

Space Weather Highlights
16 - 22 September 2002

SWO PRF 1412
24 September 2002

Solar Activity ranged from low to moderate levels. Moderate activity was observed on 16 September and again on 20 September due to impulsive M-class flare activity. For flare times and magnitudes, please refer to the Energetic Events or Optical Flare lists. Low activity was observed for the rest of the summary period. The most significant event during the period was a long-duration C8/1f flare and associated CME on 17 September, from Region 114 (S12, L=288, class/area Dkc/470 on 14 September). The largest region on the visible disk, Region 119 (S14, L=229, class/area Dkc/670 on 21 September), emerged rapidly over the course of the period, but did not produce much beyond some scattered and predominantly impulsive C-class flares. Region 114 was the source of an impulsive M-class flare on 16 September, and on 20 September, two impulsive M-class flares occurred in Region 126 (S23, L=141, class/area Dao/180 on 20 September). Type-II radio sweeps with associated CME's visible in SOHO/LASCO imagery occurred on 17 September and 20 September, however the ejecta from these events did not appear earth-directed.

Solar wind data were available from the NASA Advanced Composition Explorer (ACE) spacecraft for most of the summary period. Solar wind speeds followed a rising trend during 16-18 September and persisted near 500 km/s for most of those days. On 19 September, a transient CME shock passage was observed just before 0600 UTC, and subsequent wind speeds reached 750 km/s later that day. Wind speeds fell to near 400 km/s by early on 20 September, and remained near that level for the rest of the period. Total IMF field remained mostly less than 10 nT throughout the period. Some intervals of persistent southward Bz near -5 nT were evident on 19 September and 22 September.

Energetic proton flux at geo-synchronous orbit remained near background levels throughout the summary period.

The greater than 2 MeV electron flux at geo-synchronous orbit ranged from normal to high levels during the period, in the wake of high speed stream effects from the prior week. Electron flux reached high levels on 16-17 September and on 19 September.

The geomagnetic field was at quiet to active levels. Elevated solar wind speed caused isolated active periods 16-18 September. The CME shock arrival on 19 September, attributed to the long-duration C8 flare event discussed above, lead to sustained active conditions late on that day. Thereafter, quiet to unsettled levels persisted for the remainder of the summary period.

Space Weather Outlook
25 September - 21 October 2002

Solar activity is expected to be low to moderate. An increased chance for moderate activity may accompany the expected return of the Region 105/114 complex to the visible disk during 05-19 October.

The slight chances for a proton event occurrence will be somewhat greater during the latter half of the period.

The greater than 2 MeV electron flux at geo-synchronous orbit may reach event thresholds on 03-04 October and 09-10 October, due to the possibility of recurrent coronal hole effects.

The geomagnetic field is expected to be mainly quiet to unsettled for most of the forecast period. Isolated active conditions are possible on 02-03 October and on 08-09 October, in response to recurrent coronal hole effects.



Daily Solar Data

| Date | Radio Flux 10.7 cm | Sun spot No. | Sunspot Area (10 ⁻⁶ hemi.) | X-ray Background | Flares | | | | | | | |
|--------------|-----------------------|-----------------|--|------------------|------------|---|---|---------|---|---|---|---|
| | | | | | X-ray Flux | | | Optical | | | | |
| | | | | | C | M | X | S | 1 | 2 | 3 | 4 |
| 16 September | 183 | 190 | 1530 | B9.0 | 8 | 1 | 0 | 10 | 1 | 0 | 0 | 0 |
| 17 September | 194 | 228 | 1480 | B6.7 | 10 | 0 | 0 | 17 | 1 | 0 | 0 | 0 |
| 18 September | 177 | 225 | 1570 | C1.1 | 7 | 0 | 0 | 13 | 2 | 0 | 0 | 0 |
| 19 September | 165 | 206 | 1500 | B6.4 | 5 | 0 | 0 | 7 | 1 | 0 | 0 | 0 |
| 20 September | 164 | 237 | 1730 | B8.2 | 5 | 2 | 0 | 10 | 0 | 0 | 0 | 0 |
| 21 September | 159 | 217 | 1500 | B7.6 | 7 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| 22 September | 160 | 218 | 1500 | B5.2 | 3 | 0 | 0 | 6 | 0 | 0 | 0 | 0 |

Daily Particle Data

| Date | Proton Fluence (protons/cm ² -day-sr) | | | Electron Fluence (electrons/cm ² -day-sr) | | |
|--------------|---|--------|---------|---|--------|--------|
| | >1MeV | >10MeV | >100MeV | >6MeV | >2MeV | >4MeV |
| | 16 September | 6.2E+4 | 1.2E+4 | 2.8E+3 | | 7.2E+7 |
| 17 September | 2.5E+5 | 1.2E+4 | 2.8E+3 | | 4.4E+7 | |
| 18 September | 2.1E+5 | 1.1E+4 | 2.6E+3 | | 2.5E+7 | |
| 19 September | 3.6E+5 | 1.1E+4 | 2.5E+3 | | 2.9E+7 | |
| 20 September | 6.2E+5 | 1.1E+4 | 2.6E+3 | | 2.6E+7 | |
| 21 September | 1.0E+6 | 1.0E+4 | 2.5E+3 | | 2.9E+7 | |
| 22 September | 2.2E+5 | 1.1E+4 | 2.4E+3 | | 2.0E+7 | |

Daily Geomagnetic Data

| Date | Middle Latitude Fredericksburg | | High Latitude College | | Estimated Planetary | |
|--------------|-----------------------------------|-----------------|--------------------------|-----------------|------------------------|-----------------|
| | A | K-indices | A | K-indices | A | K-indices |
| | 16 September | 5 | 1-0-2-2-2-2-1-1 | 7 | 1-0-2-3-3-2-2-0 | 8 |
| 17 September | 11 | 2-3-3-3-2-2-2-3 | 20 | 1-2-4-5-5-3-2-2 | 13 | 2-3-3-3-4-3-3-3 |
| 18 September | 13 | 3-2-2-3-4-3-2-2 | 17 | 3-3-2-4-5-3-2-1 | 14 | 4-3-2-3-4-3-3-3 |
| 19 September | 11 | 2-1-2-3-3-4-1-2 | 22 | 2-2-2-3-5-6-1-2 | 13 | 3-2-1-2-4-4-3-3 |
| 20 September | 3 | 2-2-1-0-0-0-0-1 | 2 | 1-2-1-1-0-1-0-0 | 6 | 3-2-1-1-2-2-3-2 |
| 21 September | 5 | 1-1-1-2-2-2-1-1 | 6 | 1-0-1-3-3-2-0-1 | 9 | 2-2-2-3-3-3-2-2 |
| 22 September | 4 | 1-0-2-1-2-2-1-1 | 6 | 1-1-1-1-3-3-1-1 | 9 | 2-2-3-2-3-3-3-2 |

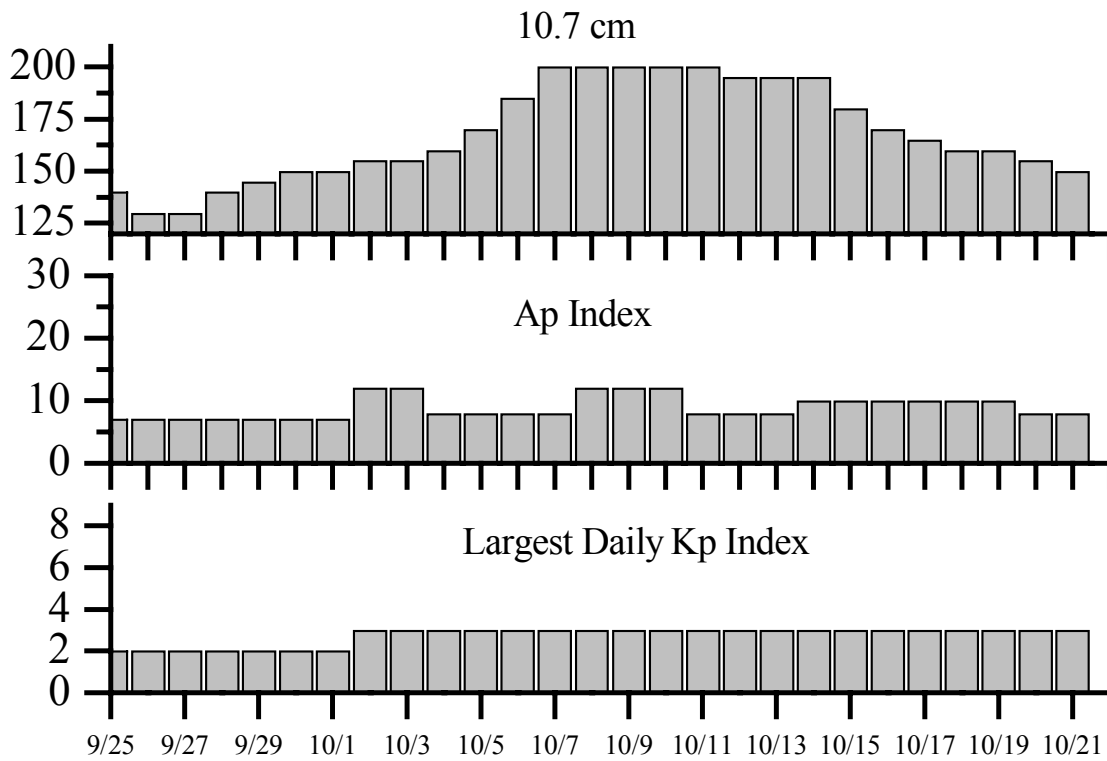


Alerts and Warnings Issued

| <u>Date & Time of Issue</u> | <u>Type of Alert or Warning</u> | <u>Date & Time of Event UT</u> |
|---------------------------------|---|------------------------------------|
| 16 Sep 0013 | 4 - 245 MHz Radio Bursts | 15 Sep |
| 16 Sep 0013 | 1 - 245 MHz Radio Noise Storm | 15 Sep |
| 16 Sep 0338 | ALERT: Type II Radio Emission | 16 Sep 0316 |
| 16 Sep 1237 | ALERT: Electron 2MeV Integral Flux exceeded 1000pfu | 16 Sep 1236 |
| 17 Sep 0015 | 2 - 245 MHz Radio Bursts | 16 Sep |
| 17 Sep 0015 | 1 - 245 MHz Radio Noise Storm | 16 Sep |
| 17 Sep 0223 | ALERT: Type II Radio Emission | 17 Sep 0204 |
| 17 Sep 1246 | ALERT: Electron 2MeV Integral Flux exceeded 1000pfu | 17 Sep 1230 |
| 17 Sep 1456 | ALERT: Geomagnetic K= 4 | 17 Sep 0850 |
| 18 Sep 0028 | 7 - 245 MHz Radio Bursts | 17 Sep |
| 18 Sep 0028 | 1 - 245 MHz Radio Noise Storm | 17 Sep |
| 18 Sep 1442 | ALERT: Geomagnetic K= 4 | 18 Sep 1440 |
| 19 Sep 0016 | 3 - 245 MHz Radio Bursts | 18 Sep |
| 19 Sep 0016 | 1 - 245 MHz Radio Noise Storm | 18 Sep |
| 19 Sep 0612 | ALERT: Type II Radio Emission | 19 Sep 0521 |
| 19 Sep 1405 | WARNING: Geomagnetic K= 4 | 19 Sep 1406 -2359 |
| 19 Sep 1407 | ALERT: Geomagnetic K= 4 | 19 Sep 1406 |
| 19 Sep 1433 | ALERT: Electron 2MeV Integral Flux > 1000pfu | 19 Sep 1410 |
| 19 Sep 1554 | WARNING: Geomagnetic K= 5 | 19 Sep 1600 - 20 Sep 1500 |
| 19 Sep 1608 | ALERT: Geomagnetic K= 5 | 19 Sep 1605 |
| 19 Sep 1733 | WATCH: Geomagnetic A \geq 20 | 20 Sep |
| 20 Sep 0031 | 3 - 245 MHz Radio Bursts | 18 Sep |
| 20 Sep 0031 | 1 - 245 MHz Radio Noise Storm | 18 Sep |
| 20 Sep 1118 | ALERT: Type IV Radio Emission | 20 Sep 0924 |
| 20 Sep 1451 | CANCEL WATCH: Geomagnetic A \geq 20 | |
| 21 Sep 0022 | 8 - 245 MHz Radio Bursts | 20 Sep |
| 21 Sep 0610 | ALERT: Type II Radio Emission | 21 Sep 0317 |



Twenty-seven Day Outlook



| Date | Radio Flux 10.7 cm | Planetary A Index | Largest Kp Index | Date | Radio Flux 10.7 cm | Planetary A Index | Largest Kp Index |
|--------|-----------------------|----------------------|---------------------|--------|-----------------------|----------------------|---------------------|
| 25 Sep | 140 | 7 | 2 | 09 Oct | 200 | 12 | 3 |
| 26 | 130 | 7 | 2 | 10 | 200 | 12 | 3 |
| 27 | 130 | 7 | 2 | 11 | 200 | 12 | 3 |
| 28 | 140 | 7 | 2 | 12 | 195 | 8 | 3 |
| 29 | 145 | 7 | 2 | 13 | 195 | 8 | 3 |
| 30 | 150 | 7 | 2 | 14 | 195 | 8 | 3 |
| 01 Oct | 150 | 7 | 2 | 15 | 180 | 10 | 3 |
| 02 | 155 | 12 | 3 | 16 | 170 | 10 | 3 |
| 03 | 155 | 12 | 3 | 17 | 165 | 10 | 3 |
| 04 | 160 | 8 | 3 | 18 | 160 | 10 | 3 |
| 05 | 170 | 8 | 3 | 19 | 160 | 10 | 3 |
| 06 | 185 | 8 | 3 | 20 | 155 | 8 | 3 |
| 07 | 200 | 8 | 3 | 21 | 150 | 8 | 3 |
| 08 | 200 | 12 | 3 | | | | |



Energetic Events

| Date | Time | | X-ray | | Optical Information | | | Peak | | Sweep Freq | | |
|--------|-------|------|----------|-------|---------------------|---------------|---------------------|----------|------------|------------|-----------|----|
| | Begin | Max | ½ Max | Class | Integ Flux | Imp/ Brtns | Location Lat CMD | Rgn # | Radio Flux | | Intensity | |
| | | | | | | | | | 245 | 2695 | II | IV |
| 16 Sep | 0306 | 0310 | 0312 | M1.3 | .002 | Sn | S13W20 | 0114 | 490 | | 1 | |
| 20 Sep | 0508 | 0512 | 0517 | M1.5 | .006 | Sf | S24E75 | 0126 | | | | |
| 20 Sep | 0921 | 0928 | 0933 | M1.8 | .007 | Sf | S24E73 | 0126 | 53 | | 2 | |

Flare List

| Date | Time | | | X-ray Class. | Optical Imp / Brtns | Location Lat CMD | Rgn |
|--------------|--------------|-------|-------|-----------------|---------------------------|---------------------|--------|
| | Begin | Max | End | | | | |
| 16 September | 0130 | 0146 | 0221 | C2.4 | Sf | S13W21 | 0114 |
| | 0143 | 0144 | 0152 | | Sf | S16E46 | 0105 |
| | 0309 | 0310 | 0328 | M1.3 | Sn | S13W20 | 0114 |
| | 0340 | 0346 | 0446 | C5.0 | 1f | S06W37 | 0105 |
| | 0419 | 0423 | 0446 | | Sf | S13W23 | 0114 |
| | 0852 | 0900 | 0910 | C1.6 | Sf | S15E41 | 0119 |
| | 1025 | 1026 | 1035 | C1.4 | Sf | S11W25 | 0114 |
| | 1156 | 1157 | 1200 | C1.2 | Sf | S08W37 | 0105 |
| | 1549 | 1555 | 1609 | C4.6 | Sf | S15E38 | 0119 |
| | 1959 | 2001 | 2014 | | Sf | S12W42 | 0105 |
| | 2000 | 2003 | 2038 | C5.0 | Sf | S15E37 | 0119 |
| | 2156 | 2200 | 2202 | C2.7 | | | |
| | 17 September | 0046 | 0048 | 0055 | | Sf | S18E27 |
| 0052 | | 0052 | 0055 | | Sf | S08W47 | 0105 |
| 0158 | | 0201 | 0212 | | Sf | S18E26 | 0119 |
| 0201 | | 0202 | 0229 | C5.2 | Sf | N19W60 | 0110 |
| 0208 | | 0226 | 0256 | | Sf | S08W47 | 0105 |
| 0259 | | 0300 | 0304 | | Sf | S18E26 | 0119 |
| 0305 | | 0307 | 0313 | | Sf | S15E28 | 0119 |
| 0412 | | 0421 | 0437 | C1.2 | Sf | S15E27 | 0119 |
| 0550 | | 0551 | 0605 | C2.0 | Sn | S13W37 | 0114 |
| 0626 | | 0649 | 0919 | C8.6 | 1f | S12W33 | 0114 |
| 0916 | | 0920 | 0941 | C8.8 | Sn | S16E25 | 0119 |
| 1038 | | 1041 | A1104 | C4.3 | Sf | S18E25 | 0119 |
| 1444 | | 1444 | 1453 | | Sf | S08W54 | 0105 |
| B1739 | | U1739 | 1744 | C2.8 | Sf | S15E19 | 0119 |
| 1923 | | 1924 | 1928 | C2.5 | Sf | S16E18 | 0119 |
| 2125 | 2151 | 2200 | C4.0 | | | | |
| B2127 | U2127 | 2134 | | Sf | S17E16 | 0119 | |
| 2333 | 2333 | 2339 | | Sf | S15E16 | 0119 | |
| 2357 | 0001 | 0019 | C2.8 | Sf | S15E16 | 0119 | |
| 18 September | 0113 | 0114 | 0123 | C3.8 | Sf | S01W62 | 0112 |
| | 0209 | 0219 | 0253 | C4.8 | 1f | S17E13 | 0119 |
| | 0326 | 0327 | 0330 | | Sf | S15E14 | 0119 |
| | 0518 | 0518 | 0522 | | Sf | S18E11 | 0119 |
| | 0523 | 0525 | 0529 | | Sf | S18E11 | 0119 |



Flare List- continued.

| Date | Time | | | X-ray Class. | Optical | | Rgn | |
|--------------|--------------|-------|-------|-----------------|----------------|---------------------|--------|------|
| | Begin | Max | End | | Imp / Brtns | Location Lat CMD | | |
| 18 September | 0722 | 0725 | 0735 | | Sf | S04W62 | 0105 | |
| | 0929 | 0932 | 0943 | | Sf | S19E08 | 0119 | |
| | 1018 | 1021 | 1045 | C3.1 | Sf | S16E10 | 0119 | |
| | 1540 | 1606 | 1701 | C2.2 | 1f | S22E04 | 0119 | |
| | B1610 | U1612 | 1619 | | Sf | S20E05 | 0119 | |
| | 1645 | 1646 | 1650 | | Sf | S04W67 | 0105 | |
| | 1651 | 1651 | 1656 | | Sf | S06W66 | 0105 | |
| | 1717 | 1722 | 1733 | C3.9 | Sf | S09W71 | 0105 | |
| | 1748 | 1749 | 1755 | | Sf | S03W06 | 0115 | |
| | 2109 | 2111 | 2128 | C1.7 | Sf | S11W71 | 0105 | |
| | 2148 | 2153 | 2200 | C1.0 | | | | |
| | 19 September | 0514 | 0517 | 0607 | C4.7 | 1f | S07E63 | 0125 |
| | | 0737 | 0739 | 0745 | | Sf | S14W60 | 0114 |
| 0810 | | 0815 | 0830 | C3.7 | Sf | S14W02 | 0119 | |
| 1342 | | 1345 | 1347 | C1.0 | | | | |
| 1359 | | 1400 | 1404 | C1.0 | Sf | S12W80 | 0105 | |
| 1430 | | 1432 | 1443 | C3.3 | Sf | S13W79 | 0105 | |
| 1436 | | 1441 | 1455 | | Sf | S16E07 | 0123 | |
| 1502 | | 1503 | 1507 | | Sf | S12W81 | 0105 | |
| 1847 | | 1848 | 1912 | | Sf | S14W06 | 0119 | |
| 20 September | | 0023 | 0025 | 0041 | | Sf | S17E05 | 0123 |
| | 0202 | 0203 | 0206 | C2.4 | Sf | S15W13 | 0119 | |
| | 0313 | 0320 | 0331 | | Sf | S02W30 | 0115 | |
| | 0509 | 0518 | 0524 | M1.5 | Sf | S24E75 | 0126 | |
| | 0830 | 0832 | 0838 | C1.9 | Sf | S03W27 | 0115 | |
| | B0924 | U0925 | A0952 | M1.8 | Sf | S24E73 | 0126 | |
| | 1117 | 1117 | 1125 | C2.1 | Sf | S22E70 | 0126 | |
| | 1154 | 1154 | 1200 | | Sf | S23E71 | 0126 | |
| | 1206 | 1207 | 1214 | | Sf | S14W16 | 0119 | |
| | 1323 | 1331 | 1344 | C2.1 | | | | |
| | 1354 | 1354 | 1358 | | Sf | S16W12 | 0119 | |
| 21 September | 2326 | 2334 | 2348 | C2.5 | | | | |
| | 0317 | 0320 | 0334 | C3.0 | Sf | S14E08 | 0121 | |
| | 0335 | 0338 | 0341 | C2.4 | | | | |
| | 0755 | 0759 | 0811 | C1.5 | | | | |
| | 1455 | 1459 | 1503 | C1.1 | | | | |
| | 1700 | 1701 | 1705 | C2.6 | Sf | S15W32 | 0119 | |
| | 2045 | 2101 | A2106 | C2.6 | Sf | S16W19 | 0123 | |
| | 2300 | 2307 | 2313 | C1.7 | | | | |



Flare List - continued.

| Date | Time | | | X-ray Class. | Optical | | Rgn |
|--------------|-------|------|------|-----------------|----------------|---------------------|------|
| | Begin | Max | End | | Imp / Brtns | Location Lat CMD | |
| 22 September | 0235 | 0240 | 0245 | | Sf | S14E04 | 0127 |
| | 0550 | 0552 | 0603 | C2.4 | Sf | S16W43 | 0119 |
| | 0921 | 0921 | 0936 | | Sf | N18E07 | 0132 |
| | 0924 | 0927 | 0935 | C1.7 | Sf | S16W45 | 0119 |
| | 1026 | 1030 | 1034 | B8.9 | | | |
| | 1053 | 1056 | 1058 | B7.9 | | | |
| | 1600 | 1600 | 1605 | | Sf | S16W45 | 0119 |
| | 1735 | 1735 | 1740 | | Sf | S07E23 | 0125 |
| | 1917 | 1921 | 1928 | C1.0 | | | |

Region Summary

| Date | Location | | Sunspot Characteristics | | | | Flares | | | | | |
|------|---------------|-----|---------------------------------|-------------------|---------------|---------------|--------------|-------|---|---|---------|---|
| | Helio | | Area (10 ⁻⁶ hemi) | Extent (helio) | Spot Class | Spot Count | Mag Class | X-ray | | | Optical | |
| | (° Lat ° CMD) | Lon | | | | | | C | M | X | S | 1 |

Region 104

| | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|---|--|--|--|--|--|--|--|--|
| 07 Sep | N11E59 | 319 | 0030 | 01 | Hsx | 001 | A | | | | | | | | |
| 08 Sep | N10E44 | 321 | 0030 | 01 | Hsx | 001 | A | | | | | | | | |
| 09 Sep | N10E30 | 322 | 0010 | 01 | Hsx | 001 | A | | | | | | | | |
| 10 Sep | N10E15 | 324 | 0020 | 02 | Bxo | 004 | B | | | | | | | | |
| 11 Sep | N10E02 | 324 | | | | | | | | | | | | | |
| 12 Sep | N09W10 | 322 | 0000 | 02 | Axx | 002 | A | | | | | | | | |
| 13 Sep | N09W23 | 322 | 0000 | 03 | Bxo | 004 | B | | | | | | | | |
| 14 Sep | N09W36 | 322 | | | | | | | | | | | | | |
| 15 Sep | N09W49 | 322 | | | | | | | | | | | | | |
| 16 Sep | N09W62 | 322 | | | | | | | | | | | | | |
| 17 Sep | N09W75 | 322 | | | | | | | | | | | | | |
| 18 Sep | N09W88 | 322 | | | | | | | | | | | | | |

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 324



Region Summary - continued.

| Date | Location | | Sunspot Characteristics | | | | Flares | | | | | | | | | | | |
|-------------------|----------------|-------|---------------------------------|-------------------|---------------|---------------|--------------|-------|---|---|---------|---|---|---|---|--|--|--|
| | (° Lat ° CMD) | Helio | Area (10 ⁻⁶ hemi) | Extent (helio) | Spot Class | Spot Count | Mag Class | X-ray | | | Optical | | | | | | | |
| | | Lon | | | | | | C | M | X | S | 1 | 2 | 3 | 4 | | | |
| <i>Region 105</i> | | | | | | | | | | | | | | | | | | |
| 07 Sep | S06E77 | 301 | 0290 | 10 | Dko | 004 | B | | | | | | | | | | | |
| 08 Sep | S07E66 | 299 | 0850 | 22 | Fko | 025 | Bg | | 1 | | | 1 | | | | | | |
| 09 Sep | S08E54 | 298 | 1270 | 21 | Fki | 032 | Bgd | | 1 | | | 1 | | 1 | | | | |
| 10 Sep | S08E42 | 297 | 1520 | 23 | Fki | 040 | Bgd | 3 | 1 | | | 3 | 1 | | | | | |
| 11 Sep | S09E28 | 297 | 1370 | 24 | Fki | 056 | Bgd | | 1 | | | 1 | | 1 | | | | |
| 12 Sep | S08E16 | 296 | 1180 | 23 | Fki | 058 | Bgd | 3 | | | | 5 | | | | | | |
| 13 Sep | S08E03 | 296 | 1180 | 25 | Fki | 076 | Bgd | 1 | | | | 1 | | | | | | |
| 14 Sep | S07W18 | 304 | 0670 | 14 | Eko | 043 | Bg | 4 | | | | 2 | | | | | | |
| 15 Sep | S07W31 | 304 | 0670 | 09 | Dki | 022 | Bg | 1 | 1 | | | 3 | | | | | | |
| 16 Sep | S07W44 | 304 | 0710 | 08 | Dki | 018 | Bg | 2 | | | | 3 | 1 | | | | | |
| 17 Sep | S08W56 | 302 | 0560 | 09 | Dki | 026 | Bg | | | | | 3 | | | | | | |
| 18 Sep | S09W70 | 303 | 0560 | 14 | Eko | 021 | Bg | 2 | | | | 5 | | | | | | |
| 19 Sep | S08W83 | 303 | 0350 | 05 | Hkx | 001 | A | 2 | | | | 3 | | | | | | |
| 20 Sep | S07W92 | 299 | 0210 | 06 | Dko | 004 | B | | | | | | | | | | | |
| | | | | | | | | 18 | 5 | 0 | 31 | 2 | 2 | 0 | 0 | | | |

Crossed West Limb.

Absolute heliographic longitude: 296

Region 106

| | | | | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|---|---|---|---|---|---|---|---|---|---|---|--|
| 08 Sep | N28E50 | 315 | 0010 | 04 | Bxo | 003 | B | | | | | | | | | | | |
| 09 Sep | N27E36 | 316 | 0020 | 03 | Bxo | 003 | B | | | | | | | | | | | |
| 10 Sep | N27E23 | 316 | | | | | | | | | | | | | | | | |
| 11 Sep | N27E10 | 316 | | | | | | | | | | | | | | | | |
| 12 Sep | N27W03 | 316 | | | | | | | | | | | | | | | | |
| 13 Sep | N27W16 | 316 | | | | | | | | | | | | | | | | |
| 14 Sep | N27W29 | 316 | | | | | | | | | | | | | | | | |
| 15 Sep | N27W42 | 316 | | | | | | | | | | | | | | | | |
| 16 Sep | N27W55 | 316 | | | | | | | | | | | | | | | | |
| 17 Sep | N27W68 | 316 | | | | | | | | | | | | | | | | |
| 18 Sep | N27W82 | 316 | | | | | | | | | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |

Crossed West Limb.

Absolute heliographic longitude: 316



Region Summary - continued.

| Date | Location | | Sunspot Characteristics | | | | Flares | | | | | | | | | | | | | | | |
|-------------------|----------------|-------|---------------------------------|-------------------|---------------|---------------|--------------|-------|---|---|---------|---|---|---|---|--|--|--|--|--|--|--|
| | (° Lat ° CMD) | Helio | Area (10 ⁻⁶ hemi) | Extent (helio) | Spot Class | Spot Count | Mag Class | X-ray | | | Optical | | | | | | | | | | | |
| | | Lon | | | | | | C | M | X | S | 1 | 2 | 3 | 4 | | | | | | | |
| <i>Region 107</i> | | | | | | | | | | | | | | | | | | | | | | |
| 08 Sep | N11E70 | 295 | 0060 | 08 | Cso | 005 | B | 1 | | | | 3 | | | | | | | | | | |
| 09 Sep | N11E56 | 296 | 0080 | 06 | Dso | 005 | B | | | | | | | | | | | | | | | |
| 10 Sep | N11E43 | 296 | 0150 | 07 | Dao | 009 | B | 3 | | | | 6 | | | | | | | | | | |
| 11 Sep | N11E30 | 295 | 0170 | 09 | Dao | 015 | B | 4 | | | | 4 | | | | | | | | | | |
| 12 Sep | N11E16 | 296 | 0190 | 08 | Dai | 020 | B | 3 | | | | 3 | | | | | | | | | | |
| 13 Sep | N11E03 | 296 | 0190 | 08 | Dai | 023 | B | | | | | | | | | | | | | | | |
| 14 Sep | N11W10 | 296 | 0190 | 09 | Dai | 023 | B | | | | | | | | | | | | | | | |
| 15 Sep | N11W23 | 296 | 0100 | 08 | Dao | 011 | B | | | | | | | | | | | | | | | |
| 16 Sep | N11W36 | 296 | 0080 | 08 | Dao | 007 | B | | | | | | | | | | | | | | | |
| 17 Sep | N11W52 | 298 | 0090 | 04 | Dao | 004 | B | | | | | | | | | | | | | | | |
| 18 Sep | N11W67 | 300 | 0030 | 02 | Hsx | 003 | A | | | | | | | | | | | | | | | |
| 19 Sep | N12W80 | 300 | 0010 | 01 | Axx | 002 | A | | | | | | | | | | | | | | | |
| 20 Sep | N12W92 | 299 | 0020 | 01 | Hax | 001 | A | | | | | | | | | | | | | | | |

11 0 0 16 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 296

| | | | | | | | | | | | | | | | | | | | | | |
|-------------------|--------|-----|------|----|-----|-----|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <i>Region 108</i> | | | | | | | | | | | | | | | | | | | | | |
| 10 Sep | S23E49 | 290 | 0020 | 03 | Bxo | 003 | B | | | | | | | | | | | | | | |
| 11 Sep | S24E36 | 289 | 0010 | 03 | Bxo | 002 | B | | | | | | | | | | | | | | |
| 12 Sep | S24E20 | 292 | 0000 | 00 | Axx | 001 | A | | | | | | | | | | | | | | |
| 13 Sep | S24E07 | 292 | | | | | | | | | | | | | | | | | | | |
| 14 Sep | S24W06 | 292 | | | | | | | | | | | | | | | | | | | |
| 15 Sep | S24W19 | 292 | | | | | | | | | | | | | | | | | | | |
| 16 Sep | S24W32 | 292 | | | | | | | | | | | | | | | | | | | |
| 17 Sep | S24W45 | 292 | | | | | | | | | | | | | | | | | | | |
| 18 Sep | S24W58 | 292 | | | | | | | | | | | | | | | | | | | |
| 19 Sep | S24W71 | 292 | | | | | | | | | | | | | | | | | | | |
| 20 Sep | S24W84 | 292 | | | | | | | | | | | | | | | | | | | |

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 292



Region Summary - continued.

| Date | Location | | Sunspot Characteristics | | | | Flares | | | | | | | |
|------|----------------|-------|---------------------------------|-------------------|---------------|---------------|--------------|-------|---|---|---------|---|---|---|
| | (° Lat ° CMD) | Helio | Area (10 ⁻⁶ hemi) | Extent (helio) | Spot Class | Spot Count | Mag Class | X-ray | | | Optical | | | |
| | | Lon | | | | | | C | M | X | S | 1 | 2 | 3 |

Region 109

| | | | | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|---|--|--|--|--|--|--|--|--|--|--|--|
| 10 Sep | S08E18 | 321 | 0030 | 03 | Cso | 004 | B | | | | | | | | | | | |
| 11 Sep | S08E05 | 320 | 0060 | 06 | Dso | 011 | B | | | | | | | | | | | |
| 12 Sep | S08W10 | 322 | 0060 | 06 | Dao | 015 | B | | | | | | | | | | | |
| 13 Sep | S08W23 | 322 | 0040 | 06 | Dao | 009 | B | | | | | | | | | | | |
| 14 Sep | S08W36 | 322 | 0030 | 04 | Bxo | 005 | B | | | | | | | | | | | |
| 15 Sep | S08W49 | 322 | | | | | | | | | | | | | | | | |
| 16 Sep | S08W62 | 322 | | | | | | | | | | | | | | | | |
| 17 Sep | S08W75 | 322 | | | | | | | | | | | | | | | | |
| 18 Sep | S08W88 | 322 | | | | | | | | | | | | | | | | |

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 320

Region 110

| | | | | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|---|---|--|--|---|--|--|--|--|--|--|--|
| 10 Sep | N20E18 | 321 | 0050 | 05 | Cso | 008 | B | | | | | | | | | | | |
| 11 Sep | N20E05 | 320 | 0100 | 07 | Dao | 009 | B | | | | | | | | | | | |
| 12 Sep | N19W09 | 321 | 0030 | 06 | Dso | 009 | B | | | | | | | | | | | |
| 13 Sep | N19W22 | 321 | 0020 | 06 | Dro | 006 | B | | | | | | | | | | | |
| 14 Sep | N19W35 | 321 | 0040 | 05 | Dro | 009 | B | | | | | | | | | | | |
| 15 Sep | N19W48 | 321 | 0020 | 04 | Cro | 003 | B | | | | | | | | | | | |
| 16 Sep | N19W61 | 321 | 0030 | 04 | Cao | 002 | B | | | | | | | | | | | |
| 17 Sep | N17W75 | 321 | 0030 | 01 | Hrx | 001 | A | 1 | | | 1 | | | | | | | |
| 18 Sep | N19W88 | 321 | 0020 | 01 | Hrx | 001 | A | | | | | | | | | | | |

1 0 0 1 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 320

Region 111

| | | | | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|---|--|--|--|--|--|--|--|--|--|--|--|
| 12 Sep | N11E01 | 311 | 0010 | 05 | Bxo | 006 | B | | | | | | | | | | | |
| 13 Sep | N11W12 | 311 | 0020 | 04 | Bxo | 009 | B | | | | | | | | | | | |
| 14 Sep | N11W25 | 311 | 0020 | 04 | Bxo | 009 | B | | | | | | | | | | | |
| 15 Sep | N10W38 | 311 | | | | | | | | | | | | | | | | |
| 16 Sep | N10W51 | 311 | | | | | | | | | | | | | | | | |
| 17 Sep | N10W64 | 311 | | | | | | | | | | | | | | | | |
| 18 Sep | N10W77 | 311 | | | | | | | | | | | | | | | | |
| 19 Sep | N10W90 | 311 | | | | | | | | | | | | | | | | |

0 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 311



Region Summary - continued.

| Date | Location | | Sunspot Characteristics | | | | | Flares | | | | | | |
|------|----------------|-------|---------------------------------|-------------------|---------------|---------------|--------------|--------|---|---|---------|---|---|---|
| | (° Lat ° CMD) | Helio | Area (10 ⁻⁶ hemi) | Extent (helio) | Spot Class | Spot Count | Mag Class | X-ray | | | Optical | | | |
| | | Lon | | | | | | C | M | X | S | 1 | 2 | 3 |

Region 112

| | | | | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 Sep | N00E04 | 308 | 0010 | 02 | Axx | 005 | A | | | | | | | | | | | |
| 13 Sep | N00W09 | 308 | 0010 | 03 | Bxo | 004 | B | | | | | | | | | | | |
| 14 Sep | N02W20 | 306 | | | | | | | | | | | | | | | | |
| 15 Sep | N02W33 | 306 | | | | | | | | | | | | | | | | |
| 16 Sep | N02W46 | 306 | | | | | | | | | | | | | | | | |
| 17 Sep | N02W59 | 306 | | | | | | | | | | | | | | | | |
| 18 Sep | N02W72 | 306 | | | | | | 1 | | | 1 | | | | | | | |
| 19 Sep | N02W85 | 306 | | | | | | | | | | | | | | | | |
| | | | | | | | | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

Crossed West Limb.

Absolute heliographic longitude: 308

Region 113

| | | | | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|---|--|---|---|---|---|---|---|---|---|---|---|
| 12 Sep | N30W38 | 350 | 0010 | 01 | Axx | 001 | A | | | | | | | | | | | |
| 13 Sep | N30W51 | 350 | | | | | | | | | | | | | | | | |
| 14 Sep | N30W64 | 350 | | | | | | | | | | | | | | | | |
| 15 Sep | N30W77 | 350 | | | | | | | | | | | | | | | | |
| 16 Sep | N30W90 | 350 | | | | | | | | | | | | | | | | |
| | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Crossed West Limb.

Absolute heliographic longitude: 350

Region 114

| | | | | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|-----|---|---|---|----|---|---|---|---|---|--|--|
| 14 Sep | S12W02 | 288 | 0470 | 09 | Dkc | 051 | Bgd | 1 | | | 3 | | | | | | | |
| 15 Sep | S12W15 | 288 | 0300 | 08 | Dai | 025 | Bg | 2 | | | 2 | | | | | | | |
| 16 Sep | S12W28 | 288 | 0190 | 06 | Dao | 018 | Bg | 2 | 1 | | 4 | | | | | | | |
| 17 Sep | S11W43 | 289 | 0130 | 06 | Dao | 014 | B | 2 | | | 1 | 1 | | | | | | |
| 18 Sep | S11W57 | 290 | 0100 | 02 | Hsx | 001 | A | | | | | | | | | | | |
| 19 Sep | S12W70 | 290 | 0120 | 05 | Cso | 003 | B | | | | 1 | | | | | | | |
| 20 Sep | S11W84 | 291 | 0110 | 02 | Hax | 001 | A | | | | | | | | | | | |
| 21 Sep | S14W87 | 281 | 0020 | 01 | Hax | 001 | A | | | | | | | | | | | |
| | | | | | | | | 7 | 1 | 0 | 11 | 1 | 0 | 0 | 0 | 0 | | |

Crossed West Limb.

Absolute heliographic longitude: 288



Region Summary - continued.

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

Region 118

| | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|---|--|--|--|--|--|--|--|--|
| 16 Sep | N14E14 | 246 | 0010 | 02 | Axx | 002 | A | | | | | | | | |
| 17 Sep | N13W01 | 247 | 0010 | 02 | Bxo | 004 | B | | | | | | | | |
| 18 Sep | N13W14 | 247 | | | | | | | | | | | | | |
| 19 Sep | N13W27 | 247 | | | | | | | | | | | | | |
| 20 Sep | N13W40 | 247 | | | | | | | | | | | | | |
| 21 Sep | N13W53 | 247 | | | | | | | | | | | | | |
| 22 Sep | N13W66 | 247 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

Still on Disk.

Absolute heliographic longitude: 247

Region 119

| | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|-----|---|--|----|---|--|--|--|--|
| 16 Sep | S14E32 | 228 | 0040 | 05 | Cao | 008 | B | 2 | | 3 | | | | | |
| 17 Sep | S14E17 | 229 | 0090 | 07 | Dao | 010 | B | 6 | | 12 | | | | | |
| 18 Sep | S14E04 | 229 | 0220 | 08 | Dai | 016 | B | 3 | | 6 | 2 | | | | |
| 19 Sep | S14W10 | 230 | 0380 | 08 | Dki | 018 | Bd | 1 | | 2 | | | | | |
| 20 Sep | S14W24 | 231 | 0500 | 10 | Dkc | 027 | Bgd | 1 | | 3 | | | | | |
| 21 Sep | S14W36 | 230 | 0670 | 10 | Dkc | 031 | Bd | 1 | | 1 | | | | | |
| 22 Sep | S14W49 | 229 | 0650 | 12 | Eki | 033 | Bd | 2 | | 3 | | | | | |
| | | | | | | | | | | | | | | | |

Still on Disk.

Absolute heliographic longitude: 229

Region 120

| | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|---|--|--|--|--|--|--|--|--|
| 16 Sep | S19E57 | 203 | 0040 | 01 | Hsx | 001 | A | | | | | | | | |
| 17 Sep | S19E43 | 203 | 0040 | 05 | Cso | 004 | B | | | | | | | | |
| 18 Sep | S18E30 | 203 | 0020 | 04 | Bxo | 004 | B | | | | | | | | |
| 19 Sep | S19E17 | 203 | 0020 | 04 | Cso | 004 | B | | | | | | | | |
| 20 Sep | S18E03 | 204 | 0020 | 04 | Bxo | 004 | B | | | | | | | | |
| 21 Sep | S19W10 | 204 | 0010 | 02 | Bxo | 003 | B | | | | | | | | |
| 22 Sep | S19W23 | 204 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

Still on Disk.

Absolute heliographic longitude: 204



Region Summary - continued.

| Date | Location | | Sunspot Characteristics | | | | Flares | | | | | | | |
|------|----------------|-------|---------------------------------|-------------------|---------------|---------------|--------------|-------|---|---|---------|---|---|---|
| | (° Lat ° CMD) | Helio | Area (10 ⁻⁶ hemi) | Extent (helio) | Spot Class | Spot Count | Mag Class | X-ray | | | Optical | | | |
| | | Lon | | | | | | C | M | X | S | 1 | 2 | 3 |

Region 121

| | | | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|---|---|---|---|---|---|---|---|---|---|---|
| 16 Sep | S14E69 | 191 | 0050 | 01 | Hsx | 001 | A | | | | | | | | | | |
| 17 Sep | S14E53 | 193 | 0060 | 01 | Hsx | 001 | A | | | | | | | | | | |
| 18 Sep | S13E39 | 194 | 0050 | 02 | Hsx | 001 | A | | | | | | | | | | |
| 19 Sep | S13E26 | 194 | 0040 | 02 | Hsx | 001 | A | | | | | | | | | | |
| 20 Sep | S13E12 | 195 | 0050 | 01 | Hsx | 001 | A | | | | | | | | | | |
| 21 Sep | S13W02 | 196 | 0050 | 02 | Hax | 001 | A | 1 | | | | 1 | | | | | |
| 22 Sep | S12W15 | 195 | 0040 | 02 | Hax | 002 | A | | | | | | | | | | |
| | | | | | | | | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.

Absolute heliographic longitude: 196

Region 122

| | | | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|---|--|---|---|---|---|---|---|---|---|---|
| 16 Sep | S19E74 | 186 | 0050 | 01 | Hsx | 001 | A | | | | | | | | | | |
| 17 Sep | S18E62 | 184 | 0060 | 01 | Hsx | 001 | A | | | | | | | | | | |
| 18 Sep | S17E48 | 185 | 0060 | 02 | Hsx | 001 | A | | | | | | | | | | |
| 19 Sep | S17E35 | 185 | 0040 | 02 | Hsx | 001 | A | | | | | | | | | | |
| 20 Sep | S18E21 | 186 | 0070 | 02 | Hsx | 001 | A | | | | | | | | | | |
| 21 Sep | S18E09 | 185 | 0060 | 02 | Hsx | 001 | A | | | | | | | | | | |
| 22 Sep | S18W05 | 185 | 0040 | 02 | Hax | 002 | A | | | | | | | | | | |
| | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.

Absolute heliographic longitude: 185

Region 123

| | | | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|---|---|---|---|---|---|---|---|---|---|---|
| 17 Sep | S16E30 | 216 | 0020 | 03 | Hrx | 003 | A | | | | | | | | | | |
| 18 Sep | S16E16 | 217 | 0020 | 04 | Bxo | 005 | B | | | | | | | | | | |
| 19 Sep | S14E04 | 216 | 0040 | 07 | Dso | 009 | B | | | | | 1 | | | | | |
| 20 Sep | S14W10 | 217 | 0090 | 10 | Dao | 014 | B | | | | | 1 | | | | | |
| 21 Sep | S15W21 | 215 | 0060 | 09 | Dao | 014 | B | 1 | | | | 1 | | | | | |
| 22 Sep | S13W38 | 218 | 0040 | 05 | Cao | 005 | B | | | | | | | | | | |
| | | | | | | | | | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.

Absolute heliographic longitude: 216

Region 124

| | | | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|---|--|---|---|---|---|---|---|---|---|---|
| 18 Sep | N03W49 | 282 | 0010 | 03 | Cro | 003 | B | | | | | | | | | | |
| 19 Sep | N03W63 | 283 | 0010 | 02 | Cso | 002 | B | | | | | | | | | | |
| 20 Sep | N03W76 | 283 | | | | | | | | | | | | | | | |
| | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Crossed West Limb.

Absolute heliographic longitude: 282



Region Summary - continued.

| Date | Location | | Sunspot Characteristics | | | | Flares | | | | | | | |
|------|-------------|-------|---------------------------------|-------------------|---------------|---------------|--------------|-------|---|---|---------|---|---|---|
| | ° Lat ° CMD | Helio | Area (10 ⁻⁶ hemi) | Extent (helio) | Spot Class | Spot Count | Mag Class | X-ray | | | Optical | | | |
| | | Lon | | | | | | C | M | X | S | 1 | 2 | 3 |

Region 125

| | | | | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|---|---|---|---|---|---|---|---|---|---|--|--|
| 18 Sep | S08E69 | 164 | 0010 | 01 | Axx | 001 | A | | | | | | | | | | | |
| 19 Sep | S08E55 | 165 | 0020 | 01 | Axx | 001 | A | 1 | | | | | 1 | | | | | |
| 20 Sep | S09E40 | 167 | 0020 | 03 | Bxo | 003 | B | | | | | | | | | | | |
| 21 Sep | S09E27 | 167 | 0020 | 03 | Cao | 003 | B | | | | | | | | | | | |
| 22 Sep | S09E14 | 166 | 0020 | 02 | Hsx | 004 | A | | | | | | 1 | | | | | |
| | | | | | | | | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | | |

Still on Disk.

Absolute heliographic longitude: 166

Region 126

| | | | | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|---|---|---|---|---|---|---|---|---|---|--|--|
| 19 Sep | S23E75 | 145 | 0060 | 01 | Hsx | 001 | A | | | | | | | | | | | |
| 20 Sep | S24E62 | 145 | 0180 | 06 | Dao | 004 | B | 1 | 2 | | 4 | | | | | | | |
| 21 Sep | S23E52 | 142 | 0100 | 06 | Dao | 005 | B | | | | | | | | | | | |
| 22 Sep | S23E39 | 141 | 0080 | 05 | Dao | 005 | B | | | | | | | | | | | |
| | | | | | | | | 1 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | | |

Still on Disk.

Absolute heliographic longitude: 141

Region 127

| | | | | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|---|---|---|---|---|---|---|---|---|---|--|--|
| 20 Sep | S14E19 | 188 | 0050 | 03 | Dao | 010 | B | | | | | | | | | | | |
| 21 Sep | S14E05 | 189 | 0130 | 07 | Dao | 019 | B | | | | | | | | | | | |
| 22 Sep | S13W09 | 189 | 0190 | 09 | Dao | 017 | B | | | | | | 1 | | | | | |
| | | | | | | | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | | |

Still on Disk.

Absolute heliographic longitude: 189

Region 128

| | | | | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|---|---|---|---|---|---|---|---|---|---|--|--|
| 20 Sep | N11E63 | 144 | 0020 | 00 | Axx | 001 | A | | | | | | | | | | | |
| 21 Sep | N10E49 | 145 | 0010 | 00 | Axx | 001 | A | | | | | | | | | | | |
| 22 Sep | N10E36 | 145 | | | | | | | | | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |

Still on Disk.

Absolute heliographic longitude: 145

Region 129

| | | | | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|---|---|---|---|---|---|---|---|---|---|--|--|
| 22 Sep | N25E54 | 126 | 0010 | 01 | Axx | 001 | A | | | | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |

Still on Disk.

Absolute heliographic longitude: 126

Region 130

| | | | | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|---|---|---|---|---|---|---|---|---|---|--|--|
| 22 Sep | N06E52 | 128 | 0020 | 01 | Axx | 003 | A | | | | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |

Still on Disk.

Absolute heliographic longitude: 128



Region Summary - continued.

| Date | Location | | Sunspot Characteristics | | | | Flares | | | | | | | |
|------|----------------|-------|---------------------------------|-------------------|---------------|---------------|--------------|-------|---|---|---------|---|---|---|
| | (° Lat ° CMD) | Helio | Area (10 ⁻⁶ hemi) | Extent (helio) | Spot Class | Spot Count | Mag Class | X-ray | | | Optical | | | |
| | | Lon | | | | | | C | M | X | S | 1 | 2 | 3 |

Region 131

| | | | | | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22 Sep | S07E35 | 145 | 0030 | 03 | Cao | 002 | B | | | | | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.

Absolute heliographic longitude: 145

Region 132

| | | | | | | | | | | | | | | | | | | | |
|--------|--------|-----|------|----|-----|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22 Sep | N18W01 | 181 | 0070 | 04 | Cao | 009 | B | | | | | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.

Absolute heliographic longitude: 181

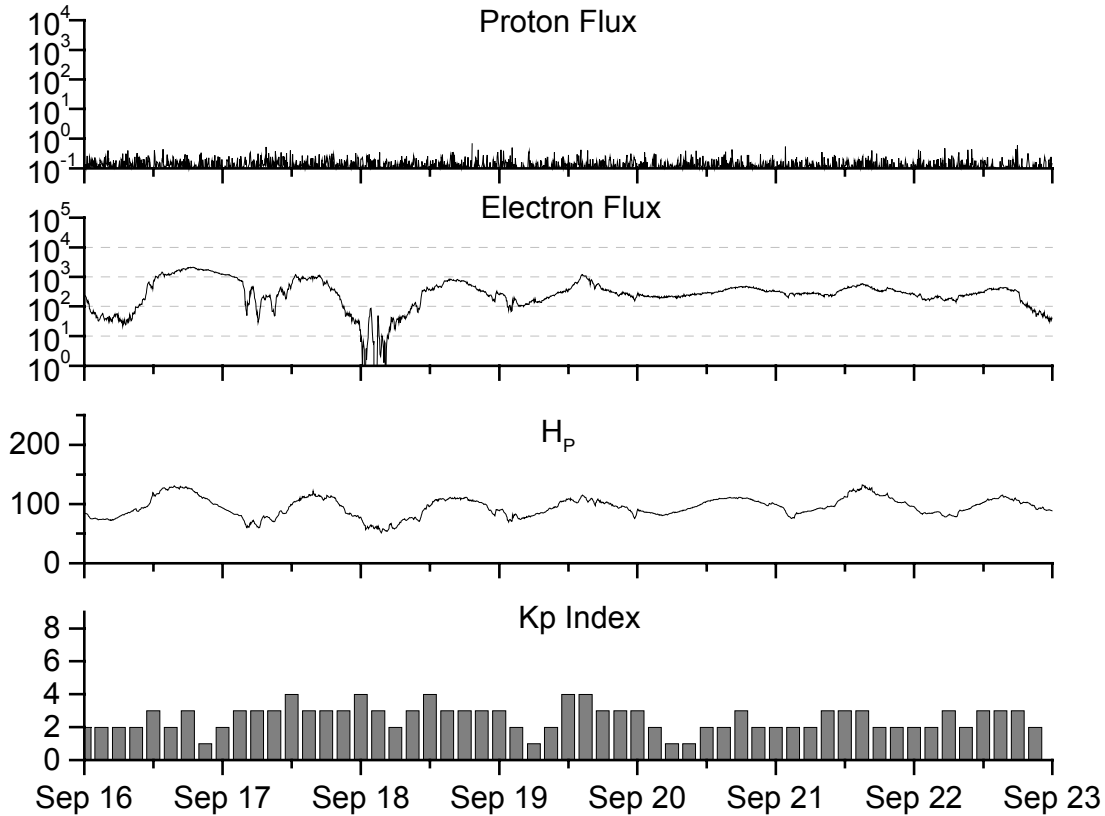


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

| Month | Sunspot Numbers | | | Radio Flux | | Geomagnetic | | | |
|-------------|------------------------|-------------|-----------------|----------------------|---------------------|-----------------------|-----------------|-----------------|-----------------|
| | Observed values SWO | Ratio RI | Ratio RI/SWO | Smooth values SWO | Smooth values RI | *Penticton 10.7 cm | Smooth Value | Planetary Ap | Smooth Value |
| 2000 | | | | | | | | | |
| September | 157.9 | 109.9 | 0.70 | 169.0 | 116.2 | 182.1 | 177.1 | 18 | 14.2 |
| October | 138.9 | 100.1 | 0.72 | 166.2 | 114.4 | 167.7 | 175.6 | 18 | 14.6 |
| November | 149.9 | 106.5 | 0.71 | 162.7 | 112.7 | 178.8 | 173.6 | 17 | 14.6 |
| December | 146.4 | 104.5 | 0.71 | 160.8 | 112.1 | 173.6 | 172.0 | 08 | 14.4 |
| 2001 | | | | | | | | | |
| January | 142.7 | 95.1 | 0.67 | 156.3 | 108.8 | 166.7 | 168.8 | 08 | 13.8 |
| February | 131.0 | 80.1 | 0.61 | 151.4 | 104.2 | 147.3 | 165.8 | 06 | 13.3 |
| March | 166.7 | 114.2 | 0.69 | 154.0 | 104.9 | 177.7 | 167.9 | 17 | 12.9 |
| April | 163.6 | 108.2 | 0.66 | 159.4 | 107.7 | 178.3 | 171.7 | 18 | 12.7 |
| May | 135.1 | 97.3 | 0.72 | 163.1 | 108.8 | 148.7 | 174.8 | 12 | 12.5 |
| June | 196.7 | 134.0 | 0.68 | 167.2 | 109.9 | 173.7 | 178.8 | 12 | 12.4 |
| July | 124.6 | 82.2 | 0.66 | 172.1 | 111.8 | 131.3 | 183.9 | 11 | 12.4 |
| August | 159.4 | 106.8 | 0.67 | 176.7 | 113.8 | 163.2 | 188.8 | 13 | 12.5 |
| September | 229.1 | 150.7 | 0.66 | 178.8 | 114.3 | 233.3 | 191.3 | 12 | 12.3 |
| October | 197.4 | 125.6 | 0.64 | 179.5 | 114.1 | 208.2 | 191.9 | 18 | 11.9 |
| November | 178.6 | 106.5 | 0.60 | 183.7 | 115.6 | 212.5 | 193.6 | 14 | 11.9 |
| December | 217.5 | 131.8 | 0.61 | 184.5 | 114.7 | 236.6 | 193.8 | 08 | 12.0 |
| 2002 | | | | | | | | | |
| January | 189.0 | 113.9 | 0.60 | 184.8 | 113.5 | 226.4 | 194.6 | 07 | 12.0 |
| February | 194.5 | 108.0 | 0.56 | 188.6 | 114.7 | 205.1 | 197.2 | 09 | 12.2 |
| March | 153.1 | 98.1 | 0.64 | | | 179.5 | | 10 | |
| April | 194.9 | 120.4 | 0.62 | | | 189.7 | | 15 | |
| May | 204.1 | 120.8 | 0.59 | | | 178.4 | | 15 | |
| June | 146.0 | 88.5 | 0.61 | | | 148.8 | | 11 | |
| July | 183.5 | 99.9 | 0.54 | | | 174.5 | | 13 | |
| August | 191.0 | 116.4 | 0.61 | | | 184.0 | | 16 | |

NOTE: All smoothed values after June 1999 and monthly values after December 2000 are preliminary estimates. The lowest smoothed sunspot index number for Cycle 22, RI = 8.0, occurred in May 1996. The highest smoothed sunspot number for Cycle 22, RI= 158.5, occurred July 1989. *After June 1991, the 10.7 cm radio flux data source is Penticton, B.C. Canada. Prior to that, it was Ottawa.





Weekly Geosynchronous Satellite Environment Summary

Week Beginning 16 September 2002

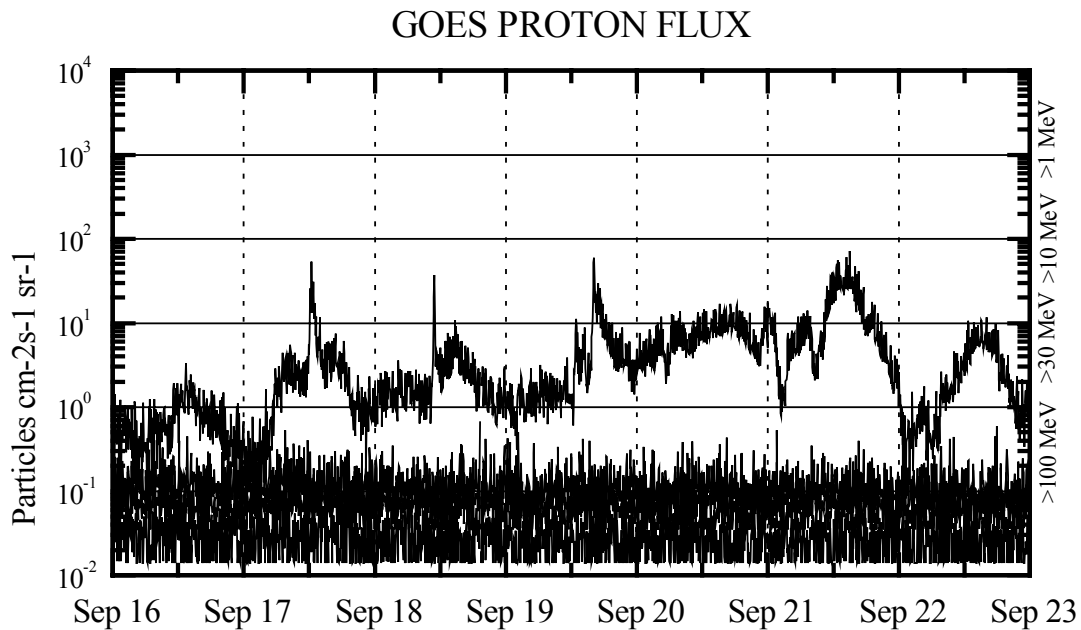
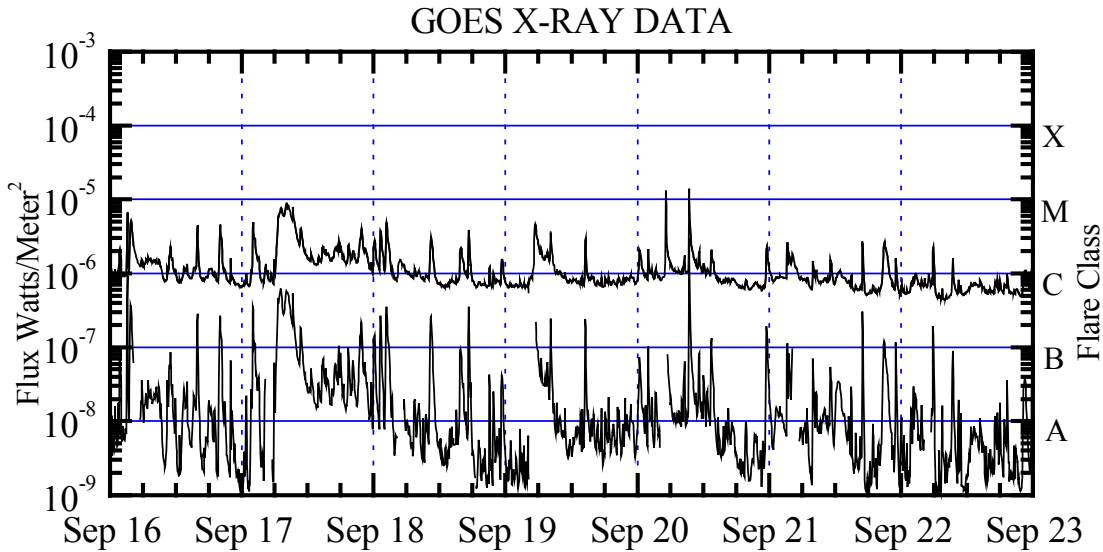
Protons plot contains the five-minute averaged integral proton flux (protons/cm²-sec -sr) as measured by GOES-8 (W75) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-8.

H_p plot contains the five minute averaged magnetic field H - component in nanoteslas (nT) as measured by GOES-8. The H component is parallel to the spin axis of the satellite, which is nearly parallel to the Earth's rotation axis.

K_p plot contains the estimated planetary 3-hour K-index (derived by the Air Force Weather Agency) in real time from magnetometers at Meanook, Canada; Sitka, AK; Glenlea, Canada; St. Johns, Canada; Ottawa, Canada; Newport, WA; Fredericksburg, VA; Boulder, CO; Fresno, CA and Heartland, UK. These data are made available through cooperation from the Geological Survey of Canada (GSC) and the US Geological Survey. These may differ from the final K_p values derived from a more extensive network of magnetometers. The data included here are those now available in real time at the SWO 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 K_p are "global" parameters that are applicable to a first order approximation over large areas. H_p 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

X-ray plot contains five-minute averaged x-ray flux (watts/m²) as measured by GOES 8 and 10 in two wavelength bands, .05 - .4 and .1 - .8 nm. The letters A, B, C, M and X refer to x-ray event levels for the .1 - .8 nm band.

Proton plot contains the five-minute averaged integral proton flux (protons/cm²-sec-sr) as measured by GOES-8 (W75) for each of the energy thresholds: >1, >10, >30 and >100 MeV. P10 event threshold is 10 pfu (protons/cm²-sec-sr) at greater than 10 MeV.

