

Solar activity was at low to moderate levels during the period. The period began at moderate levels on 03 March as Region 1989 (N08, L=137, class/area Cao/90 on 24 Feb) produced an M1/Sn flare at 03/1558 UTC. On 04 March, solar activity was at low levels as Region 1991 (S24, L=093, class/area Eki/370 on 02 March) produced the majority of the C-class flare activity. Moderate levels were once again reached on 05 March as Region 1991 produced an isolated M1 flare at 05/0210 UTC. Solar activity was at low levels once again on 06-07 March. By 08 March, a small but active sunspot group rotated onto the SE limb and was numbered as Region 2002 (S19, L=323, class/area Dac/beta-gamma-delta on 09 March). Over the last two days of the period, solar activity reached moderate levels as Region 2002 continued to grow and produced a total of 3 M-class flares as well as 15 C-class flares. M-class flare activity included an M1 at 08/2341 UTC, an M1/Sn at 09/1358 UTC, and an M1/Sf at 09/2028 UTC. No Earth-directed coronal mass ejections (CMEs) were observed during the period.

The period began with the greater than 10 MeV proton flux near 11 pfu (above S1-Minor) but in decline from the proton event that began at 25/1355 UTC associated with the X4/2b flare on 25 February. The proton event ended at 03/0150 UTC and decreased to background levels by 07 March.

The greater than 2 MeV electron flux at geosynchronous orbit was at moderate levels on 05 March and again from 07-09 March.

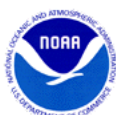
Geomagnetic field activity ranged from quiet to unsettled levels. A solar sector boundary crossing was observed in ACE SWEPAM data at approximately 03/2053 UTC. Phi angle became mostly positive (away) and remained that way through the end of the period. Following the sector crossing, solar wind speed became enhanced to around 500 km/s by 06/0730 UTC with total field near 6 nT and the Bz component fluctuating between +6 nT and -5 nT. The geomagnetic field responded with quiet to unsettled levels from 03-06 March. By late on 06 March, solar wind speed and total field measurements were in decline. Total field was steady between 2 nT and 4 nT through the end of the period with solar wind declining to 270 km/s by the end of the period. As a result, quiet conditions were observed from 07-09 March.

### **Space Weather Outlook** **10 March - 05 April 2014**

Solar activity is expected to be at low levels with moderate levels likely from 10-29 March as Region 2002 transits the visible disk along with the return of old Regions 1986 (N13, L=177), 1982 (S10, L=207), and a new Region centered near N14, L=253 which have been active over the past few days in STEREO B EUVI 195 imagery.

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 with a chance for high levels on 11-14 March due to coronal hole high speed stream (CH HSS) influence.

Geomagnetic field activity is expected to be at quiet to unsettled levels from 10-13 March with active periods possible on 11 March due to CH HSS effects. Mostly quiet conditions are expected to prevail with the possibility of unsettled periods on 30 March-01 April due to recurrent prolonged periods of southward Bz.



### *Daily Solar Data*

| Date     | Radio<br>Flux<br>10.7cm | Sun<br>spot<br>No. | Sunspot<br>Area<br>(10 <sup>-6</sup> hemi.) | X-ray<br>Background<br>Flux | Flares |   |   |         |   |   |   |   |
|----------|-------------------------|--------------------|---|-----------------------------|--------|---|---|---------|---|---|---|---|
|          |                         |                    |   |                             | X-ray  |   |   | Optical |   |   |   |   |
|          |                         |                    |   |                             | C      | M | X | S       | 1 | 2 | 3 | 4 |
| 03 March | 161                     | 191                | 930   | C1.0                        | 10     | 1 | 0 | 4       | 1 | 0 | 0 | 0 |
| 04 March | 158                     | 160                | 760   | B8.8                        | 10     | 0 | 0 | 1       | 1 | 0 | 0 | 0 |
| 05 March | 149                     | 191                | 920   | B7.6                        | 7      | 1 | 0 | 5       | 0 | 0 | 0 | 0 |
| 06 March | 149                     | 174                | 540   | B5.5                        | 1      | 0 | 0 | 2       | 0 | 0 | 0 | 0 |
| 07 March | 148                     | 161                | 740   | B5.4                        | 2      | 0 | 0 | 0       | 0 | 0 | 0 | 0 |
| 08 March | 142                     | 138                | 490   | B6.4                        | 4      | 1 | 0 | 8       | 1 | 0 | 0 | 0 |
| 09 March | 146                     | 123                | 340   | B9.3                        | 14     | 2 | 0 | 27      | 1 | 0 | 0 | 0 |

### *Daily Particle Data*

| Date     | Proton Fluence<br>(protons/cm <sup>2</sup> -day-sr) |         |          | Electron Fluence<br>(electrons/cm <sup>2</sup> -day-sr) |         |         |
|----------|---|---------|----------|---|---------|---------|
|          | >1 MeV  | >10 MeV | >100 MeV | >0.6 MeV  | >2MeV   | >4 MeV  |
|          | 03 March  | 1.7e+07 | 5.8e+05  | 2.5e+03   |         | 3.6e+06 |
| 04 March | 7.1e+06   | 2.3e+05 | 2.3e+03  |   | 3.2e+06 |         |
| 05 March | 2.2e+06   | 8.2e+04 | 2.4e+03  |   | 4.4e+06 |         |
| 06 March | 1.3e+06   | 3.7e+04 | 2.4e+03  |   | 4.5e+06 |         |
| 07 March | 1.4e+06   | 2.2e+04 | 2.5e+03  |   | 6.6e+06 |         |
| 08 March | 1.3e+06   | 1.8e+04 | 2.5e+03  |   | 6.1e+06 |         |
| 09 March | 1.3e+06   | 1.5e+04 | 2.7e+03  |   | 6.5e+06 |         |

### *Daily Geomagnetic Data*

| Date     | Middle Latitude<br>Fredericksburg |                 | High Latitude<br>College |                 | Estimated<br>Planetary |                 |
|----------|-----------------------------------|-----------------|--------------------------|-----------------|------------------------|-----------------|
|          | A                                 | K-indices       | A                        | K-indices       | A                      | K-indices       |
|          | 03 March                          | 6               | 2-2-2-1-2-2-1-1          | 6               | 0-1-2-3-3-1-0-1        | 7               |
| 04 March | 8                                 | 2-2-0-3-3-2-1-2 | 7                        | 1-0-0-4-3-2-1-1 | 8                      | 2-1-0-2-3-2-2-3 |
| 05 March | 6                                 | 1-1-1-1-3-2-2-1 | 7                        | 1-0-0-4-3-2-1-1 | 7                      | 2-1-2-2-3-2-2-2 |
| 06 March | 5                                 | 1-0-0-1-2-3-2-1 | 5                        | 0-0-0-1-4-2-1-0 | 6                      | 1-1-1-2-2-2-3-1 |
| 07 March | 3                                 | 0-1-0-1-2-2-1-1 | 0                        | 0-0-0-0-0-0-1-0 | 4                      | 1-1-1-1-1-1-1-1 |
| 08 March | 5                                 | 1-1-1-1-2-2-1-2 | 1                        | 0-0-0-2-0-0-0-0 | 4                      | 1-1-1-1-1-1-1-1 |
| 09 March | 2                                 | 1-0-1-1-0-1-1-1 | 0                        | 0-0-0-0-0-0-0-0 | 3                      | 1-0-1-1-0-0-1-1 |

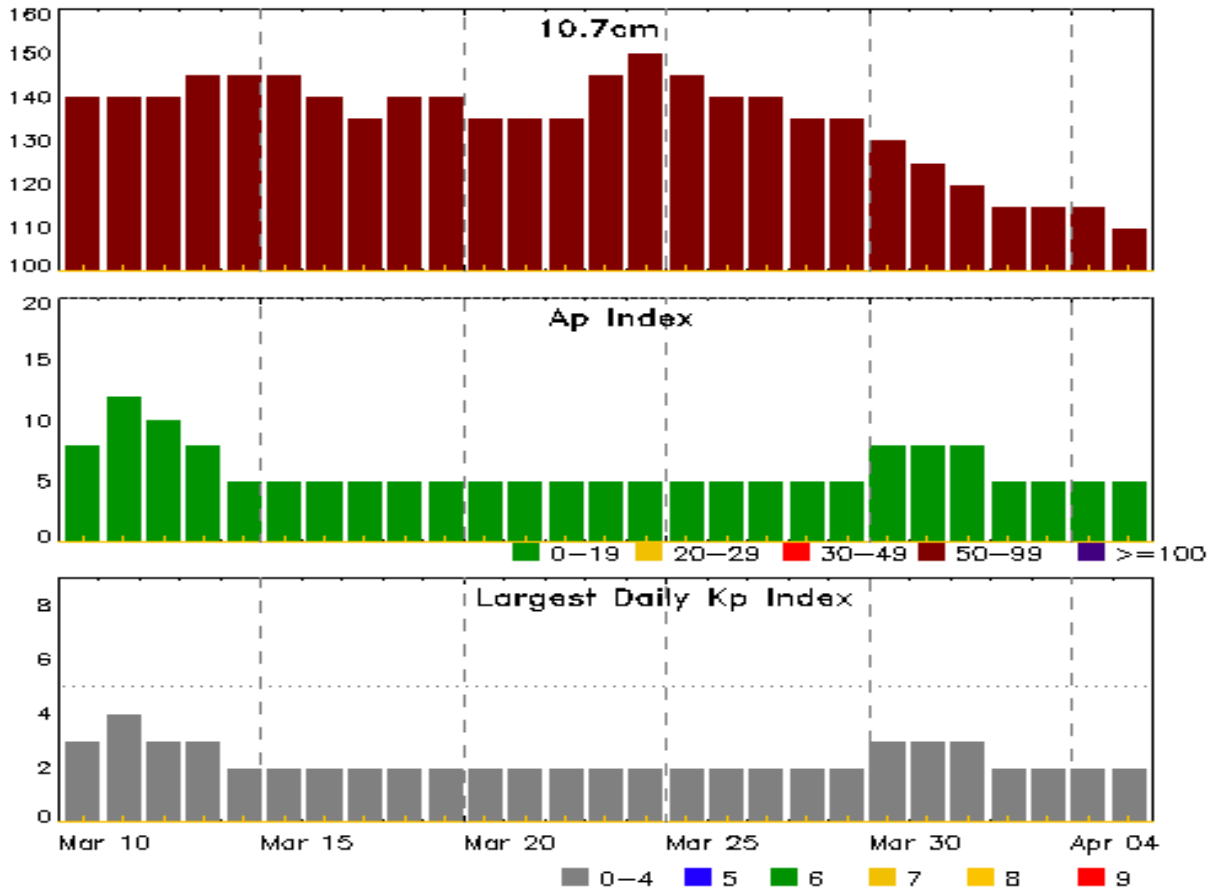


### *Alerts and Warnings Issued*

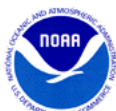
| <b>Date &amp; Time<br/>of Issue UTC</b> | <b>Type of Alert or Warning</b>                        | <b>Date &amp; Time<br/>of Event UTC</b> |
|---|--|---|
| 03 Mar 0615                             | SUMMARY: Proton Event 10MeV Integral Flux $\geq$ 10pfu | 25/1355 - 03/0150                       |
| 05 Mar 1411                             | ALERT: Type II Radio Emission                          | 05/1333                                 |
| 06 Mar 0959                             | ALERT: Type II Radio Emission                          | 06/0927                                 |



## Twenty-seven Day Outlook



| Date   | Radio Flux<br>10.7cm | Planetary<br>A Index | Largest<br>Kp Index | Date   | Radio Flux<br>10.7cm | Planetary<br>A Index | Largest<br>Kp Index |
|--------|----------------------|----------------------|---------------------|--------|----------------------|----------------------|---------------------|
| 10 Mar | 140                  | 8                    | 3                   | 24 Mar | 150                  | 5                    | 2                   |
| 11     | 140                  | 12                   | 4                   | 25     | 145                  | 5                    | 2                   |
| 12     | 140                  | 10                   | 3                   | 26     | 140                  | 5                    | 2                   |
| 13     | 145                  | 8                    | 3                   | 27     | 140                  | 5                    | 2                   |
| 14     | 145                  | 5                    | 2                   | 28     | 135                  | 5                    | 2                   |
| 15     | 145                  | 5                    | 2                   | 29     | 135                  | 5                    | 2                   |
| 16     | 140                  | 5                    | 2                   | 30     | 130                  | 8                    | 3                   |
| 17     | 135                  | 5                    | 2                   | 31     | 125                  | 8                    | 3                   |
| 18     | 140                  | 5                    | 2                   | 01 Apr | 120                  | 8                    | 3                   |
| 19     | 140                  | 5                    | 2                   | 02     | 115                  | 5                    | 2                   |
| 20     | 135                  | 5                    | 2                   | 03     | 115                  | 5                    | 2                   |
| 21     | 135                  | 5                    | 2                   | 04     | 115                  | 5                    | 2                   |
| 22     | 135                  | 5                    | 2                   | 05     | 110                  | 5                    | 2                   |
| 23     | 145                  | 5                    | 2                   |        |                      |                      |                     |



### *Energetic Events*

| Date   | Time  |      |      | X-ray | Optical Information |               |                     |          | Peak       |      | Sweep Freq |    |
|--------|-------|------|------|-------|---------------------|---------------|---------------------|----------|------------|------|------------|----|
|        | Begin | Max  | Half | Class | Integ<br>Flux       | Imp/<br>Brtns | Location<br>Lat CMD | Rgn<br># | Radio Flux |      | Intensity  |    |
|        |       |      | Max  |       |                     |               |                     |          | 245        | 2695 | II         | IV |
| 03 Mar | 1554  | 1558 | 1601 | M1.2  | 0.003               | SN            | N05W36              | 1989     |            | 89   |            |    |
| 05 Mar | 0206  | 0210 | 0212 | M1.0  | 0.002               |               |                     | 1991     | 130        |      |            |    |
| 08 Mar | 2326  | 2341 | 2350 | M1.4  | 0.011               |               |                     | 2002     |            |      |            |    |
| 09 Mar | 1352  | 1358 | 1405 | M1.0  | 0.005               | SN            | S17E58              | 2002     |            |      |            |    |
| 09 Mar | 2013  | 2028 | 2035 | M1.0  | 0.009               | SF            | S19E54              | 2002     |            |      |            |    |

### *Flare List*

| Date   | Time  |       |       | X-ray<br>Class | Imp/<br>Brtns | Location<br>Lat CMD | Rgn<br># |
|--------|-------|-------|-------|----------------|---------------|---------------------|----------|
|        | Begin | Max   | End   |                |               |                     |          |
| 03 Mar | 0220  | 0224  | 0227  | C2.0           | SF            | N08W26              | 1989     |
| 03 Mar | 0553  | 0558  | 0604  | C3.2           |               |                     | 1989     |
| 03 Mar | 0649  | 0654  | 0659  | C2.3           |               |                     | 1986     |
| 03 Mar | 0704  | 0709  | 0713  | C3.3           | SF            | N07W31              | 1989     |
| 03 Mar | 0954  | 0957  | 1000  | C2.9           |               |                     | 1995     |
| 03 Mar | 1026  | 1026  | 1030  |                | SF            | N06W31              | 1989     |
| 03 Mar | 1049  | 1053  | 1109  | C2.0           |               |                     | 1991     |
| 03 Mar | 1222  | 1225  | 1228  | C1.8           |               |                     |          |
| 03 Mar | B1257 | U1321 | A1342 | C1.4           | 1N            | N06W32              | 1989     |
| 03 Mar | 1554  | 1558  | 1601  | M1.2           | SN            | N05W36              | 1989     |
| 03 Mar | 1915  | 1922  | 1932  | C1.9           |               |                     | 1986     |
| 03 Mar | 2133  | 2145  | 2153  | C3.5           |               |                     |          |
| 04 Mar | 0007  | 0018  | 0025  | C4.8           |               |                     |          |
| 04 Mar | 0057  | 0101  | 0109  | C1.8           |               |                     |          |
| 04 Mar | 0449  | 0455  | 0459  | C8.3           | 1F            | S26W01              | 1991     |
| 04 Mar | 0622  | 0704  | 0723  | C5.6           |               |                     | 1994     |
| 04 Mar | 0827  | 0832  | 0835  | C2.7           | SF            | S26E00              | 1991     |
| 04 Mar | 0957  | 1002  | 1010  | C1.6           |               |                     |          |
| 04 Mar | 1019  | 1025  | 1029  | C4.4           |               |                     | 1991     |
| 04 Mar | 1117  | 1124  | 1138  | C7.6           |               |                     |          |
| 04 Mar | 1804  | 1835  | 1913  | C5.5           |               |                     |          |
| 04 Mar | 2146  | 2151  | 2154  | C3.2           |               |                     | 1991     |
| 05 Mar | 0010  | 0016  | 0019  | C4.8           | SF            | S27W07              | 1991     |
| 05 Mar | 0152  | 0158  | 0201  | C2.8           | SF            | S28W08              | 1991     |
| 05 Mar | 0206  | 0210  | 0212  | M1.0           |               |                     | 1991     |
| 05 Mar | 0427  | 0430  | 0520  | C1.8           |               |                     |          |



## *Flare List*

| Date   | Time  |       |      | X-ray<br>Class | Optical       |                     | Rgn<br># |
|--------|-------|-------|------|----------------|---------------|---------------------|----------|
|        | Begin | Max   | End  |                | Imp/<br>Brtns | Location<br>Lat CMD |          |
| 05 Mar | 0958  | 1001  | 1004 | C1.1           |               |                     |          |
| 05 Mar | 1257  | 1301  | 1305 | C2.0           |               |                     | 1990     |
| 05 Mar | 1703  | 1704  | 1706 |                | SF            | N13E22              | 1996     |
| 05 Mar | 1732  | 1740  | 1750 | C1.6           | SF            | N13E21              | 1996     |
| 05 Mar | 2245  | 2246  | 2254 |                | SF            | N13E19              | 1996     |
| 05 Mar | 2305  | 2309  | 2315 | C1.3           |               |                     | 1990     |
| 06 Mar | 0353  | 0357  | 0402 | C1.5           | SF            | N15W36              | 1993     |
| 06 Mar | B0923 | U0925 | 0930 |                | SF            | S07E64              | 1998     |
| 07 Mar | 1814  | 1857  | 1917 | C2.1           |               |                     | 1995     |
| 07 Mar | 2031  | 2036  | 2039 | B7.6           |               |                     |          |
| 07 Mar | 2356  | 0007  | 0020 | C3.4           |               |                     | 2002     |
| 08 Mar | 0214  | 0217  | 0229 |                | SF            | S19E79              |          |
| 08 Mar | 0235  | 0236  | 0241 |                | SF            | S19E78              |          |
| 08 Mar | 0257  | 0302  | 0327 |                | SF            | S19E78              |          |
| 08 Mar | 0333  | 0350  | 0402 |                | SF            | S19E78              |          |
| 08 Mar | 0429  | 0438  | 0456 | C1.0           | SF            | S19E77              | 2002     |
| 08 Mar | 0541  | 0544  | 0547 | C1.6           | 1F            | S27W56              | 1991     |
| 08 Mar | 1004  | 1006  | 1011 |                | SF            | S16E73              | 2002     |
| 08 Mar | 1055  | 1058  | 1106 | C1.0           |               |                     |          |
| 08 Mar | 1304  | 1305  | 1310 |                | SF            | N17W59              | 2001     |
| 08 Mar | 1754  | 1800  | 1815 | C2.0           | SF            | S20E67              | 2002     |
| 08 Mar | 2326  | 2341  | 2350 | M1.4           |               |                     | 2002     |
| 09 Mar | 0035  | 0046  | 0051 | C2.8           |               |                     | 2002     |
| 09 Mar | 0159  | 0217  | 0228 | C3.0           | SF            | S19E64              | 2002     |
| 09 Mar | 0441  | 0448  | 0452 | C6.5           | SF            | S19E62              | 2002     |
| 09 Mar | 0555  | 0556  | 0558 |                | SF            | S19E62              | 2002     |
| 09 Mar | 0611  | 0611  | 0618 |                | SF            | S16E63              | 2002     |
| 09 Mar | 0636  | 0704  | 0722 | C4.8           | SF            | S16E62              | 2002     |
| 09 Mar | 0715  | 0716  | 0727 |                | SF            | N17W71              | 1993     |
| 09 Mar | 0825  | 0840  | 0914 |                | SF            | S17E59              | 2002     |
| 09 Mar | B0951 | U1003 | 1005 |                | SF            | N13W30              | 1996     |
| 09 Mar | 1001  | 1020  | 1028 | C2.1           | SF            | N13W31              | 1996     |
| 09 Mar | 1039  | 1045  | 1049 | C1.9           |               |                     | 2002     |
| 09 Mar | 1124  | 1126  | 1128 |                | SF            | N13W31              | 1996     |
| 09 Mar | 1136  | 1138  | 1143 |                | SF            | N18W72              | 1993     |
| 09 Mar | 1236  | 1241  | 1244 | C1.3           | SF            | N12W32              | 1996     |
| 09 Mar | 1326  | 1332  | 1338 | C7.1           |               |                     | 2002     |
| 09 Mar | 1327  | 1357  | 1425 | M1.0           | SN            | S17E58              | 2002     |



## *Flare List*

| Date   | Time  |      |      | X-ray<br>Class | Optical       |                     | Rgn<br># |
|--------|-------|------|------|----------------|---------------|---------------------|----------|
|        | Begin | Max  | End  |                | Imp/<br>Brtns | Location<br>Lat CMD |          |
| 09 Mar | 1419  | 1442 | 1518 |                | 1F            | S20E67              | 2002     |
| 09 Mar | 1429  | 1429 | 1433 |                | SF            | S13E28              | 1998     |
| 09 Mar | 1433  | 1442 | 1447 | C7.7           |               |                     | 2002     |
| 09 Mar | 1434  | 1434 | 1438 |                | SF            | N18W78              | 2001     |
| 09 Mar | 1452  | 1453 | 1505 |                | SF            | N15W30              | 1996     |
| 09 Mar | 1525  | 1552 | 1613 |                | SF            | S21E58              | 2002     |
| 09 Mar | 1628  | 1631 | 1638 |                | SF            | S21E57              | 2002     |
| 09 Mar | 1640  | 1643 | 1652 | C2.1           |               |                     | 2002     |
| 09 Mar | 1815  | 1818 | 1827 | C1.6           | SF            | S21E56              | 2002     |
| 09 Mar | 1854  | 1859 | 1919 |                | SF            | N15W33              | 1996     |
| 09 Mar | 1917  | 1917 | 1924 |                | SF            | S21E56              | 2002     |
| 09 Mar | 1959  | 1959 | 2009 |                | SF            | S19E54              | 2002     |
| 09 Mar | 2013  | 2028 | 2035 | M1.0           | SF            | S19E54              | 2002     |
| 09 Mar | 2134  | 2142 | 2143 |                | SF            | S19E52              | 2002     |
| 09 Mar | 2145  | 2149 | 2152 |                | SF            | N15W33              | 1996     |
| 09 Mar | 2204  | 2210 | 2227 | C2.6           |               |                     | 2002     |
| 09 Mar | 2219  | 2244 | 2256 | C5.2           | SF            | S19E52              | 2002     |
| 09 Mar | 2306  | 2312 | 2327 |                | SF            | S19E52              | 2002     |
| 09 Mar | 2347  | 2351 | 2355 | C2.7           |               |                     | 2002     |





### *Region Summary*

| Date                      | Location |     | Sunspot Characteristics        |                   |               |               | Flares       |       |   |   |         |   |   |   |   |  |  |  |
|---------------------------|----------|-----|--------------------------------|-------------------|---------------|---------------|--------------|-------|---|---|---------|---|---|---|---|--|--|--|
|                           | Lat CMD  | Lon | Helio<br>10 <sup>6</sup> hemi. | Extent<br>(helio) | Spot<br>Class | Spot<br>Count | Mag<br>Class | X-ray |   |   | Optical |   |   |   |   |  |  |  |
|                           |          |     |                                |                   |               |               |              | C     | M | X | S       | 1 | 2 | 3 | 4 |  |  |  |
| <b><i>Region 1986</i></b> |          |     |                                |                   |               |               |              |       |   |   |         |   |   |   |   |  |  |  |
| 20 Feb                    | N13E58   | 179 | 10                             | 6                 | Bxo           | 2             | B            |       |   |   |         |   |   |   |   |  |  |  |
| 21 Feb                    | N14E48   | 177 | 30                             | 12                | Cao           | 4             | B            |       |   |   |         |   |   |   |   |  |  |  |
| 22 Feb                    | N13E34   | 178 | 30                             | 14                | Cri           | 8             | B            |       |   |   |         |   |   |   |   |  |  |  |
| 23 Feb                    | N13E21   | 177 | 40                             | 12                | Cao           | 13            | B            |       |   |   |         | 1 |   |   |   |  |  |  |
| 24 Feb                    | N13E07   | 176 | 30                             | 13                | Cro           | 19            | B            |       |   |   |         |   |   |   |   |  |  |  |
| 25 Feb                    | N14W05   | 176 | 40                             | 13                | Cro           | 10            | B            | 2     |   |   |         | 2 | 1 |   |   |  |  |  |
| 26 Feb                    | N13W18   | 176 | 10                             | 13                | Bxo           | 13            | B            |       |   |   |         | 1 |   |   |   |  |  |  |
| 27 Feb                    | N13W30   | 176 | 30                             | 5                 | Cro           | 11            | B            | 1     |   |   |         | 1 |   |   |   |  |  |  |
| 28 Feb                    | N14W41   | 174 | 10                             | 5                 | Bxo           | 8             | B            |       |   |   |         |   |   |   |   |  |  |  |
| 01 Mar                    | N14W55   | 174 | plage                          |                   |               |               |              |       |   |   |         |   |   |   |   |  |  |  |
| 02 Mar                    | N14W69   | 175 | plage                          |                   |               |               |              | 1     | 1 |   |         | 1 |   |   |   |  |  |  |
| 03 Mar                    | N14W83   | 176 | plage                          |                   |               |               |              | 2     |   |   |         |   |   |   |   |  |  |  |
|                           |          |     |                                |                   |               |               |              | 6     | 1 | 0 | 6       | 1 | 0 | 0 | 0 |  |  |  |

Crossed West Limb.  
Absolute heliographic longitude: 176

|                           |        |     |     |    |     |    |    |   |   |   |   |   |   |   |   |   |  |  |
|---------------------------|--------|-----|-----|----|-----|----|----|---|---|---|---|---|---|---|---|---|--|--|
| <b><i>Region 1987</i></b> |        |     |     |    |     |    |    |   |   |   |   |   |   |   |   |   |  |  |
| 21 Feb                    | S03E71 | 154 | 30  | 1  | Hax | 1  | A  |   |   |   |   |   |   |   |   |   |  |  |
| 22 Feb                    | S02E61 | 151 | 150 | 7  | Dao | 8  | BG |   |   |   |   | 2 |   |   |   |   |  |  |
| 23 Feb                    | S02E48 | 150 | 240 | 9  | Dao | 13 | BG | 1 |   |   |   |   |   |   |   |   |  |  |
| 24 Feb                    | S02E36 | 147 | 230 | 10 | Dai | 15 | BG |   |   |   |   |   |   |   |   |   |  |  |
| 25 Feb                    | S01E23 | 148 | 170 | 9  | Dai | 9  | BG |   |   |   |   |   |   |   |   |   |  |  |
| 26 Feb                    | S01E09 | 148 | 190 | 10 | Dai | 14 | B  |   |   |   |   |   |   |   |   |   |  |  |
| 27 Feb                    | S03W04 | 150 | 180 | 10 | Dsi | 16 | BG |   |   |   |   |   |   |   |   |   |  |  |
| 28 Feb                    | S02W17 | 148 | 150 | 11 | Esi | 29 | B  | 1 |   |   |   |   |   |   |   |   |  |  |
| 01 Mar                    | S02W29 | 148 | 160 | 11 | Esi | 16 | B  | 1 |   |   |   | 1 |   |   |   |   |  |  |
| 02 Mar                    | S02W44 | 150 | 110 | 7  | Esi | 9  | B  | 1 |   |   |   | 1 |   |   |   |   |  |  |
| 03 Mar                    | S02W56 | 150 | 130 | 10 | Cso | 10 | B  |   |   |   |   |   |   |   |   |   |  |  |
| 04 Mar                    | S01W76 | 153 | 40  | 1  | Hsx | 1  | A  |   |   |   |   |   |   |   |   |   |  |  |
| 05 Mar                    | S02W87 | 152 | 60  | 1  | Hsx | 1  | A  |   |   |   |   |   |   |   |   |   |  |  |
|                           |        |     |     |    |     |    |    | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |  |  |

Crossed West Limb.  
Absolute heliographic longitude: 150



### *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 |   |  |
| <b>Region 1988</b> |          |           |                            |                |            |            |           |       |   |   |         |   |   |   |   |   |  |
| 22 Feb             | S10E35   | 177       | 10                         | 3              | Bxo        | 3          | B         |       |   |   |         |   |   |   |   |   |  |
| 23 Feb             | S10E21   | 177       | plage                      |                |            |            |           |       |   |   |         |   |   |   |   |   |  |
| 24 Feb             | S10E07   | 178       | plage                      |                |            |            |           |       |   |   |         |   |   |   |   |   |  |
| 25 Feb             | S10W07   | 179       | plage                      |                |            |            |           |       |   |   |         |   |   |   |   |   |  |
| 26 Feb             | S10W21   | 180       | plage                      |                |            |            |           |       |   |   |         |   |   |   |   |   |  |
| 27 Feb             | S10W37   | 183       | 60                         | 5              | Dao        | 10         | B         |       |   |   | 1       |   |   |   |   |   |  |
| 28 Feb             | S10W51   | 182       | 170                        | 7              | Dao        | 13         | B         |       |   |   |         |   |   |   |   |   |  |
| 01 Mar             | S10W64   | 183       | 120                        | 10             | Dao        | 7          | B         |       |   |   |         |   |   |   |   |   |  |
| 02 Mar             | S11W79   | 185       | 80                         | 12             | Dao        | 4          | B         |       |   |   |         |   |   |   |   |   |  |
| 03 Mar             | S08W87   | 185       | 10                         | 1              | Axx        | 1          | A         |       |   |   |         |   |   |   |   |   |  |
|                    |          |           |                            |                |            |            |           | 0     | 0 | 0 | 1       | 0 | 0 | 0 | 0 | 0 |  |

Crossed West Limb.

Absolute heliographic longitude: 178

|                    |        |     |       |    |     |   |   |   |   |   |   |   |   |   |   |   |  |
|--------------------|--------|-----|-------|----|-----|---|---|---|---|---|---|---|---|---|---|---|--|
| <b>Region 1989</b> |        |     |       |    |     |   |   |   |   |   |   |   |   |   |   |   |  |
| 23 Feb             | N09E62 | 136 | 30    | 2  | Hax | 1 | A | 1 |   |   |   |   |   |   |   |   |  |
| 24 Feb             | N08E47 | 137 | 90    | 11 | Cao | 7 | B |   |   |   |   |   |   |   |   |   |  |
| 25 Feb             | N08E38 | 134 | 60    | 3  | Cao | 7 | B | 1 |   |   |   | 2 |   |   |   |   |  |
| 26 Feb             | N09E26 | 132 | 30    | 1  | Dao | 2 | B |   |   |   |   |   |   |   |   |   |  |
| 27 Feb             | N09E14 | 132 | 20    | 3  | Hrx | 3 | A |   |   |   |   |   |   |   |   |   |  |
| 28 Feb             | N08E01 | 130 | 10    | 7  | Bxo | 5 | B |   |   |   |   |   |   |   |   |   |  |
| 01 Mar             | N07W13 | 132 | 10    | 6  | Bxo | 7 | B |   |   |   |   |   |   |   |   |   |  |
| 02 Mar             | N08W26 | 132 | 10    | 4  | Bxo | 3 | B |   |   |   |   | 3 |   |   |   |   |  |
| 03 Mar             | N08W42 | 132 | 60    | 3  | Cao | 9 | B | 4 | 1 |   |   | 4 | 1 |   |   |   |  |
| 04 Mar             | N07W56 | 135 | 70    | 6  | Cso | 8 | B |   |   |   |   |   |   |   |   |   |  |
| 05 Mar             | N08W70 | 135 | 30    | 8  | Bxo | 3 | B |   |   |   |   |   |   |   |   |   |  |
| 06 Mar             | N08W84 | 137 | plage |    |     |   |   |   |   |   |   |   |   |   |   |   |  |
|                    |        |     |       |    |     |   |   | 6 | 1 | 0 | 9 | 1 | 0 | 0 | 0 | 0 |  |

Crossed West Limb.

Absolute heliographic longitude: 130



### *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 |  |  |  |  |   |  |  |  |
| <b>Region 1990</b> |          |           |                            |                |            |            |           |        |   |   |         |   |   |   |   |  |  |  |  |   |  |  |  |
| 24 Feb             | S15E77   | 108       | 250                        | 3              | Hkx        | 2          | A         | 2      | 2 |   |         |   |   |   |   |  |  |  |  |   |  |  |  |
| 25 Feb             | S12E64   | 107       | 180                        | 3              | Hkx        | 2          | A         |        |   |   | 1       | 2 |   |   |   |  |  |  |  | 1 |  |  |  |
| 26 Feb             | S12E50   | 108       | 210                        | 3              | Dkc        | 3          | BD        |        |   |   |         |   |   |   |   |  |  |  |  |   |  |  |  |
| 27 Feb             | S14E38   | 108       | 250                        | 6              | Dkc        | 7          | BD        | 1      |   |   |         | 1 |   |   |   |  |  |  |  |   |  |  |  |
| 28 Feb             | S14E24   | 107       | 250                        | 3              | Dkc        | 4          | BD        |        |   |   |         | 1 |   |   |   |  |  |  |  |   |  |  |  |
| 01 Mar             | S14E11   | 108       | 210                        | 6              | Dac        | 9          | BD        |        |   |   |         | 1 |   |   |   |  |  |  |  |   |  |  |  |
| 02 Mar             | S13W04   | 110       | 190                        | 6              | Dac        | 5          | BD        | 1      |   |   |         | 1 |   |   |   |  |  |  |  |   |  |  |  |
| 03 Mar             | S12W17   | 110       | 210                        | 7              | Dac        | 7          | B         |        |   |   |         |   |   |   |   |  |  |  |  |   |  |  |  |
| 04 Mar             | S12W28   | 107       | 190                        | 5              | Cso        | 6          | B         |        |   |   |         |   |   |   |   |  |  |  |  |   |  |  |  |
| 05 Mar             | S12W41   | 106       | 190                        | 3              | Dso        | 4          | B         | 2      |   |   |         |   |   |   |   |  |  |  |  |   |  |  |  |
| 06 Mar             | S12W55   | 107       | 180                        | 6              | Dso        | 11         | B         |        |   |   |         |   |   |   |   |  |  |  |  |   |  |  |  |
| 07 Mar             | S13W68   | 107       | 200                        | 6              | Cso        | 9          | B         |        |   |   |         |   |   |   |   |  |  |  |  |   |  |  |  |
| 08 Mar             | S12W82   | 109       | 110                        | 2              | Hsx        | 2          | A         |        |   |   |         |   |   |   |   |  |  |  |  |   |  |  |  |
| 09 Mar             | S12W94   | 108       | 60                         | 3              | Hsx        | 1          | A         |        |   |   |         |   |   |   |   |  |  |  |  |   |  |  |  |
|                    |          |           |                            |                |            |            |           | 6      | 2 | 1 | 6       | 0 | 1 | 0 | 0 |  |  |  |  |   |  |  |  |

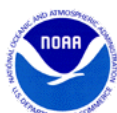
Still on Disk.

Absolute heliographic longitude: 110

|                    |        |    |       |    |     |    |     |    |   |   |    |    |   |   |   |  |  |  |  |  |  |  |  |
|--------------------|--------|----|-------|----|-----|----|-----|----|---|---|----|----|---|---|---|--|--|--|--|--|--|--|--|
| <b>Region 1991</b> |        |    |       |    |     |    |     |    |   |   |    |    |   |   |   |  |  |  |  |  |  |  |  |
| 26 Feb             | S25E65 | 93 | 120   | 7  | Dso | 4  | B   |    |   |   |    | 4  |   |   |   |  |  |  |  |  |  |  |  |
| 27 Feb             | S25E52 | 94 | 280   | 9  | Dko | 11 | B   | 7  |   |   |    | 10 |   |   |   |  |  |  |  |  |  |  |  |
| 28 Feb             | S25E38 | 93 | 320   | 11 | Eko | 18 | BG  |    | 1 |   |    | 2  |   |   |   |  |  |  |  |  |  |  |  |
| 01 Mar             | S25E26 | 93 | 290   | 11 | Eko | 10 | BG  | 1  |   |   |    |    |   |   |   |  |  |  |  |  |  |  |  |
| 02 Mar             | S24E13 | 93 | 370   | 12 | Eki | 13 | BG  | 1  |   |   |    | 5  |   |   |   |  |  |  |  |  |  |  |  |
| 03 Mar             | S23W00 | 93 | 330   | 12 | Eki | 33 | BG  | 1  |   |   |    |    |   |   |   |  |  |  |  |  |  |  |  |
| 04 Mar             | S24W13 | 92 | 240   | 11 | Eac | 25 | BGD | 4  |   |   |    | 1  | 1 |   |   |  |  |  |  |  |  |  |  |
| 05 Mar             | S24W25 | 90 | 240   | 13 | Eac | 24 | B   | 2  | 1 |   |    | 2  |   |   |   |  |  |  |  |  |  |  |  |
| 06 Mar             | S25W38 | 90 | 110   | 13 | Eso | 19 | B   |    |   |   |    |    |   |   |   |  |  |  |  |  |  |  |  |
| 07 Mar             | S24W51 | 90 | 90    | 13 | Eao | 7  | B   |    |   |   |    |    |   |   |   |  |  |  |  |  |  |  |  |
| 08 Mar             | S26W61 | 88 | 40    | 2  | Cao | 5  | B   | 1  |   |   |    |    | 1 |   |   |  |  |  |  |  |  |  |  |
| 09 Mar             | S26W75 | 89 | plage |    |     |    |     |    |   |   |    |    |   |   |   |  |  |  |  |  |  |  |  |
|                    |        |    |       |    |     |    |     | 17 | 2 | 0 | 24 | 2  | 0 | 0 | 0 |  |  |  |  |  |  |  |  |

Still on Disk.

Absolute heliographic longitude: 93



### *Region Summary - continued*

| Date               | Location |     | Sunspot Characteristics         |      |                   |               | Flares        |              |       |   |   |         |   |   |   |   |   |   |   |
|--------------------|----------|-----|---------------------------------|------|-------------------|---------------|---------------|--------------|-------|---|---|---------|---|---|---|---|---|---|---|
|                    | Lat CMD  | Lon | Helio<br>10 <sup>-6</sup> hemi. | Area | Extent<br>(helio) | Spot<br>Class | Spot<br>Count | Mag<br>Class | X-ray |   |   | Optical |   |   |   |   |   |   |   |
|                    |          |     |                                 |      |                   |               |               |              | C     | M | X | S       | 1 | 2 | 3 | 4 |   |   |   |
| <b>Region 1992</b> |          |     |                                 |      |                   |               |               |              |       |   |   |         |   |   |   |   |   |   |   |
| 26 Feb             | S19E20   | 137 | 10                              | 2    | Cro               | 3             | B             |              |       |   |   |         |   |   |   |   |   |   |   |
| 27 Feb             | S20E07   | 139 | 30                              | 4    | Dao               | 4             | B             |              |       |   |   |         |   |   |   |   |   |   |   |
| 28 Feb             | S20W06   | 137 | 30                              | 5    | Cao               | 7             | B             |              |       |   |   | 1       |   |   |   |   |   |   |   |
| 01 Mar             | S19W19   | 138 | 20                              | 2    | Hsx               | 1             | A             |              |       |   |   | 1       |   |   |   |   |   |   |   |
| 02 Mar             | S19W35   | 141 | 10                              | 1    | Hrx               | 1             | A             |              |       |   |   |         |   |   |   |   |   |   |   |
| 03 Mar             | S19W49   | 141 | 10                              | 1    | Axx               | 1             | A             |              |       |   |   |         |   |   |   |   |   |   |   |
| 04 Mar             | S19W63   | 143 | plage                           |      |                   |               |               |              |       |   |   |         |   |   |   |   |   |   |   |
| 05 Mar             | S19W77   | 144 | plage                           |      |                   |               |               |              |       |   |   |         |   |   |   |   |   |   |   |
|                    |          |     |                                 |      |                   |               |               |              |       |   |   | 0       | 0 | 0 | 2 | 0 | 0 | 0 | 0 |

Died on Disk.

Absolute heliographic longitude: 137

|                    |        |     |       |   |     |    |   |   |  |  |  |   |   |   |    |   |   |   |   |
|--------------------|--------|-----|-------|---|-----|----|---|---|--|--|--|---|---|---|----|---|---|---|---|
| <b>Region 1993</b> |        |     |       |   |     |    |   |   |  |  |  |   |   |   |    |   |   |   |   |
| 26 Feb             | N16E57 | 101 | 10    | 5 | Bxo | 4  | B |   |  |  |  |   |   |   |    |   |   |   |   |
| 27 Feb             | N16E45 | 101 | 30    | 6 | Cro | 7  | B |   |  |  |  |   |   |   |    |   |   |   |   |
| 28 Feb             | N16E31 | 100 | 30    | 8 | Dri | 17 | B | 2 |  |  |  | 4 |   |   |    |   |   |   |   |
| 01 Mar             | N16E16 | 103 | 110   | 8 | Dai | 13 | B | 1 |  |  |  | 2 |   |   |    |   |   |   |   |
| 02 Mar             | N16E04 | 102 | 80    | 7 | Dai | 15 | B |   |  |  |  | 2 |   |   |    |   |   |   |   |
| 03 Mar             | N16W11 | 102 | 30    | 6 | Cao | 8  | B |   |  |  |  |   |   |   |    |   |   |   |   |
| 04 Mar             | N16W23 | 102 | 50    | 4 | Cso | 3  | B |   |  |  |  |   |   |   |    |   |   |   |   |
| 05 Mar             | N16W36 | 101 | 50    | 5 | Bxo | 10 | B |   |  |  |  |   |   |   |    |   |   |   |   |
| 06 Mar             | N16W51 | 102 | 10    | 6 | Bxo | 8  | B | 1 |  |  |  | 1 |   |   |    |   |   |   |   |
| 07 Mar             | N17W61 | 100 | 10    | 1 | Axx | 1  | A |   |  |  |  |   |   |   |    |   |   |   |   |
| 08 Mar             | N17W75 | 102 | plage |   |     |    |   |   |  |  |  |   |   |   |    |   |   |   |   |
| 09 Mar             | N17W89 | 103 | plage |   |     |    |   |   |  |  |  | 2 |   |   |    |   |   |   |   |
|                    |        |     |       |   |     |    |   |   |  |  |  | 4 | 0 | 0 | 11 | 0 | 0 | 0 | 0 |

Still on Disk.

Absolute heliographic longitude: 102

|                    |        |     |    |   |     |   |   |   |  |  |  |   |   |   |   |   |   |   |   |
|--------------------|--------|-----|----|---|-----|---|---|---|--|--|--|---|---|---|---|---|---|---|---|
| <b>Region 1994</b> |        |     |    |   |     |   |   |   |  |  |  |   |   |   |   |   |   |   |   |
| 28 Feb             | S06W15 | 146 | 20 | 7 | Dri | 9 | B |   |  |  |  |   |   |   |   |   |   |   |   |
| 01 Mar             | S07W31 | 150 | 30 | 3 | Hax | 3 | A |   |  |  |  | 1 |   |   |   |   |   |   |   |
| 02 Mar             | S07W47 | 153 | 30 | 2 | Hax | 2 | A |   |  |  |  |   |   |   |   |   |   |   |   |
| 03 Mar             | S06W61 | 153 | 40 | 2 | Hsx | 2 | A |   |  |  |  |   |   |   |   |   |   |   |   |
| 04 Mar             | S06W75 | 154 | 90 | 1 | Hsx | 2 | A | 1 |  |  |  |   |   |   |   |   |   |   |   |
| 05 Mar             | S06W87 | 152 | 30 | 1 | Hsx | 1 | A |   |  |  |  |   |   |   |   |   |   |   |   |
|                    |        |     |    |   |     |   |   |   |  |  |  | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

Crossed West Limb.

Absolute heliographic longitude: 146



### *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 |   |   |  |
| <b>Region 1995</b> |          |           |                            |                |            |            |           |       |   |   |         |   |   |   |   |   |   |  |
| 28 Feb             | S18E19   | 112       | 20                         | 5              | Cao        | 9          | B         |       |   |   |         |   |   |   |   |   |   |  |
| 01 Mar             | S17E06   | 113       | 60                         | 8              | Cao        | 8          | B         |       |   |   |         |   |   |   |   |   |   |  |
| 02 Mar             | S17W08   | 114       | 40                         | 6              | Dai        | 12         | B         |       |   |   |         |   |   |   |   |   |   |  |
| 03 Mar             | S17W22   | 114       | 50                         | 8              | Cao        | 13         | B         | 1     |   |   |         |   |   |   |   |   |   |  |
| 04 Mar             | S16W35   | 114       | 10                         | 6              | Bxo        | 9          | B         |       |   |   |         |   |   |   |   |   |   |  |
| 05 Mar             | S16W50   | 115       | 20                         | 5              | Bxo        | 5          | B         |       |   |   |         |   |   |   |   |   |   |  |
| 06 Mar             | S17W63   | 115       | 10                         | 3              | Bxo        | 4          | B         |       |   |   |         |   |   |   |   |   |   |  |
| 07 Mar             | S16W76   | 115       | 40                         | 2              | Dao        | 2          | B         | 1     |   |   |         |   |   |   |   |   |   |  |
| 08 Mar             | S16W89   | 116       | 30                         | 3              | Cao        | 2          | B         |       |   |   |         |   |   |   |   |   |   |  |
|                    |          |           |                            |                |            |            |           | 2     | 0 | 0 | 0       | 0 | 0 | 0 | 0 | 0 | 0 |  |

Crossed West Limb.  
 Absolute heliographic longitude: 113

|                    |        |    |     |    |     |    |    |   |   |   |    |   |   |   |   |   |   |  |
|--------------------|--------|----|-----|----|-----|----|----|---|---|---|----|---|---|---|---|---|---|--|
| <b>Region 1996</b> |        |    |     |    |     |    |    |   |   |   |    |   |   |   |   |   |   |  |
| 02 Mar             | N13E55 | 51 | 40  | 4  | Cao | 6  | B  |   |   |   |    |   |   |   |   |   |   |  |
| 03 Mar             | N14E42 | 51 | 60  | 8  | Cai | 7  | B  |   |   |   |    |   |   |   |   |   |   |  |
| 04 Mar             | N13E29 | 50 | 60  | 7  | Csi | 14 | B  |   |   |   |    |   |   |   |   |   |   |  |
| 05 Mar             | N14E15 | 52 | 120 | 6  | Cso | 20 | B  | 1 |   |   | 3  |   |   |   |   |   |   |  |
| 06 Mar             | N15E02 | 50 | 50  | 8  | Dso | 13 | B  |   |   |   |    |   |   |   |   |   |   |  |
| 07 Mar             | N15W10 | 49 | 110 | 8  | Dai | 21 | B  |   |   |   |    |   |   |   |   |   |   |  |
| 08 Mar             | N15W23 | 50 | 80  | 8  | Dai | 16 | B  |   |   |   |    |   |   |   |   |   |   |  |
| 09 Mar             | N14W37 | 51 | 80  | 11 | Eai | 19 | BG | 2 |   |   | 7  |   |   |   |   |   |   |  |
|                    |        |    |     |    |     |    |    | 3 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 |  |

Still on Disk.  
 Absolute heliographic longitude: 50

|                    |        |     |    |   |     |   |   |   |   |   |   |   |   |   |   |   |   |  |
|--------------------|--------|-----|----|---|-----|---|---|---|---|---|---|---|---|---|---|---|---|--|
| <b>Region 1997</b> |        |     |    |   |     |   |   |   |   |   |   |   |   |   |   |   |   |  |
| 04 Mar             | S13W75 | 154 | 10 | 5 | Bxo | 2 | B |   |   |   |   |   |   |   |   |   |   |  |
| 05 Mar             | S13W89 | 154 | 80 | 4 | Bxo | 5 | B |   |   |   |   |   |   |   |   |   |   |  |
|                    |        |     |    |   |     |   |   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |

Crossed West Limb.  
 Absolute heliographic longitude: 154

|                    |        |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |  |  |
|--------------------|--------|---|-----|---|-----|---|---|---|---|---|---|---|---|---|---|---|--|--|
| <b>Region 1998</b> |        |   |     |   |     |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 06 Mar             | S10E51 | 1 | 100 | 4 | Cao | 3 | B |   |   |   | 1 |   |   |   |   |   |  |  |
|                    |        |   |     |   |     |   |   | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |  |  |

Still on Disk.  
 Absolute heliographic longitude: 0



### *Region Summary - continued*

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

#### *Region 1999*

|        |        |    |    |   |     |    |   |  |  |  |  |  |  |  |  |  |  |
|--------|--------|----|----|---|-----|----|---|--|--|--|--|--|--|--|--|--|--|
| 05 Mar | S17E22 | 45 | 40 | 6 | Dro | 6  | B |  |  |  |  |  |  |  |  |  |  |
| 06 Mar | S18E07 | 45 | 40 | 5 | Dso | 6  | B |  |  |  |  |  |  |  |  |  |  |
| 07 Mar | S16W06 | 45 | 60 | 6 | Dso | 12 | B |  |  |  |  |  |  |  |  |  |  |
| 08 Mar | S16W19 | 46 | 10 | 4 | Bxo | 2  | B |  |  |  |  |  |  |  |  |  |  |
| 09 Mar | S16W29 | 43 | 0  | 1 | Axx | 1  | A |  |  |  |  |  |  |  |  |  |  |

0 0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 45

#### *Region 2000*

|        |        |    |    |   |     |   |   |  |  |  |  |  |  |  |  |  |  |
|--------|--------|----|----|---|-----|---|---|--|--|--|--|--|--|--|--|--|--|
| 06 Mar | S10E41 | 11 | 20 | 3 | Cso | 2 | B |  |  |  |  |  |  |  |  |  |  |
| 07 Mar | S11E27 | 12 | 70 | 4 | Cso | 8 | B |  |  |  |  |  |  |  |  |  |  |
| 08 Mar | S11E13 | 13 | 40 | 6 | Cao | 7 | B |  |  |  |  |  |  |  |  |  |  |
| 09 Mar | S11W00 | 14 | 10 | 6 | Bxo | 7 | B |  |  |  |  |  |  |  |  |  |  |

0 0 0 0 0 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 14

#### *Region 2001*

|        |        |    |    |   |     |   |   |  |  |  |  |   |  |  |  |  |  |
|--------|--------|----|----|---|-----|---|---|--|--|--|--|---|--|--|--|--|--|
| 06 Mar | N19W37 | 89 | 10 | 3 | Bxo | 3 | B |  |  |  |  |   |  |  |  |  |  |
| 07 Mar | N18W51 | 90 | 60 | 5 | Bxo | 5 | B |  |  |  |  |   |  |  |  |  |  |
| 08 Mar | N19W65 | 92 | 50 | 7 | Cao | 4 | B |  |  |  |  | 1 |  |  |  |  |  |
| 09 Mar | N19W78 | 92 | 40 | 7 | Dso | 8 | B |  |  |  |  | 1 |  |  |  |  |  |

0 0 0 2 0 0 0 0

Still on Disk.

Absolute heliographic longitude: 89

#### *Region 2002*

|        |        |     |    |   |     |    |     |    |   |  |    |   |  |  |  |  |  |
|--------|--------|-----|----|---|-----|----|-----|----|---|--|----|---|--|--|--|--|--|
| 08 Mar | S19E64 | 323 | 50 | 5 | Cao | 5  | B   | 2  | 1 |  | 3  |   |  |  |  |  |  |
| 09 Mar | S19E51 | 323 | 90 | 8 | Dac | 12 | BGD | 12 | 2 |  | 16 | 1 |  |  |  |  |  |

15 3 0 19 1 0 0 0

Still on Disk.

Absolute heliographic longitude: 323

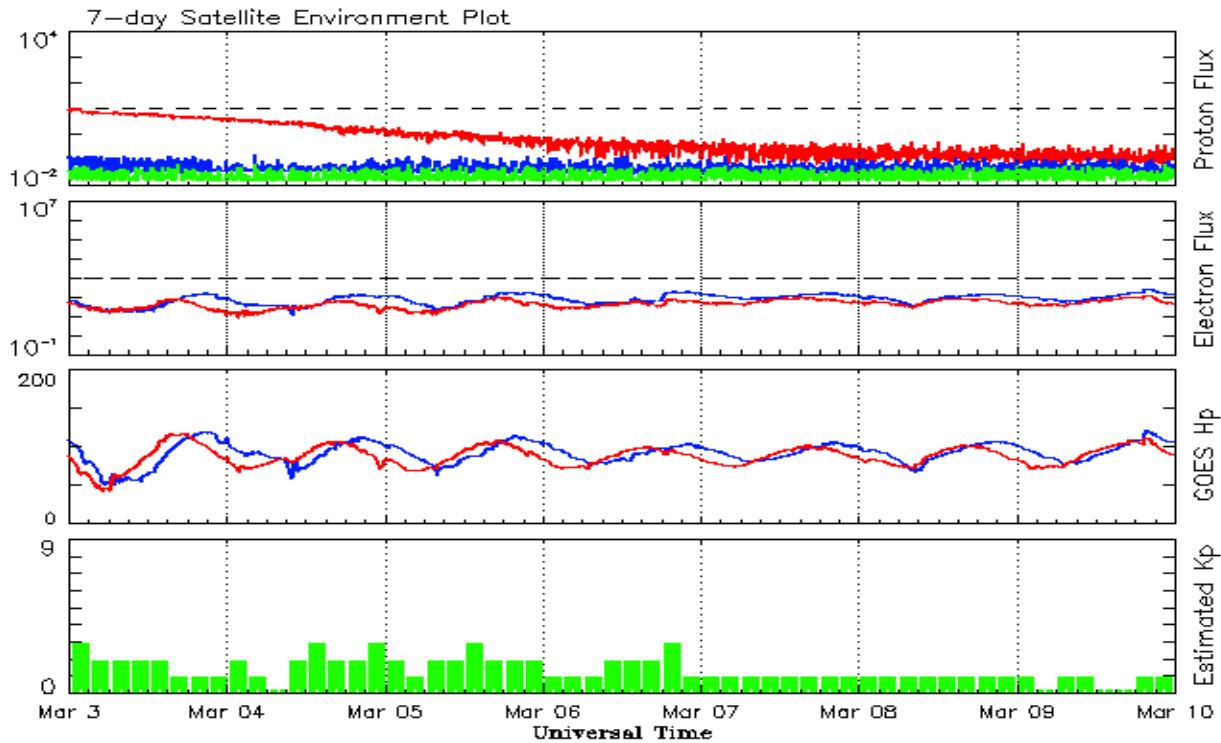


**Recent Solar Indices (preliminary)**  
**Observed monthly mean values**

| 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>2012</b> |                 |       |        |               |      |            |        |             |        |
| 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   | 87.3          | 59.7 | 120.9      | 120.1  | 6           | 7.3    |
| December    | 60.4            | 40.8  | 0.68   | 88.0          | 59.6 | 108.4      | 120.1  | 3           | 7.5    |
| <b>2013</b> |                 |       |        |               |      |            |        |             |        |
| January     | 99.8            | 62.9  | 0.63   | 87.1          | 58.7 | 127.1      | 118.9  | 4           | 7.5    |
| February    | 60.0            | 38.1  | 0.63   | 86.7          | 58.4 | 104.4      | 118.0  | 5           | 7.4    |
| March       | 81.0            | 57.9  | 0.71   | 85.7          | 57.6 | 111.2      | 117.1  | 9           | 7.4    |
| April       | 112.8           | 72.4  | 0.64   | 86.7          | 57.9 | 125.0      | 116.6  | 5           | 7.2    |
| May         | 125.5           | 78.7  | 0.63   | 90.5          | 59.9 | 131.3      | 118.1  | 10          | 7.0    |
| June        | 80.1            | 52.5  | 0.66   | 94.4          | 62.6 | 110.2      | 120.9  | 13          | 7.1    |
| July        | 86.1            | 57.0  | 0.66   | 97.9          | 65.5 | 115.6      | 123.9  | 9           | 7.3    |
| August      | 90.2            | 66.0  | 0.73   | 103.7         | 69.0 | 114.7      | 127.9  | 9           | 7.6    |
| September   | 55.0            | 37.0  | 0.67   |               |      | 102.7      |        | 5           |        |
| October     | 127.1           | 85.6  | 0.67   |               |      | 132.3      |        | 7           |        |
| November    | 125.7           | 77.6  | 0.62   |               |      | 148.4      |        | 5           |        |
| December    | 118.2           | 90.3  | 0.76   |               |      | 147.7      |        | 5           |        |
| <b>2014</b> |                 |       |        |               |      |            |        |             |        |
| January     | 125.9           | 82.0  | 0.65   |               |      | 158.6      |        | 6           |        |
| February    | 174.6           | 102.8 | 0.59   |               |      | 170.3      |        | 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 03 March 2014*

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.

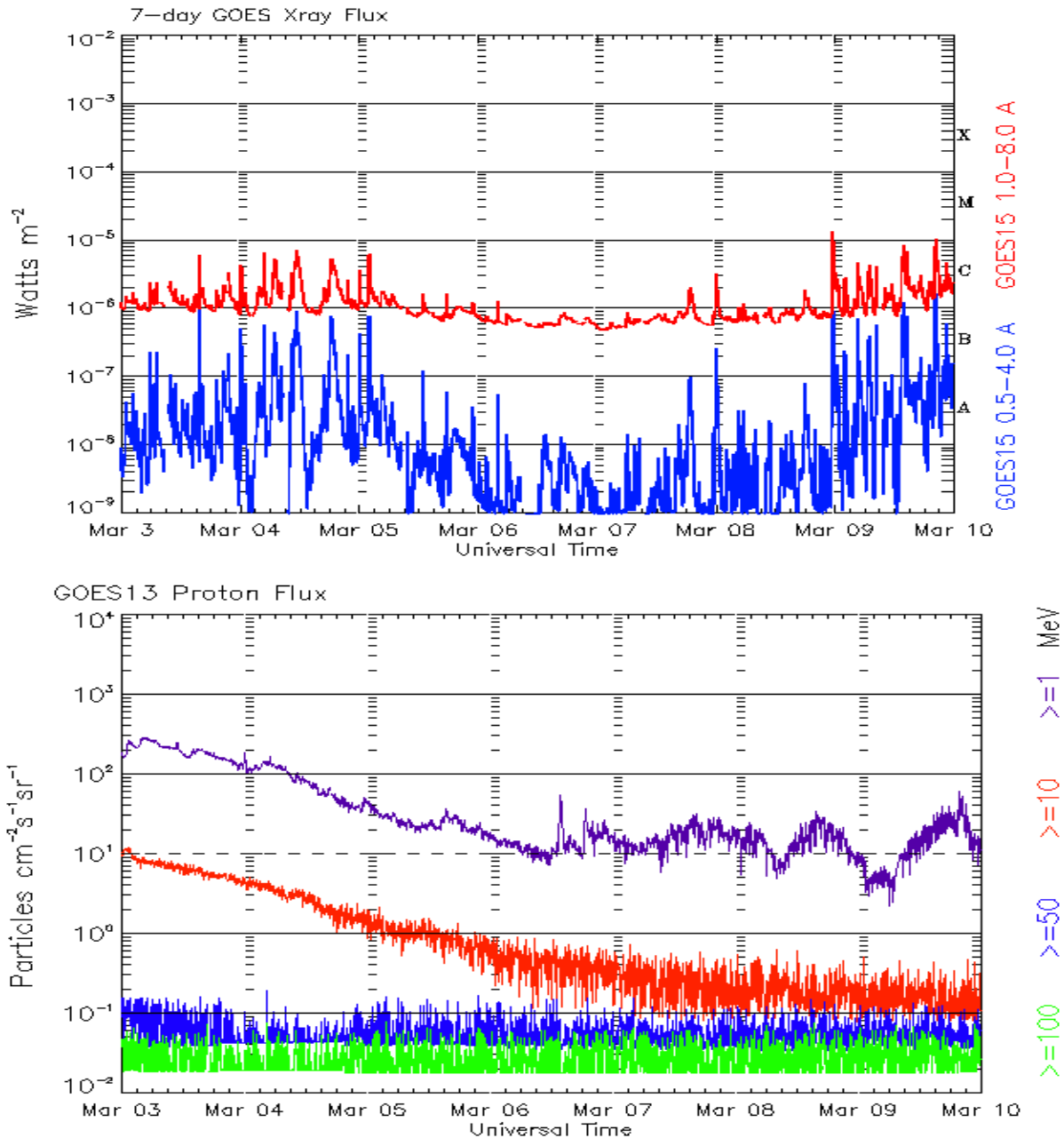
The Hp plot contains the five minute averaged Hp magnetic field component in nanoteslas (nT) as by the SWPC Primary GOES satellite. The Hp component is parallel to the spin axis of the satellite, which is nearly parallel to the Earth's rotation axis.

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 03 March 2014*

The x-ray plots contains five-minute averages x-ray flux (Watt/m<sup>2</sup>) 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 (pflu = protons/cm<sup>2</sup> -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 pflu at greater than 10 MeV.



## ***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)

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