# Newsletter Belgian Solar Observers

Results and news for solar observers | Volume 12 | Number 142 | December 2007

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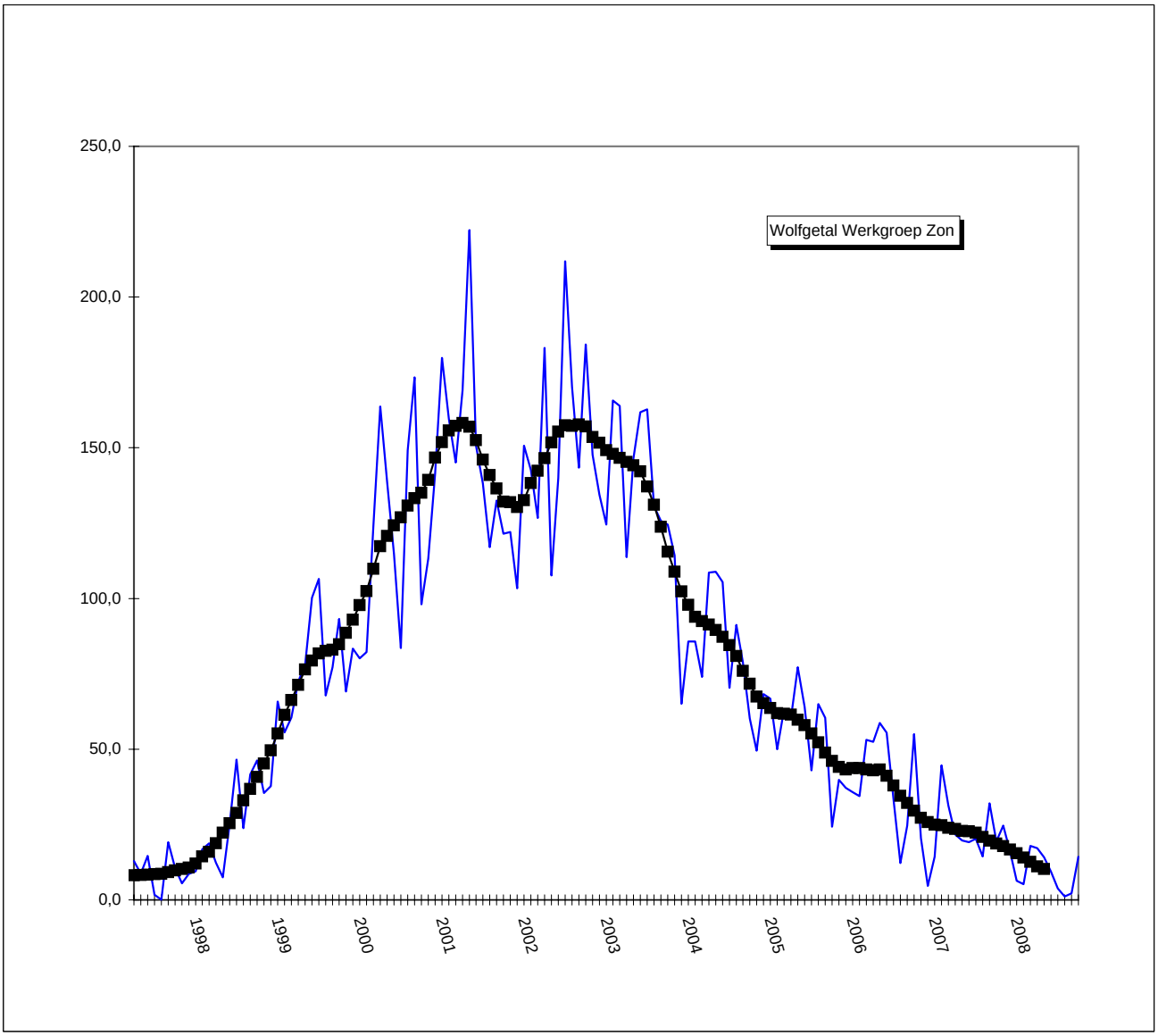
## Content Newsletter

**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 december observations**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Groups : | N | **0,14** | Wolfnumb | N | **1** | Beck : | **184,6** |
| | S | **0,64** | | S | **13,3** | CV | **13,8** |
| | N+S | **0,79** | | N+S | **14,3** | | |
| 331 observations | | 29 observers | | | | | |

# Wolfnumbers Belgian Solar Observers

Month: **December 2007**

| | SIDC | L. Meeus | | | H.Coeckelberghs | | | Publ Obs Mira | | | O. Steen | | | F. Dubois | | | L. Claeys | | | G. Deman | | | A.T.Son | | | H. De Backer | | | B. Thooris | | | A Gabriel | | | Dag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dag | R | g | f | R | g | f | R | g | f | R | g | f | R | g | f | R | g | f | R | g | f | R | g | f | R | g | f | R | g | f | R | g | f | R | |
| 1 | 10 | 1 | 4 | 14 | | | | | | | 2 | 5 | 25 | 2 | 5 | 25 | 1 | 5 | 15 | 2 | 5 | 25 | | | | 1 | 4 | 14 | 1 | 3 | 13 | 2 | 3 | 23 | 1 |
| 2 | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| 3 | 7 | 1 | 1 | 11 | | | | 1 | 3 | 13 | 1 | 1 | 11 | 1 | 4 | 14 | | | | 1 | 7 | 17 | | | | 1 | 2 | 12 | 1 | 2 | 12 | 1 | 1 | 11 | 3 |
| 4 | 9 | | | | | | | | | | | | | 1 | 3 | 13 | 1 | 4 | 14 | | | | | | | 1 | 2 | 12 | | | | 1 | 4 | 14 | 4 |
| 5 | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 2 | 12 | 5 |
| 6 | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| 7 | 15 | 1 | 10 | 20 | | | | | | | 3 | 16 | 46 | 1 | 13 | 23 | | | | | | | | | | 1 | 9 | 19 | 1 | 7 | 17 | 1 | 11 | 21 | 7 |
| 8 | 25 | | | | | | | | | | 1 | 6 | 16 | | | | | | | | | | | | | | | | | | | 2 | 18 | 38 | 8 |
| 9 | 26 | 2 | 17 | 37 | 2 | 15 | 35 | | | | 2 | 14 | 34 | 2 | 25 | 45 | 2 | 27 | 47 | 2 | 23 | 43 | | | | 1 | 11 | 21 | 2 | 18 | 38 | 2 | 21 | 41 | 9 |
| 10 | 24 | | | | | | | | | | 1 | 28 | 38 | | | | | | | | | | 2 | 26 | 46 | 1 | 26 | 36 | 1 | 16 | 26 | 1 | 24 | 34 | 10 |
| 11 | 24 | 1 | 29 | 39 | | | | | | | 1 | 25 | 35 | 1 | 31 | 41 | 1 | 26 | 36 | 1 | 24 | 34 | 1 | 28 | 38 | 1 | 28 | 38 | 1 | 14 | 24 | 1 | 25 | 35 | 11 |
| 12 | 28 | | | | | | | | | | 2 | 26 | 46 | 2 | 37 | 57 | | | | | | | | | | 1 | 27 | 37 | 1 | 13 | 23 | 2 | 29 | 49 | 12 |
| 13 | 30 | | | | | | | | | | 2 | 29 | 49 | | | | | | | | | | | | | 1 | 23 | 33 | | | | 1 | 27 | 37 | 13 |
| 14 | 24 | | | | | | | | | | 1 | 25 | 35 | 1 | 29 | 39 | | | | 1 | 38 | 48 | 1 | 23 | 33 | 1 | 18 | 28 | 1 | 17 | 27 | 2 | 24 | 44 | 14 |
| 15 | 22 | 1 | 25 | 35 | 1 | 2 | 12 | | | | 1 | 19 | 29 | 1 | 34 | 44 | 1 | 24 | 34 | | | | 1 | 14 | 24 | | | | 1 | 14 | 24 | 1 | 22 | 32 | 15 |
| 16 | 18 | | | | 1 | 5 | 15 | | | | 1 | 17 | 27 | 1 | 23 | 33 | 1 | 18 | 28 | 1 | 17 | 27 | | | | 1 | 13 | 23 | 1 | 9 | 19 | 1 | 16 | 26 | 16 |
| 17 | 11 | | | | | | | | | | 1 | 2 | 12 | | | | 1 | 8 | 18 | | | | | | | 1 | 8 | 18 | | | | 1 | 6 | 16 | 17 |
| 18 | 7 | 0 | 0 | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | 1 | 1 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 20 | 0 | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | 0 | 0 | 0 | 21 |
| 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 11 | 0 | 0 | 0 | 22 |
| 23 | 0 | | | | | | | | | | | | | | | | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | 23 |
| 24 | 0 | 0 | 0 | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 25 | 0 | | | | | | | | | | | | | 0 | 0 | 0 | | | | | | | | | | 0 | 0 | 0 | | | | 0 | 0 | 0 | 25 |
| 26 | 0 | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | 0 | 0 | 0 | 26 |
| 27 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 27 |
| 28 | 0 | 0 | 0 | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 29 | 0 | 0 | 0 | 0 | | | | | | | 0 | 0 | 0 | | | | | | | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 30 | 0 | | | | | | | | | | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 31 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 31 |
| # | **10,1** | | | **12,0** | | | **10,3** | | | **4,3** | | | **18,3** | | | **17,6** | | | **13,7** | | | **17,6** | | | **20,1** | | | **14,4** | | | **13,0** | | | **16,0** | |

Observations of the SIDC are not included in the Belgian monthly Wolfnumber.
Publ Obs Mira : observers : Francis Meeus , Guido Mattheus and Marc Rayen

| | SIDC | J. Devriese | | | J. Bourgeois | | | KSB | | | Carels | | | G.Gubbels | | | J. Claes | | | E. De Ceuninck | | | S . Kleber | | | B. Taillieu | | | S. Dufoer | | | F. van Loo | | | Dag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dag | R | g | f | R | g | f | R | g | f | R | g | f | R | g | f | R | g | f | R | g | f | R | g | f | R | g | f | R | g | f | R | g | f | R | |
| 1 | 10 | | | | 1 | 4 | 14 | 1 | 4 | 14 | 1 | 4 | 14 | 1 | 4 | 14 | 1 | 3 | 13 | 2 | 7 | 27 | 0 | 0 | 0 | 2 | 5 | 25 | | | | | | | 1 |
| 2 | 9 | | | | | | | | | | | | | | | | | | | | | | 0 | 0 | 0 | | | | | | | | | | 2 |
| 3 | 7 | | | | | | | 1 | 3 | 13 | 1 | 1 | 11 | | | | 1 | 1 | 11 | 1 | 2 | 12 | | | | | | | | | | | | | 3 |
| 4 | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 |
| 5 | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 5 |
| 6 | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| 7 | 15 | | | | | | | 1 | 11 | 21 | 2 | 15 | 35 | 2 | 8 | 28 | | | | 1 | 3 | 13 | | | | | | | | | | | | | 7 |
| 8 | 25 | | | | | | | | | | | | | 2 | 17 | 37 | | | | | | | | | | | | | | | | | | | 8 |
| 9 | 26 | | | | 1 | 23 | 33 | 2 | 25 | 45 | 2 | 24 | 44 | 2 | 19 | 39 | 2 | 20 | 40 | 2 | 24 | 44 | 1 | 16 | 26 | 2 | 18 | 38 | 2 | 16 | 36 | | | | 9 |
| 10 | 24 | | | | | | | | | | | | | | | | | | | | | | 1 | 12 | 22 | | | | | | | | | | 10 |
| 11 | 24 | | | | 1 | 47 | 57 | 1 | 22 | 32 | | | | 1 | 24 | 34 | 1 | 26 | 36 | 1 | 30 | 40 | 1 | 11 | 21 | | | | | | | 1 | 23 | 33 | 11 |
| 12 | 28 | | | | | | | 1 | 35 | 45 | 2 | 26 | 46 | | | | | | | 2 | 45 | 65 | 1 | 8 | 18 | | | | | | | | | | 12 |
| 13 | 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 13 |
| 14 | 24 | | | | | | | | | | 1 | 19 | 29 | | | | | | | 1 | 40 | 50 | | | | | | | | | | | | | 14 |
| 15 | 22 | | | | 1 | 37 | 47 | 1 | 30 | 40 | 1 | 25 | 35 | 1 | 23 | 33 | 1 | 25 | 35 | 1 | 25 | 35 | 1 | 15 | 25 | 1 | 21 | 31 | 1 | 31 | 41 | | | | 15 |
| 16 | 18 | | | | 1 | 20 | 30 | 1 | 17 | 27 | 1 | 25 | 35 | 1 | 19 | 29 | 1 | 20 | 30 | 1 | 15 | 25 | 1 | 10 | 20 | 1 | 14 | 24 | 1 | 17 | 27 | 1 | 3 | 13 | 16 |
| 17 | 11 | | | | 1 | 5 | 15 | 1 | 2 | 12 | | | | 1 | 7 | 17 | | | | 1 | 15 | 25 | 0 | 0 | 0 | 1 | 4 | 14 | | | | 1 | 4 | 14 | 17 |
| 18 | 7 | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 12 | 0 | 0 | 0 | | | | | | | | | | 18 |
| 19 | 0 | | | | | | | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | 19 |
| 20 | 0 | | | | | | | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | 20 |
| 21 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | | | | | | | 0 | 0 | 0 | | | | 21 |
| 22 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | 0 | 0 | 0 | | | | 22 |
| 23 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | | | | | | | 0 | 0 | 0 | | | | 0 | 0 | 0 | | | | 23 |
| 24 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | | | | 24 |
| 25 | 0 | | | | | | | | | | | | | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | 25 |
| 26 | 0 | | | | | | | | | | | | | | | | | | | 0 | 0 | 0 | | | | | | | 0 | 0 | 0 | | | | 26 |
| 27 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 27 |
| 28 | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | | | | 28 |
| 29 | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | 29 |
| 30 | 0 | | | | | | | | | | 0 | 0 | 0 | | | | | | | 0 | 0 | 0 | | | | 0 | 0 | 0 | | | | | | | 30 |
| 31 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 31 |
| # | **10,1** | | | **####** | | | **17,8** | | | **13,8** | | | **20,8** | | | **14,4** | | | **16,5** | | | **18,3** | | | **8,8** | | | **18,9** | | | **10,4** | | | **20,0** | |

| | SIDC | K.Dewaele | | | Verboven | | | J.Bavais | | | R. Gadyne | | | JG Astrolab | | | D.V.Hessche | | | A. De Kerchove | | | M.Vanleenhove | | | R. Dezeure | | | L.Gysel | | | | Dag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dag | R | g | f | R | g | f | R | g | f | R | g | f | R | g | f | R | g | f | R | g | f | R | g | f | R | g | f | R | g | f | R | | | |
| 1 | 10 | | | | 1 | 1 | 11 | | | | 1 | 3 | 13 | 0 | 0 | 0 | 1 | 4 | 14 | | | | | | | 1 | 3 | 13 | 0 | 0 | 0 | | | 1 |
| 2 | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| 3 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | 11 | | | | | | 3 |
| 4 | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 |
| 5 | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 5 |
| 6 | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| 7 | 15 | 1 | 12 | 22 | | | | | | | | | | | | | | | | | | | | | | 1 | 5 | 15 | | | | | | 7 |
| 8 | 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 8 |
| 9 | 26 | | | | 2 | 17 | 37 | | | | | | | | | | 2 | 24 | 44 | | | | | | | 2 | 11 | 31 | | | | | | 9 |
| 10 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 | 0 | | | 10 |
| 11 | 24 | | | | | | | | | | 1 | 26 | 36 | | | | 1 | 32 | 42 | | | | | | | 1 | 22 | 32 | | | | | | 11 |
| 12 | 28 | 1 | 29 | 39 | | | | | | | | | | | | | | | | 1 | 17 | 27 | | | | 2 | 8 | 28 | | | | | | 12 |
| 13 | 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 13 |
| 14 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 19 | 29 | | | | | | 14 |
| 15 | 22 | | | | 1 | 20 | 30 | | | | | | | 1 | 2 | 12 | 1 | 26 | 36 | 1 | 16 | 26 | | | | 1 | 11 | 21 | | | | | | 15 |
| 16 | 18 | | | | 1 | 18 | 28 | | | | | | | | | | 1 | 14 | 24 | 1 | 13 | 23 | | | | 1 | 11 | 21 | | | | | | 16 |
| 17 | 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 17 |
| 18 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 | 0 | | | | | | 18 |
| 19 | 0 | | | | 0 | 0 | 0 | | | | | | | | | | 0 | 0 | 0 | | | | | | | 0 | 0 | 0 | | | | | | 19 |
| 20 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 | 0 | | | | | | 20 |
| 21 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 | 0 | | | | | | 21 |
| 22 | 0 | | | | | | | | | | | | | | | | 0 | 0 | 0 | | | | | | | 0 | 0 | 0 | | | | | | 22 |
| 23 | 0 | | | | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | 23 |
| 24 | 0 | | | | | | | | | | 0 | 0 | 0 | | | | | | | | | | | | | 0 | 0 | 0 | | | | | | 24 |
| 25 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 | 0 | | | | | | 25 |
| 26 | 0 | | | | 0 | 0 | 0 | | | | 0 | 0 | 0 | | | | | | | | | | | | | 0 | 0 | 0 | | | | | | 26 |
| 27 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 27 |
| 28 | 0 | | | | | | | | | | 0 | 0 | 0 | | | | | | | | | | | | | 0 | 0 | 0 | | | | | | 28 |
| 29 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 | 0 | | | | | | 29 |
| 30 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 | 0 | | | | | | 30 |
| 31 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 31 |
| # | **10,1** | | | **30,5** | | | **15,1** | | | **####** | | | **9,8** | | | **6,0** | | | **22,9** | | | **25,3** | | | **####** | | | **10** | | | **0** | | | **#####** | |

# Sunspotnumbers VVS Belgium

**Month:** 'December 2007

| | GROUPS | | | WOLFNUMBER | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Day | N | S | N+S | N | S | N+S | RE' | CV | OBS |
| 1 | 0 | 2 | 2 | 0 | 14,8 | **14,8** | 27 | 5,1 | 23 |
| 2 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 | 1 |
| 3 | 0 | 1 | 1 | 0 | 12,2 | **12** | 7 | 1,2 | 13 |
| 4 | 0 | 1 | 1 | 0 | 13,3 | **13** | 10 | 1,5 | 4 |
| 5 | 0 | 1 | 1 | 0 | 12 | **12** | | | 1 |
| 6 | | | | | | | | | |
| 7 | 0 | 2 | 2 | 0 | 23,3 | **23** | 194 | 28 | 12 |
| 8 | 1 | 1 | 2 | 7,4 | 22,9 | **30** | 192 | 36,5 | 3 |
| 9 | 1 | 1 | 2 | 9,3 | 28,8 | **38** | 366 | 43,3 | 21 |
| 10 | 1 | 1 | 2 | 3,1 | 25,7 | **29** | 650 | 45,5 | 7 |
| 11 | 0 | 1 | 1 | 0 | 36 | **36** | 672 | 34,2 | 19 |
| 12 | 1 | 1 | 2 | 7,3 | 33,9 | **41** | 709 | 36,5 | 11 |
| 13 | 0 | 1 | 1 | 0 | 39,7 | **40** | 640 | 28 | 3 |
| 14 | 0 | 1 | 1 | 0 | 36,2 | **36** | 536 | 29,5 | 10 |
| 15 | 0 | 1 | 1 | 0 | 31,2 | **31** | 504 | 33 | 22 |
| 16 | 0 | 1 | 1 | 0 | 25,3 | **25** | 339 | 27,9 | 22 |
| 17 | 0 | 1 | 1 | 0 | 16,1 | **16** | 131 | 20,3 | 10 |
| 18 | 0 | 1 | 1 | 0 | 1,9 | **2** | 6 | 1,4 | 12 |
| 19 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 | 19 |
| 20 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 | 6 |
| 21 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 | 14 |
| 22 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 | 18 |
| 23 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 | 10 |
| 24 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 | 16 |
| 25 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 | 4 |
| 26 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 | 8 |
| 27 | | | | | | | | | |
| 28 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 | 16 |
| 29 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 | 13 |
| 30 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 | 10 |
| 31 | | | | | | | | | |
| | **0,14** | **0,64** | **0,79** | **1,0** | **13,3** | **14,3** | **184,6** | **13,8** | **328** |

Monthly mean: **14,3** Covering: **28/31** Spotless days: **12**
Observations: **328** Number of observers: **29**

**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**

# VVS Belgian Solar Observers  Prominence number  Rp

Month : December 2007

| Day | J. Janssens time | Q | W | H | e | PST Rp | F. Dubois time | Q | W | H | e | PST Rp | E. De Ceunick time | Q | W | H | e | PST Rp | L. Meeus time | Q | W | H | e | PST Rp | J. Hambsch (asm 60) time | Q | W | H | e | Rp | G. Deman (Lille 20/20) time | Q | W | H | e | Rp |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9,20 | 3,5 | 2,5 | 7 | 11 | 81 | 10,28 | 3 | 3 | 5 | 9 | 59 | 09.30 | 2,50 | 3 | 4 | 7 | 47 | 11.00 | 3 | 3 | 8 | 9 | 89 | | | | | | | 11:35 | 3 | 3 | 9 | 14 | 104 |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | 9,15 | 3 | 3 | 2 | 2 | 22 | 09.45 | 2,00 | 3 | 4 | 4 | 44 | | | | | | | | | | | | | 9:50 | 3 | 4 | 5 | 8 | 58 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | 10.45 | 2,50 | 3 | 2 | 2 | 22 | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | 9,58 | 3 | 3 | 4 | 4 | 44 | 10.00 | 2,00 | 3 | 2 | 2 | 22 | | | | | | | 11u20 | 2 | 3 | 3 | 3 | 33 | 10:05 | 2 | 2 | 3 | 3 | 33 |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | 9,25 | 2 | 3 | 4 | 4 | 44 | 13.30 | 2,00 | 3 | 1 | 1 | 11 | 10.35 | 2,5 | 2,5 | 5 | 6 | 56 | | | | | | | 13:35 | 2 | 2 | 4 | 5 | 45 |
| 12 | | | | | | | | | | | | | 10.30 | 2,50 | 3 | 3 | 3 | 33 | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | 12,50 | 2,5 | 2,5 | 3 | 4 | 34 | 11.40 | 2,50 | 3 | 2 | 2 | 22 | | | | | | | | | | | | | 11:50 | 3 | 2 | 4 | 5 | 45 |
| 15 | 9,15 | 2,5 | 2 | 3 | 4 | 34 | 10,21 | 3 | 2,5 | 3 | 6 | 36 | 10.00 | 2,00 | 3 | 2 | 2 | 22 | 10.30 | 3 | 2 | 2 | 2 | 22 | 13u25 | 2 | 3 | 1 | 2 | 12 | | | | | | |
| 16 | 9,30 | 2,5 | 2 | 3 | 3 | 33 | | | | | | | 10.30 | 1,00 | 3 | 3 | 3 | 33 | | | | | | | 11u50 | 2 | 3 | 3 | 3 | 33 | 11:05 | 2 | 2 | 4 | 5 | 45 |
| 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | 9,32 | 2 | 2,5 | 4 | 4 | 44 | 10.45 | 2,50 | 2,5 | 2 | 2 | 22 | 13.50 | 2 | 2,5 | 1 | 2 | 12 | 11u35 | 2 | 3 | 5 | 7 | 57 | | | | | | |
| 19 | | | | | | | 10,35 | 2 | 2,5 | 2 | 2 | 22 | 10.30 | 1,00 | 3 | 1 | 1 | 11 | 11.05 | 2 | 1 | 2 | 2 | 22 | 11u50 | 2 | 3 | 3 | 3 | 33 | 13:20 | 3 | 2 | 3 | 4 | 34 |
| 20 | | | | | | | 10,07 | 2 | 2,5 | 1 | 1 | 11 | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | | | | | | | 10,32 | 2 | 2,5 | 4 | 4 | 44 | 13.30 | 1,00 | 3 | 3 | 3 | 33 | 11.50 | 2,5 | 2 | 3 | 3 | 33 | | | | | | | | | | | | |
| 22 | 9,40 | 3,5 | 2,5 | 2 | 3 | 23 | 10,50 | 2 | 3 | 3 | 4 | 34 | 12.00 | 1,00 | 3 | 4 | 4 | 44 | 11.00 | 4 | 2 | 4 | 5 | 45 | 11u35 | 2 | 3 | 7 | 5 | 75 | | | | | | |
| 23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | | | | | | | 9,56 | 1,5 | 2,5 | 3 | 5 | 35 | 11.15 | 1,00 | 3 | 4 | 7 | 47 | | | | | | | | | | | | | 10:45 | 2 | 2 | 4 | 7 | 47 |
| 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | | | | | | | 8,54 | 2 | 2,5 | 3 | 3 | 33 | 10.45 | 1,00 | 3 | 3 | 3 | 33 | | | | | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | | | | | | | 10,12 | 3 | 3 | 3 | 4 | 34 | 10.45 | 1,00 | 3 | 4 | 7 | 47 | | | | | | | | | | | | | 11:05 | 1 | 3 | 5 | 7 | 57 |
| 29 | | | | | | | | | | | | | 10.45 | 1,00 | 3 | 4 | 4 | 44 | | | | | | | | | | | | | 10:50 | 2 | 2 | 4 | 7 | 47 |
| 30 | | | | | | | | | | | | | 10.00 | 2,00 | 3 | 3 | 5 | 35 | | | | | | | | | | | | | 10:55 | 3 | 2 | 3 | 6 | 36 |
| 31 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4 | 3 | 2,3 | 3,8 | 5,3 | 42,8 | 14 | 2,4 | 2,7 | 3,1 | 4,0 | 35,4 | 18 | 1,7 | 3 | 2,8 | 3,4 | 31,8 | 7 | 2,7 | 2,1 | 3,57 | 4,1 | 39,9 | 6 | 2,0 | 3,0 | 3,7 | 3,8 | 40,5 | 11 | 2,4 | 2,4 | 4,36 | 6,5 | 50,1 |

| Day | O. Steen time | Q | W | H | e | PST Rp | H. Coekelberghs time | Q | W | H | e | PST Rp | J. Claes time | Q | W | H | e | PST Rp | A Gabriel time | Q | W | H | e | PST Rp (asp 60) | R.Blondeel time | Q | W | H | e | Rp (asp 60) | G. Gubbels time | Q | W | H | e | PST Rp |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9,45 | 3,5 | 2 | 6 | 8 | 68 | | | | | | | 930 | 4 | 1 | 5 | 11 | 61 | 9:20 | 2 | 2 | 7 | 11 | 81 | 10h50 | 3 | 1 | 10 | 14 | 114 | 9.00 | 4 | 1 | 4 | 8 | 48 |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 9,50 | 3 | 2 | 4 | 6 | 46 | | | | | | | 1130 | 4 | 2 | 4 | 10 | 50 | 9:15 | 2 | 2 | 6 | 9 | 69 | | | | | | | 11.30 | 3 | 1.5 | 7 | 18 | 88 |
| 4 | | | | | | | | | | | | | | | | | | | 9:00 | 2 | 3 | 5 | 7 | 57 | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | 12,45 | 3 | 2 | 3 | 4 | 34 | | | | | | | | | | | | | 9:15 | 2 | 2 | 5 | 8 | 58 | | | | | | | 14.09 | 3 | 2 | 3 | 6 | 36 |
| 8 | | | | | | | | | | | | | | | | | | | 9:10 | 2 | 3 | 4 | 5 | 45 | | | | | | | | | | | | |
| 9 | 10,10 | 2,5 | 2 | 4 | 4 | 44 | 0,50 | 4 | 3 | 3 | 4 | 34 | 930 | 3 | 2 | 2 | 3 | 23 | 9:20 | 2 | 2 | 5 | 6 | 56 | | | | | | | 9.18 | 3.5 | 1.5 | 2 | 3 | 23 |
| 10 | 13,35 | 3,5 | 2 | 3 | 4 | 34 | | | | | | | | | | | | | 11:00 | 3 | 2 | 3 | 5 | 35 | | | | | | | | | | | | |
| 11 | 8,35 | 3 | 2 | 6 | 7 | 67 | | | | | | | 11 | 3 | 2 | 5 | 6 | 56 | 9:30 | 2 | 2 | 5 | 8 | 58 | | | | | | | 10.15 | 4 | 1 | 4 | 6 | 46 |
| 12 | 9,35 | 3,5 | 2 | 7 | 9 | 79 | | | | | | | | | | | | | 9:25 | 2 | 2 | 4 | 6 | 46 | 10h45 | 3 | 1 | 4 | 5 | 45 | | | | | | |
| 13 | 10,00 | 3,5 | 2,5 | 4 | 6 | 46 | | | | | | | | | | | | | 9:40 | 2 | 2 | 6 | 10 | 70 | | | | | | | | | | | | |
| 14 | 12,20 | 3 | 2 | 4 | 6 | 46 | | | | | | | | | | | | | 9:45 | 2 | 2 | 6 | 9 | 69 | | | | | | | | | | | | |
| 15 | 9,00 | 3 | 2 | 3 | 4 | 34 | 0,43 | 2 | 2 | 1 | 1 | 11 | 930 | 3 | 2 | 4 | 6 | 46 | 9:40 | 2 | 2 | 4 | 6 | 46 | 10h30 | 2 | 1 | 2 | 2 | 22 | 9.37 | 3.5 | 1 | 4 | 6 | 46 |
| 16 | 8,20 | 3 | 2 | 5 | 5 | 55 | 0,47 | 2 | 2 | 2 | 2 | 22 | 1045 | 3 | 2 | 4 | 4 | 44 | 9:40 | 2 | 2 | 3 | 4 | 34 | 12h00 | 3 | 1 | 3 | 3 | 33 | 9.34 | 4 | 1.5 | 4 | 7 | 47 |
| 17 | 9,05 | 3 | 2,5 | 6 | 7 | 67 | | | | | | | | | | | | | 9:45 | 2 | 2 | 4 | 6 | 46 | | | | | | | 13.59 | 2.5 | 1.5 | 4 | 4 | 44 |
| 18 | 9,35 | 3 | 2 | 3 | 4 | 34 | 0,55 | 4 | 4 | 3 | 3 | 33 | 1030 | 3 | 2 | 3 | 4 | 34 | 9:50 | 3 | 2 | 3 | 6 | 36 | 11h00 | 3 | 1 | 5 | 6 | 56 | 11.41 | 3.5 | 1 | 2 | 5 | 25 |
| 19 | 9,00 | 2,5 | 2 | 5 | 6 | 56 | | | | | | | 1045 | 3 | 2 | 3 | 3 | 33 | 9:40 | 2 | 2 | 3 | 4 | 34 | 11h10 | 1 | 1 | 3 | 4 | 34 | 12.25 | 3.5 | 1 | 3 | 5 | 35 |
| 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | 12,20 | 3 | 2 | 5 | 5 | 55 | 0,55 | 3 | 3 | 4 | 4 | 44 | | | | | | | | | | | | | | | | | | | 9.25 | 4 | 1.5 | 3 | 6 | 36 |
| 22 | 13,30 | 3 | 2 | 6 | 11 | 71 | 0,51 | 2 | 2 | 2 | 3 | 23 | 1215 | 4 | 1 | 5 | 7 | 57 | 10:50 | 2 | 2 | 4 | 6 | 46 | 11h30 | 3 | 1 | 3 | 4 | 34 | 10.18 | 3.5 | 1.5 | 5 | 10 | 60 |
| 23 | | | | | | | | | | | | | | | | | | | 9:30 | 2 | 3 | 3 | 4 | 34 | | | | | | | 12.08 | 4 | 1 | 4 | 16 | 56 |
| 24 | 10,50 | 3 | 2 | 4 | 7 | 47 | | | | | | | | | | | | | 10:10 | 2 | 2 | 5 | 9 | 59 | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | | | | 9:30 | 2 | 3 | 4 | 7 | 47 | | | | | | | | | | | | |
| 26 | 9,15 | 3 | 2 | 3 | 5 | 35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | 9,25 | 2,5 | 2,5 | 5 | 7 | 57 | | | | | | | 0 | 3 | 2 | 4 | 6 | 46 | 9:20 | 2 | 3 | 4 | 8 | 48 | | | | | | | 10.20 | 3 | 1.5 | 4 | 12 | 52 |
| 29 | 10,00 | 2,5 | 2,5 | 4 | 8 | 48 | | | | | | | | | | | | | 10:30 | 2 | 2 | 4 | 5 | 45 | | | | | | | | | | | | |
| 30 | 9,20 | 3 | 2 | 4 | 7 | 47 | | | | | | | | | | | | | 9:50 | 2 | 3 | 3 | 7 | 37 | | | | | | | | | | | | |
| 31 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 21 | 3 | 2,1 | 4,5 | 6,2 | 51,0 | 6 | 2,8 | 2,7 | 2,5 | 2,8 | 27,8 | 10 | 3,3 | 1,8 | 3,9 | 6,0 | 45,0 | 23 | 2,1 | 2,3 | 4,35 | 7 | 50,3 | 7 | 2,6 | 1,0 | 4,3 | 5,4 | 48,3 | 14 | 3,6 | 1,1 | 3,79 | 8,0 | 45,9 |

| Day | T.Spaninks time | Q | W | H | e | PST Rp |
|---|---|---|---|---|---|---|
| 1 | 10,40 | 3 | 3 | 11 | 14 | 124 |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |
| 11 | | | | | | |
| 12 | | | | | | |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | 11,05 | 3 | 2 | 5 | 6 | 56 |
| 16 | 10,57 | 3 | 2 | 4 | 4 | 44 |
| 17 | | | | | | |
| 18 | | | | | | |
| 19 | | | | | | |
| 20 | | | | | | |
| 21 | | | | | | |
| 22 | 11,21 | 3 | 2 | 6 | 8 | 68 |
| 23 | | | | | | |
| 24 | | | | | | |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | 10,59 | 3 | 2 | 5 | 8 | 58 |
| 30 | | | | | | |
| 31 | | | | | | |
| | 5 | 3 | 2,2 | 6,2 | 8 | 70,0 |

**Time : Beginning of observation**
**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*10+e**
**More info at : http://members.chello.be/j.janssens/**

# Prominence number Rp

## Belgian solar observers

**Month:** **December 2007**

| Day | Q | Wedel | | H | e | Rp | el. Obs | Stdev | OBS |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3,2 | 2,2 | | 5,8 | 9,3 | **67,3** | 3 | 15,8 | 11 |
| 2 | | | | | | | | | |
| 3 | 2,8 | 2,6 | | 5 | 9,2 | **59,2** | 1 | 16,8 | 7 |
| 4 | 2 | 3 | | 5 | 7 | **57** | | | 1 |
| 5 | | | | | | | | | |
| 6 | | | | | | | | | |
| 7 | 2,7 | 2 | | 3,7 | 6 | **43** | 1 | 13,3 | 4 |
| 8 | 2 | 3 | | 4 | 5 | **45** | | | 1 |
| 9 | 2,6 | 2,6 | | 2,9 | 3,3 | **32,3** | 1 | 8,9 | 9 |
| 10 | 3,3 | 2 | | 3 | 4,5 | **34,5** | | 0,7 | 2 |
| 11 | 2,6 | 2,1 | | 4,7 | 6 | **53** | 1 | 8,5 | 8 |
| 12 | 2,8 | 2 | | 3,7 | 4,7 | **41,7** | 1 | 7,2 | 4 |
| 13 | 2,8 | 2,3 | | 5 | 8 | **58** | | 17 | 2 |
| 14 | 2,6 | 2,1 | | 4,3 | 6 | **49** | 1 | 14,7 | 5 |
| 15 | 2,6 | 1,9 | | 3 | 4,2 | **34,2** | 3 | 10,4 | 12 |
| 16 | 2,5 | 2,1 | | 3,5 | 3,9 | **38,9** | | 9,3 | 11 |
| 17 | 2,5 | 2,3 | | 4,7 | 5,7 | **52,7** | | 12,7 | 3 |
| 18 | 2,9 | 2,2 | | 3,5 | 4,9 | **39,9** | 2 | 11,5 | 10 |
| 19 | 2,2 | 1,8 | | 3 | 3,7 | **33,7** | 1 | 9,8 | 10 |
| 20 | 2 | 2,5 | | 1 | 1 | **11** | | | 1 |
| 21 | 2,6 | 2,5 | | 3,7 | 4,2 | **41,2** | | 8,6 | 6 |
| 22 | 2,7 | 2,1 | | 4,7 | 6,4 | **53,4** | 2 | 15 | 12 |
| 23 | 3 | 2 | | 3,5 | 10 | **45** | | 15,6 | 2 |
| 24 | 1,9 | 2,3 | | 4 | 7 | **47** | | 8,5 | 5 |
| 25 | 2 | 3 | | 4 | 7 | **47** | | | 1 |
| 26 | 2 | 2,5 | | 3 | 3,7 | **33,7** | | 1,2 | 3 |
| 27 | | | | | | | | | |
| 28 | 2,2 | 2,8 | | 4,1 | 7,3 | **48,3** | | 7,9 | 7 |
| 29 | 2,1 | 2,3 | | 4,2 | 6,4 | **48,4** | | 5,6 | 5 |
| 30 | 2,5 | 2,5 | | 3,3 | 6,3 | **39,3** | | 5,6 | 4 |
| 31 | | | | | | | | | |
| | **2,50** | **2,33** | | **3,9** | **5,8** | **44,4** | **17** | **10,2** | **146** |

Monthly mean: **44,4** Covering: **26/31**
Observations: **146** Number of observers: **11**

**V.V.S. BELGIUM SOLAR SECTION FRANKY DUBOIS**
Poekapellestraat 39
B8920 Langemark
Belgium
e-mail : astrosun@skynet.be

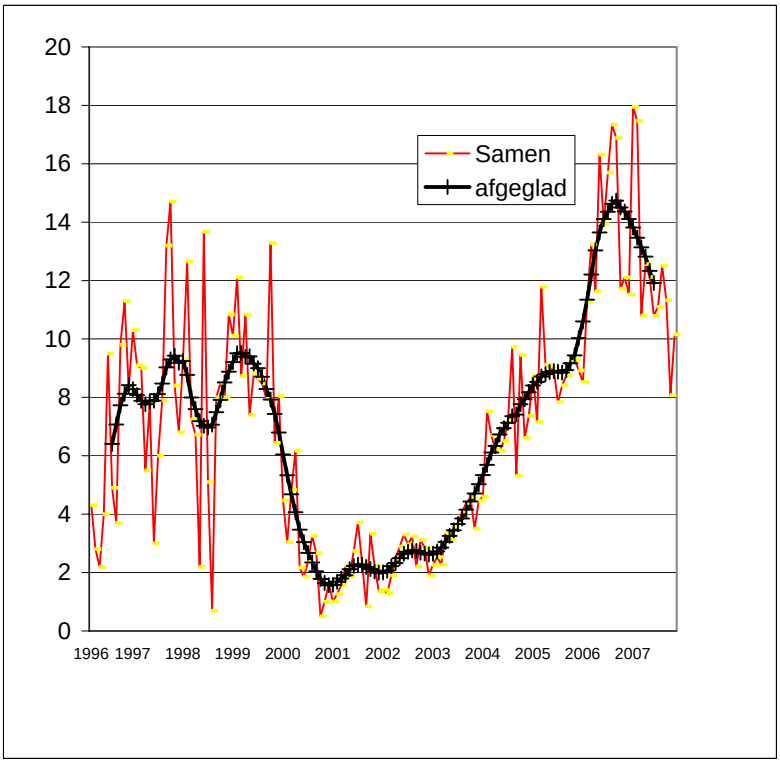
**Observers:**
**Steen ; Dubois ; Meeus ; De Ceuninck ; Coeckelberghs ; Janssens**
**Hambsch ; Claes ; Gabriel ; Blondeel ; Deman ; G.Gubbels ; T.Spaninks**
**Q : Seeing scale SIDC**
**W : transparency scale of Wedel , see http://members.chello.be/j.janssens/**
**H : number of prominence groups at the limb**
**e : total of individual prominences at the limb**
**Rp : H*10+e**
**More info at : http://members.chello.be/j.janssens/**

# Belgian Solar Observers

## Polar Faculae

**Month: December 2007**

| Date | Dubois 125mm F20 | | | Steen 102mm F15 | | | Deman 150mmF15 | | | Gabriel 250 mm F20 | | | Carels 150mm F8 | | | Janssen 200mmF10 | | | T.Spaninks 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 | 4 | 2 | 2 | 7 | 6 | 3,5 | 15 | 13 | 3 | | | | | | | 7 | 4 | 3,5 | 0 | 1 | 4 | 5 | 4 | 4 |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 4 | 2 | 3 | 8 | 6 | 3,0 | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | 4 | 6 | 3 | 6 | 4 | 3,5 | | | | | | | | | | | | | | | | 5 | 3 | 3.5 |
| 8 | | | | | | | | | | | | | | | | | | | | | | 4 | 4 | 3 |
| 9 | | | | | | | | | | | | | | | | | | | | | | 5 | 7 | 4 |
| 10 | | | | 3 | 3 | 3,5 | | | | | | | | | | | | | | | | | | |
| 11 | | | | 12 | 4 | 3,0 | | | | | | | | | | | | | | | | 7 | 8 | 4 |
| 12 | | | | 5 | 3 | 3,5 | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | 11 | 5 | 3,0 | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | 5 | 3 | 2,5 | 0 | 0 | 3 | 3 | 5 | 4 |
| 16 | | | | | | | | | | | | | | | | 6 | 4 | 2,5 | | | | 4 | 3 | 4 |
| 17 | | | | | | | | | | | | | | | | | | | | | | 4 | 6 | 3.5 |
| 18 | 8 | 3 | 3 | 5 | 4 | 3,0 | | | | | | | | | | | | | 1 | 0 | 3 | | | |
| 19 | | | | | | | | | | | | | | | | | | | | | | 3 | 4 | 4 |
| 20 | 7 | 3 | 3 | | | | | | | | | | | | | | | | | | | | | |
| 21 | | | | 6 | 5 | 3,0 | | | | | | | | | | | | | | | | | | |
| 22 | | | | 7 | 8 | 3,0 | | | | | | | | | | 6 | 8 | 3,5 | 0 | 0 | 3 | 4 | 5 | 4 |
| 23 | | | | | | | | | | | | | | | | | | | | | | 4 | 6 | 3 |
| 24 | 7 | 1 | 3 | 4 | 3 | 3,0 | | | | | | | | | | | | | | | | 7 | 8 | 4 |
| 25 | | | | | | | | | | | | | | | | | | | | | | 4 | 6 | 3 |
| 26 | 5 | 3 | 3 | | | | | | | | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | | | | | | | | | 7 | 8 | 3 |
| 29 | | | | | | | | | | | | | 6 | 4 | 4 | | | | 0 | 1 | 4 | | | |
| 30 | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5,57 | 2,86 | | 6,73 | 4,64 | | 15,0 | 13,0 | | ##### | ##### | | 6,00 | 4,00 | | 6,00 | 4,75 | | 0,20 | 0,40 | | 4,71 | 5,50 | |



# Different Relative Sunspotnumbers Month : December 2007

| | CV | | | | | | | | | Pettisindex SN | | | | Intersol IS | | | Becknumber | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | F.Dubois | O.Steen | L.Meeus | J.Carels | J.Janssens | G.Gubbels | H.De Backer | S.Dufoer | Mean | G.Gubbels | F.Dubois | O.Steen | J.Carels | F.Dubois | J.Carels | G.Gubbels | F.Dubois | O.Steen | L.Meeus | J.Carels | G.Gubbels | S.Dufoer | A.T.Son | J.Bourgeois | H.Coeckelberghs | De Backer | Pbl Obs Mira | J.Claes | D.Van Hessche | Mean | Date |
| 1 | 3 | 3 | 2 | 2 | 2 | 5 | 19 | | **5,1** | 13 | 5 | 5 | 4 | 6 | 5 | 5 | 20 | 20 | 16 | 16 | 32 | | | | 72 | | 24 | 16 | **27** | 1 |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| 3 | 1 | 1 | 1 | 1 | | | 2 | | **1,2** | | 4 | 1 | 1 | 5 | 1 | | 16 | 4 | 4 | 4 | | | | | 8 | 12 | 4 | | **7** | 3 |
| 4 | 1 | | | | | | 2 | | **1,5** | | 3 | | | 4 | | | 12 | | | | | | | | 8 | | | | **10** | 4 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 5 |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| 7 | 43 | 25 | 19 | 24 | | 35 | 22 | | **28,0** | 33 | 36 | 31 | 49 | 14 | 17 | 10 | 234 | 246 | 180 | 228 | 116 | | | | 162 | | | | **194** | 7 |
| 8 | | 31 | | | | 42 | | | **36,5** | 56 | | 32 | | | | 19 | | 108 | | | 276 | | | | | | | | **192** | 8 |
| 9 | 63 | 37 | 30 | 43 | | 42 | 55 | 33 | **43,3** | 67 | 74 | 55 | 74 | 27 | 26 | 21 | 430 | 316 | 286 | 566 | 322 | 268 | | | 399 | 198 | | 330 | 549 | **366** | 9 |
| 10 | | 35 | | | | | 56 | | **45,5** | | | 77 | | | | | | 650 | | | | | 575 | | | 650 | | | | **625** | 10 |
| 11 | 32 | 23 | 29 | | | 31 | 56 | | **34,2** | 60 | 65 | 42 | | 32 | | 25 | 775 | 625 | 725 | | 432 | | 700 | | | 700 | | 650 | 800 | **676** | 11 |
| 12 | 33 | 33 | | 33 | | | 47 | | **36,5** | | 66 | 49 | 73 | 38 | 27 | | 904 | 629 | | 629 | | | | | | 675 | | | | **709** | 12 |
| 13 | | 33 | | | | | 23 | | **28,0** | | | 45 | | | | | | 704 | | | | | | | | 575 | | | | **640** | 13 |
| 14 | 32 | 32 | | 31 | | | 23 | | **29,5** | | 86 | 42 | 59 | 30 | 20 | | 725 | 625 | | 342 | | | 575 | | | 450 | | | | **543** | 14 |
| 15 | 31 | 23 | 23 | 55 | 22 | 31 | | 46 | **33,0** | 80 | 60 | 33 | 68 | 35 | 26 | 24 | 612 | 475 | 625 | 450 | 414 | 558 | 56 | | 300 | | | 450 | 650 | **459** | 15 |
| 16 | 32 | 9 | | 32 | 22 | 32 | 22 | 46 | **27,9** | 78 | 55 | 43 | 59 | 24 | 26 | 20 | 575 | 136 | | 625 | 475 | 306 | | | 90 | 234 | | 360 | 252 | **339** | 16 |
| 17 | | 7 | | | | 32 | 22 | | **20,3** | 22 | | 11 | | | | 8 | | 74 | | | 175 | | | | | 144 | | | | **131** | 17 |
| 18 | 0 | 0 | 0 | | | 0 | 7 | | **1,4** | 0 | 0 | 0 | | 0 | | 0 | 0 | 0 | 0 | | 0 | | | | | 37 | | 0 | | **6** | 18 |
| 19 | 0 | 0 | 0 | | | 0 | 0 | | **0,0** | 0 | 0 | 0 | | 0 | | 0 | 0 | 0 | 0 | | 0 | | 0 | | 0 | 0 | 0 | 0 | 0 | **0** | 19 |
| 20 | 0 | | | | | | | | **0,0** | | 0 | | | 0 | | | 0 | | | | | | | | | | | | | **0** | 20 |
| 21 | 0 | 0 | 0 | 0 | | 0 | | 0 | **0,0** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | | 0 | | | **0** | 21 |
| 22 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | **0,0** | 0 | 0 | 0 | | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | **0** | 22 |
| 23 | | | | | | 0 | 0 | 0 | **0,0** | 0 | | | | | | 0 | | | | | 0 | 0 | 0 | | | 0 | | | | **0** | 23 |
| 24 | 0 | 0 | 0 | | | 0 | 0 | 0 | **0,0** | 0 | 0 | 0 | | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | | | | 0 | | | | **0** | 24 |
| 25 | 0 | | | | | 0 | 0 | | **0,0** | 0 | 0 | | | 0 | | 0 | 0 | | | | 0 | | | | | 0 | | | | **0** | 25 |
| 26 | 0 | 0 | | | | | | 0 | **0,0** | | 0 | 0 | | 0 | | | 0 | 0 | | | | 0 | | | | | | | | **0** | 26 |
| 27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 27 |
| 28 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | **0,0** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | | 0 | | **0** | 28 |
| 29 | | 0 | 0 | 0 | | | 0 | 0 | **0,0** | | | 0 | 0 | | 0 | | | 0 | 0 | 0 | | 0 | | | | 0 | | | | **0** | 29 |
| 30 | | 0 | | 0 | | | 0 | | **0,0** | | | 0 | 0 | | 0 | | | 0 | | 0 | | | | | | 0 | | | | **0** | 30 |
| 31 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 31 |
| ## | **14,3** | **13,3** | **8,0** | **18,4** | **11,5** | **15,6** | **17,0** | **12,5** | **14,3** | **25,6** | **23,9** | **21,2** | **32,3** | **11,3** | **12,3** | **8,3** | 226 | **210** | **141** | **238** | **140** | **113** | **272** | **####** | **132** | **186** | **4** | **182** | **324** | **189** | |

# Vereniging Voor Sterrenkunde (VVS) Werkgroep Zon

# a.k.a. The Belgian Solar Observers

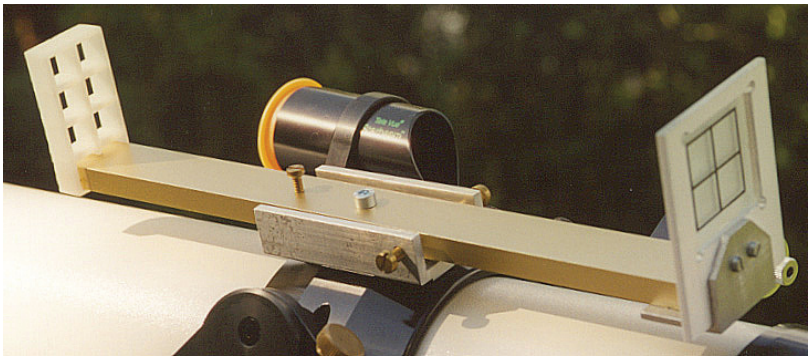
We have probably seen more Sun this November than we have seen in the UK for some time. Well it felt that way until the dark and dank days returned. The Sun is obviously at or very near its minimum, with few Sunspots to see over the recent weeks, although those using hydrogen-alpha filtration have recorded several prominences.

I was just thinking about how the numbers of spots were visible over recent months when I thought where to look for the details? I know the British Astronomical Association (BAA) has details available and there is much data available on the Association of Lunar and Planetary Observers (ALPO) website as I have mentioned before. One other resource that I often return to is a group of amateurs from the VVS - Vereniging Voor Sterrenkunde or as we in Great Britain would call them, the Belgian Amateur-astronomers Association. This busy and dedicated association has a dedicated solar section that has been actively observing since 1969. Seven years later the VVS started to publish their observations regularly in their monthly magazine Heelal, and since then over 50,000 observations have been made by nearly 160 observers.

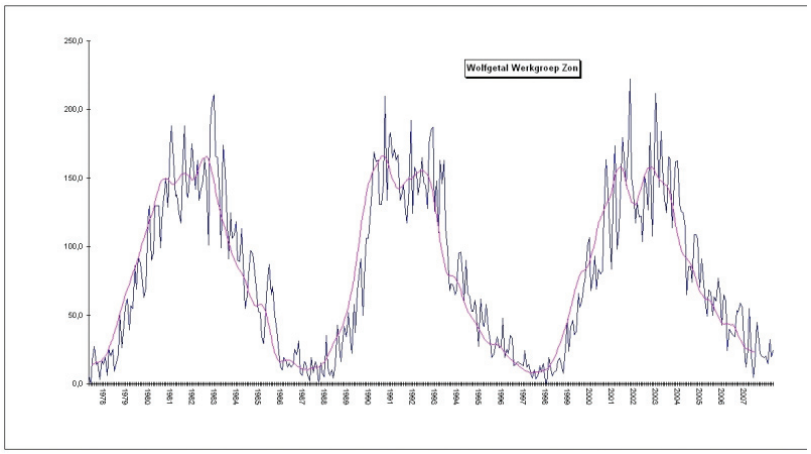
So for those not familiar with the Belgian Solar Observers (BSO), this month we shall look into the organisation and what the amateur can glean from it.

In recent years the Belgian Solar Observers have produced a newsletter on a monthly basis in Adobe PDF format that is entitled 'Nieuwsbrief voor zonnewaarnemers' or Newsletter for solar observers – and it is available in English! Those on the Daystar or ALPO Solar newsgroups will always receive notification of this and those wishing to receive a regular notification of publication can contact the VVS directly or download it directly from their web site.

The section currently has approximately 25 regular active observers using a range



*Within the web-site of the VVS you can find details to make this Sun pointer.*




*The VVS has extensive records on their website - these Wolf numbers go back to 1978.*

of instruments from 60mm to 250mm and they concentrate primarily on white light observations particularly in generating Wolf numbers.

The Wolf number was introduced by Rudolph Wolf in 1848 and was the result of collecting data from various observers using different types of equipment; the data being used to verify the frequency cycle earlier determined by H Schwabe.

Other observations, including positional data as well as some hydrogen-alpha work is also carried out by some of the observers and the current section leader is the widely renowned solar observer Franky Dubois who can be contacted by email at astrosun@skynet.be. The section has its own website at www.bso.vvs.be/index_en.php.

As a resource, this web site is most helpful and very rewarding. Having access to data that is easy to find and easy to understand is such a bonus. Many a site has the data but it can be somewhat overwhelming for the amateur looking for basic data. Here finding details such as I was looking for – Wolf numbers and their change over the recent months was easily located. In fact data in a simple chart as well as a graph was easy to understand. Additional to that was a plot of the Wolf numbers going back over several solar cycles. It certainly appears as if we are close to a solar minimum.

Looking through the web site gives access to the newsletters in chronological order all of which are downloadable in Adobe PDF format. Consulting one of the more recent issues it appears there is an awful lot of additional information is available. Prominence data is presented in tabular form, as is data on polar faculae all recorded by the members of the section. Additional images and special observations are also included.

One interesting item included in the newsletter, is the weekly bulletin of the Solar Index Data Centre (SIDC) that gives a summary of Solar & Geomagnetic activity for the previous month.

The BSO web site also has additional observational assistance including how to build your own Sun pointer, and a particularly interesting description of how to modify a Coronado PST for use on a

*Members of the solar section of the VVS pose for a group photograph.*

125mm telescope. Coupled with a database of previous observations allowing you to compare your own observations with theirs makes it a very useful resource.

Further observations included are detailed observations of solar flares as witnessed in both white light and hydrogen-alpha by some of their regular observers.

In summary, for the solar observer trying to keep up to date with what is happening on our Sun despite having limited observing access, the Belgian Solar Observers provide a great resource.

The website is simple and easy to navigate, and the BSO newsletter is a good companion to the BAA newsletter.

And that only leaves me to wish you all a very pleasant Christmas and New Year.

Kevin Smith FRAS, AIS, FRPS

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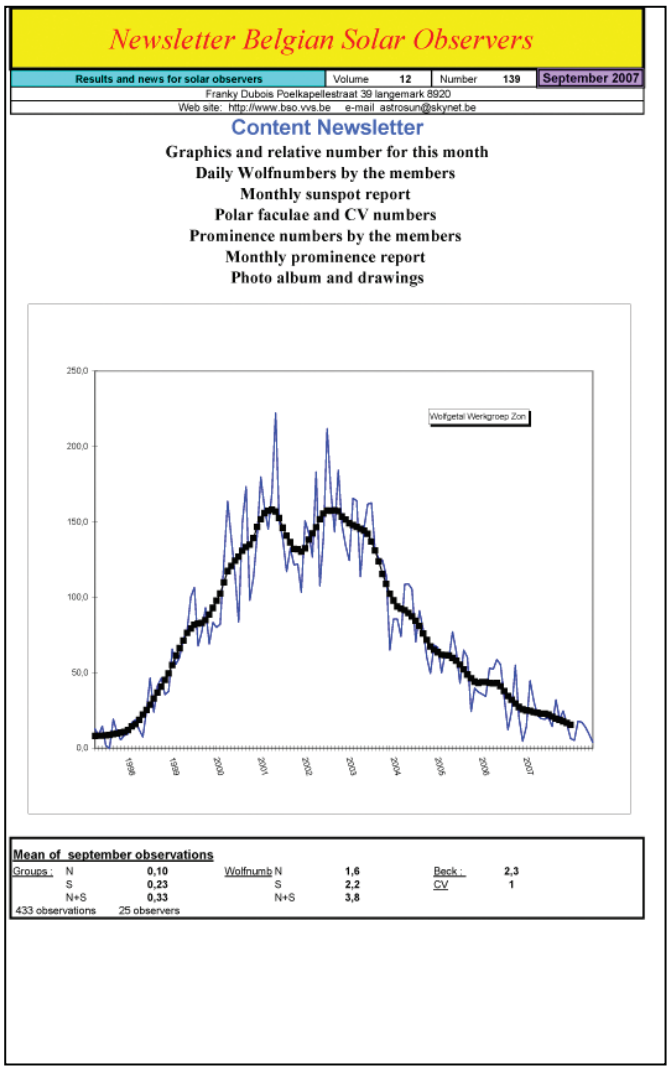


Newsletter Belgian Solar Observers

Results and news for solar observers | Volume 12 | Number 139 | September 2007

Franky Dubois Poelkapellestraat 39 langemark 8920

Web site: http://www.bso.vvs.be e-mail 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

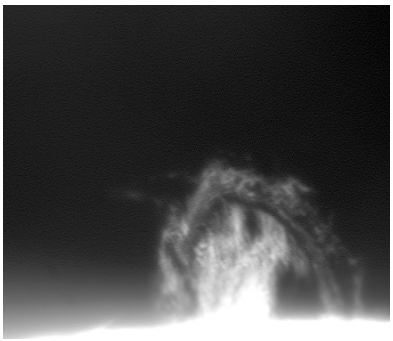


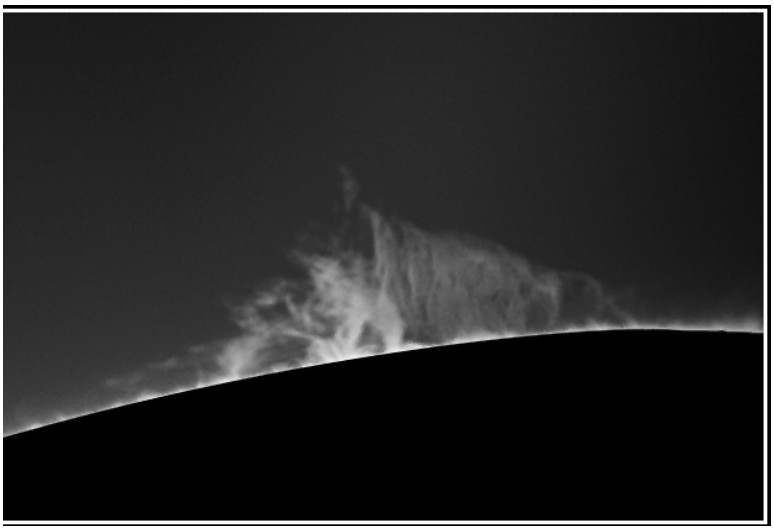
Mean of september observations

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Groups : | N | 0,10 | Wolfnumb | N | 1,6 | Beck : | 2,3 |
| | S | 0,23 | | S | 2,2 | CV | 1 |
| | N+S | 0,33 | | N+S | 3,8 | | |

433 observations 25 observers

*The VVS make available for download a monthly newsletter listing very useful information and monthly data.*





*Besides observing the Sun, the VVS has some accomplished imagers as these pictures testify. Left image by F. Dubois and right image by S. Kersten, P Dutrieue and F. Dubois*

SIDC Weekly bulletin on Solar and Geomagnetic activity WEEK 364 from 2007 Dec 17

SOLAR ACTIVITY
Sunspot group 64 (NOAA AR 0978), responsible for the C-flaring activity last week fired off two last C-flare on Dec 17 and 18. On Dec 18, the active region was located at the west-limb. From this moment, the background X-ray radiation measured by GOES11 decreased spectacular reaching a level beneath the measurement threshold on Dec 20.
An elongated southern coronal hole was visible in EIT195. The equatorial extension in front of it passed the central meridian already on Dec 13.

GEOMAGNETIC CONDITIONS
Geomagnetic conditions were dominated by the coronal hole mentioned in the previous section. The co-rotating compressed interaction region arrived on Dec 17 resulting in active geomagnetic conditions until the first part of Dec 19. A second disturbance related to the polar part of the coronal hole was visible in ACE data on Dec 20 with a short period of active conditions as a result. Unsettled conditions were induced in the aftermath of the coronal hole on Dec 21 and 22.

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SIDC Weekly bulletin on Solar and Geomagnetic activity WEEK 365 from 2007 Dec 24

SOLAR ACTIVITY
An all-quiet alert was issued on Dec 22, 2007. It was valid for the whole week: the estimated international sunspot number was zero, the x-ray background radiation was below the measurement threshold of the satellite GOES11.A faint coronal hole transited the solar disk this week.

GEOMAGNETIC ACTIVITY
The signature of the coronal hole mentioned in the previous section was visible in ACE-data, although there were no geomagnetic consequences. The estimated Kp index (NOAA) reached only the value 2 on Dec 27.

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SIDC Weekly bulletin on Solar and Geomagnetic activity WEEK 366 from 2007 Dec 31

SOLAR ACTIVITY
The week started spectacularly with a C8.3 flare at 00:37UT on Monday Dec.31. SOHO/EIT imagery indicated that this flare was partially masked behind the limb and was thus probably even an M-class flare. The event was associated with a large East-limb CME. The source region was the return of NOAA 978 which was renumbered to NOAA AR 980 on Tuesday when it was fully rotated into the visible disk. The only other noteworthy event was a long duration C1.2 flare (Jan 2, peak at 10h00), again associated with a strong CME. The region then quickly decayed and produced no more activity.
A second surprise occurred on Friday when several observatories reported the first high-latitude sunspot group of the upcoming solar cycle 24. This group was later labelled by NOAA as active region 981.

GEOMAGNETIC ACTIVITY
Geomagnetic conditions where quiet (NOAAs estimated Kp <= 2), with a solar wind speed in the order of 300-350 km/s, up till Saturday Jan 5. On that day, a recurrent coronal hole pushed the solar wind speed up to about 600 km/s and active geomagnetic conditions (Kp =4) were observed up till the end of the period.

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SIDC Weekly bulletin on Solar and Geomagnetic activity WEEK 367 from 2008 Jan 07

SOLAR ACTIVITY
Solar activity was low during the entire week. The week started with the decay of the first high-latitude sunspot group of the upcoming solar cycle 24 (AR 981). During the entire week AR 980 remained visible, sometimes showing a few sunspots, but no significant flaring was observed. A large recurring coronal hole dominated the solar equator during the entire week, crossing the central meridian on Jan 11.

GEOMAGNETIC ACTIVITY
Geomagnetic conditions ranged from quiet to active conditions (NOAAs estimated Kp <= 4). The week started with still unsettled conditions (Kp <= 3), due to the already declining influence of a recurrent coronal hole. Solar wind speeds decreased during the middle of the week (Jan 10-12), allowing quiet conditions (Kp <= 2), only to increase again due increased solar wind speeds from another recurrent coronal hole, which passed the central meridian on Jan 11, causing unsettled to active conditions (Kp <= 4).

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