

# Newsletter Belgian Solar Observers

Results and news for solar observers

Volume 12

Number 132

February 2007

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## Content Newsletter

Graphics and relative number for this month

Daily Wolfnumbers by the members

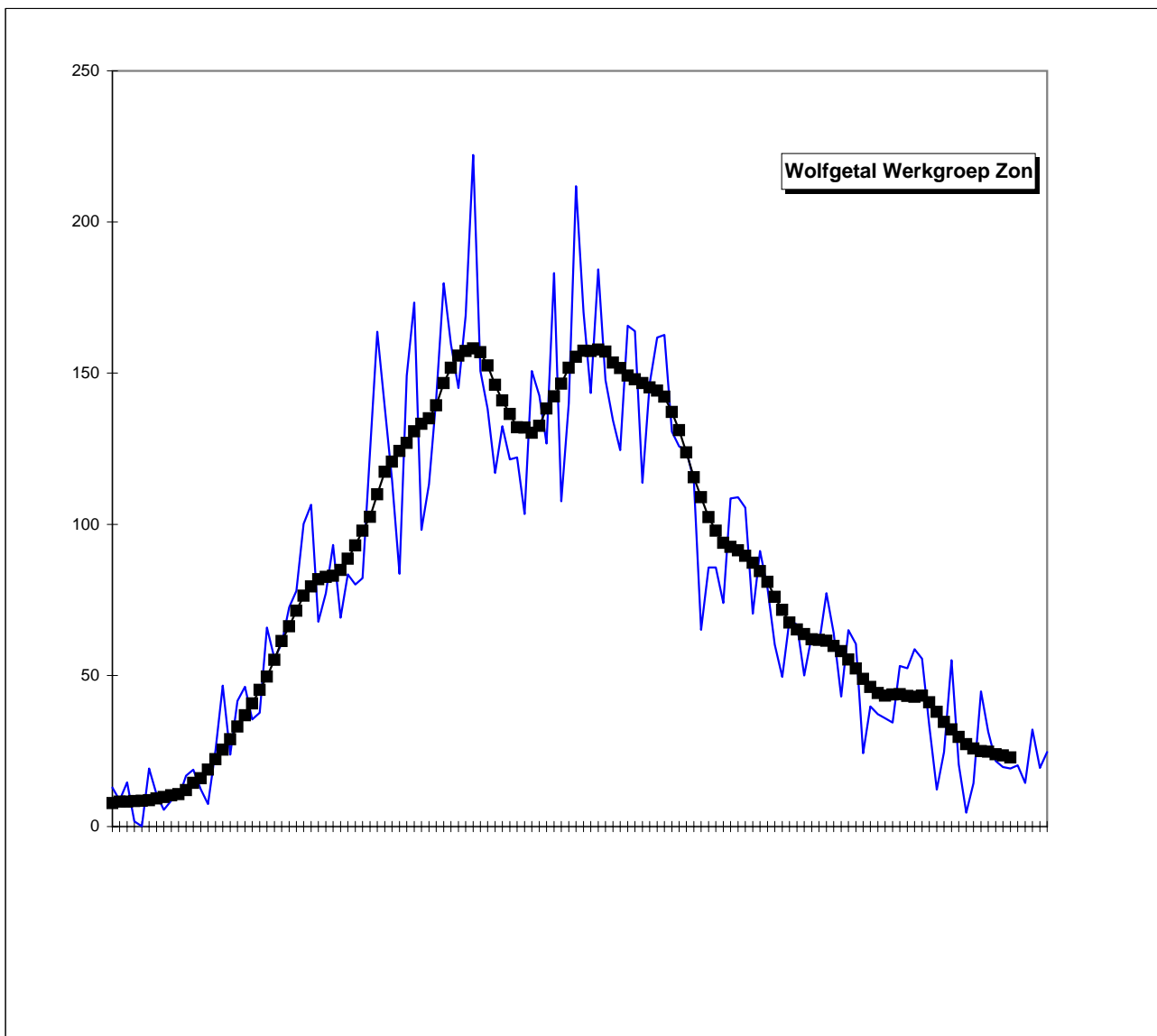
Monthly sunspot report

Polar faculae and CV numbers

Prominence numbers by the members

Monthly prominence report

Photo album and drawings



### Mean of February observations

Groups :	N	0,00	Wolfnumb	N	0	Beck :	68,3
	S	1,35		S	16	CV	18,6
	N+S	1,35		N+S	16		
254 observations	24 observers						

# Wolfnumbers Belgian Solar Observers

Month: February 2007

SIDC	L. Meeus			H.Coeckelberghs			Publ Obs Mira			O. Steen			F. Dubois			L. Claeys			G. Deman			A.T.Son			H. De Backer			Macharis			A Gabriel			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	g	f																		
1																																		1																					
2													2	16	36																		2																						
3		2	16	36		2	6	26				2	11	31		2	14	34		2	11	31		2	13	33		2	10	30		2	12	32	3																				
4						2	4	24				2	4	24		2	4	24		2	5	25											2	7	27	4																			
5																2	4	24																	2	4	24	5																	
6																							2	2	22										2	2	22	6																	
7													2	2	22		2	2	22		2	3	23												2	3	23	7																	
8									1	1	11		1	1	11		1	1	11		1	1	11												1	1	11	8																	
9			1	1	11								1	1	11		1	1	11																	1	1	11	9																
10													1	1	11																					1	1	11	10																
11		0	0	0		0	0	0					0	0	0		0	0	0		0	0	0												0	0	0	11																	
12		0	0	0		0	0	0					0	0	0		0	0	0		0	0	0													0	0	0	12																
13		0	0	0		0	0	0					0	0	0		0	0	0				0	0	0												0	0	0	13															
14																																							0	0	0	14													
15		0	1	2	12		0	0	0		0	0	0		1	1	11		0	0	0		1	2	12		1	2	12		0	0	0		0	0	0	15																	
16		0	0	0		0	0	0		0	0	0		0	0	0		0	0	0		1	1	11														0	0	0	16														
17		8										1	1	11		1	1	11		1	1	11							1	2	12		1	3	13		1	1	11	17															
18		8										1	1	11						1	2	12																1	4	14	18														
19																																									2	7	27	19											
20																																										2	5	25	20										
21		2	7	27						2	3	23		2	5	25		2	6	26		2	6	26		2	5	25		0	0	0		1	2	12		1	3	13	21														
22																																										2	3	23	22										
23			2	5	25																																					1	1	11	23										
24		8																																								1	1	11	24										
25		8																																								2	2	22	25										
26		15																																								2	3	23	26										
27		15																																												2	2	22	27						
28		8		1	1	11				1	1	11		1	2	12		1	2	12		1	2	12					1	2	12									1	5	15	28												
#																																												10,6	12,2	12,5	8	14	15,1	16,6	17,3	12,4	12,9	###	14,6

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			L. Gysel			R. Gadyne			E. De Ceuninck			S. Kleber			B. Tailieu			Dewaele			F. van Loo			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	g	f																					
1																																																1										
2																																																		2								
3		2	14	34						2	12	32		2	14	34					2	13	33		2	5	25		2	11	31		2	15	35														3									
4																																																				4						
5																																																				5						
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9			1	3	13						1	1	11																																							9						
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12		0	0	0		0	0	0					0	0	0																																						12					
13		0																																																					13			
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15		0																																																						15		
16		0	0	0		0	0	0		0	0	0		0	0	0																																						16				
17		8																																																					17			
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23																																																									23	
24		8		1																																																						

# Sunspotnumbers VVS Belgium

Month: February 2007

Day	GROUPS			WOLFNUMBER			RE'	CV	OBS
	N	S	N+S	N	S	N+S			
1	0	2	2	0	37,5	37,5	314	86	2
2	0	2	2	0	24	24			1
3	0	2	2	0	31,7	31,7	260	59	24
4	0	2	2	0	25,5	25,5	146	21	12
5	0	2	2	0	23,7	23,7	63	41	7
6	0	2	2	0	22,7	22,7	131		4
7	0	2	2	0	22,3	22,3	79	49	8
8	0	1	1	0	11,1	11,1	47	25	10
9	0	1	1	0	11,3	11,3	46	20	12
10	0	1	1	0	8,3	8,3	19	5	4
11	0	0	0	0	0	0	0	10	10
12	0	0	0	0	0	0	0	14	15
13	0	0	0	0	0	0	0	8	8
14									
15	0	1	1	0	4,4	4,4	1	1	17
16	0	0	0	0	0	0	0	0	12
17	0	1	1	0	14,2	14,2	29	8	12
18	0	1	1	0	15,4	15,4	86	7	5
19	0	2	2	0	28	28	72		2
20	0	2	2	0	22,5	22,5	52	5	14
21	0	1	1	0	15,3	15,3	24	2	8
22	0	2	2	0	18,6	18,6	76	12	12
23	0	2	2	0	16,1	16,1	54	11	16
24	0	1	1	0	11,5	11,5	46	9	10
25	0	2	2	0	16,3	16,3	57	9	13
26	0	2	2	0	22,5	22,5	49	15	2
27									
28	0	1	1	0	11,9	11,9	56	10	14
	<b>0,00</b>	<b>1,35</b>	<b>1,35</b>	<b>0,0</b>	<b>16,0</b>	<b>16,0</b>	<b>68,3</b>	<b>18,6</b>	<b>254</b>

Monthly mean: **16**    Covering: **26/28**    Spotless days: **4**  
 Observations: **254**    Number of observers: **24**

V.V.S. BELGIUM SOLAR SECTION    FRANKY DUBOIS

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 B8920 Langemark  
 Belgium  
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**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



# Prominence number Rp

## Belgian solar observers

Month: February 2007

Day	Q	Wedel		H	e	Rp	el. Obs	Stdev	OBS
1	2	2,5		5	10	60			1
2									
3	3,4	2,1		8,7	11,7	98,7	-3	20,3	10
4	3	2,5		6	7	67	-2	15,6	4
5	2,8	2,7		3,3	3,3	36,3		6,4	3
6	2,5	2,5		4,5	6	51		5,7	2
7	2,7	2,7		3,7	3,7	40,7		12,7	3
8	2,5	2,7		4	7,7	47,7	-1	2,1	4
9	2,6	2,5		5	7,8	57,8		8,3	5
10	3	2,8		9,0	16,5	106,5		2,1	2
11	2,4	3		6,5	9,8	74,8		19,3	4
12	2,9	2,3		4,2	8,2	50,2		13,8	5
13	2,6	2,8		5,8	7	65		5,7	4
14									
15	3,1	2,2		5,2	7,6	59,6		11,9	9
16	2,8	2,7		3,3	4	37		7,5	3
17	2,2	2,7		5,7	6,3	63,3	-1	13	4
18	3,5	2		3	4	34		17	2
19									
20	2	3,2		4	6,3	46,3		13	3
21	2,9	2		4	6,3	46,3		13	4
22	3	2,5		4,3	5	48		5,8	3
23	3	1,8		7,7	10,6	87,6		15,5	7
24	2,9	2,2		8	12,8	92,8		13	5
25	2,5	2,3		5,6	7,4	63,4		10,9	5
26									
27									
28	3,3	2,3		5,5	7,8	62,8	-1	7,3	5
	<b>2,77</b>	<b>2,48</b>		<b>5,3</b>	<b>7,7</b>	<b>60,7</b>	<b>8</b>	<b>10,9</b>	<b>97</b>

Monthly mean: **60,7**    Covering: **23/28**  
 Observations: **97**    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

**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 :  $H \cdot 10 + e$**

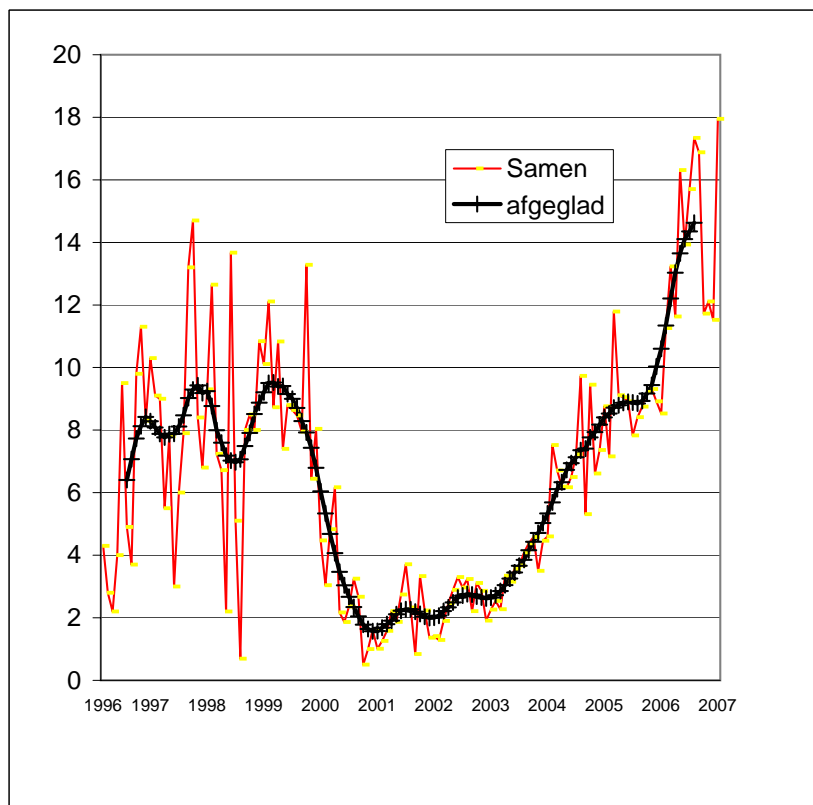
**More info at : <http://members.chello.be/j.janssens/>**

# Belgian Solar Observers

## Polar Faculae

Month: February 2007

Date	Dubois			Steen			Deman			Gabriel			Carels			Janssen		
	125mm F20			102mm F15			150mm F15			250 mm F20			150mm F8			200mm F10		
	North	South	Q	North	South	Q	North	South	Q	North	South	Q	North	South	Q	North	South	Q
1																		
2																		
3	4	16	3	4	5	3,5	17	29	3							3	11	3,5
4																		
5				4	7	3,5												
6																		
7				2	4	3,5												
8																		
9				2	6	3												
10																		
11				2	7	4												
12	4	14	3	5	7	3,5												
13	4	18	4	4	7	3,0	29	34	3									
14																		
15	4	15	3	5	4	3,0	23	28	3	31	36	3						
16																		
17																		
18										19	33	4						
19																		
20							6	17	2									
21				3	8	3,5	12	34	3									
22										18	34	4						
23	4	17	3	5	7	3,0	11	32	3									
24																		
25				6	9	3,5												
26																		
27																		
28				6	10	3,5												
	4,00	16,00		4,00	6,75		16,3	29,0		22,67	34,33		#####	#####		3,00	11,00	



## Cv numbers for February 2007

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	Mean
O. Steen			52	21	21		20	10	10	10	0	0	0		1	0	7	7		3	2	11	10	10	11	15	11		10,5
L.Meeus			89						10		0	0	0		2	0				9		12					10		13,2
J. Carels			38								0	0	0		0	0	11					9	8	8					9,3
F.Dubois			82		81		77	40	40		0	0	0		0	0	7			3	2	12	11	10	11		10		24,8
J.Janssen			22																										22,0
Sj Dufoer			68	21	21						0	0													7				19,5

### CV New ( J. Janssens )

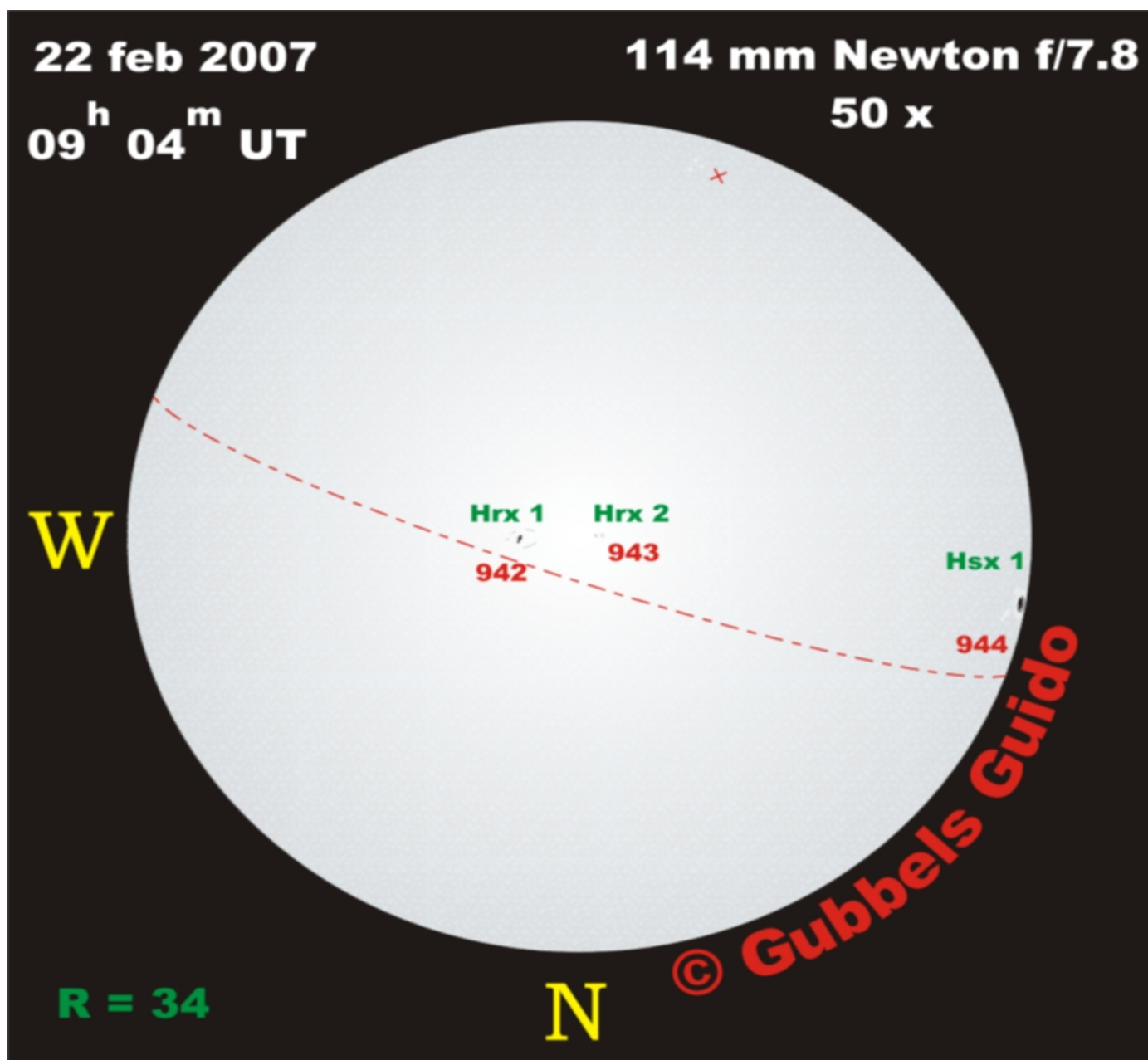
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	Mean
O. Steen			75	35	35		32	16	16	16	0	0	0		1	0	11	11		5	3	18	16	16	17	24	19		16,6

### CV New

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	Mean
O. Steen			75	35	35		32	16	16	16	0	0	0		1	0	11	11		5	3	18	16	16	17	24	19		16,6

### Special events and observations in february 2007

- 22/feb/07 Wilson effect in 944 ( G.Gubbels )
- 23/feb/07 Wilson effect in 944 ( G.Gubbels )
- 24/feb/07 Wilson effect in 944 ( G.Gubbels )



SIDC Weekly bulletin on Solar and Geomagnetic activity  
WEEK 319 from 2007 Feb 05  
SOLAR ACTIVITY

Solar activity was extremely low this week. The GOES X-ray level surpassed the B1 level only twice and fell even below the A1 level towards the end of the period.

On Feb 7, a long duration event reached the B1 level and late on Feb 8 a spike-like C1.2 flare -of unknown origin- occurred. The first event was associated with an eruption/dimming and was automatically detected in EIT images by the NEMO software (<http://sidc.be/NEMO/realtime.html>).

#### GEOMAGNETIC ACTIVITY

Geomagnetic activity was quiet during the period with the NOAA estimated Kp index never reaching the kp=4 level during the period. An {SIDC all quiet alert} was active from the previous period up till Feb 9 when the influence of a recurrent coronal hole became into view (see next period).

The solar wind did not show any prominent features throughout the whole period with wind speeds in the range 400-500km/s,

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SIDC Weekly bulletin on Solar and Geomagnetic activity  
WEEK 320 from 2007 Feb 12  
SOLAR ACTIVITY

Flaring activity was low this week. At the start of the week, the X-ray curve measured by GOES was well below the A-level. From Feb 15, a slight increase was visible in X-ray background radiation measured by GOES caused by the sunspot group with Catania number 23 (NOAA AR 0942). This group was new and popped up somewhere at the back side of the solar disk before rotating onto the visible side. One very confined C1.7-flare was measured on Feb 16. On Feb 17, 14:48UT, the CACTus software detected a partial halo CME with a median velocity of 504 km/s and an angular width of 240°. The plasma cloud was ejected mainly to the east. EIT was not available and GOES showed no flaring activity at that moment. There was no indication of the source of the CME. A glancing blow is possible. A first part of a large recurrent coronal hole passed the central meridian on Feb 09. The coronal hole has a southern part and a trailing equatorial extension.

#### GEOMAGNETIC ACTIVITY

The southern part of the coronal hole mentioned above became geoeffective on Feb 12 as the corotating interaction region carrying a more compressed magnetic field arrived at earth. Typically the B<sub>z</sub> component fluctuates strongly. At the end of Feb 13, active to minor storm conditions were estimated by NOAA Boulder. Because of the wide longitudinal extend of the coronal hole which was split into a southern and an equatorial part, the geomagnetic conditions were active until the first part of Feb 15.

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SIDC Weekly bulletin on Solar and Geomagnetic activity  
WEEK 321 from 2007 Feb 19  
SOLAR ACTIVITY

Solar activity was low for almost all the week despite starting brightly with an impulsive C1.1 flare which peaked at 00:10 UT on Feb 19th, the first day of the period. The flare erupted from NOAA AR 0943 at S12E16 but immediately preceded a SOHO data gap so it is not possible to say definitively whether or not there was a CME associated with it, though close inspection of LASCO images soonest after the flare suggest that there was no significant CME. For the duration of the week though the background soft X-ray flux only occasionally rose above the A-class threshold, while the 10.7cm radio flux was correspondingly low-level and stable. AR 0942 was a new active region that emerged to the NW of a recurrent coronal hole that had led to minor storm

conditions on previous rotations, with the result that the hole now appeared to be substantially smaller than during previous rotations.

#### GEOMAGNETIC ACTIVITY

Geomagnetic conditions remained very quiet all week with the only periods where Kp rose above 1 all week recorded on the first and last days, when Kp=2 was reached for a total of three periods. The K value at Niemegk was correspondingly low and stable, reaching 3 for a single isolated period late on Feb 22nd though this was not reflected in Kp. The overall lack of geomagnetic activity was due to the evolution of two coronal holes: the week began with the early exit from a fast stream while it ended with the late arrival of another, based on 27-day recurrence plots of solar wind speed and K-indices. In both cases, inspection of solar images indicated that the associated respective recurrent coronal holes had evolved substantially during the past rotation.

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SIDC Weekly bulletin on Solar and Geomagnetic activity  
WEEK 322 from 2007 Feb 26  
SOLAR ACTIVITY

The solar activity was very low during the whole week. Two minor active regions, of which a small H group, crossed the disk without producing any activity. Except for two isolated B subflares, the X ray background remained below A1 level at all times. The only significant feature was a recurrent coronal hole that was geoeffective in the middle of the week. However, the extent of this hole was significantly reduced compared to previous rotations because of the appearance of an active region in the middle of the hole. Note that the observed erosion of this coronal hole may lead to its disappearance over the upcoming rotation, and that its geoeffectiveness will be probably further reduced in any case.

#### GEOMAGNETIC ACTIVITY

The week started with a slow solar wind and a quiet magnetosphere. On Feb. 27, the solar wind speed started to rise due to a recurrent fast stream, causing a brief geomagnetic active period. However, the speed remained below 450km/s for one day before rising to a maximum of 650km/s on Feb.28. This induced active geomagnetic conditions from late Feb.27 to early March 1st, with minor storms at high latitudes. Compared to previous rotations, this stream arrived with a delay of almost two days and proved less geoeffective. This change can be attributed to the fragmentation of the associated coronal hole on the Sun, as described above. The duration of the disturbance was thus also shorter, and the solar wind speed started to decline on March 1st, to finally reach a minimum of 350km/s on March 4. The geomagnetic field was thus mostly quiet for the rest of the week. On the last day of the week, the solar wind speed increased slightly again, probably heralding the recurrence of a weak stream that could induce unsettled conditions early next week.

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