

# Newsletter Belgian Solar Observers

Results and news for solar observers

Volume 14

Number 155

January 2009

Franky Dubois Poelkapellestraat 39 langemark 8920

Web site: <http://www.bso.vvs.be> e-mail [astrosun@skynet.be](mailto:astrosun@skynet.be)

## Content Newsletter

Graphics and relative number for this month

Daily Wolfnumbers by the members

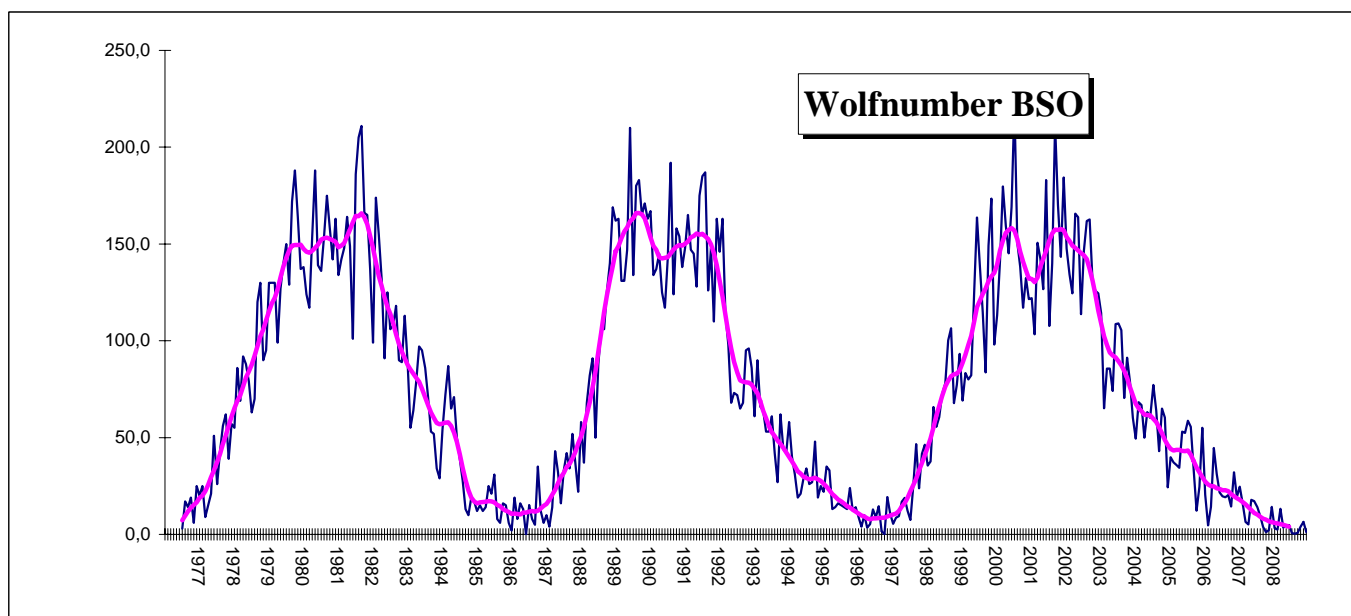
Monthly sunspot report

Polar faculae and CV numbers

Prominence numbers by the members

Monthly prominence report

Photo album and drawings



### Mean of January observations

|                  |              |      |            |     |        |     |
|------------------|--------------|------|------------|-----|--------|-----|
| Groups :         | N            | 0,21 | Wolfnumb N | 2,2 | Beck : | 7,6 |
|                  | S            | 0,04 | S          | 0,2 | CV     | 0,6 |
|                  | N+S          | 0,25 | N+S        | 2,4 |        |     |
| 272 observations | 25 observers |      |            |     |        |     |



# Sunspotnumbers VVS Belgium

Month: **January 2009**

| Day | GROUPS |      |      | WOLFNUMBER |     |      | RE' | CV  | OBS |
|-----|--------|------|------|------------|-----|------|-----|-----|-----|
|     | N      | S    | N+S  | N          | S   | N+S  |     |     |     |
| 1   |        |      |      |            |     |      |     |     |     |
| 2   |        |      |      |            |     |      |     |     |     |
| 3   | 0      | 0    | 0    | 0          | 0   | 0    | 0   | 0   | 13  |
| 4   |        |      |      |            |     |      |     |     |     |
| 5   | 0      | 0    | 0    | 0          | 0   | 0    | 0   | 0   | 2   |
| 6   | 0      | 0    | 0    | 0          | 0   | 0    | 0   | 0   | 17  |
| 7   | 0      | 1    | 1    | 0          | 3,7 | 3,7  | 1   | 0,3 | 3   |
| 8   | 0      | 0    | 0    | 0          | 0   | 0    | 0   | 0   | 6   |
| 9   | 1      | 0    | 1    | 11,6       | 0   | 11,6 | 20  | 3,5 | 16  |
| 10  | 1      | 0    | 1    | 18,5       | 0   | 18,5 | 87  | 4,3 | 22  |
| 11  | 1      | 0    | 1    | 14,8       | 0   | 14,8 | 72  | 6,4 | 16  |
| 12  | 1      | 0    | 1    | 3,7        | 0   | 3,7  | 1   | 0,3 | 3   |
| 13  |        |      |      |            |     |      |     |     |     |
| 14  |        |      |      |            |     |      |     |     |     |
| 15  | 0      | 0    | 0    | 0          | 0   | 0    | 0   | 0   | 14  |
| 16  |        |      |      |            |     |      |     |     |     |
| 17  | 0      | 0    | 0    | 0          | 0   | 0    | 0   | 0   | 10  |
| 18  | 0      | 0    | 0    | 0          | 0   | 0    | 0   | 0   | 11  |
| 19  | 0      | 0    | 0    | 0          | 0   | 0    | 0   | 0   | 7   |
| 20  | 0      | 0    | 0    | 0          | 0   | 0    | 0   | 0   | 16  |
| 21  | 0      | 0    | 0    | 0          | 0   | 0    | 0   | 0   | 4   |
| 22  |        |      |      |            |     |      |     |     |     |
| 23  | 0      | 0    | 0    | 0          | 0   | 0    | 0   | 0   | 2   |
| 24  | 0      | 0    | 0    | 0          | 0   | 0    | 0   | 0   | 14  |
| 25  | 0      | 0    | 0    | 0          | 0   | 0    | 0   | 0   | 14  |
| 26  | 0      | 0    | 0    | 0          | 0   | 0    | 0   | 0   | 6   |
| 27  | 0      | 0    | 0    | 0          | 0   | 0    | 0   | 0   | 10  |
| 28  | 0      | 0    | 0    | 0          | 0   | 0    | 0   | 0   | 10  |
| 29  | 1      | 0    | 1    | 4,6        | 0   | 5    | 2   | 0,5 | 20  |
| 30  | 0      | 0    | 0    | 0          | 0   | 0    | 0   | 0   | 15  |
| 31  | 0      | 0    | 0    | 0          | 0   | 0    | 0   | 0   | 21  |
|     | 0,21   | 0,04 | 0,25 | 2,2        | 0,2 | 2,4  | 7,6 | 0,6 | 272 |

Monthly mean: **2,4** Covering: **24/31** Spotless days: **18**  
 Observations: **272** Number of observers: **25**

**V.V.S. BELGIUM SOLAR SECTION FRANKY DUBOIS**

Poekapellestraat 39  
 B8920 Langemark  
 Belgium  
 e-mail : astrosun@skynet.be

**Observers:**

Devriese ; De Ceuninck ; Janssens ; Publ obs Mira ; Bourgeois ; Macharis  
 De Backer; Dubois ; Gysel ; Kleber ; Deman ; Taillieu ; Carels ; Dewaele  
 Meeus ; Steen ; KSB ; Gabriel ; Claeys ; Devriese ; Thooris ; Vanleenhove  
 Claes ; Verboven ; Van Loo ; Son ; Coeckelberghs ; Gadyne  
 S.Dufoer ; G.Gubbels ; jeugdwerking Astrolab ; J Bavais ; A. De Kerchove



# Prominence number Rp

## Belgian solar observers

Month: **January 2009**

| Day | Q           | Wedel       |  | H          | e          | Rp          | el. Obs   | Stdev      | OBS        |
|-----|-------------|-------------|--|------------|------------|-------------|-----------|------------|------------|
| 1   |             |             |  |            |            |             |           |            |            |
| 2   |             |             |  |            |            |             |           |            |            |
| 3   | 3           | 1,5         |  | 5,3        | 10,5       | <b>63,5</b> | 1         | 11,7       | 5          |
| 4   |             |             |  |            |            |             |           |            |            |
| 5   | 3           | 2           |  | 4          | 9          | <b>49</b>   |           |            | 1          |
| 6   | 2,6         | 1,8         |  | 3,4        | 7,1        | <b>41,1</b> |           | 8,9        | 9          |
| 7   | 4           | 1           |  | 6          | 10         | <b>70</b>   |           |            | 1          |
| 8   | 3           | 1           |  | 4          | 7          | <b>47</b>   |           |            | 1          |
| 9   | 2,5         | 2           |  | 5,5        | 10         | <b>65</b>   | 1         | 8,4        | 7          |
| 10  | 2,8         | 2,1         |  | 3,4        | 5,9        | <b>39,9</b> | 1         | 9,1        | 10         |
| 11  | 2,5         | 2,3         |  | 2,7        | 3          | <b>30</b>   | 2         | 12,4       | 5          |
| 12  |             |             |  |            |            |             |           |            |            |
| 13  |             |             |  |            |            |             |           |            |            |
| 14  | 2           | 2           |  | 3          | 5          | <b>35</b>   |           |            | 1          |
| 15  | 2,4         | 2,4         |  | 3,8        | 7          | <b>45</b>   | 1         | 7,3        | 6          |
| 16  |             |             |  |            |            |             |           |            |            |
| 17  | 2,1         | 2,4         |  | 3,3        | 4,3        | <b>37,3</b> |           | 9,5        | 4          |
| 18  | 2,5         | 2,5         |  | 2,7        | 3          | <b>30</b>   |           | 12,4       | 3          |
| 19  | 2,3         | 2,8         |  | 2,5        | 4          | <b>29</b>   |           | 9,9        | 3          |
| 20  | 2,8         | 1,9         |  | 3,3        | 4,2        | <b>37,2</b> |           | 10,1       | 6          |
| 21  |             |             |  |            |            |             |           |            |            |
| 22  |             |             |  |            |            |             |           |            |            |
| 23  |             |             |  |            |            |             |           |            |            |
| 24  | 3,3         | 2,7         |  | 2          | 3,5        | <b>23,5</b> | 1         | 1          | 5          |
| 25  | 2,4         | 2,5         |  | 3          | 3,3        | <b>33,3</b> | 2         | 13         | 6          |
| 26  | 3,3         | 2,2         |  | 2,3        | 3          | <b>26</b>   |           | 5,9        | 3          |
| 27  | 2,8         | 2,2         |  | 1,3        | 1,3        | <b>14,3</b> |           | 6,4        | 3          |
| 28  | 3           | 2           |  | 2,5        | 5          | <b>30</b>   | 2         | 8,5        | 4          |
| 29  | 3,3         | 2,1         |  | 2,8        | 3,5        | <b>31,5</b> | 2         | 10,8       | 6          |
| 30  | 2,3         | 1,5         |  | 1,7        | 1,7        | <b>18,7</b> | 1         | 12,7       | 4          |
| 31  | 3           | 1,9         |  | 4,5        | 7,1        | <b>52,1</b> | 3         | 14,6       | 11         |
|     | <b>2,77</b> | <b>2,04</b> |  | <b>3,3</b> | <b>5,4</b> | <b>38,6</b> | <b>17</b> | <b>9,6</b> | <b>104</b> |

Monthly mean: **38,6**    Covering: **22/31**  
 Observations: **104**    Number of observers: **11**

**V.V.S. BELGIUM SOLAR SECTION    FRANKY DUBOIS**

Poekapellestraat 39  
 B8920 Langemark  
 Belgium  
 e-mail : astrosun@skynet.be

**Observers:**

Steen ; Dubois ; Meeus ; De Ceuninck ; Coeckelberghs ; Janssens  
 Hamsch ; Claes ; Gabriel ; Blondeel ; Deman ; G.Gubbels ; T.Spaninks

Q : Seeing scale SIDC

W : transparency scale of Wedel , see <http://members.chello.be/j.janssens/>

H : number of prominence groups at the limb

e : total of individual prominences at the limb

Rp :  $H \cdot 10 + e$

More info at : <http://members.chello.be/j.janssens/>

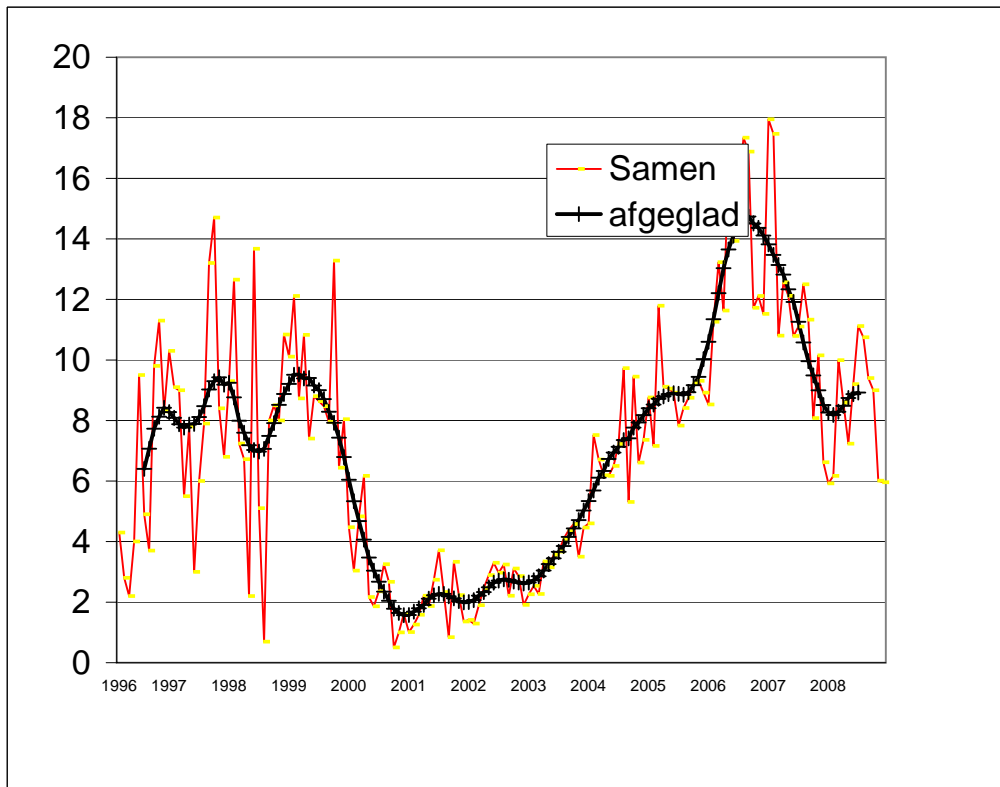


# Belgian Solar Observers

## Polar Faculae

Month: January 2009

| Date | Dubois<br>125mm F20 |       |   | Steen<br>102mm F15 |       |     | Deman<br>150mm F15 |       |   | Gabriel<br>250 mm F20 |       |   | Carels<br>150mm F8 |       |     | Janssen<br>200mm F10 |       |      | T.Spaninks<br>127mm F15 |       |      | G.Gubbels |       |     |
|------|---------------------|-------|---|--------------------|-------|-----|--------------------|-------|---|-----------------------|-------|---|--------------------|-------|-----|----------------------|-------|------|-------------------------|-------|------|-----------|-------|-----|
|      | North               | South | Q | North              | South | Q   | North              | South | Q | North                 | South | Q | North              | South | Q   | North                | South | Q    | North                   | South | Q    | North     | South | Q   |
| 1    |                     |       |   |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       |      |           |       |     |
| 2    |                     |       |   |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       |      |           |       |     |
| 3    |                     |       |   |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       |      | 2         | 4     | 4   |
| 4    |                     |       |   |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       |      | 0                       | 1     | 4    |           |       |     |
| 5    |                     |       |   |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       | 0    | 0                       | 3     |      |           |       |     |
| 6    |                     |       |   | 2                  | 4     | 3,0 |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       |      | 3         | 5     | 2,5 |
| 7    | 2                   | 5     | 3 |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       |      |           |       |     |
| 8    |                     |       |   |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       |      |           |       |     |
| 9    | 3                   | 2     | 3 |                    |       |     |                    |       | 7 | 11                    | 4     |   |                    |       |     |                      |       |      |                         |       |      | 4         | 6     | 3,5 |
| 10   | 3                   | 3     | 3 | 4                  | 3     | 3,0 | 5                  | 21    | 3 |                       |       |   |                    |       | 0   | 2                    | 3,5   |      |                         |       | 2    | 7         | 3     |     |
| 11   |                     |       |   |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       |      | 3         | 5     | 3,5 |
| 12   |                     |       |   |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       |      |           |       |     |
| 13   |                     |       |   |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       |      |           |       |     |
| 14   |                     |       |   |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       |      |           |       |     |
| 15   |                     |       |   |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       |      | 2         | 3     | 3,5 |
| 16   |                     |       |   |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       |      |           |       |     |
| 17   |                     |       |   |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       |      |           |       |     |
| 18   |                     |       |   |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       |      |           |       |     |
| 19   |                     |       |   |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       | 0    | 0                       | 4     |      |           |       |     |
| 20   | 2                   | 3     | 3 | 5                  | 3     | 3,0 |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       | 2    | 4         | 3     |     |
| 21   |                     |       |   |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       |      |           |       |     |
| 22   |                     |       |   |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       |      |           |       |     |
| 23   |                     |       |   |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       |      |           |       |     |
| 24   |                     |       |   |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       |      |           |       |     |
| 25   |                     |       |   |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       |      | 3         | 5     | 2,5 |
| 26   | 5                   | 7     | 3 |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       |      |           |       |     |
| 27   | 0                   | 2     | 3 |                    |       |     | 5                  | 14    | 4 |                       |       |   |                    |       |     |                      |       | 0    | 0                       | 4     | 3    | 8         | 3,5   |     |
| 28   |                     |       |   |                    |       |     |                    |       |   |                       |       |   |                    |       |     |                      |       |      |                         |       |      | 2         | 7     | 3,5 |
| 29   | 1                   | 2     | 4 |                    |       |     | 4                  | 18    | 5 |                       |       |   |                    |       |     |                      |       |      |                         |       |      |           |       |     |
| 30   | 4                   | 7     | 3 | 4                  | 5     | 3,0 |                    |       |   |                       |       |   |                    |       |     |                      |       | 0    | 0                       | 4     |      |           |       |     |
| 31   | 3                   | 9     | 2 |                    |       |     |                    |       |   |                       |       |   |                    |       | 0   | 1                    | 2,5   |      |                         |       | 2    | 4         | 3,0   |     |
|      | 2,56                | 4,44  |   | 3,75               | 3,75  |     | 5,3                | 16,0  |   | #####                 | ##### |   | #####              | ##### | 0,0 | 1,5                  |       | 0,00 | 0,20                    |       | 2,55 | 5,27      |       |     |



| <b>N.O.A.A.</b> | <b>ZICHTBAAR</b> |            | <b>N.O.A.A.</b> |               | <b>MAX</b>  | <b>MAX</b>    | <b>classificatie</b> |     |     |                  |
|-----------------|------------------|------------|-----------------|---------------|-------------|---------------|----------------------|-----|-----|------------------|
| <b>Regio</b>    | <b>van</b>       | <b>tot</b> | <b>breedte</b>  | <b>lengte</b> | <b>AREA</b> | <b>LENGTE</b> |                      |     |     | <b>Macintosh</b> |
| 11005           | 11-10-08         | 16-10-08   | N27             | 120           | 0070        | 06            | BXI                  | CRO | BXO |                  |
| 11006           | 16-10-08         | 17-10-08   | S27             | 155           | 0030        | 01            | AXX                  |     |     |                  |
| 11007           | 30-10-08         | 06-11-08   | N35             | 250           | 0080        | 12            | BXO                  | DSO | CSO | HSX              |
| 11008           | 10-11-08         | 17-11-08   | N33             | 121           | 0080        | 08            | DSO                  | CAO | CRO | HSX              |
| 11009           | 10-12-08         | 12-12-08   | S25             | 146           | 0050        | 07            | DSO                  | BXO |     |                  |
| 11010           | 09-01-09         | 13-01-09   | N19             | 21            | 0050        | 06            | BXO                  | DSO | BXO |                  |
| 11011           | 19-01-09         | 19-01-09   | S12             | 305           | 0010        | 03            | BXO                  |     |     |                  |



SIDC Weekly bulletin on Solar and Geomagnetic activity  
WEEK 421 from 2009 Jan 19

#### SOLAR ACTIVITY

The solar activity was quiet throughout the whole week. Only one small sunspot group was reported (on January 19-20): Catania number 94, NOAA AR 1011. It was visible until January 25 as an Halpha plage without sunspots and did not produce any noticeable flaring activity. The X-ray background flux stayed below the A level.

#### GEOMAGNETIC ACTIVITY

On January 19 the interplanetary magnetic field reached 13 nT, indicating the arrival of the interaction region between the slow and faster solar wind streams. The faster stream was produced by a low-latitude coronal hole (situated near the west limb at that moment). The solar wind speed, however, rose only up to 500 km/s later on that day as the Earth probably passed through the boundary of the fast stream. During the rest of the week the Earth was situated inside the slow solar wind flow with weak to average interplanetary magnetic field magnitude. An interplanetary sector boundary crossing occurred on January 23. The solar wind speed and the interplanetary magnetic field magnitude rose only to 370 km/s and 7 nT respectively (on January 25). Quiet geomagnetic conditions were recorded during the whole week.

---

SIDC Weekly bulletin on Solar and Geomagnetic activity  
WEEK 422 from 2009 Jan 26

#### SOLAR ACTIVITY

No sunspots were observed during this week. The solar activity thus remained at its lowest level, with the GOES X-ray flux permanently below A0 and the 10.7cm radio flux at 70 sfu. A small coronal hole rotated through the geoeffective sector, but it had shrunk compared to previous solar rotations and did not produce significant effects.

#### GEOMAGNETIC ACTIVITY

A recurrent fast solar wind stream returned by late Jan. 25. However, this stream had become weaker compared to past months due to the decay of the corresponding source coronal hole. In fact, this decline was observed for all recurrent streams over this solar rotation (N° 2078). Consequently, the solar wind speed remained between 350 and 480km/s (maximum on Jan. 31) and finally declined over the last day of the week. In response, the Earth magnetosphere remained quiet for most of the week but was unsettled on Jan.26 and 31, with active levels observed on those two days at high latitudes. An all-quiet alert remained in effect during the entire week.

---

SIDC Weekly bulletin on Solar and Geomagnetic activity  
WEEK 423 from 2009 Feb 02

#### SOLAR ACTIVITY

There was no noteworthy solar activity during the period. No sunspot groups were observed, the 10cm flux did not go above 71 sfu.

#### GEOMAGNETIC ACTIVITY

Geomagnetic activity was very quiet ( $K_p \leq 2$ ) except for Feb 4 when NOAA's estimated  $K_p$  reached values of  $K_p=4$ . This was the consequence of a solar wind shock arriving late Feb 3.

---

SIDC Weekly bulletin on Solar and Geomagnetic activity  
WEEK 424 from 2009 Feb 09

#### SOLAR ACTIVITY

During most of the week the solar activity was quiet. On Feb. 10th at 2310 UT, a B1-class flare was observed. The active region 11012 released two B-flares: on Feb 12 a B4.1 flare and on Feb 13 a B2.3 flare. In STEREO images in extreme ultraviolet, a wave was noticed. Due to a CCD bakeout, EIT images were not available. Towards the end of the week, the solar wind came under the influence of a recurrent coronal hole, which caused the wind speed to increase up to 580 km/s. The 10cm flux did not reach a value above 71 sfu.

#### GEOMAGNETIC ACTIVITY

Geomagnetic activity was quiet in the beginning of the week. Due to the fast wind stream originating from a coronal hole that reached the earth on Feb. 14, NOAA's estimated  $K_p$  reached values of  $K_p=4$ .

---

SIDC Weekly bulletin on Solar and Geomagnetic activity  
WEEK 425 from 2009 Feb 16

#### SOLAR ACTIVITY

Solar activity was extremely low during the whole week. No significant flaring activity was noticeable in soft X-rays.

#### GEOMAGNETIC ACTIVITY

Geomagnetic activity stayed at quiet levels during the whole week. The K indices from Dourbes peaked at  $K=3$  on Feb. 20th and 22th, but the average daily activity level remained very low.

---