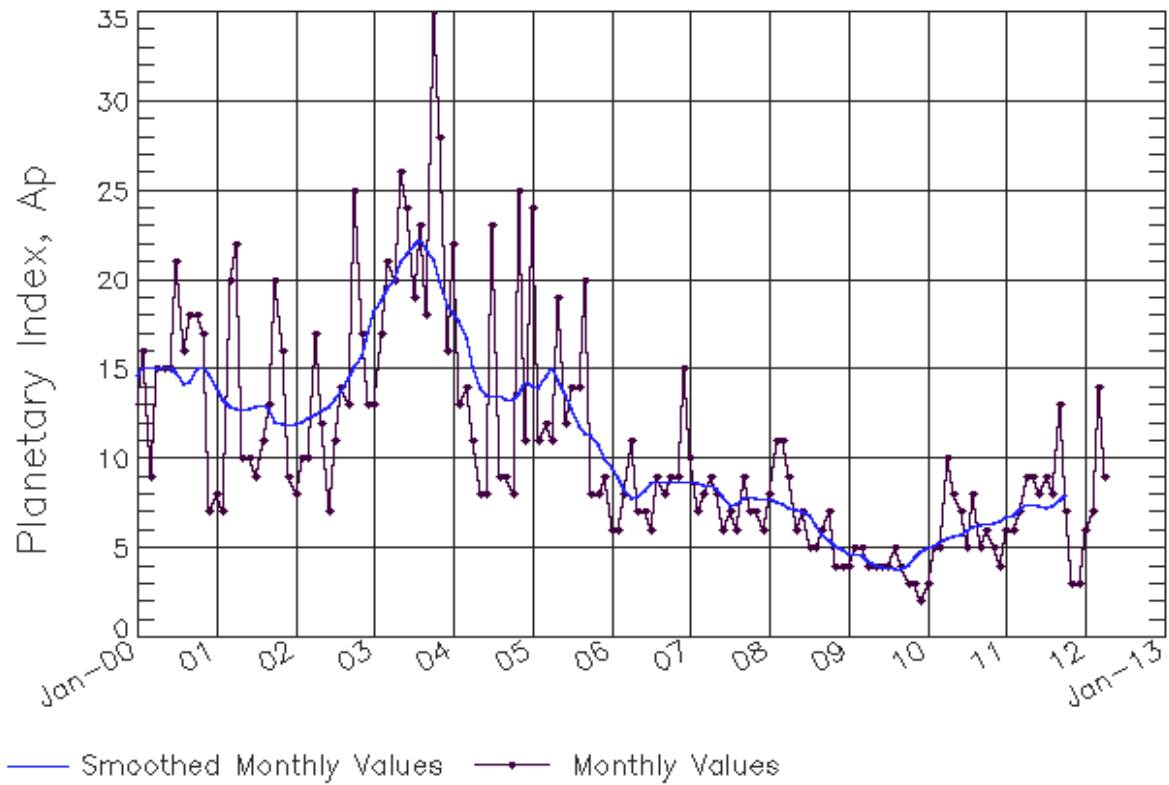
Smoothed F10.7cm Radio Flux Prediction

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 (1)	123 (1)
2012	127 (2)	130 (3)	132 (4)	132 (4)	131 (5)	131 (6)	131 (7)	133 (8)	135 (8)	138 (9)	140 (9)	140 (9)
2013	141 (9)	141 (9)	141 (9)	141 (9)	141 (9)	141 (9)	141 (9)	141 (9)	140 (9)	140 (9)	139 (9)	139 (9)
2014	138 (9)	137 (9)	136 (9)	136 (9)	135 (9)	134 (9)	132 (9)	131 (9)	130 (9)	129 (9)	127 (9)	126 (9)
2015	125 (9)	123 (9)	122 (9)	120 (9)	119 (9)	117 (9)	116 (9)	114 (9)	113 (9)	111 (9)	110 (9)	108 (9)
2016	106 (9)	105 (9)	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

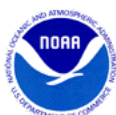
Observed data through Apr 2012



Updated 2012 May 7

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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

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

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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

