

Solar activity was very low to low. Region 1236 (N17, L=167, class/area Ehi/350 on 15 June) produced a long-duration C7/Sf at 21/0325 UTC associated with an Earth-directed full-halo coronal mass ejection (CME). Activity was at very low levels during 22 - 26 June with occasional B-class flares from Region 1236 as it gradually decayed.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal to moderate levels during 20 - 22 June. Fluxes increased to normal to high levels during 23 - 24 June. A further increase to moderate to high levels occurred on 25 - 26 June.

Geomagnetic activity was at quiet to unsettled levels during 20 - 21 June. Activity increased to quiet to active levels during 22 - 23 June, with minor to major storm periods at high latitudes, due to a coronal hole high-speed stream (CH HSS). A CME passage (from the halo-CME observed on 21 June) also occurred early on 23 June with a sudden geomagnetic impulse observed at Boulder at 23/0258 UTC (22 nT). Activity decreased to quiet to unsettled levels during 24 - 26 June as CH HSS effects subsided.

Space Weather Outlook **29 June - 25 July 2011**

Solar activity is expected to be at very low levels until 03 July with the return of old Region 1234 (S16, L=246). Activity is then expected to be low followed by a further increase to low with a chance for isolated M-class activity as old Region 1236 rotates back on the visible disk.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at moderate to high levels during 29 June - 01 July. A decrease to normal to moderate levels is expected during 02 - 05 July followed by an increase to moderate to high levels during 06 - 07 July due to a CH HSS. Fluxes are expected to decrease to normal to moderate levels during 08 - 19 July. Fluxes are expected to increase to moderate to high levels during 20 - 23 July following the CH HSS.

Geomagnetic field activity is expected to be at quiet to unsettled levels during 29 - 30 June. A CH HSS is expected to boost activity to quiet to active levels during 01 - 03 July. Mostly quiet levels are forecast for 03 - 07 July as the CH HSS subsides. An increase to quiet to unsettled levels is expected during 08 - 09 July as another CH HSS disturbs the field. Quiet levels are expected from 10 - 16 July. Another recurrent CH HSS is expected to become geoeffective on 17 July bringing quiet to unsettled conditions. A further increase to active levels with a chance for isolated minor storm periods at high latitudes is expected during 19 - 21 July followed by quiet to unsettled levels on 22 July as the effects from the CH HSS subside. Quiet levels are expected from 23 - 25 July.



Daily Solar Data

| Date | Radio Flux 10.7cm | Sun spot No. | Sunspot Area (10 ⁻⁶ hemi.) | X-ray Background Flux | Flares | | | | | | | |
|---------|-------------------------|--------------------|---|-----------------------------|--------|---|---|---------|---|---|---|---|
| | | | | | X-ray | | | Optical | | | | |
| | | | | | C | M | X | S | 1 | 2 | 3 | 4 |
| 20 June | 96 | 43 | 250 | B2.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 June | 95 | 57 | 210 | B2.1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 22 June | 93 | 44 | 160 | B1.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23 June | 96 | 47 | 210 | B1.7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 24 June | 96 | 62 | 280 | B1.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 June | 94 | 47 | 105 | B1.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 26 June | 90 | 26 | 40 | B1.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Daily Particle Data

| Date | Proton Fluence (protons/cm ² -day -sr) | | | Electron Fluence (electrons/cm ² -day -sr) | | |
|---------|--|---------|----------|--|---------|---------|
| | >1 MeV | >10 MeV | >100 MeV | >0.6 MeV | >2MeV | >4 MeV |
| | 20 June | 1.2e+06 | 1.3e+04 | 2.9e+03 | | 3.1e+06 |
| 21 June | 3.7e+05 | 1.3e+04 | 3.1e+03 | | 4.0e+06 | |
| 22 June | 2.9e+05 | 1.3e+04 | 3.0e+03 | | 8.8e+06 | |
| 23 June | 1.3e+06 | 1.1e+04 | 2.5e+03 | | 3.0e+07 | |
| 24 June | 4.2e+05 | 1.1e+04 | 2.6e+03 | | 1.5e+08 | |
| 25 June | 4.4e+05 | 1.2e+04 | 3.0e+03 | | 3.8e+08 | |
| 26 June | 1.9e+05 | 1.2e+04 | 3.1e+03 | | 2.5e+08 | |

Daily Geomagnetic Data

| Date | Middle Latitude Fredericksburg | | High Latitude College | | Estimated Planetary | |
|---------|-----------------------------------|-----------------|--------------------------|-----------------|------------------------|-----------------|
| | A | K-indices | A | K-indices | A | K-indices |
| | 20 June | 7 | 1-2-3-1-2-2-2-2 | 11 | 2-3-3-3-4-1-1-1 | 7 |
| 21 June | 8 | 3-2-2-1-2-2-2-2 | 11 | 3-3-2-1-4-3-1-1 | 10 | 2-3-2-1-3-3-2-2 |
| 22 June | 7 | 2-2-1-1-2-2-3-2 | 18 | 1-2-2-5-4-4-3-2 | 12 | 3-2-1-2-2-3-4-3 |
| 23 June | 16 | 4-3-2-3-3-2-3-4 | 33 | 4-4-3-5-6-5-3-2 | 18 | 4-4-2-3-3-3-3-3 |
| 24 June | 10 | 3-2-2-1-2-2-3-3 | 19 | 3-3-3-5-4-3-2-2 | 10 | 3-2-2-2-2-2-3-3 |
| 25 June | 5 | 2-2-1-1-1-1-2-2 | 9 | 2-2-2-4-2-2-2-1 | 7 | 2-2-2-1-1-2-2-2 |
| 26 June | 6 | 2-3-1-1-2-1-1-1 | 6 | 3-3-1-1-2-1-0-1 | 7 | 3-3-1-1-1-1-1-1 |

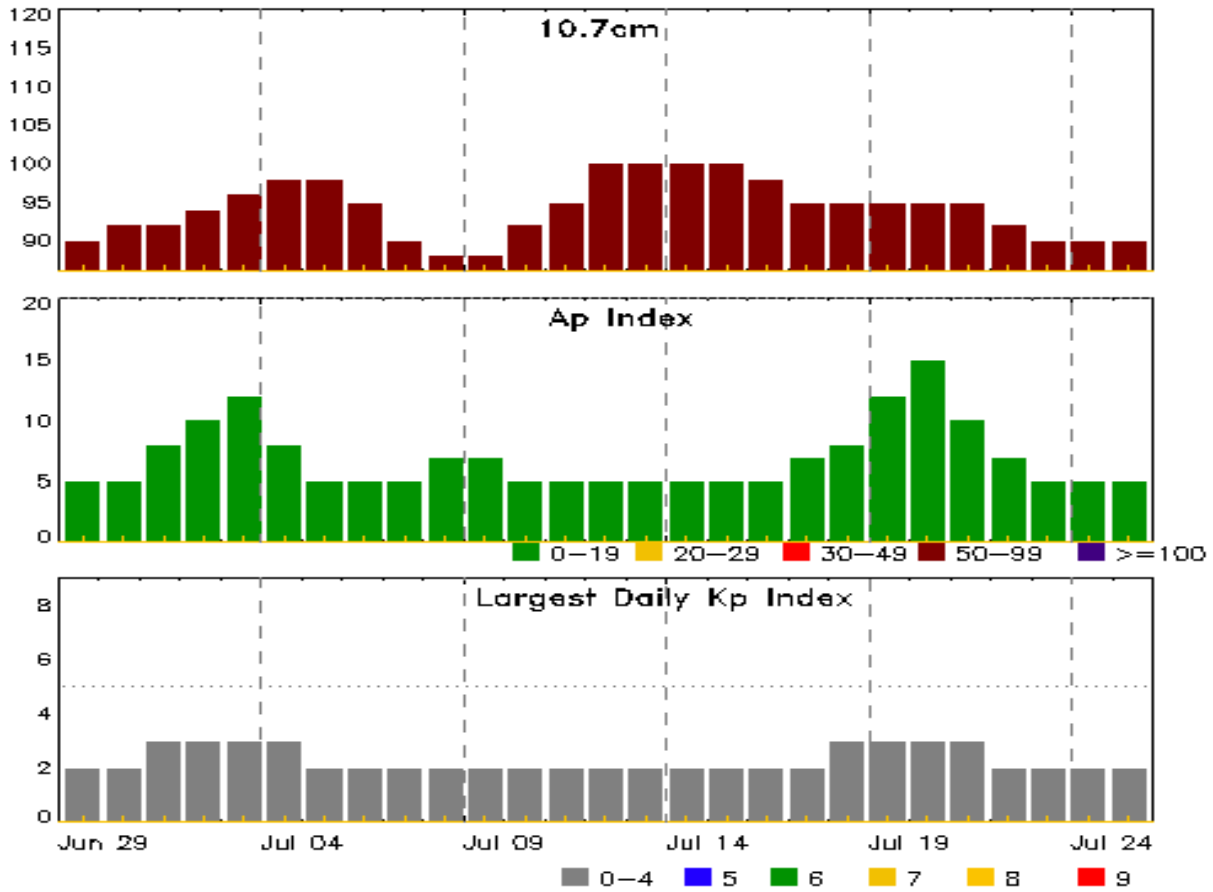


Alerts and Warnings Issued

| Date & Time of Issue UTC | Type of Alert or Warning | Date & Time of Event UTC |
|---|--|---|
| 21 Jun 2112 | WATCH: Geomagnetic A \geq 20 | 24/ |
| 23 Jun 0203 | WARNING: Geomagnetic K = 4 | 23/0202 - 1600 |
| 23 Jun 0208 | ALERT: Geomagnetic K = 4 | 23/0208 |
| 23 Jun 0241 | WARNING: Geomagnetic Sudden Impulse expected | 23/0245 - 0330 |
| 23 Jun 0308 | SUMMARY: Geomagnetic Sudden Impulse | 23/0258 |
| 23 Jun 1542 | ALERT: Electron 2MeV Integral Flux \geq 1000pfu | 23/1455 |
| 23 Jun 1556 | EXTENDED WARNING: Geomagnetic K = 4 | 23/0202 - 24/0600 |
| 24 Jun 1234 | CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu | 23/1455 |
| 24 Jun 1400 | CANCELLATION: Geomagnetic A \geq 20 | |
| 25 Jun 0506 | CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu | 23/1455 |
| 26 Jun 0740 | CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu | 23/1455 |



Twenty-seven Day Outlook



| Date | Radio Flux 10.7cm | Planetary A Index | Largest Kp Index | Date | Radio Flux 10.7cm | Planetary A Index | Largest Kp Index |
|--------|----------------------|----------------------|---------------------|--------|----------------------|----------------------|---------------------|
| 29 Jun | 90 | 5 | 2 | 13 Jul | 100 | 5 | 2 |
| 30 | 92 | 5 | 2 | 14 | 100 | 5 | 2 |
| 01 Jul | 92 | 8 | 3 | 15 | 100 | 5 | 2 |
| 02 | 94 | 10 | 3 | 16 | 98 | 5 | 2 |
| 03 | 96 | 12 | 3 | 17 | 95 | 7 | 2 |
| 04 | 98 | 8 | 3 | 18 | 95 | 8 | 3 |
| 05 | 98 | 5 | 2 | 19 | 95 | 12 | 3 |
| 06 | 95 | 5 | 2 | 20 | 95 | 15 | 3 |
| 07 | 90 | 5 | 2 | 21 | 95 | 10 | 3 |
| 08 | 88 | 7 | 2 | 22 | 92 | 7 | 2 |
| 09 | 88 | 7 | 2 | 23 | 90 | 5 | 2 |
| 10 | 92 | 5 | 2 | 24 | 90 | 5 | 2 |
| 11 | 95 | 5 | 2 | 25 | 90 | 5 | 2 |
| 12 | 100 | 5 | 2 | | | | |



Energetic Events

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

No Events Observed

Flare List

| Date | Time | | | X-ray Class | Optical | | | Rgn # |
|--------|-------|------|------|-------------|------------|------------------|--|-------|
| | Begin | Max | End | | Imp/ Brtns | Location Lat CMD | | |
| 20 Jun | 0124 | 0127 | 0131 | B3.5 | | | | 1234 |
| 20 Jun | 0603 | 0607 | 0610 | B4.0 | | | | 1234 |
| 21 Jun | 0122 | 0325 | 0427 | C7.7 | | | | 1236 |
| 21 Jun | 0245 | 0245 | 0258 | | SF | N16W08 | | 1236 |
| 21 Jun | 0259 | 0345 | 0430 | | SF | N16W08 | | 1236 |
| 22 Jun | 0453 | 0458 | 0504 | B2.8 | | | | 1239 |
| 23 Jun | 0210 | 0213 | 0217 | B2.8 | | | | 1240 |
| 23 Jun | 1236 | 1240 | 1243 | B5.7 | SF | N15W47 | | 1236 |
| 23 Jun | 1401 | 1407 | 1416 | B4.3 | | | | 1236 |
| 23 Jun | 2229 | 2233 | 2237 | B3.4 | | | | 1236 |
| 24 Jun | 1542 | 1549 | 1553 | B4.4 | | | | 1236 |
| 24 Jun | 2042 | 2045 | 2047 | B3.1 | | | | 1236 |
| 25 Jun | 0007 | 0014 | 0019 | B3.0 | | | | |
| 25 Jun | 1015 | 1020 | 1025 | B4.3 | | | | 1236 |
| 26 Jun | 2001 | 2009 | 2013 | B3.6 | | | | 1236 |



Region Summary

| Date | Location | | Sunspot Characteristics | | | | | Flares | | | | | | | | | | | | | | | |
|--------------------|----------|-----------|----------------------------|----------------|------------|------------|-----------|--------|---|---|---------|---|---|---|---|--|--|--|--|--|--|--|--|
| | Lat CMD | Helio Lon | Area 10 ⁶ hemi. | Extent (helio) | Spot Class | Spot Count | Mag Class | X-ray | | | Optical | | | | | | | | | | | | |
| | | | | | | | | C | M | X | S | 1 | 2 | 3 | 4 | | | | | | | | |
| Region 1234 | | | | | | | | | | | | | | | | | | | | | | | |
| 09 Jun | S16E59 | 245 | 10 | 5 | Bxo | 2 | B | 1 | | | | 2 | | | | | | | | | | | |
| 10 Jun | S16E43 | 247 | 10 | 4 | Bxo | 3 | B | | | | | | | | | | | | | | | | |
| 11 Jun | S16E32 | 245 | 10 | 6 | Bxo | 5 | B | | | | | | | | | | | | | | | | |
| 12 Jun | S15E18 | 246 | 10 | 8 | Bxo | 6 | B | | | | | | | | | | | | | | | | |
| 13 Jun | S16E07 | 245 | 20 | 6 | Bxo | 6 | B | | | | | | | | | | | | | | | | |
| 14 Jun | S15W07 | 245 | 40 | 5 | Dso | 9 | B | | | | | | | | | | | | | | | | |
| 15 Jun | S15W22 | 247 | 100 | 7 | Dai | 17 | B | 1 | | | | 5 | 1 | | | | | | | | | | |
| 16 Jun | S16W35 | 247 | 100 | 8 | Dsi | 26 | B | | | | | 1 | | | | | | | | | | | |
| 17 Jun | S16W48 | 246 | 100 | 8 | Dsi | 17 | B | 3 | | | | 3 | | | | | | | | | | | |
| 18 Jun | S16W61 | 246 | 150 | 9 | Dsi | 15 | B | | | | | | | | | | | | | | | | |
| 19 Jun | S16W74 | 245 | 60 | 9 | Dso | 4 | B | 1 | | | | 3 | | | | | | | | | | | |
| 20 Jun | S16W87 | 246 | plage | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | 6 | 0 | 0 | 14 | 1 | 0 | 0 | 0 | | | | | | | | |

Crossed West Limb.
Absolute heliographic longitude: 245

| | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------|--------|-----|-------|----|-----|----|----|---|---|---|----|---|---|---|---|--|--|--|--|--|--|--|--|
| Region 1236 | | | | | | | | | | | | | | | | | | | | | | | |
| 13 Jun | N17E78 | 174 | plage | | | | | 1 | | | | | | | | | | | | | | | |
| 14 Jun | N17E64 | 174 | 180 | 8 | Dso | 6 | B | 2 | 1 | | | 1 | | | | | | | | | | | |
| 15 Jun | N17E58 | 167 | 350 | 11 | Ehi | 11 | BD | 1 | | | | 2 | | | | | | | | | | | |
| 16 Jun | N17E46 | 166 | 350 | 12 | Ehi | 16 | BD | 2 | | | | 3 | 1 | | | | | | | | | | |
| 17 Jun | N17E33 | 165 | 260 | 10 | Dho | 17 | BG | | | | | | | | | | | | | | | | |
| 18 Jun | N17E18 | 166 | 200 | 12 | Esi | 21 | BG | | | | | 1 | | | | | | | | | | | |
| 19 Jun | N16E06 | 165 | 200 | 12 | Esi | 11 | BG | | | | | 1 | | | | | | | | | | | |
| 20 Jun | N17W07 | 166 | 230 | 12 | Esi | 7 | BG | | | | | | | | | | | | | | | | |
| 21 Jun | N17W21 | 165 | 190 | 13 | Esi | 18 | B | 1 | | | | 2 | | | | | | | | | | | |
| 22 Jun | N16W32 | 164 | 140 | 10 | Cso | 6 | B | | | | | | | | | | | | | | | | |
| 23 Jun | N16W46 | 164 | 150 | 13 | Cso | 4 | B | | | | | 1 | | | | | | | | | | | |
| 24 Jun | N17W61 | 166 | 180 | 11 | Cso | 4 | B | | | | | | | | | | | | | | | | |
| 25 Jun | N15W74 | 168 | 90 | 2 | Hsx | 1 | A | | | | | | | | | | | | | | | | |
| 26 Jun | N16W92 | 170 | 30 | 3 | Hrx | 2 | A | | | | | | | | | | | | | | | | |
| | | | | | | | | 7 | 1 | 0 | 11 | 1 | 0 | 0 | 0 | | | | | | | | |

Still on Disk.
Absolute heliographic longitude: 165



Region Summary - continued

| Date | Location | | Sunspot Characteristics | | | | Flares | | | | | | | | | | | |
|--------------------|----------|-----|--------------------------------|-------------------|---------------|---------------|--------------|-------|---|---|---------|---|---|---|---|---|---|---|
| | Lat CMD | Lon | Helio 10 ⁶ hemi. | Extent (helio) | Spot Class | Spot Count | Mag Class | X-ray | | | Optical | | | | | | | |
| | | | | | | | | C | M | X | S | 1 | 2 | 3 | 4 | | | |
| Region 1237 | | | | | | | | | | | | | | | | | | |
| 17 Jun | S14E66 | 132 | 0 | 1 | Axx | 1 | A | | | | | | | | | | | |
| 18 Jun | S15E53 | 131 | 0 | 1 | Axx | 1 | A | | | | | | | | | | | 2 |
| 19 Jun | S15E39 | 133 | plage | | | | | 1 | | | | | | | | | | 1 |
| 20 Jun | S18E26 | 132 | plage | | | | | | | | | | | | | | | |
| 21 Jun | S18E13 | 132 | plage | | | | | | | | | | | | | | | |
| 22 Jun | S18W01 | 133 | plage | | | | | | | | | | | | | | | |
| 23 Jun | S18W15 | 134 | plage | | | | | | | | | | | | | | | |
| 24 Jun | S18W29 | 135 | plage | | | | | | | | | | | | | | | |
| 25 Jun | S18W43 | 135 | plage | | | | | | | | | | | | | | | |
| 26 Jun | S18W57 | 137 | plage | | | | | | | | | | | | | | | |
| | | | | | | | | | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.

Absolute heliographic longitude: 133

Region 1238

| | | | | | | | | | | | | | | | | | | |
|--------|--------|-----|-------|---|-----|---|---|--|---|---|---|---|---|---|---|---|---|---|
| 19 Jun | S17E11 | 160 | 10 | 1 | Axx | 2 | A | | | | | | | | | | | |
| 20 Jun | S17W03 | 162 | plage | | | | | | | | | | | | | | | |
| 21 Jun | S17W17 | 163 | plage | | | | | | | | | | | | | | | |
| 22 Jun | S17W31 | 163 | plage | | | | | | | | | | | | | | | |
| 23 Jun | S17W45 | 164 | plage | | | | | | | | | | | | | | | |
| | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Died on Disk.

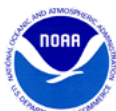
Absolute heliographic longitude: 162

Region 1239

| | | | | | | | | | | | | | | | | | | |
|--------|--------|-----|-------|---|-----|---|---|--|---|---|---|---|---|---|---|---|---|---|
| 20 Jun | N18E13 | 146 | 10 | 3 | Bxo | 5 | B | | | | | | | | | | | |
| 21 Jun | N18W00 | 145 | 10 | 4 | Bxo | 6 | B | | | | | | | | | | | |
| 22 Jun | N18W14 | 146 | 10 | 3 | Bxo | 3 | B | | | | | | | | | | | |
| 23 Jun | N16W27 | 145 | 10 | 3 | Bxo | 3 | B | | | | | | | | | | | |
| 24 Jun | N17W44 | 149 | 0 | | Axx | 1 | A | | | | | | | | | | | |
| 25 Jun | N15W56 | 148 | 0 | | Axx | 1 | A | | | | | | | | | | | |
| 26 Jun | N15W70 | 150 | plage | | | | | | | | | | | | | | | |
| | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.

Absolute heliographic longitude: 145



Region Summary - continued

| Date | Location | | Sunspot Characteristics | | | | Flares | | | | | | | | | | | |
|--------------------|----------|-----|---------------------------------|------|-------------------|---------------|---------------|--------------|-------|---|---|---------|---|---|---|---|---|---|
| | Lat CMD | Lon | Helio 10 ⁻⁶ hemi. | Area | Extent (helio) | Spot Class | Spot Count | Mag Class | X-ray | | | Optical | | | | | | |
| | | | | | | | | | C | M | X | S | 1 | 2 | 3 | 4 | | |
| Region 1240 | | | | | | | | | | | | | | | | | | |
| 20 Jun | S17E42 | 117 | 10 | 1 | Axx | 1 | A | | | | | | | | | | | |
| 21 Jun | S17E27 | 117 | 10 | 3 | Bxo | 3 | B | | | | | | | | | | | |
| 22 Jun | S19E16 | 116 | 10 | 3 | Bxo | 5 | B | | | | | | | | | | | |
| 23 Jun | S18E02 | 116 | 50 | 5 | Dro | 10 | B | | | | | | | | | | | |
| 24 Jun | S19W12 | 117 | 50 | 6 | Cro | 9 | B | | | | | | | | | | | |
| 25 Jun | S20W26 | 118 | 5 | 1 | Axx | 2 | A | | | | | | | | | | | |
| 26 Jun | S20W40 | 120 | plage | | | | | | | | | | | | | | | |
| | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.

Absolute heliographic longitude: 116

| | | | | | | | | | | | | | | | | | | |
|--------------------|--------|-----|----|---|-----|---|---|--|---|---|---|---|---|---|---|---|---|---|
| Region 1241 | | | | | | | | | | | | | | | | | | |
| 24 Jun | N19W08 | 113 | 50 | 5 | Dro | 8 | B | | | | | | | | | | | |
| 25 Jun | N18W19 | 111 | 10 | 4 | Bxo | 3 | B | | | | | | | | | | | |
| 26 Jun | N18W32 | 110 | 10 | 5 | Bxo | 4 | B | | | | | | | | | | | |
| | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.

Absolute heliographic longitude: 113

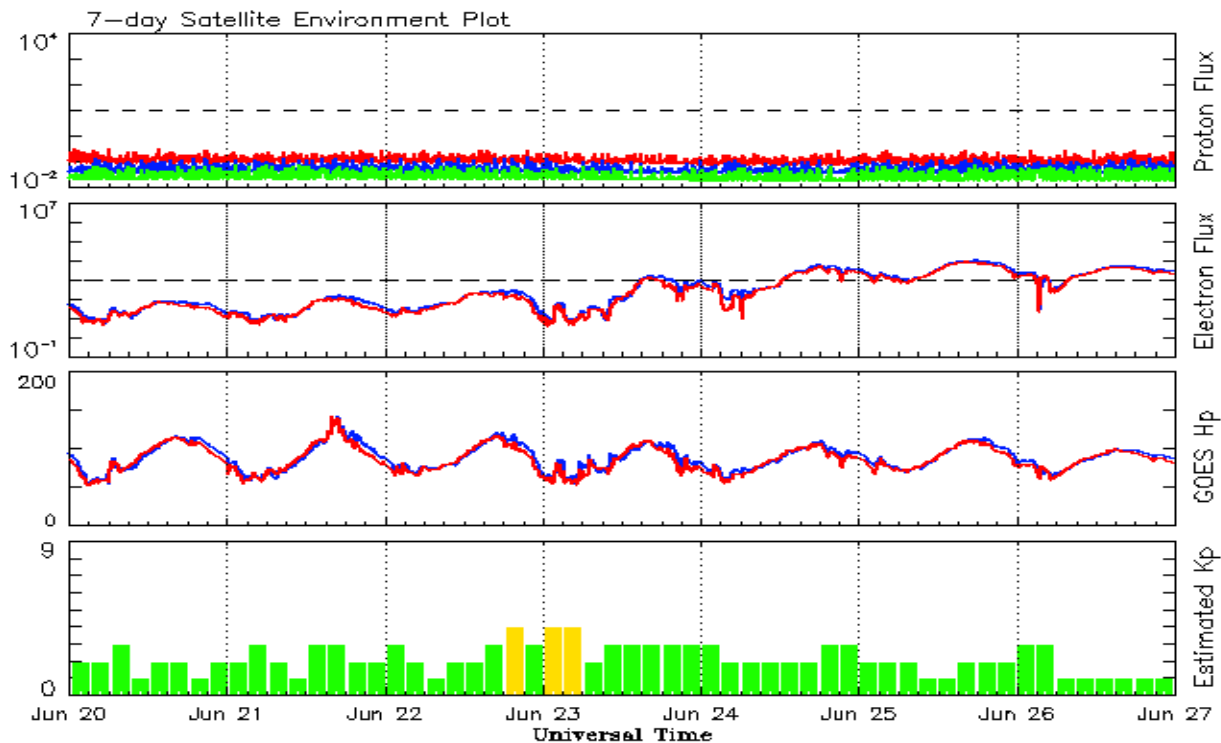


Recent Solar Indices (preliminary)
Observed monthly mean values

| 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 |
| 2009 | | | | | | | | | |
| June | 6.6 | 2.9 | 0.39 | 4.4 | 2.7 | 68.6 | 70.2 | 4 | 4.0 |
| July | 5.0 | 3.2 | 0.70 | 5.8 | 3.6 | 68.2 | 71.0 | 4 | 3.9 |
| August | 0.3 | 0.0 | 0.00 | 7.7 | 4.8 | 67.4 | 72.1 | 5 | 3.8 |
| September | 6.6 | 4.3 | 0.64 | 9.9 | 6.2 | 70.5 | 73.3 | 4 | 3.8 |
| October | 7.0 | 4.8 | 0.66 | 11.3 | 7.1 | 72.3 | 74.1 | 3 | 4.1 |
| November | 7.7 | 4.1 | 0.55 | 12.4 | 7.6 | 73.6 | 74.5 | 3 | 4.5 |
| December | 15.7 | 10.8 | 0.68 | 13.6 | 8.3 | 76.8 | 74.9 | 2 | 4.8 |
| 2010 | | | | | | | | | |
| January | 21.3 | 13.2 | 0.62 | 14.8 | 9.3 | 81.1 | 75.5 | 3 | 5.0 |
| February | 31.0 | 18.8 | 0.60 | 16.7 | 10.6 | 84.7 | 76.5 | 5 | 5.1 |
| March | 24.7 | 15.4 | 0.62 | 19.1 | 12.3 | 83.3 | 77.5 | 5 | 5.3 |
| April | 11.2 | 8.0 | 0.71 | 21.4 | 14.0 | 75.9 | 78.3 | 10 | 5.5 |
| May | 19.9 | 8.7 | 0.44 | 23.8 | 15.5 | 73.8 | 79.0 | 8 | 5.7 |
| June | 17.9 | 13.6 | 0.75 | 25.2 | 16.4 | 72.6 | 79.7 | 7 | 5.8 |
| July | 23.1 | 16.1 | 0.70 | 25.9 | 16.7 | 79.9 | 80.1 | 5 | 6.0 |
| August | 28.2 | 19.6 | 0.70 | 27.3 | 17.4 | 79.7 | 80.7 | 8 | 6.2 |
| September | 35.6 | 25.2 | 0.71 | 30.6 | 19.6 | 81.1 | 82.4 | 5 | 6.3 |
| October | 35.0 | 23.5 | 0.67 | 35.9 | 23.2 | 81.6 | 85.3 | 6 | 6.4 |
| November | 36.1 | 21.5 | 0.60 | 40.5 | 26.5 | 82.5 | 87.7 | 5 | 6.4 |
| December | 22.0 | 14.4 | 0.66 | | | 84.3 | | 4 | |
| 2011 | | | | | | | | | |
| January | 32.1 | 19.0 | 0.59 | | | 83.7 | | 6 | |
| February | 53.2 | 29.4 | 0.55 | | | 94.5 | | 6 | |
| March | 81.0 | 56.2 | 0.69 | | | 115.3 | | 7 | |
| April | 81.7 | 54.4 | 0.67 | | | 112.6 | | 9 | |
| May | 61.4 | 41.6 | 0.68 | | | 95.9 | | 9 | |

Note: Values are final except for the most recent 6 months which are considered preliminary. Cycle 23 started in May 1996 with an RI=8.0. Cycle 23 maximum was April 2000 with an RI=120.8. Solar minimum for Cycle 23 was December 2008.





*Weekly Geosynchronous Satellite Environment Summary
Week Beginning 20 June 2011*

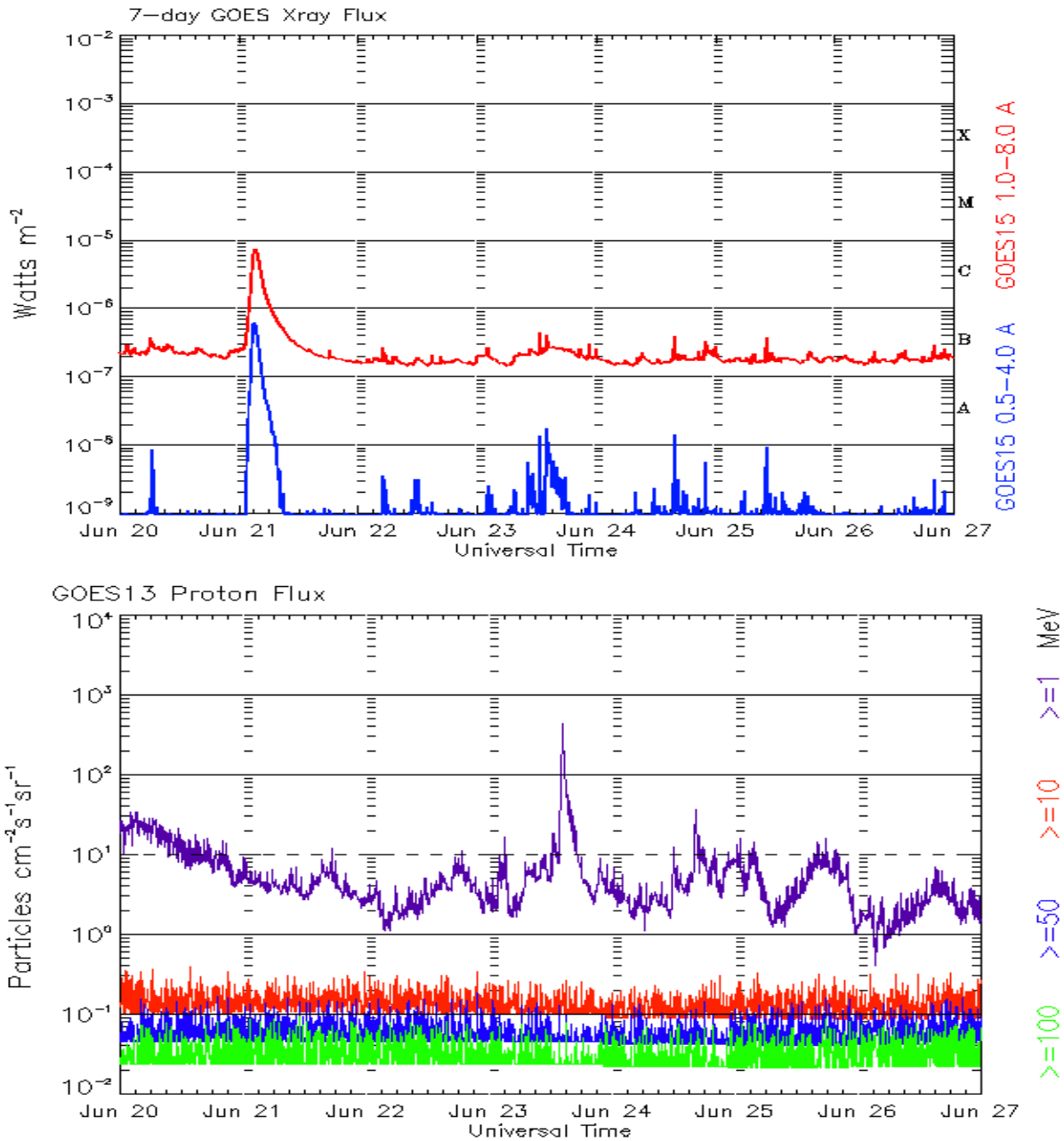
The proton flux plot contains the five-minute averaged integral proton flux (protons/cm²-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

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

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

Kp 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 Hartland, UK. These data are made available through cooperation from the Geological Survey of Canada (GSC), British Geological Survey (BGS) and the US Geological Survey. These may differ from the final Kp values derived from a more extensive network of magnetometers.

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 20 June 2011*

The x-ray plots contains five-minute averages x-ray flux (Watt/m²) as measure by the SWPC primary GOES X-ray satellite, usually at West 105 longitude, in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

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



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Notice: The 27-day Outlook, Satellite Environment, X-ray and Proton plots have been redesigned. Comments and suggestions are welcome SWPC.Webmaster@noaa.gov

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