



# **Solar-Geophysical Data prompt reports**

Data for March and April 2006

Explanation of Data Reports Issued as Number 515 (Supplement) July 1987

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MAY 2006 NUMBER 741 - Part I

# **Solar-Geophysical Data prompt reports**

Data for March and April 2006

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## **NATIONAL GEOPHYSICAL DATA CENTER**

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# SOLAR-GEOPHYSICAL DATA

Number 741  
(Issued in Two Parts)

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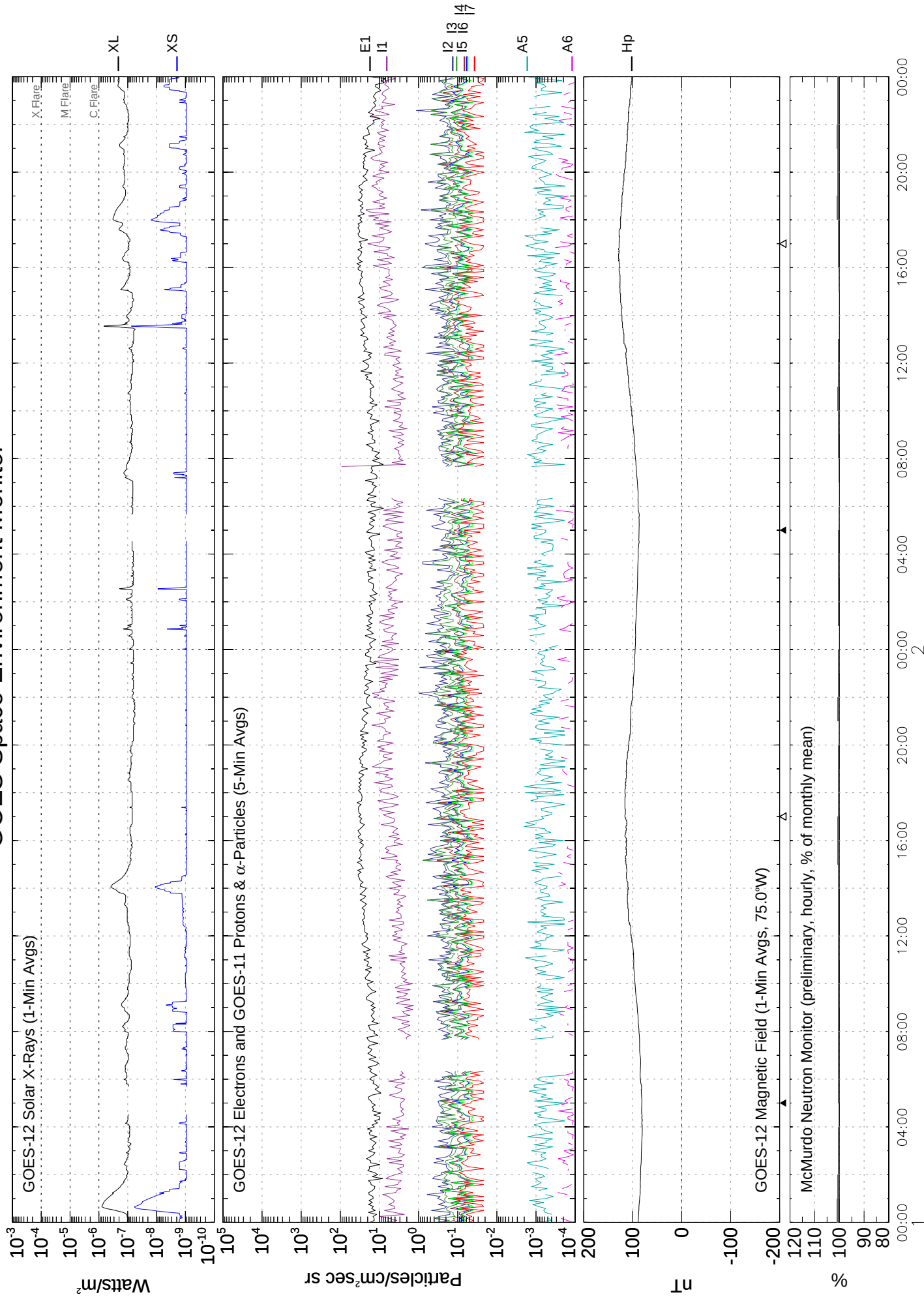
Prompt Reports

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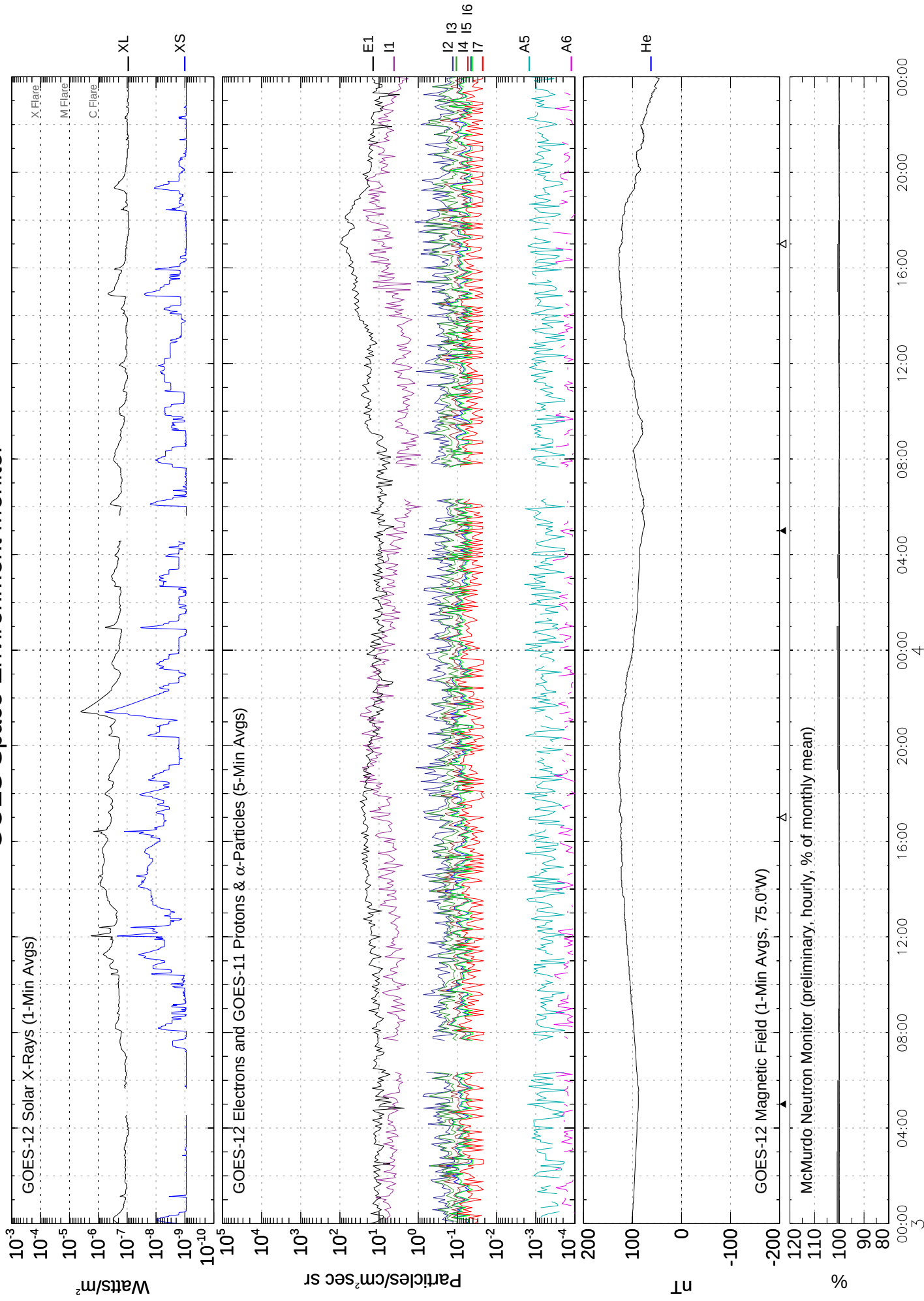
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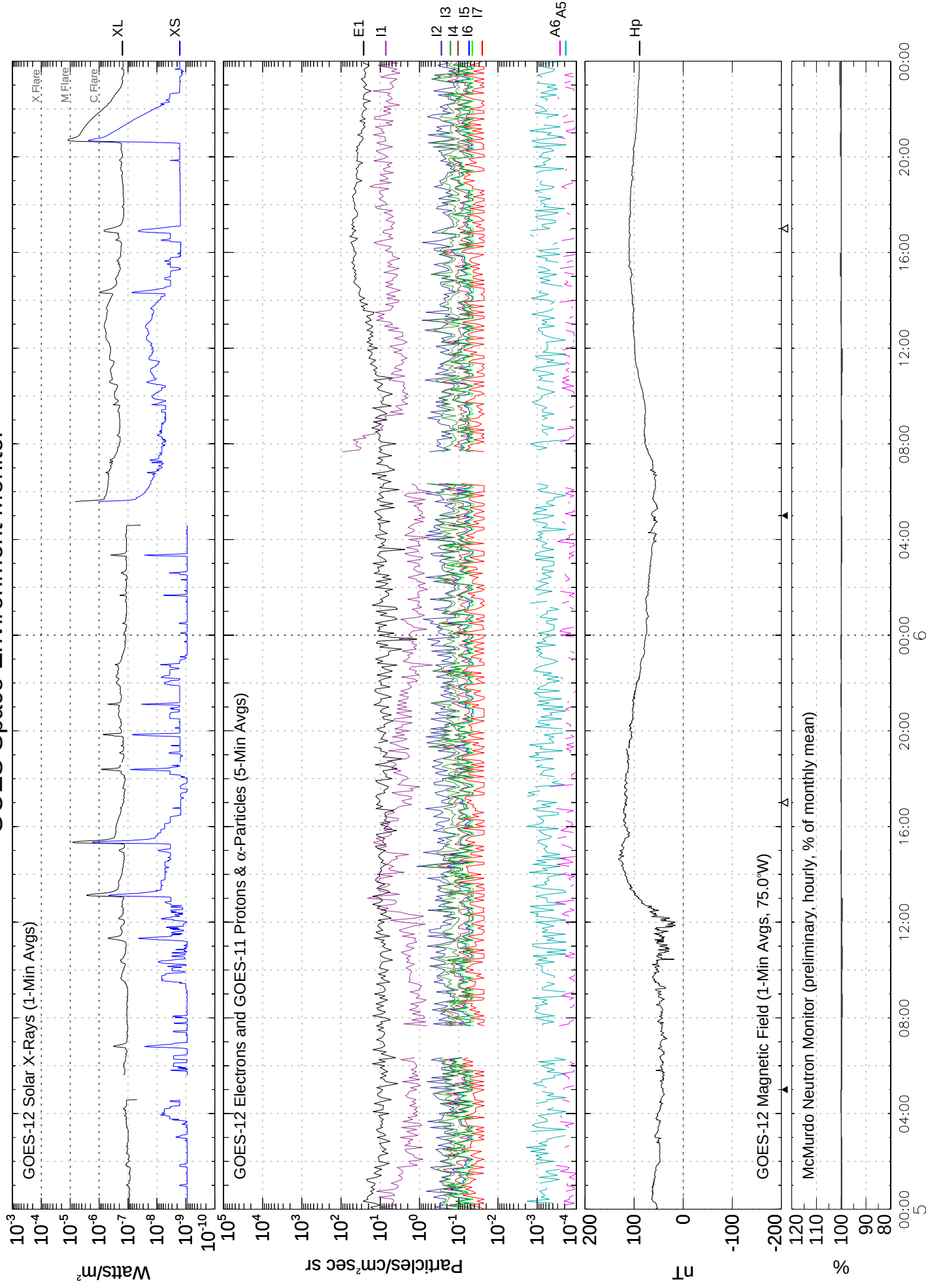
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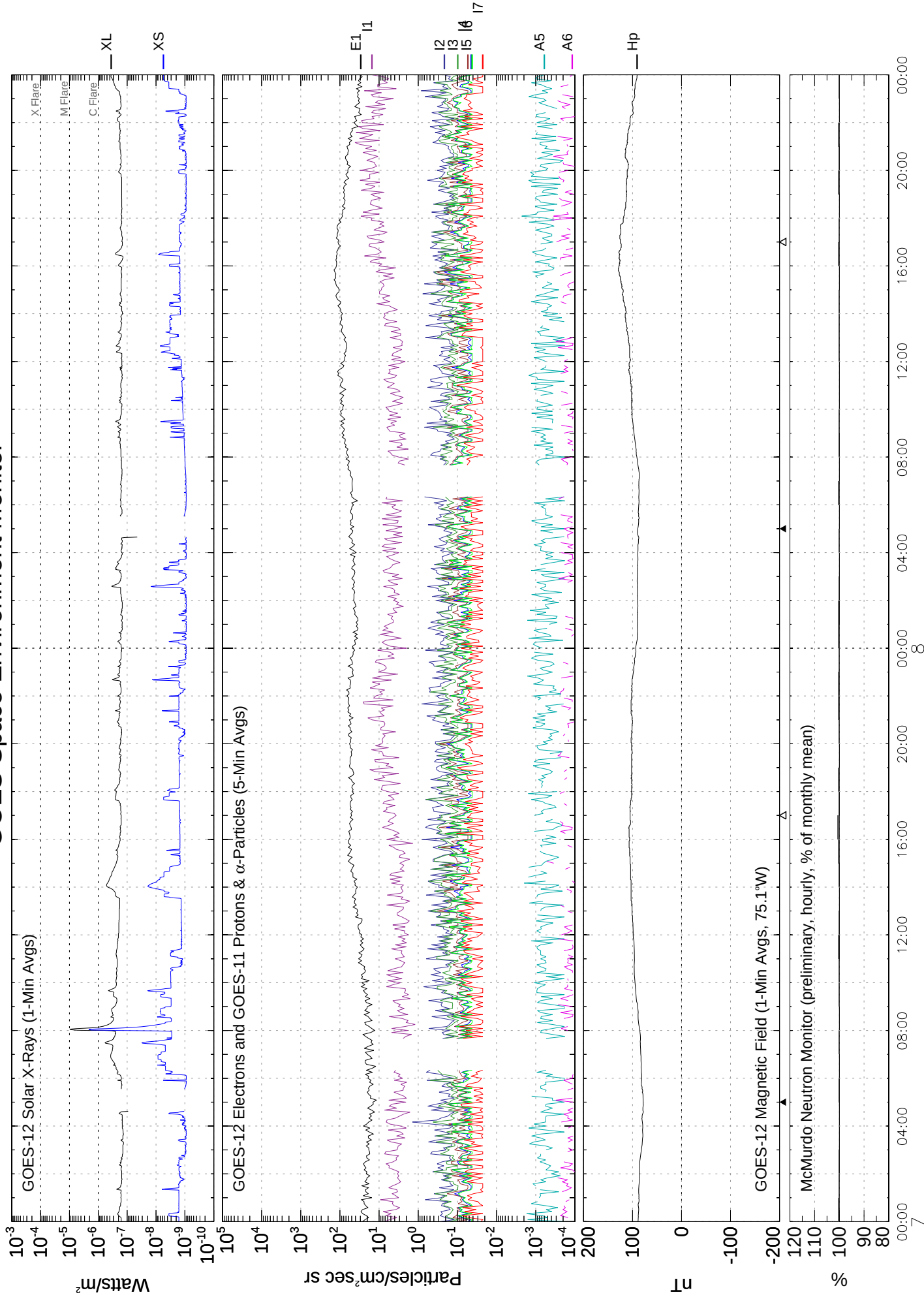
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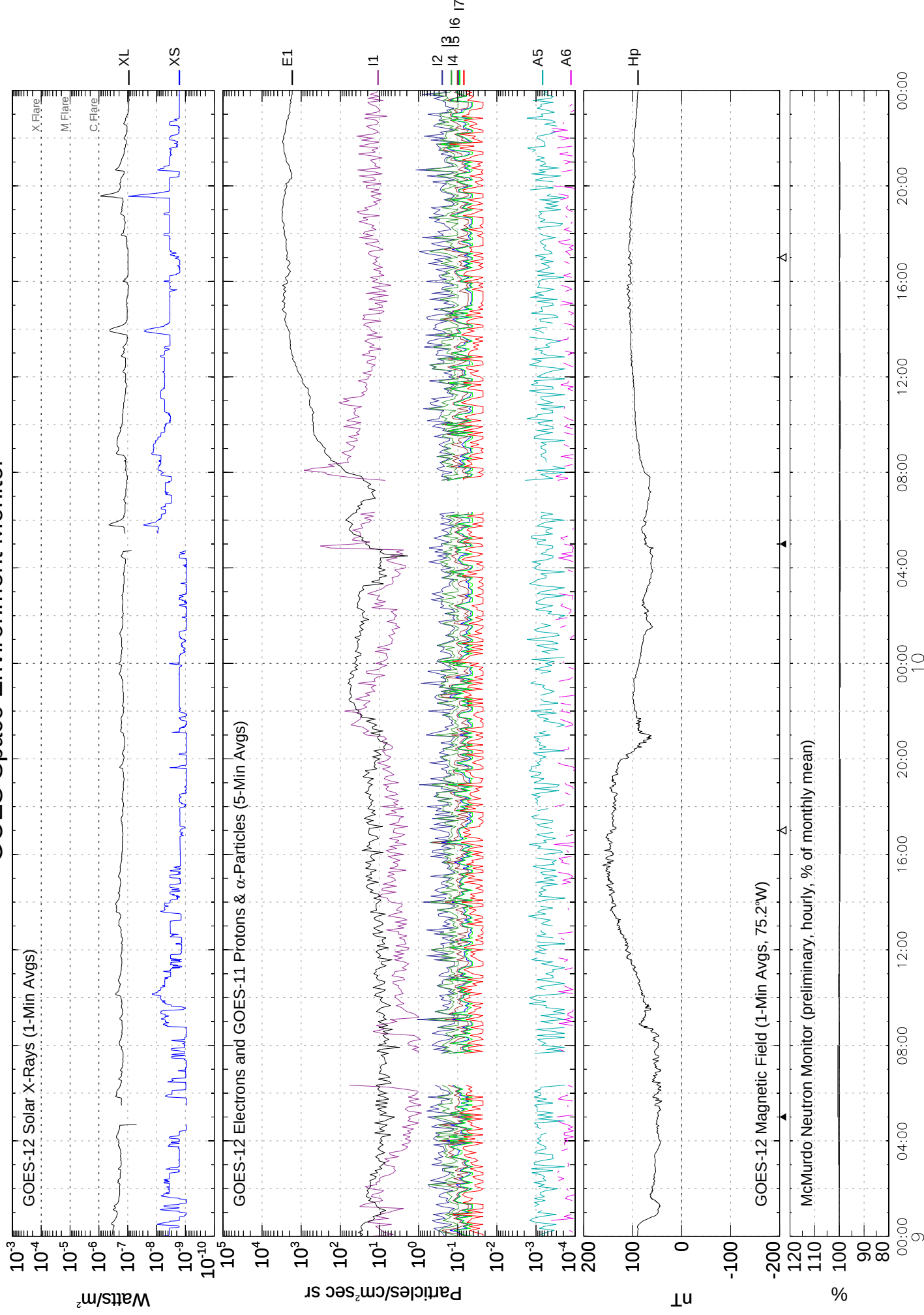
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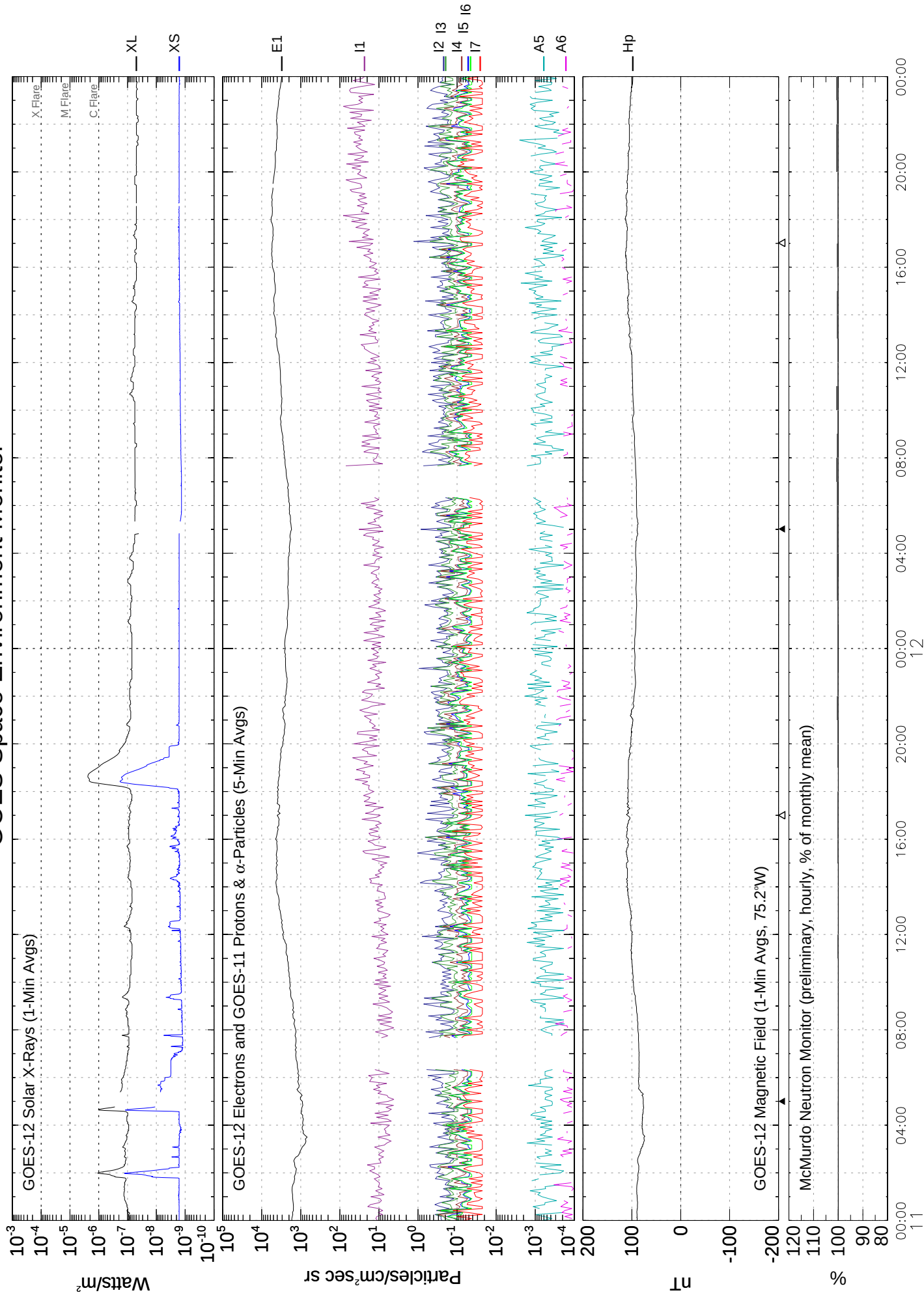
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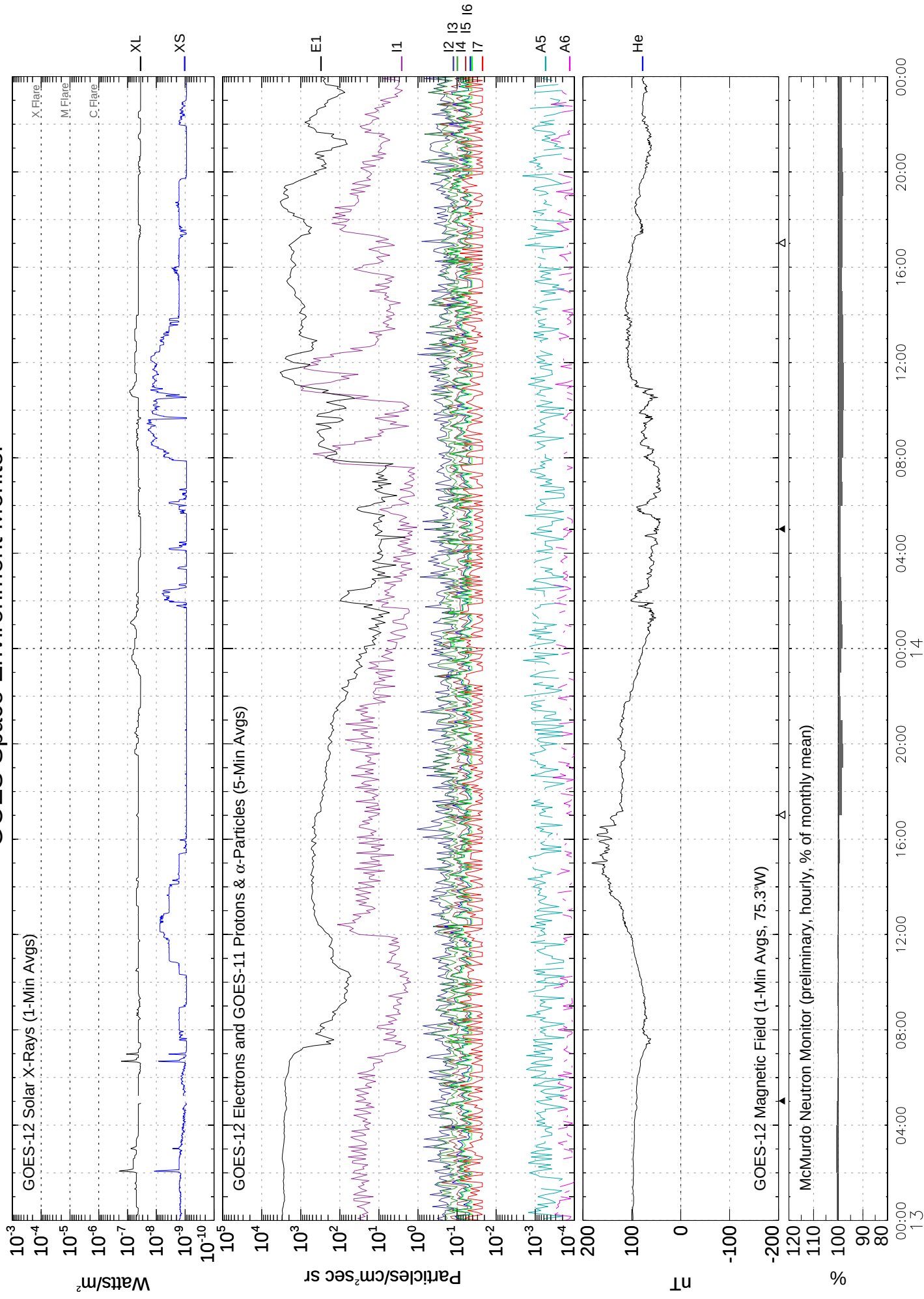
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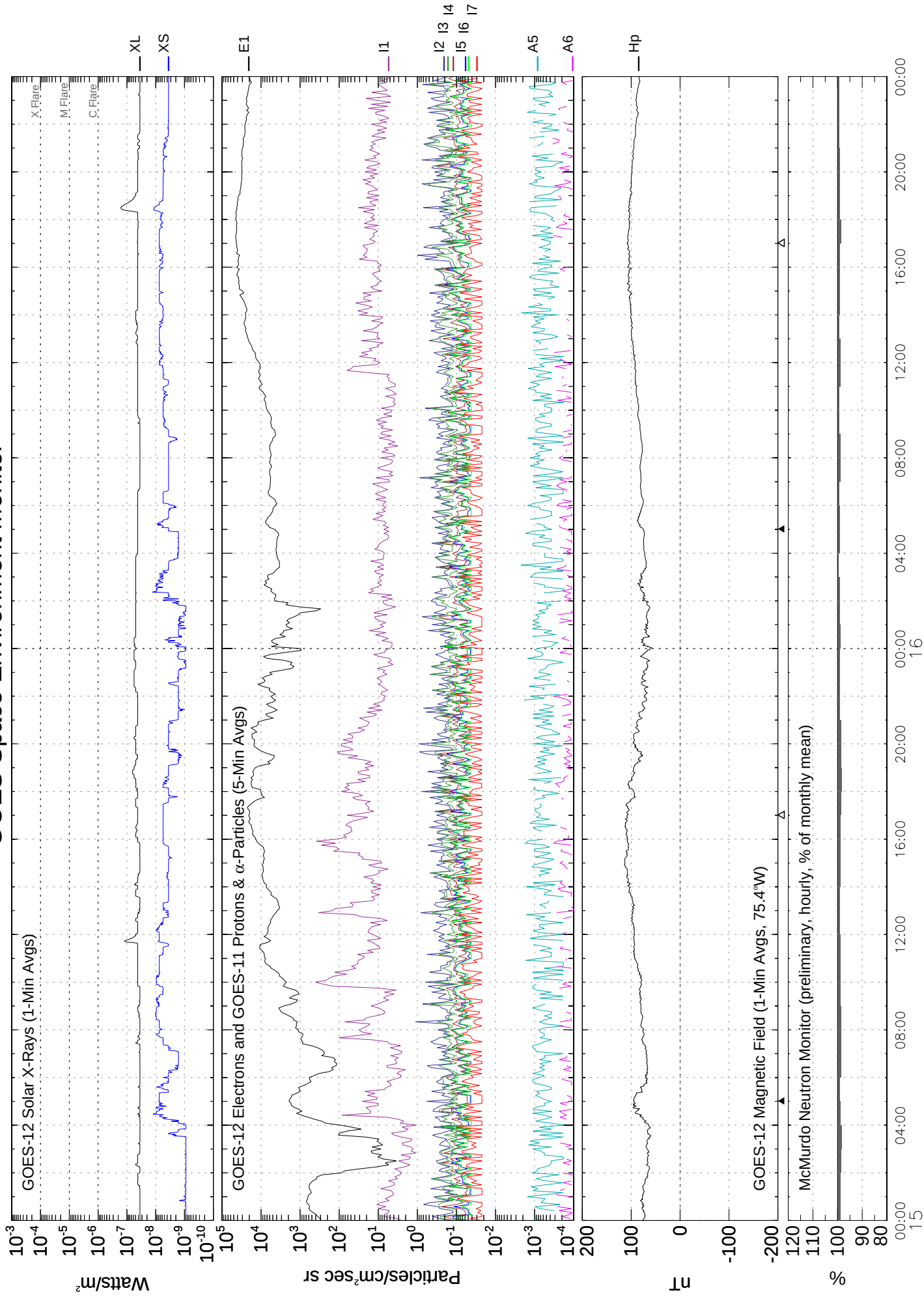


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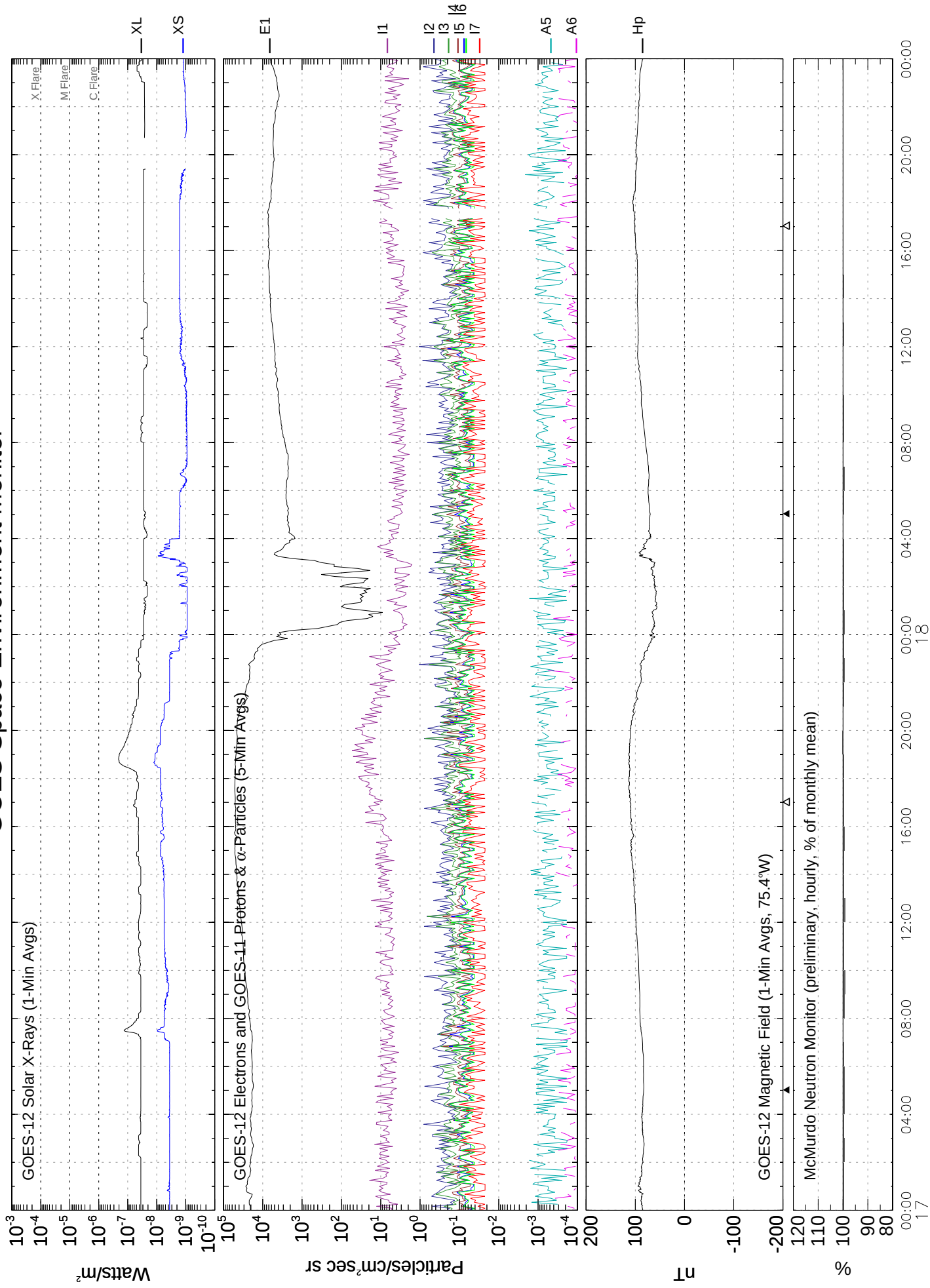


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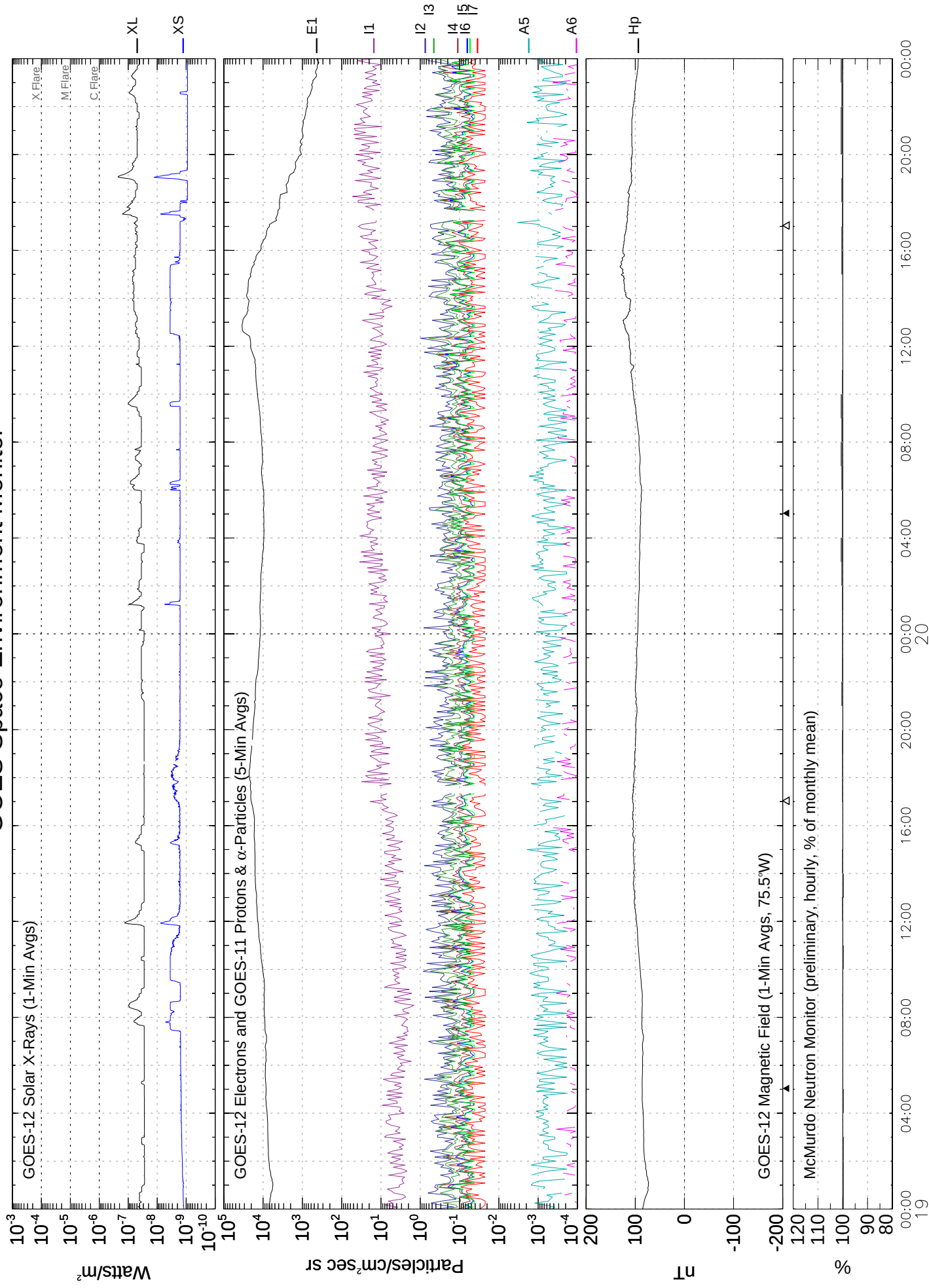


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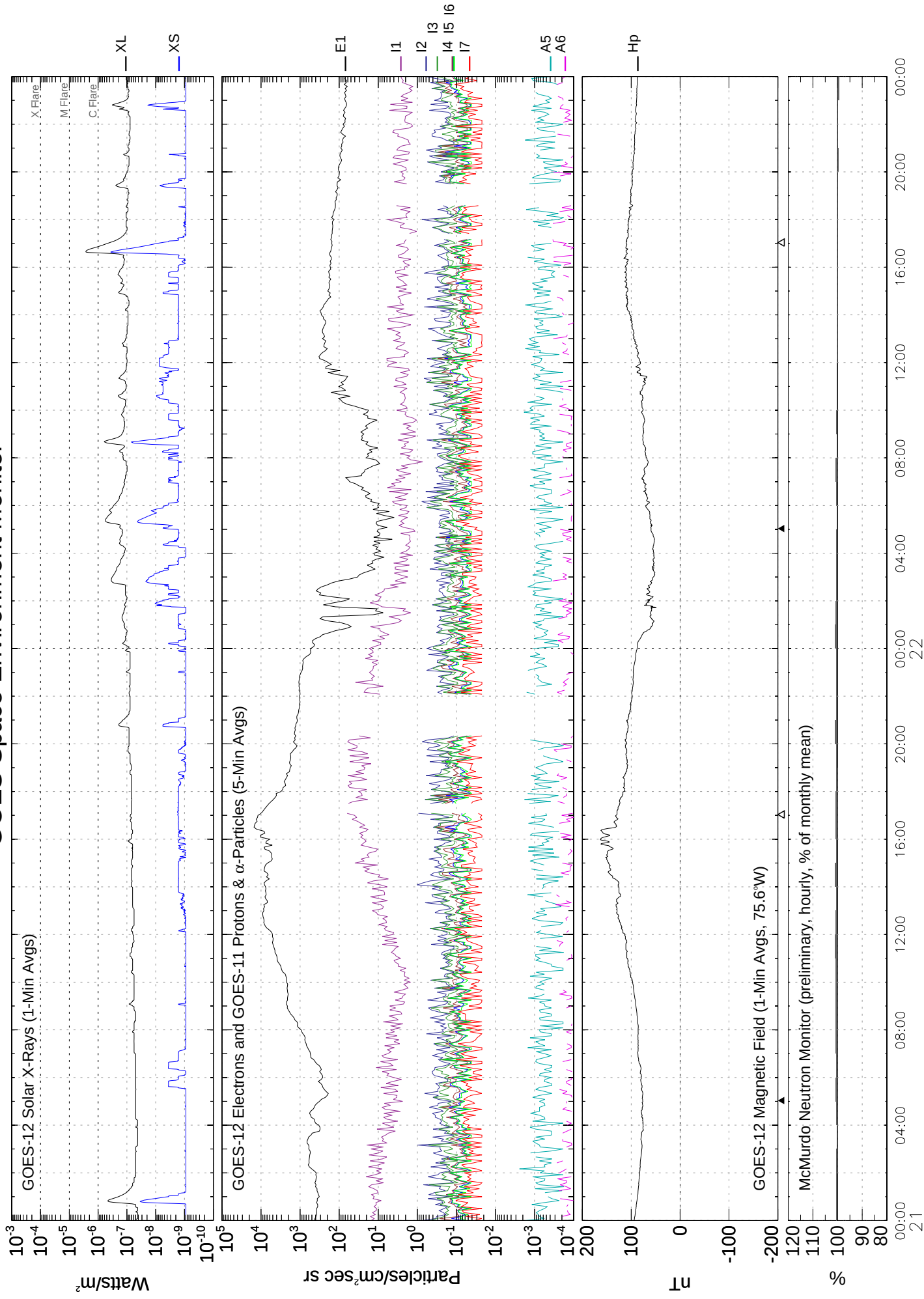
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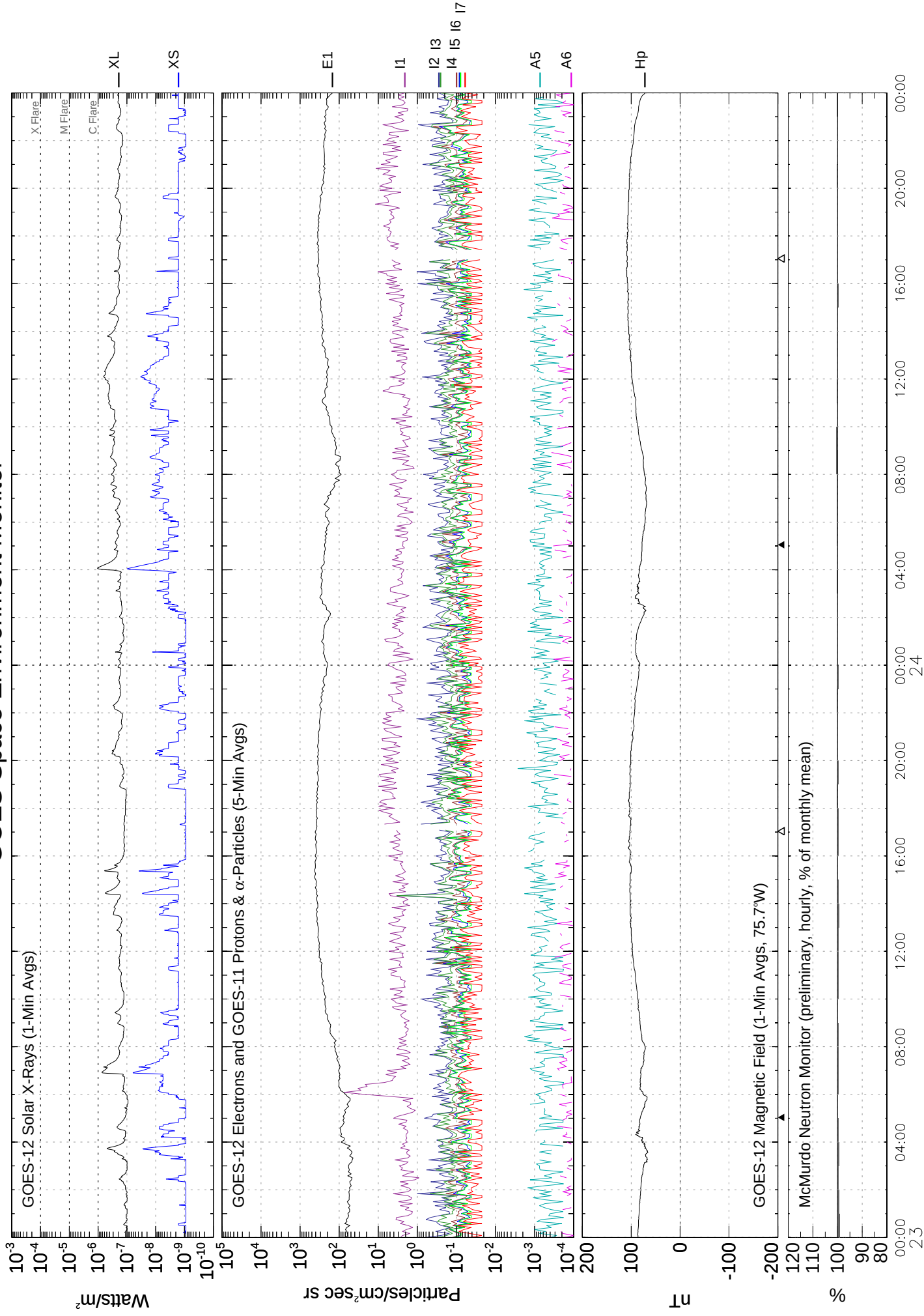
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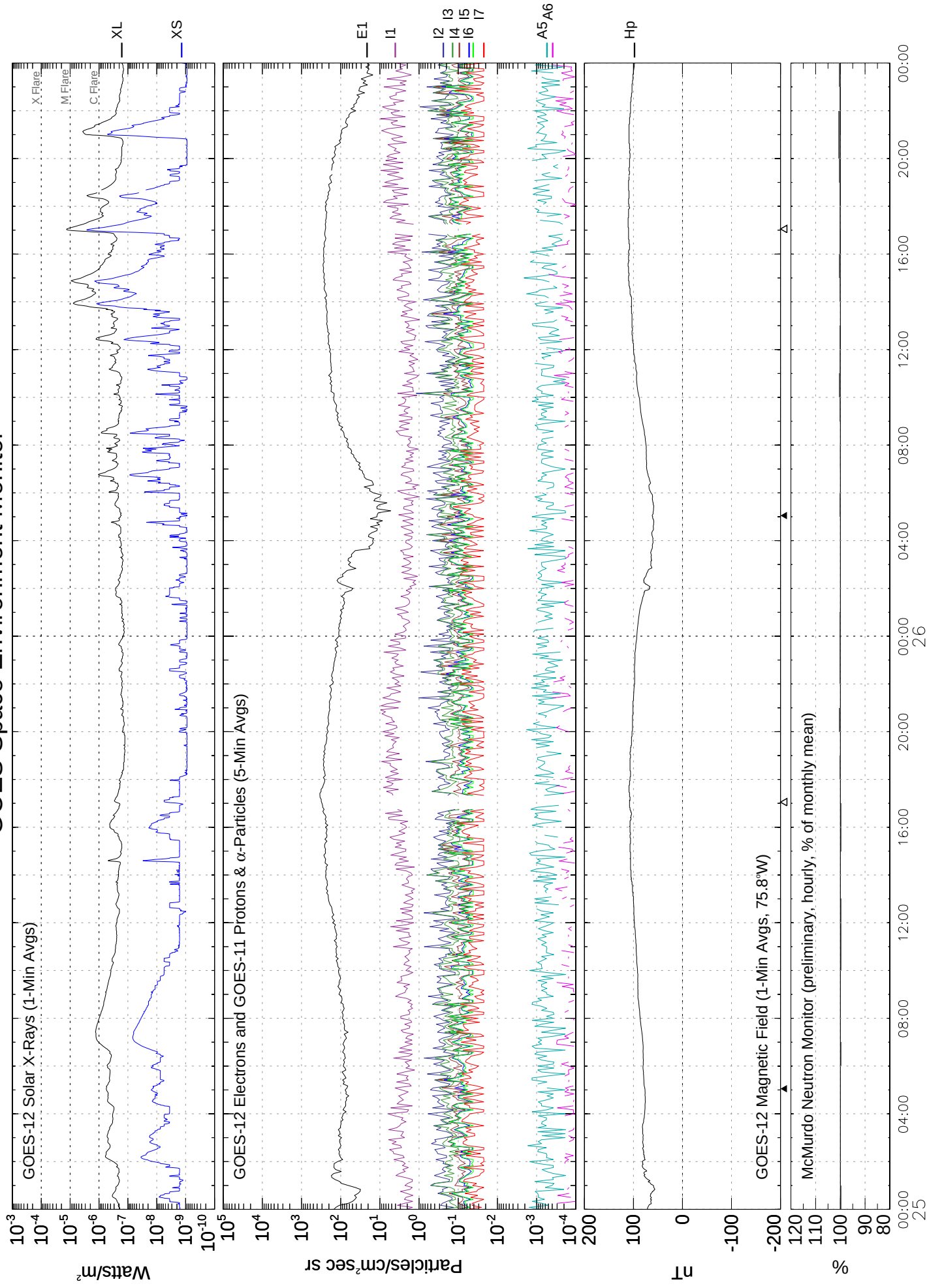


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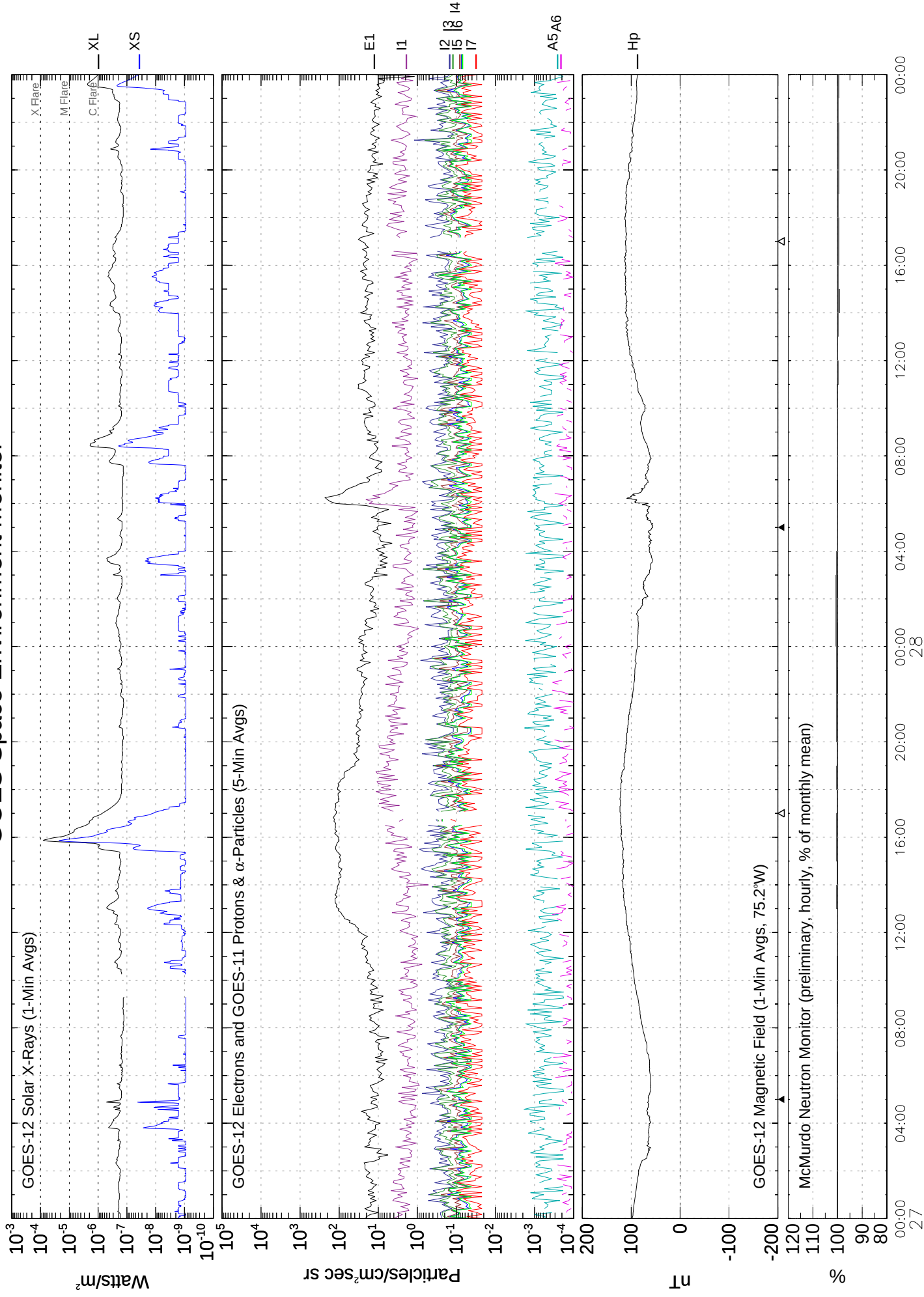




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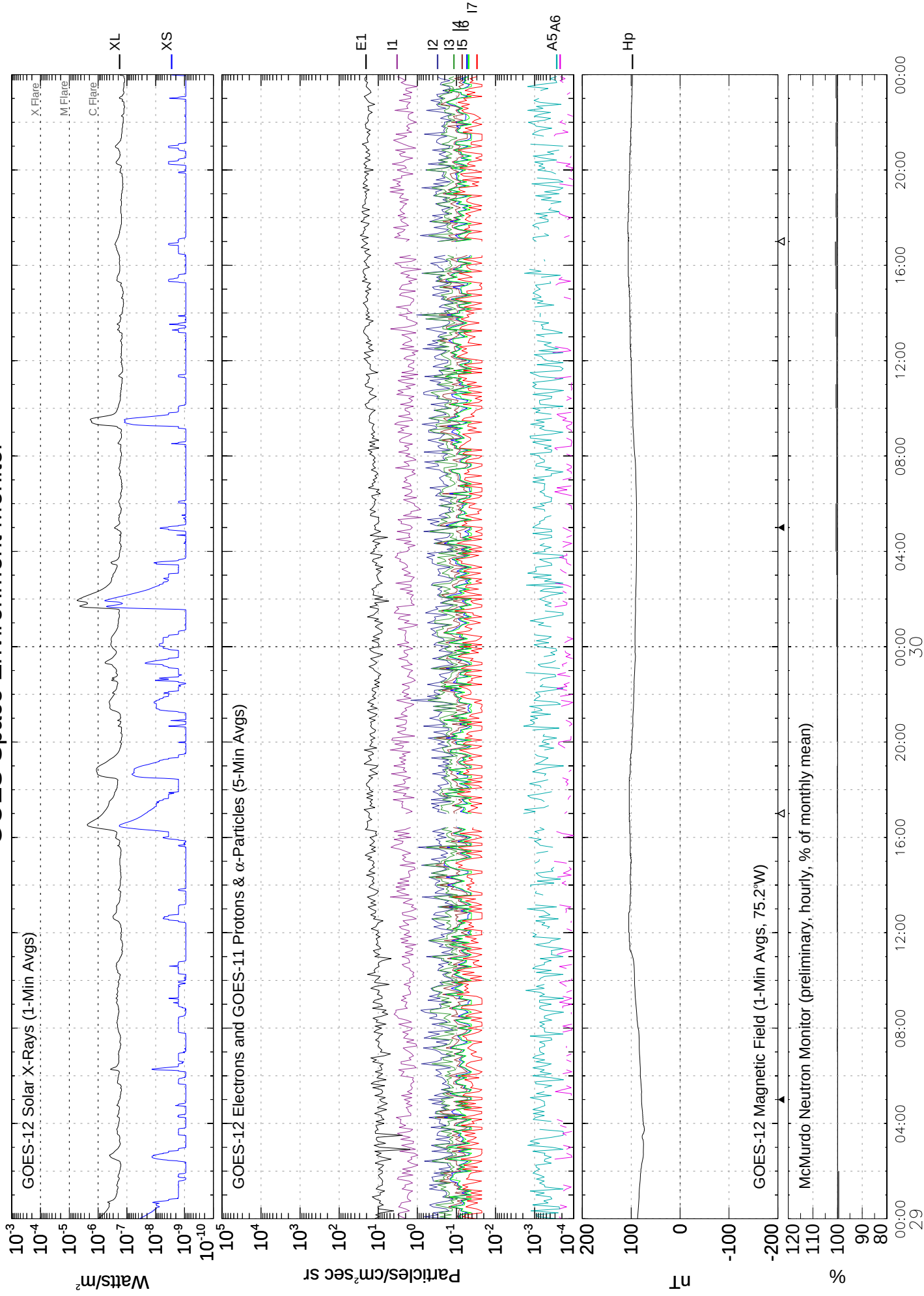


# GOES Space Environment Monitor





# GOES Space Environment Monitor



# A L E R T P E R I O D S

## The International Space Environment Service

### APRIL 2006

| Julian Day | Date of Issue | Date of Obs | Wolf No. | 10-cm Solar Flux | A-index | Rgn No. | Location |     | Flares |   |   | Date of Fcst | Region Fcst(1) | Geoadvice(1)  |
|------------|---------------|-------------|----------|------------------|---------|---------|----------|-----|--------|---|---|--------------|----------------|---------------|
|            |               |             |          |                  |         |         | Lat      | Lon | Opt    | M | X |              |                |               |
| 091        | 01            | 31          | 39       | 86               | 4       | 10866   | S13      | E20 | 0      | 0 | 0 | 01           | E              | SOL: Eruptive |
|            |               |             |          |                  |         | 10866   | S07      | E42 | 0      | 0 | 0 | 01           | Q              | MAG: Quiet    |
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| 092        | 02            | 01          | 39       | 87               | 1       | 10866   | S12      | E07 | 0      | 0 | 0 | 02           | E              | SOL: Eruptive |
|            |               |             |          |                  |         | 10866   | S06      | E28 | 0      | 0 | 0 | 02           | Q              | MAG: Quiet    |
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| 093        | 03            | 02          | 68       | 91               | 1       | 10865   | S11      | W06 | 0      | 0 | 0 | 03           | E              | SOL: Eruptive |
|            |               |             |          |                  |         | 10866   | S06      | E16 | 0      | 0 | 0 | 03           | Q              | MAG: Quiet    |
|            |               |             |          |                  |         | 10867   | S16      | E16 | 0      | 0 | 0 | 03           | Q              | PRO: Quiet    |
| 094        | 04            | 03          | 79       | 100              | 1       | 10865   | S11      | W21 | 0      | 0 | 0 | 04           | E              | SOL: Eruptive |
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|            |               |             |          |                  |         | 10867   | S16      | W67 | 0      | 0 | 0 | 09           | Q              | PRO: Quiet    |
|            |               |             |          |                  |         | 10869   | S12      | W04 | 0      | 0 | 0 | 09           | Q              |               |
| 100        | 10            | 09          | 46       | 89               | 30      | 10866   | S06      | W79 | 0      | 0 | 0 | 10           | Q              | SOL: Quiet    |
|            |               |             |          |                  |         | 10867   | S16      | W82 | 0      | 0 | 0 | 10           | Q              | MAG: Active   |
|            |               |             |          |                  |         | 10869   | S12      | W16 | 0      | 0 | 0 | 10           | Q              | PRO: Quiet    |
| 101        | 11            | 10          | 70       | 89               | 17      | 10866   | S05      | W92 | 0      | 0 | 0 | 11           | Q              | SOL: Quiet    |
|            |               |             |          |                  |         | 10867   | S15      | W96 | 0      | 0 | 0 | 11           | Q              | MAG: Quiet    |
|            |               |             |          |                  |         | 10869   | S12      | W31 | 0      | 0 | 0 | 11           | Q              | PRO: Quiet    |
|            |               |             |          |                  |         | 10870   | S08      | E22 | 0      | 0 | 0 | 11           | Q              |               |
|            |               |             |          |                  |         | 10871   | S08      | E52 | 0      | 0 | 0 | 11           | Q              |               |
| 102        | 12            | 11          | 73       | 90               | 6       | 10869   | S12      | W44 | 0      | 0 | 0 | 12           | Q              | SOL: Eruptive |
|            |               |             |          |                  |         | 10870   | S08      | E09 | 1      | 0 | 0 | 12           | Q              | MAG: Quiet    |
|            |               |             |          |                  |         | 10871   | S08      | E39 | 1      | 0 | 0 | 12           | Q              | PRO: Quiet    |
|            |               |             |          |                  |         | 10872   | S09      | E74 | 0      | 0 | 0 | 12           | Q              |               |
|            |               |             |          |                  |         | 10873   | S04      | E48 | 0      | 0 | 0 | 12           | Q              |               |
| 103        | 13            | 12          | 79       | 81               | 1       | 10869   | S11      | W61 | 0      | 0 | 0 | 13           | Q              | SOL: Eruptive |
|            |               |             |          |                  |         | 10870   | S08      | W05 | 0      | 0 | 0 | 13           | Q              | MAG: Quiet    |
|            |               |             |          |                  |         | 10871   | S08      | E23 | 0      | 0 | 0 | 13           | Q              | PRO: Quiet    |
|            |               |             |          |                  |         | 10872   | S07      | E59 | 0      | 0 | 0 | 13           | Q              |               |
|            |               |             |          |                  |         | 10873   | S04      | E35 | 0      | 0 | 0 | 13           | Q              |               |
| 104        | 14            | 13          | 69       | 80               | 13      | 10869   | S09      | W76 | 0      | 0 | 0 | 14           | Q              | SOL: Eruptive |
|            |               |             |          |                  |         | 10870   | S08      | W19 | 0      | 0 | 0 | 14           | Q              | MAG: Active   |
|            |               |             |          |                  |         | 10871   | S07      | E08 | 0      | 0 | 0 | 14           | Q              | PRO: Quiet    |
|            |               |             |          |                  |         | 10872   | S07      | E46 | 0      | 0 | 0 | 14           | Q              |               |

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# A L E R T P E R I O D S The International Space Environment Service

APRIL 2006

| Julian Day | Date of Issue | Date of Obs | Wolf No. | 10-cm Solar Flux | A-index | Rgn No. | Location |     | Flares |   |   | Date of Fcst | Region Fcst(1) | Geoadvice(1)  |
|------------|---------------|-------------|----------|------------------|---------|---------|----------|-----|--------|---|---|--------------|----------------|---------------|
|            |               |             |          |                  |         |         | Lat      | Lon | Opt    | M | X |              |                |               |
|            |               |             |          |                  |         | 10873   | S04      | E22 | 0      | 0 | 0 | 14           | Q              |               |
| 105        | 15            | 14          | 62       | 79               | 50      | 10869   | S11      | W88 | 0      | 0 | 0 | 15           | Q              | SOL: Quiet    |
|            |               |             |          |                  |         | 10870   | S09      | W30 | 0      | 0 | 0 | 15           | Q              | MAG: Minor    |
|            |               |             |          |                  |         | 10871   | S07      | W04 | 0      | 0 | 0 | 15           | Q              | PRO: Quiet    |
|            |               |             |          |                  |         | 10872   | S07      | E33 | 0      | 0 | 0 | 15           | Q              |               |
|            |               |             |          |                  |         | 10873   | S03      | E08 | 0      | 0 | 0 | 15           | Q              |               |
| 106        | 16            | 15          | 45       | 78               | 23      | 10871   | S06      | W18 | 0      | 0 | 0 | 16           | Q              | SOL: Quiet    |
|            |               |             |          |                  |         | 10872   | S06      | E21 | 0      | 0 | 0 | 16           | Q              | MAG: Minor    |
|            |               |             |          |                  |         | 10873   | S03      | W05 | 0      | 0 | 0 | 16           | Q              | PRO: Quiet    |
| 107        | 17            | 16          | 45       | 77               | 13      | 10871   | S06      | W33 | 0      | 0 | 0 | 17           | Q              | SOL: Quiet    |
|            |               |             |          |                  |         | 10872   | S06      | E08 | 0      | 0 | 0 | 17           | Q              | MAG: Quiet    |
|            |               |             |          |                  |         | 10873   | N01      | W17 | 0      | 0 | 0 | 17           | Q              | PRO: Quiet    |
| 108        | 18            | 17          | 48       | 78               | 7       | 10870   | S06      | W74 | 0      | 0 | 0 | 18           | Q              | SOL: Quiet    |
|            |               |             |          |                  |         | 10871   | S06      | W46 | 0      | 0 | 0 | 18           | Q              | MAG: Quiet    |
|            |               |             |          |                  |         | 10872   | S08      | W05 | 0      | 0 | 0 | 18           | Q              | PRO: Quiet    |
|            |               |             |          |                  |         | 10873   | S04      | W37 | 0      | 0 | 0 | 18           | Q              |               |
| 109        | 19            | 18          | 46       | 75               | 4       | 10871   | S06      | W59 | 0      | 0 | 0 | 19           | Q              | SOL: Quiet    |
|            |               |             |          |                  |         | 10872   | S08      | W18 | 0      | 0 | 0 | 19           | Q              | MAG: Quiet    |
|            |               |             |          |                  |         | 10873   | S04      | W50 | 0      | 0 | 0 | 19           | Q              | PRO: Quiet    |
|            |               |             |          |                  |         | 10874   | N00      | E15 | 0      | 0 | 0 | 19           | Q              |               |
| 110        | 20            | 19          | 38       | 76               | 3       | 10871   | S06      | W66 | 0      | 0 | 0 | 20           | Q              | SOL: Quiet    |
|            |               |             |          |                  |         | 10872   | S08      | W31 | 0      | 0 | 0 | 20           | Q              | MAG: Quiet    |
|            |               |             |          |                  |         | 10874   | N00      | E02 | 0      | 0 | 0 | 20           | Q              | PRO: Quiet    |
| 111        | 21            | 20          | 30       | 79               | 4       | 10874   | S06      | W79 | 0      | 0 | 0 | 21           | Q              | SOL: Quiet    |
|            |               |             |          |                  |         | 10874   | S01      | W11 | 0      | 0 | 0 | 21           | Q              | MAG: Quiet    |
|            |               |             |          |                  |         |         |          |     | 0      | 0 | 0 | 21           |                | PRO: Quiet    |
| 112        | 22            | 21          | 14       | 79               | 9       | 10874   | S01      | W25 | 0      | 0 | 0 | 22           | Q              | SOL: Quiet    |
|            |               |             |          |                  |         |         |          |     | 0      | 0 | 0 | 22           |                | MAG: Quiet    |
|            |               |             |          |                  |         |         |          |     | 0      | 0 | 0 | 22           |                | PRO: Quiet    |
| 113        | 23            | 22          | 15       | 82               | 16      | 10874   | S02      | W39 | 0      | 0 | 0 | 23           | Q              | SOL: Quiet    |
|            |               |             |          |                  |         |         |          |     | 0      | 0 | 0 | 23           |                | MAG: Quiet    |
|            |               |             |          |                  |         |         |          |     | 0      | 0 | 0 | 23           |                | PRO: Quiet    |
| 114        | 24            | 23          | 24       | 87               | 8       | 10875   | S01      | W55 | 0      | 0 | 0 | 24           | Q              | SOL: Quiet    |
|            |               |             |          |                  |         | 10875   | S11      | E71 | 0      | 0 | 0 | 24           | Q              | MAG: Quiet    |
|            |               |             |          |                  |         |         |          |     | 0      | 0 | 0 | 24           |                | PRO: Quiet    |
| 115        | 25            | 24          | 38       | 93               | 6       | 10876   | S10      | E62 | 2      | 0 | 0 | 25           | E              | SOL: Eruptive |
|            |               |             |          |                  |         | 10876   | S14      | E80 | 0      | 0 | 0 | 25           | Q              | MAG: Quiet    |
|            |               |             |          |                  |         |         |          |     | 0      | 0 | 0 | 25           |                | PRO: Quiet    |
| 116        | 26            | 25          | 33       | 95               | 4       | 10876   | S10      | E46 | 0      | 0 | 0 | 26           | E              | SOL: Eruptive |
|            |               |             |          |                  |         | 10876   | S16      | E69 | 0      | 0 | 0 | 26           | Q              | MAG: Quiet    |
|            |               |             |          |                  |         |         |          |     | 0      | 0 | 0 | 26           |                | PRO: Quiet    |
| 117        | 27            | 26          | 60       | 100              | 4       | 10875   | S10      | E34 | 4      | 1 | 0 | 27           | E              | SOL: Eruptive |
|            |               |             |          |                  |         | 10876   | S16      | E57 | 0      | 0 | 0 | 27           | Q              | MAG: Quiet    |
|            |               |             |          |                  |         | 10877   | S07      | E52 | 0      | 0 | 0 | 27           | Q              | PRO: Quiet    |
| 118        | 28            | 27          | 63       | 101              | 6       | 10875   | S11      | E20 | 1      | 1 | 0 | 28           | E              | SOL: Eruptive |
|            |               |             |          |                  |         | 10876   | S16      | E54 | 0      | 0 | 0 | 28           | Q              | MAG: Quiet    |
|            |               |             |          |                  |         | 10877   | S07      | E40 | 0      | 0 | 0 | 28           | Q              | PRO: Quiet    |
| 119        | 29            | 28          | 68       | 100              | 20      | 10875   | S11      | E06 | 1      | 0 | 0 | 29           | E              | SOL: Eruptive |
|            |               |             |          |                  |         | 10876   | S15      | E30 | 0      | 0 | 0 | 29           | Q              | MAG: Quiet    |
|            |               |             |          |                  |         | 10877   | S05      | E24 | 0      | 0 | 0 | 29           | Q              | PRO: Quiet    |

A L E R T P E R I O D S  
The International Space Environment Service

APRIL 2006

| Julian<br>Day | Date<br>of<br>Issue | Date<br>of<br>Obs | Wolf<br>No. | 10-cm<br>Solar<br>Flux | A-<br>index | Rgn<br>No. | Location |     | Flares |   |   | Date<br>of<br>Fcst | Region<br>Fcst(1) | Geoadvice(1)  |
|---------------|---------------------|-------------------|-------------|------------------------|-------------|------------|----------|-----|--------|---|---|--------------------|-------------------|---------------|
|               |                     |                   |             |                        |             |            | Lat      | Lon | Opt    | M | X |                    |                   |               |
| 120           | 30                  | 29                | 64          | 101                    | 1           | 10876      | S09      | W07 | 1      | 0 | 0 | 30                 | E                 | SOL: Eruptive |
|               |                     |                   |             |                        |             | 10876      | S14      | E18 | 0      | 0 | 0 | 30                 | Q                 | MAG: Quiet    |
|               |                     |                   |             |                        |             |            |          |     | 0      | 0 | 0 | 30                 |                   | PRO: Quiet    |

## (1) Region Forecast and Flare (SOL) Advice

Q = Quiet (<50% probability of C-class flares)  
E = Eruptive (C-class flares expected, probability >=50%)  
A = Active (M-class flares expected, probability >=50%)  
M = Major (X-class flares expected, probability >=50%)  
P = Proton (Proton flares expected, probability >=50%)  
W = Warning (activity levels are expected to increase, but no numerical forecast given)  
/ = No forecast available

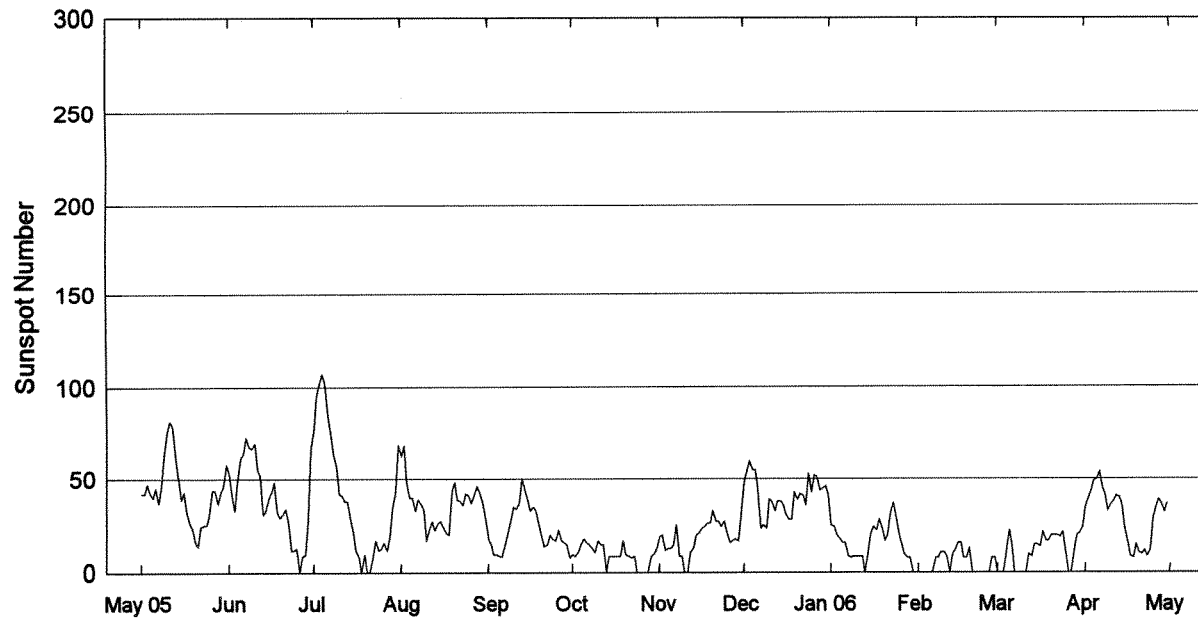
## Magnetic (MAG) Geoadvice

'Quiet'  
'Active' conditions expected (A>=20 or K=4)  
'Minor' storm expected (A>=30 or K=5)  
'Major' storm expected (A>=50 or K>=6)  
'Severe' storm expected (A>=100 or K>=7)  
'IP' magstorm in progress (A>=30 or K>=4)  
'Warning' (activity levels are expected to increase, but no numerical forecast given)  
'/' no forecast available

## Proton (PRO) Geoadvice

'Quiet'  
'Proton' event expected (10pfu at >10MeV)  
'Major' proton event expected (100pfu at >100 MeV)  
'IP' proton event in progress (>10 MeV)  
'Warning' (activity levels are expected to increase, but no numerical forecast given)  
'/' no forecast available

# International Relative Sunspot Numbers May 2005 - Apr 2006



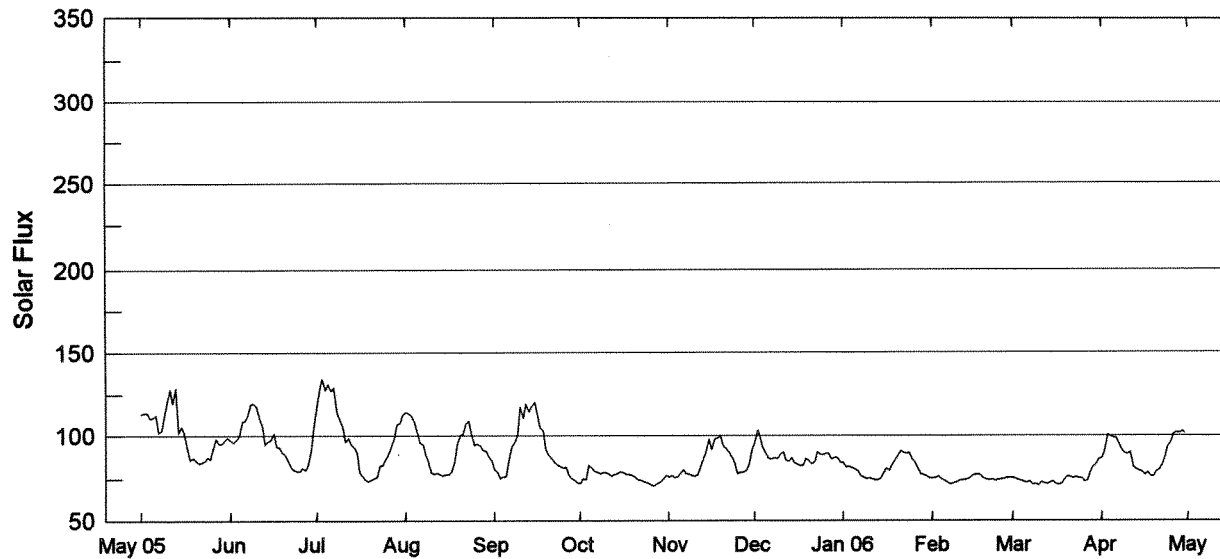
| Day  | May 05 | Jun  | Jul  | Aug  | Sep  | Oct | Nov  | Dec  | Jan 06* | Feb* | Mar* | Apr* |
|------|--------|------|------|------|------|-----|------|------|---------|------|------|------|
| 1    | 42     | 53   | 78   | 63   | 17   | 9   | 18   | 49   | 25      | 0    | 0    | 35   |
| 2    | 42     | 40   | 95   | 69   | 14   | 8   | 19   | 54   | 24      | 0    | 0    | 39   |
| 3    | 47     | 33   | 101  | 48   | 9    | 10  | 11   | 60   | 19      | 0    | 0    | 44   |
| 4    | 43     | 49   | 107  | 40   | 9    | 14  | 12   | 55   | 17      | 0    | 9    | 49   |
| 5    | 40     | 62   | 103  | 40   | 8    | 17  | 12   | 55   | 15      | 0    | 22   | 50   |
| 6    | 45     | 64   | 84   | 33   | 8    | 15  | 14   | 45   | 15      | 0    | 14   | 54   |
| 7    | 37     | 73   | 75   | 39   | 14   | 14  | 25   | 23   | 8       | 7    | 0    | 46   |
| 8    | 46     | 68   | 64   | 37   | 20   | 12  | 8    | 25   | 7       | 7    | 0    | 41   |
| 9    | 63     | 67   | 57   | 34   | 28   | 10  | 8    | 23   | 8       | 10   | 0    | 33   |
| 10   | 77     | 70   | 42   | 16   | 35   | 16  | 0    | 39   | 8       | 10   | 0    | 36   |
| 11   | 82     | 55   | 41   | 22   | 34   | 14  | 0    | 38   | 8       | 8    | 0    | 38   |
| 12   | 80     | 52   | 38   | 27   | 37   | 14  | 10   | 33   | 8       | 0    | 9    | 41   |
| 13   | 62     | 31   | 41   | 22   | 50   | 0   | 12   | 38   | 0       | 9    | 8    | 40   |
| 14   | 51     | 33   | 30   | 26   | 44   | 8   | 19   | 38   | 8       | 11   | 14   | 36   |
| 15   | 39     | 40   | 21   | 27   | 39   | 8   | 20   | 36   | 20      | 15   | 14   | 23   |
| 16   | 43     | 43   | 11   | 24   | 33   | 8   | 23   | 31   | 24      | 15   | 13   | 15   |
| 17   | 33     | 48   | 8    | 20   | 35   | 8   | 24   | 28   | 22      | 7    | 21   | 8    |
| 18   | 26     | 32   | 0    | 19   | 33   | 8   | 26   | 28   | 28      | 7    | 16   | 7    |
| 19   | 23     | 29   | 9    | 44   | 26   | 16  | 26   | 43   | 24      | 12   | 16   | 14   |
| 20   | 15     | 31   | 0    | 48   | 14   | 9   | 33   | 39   | 16      | 0    | 19   | 10   |
| 21   | 13     | 34   | 0    | 39   | 13   | 8   | 27   | 42   | 19      | 0    | 19   | 9    |
| 22   | 24     | 27   | 8    | 38   | 14   | 7   | 27   | 41   | 31      | 0    | 19   | 11   |
| 23   | 25     | 11   | 16   | 36   | 19   | 8   | 24   | 36   | 37      | 0    | 18   | 8    |
| 24   | 25     | 11   | 11   | 42   | 17   | 0   | 27   | 53   | 30      | 0    | 21   | 11   |
| 25   | 30     | 12   | 12   | 41   | 16   | 0   | 20   | 43   | 19      | 0    | 11   | 28   |
| 26   | 44     | 0    | 15   | 37   | 22   | 0   | 15   | 52   | 14      | 0    | 0    | 35   |
| 27   | 44     | 8    | 11   | 42   | 16   | 0   | 16   | 51   | 9       | 7    | 0    | 39   |
| 28   | 37     | 9    | 18   | 46   | 15   | 0   | 17   | 44   | 7       | 7    | 9    | 37   |
| 29   | 43     | 28   | 34   | 43   | 14   | 8   | 16   | 45   | 7       |      | 19   | 32   |
| 30   | 46     | 67   | 43   | 37   | 7    | 9   | 30   | 46   | 0       |      | 20   | 37   |
| 31   | 58     |      | 69   | 29   |      | 12  |      | 41   | 0       |      | 24   |      |
| Mean | 42.7   | 39.3 | 40.1 | 36.4 | 21.9 | 8.7 | 18.0 | 41.1 | 15.4    | 4.7  | 10.8 | 30.2 |

\* = Provisional.

# Penticton 2800 MHz (10.7cm) Solar Flux May 2005 - Apr 2006

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Apr 06

Adjusted to 1 AU



| Day  | May   | Jun   | Jul   | Aug    | Sep    | Oct  | Nov  | Dec   | Jan 06 | Feb  | Mar  | Apr   |
|------|-------|-------|-------|--------|--------|------|------|-------|--------|------|------|-------|
| 1    | 113.4 | 96.9  | 118.5 | 114.6  | 80.6   | 72.3 | 76.1 | 95.5  | 84.5   | 75.3 | 75.6 | 86.9  |
| 2    | 114.0 | 96.0  | 128.0 | 113.5  | 78.5   | 75.0 | 76.8 | 103.3 | 81.7   | 75.1 | 74.7 | 91.1  |
| 3    | 114.2 | 98.0  | 134.1 | 112.2  | 75.4   | 74.4 | 75.5 | 98.4  | 82.1   | 76.4 | 74.2 | 100.4 |
| 4    | 110.6 | 99.8  | 127.8 | 109.2  | 75.8   | 82.7 | 76.1 | 92.5  | 81.2   | 74.9 | 73.8 | 99.6  |
| 5    | 111.0 | 108.6 | 131.0 | 101.7  | 76.2   | 81.3 | 77.9 | 89.0  | 80.6   | 74.2 | 73.0 | 99.1  |
| 6    | 112.4 | 109.2 | 127.2 | 96.1   | 84.7   | 79.4 | 80.3 | 86.5  | 79.3   | 72.9 | 72.5 | 99.1  |
| 7    | 101.8 | 112.4 | 129.1 | 94.9   | 93.6#  | 78.7 | 78.0 | 86.3  | 76.6   | 72.0 | 73.3 | 94.7  |
| 8    | 103.2 | 119.3 | 114.2 | 88.9   | 95.5   | 78.0 | 77.9 | 86.9  | 75.6   | 72.0 | 71.3 | 91.3  |
| 9    | 112.2 | 119.7 | 110.2 | 84.7   | 100.6# | 78.7 | 76.6 | 86.4  | 75.0   | 72.8 | 71.8 | 89.5  |
| 10   | 121.6 | 117.9 | 105.2 | 78.3   | 117.6  | 78.8 | 76.4 | 88.7  | 75.2   | 73.2 | 71.2 | 89.1  |
| 11   | 127.9 | 111.4 | 96.4  | 77.9   | 111.1  | 77.3 | 77.0 | 90.2  | 74.7   | 74.1 | 73.1 | 90.1  |
| 12   | 119.9 | 106.3 | 98.5  | 78.3   | 119.5  | 76.5 | 81.4 | 85.6  | 74.0   | 74.1 | 72.3 | 81.6  |
| 13   | 128.6 | 94.7  | 94.8  | 77.4   | 115.0# | 77.6 | 86.0 | 85.2  | 74.0   | 74.4 | 71.7 | 80.5  |
| 14   | 101.7 | 96.8  | 92.9  | 76.7   | 117.9  | 78.0 | 90.4 | 86.8  | 74.9   | 75.4 | 72.8 | 79.4  |
| 15   | 105.2 | 97.5  | 90.1  | 77.7   | 120.6  | 79.1 | 97.8 | 84.2  | 78.3   | 76.6 | 73.4 | 78.9  |
| 16   | 101.4 | 101.3 | 78.8  | 77.7   | 112.9# | 78.7 | 91.8 | 83.1  | 81.1   | 77.3 | 71.7 | 77.0  |
| 17   | 92.0  | 93.7  | 76.5  | 78.9   | 104.9  | 77.5 | 98.2 | 82.5  | 79.8   | 77.3 | 71.3 | 78.5  |
| 18   | 85.8  | 92.9  | 74.4  | 84.7   | 103.2  | 77.7 | 98.8 | 82.8  | 82.9   | 76.7 | 71.7 | 76.5  |
| 19   | 86.7  | 89.8  | 73.5  | 95.3   | 91.9   | 77.2 | 99.6 | 86.6  | 85.8   | 74.8 | 74.6 | 76.5  |
| 20   | 85.6  | 88.9  | 74.4  | 100.4  | 88.5   | 76.0 | 94.1 | 84.9  | 87.9   | 74.5 | 76.2 | 79.3  |
| 21   | 83.9  | 85.5  | 75.2  | 100.8  | 86.7   | 74.6 | 92.4 | 83.7  | 90.9   | 74.2 | 76.1 | 80.0  |
| 22   | 84.2  | 82.1  | 75.9  | 107.2* | 84.3   | 74.0 | 90.3 | 84.8  | 89.9   | 74.4 | 75.4 | 83.2  |
| 23   | 85.5  | 80.1  | 82.7  | 109.3* | 83.3   | 73.4 | 87.5 | 90.1  | 89.6   | 73.6 | 76.1 | 87.7  |
| 24   | 87.4  | 79.2  | 82.8  | 100.7  | 81.9   | 72.5 | 84.4 | 88.9  | 89.8   | 74.4 | 75.4 | 93.9  |
| 25   | 86.0  | 79.3  | 86.5  | 94.4   | 81.4   | 72.1 | 77.9 | 88.8  | 86.3   | 74.5 | 75.2 | 96.3  |
| 26   | 92.8  | 81.3  | 89.2  | 95.2   | 81.7   | 71.2 | 78.7 | 89.5  | 84.2   | 75.0 | 73.3 | 101.3 |
| 27   | 98.1  | 80.0  | 93.4  | 94.0   | 77.2   | 70.7 | 78.6 | 89.2  | 81.0   | 75.5 | 74.0 | 102.0 |
| 28   | 95.1  | 82.6  | 98.7  | 91.6   | 74.9   | 72.1 | 79.7 | 86.1  | 77.6   | 75.7 | 79.0 | 101.5 |
| 29   | 95.3  | 91.9  | 106.9 | 90.9   | 74     | 73.1 | 82.4 | 87.4  | 77.2   |      | 81.5 | 102.7 |
| 30   | 97.5  | 105.9 | 108.2 | 87.6   | 72.4   | 74.5 | 92.0 | 86.9  | 76.5   |      | 83.7 | 101.4 |
| 31   | 99.0  |       | 113.1 | 85.6   |        | 76.7 |      | 84.5  | 75.3   |      | 86.1 |       |
| Mean | 101.7 | 96.6  | 99.6  | 92.8   | 92.1   | 76.1 | 84.4 | 87.9  | 80.8   | 74.7 | 74.7 | 89.6  |

NOTE: # - 1700 or 1800UT reading, burst in progress at 2000UT. \*-2300UT reading, burst in progress.  
+ - 1700UT Reading, no data available at 2000UT.



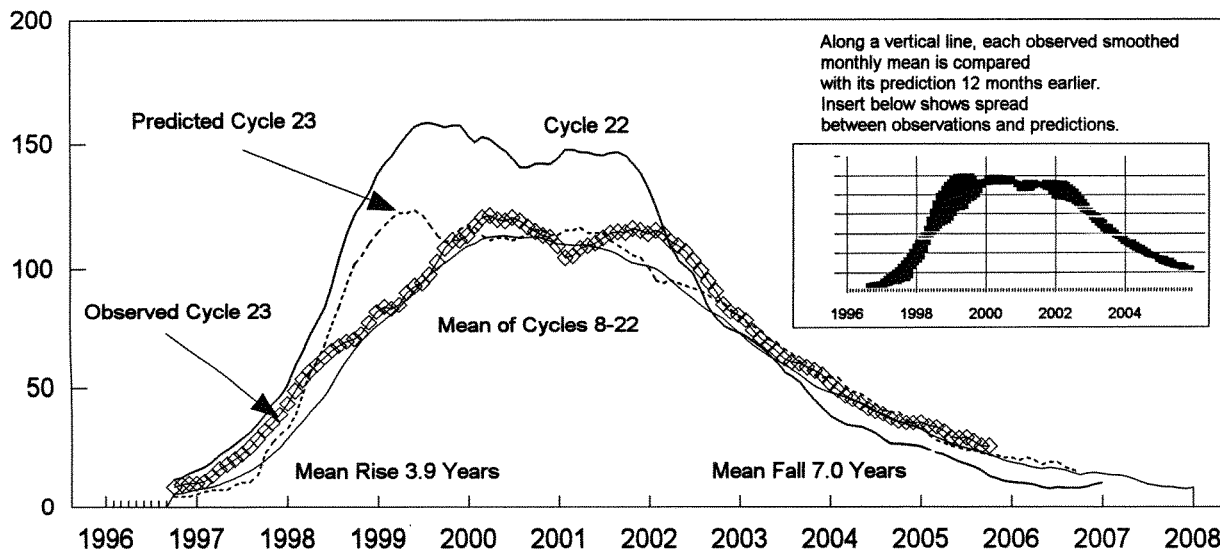
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Apr 06

# DAILY SOLAR INDICES

April 2006

| Day  | Day        | Bartels      | Sunspot        |      | Obs Flux            |                 | -----Solar Flux Adjusted to 1 Astronomical Unit----- |                |                     |                |                |               |               |               |
|------|------------|--------------|----------------|------|---------------------|-----------------|------------------------------------------------------|----------------|---------------------|----------------|----------------|---------------|---------------|---------------|
|      | of<br>Year | Cycle<br>Day | Numbers<br>Int | Amer | Penticton<br>(2800) | SGMR<br>(15400) | SGMR<br>(8800)                                       | SGMR<br>(4995) | Penticton<br>(2800) | SGMR<br>(2695) | SGMR<br>(1415) | SGMR<br>(610) | SGMR<br>(410) | SGMR<br>(245) |
| 1    | 91         | 21           | 35             | 38   | 87.0                | 550             | 222                                                  | 153            | 86.9                | 90             | 50             | 34            | 26            | 9             |
| 2    | 92         | 22           | 39             | 43   | 91.1                | 549             | 225                                                  | 150            | 91.1                | 94             | 53             | 35            | 26            | 15            |
| 3    | 93         | 23           | 44             | 49   | 100.4               | 559             | 241                                                  | 166            | 100.4               | 110            | 57             | 38            | 30            | 17            |
| 4    | 94         | 24           | 49             | 56   | 99.5                | 541             | 234                                                  | 159            | 99.6                | 103            | 55             | 30            | 27            | 19            |
| 5    | 95         | 25           | 50             | 56   | 99.0                | 547             | 218                                                  | 141            | 99.1                | 102            | 56             | 29            | 28            | 21            |
| 6    | 96         | 26           | 54             | 58   | 98.9                | 547             | 236                                                  | 153            | 99.1                | 102            | 55             | 37            | 32            | 53            |
| 7    | 97         | 27           | 46             | 50   | 94.5                | 559             | 232                                                  | 155            | 94.7                | 101            | 54             | 33            | 27            | 14            |
| 8    | 98         | 1            | 41             | 41   | 91.0                | 563             | 232                                                  | 145            | 91.3                | 95             | 54             | 34            | 25            | 13            |
| 9    | 99         | 2            | 33             | 35   | 89.2                | 556             | 232                                                  | 145            | 89.5                | 89             | 50             | 33            | 25            | 12            |
| 10   | 100        | 3            | 36             | 42   | 88.7                | 568             | 231                                                  | 144            | 89.1                | 91             | 51             | 35            | 26            | 14            |
| 11   | 101        | 4            | 38             | 43   | 89.7                | 556             | 215                                                  | 143            | 90.1                | 91             | 52             | 31            | 24            | 8             |
| 12   | 102        | 5            | 41             | 44   | 81.1                | 553             | 214                                                  | 133            | 81.6                | 88             | 50             | 32            | 24            | 8             |
| 13   | 103        | 6            | 40             | 43   | 80.0                | 551             | 219                                                  | 133            | 80.5                | 85             | 49             | 34            | 23            | 8             |
| 14   | 104        | 7            | 36             | 32   | 78.9                | 553             | 201                                                  | 123            | 79.4                | 85             | 50             | 33            | 23            | 9             |
| 15   | 105        | 8            | 23             | 21   | 78.4                | 555             | 217                                                  | 131            | 78.9                | 84             | 49             | 31            | 23            | 8             |
| 16   | 106        | 9            | 15             | 13   | 76.5                | 552             | 218                                                  | 130            | 77.0                | 82             | 49             | 35            | 24            | 7             |
| 17   | 107        | 10           | 8              | 10   | 77.9                | 537             | 211                                                  | 131            | 78.5                | 83             | 48             | 32            | 24            | 10            |
| 18   | 108        | 11           | 7              | 8    | 75.8                | 548             | 220                                                  | 131            | 76.5                | 80             | 48             | 33            | 25            | 9             |
| 19   | 109        | 12           | 14             | 2    | 75.8                | 549             | 218                                                  | 131            | 76.5                | 86             | 47             | 33            | 27            | 9             |
| 20   | 110        | 13           | 10             | 12   | 78.6                | 548             | 219                                                  | 131            | 79.3                | 84             | 47             | 32            | 26            | 10            |
| 21   | 111        | 14           | 9              | 9    | 79.2                | 552             | 219                                                  | 134            | 80.0                | 86             | 47             | 33            | 27            | 10            |
| 22   | 112        | 15           | 11             | 2    | 82.4                | 565             | 228                                                  | 143            | 83.2                | 92             | 48             | 34            | 25            | 9             |
| 23   | 113        | 16           | 8              | 8    | 86.7                | 559             | 237                                                  | 147            | 87.7                | 92             | 49             | 36            | 26            | 7             |
| 24   | 114        | 17           | 11             | 15   | 92.8                | —               | —                                                    | —              | 93.9                | —              | —              | —             | —             | —             |
| 25   | 115        | 18           | 28             | 30   | 95.1                | 557             | 234                                                  | 156            | 96.3                | 102            | 55             | 35            | 26            | 9             |
| 26   | 116        | 19           | 35             | 40   | 100.0               | 572             | 237                                                  | 168            | 101.3               | 107            | 58             | 35            | 25            | 9             |
| 27   | 117        | 20           | 39             | 46   | 100.7               | —               | —                                                    | —              | 102.0               | —              | —              | —             | —             | —             |
| 28   | 118        | 21           | 37             | 42   | 100.1               | 561             | 234                                                  | 156            | 101.5               | 111            | 61             | 39            | 28            | 11            |
| 29   | 119        | 22           | 32             | 37   | 101.2               | 565             | 236                                                  | 157            | 102.7               | 109            | 63             | 35            | 38            | 30            |
| 30   | 120        | 23           | 37             | 42   | 99.9                | 563             | 232                                                  | 158            | 101.4               | 108            | 61             | 40            | 27            | 11            |
| MEAN |            |              | 30.2           | 32.2 | 89.0                | 554             | 224                                                  | 144            | 89.6                | 94             | 52             | 33            | 26            | 13            |

NOTE: Radio flux values are from Sagamore Hill, Massachusetts, USA.



Smoothed Sunspot Numbers (Observed and Predicted) for Parts of Solar Cycles 22 and 23

| Year           | Jan       | Feb       | Mar       | Apr            | May        | Jun        | Jul        | Aug                       | Sep        | Oct        | Nov        | Dec        | Avg         |
|----------------|-----------|-----------|-----------|----------------|------------|------------|------------|---------------------------|------------|------------|------------|------------|-------------|
| 1996           | 10        | 10        | 10        | 9              | 8*         | 9          | 8          | 8                         | 8          | 9**        | 10         | 10         | 8           |
| 1997           | 11        | 11        | 14        | 17             | 18         | 20         | 23         | 25                        | 28         | 32         | 35         | 39         | 23          |
| 1998           | 44        | 49        | 53        | 57             | 59         | 63         | 65         | 68                        | 69         | 71         | 73         | 78         | 62          |
| 1999           | 83        | 85        | 84        | 85             | 90         | 93         | 94         | 98                        | 102        | 108        | 111        | 111        | 95          |
| 2000           | 113       | 117       | 120       | 120.8+         | 119        | 119        | 120        | 119                       | 116        | 115        | 113        | 112        | 107         |
| 2001           | 109       | 104       | 105       | 108            | 109        | 110        | 112        | 114                       | 114        | 114        | 115        | 115        | 111         |
| 2002           | 114       | 115       | 113       | 111            | 109        | 106        | 103        | 99                        | 95         | 91         | 85         | 82         | 102         |
| 2003           | 81        | 79        | 74        | 70             | 68         | 65         | 62         | 60                        | 60         | 58         | 57         | 57         | 66          |
| 2004           | 53        | 49        | 47        | 46             | 46         | 42         | 40         | 39                        | 38         | 36         | 35         | 35         | 42          |
| 2005           | 35        | 34        | 34        | 32             | 29         | 29         | 29         | 27                        | 26         | 26         | 24<br>(1)  | 23<br>(2)  | 29<br>(0)   |
| 2006           | 23<br>(3) | 22<br>(5) | 21<br>(6) | 20<br>(6)      | 20<br>(6)  | 19<br>(7)  | 18<br>(8)  | 17<br>(8)                 | 16<br>(9)  | 15<br>(9)  | 14<br>(9)  | 14<br>(9)  | (18)<br>(7) |
| 2007           | 13<br>(9) | 13<br>(9) | 13<br>(9) | 12<br>(9)      | 12<br>(10) | 12<br>(11) | 13<br>(12) | 13<br>(14)                | 14<br>(16) | 15<br>(17) | 16<br>(19) | 17<br>(21) | 14<br>(13)  |
| Solar Cycle 22 |           |           |           | Solar Cycle 23 |            |            |            | Min, Max, and Predictions |            |            |            |            |             |

\* May 1996 marks Cycle 22's mathematical minimum. \*\* October 1996 marks the consensus minimum NGDC is now using.

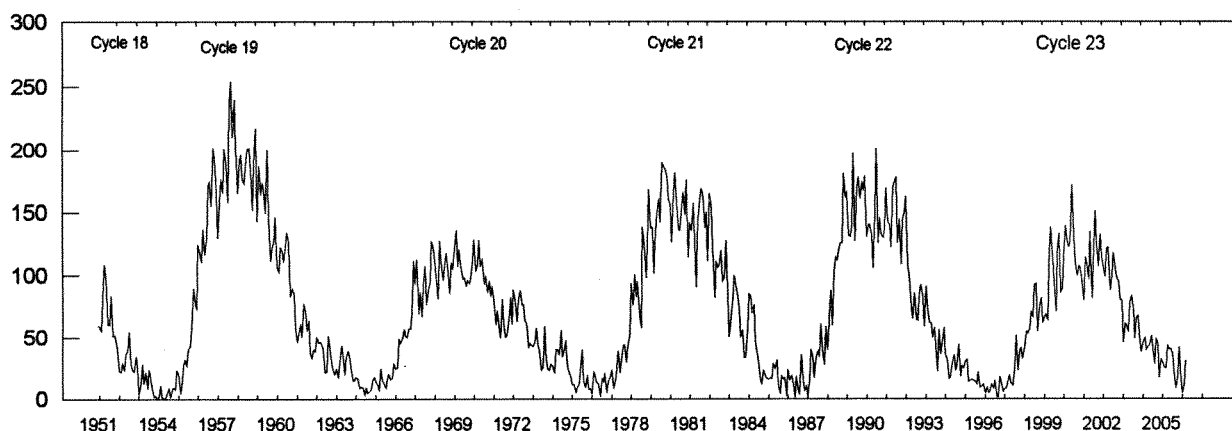
+ April 2000 marks Cycle 23 maximum.

**Observed and Predicted Numbers.** For the end of Cycle 22, and the rise and decline of Cycle 23, the table above lists observed smoothed sunspot numbers up to the one that includes the most recent monthly mean. We based these smoothed values on final monthly means through Dec 2005 and on provisional numbers thereafter. Table entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 9 in the Jul 1987 supplement to *Solar-Geophysical Data*.) Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval. Subtracting the number from the predicted value generates the lower limit. Consider, for example, the October 2006 prediction. There exists a 90% chance that in October, the actual smoothed number will fall somewhere between 6 and 24.

**Points to Ponder.** The McNish-Lincoln prediction method generates useful estimates of smoothed, monthly mean sunspot numbers for no more than 12 months ahead. Beyond 12 months, the predictions regress toward the mean of all 15 cycles of observations used in the computation. Moreover, the method remains very sensitive to the date defining the onset of the current cycle, that is, to the date of the most recent sunspot minimum. The new cycle predictions tabulated above are based on the consensus minimum value of 8.8 that occurred in October 1996.

**Note:** Please visit <http://www.sec.noaa.gov> for solar minimum and Cycle 23 discussions.

# Mean Monthly Sunspot Numbers Jan 1951 - Apr 2006



| Year | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Oct   | Nov   | Dec   | Mean    |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| 1951 | 59.9  | 59.9  | 55.9  | 92.9  | 108.5 | 100.6 | 61.5  | 61.0  | 83.1  | 51.6  | 52.4  | 45.8  | 69.4    |
| 1952 | 40.7  | 22.7  | 22.0  | 29.1  | 23.4  | 36.4  | 39.3  | 54.9  | 28.2  | 23.8  | 22.1  | 34.3  | 31.5    |
| 1953 | 26.5  | 3.9   | 10.0  | 27.8  | 12.5  | 21.8  | 8.6   | 23.5  | 19.3  | 8.2   | 1.6   | 2.5   | 13.9    |
| 1954 | 0.2   | 0.5   | 10.9  | 1.8   | 0.8   | 0.2   | 4.8   | 8.4   | 1.5   | 7.0   | 9.2   | 7.6   | 4.4 m   |
| 1955 | 23.1  | 20.8  | 4.9   | 11.3  | 28.9  | 31.7  | 26.7  | 40.7  | 42.7  | 58.5  | 89.2  | 76.9  | 38.0    |
| 1956 | 73.6  | 124.0 | 118.4 | 110.7 | 136.6 | 116.6 | 129.1 | 169.6 | 173.2 | 155.3 | 201.3 | 192.1 | 141.7   |
| 1957 | 165.0 | 130.2 | 157.4 | 175.2 | 164.6 | 200.7 | 187.2 | 158.0 | 235.8 | 253.8 | 210.9 | 239.4 | 190.2 M |
| 1958 | 202.5 | 164.9 | 190.7 | 196.0 | 175.3 | 171.5 | 191.4 | 200.2 | 201.2 | 181.5 | 152.3 | 187.6 | 184.8   |
| 1959 | 217.4 | 143.1 | 185.7 | 163.3 | 172.0 | 168.7 | 149.6 | 199.6 | 145.2 | 111.4 | 124.0 | 125.0 | 159.0   |
| 1960 | 146.3 | 106.0 | 102.2 | 122.0 | 119.6 | 110.2 | 121.7 | 134.1 | 127.2 | 82.8  | 89.6  | 85.6  | 122.3   |
| 1961 | 57.9  | 46.1  | 53.0  | 61.4  | 51.0  | 77.4  | 70.2  | 55.8  | 63.6  | 37.7  | 32.6  | 39.9  | 53.9    |
| 1962 | 38.7  | 50.3  | 45.6  | 46.4  | 43.7  | 42.0  | 21.8  | 21.8  | 51.3  | 39.5  | 26.9  | 23.2  | 37.6    |
| 1963 | 19.8  | 24.4  | 17.1  | 29.3  | 43.0  | 35.9  | 19.6  | 33.2  | 38.8  | 35.3  | 23.4  | 14.9  | 27.9    |
| 1964 | 15.3  | 17.7  | 16.5  | 8.6   | 9.5   | 9.1   | 3.1   | 9.3   | 4.7   | 6.1   | 7.4   | 15.1  | 10.2 m  |
| 1965 | 17.5  | 14.2  | 11.7  | 6.8   | 24.1  | 15.9  | 11.9  | 8.9   | 16.8  | 20.1  | 15.8  | 17.0  | 15.1    |
| 1966 | 28.2  | 24.4  | 25.3  | 48.7  | 45.3  | 47.7  | 56.7  | 51.2  | 50.2  | 57.2  | 57.2  | 70.4  | 47.0    |
| 1967 | 110.9 | 93.6  | 111.8 | 69.5  | 86.5  | 67.3  | 91.5  | 107.2 | 76.8  | 88.2  | 94.3  | 126.4 | 93.8    |
| 1968 | 121.8 | 111.9 | 92.2  | 81.2  | 127.2 | 110.3 | 96.1  | 109.3 | 117.2 | 107.7 | 86.0  | 109.8 | 105.9 M |
| 1969 | 104.4 | 120.5 | 135.8 | 106.8 | 120.0 | 106.0 | 96.8  | 98.0  | 91.3  | 95.7  | 93.5  | 97.9  | 105.5   |
| 1970 | 111.5 | 127.8 | 102.9 | 109.5 | 127.5 | 106.8 | 112.5 | 93.0  | 99.5  | 86.6  | 95.2  | 83.5  | 104.5   |
| 1971 | 91.3  | 79.0  | 60.7  | 71.8  | 57.5  | 49.8  | 81.0  | 61.4  | 50.2  | 51.7  | 63.2  | 82.2  | 66.6    |
| 1972 | 61.5  | 88.4  | 80.1  | 63.2  | 80.5  | 88.0  | 76.5  | 76.8  | 64.0  | 61.3  | 41.6  | 45.3  | 68.9    |
| 1973 | 43.4  | 42.9  | 46.0  | 57.7  | 42.4  | 39.5  | 23.1  | 25.6  | 59.3  | 30.7  | 23.9  | 23.3  | 38.0    |
| 1974 | 27.6  | 26.0  | 21.3  | 40.3  | 39.5  | 36.0  | 55.8  | 33.6  | 40.2  | 47.1  | 25.0  | 20.5  | 34.5    |
| 1975 | 18.9  | 11.5  | 11.5  | 5.1   | 9.0   | 11.4  | 28.2  | 39.7  | 13.9  | 9.1   | 19.4  | 7.8   | 15.5    |
| 1976 | 8.1   | 4.3   | 21.9  | 18.8  | 12.4  | 12.2  | 1.9   | 16.4  | 13.5  | 20.6  | 5.2   | 15.3  | 12.6 m  |
| 1977 | 16.4  | 23.1  | 8.7   | 12.9  | 18.6  | 38.5  | 21.4  | 30.1  | 44.0  | 43.8  | 29.1  | 43.2  | 27.5    |
| 1978 | 51.9  | 93.6  | 76.5  | 99.7  | 82.7  | 95.1  | 70.4  | 58.1  | 138.2 | 125.1 | 97.9  | 122.7 | 92.5    |
| 1979 | 166.6 | 137.5 | 138.0 | 101.5 | 134.4 | 149.5 | 159.4 | 142.2 | 188.4 | 186.2 | 183.3 | 176.3 | 155.4 M |
| 1980 | 159.6 | 155.0 | 126.2 | 164.1 | 179.9 | 157.3 | 136.3 | 135.4 | 155.0 | 164.7 | 147.9 | 174.4 | 154.6   |
| 1981 | 114.0 | 141.3 | 135.5 | 156.4 | 127.5 | 90.9  | 143.8 | 158.7 | 167.3 | 162.4 | 137.5 | 150.1 | 140.4   |
| 1982 | 111.2 | 163.6 | 153.8 | 122.0 | 82.2  | 110.4 | 106.1 | 107.6 | 118.8 | 94.7  | 98.1  | 127.0 | 115.9   |
| 1983 | 84.3  | 51.0  | 66.5  | 80.7  | 99.2  | 91.1  | 82.2  | 71.8  | 50.3  | 55.8  | 33.3  | 33.4  | 66.6    |
| 1984 | 57.0  | 85.4  | 83.5  | 69.7  | 76.4  | 46.1  | 37.4  | 25.5  | 15.7  | 12.0  | 22.8  | 18.7  | 45.9    |
| 1985 | 16.5  | 15.9  | 17.2  | 16.2  | 27.5  | 24.2  | 30.7  | 11.1  | 3.9   | 18.6  | 16.2  | 17.3  | 17.9    |
| 1986 | 2.5   | 23.2  | 15.1  | 18.5  | 13.7  | 1.1   | 18.1  | 7.4   | 3.8   | 35.4  | 15.2  | 6.8   | 13.4 m  |
| 1987 | 10.4  | 2.4   | 14.7  | 39.6  | 33.0  | 17.4  | 33.0  | 38.7  | 33.9  | 60.6  | 39.9  | 27.1  | 29.4    |
| 1988 | 59.0  | 40.0  | 76.2  | 88.0  | 60.1  | 101.8 | 113.8 | 111.6 | 120.1 | 125.1 | 125.1 | 179.2 | 100.2   |
| 1989 | 161.3 | 165.1 | 131.4 | 130.6 | 138.5 | 196.2 | 126.9 | 168.9 | 176.7 | 159.4 | 173.0 | 165.5 | 157.6 M |
| 1990 | 177.3 | 130.5 | 140.3 | 140.3 | 132.2 | 105.4 | 149.4 | 200.3 | 125.2 | 145.5 | 131.4 | 129.7 | 142.6   |
| 1991 | 136.9 | 167.5 | 141.9 | 140.0 | 121.3 | 169.7 | 173.7 | 176.3 | 125.3 | 144.1 | 108.2 | 144.4 | 145.7   |
| 1992 | 150.0 | 161.1 | 106.7 | 99.8  | 73.8  | 65.2  | 85.7  | 64.5  | 63.9  | 88.7  | 91.8  | 82.6  | 94.3    |
| 1993 | 59.3  | 91.0  | 69.8  | 62.2  | 61.3  | 49.8  | 57.9  | 42.2  | 22.4  | 56.4  | 35.6  | 48.9  | 54.6    |
| 1994 | 57.8  | 35.5  | 31.7  | 16.1  | 17.8  | 28.0  | 35.1  | 22.5  | 25.7  | 44.0  | 18.0  | 26.2  | 29.9    |
| 1995 | 24.2  | 29.9  | 31.1  | 14.0  | 14.5  | 15.6  | 14.5  | 14.3  | 11.8  | 21.1  | 9.0   | 10.0  | 17.5    |
| 1996 | 11.5  | 4.4   | 9.2   | 4.8   | 5.5   | 11.8  | 8.2   | 14.4  | 1.6   | 0.9   | 17.9  | 13.3  | 8.6 m   |
| 1997 | 5.7   | 7.6   | 8.7   | 15.5  | 18.5  | 12.7  | 10.4  | 24.4  | 51.3  | 22.8  | 39.0  | 41.2  | 21.5    |
| 1998 | 31.9  | 40.3  | 54.8  | 53.4  | 56.3  | 70.7  | 66.6  | 92.2  | 92.9  | 55.5  | 74.0  | 81.9  | 64.3    |
| 1999 | 62.0  | 66.3  | 68.8  | 63.7  | 106.4 | 137.7 | 113.5 | 93.7  | 71.5  | 116.7 | 133.2 | 84.6  | 93.2    |
| 2000 | 90.1  | 112.9 | 138.5 | 125.5 | 121.6 | 124.9 | 170.1 | 130.5 | 109.7 | 99.4  | 106.8 | 104.4 | 119.6 M |
| 2001 | 95.6  | 80.6  | 113.5 | 107.7 | 96.6  | 134.0 | 81.8  | 106.4 | 150.7 | 125.5 | 106.5 | 132.2 | 111.0   |
| 2002 | 114.1 | 107.4 | 98.4  | 120.7 | 120.8 | 88.3  | 99.9  | 116.4 | 109.3 | 97.5  | 95.5  | 80.8  | 104.0   |
| 2003 | 79.7  | 46.0  | 61.1  | 60.0  | 54.6  | 77.4  | 83.3  | 72.7  | 48.7  | 65.5  | 67.3  | 46.5  | 63.9    |
| 2004 | 37.7  | 45.8  | 49.1  | 39.3  | 41.5  | 43.2  | 51.0  | 40.9  | 27.7  | 48.0  | 43.5  | 17.9  | 40.4    |
| 2005 | 31.3  | 29.1  | 24.8  | 24.2  | 42.7  | 39.3  | 40.1  | 36.4  | 21.9  | 8.7   | 18.0  | 41.1  | 29.8    |
| 2006 | 15.4  | 4.7   | 10.8  | 30.2  |       |       |       |       |       |       |       |       | 15.3    |

Values are preliminary after Dec, 2005. For the yearly means, each 'M' marks a sunspot cycle maximum and each 'm' a minimum.

H $\alpha$  S O L A R F L A R E S

APRIL 2006

| Sta  | Day | Start<br>(UT) | Max<br>(UT) | End<br>(UT) | Lat | CMD | NOAA/<br>USAF<br>Region | CMP<br>Mo | Dur<br>Day | (Min) | Imp<br>Opt | Xray | Obs<br>See | Type | Area Measurement |                         |                  | Remarks |
|------|-----|---------------|-------------|-------------|-----|-----|-------------------------|-----------|------------|-------|------------|------|------------|------|------------------|-------------------------|------------------|---------|
|      |     |               |             |             |     |     |                         |           |            |       |            |      |            |      | Time<br>(UT)     | Apparent<br>(10-6 Disk) | Corr<br>(Sq Deg) |         |
| HOLL | 06  | 2038          | 2041        | 2057        | S05 | W62 | 10865                   | 04        | 2.2        | 19    | 1N         |      | 3          | E    |                  | 155                     |                  | FE      |
| LEAR | 11  | 0437          | 0438        | 0441        | S07 | E17 | 10870                   | 04        | 12.5       | 4     | SF         |      | 3          | E    |                  | 41                      |                  | FH      |
| HOLL |     | 1816E         | 1820        | 1846        | S08 | E40 | 10871                   | 04        | 14.8       | 30D   | 1N         |      | 3          | E    |                  | 123                     |                  | FH      |
| LEAR | 24  | 0901          | 0903        | 0905        | S07 | E68 | 10875                   | 04        | 29.5       | 4     | SF         |      | 3          | E    |                  | 36                      |                  | UF      |
| LEAR |     | 0906          | 0908        | 0921        | S08 | E68 | 10875                   | 04        | 29.5       | 15    | SF         |      | 3          | E    |                  | 34                      |                  | UF      |
| LEAR | 26  | 0603          | 0604        | 0607        | S10 | E45 | 10875                   | 04        | 29.6       | 4     | SF         |      | 3          | E    |                  | 17                      |                  | FH      |
| HOLL |     | 1349          | 1353        | 1417        | S10 | E38 | 10875                   | 04        | 29.4       | 28    | SF         |      | 3          | E    |                  | 54                      |                  | FE      |
| HOLL |     | 1436          | 1454        | 1524        | S07 | E39 | 10875                   | 04        | 29.5       | 48    | SF         |      | 3          | E    |                  | 92                      |                  | FE      |
| HOLL |     | 1702          | 1702        | 1733        | S11 | E38 | 10875                   | 04        | 29.6       | 31    | 1F         |      | 3          | E    |                  | 140                     |                  | FE      |
| HOLL | 27  | 1547          | 1550        | 1653        | S11 | E21 | 10875                   | 04        | 29.2       | 66    | 1N         |      | 3          | E    |                  | 233                     |                  | ZF      |
| LEAR | 28  | 0822          | 0822        | 0839        | S07 | E16 | 10875                   | 04        | 29.5       | 17    | SF         |      | 3          | E    |                  | 11                      |                  | UF      |
| HOLL | 29  | 1834          | 1834        | 1839        | S05 | W05 | 10875                   | 04        | 29.4       | 5     | SF         |      | 3          | E    |                  | 11                      |                  | F       |
| LEAR | 30  | 0203E         | 0203U       | 0209        | N15 | E71 |                         | 05        | 5.5        | 6D    | SF         |      | 3          | E    |                  | 37                      |                  | FH      |
| LEAR |     | 0917          | 0926        | 0939        | S10 | E09 | 10876                   | 05        | 1.1        | 22    | SF         |      | 3          | E    |                  | 42                      |                  | UF      |

## "Remarks"

- A = Eruptive prominence whose base is less than 90 degrees from central meridian.  
 B = Probably the end of a more important flare.  
 C = Invisible 10 minutes before.  
 D = Brilliant point.  
 E = Two or more brilliant points.  
 F = Several eruptive centers.  
 G = No visible spots in the neighborhood.  
 H = Flare accompanied by high-speed dark filament.  
 I = Active region very extended.  
 J = Distinct variations of plage intensity before or after the flare.  
 K = Several intensity maxima.  
 L = Existing filaments show signs of sudden activity.  
 M = White-light flare.  
 N = Continuous spectrum shows effects of polarization.
- O = Observations have been made in the H and K lines of Ca II.  
 P = Flare shows Helium D3 in emission.  
 Q = Flare shows Balmer continuum in emission.  
 R = Marked asymmetry in H-alpha line suggests ejection of high-velocity material.  
 S = Brightness follows disappearance of filament in same position.  
 T = Region active all day.  
 U = Two bright branches, parallel or converging.  
 V = Occurrence of an explosive phase; important, expansion within roughly 1 minute that often includes a significant intensity increase.  
 W = Great increase in area after time of maximum intensity.  
 X = Unusually wide H-alpha line.  
 Y = System of loop-type prominences.  
 Z = Major sunspot umbra covered by flare.

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

NOTE: Beginning with the February 2005 data, only H-alpha flares are included in this table. Because the number of H-alpha patrols are dwindling and emphasis is now on the X-ray flare reports, a separate table of solar X-ray flares is now produced.

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# X - R A Y S O L A R F L A R E S

APRIL 2006

| Sta Day | Start (UT) | Max (UT) | End (UT) | Lat CMD | NOAA/ USAF Region | CMP Mo Day | Dur (Min) | Imp Xray | Total Integrated Flux(1) | Total Area(2) | Total(3) Intensity |
|---------|------------|----------|----------|---------|-------------------|------------|-----------|----------|--------------------------|---------------|--------------------|
| GOES 01 | 0025       | 0040     | 0103     | S11 E18 | 10865             |            | 38        | B 7.8    | 1.3E-03                  | 2.1E+03       | 5.0E+03            |
| GOES    | 0456       | 0459     | 0502     |         |                   |            | 6         | B 1.7    | 5.8E-05                  |               |                    |
| GOES    | 1346       | 1403     | 1415     |         |                   |            | 29        | B 3.7    | 4.9E-04                  |               |                    |
| GOES 02 | 0048       | 0052     | 0054     | S16 E28 | 10866             |            | 6         | B 1.4    | 3.9E-05                  | 1.5E+02       | 2.9E+02            |
| GOES    | 0229       | 0233     | 0235     | S16 E27 | 10866             |            | 6         | B 1.9    | 4.7E-05                  | 1.5E+02       | 3.0E+02            |
| GOES    | 1326       | 1333     | 1335     | S16 E25 | 10866             |            | 9         | B 6.7    | 1.6E-04                  | 6.5E+02       | 2.5E+03            |
| GOES    | 1501       | 1505     | 1516     |         |                   |            | 15        | B 1.7    | 1.3E-04                  |               |                    |
| GOES    | 1613       | 1623     | 1632     |         |                   |            | 19        | B 1.4    | 1.5E-04                  |               |                    |
| GOES    | 1753       | 1802     | 1825     | S11 W05 | 10865             |            | 32        | B 3.2    | 5.4E-04                  | 4.5E+02       | 7.9E+02            |
| GOES 03 | 0105       | 0108     | 0111     |         |                   |            | 6         | B 1.7    | 5.3E-05                  |               |                    |
| GOES    | 1023       | 1027     | 1029     | S16 E04 | 10867             |            | 6         | B 3.6    | 1.1E-04                  | 3.8E+02       | 1.0E+03            |
| GOES    | 1037       | 1048     | 1057     |         |                   |            | 20        | B 4.0    | 4.3E-04                  |               |                    |
| GOES    | 1200       | 1203     | 1205     | S16 E13 | 10867             |            | 5         | C 1.8    | 3.8E-04                  | 1.2E+03       | 6.8E+03            |
| GOES    | 1220       | 1224     | 1226     | S16 E04 | 10867             |            | 6         | B 9.0    | 2.2E-04                  | 6.0E+02       | 2.3E+03            |
| GOES    | 1607       | 1625     | 1627     |         |                   |            | 20        | C 1.4    | 8.4E-04                  |               |                    |
| GOES    | 2020       | 2027     | 2055     | S15 E02 | 10867             |            | 35        | B 4.3    | 7.2E-04                  | 4.8E+02       | 1.3E+03            |
| GOES    | 2113       | 2126     | 2136     | S13 W21 | 10865             |            | 23        | C 4.0    | 3.1E-03                  | 3.5E+03       | 1.4E+04            |
| GOES 04 | 0051       | 0057     | 0101     | S15 W01 | 10867             |            | 10        | B 5.8    | 2.2E-04                  | 5.8E+02       | 2.1E+03            |
| GOES    | 0238       | 0305     | 0323     | S15 W01 | 10867             |            | 45        | B 3.5    | 7.9E-04                  | 3.3E+02       | 7.6E+02            |
| GOES    | 0449       | 0453     | 0504     |         |                   |            | 15        | B 7.0    | 4.5E-04                  |               |                    |
| GOES    | 0600       | 0607     | 0618     | S16 W02 | 10867             |            | 18        | B 3.8    | 3.4E-04                  | 7.0E+02       | 1.5E+03            |
| GOES    | 1446       | 1455     | 1505     | S15 W08 | 10867             |            | 19        | B 4.6    | 3.8E-04                  | 5.5E+02       | 1.4E+03            |
| GOES    | 1553       | 1557     | 1600     | S16 W02 | 10867             |            | 7         | B 2.7    | 9.4E-05                  | 1.8E+02       | 3.9E+02            |
| GOES    | 1823       | 1826     | 1828     | S16 W04 | 10867             |            | 5         | B 1.6    | 3.9E-05                  | 7.5E+01       | 1.6E+02            |
| GOES    | 1915       | 1921     | 1931     | S15 W11 | 10867             |            | 16        | B 2.8    | 2.3E-04                  | 5.0E+01       | 9.2E+01            |
| GOES 05 | 0644       | 0649     | 0652     | S17 W17 | 10867             |            | 8         | B 3.1    | 1.1E-04                  | 3.0E+02       | 9.3E+02            |
| GOES    | 1113       | 1120     | 1123     | S17 W20 | 10867             |            | 10        | B 4.8    | 2.0E-04                  | 4.0E+02       | 1.4E+03            |
| GOES    | 1206       | 1209     | 1214     | S17 W21 | 10867             |            | 8         | B 2.1    | 9.2E-05                  | 7.5E+01       | 1.3E+02            |
| GOES    | 1301       | 1307     | 1311     | S16 W21 | 10867             |            | 10        | C 2.6    | 8.4E-04                  | 1.3E+03       | 7.9E+03            |
| GOES    | 1514       | 1521     | 1524     | S17 W22 | 10867             |            | 10        | C 8.1    | 2.3E-03                  | 3.0E+03       | 2.2E+04            |
| GOES    | 1818       | 1823     | 1825     | S16 W25 | 10867             |            | 7         | B 8.2    | 2.0E-04                  | 6.5E+02       | 2.2E+03            |
| GOES    | 1945       | 1951     | 1953     | S16 W25 | 10867             |            | 8         | B 7.3    | 2.0E-04                  | 5.8E+02       | 2.1E+03            |
| GOES    | 2103       | 2107     | 2109     | S17 W26 | 10867             |            | 6         | B 5.1    | 1.2E-04                  | 5.5E+02       | 1.7E+03            |
| GOES 06 | 0317       | 0321     | 0323     | S04 W28 | 10866             |            | 6         | B 3.9    | 9.1E-05                  | 4.5E+02       | 1.2E+03            |
| GOES    | 0522       | 0533     | 0536     |         | 10865             |            | 14        | M 1.4    | 3.8E-03                  |               |                    |
| GOES    | 0935       | 0938     | 0943     | S16 W32 | 10867             |            | 8         | B 3.2    | 1.3E-04                  | 3.8E+02       | 9.6E+02            |
| GOES    | 1028       | 1035     | 1043     |         |                   |            | 15        | B 4.5    | 3.4E-04                  |               |                    |
| GOES    | 1415       | 1420     | 1424     | S08 W57 | 10865             |            | 9         | B 9.9    | 3.7E-04                  | 1.5E+03       | 4.3E+03            |
| GOES    | 1628       | 1631     | 1634     | S16 W36 | 10867             |            | 6         | B 2.6    | 8.4E-05                  | 1.3E+02       | 2.4E+02            |
| GOES    | 1648       | 1655     | 1700     | S11 E27 |                   |            | 12        | B 6.7    | 3.7E-04                  | 1.1E+03       | 3.5E+03            |
| GOES    | 2033       | 2042     | 2050     | S07 W61 | 10865             |            | 17        | M 1.2    | 6.8E-03                  | 5.6E+03       | 3.7E+04            |
| GOES 07 | 0118       | 0121     | 0124     | S08 W63 | 10865             |            | 6         | B 2.2    | 7.3E-05                  | 2.3E+02       | 4.2E+02            |
| GOES    | 0457       | 0500     | 0502     |         |                   |            | 5         | B 3.2    | 6.6E-05                  |               |                    |
| GOES    | 0725       | 0729     | 0733     | S16 W43 | 10867             |            | 8         | B 5.8    | 2.4E-04                  | 4.5E+02       | 1.1E+03            |
| GOES    | 0757       | 0803     | 0805     | S16 W44 | 10867             |            | 8         | C 9.7    | 2.3E-03                  | 2.8E+03       | 2.0E+04            |
| GOES    | 0936       | 0940     | 0943     | S16 W45 | 10867             |            | 7         | B 4.4    | 1.6E-04                  | 3.0E+02       | 7.3E+02            |
| GOES    | 2120       | 2123     | 2125     | S08 W74 | 10865             |            | 5         | B 2.5    | 6.6E-05                  | 3.3E+02       | 6.2E+02            |
| GOES    | 2237       | 2241     | 2244     | S10 W74 | 10865             |            | 7         | B 3.3    | 1.1E-04                  | 9.8E+02       | 2.0E+03            |
| GOES 08 | 0231       | 0235     | 0240     | S10 W77 | 10865             |            | 9         | B 3.3    | 1.5E-04                  | 9.5E+02       | 1.9E+03            |
| GOES    | 0315       | 0322     | 0331     | S10 W77 | 10865             |            | 16        | B 2.5    | 2.2E-04                  | 1.0E+02       | 1.7E+02            |
| GOES    | 1220       | 1224     | 1229     | S06 E83 |                   |            | 9         | B 2.3    | 1.1E-04                  | 7.5E+01       | 1.2E+02            |
| GOES    | 1624       | 1631     | 1638     | S04 E82 |                   |            | 14        | B 2.5    | 1.8E-04                  | 5.3E+02       | 1.0E+03            |
| GOES 09 | 0547       | 0552     | 0610     | S07 W51 | 10868             |            | 23        | B 2.6    | 3.3E-04                  | 2.5E+02       | 5.2E+02            |
| GOES 10 | 0542       | 0548     | 0555     | S12 W22 | 10869             |            | 13        | B 4.4    | 2.5E-04                  | 7.3E+02       | 1.6E+03            |
| GOES    | 0842       | 0848     | 0937     | S11 W24 | 10869             |            | 55        | B 2.5    | 7.3E-04                  | 2.8E+02       | 6.9E+02            |
| GOES    | 1345       | 1356     | 1405     | S04 W90 | 10866             |            | 20        | B 4.2    | 3.6E-04                  | 1.0E+03       | 2.2E+03            |
| GOES    | 1557       | 1601     | 1604     |         |                   |            | 7         | B 1.3    | 5.1E-05                  |               |                    |
| GOES    | 1753       | 1757     | 1803     | S15 W90 |                   |            | 10        | B 1.6    | 9.2E-05                  | 1.0E+02       | 1.7E+02            |
| GOES    | 1927       | 1934     | 1939     | S07 E23 | 10870             |            | 12        | B 8.7    | 3.5E-04                  | 5.5E+02       | 2.3E+03            |

## X - R A Y S O L A R F L A R E S

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| Sta Day | Start (UT) | Max (UT) | End (UT) | Lat CMD | NOAA/<br>USAF<br>Region | CMP<br>Mo Day | Dur<br>(Min) | Imp<br>Xray | Total<br>Integrated<br>Flux(1) | Total<br>Area(2) | Total(3)<br>Intensity |
|---------|------------|----------|----------|---------|-------------------------|---------------|--------------|-------------|--------------------------------|------------------|-----------------------|
| GOES 10 | 2036       | 2041     | 2050     | S11 W31 | 10869                   |               | 14           | B 2.6       | 1.8E-04                        | 2.5E+02          | 4.9E+02               |
| GOES 11 | 0145       | 0200     | 0204     | S07 E20 | 10870                   |               | 19           | C 1.0       | 5.7E-04                        | 9.0E+02          | 4.6E+03               |
| GOES    | 0433       | 0439     | 0443     | S07 E18 | 10870                   |               | 10           | C 1.0       | 3.6E-04                        | 7.8E+02          | 3.6E+03               |
| GOES    | 0742       | 0746     | 0748     |         |                         |               | 6            | B 1.5       | 4.4E-05                        |                  |                       |
| GOES    | 1808       | 1839     | 1858     | S09 E41 | 10871                   |               | 50           | C 2.3       | 4.7E-03                        | 4.8E+03          | 1.5E+04               |
| GOES 13 | 0201       | 0204     | 0207     | S07 W07 | 10870                   |               | 6            | B 1.9       | 4.7E-05                        | 2.3E+02          | 6.1E+02               |
| GOES    | 0637       | 0641     | 0643     | S07 W09 | 10870                   |               | 6            | B 1.6       | 3.3E-05                        | 1.8E+02          | 4.2E+02               |
| GOES    | 0656       | 0659     | 0701     | S05 E34 | 10873                   |               | 5            | B 1.1       | 2.1E-05                        | 7.5E+01          | 1.4E+02               |
| GOES 15 | 1139       | 1144     | 1148     |         |                         |               | 9            | B 1.1       | 5.5E-05                        |                  |                       |
| GOES 16 | 1820       | 1829     | 1840     | S08 W29 | 10871                   |               | 20           | B 1.6       | 1.6E-04                        | 5.0E+01          | 1.2E+02               |
| GOES 17 | 0724       | 0730     | 0737     |         |                         |               | 13           | B 1.3       | 8.8E-05                        |                  |                       |
| GOES    | 1806       | 1848     | 1928     |         |                         |               | 82           | B 2.0       | 6.9E-04                        |                  |                       |
| GOES 19 | 1152       | 1157     | 1203     |         |                         |               | 11           | B 1.3       | 6.9E-05                        |                  |                       |
| GOES 20 | 1727       | 1731     | 1738     | S05 W90 | 10871                   |               | 11           | B 1.6       | 8.4E-05                        | 2.0E+02          | 3.8E+02               |
| GOES    | 1857       | 1904     | 1910     | S05 W90 | 10871                   |               | 13           | B 2.2       | 1.3E-04                        | 5.5E+02          | 1.4E+03               |
| GOES 21 | 0041       | 0049     | 0058     | S05 W90 | 10871                   |               | 17           | B 4.5       | 3.2E-04                        | 1.1E+03          | 2.8E+03               |
| GOES    | 2040       | 2047     | 2100     |         |                         |               | 20           | B 1.8       | 1.9E-04                        |                  |                       |
| GOES    | 2351       | 2355     | 2359     |         |                         |               | 8            | B 1.0       | 4.5E-05                        |                  |                       |
| GOES 22 | 0240       | 0252     | 0319     |         |                         |               | 39           | B 3.5       | 6.7E-04                        |                  |                       |
| GOES    | 0511       | 0522     | 0540     | S09 E85 |                         |               | 29           | B 5.6       | 7.8E-04                        | 9.8E+02          | 2.1E+03               |
| GOES    | 0831       | 0841     | 0847     | S08 E83 |                         |               | 16           | B 6.0       | 4.0E-04                        | 6.8E+02          | 1.3E+03               |
| GOES    | 1238       | 1248     | 1253     |         |                         |               | 15           | B 1.3       | 1.1E-04                        |                  |                       |
| GOES    | 1451       | 1457     | 1503     | S07 E84 |                         |               | 12           | B 1.9       | 1.2E-04                        | 9.0E+02          | 1.8E+03               |
| GOES    | 1630       | 1639     | 1649     | S07 E90 |                         |               | 19           | C 2.6       | 1.8E-03                        | 3.4E+03          | 1.3E+04               |
| GOES    | 1917       | 1926     | 1933     | S07 E82 |                         |               | 16           | B 2.4       | 1.8E-04                        | 3.5E+02          | 6.2E+02               |
| GOES    | 2038       | 2044     | 2047     |         |                         |               | 9            | B 1.2       | 5.6E-05                        |                  |                       |
| GOES    | 2234       | 2238     | 2241     | S07 E82 |                         |               | 7            | B 1.8       | 6.1E-05                        | 1.0E+03          | 2.3E+03               |
| GOES    | 2242       | 2248     | 2253     | S07 E83 |                         |               | 11           | B 3.1       | 1.6E-04                        | 1.2E+03          | 2.6E+03               |
| GOES 23 | 0339       | 0344     | 0347     | S07 E82 |                         |               | 8            | B 4.8       | 2.0E-04                        | 2.0E+03          | 4.9E+03               |
| GOES    | 0429       | 0438     | 0447     | S07 E80 |                         |               | 18           | B 2.2       | 2.1E-04                        | 1.3E+03          | 2.6E+03               |
| GOES    | 0649       | 0656     | 0715     | S07 E79 |                         |               | 26           | B 7.3       | 8.2E-04                        | 2.3E+03          | 7.0E+03               |
| GOES    | 1328       | 1333     | 1359     | S07 E75 |                         |               | 31           | B 2.9       | 4.9E-04                        | 1.5E+03          | 3.1E+03               |
| GOES    | 1421       | 1427     | 1434     | S07 E76 |                         |               | 13           | B 5.5       | 3.3E-04                        | 2.3E+03          | 5.3E+03               |
| GOES    | 1518       | 1523     | 1526     | S07 E74 |                         |               | 8            | B 5.9       | 2.0E-04                        | 1.7E+03          | 4.2E+03               |
| GOES    | 2009       | 2025     | 2034     | S07 E73 | 10875                   |               | 25           | B 3.2       | 4.2E-04                        | 1.5E+03          | 3.0E+03               |
| GOES 24 | 0030       | 0033     | 0035     | S07 E72 | 10875                   |               | 5            | B 2.5       | 6.0E-05                        | 1.5E+02          | 2.6E+02               |
| GOES    | 0356       | 0404     | 0413     | S07 E70 | 10875                   |               | 17           | C 1.0       | 7.3E-04                        | 2.2E+03          | 6.8E+03               |
| GOES    | 0935       | 0938     | 0941     | S07 E67 | 10875                   |               | 6            | B 3.9       | 1.3E-04                        | 1.4E+03          | 2.8E+03               |
| GOES    | 0949       | 0952     | 0957     | S07 E67 | 10875                   |               | 8            | B 3.8       | 1.6E-04                        | 1.3E+03          | 2.5E+03               |
| GOES    | 1440       | 1445     | 1451     | S07 E65 | 10875                   |               | 11           | B 4.2       | 2.3E-04                        | 1.6E+03          | 3.1E+03               |
| GOES    | 1628       | 1631     | 1633     | S06 E63 | 10875                   |               | 5            | B 2.7       | 7.1E-05                        | 7.3E+02          | 1.5E+03               |
| GOES 25 | 0152       | 0213     | 0236     |         | 10875                   |               | 44           | B 6.0       | 1.2E-03                        |                  |                       |
| GOES    | 0636       | 0726     | 0812     |         | 10875                   |               | 96           | C 1.3       | 5.9E-03                        |                  |                       |
| GOES    | 1431       | 1436     | 1440     | S06 E51 | 10875                   |               | 9            | B 4.8       | 1.8E-04                        | 6.5E+02          | 1.4E+03               |
| GOES    | 1543       | 1606     | 1622     |         | 10875                   |               | 39           | B 4.2       | 8.4E-04                        |                  |                       |
| GOES    | 1700       | 1706     | 1717     |         | 10876                   |               | 17           | B 2.9       | 2.7E-04                        |                  |                       |
| GOES 26 | 0443       | 0446     | 0448     | S09 E44 | 10875                   |               | 5            | B 3.7       | 9.8E-05                        | 4.8E+02          | 1.0E+03               |
| GOES    | 0559       | 0602     | 0605     | S09 E44 | 10875                   |               | 6            | B 4.5       | 1.3E-04                        | 6.3E+02          | 1.8E+03               |
| GOES    | 0627       | 0630     | 0632     | S09 E44 | 10875                   |               | 5            | B 4.0       | 1.0E-04                        | 5.5E+02          | 1.3E+03               |
| GOES    | 0638       | 0646     | 0651     | S07 E43 | 10875                   |               | 13           | C 1.0       | 5.8E-04                        | 2.5E+03          | 6.5E+03               |
| GOES    | 0718       | 0721     | 0724     |         |                         |               | 6            | B 3.3       | 1.1E-04                        |                  |                       |
| GOES    | 0738       | 0743     | 0750     | S09 E43 | 10875                   |               | 12           | B 5.0       | 2.9E-04                        | 1.0E+03          | 2.4E+03               |
| GOES    | 0815       | 0819     | 0823     | S08 E42 | 10875                   |               | 8            | B 3.0       | 1.3E-04                        | 1.0E+02          | 1.7E+02               |
| GOES    | 0826       | 0831     | 0838     | S07 E41 | 10875                   |               | 12           | B 8.3       | 4.5E-04                        | 2.1E+03          | 4.8E+03               |
| GOES    | 1005       | 1008     | 1010     |         |                         |               | 5            | B 3.0       | 7.8E-05                        |                  |                       |

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# X - R A Y S O L A R F L A R E S

APRIL 2006

| Sta  | Day | Start<br>(UT) | Max<br>(UT) | End<br>(UT) | Lat | CMD | NOAA/<br>USAF<br>Region | CMP<br>Mo | Day | Dur<br>(Min) | Imp<br>Xray | Total<br>Integrated<br>Flux(1) | Total<br>Area(2) | Total(3)<br>Intensity |
|------|-----|---------------|-------------|-------------|-----|-----|-------------------------|-----------|-----|--------------|-------------|--------------------------------|------------------|-----------------------|
| GOES | 26  | 1105          | 1111        | 1118        | S08 | E42 | 10875                   |           |     | 13           | B 4.4       | 2.8E-04                        | 1.1E+03          | 2.4E+03               |
| GOES |     | 1212          | 1226        | 1234        | S07 | E40 | 10875                   |           |     | 22           | C 1.2       | 9.6E-04                        | 2.6E+03          | 7.1E+03               |
| GOES |     | 1251          | 1254        | 1257        | S09 | E41 | 10875                   |           |     | 6            | B 3.7       | 1.2E-04                        | 4.8E+02          | 1.0E+03               |
| GOES |     | 1319          | 1329        | 1333        |     |     |                         |           |     | 14           | B 3.7       | 2.8E-04                        |                  |                       |
| GOES |     | 1342          | 1356        | 1405        | S08 | E40 | 10875                   |           |     | 23           | C 7.7       | 6.2E-03                        | 6.2E+03          | 3.7E+04               |
| GOES |     | 1432          | 1453        | 1458        | S08 | E39 | 10875                   |           |     | 26           | C 9.1       | 7.2E-03                        | 6.0E+03          | 3.6E+04               |
| GOES |     | 1651          | 1702        | 1710        | S08 | E38 | 10875                   |           |     | 19           | M 1.3       | 8.0E-03                        | 7.1E+03          | 4.9E+04               |
| GOES |     | 1817          | 1827        | 1832        | S09 | E39 | 10875                   |           |     | 15           | C 2.6       | 1.6E-03                        | 4.3E+03          | 1.7E+04               |
| GOES |     | 2051          | 2108        | 2117        | S07 | E35 | 10875                   |           |     | 26           | C 3.6       | 3.5E-03                        | 4.2E+03          | 1.8E+04               |
| GOES | 27  | 0344          | 0349        | 0404        | S07 | E31 | 10875                   |           |     | 20           | B 4.3       | 4.1E-04                        | 5.3E+02          | 9.7E+02               |
| GOES |     | 0431          | 0435        | 0437        | S09 | E33 | 10875                   |           |     | 6            | B 2.5       | 7.6E-05                        | 2.3E+02          | 4.7E+02               |
| GOES |     | 0450          | 0453        | 0456        | S09 | E32 | 10875                   |           |     | 6            | B 5.1       | 1.3E-04                        | 6.5E+02          | 1.7E+03               |
| GOES |     | 1222          | 1302        | 1315        |     |     |                         |           |     | 53           | B 4.9       | 9.5E-04                        |                  |                       |
| GOES |     | 1522          | 1552        | 1558        | S08 | E26 | 10875                   |           |     | 36           | M 7.9       | 3.7E-02                        | 1.4E+04          | 1.4E+05               |
| GOES | 28  | 0257          | 0301        | 0304        | S12 | E27 | 10875                   |           |     | 7            | B 2.9       | 9.9E-05                        | 3.0E+02          | 7.5E+02               |
| GOES |     | 0325          | 0341        | 0348        | S06 | E18 | 10875                   |           |     | 23           | B 5.0       | 5.6E-04                        | 1.1E+03          | 2.4E+03               |
| GOES |     | 0736          | 0747        | 0803        | S06 | E16 | 10875                   |           |     | 27           | B 4.0       | 5.2E-04                        | 8.3E+02          | 1.6E+03               |
| GOES |     | 0818          | 0826        | 0843        | S07 | E16 | 10875                   |           |     | 25           | C 1.9       | 2.0E-03                        | 2.7E+03          | 1.1E+04               |
| GOES |     | 2049          | 2053        | 2056        | N14 | E83 |                         |           |     | 7            | B 3.6       | 1.3E-04                        | 3.0E+02          | 6.4E+02               |
| GOES |     | 2323          | 2336        | 2352        | N16 | E90 |                         |           |     | 29           | C 2.3       | 2.8E-03                        | 2.2E+03          | 1.2E+04               |
| GOES | 29  | 0612          | 0616        | 0621        | N15 | E80 |                         |           |     | 9            | B 3.6       | 1.6E-04                        | 3.5E+02          | 6.9E+02               |
| GOES |     | 1615          | 1631        | 1645        | N16 | E81 |                         |           |     | 30           | C 2.3       | 2.7E-03                        | 2.5E+03          | 1.5E+04               |
| GOES |     | 1827          | 1852        | 1905        | S07 | W04 | 10875                   |           |     | 38           | C 1.1       | 2.1E-03                        | 3.5E+03          | 9.7E+03               |
| GOES |     | 2103          | 2140        | 2201        |     |     |                         |           |     | 58           | B 4.1       | 1.1E-03                        |                  |                       |
| GOES |     | 2232          | 2236        | 2239        | S16 | E18 | 10876                   |           |     | 7            | B 3.3       | 1.2E-04                        | 2.0E+02          | 3.6E+02               |
| GOES |     | 2314          | 2320        | 2326        | S06 | W07 | 10875                   |           |     | 12           | B 5.7       | 3.6E-04                        | 1.7E+03          | 4.0E+03               |
| GOES | 30  | 0133          | 0157        | 0207        | N16 | E74 |                         |           |     | 34           | C 5.3       | 6.4E-03                        | 3.4E+03          | 2.4E+04               |
| GOES |     | 0325          | 0332        | 0335        | S13 | W11 | 10875                   |           |     | 10           | B 3.5       | 1.9E-04                        | 2.3E+02          | 4.8E+02               |
| GOES |     | 0913          | 0932        | 0937        | S09 | E08 | 10876                   |           |     | 24           | C 1.8       | 1.9E-03                        | 2.3E+03          | 1.2E+04               |
| GOES |     | 2356          | 2401        | 2416        |     |     |                         |           |     | 20           | B 2.0       | 2.2E-04                        |                  |                       |

Note 1: Total integrated flux computed from the event start time to end if available (units=J/m\*2).

Note 2: Total area is derived from SXI imagery in units of squared arc seconds of the largest flaring area.

Note 3: Total intensity is derived from SXI imagery in units of data numbers/second of the largest flaring area.

=====

TABLE FORMAT CHANGE: Data are from the GOES full disk xray monitor supplemented with Solar Xray Imager (SXI) data since January, 2004. Positions, areas, and intensities are taken from SXI imagery using the largest flare event on the disk. Only the largest event is selected during multiple flares on the disk.



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

## Selected Fixed Frequency Events

31  
Apr 06

APRIL                      2006

| Day | Freq Sta  | Type  | Start<br>(UT) | Time of<br>Maximum<br>(UT) | Duration<br>(Min) | Flux Density              |      | Int | Remarks         |
|-----|-----------|-------|---------------|----------------------------|-------------------|---------------------------|------|-----|-----------------|
|     |           |       |               |                            |                   | Peak<br>(10 -22 W/m 2 Hz) | Mean |     |                 |
| 03  | 2695 SGMR | 8 S   | 1202.0        | 1202.0                     | U                 | 38.0                      |      |     | QL=4 ST=2 TYP=3 |
|     | 2695 SVTO | 8 S   | 1202.0        | 1202.0                     | U                 | 24.0                      |      |     | QL=4 ST=2 TYP=3 |
| 06  | 2695 SVTO | 4 S/F | 0529.0        | 0532.0                     | 3.0               | 60.0                      |      |     | QL=4 ST=2 TYP=3 |
|     | 2695 LEAR | 8 S   | 0531.0        | 0532.0                     | 1.0               | 65.0                      |      |     | QL=4 ST=3 TYP=3 |
|     | 8800 LEAR | 8 S   | 0531.0        | 0532.0                     | 1.0               | 96.0                      |      |     | QL=4 ST=2 TYP=3 |
|     | 8800 SVTO | 8 S   | 0531.0        | 0531.0                     | 1.0               | 77.0                      |      |     | QL=4 ST=2 TYP=3 |
|     | 8800 PALE | 8 S   | 2038.0        | 2038.0                     | U                 | 52.0                      |      |     | QL=4 ST=2 TYP=3 |
|     | 2695 PALE | 8 S   | 2038.0        | 2038.0                     | 1.0               | 100.0                     |      |     | QL=4 ST=2 TYP=3 |
|     | 2695 SGMR | 8 S   | 2038.0        | 2038.0                     | 1.0               | 99.0                      |      |     | QL=4 ST=2 TYP=3 |
|     | 8800 SGMR | 8 S   | 2038.0        | 2038.0                     | 1.0               | 53.0                      |      |     | QL=4 ST=2 TYP=3 |
| 11  | 2695 LEAR | 8 S   | 0438.0        | 0438.0                     | U                 | 69.0                      |      |     | QL=4 ST=3 TYP=3 |
| 27  | 8800 SVTO | 4 S/F | 1546.0        | 1547.0                     | 9.0               | 82.0                      |      |     | QL=4 ST=2 TYP=3 |
| 29  | 2695 SVTO | 4 S/F | 1621.0        | 1622.0                     | 9.0               | 80.0                      |      |     | QL=4 ST=2 TYP=3 |
|     | 2695 SGMR | 8 S   | 1622.0        | 1622.0                     | U                 | 55.0                      |      |     | QL=4 ST=3 TYP=3 |
| 30  | 2695 LEAR | 4 S/F | 0154.0        | 0156.0                     | 4.0               | 110.0                     |      |     | QL=4 ST=3 TYP=3 |
|     | 2695 PALE | 4 S/F | 0154.0        | 0156.0                     | 4.0               | 100.0                     |      |     | QL=4 ST=2 TYP=3 |

Reports are received routinely from the following observatories:

LEAR = Learmonth

PALE = Palehua

SGMR = Sagamore Hill

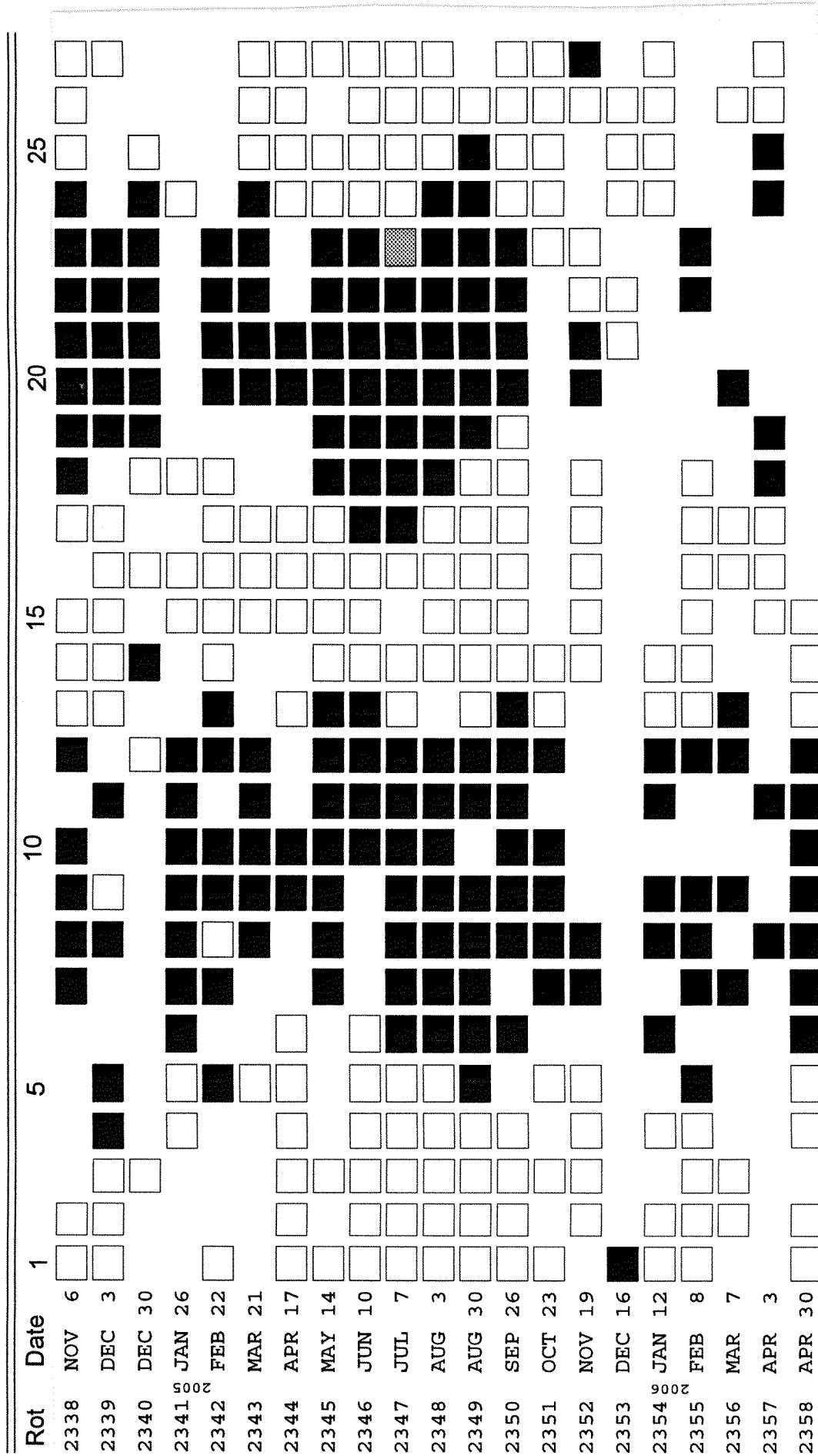
SVTO = San Vito

### 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 Precursor           | 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; and Hiraio, Japan 500 and 200 MHz.

# STANFORD MEAN SOLAR MAGNETIC FIELD



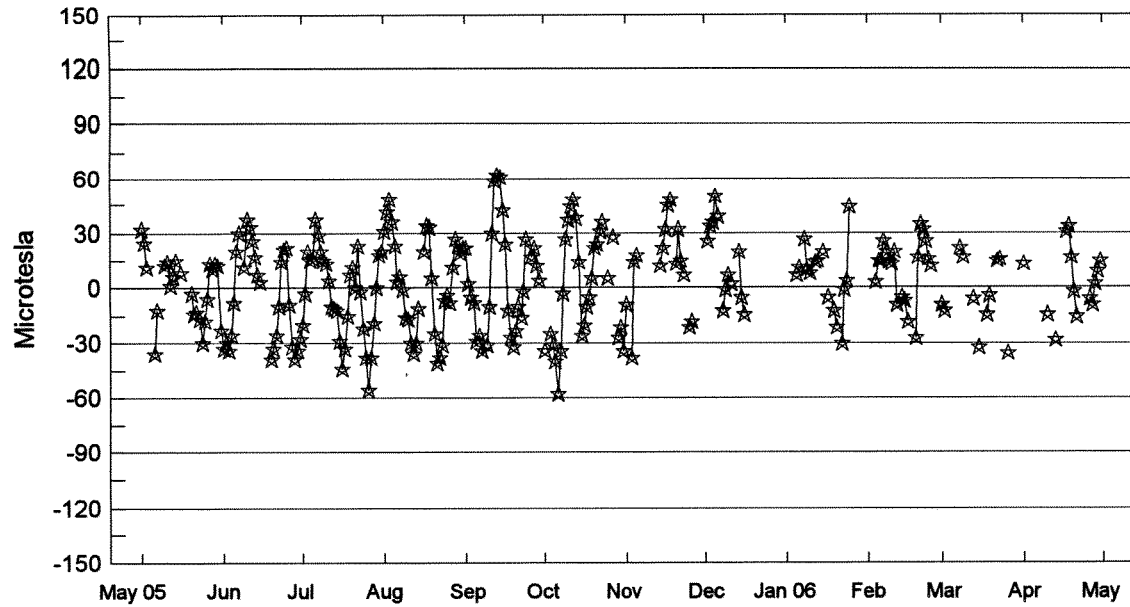
Mean Solar Magnetic Field Polarity: = field > 2 microT; = -2 microT ≤ field ≤ 2 microT

= field < -2 microT; No box = no data available

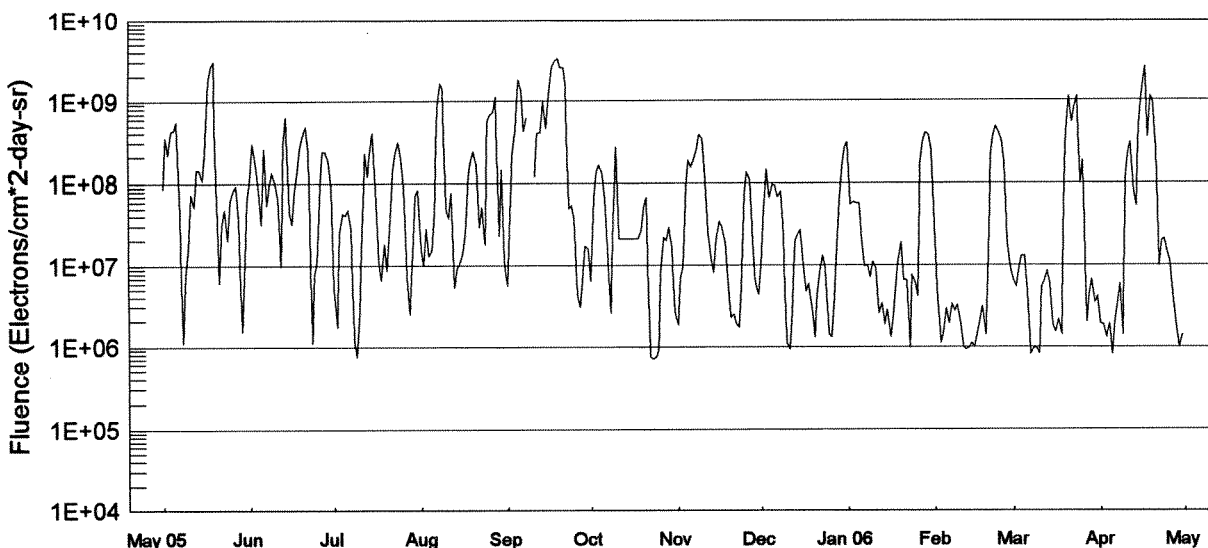
Observations are taken at 2000 UT. Rotation numbers given are the Bartels series, but the dates are not; these dates are five days earlier, to mark times of occurrence of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

# Stanford Mean Solar Magnetic Field (Microtesla) "Sun-As-A-Star"

33  
April 06



| Day | May 05 | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan 06 | Feb | Mar | Apr |
|-----|--------|-----|-----|-----|-----|-----|-----|-----|--------|-----|-----|-----|
| 1   | 32     | -33 | -20 | 31  | 22  | -34 | -9  | —   | —      | —   | -9  | 13  |
| 2   | 25     | -30 | -3  | 41  | 2   | —   | —   | 26  | —      | —   | -12 | —   |
| 3   | 11     | -34 | 20  | 48  | -5  | -25 | -38 | 34  | —      | —   | —   | —   |
| 4   | —      | -26 | 15  | 36  | -8  | -31 | 14  | 36  | —      | 3   | —   | —   |
| 5   | —      | -8  | 16  | 23  | -29 | -40 | 18  | 50  | 7      | 15  | —   | —   |
| 6   | -36    | 20  | 37  | 3   | -26 | -58 | —   | 39  | 11     | 15  | —   | —   |
| 7   | -12    | 30  | 29  | 6   | -34 | -34 | —   | —   | —      | 26  | —   | —   |
| 8   | —      | —   | 20  | -1  | —   | -3  | —   | -12 | 27     | 20  | 22  | —   |
| 9   | —      | 11  | 15  | -16 | -31 | 27  | —   | -1  | 10     | 14  | 17  | —   |
| 10  | 12     | 37  | 13  | -17 | -10 | 37  | —   | 7   | 8      | 13  | —   | -14 |
| 11  | 14     | 33  | 4   | -30 | 30  | 44  | —   | 2   | —      | 20  | —   | —   |
| 12  | 1      | 26  | -10 | -36 | 59  | 48  | —   | —   | 14     | -9  | —   | —   |
| 13  | 6      | 17  | -11 | -30 | 62  | 38  | —   | —   | 15     | —   | -6  | -28 |
| 14  | 15     | 7   | -12 | -11 | 61  | 14  | 12  | 20  | —      | -5  | —   | —   |
| 15  | —      | 3   | -29 | —   | 42  | -26 | 22  | -5  | 20     | -7  | -32 | —   |
| 16  | 8      | —   | -44 | 20  | 24  | -20 | 32  | -14 | —      | -18 | —   | —   |
| 17  | —      | —   | -33 | 34  | -12 | -10 | 45  | —   | -5     | —   | —   | 31  |
| 18  | —      | —   | -15 | 33  | -27 | -5  | 48  | —   | —      | —   | -14 | 34  |
| 19  | —      | -39 | 7   | 5   | -32 | 5   | —   | —   | -12    | -27 | -4  | 17  |
| 20  | -3     | -33 | 11  | -25 | -23 | 22  | 13  | —   | -21    | 17  | —   | -2  |
| 21  | -14    | -26 | —   | -41 | -10 | 24  | 32  | —   | —      | 35  | —   | -15 |
| 22  | -13    | -10 | 23  | -38 | -16 | 31  | 15  | —   | -30    | 32  | 15  | —   |
| 23  | -17    | 14  | -2  | -31 | -2  | 36  | 7   | —   | -1     | 26  | 16  | —   |
| 24  | -30    | 21  | -22 | -7  | 27  | —   | —   | —   | 4      | 16  | —   | —   |
| 25  | -18    | 22  | -38 | -4  | —   | 5   | -21 | —   | 44     | 12  | —   | —   |
| 26  | -6     | -9  | -56 | -8  | 17  | —   | -18 | —   | —      | —   | -35 | -6  |
| 27  | 13     | -32 | -38 | 11  | 22  | 28  | —   | —   | —      | —   | —   | -9  |
| 28  | 10     | -39 | -19 | 27  | 12  | —   | —   | —   | —      | —   | —   | 2   |
| 29  | 13     | -34 | 0   | 23  | 4   | -27 | —   | —   | —      | —   | —   | 9   |
| 30  | 12     | -28 | 18  | 19  | —   | -21 | —   | —   | —      | —   | —   | 15  |
| 31  | -23    | —   | 20  | 22  | —   | -34 | —   | —   | —      | —   | —   | —   |

GOES Daily Electron Fluence  
May 2005 - Apr 2006

| Day | May 05  | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     | Jan 06  | Feb     | Mar     | Apr     |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1   | 8.8E+07 | 1.2E+08 | 5.2E+06 | 1.6E+07 | 5.7E+06 | 6.5E+06 | 1.8E+06 | 1.0E+07 | 3.0E+08 | 3.1E+07 | 6.9E+06 | 1.9E+06 |
| 2   | 3.5E+08 | 2.9E+08 | 1.7E+06 | 1.0E+07 | 4.3E+07 | 6.7E+07 | 7.1E+06 | 4.9E+07 | 5.6E+07 | 3.6E+06 | 5.6E+06 | 1.8E+06 |
| 3   | 2.1E+08 | 1.6E+08 | 2.6E+07 | 2.8E+07 | 2.1E+08 | 1.3E+08 | 9.4E+06 | 1.4E+08 | 6.1E+07 | 1.1E+06 | 9.1E+06 | 1.3E+06 |
| 4   | 4.2E+08 | 8.4E+07 | 4.3E+07 | 1.3E+07 | 4.3E+08 | 1.6E+08 | 9.3E+07 | 6.9E+07 | 5.9E+07 | 1.5E+06 | 1.3E+07 | 1.9E+06 |
| 5   | 4.3E+08 | 3.2E+07 | 4.1E+07 | 1.5E+07 | 1.8E+09 | 1.3E+08 | 1.8E+08 | 9.6E+07 | 5.8E+07 | 2.9E+06 | 1.3E+07 | 8.2E+05 |
| 6   | 5.5E+08 | 2.5E+08 | 4.8E+07 | 4.6E+07 | 1.3E+09 | 6.8E+07 | 1.5E+08 | 9.3E+07 | 1.9E+07 | 1.9E+06 | 5.0E+06 | 1.9E+06 |
| 7   | 4.1E+07 | 5.5E+07 | 2.8E+07 | 8.8E+08 | 4.2E+08 | 1.6E+07 | 1.8E+08 | 7.0E+07 | 9.9E+06 | 3.3E+06 | 8.2E+05 | 3.1E+06 |
| 8   | 1.1E+06 | 9.5E+07 | 1.2E+06 | 1.6E+09 | 6.3E+08 | 2.5E+06 | 2.4E+08 | 8.1E+07 | 1.0E+07 | 2.7E+06 | 9.6E+05 | 6.0E+06 |
| 9   | 7.7E+06 | 1.3E+08 | 7.4E+05 | 1.4E+09 | -999    | 3.8E+07 | 3.8E+08 | 2.3E+07 | 7.3E+06 | 3.2E+06 | 9.8E+05 | 1.4E+06 |
| 10  | 1.6E+07 | 1.0E+08 | 2.7E+06 | 4.9E+07 | -999    | 2.6E+08 | 3.4E+08 | 1.1E+06 | 1.1E+07 | 2.1E+06 | 8.3E+05 | 1.1E+08 |
| 11  | 7.3E+07 | 6.9E+07 | 2.6E+07 | 3.8E+07 | 1.2E+08 | 2.1E+07 | 1.1E+08 | 9.4E+05 | 9.3E+06 | 1.0E+06 | 5.5E+06 | 2.1E+08 |
| 12  | 5.3E+07 | 9.9E+06 | 2.2E+08 | 7.8E+07 | 4.0E+08 | 2.1E+07 | 2.6E+07 | 2.6E+06 | 2.5E+06 | 9.2E+05 | 6.3E+06 | 3.0E+08 |
| 13  | 1.4E+08 | 2.8E+08 | 1.2E+08 | 5.4E+06 | 4.1E+08 | 2.1E+07 | 1.2E+07 | 2.0E+07 | 3.4E+06 | 1.0E+06 | 8.5E+06 | 8.1E+07 |
| 14  | 1.4E+08 | 6.4E+08 | 2.4E+08 | 9.0E+06 | 9.8E+08 | 2.1E+07 | 8.3E+06 | 2.4E+07 | 1.8E+06 | 1.1E+06 | 6.2E+06 | 5.5E+07 |
| 15  | 1.1E+08 | 4.5E+07 | 4.0E+08 | 1.1E+07 | 4.6E+08 | 2.1E+07 | 2.1E+07 | 2.7E+07 | 2.8E+06 | 1.0E+06 | 1.8E+06 | 5.0E+08 |
| 16  | 2.2E+08 | 3.2E+07 | 5.9E+07 | 1.4E+07 | 1.2E+09 | 2.1E+07 | 3.4E+07 | 1.2E+07 | 1.3E+06 | 1.5E+06 | 1.5E+06 | 1.5E+09 |
| 17  | 1.8E+09 | 8.0E+07 | 1.1E+07 | 2.4E+07 | 2.6E+09 | 2.1E+07 | 2.9E+07 | 4.8E+06 | 2.2E+06 | 2.1E+06 | 2.1E+06 | 2.7E+09 |
| 18  | 2.7E+09 | 1.4E+08 | 6.6E+06 | 1.2E+08 | 3.1E+09 | 2.1E+07 | 1.9E+07 | 6.0E+06 | 5.0E+06 | 3.1E+06 | 1.4E+06 | 3.6E+08 |
| 19  | 3.0E+09 | 2.6E+08 | 1.8E+07 | 1.8E+08 | 3.3E+09 | 2.7E+07 | 7.1E+06 | 2.9E+06 | 1.1E+07 | 1.4E+06 | 6.1E+07 | 1.1E+09 |
| 20  | 1.0E+08 | 3.9E+08 | 8.7E+06 | 2.3E+08 | 2.6E+09 | 5.4E+07 | 2.2E+06 | 1.3E+06 | 1.9E+07 | 7.6E+06 | 4.1E+08 | 9.3E+08 |
| 21  | 6.2E+06 | 4.8E+08 | 3.9E+07 | 1.6E+08 | 2.6E+09 | 6.8E+07 | 2.4E+06 | 4.4E+06 | 6.8E+06 | 2.0E+08 | 1.1E+09 | 2.5E+08 |
| 22  | 3.2E+07 | 2.4E+08 | 1.3E+08 | 2.9E+07 | 1.5E+09 | 7.6E+05 | 1.8E+06 | 8.9E+06 | 6.6E+06 | 3.7E+08 | 5.5E+08 | 9.9E+06 |
| 23  | 4.8E+07 | 1.1E+06 | 2.1E+08 | 5.2E+07 | 5.0E+07 | 7.1E+05 | 1.7E+06 | 1.3E+07 | 9.8E+05 | 4.9E+08 | 8.5E+08 | 2.0E+07 |
| 24  | 2.0E+07 | 7.7E+06 | 3.0E+08 | 1.8E+07 | 5.5E+07 | 7.3E+05 | 5.4E+06 | 9.3E+06 | 7.7E+06 | 4.0E+08 | 1.1E+09 | 2.1E+07 |
| 25  | 6.3E+07 | 1.1E+07 | 2.0E+08 | 5.7E+08 | 3.7E+07 | 9.0E+05 | 7.3E+07 | 1.4E+06 | 6.4E+06 | 3.3E+08 | 1.0E+08 | 1.4E+07 |
| 26  | 8.3E+07 | 9.7E+07 | 9.2E+07 | 6.8E+08 | 4.3E+06 | 8.0E+06 | 1.3E+08 | 1.3E+06 | 4.2E+06 | 1.7E+08 | 1.8E+08 | 1.1E+07 |
| 27  | 9.3E+07 | 2.3E+08 | 7.6E+06 | 7.3E+08 | 3.0E+06 | 2.2E+07 | 1.1E+08 | 3.9E+06 | 1.6E+08 | 1.9E+07 | 2.0E+06 | 3.7E+06 |
| 28  | 3.6E+07 | 2.3E+08 | 2.4E+06 | 1.1E+09 | 6.5E+06 | 2.0E+07 | 1.9E+07 | 1.7E+07 | 3.2E+08 | 9.4E+06 | 4.5E+06 | 1.7E+06 |
| 29  | 1.5E+06 | 1.8E+08 | 1.4E+07 | 2.3E+07 | 1.7E+07 | 2.9E+07 | 6.2E+06 | 6.3E+07 | 4.1E+08 |         | 6.8E+06 | 1.0E+06 |
| 30  | 6.8E+06 | 9.1E+07 | 7.2E+07 | 1.4E+08 | 1.6E+07 | 1.6E+07 | 4.4E+06 | 1.6E+08 | 3.8E+08 |         | 3.5E+06 | 1.4E+06 |
| 31  | 6.2E+07 |         | 8.4E+07 | 1.1E+07 |         | 2.5E+06 |         | 2.6E+08 | 2.4E+08 |         | 4.2E+06 |         |

NOTE: The electron detector responds significantly to protons above 32 MeV; therefore, electron data are contaminated when a proton event is in progress. These days are indicated with '-999' in the table and are not plotted. '-' indicates data not available.

NOTE: GOES9 data began April, 1996 and ended on 26 July, 1998. GOES12 is primary satellite as of 15 May 2003.

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Prompt Reports

Number 741 Part I

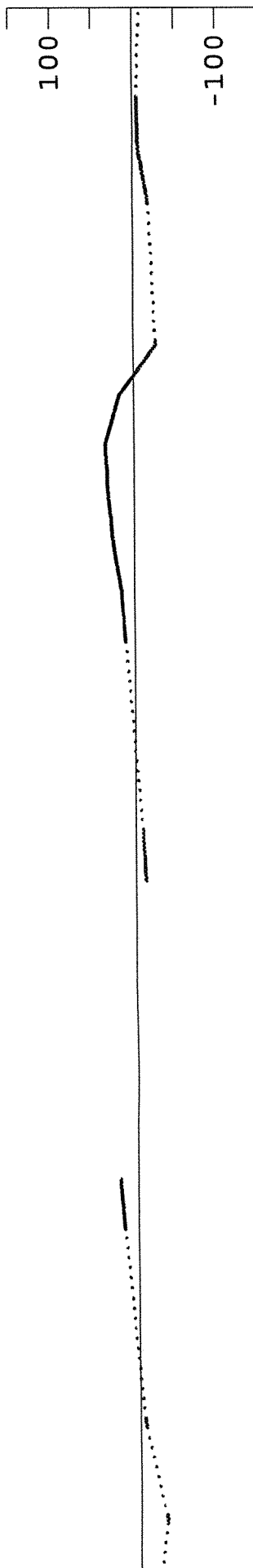
## DATA FOR MARCH 2006

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| Provisional Values of Hourly Equatorial Dst .....                             | 98     |
| Polar Cap (PC) Geomagnetic Index Plot of 15-min values – Thule .....          | 99     |
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| Principal Magnetic Storms .....                                               | 100    |
| Sudden Commencements/Solar Flare Effects .....                                | 101    |

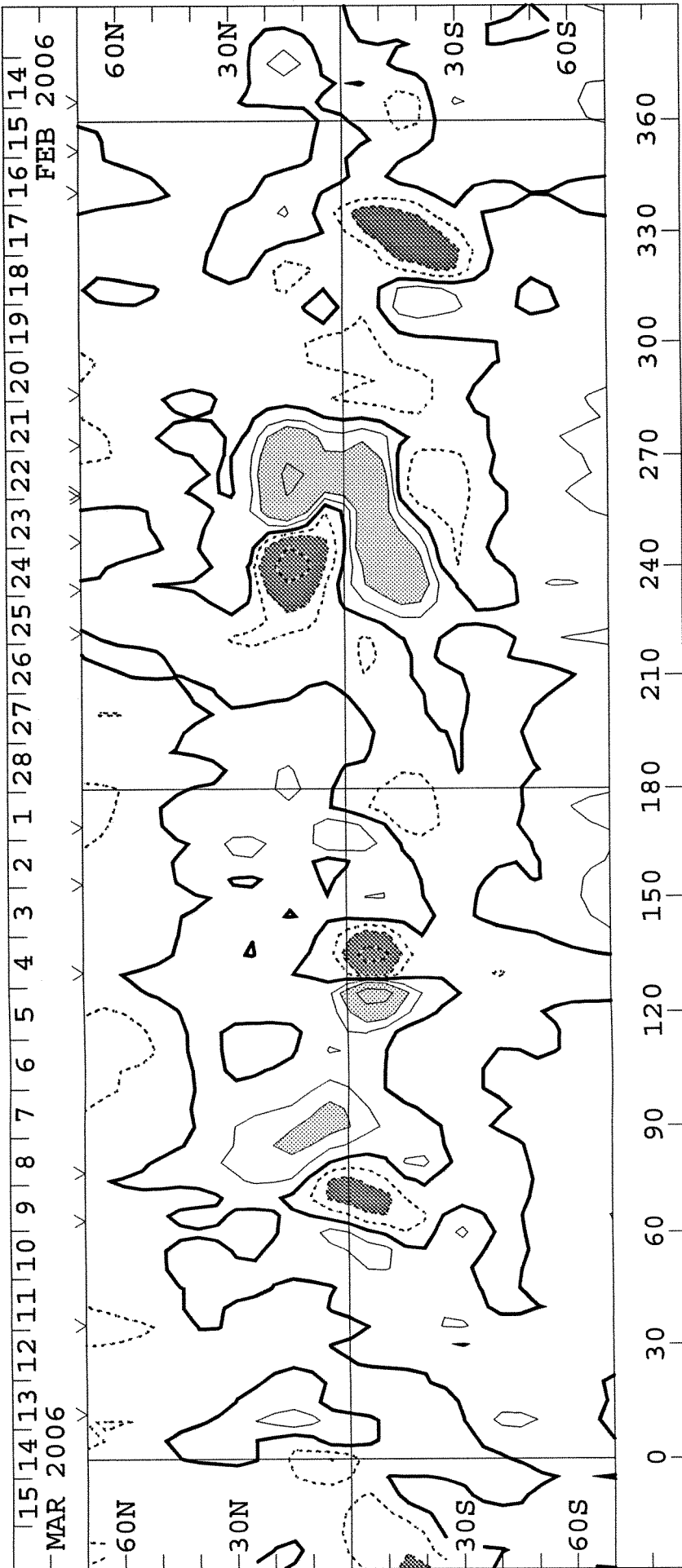
SOLAR MAGNETIC FIELD SYNOPTIC CHART  
CARRINGTON ROTATION NUMBER 2040  
(15 February to 14 March 2006)

WILCOX SOLAR OBSERVATORY

Mean Field



WSO - Photospheric Magnetic Field 0, +100, 200, 500, 1000, 2000 MicroTesla



# SOLAR MAGNETIC FIELD SYNOPSIS CHART

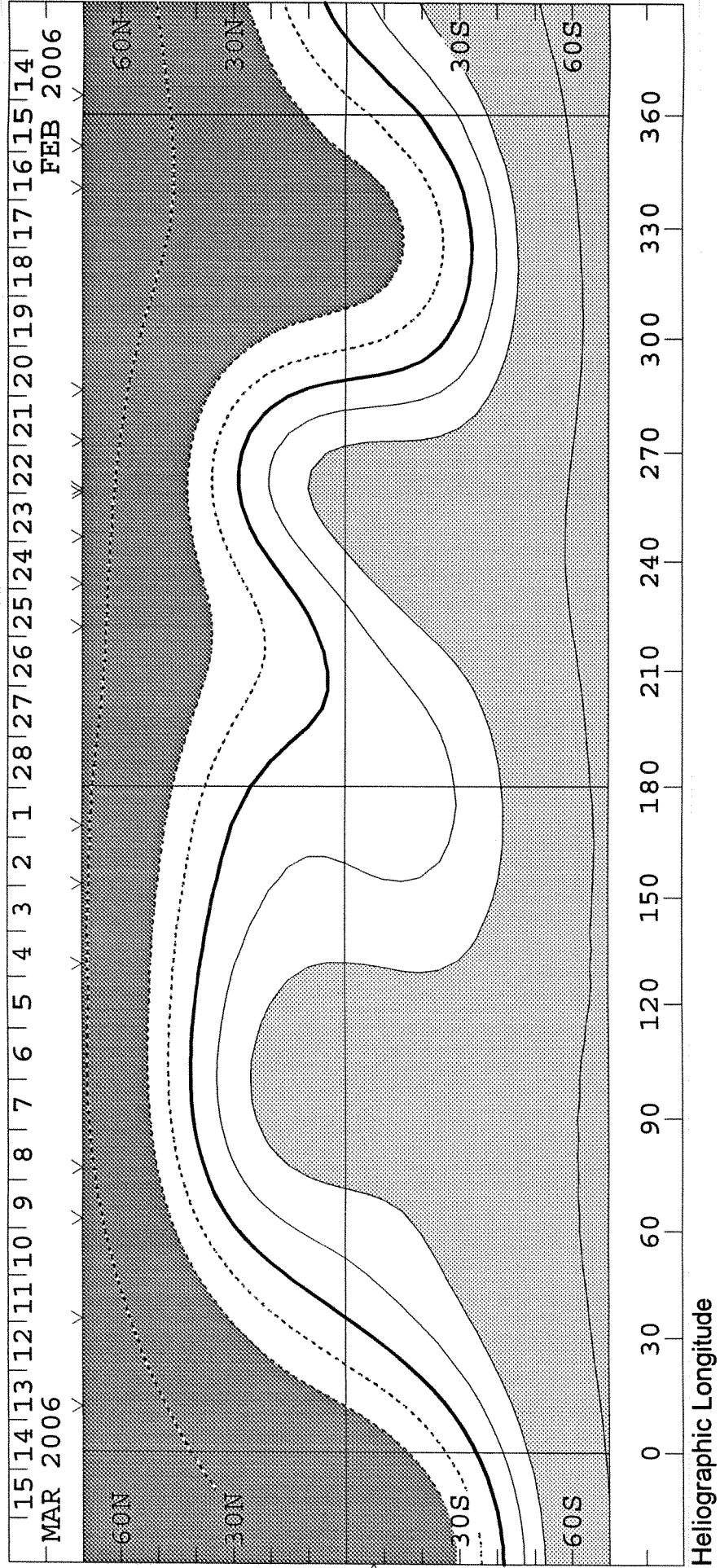
## SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 2040

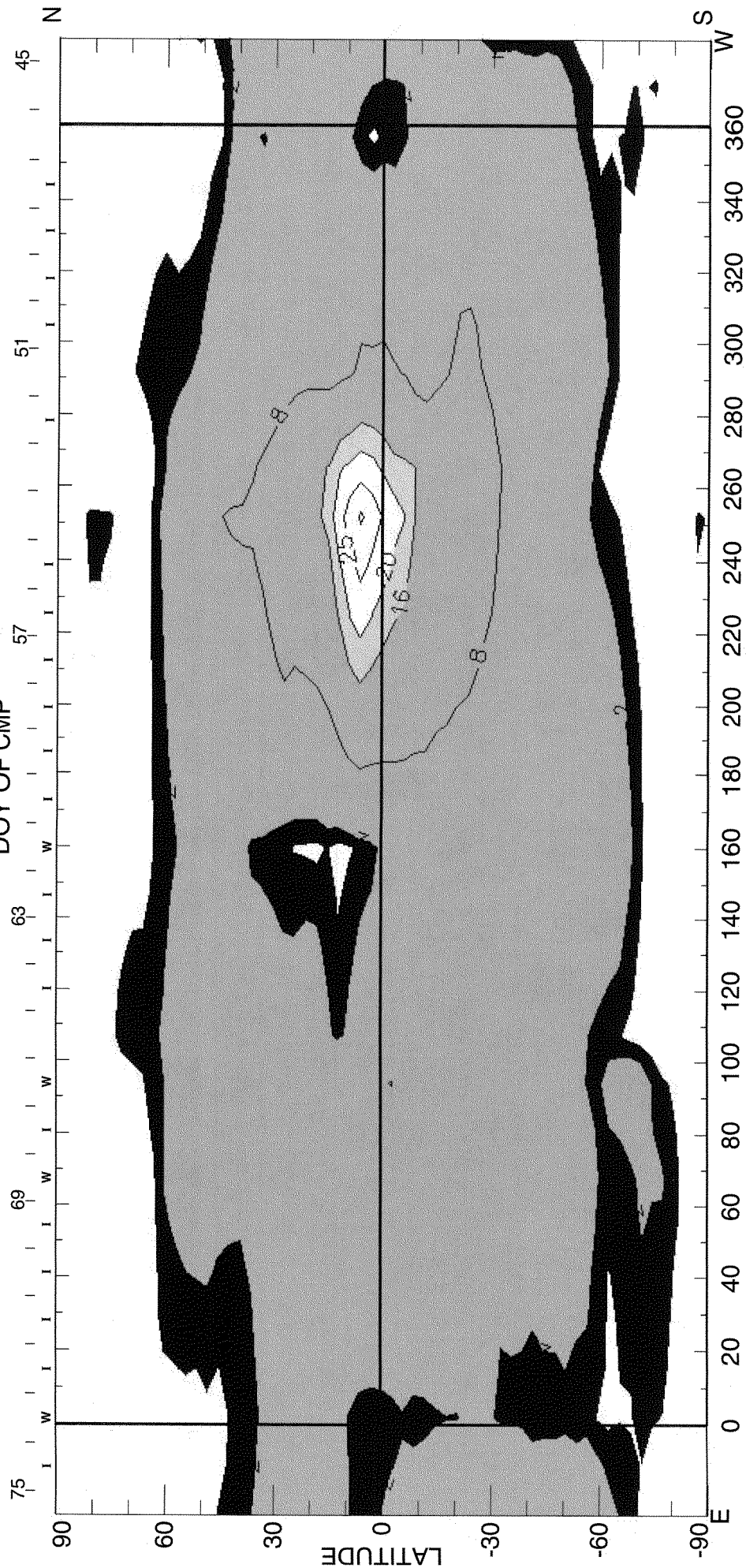
(15 February to 14 March 2006)

Wilcox Solar Observatory

0, +1, 2, 5, 10, 20 microTesla



CARRINGTON ROTATION NUMBER 2040 ; NSO/SACRAMENTO PEAK FE XIV @  $R = 1.15R_{\odot}$   
DOY OF CMP

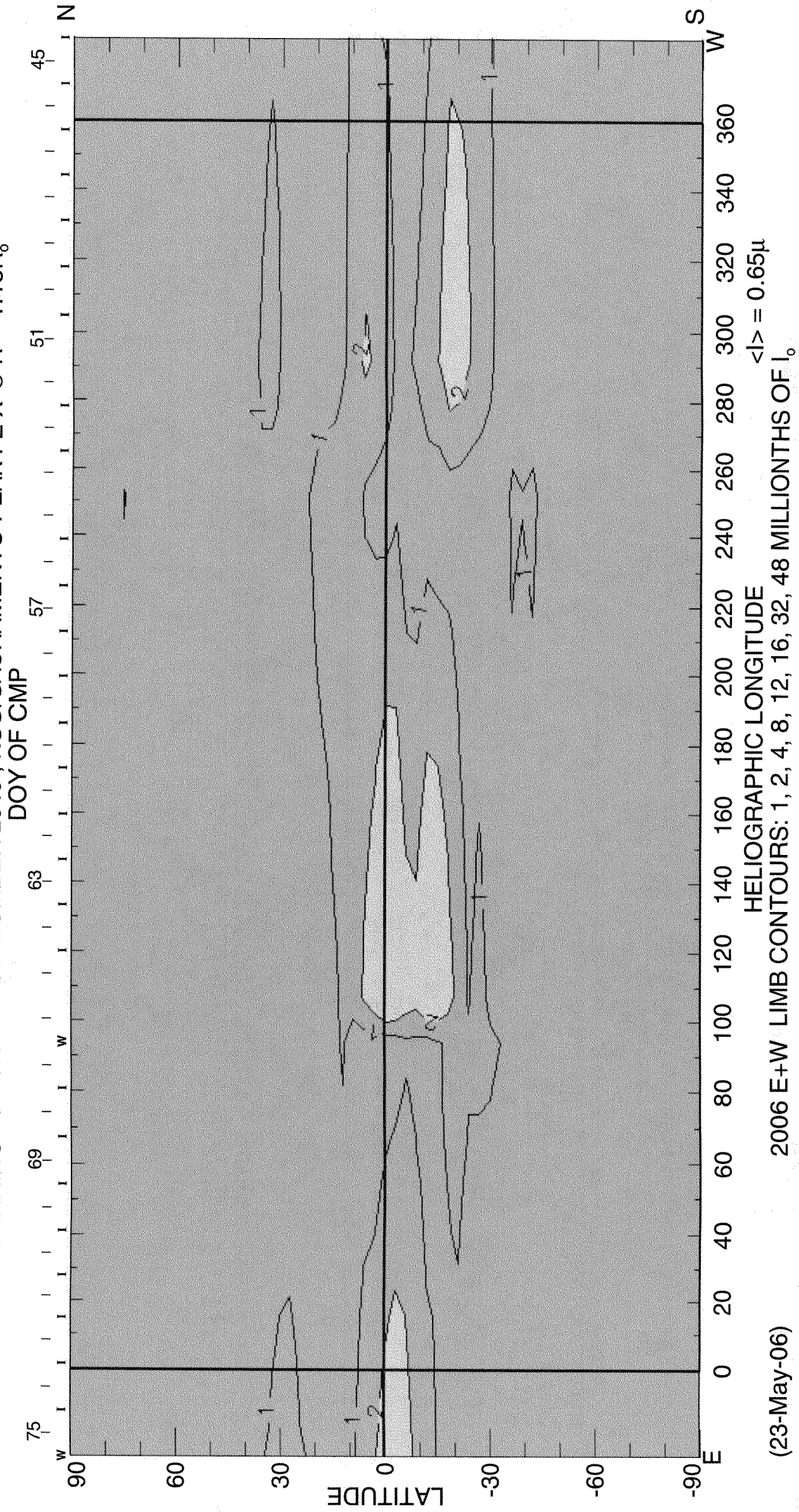


(03-May-06) 2006 E+W LIMB CONTOURS: 1, 2, 8, 16, 20, 25, 30, 35, 40, 100, 120 MILLIONTHS OF  $I_0$   
Heliographic Longitude  
CORONAL HOLES ARE SHOWN AS WHITE BORDERED BY BLACK

CAUTION -- ONLY 9 DAYS OF DATA AVAILABLE DUE TO WEATHER.  
Please use this synoptic chart with extreme caution.



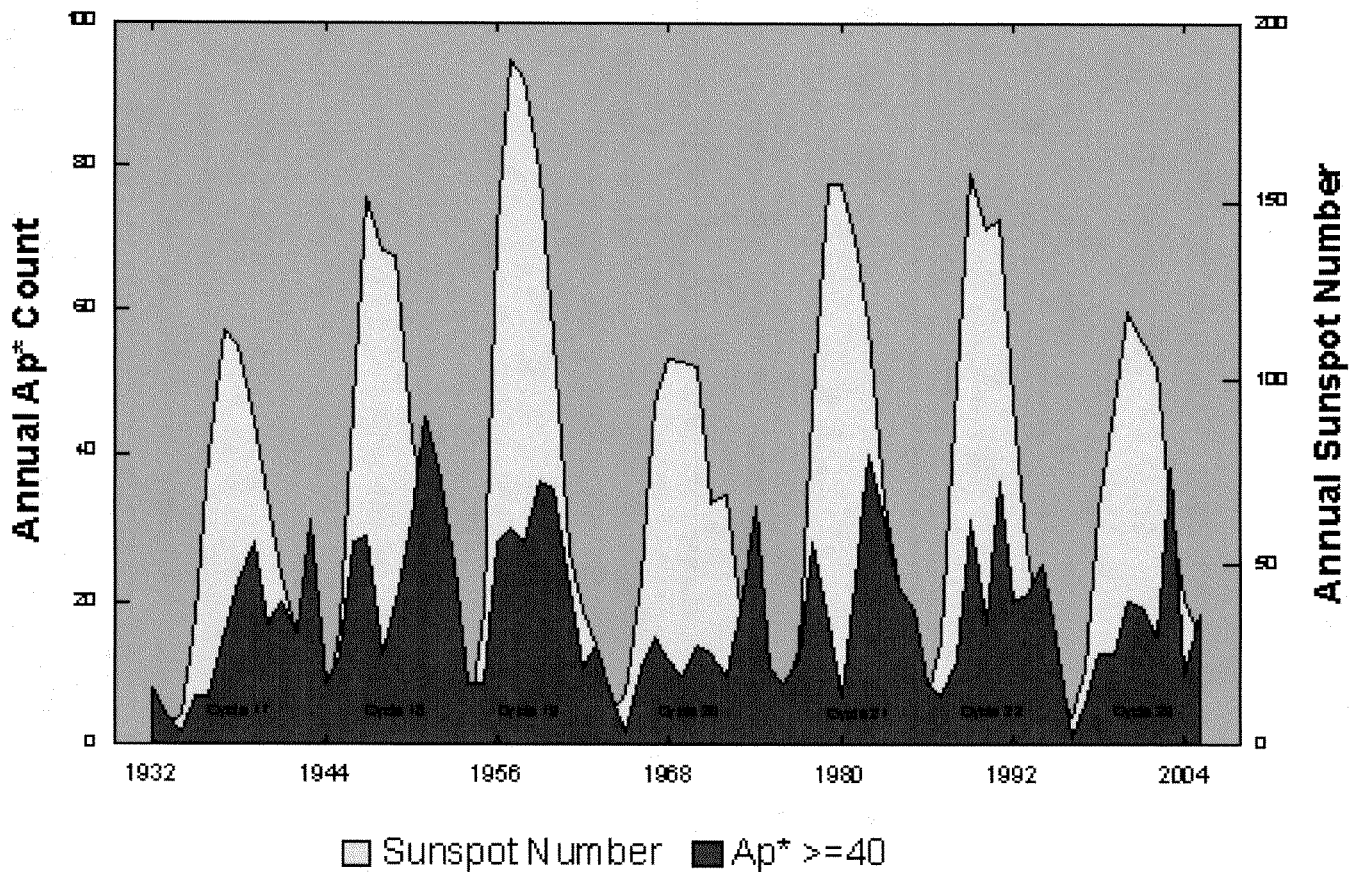
CARRINGTON ROTATION NUMBER 2040 ; NSO/SACRAMENTO PEAK FE X @ R = 1.15R<sub>o</sub>



Please note there is no synoptic chart for the Sacramento Peak CaXV wavelength for Carrington Rotation 2040. There was insufficient data (4 days only) due to bad weather during this time.

A filler page is used for this page. It shows a graph of the annual sunspot numbers and the geomagnetic storm days when Ap was greater than or equal to 40 for the time period 1932-2005. Joe H. Allen compiles these data from his ApStar calculations (listing of large geomagnetic storms). For more information, please visit [ftp://ftp.ngdc.noaa.gov/STP/GEOMAGNETIC\\_DATA/APSTAR](ftp://ftp.ngdc.noaa.gov/STP/GEOMAGNETIC_DATA/APSTAR).

## Annual Sunspot Number and $A_p^* \geq 40$ 1932-2005



**SOLAR MAGNETIC FIELD SYNOPTIC CHART**  
**CARRINGTON ROTATION NUMBER 2040**  
**(15 February to 14 March 2006)**

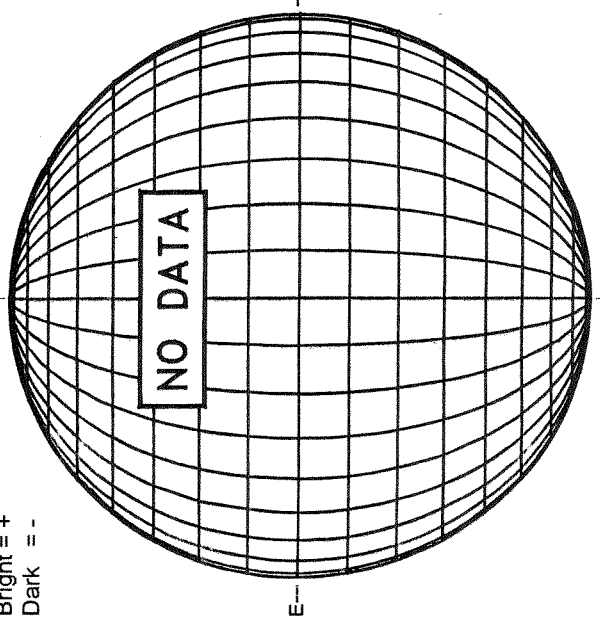
National Solar Observatory/Kitt Peak

NO DATA AVAILABLE mid-February through mid-April 2006

MARCH 1, 2006 ( P= -21.49, Bo = -7.22, Lo = 179.37)

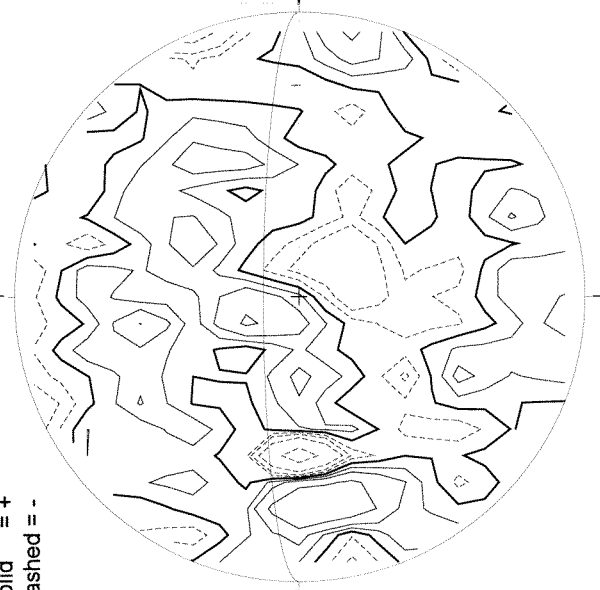
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



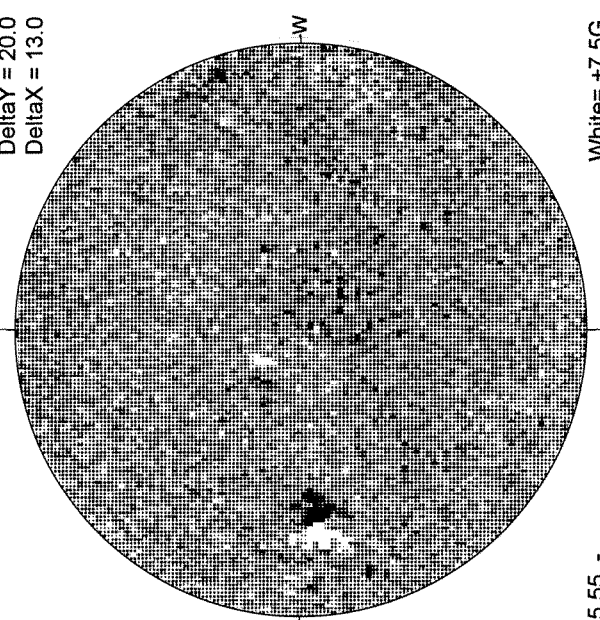
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

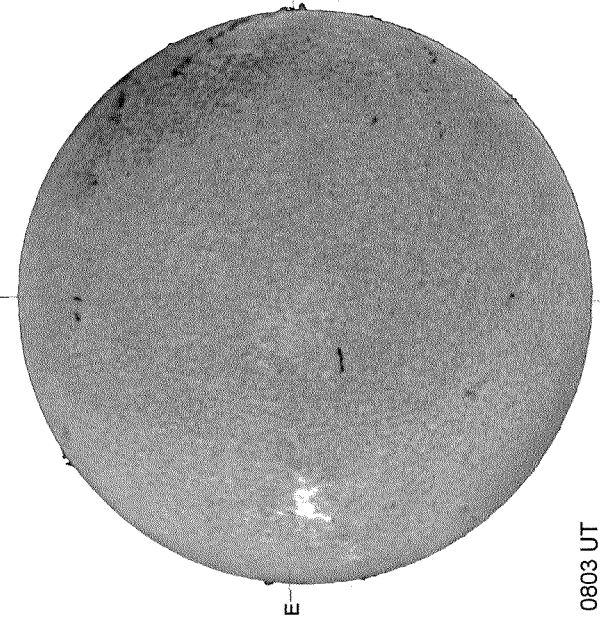
DeltaY = 20.0  
DeltaX = 13.0



15.55 -  
15.97 UT

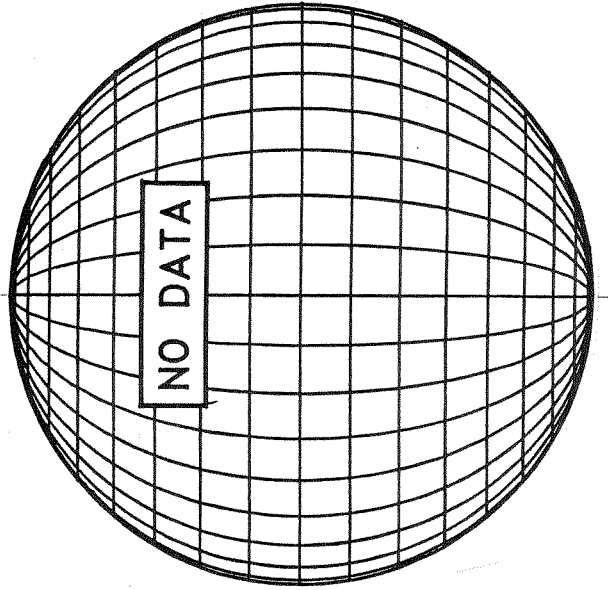
White= +7.5G  
Black = -7.5G

KANZELHOHE H-ALPHA

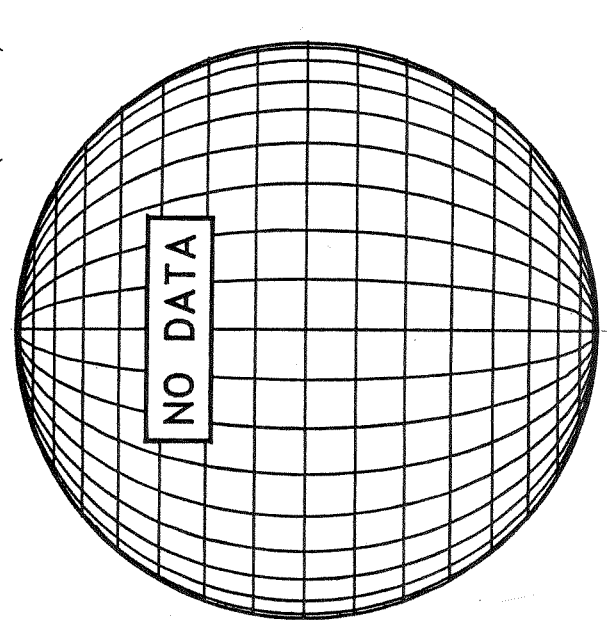


0803 UT

SAN VITO SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)----



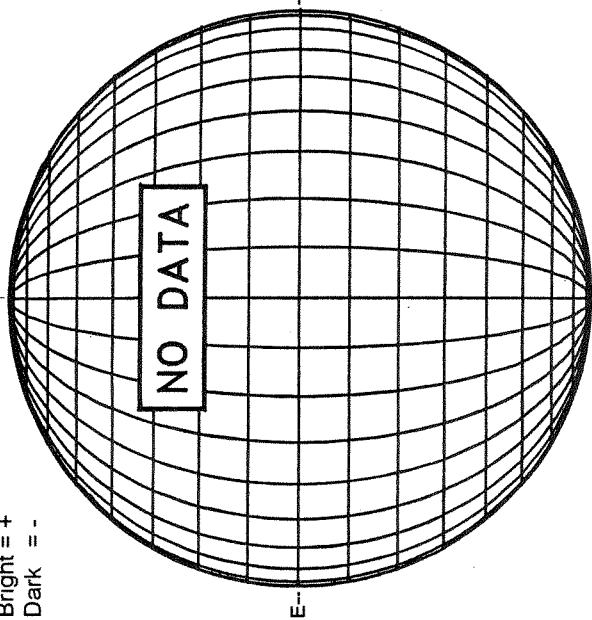


MARCH 2, 2006 ( P= -21.74, Bo = -7.23, Lo = 166.20)

KITT PEAK MAGNETOGRAM--SOLIS

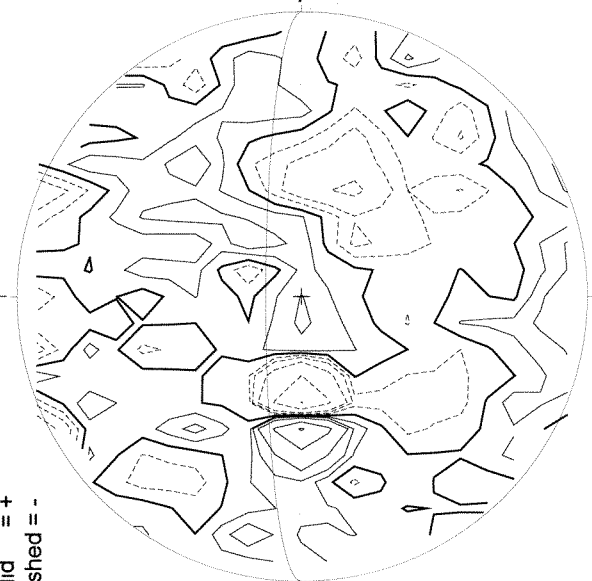
\*\*854.2 nm\*\*

Bright = +  
Dark = -



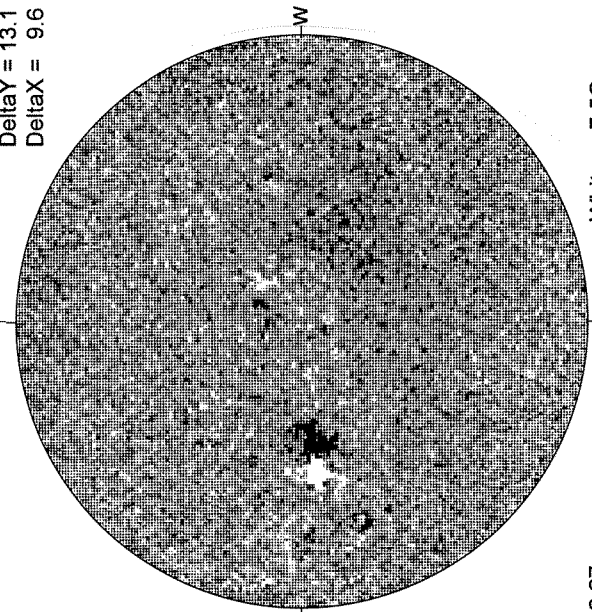
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

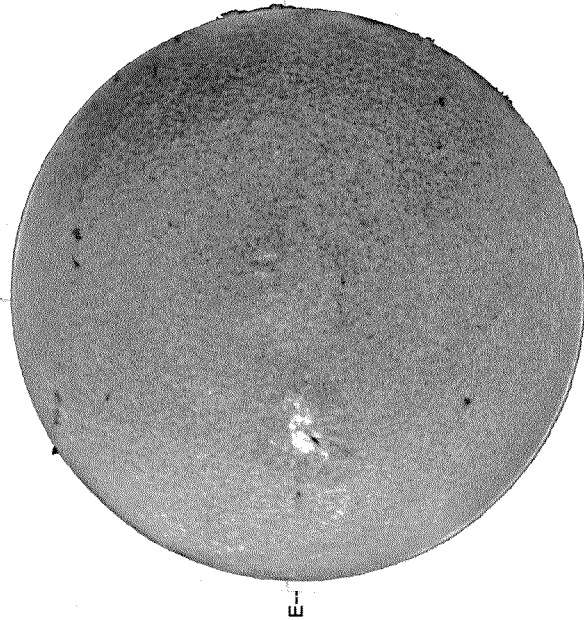
DeltaY = 13.1  
DeltaX = 9.6



16.27 -  
17.24 UT

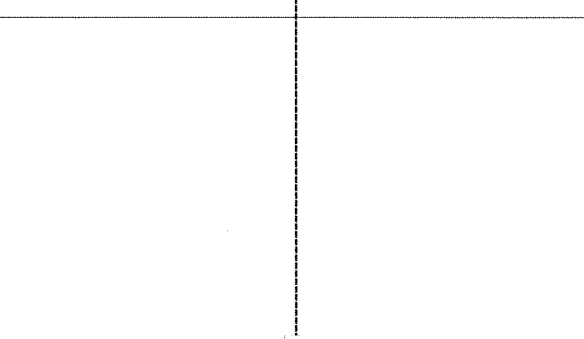
White= +7.5G  
Black = -7.5G

KANZELHOHE H-ALPHA



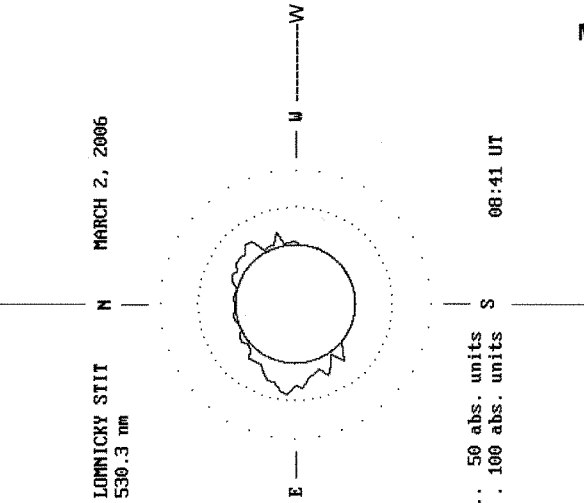
1538 UT

SAN VITO SUNSPOTS



0823 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



LOMNICKY STIT  
530.3 nm

... 50 abs. units  
... 100 abs. units

08:41 UT

MARCH 3, 2006 ( P= -21.99, Bo = -7.24, Lo = 153.03)

KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -

Solid = +  
Dashed = -

STANFORD MAGNETOGRAM

MT. WILSON MAGNETOGRAM

Delta Y =  
Delta X =

White= +7.5G  
Black = -7.5G

KANZELHOHE H-ALPHA

SAN VITO SUNSPOTS

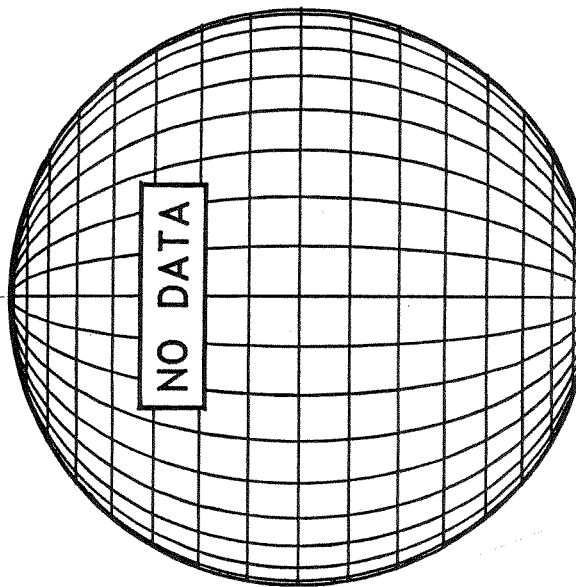
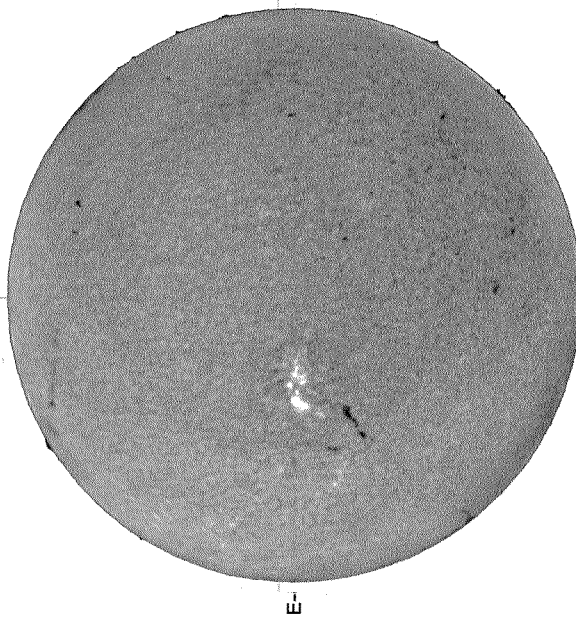
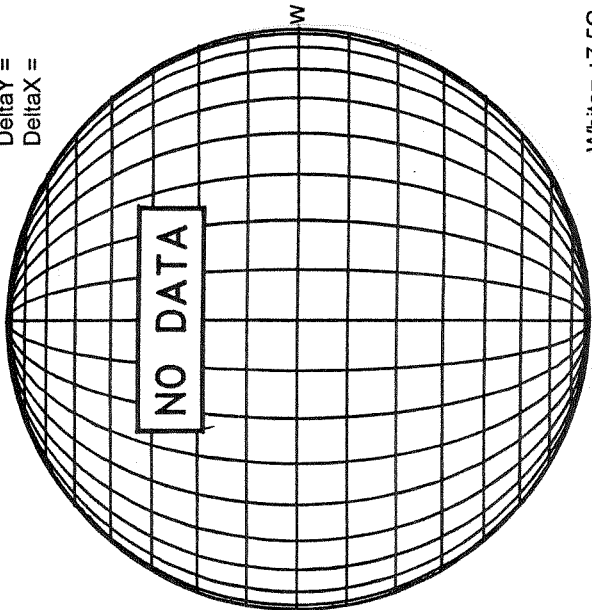
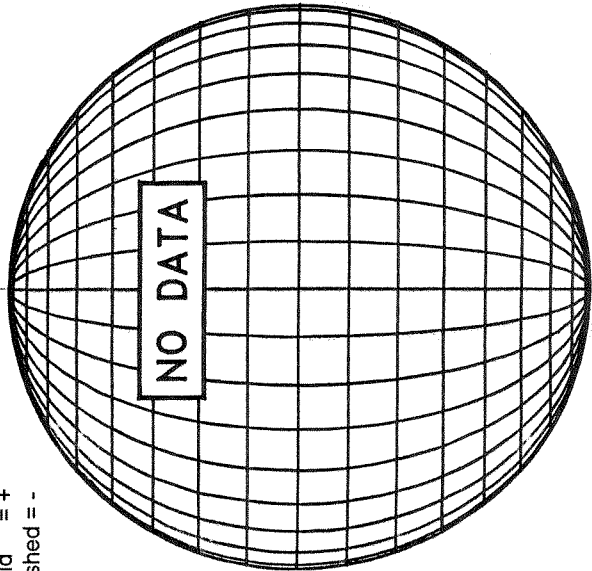
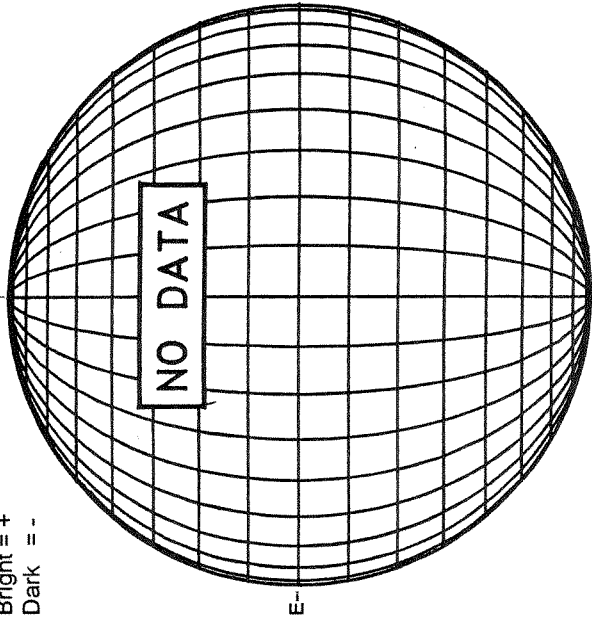
SACRAMENTO PEAK CORONA (1.15 Radii)----

0810 UT

0712 UT LOMN Prom S

S

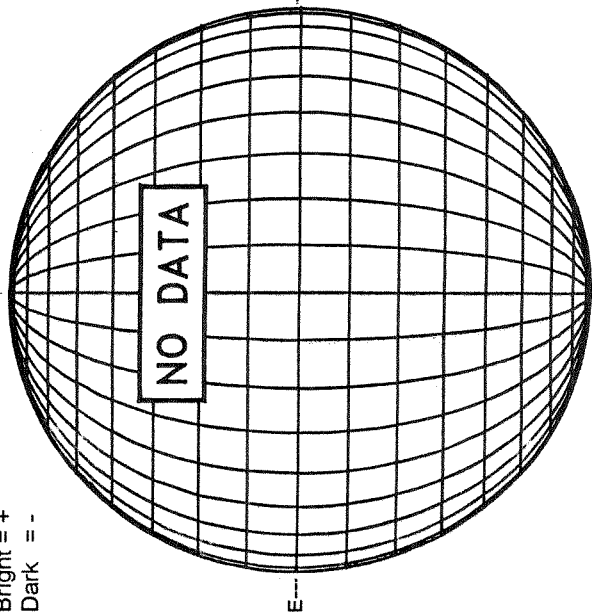
S



MARCH 4, 2006 ( P= -22.22, Bo = -7.24, Lo = 139.86)

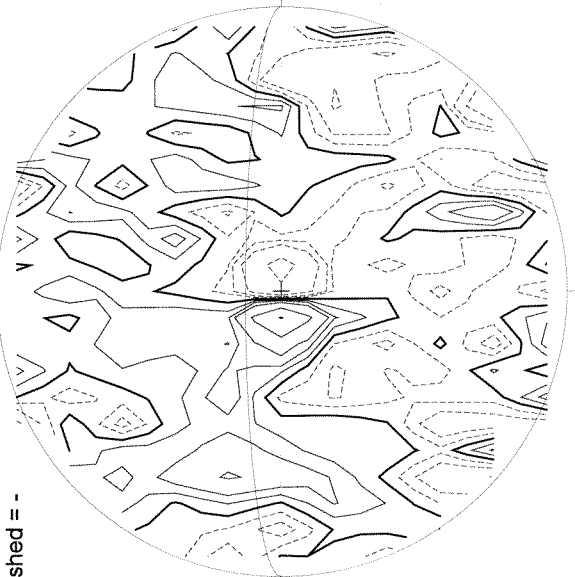
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



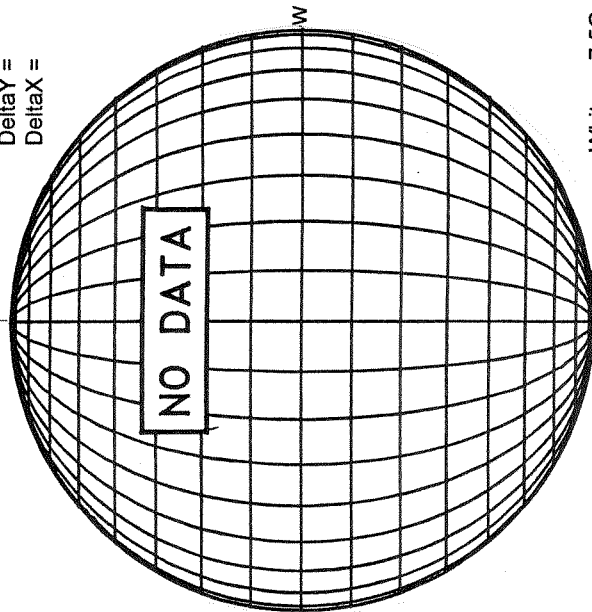
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



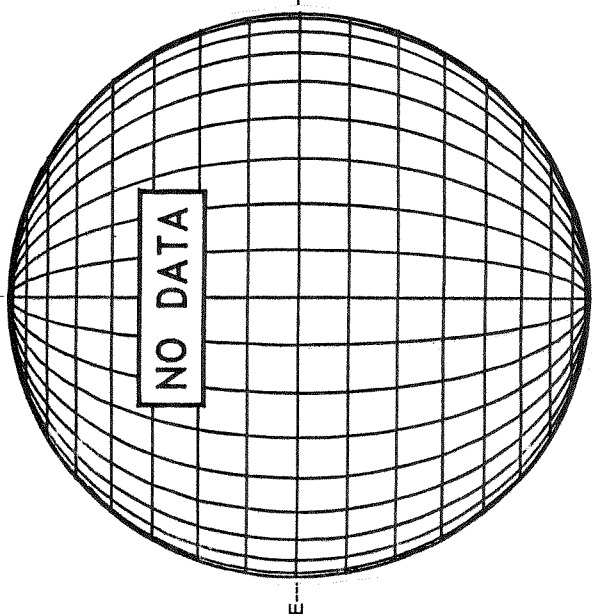
MT. WILSON MAGNETOGRAM

DeltaY =  
DeltaX =



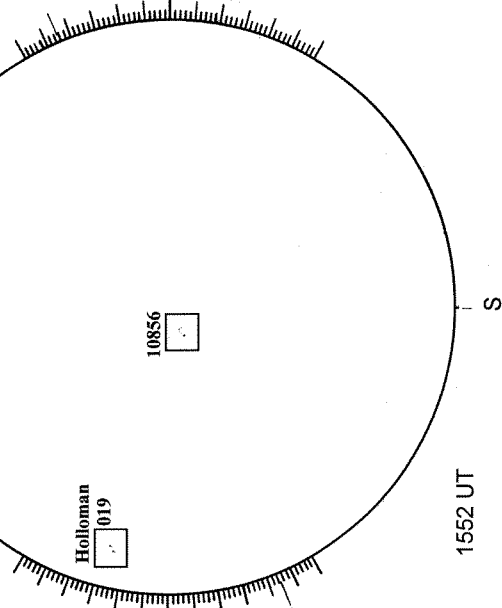
White= +7.5G  
Black = -7.5G

KANZELHOHE H-ALPHA

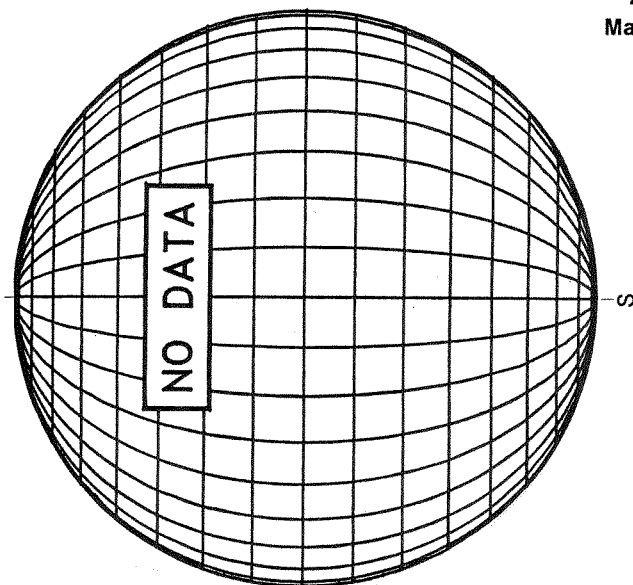


HOLLOMAN SUNSPOTS

HOLLOMAN SUNSPOTS  
March 4, 2006  
1552 UT, Good  
Bp = -7.2  
Po = -22.3  
Lo = 131.4



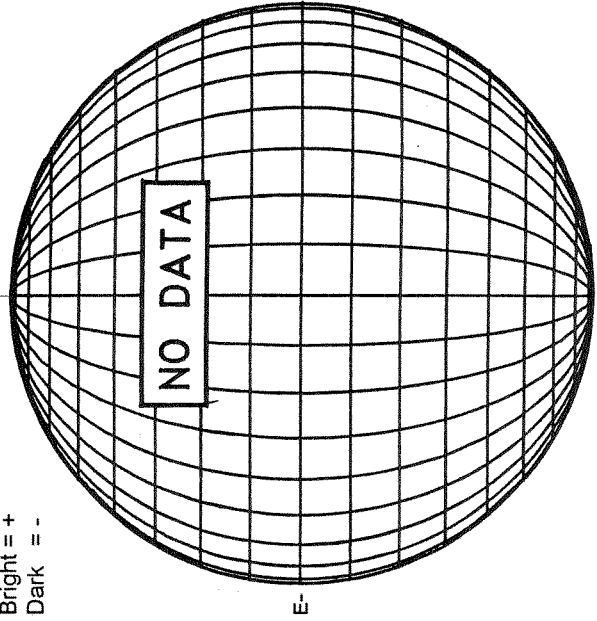
SACRAMENTO PEAK CORONA (1.15 Radii)-----



MARCH 5, 2006 ( P= -22.45, Bo = -7.25, Lo = 126.68)

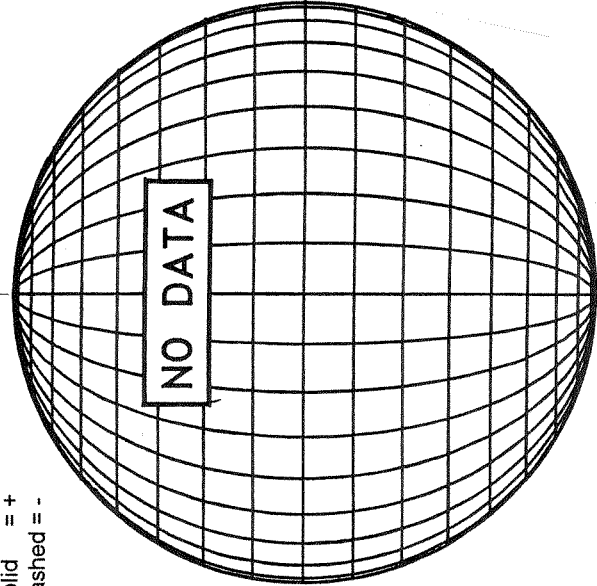
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



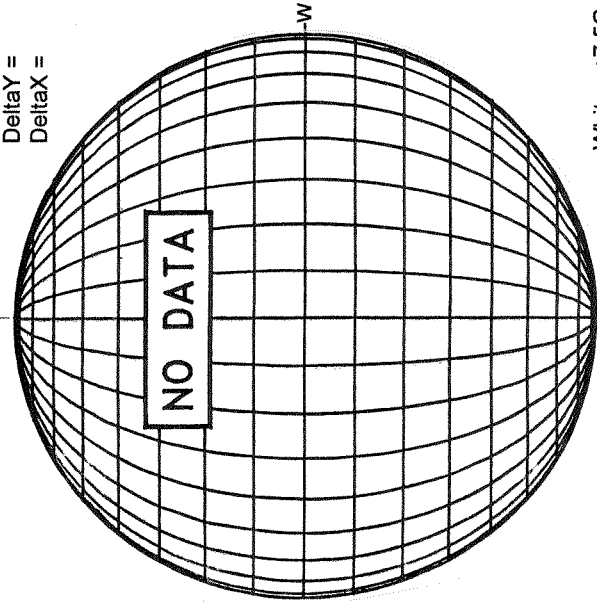
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



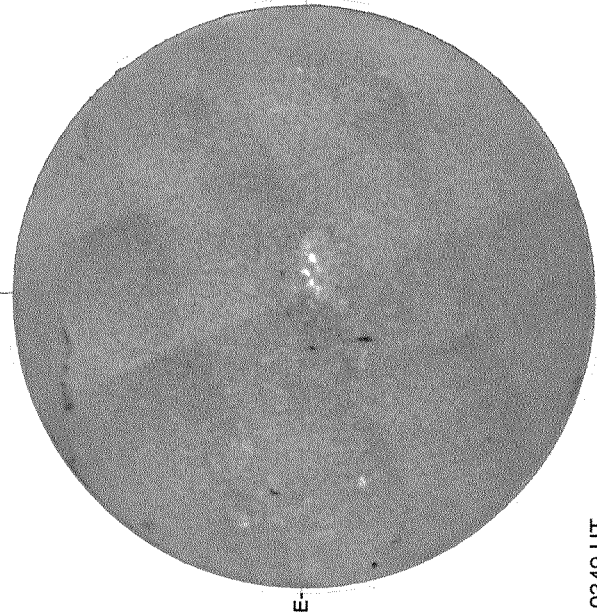
MT. WILSON MAGNETOGRAM

Delta Y =  
Delta X =



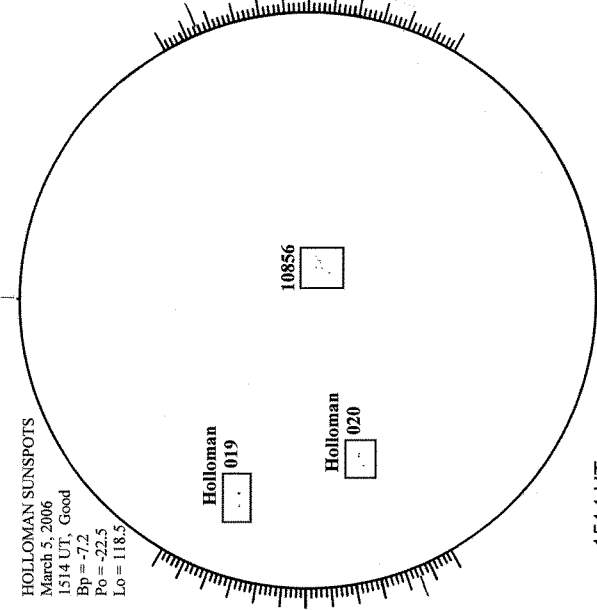
White= +7.5G  
Black = -7.5G

HUAIROU H-ALPHA

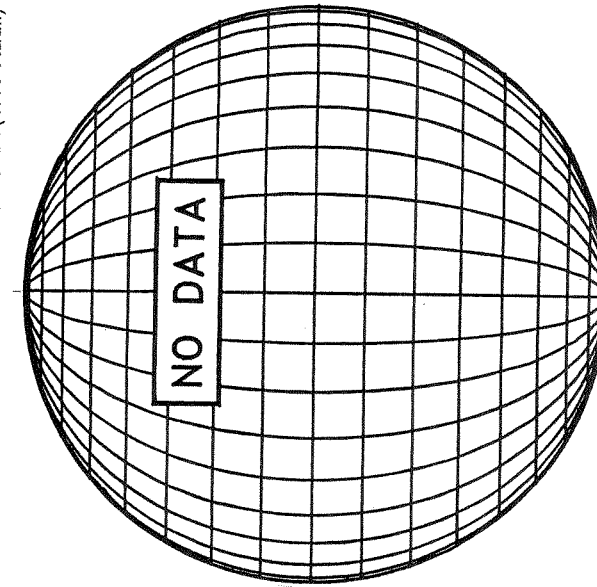


HOLLOMAN SUNSPOTS

HOLLOMAN SUNSPOTS  
March 5, 2006  
1514 UT, Good  
Bp = -7.2  
Po = -22.5  
Lo = 118.5



SACRAMENTO PEAK CORONA (1.15 Radii)----



0349 UT

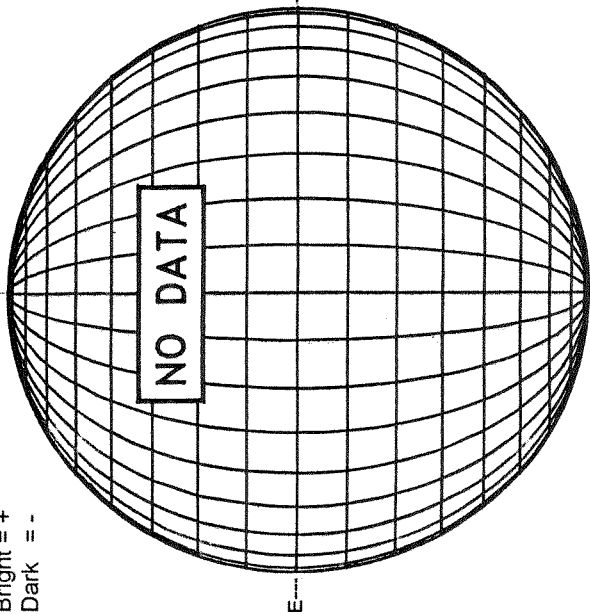
1514 UT



MARCH 6, 2006 ( P= -22.68, Bo = -7.25, Lo = 113.51)

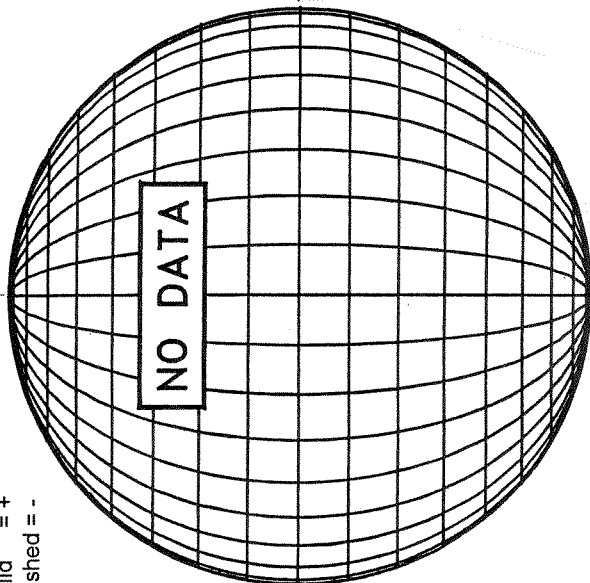
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



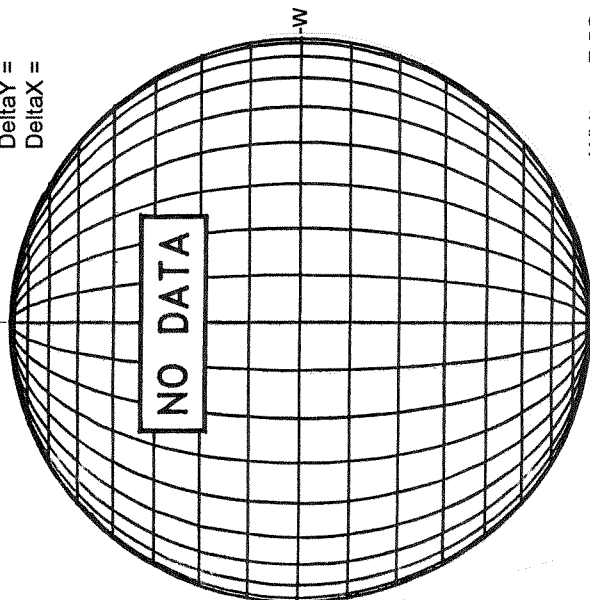
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



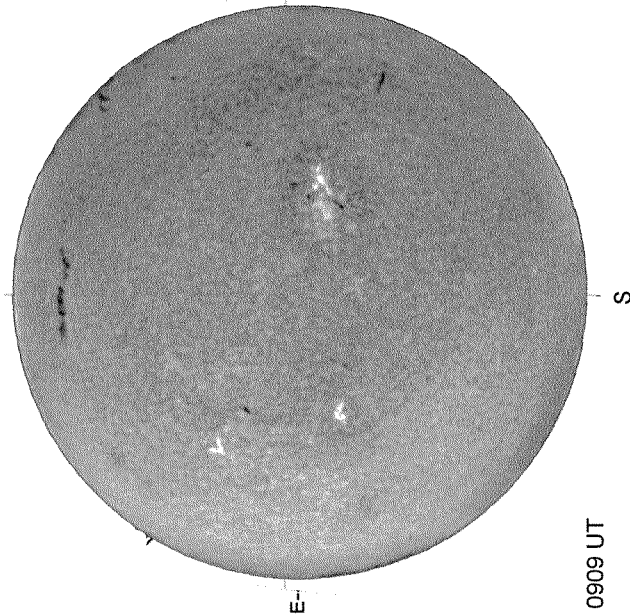
MT. WILSON MAGNETOGRAM

Delta Y =  
Delta X =



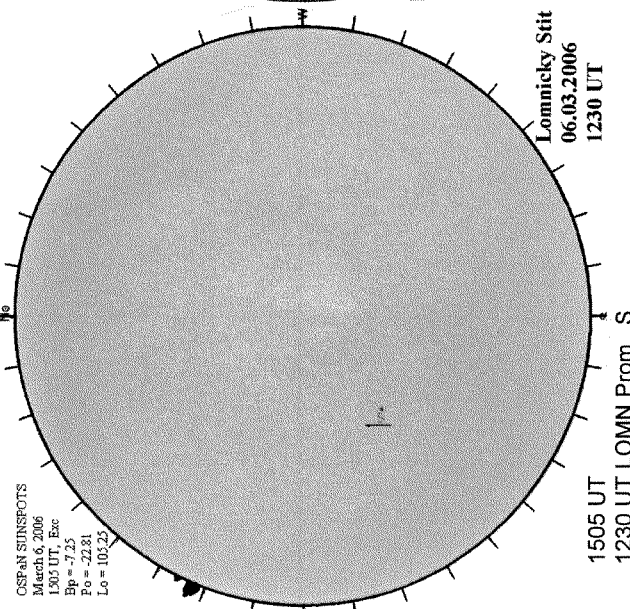
White = +7.5G  
Black = -7.5G

KANZELHOHE H-ALPHA



0909 UT

ISOON/OSPn SUNSPOTS

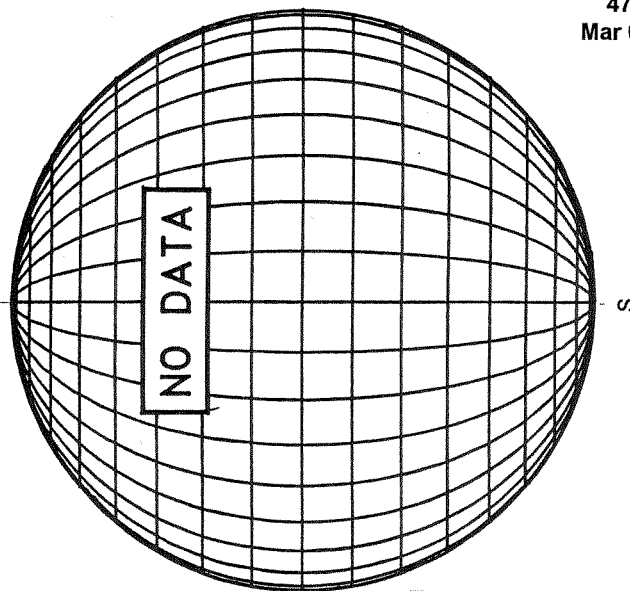


OSPn SUNSPOTS  
March 6, 2006  
1300 UT, Eac  
Bp = -7.25  
Fo = -22.61  
Lo = 103.25

Lomnický Stit  
06.03.2006  
1230 UT

1505 UT  
1230 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----

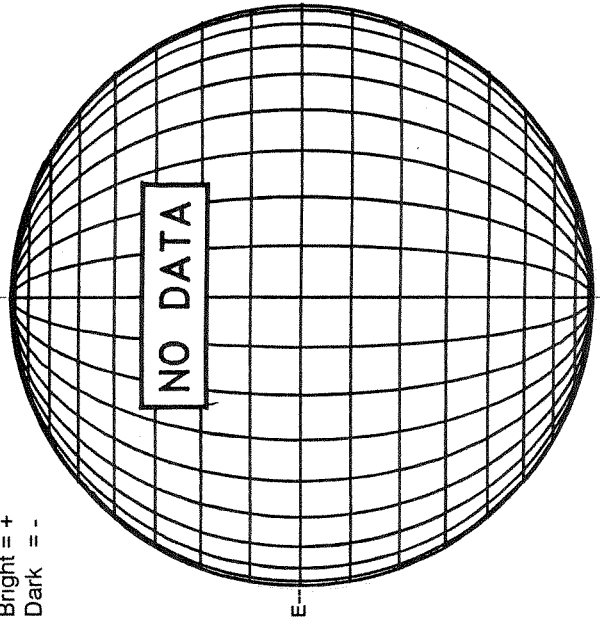


47  
Mar 06

MARCH 7, 2006 ( P= -22.90, Bo = -7.25, Lo = 100.33)

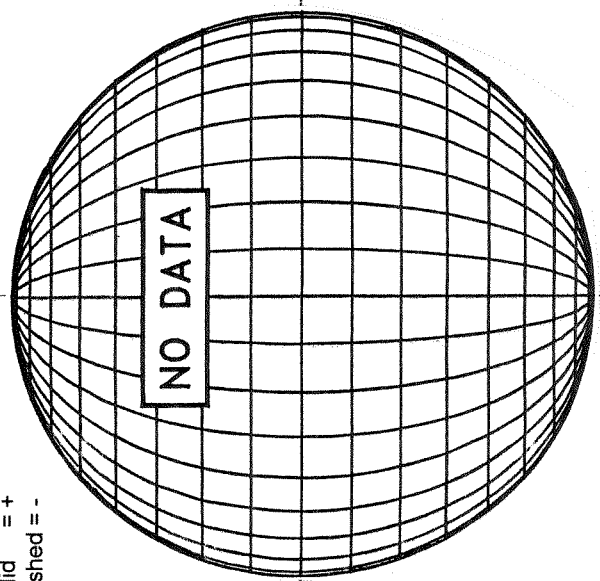
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



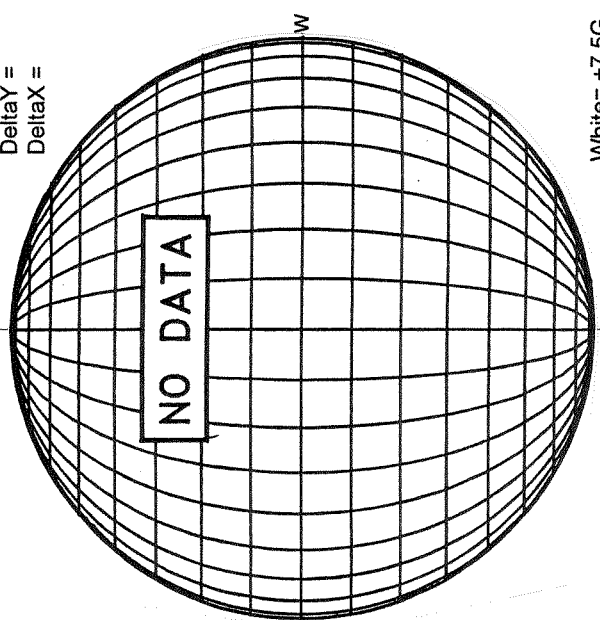
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



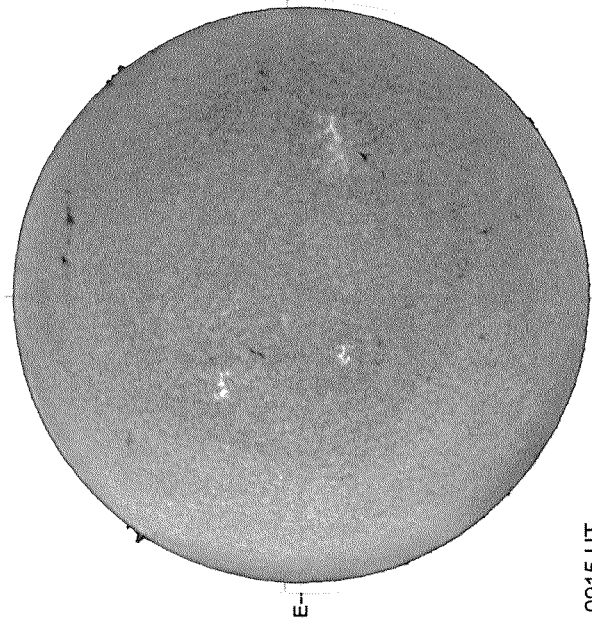
MT. WILSON MAGNETOGRAM

DeltaY =  
DeltaX =



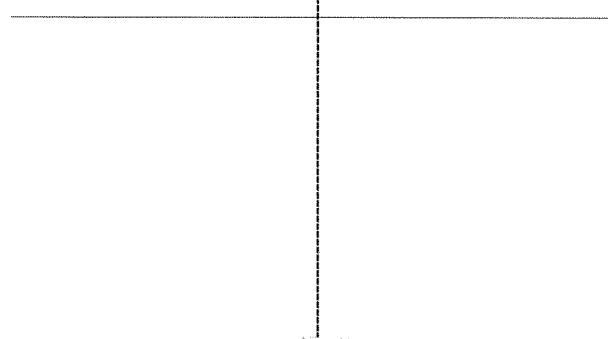
White= +7.5G  
Black = -7.5G

KANZELHOHE H-ALPHA



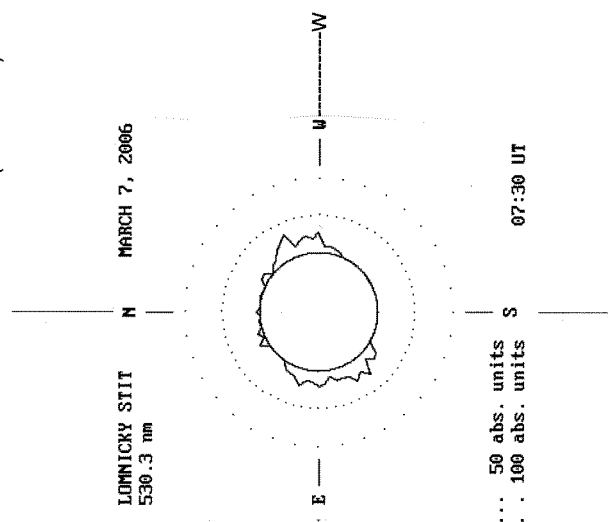
0915 UT

SAN VITO SUNSPOTS



0714 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



LOMNICKY STIT  
530.3 nm

MARCH 7, 2006

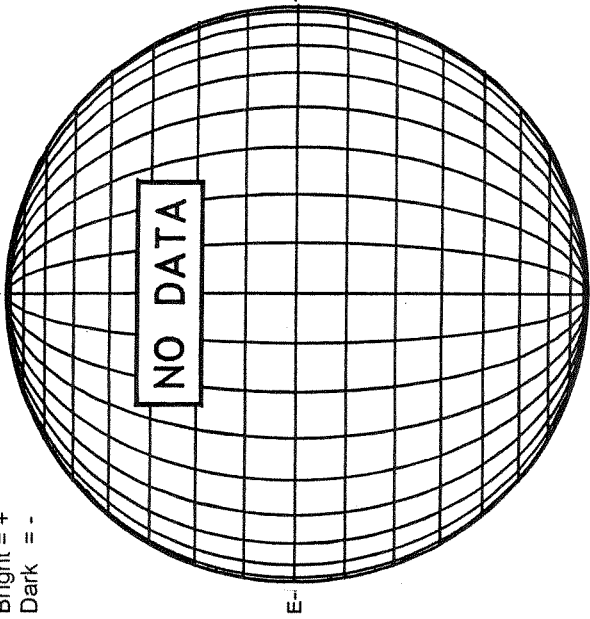
... 50 abs. units  
... 100 abs. units

07:30 UT

MARCH 8, 2006 ( P= -23.11, Bo = -7.25, Lo = 87.16)

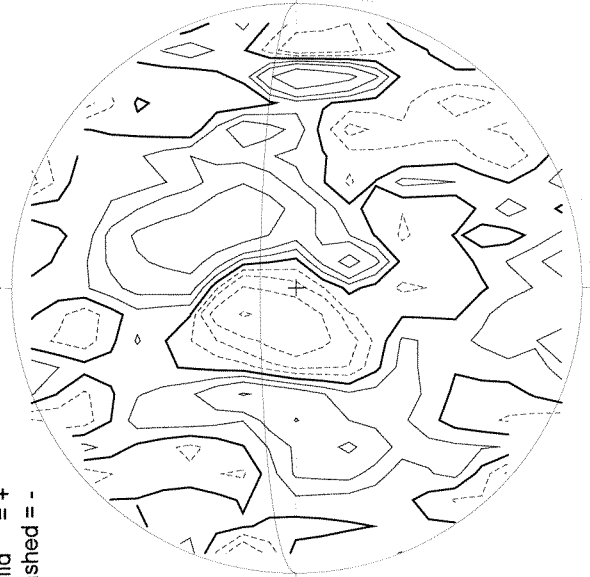
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



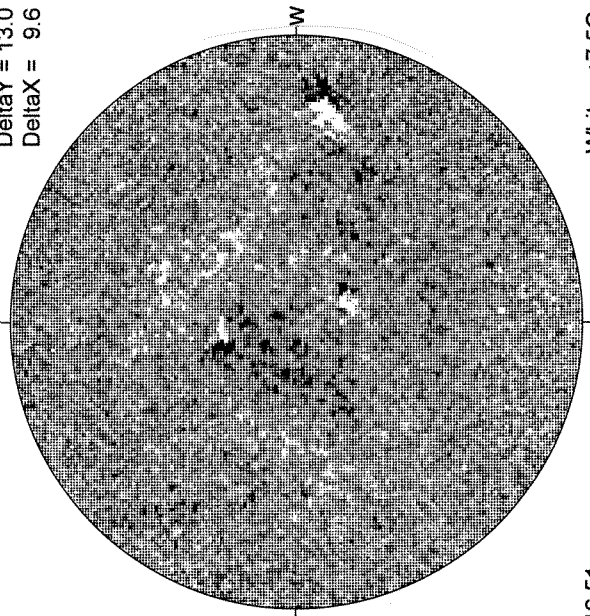
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

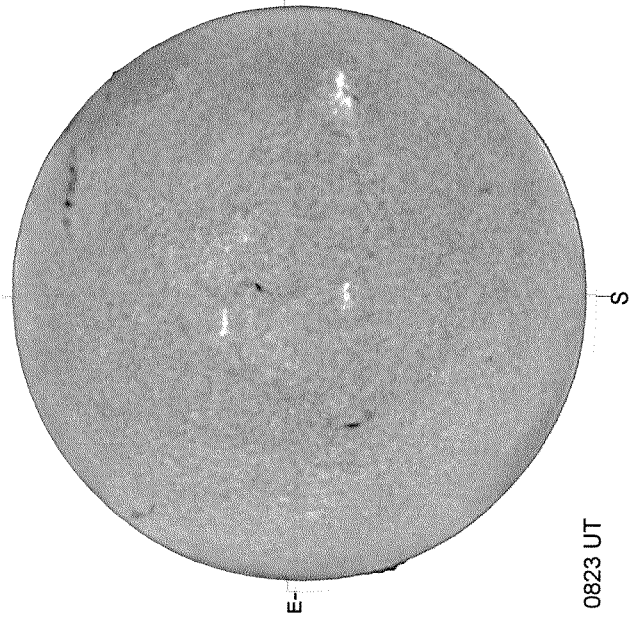
DeltaY = 13.0  
DeltaX = 9.6



16.51 -  
17.47 UT

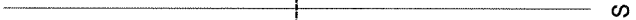
White= +7.5G  
Black = -7.5G

KANZELHOHE H-ALPHA

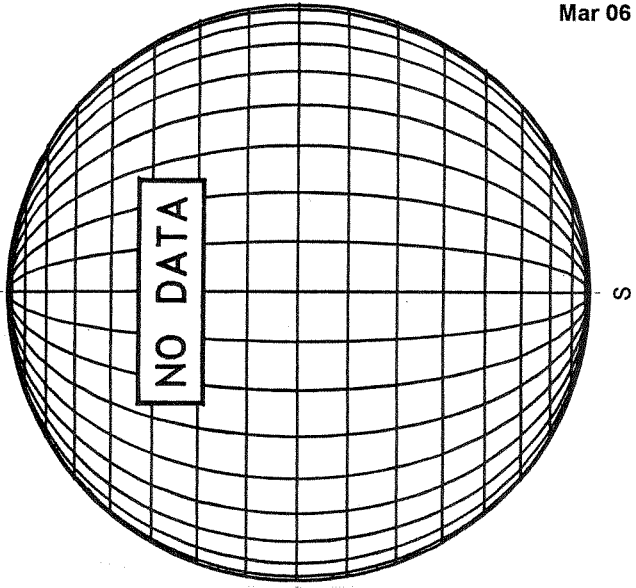


0823 UT

SAN VITO SUNSPOTS



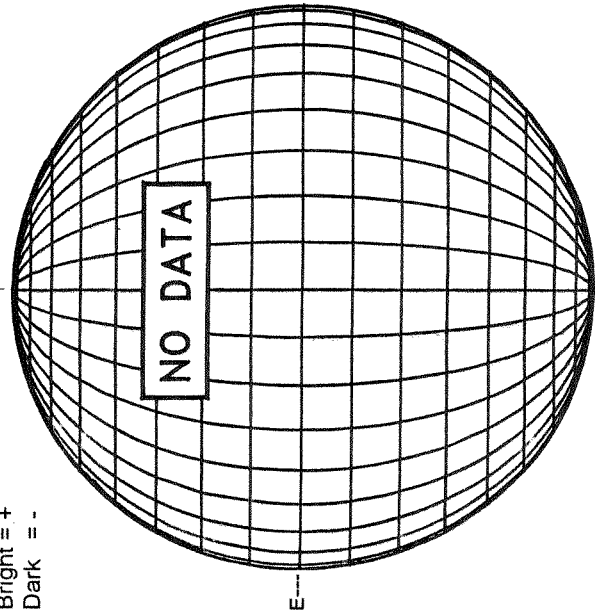
SACRAMENTO PEAK CORONA (1.15 Radii)---



MARCH 9, 2006 ( P= -23.31, Bo = -7.25, Lo = 73.98)

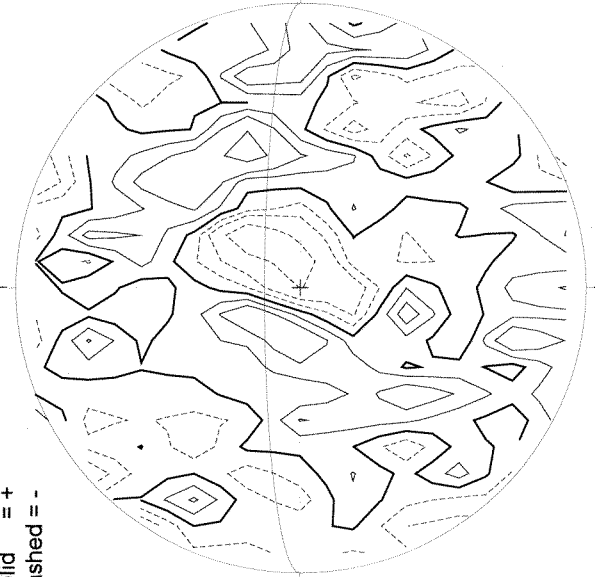
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm

Bright = +  
Dark = -



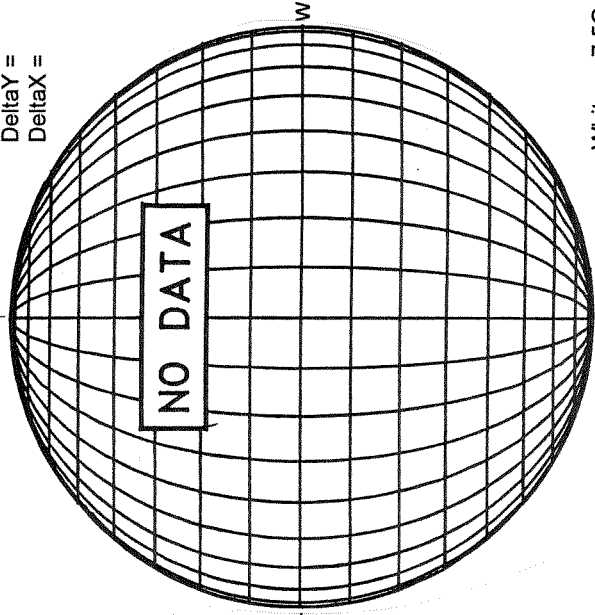
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

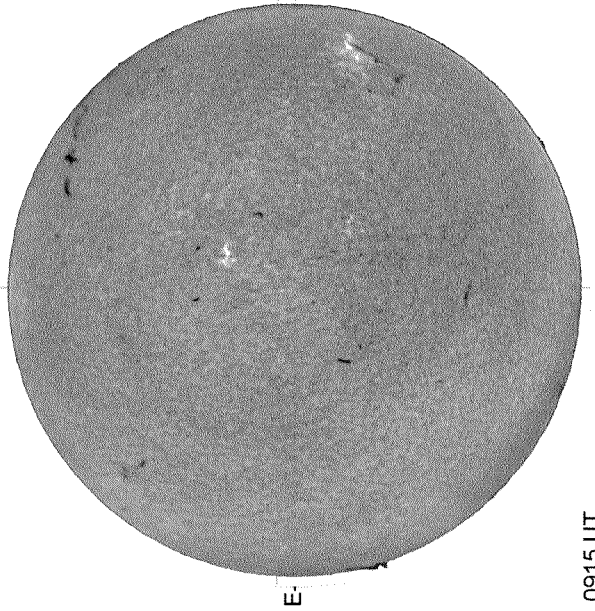
DeltaY =  
DeltaX =



White= +7.5G  
Black = -7.5G

1903 UT

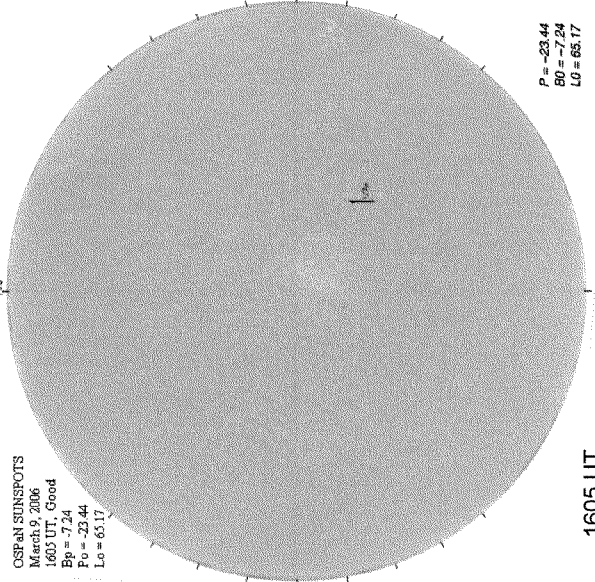
KANZELHOHE H-ALPHA



0915 UT

ISOON/OSPAN SUNSPOTS

OSPAN SUNSPOTS  
March 9, 2006  
1605 UT, Good  
Bp = -7.24  
Po = -23.44  
Lo = 65.17

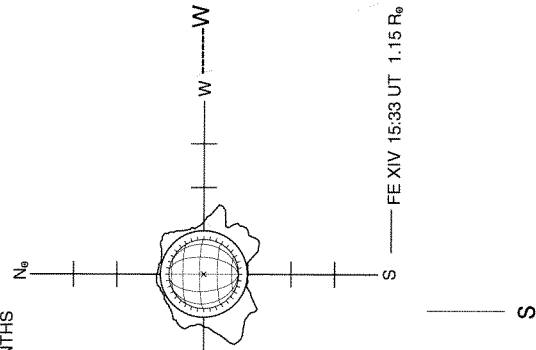


1605 UT

P = -23.44  
B0 = -7.24  
L0 = 65.17

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA  
TICK MARKS EVERY 10 MILLIONTHS



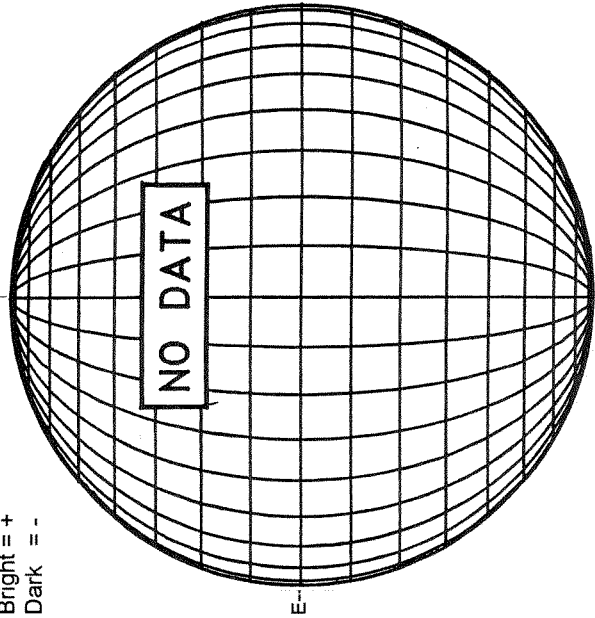
03/09/06  
(DOY 68)

FE XIV 15:33 UT 1.15 R<sub>o</sub>

MARCH 10, 2006 ( P= -23.51, Bo = -7.24 Lo = 60.80)

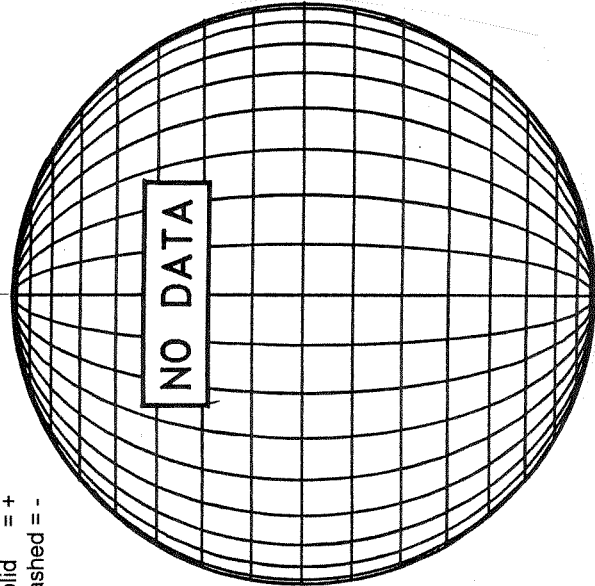
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



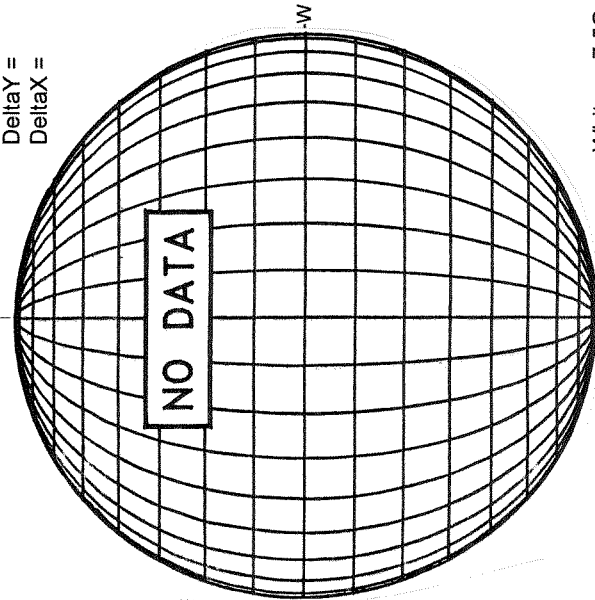
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



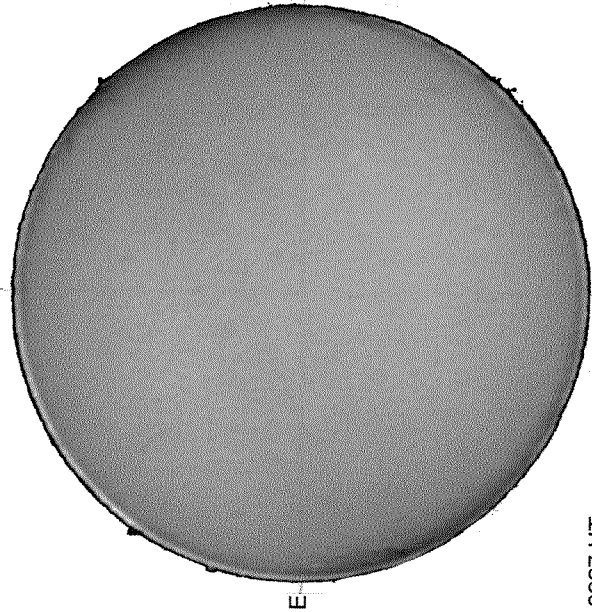
MT. WILSON MAGNETOGRAM

Delta Y =  
Delta X =

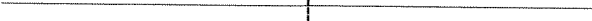


White= +7.5G  
Black = -7.5G

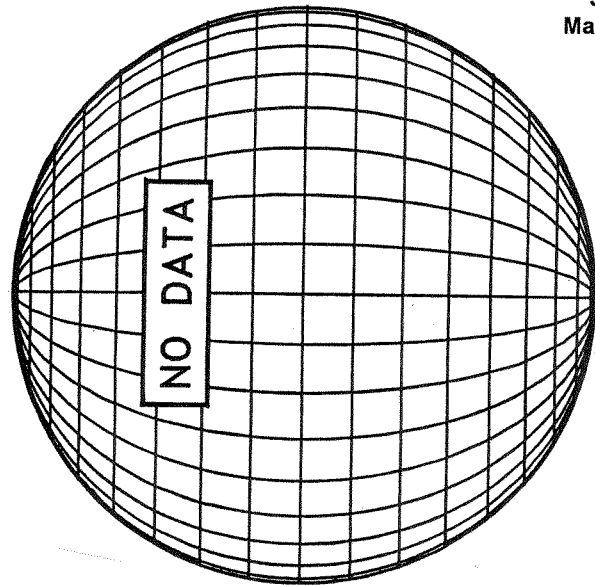
MEUDON H-ALPHA



SAN VITO SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)----



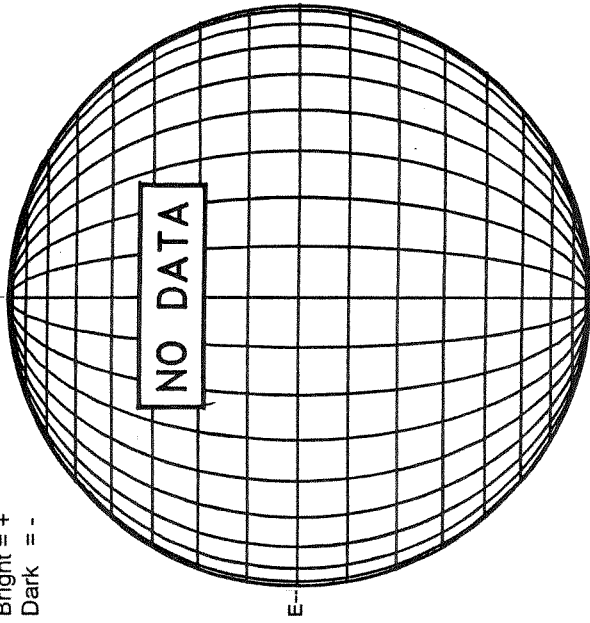
0927 UT



MARCH 11, 2006 ( P= -23.70, Bo = -7.23, Lo = 47.63)

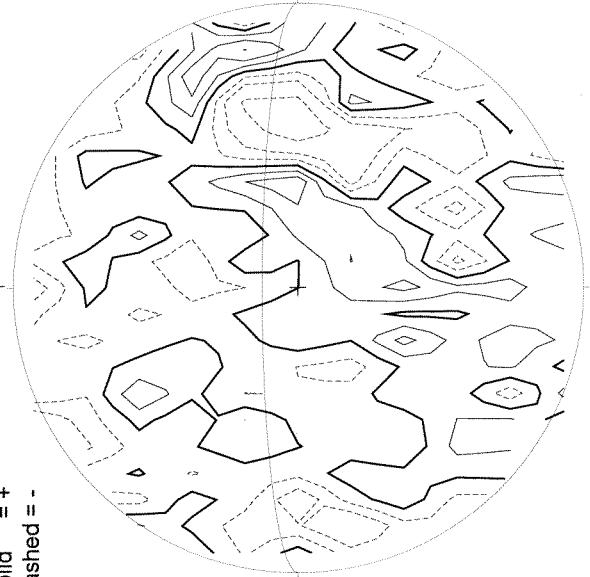
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



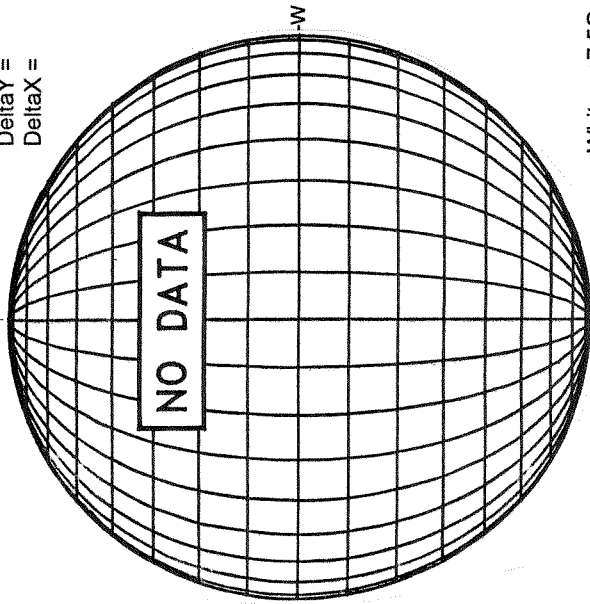
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



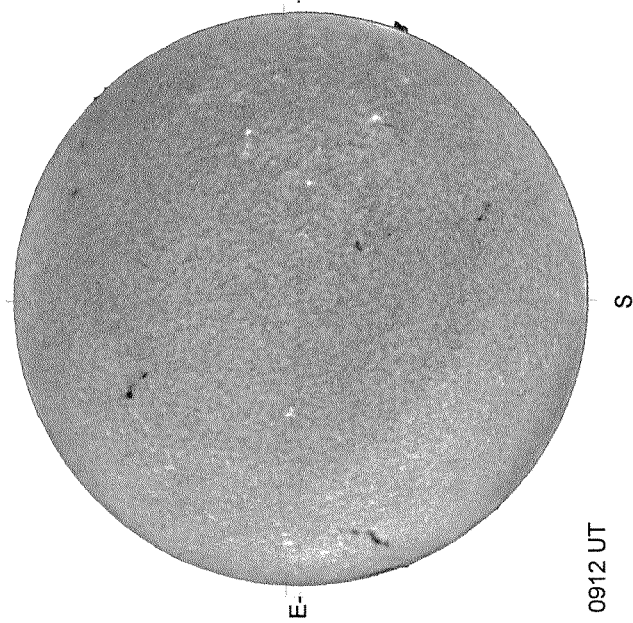
MT. WILSON MAGNETOGRAM

DeltaY =  
DeltaX =



White= +7.5G  
Black = -7.5G

KANZELHOHE H-ALPHA

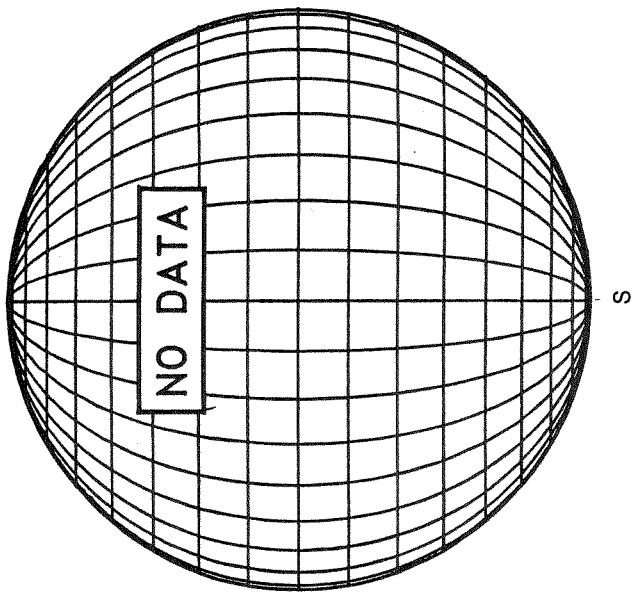


0912 UT

SAN VITO SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)----

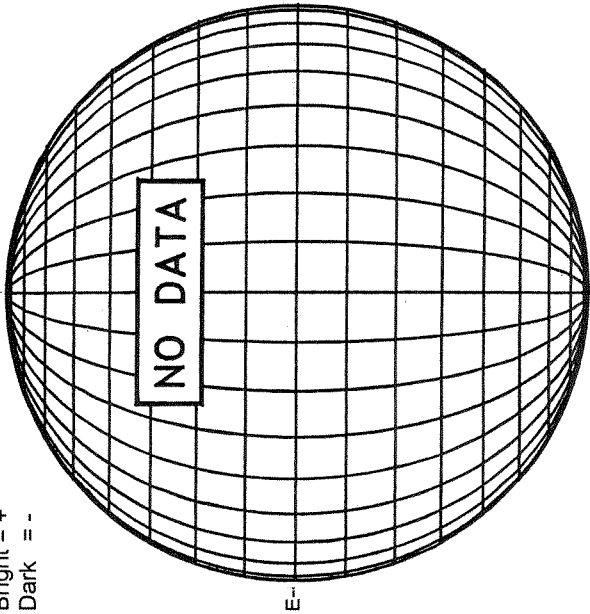


0912 UT

MARCH 12, 2006 ( P= -23.89, Bo = -7.22, Lo = 34.45)

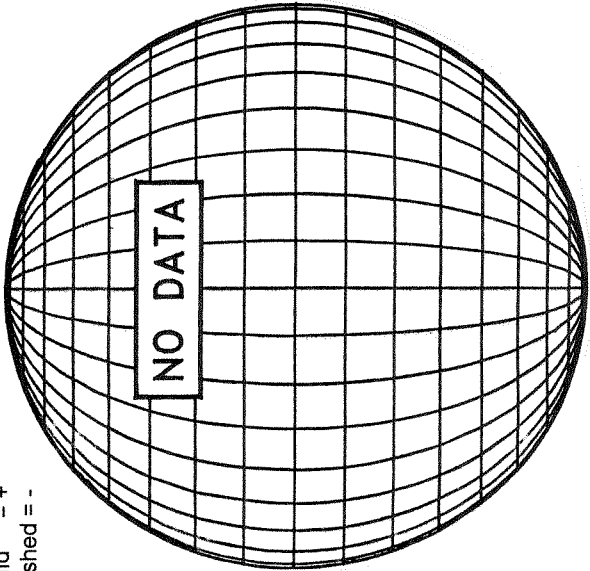
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



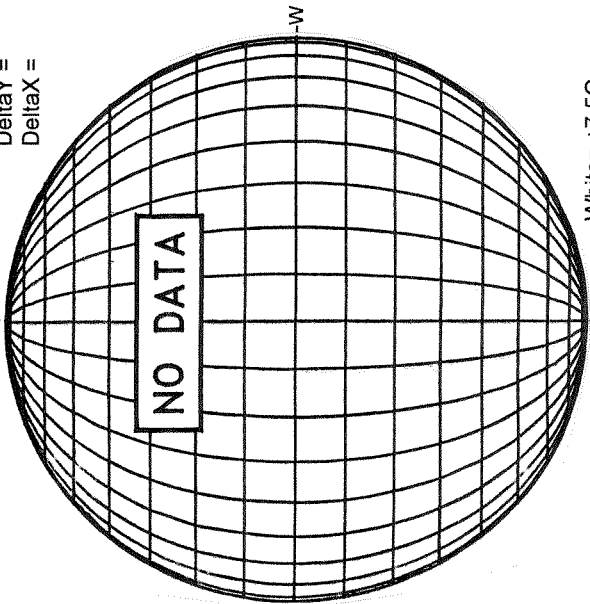
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



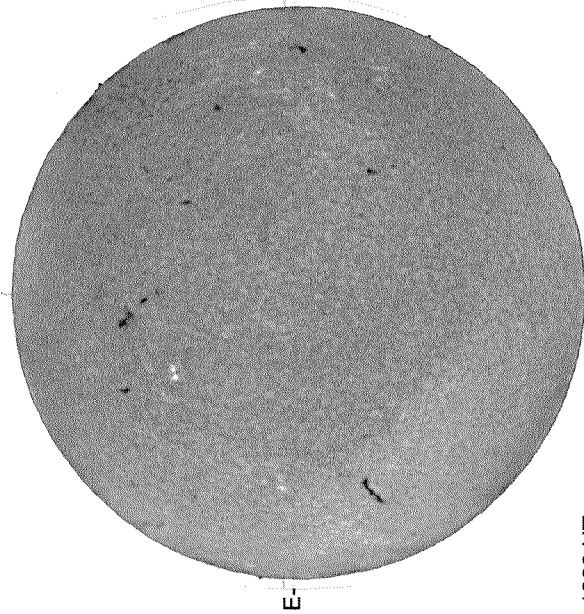
MT. WILSON MAGNETOGRAM

DeltaY =  
DeltaX =



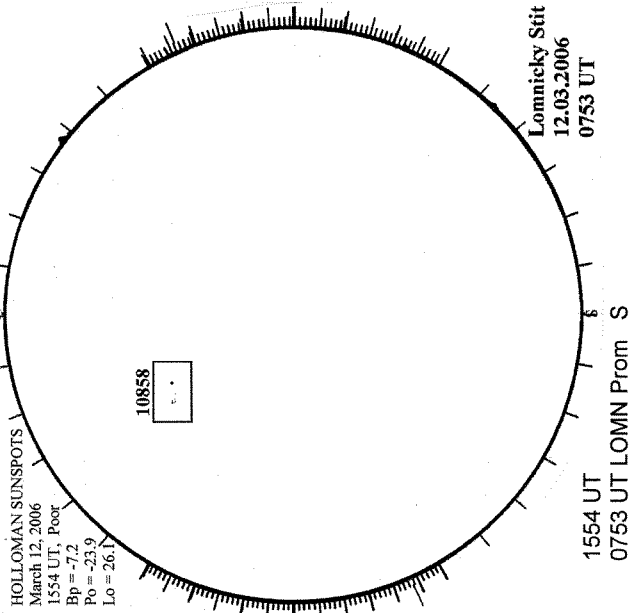
White= +7.5G  
Black = -7.5G

KANZELHOHE H-ALPHA



1226 UT

HOLLOMAN SUNSPOTS



HOLLOMAN SUNSPOTS  
March 12, 2006  
1554 UT, Poor  
Bp = -7.2  
Po = -23.9  
Lo = 26.1

10858

Lonnick Stit  
12.03.2006  
0753 UT

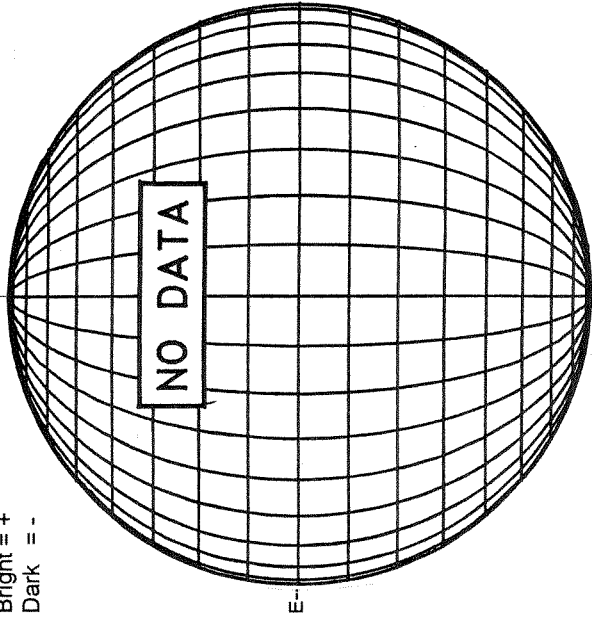
1554 UT  
0753 UT LOMN Prom S



MARCH 13, 2006 ( P= -24.07, Bo = -7.21, Lo = 21.27)

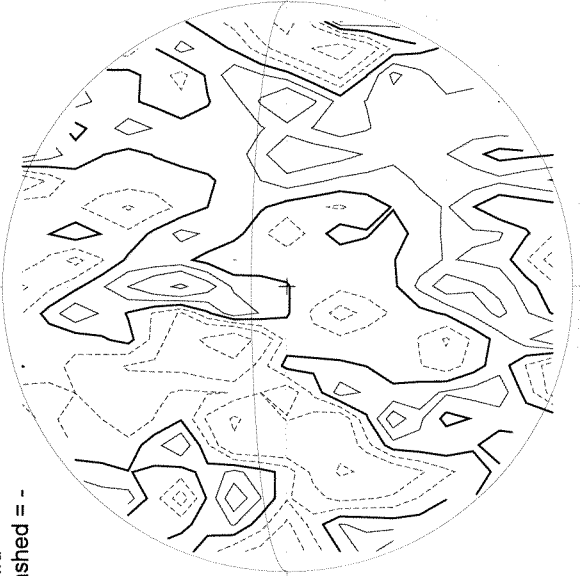
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



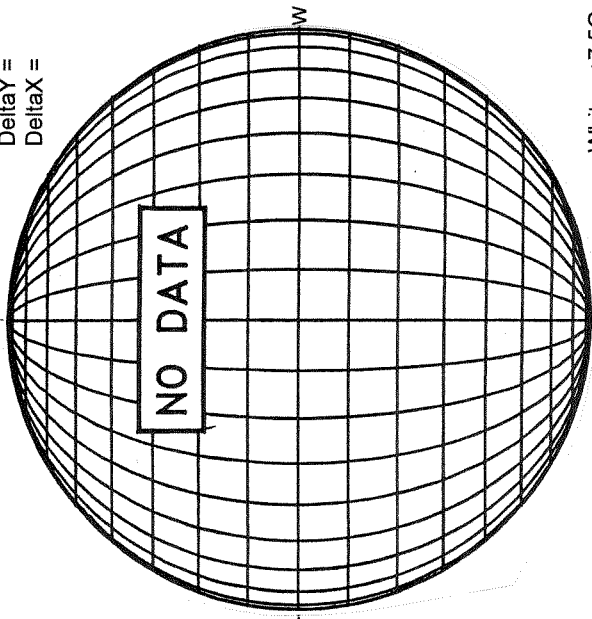
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



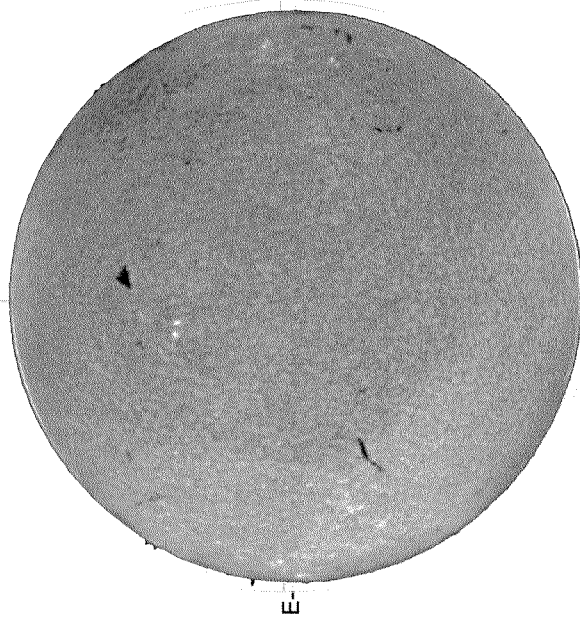
MT. WILSON MAGNETOGRAM

Delta Y =  
Delta X =



White = +7.5G  
Black = -7.5G

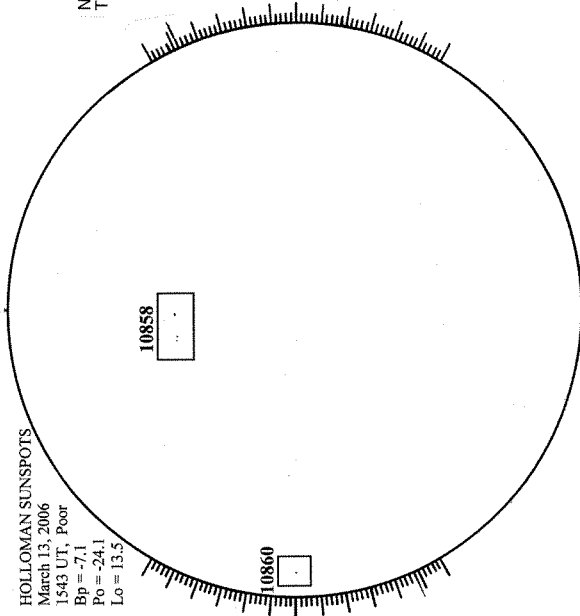
KANZELHOHE H-ALPHA



0805 UT

HOLLOMAN SUNSPOTS

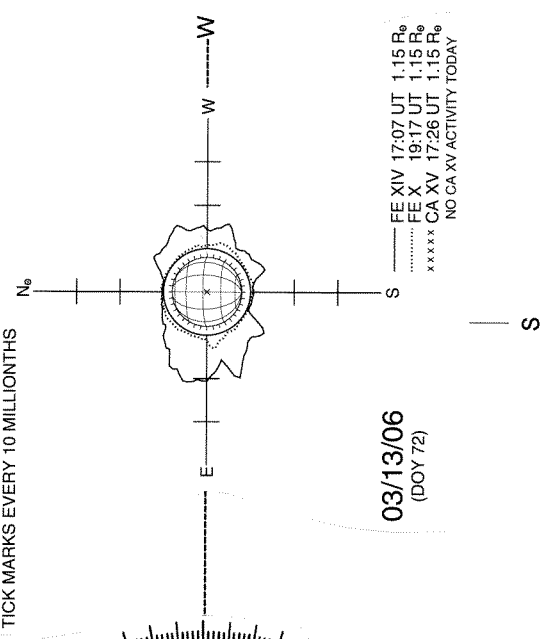
HOLLOMAN SUNSPOTS  
March 13, 2006  
1543 UT, Poor  
Bp = -7.1  
Po = -24.1  
Lo = 13.5



1543 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA  
TICK MARKS EVERY 10 MILLIONTHS

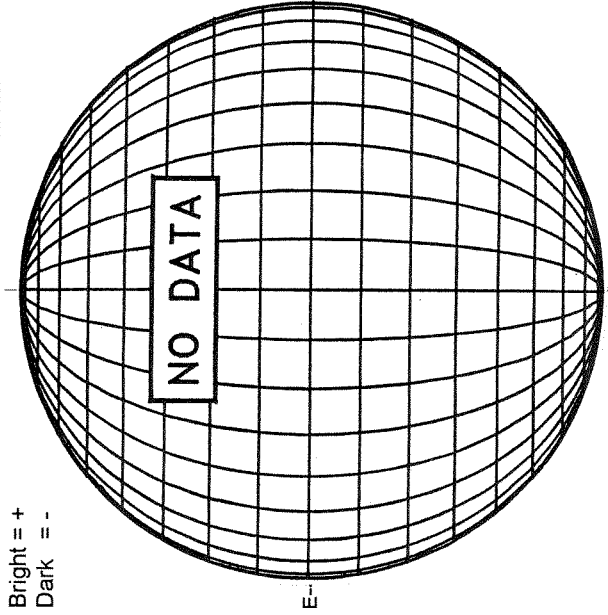


03/13/06  
(DOY 72)

--- EE XIV 17:07 UT 1.15 R<sub>o</sub>  
..... EE X 19:17 UT 1.15 R<sub>o</sub>  
xxxxx CA XV 17:26 UT 1.15 R<sub>o</sub>  
NO CA XV ACTIVITY TODAY

MARCH 14, 2006 ( P= -24.24, Bo = -7.19, Lo = 8.09)

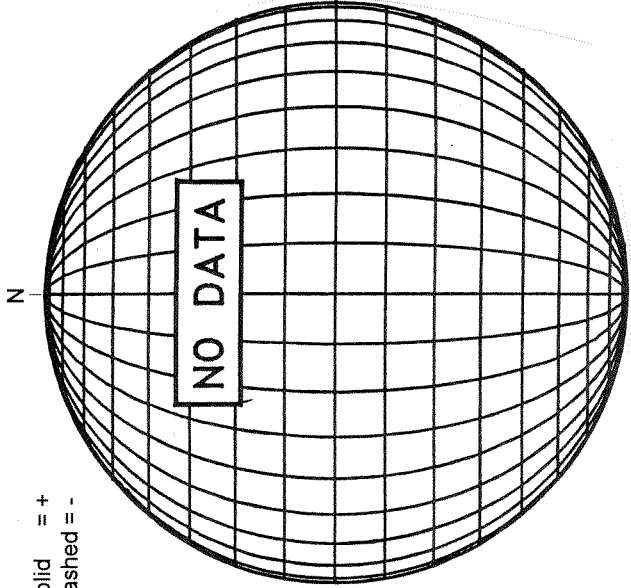
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*



Bright = +  
Dark = -

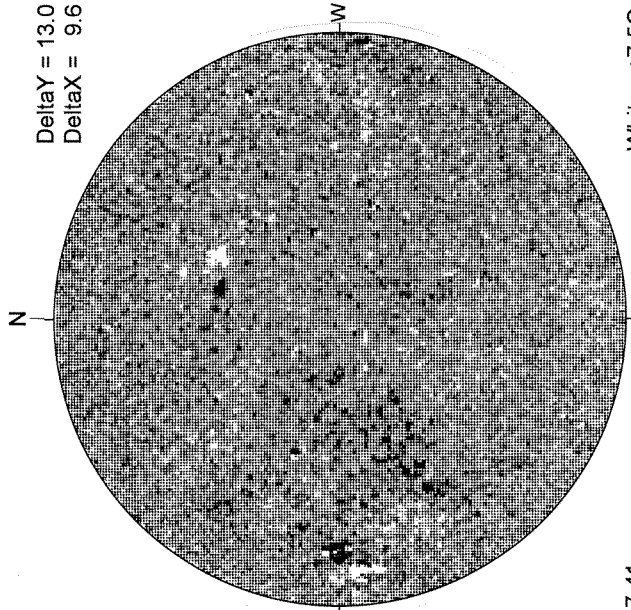
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

DeltaY = 13.0  
DeltaX = 9.6

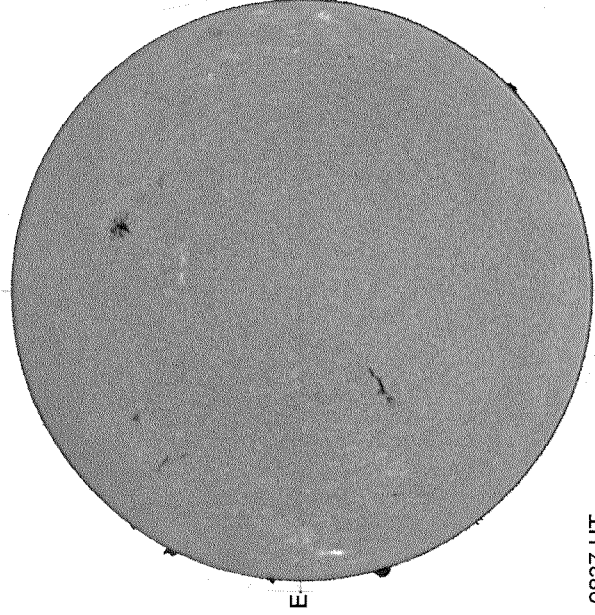


17.41 -  
18.37 UT

White = +7.5G  
Black = -7.5G

CATANIA H-ALPHA

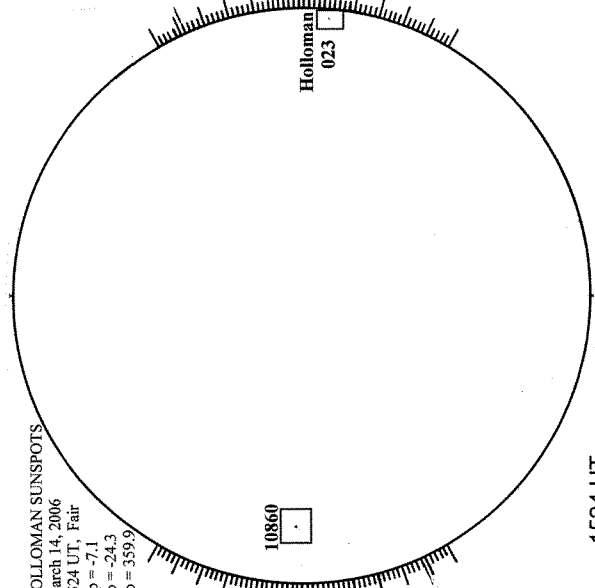
SACRAMENTO PEAK CORONA (1.15 Radii)----



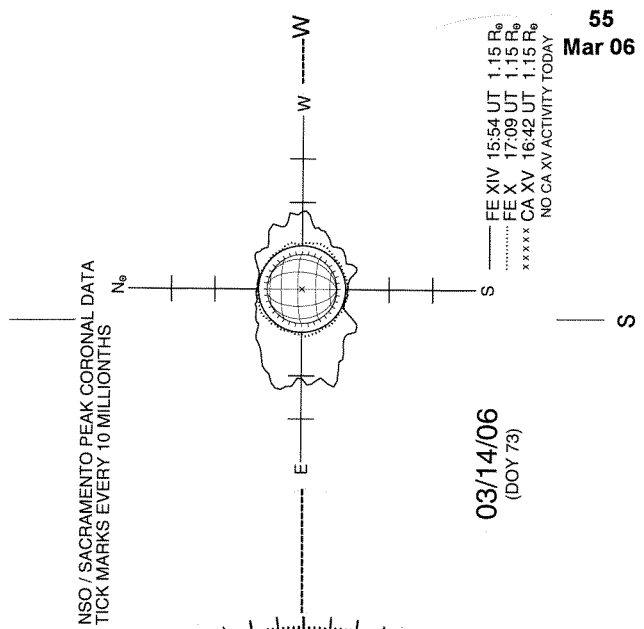
0837 UT

HOLLOMAN SUNSPOTS

HOLLOMAN SUNSPOTS  
March 14, 2006  
1524 UT, Fair  
Bp = -7.1  
Po = -24.3  
Lo = 359.9



1524 UT



NSO / SACRAMENTO PEAK CORONAL DATA  
TICK MARKS EVERY 10 MILLIONTHS

03/14/06  
(DOY 73)

FE XIV 15:54 UT 1.15 R<sub>o</sub>  
FE X 17:09 UT 1.15 R<sub>o</sub>  
CA XV 16:42 UT 1.15 R<sub>o</sub>  
NO CA XV ACTIVITY TODAY

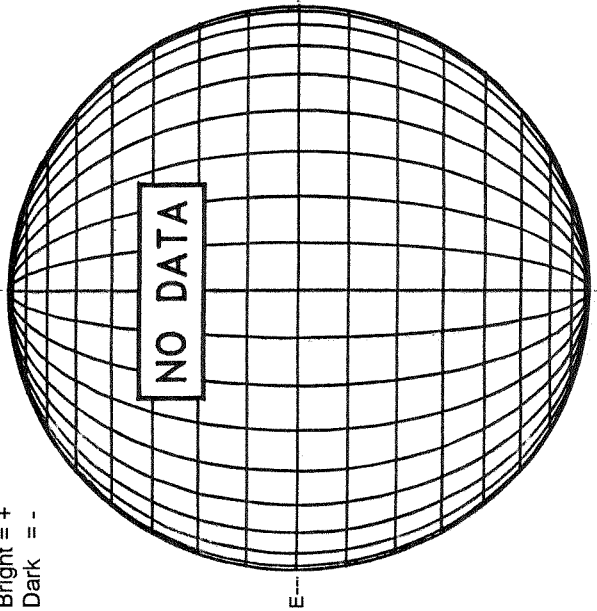
MARCH 15, 2006 ( P= -24.40, Bo = -7.17, Lo = 354.91)

KITT PEAK MAGNETOGRAM--SOLIS

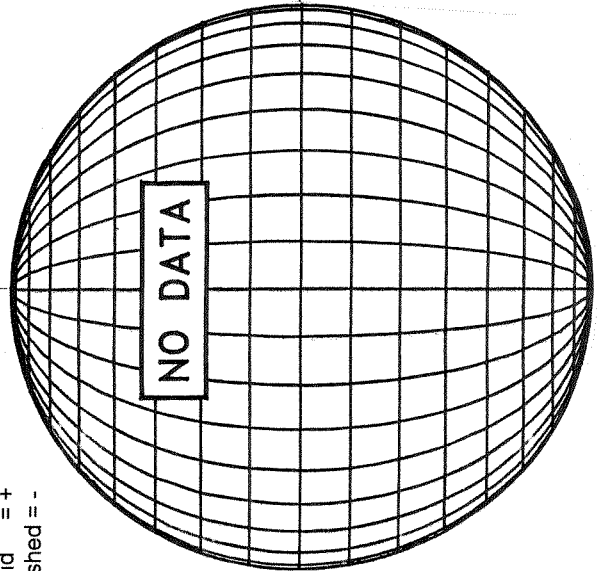
\*\*854.2 nm\*\*

Bright = +  
Dark = -

Solid = +  
Dashed = -

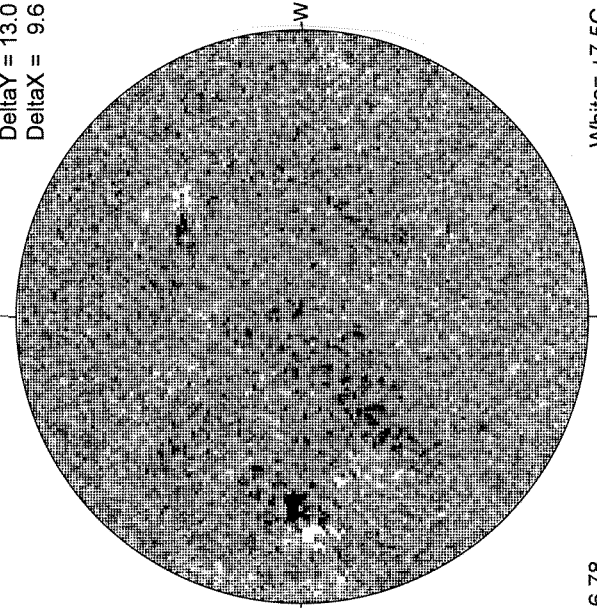


STANFORD MAGNETOGRAM



MT. WILSON MAGNETOGRAM

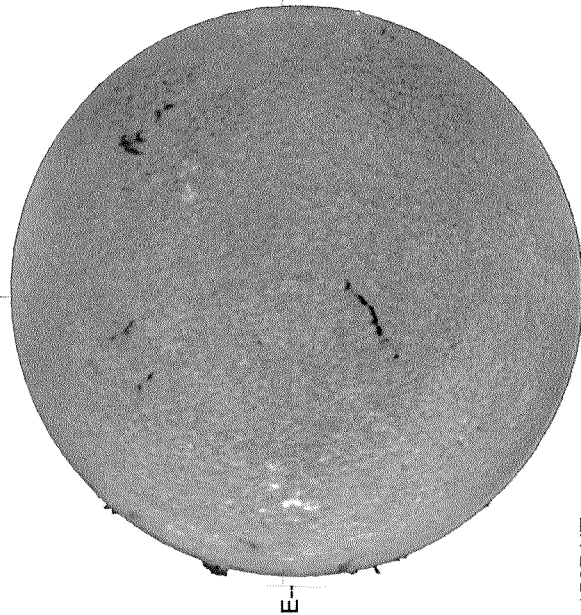
DeltaY = 13.0  
DeltaX = 9.6



16.78 -  
17.74 UT

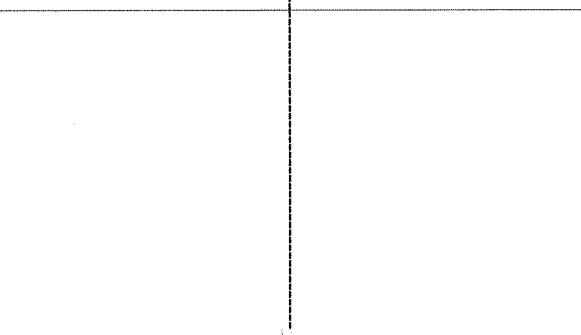
White= +7.5G  
Black = -7.5G

KANZELHOHE H-ALPHA



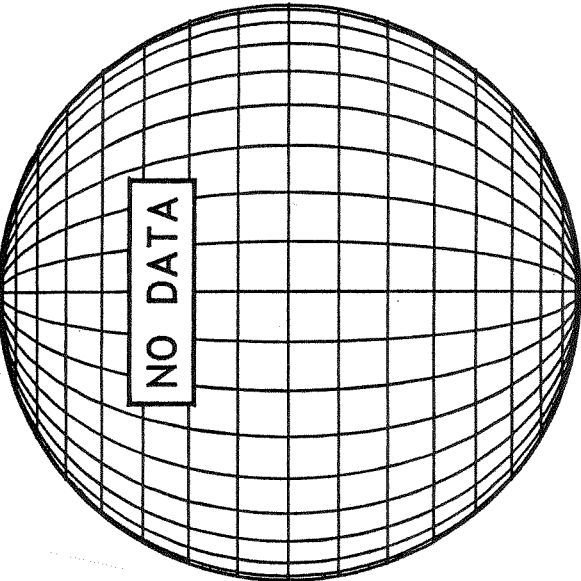
1527 UT

SAN VITO SUNSPOTS



1015 UT LOMN Prom S

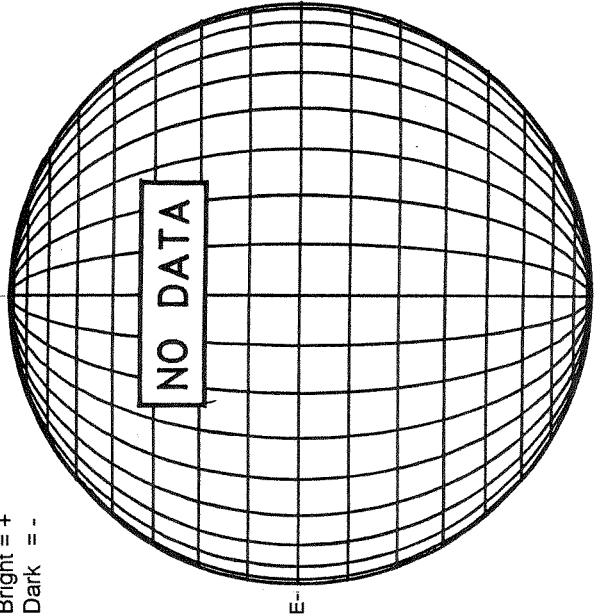
SACRAMENTO PEAK CORONA (1.15 Radii)----



MARCH 16, 2006 ( P= -24.56, Bo = -7.15, Lo = 341.73)

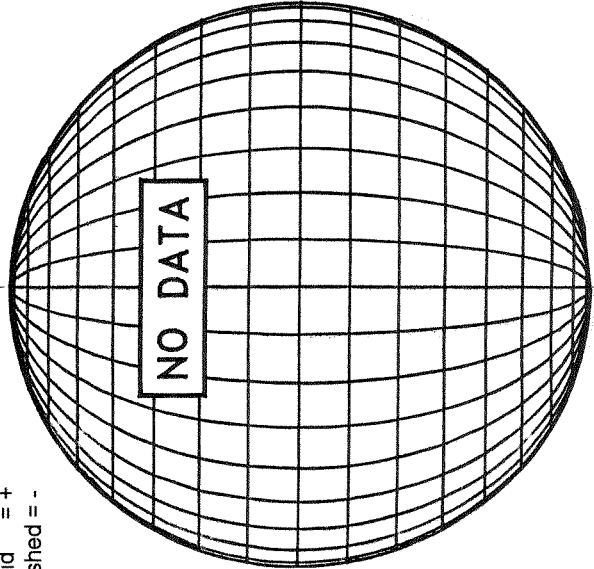
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



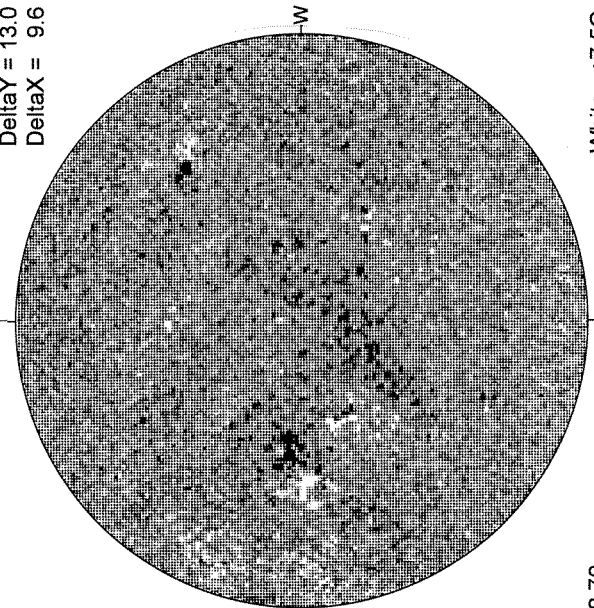
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

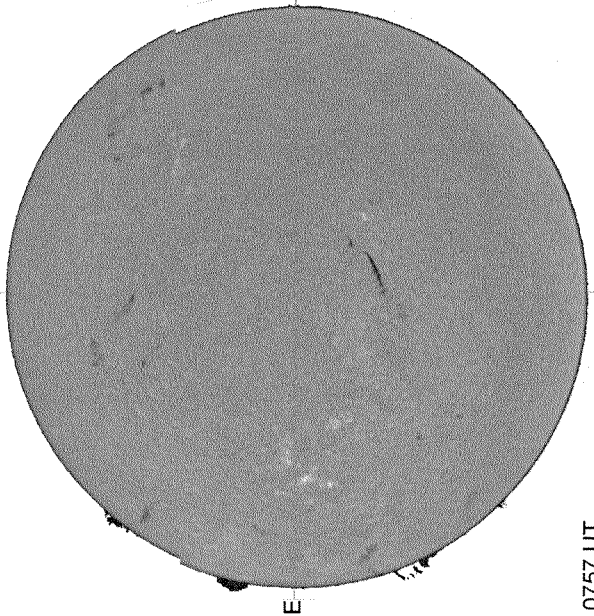
DeltaY = 13.0  
DeltaX = 9.6



18.70 -  
19.67 UT

White= +7.5G  
Black = -7.5G

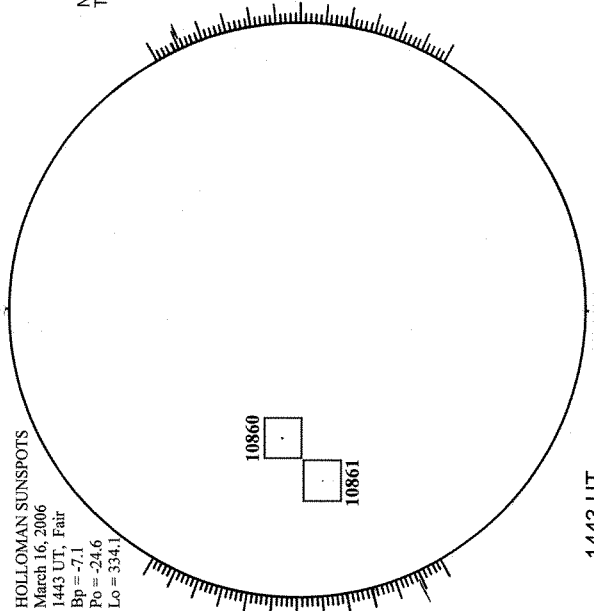
CATANIA H-ALPHA



0757 UT

HOLLOMAN SUNSPOTS

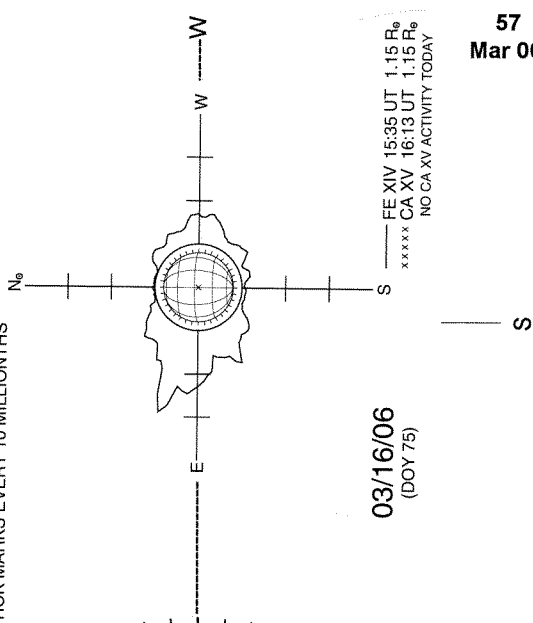
HOLLOMAN SUNSPOTS  
March 16, 2006  
1443 UT, Fair  
Bp = -7.1  
Po = -24.6  
Lo = 334.1



1443 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA  
TICK MARKS EVERY 10 MILLIONTHS



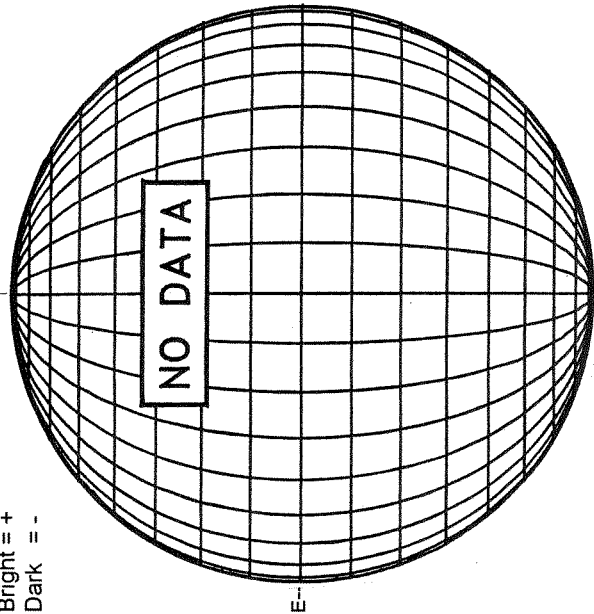
03/16/06  
(DOY 75)

FE XIV 15:35 UT 1.15 R<sub>o</sub>  
CA XV 16:13 UT 1.15 R<sub>o</sub>  
NO CA XV ACTIVITY TODAY

MARCH 17, 2005 ( P= -24.71, Bo = -7.13, Lo = 328.55)

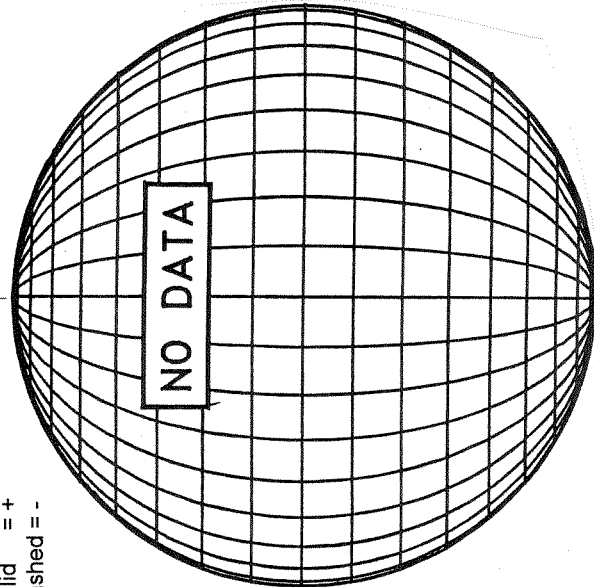
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



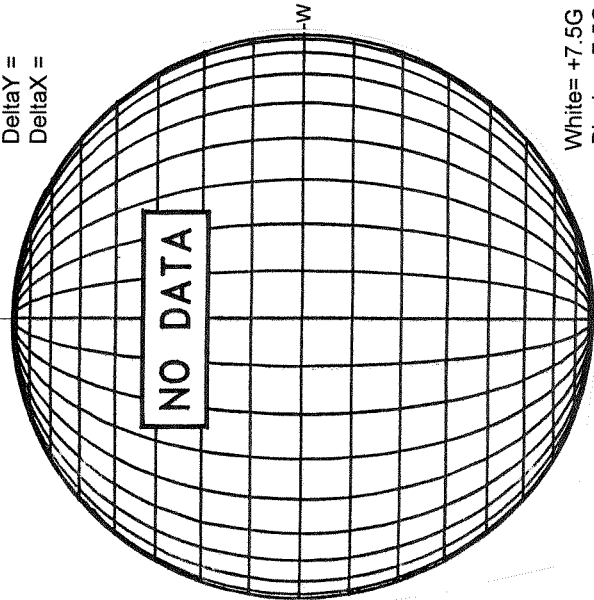
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



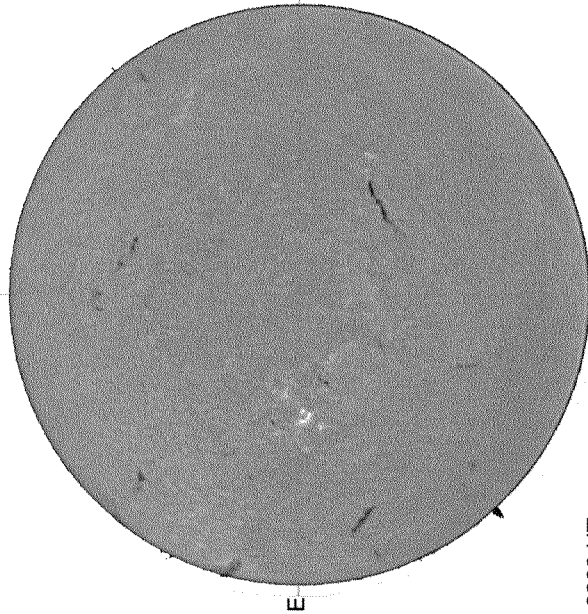
MT. WILSON MAGNETOGRAM

Delta Y =  
Delta X =

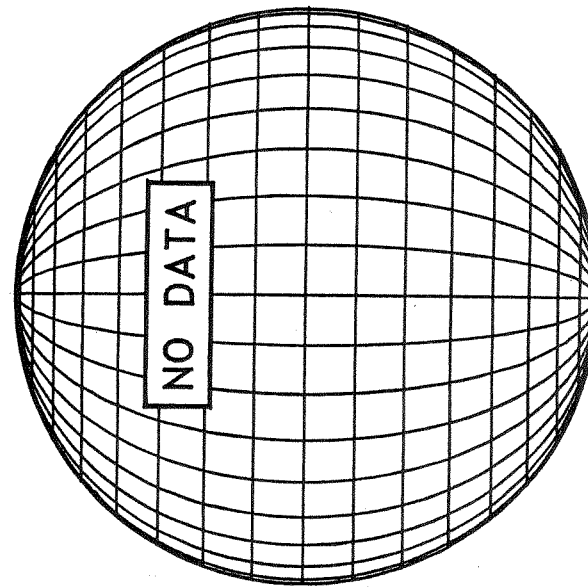


White = +7.5G  
Black = -7.5G

CATANIA H-ALPHA



SAN VITO SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)----

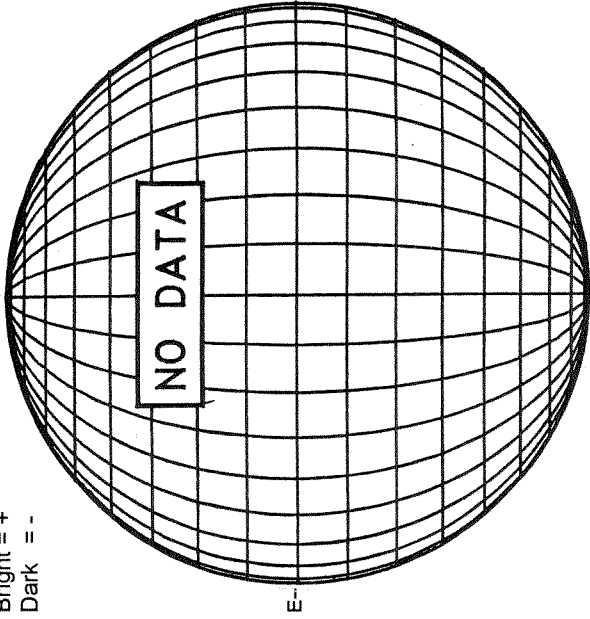
0808 UT



MARCH 18, 2006 ( P= -24.86, Bo = -7.11, Lo = 315.36)

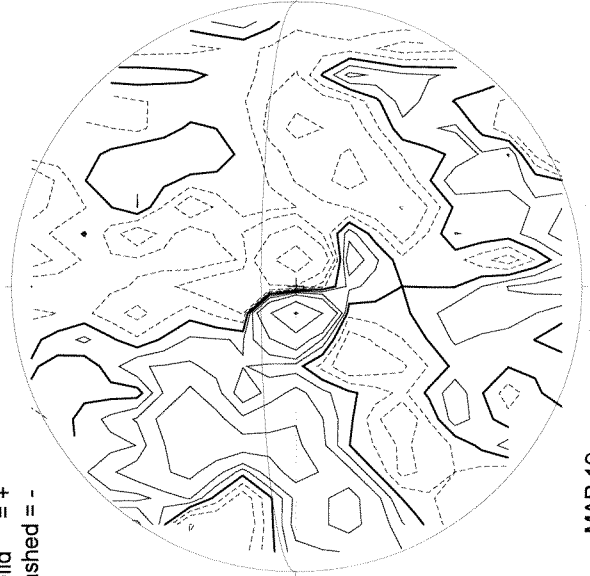
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



STANFORD MAGNETOGRAM

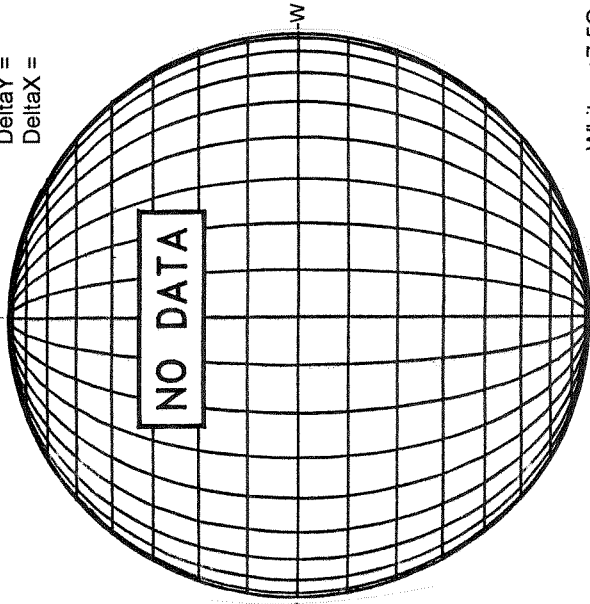
Solid = +  
Dashed = -



MAR 19  
0007 UT

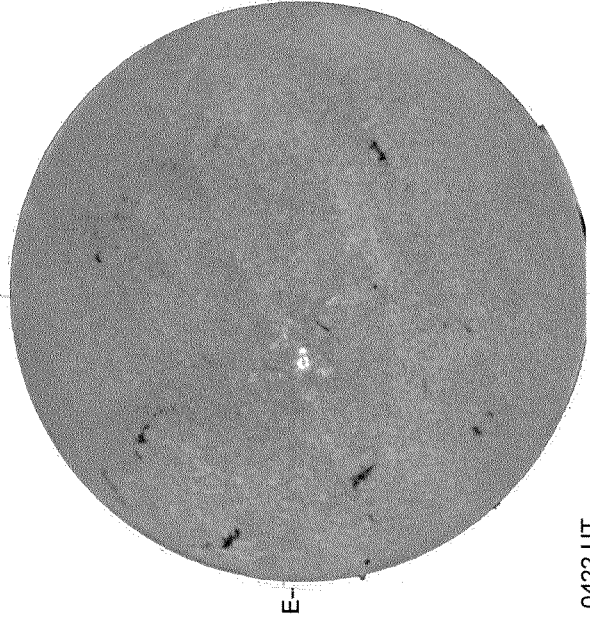
MT. WILSON MAGNETOGRAM

Delta Y =  
Delta X =



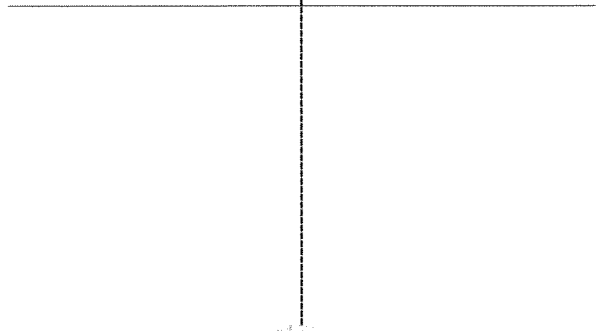
White = +7.5G  
Black = -7.5G

HUAIROU H-ALPHA



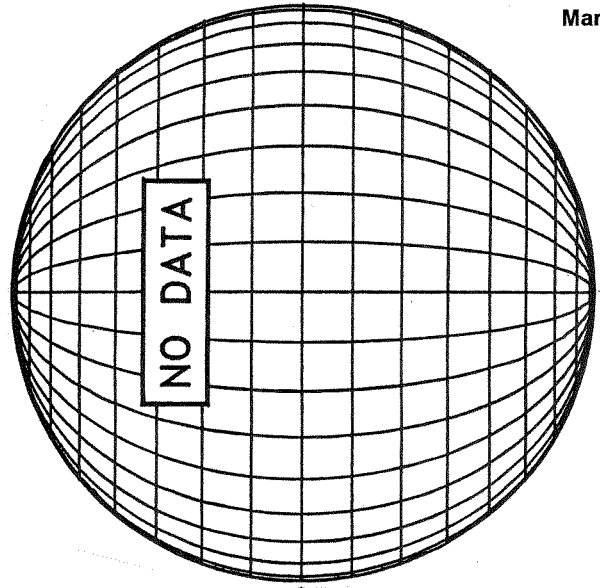
0422 UT

SAN VITO SUNSPOTS



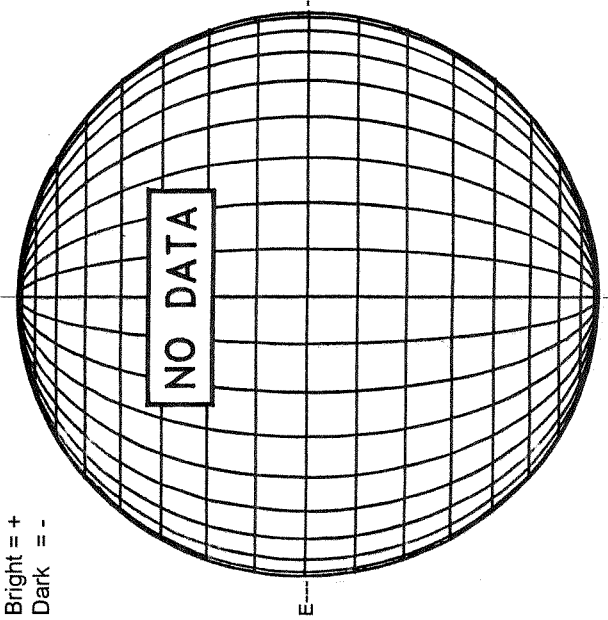
1024 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

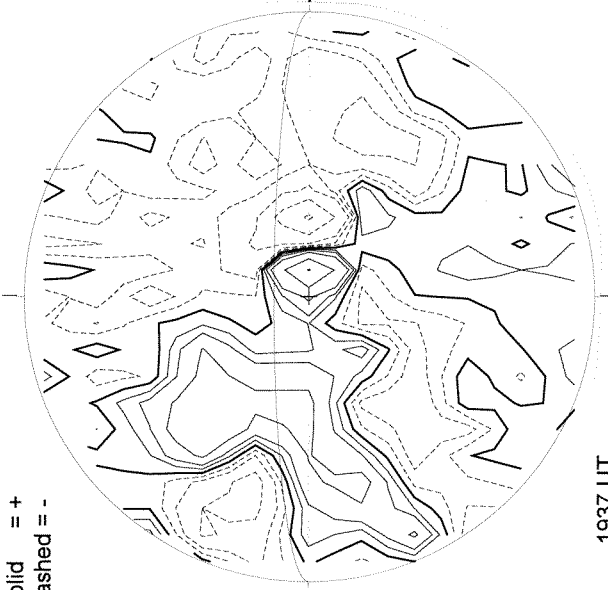


MARCH 19, 2006 ( P= -25.00, Bo = -7.08, Lo = 302.18)

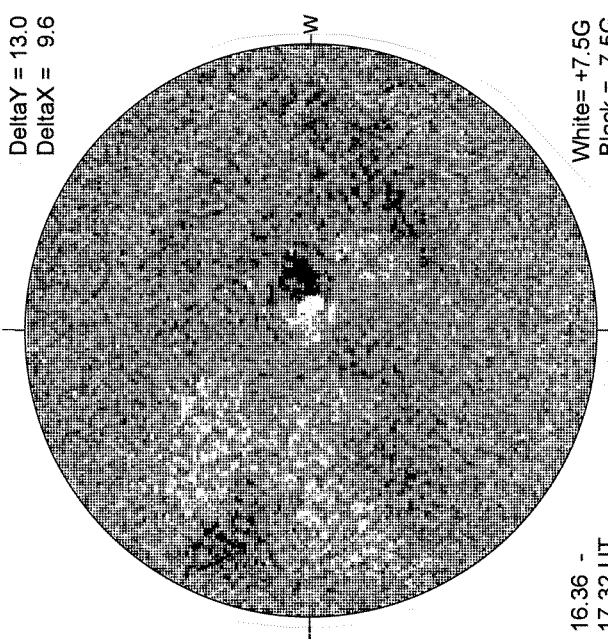
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*



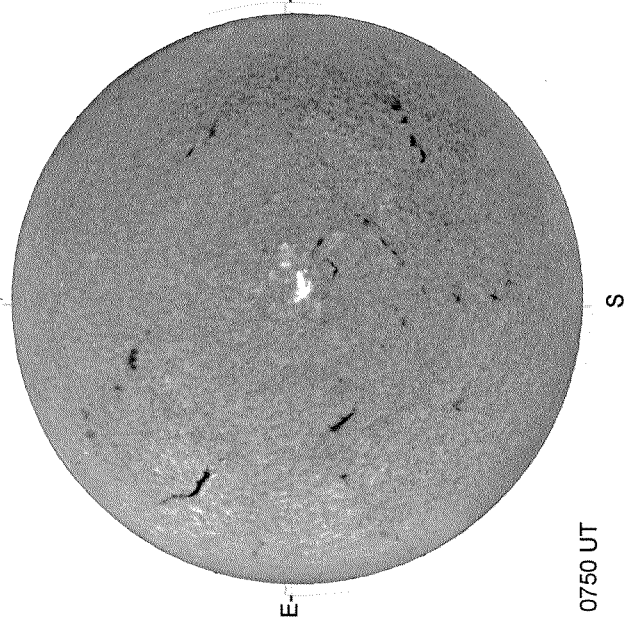
STANFORD MAGNETOGRAM



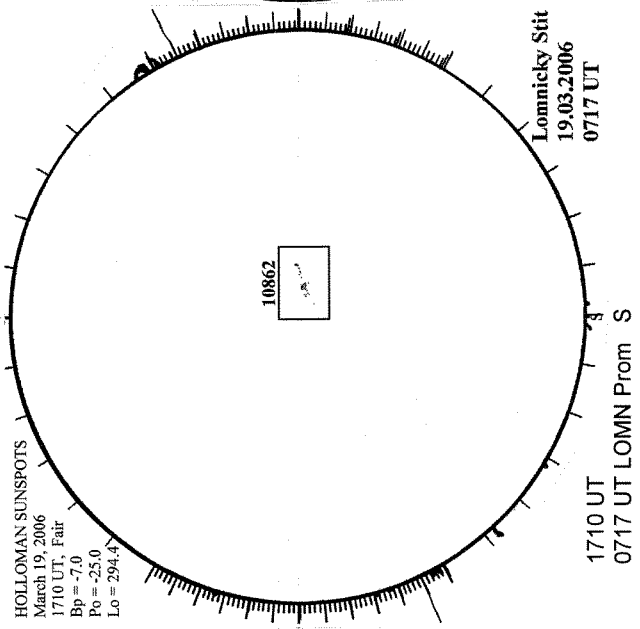
MT. WILSON MAGNETOGRAM



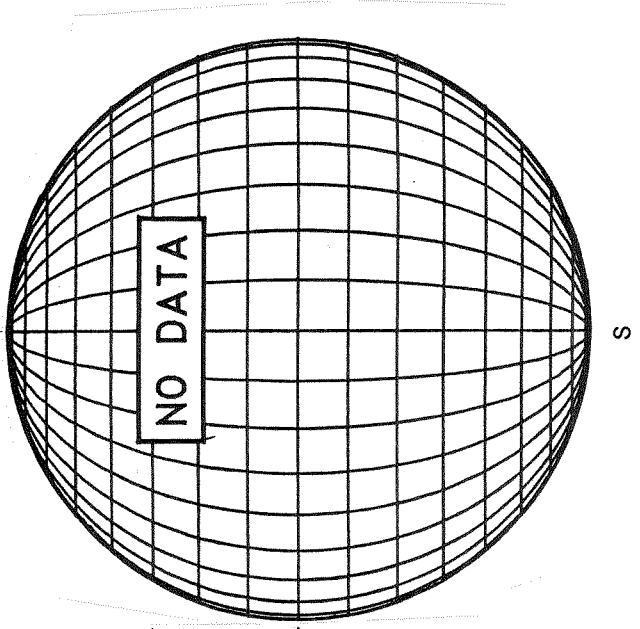
KANZELHOHE H-ALPHA



HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)---

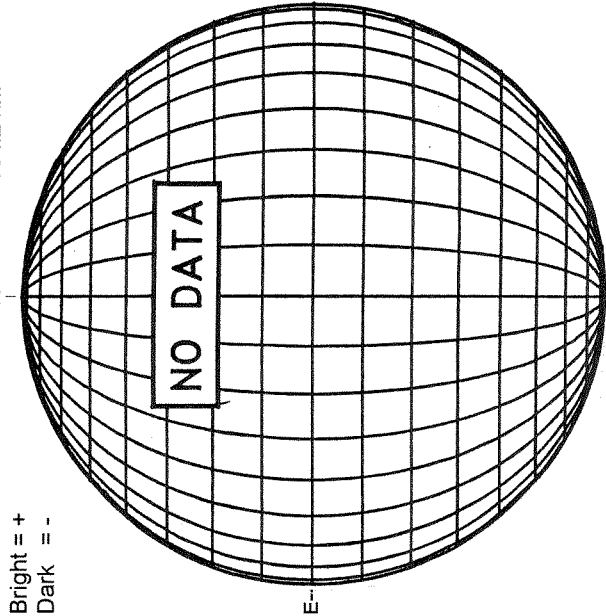




MARCH 20, 2006 ( P= -25.13, Bo = -7.05, Lo = 289.00)

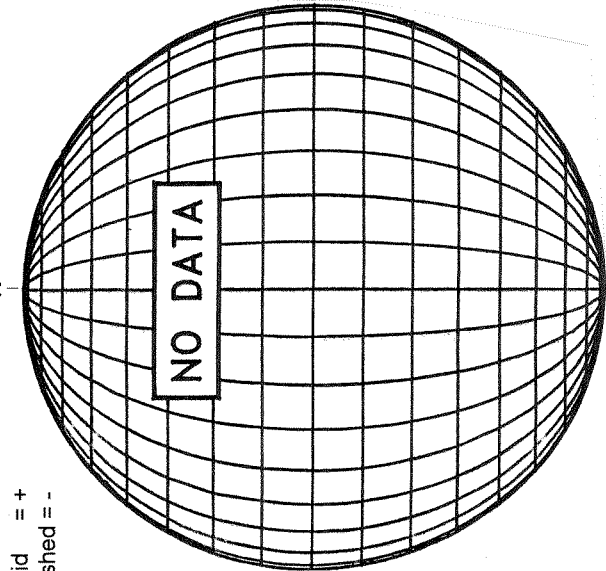
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



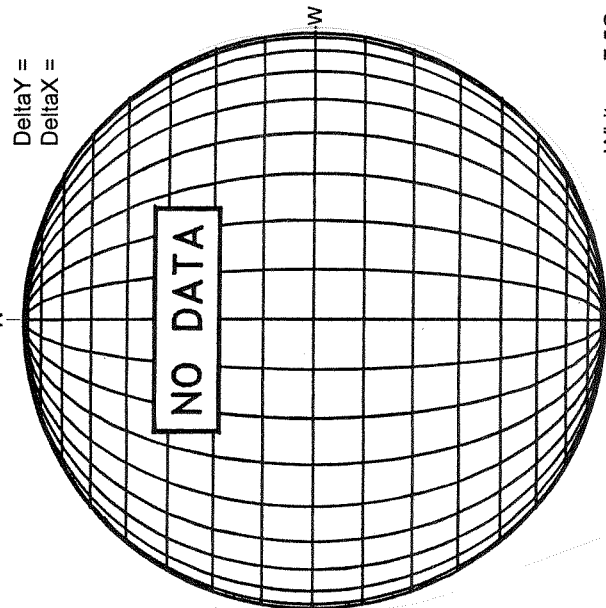
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



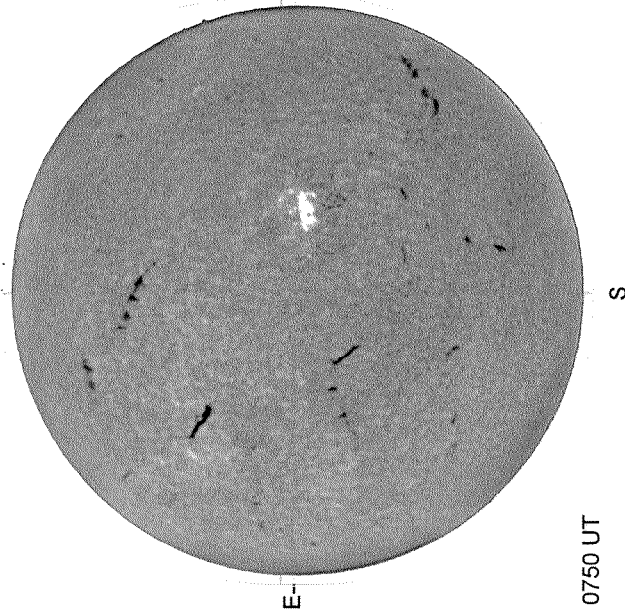
MT. WILSON MAGNETOGRAM

Delta Y =  
Delta X =



White= +7.5G  
Black = -7.5G

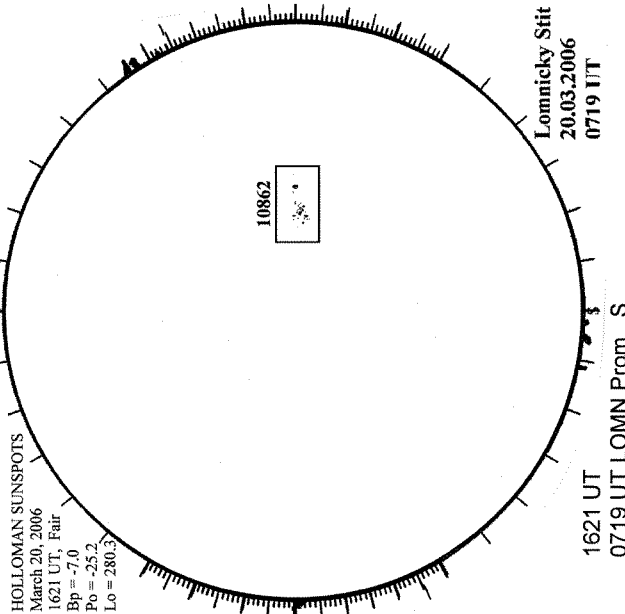
KANZELHOE H-ALPHA



0750 UT

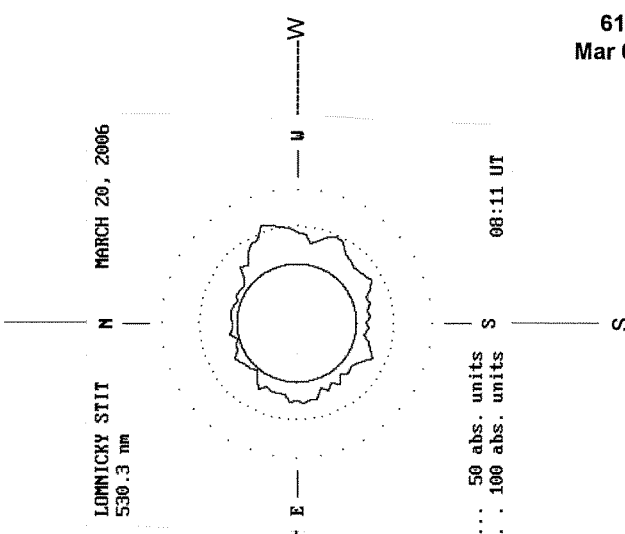
HOLLOMAN SUNSPOTS

HOLLOMAN SUNSPOTS  
March 20, 2006  
1621 UT, Fair  
Bp = -7.0  
Po = -25.2  
Lo = 280.3



1621 UT  
0719 UT LOMN Prom S

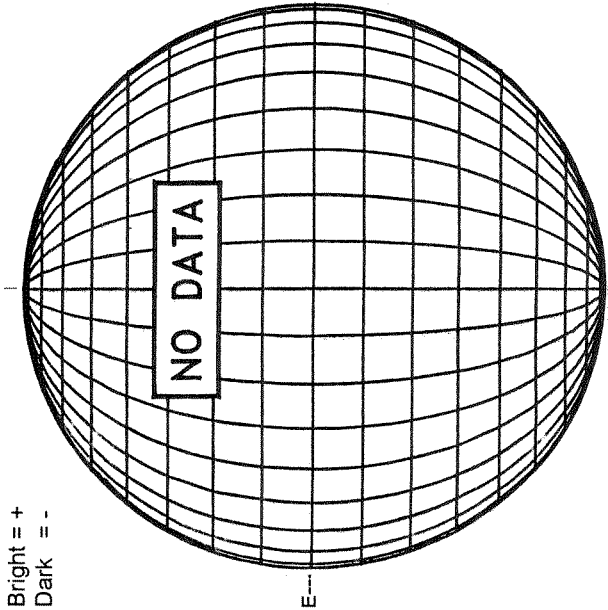
LOMNICKY PEAK CORONA (1.04 Radii)----



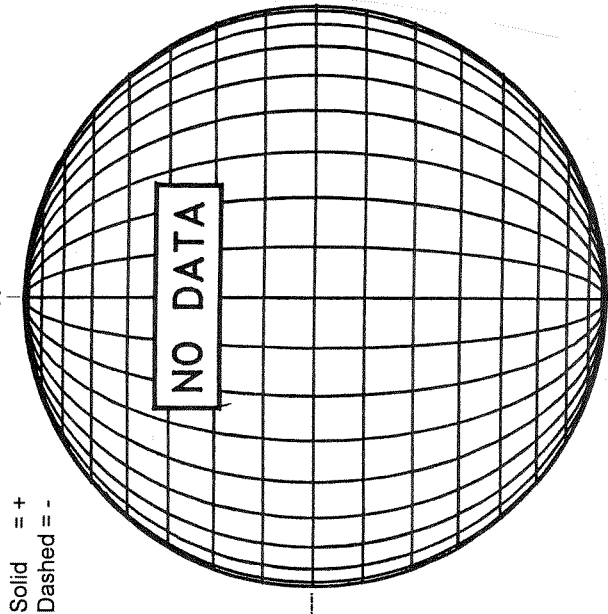
50 abs. units  
100 abs. units  
00:11 UT

MARCH 21, 2006 ( P= -25.25, Bo = -7.02, Lo = 275.81)

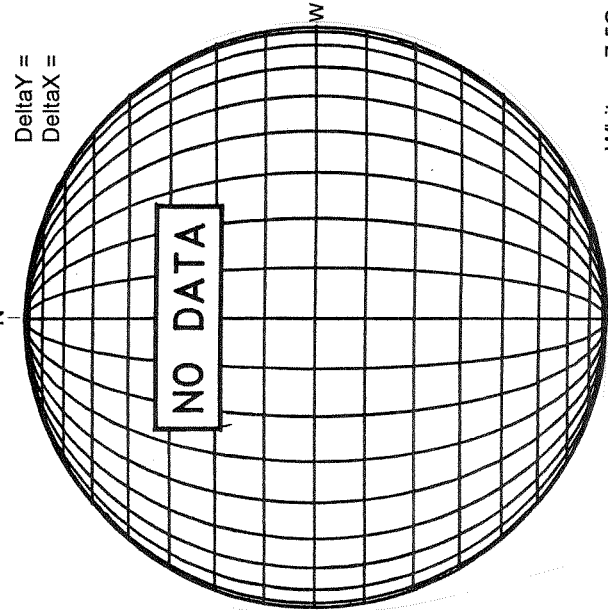
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*



STANFORD MAGNETOGRAM

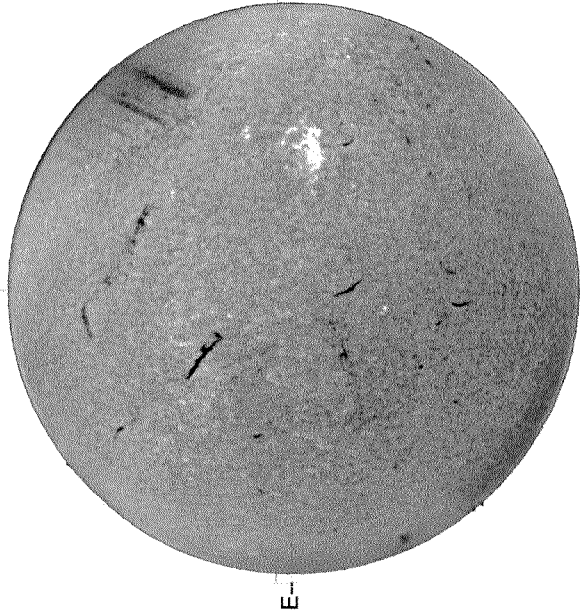


MT. WILSON MAGNETOGRAM

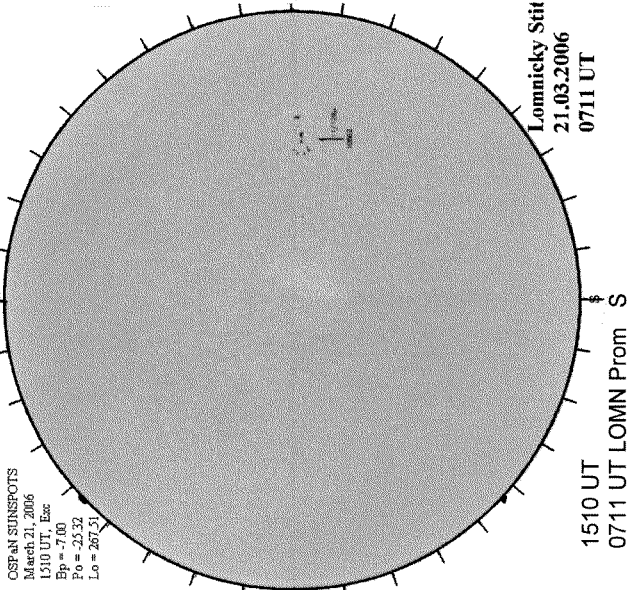


White= +7.5G  
Black = -7.5G

KANZELHOHE H-ALPHA

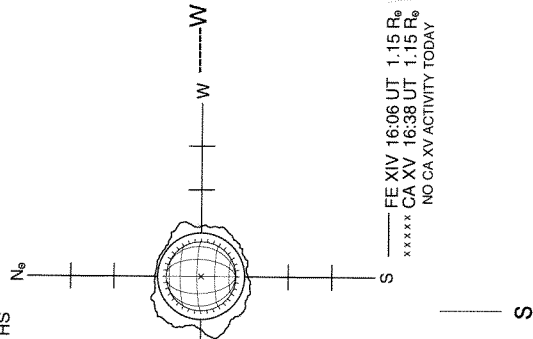


ISOON/OSPAn SUNSPOTS



LOMNICKY PEAK CORONA (1.04 Radii)----

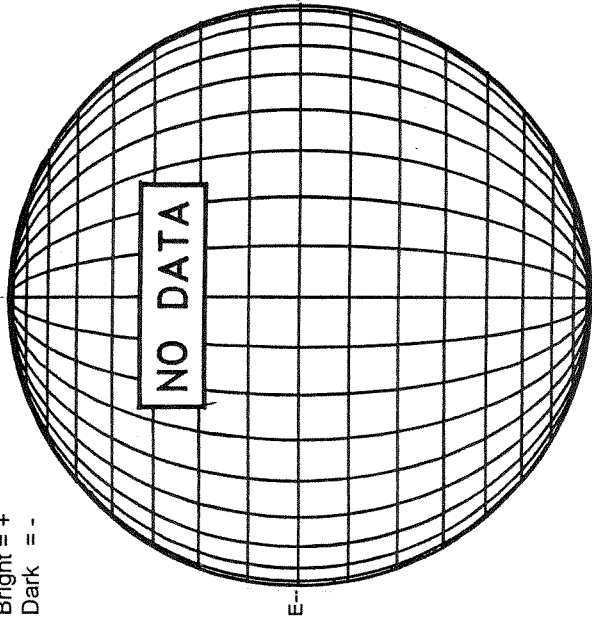
NSO / SACRAMENTO PEAK CORONAL DATA  
TICK MARKS EVERY 10 MILLIONTHS



MARCH 22, 2006 ( P= -25.37, Bo = -6.99, Lo = 262.63)

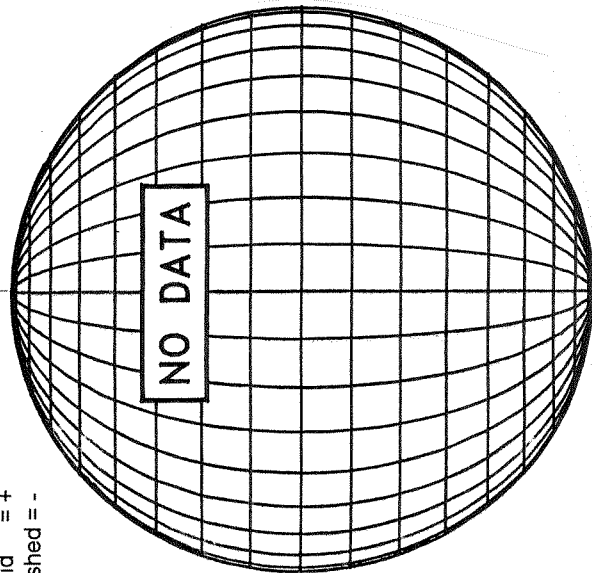
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



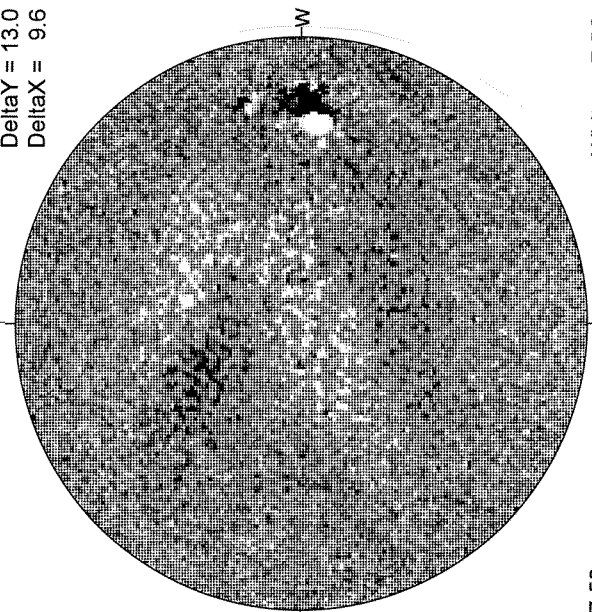
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

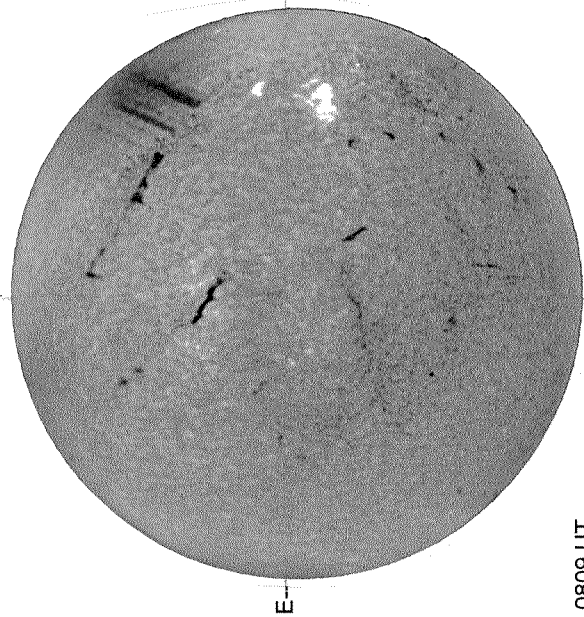
DeltaY = 13.0  
DeltaX = 9.6



17.50 -  
18.46 UT

White= +7.5G  
Black = -7.5G

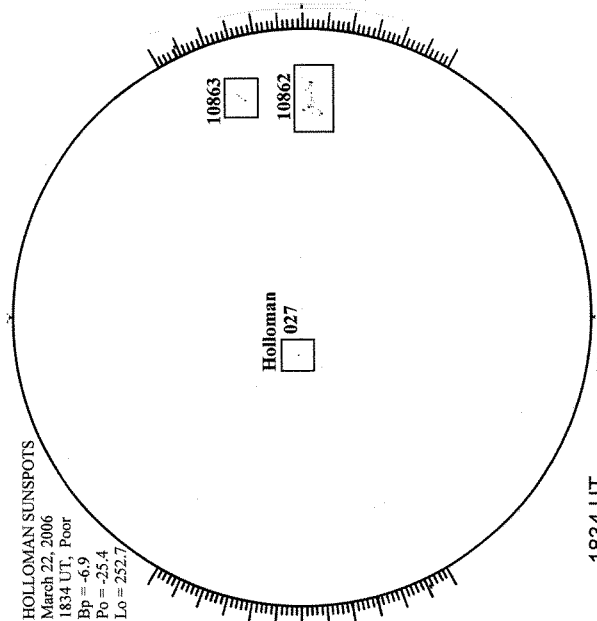
KANZELHOHE H-ALPHA



0809 UT

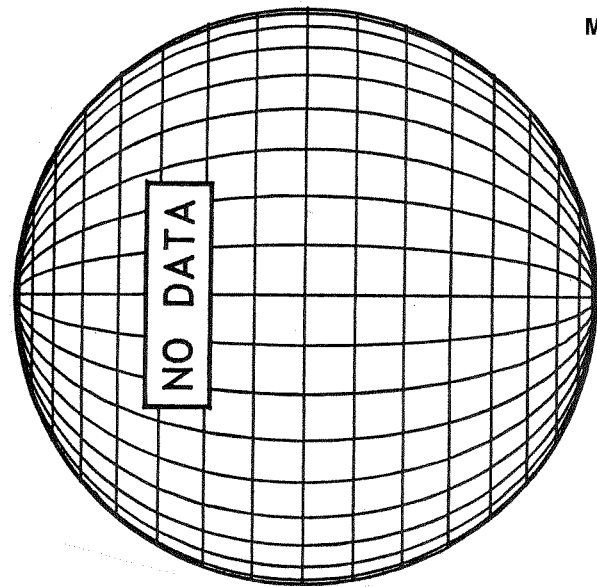
HOLLOMAN SUNSPOTS

HOLLOMAN SUNSPOTS  
March 22, 2006  
1834 UT, Poor  
Bp = -6.9  
Po = -25.4  
Lo = 252.7



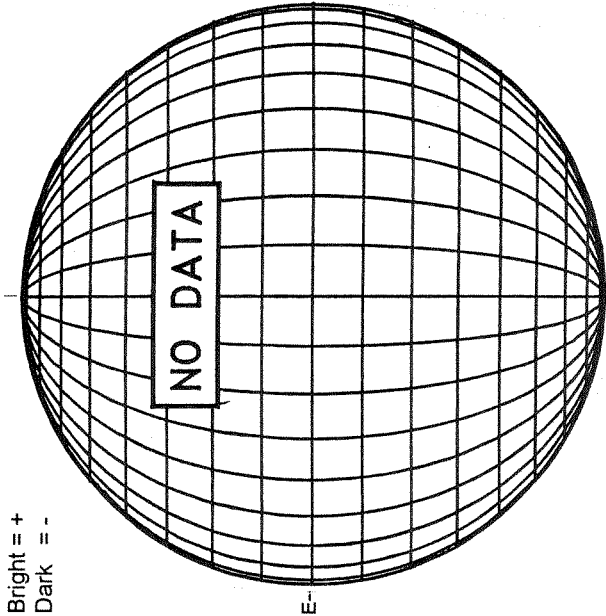
1834 UT

SACRAMENTO PEAK CORONA (1.15 Radii)-----

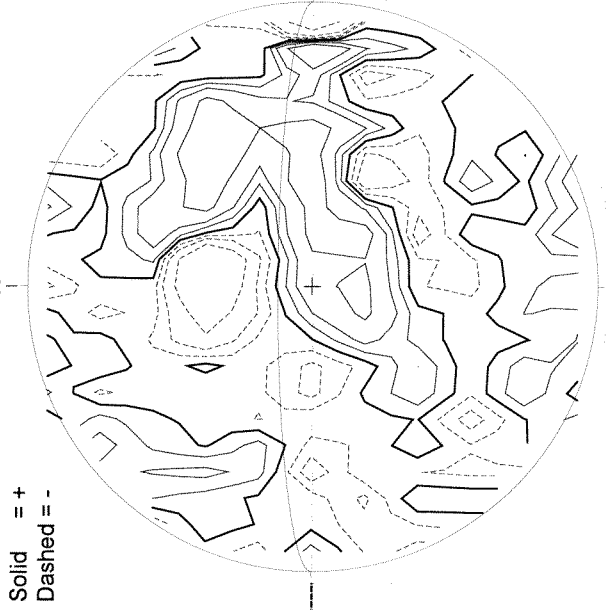


MARCH 23, 2006 ( P= -25.48, Bo = -6.96, Lo = 249.45)

KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

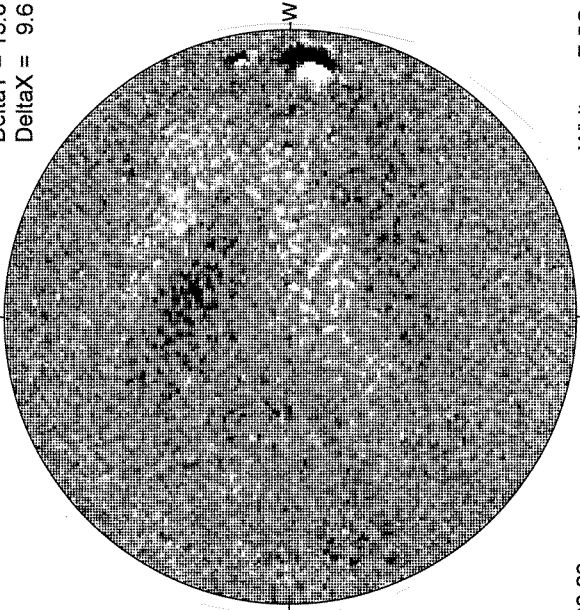


STANFORD MAGNETOGRAM



MT. WILSON MAGNETOGRAM

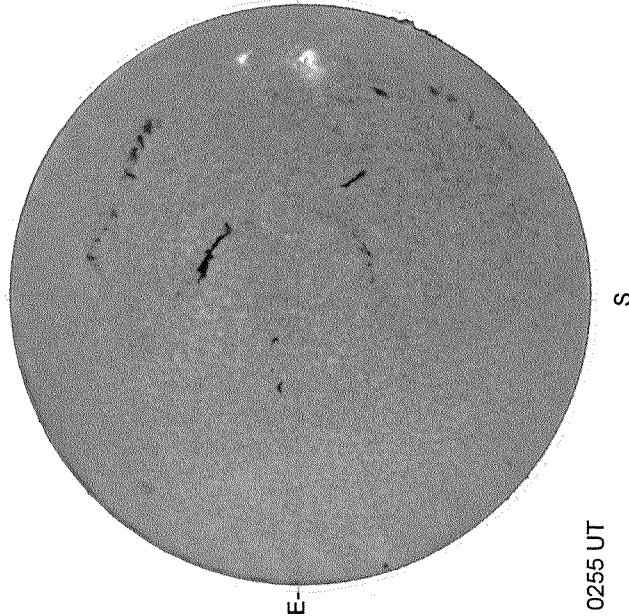
DeltaY = 13.0  
DeltaX = 9.6



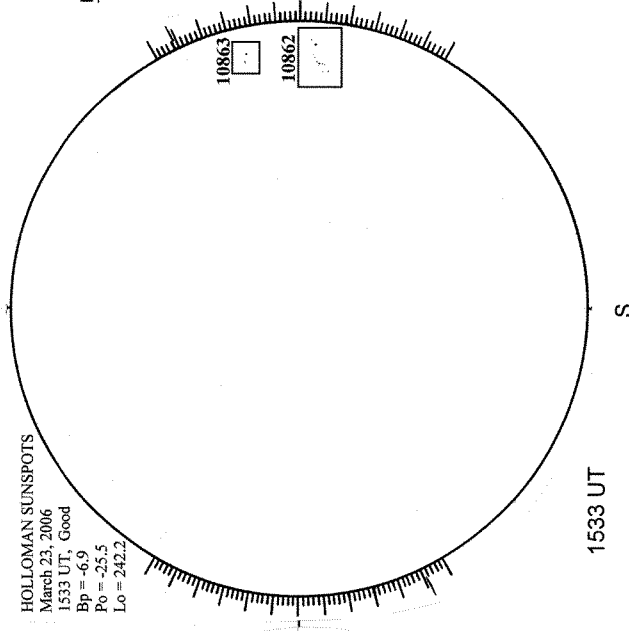
20.83 -  
21.79 UT

White= +7.5G  
Black = -7.5G

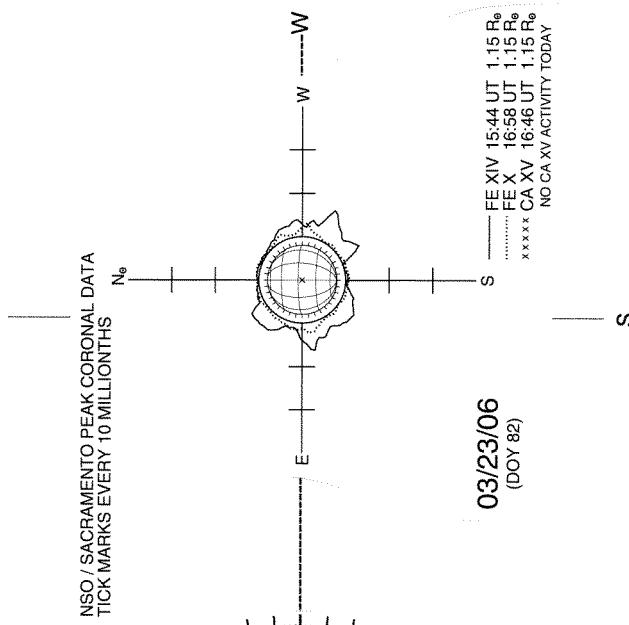
HUAIROU H-ALPHA



HOLLOMAN SUNSPOTS



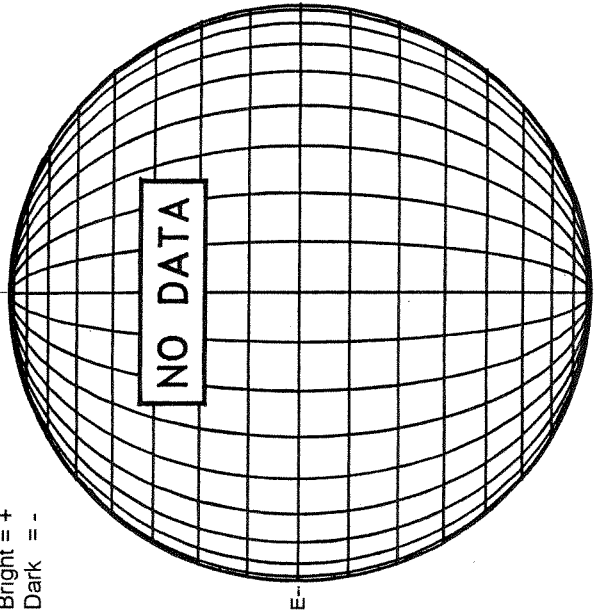
SACRAMENTO PEAK CORONA (1.15 Radii)---



MARCH 24, 2006 ( P= -25.58, Bo = -6.92, Lo = 236.26)

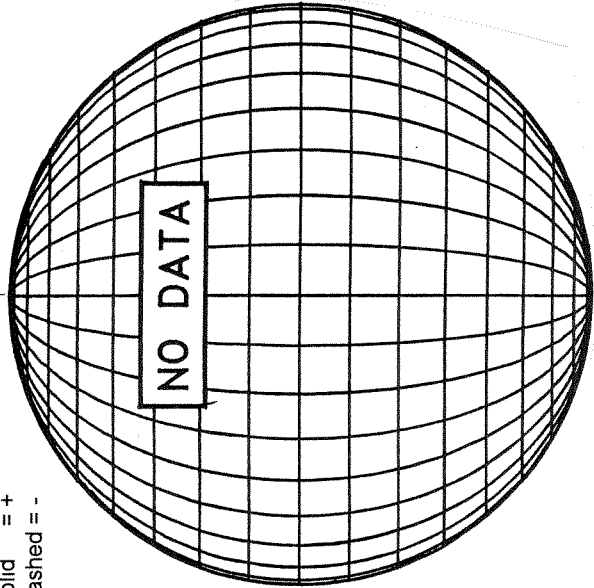
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



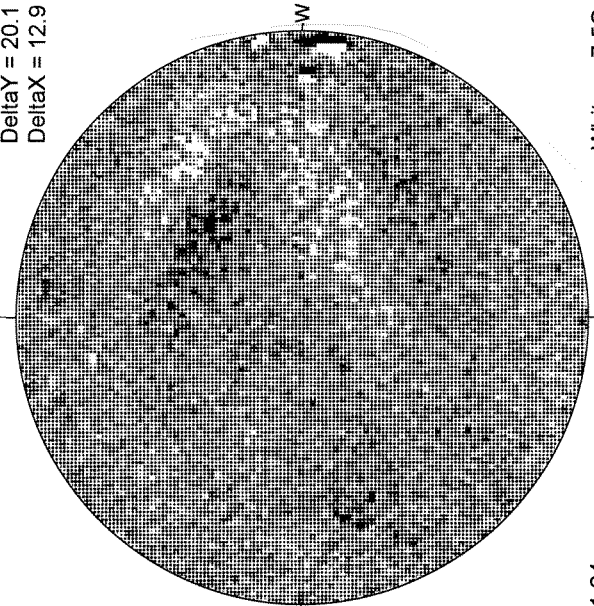
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

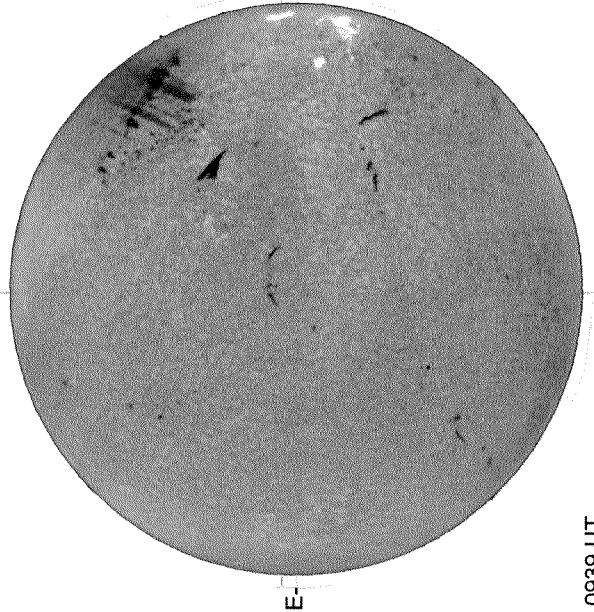
DeltaY = 20.1  
DeltaX = 12.9



21.24 -  
21.66 UT

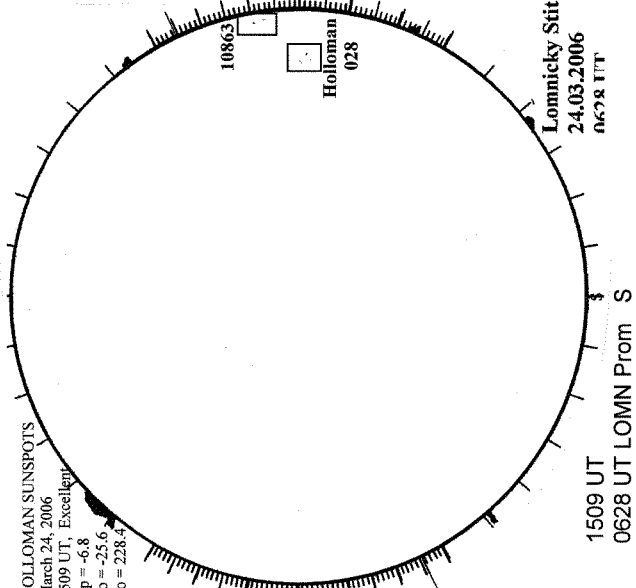
White= +7.5G  
Black = -7.5G

KANZELHOHE H-ALPHA

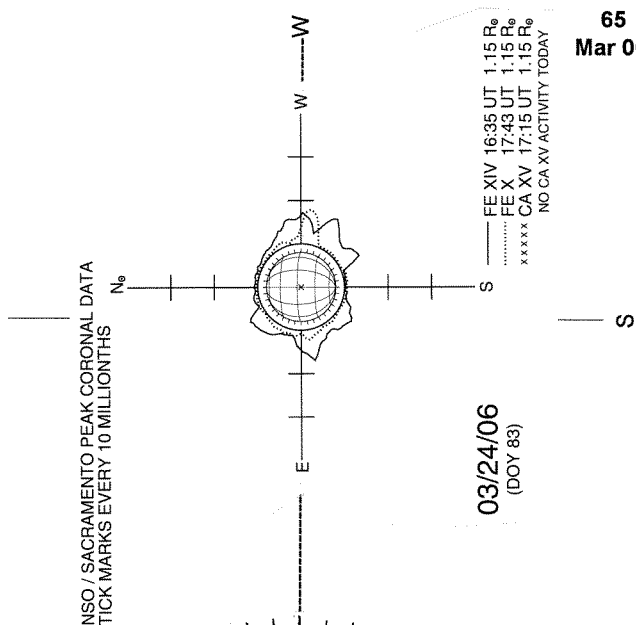


0939 UT

HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)---



03/24/06  
(DOY 83)

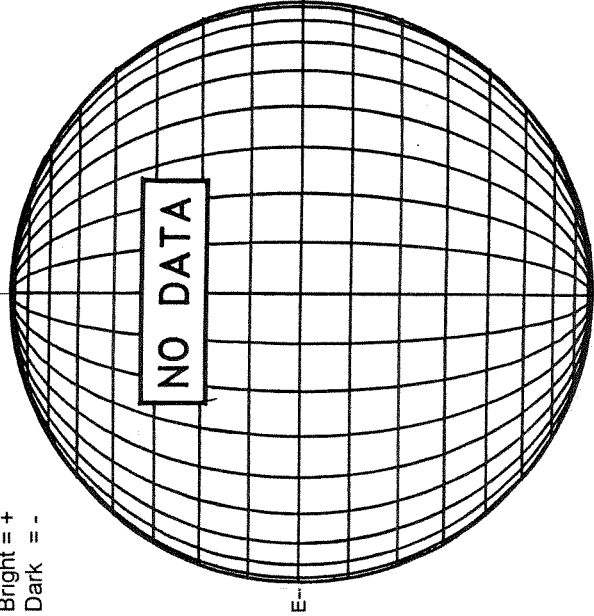
65  
Mar 06



MARCH 25, 2006 ( P= -25.68, Bo = -6.88, Lo = 223.07)

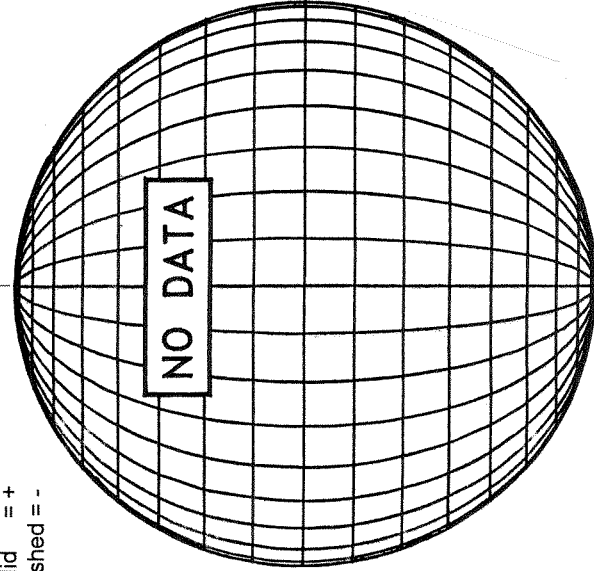
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



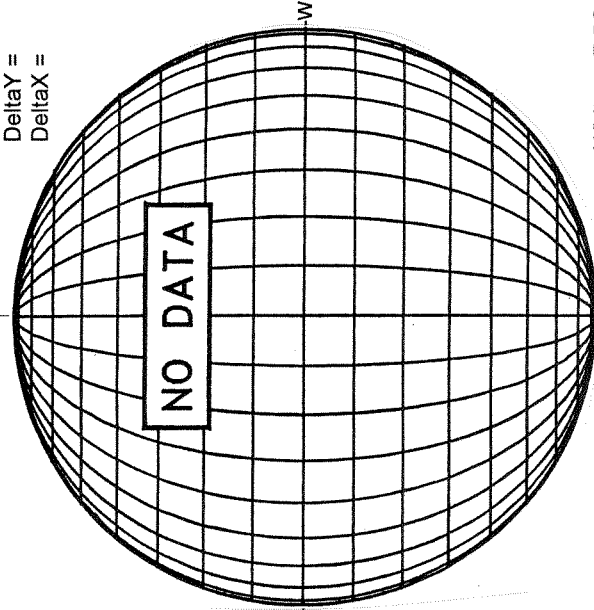
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



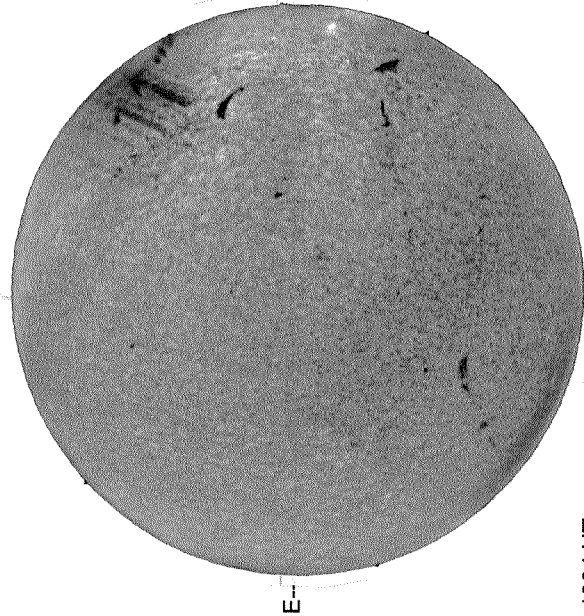
MT. WILSON MAGNETOGRAM

DeltaY =  
DeltaX =



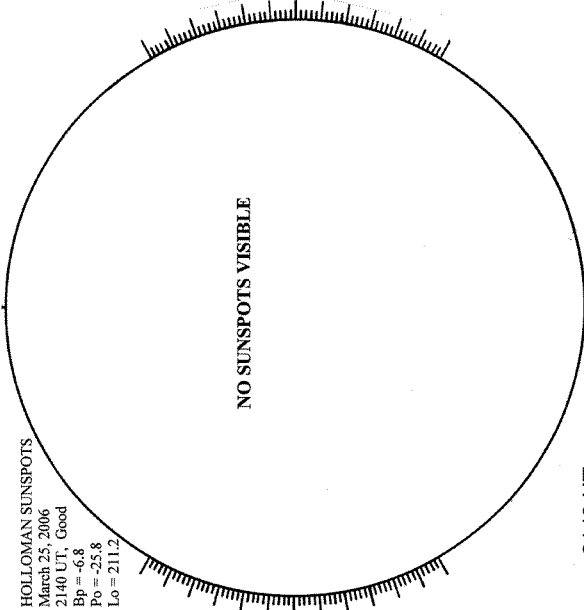
White= +7.5G  
Black = -7.5G

KANZELHOHE H-ALPHA

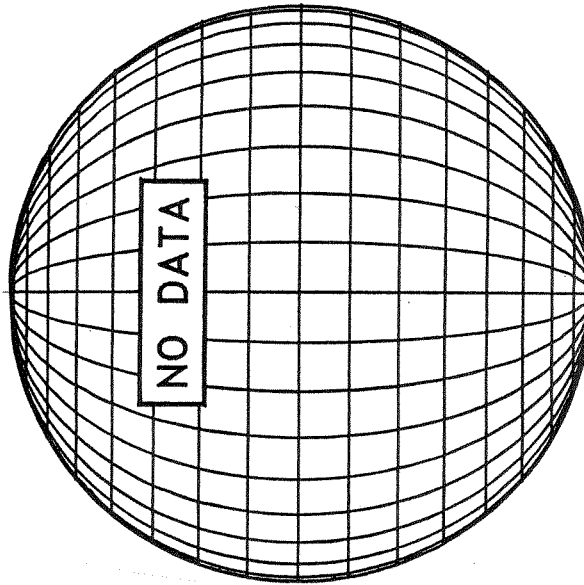


HOLLOMAN SUNSPOTS

HOLLOMAN SUNSPOTS  
March 25, 2006  
2140 UT, Good  
Bp = -6.8  
Po = -25.8  
Lo = 211.2



SACRAMENTO PEAK CORONA (1.15 Radii)----



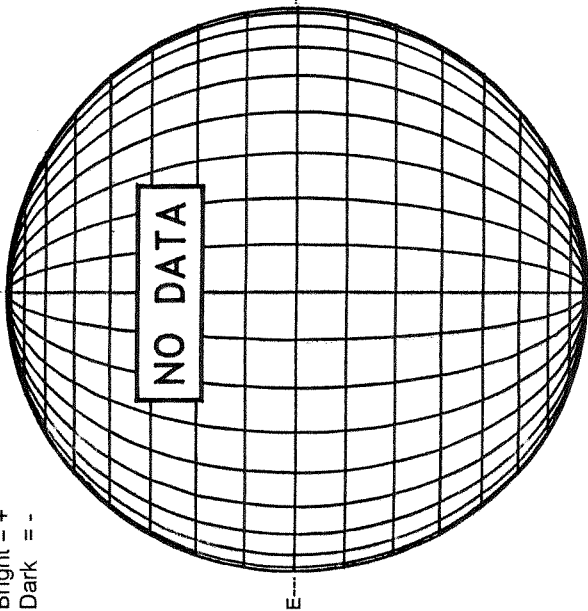
1304 UT

2140 UT

MARCH 26, 2006 ( P= -25.77, Bo = -6.84, Lo = 209.89)

KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



STANFORD MAGNETOGRAM

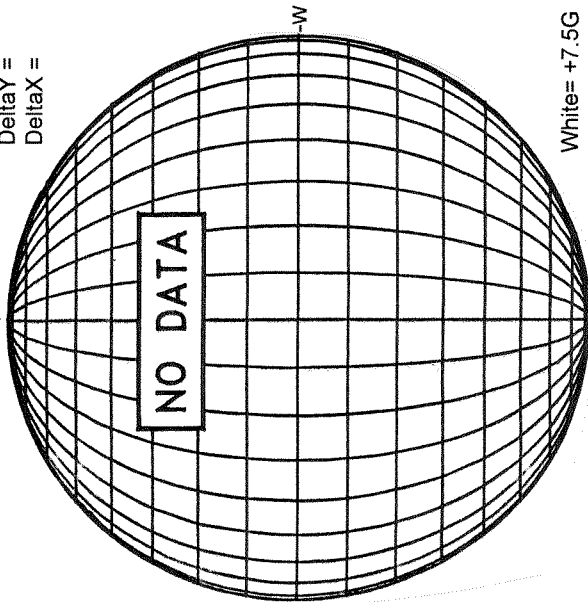
Solid = +  
Dashed = -



MAR 27  
0027 UT

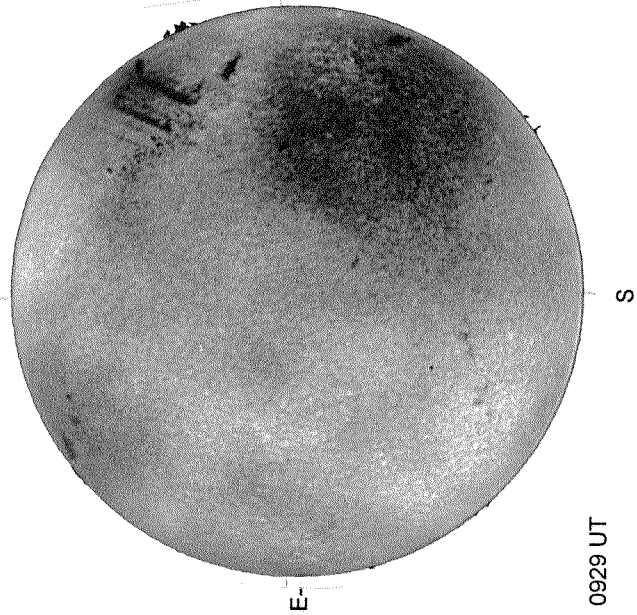
MT. WILSON MAGNETOGRAM

Delta Y =  
Delta X =



White= +7.5G  
Black = -7.5G

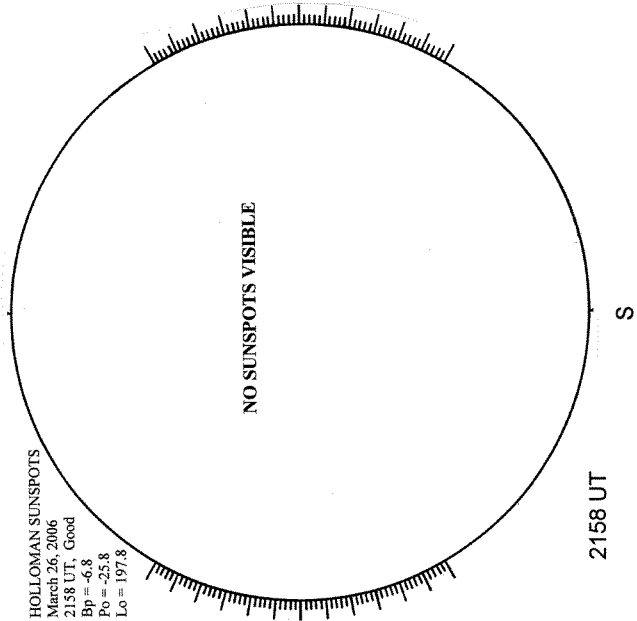
KANZELHOHE H-ALPHA



0929 UT

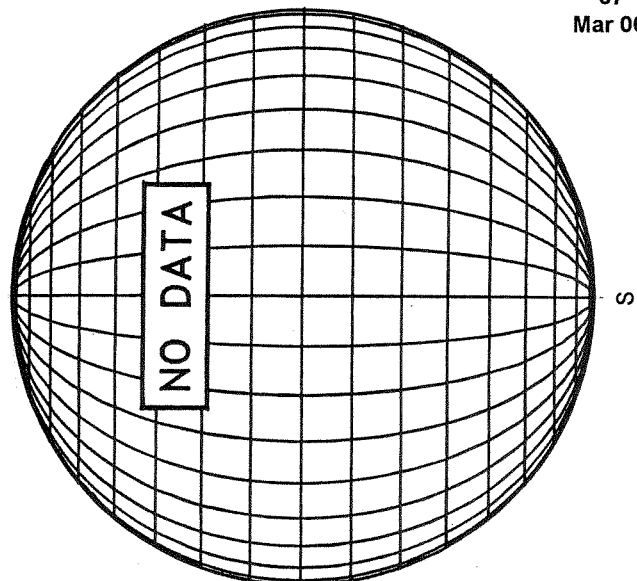
HOLLOMAN SUNSPOTS

HOLLOMAN SUNSPOTS  
March 26, 2006  
2158 UT; Good  
Bp = -6.8  
Po = -25.8  
Lo = 197.8



2158 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

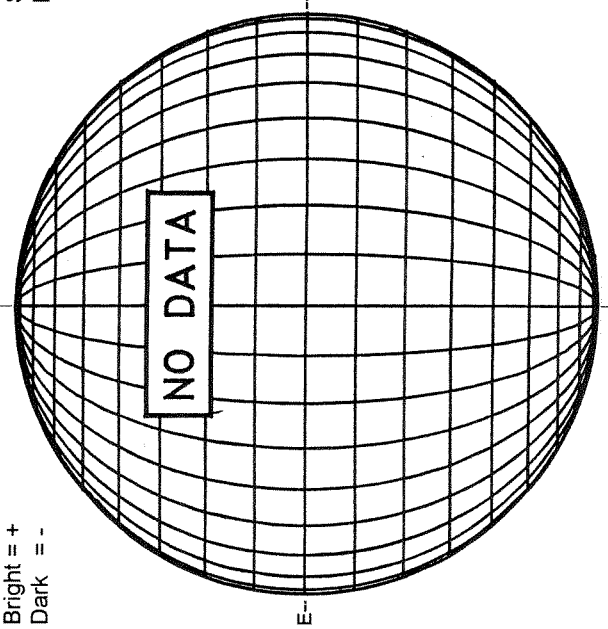




MARCH 27, 2006 ( P= -25.85, Bo = -6.80, Lo = 196.70)

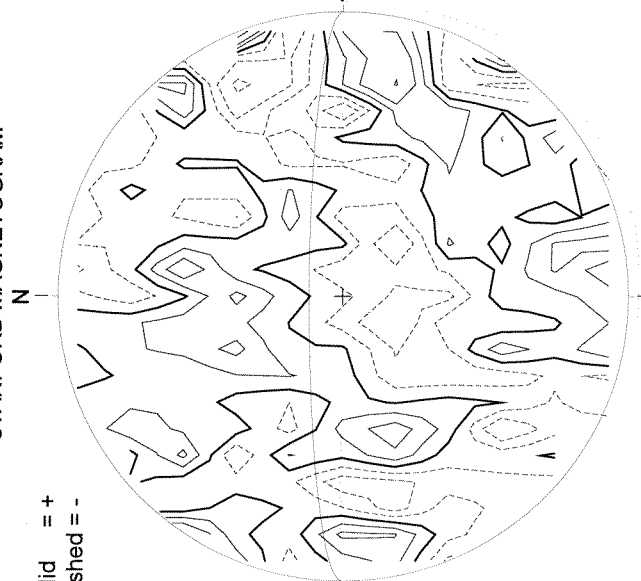
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



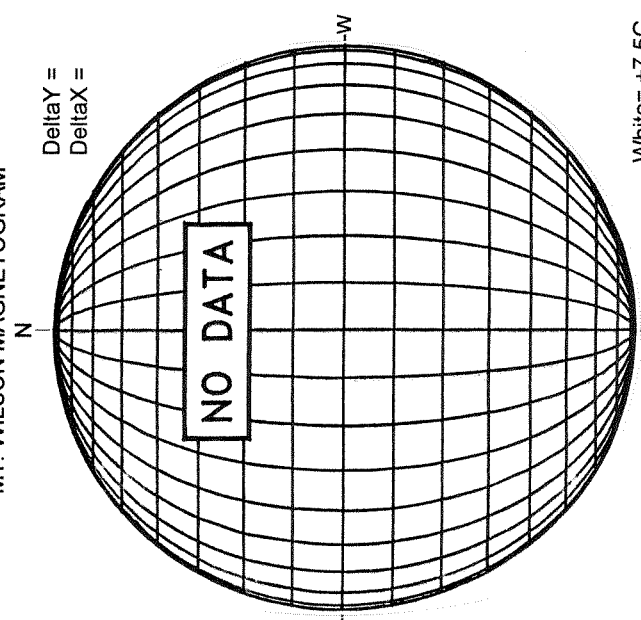
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

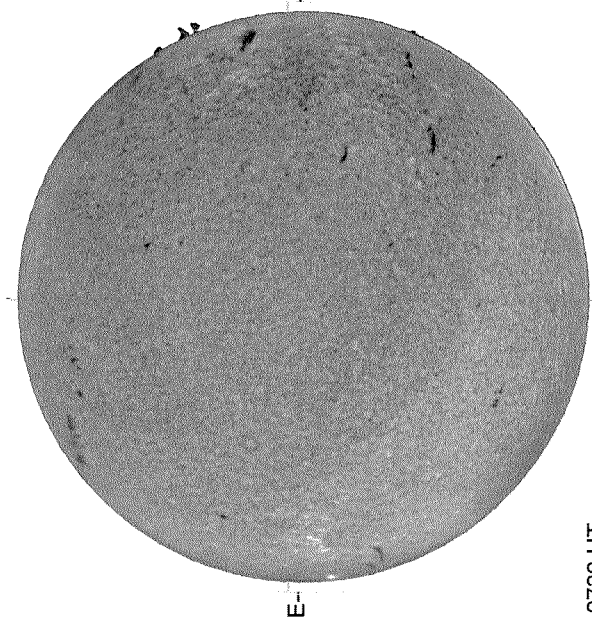
DeltaY =  
DeltaX =



White= +7.5G  
Black = -7.5G

KANZELHOHE H-ALPHA

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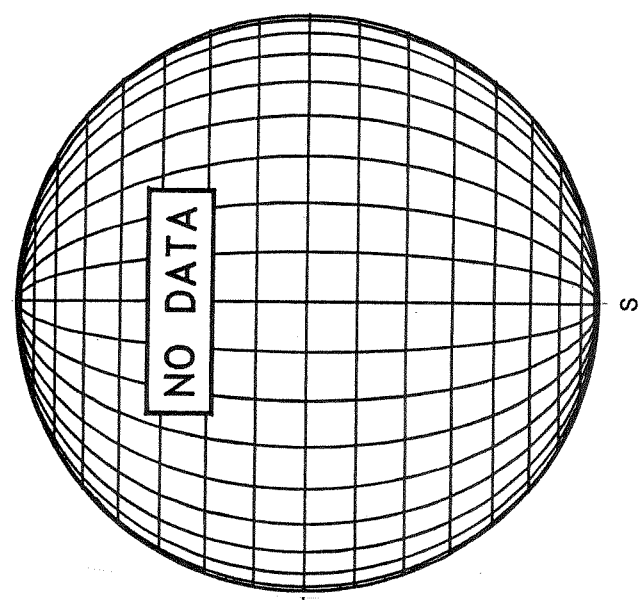


0732 UT

SAN VITO SUNSPOTS



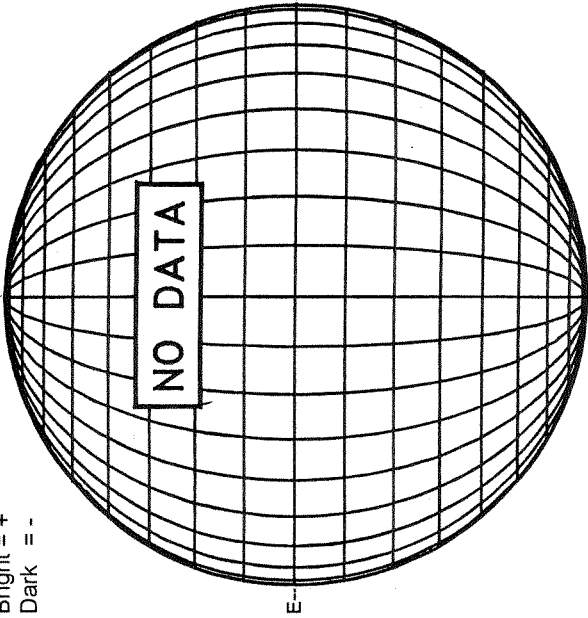
SACRAMENTO PEAK CORONA (1.15 Radii)-----



MARCH 28, 2006 ( P= -25.93, Bo = -6.75, Lo = 183.51)

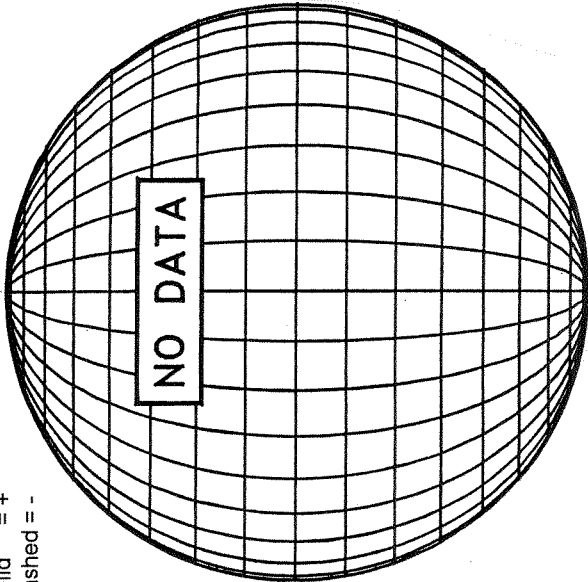
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



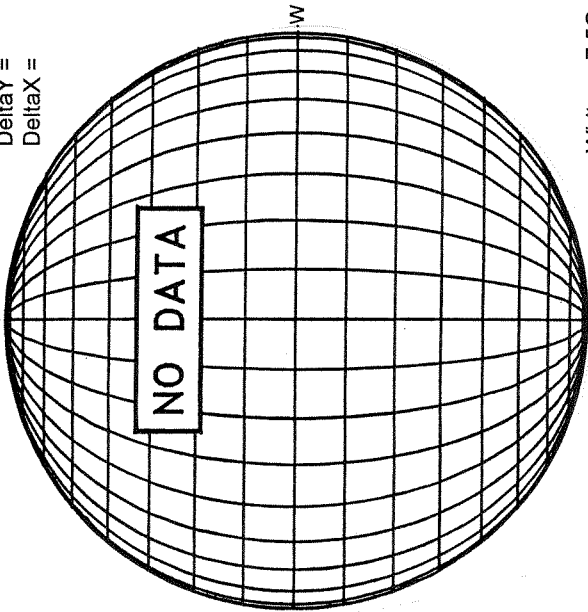
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



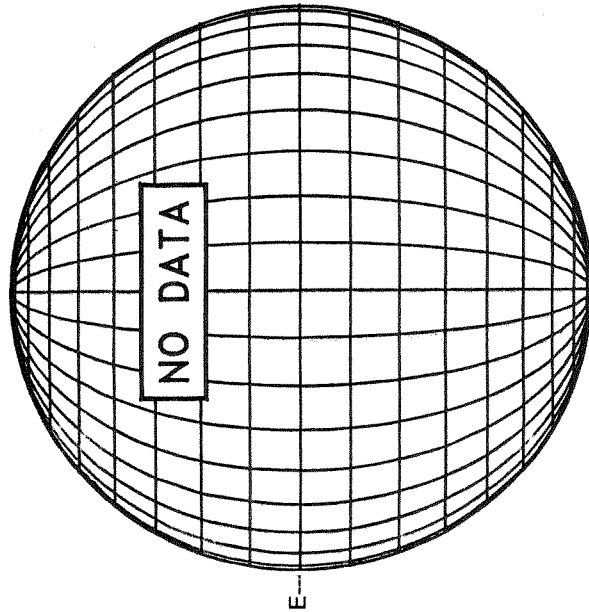
MT. WILSON MAGNETOGRAM

DeltaY =  
DeltaX =



White= +7.5G  
Black = -7.5G

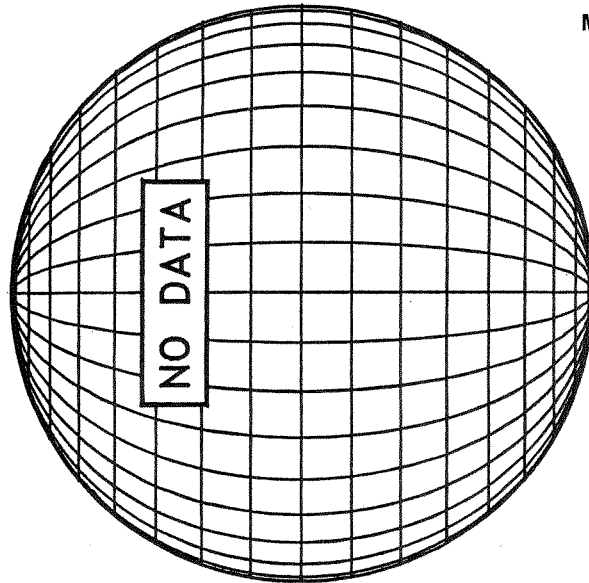
KANZELHOHE H-ALPHA



ISOON/OSPAN SUNSPOTS



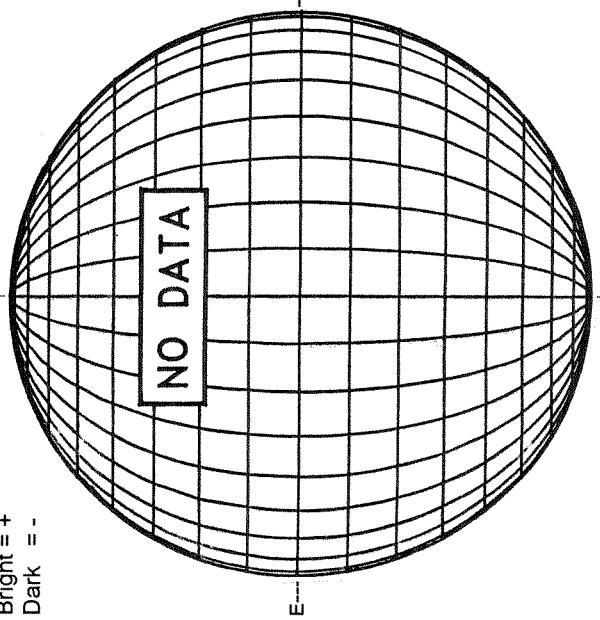
SACRAMENTO PEAK CORONA (1.15 Radii)----



MARCH 29, 2006 ( P= -26.00, Bo = -6.71, Lo = 170.32)

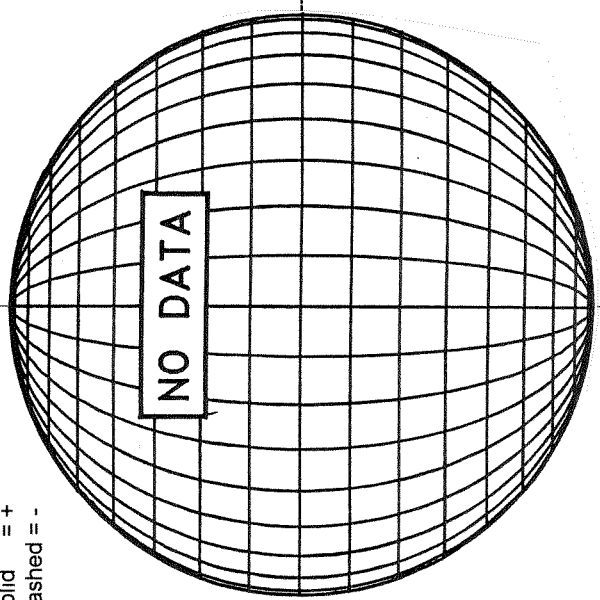
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



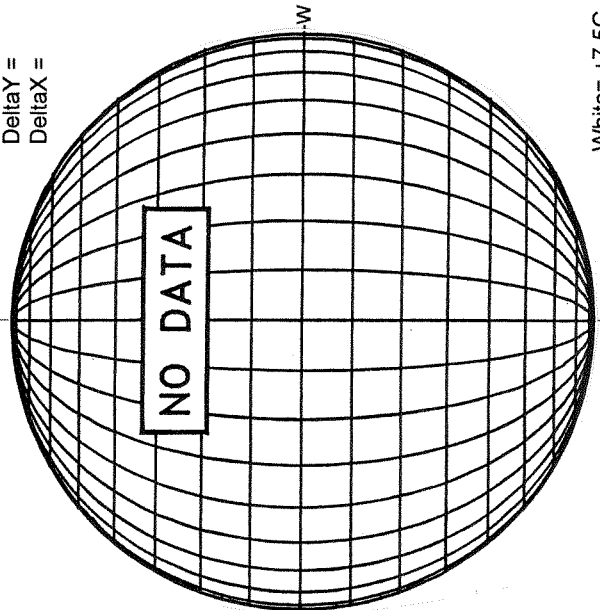
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



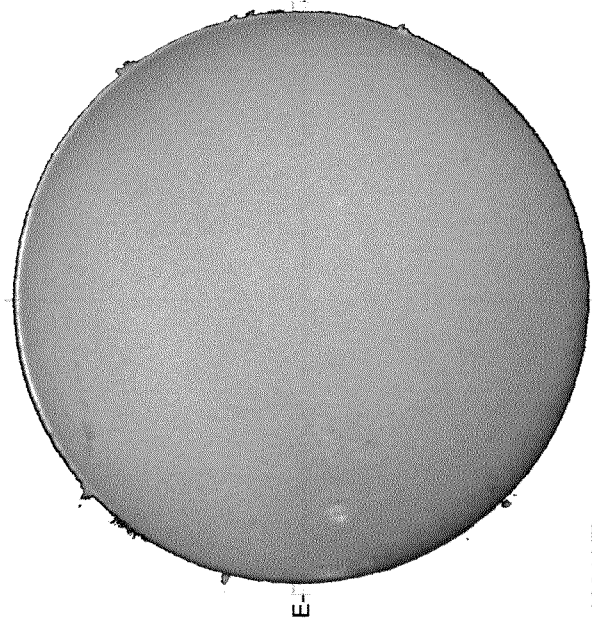
MT. WILSON MAGNETOGRAM

DeltaY =  
DeltaX =



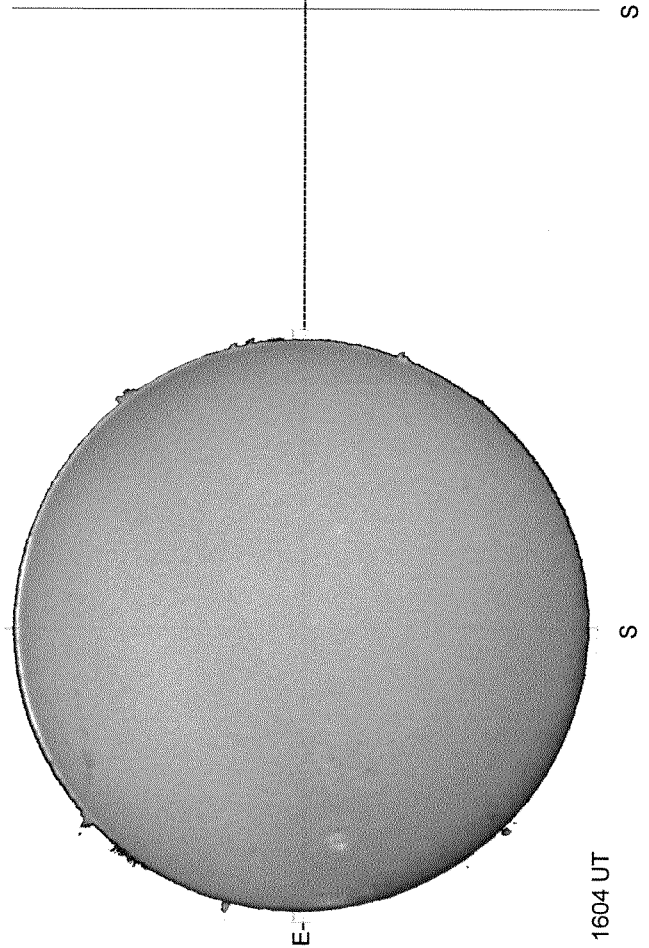
White= +7.5G  
Black = -7.5G

MEUDON H-ALPHA

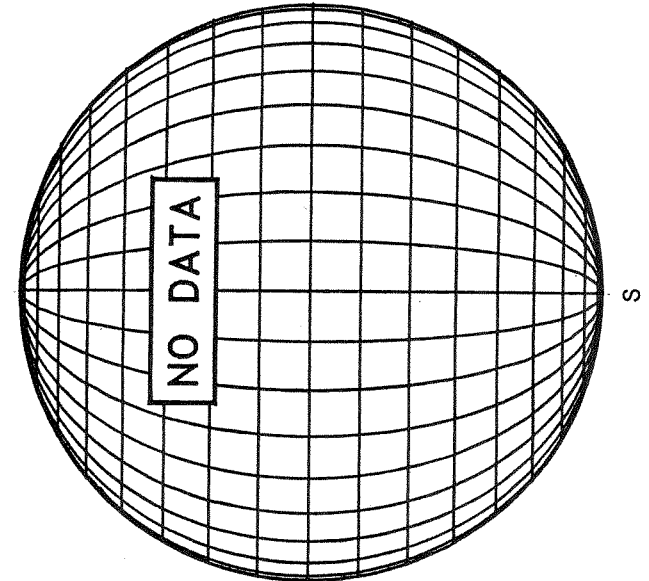


1604 UT

LEARMONTH SUNSPOTS



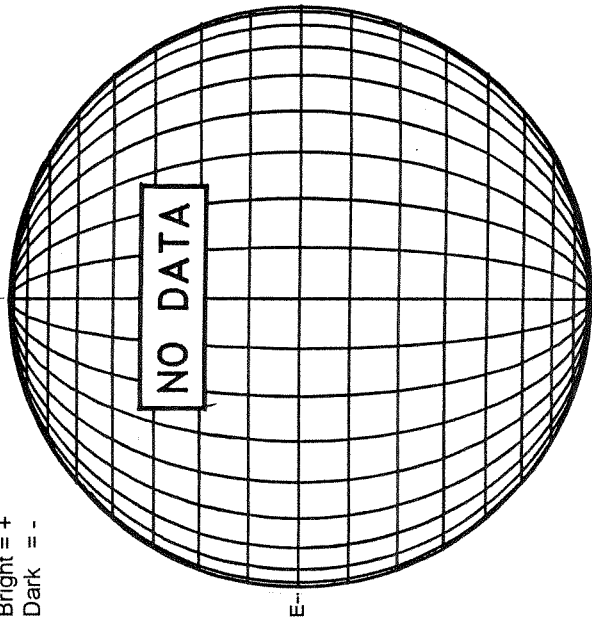
SACRAMENTO PEAK CORONA (1.15 Radii)-----



MARCH 30, 2006 ( P= -26.06, Bo = -6.66, Lo = 157.13)

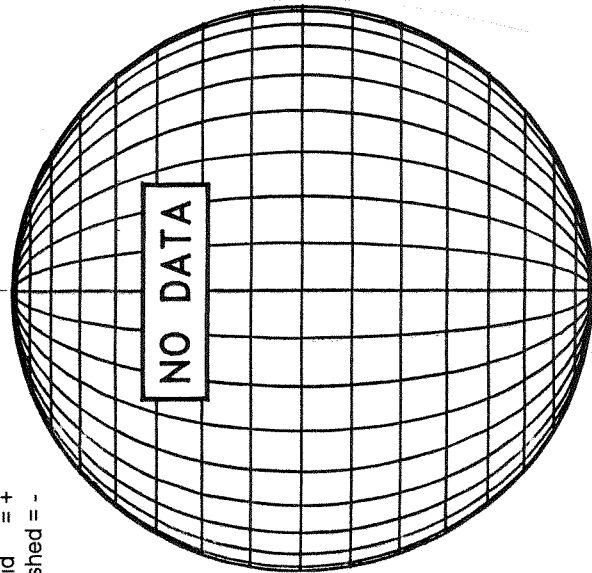
KITT PEAK MAGNETOGRAM—SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



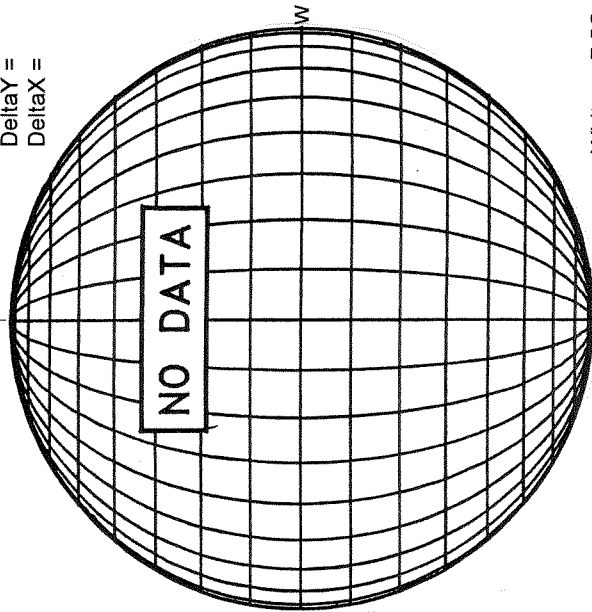
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



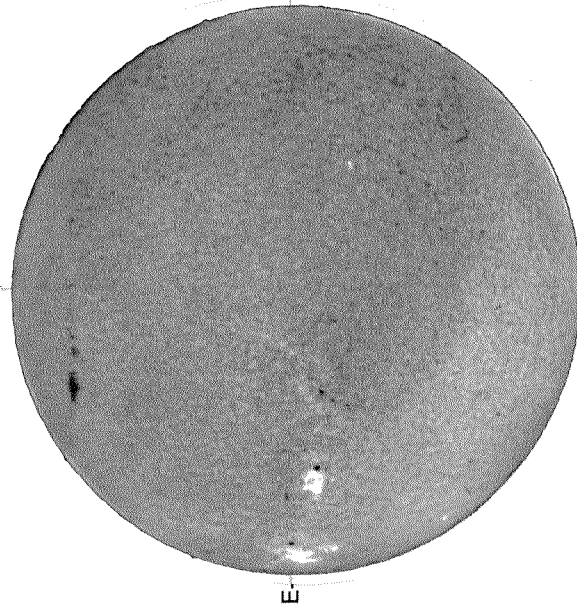
MT. WILSON MAGNETOGRAM

Delta Y =  
Delta X =



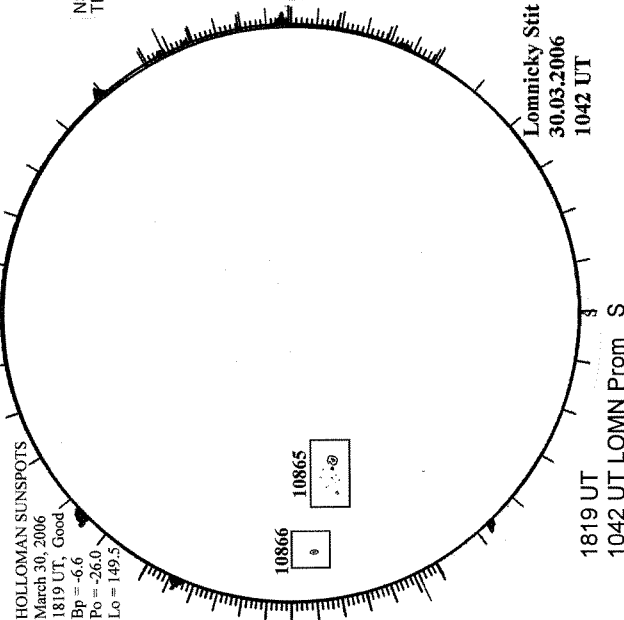
White = +7.5G  
Black = -7.5G

KANZELHOHE H-ALPHA



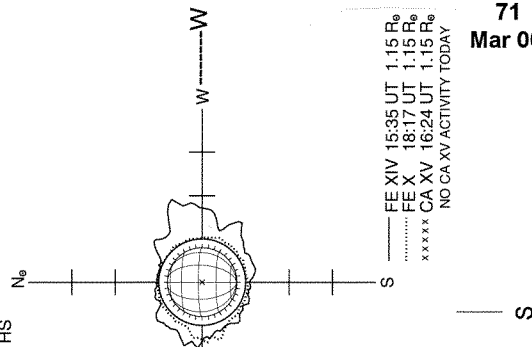
0602 UT

HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA  
TICK MARKS EVERY 10 MILLIONTHS



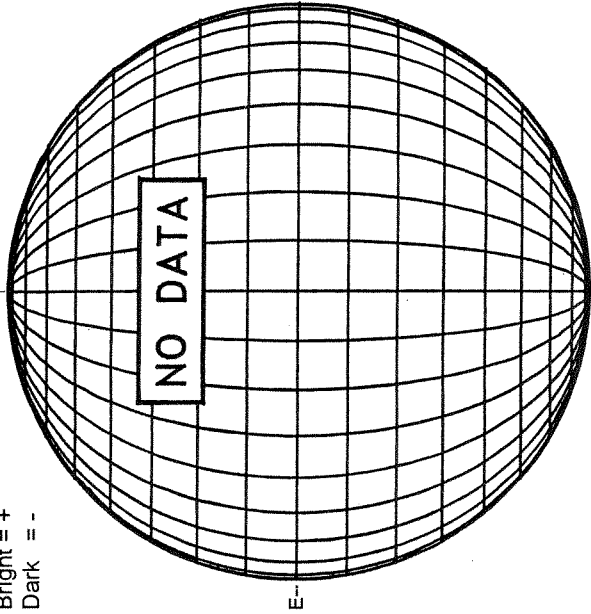
03/30/06  
(DOY 89)

— FE XIV 15:35 UT 1.15 R<sub>o</sub>  
..... FE X 18:17 UT 1.15 R<sub>o</sub>  
xxxxx CA XV 16:24 UT 1.15 R<sub>o</sub>  
NO CA XV ACTIVITY TODAY

MARCH 31, 2006 (P= -26.11, Bo = -6.61, Lo = 143.94)

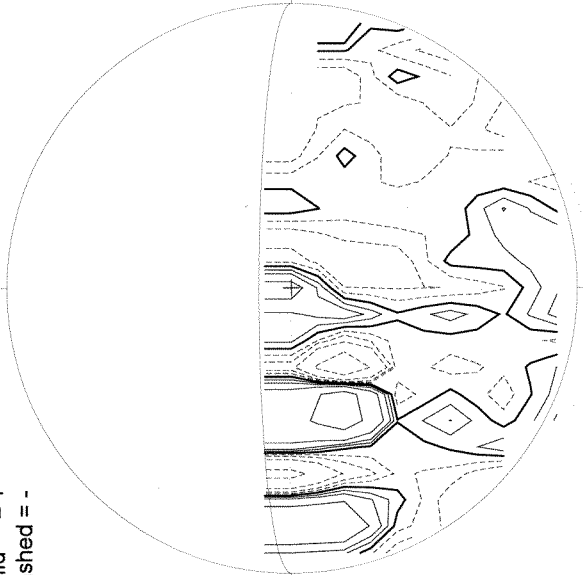
KITT PEAK MAGNETOGRAM--SOLIS  
\*\*854.2 nm\*\*

Bright = +  
Dark = -



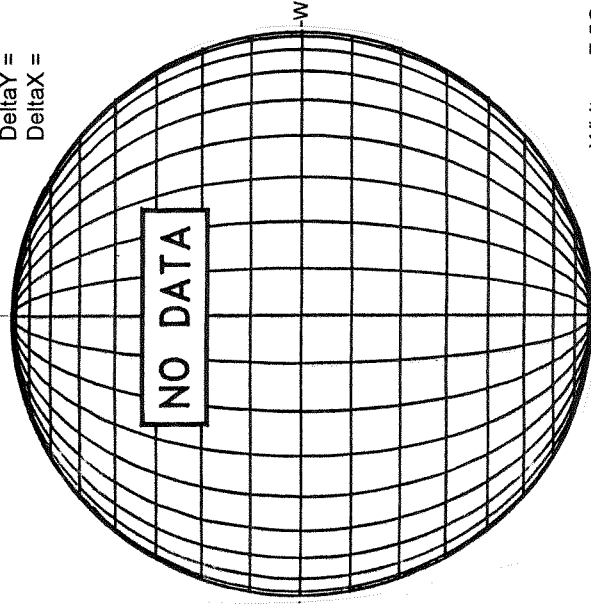
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



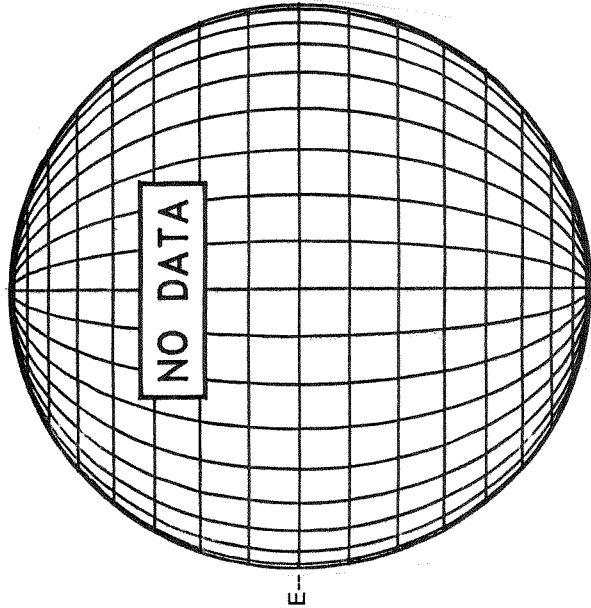
MT. WILSON MAGNETOGRAM

DeltaY =  
DeltaX =



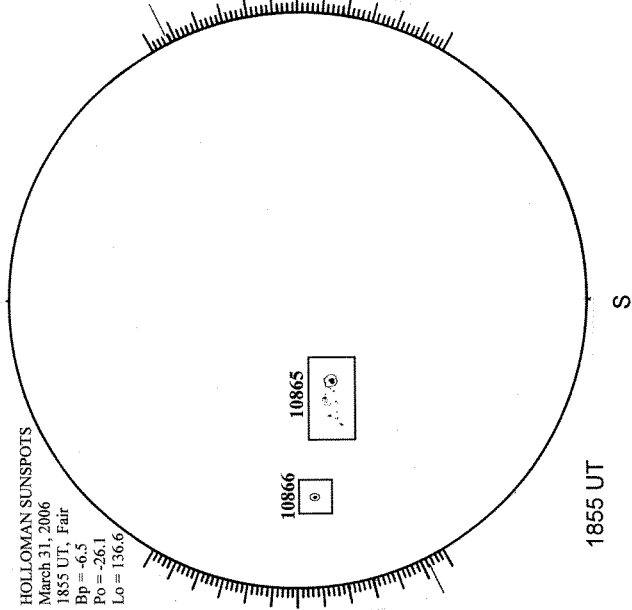
White= +7.5G  
Black = -7.5G

KANZELHOHE H-ALPHA

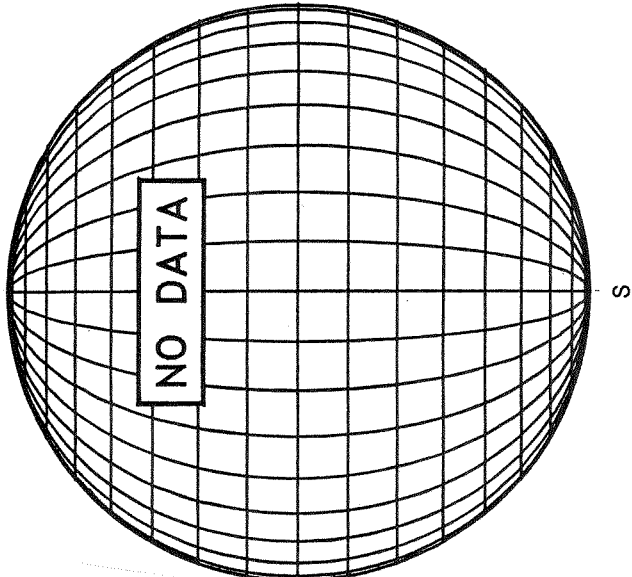


HOLLOMAN SUNSPOTS

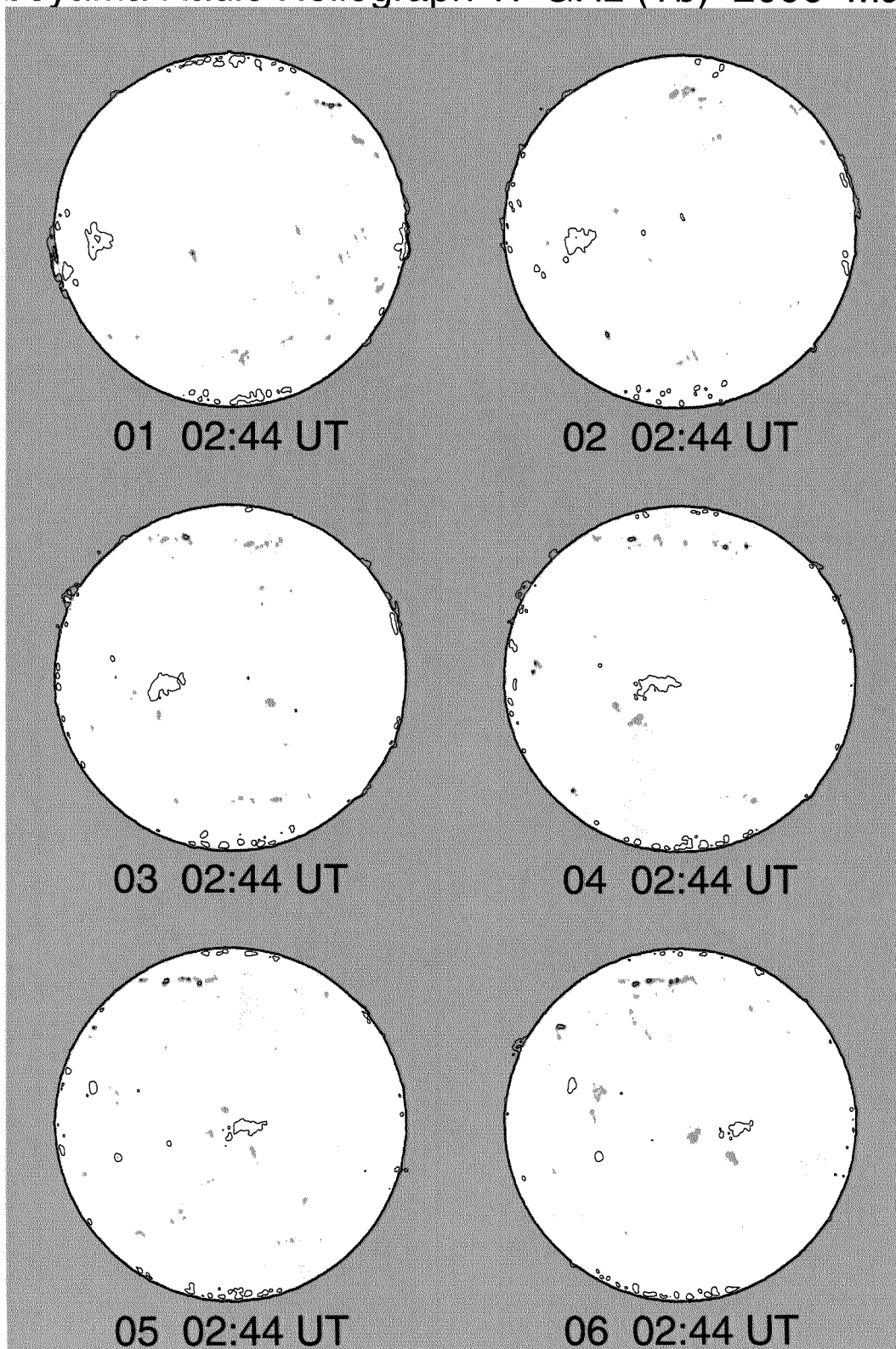
HOLLOMAN SUNSPOTS  
March 31, 2006  
1855 UT, Fair  
Bp = -6.5  
Po = -26.1  
Lo = 136.6



SACRAMENTO PEAK CORONA (1.15 Radii)-----



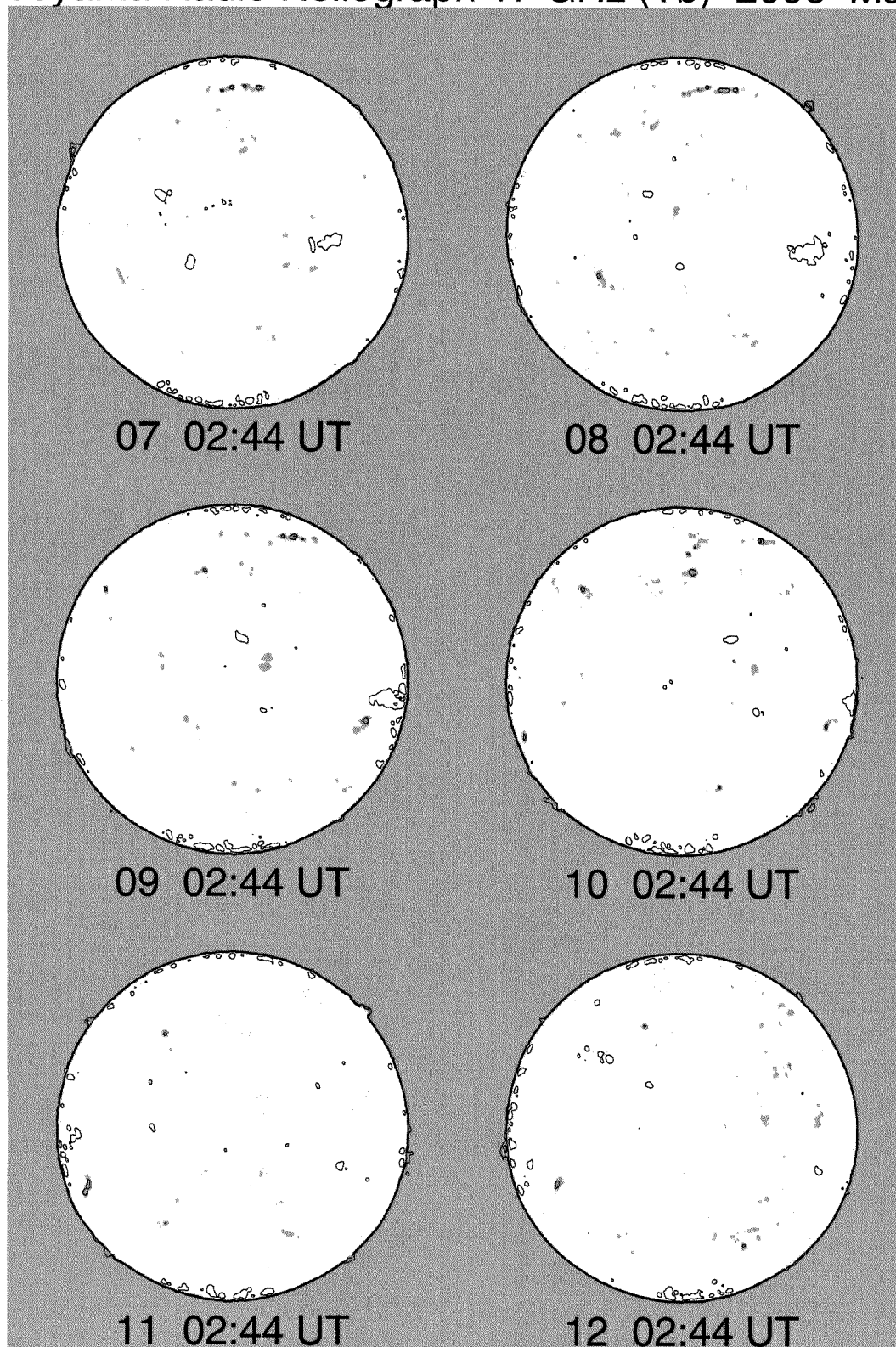
# Nobeyama Radio Heliograph 17 GHz (Tb) 2006 March



Contour Levels Tb=[5,8,12,20,50,100] x 10<sup>3</sup> K  
Grey level Tb <= 9,500 K

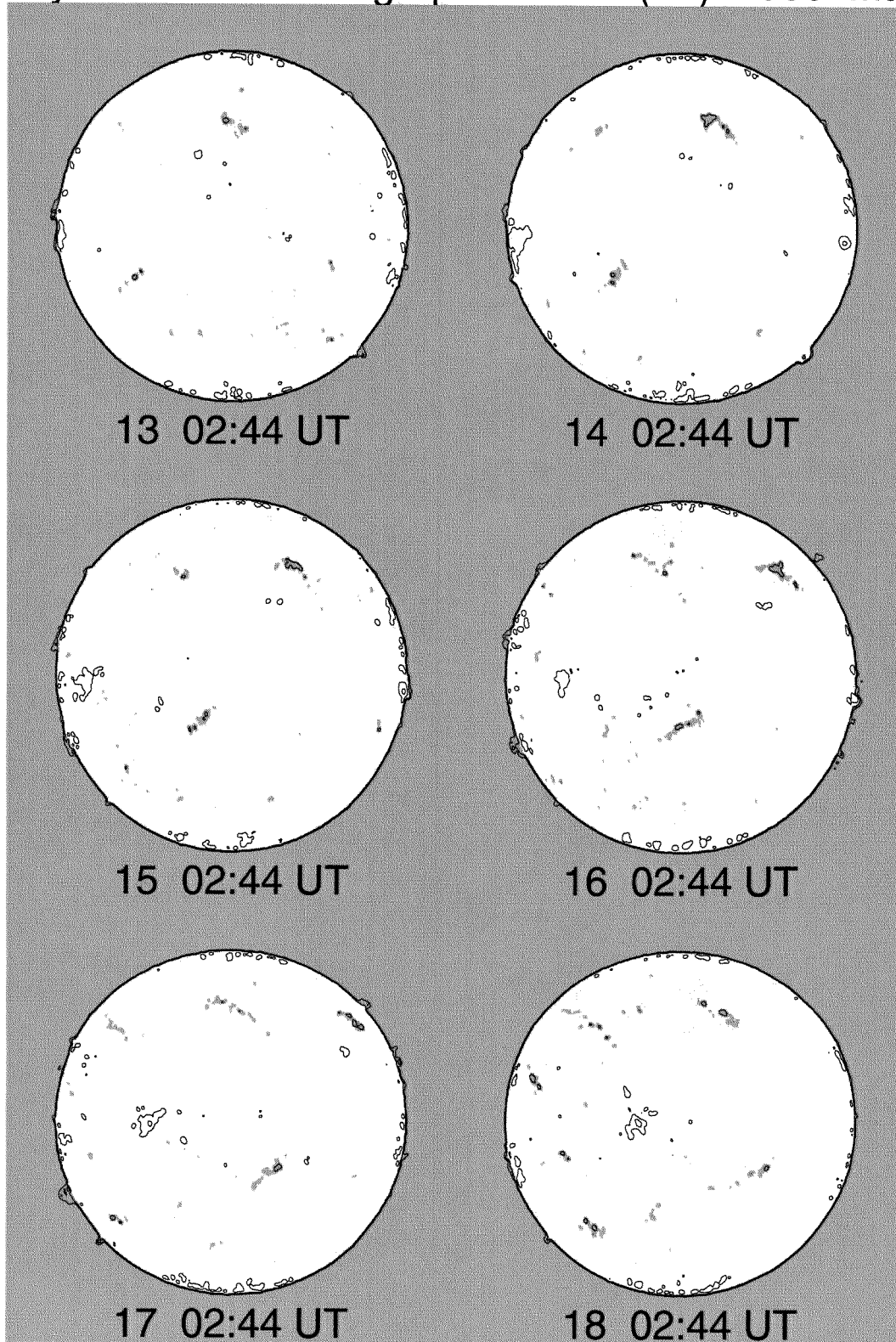


# Nobeyama Radio Heliograph 17 GHz (Tb) 2006 March



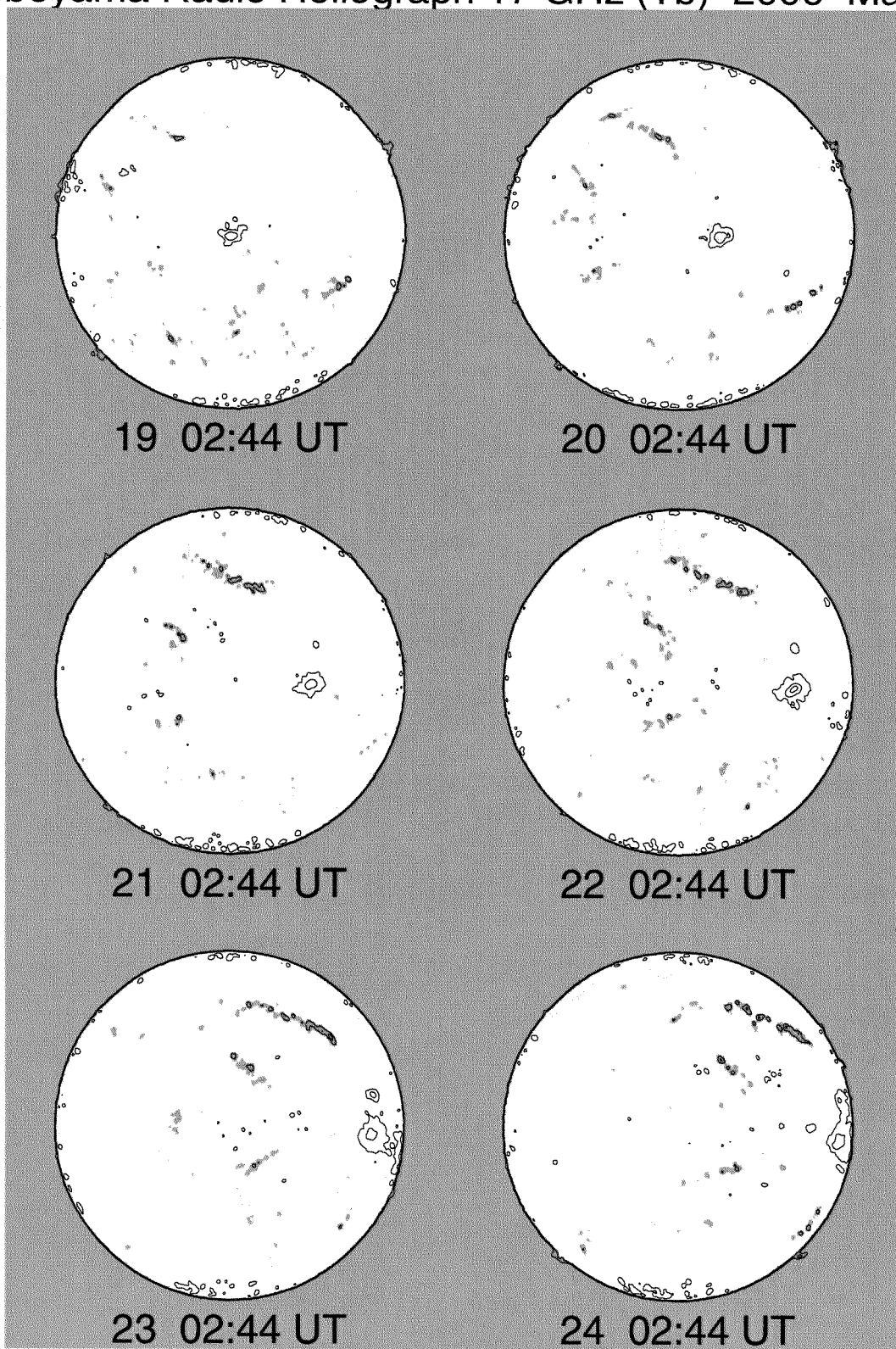
Contour Levels  $T_b = [5, 8, 12, 20, 50, 100] \times 10^3 \text{ K}$   
Grey level  $T_b \leq 9,500 \text{ K}$

# Nobeyama Radio Heliograph 17 GHz (Tb) 2006 March



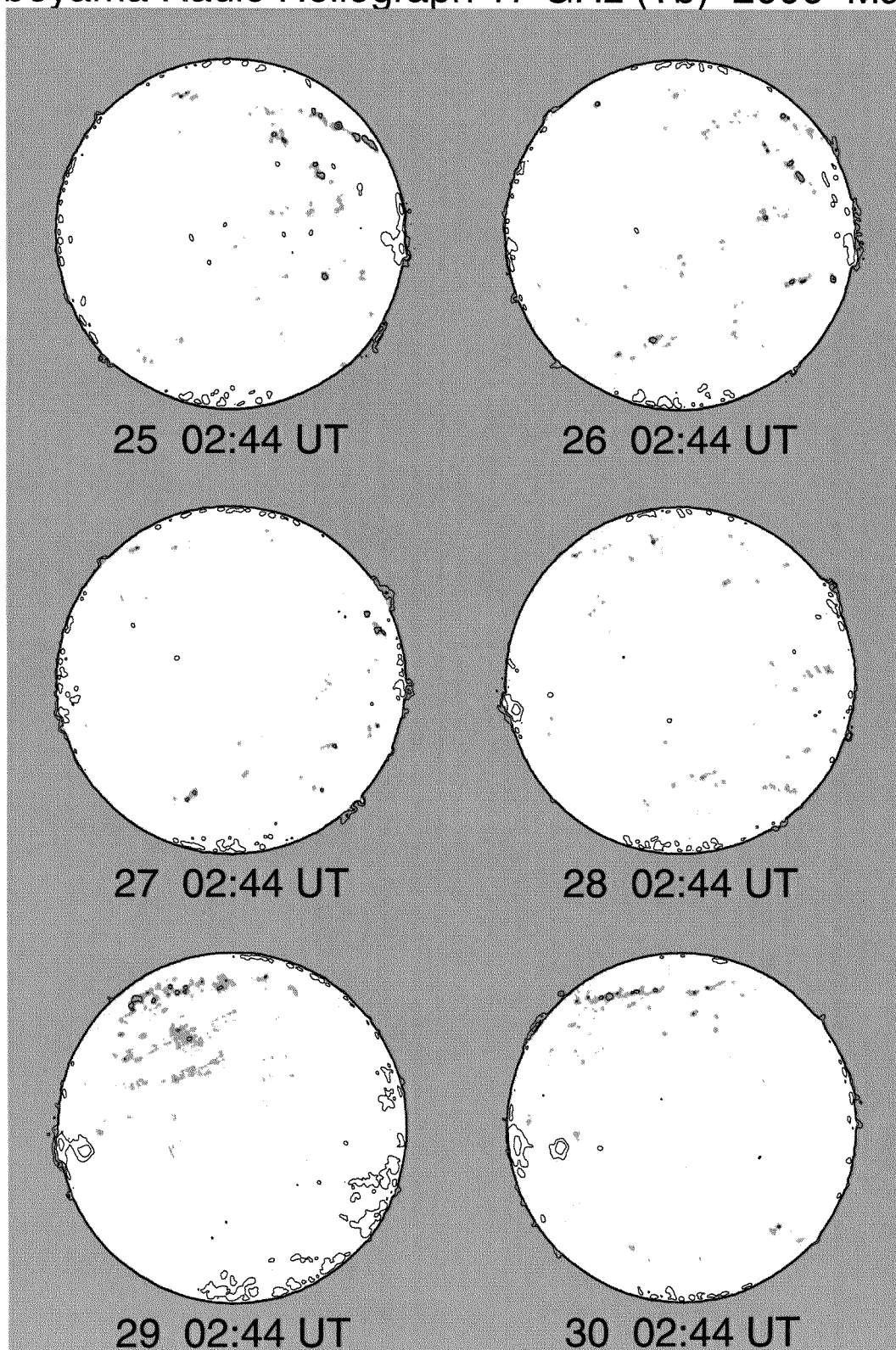
Contour Levels Tb=[5,8,12,20,50,100] x 10<sup>3</sup> K  
Grey level Tb <= 9,500 K

# Nobeyama Radio Heliograph 17 GHz (Tb) 2006 March



Contour Levels Tb=[5,8,12,20,50,100] x 10<sup>3</sup> K  
Grey level Tb ≤ 9,500 K

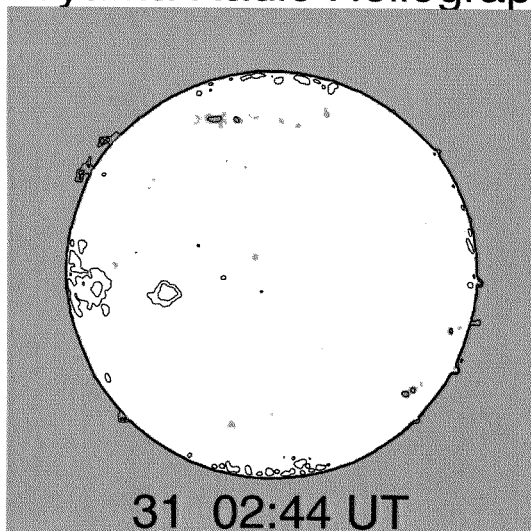
# Nobeyama Radio Heliograph 17 GHz (Tb) 2006 March



Contour Levels Tb=[5,8,12,20,50,100] x 10<sup>3</sup> K  
Grey level Tb ≤ 9,500 K

78  
Mar 06

# Nobeyama Radio Heliograph 17 GHz (Tb) 2006 March



Contour Levels Tb=[5,8,12,20,50,100] x 10<sup>3</sup> K  
Grey level Tb ≤ 9,500 K



S U N S P O T   G R O U P S  
(Ordered by Central Meridian Passage Date)

79  
Mar 06

MARCH            2006

| NOAA/<br>USAF<br>Group | Mt<br>Wilson<br>Group | Sta  | Observation<br>Time<br>Mo Day (UT) | Lat CMD | CMP<br>Mo Day | Max<br>H | Mag<br>Class | Spot<br>Class | Corrected<br>Area<br>(10-6 Hemi) | Spot<br>Count | Long.<br>Extent<br>(Deg) | Qual |
|------------------------|-----------------------|------|------------------------------------|---------|---------------|----------|--------------|---------------|----------------------------------|---------------|--------------------------|------|
| 10856                  |                       | VORO | 02 26 2333                         | S06 E80 | 03 5.0        |          |              | AXX           | 11                               | 1             |                          | 4    |
| 10856                  |                       | KAND | 02 27 1210                         | S10 E75 | 03 5.1        |          |              | AX            |                                  | 1             |                          | 2    |
| 10856                  |                       | HOLL | 02 27 1518                         | S08 E73 | 03 5.1        |          | A            | AXX           | 10                               | 1             |                          | 3    |
| 10856                  |                       | VORO | 02 28 0214                         | S09 E65 | 03 5.0        |          |              | AXX           | 9                                | 1             |                          | 3    |
| 10856                  |                       | TACH | 02 28 0559                         | S11 E62 | 03 4.9        |          |              | AXX           | 11                               | 1             | 1                        | 3    |
| 10856                  |                       | LEAR | 02 28 0629                         | S17 E63 | 03 5.0        |          | A            | AXX           | 20                               | 1             | 1                        | 1    |
| 10856                  |                       | SVTO | 02 28 0740                         | S13 E63 | 03 5.1        |          | A            | AXX           | 20                               | 1             | 1                        | 2    |
| 10856                  |                       | HOLL | 02 28 1538                         | S09 E57 | 03 4.9        |          | A            | AXX           | 10                               | 1             | 1                        | 3    |
| 10856                  |                       | LEAR | 03 04 0652                         | S09 E11 | 03 5.1        |          | A            | AXX           | 10                               | 3             | 2                        | 3    |
| 10856                  |                       | KAND | 03 04 0800                         | S11 E10 | 03 5.1        |          |              | AX            |                                  | 3             | 2                        | 3    |
| 10856                  |                       | SVTO | 03 04 0835                         | S11 E09 | 03 5.0        |          | A            | AXX           | 10                               | 2             | 1                        | 3    |
| 10856                  |                       | HOLL | 03 04 1552                         | S09 E05 | 03 5.0        |          | B            | CSO           | 10                               | 5             | 3                        | 4    |
| 10856                  |                       | LEAR | 03 05 0338                         | S10 W02 | 03 5.0        |          | A            | AXX           | 10                               | 4             | 1                        | 3    |
| 10856                  |                       | KAND | 03 05 1021                         | S10 W03 | 03 5.2        |          |              | AX            |                                  | 1             | 1                        | 4    |
| 10856                  |                       | HOLL | 03 05 1514                         | S10 W07 | 03 5.1        |          | A            | AXX           | 10                               | 5             | 6                        | 4    |
| 10856                  |                       | VORO | 03 05 2318                         | S09 W12 | 03 5.1        |          |              | AXX           | 4                                | 1             |                          | 4    |
| 10856                  |                       | LEAR | 03 06 0232                         | S10 W14 | 03 5.0        |          | A            | AXX           | 10                               | 4             | 2                        | 3    |
| 10856                  |                       | KAND | 03 06 0820                         | S10 W16 | 03 5.1        |          |              | AX            |                                  | 2             | 1                        | 2    |
| 10856                  |                       | LEAR | 03 07 0125                         | S08 W27 | 03 5.0        |          | A            | AXX           | 10                               | 2             | 2                        | 1    |
| 10856                  |                       | LEAR | 03 08 0117                         | S08 W38 | 03 5.2        |          | A            | AXX           | 10                               | 1             | 1                        | 3    |
| 10856C                 |                       | VORO | 03 05 0206                         | S17 E32 | 03 7.5        |          |              | AXX           | 8                                | 2             | 1                        | 4    |
| 10856A                 |                       | LEAR | 03 05 0338                         | S17 E42 | 03 8.3        |          | A            | AXX           | 10                               | 2             | 1                        | 3    |
| 10856A                 |                       | SVTO | 03 05 1207                         | S17 E36 | 03 8.2        |          | A            | AXX           | 10                               | 1             | 1                        | 3    |
| 10856A                 |                       | HOLL | 03 05 1514                         | S16 E37 | 03 8.4        |          | B            | BXO           | 10                               | 3             | 5                        | 4    |
| 10856A                 |                       | LEAR | 03 06 0232                         | S18 E31 | 03 8.5        |          | A            | AXX           | 10                               | 2             | 1                        | 3    |
| 10856A                 |                       | LEAR | 03 07 0125                         | S17 E17 | 03 8.3        |          | A            | AXX           | 10                               | 3             | 1                        | 1    |
| 10856A                 |                       | LEAR | 03 08 0117                         | S15 E04 | 03 8.3        |          | A            | AXX           | 10                               | 1             | 1                        | 3    |
| 10857                  |                       | HOLL | 03 04 1552                         | N07 E58 | 03 9.0        |          | BD           | DSO           | 30                               | 4             | 4                        | 4    |
| 10857                  |                       | VORO | 03 05 0206                         | N09 E51 | 03 8.9        |          |              | BRO           | 15                               | 2             | 3                        | 4    |
| 10857                  |                       | LEAR | 03 05 0338                         | N07 E52 | 03 9.0        |          | B            | BXO           | 10                               | 3             | 4                        | 3    |
| 10857                  |                       | SVTO | 03 05 1207                         | N08 E47 | 03 9.0        |          | B            | BXO           | 10                               | 2             | 4                        | 3    |
| 10857                  |                       | HOLL | 03 05 1514                         | N08 E44 | 03 8.9        |          | B            | CSO           | 20                               | 3             | 4                        | 4    |
| 10857                  |                       | VORO | 03 05 2318                         | N08 E37 | 03 8.7        |          |              | AXX           | 6                                | 1             |                          | 3    |
| 10857                  |                       | LEAR | 03 06 0232                         | N08 E37 | 03 8.9        |          | A            | AXX           | 10                               | 3             | 1                        | 3    |
| 10857                  |                       | LEAR | 03 07 0125                         | N05 E26 | 03 9.0        |          | A            | AXX           | 20                               | 3             | 3                        | 1    |
| 10857                  |                       | LEAR | 03 08 0117                         | N09 E12 | 03 8.9        |          | A            | AXX           | 20                               | 3             | 5                        | 3    |
| 10857                  |                       | LEAR | 03 09 0145                         | N08 W01 | 03 9.0        |          | A            | AXX           | 10                               | 2             | 4                        | 3    |
| 10857                  |                       | LEAR | 03 10 0104                         | N08 W16 | 03 8.8        |          | A            | AXX           | 10                               | 2             | 3                        | 3    |
| 10857A                 |                       | LEAR | 03 14 0137                         | S06 W66 | 03 9.1        |          | B            | BXO           | 20                               | 4             | 3                        | 2    |
| 10857A                 |                       | HOLL | 03 14 1524                         | S07 W76 | 03 8.9        |          | A            | AXX           | 10                               | 1             | 1                        | 3    |
| 10858                  |                       | LEAR | 03 12 0340                         | N18 E25 | 03 14.0       |          | B            | BXO           | 20                               | 10            | 3                        | 3    |
| 10858                  |                       | SVTO | 03 12 0958                         | N18 E23 | 03 14.2       |          | B            | CRO           | 20                               | 7             | 5                        | 3    |
| 10858                  |                       | HOLL | 03 12 1554                         | N18 E17 | 03 13.9       |          | B            | CSO           | 30                               | 7             | 6                        | 2    |
| 10858                  |                       | LEAR | 03 13 0200                         | N17 E13 | 03 14.1       |          | B            | BXX           | 40                               | 6             | 6                        | 1    |
| 10858                  |                       | VORO | 03 13 0301                         | N18 E10 | 03 13.9       |          |              | BRO           | 11                               | 5             | 5                        | 3    |
| 10858                  |                       | KAND | 03 13 1245                         | N17 E02 | 03 13.7       |          |              | AX            |                                  | 1             |                          | 4    |
| 10858                  |                       | HOLL | 03 13 1543                         | N18 E04 | 03 13.9       |          | B            | CSO           | 20                               | 3             | 6                        | 2    |
| 10858                  |                       | SVTO | 03 13 1551                         | N19 E01 | 03 13.7       |          | A            | AXX           | 10                               | 3             | 2                        | 2    |
| 10858                  |                       | VORO | 03 13 2344                         | N17 W03 | 03 13.8       |          |              | ARX           | 4                                | 1             |                          | 3    |
| 10858                  |                       | LEAR | 03 14 0137                         | N18 W02 | 03 13.9       |          | B            | BXO           | 10                               | 2             | 6                        | 2    |
| 10858                  |                       | VORO | 03 17 0000                         | N17 W43 | 03 13.7       |          |              | ARX           | 4                                | 1             |                          | 3    |
| 10858A                 |                       | LEAR | 03 16 0523                         | S17 E27 | 03 18.3       |          | B            | BXO           | 10                               | 2             | 2                        | 1    |
| 10860                  |                       | LEAR | 03 13 0200                         | S04 E74 | 03 18.6       |          | A            | AXX           | 30                               | 1             | 1                        | 1    |
| 10860                  |                       | VORO | 03 13 0301                         | S02 E74 | 03 18.6       |          |              | AXX           | 7                                | 1             |                          | 3    |
| 10860                  |                       | HOLL | 03 13 1543                         | S03 E67 | 03 18.7       |          | A            | HSX           | 10                               | 1             | 1                        | 2    |
| 10860                  |                       | VORO | 03 13 2344                         | S02 E62 | 03 18.6       |          |              | ARX           | 9                                | 1             |                          | 3    |
| 10860                  |                       | LEAR | 03 14 0137                         | S04 E61 | 03 18.6       |          | A            | AXX           | 20                               | 1             | 1                        | 2    |
| 10860                  |                       | HOLL | 03 14 1524                         | S03 E54 | 03 18.7       |          | A            | HSX           | 10                               | 1             | 1                        | 3    |
| 10860                  |                       | VORO | 03 14 2333                         | S03 E49 | 03 18.6       |          |              | ARX           | 5                                | 1             |                          | 3    |
| 10860                  |                       | LEAR | 03 15 0408                         | S03 E47 | 03 18.7       |          | A            | AXX           | 20                               | 1             | 1                        | 1    |
| 10860                  |                       | SVTO | 03 15 0657                         | S04 E45 | 03 18.6       |          | A            | AXX           | 20                               | 1             | 1                        | 2    |
| 10860                  |                       | VORO | 03 16 0000                         | S03 E35 | 03 18.6       |          |              | AXX           | 8                                | 1             |                          | 3    |



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Mar 06

S U N S P O T G R O U P S  
(Ordered by Central Meridian Passage Date)

MARCH 2006

| NOAA/<br>USAF<br>Group | Mt<br>Wilson<br>Group | Sta  | Observation<br>Time<br>(UT) | Lat CMD | CMP<br>Mo Day | Max<br>H | Mag<br>Class | Spot<br>Class | Corrected<br>Area<br>(10-6 Hemi) | Spot<br>Count | Long.<br>Extent<br>(Deg) | Qual |
|------------------------|-----------------------|------|-----------------------------|---------|---------------|----------|--------------|---------------|----------------------------------|---------------|--------------------------|------|
| 10860                  |                       | LEAR | 03 16 0523                  | S03 E32 | 03 18.6       |          | A            | AXX           | 10                               | 1             | 1                        | 1    |
| 10860                  |                       | SVTO | 03 16 0732                  | S05 E32 | 03 18.7       |          | A            | AXX           | 20                               | 1             | 1                        | 2    |
| 10860                  |                       | HOLL | 03 16 1443                  | S03 E26 | 03 18.5       |          | A            | AXX           | 10                               | 1             | 1                        | 3    |
| 10860                  |                       | VORO | 03 17 0000                  | S04 E21 | 03 18.6       |          |              | ARX           | 7                                | 1             |                          | 3    |
| 10860                  |                       | LEAR | 03 17 0023                  | S04 E27 | 03 19.0       |          | A            | HSX           | 20                               | 2             | 1                        | 2    |
| 10860                  |                       | SVTO | 03 17 1045                  | S04 E15 | 03 18.6       |          | A            | AXX           | 20                               | 1             | 1                        | 2    |
| 10860                  |                       | LEAR | 03 18 0103                  | S05 E09 | 03 18.7       |          | A            | AXX           | 10                               | 4             | 4                        | 2    |
| 10860                  |                       | SVTO | 03 18 0700                  | S04 E04 | 03 18.6       |          | A            | HRX           | 10                               | 1             | 1                        | 3    |
| 10860                  |                       | VORO | 03 18 2357                  | S04 W06 | 03 18.5       |          |              | ARX           | 5                                | 1             |                          | 3    |
| 10860                  |                       | LEAR | 03 19 0217                  | S03 W07 | 03 18.6       |          | A            | AXX           | 20                               | 2             | 2                        | 1    |
| 10863                  |                       | KAND | 03 21 1130                  | N07 W35 | 03 18.8       |          |              | AX            |                                  | 1             | 1                        | 4    |
| 10863                  |                       | LEAR | 03 22 0114                  | N07 W40 | 03 19.0       |          | B            | BXO           | 10                               | 4             | 2                        | 2    |
| 10863                  |                       | HOLL | 03 22 1834                  | N08 W51 | 03 18.9       |          | B            | CSO           | 20                               | 4             | 4                        | 2    |
| 10863                  |                       | LEAR | 03 23 0107                  | N07 W53 | 03 19.1       |          | B            | BXO           | 10                               | 3             | 3                        | 2    |
| 10863                  |                       | VORO | 03 23 0300                  | N06 W55 | 03 19.0       |          |              | AXX           | 9                                | 2             | 1                        | 3    |
| 10863                  |                       | KAND | 03 23 0910                  | N07 W61 | 03 18.8       |          |              | HR            |                                  | 1             | 1                        | 2    |
| 10863                  |                       | HOLL | 03 23 1533                  | N08 W61 | 03 19.1       |          | B            | CSO           | 30                               | 2             | 4                        | 4    |
| 10863                  |                       | VORO | 03 24 0016                  | N04 W69 | 03 18.8       |          |              | AXX           | 6                                | 2             | 3                        | 3    |
| 10863                  |                       | LEAR | 03 24 0123                  | N07 W68 | 03 19.0       |          | B            | CAO           | 30                               | 2             | 2                        | 3    |
| 10863                  |                       | HOLL | 03 24 1509                  | N07 W75 | 03 19.0       |          | B            | BXO           | 30                               | 3             | 3                        | 5    |
| 10863                  |                       | VORO | 03 25 0023                  | N08 W79 | 03 19.1       |          |              | AXX           | 19                               | 1             |                          | 3    |
| 10862                  |                       | VORO | 03 14 2333                  | S10 E58 | 03 19.3       |          |              | AXX           | 6                                | 1             |                          | 3    |
| 10862                  |                       | VORO | 03 16 0000                  | S11 E45 | 03 19.4       |          |              | AXX           | 4                                | 1             |                          | 3    |
| 10862                  |                       | VORO | 03 17 0000                  | S11 E32 | 03 19.4       |          |              | AXX           | 5                                | 2             |                          | 3    |
| 10862                  |                       | LEAR | 03 17 0023                  | S08 E30 | 03 19.3       |          | B            | BXO           | 10                               | 3             | 2                        | 2    |
| 10862                  |                       | LEAR | 03 18 0103                  | S08 E15 | 03 19.2       |          | BG           | BXO           | 20                               | 5             | 3                        | 2    |
| 10862                  |                       | SVTO | 03 18 0700                  | S07 E12 | 03 19.2       |          | B            | CSO           | 20                               | 5             | 4                        | 3    |
| 10862                  |                       | TACH | 03 18 0715                  | S06 E09 | 03 19.0       |          |              | BRI           | 15                               | 6             | 9                        | 3    |
| 10862                  |                       | VORO | 03 18 2357                  | S07 E02 | 03 19.1       |          |              | BRO           | 42                               | 15            | 5                        | 3    |
| 10862                  |                       | LEAR | 03 19 0217                  | S07 E02 | 03 19.2       |          | B            | BXI           | 60                               | 14            | 7                        | 1    |
| 10862                  |                       | HOLL | 03 19 1710                  | S08 W06 | 03 19.3       |          | B            | DAI           | 90                               | 18            | 8                        | 3    |
| 10862                  |                       | VORO | 03 20 0027                  | S07 W12 | 03 19.1       |          |              | DAI           | 110                              | 16            | 7                        | 3    |
| 10862                  |                       | LEAR | 03 20 0125                  | S07 W15 | 03 18.9       |          | BG           | DAI           | 120                              | 20            | 8                        | 2    |
| 10862                  |                       | KAND | 03 20 0955                  | S07 W18 | 03 19.1       |          |              | DAI           |                                  | 17            | 9                        | 4    |
| 10862                  |                       | HOLL | 03 20 1621                  | S07 W23 | 03 18.9       |          | B            | DAC           | 140                              | 25            | 9                        | 3    |
| 10862                  |                       | VORO | 03 21 0023                  | S07 W26 | 03 19.1       |          |              | DAI           | 153                              | 18            | 8                        | 3    |
| 10862                  |                       | LEAR | 03 21 0038                  | S07 W26 | 03 19.1       |          | BG           | DAI           | 140                              | 39            | 8                        | 3    |
| 10862                  |                       | SVTO | 03 21 0720                  | S08 W30 | 03 19.0       |          | B            | DAI           | 90                               | 18            | 10                       | 2    |
| 10862                  |                       | KAND | 03 21 1130                  | S07 W34 | 03 18.9       |          |              | DAO           |                                  | 15            | 10                       | 4    |
| 10862                  |                       | HOLL | 03 21 1530                  | S07 W35 | 03 19.0       |          | BG           | EAC           | 120                              | 28            | 11                       | 4    |
| 10862                  |                       | LEAR | 03 22 0114                  | S07 W40 | 03 19.0       |          | BG           | DAI           | 120                              | 28            | 10                       | 2    |
| 10862                  |                       | KAND | 03 22 0713                  | S07 W43 | 03 19.1       |          |              | DAI           |                                  | 12            | 10                       | 4    |
| 10862                  |                       | HOLL | 03 22 1834                  | S06 W49 | 03 19.1       |          | BG           | EAC           | 90                               | 22            | 11                       | 2    |
| 10862                  |                       | LEAR | 03 23 0107                  | S07 W54 | 03 19.0       |          | BG           | DAI           | 70                               | 19            | 8                        | 2    |
| 10862                  |                       | VORO | 03 23 0300                  | S09 W54 | 03 19.1       |          |              | BAI           | 30                               | 6             | 10                       | 3    |
| 10862                  |                       | TACH | 03 23 0651                  | S08 W56 | 03 19.1       |          |              | BXI           | 17                               | 4             | 11                       | 3    |
| 10862                  |                       | KAND | 03 23 0910                  | S08 W59 | 03 18.9       |          |              | CAO           |                                  | 6             | 11                       | 2    |
| 10862                  |                       | HOLL | 03 23 1533                  | S07 W62 | 03 19.0       |          | B            | DSI           | 60                               | 11            | 11                       | 4    |
| 10862                  |                       | VORO | 03 24 0016                  | S09 W68 | 03 18.9       |          |              | BAI           | 25                               | 5             | 8                        | 3    |
| 10862                  |                       | LEAR | 03 24 0123                  | S08 W65 | 03 19.2       |          | BG           | EAI           | 90                               | 11            | 12                       | 3    |
| 10862                  |                       | SVTO | 03 24 1037                  | S05 W71 | 03 19.1       |          | B            | BXO           | 30                               | 3             | 3                        | 3    |
| 10861                  |                       | LEAR | 03 15 0408                  | S11 E57 | 03 19.5       |          | A            | AXX           | 10                               | 1             | 1                        | 1    |
| 10861                  |                       | SVTO | 03 15 0657                  | S12 E55 | 03 19.4       |          | A            | AXX           | 10                               | 1             | 1                        | 2    |
| 10861                  |                       | LEAR | 03 16 0523                  | S10 E43 | 03 19.4       |          | A            | AXX           | 10                               | 1             | 1                        | 1    |
| 10861                  |                       | SVTO | 03 16 0732                  | S13 E42 | 03 19.5       |          | A            | AXX           | 10                               | 1             | 1                        | 2    |
| 10861                  |                       | HOLL | 03 16 1443                  | S10 E37 | 03 19.4       |          | A            | AXX           | 10                               | 1             | 1                        | 3    |
| 10861                  |                       | LEAR | 03 17 0023                  | S11 E32 | 03 19.4       |          | A            | AXX           | 10                               | 2             | 1                        | 2    |
| 10861A                 |                       | VORO | 03 24 0016                  | S06 W48 | 03 20.4       |          |              | AXX           | 1                                | 2             | 1                        | 3    |
| 10861A                 |                       | LEAR | 03 24 0123                  | S05 W48 | 03 20.5       |          | B            | CAO           | 20                               | 3             | 2                        | 3    |
| 10861A                 |                       | TACH | 03 24 0615                  | S04 W51 | 03 20.4       |          |              | AR            | 4                                | 2             | 2                        | 3    |
| 10861A                 |                       | SVTO | 03 24 1037                  | S03 W54 | 03 20.4       |          | B            | CAO           | 10                               | 2             | 3                        | 3    |
| 10861A                 |                       | HOLL | 03 24 1509                  | S06 W57 | 03 20.4       |          | B            | BXO           | 30                               | 5             | 5                        | 5    |
| 10861A                 |                       | VORO | 03 25 0023                  | S05 W62 | 03 20.4       |          |              | BRO           | 16                               | 2             | 4                        | 3    |

S U N S P O T   G R O U P S  
(Ordered by Central Meridian Passage Date)

81  
Mar 06

MARCH            2006

| NOAA/<br>USAF<br>Group | Mt<br>Wilson<br>Group | Sta  | Observation<br>Time |     |      | CMP |     | Max | Mag  | Spot | Corrected<br>Area | Spot  | Long.<br>Extent | Qual  |       |   |
|------------------------|-----------------------|------|---------------------|-----|------|-----|-----|-----|------|------|-------------------|-------|-----------------|-------|-------|---|
|                        |                       |      | Mo                  | Day | (UT) | Lat | CMD | Mo  | Day  | H    | Class             | Class | (10-6 Hemi)     | Count | (Deg) |   |
| 10861B                 |                       | HOLL | 03                  | 22  | 1834 | S06 | E08 | 03  | 23.4 |      | A                 | AXX   |                 | 1     | 1     | 2 |
| 10861C                 |                       | TACH | 03                  | 23  | 0651 | S08 | E33 | 03  | 25.7 |      |                   | AXX   | 10              | 1     | 1     | 3 |

Stations reporting:

HOLL = Holloman  
KAND = Kandilli  
LEAR = Learmonth

MWIL = Mt. Wilson  
PALE = Palehua

RAMY = Ramey  
SVTO = San Vito

TACH = Tashkent  
VORO = Voroshilov

SUDDEN IONOSPHERIC DISTURBANCES  
MARCH 2006

| Day | Start<br>(UT) | Max<br>(UT) | End<br>(UT) | Imp | Wide<br>Spread<br>Index | Number of Station Reports by Type |     |     |            |     | Flare<br>(UT) | X-ray<br>Class | NOAA<br>Region |
|-----|---------------|-------------|-------------|-----|-------------------------|-----------------------------------|-----|-----|------------|-----|---------------|----------------|----------------|
|     |               |             |             |     |                         | SWF                               | SEA | SPA | LF-<br>SPA | SES |               |                |                |
| 02  | 0948          | 0957        | 1030        | 1   | 1                       |                                   | 1   |     |            |     | No flare      |                |                |
| 02  | 1325          | 1359        | 1453        | 1   | 1                       |                                   | 1   |     |            |     | No flare      |                |                |
| 06  | 0708          | 0710        | 0750        | 2   | 1                       |                                   | 1   |     |            |     | No flare      |                |                |
| 08  | 1036          | 1048        | 1129        | 1   | 1                       |                                   | 1   |     |            |     | No flare      |                |                |
| 09  | 1320          | 1355        | 1409        | 1   | 1                       |                                   | 1   |     |            |     | No flare      |                |                |
| 11  | 1320          | 1344        | 1416        | 1   | 1                       |                                   | 1   |     |            |     | 1322          | B3.4           | 10856          |
| 14  | 0706          | 0709U       | 0828        | 1   | 1                       |                                   | 1   |     |            |     | 0700          | B3.6           |                |
| 14  | 1220          | 1222        | 1315        | 2   | 1                       |                                   |     |     |            | 1   | *             |                |                |
| 14  | 1401          | 1411        | 1428        | 1   | 1                       |                                   | 1   |     |            |     | 1359          | B1.7           |                |
| 14  | 1505          | 1517        | 1535        | 1   | 1                       |                                   | 1   |     |            |     | No flare      |                |                |
| 15  | 0652          | 0701        | 0727        | 1   | 1                       |                                   | 1   |     |            |     | No flare      |                |                |
| 15  | 1014          | 1023        | 1122        | 1   | 1                       |                                   | 1   |     |            |     | 1043          | B1.5           | 10859          |
| 15  | 1310          | 1331        | 1410        | 1   | 1                       |                                   | 1   |     |            |     | No flare      |                |                |
| 15  | 1428          | 1436        | 1508        | 1   | 1                       |                                   | 1   |     |            |     | *             |                |                |
| 15  | 1512          | 1522        | 1537        | 1   | 1                       |                                   | 1   |     |            |     | *             |                |                |
| 15  | 1606          | 1621        | 1635        | 1   | 1                       |                                   | 1   |     |            |     | *             |                |                |
| 16  | 0819          | 0852U       | 0952        | 1   | 1                       |                                   | 1   |     |            |     | No flare      |                |                |
| 16  | 0954          | 1016U       | 1104        | 1   | 1                       |                                   | 1   |     |            |     | *             |                |                |
| 21  | 0927          | 0946        | 1005        | 1+  | 3                       |                                   | 1   |     |            | 2   | 0915          | C2.5           | 10862          |
| 21  | 1200          | 1204        | 1213        | 1-  | 1                       |                                   |     |     |            | 1   | 1201          | C1.3           | 10862          |
| 21  | 1631          | 1634        | 1657        | 1   | 5                       |                                   | 1   |     |            | 4   | 1628          | C2.4           | 10862          |
| 21  | 1838          | 1842        | 1857        | 1   | 1                       |                                   |     |     |            | 1   | 1835          | C1.2           | 10862          |
| 21  | 1918          | 1920        | 1933        | 1-  | 1                       |                                   |     |     |            | 1   | 1913          | C1.1           | 10862          |
| 25  | 0635          | 0642        | 0705        | 2   | 1                       |                                   | 1   |     |            |     | *             |                |                |
| 26  | 1026          | 1041        | 1100        | 1   | 1                       |                                   | 1   |     |            |     | No flare      |                |                |
| 26  | 1328          | 1415U       | 1445        | 1   | 1                       |                                   | 1   |     |            |     | No flare      |                |                |
| 28  | 1252          | 1318        | 1325        | 1   | 1                       |                                   | 1   |     |            |     | *             |                |                |
| 30  | 1356          | 1407        | 1428        | 1   | 1                       |                                   | 1   |     |            |     | 1311          | B2.3           |                |
| 30  | 1457          | 1504        | 1532        | 1-  | 3                       |                                   | 1   |     |            | 1   | 1502          | B9.0           | 10865          |
| 31  | 1430          | 1435        | 1459        | 1   | 1                       |                                   | 1   |     |            |     | No flare      |                |                |

\* = no flare patrol.

## OBSERVATORIES REPORTING FOR MARCH 2006

|                                 |     |                              |               |
|---------------------------------|-----|------------------------------|---------------|
| Bedford, Massachusetts, USA     | SES | Panska Ves, Czech Republic   | SES, SEA, SWF |
| Cambridge, England, UK          | SES | Torrington, Connecticut, USA | SES           |
| Houston, Texas, USA             | SES | Tucson, Arizona, USA         | SES           |
| Isola del Gran Sasso, Italy     | SES | Upice, Czech Republic        | SEA           |
| Marlborough, Massachusetts, USA | SES | Villiersdorp, South Africa   | SES           |
| Palo Alto, California, USA      | SES |                              |               |

Observations are not necessarily continuous.

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

## Spectral Observations

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Mar 06

MARCH 2006

| Day | OBSERVATION   |             | Sta  | Start<br>(UT) | End<br>(UT) | EVENT             |                  | Int<br>(1-3) | FREQUENCY      |                | Remarks |
|-----|---------------|-------------|------|---------------|-------------|-------------------|------------------|--------------|----------------|----------------|---------|
|     | Start<br>(UT) | End<br>(UT) |      |               |             | Spectral<br>Class | Event<br>Remarks |              | Lower<br>(MHz) | Upper<br>(MHz) |         |
| 01  | 0000          | 0800        | CULG |               |             |                   |                  |              |                |                |         |
|     | 0540          | 1701        | POTS |               |             |                   |                  |              |                |                |         |
|     | 0715          | 1600        | BLEN |               |             |                   |                  |              |                |                |         |
|     | 2000          | 2400        | CULG |               |             |                   |                  |              |                |                |         |
| 02  | 0000          | 0800        | CULG |               |             |                   |                  |              |                |                |         |
|     | 0537          | 1701        | POTS |               |             |                   |                  |              |                |                |         |
|     | 2000          | 2400        | CULG |               |             |                   |                  |              |                |                |         |
| 03  | 0000          | 0800        | CULG |               |             |                   |                  |              |                |                |         |
|     | 0534          | 1704        | POTS |               |             |                   |                  |              |                |                |         |
|     | 0715          | 1600        | BLEN |               |             |                   |                  |              |                |                |         |
|     | 2000          | 2400        | CULG |               |             |                   |                  |              |                |                |         |
| 04  | 0000          | 0800        | CULG |               |             |                   |                  |              |                |                |         |
|     | 0534          | 1707        | POTS |               |             |                   |                  |              |                |                |         |
|     | 0715          | 1600        | BLEN |               |             |                   |                  |              |                |                |         |
|     | 2000          | 2400        | CULG |               |             |                   |                  |              |                |                |         |
| 05  | 0000          | 0800        | CULG |               |             |                   |                  |              |                |                |         |
|     | 0531          | 1710        | POTS |               |             |                   |                  |              |                |                |         |
|     | 0700          | 1600        | BLEN |               |             |                   |                  |              |                |                |         |
|     | 2000          | 2400        | CULG |               |             |                   |                  |              |                |                |         |
| 06  | 0000          | 0800        | CULG |               |             |                   |                  |              |                |                |         |
|     | 0528          | 1710        | POTS |               |             |                   |                  |              |                |                |         |
|     | 0700          | 1605        | BLEN |               |             |                   |                  |              |                |                |         |
|     | 2000          | 2400        | CULG |               |             |                   |                  |              |                |                |         |
| 07  | 0000          | 0800        | CULG |               |             |                   |                  |              |                |                |         |
|     | 0525          | 1713        | POTS |               |             |                   |                  |              |                |                |         |
|     | 0700          | 1605        | BLEN |               |             |                   |                  |              |                |                |         |
|     | 2000          | 2400        | CULG |               |             |                   |                  |              |                |                |         |
| 08  | 0000          | 0800        | CULG |               |             |                   |                  |              |                |                |         |
|     | 0522          | 1716        | POTS |               |             |                   |                  |              |                |                |         |
|     | 0700          | 1610        | BLEN |               |             |                   |                  |              |                |                |         |
|     | 2000          | 2400        | CULG |               |             |                   |                  |              |                |                |         |
| 09  | 0000          | 0800        | CULG |               |             |                   |                  |              |                |                |         |
|     | 0522          | 1719        | POTS |               |             |                   |                  |              |                |                |         |
|     | 0655          | 1615        | BLEN |               |             |                   |                  |              |                |                |         |
|     | 2000          | 2400        | CULG |               |             |                   |                  |              |                |                |         |
| 10  | 0000          | 0800        | CULG |               |             |                   |                  |              |                |                |         |
|     | 0519          | 1722        | POTS |               |             |                   |                  |              |                |                |         |
|     | 0655          | 1615        | BLEN |               |             |                   |                  |              |                |                |         |
|     | 2000          | 2400        | CULG |               |             |                   |                  |              |                |                |         |
| 11  | 0000          | 0800        | CULG |               |             |                   |                  |              |                |                |         |
|     | 0516          | 1722        | POTS |               |             |                   |                  |              |                |                |         |
|     | 0650          | 1620        | BLEN |               |             |                   |                  |              |                |                |         |
|     | 2000          | 2400        | CULG |               |             |                   |                  |              |                |                |         |
| 12  | 0000          | 0800        | CULG |               |             |                   |                  |              |                |                |         |
|     | 0513          | 1725        | POTS |               |             |                   |                  |              |                |                |         |
|     | 0645          | 1620        | BLEN |               |             |                   |                  |              |                |                |         |
|     | 2000          | 2400        | CULG |               |             |                   |                  |              |                |                |         |
| 13  | 0000          | 0800        | CULG |               |             |                   |                  |              |                |                |         |
|     | 0510          | 1728        | POTS |               |             |                   |                  |              |                |                |         |
|     | 0645          | 1620        | BLEN |               |             |                   |                  |              |                |                |         |
|     | 2000          | 2400        | CULG |               |             |                   |                  |              |                |                |         |
| 14  | 0000          | 0800        | CULG |               |             |                   |                  |              |                |                |         |
|     | 0510          | 1731        | POTS |               |             |                   |                  |              |                |                |         |
|     | 0645          | 1620        | BLEN |               |             |                   |                  |              |                |                |         |
|     | 2000          | 2400        | CULG |               |             |                   |                  |              |                |                |         |

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Mar 06

# S O L A R R A D I O E M I S S I O N Spectral Observations

MARCH 2006

| OBSERVATION<br>Day | Start End |      | Sta  | Start<br>(UT) | End<br>(UT) | EVENT             |                  | Int<br>(1-3) | FREQUENCY      |                | Remarks |
|--------------------|-----------|------|------|---------------|-------------|-------------------|------------------|--------------|----------------|----------------|---------|
|                    | (UT)      | (UT) |      |               |             | Spectral<br>Class | Event<br>Remarks |              | Lower<br>(MHz) | Upper<br>(MHz) |         |
| 15                 | 0000      | 0800 | CULG |               |             |                   |                  |              |                |                |         |
|                    | 0507      | 1734 | POTS | 0625.8        | 0627.6      | III               | GG,N             | 2            | 200U           | 340            |         |
|                    | 0640      | 1625 | BLEN |               |             |                   |                  |              |                |                |         |
|                    |           |      | POTS | 1615.3        | 1615.5      | III               | G                | 1            | 40X            | 300            |         |
|                    | 2000      | 2400 | CULG |               |             |                   |                  |              |                |                |         |
| 16                 | 0000      | 0800 | CULG |               |             |                   |                  |              |                |                |         |
|                    | 0504      | 1734 | POTS |               |             |                   |                  |              |                |                |         |
|                    | 0640      | 1630 | BLEN |               |             |                   |                  |              |                |                |         |
|                    | 2000      | 2400 | CULG |               |             |                   |                  |              |                |                |         |
| 17                 | 0000      | 0800 | CULG |               |             |                   |                  |              |                |                |         |
|                    | 0501      | 1737 | POTS |               |             |                   |                  |              |                |                |         |
|                    | 0630      | 1630 | BLEN |               |             |                   |                  |              |                |                |         |
|                    | 2000      | 2400 | CULG |               |             |                   |                  |              |                |                |         |
| 18                 | 0000      | 0800 | CULG |               |             |                   |                  |              |                |                |         |
|                    | 0630      | 1630 | BLEN |               |             |                   |                  |              |                |                |         |
|                    |           |      | SGMR | 1424.0        | 1425.0      | III               |                  | 1            | 30             | 60             |         |
|                    |           |      | SVTO | 1424.0        | 1425.0      | III               |                  | 1            | 25             | 75             |         |
|                    | 0458      | 1740 | POTS | 1424.3        | 1425.0      | III               | G                | 2            | 40X            | 370            |         |
|                    | 2000      | 2400 | CULG |               |             |                   |                  |              |                |                |         |
| 19                 | 0000      | 0800 | CULG |               |             |                   |                  |              |                |                |         |
|                    | 0625      | 1635 | BLEN |               |             |                   |                  |              |                |                |         |
|                    | 0458      | 1743 | POTS | 1432.3        | 1433.9      | III               | G                | 1            | 40X            | 400X           |         |
|                    | 2000      | 2400 | CULG |               |             |                   |                  |              |                |                |         |
| 20                 | 0000      | 0800 | CULG |               |             |                   |                  |              |                |                |         |
|                    | 0625      | 1635 | BLEN |               |             |                   |                  |              |                |                |         |
|                    |           |      | LEAR | 0907.0        | 0912.0      | III               |                  | 2            | 25             | 110            |         |
|                    |           |      | SVTO | 0907.0        | 0912.0      | III               |                  | 2            | 25             | 86             |         |
|                    | 0455      | 1746 | POTS | 0907.3        | 0912.4      | III               | GG,N             | 2            | 40X            | 350            |         |
|                    | 2000      | 2400 | CULG |               |             |                   |                  |              |                |                |         |
| 21                 | 0000      | 0800 | CULG |               |             |                   |                  |              |                |                |         |
|                    |           |      | LEAR | 0333.0        | 0341.0      | III               |                  | 1            | 25             | 75             |         |
|                    | 0452      | 1746 | POTS | 0625.8        | 0630.2      | DCIM              | N                | 3            | 200            | 400X           |         |
|                    | 0620      | 1635 | BLEN | 0626.0        | 0626.6      | II                |                  | 2            | 213            | 2800           |         |
|                    |           |      | BLEN | 1203.0        | 1203.8      | DCIM              | C                | 1            | 1600           | 4000X          |         |
|                    | 2000      | 2400 | CULG |               |             |                   |                  |              |                |                |         |
| 22                 | 0000      | 0800 | CULG |               |             |                   |                  |              |                |                |         |
|                    | 0615      | 1640 | BLEN |               |             |                   |                  |              |                |                |         |
|                    | 0449      | 1749 | POTS | 1424.2        | 1425.6      | UNCLF             |                  | 1            | 200U           | 290            |         |
|                    |           |      | POTS | 1531.8        | 1531.9      | III               | B                | 1            | 200U           | 270            |         |
|                    | 2000      | 2400 | CULG |               |             |                   |                  |              |                |                |         |
| 23                 | 0000      | 0800 | CULG |               |             |                   |                  |              |                |                |         |
|                    | 0449      | 1752 | POTS |               |             |                   |                  |              |                |                |         |
|                    | 0615      | 1640 | BLEN |               |             |                   |                  |              |                |                |         |
|                    | 2010      | 2400 | CULG |               |             |                   |                  |              |                |                |         |
| 24                 | 0000      | 0800 | CULG |               |             |                   |                  |              |                |                |         |
|                    | 0446      | 1752 | POTS |               |             |                   |                  |              |                |                |         |
|                    | 0610      | 1640 | BLEN |               |             |                   |                  |              |                |                |         |
|                    | 2010      | 2400 | CULG |               |             |                   |                  |              |                |                |         |
| 25                 | 0000      | 0800 | CULG |               |             |                   |                  |              |                |                |         |
|                    | 0446      | 1755 | POTS |               |             |                   |                  |              |                |                |         |
|                    | 0610      | 1645 | BLEN |               |             |                   |                  |              |                |                |         |
|                    | 2010      | 2400 | CULG |               |             |                   |                  |              |                |                |         |
| 26                 | 0000      | 0800 | CULG |               |             |                   |                  |              |                |                |         |
|                    | 0443      | 1755 | POTS |               |             |                   |                  |              |                |                |         |
|                    | 0610      | 1645 | BLEN |               |             |                   |                  |              |                |                |         |
|                    | 2010      | 2400 | CULG | 2239.0        | 2242.0      | III               | G                | 2            | 18             | 120            |         |
|                    |           |      | CULG | 2245.0        | 2251.0      | UNCLF             |                  | 1            | 57             | 120            |         |
|                    |           |      | CULG | 2247.0        | 2248.0      | III               | G                | 1            | 23             | 90             |         |

# S O L A R   R A D I O   E M I S S I O N Spectral Observations

85  
Mar 06

MARCH            2006

| Day | OBSERVATION   |             | Sta  | Start<br>(UT) | End<br>(UT) | EVENT             |                  | Int<br>(1-3) | FREQUENCY      |                | Remarks |
|-----|---------------|-------------|------|---------------|-------------|-------------------|------------------|--------------|----------------|----------------|---------|
|     | Start<br>(UT) | End<br>(UT) |      |               |             | Spectral<br>Class | Event<br>Remarks |              | Lower<br>(MHz) | Upper<br>(MHz) |         |
| 27  | 0000          | 0800        | CULG |               |             |                   |                  |              |                |                |         |
|     | 0443          | 1758        | POTS |               |             |                   |                  |              |                |                |         |
|     | 0610          | 1645        | BLEN |               |             |                   |                  |              |                |                |         |
|     | 2010          | 2400        | CULG |               |             |                   |                  |              |                |                |         |
| 28  | 0000          | 0800        | CULG |               |             |                   |                  |              |                |                |         |
|     | 0610          | 1645        | BLEN |               |             |                   |                  |              |                |                |         |
|     | 0440          | 1758        | POTS | 1026.5        | 1027.8      | III               | G                | 2            | 200U           | 400            |         |
|     |               |             | POTS | 1603          | 1614        | I                 | S,N              | 1            | 200U           | 290            |         |
|     | 2010          | 2400        | CULG |               |             |                   |                  |              |                |                |         |
| 29  | 0000          | 0800        | CULG |               |             |                   |                  |              |                |                |         |
|     | 0605          | 1650        | BLEN |               |             |                   |                  |              |                |                |         |
|     | 0437          | 1801        | POTS | 0614          | 1053 U      | I                 | S,N              | 1            | 200U           | 320            |         |
|     |               |             | POTS | 1252 U        | 1309 U      | I                 | S,N              | 1            | 270            | 400X           |         |
|     | 2010          | 2400        | CULG |               |             |                   |                  |              |                |                |         |
| 30  | 0000          | 0800        | CULG | 0239.0        | 0240.0      | III               | G                | 1            | 35             | 90             |         |
|     | 0437          | 1801        | POTS | 0528 U        | 1625 U      | I                 | S,N              | 2            | 200U           | 400X           |         |
|     | 0605          | 1650        | BLEN |               |             |                   |                  |              |                |                |         |
|     |               |             | POTS | 0704.1        | 1704.3      | III               | G                | 1            | 40X            | 65             |         |
|     | 2010          | 2400        | CULG |               |             |                   |                  |              |                |                |         |
| 31  | 0434          | 1804        | POTS | 0537 U        | 1646 U      | I                 | S,N,DC           | 2            | 200U           | 400X           |         |
|     | 0000          | 0800        | CULG | 0659.0        | 0659.0      | III               | B                | 1            | 30             | 85             |         |
|     | 0605          | 1650        | BLEN | 0851.0        | 0950.0      | I                 | DC               | 3            | 150X           | 600            |         |
|     | 2010          | 2400        | CULG | 2311.0        | 2311.0      | III               | B                | 1            | 50             | 90             |         |

## Event Remarks:

|                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>B = Single burst</p> <p>C = Underlying continuum<br/>(particularly with Type I)</p> <p>DC = Drifting chains</p> <p>DP = Drifting pairs</p> <p>F = Fundamental emission (Type II)</p> <p>FS = Fine structures (Type IV)</p> <p>G = Small group of bursts (&lt;10)</p> <p>GG = Large group of bursts (&gt;10)</p> <p>H = Herringbone</p> <p>HARM = Harmonic</p> | <p>N = Intermittent activity in this period</p> <p>MOV = Moving (Type IV)</p> <p>MWB = Meter wave burst</p> <p>RS = Reverse slope burst</p> <p>S = Storm in the sense of intermittent<br/>but apparently connected actively</p> <p>SH = Secondary harmonic emission</p> <p>STA = Stationary (Type IV)</p> <p>U = U-shaped burst of Type III</p> <p>UE = Uncertain emission (Type II)</p> <p>W = Weak</p> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Frequency qualifiers:

X = Extends beyond instrument range      U = Uncertain frequency

## Remarks:

SWF = Associated short wave fade observed

ESS = Estimated shock speed in km/s (Type II)

FLA = Associated flare observed (class optional)

## Stations Reporting:

|                 |                |                      |                 |               |
|-----------------|----------------|----------------------|-----------------|---------------|
| CULG = Culgoora | IZMI = Izmiran | LEAR = Learmonth     | ONDR = Ondrejov | BLEN = Bleien |
| PALE = Palehua  | POTS = Potsdam | SGMR = Sagamore Hill | SVTO = San Vito |               |

NOTE 1: Beginning June 26, 2001, the Bleien observatory changed to higher frequencies (1-4Ghz).



## SOLAR RADIO NOISE STORM AT 164 MHZ

FROM NANÇAY RADIOHELIOGRAPH

MARCH 2006

|          | HELIOGRAPHICS POSITIONS<br>MEAN VALUES <sup>1</sup> |       | IMP <sup>2</sup> | OBSERVING TIME <sup>3</sup> |         |
|----------|-----------------------------------------------------|-------|------------------|-----------------------------|---------|
|          | E-W                                                 | S-N   |                  | START( UT)                  | END(UT) |
| 29/03/06 | -0.83                                               | -0.21 | I                | 8H25 E                      | 10H30   |
| 31/03/06 | -0.28                                               | -0.19 | I                | 12H16 E                     | 15H25 D |

## SOLAR RADIO NOISE STORM AT 327 MHZ

FROM NANÇAY RADIOHELIOGRAPH

MARCH 2006

|          | HELIOGRAPHICS POSITIONS<br>MEAN VALUES <sup>1</sup> |       | IMP <sup>2</sup> | OBSERVING TIME <sup>3</sup> |         |
|----------|-----------------------------------------------------|-------|------------------|-----------------------------|---------|
| DAY      | E-W                                                 | S-N   |                  | START(UT)                   | END(UT) |
| 29/03/06 | -0.75                                               | -0.18 | I                | 8H25 E                      | 15H26 D |
| 31/03/06 | -0.83                                               | -0.05 | I                | 12H16 E                     | 15H25 D |
| 31/03/06 | -0.27                                               | -0.12 | I                | 12H16 E                     | 15H25 D |

**26, 30 March : NO DATA**

### OTHERS DAYS: NO DETECTABLE NOISE STORM

- For the days marked by an asterisk, intense ionospheric gravity waves are observed during the whole day. Without a more detailed analysis leading to increase uncertainties in the deviation, the positions which are indicated are estimated within 0.2 R

\*\* Following a large burst

\*\*\* importance not well determined due to the proximity of the very strong other source

\*\*\*\* no flux measurements available

<sup>1</sup> POSITIVE E-W AND S-N COORDINATES CORRESPOND TO THE N-W QUADRANT

<sup>2</sup> IMP1: FLUX < 5 SFU IMP2: 5 < FLUX < 20 SFU IMP3: 20 < FLUX < 100 SFU

IMP4: 100 < FLUX < 300 SFU IMP5: 300 SFU

<sup>3</sup> E NOISE STORM IN PROGRESS AT THE BEGINNING OF THE NANÇAY OBSERVATIONS

D NOISE STORM IN PROGRESS AT THE END OF THE NANÇAY OBSERVATIONS

**COSMIC RAY INDICES**  
**(Neutron Monitor)**

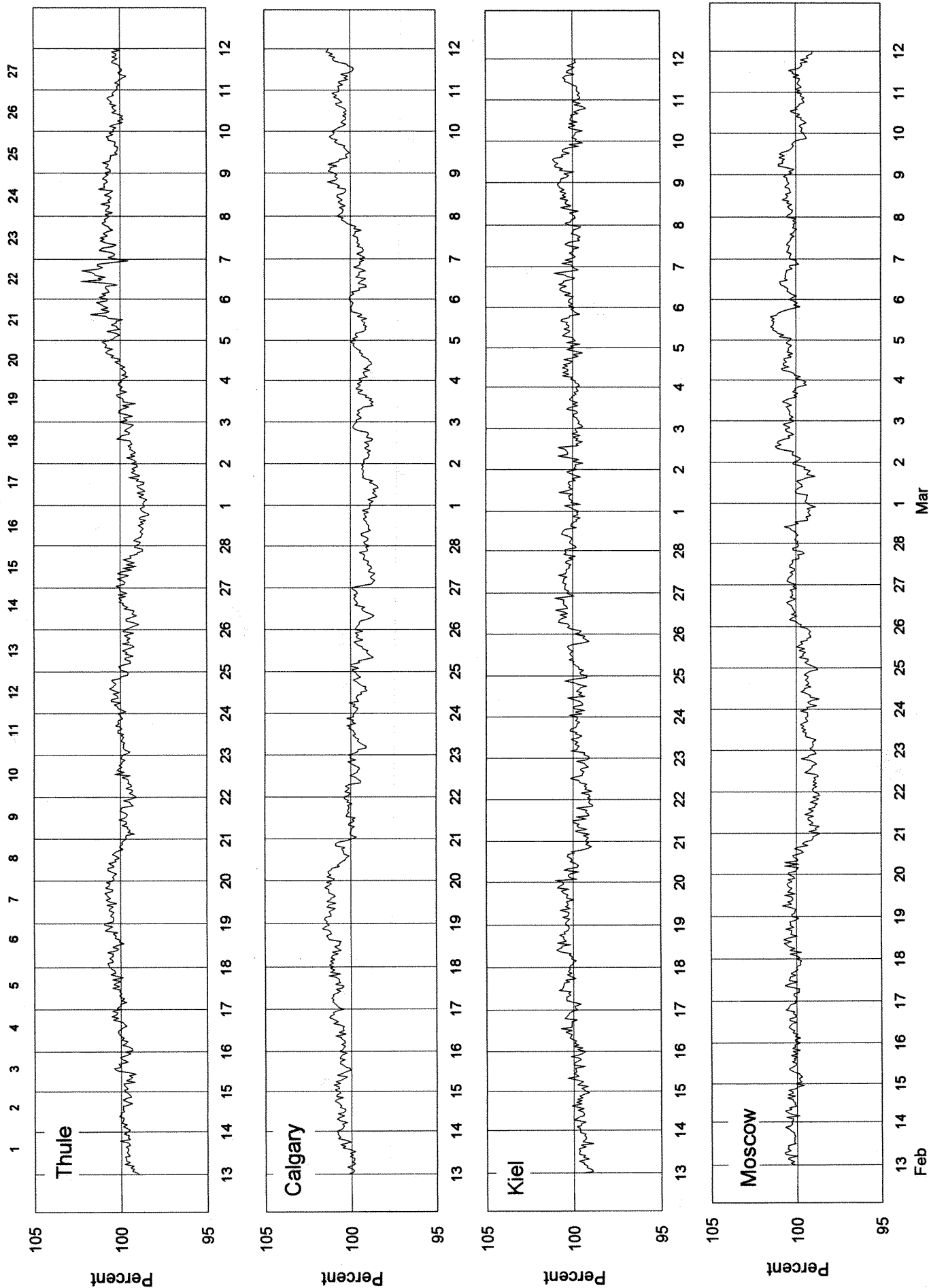
March 2006

| Day  | THULE<br>Average<br>(cts/h)/100 | CALGARY<br>Average<br>(cts/h)/300 | KIEL<br>Average<br>(cts/h)/100 | MOSCOW<br>Average<br>(cts/h)/64 | CLIMAX<br>Average<br>(cts/h)/100 | BEIJING<br>Average<br>(cts/h)/256 | HALEAKALA<br>Average<br>(cts/h)/1000 |
|------|---------------------------------|-----------------------------------|--------------------------------|---------------------------------|----------------------------------|-----------------------------------|--------------------------------------|
| 1    | 4393.5                          | 3818.2                            | 6190.0                         | 9166.6                          | 4165.6                           | 2068.8                            | 3575.0                               |
| 2    | 4419.1                          | 3828.7                            | 6182.7                         | 9249.5                          | 4176.5                           | 2067.6                            | 3578.7                               |
| 3    | 4435.2                          | 3834.2                            | 6175.4                         | 9222.2                          | 4181.9                           | 2065.0                            | 3578.3                               |
| 4    | 4452.8                          | 3833.3                            | 6190.4                         | 9242.2                          | 4207.0                           | 2071.6                            | 3577.7                               |
| 5    | 4468.5                          | 3843.7                            | 6194.8                         | 9285.2                          | 4210.1                           | 2070.7                            | 3590.6                               |
| 6    | 4487.6                          | 3842.0                            | 6202.6                         | 9245.3                          | 4201.4                           | 2066.9                            | 3594.1                               |
| 7    | 4474.7                          | 3848.8                            | 6183.3                         | 9230.1                          | 4225.6                           | 2074.8                            | 3605.3                               |
| 8    | 4476.4                          | 3886.2                            | 6205.7                         | 9249.3                          | 4246.0                           | 2072.0                            | 3608.5                               |
| 9    | 4465.5                          | 3889.3                            | 6217.3                         | 9241.0                          | 4241.9                           | 2062.9                            | 3585.4                               |
| 10   | 4456.4                          | 3883.5                            | 6175.4                         | 9181.4                          | 4226.2                           | 2063.1                            | 3586.6                               |
| 11   | 4447.7                          | 3882.5                            | 6184.2                         | 9182.7                          | 4231.0                           | 2066.7                            | 3587.2                               |
| 12   | 4466.0                          | 3889.3                            | 6188.9                         | 9134.3                          | 4228.2                           | 2071.9                            | 3581.7                               |
| 13   | 4478.4                          | 3894.5                            | 6183.1                         | 9184.0                          | 4218.3                           | 2066.8                            | 3582.1                               |
| 14   | 4468.0                          | 3895.3                            | 6174.9                         | 9187.7                          | 4189.8                           | 2064.3                            | 3584.5                               |
| 15   | 4457.8                          | 3878.8                            | 6166.9                         | 9209.7                          | 4182.6                           | 2062.2                            | 3571.6                               |
| 16   | 4464.9                          | 3888.7                            | 6154.2                         | 9201.6                          | 4188.8                           | 2058.2                            | 3582.2                               |
| 17   | 4474.8                          | 3893.8                            | 6169.5                         | 9230.6                          | 4196.0                           | 2059.0                            | 3578.1                               |
| 18   | 4475.1                          | 3900.8                            | 6197.4                         | 9303.4                          | 4223.0                           | 2069.7                            | 3579.6                               |
| 19   | 4473.1                          | 3902.3                            | 6204.0                         | 9375.7                          | 4256.9                           | 2071.0                            | 3583.2                               |
| 20   | 4473.9                          | 3893.2                            | 6199.4                         | 9385.9                          | 4244.3                           | 2068.8                            | 3576.8                               |
| 21   | 4460.5                          | 3899.7                            | 6204.9                         | 9371.6                          | 4235.2                           | 2068.3                            | 3584.9                               |
| 22   | 4460.1                          | 3899.5                            | 6224.5                         | 9369.3                          | 4231.7                           | 2070.3                            | 3580.2                               |
| 23   | 4465.8                          | 3911.5                            | 6219.1                         | 9356.3                          | 4225.0                           | 2075.5                            | 3560.9                               |
| 24   | 4453.3                          | 3900.3                            | 6205.0                         | 9350.9                          | 4204.6                           | 2068.3                            | 3551.7                               |
| 25   | 4468.7                          | 3894.5                            | 6194.9                         | 9338.9                          | 4203.4                           | 2069.2                            | 3566.8                               |
| 26   | 4461.5                          | 3901.2                            | 6165.2                         | 9297.5                          | 4204.3                           | 2065.7                            | 3561.9                               |
| 27   | 4453.5                          | 3889.7                            | 6172.0(16)                     | 9306.3                          | 4199.3                           | 2074.4                            | 3544.0                               |
| 28   | 4473.9                          | 3903.0                            | —                              | 9310.7                          | 4211.2                           | 2076.3                            | 3577.5                               |
| 29   | 4486.1                          | 3915.3                            | 6205.2(12)                     | 9343.1                          | 4234.9                           | 2070.0                            | 3563.7                               |
| 30   | 4489.4                          | 3917.2                            | 6207.7                         | 9334.7                          | 4237.6                           | 2067.8                            | 3557.7                               |
| 31   | 4491.6                          | 3922.7                            | 6220.6                         | 9373.7                          | 4238.8                           | 2074.1                            | 3574.1                               |
| Mean | 4463.0                          | 3883.3                            | 6192.0                         | 9273.0                          | 4215.1                           | 2068.4                            | 3577.9                               |

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours, and for Haleakala, whenever the sum of all three sections falls below 60 hours.

# COSMIC RAY INDICES (Neutron Monitor)

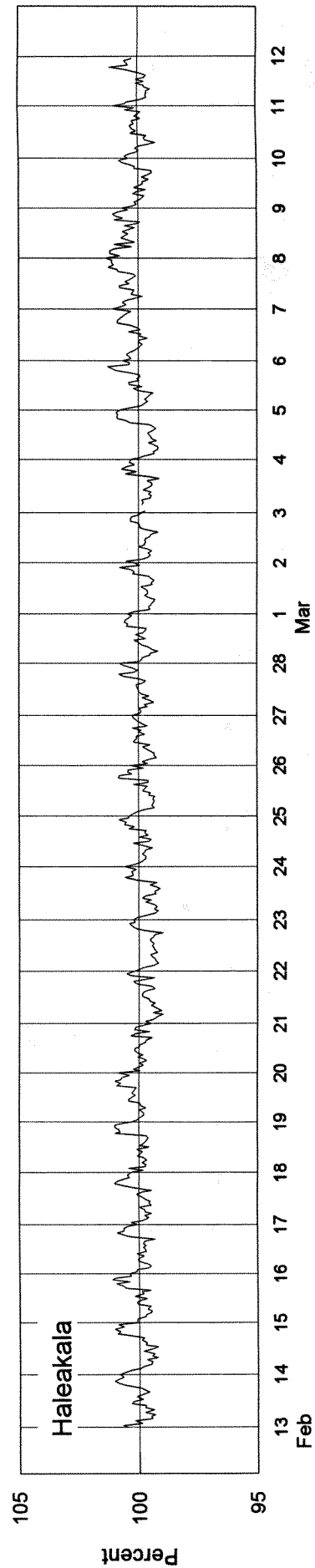
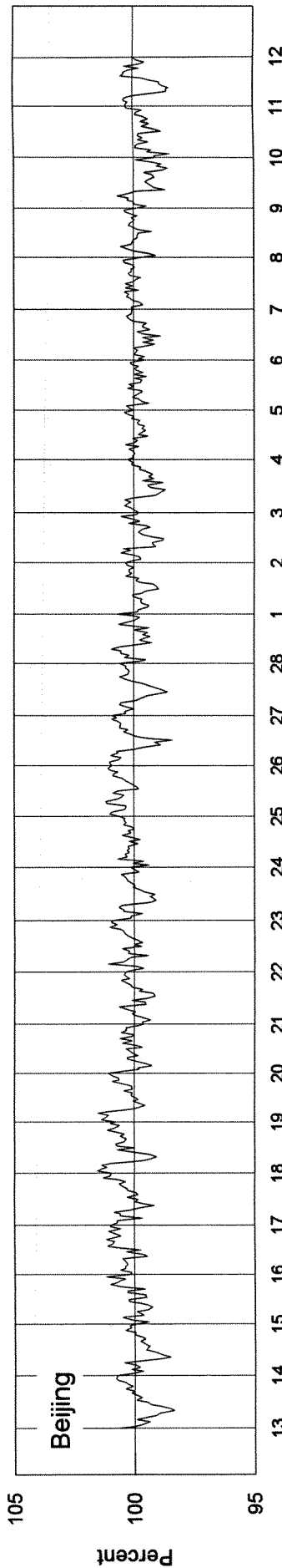
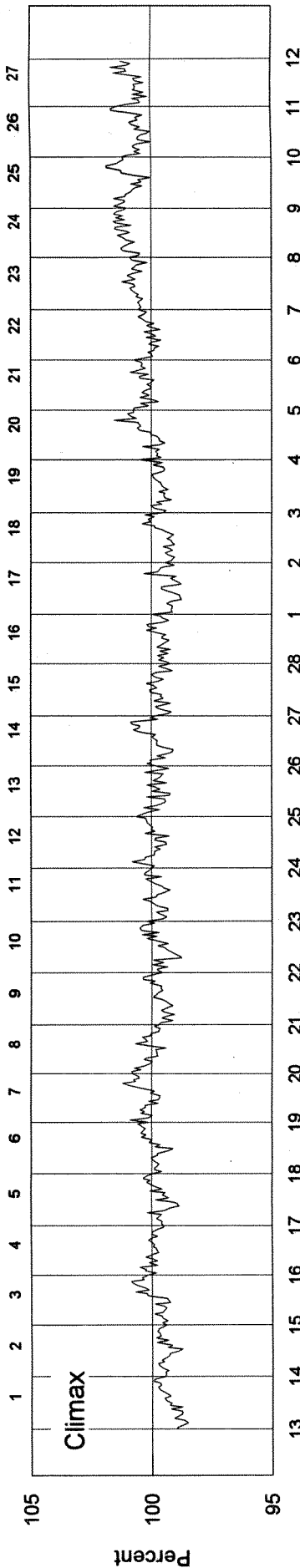
Bartels Rotation 2355 - Beginning 13 Feb 2006



# COSMIC RAY INDICES

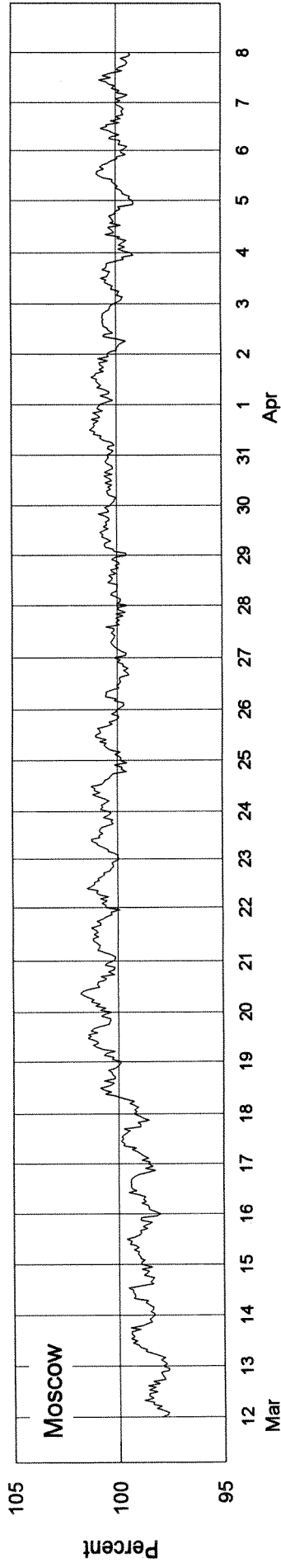
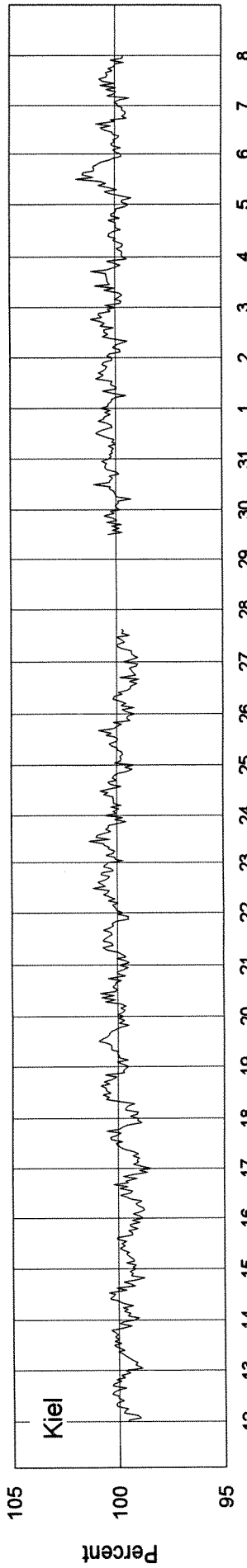
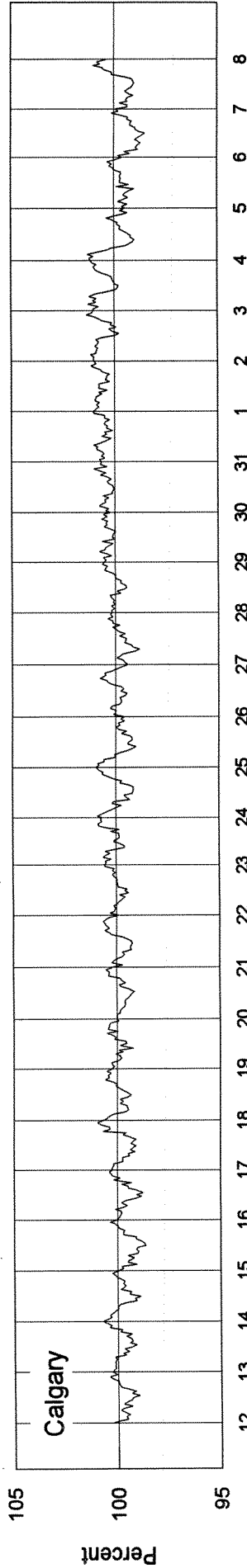
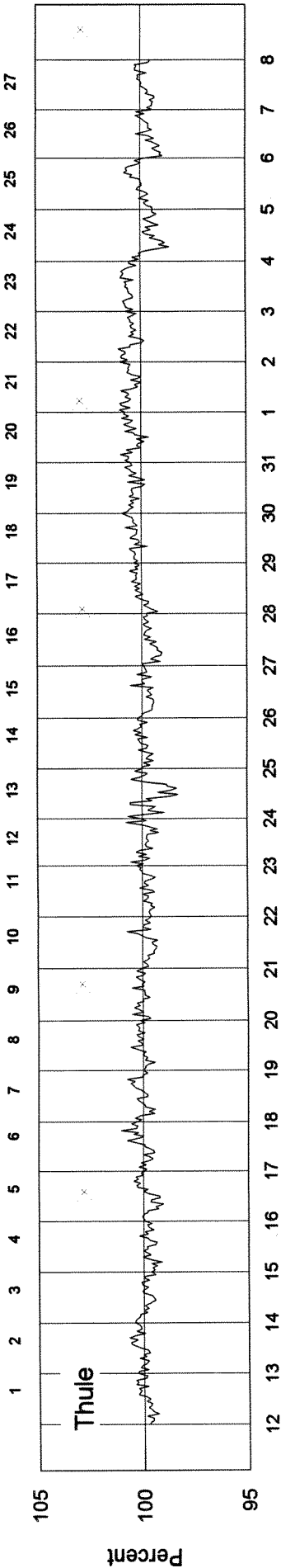
(Neutron Monitor)

Bartels Rotation 2355 - Beginning 13 Feb 2006

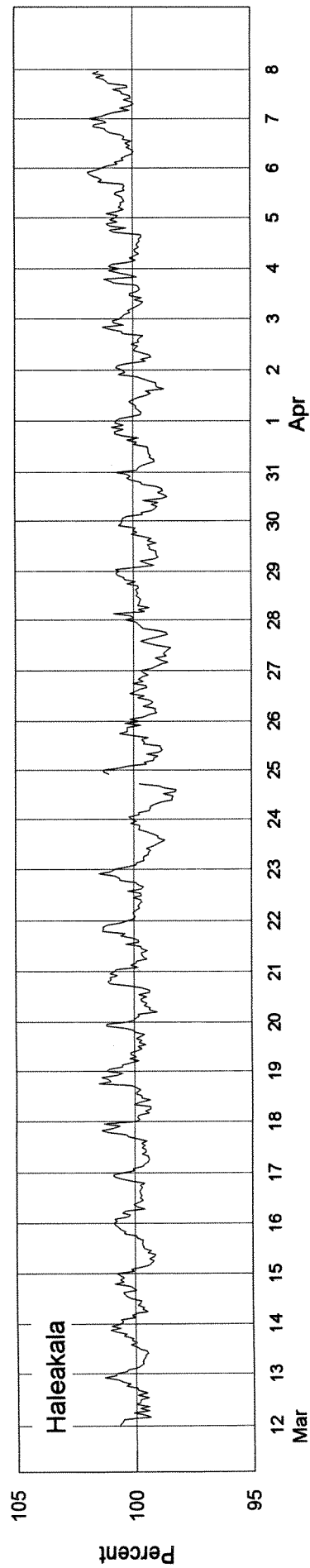
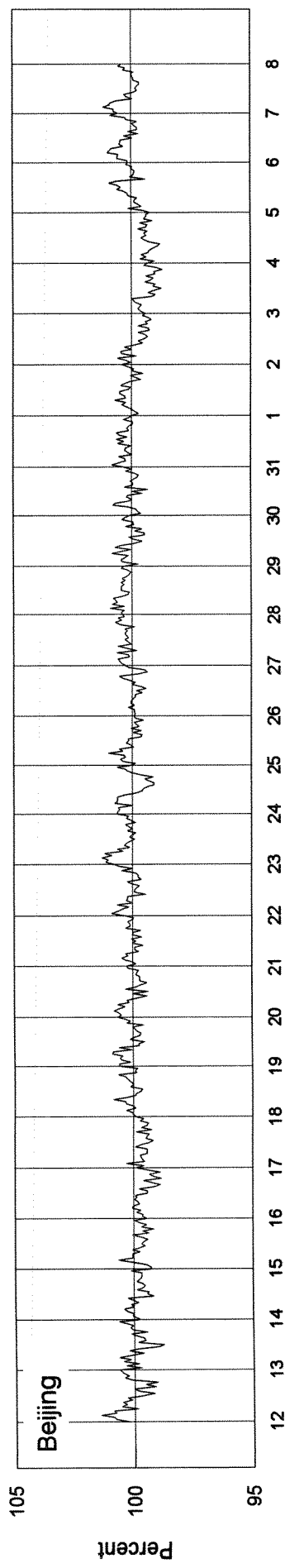
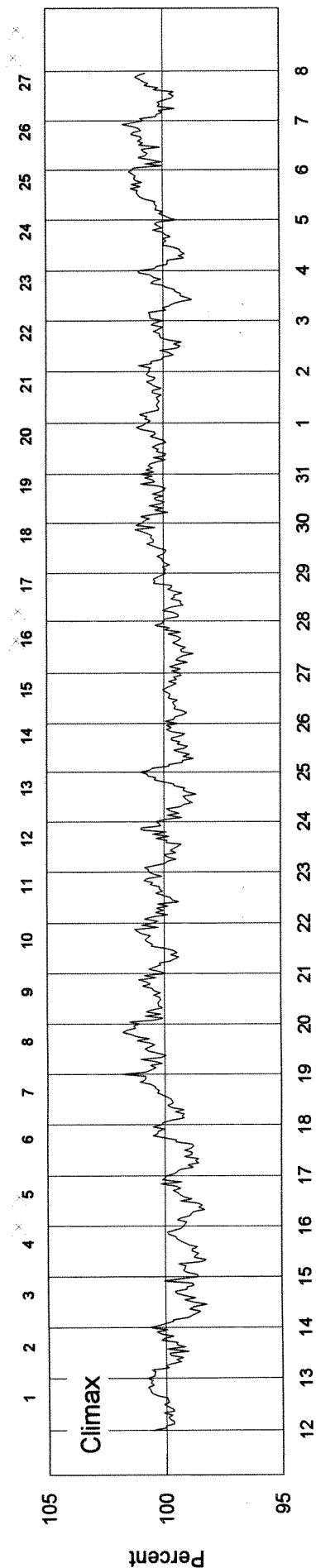


# COSMIC RAY INDICES (Neutron Monitor)

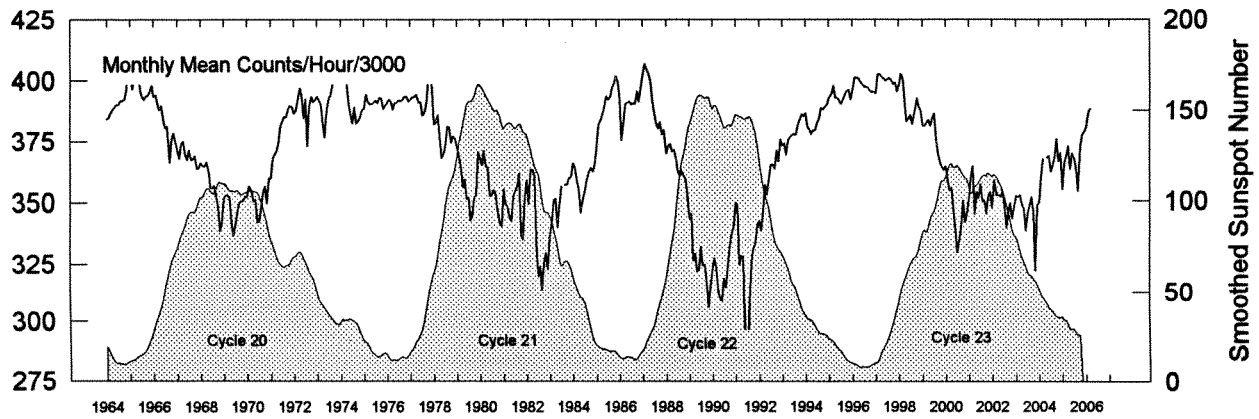
Bartels Rotation 2356 - Beginning 12 Mar 2006



# COSMIC RAY INDICES (Neutron Monitor) Bartels Rotation 2356 - Beginning 12 Mar 2006



# Calgary Neutron Monitor Pressure-Corrected Values Jan 1964 - Mar 2006



| Year | Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug     | Sep  | Oct  | Nov  | Dec  | Mean |
|------|------|------|------|------|------|------|------|---------|------|------|------|------|------|
| 1964 | 3847 | 3852 | 3872 | 3883 | 3892 | 3905 | 3905 | 3921    | 3920 | 3926 | 3966 | 4064 | 3913 |
| 1965 | 4006 | 3968 | 4007 | 4040 | 4040 | 3967 | 3935 | 3923    | 3938 | 3942 | 3960 | 3980 | 3976 |
| 1966 | 3935 | 3943 | 3906 | 3881 | 3899 | 3844 | 3807 | 3814    | 3663 | 3758 | 3785 | 3750 | 3832 |
| 1967 | 3710 | 3678 | 3741 | 3750 | 3697 | 3671 | 3713 | 3679    | 3675 | 3691 | 3638 | 3639 | 3690 |
| 1968 | 3663 | 3653 | 3647 | 3665 | 3632 | 3561 | 3556 | 3567    | 3529 | 3482 | 3386 | 3420 | 3563 |
| 1969 | 3515 | 3531 | 3529 | 3520 | 3417 | 3370 | 3408 | 3464    | 3500 | 3507 | 3506 | 3524 | 3483 |
| 1970 | 3523 | 3565 | 3548 | 3505 | 3512 | 3424 | 3426 | 3477    | 3543 | 3564 | 3497 | 3596 | 3515 |
| 1971 | 3593 | 3678 | 3693 | 3712 | 3737 | 3813 | 3832 | 3853    | 3851 | 3883 | 3899 | 3893 | 3786 |
| 1972 | 3865 | 3875 | 3924 | 3969 | 3942 | 3847 | 3926 | 3731    | 3895 | 3935 | 3912 | 3920 | 3895 |
| 1973 | 3935 | 3919 | 3903 | 3819 | 3768 | 3875 | 3926 | 3944    | 3986 | 3995 | 3997 | 4008 | 3923 |
| 1974 | 4036 | 4043 | 4005 | 3988 | 3906 | 3861 | 3822 | 3890    | 3827 | 3831 | 3850 | 3881 | 3912 |
| 1975 | 3883 | 3943 | 3914 | 3905 | 3904 | 3910 | 3918 | 3907    | 3929 | 3927 | 3884 | 3897 | 3910 |
| 1976 | 3908 | 3923 | 3915 | 3881 | 387  | 3909 | 3921 | 3918    | 3920 | 3936 | 3935 | 3916 | 3916 |
| 1977 | 3919 | 3933 | 3933 | 3943 | 3911 | 3911 | 3857 | 3865    | 3895 | 4010 | 4055 | 3961 | 3933 |
| 1978 | 3823 | 3826 | 3860 | 3773 | 3681 | 3697 | 3730 | 3811    | 3808 | 3744 | 3772 | 3764 | 3774 |
| 1979 | 3726 | 3696 | 3647 | 3559 | 3592 | 3516 | 3521 | 3427    | 3447 | 3519 | 3528 | 3705 | 3573 |
| 1980 | 3681 | 3652 | 3711 | 3649 | 3643 | 3527 | 3525 | 3550    | 3540 | 3471 | 3414 | 3403 | 3564 |
| 1981 | 3550 | 3491 | 3483 | 3440 | 3426 | 3522 | 3546 | 3560    | 3615 | 3374 | 3348 | 3520 | 3490 |
| 1982 | 3586 | 3492 | 3634 | 3632 | 3608 | 3344 | 3196 | 3239    | 3137 | 3257 | 3296 | 3225 | 3387 |
| 1983 | 3364 | 3421 | 3510 | 3515 | 3399 | 3487 | 3563 | No Data | 3571 | 3569 | 3597 | 3599 | 3509 |
| 1984 | 3661 | 3646 | 3586 | 3551 | 3460 | 3515 | 3551 | 3593    | 3623 | 3641 | 3623 | 3652 | 3592 |
| 1985 | 3723 | 3821 | 3834 | 3858 | 3888 | 3936 | 3921 | 3929    | 3971 | 3987 | 4017 | 3997 | 3907 |
| 1986 | 3923 | 3755 | 3814 | 3905 | 3906 | 3915 | 3902 | 3907    | 3902 | 3958 | 3912 | 3974 | 3898 |
| 1987 | 4025 | 4068 | 4047 | 4028 | 3993 | 3914 | 3866 | 3822    | 3802 | 3827 | 3779 | 3796 | 3914 |
| 1988 | 3698 | 3729 | 3739 | 3709 | 3714 | 3682 | 3621 | 3608    | 3624 | 3603 | 3590 | 3520 | 3653 |
| 1989 | 3436 | 3454 | 3263 | 3290 | 3216 | 3222 | 3321 | 3224    | 3246 | 3164 | 3063 | 3152 | 3254 |
| 1990 | 3227 | 3272 | 3232 | 3129 | 3099 | 3089 | 3188 | 3147    | 3237 | 3317 | 3375 | 3401 | 3226 |
| 1991 | 3496 | 3489 | 3244 | 3279 | 3280 | 2873 | 2896 | 3078    | 3253 | 3311 | 3330 | 3412 | 3245 |
| 1992 | 3425 | 3382 | 3463 | 3566 | 3528 | 3593 | 3655 | 3655    | 3636 | 3711 | 3665 | 3758 | 3586 |
| 1993 | 3730 | 3741 | 3693 | 3753 | 3765 | 3775 | 3780 | 3775    | 3815 | 3836 | 3859 | 3852 | 3781 |
| 1994 | 3864 | 3807 | 3798 | 3779 | 3793 | 3793 | 3822 | 3841    | 3885 | 3878 | 3891 | 3896 | 3837 |
| 1995 | 3929 | 3945 | 3919 | 3929 | 3927 | 3917 | 3902 | 3919    | 3940 | 3956 | 3963 | 3920 | 3931 |
| 1996 | 3960 | 4008 | 4012 | 4010 | 3993 | 3983 | 3976 | 3976    | 3970 | 3960 | 3953 | 3955 | 3980 |
| 1997 | 3947 | 4023 | 4024 | 4014 | 4007 | 3998 | 4001 | 4010    | 3999 | 3985 | 3990 | 3955 | 3996 |
| 1998 | 3982 | 4025 | 4013 | 3910 | 3827 | 3839 | 3857 | 3817    | 3876 | 3925 | 3890 | 3875 | 3903 |
| 1999 | 3816 | 3811 | 3823 | 3836 | 3810 | 3843 | 3861 | 3760    | 3699 | 3664 | 3644 | 3631 | 3767 |
| 2000 | 3646 | 3586 | 3544 | 3554 | 3465 | 3386 | 3293 | 3337    | 3395 | 3503 | 3417 | 3447 | 3464 |
| 2001 | 3510 | 3599 | 3646 | 3449 | 3537 | 3511 | 3570 | 3501    | 3504 | 3449 | 3521 | 3537 | 3528 |
| 2002 | 3469 | 3585 | 3527 | 3526 | 3517 | 3541 | 3479 | 3393    | 3455 | 3493 | 3431 | 3474 | 3491 |
| 2003 | 3523 | 3517 | 3524 | 3488 | 3473 | 3384 | 3450 | 3480    | 3517 | 3460 | 3216 | 3485 | 3460 |
| 2004 | 3492 | 3604 | 3676 | —    | 3680 | 3689 | 3612 | 3645    | 3683 | 3756 | 3665 | 3702 | 3655 |
| 2005 | 3546 | 3658 | 3688 | 3729 | 3633 | 3698 | 3684 | 3640    | 3541 | 3729 | 3775 | 3785 | 3676 |
| 2006 | 3804 | 3862 | 3883 |      |      |      |      |         |      |      |      |      | 3850 |

Multiply table entries by 300 to obtain hourly counting rate. Calgary, Canada: N51 W114, Alt=1128m, Cutoff Rigidity=1.09GV.

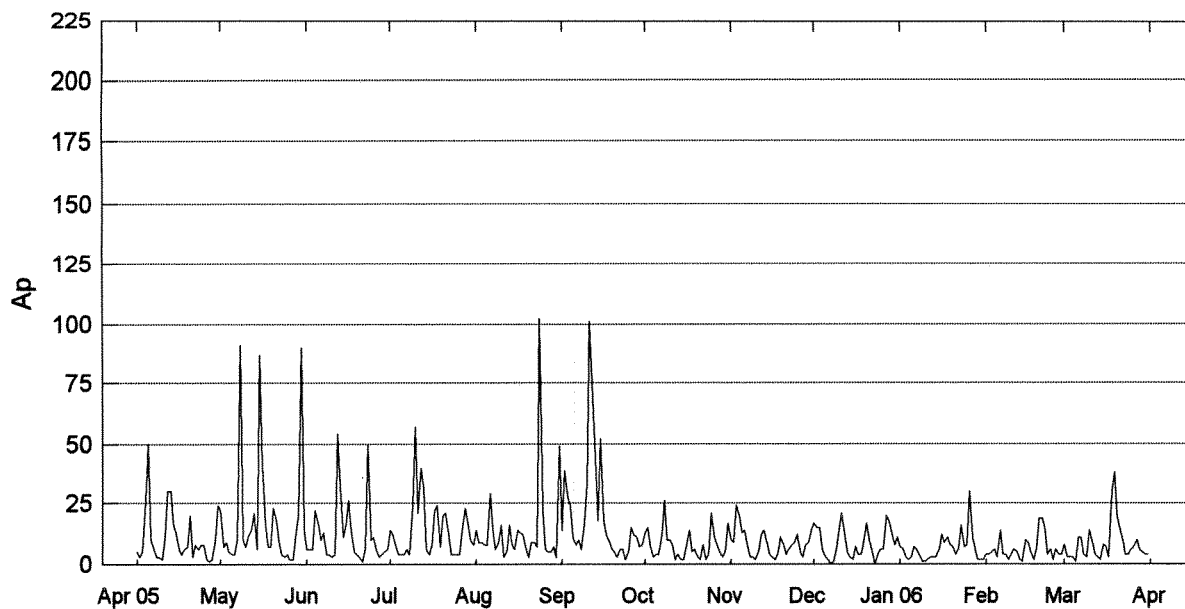


# Geomagnetic Activity Indices

## March 2006

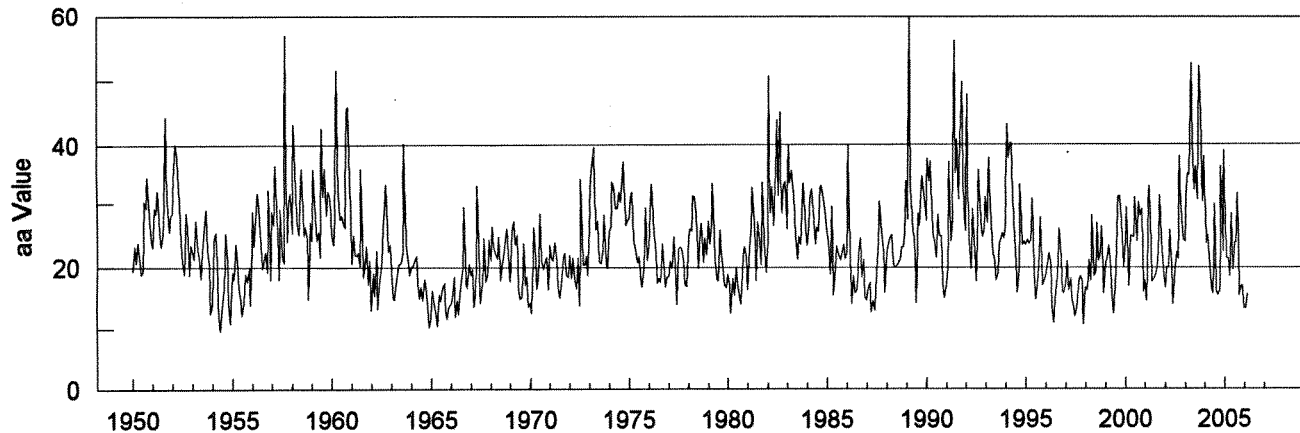
| Day  | Kp Three-Hourly Indices |    |    |    |    |    |    |    | Sum | Ap                      | Cp   | Km Three-Hourly Indices |    |    |    |    |    |      |      | Am   | aa Provisional |      |      |     |      |    |
|------|-------------------------|----|----|----|----|----|----|----|-----|-------------------------|------|-------------------------|----|----|----|----|----|------|------|------|----------------|------|------|-----|------|----|
|      | 1                       | 2  | 3  | 4  | 5  | 6  | 7  | 8  |     |                         |      | 1                       | 2  | 3  | 4  | 5  | 6  | 7    | 8    |      | N              | S    | M    |     |      |    |
| 1    | 3                       | 2+ | 2  | 2+ | 3  | 1+ | 0+ | 0+ | 15- | 8                       | 0.4  | 2+                      | 2- | 2- | 2o | 3o | 2- | 1-   | 0+   | 14   | 15             | 17   | 16   | 16  |      |    |
| 2    | Q3                      | 1- | 1- | 1  | 1  | 0  | 0  | 1+ | 5   | 3                       | 0.0  | 0+                      | 1- | 1- | 1+ | 1o | 1o | 0+   | 1-   | 1+   | 6              | 7    | 7    | 7   | CK   |    |
| 3    | Q4                      | 1  | 0  | 0  | 0+ | 1- | 1  | 1+ | 5   | 3                       | 0.0  | 1o                      | 1- | 1- | 1- | 1o | 1- | 1o   | 1+   | 1-   | 6              | 7    | 7    | 5   | 8    | CC |
| 4    | Q5                      | 1- | 1  | 1+ | 1- | 0+ | 0  | 0  | 5   | 3                       | 0.0  | 1o                      | 1o | 1+ | 1+ | 1o | 0+ | 0+   | 0o   | 1o   | 5              | 7    | 6    | 8   | 5    | CC |
| 5    | Q1                      | 0+ | 0  | 0+ | 0  | 0  | 1- | 0  | 2   | 1                       | 0.0  | 1-                      | 0o | 0+ | 0+ | 0+ | 0+ | 0+   | 0o   | 1-   | 3              | 4    | 3    | 4   | 3    | CC |
| 6    |                         | 1- | 0+ | 1- | 2- | 3  | 3- | 4- | 16+ | 11                      | 0.6  | 0+                      | 0+ | 1+ | 1+ | 3- | 2+ | 4-   | 3+   | 18   | 22             | 22   | 9    | 35  |      |    |
| 7    |                         | 4+ | 4- | 2+ | 1+ | 1+ | 1- | 2- | 17  | 11                      | 0.6  | 3o                      | 3- | 3- | 2+ | 2o | 1o | 2-   | 1+   | 18   | 21             | 17   | 26   | 12  |      |    |
| 8    |                         | 2- | 1+ | 0+ | 1- | 2- | 1- | 2+ | 9+  | 4                       | 0.2  | 1+                      | 1o | 0+ | 1- | 2- | 1o | 2-   | 1+   | 8    | 11             | 8    | 7    | 12  | CC   |    |
| 9    | Q10                     | 0  | 1- | 0  | 0  | 0+ | 1- | 3- | 6-  | 3                       | 0.1  | 0+                      | 1o | 0o | 0o | 0+ | 1o | 2+   | 1+   | 6    | 8              | 5    | 3    | 10  | CK   |    |
| 10   | D4*                     | 1+ | 2+ | 2+ | 3  | 3  | 3- | 2+ | 22- | 14                      | 0.8  | 1+                      | 2+ | 2o | 3o | 3o | 2+ | 2o   | 4o   | 24   | 31             | 21   | 21   | 32  |      |    |
| 11   |                         | 4- | 3  | 3  | 2+ | 1  | 2  | 1+ | 18- | 10                      | 0.6  | 3o                      | 2+ | 3o | 3o | 1+ | 2+ | 2-   | 1+   | 20   | 21             | 24   | 30   | 15  |      |    |
| 12   |                         | 0  | 1+ | 2- | 2- | 1+ | 1  | 1+ | 8+  | 4                       | 0.1  | 0+                      | 1+ | 2- | 1+ | 1+ | 1o | 1+   | 0+   | 7    | 6              | 8    | 8    | 7   | CC   |    |
| 13   | Q2                      | 0+ | 1- | 0+ | 1- | 1- | 0+ | 1- | 5-  | 3                       | 0.0  | 0o                      | 0+ | 0+ | 1o | 1- | 0+ | 1-   | 1o   | 4    | 6              | 3    | 4    | 5   | CC   |    |
| 14   | Q7                      | 0  | 0  | 0  | 1- | 1  | 0+ | 0+ | 4+  | 2                       | 0.0  | 0o                      | 0+ | 0o | 1- | 2o | 0+ | 0+   | 2-   | 5    | 6              | 7    | 4    | 9   | CC   |    |
| 15   |                         | 2  | 2  | 2  | 2+ | 2- | 2  | 3  | 15+ | 8                       | 0.4  | 2o                      | 2o | 2o | 2+ | 2- | 2+ | 3o   | 1-   | 16   | 19             | 15   | 19   | 15  |      |    |
| 16   |                         | 2- | 2+ | 2+ | 2+ | 2- | 2+ | 1  | 15  | 7                       | 0.4  | 1o                      | 2- | 2+ | 2+ | 2- | 3- | 1o   | 1o   | 13   | 12             | 16   | 14   | 14  | K    |    |
| 17   | Q6                      | 0  | 0+ | 0+ | 1  | 1- | 0+ | 1- | 5   | 3                       | 0.0  | 0+                      | 0+ | 0+ | 1o | 1o | 0o | 1o   | 1+   | 4    | 5              | 7    | 5    | 7   | CK   |    |
| 18   | D2                      | 0+ | 2- | 3+ | 5- | 3  | 5  | 5  | 29- | 30                      | 1.3  | 1-                      | 2- | 3+ | 4o | 3o | 4+ | 4o   | 5o   | 44   | 63             | 34   | 27   | 70  |      |    |
| 19   | D1                      | 6+ | 5+ | 5+ | 4- | 4+ | 3  | 4  | 35  | 38                      | 1.4  | 6-                      | 5- | 4+ | 4o | 4o | 3- | 4-   | 4-   | 60   | 57             | 66   | 72   | 51  |      |    |
| 20   | D3                      | 4+ | 4  | 4  | 3+ | 2  | 2+ | 4  | 27- | 20                      | 1.0  | 4o                      | 4- | 4- | 3+ | 2+ | 3- | 4o   | 3o   | 39   | 38             | 37   | 46   | 29  |      |    |
| 21   | D5*                     | 2+ | 4- | 2- | 1+ | 2+ | 4  | 3+ | 22- | 14                      | 0.8  | 2+                      | 3o | 2- | 2o | 3- | 4- | 3o   | 3o   | 25   | 32             | 26   | 21   | 36  |      |    |
| 22   |                         | 3  | 3+ | 3- | 1  | 1- | 1+ | 3- | 17  | 10                      | 0.5  | 3-                      | 3- | 3- | 1+ | 1- | 1+ | 2+   | 3-   | 17   | 22             | 13   | 18   | 17  |      |    |
| 23   | Q8                      | 2- | 2  | 1  | 1- | 0+ | 1- | 0+ | 7+  | 4                       | 0.1  | 1+                      | 1+ | 1- | 1- | 1- | 1- | 0o   | 1+   | 6    | 7              | 5    | 7    | 6   | CC   |    |
| 24   |                         | 1+ | 0+ | 0+ | 1  | 1- | 1  | 1+ | 8+  | 4                       | 0.1  | 2-                      | 0+ | 0+ | 1o | 1- | 1o | 1+   | 3-   | 8    | 10             | 6    | 5    | 11  | CC   |    |
| 25   |                         | 2- | 3- | 1+ | 1  | 1  | 1+ | 3- | 12  | 6                       | 0.3  | 1+                      | 2o | 1+ | 1+ | 1+ | 1+ | 2+   | 0+   | 10   | 11             | 12   | 9    | 14  | CC   |    |
| 26   |                         | 1- | 1+ | 0  | 1+ | 2- | 2+ | 3+ | 13  | 7                       | 0.3  | 1o                      | 1+ | 0+ | 1+ | 2- | 2+ | 3o   | 3-   | 14   | 12             | 14   | 9    | 18  | KK   |    |
| 27   |                         | 3+ | 3  | 0+ | 0+ | 1+ | 3- | 1  | 15+ | 10                      | 0.5  | 3o                      | 3- | 0+ | 0+ | 1+ | 3- | 1o   | 3o   | 16   | 23             | 12   | 14   | 22  |      |    |
| 28   |                         | 1+ | 3+ | 1  | 0+ | 1  | 1+ | 2- | 11  | 6                       | 0.3  | 1-                      | 3o | 1+ | 1- | 1o | 1+ | 1+   | 1o   | 10   | 13             | 11   | 15   | 9   | KK   |    |
| 29   |                         | 1  | 2  | 1- | 1  | 1- | 1- | 2- | 10  | 5                       | 0.2  | 1o                      | 2- | 1- | 1o | 1- | 1o | 1+   | 2+   | 9    | 12             | 6    | 8    | 11  | CC   |    |
| 30   | Q9                      | 1+ | 1- | 0+ | 0+ | 0+ | 0+ | 2- | 7   | 4                       | 0.1  | 1o                      | 0+ | 0o | 1- | 0+ | 0+ | 2-   | 2o   | 6    | 9              | 6    | 4    | 11  | CC   |    |
| 31   |                         | 1  | 0  | 1  | 2- | 2- | 1+ | 2  | 9+  | 4                       | 0.2  | 1o                      | 0+ | 1o | 2- | 2o | 2- | 2+   | 1o   | 10   | 10             | 12   | 8    | 14  | CC   |    |
| Mean |                         |    |    |    |    |    |    |    |     | 8                       | 0.36 |                         |    |    |    |    |    |      |      | 14.5 | 17.2           | 14.6 | 15.8 |     |      |    |
| Day  | Kn Three-Hourly Indices |    |    |    |    |    |    |    | An  | Ks Three-Hourly Indices |      |                         |    |    |    |    |    | Prov |      |      |                |      | Ra   | Rs  | IMF  |    |
|      | 1                       | 2  | 3  | 4  | 5  | 6  | 7  | 8  |     | 1                       | 2    | 3                       | 4  | 5  | 6  | 7  | 8  | As   | Sa   | Ri   |                |      |      |     |      |    |
| 1    | 2+                      | 2- | 2- | 2o | 3+ | 2- | 1- | 0o | 14  | 2+                      | 2-   | 2-                      | 2o | 3- | 2- | 1o | 1- | 14   | 75.6 | 0    | 1              | 20   |      |     |      |    |
| 2    | 0+                      | 1- | 1+ | 1o | 1+ | 0+ | 1- | 1+ | 6   | 1-                      | 1o   | 1o                      | 1o | 1- | 0+ | 1- | 1+ | 6    | 74.7 | 0    | 1              | 19   |      |     |      |    |
| 3    | 1o                      | 0+ | 1- | 1- | 1- | 1+ | 1+ | 1- | 6   | 1o                      | 1o   | 1-                      | 1o | 1- | 1o | 2- | 1- | 6    | 74.2 | 0    | 1              | 18   |      |     |      |    |
| 4    | 1-                      | 1o | 2- | 1o | 1- | 1o | 0o | 1+ | 6   | 1o                      | 1+   | 1o                      | 1o | 0o | 0o | 0o | 1o | 5    | 73.8 | 9    | 3              | 18   |      |     |      |    |
| 5    | 0+                      | 0o | 0o | 0o | 0+ | 0+ | 0o | 1- | 2   | 1o                      | 0o   | 1-                      | 0+ | 0+ | 0+ | 0+ | 1- | 3    | 73.0 | 22   | 9              | 17   |      |     |      |    |
| 6    | 0+                      | 0+ | 1+ | 1+ | 3- | 3- | 3+ | 3+ | 18  | 0+                      | 1-   | 1+                      | 2- | 3- | 2- | 4- | 4- | 19   | 72.5 | 14   | 4              | 16   |      |     |      |    |
| 7    | 3+                      | 3- | 3o | 3- | 2+ | 1+ | 2- | 2- | 20  | 3o                      | 3o   | 2o                      | 2o | 2- | 1- | 1+ | 1+ | 15   | 73.3 | 0    | 1              | 17   |      |     |      |    |
| 8    | 1o                      | 1o | 0+ | 1- | 2- | 1+ | 2o | 1+ | 8   | 1+                      | 1o   | 0o                      | 1o | 2- | 1o | 1+ | 1+ | 8    | 71.3 | 0    | 2              | 15   |      |     |      |    |
| 9    | 0o                      | 1- | 0o | 0+ | 1- | 1o | 3- | 1+ | 6   | 1-                      | 1+   | 0+                      | 0o | 0+ | 1o | 2+ | 1+ | 6    | 71.8 | 0    | 0              | 16   |      |     |      |    |
| 10   | 1+                      | 2o | 2o | 3o | 3+ | 3- | 2+ | 4o | 24  | 1+                      | 3-   | 2o                      | 3- | 3- | 2o | 2o | 4+ | 24   | 71.2 | 0    | 0              | 15   |      |     |      |    |
| 11   | 3o                      | 2+ | 3+ | 3+ | 2- | 3- | 2o | 2- | 23  | 3o                      | 2o   | 3-                      | 3o | 1+ | 2o | 1+ | 1+ | 16   | 73.1 | 0    | 0              | 17   |      |     |      |    |
| 12   | 0o                      | 1o | 2- | 2- | 2- | 1+ | 1+ | 1- | 8   | 1-                      | 2-   | 1+                      | 1+ | 1+ | 1- | 1+ | 0o | 7    | 72.3 | 9    | 11             | 16   |      |     |      |    |
| 13   | 0+                      | 0+ | 0+ | 1o | 1- | 0+ | 1- | 1o | 4   | 0o                      | 0+   | 1-                      | 1o | 0+ | 0o | 1o | 1o | 4    | 71.7 | 8    | 11             | 15   |      |     |      |    |
| 14   | 0o                      | 0o | 0o | 1- | 2+ | 0+ | 1- | 2o | 6   | 0o                      | 0+   | 0+                      | 1o | 2- | 0o | 0+ | 1+ | 4    | 72.8 | 14   | 9              | 17   |      |     |      |    |
| 15   | 2-                      | 2- | 2o | 3- | 2- | 3- | 3o | 1- | 16  | 2+                      | 2+   | 2+                      | 2o | 2o | 2- | 3o | 1o | 16   | 73.4 | 14   | 13             | 17   |      |     |      |    |
| 16   | 1o                      | 2o | 2+ | 3- | 2- | 3o | 1o | 1+ | 14  | 1+                      | 2-   | 2+                      | 2+ | 1+ | 2o | 1o | 1o | 12   | 71.7 | 13   | 12             | 15   |      |     |      |    |
| 17   | 0o                      | 0o | 0+ | 1o | 1o | 0+ | 1o | 2- | 5   | 1-                      | 1-   | 0+                      | 1o | 1o | 0o | 1o | 1o | 5    | 71.3 | 21   | 14             | 15   |      |     |      |    |
| 18   | 0+                      | 1+ | 4- | 4o | 3o | 4+ | 4o | 5- | 43  | 1o                      | 2-   | 3+                      | 4o | 3o | 4o | 4o | 5+ | 45   | 71.7 | 16   | 15             | 15   |      |     |      |    |
| 19   | 5o                      | 4+ | 4+ | 4o | 4o | 3- | 3+ | 3+ | 53  | 6o                      | 5o   | 4o                      | 4- | 4- | 3- | 4- | 4- | 67   | 74.6 | 16   | 17             | 19   |      |     |      |    |
| 20   | 4-                      | 4- | 4o | 4- | 2+ | 3- | 4o | 3o | 38  | 4o                      | 4o   | 3+                      | 3o | 2o | 3- | 4+ | 3+ | 40   | 76.2 | 19   | 20             | 20   |      |     |      |    |
| 21   | 2+                      | 3o | 2- | 2o | 3- | 4- | 3o | 3o | 26  | 3-                      | 3o   | 1+                      | 2o | 3- | 3+ | 3o | 3+ | 25   | 76.1 | 19   | 22             | 20   |      |     |      |    |
| 22   | 2+                      | 3- | 3- | 1+ | 1o | 2o | 3- | 2+ | 17  | 3o                      | 2+   | 3-                      | 1o | 1- | 1o | 2+ | 3- | 16   | 75.4 | 19   | 20             | 19   |      |     |      |    |
| 23   | 1+                      | 1+ | 1o | 0+ | 1- | 1- | 0+ | 1+ | 6   | 1+                      | 1+   | 0+                      | 1- | 1- | 0+ | 0o | 1o | 5    | 76.1 | 18   | 14             | 20   |      |     |      |    |
| 24   | 1+                      | 1- | 0+ | 1o | 1- | 1+ | 2- | 3- | 8   | 2o                      | 0o   | 0+                      | 1o | 1- | 0+ | 1+ | 3- | 8    | 75.4 | 21   | 13             | 19   |      |     |      |    |
| 25   | 2-                      | 2o | 1+ | 1+ | 1+ | 2- | 3- | 0+ | 11  | 1o                      | 2o   | 2-                      | 1+ | 2- | 1- | 2+ | 1- | 10   | 75.2 | 11   | 3              | 19   |      |     |      |    |
| 26   | 1-                      | 1o | 0o | 1+ | 2- | 3- | 3+ | 3- | 15  | 1+                      | 2-   | 1-                      | 1+ | 1+ | 2- | 3o | 2+ | 13   | 73.3 | 0    | 0              | 17   |      |     |      |    |
| 27   | 3o                      | 2+ | 0+ | 0+ | 1+ | 3o | 1o | 3+ | 16  | 3o                      | 3o   | 1-                      | 0o | 1+ | 3- | 1- | 3- | 15   | 74.0 | 0    | 1              | 18   |      |     |      |    |
| 28   | 1-                      | 3- | 1+ | 0+ | 1+ | 2- | 2- | 1+ | 10  | 1o                      | 3o   | 2-                      | 1o | 1- | 1+ | 1+ | 1- | 10   | 79.0 | 9    | 14             | 23   |      |     |      |    |
| 29   | 1-                      | 2- | 1- | 1+ | 1- | 1+ | 2o | 2+ | 10  | 1o                      | 1+   | 0+                      | 1o | 0+ | 1- | 1- | 3- | 7    | 81.5 | 19   | 23             | 26   |      |     |      |    |
| 30   | 1o                      | 0+ | 0o | 1- | 1o | 1- | 2o | 2+ | 8   | 1o                      | 1-   | 0o                      | 0+ | 0o | 0+ | 1+ | 2- | 5    | 83.7 | 20   | 24             | 28   |      |     |      |    |
| 31   | 1o                      | 0+ | 1+ | 2o | 2+ | 2o | 3- | 1o | 11  | 1o                      | 0o   | 1o                      | 2- | 2o | 1+ | 2+ | 1o | 9    | 86.1 | 24   | 28             | 31   |      |     |      |    |
| Mean |                         |    |    |    |    |    |    |    |     | 14.8                    |      |                         |    |    |    |    |    |      |      |      | 14.4           | 74.7 | 10.8 | 9.9 | 18.7 |    |

# Daily Average Indices Ap Apr 2005 - Mar 2006



| Day  | Apr 05 | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan 06 | Feb | Mar |
|------|--------|-----|-----|-----|-----|-----|-----|-----|-----|--------|-----|-----|
| 1    | 5      | 22  | 6   | 14  | 14  | 14  | 13  | 10  | 17  | 7      | 4   | 8   |
| 2    | 3      | 7   | 6   | 12  | 9   | 39  | 15  | 9   | 15  | 6      | 4   | 3   |
| 3    | 5      | 9   | 6   | 7   | 9   | 27  | 7   | 24  | 15  | 3      | 5   | 3   |
| 4    | 26     | 5   | 22  | 4   | 8   | 24  | 3   | 20  | 6   | 2      | 6   | 3   |
| 5    | 50     | 4   | 17  | 4   | 8   | 11  | 4   | 13  | 3   | 3      | 3   | 1   |
| 6    | 10     | 4   | 10  | 4   | 29  | 8   | 4   | 14  | 2   | 7      | 14  | 11  |
| 7    | 6      | 10  | 13  | 6   | 14  | 10  | 12  | 7   | 0   | 6      | 4   | 11  |
| 8    | 3      | 91  | 4   | 4   | 6   | 6   | 26  | 3   | 1   | 4      | 4   | 4   |
| 9    | 3      | 10  | 4   | 24  | 9   | 17  | 10  | 3   | 6   | 1      | 2   | 3   |
| 10   | 2      | 7   | 3   | 57  | 16  | 33  | 10  | 2   | 14  | 1      | 4   | 14  |
| 11   | 11     | 12  | 4   | 21  | 3   | 101 | 7   | 5   | 21  | 2      | 6   | 10  |
| 12   | 30     | 14  | 54  | 40  | 5   | 75  | 2   | 12  | 12  | 3      | 5   | 4   |
| 13   | 30     | 21  | 32  | 31  | 16  | 44  | 4   | 14  | 5   | 3      | 2   | 3   |
| 14   | 16     | 6   | 11  | 6   | 8   | 18  | 2   | 9   | 3   | 3      | 1   | 2   |
| 15   | 13     | 87  | 16  | 4   | 6   | 52  | 2   | 4   | 2   | 6      | 10  | 8   |
| 16   | 6      | 41  | 26  | 8   | 14  | 18  | 7   | 3   | 7   | 12     | 9   | 7   |
| 17   | 4      | 16  | 14  | 22  | 13  | 12  | 14  | 2   | 4   | 9      | 5   | 3   |
| 18   | 6      | 7   | 5   | 24  | 12  | 10  | 5   | 4   | 4   | 11     | 2   | 30  |
| 19   | 7      | 7   | 4   | 7   | 6   | 6   | 6   | 11  | 10  | 8      | 6   | 38  |
| 20   | 20     | 23  | 3   | 20  | 3   | 5   | 3   | 8   | 17  | 7      | 19  | 20  |
| 21   | 3      | 18  | 1   | 21  | 9   | 3   | 2   | 4   | 9   | 4      | 19  | 14  |
| 22   | 8      | 9   | 6   | 12  | 9   | 6   | 8   | 6   | 5   | 6      | 15  | 10  |
| 23   | 6      | 4   | 50  | 4   | 7   | 6   | 2   | 8   | 0   | 16     | 4   | 4   |
| 24   | 8      | 3   | 10  | 4   | 102 | 2   | 4   | 9   | 4   | 7      | 6   | 4   |
| 25   | 8      | 4   | 11  | 4   | 22  | 5   | 21  | 12  | 6   | 8      | 2   | 6   |
| 26   | 2      | 2   | 6   | 4   | 6   | 15  | 11  | 5   | 6   | 30     | 6   | 7   |
| 27   | 1      | 2   | 3   | 14  | 5   | 12  | 8   | 3   | 20  | 11     | 4   | 10  |
| 28   | 2      | 12  | 4   | 23  | 5   | 11  | 5   | 8   | 18  | 6      | 4   | 6   |
| 29   | 10     | 20  | 5   | 17  | 7   | 7   | 3   | 9   | 13  | 2      |     | 5   |
| 30   | 24     | 90  | 6   | 10  | 3   | 8   | 5   | 14  | 8   | 2      |     | 4   |
| 31   |        | 14  |     | 8   | 49  |     | 17  |     | 11  | 2      |     | 4   |
| Mean | 11     | 19  | 12  | 14  | 14  | 20  | 8   | 8   | 9   | 6      | 6   | 8   |



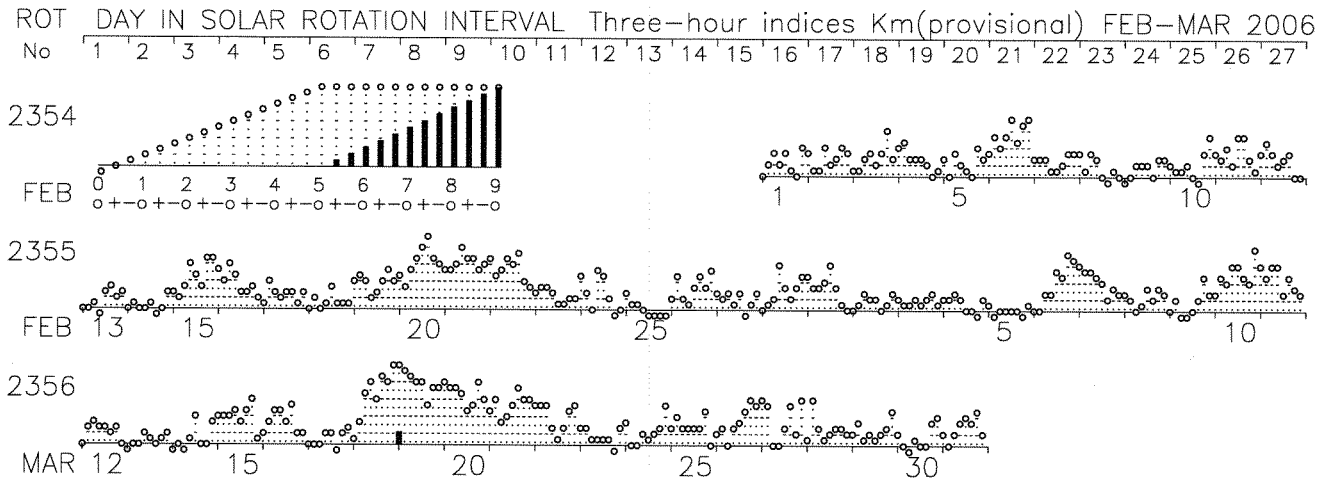


| Year | Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  | Mean |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1950 | 19.5 | 23.2 | 20.6 | 23.8 | 21.7 | 19.0 | 19.5 | 30.2 | 29.3 | 34.5 | 28.0 | 24.0 | 24.4 |
| 1951 | 23.1 | 29.2 | 28.5 | 32.1 | 25.5 | 23.2 | 25.2 | 29.7 | 44.4 | 30.3 | 25.7 | 28.2 | 28.8 |
| 1952 | 28.5 | 34.3 | 40.1 | 38.0 | 33.1 | 23.8 | 20.7 | 19.0 | 28.5 | 26.4 | 18.9 | 23.4 | 27.9 |
| 1953 | 22.3 | 21.2 | 27.4 | 22.7 | 21.4 | 18.4 | 22.5 | 26.1 | 29.0 | 22.4 | 20.2 | 12.6 | 22.2 |
| 1954 | 13.9 | 24.5 | 25.5 | 20.6 | 12.0 | 9.7  | 13.1 | 16.5 | 25.4 | 21.1 | 14.5 | 10.9 | 17.3 |
| 1955 | 19.3 | 18.2 | 23.6 | 21.1 | 16.7 | 15.1 | 12.3 | 14.3 | 19.1 | 17.8 | 19.9 | 14.1 | 17.6 |
| 1956 | 28.7 | 23.3 | 27.6 | 31.7 | 29.3 | 23.5 | 19.8 | 20.7 | 22.4 | 19.3 | 32.3 | 18.2 | 24.7 |
| 1957 | 28.7 | 26.8 | 36.7 | 28.8 | 18.1 | 29.1 | 21.7 | 20.7 | 57.0 | 24.0 | 29.5 | 31.7 | 29.4 |
| 1958 | 25.5 | 43.2 | 36.1 | 27.6 | 25.2 | 29.7 | 36.0 | 25.1 | 26.5 | 24.7 | 15.0 | 27.2 | 28.5 |
| 1959 | 24.3 | 35.9 | 29.9 | 24.2 | 25.7 | 21.6 | 42.5 | 31.2 | 36.1 | 28.2 | 32.1 | 30.8 | 30.2 |
| 1960 | 25.2 | 23.5 | 27.6 | 51.5 | 31.6 | 27.6 | 28.1 | 27.2 | 26.4 | 45.6 | 45.9 | 34.5 | 32.9 |
| 1961 | 20.6 | 25.1 | 22.0 | 21.8 | 22.3 | 20.1 | 36.0 | 18.5 | 20.7 | 23.3 | 17.3 | 21.1 | 22.4 |
| 1962 | 13.2 | 19.2 | 15.5 | 22.6 | 13.4 | 18.1 | 21.0 | 26.2 | 29.8 | 33.3 | 22.5 | 23.5 | 21.5 |
| 1963 | 19.3 | 15.3 | 14.9 | 18.2 | 20.4 | 20.5 | 20.8 | 22.5 | 40.2 | 23.5 | 20.7 | 18.9 | 21.3 |
| 1964 | 20.1 | 20.1 | 21.0 | 21.7 | 17.5 | 15.1 | 16.9 | 14.8 | 18.2 | 16.9 | 13.8 | 10.3 | 17.2 |
| 1965 | 11.8 | 16.3 | 14.3 | 12.6 | 10.5 | 15.7 | 14.7 | 16.8 | 17.5 | 13.1 | 11.7 | 13.8 | 14.1 |
| 1966 | 14.2 | 14.8 | 18.6 | 12.0 | 14.8 | 12.5 | 17.1 | 20.0 | 29.4 | 17.5 | 16.8 | 20.5 | 17.3 |
| 1967 | 18.9 | 19.8 | 13.8 | 15.5 | 33.1 | 18.6 | 14.4 | 17.5 | 24.7 | 17.8 | 18.9 | 24.5 | 19.8 |
| 1968 | 21.1 | 26.5 | 23.3 | 22.2 | 21.4 | 24.9 | 18.0 | 20.1 | 22.0 | 24.8 | 26.2 | 20.3 | 22.6 |
| 1969 | 17.8 | 25.8 | 27.3 | 23.6 | 25.2 | 16.7 | 15.0 | 15.3 | 23.8 | 17.2 | 18.7 | 13.8 | 20.0 |
| 1970 | 14.4 | 12.7 | 26.4 | 23.1 | 16.6 | 18.3 | 28.4 | 21.0 | 19.7 | 20.6 | 21.6 | 16.5 | 19.9 |
| 1971 | 23.5 | 21.2 | 21.1 | 23.9 | 21.1 | 17.0 | 15.2 | 17.1 | 21.4 | 22.2 | 18.8 | 18.6 | 20.1 |
| 1972 | 21.9 | 18.3 | 21.5 | 18.1 | 16.6 | 21.5 | 14.0 | 34.2 | 20.4 | 20.4 | 21.8 | 18.9 | 20.6 |
| 1973 | 26.1 | 32.7 | 36.9 | 39.6 | 26.1 | 27.3 | 20.9 | 20.6 | 22.8 | 28.2 | 20.7 | 19.9 | 26.8 |
| 1974 | 25.8 | 26.4 | 33.7 | 32.9 | 29.2 | 29.2 | 32.0 | 30.2 | 33.7 | 37.3 | 26.8 | 27.5 | 30.4 |
| 1975 | 27.6 | 31.1 | 32.0 | 24.3 | 22.7 | 20.7 | 21.7 | 18.1 | 16.9 | 20.2 | 29.3 | 21.1 | 23.8 |
| 1976 | 23.3 | 28.5 | 33.4 | 25.4 | 23.7 | 17.5 | 18.4 | 17.7 | 23.7 | 20.4 | 16.9 | 18.6 | 22.3 |
| 1977 | 18.7 | 21.0 | 19.9 | 24.9 | 20.1 | 14.2 | 22.9 | 23.2 | 23.0 | 20.9 | 17.3 | 17.0 | 20.3 |
| 1978 | 24.6 | 26.2 | 25.9 | 31.3 | 31.2 | 28.3 | 19.9 | 25.6 | 27.0 | 20.8 | 24.6 | 22.0 | 25.6 |
| 1979 | 27.3 | 23.7 | 26.9 | 33.5 | 21.0 | 18.3 | 17.9 | 26.0 | 22.0 | 19.3 | 17.1 | 16.8 | 22.5 |
| 1980 | 19.0 | 17.3 | 12.7 | 18.4 | 15.6 | 20.0 | 17.0 | 15.9 | 14.2 | 21.9 | 23.3 | 21.7 | 18.1 |
| 1981 | 16.5 | 23.1 | 26.6 | 32.8 | 26.9 | 18.0 | 27.2 | 24.0 | 20.4 | 33.7 | 24.1 | 19.3 | 24.4 |
| 1982 | 24.2 | 50.6 | 28.5 | 32.9 | 26.7 | 32.1 | 43.9 | 31.4 | 45.1 | 28.5 | 33.0 | 33.8 | 34.2 |
| 1983 | 26.2 | 40.0 | 33.6 | 35.7 | 31.6 | 24.9 | 21.3 | 24.9 | 23.7 | 28.3 | 33.5 | 26.0 | 29.1 |
| 1984 | 23.5 | 26.7 | 30.7 | 32.5 | 27.2 | 23.7 | 26.4 | 25.8 | 32.6 | 33.1 | 31.0 | 29.0 | 28.5 |
| 1985 | 25.7 | 24.1 | 19.0 | 29.5 | 15.6 | 19.9 | 23.4 | 22.0 | 21.2 | 22.2 | 23.7 | 21.4 | 22.3 |
| 1986 | 22.4 | 40.0 | 21.1 | 14.3 | 18.8 | 15.9 | 16.3 | 22.3 | 24.7 | 18.6 | 21.2 | 15.3 | 20.9 |
| 1987 | 14.8 | 16.6 | 17.6 | 12.9 | 14.7 | 13.2 | 19.3 | 24.3 | 30.3 | 25.8 | 22.4 | 16.0 | 19.0 |
| 1988 | 22.4 | 23.4 | 24.8 | 25.2 | 20.5 | 20.0 | 20.2 | 20.6 | 21.4 | 23.2 | 23.3 | 25.5 | 22.5 |
| 1989 | 33.9 | 27.5 | 60.1 | 32.8 | 25.7 | 24.9 | 14.4 | 28.4 | 26.7 | 31.4 | 34.7 | 31.4 | 31.0 |
| 1990 | 27.4 | 37.8 | 33.9 | 37.4 | 25.1 | 24.6 | 21.6 | 28.2 | 25.1 | 25.1 | 17.4 | 15.2 | 26.6 |
| 1991 | 17.2 | 20.1 | 37.3 | 24.3 | 27.3 | 56.2 | 35.2 | 40.8 | 30.7 | 44.1 | 49.7 | 28.0 | 34.2 |
| 1992 | 25.9 | 47.7 | 24.5 | 19.8 | 29.1 | 24.8 | 17.9 | 24.1 | 35.8 | 27.0 | 25.0 | 26.1 | 27.3 |
| 1993 | 31.2 | 27.1 | 37.9 | 29.2 | 22.1 | 21.8 | 18.2 | 19.2 | 23.8 | 24.6 | 25.5 | 24.8 | 25.5 |
| 1994 | 26.5 | 43.2 | 37.9 | 40.2 | 40.2 | 27.2 | 20.6 | 16.0 | 20.2 | 33.3 | 23.6 | 24.1 | 29.4 |
| 1995 | 23.6 | 24.5 | 23.8 | 24.2 | 30.9 | 19.1 | 14.9 | 17.0 | 22.2 | 27.9 | 17.2 | 18.2 | 22.0 |
| 1996 | 18.8 | 20.8 | 22.3 | 20.5 | 14.0 | 11.1 | 14.7 | 18.8 | 26.2 | 23.5 | 16.3 | 15.9 | 18.6 |
| 1997 | 17.4 | 21.0 | 16.3 | 18.4 | 15.1 | 13.7 | 12.1 | 13.7 | 18.4 | 18.7 | 18.0 | 10.8 | 16.1 |
| 1998 | 16.8 | 16.4 | 21.2 | 18.0 | 28.1 | 18.8 | 19.3 | 27.0 | 21.1 | 22.4 | 26.5 | 15.9 | 21.0 |
| 1999 | 20.8 | 21.3 | 23.5 | 21.3 | 15.8 | 12.7 | 16.9 | 26.2 | 31.2 | 31.3 | 25.1 | 20.1 | 22.2 |
| 2000 | 24.2 | 29.4 | 17.1 | 25.1 | 25.0 | 24.9 | 31.1 | 24.3 | 30.2 | 28.1 | 29.1 | 16.1 | 25.4 |
| 2001 | 18.0 | 14.7 | 30.2 | 33.0 | 17.8 | 18.2 | 18.7 | 19.9 | 22.7 | 31.4 | 24.4 | 19.5 | 22.4 |
| 2002 | 16.8 | 20.0 | 20.2 | 26.0 | 19.9 | 14.2 | 19.9 | 22.5 | 21.4 | 38.1 | 29.3 | 24.4 | 22.7 |
| 2003 | 24.2 | 31.3 | 35.2 | 34.9 | 52.7 | 40.2 | 32.4 | 36.4 | 30.7 | 52.2 | 44.7 | 30.4 | 37.1 |
| 2004 | 38.1 | 23.9 | 25.2 | 20.1 | 16.6 | 15.9 | 29.9 | 16.3 | 15.6 | 16.3 | 36.4 | 22.6 | 23.1 |
| 2005 | 39.0 | 21.6 | 21.4 | 18.8 | 28.4 | 19.7 | 24.0 | 24.0 | 31.8 | 15.5 | 17.1 | 17.1 | 23.2 |
| 2006 | 13.6 | 13.6 | 15.8 |      |      |      |      |      |      |      |      |      | 14.3 |

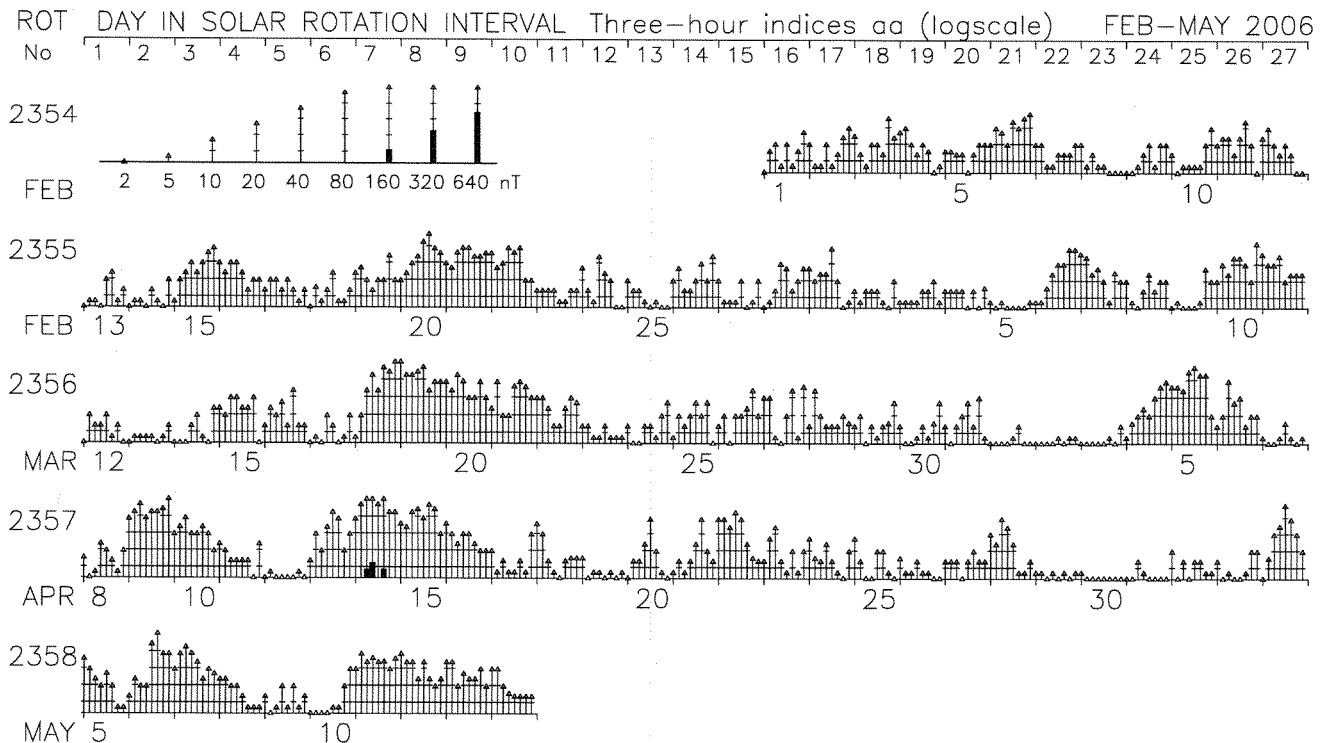
# PLANETARY GEOMAGNETIC ACTIVITY

## 3-HOUR-RANGE INDICES Km AND aa BY 27-DAY SOLAR ROTATION INTERVAL

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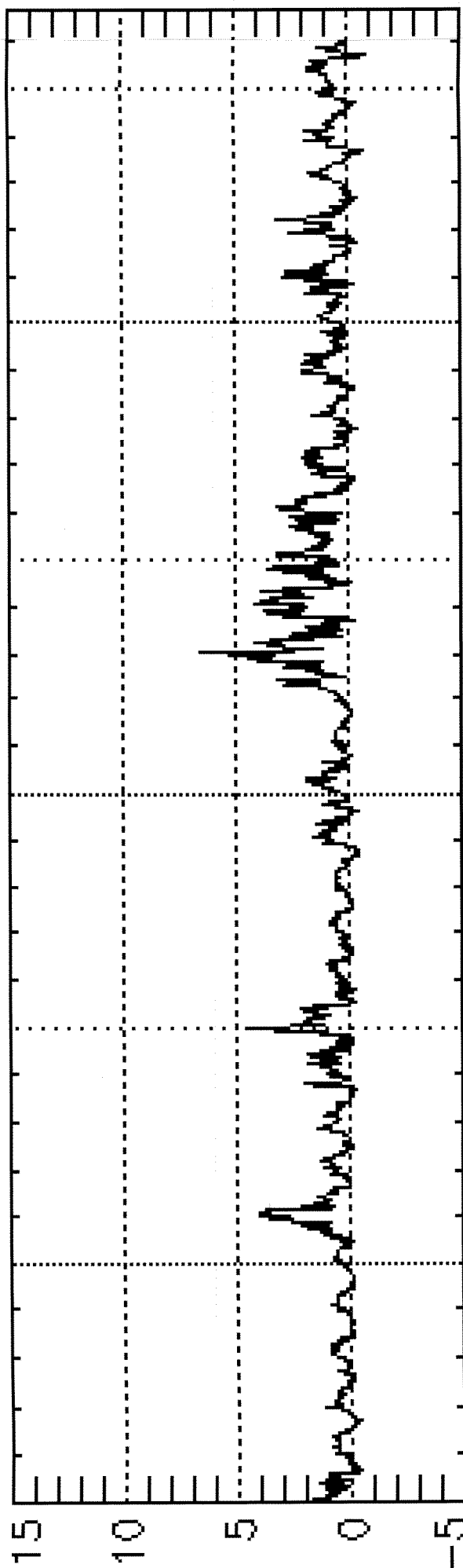


Indices Derivation at C.E.T.P.; Graph Prepared at ISGI Publication Office.

WDC C1 for Geomagnetism, Copenhagen

Polar Cap index  
Qaanaaq (Thule), THL

2006-03-01



Date, mm-dd

Data source: Solar-Terrestrial Physics Division  
Danish Meteorological Institute

100  
Mar 06

# PRINCIPAL MAGNETIC STORMS

MARCH 2006

| Sta | Geomag Lat | Commencement Time |      |      | SC Amplitudes |              |              | Maximum 3-Hour K Index<br>Day(3-Hour Periods) | Ranges       |              |              | End Hour |       |
|-----|------------|-------------------|------|------|---------------|--------------|--------------|-----------------------------------------------|--------------|--------------|--------------|----------|-------|
|     |            | Day               | (UT) | Type | D<br>(Min)    | H<br>(Gamma) | Z<br>(Gamma) |                                               | D<br>K (Min) | H<br>(Gamma) | Z<br>(Gamma) | Day      | (UT)  |
| JAI | 17.4N      | 06                | 0600 | ..   | ..            | ..           | ..           |                                               | -            | 4            | 86           | 31       | 07 21 |
| NGP | 11.3N      | 06                | 0600 | ..   | ..            | ..           | ..           |                                               | -            | 3            | 99           | 19       | 07 21 |
| ABG | 09.4N      | 06                | 0600 | ..   | ..            | ..           | ..           | 06(7)                                         | 5            | 2            | 99           | 19       | 07 21 |
| HYB | 07.6N      | 06                | 0500 | ..   | ..            | ..           | ..           | 06(7)                                         | 5            | 5            | 98           | 19       | 08 24 |
| PND | 02.0N      | 06                | 0600 | ..   | ..            | ..           | ..           |                                               | -            | 2            | 105          | 35       | 07 21 |
| TIR | 00.6S      | 06                | 0600 | ..   | ..            | ..           | ..           |                                               | -            | 2            | 138          | 42       | 07 21 |
| HYB | 07.6N      | 09                | 1500 | ..   | ..            | ..           | ..           | 10(4) 11(3)                                   | 4            | 3            | 85           | 14       | 11 24 |
| JAI | 17.4N      | 10                | 0300 | ..   | ..            | ..           | ..           |                                               | -            | 4            | 58           | 29       | 11 20 |
| NGP | 11.3N      | 10                | 0300 | ..   | ..            | ..           | ..           |                                               | -            | 3            | 80           | 16       | 11 20 |
| ABG | 09.4N      | 10                | 0300 | ..   | ..            | ..           | ..           | 10(4,5,8)11(1,4)12(4)                         | 4            | 3            | 78           | 22       | 11 20 |
| PND | 02.0N      | 10                | 0300 | ..   | ..            | ..           | ..           |                                               | -            | 2            | 95           | 37       | 11 20 |
| TIR | 00.6S      | 10                | 0300 | ..   | ..            | ..           | ..           |                                               | -            | 3            | 128          | 50       | 11 20 |
| HYB | 07.6N      | 14                | 0900 | ..   | ..            | ..           | ..           | 15(4)                                         | 4            | 2            | 88           | 19       | 16 23 |
| JAI | 17.4N      | 18                | 0300 | ..   | ..            | ..           | ..           |                                               | -            | 5            | 118          | 39       | 20 23 |
| NGP | 11.3N      | 18                | 0300 | ..   | ..            | ..           | ..           |                                               | -            | 4            | 137          | 25       | 20 23 |
| ABG | 09.4N      | 18                | 0300 | ..   | ..            | ..           | ..           | 18(4,5,6,7)                                   | 5            | 4            | 141          | 35       | 20 23 |
| HYB | 07.6N      | 18                | 0000 | ..   | ..            | ..           | ..           | 18(3,4,6)                                     | 5            | 4            | 148          | 22       | 21 24 |
| PND | 02.0N      | 18                | 0300 | ..   | ..            | ..           | ..           |                                               | -            | 4            | 158          | 70       | 20 23 |
| TIR | 00.6S      | 18                | 0300 | ..   | ..            | ..           | ..           |                                               | -            | 5            | 224          | 82       | 20 23 |
| GNA | 43.0S      | 18                | 0600 | ..   | ..            | ..           | ..           | 18(4,6) 19(4) 20(4)                           | 5            | 17           | 87           | 111      | 20 21 |
| CAN | 43.6S      | 18                | 0200 | ..   | ..            | ..           | ..           | 19(1,4,5)                                     | 5            | 16           | 121          | 47       | 20 21 |

## Stations:

ABG = ALIBAG  
AMS = MARTIN DE VIVIES  
ANN = ANNAMALAINAGAR  
BJI = BEIJING  
CAN = CANBERRA  
CMO = COLLEGE

CZT = PORT ALFRED  
DRV = DUMONT D'URVILLE  
ETT = ETAIYAPURAM  
GNA = GNANGARA  
GUA = GUAM  
HER = HERMANUS

HON = HONOLULU  
HYB = HYDERABAD  
JAI = JAIPUR  
KRC = KARACHI  
NGP = NAGPUR  
PAF = PORT AUX FRANCAIS

PMG = PORT MORESBY  
PND = PONDICHERRY  
SHL = SHILLONG  
SIT = SITKA  
TIR = TIRUNELVELI  
UJJ = UJJAIN



## MAGNETIC STORM SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS (PRELIMINARY REPORT ON RAPID MAGNETIC VARIATIONS)

March 2006

| Storm Sudden Commencements (SSC) |      |                         | Solar Flare Effects (sfe) |           |            |
|----------------------------------|------|-------------------------|---------------------------|-----------|------------|
| Day                              | Time | Quality: Station Group* | Day                       | Begin-End | Station(s) |
| None                             |      |                         | 08                        | 1208-1222 | GUI        |
|                                  |      |                         | 23                        | 0844-0856 | NAG        |
|                                  |      |                         | 26                        | 1605-1621 | GUI        |
|                                  |      |                         | 31                        | 1040-1103 | NAG        |

### REPORTING OBSERVATORIES (up to the 2nd of May 2006):

NUR LER ESK NGK VAL HAD DOU BDV CLF HRB NAG GCK MMB EBR SPT KAK HTY KNY GUI HYB GNA  
CNB

Three-letter codes identify each observatory. Reporting stations have been grouped by the character of the observed event. The letter A means very remarkable; B means fair, but unmistakable; C means very poor, doubtful; and - means no quality figure given. The \* means that the SSC, at least in one component, was preceded by a small reversed impulse. SSCs are given only when five or more stations report the event. SFEs include all reports. If an SFE is confirmed by solar or ionospheric events, the name of the station is identified with a plus sign (+).

Note that we have included data of the Antarctic Station LIVINGSTONE (62° 39' 44" S, 60°23' 41" W) -- Luis F.

### Criterion on Provisional SSC data

From December 2002, we are giving as provisional SSC only the SSC reported by more than 4 observatories. This is a change with respect to the previous criterion according to which we used to give the SSC reported by more than 5 observatories. The change, pending IAGA confirmation, has been provisionally taken because of the decreasing number of reporting observatories in order to keep the homogeneity of the data. The idea is to keep the same minimum percentage of the observatories reporting an SSC, relative to the total number of reporting observatories, to be considered as a probable SSC.