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**NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE**
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MAY 1994 NUMBER 597 - Part II

# Solar-Geophysical Data comprehensive reports

Data for November 1993

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**NATIONAL GEOPHYSICAL DATA CENTER**
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Subscription information is on the inside back cover.

# SOLAR-GEOPHYSICAL DATA

Number 597

(Issued in Two Parts)

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## DATA FOR NOVEMBER 1993

# Hα SOLAR FLARES

## NOVEMBER 1993

| Grp # | Sta | Day | Start (UT) | Max (UT) | End (UT) | Lat | CMD | NOAA/ USAF Region | CMP Mo | CMP Day | Dur (Min) | Imp Opt | Imp Xray | Imp See | Obs Type | Area Measurement Time (UT) | Area Measurement Apparent (10-6 Disk) | Area Measurement Corr (Sq Deg) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0001 | MITK | 01 | 0626 | 0627 | 0628 | S15 | E45 | 7613 | 11 | 4.7 | 2 | SN | | | C | 0627 | 7 | 0.1 | D |
| 0002 | SVTO | 01 | 0723 | 0725 | 0740 | S08 | E50 | 7613 | 11 | 5.0 | 17 | SF | B 2.6 | 3 | E | | 18 | | FH |
| 0003 | SVTO | 01 | 1116 | 1124 | 1136D | S11 | E44 | 7613 | 11 | 4.8 | 20D | SF | B 3.8 | 3 | E | | 41 | | FH |
| 0004 | SVTO | 01 | 1236 | 1237 | 1244 | S14 | E46 | 7613 | 11 | 5.0 | 8 | SF | B 3.0 | 3 | E | | 42 | | F |
| | | 01 | 1342 | | 1349 | No Flare Patrol | | | | | | | | | | | | | |
| | | 01 | 1439 | | 1507 | No Flare Patrol | | | | | | | | | | | | | |
| | | 01 | 1535 | | 1624 | No Flare Patrol | | | | | | | | | | | | | |
| | | 01 | 1638 | | 1648 | No Flare Patrol | | | | | | | | | | | | | |
| 0005 | HOLL | 01 | 2057 | 2141 | 2309 | S10 | E45 | 7613 | 11 | 5.2 | 132 | SF | C 3.2 | 3 | E | | 32 | | F |
| 0006 | LEAR | 02 | 0811 | 0812 | 0819 | S09 | E34 | 7613 | 11 | 4.9 | 8 | SF | B 6.3 | 3 | E | | 18 | | |
| 0007 | RAMY | 02 | 1740 | 1742 | 1748 | S09 | E30 | 7613 | 11 | 5.0 | 8 | SF | B 3.2 | 3 | E | | 18 | | F |
| | | 03 | 0002 | | 0347 | No Flare Patrol | | | | | | | | | | | | | |
| | | 03 | 0507 | | 0536 | No Flare Patrol | | | | | | | | | | | | | |
| | | 03 | 0606 | | 0614 | No Flare Patrol | | | | | | | | | | | | | |
| | | 03 | 0716 | | 0717 | No Flare Patrol | | | | | | | | | | | | | |
| | | 03 | 0723 | | 0730 | No Flare Patrol | | | | | | | | | | | | | |
| 0008 | KANZ | 03 | 1125 | 1129 | 1150 | S11 | E17 | 7613 | 11 | 4.7 | 25 | SF | | 2 | C | | | | |
| | | 03 | 2025 | | 2030 | No Flare Patrol | | | | | | | | | | | | | |
| | | 03 | 2035 | | 2041 | No Flare Patrol | | | | | | | | | | | | | |
| | | 04 | 0617 | | 0656 | No Flare Patrol | | | | | | | | | | | | | |
| 0009 | | 04 | 1222 | 1226 | 1246 | S18 | E16 | 7613 | 11 | 5.7 | 24 | SF | | | | | 15 | | H |
| | KANZ | 04 | 1222 | 1226 | 1246 | S18 | E13 | 7613 | 11 | 5.5 | 24 | SF | | 2 | C | | | | |
| | SVTO | 04 | 1229E | 1230U | 1245D | S18 | E18 | 7613 | 11 | 5.9 | 16D | SF | | 1 | E | | 15 | | H |
| 0010 | | 04 | 21231 | 21243 | 2144 | S18 | E08 | 7613 | 11 | 5.5 | 21 | SN | B 6.5 | | | | 48 | | FH |
| | HOLL | 04 | 2123 | 2124 | 2144 | S17 | E09 | 7613 | 11 | 5.6 | 21 | SF | B 6.5 | 3 | E | | 44 | | FH |
| | RAMY | 04 | 2124 | 2127 | 2146D | S18 | E08 | 7613 | 11 | 5.5 | 22D | SN | | 3 | E | | 53 | | F |
| | | 05 | 0701 | | 0721 | No Flare Patrol | | | | | | | | | | | | | |
| | | 05 | 0729 | | 0747 | No Flare Patrol | | | | | | | | | | | | | |
| | | 05 | 0800 | | 0936 | No Flare Patrol | | | | | | | | | | | | | |
| | | 05 | 0946 | | 1049 | No Flare Patrol | | | | | | | | | | | | | |
| | | 06 | 1017 | | 1024 | No Flare Patrol | | | | | | | | | | | | | |
| | | 07 | 1019 | | 1121 | No Flare Patrol | | | | | | | | | | | | | |
| | | 07 | 1217 | | 1231 | No Flare Patrol | | | | | | | | | | | | | |
| 0011 | ISTA | 08 | 0948 | | 0951 | S10 | W47 | 7613 | 11 | 4.9 | 3 | SF | | | | | | | E |
| | | 08 | 1124 | | 1131 | No Flare Patrol | | | | | | | | | | | | | |
| | | 08 | 1211 | | 1309 | No Flare Patrol | | | | | | | | | | | | | |
| | | 08 | 1341 | | 1406 | No Flare Patrol | | | | | | | | | | | | | |
| | | 08 | 1410 | | 1429 | No Flare Patrol | | | | | | | | | | | | | |
| | | 08 | 1507 | | 1511 | No Flare Patrol | | | | | | | | | | | | | |
| 0012 | HOLL | 08 | 2154 | 2202 | 2225 | S20 | E21 | 7617 | 11 | 10.5 | 31 | SF | B 5.7 | 3 | E | | 45 | | FH |
| 0013 | | 09 | 07512 | 07531 | 0810D | S08 | W58 | 7613 | 11 | 5.0 | 19D | SN | B 2.7 | | | | 42 | 1.0 | EF |
| | SVTO | 09 | 0751 | 0754 | 0808D | S09 | W58 | 7613 | 11 | 5.0 | 17D | SF | B 2.7 | 3 | E | | 29 | | FE |
| | CATA | 09 | 0753 | 0753 | 0810D | S07 | W57 | 7613 | 11 | 5.0 | 17D | SB | | 1 | C | 0753 | 56 | 1.0 | |
| 0014 | CATA | 09 | 1003E | 1005 | 1011 | S09 | W60 | 7613 | 11 | 4.9 | 8D | SF | | 1 | C | 1005 | 67 | 1.4 | H |
| 0015 | | 09 | 1942 | 1943 | 2005 | S18 | E12 | 7617 | 11 | 10.7 | 23 | SF | B 1.6 | | | | 16 | | |
| | HOLL | 09 | 1942 | 1943 | 2005 | S19 | E11 | 7617 | 11 | 10.7 | 23 | SF | B 1.6 | 3 | E | | 11 | | |
| | PALE | 09 | 1945E | 1945U | 2013D | S18 | E12 | 7617 | 11 | 10.7 | 28D | SF | | 3 | E | | 22 | | |
| | | 10 | 0408 | | 0419 | No Flare Patrol | | | | | | | | | | | | | |
| | | 11 | 0104 | | 0131 | No Flare Patrol | | | | | | | | | | | | | |
| | | 11 | 0305 | | 0440 | No Flare Patrol | | | | | | | | | | | | | |

# Hα SOLAR FLARES

## NOVEMBER 1993

| Grp # | Sta | Day | Start (UT) | Max (UT) | End (UT) | Lat | CMD | NOAA/ USAF Region | CMP Mo | CMP Day | Dur (Min) | Imp | Opt | Xray | See | Obs Type | Area Measurement Time (UT) | Area Measurement Apparent (10-6 Disk) | Area Measurement Corr (Sq Deg) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 11 | 1513 | | 1517 | No Flare Patrol | | | | | | | | | | | | | | |
| | | 11 | 2134 | | 2154 | No Flare Patrol | | | | | | | | | | | | | | |
| 0016 | LEAR | 12 | 0221 | 0222 | 0228 | N08 | E82 | 7618 | 11 | 18.2 | 7 | SF | M | 2.0 | 3 | E | | 26 | | |
| | | 12 | 0328 | | 0420 | No Flare Patrol | | | | | | | | | | | | | | |
| | | 12 | 0509 | | 0634 | No Flare Patrol | | | | | | | | | | | | | | |
| 0017 | SVTO | 12 | 0759 | 0800 | 0804 | N09 | E81 | 7618 | 11 | 18.4 | 5 | SF | B | 5.5 | 4 | E | | 19 | | |
| | | 12 | 0826 | | 0839 | No Flare Patrol | | | | | | | | | | | | | | |
| | | 12 | 0901 | | 0935 | No Flare Patrol | | | | | | | | | | | | | | |
| | | 12 | 0938 | | 0949 | No Flare Patrol | | | | | | | | | | | | | | |
| 0018 | | 12 | 10591 | 1100 | 1104 | N08 | E82 | 7618 | 11 | 18.6 | 5 | SN | B | 2.8 | | | | 40 | | |
| | SVTO | 12 | 1059 | 1100 | 1105 | N09 | E81 | 7618 | 11 | 18.5 | 6 | SF | B | 2.8 | 3 | E | | 34 | | |
| | CATA | 12 | 1100 | 1100 | 1104 | N07 | E82 | 7618 | 11 | 18.6 | 4 | SB | | | 1 | C | 1100 | 45 | | |
| | | 12 | 1121 | | 1129 | No Flare Patrol | | | | | | | | | | | | | | |
| | | 12 | 1152 | | 1206 | No Flare Patrol | | | | | | | | | | | | | | |
| 0019 | RAMY | 12 | 1757 | 1804 | 1814 | N11 | E78 | 7618 | 11 | 18.6 | 17 | SF | C | 3.5 | 3 | E | | 62 | | F |
| 0020 | RAMY | 12 | 1955 | 1959 | 2006 | N10 | E77 | 7618 | 11 | 18.6 | 11 | SF | C | 3.7 | 3 | E | | 32 | | |
| 0021 | RAMY | 12 | 2037 | 2038 | 2042 | N11 | E78 | 7618 | 11 | 18.7 | 5 | SF | C | 1.9 | 3 | E | | 34 | | F |
| | | 12 | 2137 | | 2157 | No Flare Patrol | | | | | | | | | | | | | | |
| 0022 | | 12 | 2158E | 2200U | 2305D | N08 | E79 | 7618 | 11 | 18.8 | 67D | SF | C | 2.2 | | | | 47 | | |
| | HOLL | 12 | 2158E | 2200U | 2305D | N09 | E80 | 7618 | 11 | 18.9 | 67D | SF | | | 3 | E | | 59 | | |
| | PALE | 12 | 2201E | 2201U | 2204D | N08 | E78 | 7618 | 11 | 18.8 | 3D | SF | C | 2.2 | 3 | E | | 35 | | |
| | | 12 | 2206 | | 2249 | No Flare Patrol | | | | | | | | | | | | | | |
| 0023 | PALE | 12 | 2256 | 2300U | 2306D | N11 | E65 | 7618 | 11 | 17.8 | 10D | SF | C | 3.0 | 3 | E | | 44 | | |
| | | 12 | 2301 | | 2305 | No Flare Patrol | | | | | | | | | | | | | | |
| | | 12 | 2317 | | 2400 | No Flare Patrol | | | | | | | | | | | | | | |
| | | 13 | 0000 | | 0047 | No Flare Patrol | | | | | | | | | | | | | | |
| | | 13 | 0052 | | 0059 | No Flare Patrol | | | | | | | | | | | | | | |
| | | 13 | 0136 | | 0157 | No Flare Patrol | | | | | | | | | | | | | | |
| | | 13 | 0203 | | 0500 | No Flare Patrol | | | | | | | | | | | | | | |
| | | 13 | 0504 | | 0516 | No Flare Patrol | | | | | | | | | | | | | | |
| 0024 | LEAR | 13 | 0624 | 0637 | 0706 | N08 | E73 | 7618 | 11 | 18.7 | 42 | 1F | M | 2.1 | 3 | E | | 154 | | F |
| 0025 | | 13 | 09073 | 09091 | 0914 | N08 | E74 | 7618 | 11 | 18.9 | 7 | SF | | | | | | 23 | | ET |
| | HTPR | 13 | 0907 | 0909 | 0913 | N08 | E75 | 7618 | 11 | 19.0 | 6 | SF | | | | C | 0909 | 20 | | ET |
| | LEAR | 13 | 0910 | 0910 | 0914 | N08 | E73 | 7618 | 11 | 18.8 | 4 | SF | | | 3 | E | | 26 | | |
| 0026 | | 13 | 09284 | 09331 | 1018 | N08 | E74 | 7618 | 11 | 18.9 | 50 | SN | C | 3.1 | | | | 92 | | ,HRT |
| | LEAR | 13 | 0928 | 0933 | 1018 | N07 | E73 | 7618 | 11 | 18.9 | 50 | SF | C | 3.1 | 3 | E | | 92 | | |
| | KHAR | 13 | 0932 | 0934 | 0955U | N08 | E75 | 7618 | 11 | 19.0 | 23U | SB | | | 2 | V | | | | H,R,T, |
| 0027 | KHAR | 13 | 1005 | 1007 | 1025 | N08 | E75 | 7618 | 11 | 19.0 | 20 | SN | | | 2 | V | | | | ,HT |
| 0028 | KHAR | 13 | 1027 | 1029 | 1046 | N08 | E75 | 7618 | 11 | 19.0 | 19 | SN | | | 2 | V | | | | ,HT |
| 0029 | | 13 | 1143 | 1150* | 1332 | N08 | E75 | 7618 | 11 | 19.1 | 109 | SF | | | | | | 25 | | EKT |
| | HTPR | 13 | 1143 | 1150 | 1332 | N08 | E75 | 7618 | 11 | 19.1 | 109 | SF | | | | C | 1150 | 20 | | EKT |
| | HTPR | 13 | 1143 | 1211 | 1332 | N08 | E75 | 7618 | 11 | 19.1 | 109 | SF | | | | C | 1211 | 30 | | EEKT |
| 0030 | HTPR | 13 | 1143 | 1321 | 1332 | N08 | E75 | 7618 | 11 | 19.1 | 109 | SF | | | | C | 1321 | 50 | | KT |
| 0031 | KANZ | 13 | 1227E | | 1239 | N08 | E70 | 7618 | 11 | 18.8 | 12D | SF | | | 2 | C | | | | |
| 0032 | HTPR | 13 | 1411E | 1413 | 1419 | N08 | E75 | 7618 | 11 | 19.2 | 8D | SN | | | | C | 1413 | 100 | | T |

# Hα SOLAR FLARES

## NOVEMBER 1993

| Grp # | Sta | Day | Start (UT) | Max (UT) | End (UT) | Lat | CMD | NOAA/ USAF Region | CMP Mo | CMP Day | Dur (Min) | Imp Opt | Imp Xray | Imp See | Obs Type | Area Measurement Time (UT) | Area Measurement Apparent (10-6 Disk) | Area Measurement Corr (Sq Deg) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0033 | RAMY | 13 | 1529 | 1529 | 1615 | N10 | E68 | 7618 | 11 | 18.7 | 46 | SF | C 5.8 | 3 | E | | 33 | | F |
| | | 13 | 1533 | | 1600 | No Flare Patrol | | | | | | | | | | | | | |
| | | 13 | 1622 | | 1629 | No Flare Patrol | | | | | | | | | | | | | |
| 0034 | RAMY | 13 | 1738 | 1742 | 1746 | N10 | E66 | 7618 | 11 | 18.7 | 8 | SF | C 1.1 | 3 | E | | 36 | | F |
| | | 13 | 2133 | | 2149 | No Flare Patrol | | | | | | | | | | | | | |
| 0035 | | 14 | 0103 | 0103 | 0108 | N08 | E61 | 7618 | 11 | 18.6 | 5 | SF | C 2.5 | | | | 29 | | F |
| | LEAR | 14 | 0103 | 0103 | 0108 | N08 | E63 | 7618 | 11 | 18.8 | 5 | SF | | 3 | E | | 37 | | F |
| | PALE | 14 | 0103E | 0103U | 0109D | N09 | E59 | 7618 | 11 | 18.5 | 6D | SF | C 2.5 | 3 | E | | 21 | | |
| 0036 | MITK | 14 | 0408 | 0411 | 0417 | N03 | E59 | 7618 | 11 | 18.6 | 9 | SN | | | C | 0411 | 93 | 1.9 | E |
| 0037 | SVTO | 14 | 1129E | 1129U | 1130 | N08 | E57 | 7618 | 11 | 18.7 | 1D | SF | B 5.2 | 3 | E | | 18 | | |
| | | 14 | 1214 | | 1220 | No Flare Patrol | | | | | | | | | | | | | |
| | | 14 | 1344 | | 1407 | No Flare Patrol | | | | | | | | | | | | | |
| 0038 | HOLL | 14 | 1659 | 1700 | 1712 | N07 | E52 | 7618 | 11 | 18.6 | 13 | SF | C 1.2 | 3 | E | | 78 | | F |
| 0039 | | 14 | 1824 | 1825 | 1838 | N07 | E52 | 7618 | 11 | 18.7 | 14 | SF | B 4.1 | | | | 32 | | F |
| | HOLL | 14 | 1824 | 1825 | 1838 | N08 | E53 | 7618 | 11 | 18.7 | 14 | SF | B 4.1 | 3 | E | | 23 | | |
| | PALE | 14 | 1830E | 1834U | 1836D | N06 | E51 | 7618 | 11 | 18.6 | 6D | SF | | 3 | E | | 42 | | F |
| 0040 | | 14 | 2231 | 2232 | 2236 | N08 | E50 | 7618 | 11 | 18.7 | 5 | SF | B 4.8 | | | | 20 | | |
| | HOLL | 14 | 2231 | 2232 | 2235 | N07 | E50 | 7618 | 11 | 18.7 | 4 | SF | B 4.8 | 3 | E | | 16 | | |
| | LEAR | 14 | 2231 | 2232 | 2238 | N09 | E50 | 7618 | 11 | 18.7 | 7 | SF | B 4.8 | 3 | E | | 27 | | |
| | PALE | 14 | 2232E | 2232U | 2235D | N09 | E50 | 7618 | 11 | 18.7 | 3D | SF | | 1 | E | | 18 | | |
| 0041 | LEAR | 14 | 2309 | 2310 | 2317 | N08 | E50 | 7618 | 11 | 18.7 | 8 | SF | B 7.4 | 3 | E | | 27 | | FH |
| 0042 | LEAR | 15 | 0804 | 0806 | 0816 | N09 | E45 | 7618 | 11 | 18.7 | 12 | SF | | 3 | E | | 35 | | F |
| | | 15 | 1216 | | 1221 | No Flare Patrol | | | | | | | | | | | | | |
| | | 15 | 1241 | | 1247 | No Flare Patrol | | | | | | | | | | | | | |
| | | 15 | 1317 | | 1335 | No Flare Patrol | | | | | | | | | | | | | |
| | | 15 | 1416 | | 1423 | No Flare Patrol | | | | | | | | | | | | | |
| | | 15 | 1513 | | 1532 | No Flare Patrol | | | | | | | | | | | | | |
| 0043 | HOLL | 15 | 1628 | 1630 | 1636 | N09 | E40 | 7618 | 11 | 18.7 | 8 | SF | | 3 | E | | 12 | | |
| 0044 | PALE | 15 | 1920E | 1920U | 1944D | N08 | E40 | 7618 | 11 | 18.8 | 24D | SF | B 8.2 | 3 | E | | 37 | | |
| 0045 | | 16 | 09101 | 09103 | 0918 | N10 | E31 | 7618 | 11 | 18.7 | 8 | SF | C 1.0 | | | | 31 | 0.3 | EF |
| | HTPR | 16 | 0909E | 0911 | 0916 | N12 | E30 | 7618 | 11 | 18.6 | 7D | SF | | | C | 0911 | 30 | 0.3 | E |
| | SVTO | 16 | 0910 | 0910 | 0922 | N11 | E32 | 7618 | 11 | 18.8 | 12 | SF | C 1.0 | 3 | E | | 25 | | F |
| | KANZ | 16 | 0911 | 0911 | 0919 | N09 | E31 | 7618 | 11 | 18.7 | 8 | SF | | 2 | C | | | | |
| | LEAR | 16 | 0911 | 0913 | 0916 | N10 | E30 | 7618 | 11 | 18.6 | 5 | SF | C 1.0 | 3 | E | | 39 | | F |
| 0046 | KANZ | 16 | 0923 | 0935 | 0955 | N09 | E29 | 7618 | 11 | 18.6 | 32 | SF | | 2 | C | | | | |
| | | 16 | 2106 | | 2146 | No Flare Patrol | | | | | | | | | | | | | |
| | | 17 | 1713 | | 1717 | No Flare Patrol | | | | | | | | | | | | | |
| 0047 | RAMY | 17 | 1823 | 1823 | 1826D | N07 | E11 | 7618 | 11 | 18.6 | 3D | SF | B 6.0 | 3 | E | | 12 | | FU |
| | | 17 | 2144 | | 2156 | No Flare Patrol | | | | | | | | | | | | | |
| 0048 | RAMY | 18 | 1149E | 1212 | 1214D | N08 | E02 | 7618 | 11 | 18.6 | 25D | SF | B 5.1 | 3 | E | | 39 | | F |
| 0049 | | 18 | 13272 | 13291 | 1335 | N10 | E01 | 7618 | 11 | 18.6 | 8 | SF | C 1.6 | | | | 38 | | F |
| | SVTO | 18 | 1327 | 1329 | 1352D | N10 | E01 | 7618 | 11 | 18.6 | 25D | SF | | 1 | E | | 24 | | F |
| | RAMY | 18 | 1329 | 1330 | 1335 | N09 | E01 | 7618 | 11 | 18.6 | 6 | SF | C 1.6 | 3 | E | | 51 | | F |
| 0050 | RAMY | 18 | 1342 | 1343 | 1346 | N08 | E00 | 7618 | 11 | 18.6 | 4 | SF | | 3 | E | | 40 | | F |
| 0051 | HTPR | 18 | 1352E | 1355 | 1438 | N06 | E05 | 7618 | 11 | 18.9 | 46D | SF | | | C | 1355 | 70 | 0.7 | E |

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| Grp # | Sta | Day | Start (UT) | Max (UT) | End (UT) | Lat | CMD | NOAA/ USAF Region | CMP Mo | CMP Day | Dur (Min) | Imp Opt | Imp Xray | Imp See | Obs Type | Area Measurement Time (UT) | Area Measurement Apparent (10-6 Disk) | Area Measurement Corr (Sq Deg) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 18 | 1504 | | 1523 | No Flare Patrol | | | | | | | | | | | | | |
| 0052 | RAMY | 18 | 1522 | 1525 | 1538 | N07 | W03 | 7618 | 11 | 18.4 | 16 | SF | | 3 | E | | 13 | | F |
| | | 18 | 1557 | | 1650 | No Flare Patrol | | | | | | | | | | | | | |
| 0053 | RAMY | 18 | 1658 | 1658 | 1710 | N06 | W03 | 7618 | 11 | 18.5 | 12 | SF | | 3 | E | | 25 | | FU |
| | | 18 | 1744 | | 2029 | No Flare Patrol | | | | | | | | | | | | | |
| | | 18 | 2035 | | 2043 | No Flare Patrol | | | | | | | | | | | | | |
| | | 18 | 2133 | | 2151 | No Flare Patrol | | | | | | | | | | | | | |
| 0054 | LEAR | 19 | 0340 | 0340 | 0344 | N09 | W07 | 7618 | 11 | 18.6 | 4 | SF | B 3.1 | 3 | E | | 22 | | |
| 0055 | PALE | 19 | 2007E | 2009U | 2015D | N12 | W12 | 7618 | 11 | 18.9 | 8D | SF | | 3 | E | | 21 | | |
| 0056 | LEAR | 20 | 0345 | 0355 | 0455 | N08 | W20 | 7618 | 11 | 18.6 | 70 | SF | C 1.3 | 3 | E | | 54 | | F |
| 0057 | KHAR | 20 | 1024 | 1025 | 1033 | N08 | W20 | 7618 | 11 | 18.9 | 9 | SF | | 2 | V | | | | D |
| | | 20 | 1054 | | 1102 | No Flare Patrol | | | | | | | | | | | | | |
| | | 20 | 1115 | | 1153 | No Flare Patrol | | | | | | | | | | | | | |
| | | 20 | 1301 | | 1308 | No Flare Patrol | | | | | | | | | | | | | |
| | | 20 | 1401 | | 1409 | No Flare Patrol | | | | | | | | | | | | | |
| | | 20 | 1424 | | 1433 | No Flare Patrol | | | | | | | | | | | | | |
| 0058 | LEAR | 21 | 2202E | 2203U | 2209D | N02 | E39 | 7620 | 11 | 24.8 | 7D | SF | B 3.6 | 3 | E | | 25 | | F |
| 0059 | LEAR | 22 | 0452 | 0456 | 0511 | N09 | W47 | 7618 | 11 | 18.7 | 19 | SF | | 3 | E | | 27 | | |
| | | 22 | 1026 | | 1033 | No Flare Patrol | | | | | | | | | | | | | |
| 0060 | HTPR | 22 | 1034E | | 1040D | N10 | W50 | 7618 | 11 | 18.7 | 6D | F | | | C | | | | |
| | | 22 | 1041 | | 1051 | No Flare Patrol | | | | | | | | | | | | | |
| 0061 | CATA | 22 | 1158 | 1158 | 1204 | N13 | E56 | 7622 | 11 | 26.7 | 6 | SN | | 1 | C | 1158 | 56 | 1.0 | |
| 0062 | HTPR | 22 | 1210 | 1212 | 1222 | N04 | E24 | 7620 | 11 | 24.3 | 12 | SF | | | C | 1212 | 20 | 0.2 | |
| | | 22 | 1235 | | 1237 | No Flare Patrol | | | | | | | | | | | | | |
| 0063 | HTPR | 22 | 1444 | 1447 | 1449 | N04 | E24 | 7620 | 11 | 24.4 | 5 | SF | | | C | 1447 | 30 | 0.3 | E |
| | | 22 | 1530 | | 1538 | No Flare Patrol | | | | | | | | | | | | | |
| | | 22 | 1702 | | 1707 | No Flare Patrol | | | | | | | | | | | | | |
| | | 22 | 1723 | | 1842 | No Flare Patrol | | | | | | | | | | | | | |
| | | 22 | 1853 | | 1858 | No Flare Patrol | | | | | | | | | | | | | |
| | | 22 | 1928 | | 2022 | No Flare Patrol | | | | | | | | | | | | | |
| | | 22 | 2034 | | 2129 | No Flare Patrol | | | | | | | | | | | | | |
| | | 22 | 2143 | | 2158 | No Flare Patrol | | | | | | | | | | | | | |
| | | 22 | 2306 | | 2324 | No Flare Patrol | | | | | | | | | | | | | |
| 0064 | | 23 | 0816 | 0816 | 0826 | N05 | W60 | 7618 | 11 | 18.8 | 10 | SF | B 3.3 | | | | 15 | | F |
| | SVTO | 23 | 0816 | 0816 | 0825 | N04 | W61 | 7618 | 11 | 18.8 | 9 | SF | B 3.3 | 3 | E | | 15 | | F |
| | KANZ | 23 | 0816 | 0816 | 0828 | N06 | W59 | 7618 | 11 | 18.9 | 12 | SF | | 2 | C | | | | |
| 0065 | | 23 | 12022 | 12042 | 1220 | N14 | E55 | 7622 | 11 | 27.6 | 18 | SN | B 3.8 | | | | 40 | 1.2 | F |
| | RAMY | 23 | 1202 | 1204 | 1227 | N15 | E55 | 7622 | 11 | 27.7 | 25 | SF | B 3.8 | 3 | E | | 31 | | F |
| | SVTO | 23 | 1204 | 1206 | 1212 | N14 | E55 | 7622 | 11 | 27.6 | 8 | SF | | 3 | E | | 23 | | |
| | CATA | 23 | 1206E | 1206 | 1211D | N12 | E56 | 7622 | 11 | 27.7 | 5D | SB | | 1 | C | 1206 | 67 | 1.2 | |
| 0066 | RAMY | 23 | 1636 | 1639 | 1654 | N03 | E04 | 7620 | 11 | 24.0 | 18 | SF | B 2.7 | 3 | E | | 12 | | |
| | | 23 | 1710 | | 1745 | No Flare Patrol | | | | | | | | | | | | | |
| | | 23 | 1756 | | 1803 | No Flare Patrol | | | | | | | | | | | | | |
| | | 23 | 1829 | | 1837 | No Flare Patrol | | | | | | | | | | | | | |
| | | 23 | 1938 | | 1953 | No Flare Patrol | | | | | | | | | | | | | |
| | | 23 | 2112 | | 2119 | No Flare Patrol | | | | | | | | | | | | | |

# Hα SOLAR FLARES

## NOVEMBER 1993

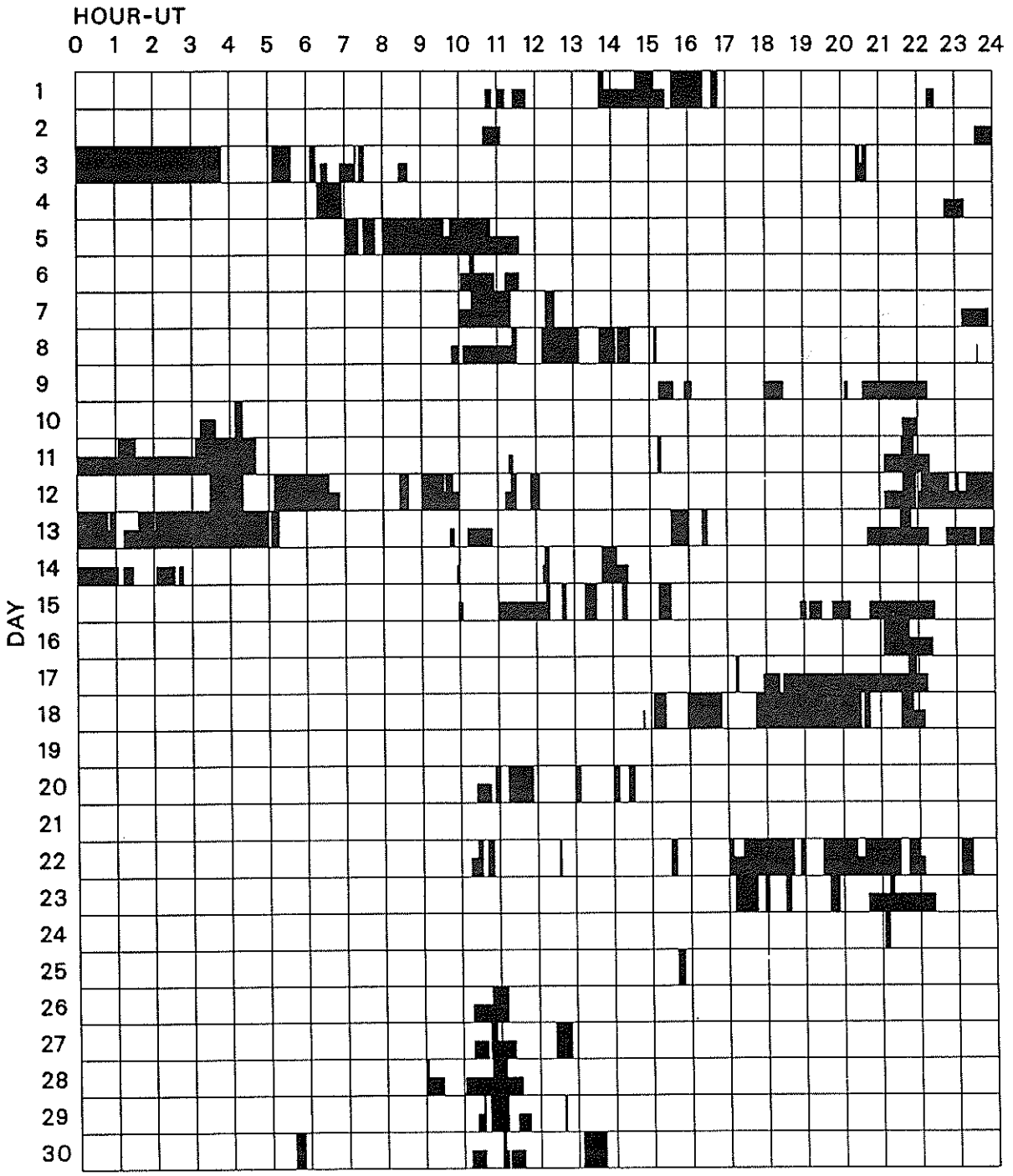
| Grp # | Sta | Day | Start (UT) | Max (UT) | End (UT) | Lat | CMD | NOAA/ USAF Region | CMP Mo | CMP Day | Dur (Min) | Imp Opt | Imp Xray | See | Obs Type | Area Measurement Time (UT) | Area Measurement Apparent (10-6 Disk) | Area Measurement Corr (Sq Deg) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0067 | LEAR | 23 | 2234 | 2238 | 2244 | N03 | E03 | 7620 | 11 | 24.2 | 10 | SF | | 3 | E | | 14 | | |
| 0068 | | 24 | 06293 | 06324 | 0652 | N04 | W03 | 7620 | 11 | 24.0 | 23 | SN | B 5.7 | | | | 30 | 0.4 | EF |
| | LEAR | 24 | 0629 | 0632 | 0705 | N04 | W02 | 7620 | 11 | 24.1 | 36 | SF | B 5.7 | 3 | E | | 27 | | F |
| | MITK | 24 | 0632 | 0636 | 0640 | N04 | W04 | 7620 | 11 | 24.0 | 8 | SN | | | C | 0636 | 34 | 0.4 | E |
| 0069 | SVTO | 24 | 0747E | 0753U | 0809D | N05 | W01 | 7620 | 11 | 24.2 | 22D | SF | | 1 | E | | 41 | | F |
| 0070 | KHAR | 24 | 0955E | | 1010U | N05 | W06 | 7620 | 11 | 24.0 | 15U | 1F | | 2 | V | | | | ,KL |
| 0071 | RAMY | 24 | 1417 | 1418 | 1422 | N12 | E36 | 7622 | 11 | 27.3 | 5 | SF | C 1.2 | 3 | E | | 19 | | F |
| 0072 | HOLL | 24 | 1601 | 1603 | 1611 | N03 | W07 | 7620 | 11 | 24.1 | 10 | SF | | 3 | E | | 23 | | |
| 0073 | HOLL | 24 | 1853 | 1854 | 1915 | N06 | W82 | 7618 | 11 | 18.6 | 22 | SF | C 1.0 | 3 | E | | 21 | | |
| 0074 | HOLL | 24 | 2050 | 2053 | 2100 | N13 | E34 | 7622 | 11 | 27.4 | 10 | SF | | 3 | E | | 18 | | |
| | | 24 | 2104 | | 2111 | No Flare Patrol | | | | | | | | | | | | | |
| 0075 | | 24 | 2206* | 22222 | 2229 | N05 | W10 | 7620 | 11 | 24.2 | 23 | SF | C 1.4 | | | | 14 | | F |
| | HOLL | 24 | 2206 | 2222 | 2230 | N03 | W10 | 7620 | 11 | 24.2 | 24 | SF | C 1.4 | 3 | E | | 13 | | |
| | PALE | 24 | 2208E | 2212U | 2240D | N07 | W09 | 7620 | 11 | 24.2 | 32D | SF | | 2 | E | | 14 | | |
| | LEAR | 24 | 2218 | 2224 | 2228 | N04 | W11 | 7620 | 11 | 24.1 | 10 | SF | | 3 | E | | 15 | | F |
| 0076 | | 24 | 23424 | 23424 | 2349 | N04 | W12 | 7620 | 11 | 24.1 | 7 | SN | B 8.4 | | | | 34 | 0.6 | DF |
| | MITK | 24 | 2342 | 2342 | 2345 | N05 | W13 | 7620 | 11 | 24.0 | 3 | SN | | | C | 2342 | 53 | 0.6 | D |
| | LEAR | 24 | 2346 | 2346 | 2353 | N04 | W11 | 7620 | 11 | 24.2 | 7 | SF | B 8.4 | 3 | E | | 16 | | F |
| 0077 | LEAR | 24 | 2357 | | 2405 | N04 | W11 | 7620 | 11 | 24.2 | 8 | SF | | 3 | E | | 20 | | F |
| 0078 | | 25 | 00122 | 00141 | 0024 | N05 | W13 | 7620 | 11 | 24.0 | 12 | SF | C 1.0 | | | | 18 | 0.2 | F |
| | LEAR | 25 | 0012 | 0014 | 0030 | N04 | W14 | 7620 | 11 | 24.0 | 18 | SF | C 1.0 | 3 | E | | 17 | | F |
| | PALE | 25 | 0013E | 0013U | 0016D | N06 | W11 | 7620 | 11 | 24.2 | 3D | SF | | 2 | E | | 18 | | |
| | MITK | 25 | 0014 | 0015 | 0018 | N05 | W14 | 7620 | 11 | 24.0 | 4 | SN | | | C | 0015 | 20 | 0.2 | |
| 0079 | LEAR | 25 | 0105 | 0105 | 0112 | N05 | W14 | 7620 | 11 | 24.0 | 7 | SF | | 3 | E | | 12 | | F |
| 0080 | | 25 | 01161 | 0117 | 0121 | N04 | W14 | 7620 | 11 | 24.0 | 5 | SN | | | | | 24 | 0.2 | D |
| | LEAR | 25 | 0116 | 0117 | 0124 | N03 | W15 | 7620 | 11 | 23.9 | 8 | SF | | 3 | E | | 27 | | |
| | MITK | 25 | 0117 | 0117 | 0118 | N05 | W14 | 7620 | 11 | 24.0 | 1 | SN | | | C | 0117 | 20 | 0.2 | D |
| 0081 | | 25 | 0140 | 0142 | 0158 | N06 | W13 | 7620 | 11 | 24.1 | 18 | SF | B 9.7 | | | | 18 | | F |
| | LEAR | 25 | 0140 | 0142 | 0158 | N05 | W14 | 7620 | 11 | 24.0 | 18 | SF | B 9.7 | 3 | E | | 16 | | F |
| | PALE | 25 | 0141E | 0142U | 0148D | N06 | W12 | 7620 | 11 | 24.2 | 7D | SF | | 2 | E | | 20 | | |
| 0082 | MITK | 25 | 0232 | 0234 | 0237 | N05 | W15 | 7620 | 11 | 24.0 | 5 | SN | | | C | 0234 | 73 | 0.8 | D |
| 0083 | MITK | 25 | 0341 | 0342 | 0344 | N05 | W15 | 7620 | 11 | 24.0 | 3 | SN | | | C | 0342 | 27 | 0.3 | D |
| 0084 | MITK | 25 | 0345 | 0400 | 0404 | N05 | W16 | 7620 | 11 | 23.9 | 19 | SN | | | C | 0400 | 80 | 0.8 | |
| 0085 | LEAR | 25 | 0458 | 0518 | 0527 | N03 | W15 | 7620 | 11 | 24.1 | 29 | SF | | 3 | E | | 51 | | F |
| 0086 | LEAR | 25 | 0538 | 0620 | 0646 | N03 | W17 | 7620 | 11 | 24.0 | 68 | 1N | C 1.2 | 3 | E | | 117 | | EF |
| 0087 | HTPR | 25 | 0807 | 0813 | 0822 | N05 | W29 | 7620 | 11 | 23.2 | 15 | SF | | | C | 0813 | 30 | 0.3 | E |
| 0088 | | 25 | 08081 | 0809 | 0816 | N04 | W16 | 7620 | 11 | 24.1 | 8 | SF | C 2.1 | | | | 58 | | F |
| | LEAR | 25 | 0808 | 0809 | 0812 | N03 | W17 | 7620 | 11 | 24.1 | 4 | SF | C 2.1 | 3 | E | | 58 | | F |
| | KANZ | 25 | 0809 | 0809 | 0821 | N04 | W16 | 7620 | 11 | 24.1 | 12 | SF | | 2 | C | | | | |
| 0089 | | 25 | 0834* | 09072 | 0932 | N03 | W18 | 7620 | 11 | 24.0 | 58 | SF | C 1.9 | | | | 44 | | F |
| | LEAR | 25 | 0834 | 0907 | 0931 | N04 | W19 | 7620 | 11 | 23.9 | 57 | SF | C 1.9 | 3 | E | | 56 | | F |
| | KANZ | 25 | 0901 | 0909 | 0933 | N03 | W19 | 7620 | 11 | 23.9 | 32 | SF | | 2 | C | | | | |
| | SVTO | 25 | 0904E | 0918U | 0921D | N03 | W17 | 7620 | 11 | 24.1 | 17D | SF | | 2 | E | | 31 | | F |
| 0090 | HTPR | 25 | 0859 | 0908 | 0927 | N05 | W29 | 7620 | 11 | 23.2 | 28 | SN | | | C | 0908 | 100 | 1.0 | E |

# NOVEMBER 1993

| Grp # | Sta | Day | Start (UT) | Max (UT) | End (UT) | Lat | CMD | NOAA/ USAF Region | CMP Mo | CMP Day | Dur (Min) | Imp Opt | Imp Xray | Imp See | Obs Type | Area Measurement Time (UT) | Area Measurement Apparent (10-6 Disk) | Area Measurement Corr (Sq Deg) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0091 | HTPR | 25 | 1216 | 1222 | 1232 | N05 | W29 | 7620 | 11 | 23.3 | 16 | SF | | | C | 1222 | 120 | 1.3 | E |
| | | 25 | 1539 | | 1550 | No Flare Patrol | | | | | | | | | | | | | |
| 0092 | HOLL | 25 | 2023 | 2026 | 2046 | N04 | W24 | 7620 | 11 | 24.0 | 23 | SF | C 1.8 | 3 | E | | 58 | | F |
| 0093 | LEAR | 26 | 0723 | 0724 | 0739 | N12 | E17 | 7622 | 11 | 27.6 | 16 | SF | B 4.0 | 3 | E | | 29 | | FH |
| | | 26 | 1046 | | 1111 | No Flare Patrol | | | | | | | | | | | | | |
| 0094 | HTPR | 26 | 1122 | 1124 | 1200 | N04 | W34 | 7620 | 11 | 23.9 | 38 | SN | | | C | 1124 | 70 | 0.8 | D |
| 0095 | | 26 | 1602 | 16031 | 1607 | S08 | E74 | | 12 | 2.2 | 5 | SF | C 2.1 | | | | 42 | | H |
| | RAMY | 26 | 1602 | 1603 | 1607 | S07 | E74 | | 12 | 2.2 | 5 | SF | | 3 | E | | 35 | | H |
| | HOLL | 26 | 1602 | 1604 | 1607 | S09 | E75 | | 12 | 2.3 | 5 | SF | C 2.1 | 3 | E | | 50 | | H |
| 0096 | | 26 | 1708 | 1710 | 1734 | N03 | W37 | 7620 | 11 | 23.9 | 26 | SF | C 1.2 | | | | 68 | | F |
| | HOLL | 26 | 1708 | 1710 | 1731 | N04 | W38 | 7620 | 11 | 23.9 | 23 | SF | C 1.2 | 3 | E | | 63 | | |
| | RAMY | 26 | 1708 | 1710 | 1736 | N02 | W36 | 7620 | 11 | 24.0 | 28 | SF | | 3 | E | | 72 | | F |
| 0097 | | 26 | 2005 | 2005 | 2008 | N04 | W42 | 7620 | 11 | 23.7 | 3 | SF | B 4.2 | | | | 15 | | |
| | PALE | 26 | 2000E | 2001U | 2004D | N05 | W41 | 7620 | 11 | 23.8 | 4D | SF | | 3 | E | | 15 | | |
| | HOLL | 26 | 2005 | 2005 | 2008 | N02 | W43 | 7620 | 11 | 23.6 | 3 | SF | B 4.2 | 3 | E | | 15 | | |
| 0098 | CATA | 27 | 0705 | 0705 | 0710 | N01 | W51 | 7620 | 11 | 23.5 | 5 | SN | | 1 | C | 0705 | 56 | 0.9 | |
| 0099 | KHAR | 27 | 1015 | 1018 | 1029 | N11 | E04 | 7622 | 11 | 27.7 | 14 | SF | | 2 | V | | | | |
| | | 27 | 1044 | | 1053 | No Flare Patrol | | | | | | | | | | | | | |
| | | 27 | 1226 | | 1251 | No Flare Patrol | | | | | | | | | | | | | |
| 0100 | | 28 | 0055 | 0059* | 0110 | S12 | E50 | 7623 | 12 | 1.8 | 15 | SF | B 7.4 | | | | 32 | | F |
| | LEAR | 28 | 0055 | 0059 | 0110 | S11 | E49 | 7623 | 12 | 1.7 | 15 | SF | B 7.4 | 3 | E | | 36 | | F |
| | PALE | 28 | 0058E | 0112 | 0135D | S12 | E50 | 7623 | 12 | 1.8 | 37D | SF | | 3 | E | | 28 | | F |
| | | 28 | 0902 | | 0904 | No Flare Patrol | | | | | | | | | | | | | |
| | | 28 | 1045 | | 1107 | No Flare Patrol | | | | | | | | | | | | | |
| 0101 | LEAR | 29 | 0728 | 0730 | 0735 | S13 | E37 | 7623 | 12 | 2.1 | 7 | SF | B 3.8 | 3 | E | | 17 | | |
| | | 29 | 1031 | | 1033 | No Flare Patrol | | | | | | | | | | | | | |
| | | 29 | 1041 | | 1109 | No Flare Patrol | | | | | | | | | | | | | |
| | | 29 | 1239 | | 1241 | No Flare Patrol | | | | | | | | | | | | | |
| 0102 | RAMY | 29 | 1402 | 1403 | 1412 | S14 | E06 | 7625 | 11 | 30.0 | 10 | SF | | 3 | E | | 18 | | F |
| | | 30 | 0535 | | 0550 | No Flare Patrol | | | | | | | | | | | | | |
| 0103 | HTPR | 30 | 1040 | 1045 | 1058 | N03 | W08 | 7624 | 11 | 29.8 | 18 | SF | | | C | 1045 | 80 | 0.8 | T |
| | | 30 | 1100 | | 1105 | No Flare Patrol | | | | | | | | | | | | | |
| | | 30 | 1307 | | 1343 | No Flare Patrol | | | | | | | | | | | | | |
| 0104 | HOLL | 30 | 1807 | 1812 | 1825 | N03 | W14 | 7624 | 11 | 29.7 | 18 | SF | B 8.4 | 3 | E | | 15 | | F |

# INTERVALS OF NO FLARE PATROL OBSERVATION
## FOR PRECEDING SOLAR FLARE TABLE

## NOVEMBER 1993

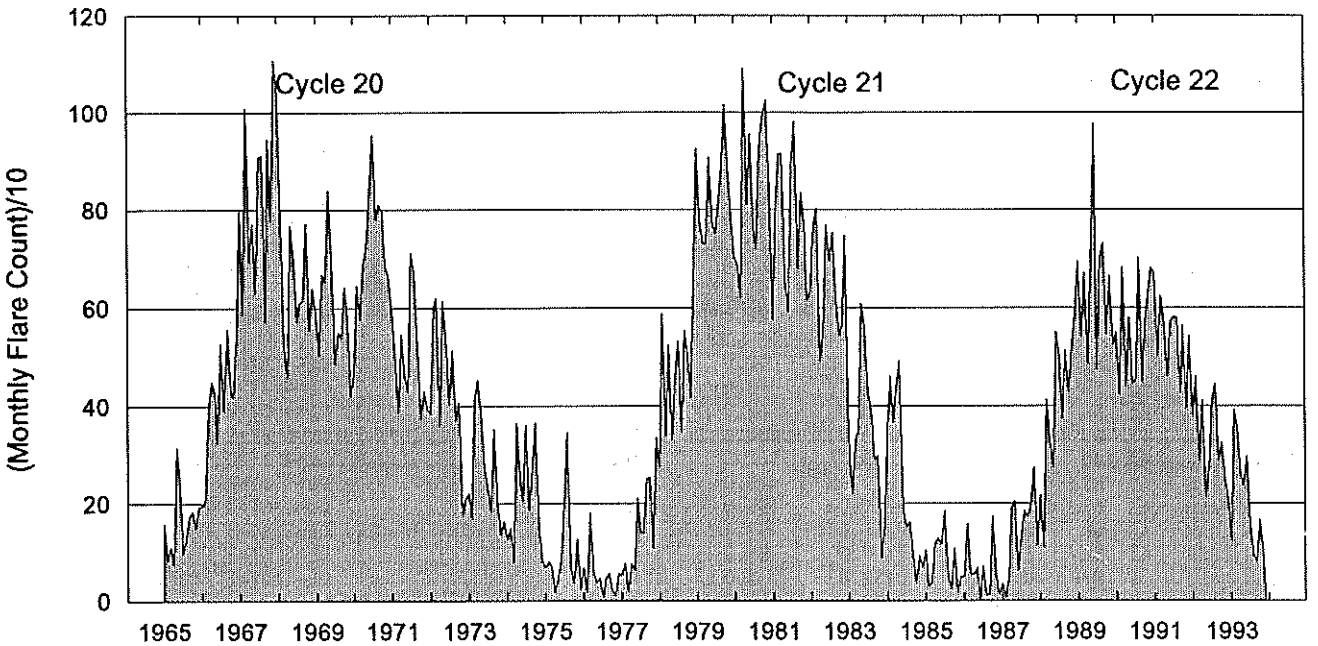



Times of no flare patrol, shown here as shaded areas, combine reports from the stations listed below. Portions of a panel completely shaded mark dates and times of no patrol of any kind (neither visual nor cinematographic); portions of a panel with only the bottom half shaded mark times of only visual patrol.

Athens
Catania
Haute Province
Holloman
Istanbul
Kanzelhoehe
Kharkov
Larissa
Learmonth
Mitaka
Palehua
Ramey
San Vito
Tashkent
Voroshilov

# Monthly Counts of Grouped Solar Flares
# Jan 1965 - Nov 1993






| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1965 | 158 | 85 | 110 | 74 | 315 | 231 | 99 | 127 | 173 | 184 | 150 | 193 | 1899 |
| 1966 | 194 | 205 | 390 | 449 | 429 | 323 | 528 | 391 | 558 | 432 | 417 | 543 | 4859 |
| 1967 | 796 | 589 | 1009 | 694 | 771 | 629 | 907 | 911 | 573 | 946 | 775 | 1109 | 9709 |
| 1968 | 1037 | 773 | 519 | 460 | 768 | 697 | 573 | 611 | 616 | 772 | 556 | 640 | 8022 |
| 1969 | 581 | 504 | 669 | 655 | 839 | 694 | 489 | 551 | 540 | 643 | 566 | 422 | 7153 |
| 1970 | 466 | 646 | 578 | 688 | 722 | 836 | 954 | 780 | 811 | 797 | 687 | 667 | 8632 |
| 1971 | 598 | 505 | 387 | 546 | 461 | 430 | 713 | 673 | 518 | 375 | 431 | 394 | 6031 |
| 1972 | 384 | 599 | 621 | 361 | 614 | 541 | 404 | 515 | 371 | 408 | 175 | 210 | 5203 |
| 1973 | 221 | 171 | 410 | 453 | 388 | 270 | 232 | 182 | 353 | 201 | 136 | 163 | 3180 |
| 1974 | 127 | 148 | 79 | 364 | 255 | 204 | 360 | 187 | 270 | 366 | 153 | 81 | 2594 |
| 1975 | 68 | 82 | 69 | 19 | 42 | 85 | 196 | 346 | 68 | 38 | 127 | 25 | 1165 |
| 1976 | 69 | 18 | 180 | 60 | 38 | 48 | 6 | 47 | 57 | 23 | 13 | 55 | 614 |
| 1977 | 54 | 77 | 18 | 76 | 64 | 210 | 140 | 140 | 250 | 252 | 107 | 336 | 1724 |
| 1978 | 274 | 588 | 338 | 526 | 330 | 460 | 533 | 346 | 554 | 499 | 418 | 648 | 5514 |
| 1979 | 926 | 781 | 731 | 731 | 907 | 772 | 750 | 821 | 901 | 1018 | 888 | 786 | 10012 |
| 1980 | 703 | 689 | 621 | 1092 | 811 | 956 | 763 | 720 | 924 | 988 | 1027 | 838 | 10132 |
| 1981 | 578 | 782 | 914 | 915 | 658 | 592 | 893 | 982 | 680 | 836 | 773 | 615 | 9218 |
| 1982 | 631 | 766 | 803 | 490 | 553 | 769 | 696 | 753 | 615 | 544 | 564 | 748 | 7932 |
| 1983 | 332 | 220 | 337 | 346 | 609 | 561 | 427 | 389 | 289 | 298 | 88 | 152 | 4048 |
| 1984 | 353 | 461 | 366 | 440 | 492 | 185 | 151 | 161 | 95 | 36 | 92 | 69 | 2901 |
| 1985 | 104 | 29 | 38 | 119 | 129 | 116 | 185 | 53 | 25 | 108 | 19 | 50 | 975 |
| 1986 | 51 | 158 | 54 | 56 | 68 | 3 | 71 | 12 | 14 | 174 | 56 | 13 | 730 |
| 1987 | 36 | 7 | 52 | 192 | 205 | 61 | 132 | 185 | 172 | 198 | 273 | 114 | 1627 |
| 1988 | 217 | 109 | 413 | 328 | 274 | 551 | 502 | 375 | 513 | 429 | 518 | 587 | 4816 |
| 1989 | 695 | 544 | 672 | 488 | 691 | 977 | 474 | 699 | 733 | 547 | 665 | 526 | 7711 |
| 1990 | 550 | 424 | 684 | 442 | 580 | 445 | 454 | 703 | 449 | 574 | 623 | 682 | 6610 |
| 1991 | 672 | 503 | 625 | 570 | 458 | 574 | 582 | 581 | 425 | 565 | 396 | 544 | 6495 |
| 1992 | 380 | 462 | 287 | 412 | 214 | 271 | 413 | 447 | 287 | 325 | 248 | 206 | 3952 |
| 1993 | 123 | 392 | 357 | 262 | 237 | 296 | 154 | 92 | 82 | 167 | 104 | | 2266 |

Monthly totals for the last 6 months may change significantly, as more stations submit their reports. The term 'grouped' means observations of the same event by different sites were lumped together and counted as one.

NOTE: Counts for 1993 were updated to reflect the addition of Catania data.

# S O L A R  R A D I O  E M I S S I O N
## Outstanding Occurrences

## NOVEMBER 1993

| Day | Freq | Sta | Type | | Start (UT) | Time of Maximum (UT) | Duration (Min) | Flux Density Peak (10 -22 W/m 2 Hz) | Flux Density Mean (10 -22 W/m 2 Hz) | Int | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 127 | TORN | 44 | NS | 0620.0E | | 520.0D | | 20.0 | | V=2 |
| | 245 | SVTO | 43 | NS | 0629.0 | 0731.0 | 167.0 | 210.0 | | | QL=4 ST=2 TYP=1 |
| | 204 | IZMI | 44 | NS | 0700.0E | | 300.0D | | 50.0 | | |
| | 245 | LEAR | 43 | NS | 0729.0 | 0749.0 | 46.0 | 240.0 | | | QL=4 ST=2 TYP=1 |
| | 410 | SVTO | 43 | NS | 0736.0 | 0822.0 | 54.0 | 110.0 | | | QL=4 ST=2 TYP=1 |
| | 610 | SVTO | 43 | NS | 0739.0 | 0745.0 | 20.0 | 56.0 | | | QL=4 ST=2 TYP=1 |
| | 260 | ONDR | 44 | NS | 0750.0E | | 380.0D | | | | |
| | 245 | SGMR | 43 | NS | 1139.0 | 1237.0U | 92.0 | 150.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | SVTO | 43 | NS | 1143.0 | 1237.0 | 70.0 | 100.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | SGMR | 43 | NS | 1609.0 | 1646.0 | 67.0 | 280.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | PALE | 43 | NS | 1652.0 | 1716.0 | 404.0 | 120.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | SGMR | 43 | NS | 1831.0 | 2045.0 | 162.0 | 340.0 | | | QL=4 ST=2 TYP=1 |
| | 610 | PALE | 43 | NS | 2208.0 | 2239.0U | 125.0 | 68.0 | | | QL=4 ST=2 TYP=1 |
| | 410 | PALE | 43 | NS | 2208.0 | 2215.0U | 135.0 | 60.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | LEAR | 43 | NS | 2309.0 | 0244.0 | 51.0 | 250.0 | | | QL=4 ST=3 TYP=1 |
| | 245 | LEAR | 43 | NS | 2309.0 | 2309.0 | 51.0 | 74.0 | | | QL=4 ST=3 TYP=1 |
| | 245 | PALE | 4 | S/F | 0130.0 | 0132.0 | 3.0 | 100.0 | | | QL=4 ST=2 TYP=3 |
| | 500 | HIRA | 42 | SER | 0130.5 | 0132.5 | 2.0 | 12.0 | | | WL |
| | 245 | LEAR | 8 | S | 0132.0 | 0132.0 | U | 73.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 0241.0 | 0242.0 | 1.0 | 87.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 0248.0 | 0249.0 | 1.0 | 57.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | LEAR | 8 | S | 0249.0 | 0249.0 | U | 54.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 0250.0 | 0252.0 | 2.0 | 250.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | LEAR | 8 | S | 0308.0 | 0309.0 | 1.0 | 360.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 0308.0 | 0309.0 | 1.0 | 430.0 | | | QL=4 ST=2 TYP=3 |
| | 500 | HIRA | 46 | C | 0308.9 | 0309.1 | 1.5 | 14.0 | 6.0 | | WL |
| | 245 | LEAR | 8 | S | 0321.0 | 0321.0 | 1.0 | 59.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 0321.0 | 0321.0 | 1.0 | 69.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 0330.0 | 0331.0 | 1.0 | 68.0 | | | QL=4 ST=2 TYP=3 |
| | 410 | LEAR | 4 | S/F | 0417.0 | 0419.0 | 3.0 | 30.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | LEAR | 8 | S | 0418.0 | 0419.0 | 1.0 | 70.0 | | | QL=4 ST=2 TYP=3 |
| | 500 | HIRA | 8 | S | 0419.5 | 0419.6 | 0.6 | 10.0 | | | WL |
| | 245 | LEAR | 8 | S | 0429.0 | 0429.0 | 2.0 | 160.0 | | | QL=4 ST=2 TYP=3 |
| | 500 | HIRA | 42 | SER | 0429.1 | 0429.4 | 7.0 | 22.0 | | | WL |
| | 410 | LEAR | 8 | S | 0430.0 | 0430.0 | 1.0 | 76.0 | | | QL=4 ST=2 TYP=3 |
| | 500 | HIRA | 3 | S | 0510.0 | 0510.4 | 1.0 | 7.0 | 4.0 | | O |
| | 2840 | PEKG | 1 | S | 0521.0 | 0522.2 | 4.0 | 6.4 | | | |
| | 500 | HIRA | 42 | SER | 0621.7 | 0626.7 | 6.0 | 13.0 | | | WL |
| | 245 | SVTO | 8 | S | 0651.0 | 0652.0 | 1.0 | 52.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | LEAR | 8 | S | 0652.0 | 0652.0 | U | 60.0 | | | QL=4 ST=2 TYP=3 |
| | 2850 | CRIM | 25 | R | 0702.0 | 0724.0 | 180.0 | 7.0 | | | |
| | 2950 | GORK | 45 | C | 0704.8 | 0705.0 | 0.7 | 3.3 | | | |
| | 245 | LEAR | 8 | S | 0710.0 | 0710.0 | 1.0 | 50.0 | | | QL=4 ST=2 TYP=3 |
| | 410 | LEAR | 8 | S | 0711.0 | 0711.0 | U | 59.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | LEAR | 49 | GB | 0714.0 | 0722.0 | 13.0 | 590.0 | | | QL=4 ST=2 TYP=7 |
| | 410 | SVTO | 4 | S/F | 0717.0 | 0717.0 | 1433.0 | 30.0 | | | QL=4 ST=2 TYP=3 |
| | 9100 | GORK | 2 | S/F | 0720.1 | 0722.5 | 5.0 | 6.8 | | | |
| | 3013 | IZMI | 5 | S | 0720.5 | 0722.5 | 5.0 | 17.0 | 8.0 | | |
| | 500 | HIRA | 46 | C | 0721.0 | 0722.3 | 1.5 | 150.0 | 50.0 | | O |
| | 2850 | CRIM | 3 | S | 0721.0 | 0722.5 | 3.0 | 22.0 | 7.0 | | |
| | 950 | GORK | 4 | S/F | 0721.7 | 0722.4 | 2.2 | 51.0 | | | |
| | 2950 | GORK | 2 | S/F | 0721.9 | 0722.4 | 1.1 | 13.3 | | | |
| | 410 | LEAR | 8 | S | 0722.0 | 0722.0 | 1.0 | 390.0 | | | QL=4 ST=2 TYP=3 |
| | 610 | LEAR | 8 | S | 0722.0 | 0722.0 | 1.0 | 99.0 | | | QL=4 ST=2 TYP=3 |
| | 15400 | LEAR | 8 | S | 0722.0 | 0722.0 | U | 27.0 | | | QL=4 ST=2 TYP=3 |
| | 610 | SVTO | 8 | S | 0722.0 | 0722.0 | U | 110.0 | | | QL=2 ST=2 TYP=3 |
| | 204 | IZMI | 42 | SER | 0722.0 | 0722.3 | 6.0 | 760.0 | | | |
| | 33 | UPIC | 46 | C | 0722.4 | 0723.2 | 2.0 | | | | |
| | 2850 | CRIM | 1 | S | 0724.8 | 0725.0 | 0.6 | 4.0 | 1.0 | | |
| | 410 | LEAR | 4 | S/F | 0738.0 | 0739.0 | 8.0 | 87.0 | | | QL=4 ST=2 TYP=3 |
| | 33 | UPIC | 2 | S/F | 0839.0 | 0839.6 | 0.9 | | | | |
| | 410 | SVTO | 8 | S | 1040.0 | 1040.0 | 1.0 | 47.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SVTO | 49 | GB | 1040.0 | 1040.0 | 1.0 | 780.0 | | | QL=4 ST=2 TYP=6 |
| | 2850 | CRIM | 1 | S | 1040.2 | 1041.0 | 112.0 | 2.6 | 1.0 | | |
| | 127 | TORN | 4 | S/F | 1040.2 | 1041.8 | 2.0 | 540.0 | 270.0 | | |
| | 2950 | GORK | 2 | S/F | 1040.4 | 1041.1 | 1.4 | 2.5 | | | |
| | 3013 | IZMI | 1 | S | 1040.5 | 1041.0 | 2.0 | 4.0 | 2.0 | | |
| | 204 | IZMI | 4 | S/F | 1040.5 | 1041.0 | 1.5 | 350.0 | | | |
| | 9100 | GORK | 2 | S/F | 1040.5 | 1041.5 | 2.9 | 11.0 | | | |

# SOLAR RADIO EMISSION
## Outstanding Occurrences

### NOVEMBER 1993

| Day | Freq | Sta | Type | | Start (UT) | Time of Maximum (UT) | Duration (Min) | Flux Density Peak (10 -22 W/m 2 Hz) | Flux Density Mean (10 -22 W/m 2 Hz) | Int | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 950 | GORK | 4 | S/F | 1040.5 | 1040.7 | 1.4 | 59.0 | | | |
| | 127 | TORN | 4 | S/F | 1114.2 | 1114.9 | 1.9 | 210.0 | 60.0 | | |
| | 33 | UPIC | 2 | S/F | 1114.9 | 1115.1 | 0.5 | | | | |
| | 3013 | IZMI | 7 | C | 1120.5 | 1122.0 | 4.0 | 12.0 | 6.0 | | |
| | 9100 | GORK | 7 | C | 1121.0 | 1121.8 | 6.5 | 5.5 | | | |
| | 2850 | CRIM | 4 | S/F | 1121.3 | 1122.0 | 1.2 | 16.0 | 5.0 | | |
| | 2950 | GORK | 2 | S/F | 1121.4 | 1122.1 | 1.4 | 11.3 | | | |
| | 245 | SGMR | 8 | S | 1402.0 | 1404.0 | 2.0 | 100.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SVTO | 8 | S | 1402.0 | 1404.0 | 2.0 | 69.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1550.0 | 1551.0 | 2.0 | 150.0 | | | QL=4 ST=2 TYP=3 |
| | 410 | SGMR | 8 | S | 1551.0 | 1551.0 | 1.0 | 90.0 | | | QL=4 ST=2 TYP=3 |
| | 410 | SGMR | 4 | S/F | 1636.0 | 1637.0 | 3.0 | 39.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1753.0 | 1754.0 | 1.0 | 55.0 | | | QL=4 ST=3 TYP=3 |
| | 2800 | PENT | 24 | R | 2039.0 | 2240.0 | 160.0D | 17.0 | 11.0 | | |
| | 410 | SGMR | 8 | S | 2042.0 | 2043.0 | 1.0 | 55.0 | | | QL=4 ST=2 TYP=3 |
| | 410 | PALE | 4 | S/F | 2127.0 | 2129.0 | 4.0 | 50.0 | | | QL=4 ST=2 TYP=3 |
| | 610 | PALE | 4 | S/F | 2127.0 | 2129.0 | 4.0 | 17.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 2128.0 | 2129.0 | 1.0 | 86.0 | | | QL=2 ST=2 TYP=3 |
| | 2695 | PALE | 4 | S/F | 2200.0 | 2204.0 | 8.0 | 11.0 | | | QL=4 ST=2 TYP=3 |
| | 2800 | HIRA | 47 | GB | 2200.0 | 2226.6 | 35.0 | 82.0 | 17.0 | | SL |
| | 410 | LEAR | 49 | GB | 2201.0 | 2207.0 | 9.0 | 2200.0 | | | QL=4 ST=2 TYP=6 |
| | 610 | PALE | 49 | GB | 2201.0 | 2206.0 | 7.0 | 3700.0 | | | QL=4 ST=2 TYP=6 |
| | 410 | PALE | 49 | GB | 2201.0 | 2206.0 | 7.0 | 2300.0 | | | QL=4 ST=2 TYP=6 |
| | 1415 | PALE | 49 | GB | 2201.0 | 2206.0 | 119.0 | 740.0 | | | QL=4 ST=1 TYP=6 |
| | 500 | HIRA | 48 | C | 2201.2 | 2206.8 | 40.0 | 370.0 | 70.0 | | ML |
| | 1415 | LEAR | 49 | GB | 2202.0 | 2206.0 | 5.0 | 580.0 | | | QL=4 ST=2 TYP=6 |
| | 1415 | PALE | 49 | GB | 2202.0 | 2206.0 | 5.0 | 720.0 | | | QL=4 ST=2 TYP=6 |
| | 610 | LEAR | 49 | GB | 2202.0 | 2206.0 | 16.0 | 2400.0 | | | QL=4 ST=2 TYP=6 |
| | 410 | PALE | 4 | S/F | 2212.0 | 2214.0 | 8.0 | 320.0 | | | QL=2 ST=2 TYP=3 |
| | 1415 | PALE | 4 | S/F | 2212.0 | 2214.0 | 5.0 | 170.0 | | | QL=4 ST=2 TYP=3 |
| | 610 | PALE | 49 | GB | 2212.0 | 2215.0 | 5.0 | 1000.0 | | | QL=2 ST=2 TYP=6 |
| | 2695 | LEAR | 8 | S | 2213.0 | 2214.0 | 2.0 | 31.0 | | | QL=4 ST=2 TYP=3 |
| | 2800 | PENT | 3 | S | 2220.0 | | 11.8 | 19.2 | | | |
| | 610 | LEAR | 49 | GB | 2220.0 | 2224.0 | 17.0 | 1300.0 | | | QL=4 ST=2 TYP=6 |
| | 410 | LEAR | 49 | GB | 2221.0 | 2224.0 | 14.0 | 540.0 | | | QL=4 ST=2 TYP=6 |
| | 1415 | LEAR | 4 | S/F | 2222.0 | 2224.0 | 8.0 | 170.0 | | | QL=4 ST=2 TYP=3 |
| | 1415 | PALE | 4 | S/F | 2223.0 | 2224.0 | 7.0 | 200.0 | | | QL=4 ST=2 TYP=3 |
| | 2695 | PALE | 4 | S/F | 2223.0 | 2226.0 | 13.0 | 45.0 | | | QL=4 ST=2 TYP=3 |
| | 610 | PALE | 49 | GB | 2223.0 | 2224.0 | 13.0 | 1600.0 | | | QL=2 ST=3 TYP=6 |
| | 410 | PALE | 49 | GB | 2223.0 | 2224.0 | 10.0 | 560.0 | | | QL=2 ST=3 TYP=6 |
| | 2695 | LEAR | 4 | S/F | 2224.0 | 2226.0 | 3.0 | 33.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | LEAR | 8 | S | 2225.0 | 2226.0 | 1.0 | 87.0 | | | QL=4 ST=2 TYP=3 |
| | 500 | HIRA | 27 | RF | 2305.0 | 2335.9 | 105.0 | 65.0 | 18.0 | | WL |
| | 245 | LEAR | 8 | S | 2329.0 | 2329.0 | 2.0 | 230.0 | | | QL=4 ST=2 TYP=3 |
| 02 | 245 | PALE | 43 | NS | 0224.0 | 0244.0 | 75.0 | 320.0 | | | QL=4 ST=2 TYP=1 |
| | 127 | TORN | 44 | NS | 0620.0E | | 430.0D | | 2.0 | | V=1 |
| | 204 | IZMI | 44 | NS | 0700.0E | | 300.0D | | 35.0 | | |
| | 260 | ONDR | 44 | NS | 0750.0E | | 380.0D | | | | |
| | 245 | LEAR | 43 | NS | 0813.0 | 0813.0 | 124.0 | 52.0 | | | QL=4 ST=3 TYP=1 |
| | 245 | SGMR | 43 | NS | 1141.0 | 1850.0 | 571.0 | 570.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | SVTO | 43 | NS | 1204.0 | 1334.0 | 198.0 | 260.0 | | | QL=4 ST=2 TYP=1 |
| | 280 | CUBA | 44 | NS | 1550.0E | | 310.0D | | 20.0 | | |
| | 235 | CUBA | 44 | NS | 1550.0E | | 310.0D | | 20.0 | | |
| | 245 | PALE | 43 | NS | 1653.0 | 1850.0U | 490.0 | 850.0 | | | QL=4 ST=3 TYP=1 |
| | 245 | PALE | 43 | NS | 1753.0 | 1850.0 | 430.0 | 850.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | LEAR | 43 | NS | 2156.0 | 2334.0 | 742.0 | 360.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | PALE | 8 | S | 0218.0 | 0219.0 | 1.0 | 69.0 | | | QL=4 ST=2 TYP=3 |
| | 500 | HIRA | 42 | SER | 0311.5 | 0311.7 | 10.0 | 11.0 | | | O |
| | 245 | LEAR | 4 | S/F | 0526.0 | 0529.0 | 7.0 | 170.0 | | | QL=2 ST=2 TYP=3 |
| | 245 | LEAR | 4 | S/F | 0526.0 | 0529.0 | 7.0 | 170.0 | | | QL=4 ST=2 TYP=3 |
| | 500 | HIRA | 42 | SER | 0527.7 | 0529.4 | 2.5 | 4.0 | | | WL |
| | 33 | UPIC | 42 | SER | 0706.6 | 0806.0 | 154.7 | | | | |
| | 204 | IZMI | 42 | SER | 0810.0 | 0814.5 | 29.0 | 35.0 | | | |
| | 9100 | GORK | 1 | S | 0810.7 | 0812.1 | 7.3 | 10.0 | | | |
| | 2950 | GORK | 1 | S | 0811.6 | 0812.0 | 4.1 | 2.0 | | | |
| | 127 | TORN | 8 | S | 0811.8 | 0812.2 | 1.1 | 320.0 | 160.0 | | |
| | 3013 | IZMI | 5 | S | 0812.0 | 0812.2 | 5.0 | 9.0 | 4.0 | | |
| | 245 | PALE | 49 | GB | 1740.0 | 1740.0 | U | 1100.0 | | | QL=2 ST=2 TYP=6 |

# S O L A R  R A D I O  E M I S S I O N
## Outstanding Occurrences

### NOVEMBER 1993

| Day | Freq | Sta | Type | | Start (UT) | Time of Maximum (UT) | Duration (Min) | Flux Density Peak (10 -22 W/m 2 Hz) | Flux Density Mean (10 -22 W/m 2 Hz) | Int | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 02 | 410 | PALE | 8 | S | 1844.0 | 1845.0 | 1.0 | 76.0 | | | QL=4 ST=2 TYP=3 |
| | 410 | SGMR | 8 | S | 1852.0 | 1853.0 | 2.0 | 62.0 | | | QL=4 ST=2 TYP=3 |
| 03 | 245 | PALE | 43 | NS | 0245.0 | 0248.0 | 53.0 | 190.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | SVTO | 43 | NS | 0542.0 | 0602.0 | 1098.0 | 460.0 | | | QL=4 ST=1 TYP=1 |
| | 245 | SVTO | 43 | NS | 0542.0 | 0000.0 | 1098.0 | | | | QL=4 ST=1 TYP=1 |
| | 204 | IZMI | 44 | NS | 0700.0E | | 300.0D | 25.0 | | | |
| | 260 | ONDR | 44 | NS | 0750.0E | | 380.0D | | | | |
| | 245 | SGMR | 43 | NS | 1355.0 | 1355.0 | 93.0 | 210.0 | | | QL=4 ST=2 TYP=1 |
| | 235 | CUBA | 44 | NS | 1500.0E | | 360.0D | | 16.0 | | |
| | 280 | CUBA | 44 | NS | 1600.0E | | 300.0D | | 15.0 | | |
| | 245 | LEAR | 43 | NS | 2329.0 | 2329.0 | 226.0 | 160.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | PALE | 8 | S | 0113.0 | 0114.0 | 1.0 | 120.0 | | | QL=2 ST=2 TYP=3 |
| | 33 | UPIC | 42 | SER | 1046.1 | 1049.0 | 44.9 | | | | |
| | 127 | TORN | 4 | S/F | 1048.4 | 1048.7 | 1.0 | 150.0 | 30.0 | | DISTURBED |
| | 245 | SGMR | 4 | S/F | 1227.0 | 1230.0 | 4.0 | 120.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 1729.0 | 1729.0 | U | 75.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1729.0 | 1729.0 | 1.0 | 61.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 1806.0 | 1806.0 | U | 61.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 1911.0 | 1911.0 | U | 120.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1911.0 | 1911.0 | U | 110.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 2001.0 | 2001.0 | U | 52.0 | | | QL=4 ST=2 TYP=3 |
| 04 | 260 | ONDR | 44 | NS | 0750.0E | | 380.0D | | | | |
| | 204 | IZMI | 43 | NS | 1108.0 | | 52.0D | | 10.0 | | |
| | 245 | SVTO | 43 | NS | 1146.0 | 1146.0 | 19.0 | 230.0 | | | QL=4 ST=2 TYP=1 |
| | 2800 | HIRA | 21 | GRF | 0212.0 | 0218.5 | 25.0 | 8.0 | 4.0 | | O |
| | 245 | LEAR | 8 | S | 0310.0 | 0310.0 | 1.0 | 100.0 | | | QL=2 ST=3 TYP=3 |
| | 410 | LEAR | 8 | S | 0310.0 | 0310.0 | 1.0 | 140.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 0310.0 | 0311.0 | 1.0 | 130.0 | | | QL=4 ST=2 TYP=3 |
| | 410 | PALE | 8 | S | 0310.0 | 0310.0 | 1.0 | 140.0 | | | QL=4 ST=2 TYP=3 |
| | 500 | HIRA | 42 | SER | 0310.0 | 0310.5 | 3.0 | 68.0 | | | O |
| | 245 | LEAR | 4 | S/F | 0616.0 | 0617.0 | 3.0 | 66.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SVTO | 4 | S/F | 0616.0 | 0623.0 | 8.0 | 200.0 | | | QL=2 ST=2 TYP=3 |
| | 204 | IZMI | 7 | C | 0925.0 | 0926.0 | 2.5 | 45.0 | | | |
| | 204 | IZMI | 7 | C | 0938.8 | 0939.2 | 1.0 | 50.0 | 25.0 | | |
| | 33 | UPIC | 42 | SER | 1122.3 | 1146.4 | 35.4 | | | | |
| | 245 | SGMR | 8 | S | 1146.0 | 1146.0 | U | 250.0 | | | QL=4 ST=3 TYP=3 |
| | 204 | IZMI | 41 | F | 1146.0 | 1146.5 | 2.0 | 280.0 | | | |
| | 127 | TORN | 8 | S | 1152.0 | 1152.5 | 0.8 | 250.0 | 120.0 | | |
| | 127 | TORN | 8 | S | 1153.9 | 1154.5 | 1.0 | 100.0 | 50.0 | | |
| | 245 | SGMR | 8 | S | 1204.0 | 1205.0 | 1.0 | 96.0 | | | QL=4 ST=3 TYP=3 |
| 05 | 260 | ONDR | 27 | RF | 0952.0 | 0958.0 | 28.0 | 62.0 | | | |
| | 245 | SGMR | 8 | S | 1942.0 | 1943.0 | 1.0 | 470.0 | | | QL=4 ST=2 TYP=3 |
| 06 | 204 | IZMI | 44 | NS | 0700.0E | | 300.0D | | 10.0 | | |
| | 245 | SVTO | 43 | NS | 0717.0 | 0909.0 | U | 170.0 | | | QL=4 ST=3 TYP=1 |
| | 245 | SVTO | 43 | NS | 0717.0 | 0909.0 | U | 170.0 | | | QL=4 ST=3 TYP=1 |
| | 245 | LEAR | 43 | NS | 0717.0 | 0909.0 | 183.0 | 180.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | SVTO | 43 | NS | 0717.0 | 0909.0 | 480.0 | 170.0 | | | QL=4 ST=3 TYP=1 |
| | 260 | ONDR | 44 | NS | 0750.0E | | 380.0D | | | | |
| | 245 | SGMR | 43 | NS | 1201.0 | 1217.0 | 64.0 | 140.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | SGMR | 43 | NS | 1359.0 | 1400.0 | 40.0 | 110.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | PALE | 43 | NS | 1655.0 | 1700.0U | 247.0 | 360.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | SGMR | 43 | NS | 1656.0 | 1701.0 | 36.0 | 350.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | LEAR | 8 | S | 0413.0 | 0413.0 | 1.0 | 98.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | LEAR | 8 | S | 0644.0 | 0644.0 | U | 70.0 | | | QL=4 ST=2 TYP=3 |
| | 204 | IZMI | 41 | F | 1035.0 | 1036.0 | 3.0 | 70.0 | | | |
| | 204 | IZMI | 42 | SER | 1146.0 | 1148.2 | 5.0 | 400.0 | | | |
| | 245 | SGMR | 4 | S/F | 1331.0 | 1338.0 | 7.0 | 67.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 4 | S/F | 1842.0 | 1845.0 | 6.0 | 130.0 | | | QL=4 ST=2 TYP=5 |
| | 245 | SGMR | 4 | S/F | 2030.0 | 2033.0 | 4.0 | 53.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 2102.0 | 2102.0 | 1.0 | 76.0 | | | QL=4 ST=2 TYP=3 |
| 07 | 245 | LEAR | 43 | NS | 0058.0 | 0317.0 | 562.0 | 280.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | PALE | 43 | NS | 0100.0 | 0316.0 | 156.0 | 290.0 | | | QL=4 ST=2 TYP=1 |
| | 204 | IZMI | 44 | NS | 0700.0E | | 300.0D | | 10.0 | | |
| | 260 | ONDR | 44 | NS | 0750.0E | | 380.0D | | | | |

# S O L A R  R A D I O  E M I S S I O N
## Outstanding Occurrences

### NOVEMBER 1993

| Day | Freq | Sta | Type | | Start (UT) | Time of Maximum (UT) | Duration (Min) | Flux Density Peak (10 -22 W/m 2 Hz) | Flux Density Mean (10 -22 W/m 2 Hz) | Int | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 07 | 245 | SVTO | 43 | NS | 0853.0 | 0858.0 | 55.0 | 87.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | SGMR | 43 | NS | 1226.0 | 1414.0 | 161.0 | 270.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | SVTO | 43 | NS | 1304.0 | 1352.0 | 60.0 | 87.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | PALE | 43 | NS | 1937.0 | 1950.0 | 478.0 | 170.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | SGMR | 43 | NS | 1945.0 | 1950.0 | 5.0 | 110.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | LEAR | 43 | NS | 2302.0 | 0242.0 | 594.0 | 270.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | LEAR | 8 | S | 0416.0 | 0416.0 | U | 370.0 | | | QL=2 ST=2 TYP=3 |
| | 950 | GORK | 20 | GRF | 0732.6 | 0746.0 | 27.4 | 8.0 | | | |
| | 204 | IZMI | 41 | F | 1120.0 | 1122.0 | 65.0 | 200.0 | | | |
| | 245 | SVTO | 8 | S | 1203.0 | 1204.0 | 2.0 | 220.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1204.0 | 1204.0 | U | 190.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1633.0 | 1633.0 | U | 80.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1856.0 | 1856.0 | U | 100.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 4 | S/F | 1925.0 | 1926.0 | 8.0 | 74.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 1926.0 | 1926.0 | U | 130.0 | | | QL=4 ST=3 TYP=3 |
| | 245 | LEAR | 8 | S | 2339.0 | 2339.0 | 1.0 | 88.0 | | | QL=2 ST=2 TYP=3 |
| 08 | 245 | SVTO | 43 | NS | 0549.0 | 0632.0 | 153.0 | 270.0 | | | QL=4 ST=2 TYP=1 |
| | 204 | IZMI | 44 | NS | 0700.0E | | 300.0D | 15.0 | | | |
| | 260 | ONDR | 44 | NS | 0750.0E | | 380.0D | | | | |
| | 245 | LEAR | 43 | NS | 0945.0 | 0945.0 | 36.0 | 160.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | PALE | 44 | NS | 2115.0E | 2129.0 | 251.0D | 73.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | LEAR | 43 | NS | 2353.0 | 0028.0 | 629.0 | 98.0 | | | QL=4 ST=2 TYP=1 |
| | 204 | IZMI | 42 | SER | 0946.0 | 0947.0 | 2.0 | 170.0 | | | |
| | 245 | SGMR | 8 | S | 1321.0 | 1322.0 | 1.0 | 380.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SVTO | 8 | S | 1321.0 | 1322.0 | 1.0 | 290.0 | | | QL=2 ST=2 TYP=3 |
| | 245 | SGMR | 4 | S/F | 1405.0 | 1408.0 | 5.0 | 92.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SVTO | 8 | S | 1405.0 | 1405.0 | 1.0 | 48.0 | | | QL=2 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1542.0 | 1542.0 | 1.0 | 460.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1623.0 | 1623.0 | U | 73.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1644.0 | 1644.0 | U | 82.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1822.0 | 1822.0 | U | 84.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 4 | S/F | 1829.0 | 1830.0 | 3.0 | 52.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 1830.0 | 1830.0 | U | 70.0 | | | QL=4 ST=2 TYP=3 |
| 09 | 245 | SVTO | 43 | NS | 0600.0 | 0604.0 | 36.0 | 86.0 | | | QL=4 ST=2 TYP=1 |
| | 204 | IZMI | 44 | NS | 0700.0E | | 300.0D | | 20.0 | | |
| | 260 | ONDR | 44 | NS | 0750.0E | | 370.0D | | | | |
| | 245 | SVTO | 43 | NS | 1042.0 | 1116.0 | 55.0 | 110.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | PALE | 43 | NS | 1804.0 | 1806.0 | 542.0 | 71.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | LEAR | 43 | NS | 2300.0 | 2336.0 | 390.0 | 71.0 | | | QL=4 ST=2 TYP=1 |
| | 2950 | GORK | 20 | GRF | 0743.8 | 0751.0 | 13.2 | 2.5 | | | |
| | 9100 | GORK | 1 | S | 0749.4 | 0750.5 | 7.6 | 5.3 | | | |
| | 950 | GORK | 20 | GRF | 0750.7 | 0751.1 | 7.3 | 1.5 | | | |
| | 204 | IZMI | 5 | S | 0820.0 | 0820.4 | | 200.0 | | | |
| | 9100 | GORK | 1 | S | 0822.9 | 0823.1 | 3.7 | 3.5 | | | |
| | 9100 | GORK | 22 | GRF | 0836.7 | 0839.5 | 11.8 | 5.3 | | | |
| | 950 | GORK | 21 | GRF | 0948.3 | 1025.0 | 102.0D | 17.0 | | | |
| | 950 | GORK | 46 | C | 1022.3 | 1023.5 | 2.7 | 27.0 | | | |
| | 808 | ONDR | 41 | F | 1023.0 | | 4.0 | | | | |
| | 950 | GORK | 4 | S/F | 1036.9 | 1040.5 | 7.2 | 170.0 | | | |
| | 808 | ONDR | 2 | S/F | 1037.0 | 1041.5 | 8.0 | 367.0 | | | |
| | 2950 | GORK | 22 | GRF | 1038.2 | 1040.4 | 9.8 | 2.0 | | | |
| | 950 | GORK | 2 | S/F | 1049.9 | 1051.1 | 5.5 | 17.0 | | | |
| | 245 | SGMR | 8 | S | 1402.0 | 1402.0 | U | 77.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1407.0 | 1408.0 | 1.0 | 76.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1422.0 | 1422.0 | U | 100.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1641.0 | 1641.0 | 1.0 | 84.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1722.0 | 1723.0 | 1.0 | 70.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1730.0 | 1731.0 | 1.0 | 53.0 | | | QL=4 ST=2 TYP=3 |
| 10 | 260 | ONDR | 44 | NS | 0650.0E | | 370.0D | | | | |
| | 204 | IZMI | 44 | NS | 0700.0E | | 300.0D | | 10.0 | | |
| | 127 | TORN | 44 | NS | 0900.0E | | 330.0D | | 16.0 | | V=1 |
| | 204 | IZMI | 41 | F | 1059.0 | 1059.5 | 10.0 | 200.0 | | | |
| | 245 | SGMR | 8 | S | 1340.0 | 1340.0 | U | 62.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SVTO | 8 | S | 1340.0 | 1340.0 | U | 62.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 1730.0 | 1730.0 | U | 94.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1730.0 | 1730.0 | U | 55.0 | | | QL=4 ST=2 TYP=3 |

# SOLAR RADIO EMISSION
## Outstanding Occurrences

### NOVEMBER 1993

| Day | Freq | Sta | Type | | Start (UT) | Time of Maximum (UT) | Duration (Min) | Flux Density Peak (10 -22 W/m 2 Hz) | Flux Density Mean (10 -22 W/m 2 Hz) | Int | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 127 | TORN | 44 | NS | 0640.0E | | 470.0D | | 7.0 | | V=1 |
| | 204 | IZMI | 43 | NS | 1100.0 | | 60.0 | | 15.0 | | |
| | 2800 | HIRA | 8 | S | 0550.1 | 0550.2 | 0.2 | 18.0 | | | O |
| | 3013 | IZMI | 1 | S | 0759.5 | 0800.0 | 1.5 | 4.0 | 2.0 | | |
| | 9100 | GORK | 1 | S | 0759.5 | 0800.3 | 1.8 | 4.4 | | | |
| | 2850 | CRIM | 1 | S | 0759.6 | 0800.0 | 1.0 | 5.4 | 1.0 | | |
| | 2950 | GORK | 2 | S/F | 0759.6 | 0800.0 | 1.4 | 3.8 | | | |
| | 260 | ONDR | 41 | F | 1031.0 | | 78.0 | | | | |
| | 2950 | GORK | 22 | GRF | 1115.0 | 1118.0 | 10.7 | 4.9 | | | |
| | 3013 | IZMI | 7 | C | 1115.0 | 1118.0 | 15.0 | 6.0 | 3.0 | | |
| | 9100 | GORK | 2 | S/F | 1115.6 | 1116.9 | 3.0 | 8.6 | | | |
| | 2850 | CRIM | 42 | SER | 1117.0 | 1118.0 | 8.5 | 4.5 | 2.0 | | |
| | 950 | GORK | 2 | S/F | 1117.0 | 1117.9 | 4.0 | 11.0 | | | |
| 12 | 127 | TORN | 43 | NS | 0732.0 | | 150.0 | | 1.0 | | V=1 |
| | 2695 | LEAR | 4 | S/F | 0220.0 | 0223.0 | 6.0 | 46.0 | | | QL=4 ST=2 TYP=3 |
| | 4995 | LEAR | 4 | S/F | 0220.0 | 0223.0 | 6.0 | 19.0 | | | QL=4 ST=2 TYP=3 |
| | 610 | LEAR | 4 | S/F | 0220.0 | 0225.0 | 6.0 | 85.0 | | | QL=4 ST=2 TYP=3 |
| | 2800 | HIRA | 45 | C | 0220.7 | 0223.0 | 8.0 | 56.0 | 24.0 | | WR |
| | 410 | LEAR | 4 | S/F | 0221.0 | 0224.0 | 5.0 | 27.0 | | | QL=4 ST=2 TYP=3 |
| | 1415 | LEAR | 4 | S/F | 0221.0 | 0223.0 | 4.0 | 170.0 | | | QL=4 ST=2 TYP=3 |
| | 2695 | PALE | 8 | S | 0221.0 | 0223.0 | 2.0 | 41.0 | | | QL=4 ST=2 TYP=3 |
| | 1415 | PALE | 4 | S/F | 0221.0 | 0223.0 | 3.0 | 180.0 | | | QL=4 ST=2 TYP=3 |
| | 500 | HIRA | 45 | C | 0221.1 | 0221.5 | 10.0 | 52.0 | 10.0 | | O |
| | 610 | PALE | 4 | S/F | 0223.0 | 0225.0 | 3.0 | 80.0 | | | QL=4 ST=2 TYP=3 |
| | 410 | PALE | 8 | S | 0224.0 | 0224.0 | U | 32.0 | | | QL=4 ST=2 TYP=3 |
| | 610 | PALE | 8 | S | 0227.0 | 0228.0 | 2.0 | 39.0 | | | QL=4 ST=2 TYP=3 |
| | 410 | PALE | 8 | S | 0228.0 | 0228.0 | 1.0 | 32.0 | | | QL=4 ST=2 TYP=3 |
| | 2840 | PEKG | 45 | C | 0231.0 | 0233.0 | 8.0 | 49.5 | | | |
| | 245 | LEAR | 8 | S | 0726.0 | 0726.0 | 1.0 | 170.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SVTO | 8 | S | 0726.0 | 0726.0 | 1.0 | 180.0 | | | QL=4 ST=2 TYP=3 |
| | 2950 | GORK | 2 | S/F | 0833.0 | 0834.1 | 3.0 | 7.1 | | | |
| | 950 | GORK | 4 | S/F | 0833.1 | 0834.1 | 5.3 | 33.0 | | | |
| | 9100 | GORK | 2 | S/F | 0833.9 | 0834.1 | 1.9 | 4.6 | | | |
| | 9100 | GORK | 1 | S | 1129.9 | 1130.3 | 0.7 | 8.2 | | | |
| | 245 | SVTO | 8 | S | 1233.0 | 1233.0 | U | 49.0 | | | QL=4 ST=3 TYP=3 |
| | 410 | SVTO | 8 | S | 1233.0 | 1233.0 | 1.0 | 68.0 | | | QL=4 ST=3 TYP=3 |
| | 245 | SGMR | 8 | S | 1616.0 | 1617.0 | 1.0 | 190.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 1723.0 | 1724.0 | 1.0 | 130.0 | | | QL=2 ST=3 TYP=3 |
| | 245 | SGMR | 8 | S | 1723.0 | 1724.0 | 1.0 | 65.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 1803.0 | 1803.0 | 1.0 | 420.0 | | | QL=2 ST=3 TYP=3 |
| | 410 | PALE | 8 | S | 1803.0 | 1803.0 | 1.0 | 90.0 | | | QL=4 ST=2 TYP=3 |
| | 1415 | PALE | 8 | S | 1803.0 | 1803.0 | 1.0 | 49.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1803.0 | 1803.0 | 1.0 | 270.0 | | | QL=4 ST=2 TYP=3 |
| | 410 | SGMR | 8 | S | 1803.0 | 1803.0 | 1.0 | 77.0 | | | QL=4 ST=2 TYP=3 |
| | 1415 | SGMR | 8 | S | 1803.0 | 1803.0 | 1.0 | 50.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 49 | GB | 1943.0 | 1944.0 | 1.0 | 760.0 | | | QL=2 ST=3 TYP=6 |
| | 245 | SGMR | 8 | S | 1943.0 | 1944.0 | 1.0 | 420.0 | | | QL=4 ST=3 TYP=3 |
| | 245 | SGMR | 8 | S | 2029.0 | 2029.0 | U | 120.0 | | | QL=4 ST=2 TYP=3 |
| | 2800 | PENT | 4 | S/F | 2036.8 | 2037.5 | 2.5 | 23.3 | 6.0 | | |
| | 410 | PALE | 8 | S | 2037.0 | 2037.0 | U | 62.0 | | | QL=4 ST=2 TYP=3 |
| | 1415 | PALE | 8 | S | 2037.0 | 2037.0 | U | 44.0 | | | QL=4 ST=2 TYP=3 |
| | 2695 | PALE | 8 | S | 2037.0 | 2037.0 | U | 33.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 2037.0 | 2037.0 | U | 270.0 | | | QL=4 ST=2 TYP=3 |
| | 410 | SGMR | 8 | S | 2037.0 | 2037.0 | U | 51.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 49 | GB | 2129.0 | 2129.0 | 2.0 | 1600.0 | | | QL=2 ST=2 TYP=6 |
| | 410 | PALE | 8 | S | 2131.0 | 2131.0 | U | 270.0 | | | QL=4 ST=2 TYP=3 |
| | 500 | HIRA | 42 | SER | 2151.7 | 2152.8 | 10.0 | 100.0 | | | O |
| | 610 | PALE | 8 | S | 2152.0 | 2152.0 | 1.0 | 330.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 49 | GB | 2159.0 | 2159.0 | 1.0 | 2300.0 | | | QL=2 ST=2 TYP=6 |
| | 410 | PALE | 8 | S | 2159.0 | 2159.0 | 1.0 | 390.0 | | | QL=4 ST=2 TYP=3 |
| | 610 | PALE | 8 | S | 2159.0 | 2159.0 | U | 170.0 | | | QL=4 ST=2 TYP=3 |
| | 1415 | PALE | 8 | S | 2159.0 | 2159.0 | 1.0 | 33.0 | | | QL=4 ST=2 TYP=3 |
| | 2695 | PALE | 8 | S | 2159.0 | 2159.0 | 1.0 | 58.0 | | | QL=4 ST=2 TYP=3 |
| | 2800 | PENT | 4 | S/F | 2159.5 | 2159.9 | 1.3 | 64.0 | 22.0 | | |
| | 2800 | HIRA | 8 | S | 2159.6 | 2159.8 | 0.6 | 95.0 | 56.0 | | MR |
| | 500 | HIRA | 8 | S | 2223.3 | 2223.3 | 0.5 | 14.0 | | | O |
| | 500 | HIRA | 8 | S | 2241.5 | 2241.8 | 0.6 | 22.0 | | | O |
| | 500 | HIRA | 42 | SER | 2305.3 | 2308.5 | 3.5 | 27.0 | | | O |

# S O L A R  R A D I O  E M I S S I O N
## Outstanding Occurrences

### NOVEMBER 1993

| Day | Freq | Sta | Type | | Start (UT) | Time of Maximum (UT) | Duration (Min) | Flux Density Peak (10 -22 W/m 2 Hz) | Flux Density Mean (10 -22 W/m 2 Hz) | Int | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 500 | HIRA | 46 | C | 2347.7 | 2349.1 | 2.0 | 75.0 | 20.0 | | O |
| 13 | 204 | IZMI | 44 | NS | 0700.0E | | 300.0D | | 15.0 | | |
| | 500 | HIRA | 42 | SER | 0011.8 | 0013.9 | 15.0 | 90.0 | | | O |
| | 245 | LEAR | 49 | GB | 0012.0 | 0014.0 | 2.0 | 2700.0 | | | QL=4 ST=2 TYP=6 |
| | 2800 | HIRA | 42 | SER | 0012.9 | 0014.1 | 9.0 | 100.0 | | | WR |
| | 610 | PALE | 4 | S/F | 0013.0 | 0014.0 | 1427.0 | 150.0 | | | QL=4 ST=1 TYP=3 |
| | 2840 | PEKG | 3 | S | 0013.0 | 0014.4 | 7.0 | 66.6 | | | |
| | 410 | LEAR | 8 | S | 0014.0 | 0014.0 | U | 240.0 | | | QL=4 ST=2 TYP=3 |
| | 610 | LEAR | 8 | S | 0014.0 | 0014.0 | U | 100.0 | | | QL=4 ST=2 TYP=3 |
| | 4995 | LEAR | 8 | S | 0014.0 | 0014.0 | U | 61.0 | | | QL=4 ST=2 TYP=3 |
| | 1415 | LEAR | 8 | S | 0014.0 | 0014.0 | U | 70.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 49 | GB | 0014.0 | 0014.0 | U | 3500.0 | | | QL=2 ST=2 TYP=6 |
| | 410 | PALE | 8 | S | 0014.0 | 0014.0 | U | 310.0 | | | QL=4 ST=2 TYP=3 |
| | 610 | PALE | 8 | S | 0014.0 | 0014.0 | U | 150.0 | | | QL=4 ST=2 TYP=3 |
| | 1415 | PALE | 8 | S | 0014.0 | 0014.0 | U | 79.0 | | | QL=4 ST=2 TYP=3 |
| | 2695 | PALE | 8 | S | 0014.0 | 0014.0 | 1.0 | 83.0 | | | QL=4 ST=2 TYP=3 |
| | 4995 | PALE | 8 | S | 0014.0 | 0014.0 | 1.0 | 72.0 | | | QL=4 ST=2 TYP=3 |
| | 8800 | PALE | 8 | S | 0014.0 | 0014.0 | U | 70.0 | | | QL=4 ST=2 TYP=3 |
| | 15400 | PALE | 8 | S | 0014.0 | 0014.0 | U | 54.0 | | | QL=4 ST=2 TYP=3 |
| | 2695 | LEAR | 4 | S/F | 0014.0 | 0014.0 | 1426.0 | 85.0 | | | QL=4 ST=1 TYP=3 |
| | 245 | PALE | 49 | GB | 0017.0 | 0018.0 | 1.0 | 1200.0 | | | QL=2 ST=2 TYP=6 |
| | 610 | LEAR | 8 | S | 0021.0 | 0022.0 | 1.0 | 66.0 | | | QL=4 ST=3 TYP=3 |
| | 610 | PALE | 8 | S | 0021.0 | 0022.0 | 1.0 | 100.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | LEAR | 8 | S | 0126.0 | 0126.0 | U | 100.0 | | | QL=4 ST=2 TYP=3 |
| | 2695 | LEAR | 8 | S | 0417.0 | 0418.0 | 1.0 | 38.0 | | | QL=4 ST=2 TYP=3 |
| | 4995 | LEAR | 8 | S | 0417.0 | 0417.0 | 1.0 | 64.0 | | | QL=4 ST=2 TYP=3 |
| | 8800 | LEAR | 8 | S | 0417.0 | 0417.0 | 1.0 | 45.0 | | | QL=4 ST=2 TYP=3 |
| | 2800 | HIRA | 3 | S | 0417.1 | 0417.7 | 2.0 | 33.0 | 20.0 | | O |
| | 2840 | PEKG | 3 | S | 0419.0 | 0420.5 | 10.0 | 44.0 | | | |
| | 245 | LEAR | 8 | S | 0539.0 | 0539.0 | U | 170.0 | | | QL=4 ST=2 TYP=3 |
| | 2850 | CRIM | 7 | C | 0624.0 | 0624.9 | 5.0 | 9.5 | 5.0 | | |
| | 2950 | GORK | 23 | GRF | 0634.0 | 0700.0 | 287.0 | 6.1 | | | |
| | 9100 | GORK | 21 | GRF | 0636.0U | 0703.0 | 144.0D | 15.0 | | | |
| | 2950 | GORK | 1 | S | 0638.5 | 0638.8 | 1.6 | 4.1 | | | |
| | 2850 | CRIM | 1 | S | 0638.6 | 0639.0 | 1.0 | 5.0 | 2.0 | | |
| | 950 | GORK | 4 | S/F | 0638.6 | 0638.8 | 0.3 | 37.0 | | | |
| | 9100 | GORK | 1 | S | 0638.6 | 0638.8 | 1.0 | 7.4 | | | |
| | 204 | IZMI | 7 | C | 0724.0 | 0725.0 | 2.0 | 57.0 | 30.0 | | |
| | 950 | GORK | 21 | GRF | 0739.4 | 0756.0 | 23.0 | 5.0 | | | |
| | 950 | GORK | 4 | S/F | 0743.9 | 0744.8 | 1.7 | 20.0 | | | |
| | 2950 | GORK | 2 | S/F | 0744.6 | 0745.1 | 0.8 | 5.3 | | | |
| | 410 | LEAR | 8 | S | 0753.0 | 0754.0 | 1.0 | 160.0 | | | QL=4 ST=2 TYP=3 |
| | 410 | SVTO | 8 | S | 0753.0 | 0754.0 | 1.0 | 220.0 | | | QL=4 ST=2 TYP=3 |
| | 9100 | GORK | 1 | S | 0753.7 | 0754.3 | 2.1 | 2.8 | | | |
| | 2950 | GORK | 1 | S | 0753.9 | 0754.2 | 1.0 | 2.6 | | | |
| | 2850 | CRIM | 1 | S | 0754.0 | 0754.2 | 1.0 | 4.0 | 1.0 | | |
| | 950 | GORK | 1 | S | 0754.0 | 0754.2 | 0.9 | 9.0 | | | |
| | 3013 | IZMI | 5 | S | 0754.0 | 0754.2 | 2.5 | 5.0 | 3.0 | | |
| | 245 | SVTO | 8 | S | 0803.0 | 0803.0 | U | 67.0 | | | QL=4 ST=2 TYP=3 |
| | 204 | IZMI | 42 | SER | 0803.0 | 0803.3 | 6.0 | 15.0 | | | |
| | 245 | SVTO | 8 | S | 0805.0 | 0805.0 | 1.0 | 120.0 | | | QL=4 ST=2 TYP=3 |
| | 2850 | CRIM | 1 | S | 0823.0 | 0823.1 | 0.8 | 5.0 | 2.0 | | |
| | 260 | ONDR | 3 | S | 0827.5 | 0828.0 | 1.0 | 160.0 | | | |
| | 950 | GORK | 2 | S/F | 0827.7 | 0828.2 | 2.0 | 11.0 | | | |
| | 2950 | GORK | 3 | S | 0828.0 | 0828.2 | 0.9 | 4.0 | | | |
| | 204 | IZMI | 5 | S | 0828.0 | 0828.2 | 1.0 | 5.0 | 3.0 | | |
| | 245 | SVTO | 8 | S | 0847.0 | 0848.0 | 2.0 | 200.0 | | | QL=2 ST=2 TYP=3 |
| | 950 | GORK | 4 | S/F | 0847.2 | 0848.6 | 2.8 | 47.0 | | | |
| | 2950 | GORK | 2 | S/F | 0847.8 | 0849.0 | 1.4 | 3.3 | | | |
| | 245 | LEAR | 8 | S | 0848.0 | 0848.0 | 1.0 | 230.0 | | | QL=4 ST=2 TYP=3 |
| | 260 | ONDR | 3 | S | 0848.0 | 0849.0 | 1.0 | 217.0 | | | |
| | 245 | SVTO | 8 | S | 0848.0 | 0848.0 | 1.0 | 200.0 | | | QL=2 ST=2 TYP=3 |
| | 204 | IZMI | 41 | F | 0848.4 | 0848.5 | 1.1 | 1500.0 | | | |
| | 260 | ONDR | 1 | S | 0930.0 | 0932.5 | 6.0 | 309.0 | | | |
| | 204 | IZMI | 42 | SER | 0932.4 | 0932.5 | 4.5 | 760.0 | | | |
| | 260 | ONDR | 1 | S | 1025.5 | 1038.0 | 16.0 | 464.0 | | | |
| | 245 | SVTO | 8 | S | 1029.0 | 1029.0 | U | 91.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SVTO | 49 | GB | 1038.0 | 1039.0 | 1.0 | 1500.0 | | | QL=2 ST=2 TYP=6 |

# SOLAR RADIO EMISSION
## Outstanding Occurrences

### NOVEMBER 1993

| Day | Freq | Sta | Type | | Start (UT) | Time of Maximum (UT) | Duration (Min) | Flux Density Peak (10 -22 W/m 2 Hz) | Flux Density Mean (10 -22 W/m 2 Hz) | Int | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | 2950 | GORK | 1 | S | 1038.9 | 1039.1 | 1.0 | 1.3 | | | |
| 14 | 260 | ONDR | 44 | NS | 0800.0E | | 200.0D | | | | |
| | 204 | IZMI | 43 | NS | 0925.0 | | 145.0D | | 10.0 | | |
| | 9100 | GORK | 22 | GRF | 0642.0 | 0658.5 | 63.0 | 5.5 | | | |
| | 9100 | GORK | 22 | GRF | 0927.0 | 1127.9 | 153.0 | 18.0 | | | |
| 15 | 204 | IZMI | 44 | NS | 0700.0E | | 300.0D | | 20.0 | | |
| | 127 | TORN | 43 | NS | 0700.0 | | 330.0 | | 3.0 | | V=0 |
| | 260 | ONDR | 44 | NS | 0810.0E | | 195.0D | | | | |
| | 245 | PALE | 8 | S | 0101.0 | 0101.0 | U | 74.0 | | | QL=2 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 0128.0 | 0129.0 | 1.0 | 51.0 | | | QL=2 ST=2 TYP=3 |
| | 245 | PALE | 4 | S/F | 0208.0 | 0208.0 | 1341.0 | 81.0 | | | QL=2 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 0253.0 | 0253.0 | U | 64.0 | | | QL=2 ST=2 TYP=3 |
| | 245 | SVTO | 8 | S | 0904.0 | 0904.0 | 1.0 | 120.0 | | | QL=2 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1617.0 | 1617.0 | U | 61.0 | | | QL=4 ST=2 TYP=3 |
| 16 | 204 | IZMI | 44 | NS | 0700.0E | | 300.0D | | 5.0 | | |
| | 245 | LEAR | 8 | S | 0138.0 | 0139.0 | 1.0 | 97.0 | | | QL=4 ST=2 TYP=3 |
| | 9100 | GORK | 1 | S | 0910.2 | 0910.4 | 1.1 | 6.5 | | | |
| | 260 | ONDR | 41 | F | 1000.0 | | 30.0D | | | | |
| 17 | 127 | TORN | 44 | NS | 0650.0E | | 460.0D | | 5.0 | | V=1 |
| | 204 | IZMI | 44 | NS | 0700.0E | | 300.0D | | 15.0 | | |
| | 204 | IZMI | 41 | F | 0814.0 | 0815.0 | 1.5 | 75.0 | | | |
| | 245 | PALE | 8 | S | 2207.0 | 2207.0 | 1.0 | 49.0 | | | QL=4 ST=2 TYP=3 |
| 18 | 127 | TORN | 44 | NS | 0650.0E | | 460.0D | | 5.0 | | V=1 |
| | 204 | IZMI | 44 | NS | 0700.0E | | 300.0D | | 10.0 | | |
| | 260 | ONDR | 44 | NS | 0810.0E | | 230.0D | | | | |
| | 245 | PALE | 43 | NS | 1750.0 | 1750.0 | 133.0 | 140.0 | | | QL=2 ST=2 TYP=1 |
| | 245 | SGMR | 43 | NS | 1750.0 | 1758.0 | 370.0 | 72.0 | | | QL=4 ST=3 TYP=1 |
| | 245 | SGMR | 43 | NS | 1752.0 | 1758.0 | 129.0 | 72.0 | | | QL=4 ST=3 TYP=1 |
| | 245 | LEAR | 43 | NS | 2223.0 | 2231.0 | 187.0 | 95.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | PALE | 43 | NS | 2358.0 | 2305.0 | 90.0 | 120.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | PALE | 8 | S | 0004.0 | 0004.0 | U | 62.0 | | | QL=4 ST=2 TYP=3 |
| | 410 | SVTO | 8 | S | 0953.0 | 0953.0 | 1.0 | 52.0 | | | QL=4 ST=2 TYP=3 |
| | 9100 | GORK | 24 | R | 1018.0 | 1112.1 | 102.0D | 11.0 | | | |
| | 245 | SGMR | 8 | S | 1403.0 | 1403.0 | U | 60.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1519.0 | 1520.0 | 1.0 | 71.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1652.0 | 1652.0 | 2.0 | 67.0 | | | QL=4 ST=3 TYP=3 |
| | 245 | PALE | 8 | S | 2040.0 | 2041.0 | 2.0 | 190.0 | | | QL=2 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 2040.0 | 2041.0 | 2.0 | 110.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 2105.0 | 2106.0 | 2.0 | 73.0 | | | QL=2 ST=2 TYP=3 |
| | 2800 | PENT | 3 | S | 2110.9 | 2112.5 | 4.8 | 8.0 | 3.0 | | |
| | 245 | PALE | 8 | S | 2206.0 | 2206.0 | U | 58.0 | | | QL=2 ST=2 TYP=3 |
| 19 | 245 | LEAR | 43 | NS | 0621.0 | 0623.0 | 49.0 | 81.0 | | | QL=4 ST=3 TYP=1 |
| | 245 | SVTO | 43 | NS | 0622.0 | 0623.0 | 1058.0 | 83.0 | | | QL=4 ST=3 TYP=1 |
| | 204 | IZMI | 44 | NS | 0700.0E | | 300.0D | | 35.0 | | |
| | 260 | ONDR | 44 | NS | 0810.0E | | 330.0D | | | | |
| | 245 | SGMR | 43 | NS | 1506.0 | 1525.0 | 231.0 | 71.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | PALE | 43 | NS | 1703.0 | 1735.0 | 172.0 | 96.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | LEAR | 43 | NS | 2153.0 | 0557.0U | 755.0 | 160.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | SVTO | 4 | S/F | 0622.0 | 0623.0 | 1058.0 | 83.0 | | | QL=4 ST=3 TYP=3 |
| | 204 | IZMI | 41 | F | 0825.0 | 0827.0 | 2.5 | 150.0 | | | |
| | 245 | SGMR | 8 | S | 1301.0 | 1302.0 | 1.0 | 56.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1358.0 | 1359.0 | 1.0 | 63.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SVTO | 8 | S | 1358.0 | 1359.0 | 2.0 | 58.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1432.0 | 1433.0 | 1.0 | 79.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | SGMR | 8 | S | 1625.0 | 1625.0 | 1.0 | 280.0 | | | QL=4 ST=2 TYP=3 |
| 20 | 245 | PALE | 43 | NS | 0046.0 | 0118.0 | 166.0 | 100.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | SVTO | 43 | NS | 0613.0 | 0649.0 | 124.0 | 110.0 | | | QL=4 ST=2 TYP=1 |
| | 260 | ONDR | 44 | NS | 0820.0E | | 320.0D | | | | |
| | 204 | IZMI | 42 | SER | 0727.0 | 0734.0 | 12.0 | 75.0 | | | |
| | 204 | IZMI | 42 | SER | 1037.5 | 1040.8 | 15.0 | 50.0 | | | |
| | 204 | IZMI | 42 | SER | 1132.0 | 1134.0 | 7.0 | 80.0 | | | |
| | 245 | SGMR | 4 | S/F | 1348.0 | 1350.0 | 4.0 | 53.0 | | | QL=4 ST=2 TYP=3 |

# S O L A R  R A D I O  E M I S S I O N
## Outstanding Occurrences

### NOVEMBER 1993

| Day | Freq | Sta | Type | | Start (UT) | Time of Maximum (UT) | Duration (Min) | Flux Density Peak (10 -22 W/m 2 Hz) | Flux Density Mean (10 -22 W/m 2 Hz) | Int | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 22 | 204 | IZMI | 44 | NS | 0700.0E | | 300.0D | | 5.0 | | |
| | 2800 | HIRA | 1 | S | 0418.9 | 0421.2 | 6.0 | 5.0 | 3.0 | | O |
| | 245 | PALE | 49 | GB | 2009.0 | 2009.0 | 1.0 | 620.0 | | | QL=4 ST=2 TYP=6 |
| 23 | 260 | ONDR | 43 | NS | 0922.0 | 1017.0 | 65.0D | 62.0 | | | |
| | 245 | PALE | 43 | NS | 1757.0 | 1912.0 | 173.0 | 160.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | SGMR | 43 | NS | 1900.0 | 1901.0 | 110.0 | 77.0 | | | QL=4 ST=2 TYP=1 |
| | 3013 | IZMI | 5 | S | 0807.0 | 0808.0 | 7.0 | 3.0 | 1.5 | | |
| | 3013 | IZMI | 5 | S | 0814.0 | 0816.0 | 7.0 | 3.0 | 1.5 | | |
| | 2950 | GORK | 1 | S | 0814.8 | 0815.7 | 1.6 | 1.5 | | | |
| | 204 | IZMI | 7 | C | 1156.0 | 1159.0 | 5.5 | 54.0 | | | |
| 24 | 260 | ONDR | 43 | NS | 0932.0 | | 43.0D | 54.0 | | | |
| | 9100 | GORK | 24 | R | 1003.0 | 1011.0 | 87.0D | 8.5 | | | |
| | 245 | SGMR | 49 | GB | 1527.0 | 1528.0 | 2.0 | 2500.0 | | | QL=2 ST=3 TYP=6 |
| | 2800 | PENT | 22 | GRF | 2041.4 | 2047.3 | 29.0 | 2.3 | 1.0 | | |
| | 2800 | PENT | 2 | S/F | 2047.8 | 2048.8 | 2.3 | 4.9 | 1.0 | | |
| 25 | 245 | PALE | 43 | NS | 0224.0 | 0326.0 | 67.0 | 140.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | LEAR | 43 | NS | 0242.0 | 0524.0 | 469.0 | 120.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | SVTO | 43 | NS | 0612.0 | 0929.0 | 529.0 | 180.0 | | | QL=4 ST=2 TYP=1 |
| | 204 | IZMI | 44 | NS | 0700.0E | | 300.0D | | 80.0 | | |
| | 127 | TORN | 44 | NS | 0700.0E | | 400.0D | | 15.0 | | V=2 |
| | 260 | ONDR | 44 | NS | 0830.0E | | 300.0D | | | | |
| | 245 | SGMR | 43 | NS | 1230.0 | 1238.0 | 95.0 | 180.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | SGMR | 43 | NS | 1756.0 | 1915.0 | 173.0 | 990.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | PALE | 43 | NS | 1802.0 | 1915.0 | 435.0 | 1100.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | LEAR | 43 | NS | 2148.0 | 2201.0U | 147.0 | 140.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | LEAR | 8 | S | 0053.0 | 0053.0 | 1.0 | 51.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 0053.0 | 0053.0 | 1.0 | 48.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | PALE | 8 | S | 0158.0 | 0158.0 | U | 73.0 | | | QL=4 ST=2 TYP=3 |
| | 245 | LEAR | 8 | S | 0224.0 | 0224.0 | 1.0 | 50.0 | | | QL=4 ST=2 TYP=3 |
| | 2950 | GORK | 2 | S/F | 0615.6 | 0617.1 | 3.9 | 4.6 | | | |
| | 950 | GORK | 2 | S/F | 0615.7 | 0617.1 | 2.8 | 14.0 | | | |
| | 2950 | GORK | 1 | S | 0807.4 | 0807.9 | 1.4 | 3.0 | | | |
| | 204 | IZMI | 42 | SER | 1045.0 | 1054.0 | 10.0 | 350.0 | | | |
| | 204 | IZMI | 41 | F | 1131.5 | 1132.0 | 1.4 | 480.0 | | | |
| | 245 | SGMR | 4 | S/F | 1644.0 | 1646.0 | 3.0 | 97.0 | | | QL=4 ST=3 TYP=3 |
| | 245 | SGMR | 8 | S | 1740.0 | 1741.0 | 1.0 | 58.0 | | | QL=4 ST=2 TYP=3 |
| | 410 | SGMR | 8 | S | 1925.0 | 1925.0 | U | 52.0 | | | QL=4 ST=2 TYP=3 |
| 26 | 245 | PALE | 43 | NS | 0150.0 | 0300.0 | 101.0 | 110.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | LEAR | 44 | NS | 0242.0E | 0243.0 | 470.0D | 100.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | SVTO | 43 | NS | 0615.0 | 0615.0 | 60.0 | 88.0 | | | QL=4 ST=2 TYP=1 |
| | 204 | IZMI | 44 | NS | 0700.0E | | 300.0D | | 40.0 | | |
| | 127 | TORN | 44 | NS | 0700.0E | | 440.0D | | 20.0 | | V=1 |
| | 260 | ONDR | 44 | NS | 0820.0E | | 310.0D | | | | |
| | 245 | SVTO | 43 | NS | 0929.0 | 0929.0 | 7.0 | 73.0 | | | QL=4 ST=3 TYP=1 |
| | 245 | SVTO | 43 | NS | 1059.0 | 1344.0 | 241.0 | 130.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | SGMR | 43 | NS | 1226.0 | 1519.0 | 482.0 | 190.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | PALE | 43 | NS | 1727.0 | 2243.0 | 477.0 | 220.0 | | | QL=4 ST=2 TYP=1 |
| | 245 | LEAR | 43 | NS | 2243.0 | 2243.0 | 497.0 | 210.0 | | | QL=4 ST=2 TYP=1 |
| | 2800 | HIRA | 1 | S | 0201.3 | 0201.5 | 1.0 | 8.0 | 4.0 | | O |
| | 410 | PALE | 8 | S | 0234.0 | 0235.0 | 1.0 | 71.0 | | | QL=4 ST=2 TYP=3 |
| | 410 | SGMR | 8 | S | 1641.0 | 1641.0 | 1.0 | 82.0 | | | QL=4 ST=2 TYP=3 |
| 27 | 410 | LEAR | 43 | NS | 0004.0 | 0004.0 | 76.0 | 55.0 | | | QL=4 ST=2 TYP=1 |
| | 127 | TORN | 44 | NS | 0700.0E | | 150.0D | | 3.0 | | V=0 |
| | 204 | IZMI | 44 | NS | 0700.0E | | 300.0D | | 10.0 | | |
| | 260 | ONDR | 44 | NS | 0820.0E | | 310.0D | | | | |
| 28 | 204 | IZMI | 7 | C | 1113.5 | 1114.0 | 0.5 | 200.0 | | | |
| 29 | 2840 | PEKG | 5 | S | 0207.0 | 0210.0 | 8.0 | 21.1 | | | |
| | 2840 | PEKG | 3 | S | 0230.0 | 0306.0 | 42.0 | 38.9 | | | |
| | 9100 | GORK | 3 | S | 0841.0 | 0841.3 | 0.6 | 24.0 | | | |
| | 245 | SGMR | 8 | S | 2027.0 | 2028.0 | 1.0 | 110.0 | | | QL=4 ST=2 TYP=3 |
| | 2800 | HIRA | 1 | S | 2311.5 | 2312.0 | 2.0 | 12.0 | 7.0 | | O |

# S O L A R  R A D I O  E M I S S I O N
## Outstanding Occurrences

### NOVEMBER 1993

| Day | Freq | Sta | Type | | Start (UT) | Time of Maximum (UT) | Duration (Min) | Flux Density Peak (10 -22 W/m 2 Hz) | Flux Density Mean (10 -22 W/m 2 Hz) | Int | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | 127 | TORN | 43 | NS | 1036.0 | | 256.0 | | 4.0 | | V=1 |
| | 2800 | HIRA | 1 | S | 0545.1 | 0546.4 | 2.5 | 8.0 | 4.0 | | O |
| | 2840 | PEKG | 45 | C | 0547.0 | 0556.7 | 31.0 | 246.0 | | | |
| | 2950 | GORK | 46 | C | 0600.0 | 0601.0 | 9.0 | 13.0 | | | |
| | 950 | GORK | 46 | C | 0600.0 | 0604.1 | | 29.0 | | | |
| | 950 | GORK | 46 | C | 0600.0 | 0605.6 | | 21.0 | | | |
| | 2950 | GORK | 46 | C | 0600.0 | 0603.6 | | 168.0 | | | |
| | 9100 | GORK | 46 | C | 0600.0U | 0603.8 | | 723.0 | | | |
| | 950 | GORK | 46 | C | 0600.0 | 0600.8 | 11.1 | 6.0 | | | |
| | 9100 | GORK | 46 | C | 0600.0U | 0600.9 | 8.2D | 7.0 | | | |
| | 4995 | LEAR | 49 | GB | 0602.0 | 0603.0 | 6.0 | 860.0 | | | QL=4 ST=2 TYP=6 |
| | 2800 | HIRA | 47 | GB | 0602.9 | 0603.6 | 5.0 | 270.0 | 100.0 | | WR |
| | 8800 | LEAR | 49 | GB | 0603.0 | 0603.0 | 4.0 | 720.0 | | | QL=4 ST=2 TYP=6 |
| | 15400 | LEAR | 4 | S/F | 0603.0 | 0603.0 | 3.0 | 320.0 | | | QL=4 ST=2 TYP=3 |
| | 2695 | LEAR | 4 | S/F | 0603.0 | 0603.0 | 1077.0 | 240.0 | | | QL=4 ST=1 TYP=3 |
| | 9100 | GORK | 29 | PBI | 0609.0 | 0609.0 | 24.0 | 10.0 | | | |

Reports are received routinely from the following observatories:

| | | | |
|---|---|---|---|
| BERN = Berne | HUMN = Humain | ONDR = Ondrejov | SVTO = San Vito |
| CRIM = Crimea | IZMI = IZMIRAN | PEKG = Peking | TORN = Torun |
| CUBA = Havana | KISV = Kislovodsk | PALE = Palehua | TRST = Trieste |
| GORK = Gorky | KRAK = Krakow | PENT = Penticton | TYKW = Toyokawa |
| HIRA = Hiraiso | LEAR = Learmonth | POTS = Potsdam | UPIC = Upice |
| HUAN = Huancayo | NOBE = Nobeyama | SGMR = Sagamore Hill | |

Explanation of Type Code:

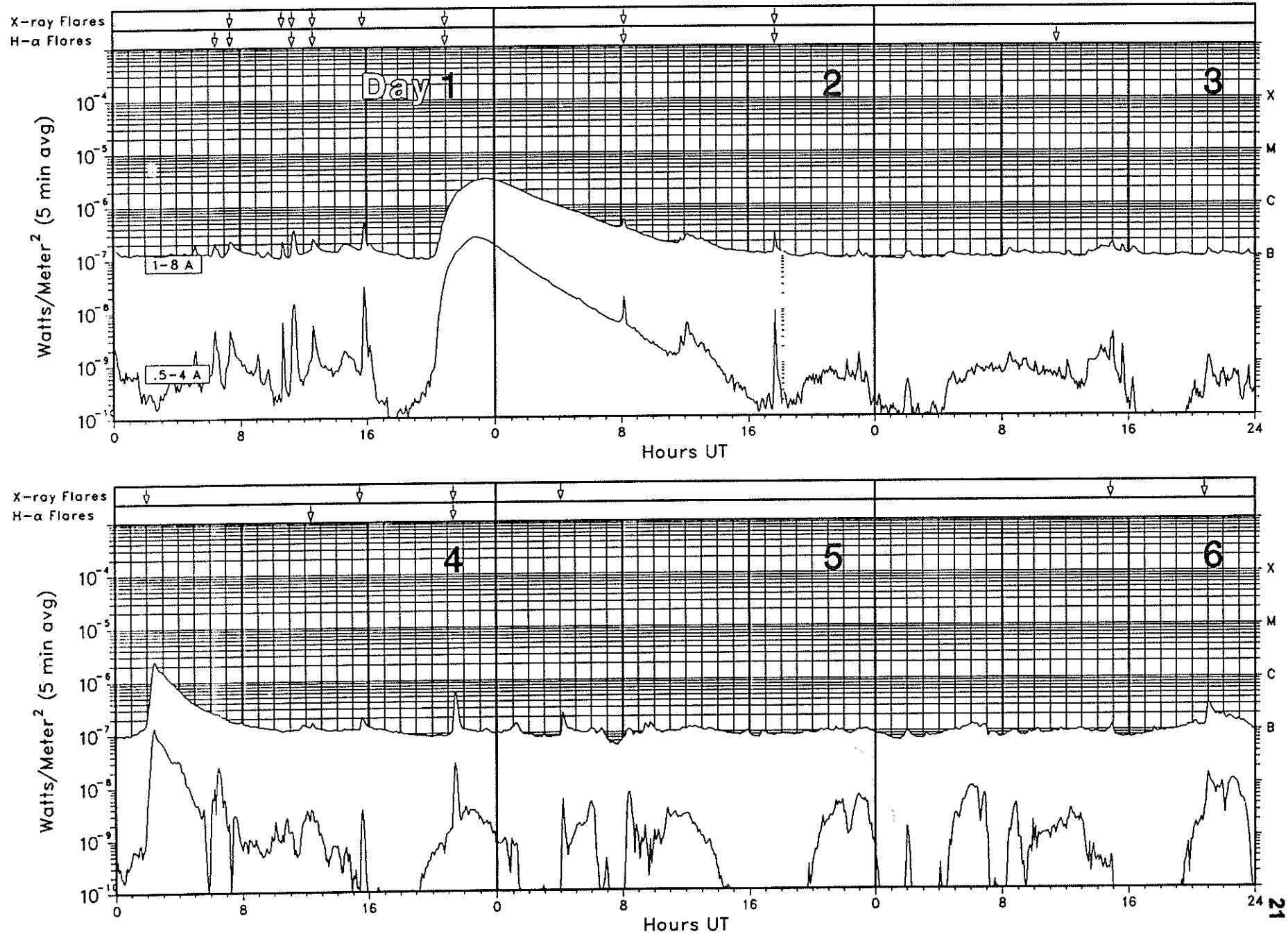
| | | | | |
|---|---|---|---|---|
| 1 Simple 1 | 7 Minor + | 24 Rise | 30 Post Burst Increase A | 43 Onset of Noise Storm |
| 2 Simple 1F | 8 Spike | 25 Rise A | 31 Post Burst Decrease | 44 Noise Storm in Progress |
| 3 Simple 2 | 20 Simple 3 | 26 Fall | 33 Absorption | 45 Complex |
| 4 Simple 2F | 21 Simple 3A | 27 Rise and Fall | 40 Fluctuation | 46 Complex F |
| 5 Simple | 22 Simple 3F | 28 Precusor | 41 Group of Bursts | 47 Great Burst |
| 6 Minor | 23 Simple 3AF | 29 Post Burst Increase | 42 Series of Bursts | 48 Major |

| | | | |
|---|---|---|---|
| 1A Simple 1A | 4A Simple 2AF | 24PF Post Rise F | 27F Rise and Fall F |
| 3A Simple 2A | 40 Rise Only | 16A Fall A | 27AF Rise and Fall AF |
| 21A Simple 3A GRF | 40F Rise Only F | 260 Fall Only | 31A Post Burst Decrease A |
| 2A Simple 1AF | 4P Post Rise | 26F Fall F | 32A Absorption A |

RSTN Site Information: Beginning in April 1986, the RSTN sites LEAR, PALE, SGMR, and SVTO fixed frequency solar radio data are periodically adjusted to several world standard stations. These world standard stations include: Kislovodsk, USSR 15,500 MHz; Penticton, Canada 2800 MHz; Hiraiso, Japan 500 and 200 MHz; and Toyokawa, Japan 9400, 3750, 2000 and 1000 MHz.

# GOES-7 X-RAY DETECTOR

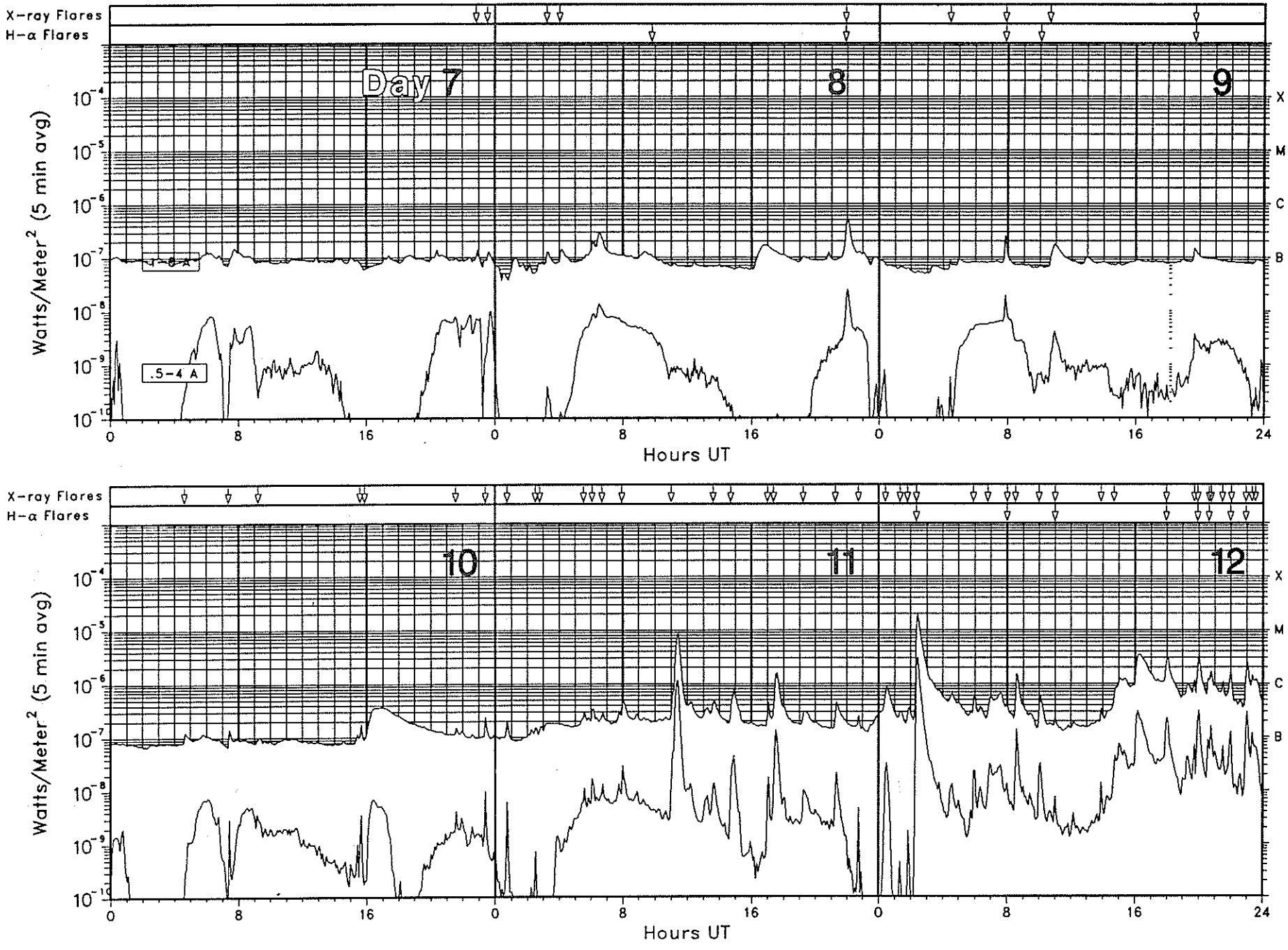
## November 1993



# GOES-7 X-RAY DETECTOR

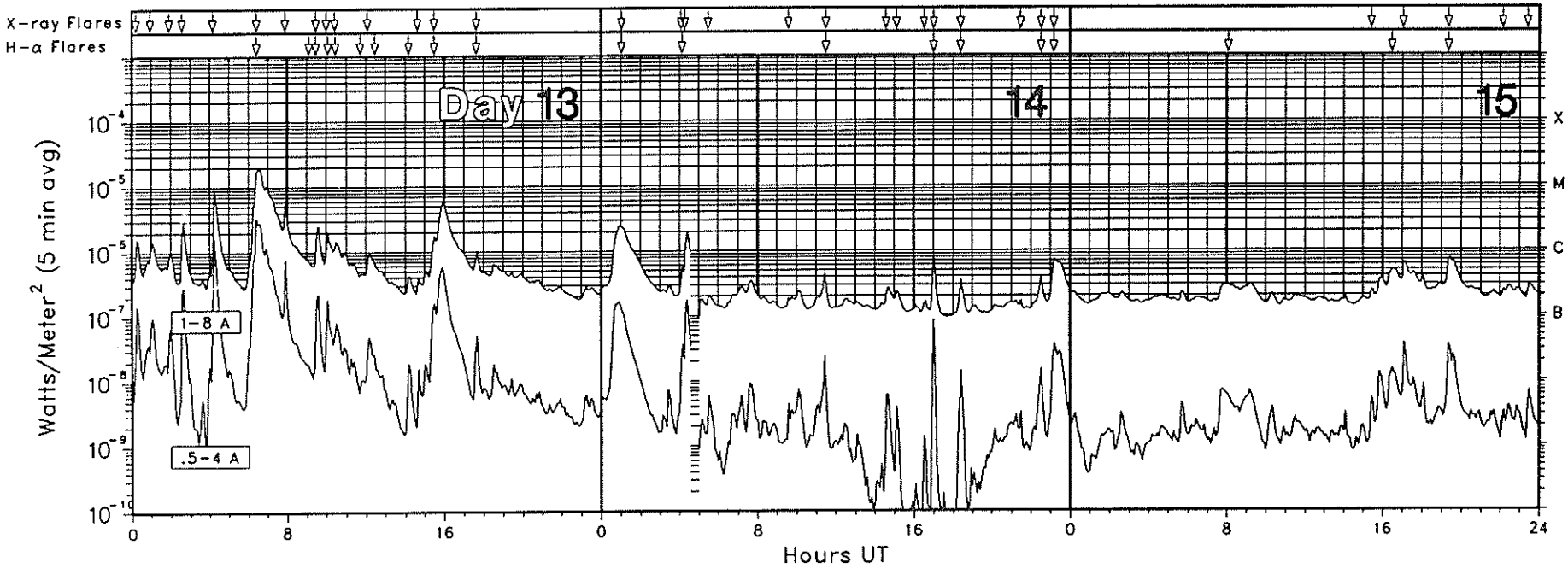
## November 1993

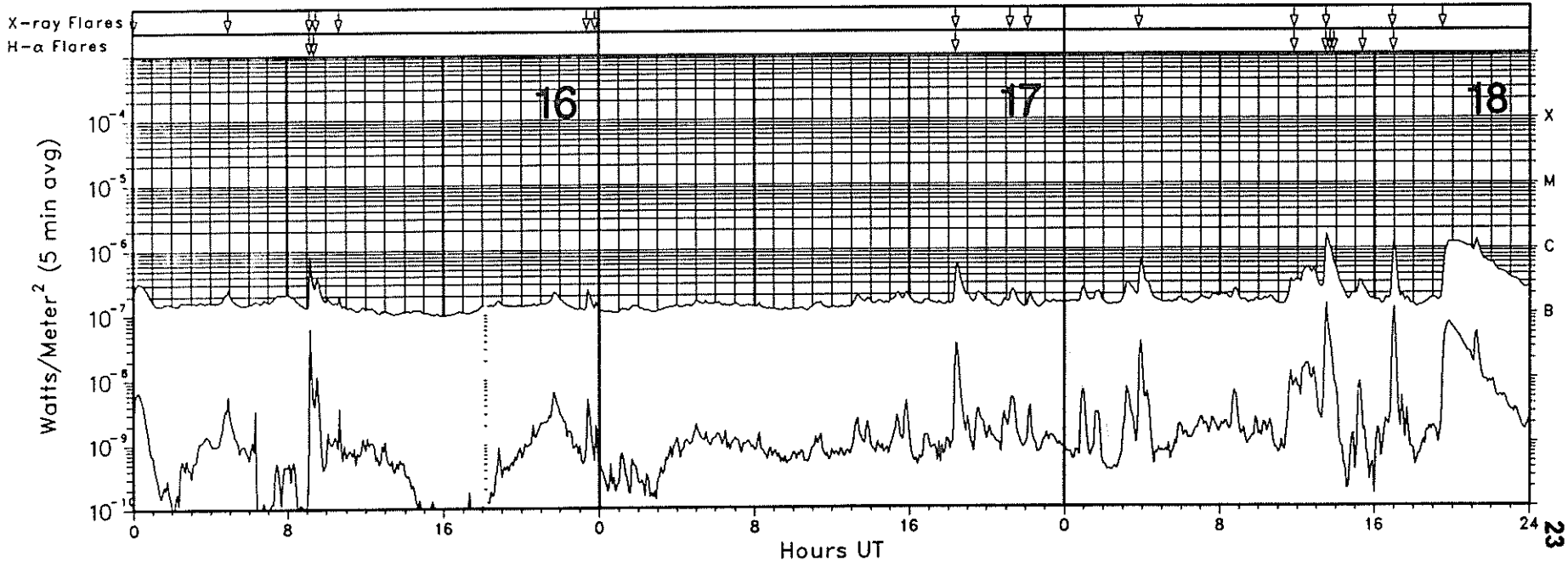




# GOES-7 X-RAY DETECTOR

## November 1993

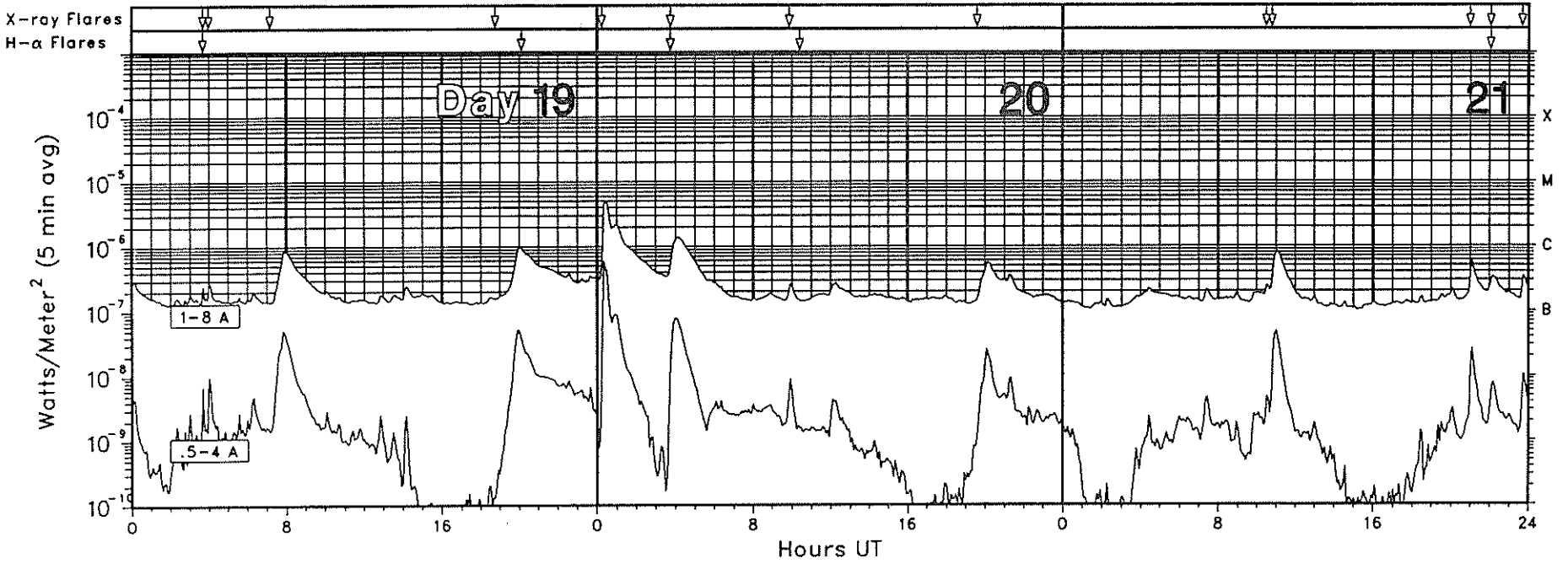


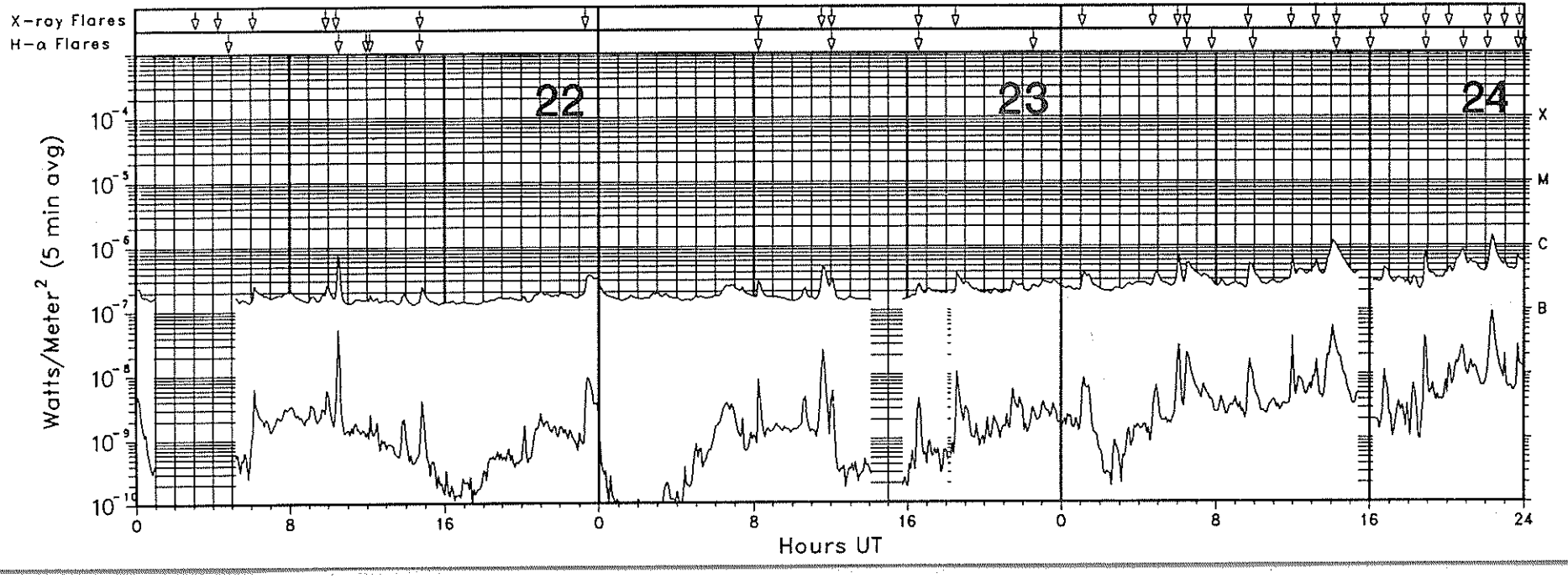



# GOES-7 X-RAY DETECTOR

## November 1993

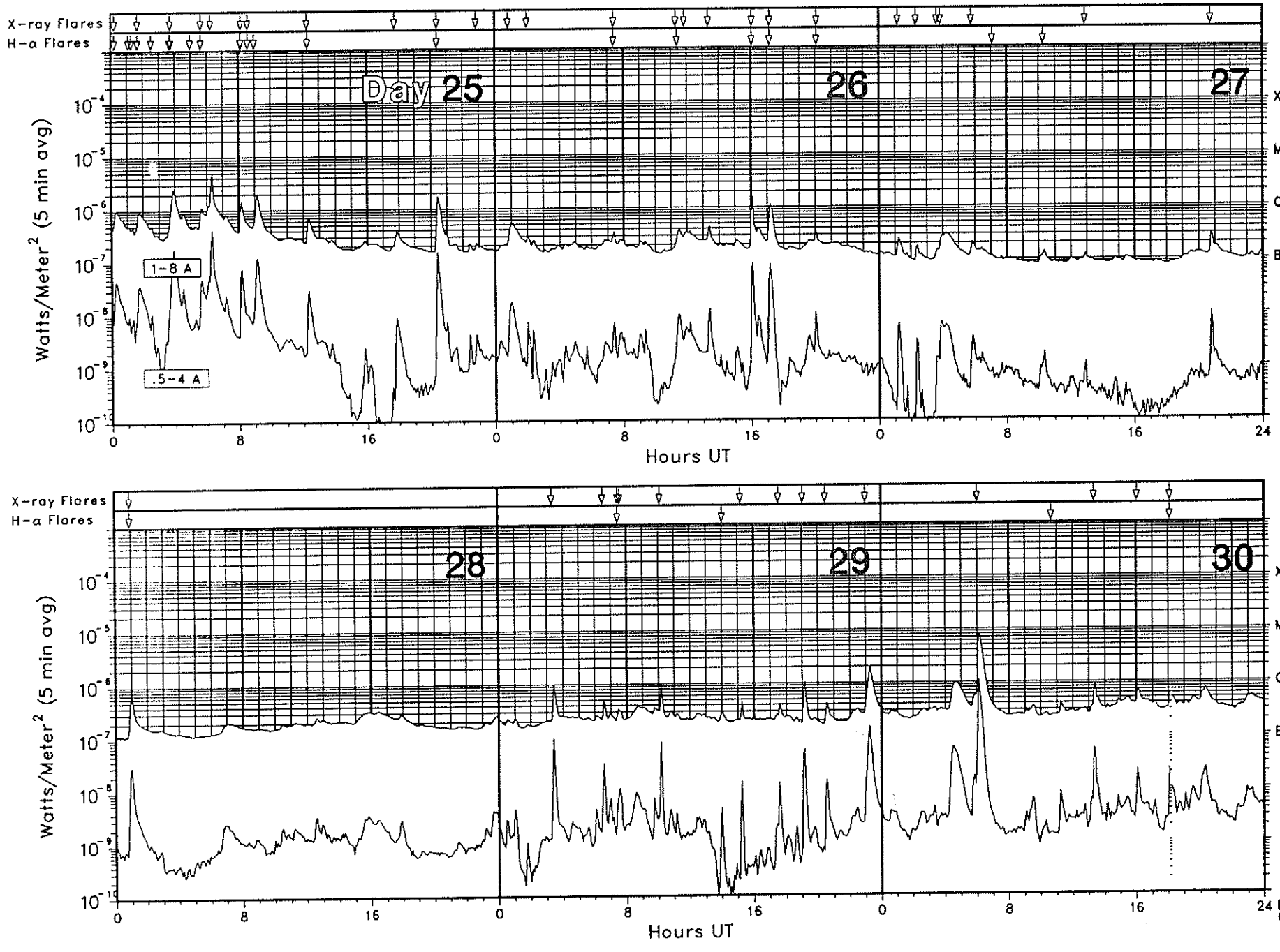




# GOES-7 X-RAY DETECTOR

## November 1993



# GOES S O L A R X-RAY F L A R E S
**Preliminary Listing**

## November 1993

| Day | Start (UT) | Max (UT) | End (UT) | Lat | CMD | Opt | Imp | Xray | NOAA/ USAF Region |
|---|---|---|---|---|---|---|---|---|---|
| 01 | 0723 | 0725 | 0740 | S08 | E50 | SF | B2.5 | | 7613 |
| 01 | 1038 | 1043 | 1047 | | | | B2.6 | | |
| 01 | 1116 | 1124 | 1136 | S11 | E44 | SF | B3.8 | | 7613 |
| 01 | 1236 | 1237 | 1244 | S14 | E46 | SF | B3.0 | | 7613 |
| 01 | 1545 | 1553 | 1557 | | | | B6.4 | | |
| 01 | 2057 | 2141 | 2309 | S10 | E45 | SF | C3.2 | | 7613 |
| 02 | 0811 | 0812 | 0819 | S09 | E34 | SF | B6.3 | | 7613 |
| 02 | 1740 | 1742 | 1748 | S09 | E30 | SF | B3.2 | | 7613 |
| 04 | 0201 | 0228 | 0309 | | | | C2.5 | | |
| 04 | 1530 | 1535 | 1537 | | | | B2.8 | | |
| 04 | 2123 | 2124 | 2144 | S17 | E09 | SF | B6.5 | | 7613 |
| 05 | 0405 | 0412 | 0420 | | | | B2.6 | | |
| 06 | 1451 | 1454 | 1458 | | | | B1.6 | | |
| 06 | 2047 | 2104 | 2122 | | | | B3.3 | | |
| 07 | 2251 | 2255 | 2258 | | | | B1.6 | | |
| 07 | 2333 | 2338 | 2343 | | | | B1.4 | | |
| 08 | 0314 | 0319 | 0323 | | | | B1.5 | | |
| 08 | 0403 | 0409 | 0423 | | | | B1.5 | | |
| 08 | 2154 | 2202 | 2225 | S20 | E21 | SF | B5.7 | | 7617 |
| 09 | 0426 | 0429 | 0431 | | | | B1.4 | | |
| 09 | 0751 | 0754 | 0808 | S09 | W58 | SF | B2.7 | | 7613 |
| 09 | 1036 | 1055 | 1123 | | | | B1.7 | | |
| 09 | 1942 | 1943 | 2005 | S19 | E11 | SF | B1.6 | | 7617 |
| 10 | 0438 | 0443 | 0450 | | | | B1.4 | | |
| 10 | 0723 | 0727 | 0732 | | | | B1.8 | | |
| 10 | 0915 | 0918 | 0920 | | | | B1.1 | | |
| 10 | 1536 | 1541 | 1544 | | | | B2.1 | | |
| 10 | 1553 | 1638 | 1816 | | | | B3.7 | | |
| 10 | 2134 | 2137 | 2140 | | | | B1.7 | | |
| 10 | 2324 | 2327 | 2330 | | | | B2.8 | | |
| 11 | 0044 | 0048 | 0050 | | | | B2.4 | | |
| 11 | 0230 | 0234 | 0237 | | | | B1.8 | | |
| 11 | 0246 | 0255 | 0259 | | | | B1.8 | | |
| 11 | 0533 | 0536 | 0540 | | | | B3.3 | | |
| 11 | 0604 | 0609 | 0612 | | | | B4.6 | | |
| 11 | 0641 | 0646 | 0650 | | | | B3.4 | | |
| 11 | 0757 | 0802 | 0812 | | | | B5.6 | | |
| 11 | 1100 | 1126 | 1132 | | | | C9.7 | | |
| 11 | 1335 | 1341 | 1346 | | | | B5.0 | | |
| 11 | 1441 | 1456 | 1505 | | | | B8.4 | | |
| 11 | 1700 | 1705 | 1710 | | | | B5.3 | | |
| 11 | 1723 | 1734 | 1744 | | | | C1.7 | | |
| 11 | 1913 | 1918 | 1935 | | | | B3.1 | | |
| 11 | 2115 | 2122 | 2133 | | | | B4.6 | | |
| 11 | 2243 | 2246 | 2249 | | | | B2.9 | | |
| 12 | 0025 | 0032 | 0040 | | | | B8.8 | | |
| 12 | 0119 | 0123 | 0128 | | | | B3.4 | | |
| 12 | 0146 | 0154 | 0203 | | | | B3.8 | | |
| 12 | 0221 | 0222 | 0228 | N08 | E82 | SF | M2.0 | | 7618 |
| 12 | 0554 | 0559 | 0603 | | | | B8.2 | | |
| 12 | 0647 | 0738 | 0746 | | | | B7.2 | | |
| 12 | 0759 | 0800 | 0804 | N09 | E81 | 1SF | B5.5 | | 7618 |
| 12 | 0829 | 0838 | 0846 | | | | C1.6 | | |
| 12 | 0958 | 1006 | 1014 | | | | B6.0 | | |
| 12 | 1059 | 1100 | 1105 | N09 | E81 | SF | B2.8 | | 7618 |
| 12 | 1353 | 1357 | 1400 | | | | B4.4 | | |
| 12 | 1441 | 1614 | 1651 | | | | C3.5 | | |
| 12 | 1757 | 1804 | 1814 | N11 | E78 | SF | C3.5 | | 7618 |
| 12 | 1942 | 1945 | 1948 | | | | C1.3 | | |
| 12 | 1955 | 1959 | 2006 | N10 | E77 | SF | C3.7 | | 7618 |
| 12 | 2037 | 2038 | 2042 | N11 | E78 | SF | C1.9 | | 7618 |
| 12 | 2045 | 2048 | 2050 | | | | C2.1 | | |
| 12 | 2127 | 2132 | 2135 | | | | C1.2 | | |
| 12 | 2201 | 2201 | 2204 | N08 | E78 | SF | C2.2 | | 7618 |
| 12 | 2256 | 2300 | 2306 | N11 | E65 | SF | C3.0 | | 7618 |
| 12 | 2318 | 2322 | 2326 | | | | C1.5 | | |
| 12 | 2331 | 2334 | 2336 | | | | C1.4 | | |
| 13 | 0011 | 0017 | 0024 | | | | C2.0 | | |
| 13 | 0057 | 0104 | 0113 | | | | C1.5 | | |
| 13 | 0155 | 0200 | 0205 | | | | C1.2 | | |
| 13 | 0234 | 0242 | 0246 | | | | C3.2 | | |
| 13 | 0410 | 0417 | 0421 | | | | M1.1 | | |
| 13 | 0624 | 0637 | 0706 | N08 | E73 | 1F | M2.1 | | 7618 |
| 13 | 0752 | 0756 | 0759 | | | | C8.3 | | |
| 13 | 0928 | 0933 | 1018 | N07 | E73 | SF | C3.1 | | 7618 |
| 13 | 1000 | 1007 | 1012 | | | | C2.3 | | |
| 13 | 1025 | 1032 | 1035 | | | | C1.7 | | |
| 13 | 1205 | 1217 | 1223 | | | | B9.9 | | |
| 13 | 1406 | 1414 | 1418 | | | | B5.8 | | |
| 13 | 1438 | 1442 | 1447 | | | | B4.4 | | |
| 13 | 1529 | 1529 | 1615 | N10 | E68 | SF | C5.8 | | 7618 |
| 13 | 1738 | 1742 | 1746 | N10 | E66 | SF | C1.1 | | 7618 |
| 14 | 0103 | 0103 | 0109 | N09 | E59 | SF | C2.5 | | 7618 |
| 14 | 0405 | 0411 | 0416 | | | | B6.7 | | |
| 14 | 0417 | 0427 | 0434 | | | | C2.0 | | |
| 14 | 0529 | 0534 | 0540 | | | | C2.3 | | |
| 14 | 0934 | 0937 | 0941 | | | | B2.2 | | |
| 14 | 1129 | 1129 | 1130 | N08 | E57 | SF | B5.2 | | 7618 |
| 14 | 1433 | 1441 | 1452 | | | | B2.7 | | |
| 14 | 1505 | 1508 | 1513 | | | | B2.6 | | |
| 14 | 1630 | 1634 | 1637 | | | | B2.0 | | |
| 14 | 1659 | 1700 | 1712 | N07 | E52 | SF | C1.2 | | 7618 |
| 14 | 1824 | 1825 | 1838 | N08 | E53 | SF | B4.1 | | 7618 |
| 14 | 2128 | 2131 | 2133 | | | | B1.9 | | |
| 14 | 2231 | 2232 | 2238 | N09 | E50 | SF | B4.8 | | 7618 |
| 14 | 2309 | 2310 | 2317 | N08 | E50 | SF | B7.4 | | 7618 |
| 15 | 1525 | 1528 | 1534 | | | | B2.9 | | |
| 15 | 1702 | 1709 | 1718 | | | | B6.9 | | |
| 15 | 1920 | 1920 | 1944 | N08 | E40 | SF | B8.2 | | 7618 |
| 15 | 2207 | 2210 | 2214 | | | | B2.9 | | |
| 15 | 2325 | 2332 | 2346 | | | | B3.0 | | |
| 16 | 0002 | 0019 | 0039 | | | | B3.2 | | |
| 16 | 0456 | 0458 | 0501 | | | | B3.0 | | |
| 16 | 0910 | 0913 | 0922 | N10 | E30 | SF | C1.0 | | 7618 |
| 16 | 0929 | 0933 | 0937 | | | | B4.2 | | |
| 16 | 1039 | 1042 | 1044 | | | | B2.6 | | |
| 16 | 2322 | 2326 | 2335 | | | | B2.6 | | |
| 16 | 2349 | 2353 | 2356 | | | | B1.7 | | |
| 17 | 1823 | 1823 | 1826 | N07 | E11 | SF | B6.0 | | 7618 |
| 17 | 2112 | 2121 | 2132 | | | | B2.4 | | |
| 17 | 2207 | 2215 | 2222 | | | | B2.2 | | |
| 18 | 0349 | 0358 | 0404 | | | | B7.3 | | |
| 18 | 1149 | 1212 | 1214 | N08 | E02 | SF | B5.1 | | 7618 |
| 18 | 1329 | 1330 | 1335 | N09 | E01 | SF | C1.6 | | 7618 |

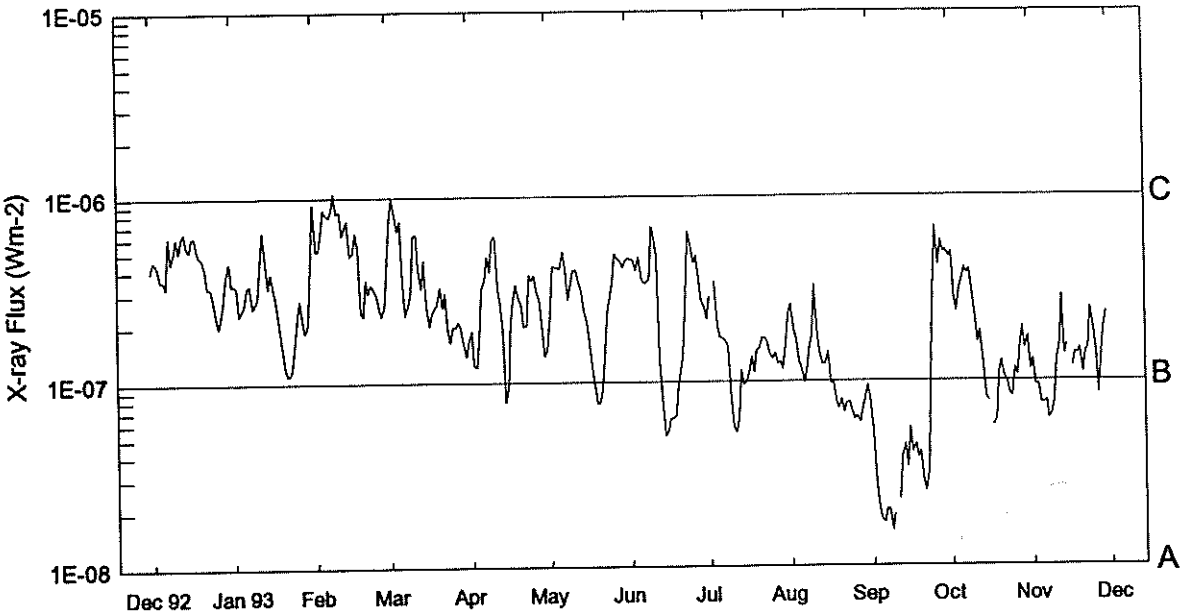
# GOES S O L A R X-RAY F L A R E S
**Preliminary Listing**

## November 1993

| Day | Start (UT) | Max (UT) | End (UT) | Lat | CMD | Opt | Imp | Xray | NOAA/ USAF Region |
|---|---|---|---|---|---|---|---|---|---|
| 18 | 1654 | 1659 | 1717 | | | | C1.5 | | |
| 18 | 1928 | 2115 | 2155 | | | | C1.4 | | |
| 19 | 0340 | 0340 | 0344 | N09 | W07 | SF | B3.1 | | 7618 |
| 19 | 0359 | 0404 | 0408 | | | | B3.2 | | |
| 19 | 0710 | 0759 | 0828 | | | | B8.9 | | |
| 19 | 1845 | 2004 | 2051 | | | | B9.8 | | |
| 20 | 0014 | 0032 | 0040 | | | | C5.2 | | |
| 20 | 0345 | 0355 | 0455 | N08 | W20 | SF | C1.3 | | 7618 |
| 20 | 0952 | 0958 | 1006 | | | | B2.7 | | |
| 20 | 1935 | 2011 | 2036 | | | | B5.7 | | |
| 21 | 1028 | 1031 | 1041 | | | | B2.5 | | |
| 21 | 1047 | 1103 | 1125 | | | | B8.2 | | |
| 21 | 2058 | 2107 | 2114 | | | | B6.4 | | |
| 21 | 2202 | 2203 | 2209 | N02 | E39 | SF | B3.6 | | 7620 |
| 21 | 2340 | 2347 | 2357 | | | | B3.5 | | |
| 22 | 0307 | 0312 | 0315 | | | | B3.9 | | |
| 22 | 0417 | 0428 | 0445 | | | | B6.6 | | |
| 22 | 0607 | 0612 | 0624 | | | | B2.7 | | |
| 22 | 0953 | 0958 | 1004 | | | | B2.9 | | |
| 22 | 1025 | 1034 | 1037 | | | | C1.0 | | |
| 22 | 1446 | 1452 | 1500 | | | | B2.5 | | |
| 22 | 2321 | 2333 | 0004 | | | | B3.7 | | |
| 23 | 0816 | 0816 | 0825 | N04 | W61 | SF | B3.3 | | 7618 |
| 23 | 1132 | 1139 | 1146 | | | | B5.2 | | |
| 23 | 1202 | 1204 | 1227 | N15 | E55 | SF | B3.8 | | 7622 |
| 23 | 1636 | 1639 | 1654 | N03 | E04 | SF | B2.7 | | 7620 |
| 23 | 1832 | 1838 | 1847 | | | | B4.0 | | |
| 24 | 0105 | 0012 | 0121 | | | | B3.9 | | |
| 24 | 0443 | 0457 | 0505 | | | | B4.0 | | |
| 24 | 0600 | 0606 | 0610 | | | | B7.8 | | |
| 24 | 0629 | 0632 | 0705 | N04 | W02 | SF | B5.7 | | 7620 |
| 24 | 0940 | 0948 | 1001 | | | | B5.6 | | |
| 24 | 1156 | 1201 | 1205 | | | | B9.0 | | |
| 24 | 1313 | 1319 | 1321 | | | | B6.4 | | |
| 24 | 1417 | 1418 | 1422 | N12 | E36 | SF | C1.2 | | 7622 |
| 24 | 1644 | 1648 | 1652 | | | | B4.9 | | |
| 24 | 1853 | 1854 | 1915 | N06 | W82 | SF | C1.0 | | 7618 |
| 24 | 2005 | 2009 | 2013 | | | | B5.6 | | |
| 24 | 2206 | 2222 | 2230 | N03 | W10 | SF | C1.4 | | 7620 |
| 24 | 2259 | 2301 | 2303 | | | | B7.3 | | |
| 24 | 2346 | 2346 | 2353 | N04 | W11 | SF | B8.4 | | 7620 |
| 25 | 0012 | 0014 | 0030 | N04 | W14 | SF | C1.0 | | 7620 |
| 25 | 0140 | 0142 | 0158 | N05 | W14 | SF | B9.7 | | 7620 |
| 25 | 0343 | 0357 | 0406 | | | | C2.6 | | |
| 25 | 0538 | 0620 | 0646 | N03 | W17 | 1N | C1.2 | | 7620 |
| 25 | 0614 | 0621 | 0625 | | | | C5.7 | | |
| 25 | 0808 | 0809 | 0812 | N03 | W17 | SF | C2.1 | | 7620 |
| 25 | 0834 | 0907 | 0931 | N04 | W19 | SF | C1.9 | | 7620 |
| 25 | 1214 | 1223 | 1231 | | | | B7.5 | | |
| 25 | 1744 | 1754 | 1803 | | | | B3.9 | | |
| 25 | 2023 | 2026 | 2046 | N04 | W24 | SF | C1.8 | | 7620 |
| 25 | 2251 | 2254 | 2256 | | | | B2.7 | | |
| 26 | 0049 | 0104 | 0125 | | | | B3.7 | | |
| 26 | 0159 | 0203 | 0205 | | | | B3.8 | | |
| 26 | 0723 | 0724 | 0739 | N12 | E17 | SF | B4.0 | | 7622 |
| 26 | 1117 | 1130 | 1142 | | | | B3.8 | | |
| 26 | 1150 | 1211 | 1212 | | | | B4.3 | | |
| 26 | 1320 | 1325 | 1328 | | | | B5.6 | | |
| 26 | 1602 | 1604 | 1607 | S09 | E75 | SF | C2.1 | | 7623 |
| 26 | 1708 | 1710 | 1731 | N04 | W38 | SF | C1.2 | | 7620 |
| 26 | 2005 | 2005 | 2008 | N02 | W43 | SF | B4.2 | | 7620 |
| 27 | 0109 | 0117 | 0126 | | | | B2.5 | | |
| 27 | 0219 | 0223 | 0229 | | | | B2.2 | | |
| 27 | 0336 | 0339 | 0343 | | | | B1.7 | | |
| 27 | 0348 | 0412 | 0438 | | | | B3.0 | | |
| 27 | 0546 | 0552 | 0559 | | | | B2.1 | | |
| 27 | 1251 | 1254 | 1258 | | | | B1.5 | | |
| 27 | 2042 | 2049 | 2054 | | | | B3.2 | | |
| 28 | 0055 | 0059 | 0110 | S11 | E49 | SF | B7.4 | | 7623 |
| 29 | 0321 | 0328 | 0334 | | | | C1.1 | | |
| 29 | 0631 | 0636 | 0641 | | | | B6.0 | | |
| 29 | 0728 | 0730 | 0735 | S13 | E57 | SF | B3.8 | | 7623 |
| 29 | 0736 | 0739 | 0742 | | | | B3.8 | | |
| 29 | 1007 | 1012 | 1016 | | | | C1.1 | | |
| 29 | 1511 | 1515 | 1518 | | | | B6.2 | | |
| 29 | 1732 | 1737 | 1742 | | | | B4.3 | | |
| 29 | 1903 | 1910 | 1916 | | | | C1.2 | | |
| 29 | 2029 | 2034 | 2042 | | | | B4.7 | | |
| 29 | 2259 | 2316 | 2326 | | | | C2.1 | | |
| 30 | 0600 | 0608 | 0619 | | | | C9.2 | | |
| 30 | 1320 | 1324 | 1328 | | | | C1.4 | | |
| 30 | 1602 | 1608 | 1615 | | | | B7.3 | | |
| 30 | 1807 | 1812 | 1825 | N03 | W14 | SF | B8.4 | | 7624 |

EDITOR's NOTE: Please note that whenever optical flares are given, the times given are times of the optical flares and not the times of the X-ray flares. These data are taken directly from the NOAA SEL "Preliminary Report and Forecast of Solar Geophysical Data" weekly report.

# Preliminary GOES Satellite Daily X-Ray Background
## Dec 92 - Nov 93




| Day | Dec 92 | Jan 93 | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | B4.0 | B3.3 | B9.2 | B4.5 | B1.6 | B1.4 | B4.6 | B2.1 | B2.3 | A8.0 | B4.6 | B1.1 |
| 2 | B4.6 | B3.4 | B5.1 | B7.6 | B1.9 | B2.2 | B4.5 | B2.8 | B2.5 | A5.1 | B4.9 | B1.3 |
| 3 | B4.5 | B3.3 | B5.1 | C1.0 | B1.2 | B4.2 | B4.5 | --- | B1.9 | A2.8 | B2.8 | A9.5 |
| 4 | B4.2 | B2.3 | B6.3 | B8.2 | B1.2 | B4.1 | B3.9 | B3.4 | B1.6 | A2.1 | B2.3 | A9.5 |
| 5 | B3.6 | B2.4 | B8.6 | B6.5 | B1.7 | B4.1 | B4.7 | B2.0 | B1.2 | A1.7 | B3.1 | A7.5 |
| 6 | B3.6 | B2.7 | B8.1 | B7.4 | B3.2 | B4.0 | B3.6 | B1.7 | B1.1 | A1.7 | B3.4 | A7.5 |
| 7 | B3.3 | B3.3 | B7.9 | B3.5 | B3.6 | B5.0 | B3.4 | B1.7 | A9.8 | A2.0 | B4.0 | A7.8 |
| 8 | B6.2 | B3.4 | B8.5 | B2.3 | B4.7 | B4.0 | B3.4 | B1.6 | B1.1 | A2.0 | B3.7 | A6.2 |
| 9 | B4.5 | B2.5 | C1.0 | B2.6 | B3.9 | B2.7 | B3.5 | B1.5 | B1.5 | A1.5 | B3.9 | A6.6 |
| 10 | B5.1 | B2.7 | B8.2 | B3.0 | B5.8 | B3.4 | B6.8 | A8.5 | B1.7 | A1.9 | B2.8 | A7.7 |
| 11 | B6.1 | B2.8 | B8.4 | B6.2 | B6.1 | B4.0 | B5.9 | A5.7 | B3.3 | --- | B2.2 | B1.2 |
| 12 | B5.1 | B4.9 | B6.2 | B6.2 | B3.2 | B4.0 | B4.7 | A5.3 | B1.7 | A2.2 | B1.6 | B1.5 |
| 13 | B6.1 | B6.5 | B6.8 | B4.0 | B2.7 | B3.4 | B1.3 | A6.6 | B1.3 | A3.8 | B1.8 | B2.8 |
| 14 | B6.5 | B4.4 | B7.5 | B3.2 | B1.9 | B3.2 | A7.2 | B1.1 | B1.2 | A4.5 | B1.2 | B1.3 |
| 15 | B5.4 | B3.2 | B4.8 | B4.6 | A7.8 | B2.4 | A5.1 | A9.5 | B1.2 | A3.4 | A8.2 | B1.5 |
| 16 | B5.2 | B3.9 | B5.0 | B2.6 | A9.5 | B2.1 | A5.4 | A9.9 | B1.4 | A5.6 | A7.7 | --- |
| 17 | B6.1 | B3.1 | B6.4 | B2.0 | B2.0 | B1.7 | A6.3 | B1.1 | A9.6 | A4.1 | --- | B1.1 |
| 18 | B6.2 | B2.7 | B5.4 | B2.3 | B2.8 | B1.2 | A6.3 | B1.3 | A9.9 | A4.5 | A5.7 | B1.4 |
| 19 | B5.1 | B2.1 | B2.4 | B2.5 | B3.3 | A9.5 | A6.5 | B1.1 | A7.6 | A3.8 | A6.2 | B1.3 |
| 20 | B4.8 | B1.7 | B2.3 | B2.6 | B2.8 | A7.6 | A9.5 | B1.4 | A7.1 | A4.1 | B1.0 | B1.5 |
| 21 | B4.7 | B1.2 | B3.6 | B3.2 | B2.6 | A7.7 | B1.2 | B1.5 | A7.9 | A2.9 | B1.2 | B1.1 |
| 22 | B4.0 | B1.1 | B3.0 | B2.5 | B1.9 | A9.0 | B1.4 | B1.7 | A6.7 | A2.5 | B1.0 | B1.4 |
| 23 | B3.3 | B1.1 | B3.4 | B3.0 | B2.0 | B1.3 | B3.0 | B1.7 | A7.5 | A3.2 | A9.9 | B1.4 |
| 24 | B3.3 | B1.1 | B3.2 | B1.9 | B3.7 | B2.4 | B6.4 | B1.6 | A7.7 | B1.0 | A8.5 | B2.4 |
| 25 | B2.9 | B1.5 | B3.0 | B1.6 | B3.5 | B2.8 | B5.5 | B1.4 | A6.8 | B3.0 | A8.2 | B1.9 |
| 26 | B2.4 | B2.2 | B2.5 | B2.0 | B3.7 | B3.3 | B4.3 | B1.3 | A6.2 | B6.8 | B1.1 | B1.4 |
| 27 | B2.0 | B2.8 | B2.2 | B1.9 | B3.1 | B4.9 | B4.7 | B1.4 | A6.4 | B4.2 | B1.0 | A8.5 |
| 28 | B2.3 | B2.1 | B2.5 | B2.1 | B2.7 | B4.6 | B3.6 | B1.2 | A6.0 | B5.7 | B1.5 | B1.4 |
| 29 | B2.8 | B1.8 | | B1.9 | B1.9 | B4.4 | B2.7 | B1.2 | A7.1 | B4.9 | B1.9 | B1.8 |
| 30 | B3.8 | B2.0 | | B1.6 | B1.3 | B4.1 | B2.5 | B1.1 | A8.1 | B5.0 | B1.4 | B2.3 |
| 31 | B4.5 | B4.2 | | B1.3 | | B4.5 | | B1.6 | A9.4 | | B1.7 | |

# MASS EJECTIONS FROM THE SUN--PROXY DATA*

November 1993

| Site | Mo | Day | Observed UT Start | Max | End | Location RA° | R/Ro | Freq or Wavelength | Kind of Event |
|---|---|---|---|---|---|---|---|---|---|
| LEAR | Nov | 12 | 0226.0 | | 0236.0 | | | | II 1600km/s |
| KHAR | Nov | 13 | 0951.0 | | 1018.0 | 82 | 0.98 | H-alpha | S |
| KHAR | Nov | 13 | 1033.0 | | 1045.0 | 82 | 0.98 | H-alpha | S |
| KHAR | Nov | 25 | 0945.0 | | 1045.0 | 97 | 1.00-1.03 | H-alpha | S |

QUALIFIERS ON START, MAX AND END TIMES
- E = event began before the tabulated time
- U = uncertain time

TYPE OF EVENT
- A = eruptive active region prominence
- CB = coronal cloud bubble
- D = coronal depletions
- E = coronal enhancement
- EL = coronal expanding loop
- II = Type II radio burst
- IVm = moving Type IV radio burst
- Q = eruptive quiescent prominence
- R = coronal ray or streamer
- S = flare-surge if there is a known flare association
- SP = flare-spray if there is a known flare association
- ** = movement may be caused by ionospheric refraction

REPORTING STATIONS
- IZMI = Izmiran
- KHAR = Kharkov
- LEAR = Learmonth
- ONDR = Ondrejov
- POTS = Potsdam
- SGMR = Sagamore Hill
- SVTO = San Vito
- WROC = Wroclaw

*Please be advised that this list is made up of proxy data--not actual measurements of coronal mass ejections (CMEs). The list was requested by the IAU Commission 10 in 1979. See page 46 in the July 1987 supplement to Solar-Geophysical Data for more information.

# ACTIVE PROMINENCES AND FILAMENTS

## NOVEMBER 1993

| Day | Event Type | Start (UT) | End (UT) | Lat | CMD | CMP Mo | CMP Day | Imp | Extent | Blue Shift (.1 A) | Red Shift (.1 A) | Obs Type | Sta | NOAA/ USAF Reg# | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | AFS | 0545E | 1014 | N03 | W68 | 10 | 27.2 | | 01 | 9 | 9 | E | LEAR | | |
| 01 | DSD | 0726E | 0803D | S08 | E51 | 11 | 5.1 | | 02 | 9 | 9 | E | SVTO | 7613 | Flare Associated |
| 01 | DSD | 1125E | 1146D | S10 | E48 | 11 | 5.1 | | 02 | 9 | 9 | E | SVTO | 7613 | Flare Associated |
| 01 | AFS | 1334E | 2053 | S15 | E49 | 11 | 5.3 | | 02 | 9 | 9 | E | RAMY | 7613 | |
| 01 | DSD | 1359E | 2053 | S10 | E42 | 11 | 4.7 | | 02 | 9 | 9 | E | RAMY | 7613 | |
| 01 | DSD | 1650E | 2311 | S13 | E41 | 11 | 4.8 | | 02 | 9 | 9 | E | HOLL | 7613 | |
| 01 | DSD | 1656E | 2053 | N03 | W71 | 10 | 27.5 | | 03 | 9 | 9 | E | RAMY | | |
| 01 | DSD | 1657E | 2053 | S12 | E40 | 11 | 4.7 | | 01 | 9 | 9 | E | RAMY | 7613 | |
| 01 | DSD | 1657E | 2053 | S13 | E42 | 11 | 4.9 | | 02 | 9 | 9 | E | RAMY | 7613 | |
| 01 | SSB | 1945 | | 323 | W23 | 10 | 31.0 | | | 0 | 0 | E | HOLL | | |
| 02 | ADF | 0825E | 1015D | S06 | E33 | 11 | 4.8 | 1 | 06 | 9 | 9 | E | LEAR | 7613 | |
| 02 | APR | 0900 | 1200 | N09 | E90 | 11 | 9.1 | | | | | | ATHN | | |
| 02 | ADF | 0900 | 1200 | S22 | E58 | 11 | 6.8 | | | | | | ATHN | | |
| 02 | AFS | 1104E | 2130 | S13 | W13 | 11 | 1.5 | | 01 | 9 | 9 | E | RAMY | | |
| 02 | AFS | 1109E | 2130 | S12 | E39 | 11 | 5.4 | | 01 | 9 | 9 | E | RAMY | 7613 | |
| 02 | DSD | 1109E | 2130 | S14 | E37 | 11 | 5.3 | | 02 | 9 | 9 | E | RAMY | 7613 | |
| 02 | DSD | 1110E | 2130 | S11 | E39 | 11 | 5.4 | | 02 | 9 | 9 | E | RAMY | 7613 | |
| 02 | SSB | 1131 | | 323 | W32 | 10 | 31.6 | | | 0 | 0 | E | RAMY | | |
| 02 | DSD | 1231E | 1400D | S12 | E30 | 11 | 4.8 | | 05 | 9 | 9 | E | RAMY | 7613 | |
| 02 | ADF | 1350E | 2130 | S18 | E05 | 11 | 2.9 | 1 | 10 | 9 | 9 | E | RAMY | 7612 | |
| 02 | DSD | 1427E | 2130 | N05 | W48 | 10 | 30.1 | | 01 | 9 | 9 | E | RAMY | 7608 | |
| 02 | ADF | 1646E | 2130 | S15 | E60 | 11 | 7.2 | 1 | 08 | 9 | 9 | E | RAMY | | |
| 02 | APR | 1650E | 2130 | N41 | E90 | 11 | 10.1 | 1 | | 9 | 9 | E | RAMY | | |
| 02 | AFS | 1903E | 0001 | S11 | W34 | 10 | 31.2 | | 02 | 5 | 8 | E | HOLL | | |
| 02 | ADF | 2107E | 2220D | S13 | W26 | 10 | 31.9 | 1 | 04 | 9 | 9 | E | HOLL | 7613 | |
| 02 | AFS | 2225E | 0045 | S10 | E33 | 11 | 5.4 | | 02 | 7 | 7 | E | LEAR | 7613 | |
| 03 | APR | 0615 | 1100 | N12 | E90 | 11 | 10.0 | | | | | | ATHN | | |
| 03 | APR | 0620 | 1100 | S07 | E90 | 11 | 10.0 | | | | | | ATHN | | |
| 03 | BSL | 0807E | 0821 | N01 | W90 | 10 | 27.7 | 1- | | | | C | CATA | | |
| 03 | AFS | 1114E | 2117 | S10 | E23 | 11 | 5.2 | | 01 | 9 | 9 | E | RAMY | 7613 | |
| 03 | DSD | 1117E | 2117 | S09 | E19 | 11 | 4.9 | | 01 | 9 | 9 | E | RAMY | 7613 | |
| 03 | DSD | 1119E | 1357D | S15 | E28 | 11 | 5.6 | | 01 | 9 | 9 | E | RAMY | 7613 | |
| 03 | BSL | 1219E | 1230D | N05 | E90 | 11 | 10.2 | 1- | | | | C | CATA | | |
| 03 | SSB | 1241 | | 322 | W45 | 11 | 1.7 | | | 0 | 0 | E | RAMY | | |
| 03 | BSL | 1245E | 1250D | N05 | E90 | 11 | 10.3 | 1- | | | | C | CATA | | |
| 03 | DSD | 1352E | 2117 | S12 | E16 | 11 | 4.8 | | 02 | 9 | 9 | E | RAMY | 7613 | |
| 03 | APR | 1421E | 2117 | S12 | E90 | 11 | 10.4 | 1 | | 9 | 9 | E | RAMY | | |
| 03 | AFS | 1738E | 1914D | S11 | E16 | 11 | 4.9 | | 02 | 9 | 9 | E | HOLL | 7613 | |
| 03 | SSB | 1757 | | 326 | W51 | 11 | 1.5 | | | 0 | 0 | E | HOLL | | |
| 03 | DSD | 1900E | 2117 | S20 | W67 | 10 | 29.8 | | 02 | 9 | 9 | E | RAMY | | |
| 03 | DSF | 2315U | 1540U | N01 | E81 | 11 | 10.0 | | 10 | 0 | 0 | E | HOLL | | |
| 04 | DSD | 1101E | 2146 | S12 | E06 | 11 | 4.9 | | 09 | 9 | 9 | E | RAMY | 7613 | |
| 04 | DSD | 1103E | 2146 | S10 | E04 | 11 | 4.8 | | 04 | 9 | 9 | E | RAMY | 7613 | |
| 04 | DSD | 1106E | 2146 | S14 | E05 | 11 | 4.8 | | 02 | 9 | 9 | E | RAMY | 7613 | |
| 04 | AFS | 1114E | 1420D | N05 | W07 | 11 | 3.9 | | 01 | 9 | 9 | E | RAMY | | |
| 04 | ADF | 1116E | 2146 | S12 | W19 | 11 | 3.0 | 1 | 12 | 9 | 9 | E | RAMY | 7612 | |
| 04 | DSD | 1129E | 1240 | S08 | E08 | 11 | 5.1 | | 02 | 9 | 9 | E | SVTO | 7613 | |
| 04 | DSD | 1129E | 1240 | S09 | E12 | 11 | 5.4 | | 03 | 9 | 9 | E | SVTO | 7613 | |
| 04 | DSD | 1129E | 1240 | S10 | E08 | 11 | 5.1 | | 02 | 9 | 9 | E | SVTO | 7613 | |
| 04 | AFS | 1129E | 1240 | S12 | E09 | 11 | 5.1 | | 02 | 9 | 9 | E | SVTO | 7613 | |
| 04 | AFS | 1134E | 2146 | S13 | W42 | 11 | 1.3 | | 01 | 7 | 8 | E | RAMY | 7615 | |
| 04 | DSD | 1230 | 1240 | S16 | E20 | 11 | 6.0 | | 02 | 9 | 9 | E | SVTO | 7613 | Flare Associated |
| 04 | AFS | 1525E | 2146 | S11 | E07 | 11 | 5.2 | | 02 | 9 | 9 | E | RAMY | 7613 | |
| 04 | DSD | 1542E | 1730D | S13 | E04 | 11 | 4.9 | | 04 | 9 | 9 | E | HOLL | 7613 | |
| 04 | AFS | 1755E | 0349 | S10 | E09 | 11 | 5.4 | | 02 | 9 | 9 | E | PALE | 7613 | |
| 04 | DSD | 1755E | 0349 | S12 | E05 | 11 | 5.1 | | 04 | 9 | 9 | E | PALE | 7613 | |
| 04 | SSB | 1950 | | 324 | W64 | 11 | 2.7 | | | 0 | 0 | E | HOLL | | |
| 04 | ASR | 2025E | 2146 | N05 | E87 | 11 | 11.3 | | | 9 | 9 | E | RAMY | | |
| 04 | DSD | 2123 | 2240D | S20 | E07 | 11 | 5.4 | | 08 | 9 | 9 | E | HOLL | 7613 | Flare Associated |
| 05 | DSD | 1050E | 1927 | S09 | W01 | 11 | 5.4 | | 04 | 9 | 9 | E | RAMY | 7613 | |
| 05 | AFS | 1050E | 1927 | S10 | W04 | 11 | 5.1 | | 01 | 9 | 9 | E | RAMY | 7613 | |
| 05 | DSD | 1050E | 1927 | S10 | W07 | 11 | 4.9 | | 03 | 9 | 9 | E | RAMY | 7613 | |
| 05 | AFS | 1056E | 1927 | S13 | W52 | 11 | 1.5 | | 01 | 9 | 9 | E | RAMY | 7615 | |
| 05 | ADF | 1102E | 1927 | N09 | E76 | 11 | 11.2 | 1 | 04 | 9 | 9 | E | RAMY | 7616 | |
| 05 | DSD | 1102E | 1927 | S20 | E62 | 11 | 10.2 | | 02 | 9 | 9 | E | RAMY | 7617 | |
| 05 | SSB | 1139 | | 261 | W10 | 11 | 10.1 | | | 0 | 0 | E | RAMY | | 272 W21 328 W77 |

# ACTIVE PROMINENCES AND FILAMENTS

## NOVEMBER 1993

| Day | Event Type | Start (UT) | End (UT) | Lat | CMD | CMP Mo | CMP Day | Imp | Extent | Blue Shift (.1 A) | Red Shift (.1 A) | Obs Type | Sta | NOAA/ USAF Reg# | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 05 | SSB | 2104 | | 266 | W20 | 11 | 10.9 | | | 0 | 0 | E | PALE | | |
| 05 | AFS | 2104E | 0250 | S06 | W12 | 11 | 5.0 | | 02 | 9 | 9 | E | PALE | 7613 | |
| 05 | DSD | 2104E | 0250 | S10 | W02 | 11 | 5.7 | | 02 | 9 | 9 | E | PALE | 7613 | |
| 05 | AFS | 2320E | 1016 | S10 | W12 | 11 | 5.1 | | 01 | 9 | 9 | E | LEAR | 7613 | |
| 05 | DSD | 2321E | 0233D | S13 | W05 | 11 | 5.6 | | 02 | 9 | 9 | E | LEAR | 7613 | |
| 06 | DSD | 0427E | 1016 | S11 | W09 | 11 | 5.5 | | 03 | 9 | 9 | E | LEAR | 7613 | |
| 06 | ASR | 0430E | 1016 | N11 | W90 | 10 | 30.5 | | | 8 | 9 | E | LEAR | 7608 | |
| 06 | ASR | 0608E | 1016 | S23 | W85 | 10 | 30.8 | | | 6 | 7 | E | LEAR | 7615 | |
| 06 | DSD | 0821E | 1325D | S19 | E50 | 11 | 10.2 | | 02 | 9 | 9 | E | SVTO | 7617 | |
| 06 | DSD | 0826E | 1520 | S10 | W12 | 11 | 5.4 | | 02 | 9 | 9 | E | SVTO | 7613 | |
| 06 | BSL | 0927E | 0935D | N09 | W90 | 10 | 30.7 | 1- | | | | C | CATA | | |
| 06 | BSL | 0927E | 0935D | S49 | E90 | 11 | 14.0 | 1- | | | | C | CATA | | |
| 06 | BSL | 0945E | 0945D | N10 | W90 | 10 | 30.7 | 1- | | | | C | CATA | | |
| 06 | BSL | 0945E | 0945D | S49 | E90 | 11 | 14.0 | 1- | | | | C | CATA | | |
| 06 | DSD | 1056E | 1728D | S10 | W14 | 11 | 5.4 | | 02 | 9 | 9 | E | RAMY | 7613 | |
| 06 | DSD | 1056E | 1728D | S10 | W18 | 11 | 5.1 | | 03 | 9 | 9 | E | RAMY | 7613 | |
| 06 | DSD | 1056E | 2003D | S12 | W09 | 11 | 5.8 | | 02 | 9 | 9 | E | RAMY | 7613 | |
| 06 | DSD | 1102E | 1656D | S18 | E54 | 11 | 10.6 | | 01 | 9 | 9 | E | RAMY | 7617 | |
| 06 | AFS | 1102E | 2122 | S13 | E57 | 11 | 10.8 | | 01 | 9 | 9 | E | RAMY | 7617 | |
| 06 | SSB | 1133 | | 263 | W25 | 11 | 11.4 | | | 0 | 0 | E | RAMY | | 273 W35 |
| 06 | APR | 1254E | 2122 | S07 | W90 | 10 | 30.9 | 1 | | 8 | 9 | E | RAMY | | |
| 06 | DSD | 1327E | 1520 | S18 | W12 | 11 | 5.6 | | 01 | 9 | 9 | E | SVTO | 7613 | |
| 06 | DSD | 1358E | 1520 | N07 | E58 | 11 | 10.9 | | 01 | 9 | 9 | E | SVTO | 7616 | |
| 06 | ADF | 1409E | 2122 | S13 | E46 | 11 | 10.1 | 1 | 08 | 9 | 9 | E | RAMY | 7617 | |
| 06 | ADF | 1409E | 2122 | S19 | E58 | 11 | 11.0 | 1 | 04 | 9 | 9 | E | RAMY | 7617 | |
| 06 | AFS | 1707E | 0315 | S12 | W21 | 11 | 5.1 | | 02 | 9 | 9 | E | PALE | 7613 | |
| 06 | DSD | 1721E | 0315 | S19 | E42 | 11 | 9.9 | | 03 | 9 | 9 | E | PALE | 7617 | |
| 06 | DSD | 1728E | 2003D | S16 | W15 | 11 | 5.6 | | 02 | 9 | 9 | E | RAMY | 7613 | |
| 06 | DSD | 1909E | 0315 | N06 | E60 | 11 | 11.3 | | 02 | 9 | 9 | E | PALE | 7616 | |
| 06 | DSD | 2045E | 0315 | S12 | W21 | 11 | 5.3 | | 03 | 9 | 9 | E | PALE | 7613 | |
| 06 | AFS | 2240E | 0730D | S09 | W24 | 11 | 5.1 | | 02 | 6 | 7 | E | LEAR | 7613 | |
| 06 | DSD | 2330E | 1018 | S14 | E45 | 11 | 10.4 | | 03 | 9 | 9 | E | LEAR | 7617 | |
| 07 | DSD | 0040E | 1018 | S16 | W24 | 11 | 5.2 | | 02 | 9 | 9 | E | LEAR | 7613 | |
| 07 | SSB | 0540 | | 262 | W34 | 11 | 12.2 | | | 0 | 0 | E | LEAR | | |
| 07 | AFS | 1127E | 2106 | S17 | E43 | 11 | 10.7 | | 02 | 9 | 9 | E | RAMY | 7617 | |
| 07 | AFS | 1128E | 2106 | S12 | E45 | 11 | 10.9 | | 01 | 9 | 9 | E | RAMY | 7617 | |
| 07 | DSD | 1132E | 2106 | S12 | W35 | 11 | 4.8 | | 03 | 9 | 9 | E | RAMY | 7613 | |
| 07 | DSD | 1134E | 2106 | S10 | W34 | 11 | 4.9 | | 03 | 9 | 9 | E | RAMY | 7613 | |
| 07 | DSD | 1136E | 2106 | S12 | W28 | 11 | 5.4 | | 03 | 9 | 9 | E | RAMY | 7613 | |
| 07 | APR | 1137E | 2106 | S12 | E90 | 11 | 14.3 | 1 | | 7 | 8 | E | RAMY | | |
| 07 | ADF | 1530E | 2106 | S14 | E36 | 11 | 10.4 | 1 | 04 | 9 | 9 | E | RAMY | 7617 | |
| 07 | ADF | 1531E | 2106 | S20 | E45 | 11 | 11.1 | 1 | 04 | 9 | 9 | E | RAMY | 7617 | |
| 07 | ADF | 1728E | 0124 | S17 | E37 | 11 | 10.5 | 1 | 04 | 9 | 9 | E | PALE | 7617 | |
| 07 | DSD | 2139E | 2340D | S20 | E40 | 11 | 11.0 | | 04 | 9 | 9 | E | HOLL | 7617 | |
| 07 | DSD | 2245E | 0124 | S14 | W40 | 11 | 4.9 | | 05 | 9 | 9 | E | PALE | 7613 | |
| 08 | DSD | 0030E | 1019 | S07 | W41 | 11 | 4.9 | | 03 | 9 | 9 | E | LEAR | 7613 | |
| 08 | SSB | 0122 | | 383 | W65 | 10 | 31.6 | | | 0 | 0 | E | PALE | | |
| 08 | DSD | 0722E | 1130 | S10 | W35 | 11 | 5.7 | | 02 | 9 | 9 | E | SVTO | 7613 | |
| 08 | APR | 0815 | 1115 | N12 | E90 | 11 | 15.1 | | | | | | ATHN | | |
| 08 | APR | 0820 | 1115 | S28 | E90 | 11 | 15.4 | | | | | | ATHN | | |
| 08 | DSD | 1107E | 1436D | S13 | W47 | 11 | 4.9 | | 03 | 9 | 9 | E | RAMY | 7613 | |
| 08 | SSB | 1730 | | 282 | W73 | 11 | 16.2 | | | 0 | 0 | E | PALE | | |
| 08 | AFS | 1840E | 2356 | N13 | W59 | 11 | 4.3 | | 02 | 9 | 9 | E | HOLL | | |
| 08 | AFS | 1900E | 1903D | S13 | E25 | 11 | 10.7 | | 02 | 8 | 8 | E | PALE | 7617 | |
| 08 | DSD | 2154 | 2356 | S19 | E23 | 11 | 10.7 | | 03 | 9 | 9 | E | HOLL | 7617 | Flare Associated |
| 09 | AFS | 0235E | 1020 | S13 | W54 | 11 | 5.0 | | 03 | 4 | 9 | E | LEAR | 7613 | |
| 09 | APR | 0600 | 1200 | N07 | E90 | 11 | 16.0 | | | | | | ATHN | | |
| 09 | BSL | 0830E | 0836 | N68 | E90 | 11 | 17.5 | 1- | | | | C | CATA | | |
| 09 | BSL | 0830E | 0836 | S28 | E90 | 11 | 16.4 | 1- | | | | C | CATA | | |
| 09 | BSL | 0830E | 0900 | S43 | E90 | 11 | 16.8 | 1- | | | | C | CATA | | |
| 09 | BSL | 0900 | 0900D | S89 | W90 | 10 | 31.9 | 1- | | | | C | CATA | | |
| 09 | DSD | 1011 | 1027 | S07 | W65 | 11 | 4.5 | 2 | | | | C | CATA | | |
| 09 | DSD | 1015E | 1324D | S10 | W67 | 11 | 4.4 | | 07 | 8 | 7 | E | SVTO | 7613 | |
| 09 | DSD | 1015E | 1520 | S12 | W61 | 11 | 4.8 | | 03 | 9 | 9 | E | SVTO | 7613 | |
| 09 | DSD | 1027E | 1520 | N13 | W70 | 11 | 4.1 | | 01 | 9 | 9 | E | SVTO | | |
| 09 | BSL | 1100 | 1100D | N55 | E90 | 11 | 17.2 | 1- | | | | C | CATA | | |

# ACTIVE PROMINENCES AND FILAMENTS

## NOVEMBER 1993

| Day | Event Type | Start (UT) | End (UT) | Lat | CMD | CMP Mo | CMP Day | Imp | Extent | Blue Shift (.1 A) | Red Shift (.1 A) | Obs Type | Sta | NOAA/ USAF Reg# | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09 | AFS | 1116E | 2127 | S12 | W56 | 11 | 5.2 | | 01 | 9 | 9 | E | RAMY | 7613 | |
| 09 | DSD | 1116E | 2127 | S13 | W61 | 11 | 4.9 | | 03 | 9 | 9 | E | RAMY | 7613 | |
| 09 | DSF | 1218U | 1323U | S24 | E13 | 11 | 10.5 | 3 | 06 | 9 | 9 | E | RAMY | 7617 | |
| 09 | DSD | 1253E | 2127 | N07 | E19 | 11 | 10.9 | | 01 | 9 | 9 | E | RAMY | 7616 | |
| 09 | ADF | 1335E | 1520 | S19 | E15 | 11 | 10.7 | 3 | 07 | 9 | 9 | E | SVTO | 7617 | |
| 09 | ADF | 1616E | 2127 | N07 | E28 | 11 | 11.8 | 1 | 12 | 9 | 9 | E | RAMY | 7616 | |
| 09 | EPL | 1833E | 2002D | N38 | E90 | 11 | 17.0 | 3 | | 9 | 3 | E | RAMY | | |
| 09 | EPL | 1842E | 2000D | N30 | E90 | 11 | 16.8 | 1 | | 1 | 1 | E | HOLL | | |
| 09 | EPL | 1853E | 2010D | N30 | E90 | 11 | 16.9 | 1 | | 1 | 1 | E | PALE | | |
| 09 | AFS | 2214E | 1019 | S12 | W64 | 11 | 5.1 | | 02 | 8 | 8 | E | LEAR | 7613 | |
| 10 | ADF | 0525E | 0831D | S20 | E05 | 11 | 10.6 | 1 | 04 | 9 | 9 | E | LEAR | 7617 | |
| 10 | BSL | 0748E | 0757 | S45 | E90 | 11 | 17.8 | 1- | | | | C | CATA | | |
| 10 | DSD | 0837E | 1035D | N04 | E10 | 11 | 11.1 | | 02 | 9 | 9 | E | SVTO | 7616 | |
| 10 | BSL | 0846E | 0857 | S82 | W90 | 11 | 2.0 | 1- | | | | C | CATA | | |
| 10 | DSD | 0959E | 1129D | S12 | W70 | 11 | 5.1 | | 01 | 9 | 9 | E | SVTO | 7613 | |
| 10 | BSL | 1102 | 1105D | S88 | W90 | 11 | 2.0 | 1- | | | | C | CATA | | |
| 10 | AFS | 1105E | 2045 | S11 | W68 | 11 | 5.3 | | 02 | 9 | 9 | E | RAMY | 7613 | |
| 10 | DSD | 1105E | 2045 | S14 | W73 | 11 | 4.9 | | 02 | 9 | 9 | E | RAMY | 7613 | |
| 10 | ADF | 1120E | 1640D | N03 | E17 | 11 | 11.7 | 1 | 09 | 9 | 9 | E | RAMY | 7616 | |
| 10 | AFS | 1404E | 2045 | S14 | W06 | 11 | 10.1 | | 02 | 9 | 9 | E | RAMY | 7617 | |
| 10 | DSF | 1545U | 1645U | N04 | E07 | 11 | 11.2 | 3 | 07 | 9 | 9 | E | HOLL | 7616 | |
| 10 | ADF | 1608E | 1645D | N04 | E07 | 11 | 11.2 | 1 | 07 | 9 | 9 | E | HOLL | 7616 | |
| 10 | ADF | 1618E | 1705D | N10 | E16 | 11 | 11.9 | 1 | 06 | 9 | 9 | E | RAMY | 7616 | |
| 10 | DSF | 1618U | 1640U | N03 | E17 | 11 | 11.9 | 3 | 09 | 0 | 0 | E | RAMY | 7616 | |
| 10 | ADF | 1815E | 0304 | N03 | E08 | 11 | 11.3 | 1 | 06 | 9 | 9 | E | PALE | 7616 | |
| 10 | ADF | 1815E | 0304 | S19 | E01 | 11 | 10.8 | 1 | 05 | 9 | 9 | E | PALE | 7617 | |
| 10 | DSD | 2042E | 2313D | S11 | W80 | 11 | 4.8 | | 09 | 9 | 9 | E | HOLL | 7613 | |
| 10 | DSD | 2103E | 0304 | S11 | W80 | 11 | 4.8 | | 02 | 9 | 9 | E | PALE | 7613 | |
| 11 | ASR | 0648E | 1411 | N11 | W81 | 11 | 5.2 | | | 9 | 9 | E | SVTO | 7613 | |
| 11 | AFS | 0649E | 1411 | N13 | W77 | 11 | 5.5 | | 02 | 9 | 9 | E | SVTO | 7613 | |
| 11 | ASR | 0652E | 0945D | S08 | W90 | 11 | 4.5 | | | 9 | 9 | E | LEAR | 7613 | |
| 11 | DSD | 0709E | 0000 | N04 | E06 | 11 | 11.7 | | 01 | 9 | 9 | E | SVTO | 7616 | |
| 11 | DSD | 0709E | 1411 | N04 | E06 | 11 | 11.7 | | 01 | 9 | 9 | E | SVTO | 7616 | |
| 11 | ADF | 0712E | 1215D | N14 | E03 | 11 | 11.5 | 1 | 09 | 9 | 9 | E | SVTO | 7616 | |
| 11 | BSL | 0811 | 0815D | S30 | W90 | 11 | 4.3 | 1- | | | | C | CATA | | |
| 11 | BSL | 0832E | 0842D | S30 | W90 | 11 | 4.3 | 1- | | | | C | CATA | | |
| 11 | BSL | 0852E | 0856 | S30 | W90 | 11 | 4.3 | 1- | | | | C | CATA | | |
| 11 | BSL | 1015 | 1030D | S30 | W90 | 11 | 4.3 | 1- | | | | C | CATA | | |
| 11 | ASR | 1103E | 2133 | S13 | W86 | 11 | 5.0 | | | 9 | 9 | E | RAMY | 7613 | |
| 11 | ASR | 1153E | 2133 | N12 | E90 | 11 | 18.3 | | | 9 | 9 | E | RAMY | | |
| 11 | BSL | 1201E | 1240D | S30 | W90 | 11 | 4.4 | 1 | | | | C | CATA | | |
| 11 | ASR | 1204E | 1411 | N10 | E90 | 11 | 18.3 | | | 9 | 9 | E | SVTO | | |
| 11 | APR | 1214E | 2133 | S05 | W89 | 11 | 4.8 | 1 | | 9 | 9 | E | RAMY | 7613 | |
| 11 | ADF | 1239E | 2133 | S13 | W08 | 11 | 10.9 | 1 | 03 | 8 | 9 | E | RAMY | 7617 | |
| 11 | APR | 1255E | 1411 | S04 | W88 | 11 | 4.9 | 1 | | 9 | 9 | E | SVTO | 7613 | |
| 11 | ADF | 1830E | 0236 | S10 | W15 | 11 | 10.6 | 1 | 04 | 8 | 8 | E | PALE | 7617 | |
| 11 | ADF | 1830E | 0236 | S11 | W85 | 11 | 5.4 | 1 | 05 | 9 | 9 | E | PALE | 7613 | |
| 11 | ASR | 1830E | 0236 | S11 | W90 | 11 | 5.0 | | | 9 | 9 | E | PALE | 7613 | |
| 11 | AFS | 1830E | 0236 | S12 | W18 | 11 | 10.4 | | 02 | 9 | 9 | E | PALE | 7617 | |
| 11 | ASR | 1830E | 1915 | N14 | E90 | 11 | 18.6 | | | 9 | 9 | E | PALE | | |
| 11 | SSB | 1841 | | 199 | W30 | 11 | 19.6 | | | 0 | 0 | E | PALE | | |
| 11 | ASR | 2210E | 0748 | N08 | E90 | 11 | 18.7 | | | 9 | 9 | E | LEAR | 7618 | |
| 11 | ASR | 2345E | 0235D | S10 | W90 | 11 | 5.2 | | | 9 | 9 | E | LEAR | 7613 | |
| 11 | ADF | 2348E | 0130D | N12 | W04 | 11 | 11.7 | 1 | 06 | 9 | 9 | E | LEAR | 7616 | |
| 12 | LPS | 0245E | 0407D | N07 | E88 | 11 | 18.7 | | | 9 | 9 | E | LEAR | 7618 | |
| 12 | ASR | 0542E | 0748 | S10 | W90 | 11 | 5.5 | | | 9 | 9 | E | LEAR | 7613 | |
| 12 | BSL | 0701E | 0711 | S16 | W90 | 11 | 5.5 | 1- | | | | C | CATA | | |
| 12 | ASR | 0725E | 1500 | S14 | W84 | 11 | 6.0 | | | 9 | 9 | E | SVTO | 7618 | |
| 12 | ADF | 0745E | 1500 | N05 | W17 | 11 | 11.0 | 1 | 06 | 9 | 9 | E | SVTO | 7616 | |
| 12 | BSL | 0843 | 0855 | S15 | W90 | 11 | 5.5 | 1- | | | | C | CATA | | |
| 12 | BSL | 0855 | 0900D | N68 | W90 | 11 | 4.2 | 1- | | | | C | CATA | | |
| 12 | ASR | 1017E | 1500 | N09 | E83 | 11 | 18.6 | | | 9 | 9 | E | SVTO | 7618 | |
| 12 | BSL | 1047 | 1056 | N75 | W90 | 11 | 4.2 | 1- | | | | C | CATA | | |
| 12 | BSL | 1105 | 1105D | S07 | W90 | 11 | 5.7 | 1- | | | | C | CATA | | |
| 12 | ASR | 1253E | 2136 | N12 | E82 | 11 | 18.7 | | | 9 | 9 | E | RAMY | 7618 | |
| 12 | ADF | 1720E | 0159D | S18 | W28 | 11 | 10.6 | 1 | 05 | 9 | 9 | E | PALE | 7617 | |
| 12 | DSD | 1750E | 2201D | N08 | E77 | 11 | 18.5 | | 13 | 9 | 9 | E | HOLL | 7618 | |

# ACTIVE PROMINENCES AND FILAMENTS

## NOVEMBER 1993

| Day | Event Type | Start (UT) | End (UT) | Lat | CMD | CMP Mo | CMP Day | Imp | Extent | Blue Shift (.1 A) | Red Shift (.1 A) | Obs Type | Sta | NOAA/ USAF Reg# | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | ASR | 1810E | 0159D | N08 | E80 | 11 | 18.7 | | | 9 | 9 | E | PALE | 7618 | |
| 12 | DSD | 1842E | 2136 | N09 | E74 | 11 | 18.3 | | 06 | 9 | 9 | E | RAMY | 7618 | |
| 12 | DSD | 2000E | 0159D | N07 | E78 | 11 | 18.7 | | 02 | 9 | 9 | E | PALE | 7618 | |
| 13 | BSL | 0048E | 0135D | N08 | E73 | 11 | 18.5 | | | 7 | 7 | E | PALE | 7618 | |
| 13 | BSL | 0102E | 0135 | N08 | E80 | 11 | 19.0 | | | 7 | 5 | E | LEAR | 7618 | |
| 13 | BSL | 0102E | 0135 | N08 | E80 | 11 | 19.0 | | | 7 | 5 | E | LEAR | 7618 | |
| 13 | DSD | 0401E | 0455D | N06 | E73 | 11 | 18.6 | | 12 | 9 | 9 | E | LEAR | 7618 | |
| 13 | ASR | 0602E | 1018 | N07 | E73 | 11 | 18.7 | | | 9 | 9 | E | LEAR | 7618 | |
| 13 | DSD | 0605E | 0828D | N01 | W24 | 11 | 11.5 | | 01 | 9 | 9 | E | LEAR | 7616 | |
| 13 | DSF | 0743U | 2220U | S40 | W05 | 11 | 12.9 | 2 | 34 | 0 | 0 | E | LEAR | | |
| 13 | DSD | 0951 | 1018 | N07 | E80 | 11 | 19.4 | 1 | | | | | KHAR | | |
| 13 | DSD | 1033 | 1045 | N07 | E80 | 11 | 19.4 | 1 | | | | | KHAR | | |
| 13 | APR | 1222E | 2132 | S16 | W90 | 11 | 6.7 | 1 | | 9 | 9 | E | RAMY | | |
| 13 | AFS | 1231E | 2132 | N12 | E64 | 11 | 18.3 | | 02 | 9 | 9 | E | RAMY | 7618 | |
| 13 | DSD | 1235E | 2132 | N10 | E68 | 11 | 18.6 | | 03 | 8 | 7 | E | RAMY | 7618 | |
| 13 | DSD | 1858E | 0322 | N09 | E65 | 11 | 18.7 | | 03 | 9 | 9 | E | PALE | 7618 | |
| 13 | AFS | 2231E | 1022 | N08 | E64 | 11 | 18.7 | | 05 | 9 | 9 | E | LEAR | 7618 | |
| 13 | AFS | 2249E | 0322 | N09 | E61 | 11 | 18.5 | | 03 | 9 | 9 | E | PALE | 7618 | |
| 14 | DSD | 0245E | 0450D | N07 | E58 | 11 | 18.4 | | 02 | 9 | 9 | E | LEAR | 7618 | |
| 14 | DSF | 0300U | 1727U | S12 | E30 | 11 | 16.4 | 2 | 16 | 0 | 0 | E | PALE | | |
| 14 | DSF | 0300U | 1727U | S12 | E30 | 11 | 16.4 | 2 | 16 | 0 | 0 | E | PALE | | |
| 14 | BSL | 0757 | 0808 | N10 | E90 | 11 | 21.1 | 1- | | | | C | CATA | | |
| 14 | APR | 0800 | 0900 | S17 | E90 | 11 | 21.2 | | | | | | ATHN | | |
| 14 | APR | 0805 | 0900 | S10 | W90 | 11 | 7.6 | | | | | | ATHN | | |
| 14 | DSF | 0911U | 2205U | N21 | E41 | 11 | 17.5 | 2 | 14 | 0 | 0 | E | LEAR | | |
| 14 | BSL | 1055 | 1100D | S31 | W90 | 11 | 7.3 | 1- | | | | C | CATA | | |
| 14 | APR | 1055E | 1229D | S31 | W90 | 11 | 7.3 | | | 9 | 9 | E | SVTO | | |
| 14 | AFS | 1235E | 2054 | N09 | E54 | 11 | 18.6 | | 03 | 9 | 9 | E | RAMY | 7618 | |
| 14 | AFS | 1246E | 2054 | N10 | W12 | 11 | 13.6 | | 01 | 9 | 9 | E | RAMY | | |
| 14 | DSD | 1317E | 2054 | N09 | E51 | 11 | 18.4 | | 01 | 9 | 9 | E | RAMY | 7618 | |
| 14 | DSD | 1317E | 2054 | N10 | E54 | 11 | 18.6 | | 02 | 9 | 9 | E | RAMY | 7618 | |
| 14 | AFS | 1459E | 2329 | N08 | E53 | 11 | 18.6 | | 02 | 9 | 9 | E | HOLL | 7618 | |
| 14 | DSD | 1535E | 2149D | N08 | E52 | 11 | 18.5 | | 03 | 9 | 9 | E | HOLL | 7618 | |
| 14 | DSD | 1730E | 0331 | N06 | E49 | 11 | 18.4 | | 02 | 9 | 9 | E | PALE | 7618 | |
| 14 | AFS | 1730E | 0331 | N06 | E51 | 11 | 18.5 | | 03 | 9 | 9 | E | PALE | 7618 | |
| 14 | AFS | 2203E | 1025 | N09 | E51 | 11 | 18.7 | | 02 | 8 | 8 | E | LEAR | 7618 | |
| 14 | AFS | 2303E | 0255D | N10 | W18 | 11 | 13.6 | | 01 | 7 | 7 | E | LEAR | 7619 | |
| 14 | DSD | 2311E | 2326D | N06 | E50 | 11 | 18.7 | | 03 | 8 | 8 | E | LEAR | 7618 | Flare Associated |
| 15 | BSL | 0334E | 0407D | S19 | E90 | 11 | 22.0 | | | 7 | 7 | E | LEAR | | |
| 15 | DSF | 0911U | 2215U | N20 | W32 | 11 | 12.9 | | 06 | 0 | 0 | E | LEAR | | |
| 15 | BSL | 0933E | 0937D | N17 | W90 | 11 | 8.5 | 1- | | | | C | CATA | | |
| 15 | BSL | 0948E | 1010 | N16 | W90 | 11 | 8.6 | 1- | | | | C | CATA | | |
| 15 | DSD | 1229E | 2043 | N08 | E43 | 11 | 18.7 | | 02 | 9 | 9 | E | RAMY | 7618 | |
| 15 | AFS | 1229E | 2043 | N10 | E41 | 11 | 18.6 | | 02 | 9 | 9 | E | RAMY | 7618 | |
| 15 | DSD | 1248E | 2043 | N10 | E43 | 11 | 18.8 | | 03 | 9 | 9 | E | RAMY | 7618 | |
| 15 | DSD | 1248E | 2043 | N12 | E43 | 11 | 18.8 | | 02 | 9 | 9 | E | RAMY | 7618 | |
| 15 | SSB | 1341 | | 132 | W14 | 11 | 18.0 | | | 0 | 0 | E | RAMY | | |
| 15 | AFS | 1633E | 2025 | N09 | E39 | 11 | 18.6 | | 02 | 9 | 9 | E | HOLL | 7618 | |
| 15 | DSD | 1715E | 0339 | N08 | E40 | 11 | 18.7 | | 03 | 9 | 9 | E | PALE | 7618 | |
| 15 | AFS | 1715E | 0339 | N09 | E39 | 11 | 18.6 | | 02 | 9 | 9 | E | PALE | 7618 | |
| 15 | SSB | 1809 | | 141 | W25 | 11 | 18.9 | | | 0 | 0 | E | PALE | | 163 W47 |
| 15 | AFS | 2230E | 1020 | N08 | E34 | 11 | 18.5 | | 03 | 9 | 4 | E | LEAR | 7618 | |
| 16 | BSL | 0747E | 0755 | S20 | W90 | 11 | 9.4 | 1- | | | | C | CATA | | |
| 16 | AFS | 1515E | 2105 | N08 | E27 | 11 | 18.6 | | 02 | 9 | 9 | E | HOLL | 7618 | |
| 16 | DSD | 1557E | 1815 | N08 | E27 | 11 | 18.7 | | 03 | 9 | 9 | E | RAMY | 7618 | |
| 16 | AFS | 1557E | 1815 | N11 | E26 | 11 | 18.6 | | 02 | 9 | 9 | E | RAMY | 7618 | |
| 16 | DSD | 1604E | 1815 | N08 | W40 | 11 | 13.7 | | 02 | 3 | 9 | E | RAMY | 7619 | |
| 16 | DSD | 1730E | 2046D | N05 | E21 | 11 | 18.3 | | 03 | 9 | 9 | E | HOLL | 7618 | |
| 16 | AFS | 1825E | 0305 | N05 | E22 | 11 | 18.4 | | 02 | 9 | 9 | E | PALE | 7618 | |
| 16 | DSD | 1825E | 0305 | N08 | E26 | 11 | 18.7 | | 03 | 9 | 9 | E | PALE | 7618 | |
| 16 | SSB | 1830 | | 147 | W03 | 11 | 20.3 | | | 0 | 0 | E | PALE | | |
| 17 | BSL | 0755 | 0755D | N04 | E90 | 11 | 24.0 | 1- | | | | C | CATA | | |
| 17 | BSL | 0810E | 0831 | N04 | E90 | 11 | 24.1 | 1- | | | | C | CATA | | |
| 17 | ADF | 0915 | 0945 | S15 | W55 | 11 | 13.2 | | | | | | ATHN | | |
| 17 | AFS | 1108E | 1826 | N09 | E17 | 11 | 18.7 | | 03 | 9 | 9 | E | RAMY | 7618 | |

# ACTIVE PROMINENCES AND FILAMENTS

## NOVEMBER 1993

| Day | Event Type | Start (UT) | End (UT) | Lat | CMD | CMP Mo | CMP Day | Imp | Extent | Blue Shift (.1 A) | Red Shift (.1 A) | Obs Type | Sta | NOAA/ USAF Reg# | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | DSD | 1109E | 1826 | N08 | E12 | 11 | 18.4 | | 02 | 9 | 9 | E | RAMY | 7618 | |
| 17 | SSB | 1115 | | 168 | W73 | 11 | 23.7 | | | 0 | 0 | E | RAMY | | |
| 17 | ASR | 1343E | 1826 | S06 | W78 | 11 | 11.7 | | | 9 | 9 | E | RAMY | | |
| 17 | APR | 1344E | 1826 | S16 | W90 | 11 | 10.7 | 1 | | 9 | 9 | E | RAMY | 7617 | |
| 17 | DSD | 1357E | 1826 | N07 | E16 | 11 | 18.8 | | 02 | 8 | 7 | E | RAMY | 7618 | |
| 17 | DSD | 1835E | 0346 | N09 | E15 | 11 | 18.9 | | 02 | 9 | 9 | E | PALE | 7618 | |
| 17 | AFS | 1835E | 0346 | N10 | E18 | 11 | 19.1 | | 03 | 9 | 9 | E | PALE | 7618 | |
| 17 | ASR | 1835E | 0346 | S08 | W90 | 11 | 11.0 | | | 9 | 9 | E | PALE | | |
| 18 | AFS | 0040E | 0953 | N06 | E08 | 11 | 18.6 | | 03 | 4 | 4 | E | LEAR | 7618 | |
| 18 | ADF | 0115E | 0855D | N04 | E01 | 11 | 18.1 | 1 | 04 | 7 | 6 | E | LEAR | 7618 | |
| 18 | AFS | 1046E | 1352D | N08 | E02 | 11 | 18.6 | | 02 | 9 | 9 | E | SVTO | 7618 | |
| 18 | AFS | 1116E | 1745 | N08 | E02 | 11 | 18.6 | | 02 | 9 | 9 | E | RAMY | 7618 | |
| 18 | DSD | 1117E | 1745 | N06 | W02 | 11 | 18.3 | | 03 | 9 | 9 | E | RAMY | 7618 | |
| 18 | ADF | 1118E | 1745 | N08 | E02 | 11 | 18.6 | 1 | 04 | 9 | 9 | E | RAMY | 7618 | |
| 18 | DSD | 1125E | 1745 | N05 | E01 | 11 | 18.5 | | 03 | 9 | 9 | E | RAMY | 7618 | |
| 18 | ASR | 1215E | 1745 | N07 | E90 | 11 | 25.2 | | | 8 | 7 | E | RAMY | | |
| 18 | AFS | 1325E | 1352 | N00 | W09 | 11 | 17.9 | | 01 | 9 | 9 | E | SVTO | 7618 | |
| 18 | DSD | 1325E | 1352D | N08 | W05 | 11 | 18.2 | | 04 | 9 | 9 | E | SVTO | 7618 | |
| 18 | AFS | 1745E | 0325 | N02 | W08 | 11 | 18.1 | | 02 | 9 | 9 | E | PALE | 7618 | |
| 18 | AFS | 1748E | 0325 | N19 | E16 | 11 | 20.0 | | 02 | 5 | 5 | E | PALE | | |
| 18 | AFS | 1751E | 0325 | N16 | E13 | 11 | 19.7 | | 02 | 5 | 5 | E | PALE | | |
| 18 | DSD | 1812E | 0325 | N03 | W10 | 11 | 18.0 | | 03 | 9 | 9 | E | PALE | 7618 | |
| 18 | ADF | 1812E | 0325 | N03 | W12 | 11 | 17.9 | 1 | 07 | 9 | 9 | E | PALE | 7618 | |
| 18 | APR | 1949E | 2051D | N15 | E90 | 11 | 25.6 | | | 9 | 9 | E | HOLL | | |
| 18 | AFS | 2020E | 2132 | N07 | E04 | 11 | 19.1 | | 02 | 8 | 9 | E | HOLL | 7618 | |
| 18 | ADF | 2325E | 1020 | N08 | W04 | 11 | 18.7 | 1 | 06 | 6 | 6 | E | LEAR | 7618 | |
| 19 | AFS | 0350E | 1020 | N08 | W08 | 11 | 18.5 | | 02 | 5 | 7 | E | LEAR | 7618 | |
| 19 | AFS | 0721E | 1225 | N07 | W08 | 11 | 18.7 | | 03 | 9 | 9 | E | SVTO | 7618 | |
| 19 | DSD | 0721E | 1225 | N07 | W12 | 11 | 18.4 | | 04 | 9 | 9 | E | SVTO | 7618 | |
| 19 | DSD | 1125E | 1751D | N06 | W14 | 11 | 18.4 | | 03 | 9 | 9 | E | RAMY | 7618 | |
| 19 | AFS | 1125E | 1852 | N07 | W10 | 11 | 18.7 | | 01 | 9 | 9 | E | RAMY | 7618 | |
| 19 | DSD | 1321E | 1852 | N17 | E01 | 11 | 19.6 | | 01 | 9 | 9 | E | RAMY | | |
| 19 | DSD | 1437E | 1852 | N05 | E64 | 11 | 24.4 | | 02 | 9 | 9 | E | RAMY | 7620 | |
| 19 | DSD | 1726E | 2000D | N08 | W19 | 11 | 18.3 | | 08 | 9 | 9 | E | HOLL | 7618 | |
| 19 | DSD | 1733E | 1852 | N07 | W21 | 11 | 18.1 | | 05 | 9 | 9 | E | RAMY | 7618 | |
| 19 | AFS | 1743E | 0330 | N09 | W15 | 11 | 18.6 | | 02 | 9 | 9 | E | PALE | 7618 | |
| 19 | AFS | 1745E | 0330 | N17 | W13 | 11 | 18.7 | | 02 | 6 | 5 | E | PALE | | |
| 19 | AFS | 1808E | 2349 | N07 | W13 | 11 | 18.8 | | 01 | 9 | 9 | E | HOLL | 7618 | |
| 20 | ASR | 0016E | 0230D | N11 | E90 | 11 | 26.8 | | | 9 | 9 | E | LEAR | | |
| 20 | BSL | 0036E | 0152D | N13 | E90 | 11 | 26.8 | | | 9 | 9 | E | PALE | | |
| 20 | BSL | 0040E | 0120D | N11 | E90 | 11 | 26.8 | | | 9 | 9 | E | LEAR | | |
| 20 | ASR | 0530E | 0700D | N10 | E90 | 11 | 27.0 | | | 9 | 7 | E | LEAR | | |
| 20 | DSD | 0726E | 0735D | N02 | E50 | 11 | 24.0 | 1 | | | | C | CATA | | |
| 20 | BSL | 0938E | 0954 | N12 | E90 | 11 | 27.2 | 1- | | | | C | CATA | | |
| 20 | BSL | 1048 | 1053D | N56 | E90 | 11 | 28.2 | 1- | | | | C | CATA | | |
| 20 | BSL | 1053 | 1053D | N13 | E90 | 11 | 27.2 | 1- | | | | C | CATA | | |
| 20 | AFS | 1529E | 1547 | N05 | W26 | 11 | 18.7 | | 02 | 9 | 9 | E | RAMY | 7618 | |
| 20 | DSD | 1530E | 1547 | N02 | W27 | 11 | 18.6 | | 04 | 9 | 9 | E | RAMY | 7618 | |
| 20 | AFS | 1533E | 1547 | N04 | E50 | 11 | 24.4 | | 02 | 9 | 9 | E | RAMY | 7620 | |
| 20 | SSB | 1612 | | 423 | W19 | 11 | 18.9 | | | 0 | 0 | E | HOLL | | |
| 20 | AFS | 1745E | 0216 | N09 | W27 | 11 | 18.7 | | 05 | 9 | 9 | E | PALE | 7618 | |
| 20 | AFS | 1745E | 0216 | S13 | E54 | 11 | 24.8 | | 02 | 8 | 8 | E | PALE | 7621 | |
| 20 | ASR | 1754E | 1920D | N11 | E90 | 11 | 27.5 | | | 9 | 9 | E | PALE | | |
| 20 | ASR | 2300E | 0145D | N10 | E90 | 11 | 27.7 | | | 9 | 9 | E | LEAR | | |
| 20 | AFS | 2320E | 0216 | N06 | E45 | 11 | 24.3 | | 02 | 9 | 9 | E | PALE | 7620 | |
| 20 | ASR | 2320E | 0216 | N13 | E90 | 11 | 27.8 | | | 9 | 9 | E | PALE | | |
| 20 | AFS | 2325E | 0216 | N17 | E14 | 11 | 22.0 | | 02 | 9 | 9 | E | PALE | | |
| 21 | AFS | 0945E | 1325 | S13 | E47 | 11 | 24.9 | | 03 | 9 | 9 | E | SVTO | 7620 | |
| 21 | ADF | 1116E | 1833 | N03 | W36 | 11 | 18.8 | 1 | 04 | 9 | 9 | E | RAMY | 7618 | |
| 21 | AFS | 1116E | 1833 | N06 | W37 | 11 | 18.7 | | 02 | 9 | 9 | E | RAMY | 7618 | |
| 21 | AFS | 1140E | 1833 | N15 | E75 | 11 | 27.2 | | 02 | 9 | 9 | E | RAMY | 7622 | |
| 21 | ADF | 1142E | 1612D | N16 | E77 | 11 | 27.3 | 1 | 06 | 9 | 7 | E | RAMY | 7622 | |
| 21 | AFS | 1149E | 1833 | N07 | E37 | 11 | 24.3 | | 02 | 9 | 9 | E | RAMY | 7620 | |
| 21 | SSB | 1156 | | 435 | W35 | 11 | 18.7 | | | 0 | 0 | E | RAMY | | |
| 21 | DSD | 1303E | 1833 | N05 | E38 | 11 | 24.4 | | 02 | 9 | 9 | E | RAMY | 7620 | |
| 21 | APR | 1445E | 1502D | S26 | W90 | 11 | 14.6 | 1 | | 9 | 9 | E | RAMY | | |

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## NOVEMBER 1993

| Day | Event Type | Start (UT) | End (UT) | Lat | CMD | CMP Mo | CMP Day | Imp | Extent | Blue Shift (.1 A) | Red Shift (.1 A) | Obs Type | Sta | NOAA/ USAF Reg# | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | APR | 1455E | 1600D | S27 | W90 | 11 | 14.6 | 1 | | 9 | 9 | E | HOLL | | |
| 21 | EPL | 1502 | 1600D | S27 | W90 | 11 | 14.6 | 3 | | 9 | 9 | E | HOLL | | |
| 21 | EPL | 1502E | 1550D | S26 | W90 | 11 | 14.6 | 3 | | 9 | 9 | E | RAMY | | |
| 21 | APR | 1550E | 1729D | S29 | W90 | 11 | 14.6 | 1 | | 9 | 9 | E | RAMY | | |
| 21 | AFS | 1630E | 2306D | N03 | E35 | 11 | 24.3 | | 02 | 8 | 8 | E | HOLL | 7620 | |
| 21 | SSB | 1640 | | 433 | W35 | 11 | 19.0 | | | 0 | 0 | E | HOLL | | |
| 21 | AFS | 1650E | 1833 | S11 | E41 | 11 | 24.8 | | 01 | 9 | 9 | E | RAMY | 7621 | |
| 21 | ADF | 1701E | 1833 | N26 | W36 | 11 | 18.9 | 1 | 09 | 9 | 9 | E | RAMY | | |
| 21 | AFS | 1725E | 0330 | N09 | W41 | 11 | 18.6 | | 03 | 9 | 9 | E | PALE | 7618 | |
| 21 | AFS | 1726E | 0330 | N02 | E41 | 11 | 24.8 | | 02 | 9 | 9 | E | PALE | 7620 | |
| 21 | AFS | 1727E | 0330 | N11 | E72 | 11 | 27.1 | | 02 | 9 | 9 | E | PALE | 7622 | |
| 21 | AFS | 1818E | 0330 | S13 | E41 | 11 | 24.8 | | 01 | 7 | 7 | E | PALE | 7621 | |
| 21 | DSD | 2045E | 2128D | N02 | E28 | 11 | 23.9 | | 06 | 9 | 9 | E | PALE | 7620 | |
| 21 | AFS | 2330E | 1025 | N05 | W44 | 11 | 18.7 | | 03 | 9 | 9 | E | LEAR | 7618 | |
| 22 | AFS | 0230E | 1025 | N04 | E30 | 11 | 24.3 | | 02 | 8 | 8 | E | LEAR | 7620 | |
| 22 | BSL | 0732E | 0735 | S02 | W90 | 11 | 15.6 | 1- | | | | C | CATA | | |
| 22 | BSL | 0741 | 0741D | S72 | E90 | 11 | 30.5 | 1- | | | | C | CATA | | |
| 22 | DSD | 1120E | 1232 | N04 | W50 | 11 | 18.7 | | 01 | 9 | 9 | E | RAMY | 7618 | |
| 22 | AFS | 1120E | 1232 | N07 | W50 | 11 | 18.7 | | 02 | 9 | 9 | E | RAMY | 7618 | |
| 22 | DSD | 1130E | 1232 | N15 | E67 | 11 | 27.5 | | 02 | 9 | 9 | E | RAMY | 7622 | |
| 22 | AFS | 1133E | 1232 | S10 | E30 | 11 | 24.7 | | 01 | 9 | 9 | E | RAMY | 7621 | |
| 22 | AFS | 1140E | 1232 | N05 | E25 | 11 | 24.3 | | 01 | 9 | 9 | E | RAMY | 7620 | |
| 22 | AFS | 1507E | 2142 | N02 | E23 | 11 | 24.3 | | 02 | 9 | 9 | E | HOLL | 7620 | |
| 22 | AFS | 1654E | 2131D | N04 | W58 | 11 | 18.4 | | 02 | 9 | 6 | E | HOLL | 7618 | |
| 22 | AFS | 2030E | 0333 | N02 | E23 | 11 | 24.6 | | 02 | 9 | 9 | E | PALE | 7620 | |
| 22 | DSD | 2030E | 0333 | N03 | E20 | 11 | 24.3 | | 02 | 8 | 8 | E | PALE | 7620 | |
| 22 | AFS | 2240E | 1028 | N05 | E18 | 11 | 24.3 | | 02 | 9 | 8 | E | LEAR | 7620 | |
| 23 | DSD | 0658E | 1255 | N15 | E57 | 11 | 27.6 | | 03 | 9 | 9 | E | SVTO | 7622 | |
| 23 | AFS | 0700E | 1255 | N06 | W61 | 11 | 18.7 | | 02 | 9 | 9 | E | SVTO | 7618 | |
| 23 | AFS | 0844E | 1255 | N04 | E13 | 11 | 24.3 | | 02 | 9 | 9 | E | SVTO | 7620 | |
| 23 | AFS | 0844E | 1255 | N06 | E09 | 11 | 24.0 | | 03 | 9 | 9 | E | SVTO | 7620 | |
| 23 | AFS | 0943E | 1255 | S10 | E18 | 11 | 24.7 | | 02 | 9 | 9 | E | SVTO | 7621 | |
| 23 | DSD | 1056E | 1255 | N02 | W65 | 11 | 18.6 | | 03 | 9 | 9 | E | SVTO | 7618 | |
| 23 | DSD | 1057E | 1255 | N04 | W64 | 11 | 18.7 | | 02 | 9 | 9 | E | SVTO | 7618 | |
| 23 | AFS | 1123E | 1255 | S17 | W72 | 11 | 18.0 | | 01 | 9 | 9 | E | SVTO | | |
| 23 | DSD | 1200E | 2112 | S17 | W75 | 11 | 17.8 | | 02 | 9 | 9 | E | RAMY | | |
| 23 | AFS | 1205E | 2112 | N04 | E11 | 11 | 24.3 | | 02 | 9 | 9 | E | RAMY | 7620 | |
| 23 | DSD | 1209E | 2112 | N07 | E04 | 11 | 23.8 | | 02 | 9 | 9 | E | RAMY | 7620 | |
| 23 | ADF | 1210E | 1557D | N11 | E55 | 11 | 27.6 | 1 | 05 | 9 | 9 | E | RAMY | 7622 | |
| 23 | DSD | 1210E | 2112 | N15 | E50 | 11 | 27.3 | | 05 | 9 | 9 | E | RAMY | 7622 | |
| 23 | ADF | 1220E | 2112 | N00 | W72 | 11 | 18.1 | 1 | 05 | 9 | 9 | E | RAMY | 7618 | |
| 23 | ADF | 1222E | 2112 | S02 | W65 | 11 | 18.6 | 1 | 04 | 9 | 9 | E | RAMY | 7618 | |
| 23 | AFS | 1224E | 2112 | N04 | W65 | 11 | 18.6 | | 02 | 9 | 9 | E | RAMY | 7618 | |
| 23 | SSB | 1244 | | 429 | W56 | 11 | 21.0 | | | 0 | 0 | E | RAMY | | 438 W65 |
| 23 | DSF | 1557U | 1702U | N11 | E55 | 11 | 27.8 | 2 | 05 | 0 | 0 | E | RAMY | 7622 | |
| 23 | DSD | 1637E | 2112 | N00 | W71 | 11 | 18.4 | | 01 | 5 | 7 | E | RAMY | 7618 | |
| 23 | AFS | 1702E | 2112 | N14 | E47 | 11 | 27.3 | | 02 | 9 | 9 | E | RAMY | 7622 | |
| 23 | AFS | 1827E | 1828 | N04 | E04 | 11 | 24.1 | | 01 | 9 | 9 | E | HOLL | 7620 | |
| 23 | ADF | 1840E | 2112 | N12 | W68 | 11 | 18.6 | 1 | 13 | 7 | 8 | E | RAMY | | |
| 23 | DSD | 2135E | 0223 | N02 | E17 | 11 | 25.2 | | 02 | 9 | 9 | E | PALE | 7620 | |
| 23 | AFS | 2135E | 0223 | N06 | E19 | 11 | 25.3 | | 02 | 9 | 9 | E | PALE | 7620 | |
| 23 | ADF | 2135E | 0223 | N08 | W58 | 11 | 19.5 | 1 | 04 | 9 | 9 | E | PALE | 7618 | |
| 23 | AFS | 2135E | 0223 | N11 | E61 | 11 | 28.5 | | 02 | 8 | 8 | E | PALE | 7622 | |
| 23 | ADF | 2135E | 0223 | N14 | E68 | 11 | 29.0 | 1 | 03 | 9 | 9 | E | PALE | 7622 | |
| 23 | AFS | 2232E | 1030 | N03 | E04 | 11 | 24.2 | | 04 | 9 | 9 | E | LEAR | 7620 | |
| 23 | DSD | 2234E | 0540D | N06 | E05 | 11 | 24.3 | | 03 | 9 | 9 | E | LEAR | 7620 | |
| 24 | DSD | 0734E | 0941 | N21 | W70 | 11 | 18.9 | | 02 | 9 | 9 | E | SVTO | | |
| 24 | AFS | 0739E | 0941 | N05 | E01 | 11 | 24.4 | | 03 | 9 | 9 | E | SVTO | 7620 | |
| 24 | ADF | 0940 | 1022 | N06 | W10 | 11 | 23.6 | 1 | | | | | KHAR | | |
| 24 | ADF | 0955 | 1010 | N00 | E01 | 11 | 24.5 | 1 | | | | | KHAR | | |
| 24 | ASR | 1115E | 1850 | N03 | W76 | 11 | 18.8 | | | 9 | 9 | E | RAMY | 7618 | |
| 24 | DSD | 1125E | 1709D | N05 | W76 | 11 | 18.8 | | 03 | 9 | 9 | E | RAMY | 7618 | |
| 24 | AFS | 1125E | 1850 | N06 | W73 | 11 | 19.0 | | 02 | 9 | 9 | E | RAMY | 7618 | |
| 24 | AFS | 1151E | 1850 | N14 | E42 | 11 | 27.7 | | 02 | 8 | 8 | E | RAMY | 7622 | |
| 24 | AFS | 1153E | 1850 | N04 | W02 | 11 | 24.3 | | 01 | 9 | 9 | E | RAMY | 7620 | |
| 24 | DSD | 1153E | 1850 | N04 | W07 | 11 | 24.0 | | 02 | 9 | 9 | E | RAMY | 7620 | |
| 24 | AFS | 1153E | 1850 | N05 | W05 | 11 | 24.1 | | 02 | 9 | 9 | E | RAMY | 7620 | |

# ACTIVE PROMINENCES AND FILAMENTS

## NOVEMBER 1993

| Day | Event Type | Start (UT) | End (UT) | Lat | CMD | CMP Mo | CMP Day | Imp | Extent | Blue Shift (.1 A) | Red Shift (.1 A) | Obs Type | Sta | NOAA/ USAF Reg# | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 24 | ASR | 1227E | 1850 | N04 | W90 | 11 | 17.8 | | | 9 | 9 | E | RAMY | | |
| 24 | APR | 1311E | 1850 | N27 | E90 | 12 | 1.6 | 1 | | 9 | 8 | E | RAMY | | |
| 24 | ASR | 1337E | 1850 | N27 | W90 | 11 | 17.5 | 1 | | 7 | 7 | E | RAMY | | |
| 24 | ASR | 1517E | 2349 | N05 | W82 | 11 | 18.5 | | | 7 | 7 | E | HOLL | 7618 | |
| 24 | DSD | 1709E | 1850 | S02 | W74 | 11 | 19.2 | | 03 | 9 | 9 | E | RAMY | 7618 | |
| 24 | DSD | 1715E | 1850 | N05 | W14 | 11 | 23.7 | | 02 | 9 | 9 | E | RAMY | 7620 | |
| 24 | AFS | 1754E | 0244 | N10 | W08 | 11 | 24.1 | | 03 | 9 | 9 | E | PALE | 7620 | |
| 24 | DSD | 1756E | 0244 | N10 | W10 | 11 | 24.0 | | 03 | 9 | 9 | E | PALE | 7620 | |
| 24 | AFS | 1758E | 0244 | S10 | W01 | 11 | 24.7 | | 02 | 5 | 5 | E | PALE | 7621 | |
| 24 | DSD | 1800E | 0244 | N13 | E33 | 11 | 27.2 | | 02 | 9 | 9 | E | PALE | 7622 | |
| 24 | ADF | 1800E | 0244 | N14 | E36 | 11 | 27.5 | 1 | 07 | 9 | 9 | E | PALE | 7622 | |
| 24 | AFS | 1802E | 0244 | N14 | E34 | 11 | 27.3 | | 03 | 9 | 9 | E | PALE | 7622 | |
| 24 | AFS | 1830E | 2349 | N03 | W08 | 11 | 24.2 | | 02 | 9 | 9 | E | HOLL | 7620 | |
| 24 | DSD | 2201E | 0525D | N10 | W03 | 11 | 24.7 | | 03 | 9 | 9 | E | LEAR | 7620 | |
| 24 | ASR | 2218E | 0755D | N06 | W90 | 11 | 18.2 | | | 9 | 9 | E | LEAR | 7618 | |
| 24 | AFS | 2254E | 1029 | N08 | W03 | 11 | 24.7 | | 04 | 9 | 9 | E | LEAR | 7620 | |
| 24 | DSD | 2330E | 0104D | N11 | E31 | 11 | 27.3 | | 02 | 9 | 9 | E | LEAR | 7622 | |
| 25 | DSD | 0728E | 0858D | N06 | W16 | 11 | 24.1 | | 02 | 9 | 9 | E | SVTO | 7620 | |
| 25 | AFS | 0728E | 1150 | N05 | W13 | 11 | 24.3 | | 03 | 9 | 9 | E | SVTO | 7620 | |
| 25 | ASR | 0747E | 1150 | N05 | W90 | 11 | 18.6 | | | 9 | 9 | E | SVTO | 7618 | |
| 25 | DSD | 0748E | 0858D | N05 | W09 | 11 | 24.6 | | 03 | 9 | 9 | E | SVTO | 7620 | |
| 25 | AFS | 0749E | 1150 | N15 | E28 | 11 | 27.4 | | 04 | 9 | 9 | E | SVTO | 7622 | |
| 25 | DSD | 0858E | 1150 | N05 | W15 | 11 | 24.2 | | 02 | 9 | 9 | E | SVTO | 7620 | |
| 25 | ASR | 0915E | 1029 | N03 | W90 | 11 | 18.7 | | | 7 | 7 | E | LEAR | 7618 | |
| 25 | ASR | 0920E | 1029 | N11 | W90 | 11 | 18.6 | | | 7 | 7 | E | LEAR | 7618 | |
| 25 | BSL | 0945 | 1045 | S07 | E88 | 12 | 2.0 | 1 | | | | | KHAR | | |
| 25 | DSD | 1110E | 1954 | N03 | W17 | 11 | 24.2 | | 02 | 9 | 9 | E | RAMY | 7620 | |
| 25 | AFS | 1110E | 1954 | N03 | W19 | 11 | 24.0 | | 02 | 9 | 9 | E | RAMY | 7620 | |
| 25 | DSD | 1110E | 1954 | N03 | W20 | 11 | 24.0 | | 01 | 9 | 9 | E | RAMY | 7620 | |
| 25 | DSD | 1110E | 1954 | N06 | W19 | 11 | 24.0 | | 03 | 9 | 9 | E | RAMY | 7620 | |
| 25 | DSD | 1130E | 1954 | N11 | E29 | 11 | 27.7 | | 02 | 9 | 8 | E | RAMY | 7622 | |
| 25 | ADF | 1130E | 1954 | N11 | E30 | 11 | 27.7 | 1 | 02 | 9 | 9 | E | RAMY | 7622 | |
| 25 | DSD | 1130E | 1954 | N13 | E25 | 11 | 27.4 | | 01 | 9 | 9 | E | RAMY | 7622 | |
| 25 | ASR | 1218E | 1902D | S06 | E89 | 12 | 2.2 | | | 9 | 9 | E | RAMY | | |
| 25 | APR | 1228E | 1537D | N01 | W88 | 11 | 18.9 | 1 | | 9 | 9 | E | RAMY | 7618 | |
| 25 | ASR | 1228E | 1537D | N14 | W90 | 11 | 18.7 | | | 9 | 9 | E | RAMY | 7618 | |
| 25 | ASR | 1228E | 1745D | N04 | W89 | 11 | 18.9 | | | 9 | 9 | E | RAMY | 7618 | |
| 25 | APR | 1244E | 1954 | S18 | E89 | 12 | 2.3 | 1 | | 9 | 9 | E | RAMY | | |
| 25 | ADF | 1257E | 1954 | N31 | E84 | 12 | 2.2 | 1 | 04 | 9 | 9 | E | RAMY | | |
| 25 | SSB | 1304 | | 377 | W30 | 11 | 19.5 | | | 0 | 0 | E | RAMY | | 429 W82 |
| 25 | AFS | 1325E | 1954 | N15 | E27 | 11 | 27.6 | | 03 | 9 | 9 | E | RAMY | 7622 | |
| 25 | AFS | 1540E | 2344 | N04 | W21 | 11 | 24.1 | | 02 | 8 | 8 | E | HOLL | 7620 | |
| 25 | SSB | 1645 | | 357 | W12 | 11 | 21.4 | | | 0 | 0 | E | HOLL | | |
| 25 | AFS | 1800E | 0220 | N08 | W26 | 11 | 23.8 | | 02 | 9 | 9 | E | PALE | 7620 | |
| 25 | DSD | 1801E | 0220 | N07 | W25 | 11 | 23.9 | | 02 | 9 | 9 | E | PALE | 7620 | |
| 25 | AFS | 1803E | 0220 | N16 | E25 | 11 | 27.6 | | 03 | 9 | 9 | E | PALE | 7622 | |
| 25 | DSD | 1805E | 0220 | N16 | E24 | 11 | 27.6 | | 04 | 9 | 9 | E | PALE | 7622 | |
| 25 | DSD | 2235E | 0350D | N03 | W33 | 11 | 23.5 | | 03 | 9 | 8 | E | LEAR | 7620 | |
| 26 | AFS | 0351E | 1028 | N03 | W28 | 11 | 24.1 | | 04 | 9 | 9 | E | LEAR | 7620 | |
| 26 | DSD | 0724E | 0950D | N12 | E17 | 11 | 27.6 | | 04 | 8 | 8 | E | LEAR | 7622 | Flare Associated |
| 26 | BSL | 0915E | 0915D | S05 | W90 | 11 | 19.6 | 1- | | | | C | CATA | | |
| 26 | BSL | 0915E | 0915D | S14 | W90 | 11 | 19.6 | 1- | | | | C | CATA | | |
| 26 | BSL | 1156 | 1205 | N55 | E90 | 12 | 4.3 | 1- | | | | C | CATA | | |
| 26 | BSL | 1215 | 1226D | S80 | W90 | 11 | 18.1 | 1- | | | | C | CATA | | |
| 26 | AFS | 1525E | 2348 | N05 | W37 | 11 | 23.9 | | 02 | 9 | 9 | E | HOLL | 7620 | |
| 26 | DSD | 1542E | 2130 | N01 | W42 | 11 | 23.5 | | 03 | 9 | 9 | E | RAMY | 7620 | |
| 26 | AFS | 1542E | 2130 | N04 | W35 | 11 | 24.0 | | 02 | 9 | 9 | E | RAMY | 7620 | |
| 26 | ASR | 1603E | 1710D | S08 | E75 | 12 | 2.3 | | | 9 | 9 | E | RAMY | | Flare Associated |
| 26 | BSD | 1604E | 1707D | S10 | E75 | 12 | 2.3 | | 10 | 9 | 9 | E | HOLL | | Flare Associated |
| 26 | AFS | 1750E | 0245 | N12 | E05 | 11 | 27.1 | | 07 | 9 | 9 | E | PALE | 7622 | |
| 26 | DSD | 1809E | 1930D | N05 | W42 | 11 | 23.6 | | 03 | 9 | 9 | E | PALE | 7620 | |
| 26 | AFS | 1923E | 0245 | N04 | W36 | 11 | 24.1 | | 02 | 8 | 8 | E | PALE | 7620 | |
| 26 | AFS | 2212E | 1030 | N04 | W38 | 11 | 24.1 | | 02 | 8 | 8 | E | LEAR | 7620 | |
| 26 | AFS | 2212E | 1030 | N15 | E08 | 11 | 27.5 | | 04 | 9 | 9 | E | LEAR | 7622 | |
| 27 | ADF | 0015E | 0700D | S14 | E51 | 11 | 30.9 | 1 | 04 | 8 | 8 | E | LEAR | | |
| 27 | ADF | 1056E | 2028 | N28 | E48 | 12 | 1.2 | 1 | 05 | 9 | 9 | E | RAMY | | |
| 27 | ADF | 1101E | 1805D | S11 | E59 | 12 | 1.9 | 1 | 05 | 9 | 9 | E | RAMY | 7623 | |

# ACTIVE PROMINENCES AND FILAMENTS

## NOVEMBER 1993

| Day | Event Type | Start (UT) | End (UT) | Lat | CMD | CMP Mo | CMP Day | Imp | Extent | Blue Shift (.1 A) | Red Shift (.1 A) | Obs Type | Sta | NOAA/ USAF Reg# | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 27 | DSD | 1104E | 1614D | N12 | E00 | 11 | 27.5 | | 02 | 9 | 9 | E | RAMY | 7622 | |
| 27 | AFS | 1104E | 2028 | N11 | E03 | 11 | 27.7 | | 02 | 9 | 9 | E | RAMY | 7622 | |
| 27 | AFS | 1110E | 2028 | N03 | W45 | 11 | 24.1 | | 03 | 9 | 9 | E | RAMY | 7620 | |
| 27 | ADF | 1111E | 1922D | N00 | W44 | 11 | 24.2 | 1 | 05 | 9 | 9 | E | RAMY | 7620 | |
| 27 | DSD | 1112E | 1436D | N02 | W52 | 11 | 23.6 | | 02 | 9 | 9 | E | RAMY | 7620 | |
| 27 | DSD | 1113E | 1625D | N05 | W50 | 11 | 23.7 | | 02 | 9 | 9 | E | RAMY | 7620 | |
| 27 | SSB | 1117 | | 366 | W44 | 11 | 22.0 | | | 0 | 0 | E | RAMY | | |
| 27 | DSD | 1626E | 2028 | N03 | W51 | 11 | 23.9 | | 02 | 9 | 9 | E | RAMY | 7620 | |
| 27 | AFS | 2020E | 0159 | N04 | W52 | 11 | 23.9 | | 04 | 8 | 8 | E | PALE | 7620 | |
| 27 | AFS | 2022E | 0159 | N13 | W05 | 11 | 27.5 | | 04 | 9 | 9 | E | PALE | 7622 | |
| 27 | AFS | 2024E | 0159 | S10 | E60 | 12 | 2.3 | | 02 | 9 | 9 | E | PALE | 7623 | |
| 27 | AFS | 2330E | 1002 | N06 | W54 | 11 | 23.9 | | 02 | 9 | 9 | E | LEAR | 7620 | |
| 28 | DSD | 0030E | 0200D | N14 | W07 | 11 | 27.5 | | 02 | 9 | 9 | E | LEAR | 7622 | |
| 28 | DSD | 1024 | 1044 | S16 | E23 | 11 | 30.2 | 1 | | | | | KHAR | | |
| 28 | DSD | 1028 | 1044 | N05 | W63 | 11 | 23.7 | 1 | | | | | KHAR | | |
| 28 | DSD | 1037 | 1044 | N02 | W61 | 11 | 23.9 | 1 | | | | | KHAR | | |
| 28 | AFS | 1118E | 2129 | S11 | E50 | 12 | 2.2 | | 02 | 9 | 9 | E | RAMY | 7623 | |
| 28 | AFS | 1126E | 2129 | N13 | W12 | 11 | 27.6 | | 01 | 9 | 9 | E | RAMY | 7622 | |
| 28 | AFS | 1126E | 2129 | N15 | W11 | 11 | 27.6 | | 01 | 9 | 9 | E | RAMY | 7622 | |
| 28 | AFS | 1132E | 2129 | N02 | W58 | 11 | 24.1 | | 02 | 9 | 9 | E | RAMY | 7620 | |
| 28 | DSD | 1159E | 2129 | N03 | E21 | 11 | 30.1 | | 01 | 9 | 9 | E | RAMY | 7624 | |
| 28 | AFS | 1159E | 2129 | N03 | E22 | 11 | 30.1 | | 01 | 9 | 9 | E | RAMY | 7624 | |
| 28 | ADF | 1208E | 2129 | S14 | E22 | 11 | 30.2 | 1 | 03 | 9 | 9 | E | RAMY | 7625 | |
| 28 | AFS | 1208E | 2129 | S15 | E21 | 11 | 30.1 | | 01 | 9 | 9 | E | RAMY | 7625 | |
| 28 | DSD | 1215E | 1336D | N04 | E19 | 11 | 29.9 | | 01 | 9 | 9 | E | RAMY | | |
| 28 | SSB | 1218 | | 368 | W60 | 11 | 22.5 | | | 0 | 0 | E | RAMY | | |
| 28 | DSD | 1603E | 2129 | N03 | W70 | 11 | 23.4 | | 03 | 9 | 9 | E | RAMY | 7620 | |
| 28 | DSD | 1607E | 2129 | S10 | E45 | 12 | 2.0 | | 01 | 9 | 9 | E | RAMY | 7623 | |
| 28 | AFS | 1946E | 2332 | S15 | E17 | 11 | 30.1 | | 02 | 9 | 9 | E | HOLL | 7625 | |
| 28 | AFS | 1947E | 2332 | N03 | E17 | 11 | 30.1 | | 01 | 9 | 9 | E | HOLL | 7624 | |
| 28 | AFS | 2255E | 1030 | N03 | E15 | 11 | 30.1 | | 01 | 9 | 9 | E | LEAR | 7624 | |
| 28 | AFS | 2255E | 1030 | S16 | E14 | 11 | 30.0 | | 02 | 9 | 9 | E | LEAR | 7625 | |
| 29 | AFS | 0921E | 1348 | S13 | E14 | 11 | 30.4 | | 02 | 9 | 9 | E | SVTO | 7625 | |
| 29 | DSD | 0922E | 1348 | N12 | W26 | 11 | 27.4 | | 01 | 9 | 9 | E | SVTO | 7622 | |
| 29 | DSD | 1110E | 1922 | S06 | E31 | 12 | 1.8 | | 02 | 9 | 9 | E | RAMY | 7623 | |
| 29 | AFS | 1117E | 1922 | S14 | E09 | 11 | 30.1 | | 02 | 9 | 9 | E | RAMY | 7625 | |
| 29 | DSD | 1117E | 1922 | S15 | E04 | 11 | 29.8 | | 01 | 9 | 9 | E | RAMY | 7625 | |
| 29 | AFS | 1120E | 1922 | N03 | E08 | 11 | 30.1 | | 03 | 9 | 9 | E | RAMY | 7624 | |
| 29 | APR | 1135E | 1922 | S21 | E90 | 12 | 6.4 | 1 | | 9 | 9 | E | RAMY | | |
| 29 | APR | 1159E | 1348 | S22 | E90 | 12 | 6.4 | 1 | | 9 | 9 | E | SVTO | | |
| 29 | DSD | 1206E | 1348 | S15 | E07 | 11 | 30.0 | | 01 | 9 | 9 | E | SVTO | 7625 | |
| 29 | AFS | 1215E | 1348 | N03 | E07 | 11 | 30.0 | | 02 | 9 | 9 | E | SVTO | 7624 | |
| 29 | DSD | 1237E | 1348 | S16 | E08 | 11 | 30.1 | | 01 | 9 | 9 | E | SVTO | 7625 | |
| 29 | AFS | 1242E | 1348 | N02 | W77 | 11 | 23.8 | | 02 | 9 | 9 | E | SVTO | 7620 | |
| 29 | ADF | 1328E | 1348 | N36 | E30 | 12 | 2.0 | 1 | 13 | 9 | 9 | E | SVTO | | |
| 29 | APR | 1340E | 1922 | S05 | E90 | 12 | 6.3 | 1 | | 6 | 7 | E | RAMY | | |
| 29 | ADF | 1420E | 1922D | N28 | E22 | 12 | 1.3 | 1 | 06 | 9 | 9 | E | RAMY | | |
| 29 | APR | 1505E | 2344 | S26 | E90 | 12 | 6.6 | 1 | | 9 | 9 | E | HOLL | 7627 | |
| 29 | ASR | 1521E | 1922 | S16 | E90 | 12 | 6.5 | | | 9 | 9 | E | RAMY | | |
| 29 | BSD | 1721E | 1922 | N02 | W86 | 11 | 23.3 | | 01 | 9 | 9 | E | RAMY | 7620 | |
| 29 | AFS | 1900E | 0311 | N02 | E07 | 11 | 30.3 | | 02 | 9 | 9 | E | PALE | 7624 | |
| 29 | DSD | 1900E | 0311 | N04 | E10 | 11 | 30.5 | | 02 | 9 | 9 | E | PALE | 7624 | |
| 29 | ADF | 1900E | 0311 | N25 | E21 | 12 | 1.4 | 1 | 04 | 9 | 9 | E | PALE | | |
| 29 | DSD | 1900E | 0311 | S13 | E02 | 11 | 29.9 | | 02 | 9 | 9 | E | PALE | 7625 | |
| 29 | APR | 1900E | 0311 | S23 | E90 | 12 | 6.7 | | | 9 | 9 | E | PALE | | |
| 29 | ASR | 2100E | 0000 | S19 | E90 | 12 | 6.7 | | | 9 | 9 | E | HOLL | 7627 | |
| 29 | AFS | 2100E | 2344 | N02 | E02 | 11 | 30.0 | | 02 | 9 | 9 | E | HOLL | 7624 | |
| 29 | ASR | 2101E | 2344 | N03 | W87 | 11 | 23.4 | | | 9 | 9 | E | HOLL | 7620 | |
| 29 | EPL | 2158 | 2344 | S29 | E90 | 12 | 7.0 | 1 | | 9 | 9 | E | HOLL | 7627 | |
| 29 | EPL | 2206E | 0222D | S23 | E90 | 12 | 6.8 | 1 | | 9 | 9 | E | PALE | | |
| 29 | EPL | 2219E | 2300D | S31 | E90 | 12 | 7.0 | 3 | | 9 | 9 | E | LEAR | 7627 | |
| 29 | APR | 2300E | 0400D | S20 | E90 | 12 | 6.8 | 1 | | 9 | 9 | E | LEAR | 7627 | |
| 29 | ASR | 2331E | 0306D | N03 | W90 | 11 | 23.2 | | | 9 | 9 | E | LEAR | 7620 | |
| 30 | AFS | 0219E | 1026 | N03 | W03 | 11 | 29.9 | | 02 | 9 | 9 | E | LEAR | 7624 | |
| 30 | AFS | 0220E | 1026 | S15 | W01 | 11 | 30.0 | | 02 | 9 | 9 | E | LEAR | 7625 | |
| 30 | DSD | 0258E | 1026 | N04 | W03 | 11 | 29.9 | | 02 | 9 | 9 | E | LEAR | 7624 | |
| 30 | ASR | 0610E | 1026 | S27 | E89 | 12 | 7.2 | | | 9 | 8 | E | LEAR | 7627 | |

# ACTIVE PROMINENCES AND FILAMENTS

## NOVEMBER 1993

| Day | Event Type | Start (UT) | End (UT) | Lat | CMD | CMP Mo | CMP Day | Imp | Extent | Blue Shift (.1 A) | Red Shift (.1 A) | Obs Type | Sta | NOAA/ USAF Reg# | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | AFS | 1111E | 1621D | S10 | E25 | 12 | 2.3 | | 02 | 9 | 9 | E | RAMY | 7623 | |
| 30 | ASR | 1112E | 2022 | S18 | E76 | 12 | 6.2 | | | 9 | 9 | E | RAMY | 7627 | |
| 30 | APR | 1114E | 2022 | S24 | E90 | 12 | 7.4 | 1 | | 9 | 9 | E | RAMY | 7627 | |
| 30 | ADF | 1119E | 2022 | N32 | E16 | 12 | 1.7 | 1 | 05 | 9 | 9 | E | RAMY | 7626 | |
| 30 | DSD | 1121E | 2022 | N14 | W37 | 11 | 27.7 | | 02 | 9 | 9 | E | RAMY | 7622 | |
| 30 | AFS | 1129E | 2022 | N03 | W07 | 11 | 29.9 | | 03 | 9 | 9 | E | RAMY | 7624 | |
| 30 | AFS | 1130E | 2022 | N02 | W05 | 11 | 30.1 | | 01 | 9 | 9 | E | RAMY | 7624 | |
| 30 | AFS | 1132E | 2022 | S14 | W05 | 11 | 30.1 | | 02 | 9 | 9 | E | RAMY | 7625 | |
| 30 | ASR | 1139E | 2022 | S01 | W90 | 11 | 23.8 | | | 9 | 9 | E | RAMY | | |
| 30 | AFS | 1147E | 2022 | S21 | W50 | 11 | 26.6 | | 01 | 9 | 9 | E | RAMY | 7628 | |
| 30 | AFS | 1427E | 2315 | N03 | W05 | 11 | 30.2 | | 02 | 9 | 9 | E | HOLL | 7624 | |
| 30 | APR | 1452E | 2315 | S26 | E90 | 12 | 7.6 | | | 9 | 9 | E | HOLL | 7627 | |
| 30 | AFS | 1457E | 2315 | S01 | W14 | 11 | 29.6 | | 02 | 9 | 9 | E | HOLL | 7625 | |
| 30 | ASR | 1532E | 2027D | S13 | E90 | 12 | 7.4 | | | 7 | 8 | E | HOLL | 7627 | |
| 30 | AFS | 1754E | 0324 | N12 | W50 | 11 | 27.0 | | 02 | 7 | 7 | E | PALE | 7622 | |
| 30 | DSD | 1756E | 0324 | N02 | W05 | 11 | 30.4 | | 03 | 9 | 9 | E | PALE | 7624 | |
| 30 | AFS | 1756E | 0324 | N02 | W10 | 11 | 30.0 | | 03 | 9 | 9 | E | PALE | 7624 | |
| 30 | AFS | 1757E | 0324 | S14 | W05 | 11 | 30.4 | | 03 | 7 | 7 | E | PALE | 7625 | |
| 30 | AFS | 1758E | 0324 | S11 | E20 | 12 | 2.2 | | 03 | 7 | 7 | E | PALE | 7623 | |
| 30 | AFS | 1800E | 0324 | N25 | E05 | 12 | 1.1 | | 02 | 5 | 5 | E | PALE | 7626 | |
| 30 | AFS | 1802E | 0324 | S15 | E62 | 12 | 5.4 | | 03 | 9 | 9 | E | PALE | 7627 | |
| 30 | DSD | 1905E | 2119D | N03 | W10 | 11 | 30.0 | | 02 | 9 | 9 | E | HOLL | 7624 | |
| 30 | AFS | 2123E | 2255D | N03 | W11 | 11 | 30.1 | | 01 | 9 | 9 | E | HOLL | 7624 | |
| 30 | AFS | 2214E | 1031 | N04 | W14 | 11 | 29.9 | | 04 | 9 | 8 | E | LEAR | 7624 | |
| 30 | DSD | 2230E | | S17 | E65 | 12 | 5.9 | | 02 | 0 | 0 | E | HOLL | 2277 | |
| 30 | DSD | 2230E | 2315 | N03 | W12 | 11 | 30.0 | | 02 | 9 | 9 | E | HOLL | 7624 | |
| 30 | DSD | 2301E | 1031 | N03 | W15 | 11 | 29.8 | | 03 | 9 | 9 | E | LEAR | 7624 | |

ADF = Active Dark Filament
AFS = Arch Filament System
APR = Active Prominence
ASR = Active Surge Region
BSD = Bright Surge on Disk
BSL = Bright Surge on Limb
CAP = CAP Prominence (Tandberg-Hanssen)
CRN = Coronal Rain
DSD = Dark Surge on Disk
DSF = Disappearing Solar Filament
EPL = Eruptive Prominence on Limb
LPS = Loops
MDP = Mound Prominence
SDF/DSF = Sudden Disappearing Filament
SPY = Spray
SSB = Solar Sector Boundary

For SOLAR SECTOR BOUNDARY REPORTS, the latitude field contains the Carrington longitude of the point where a neutral line crosses the solar equator. The comments field may contain the Carrington longitude and central meridian distance of two more intersection points.

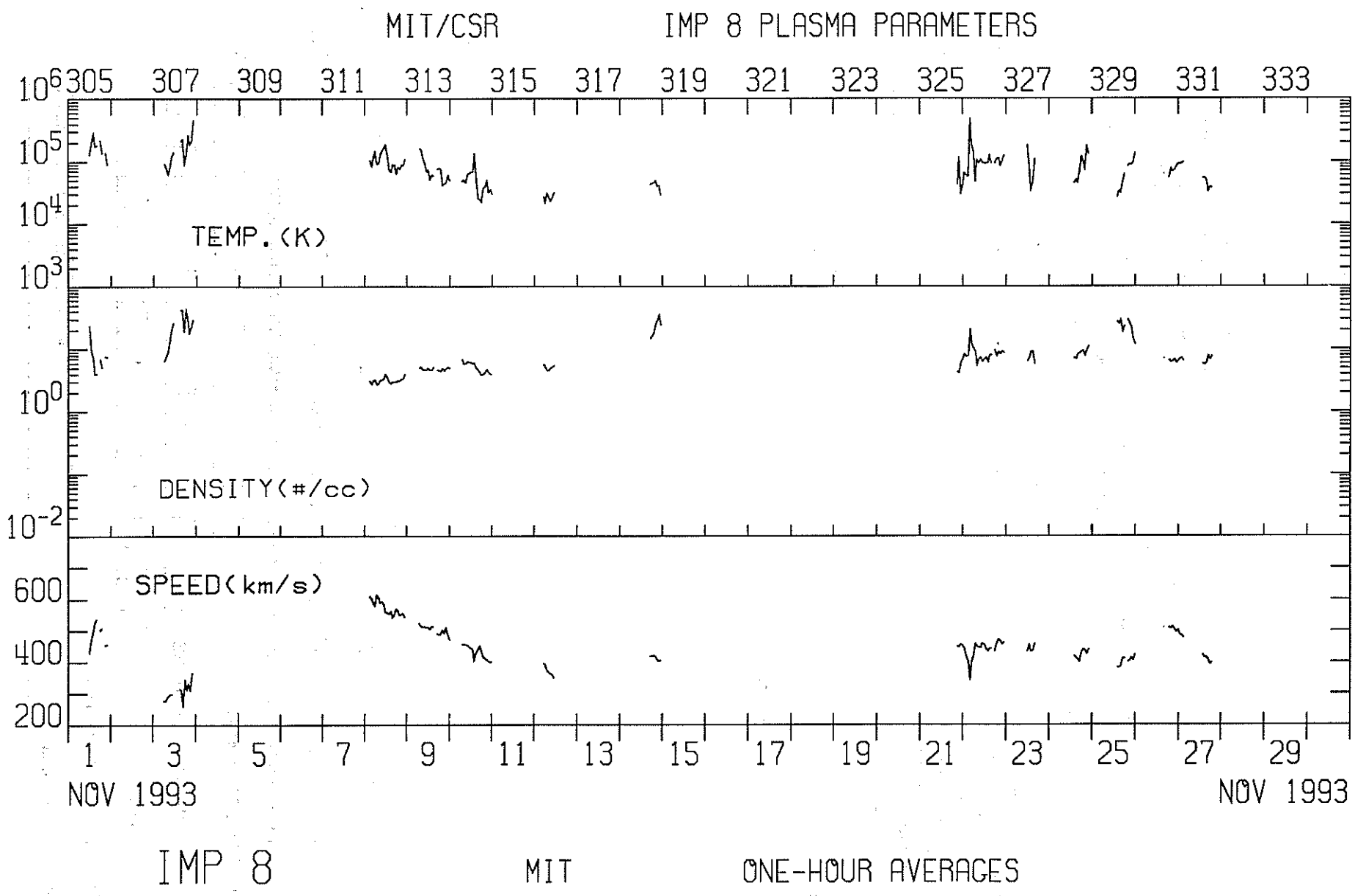
The EXTENT field for limb events is the radial extent above the limb in hundredths of solar radius. For disk events this field contains the heliographic extent in whole degrees.

The remark "Bright Emission 1/3" indicates that bright emission was observed 1/3 of time.
The remark "Normal Emission 1/3" indicates that normal emission was observed 1/3 of time.

Observation Type: C= Cinematographic, E= Electronic, P= Photographic, V= Visual.

ABST = Abastumani
ATHN = Athens
BUCA = Bucharest
CATA = Catania
HOLL = Holloman
KHAR = Kharkov
LEAR = Learmonth
PALE = Palehua
RAMY = Ramey
SVTO = San Vito
VORO = Voroshilov
VALA = Valasske Mezirici

**IMP 8 SOLAR WIND PLASMA**
NOVEMBER 1993



# WORLD DATA CENTER A
## FOR
## SOLAR-TERRESTRIAL PHYSICS

The ICSU Panel on WDCs has recommended that it would be appropriate courtesy to acknowledge in publications that data were obtained from the originating station or investigator through the intermediary of the WDCs. The following statement is suggested:

"Data used in this study were provided by WDC-A for Solar-Terrestrial Physics, NOAA E/GC2, 325 Broadway, Boulder Colorado 80303, USA."