

Solar activity reached high levels this week when Region 1739 (N13, L=75, class/area=Dac/150 on 03 May) appeared on the east limb and unleashed an M5/Sf flare on 03 May at 1732Z. The flare was accompanied by Type II (1297 km/s) and Type IV radio emissions. A coronal mass ejection (CME) was subsequently observed in LASCO/C2 coronagraph imagery at 03/1748Z and also in STEREO-A and B COR2 imagery. Region 1739 was also responsible for an M1/Sf flare at 05/1756Z. The most prolific active region of the week was, by far, Region 1731 (N09, L=187, class/area=Dkc/420 on 28 Apr) with 17 C-class and two M-class flares to its credit. By 30 Apr, Region 1731 had developed beta-gamma-delta magnetic characteristics which it maintained through 03 May. During this period it produced an M1/1n flare at 02/0510Z and a long duration M1/2n flare at 03/1655Z. The 02 May event was associated with a tenflare (159 sfu), a Type II emission (703 km/s), and a CME first seen in LASCO/C2 imagery at 02/0524Z. The majority of the ejecta was directed north of the ecliptic, but output from the WSA-Enlil model suggested a possible scrape from the CME on 06 May. The 03 May event was not associated with a CME.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at high levels on 29-30 Apr and 03-04 May.

Geomagnetic field activity reached unsettled to active levels beginning late on 30 Apr and lasting through 02 May. This activity was in response to the presence of a recurrent negative polarity coronal hole high speed stream. On 01 May, activity reached major storm levels at high latitudes. Activity returned to quiet levels early on 02 May. Conditions were quiet, with the exception of one unsettled period during the latter half of 05 May with the arrival of a corotating interaction region in advance of a positive polarity recurrent coronal hole high speed stream.

### **Space Weather Outlook** **06 May - 01 June 2013**

Solar activity is expected to be at low levels with a chance for an isolated moderate or greater event for the extent of the outlook period.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be high on 8-10 May and again on 24-31 May in response to recurrent coronal hole high speed streams.

Geomagnetic field activity is expected to be quiet to unsettled for the majority of the outlook period. Active levels are possible on 21-23 May in response to a recurrent coronal hole high speed stream.



### ***Daily Solar Data***

Date	Radio Flux 10.7cm	Sun spot No.	Sunspot Area (10 <sup>-6</sup> hemi.)	X-ray Background Flux	Flares							
					X-ray			Optical				
					C	M	X	S	1	2	3	4
29 April	142	136	860	B7.3	12	0	0	17	0	0	0	0
30 April	154	165	1380	B6.7	7	0	0	14	0	0	0	0
01 May	159	151	1220	B7.8	13	0	0	16	0	0	0	0
02 May	149	102	1110	B6.0	6	1	0	5	2	0	0	0
03 May	148	139	1150	B6.5	5	2	0	4	0	1	0	0
04 May	142	156	1080	B6.4	11	0	0	8	0	0	0	0
05 May	137	103	800	B5.9	16	1	0	16	1	0	0	0

### ***Daily Particle Data***

Date	Proton Fluence (protons/cm <sup>2</sup> -day -sr)			Electron Fluence (electrons/cm <sup>2</sup> -day -sr)		
	>1 MeV	>10 MeV	>100 MeV	>0.6 MeV	>2MeV	>4 MeV
29 April	3.3e+05	1.2e+04	2.9e+03		7.6e+07	
30 April	2.1e+05	1.1e+04	2.7e+03		7.4e+07	
01 May	7.8e+05	1.1e+04	2.6e+03		2.9e+06	
02 May	1.8e+05	1.2e+04	2.7e+03		2.9e+07	
03 May	2.6e+05	1.1e+04	2.8e+03		8.8e+07	
04 May	1.9e+05	1.1e+04	2.8e+03		1.1e+08	
05 May	1.3e+05	1.1e+04	2.8e+03		1.6e+07	

### ***Daily Geomagnetic Data***

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
29 April	5	2-0-1-1-1-2-2-2	3	1-1-0-1-2-1-0-2	5	2-1-1-1-1-1-1-2
30 April	6	1-1-2-2-2-2-1-2	6	2-2-2-2-2-1-1-2	7	2-1-1-2-2-2-1-3
01 May	16	2-2-4-4-4-2-3-2	57	3-4-6-6-6-6-6-3	21	3-3-4-4-4-3-4-3
02 May	11	3-4-2-2-2-2-2-2	13	3-4-3-4-1-2-2-1	13	4-4-2-2-2-2-2-2
03 May	5	2-2-1-1-1-1-2-1	6	2-2-2-1-1-2-2-1	6	2-2-1-1-1-2-2-1
04 May	5	1-1-1-1-2-2-2-1	6	1-1-2-2-2-3-1-1	5	1-1-2-1-1-2-1-1
05 May	7	1-2-2-1-3-2-2-1	10	2-3-3-2-4-2-1-0	7	2-2-2-1-2-3-2-1

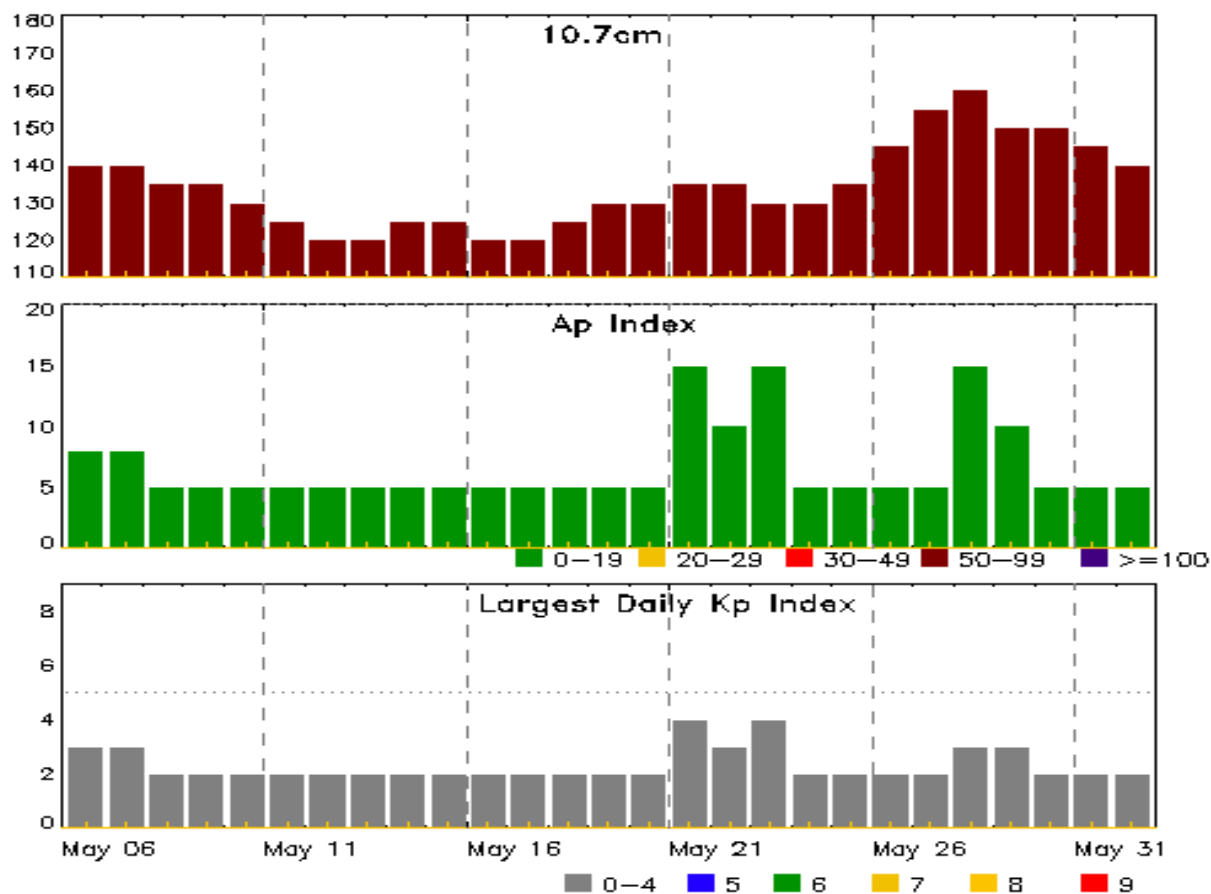


### *Alerts and Warnings Issued*

<b>Date &amp; Time of Issue UTC</b>	<b>Type of Alert or Warning</b>	<b>Date &amp; Time of Event UTC</b>
29 Apr 1240	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	27/0915
29 Apr 1950	ALERT: Type II Radio Emission	29/1935
29 Apr 2001	ALERT: Type IV Radio Emission	29/1943
30 Apr 1201	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	27/0915
01 May 0521	WARNING: Geomagnetic K = 4	01/0530 - 1200
01 May 0747	ALERT: Geomagnetic K = 4	01/0745
01 May 0750	WARNING: Geomagnetic K = 5	01/0748 - 1200
01 May 1143	EXTENDED WARNING: Geomagnetic K = 4	01/0530 - 1800
01 May 1143	EXTENDED WARNING: Geomagnetic K = 5	01/0748 - 1800
01 May 1755	EXTENDED WARNING: Geomagnetic K = 5	01/0748 - 02/0000
01 May 1755	EXTENDED WARNING: Geomagnetic K = 4	01/0530 - 02/0300
02 May 0255	EXTENDED WARNING: Geomagnetic K = 4	01/0530 - 02/1500
02 May 0521	SUMMARY: 10cm Radio Burst	02/0502 - 0505
02 May 0551	ALERT: Type II Radio Emission	02/0506
03 May 1301	ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	03/1120
03 May 1607	ALERT: Type IV Radio Emission	03/1516
03 May 1732	ALERT: X-ray Flux exceeded M5	03/1729
03 May 1819	ALERT: Type II Radio Emission	03/1745
03 May 1839	SUMMARY: X-ray Event exceeded M5	03/1724 - 1741
03 May 1940	ALERT: Type IV Radio Emission	03/1847
04 May 0911	CONTINUED ALERT: Electron 2MeV Integral Flux $\geq$ 1000pfu	03/1120



## 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 May	140	8	3	20 May	130	5	2
07	140	8	3	21	135	15	4
08	135	5	2	22	135	10	3
09	135	5	2	23	130	15	4
10	130	5	2	24	130	5	2
11	125	5	2	25	135	5	2
12	120	5	2	26	145	5	2
13	120	5	2	27	155	5	2
14	125	5	2	28	160	15	3
15	125	5	2	29	150	10	3
16	120	5	2	30	150	5	2
17	120	5	2	31	145	5	2
18	125	5	2	01 Jun	140	5	2
19	130	5	2				

### ***Energetic Events***

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	Half	Class	Integ	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux		Intensity	
			Max		Flux				245	2695	II	IV
02 May	0458	0510	0519	M1.1	0.009	1N	N10W26	1731	350	240	2	
03 May	1639	1655	1722	M1.3	0.025	2N	N10W38	1731		130		
03 May	1724	1732	1741	M5.7	0.041	SF	N16E81	1739		77		
05 May	1742	1756	1758	M1.4	0.003	SF	N13E49	1739	3900			

### ***Flare List***

Date	Time			X-ray Class	Optical		
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	Rgn #
29 Apr	0001	0004	0011		SF	N07E30	1731
29 Apr	0155	0201	0207	C1.2			
29 Apr	0224	0246	0254	C3.0	SF	S18E55	1732
29 Apr	0310	0317	0321	C3.0	SF	N11E18	1731
29 Apr	0340	0344	0349	C1.9			
29 Apr	0413	0423	0427	C2.0			
29 Apr	0502	0518	0528	C3.3	SF	S17E62	1732
29 Apr	0539	0540	0542		SF	N09E27	1731
29 Apr	0545	0546	0549		SF	S22E62	1732
29 Apr	0551	0555	0600	C3.0	SF	N10E14	1731
29 Apr	0715	0715	0718		SF	S18E77	
29 Apr	0939	0946	0951	C1.5			
29 Apr	1022	1026	1037	C1.5	SF	S18E82	
29 Apr	1741	1743	1747		SF	N10E15	1731
29 Apr	1805	1807	1812		SF	N10E15	1731
29 Apr	1826	1826	1829		SF	N10E14	1731
29 Apr	1833	1838	1901		SF	S19W43	1735
29 Apr	1926	1932	1936	C4.0	SF	S18W51	1733
29 Apr	2022	2032	2044	C5.9			1730
29 Apr	2054	2055	2059		SF	N10E13	1731
29 Apr	2115	2201	2234	C3.9	SF	N10E13	1731
29 Apr	2318	2320	2331		SF	N11E13	1731
30 Apr	0008	0012	0016	C1.3			1731
30 Apr	0153	0159	0206	C2.2	SF	S17W25	1730
30 Apr	0314	0317	0319	C1.0	SF	N10E13	1731
30 Apr	0839	0845	0855	C1.8	SF	S18W25	1730
30 Apr	1309	1313	1319		SF	S17W29	1730



## *Flare List*

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
30 Apr	1359	1400	1401		SF	S17W30	1730
30 Apr	1403	1403	1413		SF	N10E06	1731
30 Apr	1559	1603	1608		SF	S17W32	1730
30 Apr	1745	1753	1802	C1.3			1730
30 Apr	1856	1856	1858		SF	S19W64	1733
30 Apr	1929	1959	2017	C3.6			1730
30 Apr	1932	1933	1947		SF	N11E01	1731
30 Apr	1937	1944	2010		SF	S17W33	1730
30 Apr	2011	2012	2013		SF	S17W34	1730
30 Apr	2043	2048	2054	C2.6	SF	S16W35	1730
30 Apr	2254	2300	2319		SF	S17W36	1730
30 Apr	2320	2321	2325		SF	N10E00	1731
01 May	0059	0104	0113	C1.4	SF	S22E36	1732
01 May	0120	0126	0130	C9.6	SF	S18W35	1730
01 May	0147	0155	0200	C4.1			1730
01 May	0409	0415	0422	C2.7	SF	S20E26	1732
01 May	0523	0526	0534		SF	N10W04	1731
01 May	0640	0642	0648		SF	N09W03	1731
01 May	0650	0655	0701	C2.0	SF	N10W03	1731
01 May	0723	0729	0734	C5.5	SN	S17W41	1730
01 May	0742	0742	0748		SF	N07W09	1731
01 May	1145	1149	1152	C1.1			1731
01 May	1155	1203	1210	C1.8	SF	N09W07	1731
01 May	1218	1219	1224		SF	S21E31	1732
01 May	1248	1305	1312		SF	N10W08	1731
01 May	1407	1414	1425	C6.6	SF	N09W08	1731
01 May	1547	1612	2133	C2.5			1731
01 May	1550	1557	1605		SF	S17W36	1730
01 May	1609	1613	1622		SF	N11W08	1731
01 May	1842	1851	1909	C2.3			1730
01 May	2003	2006	2011	C1.4			1734
01 May	2029	2034	2058	C4.6	SF	N09W13	1731
01 May	2303	2303	2309		SF	N09W11	1731
02 May	0124	0127	0130	C1.0			
02 May	0458	0510	0519	M1.1	1N	N10W26	1731
02 May	1427	1428	1429		SF	S16E38	1734
02 May	1611	1616	1620	C1.4			1731
02 May	1704	1707	1712	C1.0			1730



## *Flare List*

Date	Time			Optical			Rgn #
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	
02 May	1859	1900	1906		SF	N08W21	1731
02 May	2000	2004	2016		SF	N09W25	1731
02 May	2041	2046	2049	C2.8	1N	S19E27	1734
02 May	2150	2157	2204	C2.3	SF	S17E34	1734
02 May	2303	2309	2315	C1.7	SF	S16E34	1734
03 May	0031	0036	0040	C1.7			1730
03 May	0115	0119	0130	C1.7			1730
03 May	1203	1208	1220	C1.7			1731
03 May	1458	1503	1507	C1.7	SF	S16E19	1734
03 May	1639	1655	1722	M1.3	2N	N10W38	1731
03 May	1724	1732	1741	M5.7	SF	N16E81	1739
03 May	1824	1825	1827		SF	N10W38	1731
03 May	2106	2111	2118	C1.4	SF	S16E15	1734
04 May	0312	0318	0325	C2.4	SF	S17E18	1734
04 May	0544	0558	0601	C2.0	SF	S17E17	1734
04 May	0730	0734	0740	C1.0			1739
04 May	0752	0800	0804	C3.7			1739
04 May	0825	0825	0832		SF	N08W45	1731
04 May	0829	0831	0835		SF	S16E10	1734
04 May	1223	1236	1242	C5.6			1739
04 May	1228	1230	1233		SF	S20E13	1734
04 May	1229	1235	1247		SF	N15E65	1739
04 May	1320	1323	1326	C1.4	SF	N08W48	1731
04 May	1607	1622	1644	C2.0	SF	N09W51	1731
04 May	1816	1821	1826	C1.6			1731
04 May	1931	1937	1942	C2.2			1739
04 May	2325	2328	2330	C1.3			1734
04 May	2345	2349	2354	C1.7			1739
05 May	0045	0049	0054	C8.0	SF	N11E57	1739
05 May	0301	0311	0327	C1.2			1739
05 May	0353	0357	0402	B9.3			1734
05 May	0453	0457	0501	B9.3			1730
05 May	0509	0515	0521	C1.6			1739
05 May	0633	0634	0639		SF	N14E54	1739
05 May	0639	0644	0648	C8.4	SF	N14E55	1739
05 May	0833	0837	0842	C1.1			
05 May	0851	0856	0859	C1.1			1739
05 May	0930	0933	0936	C2.3	SF	N14E53	1739



## *Flare List*

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
05 May	1025	1028	1030	B9.3	SF	N14E53	1739
05 May	1036	1041	1044	C1.7	SF	S17E87	
05 May	1107	1108	1110		SF	N15E52	1739
05 May	1133	1133	1137		SF	N14E52	1739
05 May	1145	1146	1149		SF	N13E51	1739
05 May	1343	1351	1355	C1.3			
05 May	1454	1458	1459		SF	N15E52	1739
05 May	1509	1511	1515		SF	N14E51	1739
05 May	1526	1530	1536	B8.4			
05 May	1558	1601	1603	C1.3			
05 May	1607	1611	1617	C3.2			1734
05 May	1610	1625	1723		SF	N12E49	1739
05 May	1616	1620	1630		SF	S16E15	1734
05 May	1619	1623	1626	C3.8			
05 May	1648	1653	1700	C2.2			
05 May	1742	1756	1758	M1.4			1739
05 May	1744	1744	1817		SF	S16W09	1734
05 May	1801	1802	1811		SF	N13E49	1739
05 May	1957	2002	2004	C8.3	1N	N11E45	1739
05 May	2054	2059	2101	C1.1	SF	N11W66	1731
05 May	2259	2303	2307	C1.3			





## Region Summary

Date	Location		Sunspot Characteristics					Flares							
	Lat CMD	Helio Lon	Area 10 <sup>-6</sup> hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical				
								C	M	X	S	1	2	3	4

### Region 1727

19 Apr	N26E57	273	40	3	Dao	2	B								
20 Apr	N25E44	273	50	7	Dao	9	B								
21 Apr	N25E31	273	60	8	Dao	7	B								
22 Apr	N25E18	272	70	8	Dao	8	B								
23 Apr	N25E03	274	40	5	Cao	3	B								
24 Apr	N25W11	276	30	2	Hax	3	A								
25 Apr	N24W26	277	30	1	Hrx	1	A								
26 Apr	N25W39	277	10	1	Axx	2	A								
27 Apr	N25W52	277	10	1	Axx	1	A								
28 Apr	N25W66	278	plage												
29 Apr	N25W80	279	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 274

### Region 1728

23 Apr	N19E62	214	40	2	Cso	2	B								
24 Apr	N19E48	217	60	2	Hsx	1	A								
25 Apr	N19E37	214	50	1	Hsx	1	A								
26 Apr	N19E24	213	60	4	Hsx	2	A								
27 Apr	N19E11	214	20	2	Hrx	3	A								
28 Apr	N19W02	214	20	1	Hrx	1	A								
29 Apr	N19W16	215	20	1	Hrx	1	A								
30 Apr	N19W30	215	20	1	Hrx	1	A								
01 May	N19W44	216	10	1	Axx	1	A								
02 May	N19W58	217	10	1	Axx	1	A								
03 May	N19W72	218	plage												
04 May	N20W85	218	10	2	Bxo	2	B								
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 214



### *Region Summary - continued*

Date	Location	Sunspot Characteristics						Flares							
	Lat CMD	Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
		Lon	10 <sup>-6</sup> hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
Region 1729															
23 Apr	S14W08	285	10	2	Bxo	2	B								
24 Apr	S14W22	287	10	3	Bxo	6	B								
25 Apr	S15W35	286	40	5	Dso	3	B								
26 Apr	S15W49	287	20	6	Cro	3	B								
27 Apr	S15W63	288	plage												
28 Apr	S15W77	289	plage												
								0	0	0	0	0	0	0	0

Died on Disk.

Absolute heliographic longitude: 285

<b>Region 1730</b>															
24 Apr	S19E47	217	10	5	Bxo	2	B								
25 Apr	S18E34	217	60	5	Dao	7	B								
26 Apr	S18E20	218	100	7	Dao	7	B								
27 Apr	S18E07	218	150	9	Dsc	15	B								
28 Apr	S18W07	218	140	9	Dai	18	B								
29 Apr	S18W20	219	210	11	Eai	19	BGD	1							
30 Apr	S18W34	219	180	11	Eac	24	BGD	5			9				
01 May	S18W48	220	100	11	Eai	12	BGD	4			3				
02 May	S18W62	221	70	9	Cso	5	B	1							
03 May	S16W81	226	100	2	Hsx	1	A	2							
04 May	S16W93	226	80	2	Hax	1	A								
								13	0	0	12	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 218



### *Region Summary - continued*

Date	Location		Sunspot Characteristics					Flares								
	Lat	CMD	Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
			Lon	10 <sup>-6</sup> hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
Region 1731																
25 Apr	N07E61		189	270	6	Dkc	4	BG								
26 Apr	N09E51		187	300	9	Dkc	10	BG								
27 Apr	N09E37		187	420	10	Dkc	17	BG	1							
28 Apr	N09E25		187	420	10	Dkc	25	BG	11			12				
29 Apr	N09E11		188	350	12	Ekc	31	BG	3			10				
30 Apr	N09W03		188	380	12	Ekc	38	BGD	2			4				
01 May	N09W17		189	350	12	Ekc	36	BGD	6			10				
02 May	N09W31		190	320	12	Ekc	33	BGD	1	1		2	1			
03 May	N10W43		187	150	15	Eac	31	BGD	1	1		1		1		
04 May	N10W56		187	90	12	Eai	20	BG	3			3				
05 May	N09W71		189	140	13	Eai	8	BG	1			1				
									29	2	0	43	1	1	0	0

Still on Disk.

Absolute heliographic longitude: 188

<b>Region 1732</b>															
27 Apr	S15E66	157	20	1	Hsx	1	A	2							
28 Apr	S17E54	158	30	1	Hsx	1	A				1				
29 Apr	S17E40	157	130	8	Dso	5	B	2			3				
30 Apr	S17E26	159	170	9	Dsi	11	B								
01 May	S17E12	160	180	9	Dsi	10	B	2			3				
02 May	S17W02	161	160	9	Dsi	7	B								
03 May	S17W15	161	160	8	Dso	7	B								
04 May	S17W22	153	150	6	Dso	12	B								
05 May	S17W35	153	90	6	Dso	4	B								
								6	0	0	7	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 161

<b>Region 1733</b>															
27 Apr	S16W30	253	30	3	Cso	3	B								
28 Apr	S17W42	254	30	3	Cso	2	B	1				1			
29 Apr	S17W56	255	30	3	Cro	2	B	1			1				
30 Apr	S17W70	255	10	1	Axx	1	A				1				
01 May	S17W84	256	10	1	Axx	1	A								
								2	0	0	2	1	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 253



### *Region Summary - continued*

Date	Location		Sunspot Characteristics					Flares							
	Lat CMD	Helio Lon	Area 10 <sup>-6</sup> hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical				
								C	M	X	S	1	2	3	4

#### *Region 1734*

29 Apr	S19E65	134	90	9	Dso	4	B								
30 Apr	S19E51	134	560	9	Dki	9	B								
01 May	S19E37	135	550	9	Dko	6	B	1							
02 May	S19E23	136	550	9	Dko	6	B	3			3	1			
03 May	S19E10	136	550	12	Eko	15	BG	2			2				
04 May	S17E04	127	590	11	Eki	22	BG	3			4				
05 May	S18W09	127	380	12	Eki	19	BG	1			2				
								10	0	0	11	1	0	0	0

Still on Disk.

Absolute heliographic longitude: 127

#### *Region 1735*

29 Apr	S17W48	246	30	3	Cro	4	B				1				
30 Apr	S17W62	247	60	4	Dao	11	B								
01 May	S17W76	248	10	1	Axx	1	A								
02 May	S17W89	248	plage												
								0	0	0	1	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 246

#### *Region 1736*

01 May	S07E34	138	10	3	Bxo	4	B								
02 May	S07E20	139	plage												
03 May	S07E05	141	plage												
04 May	S07W10	142	plage												
05 May	S07W25	144	plage												
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 141

#### *Region 1737*

03 May	N19E35	115	10	2	Axx	1	A								
04 May	N16E21	110	10	1	Axx	1	A								
05 May	N16E07	112	plage												
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 112



### ***Region Summary - continued***

Date	Location		Sunspot Characteristics					Flares							
	Lat CMD	Helio Lon	Area 10 <sup>-6</sup> hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical				
								C	M	X	S	1	2	3	4

#### ***Region 1738***

03 May	N16E63	87	30	1	Hsx	1	A								
04 May	N15E47	84	10	2	Cso	2	B								
05 May	N15E34	84	30	3	Cao	3	B								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 84

#### ***Region 1739***

03 May	N13E75	75	150	10	Dac	13	B		1		1				
04 May	N13E57	74	110	6	Dac	5	BG	5			1				
05 May	N12E44	74	140	10	Dac	8	BG	7	1		12	1			
								12	2	0	14	1	0	0	0

Still on Disk.

Absolute heliographic longitude: 74

#### ***Region 1740***

04 May	S20E64	67	30	1	Hsx	1	A								
05 May	S21E50	68	20	1	Hrx	1	A								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 68

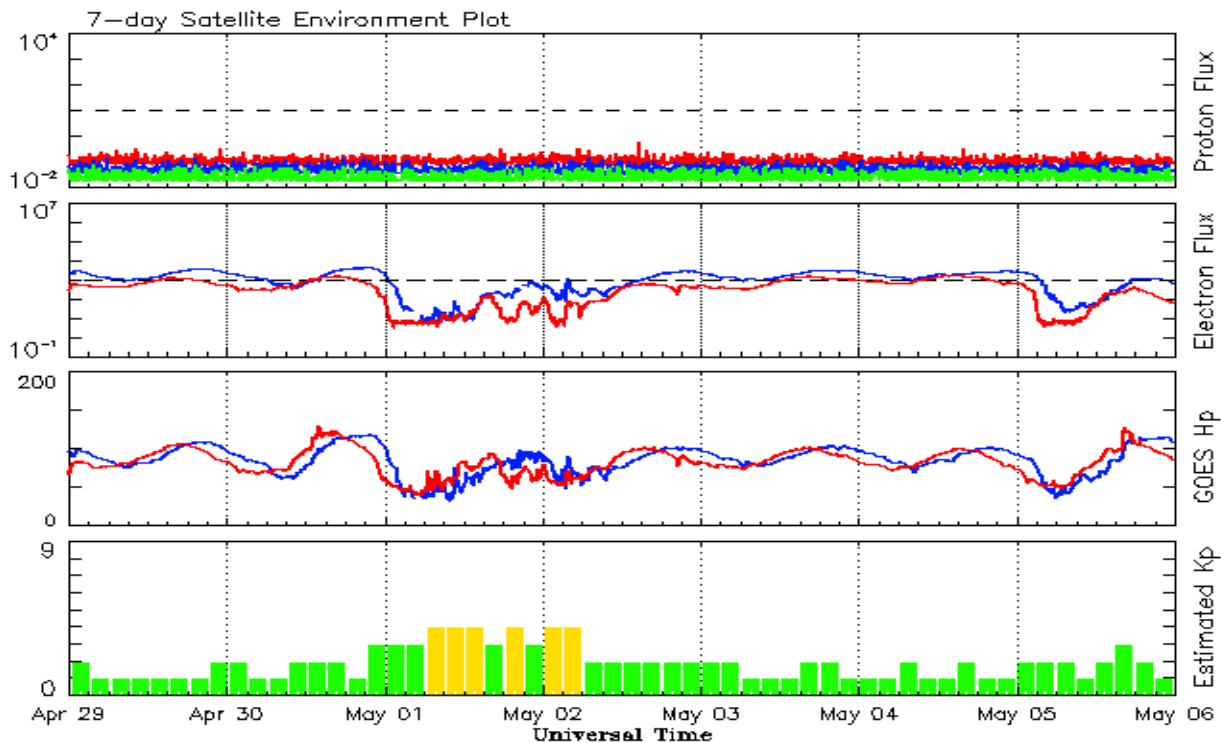


**Recent Solar Indices (preliminary)**  
**Observed monthly mean values**

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
<b>2011</b>									
May	61.4	41.6	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	57.3	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	86.3	61.1	153.1	119.5	3	8.0
December	106.3	73.0	0.69	89.2	63.4	141.2	121.6	3	8.0
<b>2012</b>									
January	91.3	58.3	0.64	92.0	65.5	133.1	124.4	6	8.3
February	50.1	32.9	0.66	94.2	66.9	106.7	126.7	7	8.4
March	77.9	64.3	0.82	94.1	66.8	115.1	126.8	14	8.1
April	84.4	55.2	0.65	91.3	64.6	113.1	125.8	9	8.0
May	99.5	69.0	0.69	87.7	61.7	121.5	123.8	8	8.2
June	88.6	64.5	0.73	83.9	58.9	120.5	121.1	10	8.3
July	99.6	66.5	0.67	82.4	57.8	135.6	119.5	13	8.3
August	85.8	63.0	0.74	83.1	58.2	115.7	119.2	7	8.1
September	84.0	61.4	0.73	83.7	58.1	123.2	118.9	8	7.8
October	73.5	53.3	0.73	85.0	58.6	123.3	119.2	9	7.4
November	89.2	61.8	0.69			120.9		6	
December	60.4	40.8	0.68			108.4		3	
<b>2013</b>									
January	99.8	62.9	0.63			127.1		4	
February	60.0	38.0	0.63			104.4		5	
March	81.0	57.9	0.71			111.2		9	
April	112.8	72.4	0.64			125.0		5	

**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 29 April 2013*

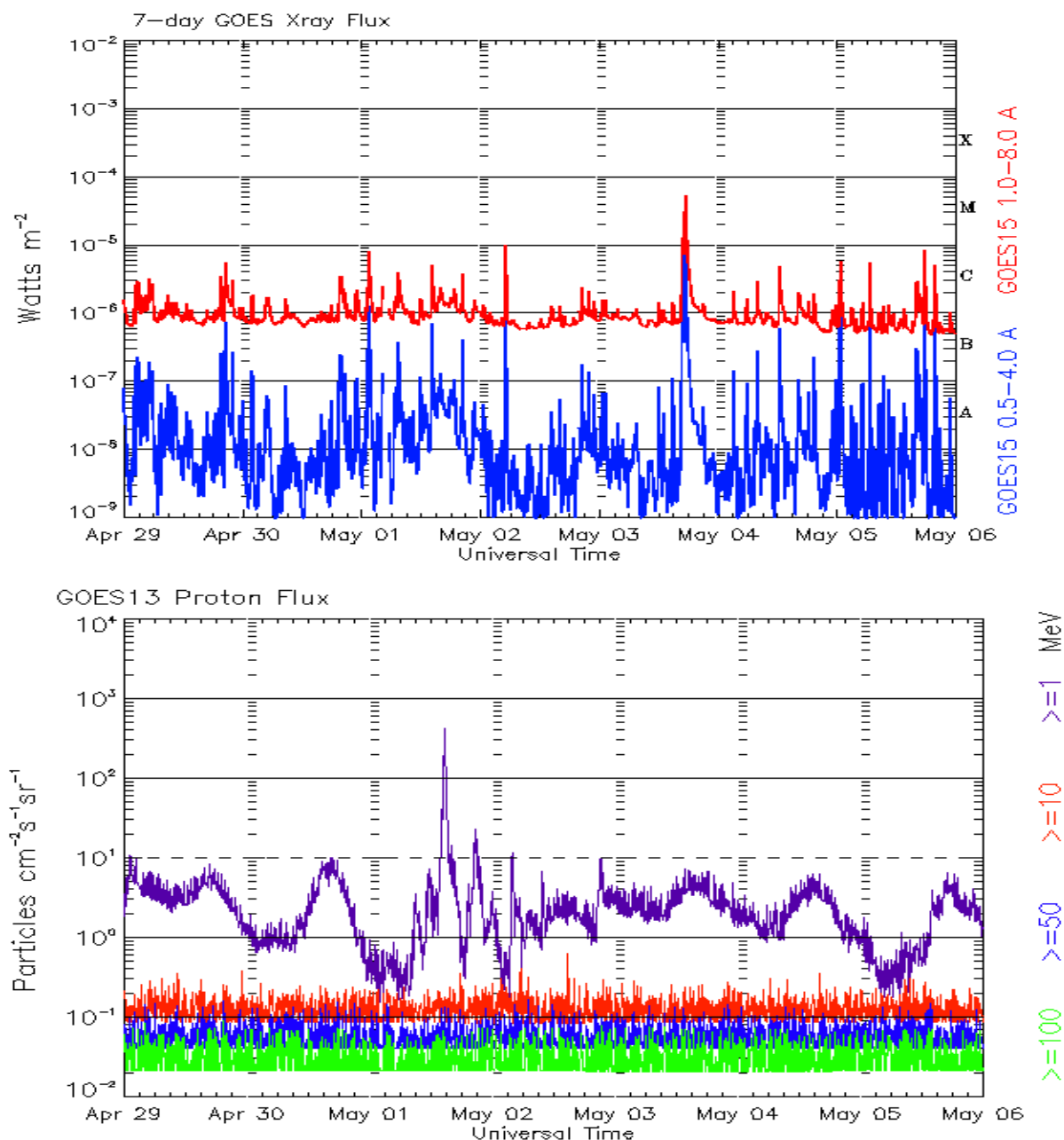
The proton flux plot contains the five-minute averaged integral proton flux (protons/cm<sup>2</sup>-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm<sup>2</sup>-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 29 April 2013*

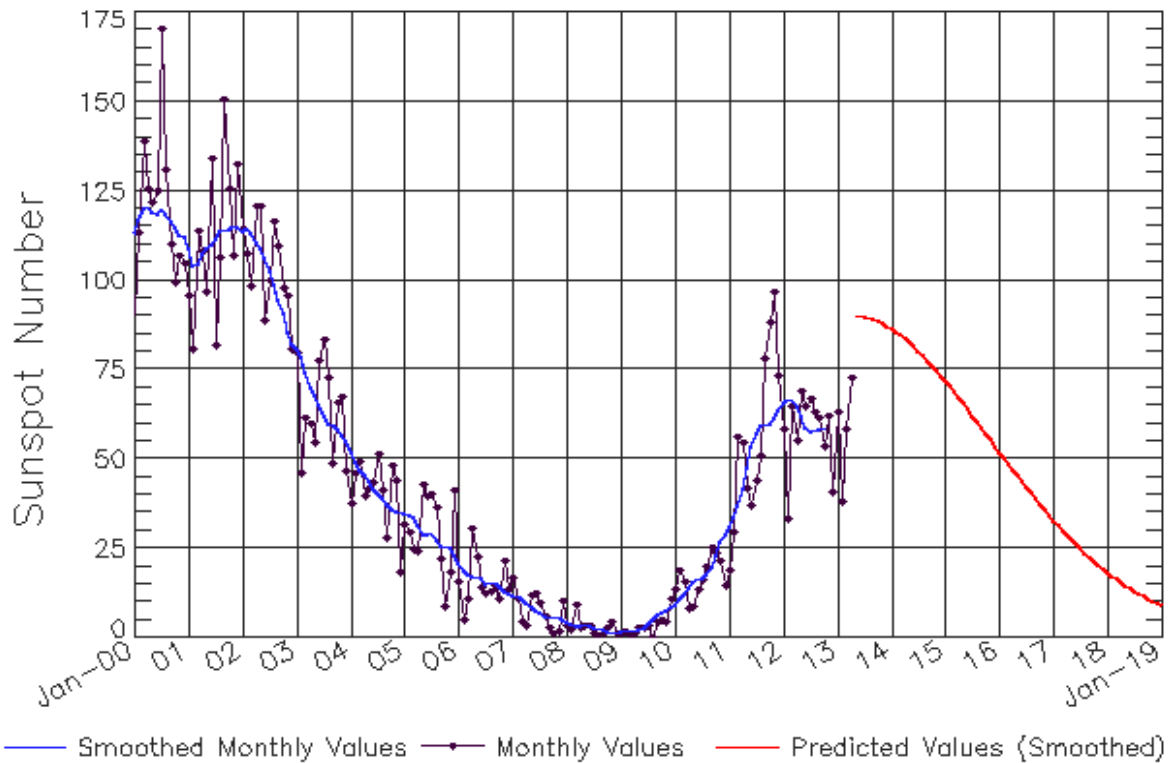
The x-ray plots contains five-minute averages x-ray flux ( $\text{Watt/m}^2$ ) as measure by the SWPC primary GOES X-ray satellite, usually at West 105 longitude, in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

The proton plot contains the five-minute averaged integral flux units ( $\text{pfu} = \text{protons/cm}^2\text{-sec -sr}$ ) 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 2013



Updated 2013 May 6

NOAA/SWPC Boulder, CO USA

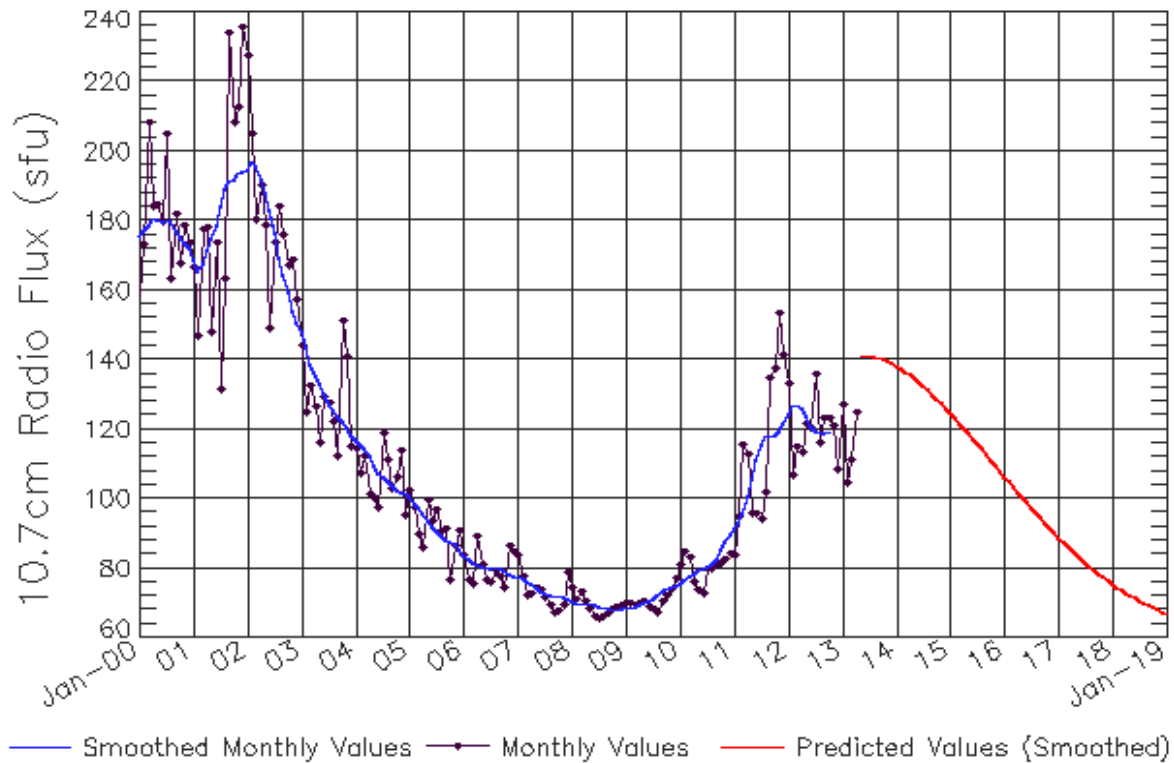
## Smoothed Sunspot Number Prediction

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 (1)	62 (2)
2013	64 (3)	66 (5)	68 (5)	71 (6)	74 (7)	77 (7)	80 (8)	83 (9)	86 (9)	87 (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 2013



Updated 2013 May 6

NOAA/SWPC Boulder, CO USA

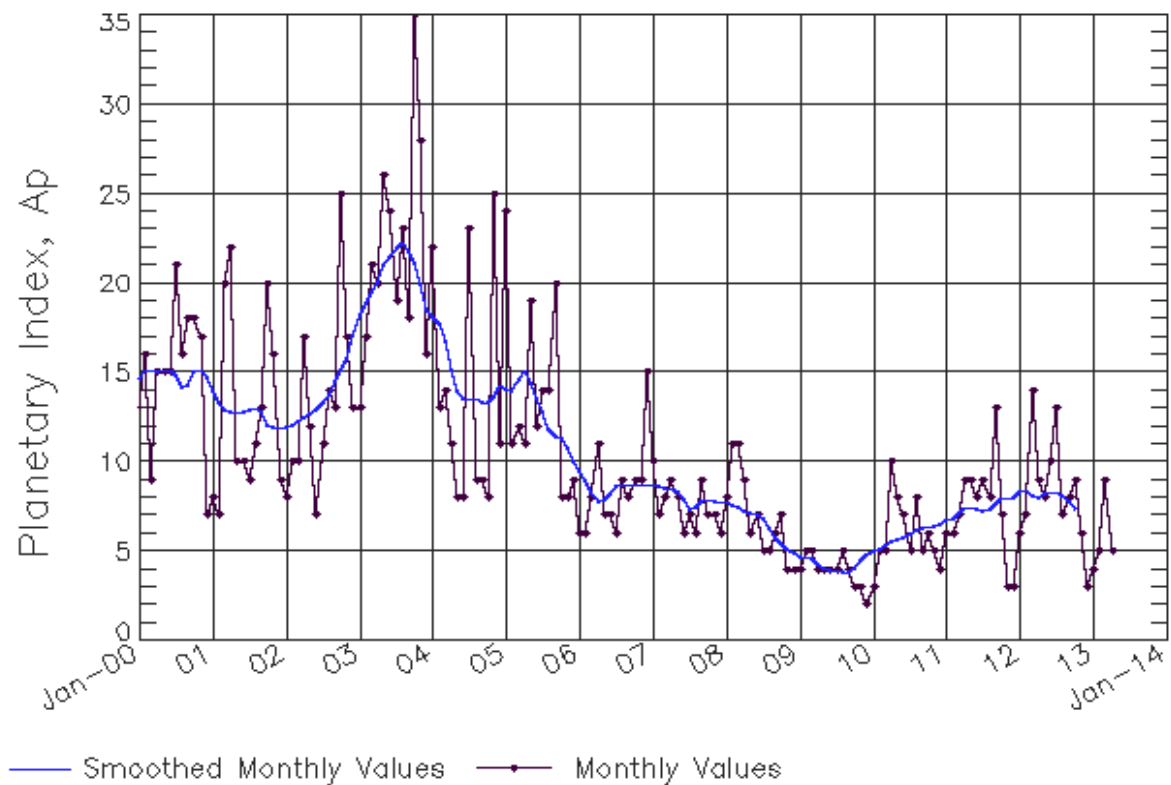
## Smoothed F10.7cm Radio Flux Prediction

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 (***)	121 (1)	122 (1)
2013	123 (2)	125 (3)	126 (4)	128 (4)	129 (5)	131 (6)	133 (7)	135 (8)	137 (8)	139 (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 2013



Updated 2013 May 6

NOAA/SWPC Boulder, CO USA

*Solar Cycle Comparison charts are temporarily unavailable.*



## ***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](mailto: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](http://spaceweather.gov/weekly/Usr_guide.pdf) -- User Guide

