

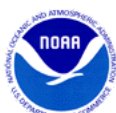
Solar activity ranged from very low to low levels. Very low levels were observed on 31 Aug while low levels dominated the period from 28-30 Aug and again from 01-03 Sep. The period began as Regions 2673 (S10, L=117, class/area Dsc/130 on 03 Sep) and 2674 (N14, L=103, class/area Fhc/930 on 03 Sep) were rotating onto the east limb as simple alpha and beta magnetic configurations on 28-29 Sep, respectively. Region 2672 (N08, L=227, class/area Dao/270 on 22 Aug) was in decay as it approached the west limb on 01 Sep. By midday on 01 Sep, Region 2674 began a growth phase which increased its overall area to approximately 930 millionths and produced 12 C-class flares including a C5/Sf at 30/1845 UTC. Region 2673 began a slow growth phase on 02 Sep, however rapid spot development occurred on 03 Sep increasing its area to approximately 130 millionths with a Dsc/beta-gamma spot classification. The largest flare of the period was a C7 observed at 02/1541 UTC, with an associated Type II (976 km/s) radio burst and non-Earth directed coronal mass ejection (CME), from Region 2672.

An earlier CME was observed off the west limb on SOHO/LASCO C3 imagery at approximately 28/1930 UTC. This CME was analyzed and it was determined there was a possibility of a glancing blow on 01 Sep, however no definitive signs were observed in solar wind data.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal levels on 30-31 Aug, moderate levels on 28 Aug, and at high levels on 29 Aug and 01-03 Sep. The largest flux of the period was 12,319 pfu observed at 03/1705 UTC.

Geomagnetic field activity ranged from quiet to G1 (Minor) storm levels during the period. Solar wind speed appeared to be in decline from approximately 500 km/s to around 350 km/s by 29 Aug with total field around 6-8 nT. Solar wind speed, temperature, and density was unreliable in DSCOVR solar wind data between 28/0600 UTC and 29/1655 UTC. A solar sector boundary crossing into a negative sector was observed at approximately 29/1925 UTC with a brief increase in total field to 13 nT. The Bz component deflected southward to -10 nT. The geomagnetic field responded with quiet levels on 28 and 30 Aug while quiet to active levels were observed on 29 Aug. At approximately 31/0100 UTC total field began to increase, phi angle switched into a positive sector, and solar wind speed and temperature began to rise as a positive polarity coronal hole high speed stream (CH HSS) moved into a geoeffective position. Total field reached a maximum of 30 nT at 31/0615 UTC. Solar wind speed was mostly between 530 km/s to 680 km/s through 03 Sep and then began to decline to approximately 480 km/s by the end of the period. The geomagnetic field responded with quiet to G1 (Minor) storm levels on 31 Aug and 02 Sep, quiet to active levels on 01 Sep, and quiet to unsettled levels on 03 Sep.



Space Weather Outlook 04 September - 30 September 2017

Solar activity is expected to be at low levels with a chance for M-class (R1-R2, Minor-Moderate) flares from 04-11 Sep and again from 14-30 Sep due to potential significant flare activity from Region 2673, 2674, and the return of old Region 2672. Very low levels are expected from 12-13 Sep.

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 on 07, 13, 21-27 Sep. High levels are expected on 04-06, 08-12, 14-20, and 28-30 Sep due to CH HSS influence.

Geomagnetic field activity is expected to be at unsettled to active levels on 04, 07-09, 13-17, 27-30 Sep with G1 (Minor) geomagnetic storm levels likely on 13-16, 27-29 Sep and G2 (Moderate) storm levels likely on 14-15 Sep due to recurrent CH HSS activity.



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 August	82	17	100	B2.0	1	0	0	0	0	0	0	0
29 August	84	35	390	B2.2	3	0	0	10	0	0	0	0
30 August	87	42	630	B1.9	4	0	0	12	1	0	0	0
31 August	92	59	950	B1.8	0	0	0	5	0	0	0	0
01 September	93	62	940	B2.4	3	0	0	7	0	0	0	0
02 September	100	71	920	B2.3	4	0	0	9	0	0	0	0
03 September	120	96	1140	B3.3	2	0	0	18	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 August		9.5e+07	1.6e+04	3.5e+03	
29 August		1.0e+08	1.6e+04	3.3e+03		3.5e+07
30 August		9.8e+07	1.6e+04	3.5e+03		2.1e+06
31 August		1.3e+08	1.7e+04	3.6e+03		1.8e+06
01 September		1.3e+08	1.6e+04	3.3e+03		4.5e+07
02 September		1.1e+08	1.6e+04	3.5e+03		2.0e+08
03 September		5.0e+07	1.7e+04	3.6e+03		4.0e+08

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	28 August	3	1-1-0-2-1-1-1-0	6	2-1-1-3-3-1-0-0	4
29 August	10	1-2-2-1-2-2-4-3	6	1-1-2-0-3-1-3-1	10	1-2-2-1-1-2-4-3
30 August	5	2-2-2-2-2-0-1-0	4	1-1-3-2-1-0-0-0	5	2-2-2-1-1-0-0-0
31 August	20	2-3-4-5-4-3-3-2	42	2-2-5-6-6-6-3-3	31	2-3-5-5-5-4-4-3
01 September	17	4-3-2-4-4-2-2-3	29	3-3-3-6-6-3-2-2	19	4-3-2-4-4-2-2-4
02 September	25	4-5-5-3-3-3-3-3	32	4-5-5-6-3-4-2-2	26	4-5-5-3-2-3-3-3
03 September	10	3-3-1-2-3-2-2-2	17	3-2-1-5-4-4-1-1	15	3-3-1-2-3-2-2-2



Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
28 Aug 2014	WATCH: Geomagnetic Storm Category G1 predicted	
29 Aug 1727	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	29/1710
29 Aug 1839	WATCH: Geomagnetic Storm Category G1 predicted	
29 Aug 1929	WARNING: Geomagnetic K = 4	29/1929 - 2359
29 Aug 1934	ALERT: Geomagnetic K = 4	29/1934
29 Aug 2354	EXTENDED WARNING: Geomagnetic K = 4	29/1929 - 30/0600
31 Aug 0510	WARNING: Geomagnetic K = 4	31/0510 - 1200
31 Aug 0544	WARNING: Geomagnetic K = 5	31/0543 - 1200
31 Aug 0717	ALERT: Geomagnetic K = 4	31/0709
31 Aug 0832	ALERT: Geomagnetic K = 5	31/0823
31 Aug 1034	ALERT: Geomagnetic K = 5	31/1022
31 Aug 1101	EXTENDED WARNING: Geomagnetic K = 4	31/0510 - 1900
31 Aug 1145	EXTENDED WARNING: Geomagnetic K = 5	31/0543 - 1700
31 Aug 1320	ALERT: Geomagnetic K = 5	31/1319
31 Aug 1336	WARNING: Geomagnetic K = 6	31/1337 - 1800
31 Aug 1336	EXTENDED WARNING: Geomagnetic K = 4	31/0510 - 2359
31 Aug 1336	EXTENDED WARNING: Geomagnetic K = 5	31/0543 - 2100
31 Aug 2357	EXTENDED WARNING: Geomagnetic K = 4	31/0510 - 01/0600
01 Sep 0523	EXTENDED WARNING: Geomagnetic K = 4	31/0510 - 01/2359
01 Sep 1011	WARNING: Geomagnetic K = 5	01/1015 - 1500
01 Sep 1406	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	01/1350
01 Sep 2330	EXTENDED WARNING: Geomagnetic K = 4	31/0510 - 02/1200
02 Sep 0421	WARNING: Geomagnetic K = 5	02/0421 - 1000
02 Sep 0448	ALERT: Geomagnetic K = 5	02/0448
02 Sep 0455	WARNING: Geomagnetic K = 6	02/0455 - 0900
02 Sep 0505	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	01/1350
02 Sep 0808	ALERT: Geomagnetic K = 5	02/0808
02 Sep 0929	EXTENDED WARNING: Geomagnetic K = 5	02/0421 - 1500

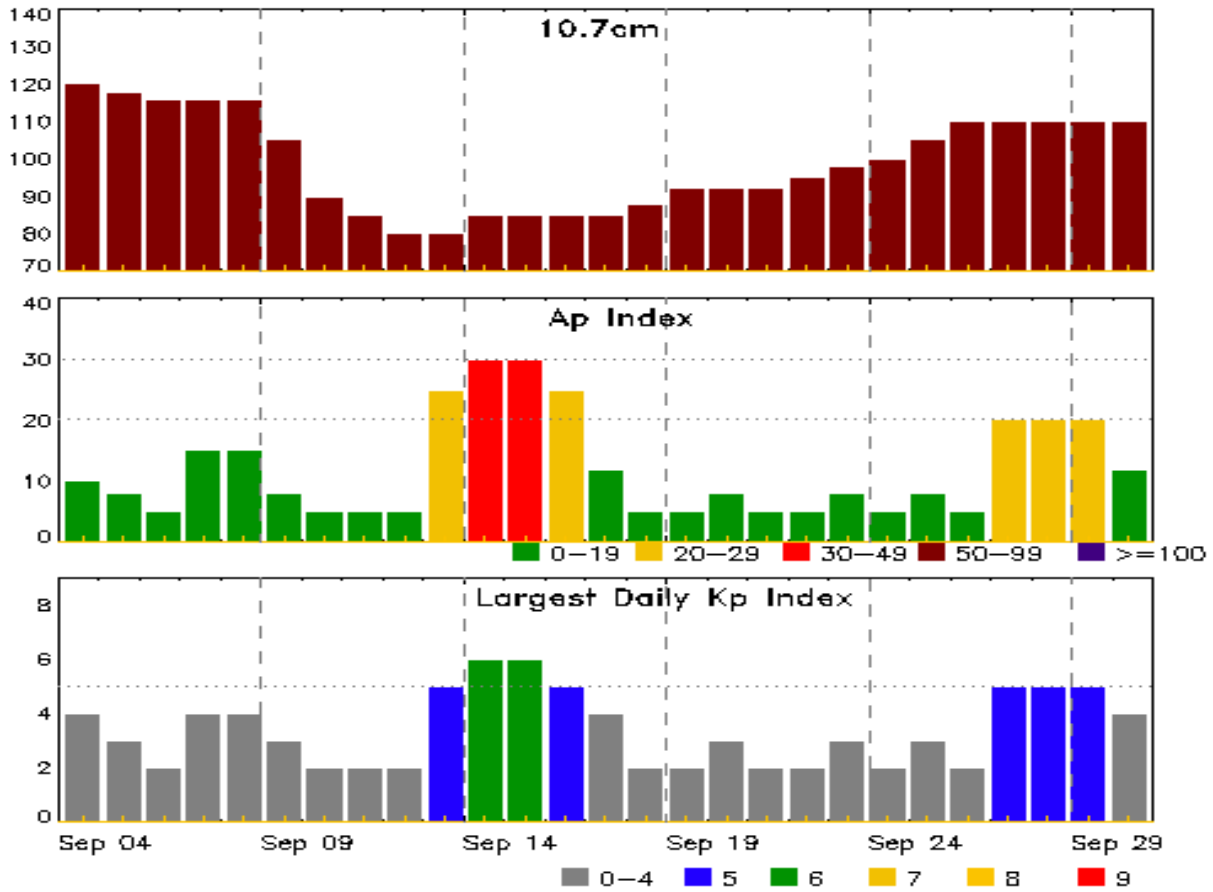


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
02 Sep 0948	EXTENDED WARNING: Geomagnetic K = 4	31/0510 - 02/2100
02 Sep 1609	ALERT: Type II Radio Emission	02/1536
02 Sep 2055	EXTENDED WARNING: Geomagnetic K = 4	31/0510 - 03/0900
03 Sep 0701	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	01/1350
03 Sep 0854	EXTENDED WARNING: Geomagnetic K = 4	31/0510 - 03/2359



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
04 Sep	120	10	4	18 Sep	88	5	2
05	118	8	3	19	92	5	2
06	116	5	2	20	92	8	3
07	116	15	4	21	92	5	2
08	116	15	4	22	95	5	2
09	105	8	3	23	98	8	3
10	90	5	2	24	100	5	2
11	85	5	2	25	105	8	3
12	80	5	2	26	110	5	2
13	80	25	5	27	110	20	5
14	85	30	6	28	110	20	5
15	85	30	6	29	110	20	5
16	85	25	5	30	110	12	4
17	85	12	4				



Energetic Events

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

No Events Observed

Flare List

Date	Time			X-ray Class	Optical			Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	Rgn #	
28 Aug	0053	0056	0103	B1.6			2672	
28 Aug	0612	0616	0620	B2.7			2672	
28 Aug	0923	0928	0938	B2.8				
28 Aug	1441	1459	1506	B5.5			2672	
28 Aug	1533	1540	1558	B9.4			2672	
28 Aug	1630	1638	1649	B8.3				
28 Aug	1957	2002	2006	B6.8				
28 Aug	2333	2344	2355	C1.0				
29 Aug	0255	0300	0307	C2.8			2674	
29 Aug	0427	0430	0454	B9.0			2674	
29 Aug	0616	0621	0629	C1.0			2674	
29 Aug	1020	1026	1031	B4.2			2674	
29 Aug	1058	1102	1117	B4.1			2674	
29 Aug	1238	1246	1256	B3.9			2674	
29 Aug	1259	1317	1325		SF	N14E86		
29 Aug	1329	1331	1336		SF	N16E87		
29 Aug	1338	1522	1556		SF	N14E85	2674	
29 Aug	1356	1359	1401	B3.6	SF	N13E90	2674	
29 Aug	1521	1523	1556		SF	N13E87	2674	
29 Aug	1616	1627	1637	B6.4	SF	N13E86	2674	
29 Aug	1639	1641	1650		SF	N13E89	2674	
29 Aug	1702	1703	1704		SF	N13E87	2674	
29 Aug	1800	1801	1808		SF	N13E87	2674	
29 Aug	1916	1921	1928	B5.2			2674	
29 Aug	2158	2201	2202		SF	N12E79	2674	
29 Aug	2214	2218	2223	C1.3			2674	
30 Aug	0318	0318	0318		SF	N13E80	2674	
30 Aug	0405	0412	0421	C1.1				
30 Aug	0451	0509	0515	B5.5	SF	N11E69	2674	
30 Aug	0815	0815	0820		SF	N13E78	2674	
30 Aug	0828	0835	0846	C1.3	1F	N13E78	2674	



Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
30 Aug	0833	0836	0842		SF	N15E75	2674
30 Aug	0907	0908	0909		SF	N13E78	2674
30 Aug	1019	1019	1024		SF	N13E75	2674
30 Aug	1100	1105	1150	B8.0			
30 Aug	1157	1158	1206		SF	N13E75	2674
30 Aug	1254	1318	1332	B7.3	SF	N14E72	2674
30 Aug	1327	1328	1334		SF	N14E74	2674
30 Aug	1607	1636	1657	B5.4			2672
30 Aug	1740	1744	1750	B3.6	SF	N14E72	2674
30 Aug	1838	1845	1850	C5.2	SF	N14E70	2674
30 Aug	2220	2311	2319	C1.3	SF	N15E69	2674
31 Aug	0237	0240	0242	B2.5	SF	N06W58	2672
31 Aug	0344	0348	0351	B5.3			
31 Aug	0533	0537	0541	B3.2			
31 Aug	0650	0650	0654		SF	N13E66	2674
31 Aug	0821	0824	0827	B7.9			2672
31 Aug	0824	0825	0827		SF	N04W68	2672
31 Aug	0826	0826	0828		SF	N02W67	2672
31 Aug	1439	1442	1444	B3.1			2672
31 Aug	1640	1644	1647	B2.3			2672
31 Aug	1945	1955	2014	B3.1	SF	N12E57	2674
01 Sep	0126	0129	0132	B4.9			2674
01 Sep	0207	0212	0224	B3.4			2674
01 Sep	0630	0637	0648	B4.6			2674
01 Sep	0937	0943	0952	B7.1			2674
01 Sep	1025	1028	1030	B3.7	SF	N14E48	2674
01 Sep	1053	1054	1101		SF	N14E48	2674
01 Sep	1331	1335	1338		SF	N14E46	2674
01 Sep	1504	1507	1509	B4.8			2674
01 Sep	1510	1513	1515	B5.1			2674
01 Sep	1531	1537	1541	C2.0	SF	N15E46	2674
01 Sep	1708	1714	1719	C1.2			2674
01 Sep	1732	1735	1738	B8.0			2674
01 Sep	2058	2102	2106	B5.4	SF	N16E41	2674
01 Sep	2157	2200	2209	B4.6	SF	N15E42	2674
01 Sep	2344	2351	2359	C1.4	SF	N15E42	2674
02 Sep	0000	0000	0012		SF	N16E41	2674
02 Sep	0013	0014	0019		SF	N15E40	2674



Flare List

Date	Time			X-ray Class	Imp/ Brtns	Optical	
	Begin	Max	End			Location Lat CMD	Rgn #
02 Sep	0025	0028	0032	B7.9	SF	N14E40	2674
02 Sep	0222	0230	0235	C1.1	SF	N13E39	2674
02 Sep	0302	0306	0326	C1.0			2674
02 Sep	0403	0407	0410	B6.2	SF	N15E38	2674
02 Sep	0516	0519	0521	B4.1			2674
02 Sep	1011	1015	1017	B4.3			2674
02 Sep	1031	1035	1039	B4.2			2674
02 Sep	1147	U1203	A1306	B8.5	SF	N15E35	2674
02 Sep	1303	1307	1309	B5.7			2672
02 Sep	1338	1346	1347		SF	N16E33	2674
02 Sep	1526	1541	1556	C7.7			2672
02 Sep	2016	2016	2019		SF	N09E23	2674
02 Sep	2156	2203	2233	C1.5			2672
02 Sep	2335	2336	2338		SF	N08E21	2674
03 Sep	0356	0357	0400		SF	S12E09	2673
03 Sep	0418	0441	0454	C1.0	SF	N14E26	2674
03 Sep	0610	0610	0613		SF	N07E18	2674
03 Sep	0839	0926	0948	B7.5			2672
03 Sep	0841	0842	0852		SF	N06E17	2674
03 Sep	0843	0843	0848		SF	S07W54	2675
03 Sep	1019	1022	1034	B5.9			2674
03 Sep	1348	1420	1727		SF	S08E05	2673
03 Sep	1349	1414	1508		SF	N15E19	2674
03 Sep	1349	1351	1356		SF	S06W59	2675
03 Sep	1513	1516	1518		SF	N15E19	2674
03 Sep	1744	1755	1802		SF	S08E02	2673
03 Sep	1811	1813	1822		SF	S08E02	2673
03 Sep	1833	1837	1839		SF	S08E02	2673
03 Sep	1936	1938	1945		SF	S08E03	2673
03 Sep	1955	2009	2021		SF	S08E03	2673
03 Sep	2039	2050	2121	C1.1	SF	S07E00	2673
03 Sep	2201	2207	2212		SF	S07W01	2673
03 Sep	2228	2251	2254		SF	S07W01	2673
03 Sep	2306	2307	2320		SF	S07W01	2673



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 2672																							
18 Aug	N05E0*		225		plage								1										
19 Aug	N05E90		225		plage								6										
20 Aug	N05E75		225	120	5	Dao	4	B	2	1			2										
21 Aug	N07E61		226	160	10	Dao	5	B	1				3										
22 Aug	N08E47		227	270	10	Dao	10	B					5										
23 Aug	N08E34		227	240	11	Esi	8	BG	2				4										
24 Aug	N07E21		226	240	11	Esi	12	BG					2										
25 Aug	N07E07		227	140	12	Eai	12	BG	1				1	1									
26 Aug	N07W07		228	130	13	Eai	10	BG					2										
27 Aug	N07W20		228	150	12	Eso	12	B															
28 Aug	N08W34		228	100	10	Cso	7	B															
29 Aug	N06W50		231	60	4	Cso	3	B															
30 Aug	N06W63		231	70	8	Dso	6	B															
31 Aug	N07W70		225	70	10	Dao	4	B					3										
01 Sep	N08W84		226	60	2	Dao	2	B															
									13	1	0	22	1	0	0	0	0						

Crossed West Limb.

Absolute heliographic longitude: 227

Region 2673

29 Aug	S08E62		119	70	1	Hsx	1	A														
30 Aug	S08E48		120	70	1	Hsx	1	A														
31 Aug	S08E36		119	80	2	Hsx	1	A														
01 Sep	S08E23		119	80	2	Hsx	1	A														
02 Sep	S10E09		119	60	4	Cso	4	B														
03 Sep	S10W02		117	130	7	Dsc	12	BG	1				11									
									1	0	0	11	0	0	0	0	0					

Still on Disk.

Absolute heliographic longitude: 117

Region 2674

29 Aug	N11E70		111	260	4	Dko	1	B	3				8									
30 Aug	N14E64		104	490	13	Eko	5	B	3				12	1								
31 Aug	N13E53		102	770	14	Eho	10	B					2									
01 Sep	N13E38		104	770	16	Fhi	15	BG	3				7									
02 Sep	N14E25		103	810	16	Fhc	18	BG	2				9									
03 Sep	N14E12		103	930	17	Fhc	21	B	1				5									
									12	0	0	43	1	0	0	0	0					

Still on Disk.

Absolute heliographic longitude: 103



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 2675

31 Aug	S07W24	179	30	3	Dro	4	B										
01 Sep	S08W37	179	30	6	Cro	4	B										
02 Sep	S08W51	179	30	6	Cro	4	B										
03 Sep	S07W63	178	50	7	Cro	5	B				2						
								0	0	0	2	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 179

Region 2676

02 Sep	S10W36	164	20	4	Bxo	5	B										
03 Sep	S11W51	166	20	6	Bxo	6	B										
								0	0	0	0	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 164

Region 2677

03 Sep	N19E64	51	10	1	Axx	2	A										
								0	0	0	0	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 51

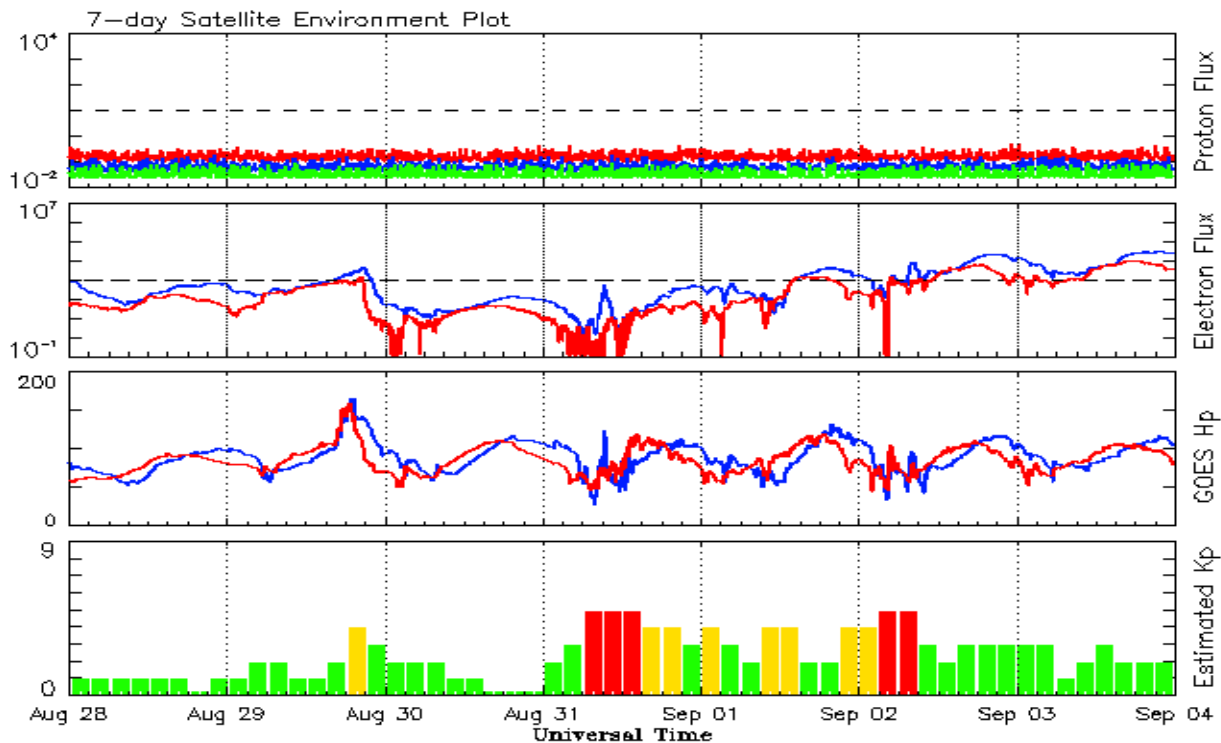


Recent Solar Indices (preliminary)
Observed monthly mean values

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
2015									
September	72.5	47.2	0.65	64.0	39.5	102.1	110.8	16	12.8
October	59.5	38.2	0.62	61.8	38.6	104.1	107.9	15	12.5
November	61.8	37.3	0.61	59.0	36.7	109.6	105.3	13	12.5
December	54.1	34.8	0.64	55.1	34.7	112.8	102.5	15	12.5
2016									
January	50.4	34.2	0.67	51.4	32.6	103.5	99.9	10	12.3
February	56.0	33.8	0.61	49.6	31.5	103.5	98.1	10	12.0
March	40.9	32.5	0.80	47.7	30.2	91.6	96.6	11	11.8
April	39.2	22.7	0.58	45.0	28.7	93.4	95.3	10	11.8
May	48.9	30.9	0.64	42.1	26.9	93.1	93.2	12	11.7
June	19.3	12.3	0.65	39.0	24.9	81.9	90.4	9	11.4
July	36.8	19.4	0.53	36.5	23.1	85.9	87.7	10	11.2
August	50.4	30.1	0.60	34.2	21.6	85.0	85.5	10	11.2
September	37.4	26.8	0.72	32.1	19.9	87.8	83.7	16	11.3
October	30.0	20.0	0.67	31.1	18.9	86.1	82.5	16	11.6
November	22.4	12.8	0.57	29.4	17.9	78.7	81.1	10	11.6
December	17.6	11.1	0.64	28.1	17.1	75.1	80.0	10	11.4
2017									
January	28.1	15.7	0.55	27.3	16.7	77.4	79.4	10	11.3
February	22.0	15.8	0.71	25.5	16.0	76.9	78.7	10	11.3
March	25.4	10.6	0.42			74.6		15	
April	30.4	19.6	0.64			80.9		13	
May	18.1	11.3	0.62			73.5		9	
June	18.0	11.6	0.64			74.8		7	
July	18.8	11.0	0.59			77.7		9	
August	25.0	19.9	0.80			77.9		12	

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 August 2017*

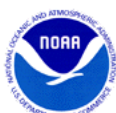
The proton flux plot contains the five-minute averaged integral proton flux (protons/cm²-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

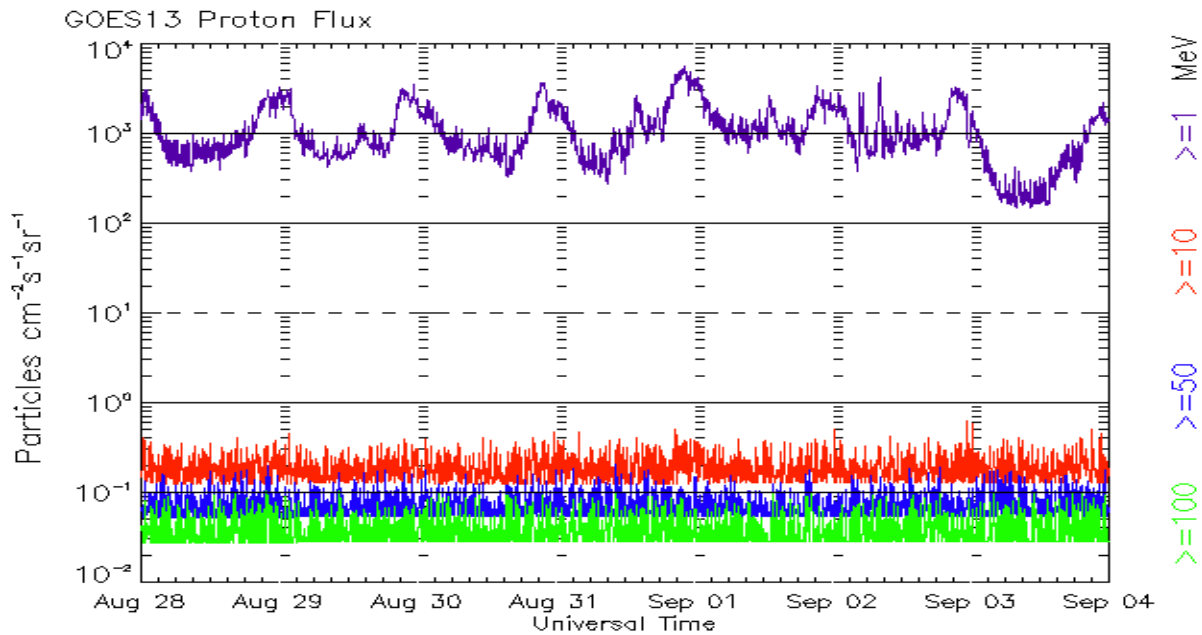
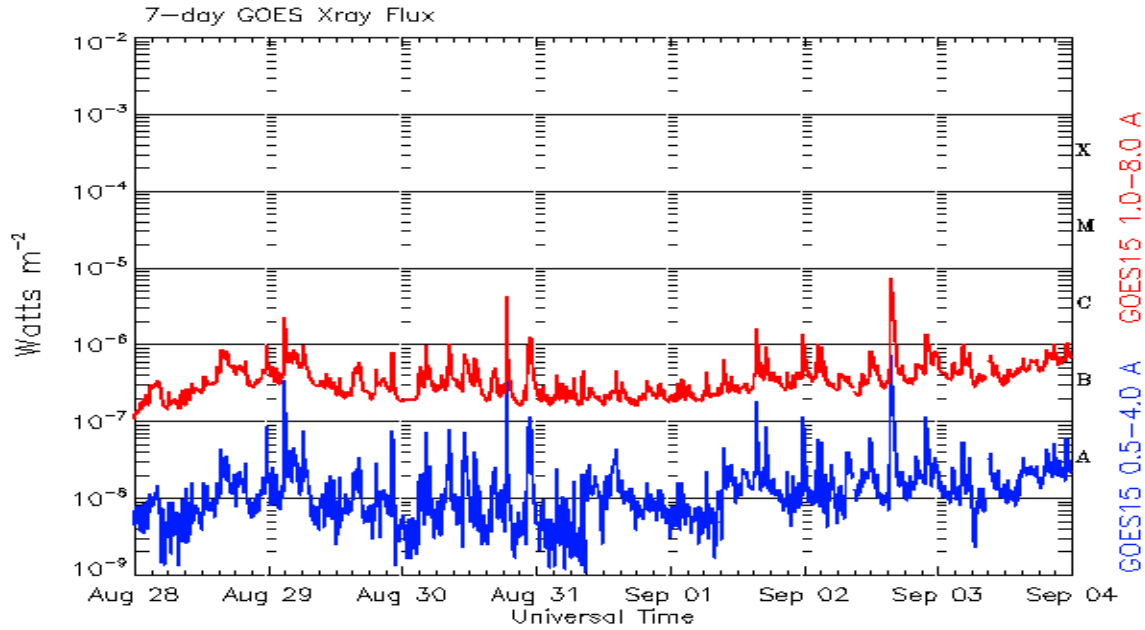
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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 August 2017*

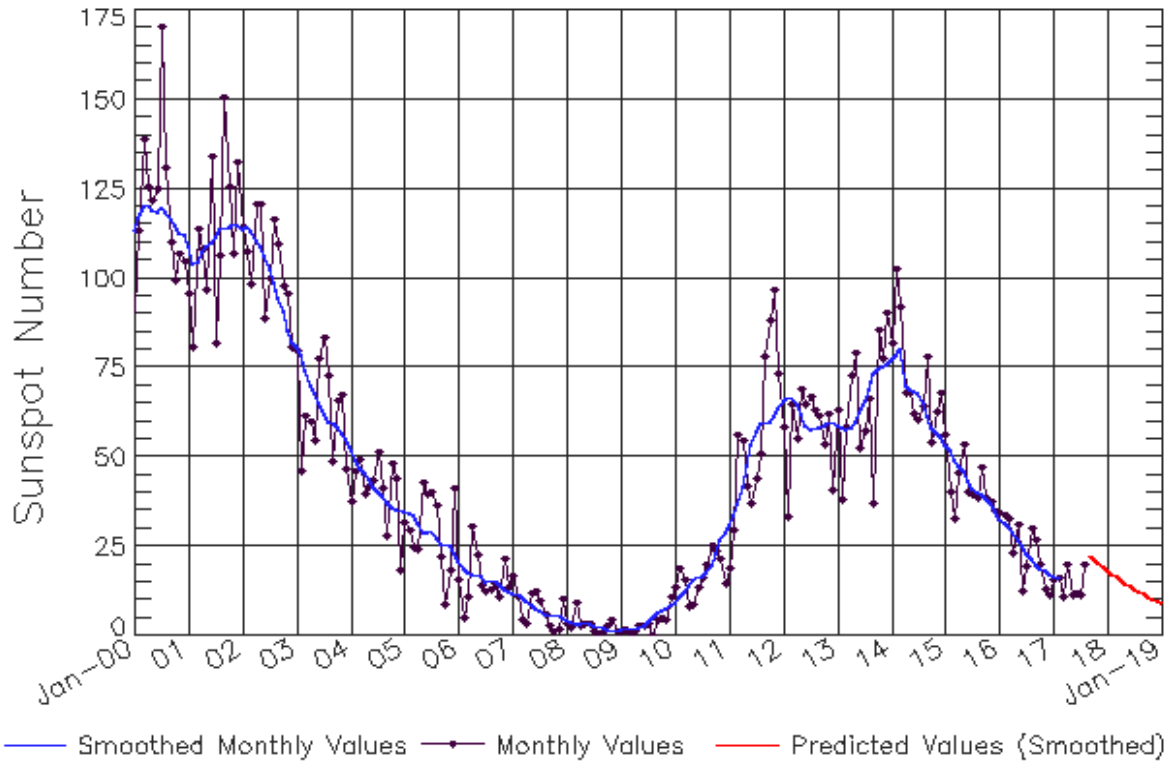
The x-ray plots contains five-minute averages x-ray flux (Watt/ m^2) as measure by the SWPC primary GOES X-ray satellite, usually at West 105 longitude, in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

The proton plot contains the five-minute averaged intergral flux units (pfu = protons/ cm^2 -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 Aug 2017

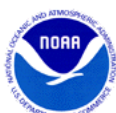


Updated 2017 Sep 4

NOAA/SWPC Boulder, CO USA

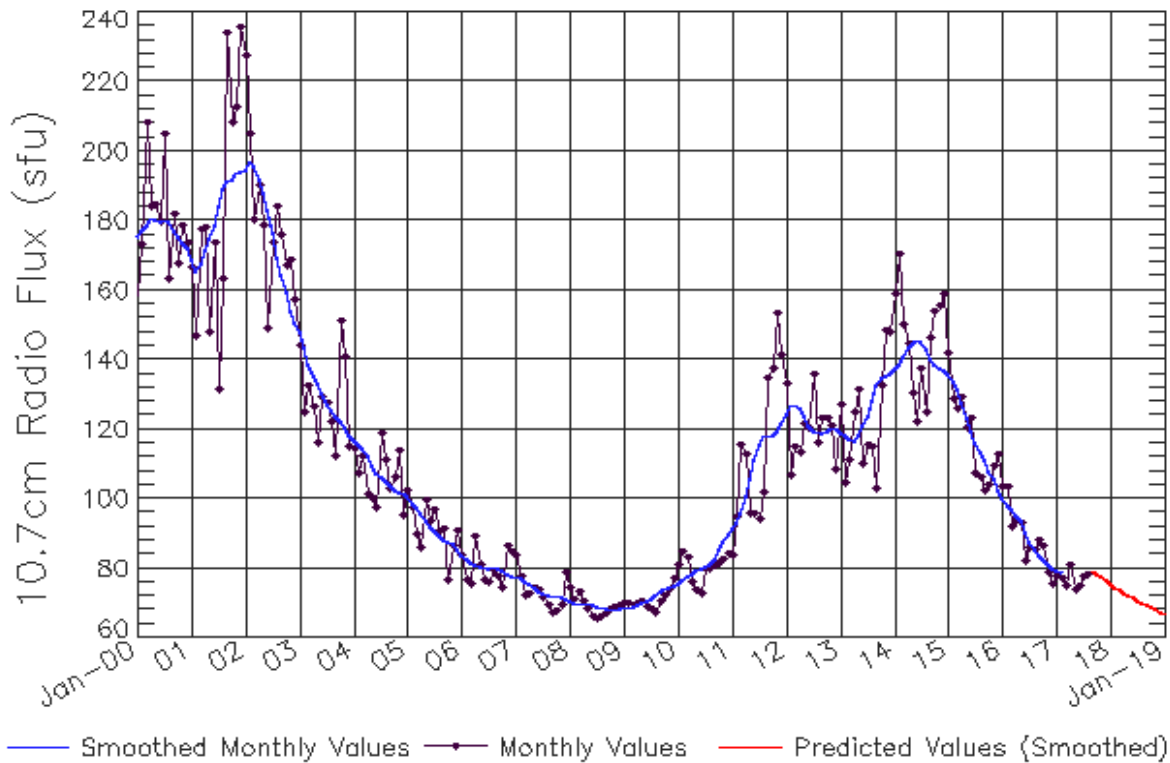
Smoothed Sunspot Number Prediction

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2010	9	10	11	13	15	16	17	17	20	23	27	29
	(1)	(2)	(3)	(5)	(5)	(6)	(7)	(7)	(8)	(9)	(9)	(10)
2011	19	30	56	54	42	37	44	51	78	88	97	73
	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)
2012	58	33	64	55	69	65	67	63	61	53	62	41
	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)
2013	63	38	58	72	79	53	57	66	37	86	78	90
	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)
2014	82	102	92	68	68	62	60	64	78	54	62	68
	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)
2015	56	40	33	45	53	40	40	39	47	38	37	35
	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)
2016	34	34	33	23	31	12	19	30	27	20	13	11
	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)
2017	16	16	11	20	11	12	11	20	23	21	20	19
	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)
2018	18	17	16	15	15	14	13	12	12	11	10	10
	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)
2019	9	8	8	7	7	6	6	6	5	5	4	4
	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)



ISES Solar Cycle F10.7cm Radio Flux Progression

Observed data through Aug 2017



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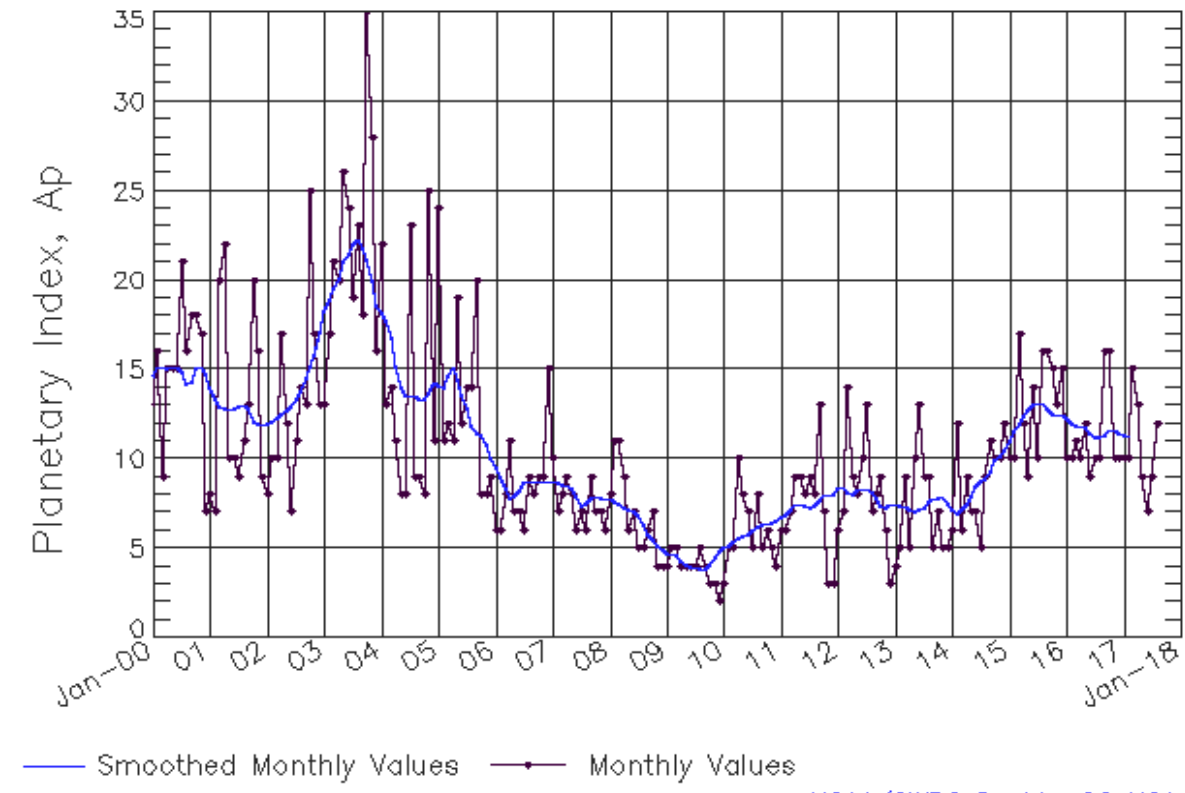
Smoothed F10.7cm Radio Flux Prediction

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 (**)	127 (**)	123 (**)	120 (**)	116 (**)	113 (**)	111 (**)	108 (**)	105 (**)	103 (**)
2016	100 (**)	98 (**)	97 (**)	95 (**)	93 (**)	90 (**)	88 (**)	86 (**)	84 (**)	83 (**)	81 (**)	80 (**)
2017	79 (**)	79 (**)	78 (1)	77 (1)	77 (2)	77 (3)	77 (4)	77 (4)	77 (5)	76 (6)	76 (7)	76 (8)
2018	75 (8)	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 Aug 2017



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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

