Space Weather Highlights **SWPC PRF 2521**
18 December - 24 December 2023 **25 December 2023**

Solar activity was at low to moderate (R1-Minor) levels over the past week. Moderate levels were observed on 21-22 Dec and 24 Dec. The strongest event was an M4.2/1n flare (R1) at 21/0538 UTC from Region 3519 (S12, L=71, class/area=Dai/180 on 21 Dec). Other, lower, M-class (R1) events were observed from Region 3529 (S19, L=345, class/area=Dko/450 on 20 Dec) and event from just beyond the SE limb on 24 Dec. The other 18 numbered active regions either produced only C-class activity or were relatively quiet.

Other activity included a ~22 degree filament eruption, centered near N48W35, that began around 24/0920 UTC. A subsequent CME signature was observed in SOHO/LASCO C2 imagery at 24/1224 UTC. Another CME from a filament eruption, centered near S20E48, was observed after 24/1438 UTC. Modeling of the two events suggested potential glancing blow late on the 27th and in to the 28th of Dec. No other Earth-directed CMEs were identified in available coronagraph imagery.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels on 21-22 Dec due to elevated geomagnetic activity earlier in the week. The remainder of the period was at normal to moderate levels.

Geomagnetic field activity ranged from quiet to G2 (Moderate) geomagnetic storm levels. G2 conditions observed on 28 Dec were in response to the waning portion of a CME that left the Sun over 14-15 Dec. Solar wind speeds were just under 500 km/s and the Bz component was near -10 nT around the time of the activity. Conditions decreased to active levels as transient influence weakened over 19-20 Dec. Mostly quiet to unsettled levels were observed for the remainder of the week (21-24 Dec).

Space Weather Outlook
25 December - 20 January 2024

Solar activity is expected to be at low levels, with a chance for moderate levels (R1-R2/Minor-Moderate), throughout the outlook period. Increased potential for activity is due to multiple R1 event or greater producing regions either on the visible disk or due to return in the coming weeks.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be reach high levels over 31 Dec - 05 Jan and 09-12 Jan due to multiple anticipated CH HSSs. The remainder of the outlook period is likely to be at moderate levels.

Geomagnetic field activity is expected to range from quiet to active levels. Active levels over

27-28 Dec are due to potential CME influence. Active conditions on 30 Dec and unsettled conditions on 31 Dec - 02 Jan and 08-10 Jan are likely due to anticipated influence from multiple, recurrent CH HSSs. The remainder of the outlook period is likely to be mostly quiet.

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
18 December	161	137	390	C1.6	9	0	0	5	0	0	0	0
19 December	179	144	750	C1.5	6	0	0	4	1	0	0	0
20 December	195	133	1285	C1.6	10	0	0	13	0	0	0	0
21 December	194	138	1160	C1.3	11	2	0	8	1	0	0	0
22 December	187	157	1030	C1.2	5	0	0	7	2	0	0	0
23 December	174	123	960	C1.0	4	0	0	3	0	0	0	0
24 December	183	113	900	C1.2	8	3	0	7	2	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	>2MeV
18 December	1.0e+06	1.8e+04	1.2e+06
19 December	3.8e+04	1.7e+04	1.5e+06
20 December	3.3e+04	1.7e+04	1.9e+07
21 December	3.2e+04	1.8e+04	6.3e+07
22 December	2.9e+04	1.8e+04	8.7e+07
23 December	4.4e+04	1.8e+04	4.0e+07
24 December	2.2e+04	1.8e+04	3.2e+06

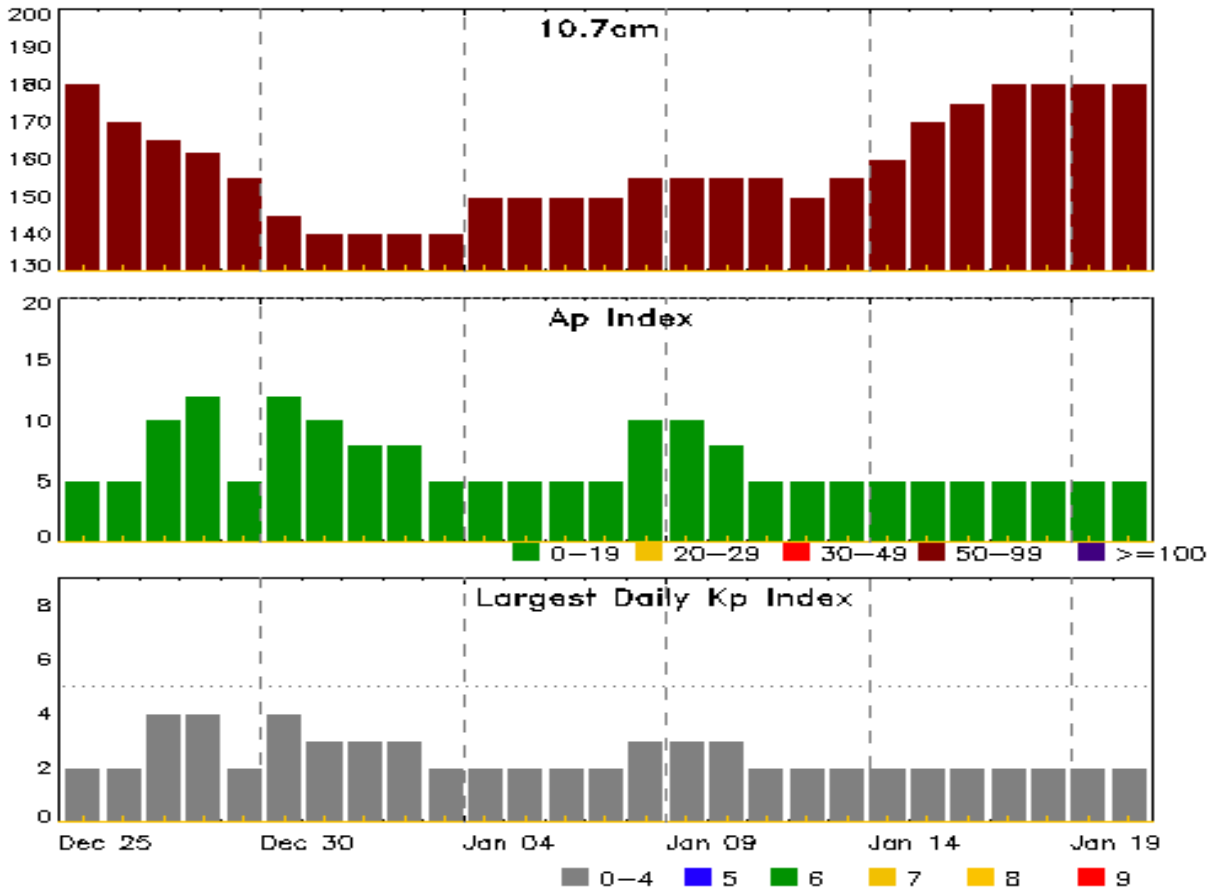
Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
18 December	16	2-3-5-3-3-2-2-3	40	2-3-6-6-6-4-3-3	28	3-3-6-4-3-3-3-5
19 December	10	3-3-2-1-2-3-2-2	11	3-4-3-1-1-2-2-2	12	4-4-3-2-2-2-2-3
20 December	7	3-2-2-1-2-2-2-1	21	4-3-4-5-4-3-2-1	11	4-3-2-2-2-2-2-1
21 December	3	2-1-0-2-1-1-1-0	9	1-1-1-5-2-2-1-0	5	3-1-1-2-1-1-1-0
22 December	3	0-1-1-1-1-2-1-0	1	0-1-1-1-0-0-0-0	4	1-1-2-1-0-1-1-1
23 December	5	0-1-3-1-2-2-1-1	12	0-0-3-1-4-5-1-1	7	1-1-3-1-2-3-1-1
24 December	7	2-2-2-3-2-2-1-1	14	0-3-3-5-4-1-1-0	12	3-3-3-3-2-2-1-1

Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
18 Dec 0555	EXTENDED WARNING: Geomagnetic K = 5	17/0505 - 18/1200
18 Dec 0741	ALERT: Geomagnetic K = 5	
18 Dec 0746	WARNING: Geomagnetic K = 6	18/0745 - 1200
18 Dec 0814	ALERT: Geomagnetic K = 6	
18 Dec 1154	EXTENDED WARNING: Geomagnetic K = 4	17/0155 - 18/1800
18 Dec 1554	EXTENDED WARNING: Geomagnetic K = 4	17/0155 - 18/2359
18 Dec 2204	WARNING: Geomagnetic K = 5	18/2202 - 19/0600
18 Dec 2249	EXTENDED WARNING: Geomagnetic K = 4	17/0155 - 19/0900
20 Dec 0153	WARNING: Geomagnetic K = 4	20/0153 - 0600
20 Dec 0234	ALERT: Geomagnetic K = 4	
20 Dec 0246	WARNING: Geomagnetic K = 5	20/0246 - 0900
20 Dec 0247	EXTENDED WARNING: Geomagnetic K = 4	20/0153 - 1200
21 Dec 1554	ALERT: Electron 2MeV Integral Flux >= 1000pfu	21/1530
22 Dec 0856	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	21/1530
23 Dec 1542	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	21/1530

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
25 Dec	180	5	2	08 Jan	155	10	3
26	170	5	2	09	155	10	3
27	165	10	4	10	155	8	3
28	162	12	4	11	155	5	2
29	155	5	2	12	150	5	2
30	145	12	4	13	155	5	2
31	140	10	3	14	160	5	2
01 Jan	140	8	3	15	170	5	2
02	140	8	3	16	175	5	2
03	140	5	2	17	180	5	2
04	150	5	2	18	180	5	2
05	150	5	2	19	180	5	2
06	150	5	2	20	180	5	2
07	150	5	2				

Energetic Events

	Time			X-ray		Optical Information			Peak Radio Flux		Sweep Freq Intensity	
Date	Begin	Max	Half Max	Class	Integ Flux	Imp/ Brtns	Location Lat	CMD	Rgn #	245	2695	II	IV
21 Dec	0519	0538	0549	M4.2	0.043	1N	S12	W61	3519	750		
21 Dec	2342	0004	0019	M3.3	0.044	1N	S10	W72	3519			
24 Dec	1109	1118	1124	M2.9	0.015	1N	S20	W27	3529	2300		
24 Dec	1637	1649	1656	M2.6	0.017	1F	S17	W33	3529			
24 Dec	1921	1951	2016	M1.1	0.025							

Flare List

	Time			Optical			
Date	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
18 Dec	0023	0026	0031	C2.2			3519
18 Dec	0123	0128	0133	C2.1			3514
18 Dec	0244	0255	0300	C6.0	SF	N26E67	3524
18 Dec	0335	0340	0349	C2.1			3519
18 Dec	0357	0408	0421	C4.2			3526
18 Dec	0931	0934	0936		SF	S09W24	3519
18 Dec	1413	1422	1430	C6.5			3528
18 Dec	1506	1521	1526	C4.4			
18 Dec	1915	1925	1930	C4.5	SF	N09E16	3528
18 Dec	1931	1934	1944		SF	N09E14	3528
18 Dec	2027	2036	2042	C4.0			3526
18 Dec	2110	2114	2119		SF	N08E16	3528
19 Dec	0242	0252	0256	C4.6	1N	N05E11	3528
19 Dec	0256	0304	0309	C7.3			3528
19 Dec	0620	0638	0647	C3.7	SF	N05E09	3528
19 Dec	1009	1009	1014		SF	N10E09	3528
19 Dec	1046	1048	1115		SF	N07E06	3528
19 Dec	1513	1539	1553	C7.1			3529
19 Dec	1735	1739	1744	C2.7			3529
19 Dec	2341	2342	2347	C2.9	SF	N10E21	3521
20 Dec	0447	0449	0450		SF	N08E20	3521
20 Dec	0548	0557	0621	C7.9	SF	N10E17	3521
20 Dec	0731	0731	0735		SF	N13E15	3521
20 Dec	0745	0754	0758		SF	N13E15	3521
20 Dec	0844	0854	0903	C8.3	SF	N10E15	3521
20 Dec	0922	U0932	0959	C7.9	SF	S10W50	3519

Flare List

Date	Time			X-ray	Optical		
	Begin	Max	End	Class	Imp/ Brtns	Location Lat CMD	Rgn #
20 Dec	B1002	1003	1008		SF	S10W49	3519
20 Dec	1303	1305	1314		SF	S11W53	3519
20 Dec	1333	1334	1341		SF	N13E13	3521
20 Dec	1338	1343	1357		SF	S18E35	3529
20 Dec	1343	1344	1348		SF	N18E38	3526
20 Dec	1402	1408	1427		SF	N14E36	3526
20 Dec	1428	1435	1439	C3.8	SF	N08E54	3530
20 Dec	1624	1628	1654	C2.5			3526
20 Dec	1708	1727	1741	C6.8			3531
20 Dec	1839	1843	1847	C7.2			3521
20 Dec	2012	2017	2021	C3.4			3524
20 Dec	2053	2101	2105	C4.4			3524
20 Dec	2134	2154	2216	C6.5			3519
21 Dec	0001	0006	0010	C5.4	SF	S24E31	3529
21 Dec	0214	0218	0222	C3.9			3529
21 Dec	0519	0538	0549	M4.2	1N	S12W61	3519
21 Dec	B0849	U0851	A0855		SF	N08W19	3528
21 Dec	0934	0938	0957		SF	N14E01	3521
21 Dec	1004	1010	1015	C2.2	SF	N14E01	3521
21 Dec	1015	1025	1029	C2.2			3521
21 Dec	1216	1221	1229	C2.1	SF	N08W19	3528
21 Dec	B1310	U1311	A1316		SF	S09W69	3519
21 Dec	1616	1625	1636	C2.1			3524
21 Dec	1752	1803	1810	C3.1			3519
21 Dec	1903	1907	1912	C4.1			3526
21 Dec	2003	2010	2022	C1.8			3519
21 Dec	2022	2030	2040	C2.0			3519
21 Dec	2027	2028	2041		SF	N07W27	3528
21 Dec	2114	2121	2125	C4.0	SF	S24E18	3529
21 Dec	2342	0004	0019	M3.3	1N	S10W72	3519
22 Dec	0057	0110	0133	C8.1			3519
22 Dec	0101	0102	0107		SF	N09E39	3530
22 Dec	0107	0109	0112		SF	S10W72	3519
22 Dec	0446	0457	0502	C7.8	1F	S11W73	3519
22 Dec	0919	0923	0929	C6.4	SF	S12W77	3519
22 Dec	1237	1237	1240		SF	N14E09	3526
22 Dec	1306	1310	1314	C2.7	SF	N22E13	3526
22 Dec	1319	1320	1323		SF	N22E13	3526

Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
22 Dec	1948	1948	2128		SF	S20E05	3529
22 Dec	2158	2205	2212	C1.8			3528
23 Dec	0221	0223	0224		SF	S14W60	3532
23 Dec	0905	0914	0922	C3.1	SF	N06E17	3530
23 Dec	0930	0942	0951	C2.9	SF	N06E17	3530
23 Dec	1426	1432	1437	C2.2			3519
23 Dec	1727	1741	1749	C2.3			3530
24 Dec	0228	0237	0256	C1.7			3521
24 Dec	0710	0711	0714		SF	N09E06	3530
24 Dec	0726	0733	0738	C1.9			3529
24 Dec	0738	0745	0756	C2.1			3529
24 Dec	0806	0816	0821	C3.7			3529
24 Dec	0807	0815	0831		SF	N08E05	3530
24 Dec	0816	0816	0820		SF	S20W25	3529
24 Dec	0856	0907	0911	C2.1			3530
24 Dec	0911	0919	0923	C2.4			3530
24 Dec	1043	1052	1100	C1.9			3529
24 Dec	1109	1118	1124	M2.9	1N	S20W27	3529
24 Dec	1133	1136	1143		SF	S20W27	3529
24 Dec	1152	1154	1200		SF	N08E02	3530
24 Dec	1637	1649	1656	M2.6	1F	S17W33	3529
24 Dec	1828	1828	1831		SF	N06W68	3528
24 Dec	1921	1951	2016	M1.1			
24 Dec	2328	2340	2347	C5.0	SF	S21W33	3529

Region Summary

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
			Region 3514												
06 Dec	N09E65	131	80	3	Dao	2	B				1				
07 Dec	N09E51	133	60	8	Dso	3	B								
08 Dec	N11E36	134	70	9	Dso	6	B								
09 Dec	N09E22	135	30	11	Cso	7	B								
10 Dec	N10E07	137	30	12	Cso	6	B								
11 Dec	N06W08	139	10	1	Cro	1	B	1							
12 Dec	N10W22	140	60	4	Dao	7	B	5			2				
13 Dec	N07W36	141	50	6	Dai	5	B	2			3				
14 Dec	N05W50	141	470	12	Ekc	21	BD	3	2	1	4	1			
15 Dec	N05W68	146	460	12	Ekc	22	BGD	9	2		13	2			
16 Dec	N05W82	147	300	13	Ekc	12	BG	14							
17 Dec	N05W94	146	120	10	Dac	4	BG	5	1		1				
								39	5	1	24	3	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 137

			Region 3515												
08 Dec	S15E74	96	30	1	Hax	1	A								
09 Dec	S15E61	96	30	1	Hsx	1	A								
10 Dec	S15E48	96	10	1	Axx	1	A								
11 Dec	S14E36	95	10	1	Hrx	1	A								
12 Dec	S13E22	96	10	1	Hrx	1	A								
13 Dec	S14E08	97	30	2	Hrx	2	A								
14 Dec	S12W01	94	10	1	Axx	1	A								
15 Dec	S14W17	95	10	1	Axx	1	A								
16 Dec	S14W31	96	plage												
17 Dec	S14W45	97	plage												
18 Dec	S14W59	98	plage												
19 Dec	S14W73	99	plage												
								0	0	0	0	0	0	0	0

Died on Disk.
Absolute heliographic longitude: 94

Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
			Region 3516												
08 Dec	S19E74	96	60	2	Hsx	1	A								
09 Dec	S19E64	93	70	7	Cso	3	B								
10 Dec	S18E52	92	40	7	Cso	3	B								
11 Dec	S19E39	92	60	5	Hax	3	A								
12 Dec	S18E25	93	40	3	Cao	2	B								
13 Dec	S18E11	94	10	2	Axx	3	A								
14 Dec	S17W01	94	10	1	Axx	1	A								
15 Dec	S18W17	95	10	1	Axx	1	A	2							
16 Dec	S18W29	94	10	1	Axx	1	A								
17 Dec	S18W40	93	10	3	Axx	2	A								
18 Dec	S18W54	93	plage												
19 Dec	S18W68	94	plage												
20 Dec	S18W82	94	plage												
								2	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 94

			Region 3517												
11 Dec	N14W03	134	10	4	Bxo	4	B								
12 Dec	N15W17	135	10	2	Cro	2	B								
13 Dec	N15W28	133	10	2	Cro	3	B								
14 Dec	N11W41	121	10	1	Hax	2	A								
15 Dec	N11W55	133	plage												
16 Dec	N11W69	134	plage												
17 Dec	N11W83	135	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 134

Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
			Region 3518												
12 Dec	N13E75	43	30	10	Hsx	1	A								
13 Dec	N12E61	44	40	2	Hax	1	A								
14 Dec	N13E51	43	20	2	Cro	3	B								
15 Dec	N13E34	44	20	1	Hax	2	A								
16 Dec	N13E21	44	10	4	Axx	3	A								
17 Dec	N13E07	45	plage												
18 Dec	N13W07	46	plage												
19 Dec	N13W21	47	plage												
20 Dec	N13W35	47	plage												
21 Dec	N13W49	48	plage												
22 Dec	N13W63	49	plage												
23 Dec	N13W77	50	plage												
								0	0	0	0	0	0	0	0

Died on Disk.
Absolute heliographic longitude: 45

			Region 3519												
13 Dec	S11E38	67	50	5	Dao	4	B				1				
14 Dec	S12E28	65	200	7	Dso	15	B	1							
15 Dec	S12E13	65	150	6	Csi	18	B				1				
16 Dec	S12W02	67	130	7	Dai	18	B								
17 Dec	S11W16	68	130	7	Dsi	18	B								
18 Dec	S11W28	67	130	7	Dsi	11	B	2			1				
19 Dec	S10W42	68	90	9	Dso	9	B								
20 Dec	S11W58	70	140	15	Eso	9	B	2			3				
21 Dec	S12W72	71	180	8	Dai	9	B	3	2		1	1			
22 Dec	S10W86	72	60	10	Cai	4	B	3			2	2			
								11	2	0	9	3	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 67

			Region 3520												
13 Dec	N10W34	139	210	8	Cao	11	B								
14 Dec	N07W46	138	120	8	Hsx	1	A								
15 Dec	N10W61	139	60	5	Cso	4	B								
16 Dec	N08W75	140	80	5	Cso	5	B								
17 Dec	N10W86	138	40	5	Cso	3	B	1							
								1	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 139

Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
			Region 3521												
15 Dec	N11E71	7	20	1	Hsx	1	A								
16 Dec	N12E57	8	30	1	Hsx	1	A								
17 Dec	N12E44	8	30	2	Hax	3	A								
18 Dec	N11E36	6	50	4	Dao	8	B								
19 Dec	N12E19	7	20	2	Cro	3	B	1			1				
20 Dec	N11E03	9	80	4	Dso	4	B	3			6				
21 Dec	N12W07	6	100	6	Dsi	8	BG	2			2				
22 Dec	N12W20	6	70	6	Csi	10	B								
23 Dec	N11W34	7	50	6	Cso	6	B								
24 Dec	N11W50	10	20	1	Hrx	2	A	1							
								7	0	0	9	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 9

			Region 3522												
16 Dec	S04E25	40	10	2	Bxo	4	B								
17 Dec	S03E12	40	plage												
18 Dec	S03W03	42	plage												
19 Dec	S03W17	43	plage												
20 Dec	S03W32	44	plage												
21 Dec	S03W47	46	plage												
22 Dec	S03W62	48	plage												
23 Dec	S03W77	50	plage												
								0	0	0	0	0	0	0	0

Died on Disk.
Absolute heliographic longitude: 42

Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
			Region 3523												
16 Dec	N21E62	3	20	1	Hrx	2	A								
17 Dec	N21E50	2	10	1	Hrx	1	A								
18 Dec	N22E38	1	10	3	Bxo	2	B								
19 Dec	N25E24	2	5	1	Axx	1	A								
20 Dec	N25E10	2	10	5	Bxo	2	B								
21 Dec	N25W04	3	plage												
22 Dec	N25W18	4	plage												
23 Dec	N25W32	5	plage												
24 Dec	N25W46	6	plage												
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 3

			Region 3524												
16 Dec	N26E63	2	20	2	Hrx	2	A								
17 Dec	N26E49	3	20	2	Hrx	2	A	1							
18 Dec	N27E36	3	10	1	Axx	1	A	1			1				
19 Dec	N26E22	4	5	1	Axx	1	A								
20 Dec	N26E08	4	plage					2							
21 Dec	N27E05	354	10	4	Bxo	2	B	1							
22 Dec	N25W11	357	10	3	Axx	2	A								
23 Dec	N25W25	358	plage												
24 Dec	N25W39	359	plage												
								5	0	0	1	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 354

Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
			Region 3525												
16 Dec	S09E45	20	20	3	Bxo	4	B								
17 Dec	S09E31	21	20	4	Cro	3	B								
18 Dec	S09E17	22	10	1	Axx	1	A								
19 Dec	S05E03	23	5	1	Axx	1	A								
20 Dec	S05W12	24	plage												
21 Dec	S05W27	26	plage												
22 Dec	S05W42	28	plage												
23 Dec	S05W57	30	plage												
24 Dec	S05W72	32	plage												
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 23

			Region 3526												
17 Dec	N15E69	343	20	3	Cao	3	B	1			1				
18 Dec	N15E57	342	30	2	Cao	2	B	2							
19 Dec	N15E44	342	190	5	Dao	5	B								
20 Dec	N15E30	342	200	6	Cao	6	B	1			2				
21 Dec	N15E17	342	170	4	Cai	8	B	1							
22 Dec	N15E04	342	150	5	Dai	8	B	1			3				
23 Dec	N15W09	342	130	5	Cai	8	B								
24 Dec	N14W22	342	50	5	Cao	5	B								
								6	0	0	6	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 342

			Region 3527												
18 Dec	S03W56	94	40	4	Cao	5	B								
19 Dec	S01W69	95	25	5	Cao	2	B								
20 Dec	S01W83	95	25	5	Cao	2	B								
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 94

Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
			Region 3528												
18 Dec	N09E12	27	50	4	Dsi	9	BD	2			3				
19 Dec	N08E01	25	110	7	Dao	10	B	3			3	1			
20 Dec	N09W14	26	140	7	Dai	9	B								
21 Dec	N08W28	27	170	7	Dai	9	B	1			3				
22 Dec	N08W41	27	190	8	Dai	11	B	1							
23 Dec	N08W54	27	200	9	Dai	11	B								
24 Dec	N08W68	28	190	9	Dao	7	B				1				
								7	0	0	10	1	0	0	0

Still on Disk.
Absolute heliographic longitude: 25

			Region 3529												
18 Dec	S20E56	343	60	5	Dsi	8	B								
19 Dec	S19E42	344	250	6	Dki	8	BG	2							
20 Dec	S19E27	345	450	8	Dko	6	BD				1				
21 Dec	S21E15	344	430	10	Dko	18	BG	3			2				
22 Dec	S20E01	345	420	11	Eho	8	B				1				
23 Dec	S20W12	345	420	12	Eko	5	B								
24 Dec	S21W25	345	400	14	Eho	7	BG	5	2		3	2			
								10	2	0	7	2	0	0	0

Still on Disk.
Absolute heliographic longitude: 345

			Region 3530												
19 Dec	N09E63	323	50	7	Cao	4	B								
20 Dec	N08E49	323	180	9	Dao	4	BG	1			1				
21 Dec	N08E36	323	30	8	Bxo	3	B								
22 Dec	N08E24	322	30	9	Cro	5	B				1				
23 Dec	N08E07	326	30	4	Cro	5	B	3			2				
24 Dec	N08W06	326	80	5	Dai	12	B	2			3				
								6	0	0	7	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 326

Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
			Region 3531												
20 Dec	S20E68	304	60	3	Hax	1	A	1							
21 Dec	S21E55	304	70	2	Hsx	1	A								
22 Dec	S20E42	304	80	3	Hsx	1	A								
23 Dec	S20E29	304	90	3	Hax	1	A								
24 Dec	S20E16	304	120	3	Hax	2	A								
								1	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 304

			Region 3532												
22 Dec	S15W58	44	10	3	Bxo	3	B								
23 Dec	S15W71	44	20	4	Bxo	2	B				1				
24 Dec	S15W83	43	plage												
								0	0	0	1	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 44

			Region 3533												
22 Dec	N15E44	302	10	4	Bxo	5	B								
23 Dec	N15E29	304	20	4	Bxo	5	B								
24 Dec	N15E16	304	40	5	Cri	8	B								
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 304

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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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