

# Newsletter Belgian Solar Observers

Results and news for solar observers

Volume 15

Number 167

January 2010

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## Content Newsletter

Graphics and relative number for this month

Daily Wolfnumbers by the members

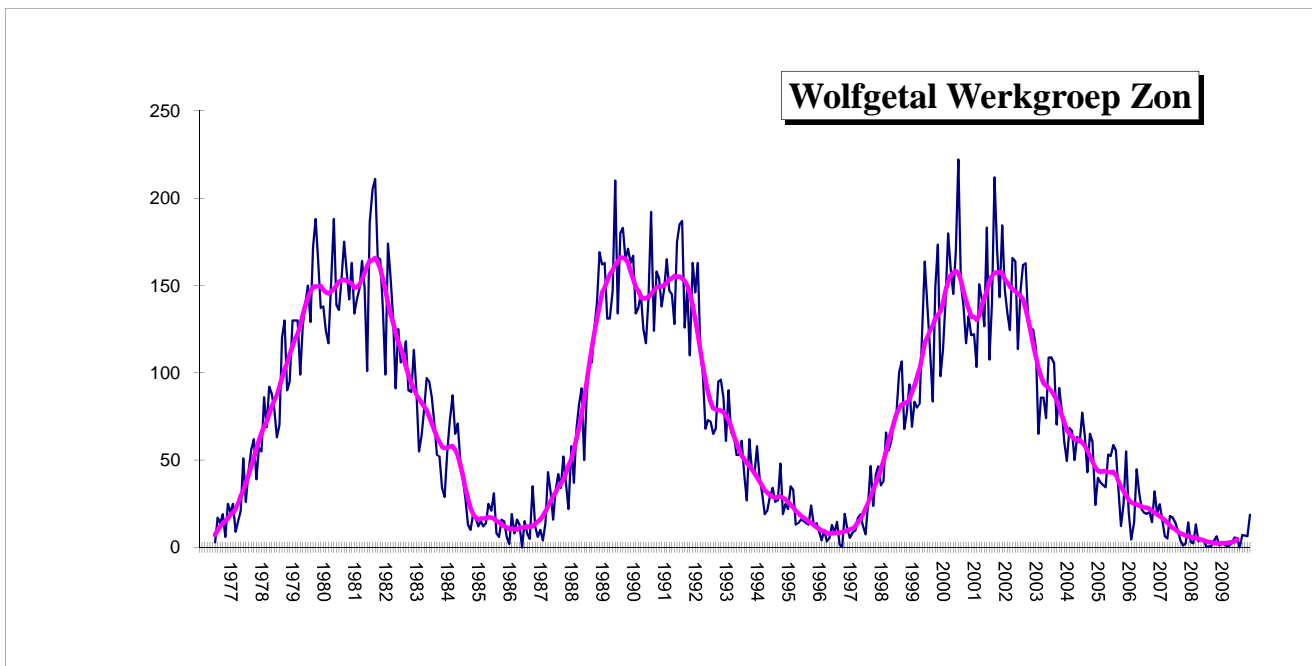
Monthly sunspot report

Polar faculae and CV numbers

Prominence numbers by the members

Monthly prominence report

Photo album and drawings



### Mean of January observations

N	0,54	Wolfnumb N	9,6	Beck :	170
S	0,63	S	8,4	CV	19,5
N+S	1,17	N+S	18		
210 observations	28 observers				



# Sunspotnumbers VVS Belgium

Month: **January 2010**

Day	GROUPS			WOLFNUMBER			RE'	CV	OBS
	N	S	N+S	N	S	N+S			
1	0	1	1	0	18,1	<b>18,1</b>	153	20,5	12
2	0	1	1	0	19,9	<b>19,9</b>	198	25,8	12
3	0	1	1	0	17,7	<b>17,7</b>	137	27,6	22
4	0	1	1	0,0	15,8	<b>15,8</b>	91	22	9
5	0	1	1	0	8,7	<b>8,7</b>	26	6	13
6	0	1	1	0	3,7	<b>3,7</b>			3
7	1	0	1	4,3	0	<b>4,3</b>	3	0,4	11
8	1	0	1	13,8	0	<b>13,8</b>	45	5,5	4
9	1	0	1	16	0	<b>16,0</b>	24	2	1
10									
11									
12									
13	1	0	1	37	0	<b>37,0</b>	1050		2
14	1	0	1	21,2	0	<b>21,2</b>	543	42,85	14
15	1	0	1	30,5	0	<b>30,5</b>	513	56	2
16	1	0	1	18	0	<b>18,0</b>	200	32	1
17	1	0	1	18,3	0	<b>18,3</b>	146	27	18
18									
19									
20	0	1	1	0	11,9	<b>11,9</b>	45	17,5	8
21									
22	1	1	2	11,1	16,8	<b>27,9</b>	202	20,3	9
23	1	1	2	17,5	16,5	<b>34,0</b>	136	24	2
24									
25	1	1	2	18	13	<b>31,0</b>	88	17	1
26	1	1	2	8	11,7	<b>19,7</b>	54	14,6	16
27	0	1	1	0	16,5	<b>16,5</b>	44		4
28	0	1	1	0	14,2	<b>14,2</b>	90	9,3	9
29	0	1	1	0	13,5	<b>13,5</b>	20		2
30	0	1	1	0	2,5	<b>2,5</b>	2	1	17
31	1	0	1	17,8	0	<b>17,8</b>	99	18,5	18
	<b>0,54</b>	<b>0,63</b>	<b>1,17</b>	<b>9,6</b>	<b>8,4</b>	<b>18,0</b>	<b>170,0</b>	<b>19,5</b>	<b>210</b>

Monthly mean: **18,0** Covering: **24/31** Spotless days: **0**  
 Observations: **210** Number of observers: **28**

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

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 Belgium  
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**Observers:**

**De Ceuninck ; Janssens ; Publ obs Mira ; Bourgeois ; R.Dezeure ; F.Feys  
 De Backer; Dubois ; Gysel ; Kleber ; Deman ; Taillieu ; Carels ; Dewaele  
 Meeus ; Steen ; KSB ; Gabriel ; Claeys ; Thooris ; J.Bonse ; P.De Reu  
 Claes ; Verboven ; Van Loo ; Son ; Coeckelberghs ; Gadyne ; Dekelver  
 S.Dufoer ; G.Gubbels ; J Bavais ; A. De Kerchove ; J.Bruyland ; Van Hessche**



# Prominence number Rp

## Belgian solar observers

Month: January 2010

Day	Q	Wedel	H	e	Rp	el. Obs	Stdev	OBS
1	2,5	2	2,3	2,8	<b>25,8</b>		6,5	4
2	2,7	2	4,3	8	<b>51</b>		6,7	3
3	2,9	2,1	3,5	3,8	<b>38,8</b>	3	11,5	7
4	2,7	2	3,7	4,7	<b>41,7</b>	1	13,6	4
5	3,2	2	5	8	<b>58</b>	1	10,5	4
6	2,7	2,2	6,3	8,3	<b>71,3</b>		14,5	3
7	2,8	2	5,7	8,3	<b>65,3</b>		7,5	3
8	2,7	2	2,5	4	<b>29</b>	1	8,5	3
9								
10								
11								
12								
13								
14	3,2	2	2	2,7	<b>22,7</b>	1	1,2	4
15								
16								
17	3,2	1,6	3,4	6	<b>40</b>	1	7,9	6
18								
19								
20	3	2,5	6	7,5	<b>67,5</b>		13,4	2
21								
22	3	2,3	3,5	5,5	<b>40,5</b>		10,6	2
23								
24								
25								
26	2,7	2,2	3,7	5	<b>42</b>		7,5	4
27								
28	3	2,3	1,7	4	<b>21</b>		7,6	3
29								
30	2,7	2,3	3,3	3,7	<b>36,7</b>		6,9	4
31	3,3	2	6,5	7,5	<b>72,5</b>	1	6,4	3
	<b>2,89</b>	<b>2,09</b>	<b>4,0</b>	<b>5,6</b>	<b>45,2</b>	<b>9</b>	<b>8,8</b>	<b>59</b>

Monthly mean: **45,2** Covering:  
Observations: **59** Number of observers: **11**

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**Observers:**

**Steen ; Dubois ; Meeus ; De Ceuninck ; Coeckelberghs ; Janssens  
Hambisch ; 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 :  $H \cdot 10 + e$**

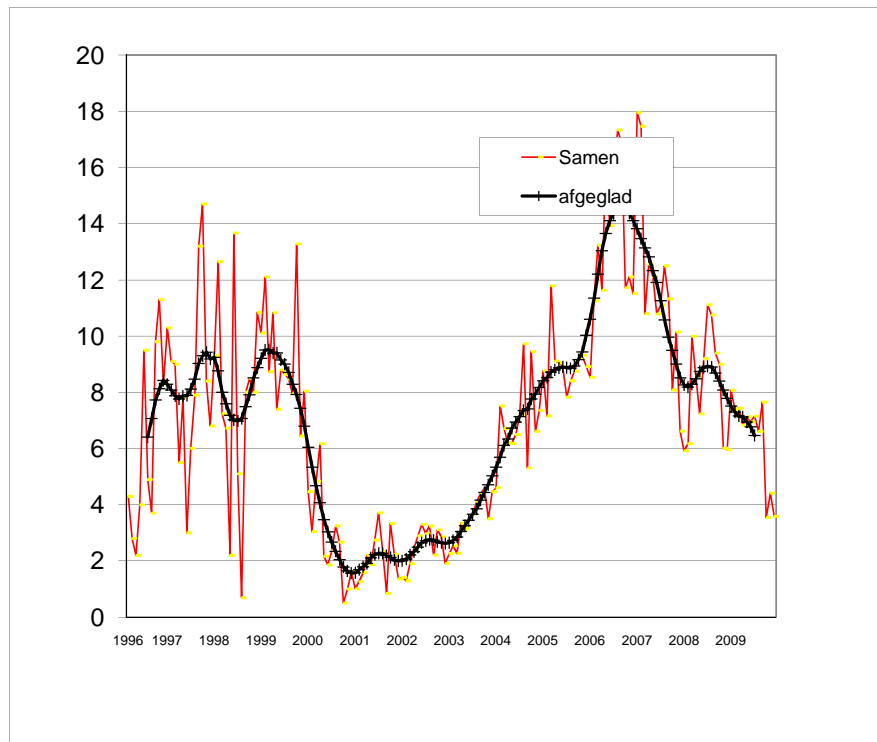
**More info at : <http://members.chello.be/j.janssens/>**

# Belgian Solar Observers

## Polar Faculae

Month: January 2010

Date	Dubois 125mm F20			Steen 102mm F15			Deman 150mmF15			Gabriel 250 mm F20			Dekelver 150mm F8			Janssen 200mmF10			T.Spaninks 127mm F15			G.Gubbels 114mm F7,8			M. Szulc 60mm F15			
	North	South	Q	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				3	3	3,0																					
2				3	4	3,5																			1	1	G	
3				5	5	3,5	7	8	3						2	3	3,5	0	0	3	2	3	2,5	0	2	G		
4													0	0	2,5									0	1	G		
5	0	1	3	2	2	3,5																		0	1	G		
6																												
7				1	3	3,0							2	0	2,5					0	0	4						
8																									1	1	G	
9																												
10																												
11																								0	3	G		
12																												
13																								0	3	G		
14				1	3	3,5																	2	3	3	1	4	G
15																												
16													0	0	2,5													
17	5	4	3	2	4	3,0						0	0	2					0	0	4							
18																												
19																												
20																									2	3	G	
21																												
22																			0	1	3	4	3	3,5	0	3	G	
23													0	0	4										2	2	G	
24																									2	4	G	
25																									1	2	G	
26																					2				2	4	G	
27																												
28	1	3	3																									
29																												
30				2	5	3,5							0	0	3					0	0	4	4	2	3	0	2	G
31				1	4	3,5													0	0	4	4	2	3	2	5	G	
	2,00	2,67		2,22	3,67		7,0	8,0		#####	#####		0,33	0,00		2,00	3,00		0,00	0,17		3,17	2,50		0,88	2,56		



Different Relative Sunspotnumbers

Month : January 2010

CV												Pettisindex SN						Intersol IS							
Date	F.Dubois	O.Steen	L.Meeus	J.Carels	J.Janssens	P.J. Dekelver	G.Gubbels	H.De Backer	D.Van Hesseche	R.verboven	S.Dufoer	Mean	R.Verboven	G.Gubbels	F.Dubois	P.J. Dekelver	O.Steen	J.Carels	F.Feys	Mean	F.Dubois	J.Carels	G.Gubbels	P.J. Dekelver	Mean
1		25		19			22					22,0					26	25		25,5					8,0
2	31	25				25	22		25			25,6		34	32		26			30,7	12		10		11,0
3	31	28	25	22	22	25	22	49	25			27,7	41	32	37		36	24		32,3	12	9	8		9,7
4	19	22				22	25					22,0			22	20	22			21,3	5		6		5,5
5	7	7	7				4					6,3			10		37			23,5	1				1,0
6		1										1,0				1				1,0					
7	0	1	0	1		1	0					0,5			0	2	1			1,3	0	1		2	1,0
8	1	2		10								4,3			4	5	11			6,7	5	2			3,5
9				2								2,0					6			6,0		7			7,0
10																									
11																									
12																									
13																									
14	46	56	22				56	47				45,4		67	45		38			50,0	16		24		20,0
15	56											56,0			56					56,0	17				17,0
16						32						32,0				22				22,0				9	9,0
17	9	8	25	39		32		22	39	23		24,6	42		24	27	25	25		25,3	9	9		11	9,7
18																									
19																									
20							25	10				17,5		22						22,0			5		5,0
21																									
22		30	21				30	10				22,8		64			28			46,0			15		15,0
23						24						24,0				50				50,0				19	19,0
24																									
25	17											17,0			29					29,0	13				13,0
26	16	19	12	9			19	17				15,3		39	26		25	14		26,0	10	6	15		10,3
27																									
28	7	7					11	10				8,8		22	11		10			14,3	2		6		4,0
29		1										1,0					2			2,0					
30	0	0	0	0		0	0	0	0			0,0		0	0	0	0	0		0,0	0	0	0	0	0,0
31	22	22	8			2	28	19	32			19,0	23	8	25		27			20,0	8		9		8,5
##	18,7	15,9	13,3	12,8	22,0	18,5	21,4	17,1	26,8	26,3	#####	17,9	35,3	32,0	22,9	20,2	19,4	13,3	####	23,22	7,9	5,3	10,2	7,8	8,86

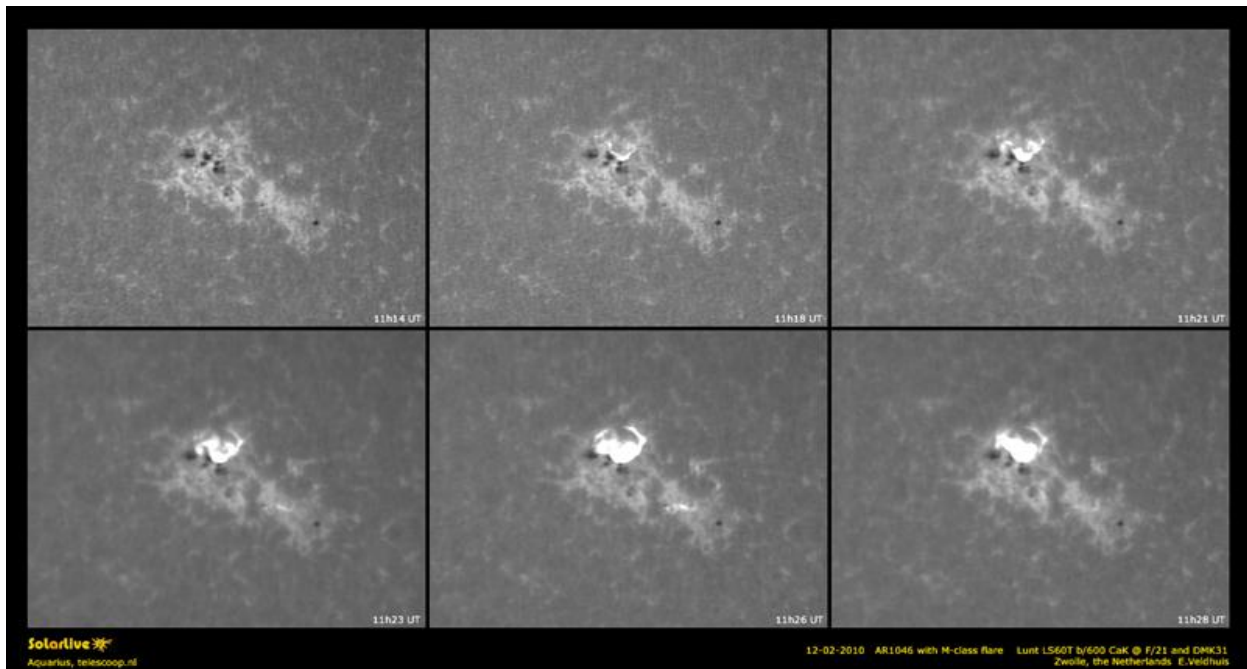
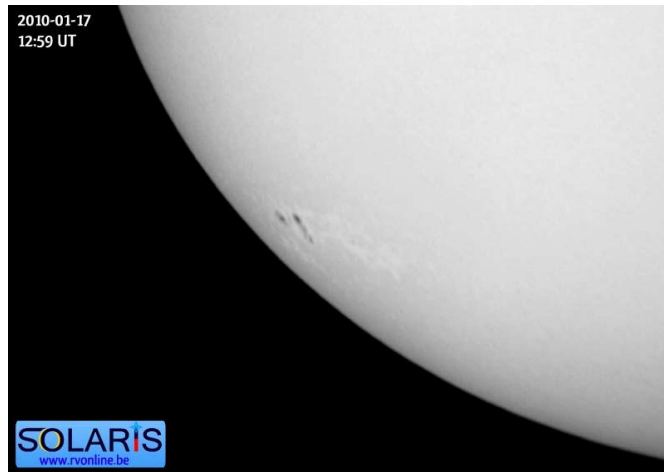
Becknumber

Date	F.Dubois	O.Steen	L.Meeus	P.J. Dekelver	J.Carels	G.Gubbels	S.Dufoer	D.Van Hesseche	R.Verboven	F.Feys	A.T.Son	J.Bourgeois	H.Coeckelberghs	De Backer	Pbl Obs Mira	J.Claes	E.De Ceuninck	Mean	Date					
1		144			126					216				108			162		151	1				
2	198	198			162			144		306				180					198	2				
3	198	180	90		144	126		126	108	180	144			108		120	162		141	3				
4	72	72		90						126				54		112			88	4				
5	37	37	44								4		0	37			8		24	5				
6		4																	4	6				
7	0	8	0	8	4									0			8		4	7				
8	16	20			74														37	8				
9					24														24	9				
10										378									378	10				
11										540									540	11				
12																				12	12			
13										1050									1050	13				
14	375	475	288			575				1250	396		540	400		684	375		536	14				
15	400									625									513	15				
16				200															200	16				
17	64	80	108	250	64			72	225	136	162			126			250		140	17				
18																				18	18			
19																				19	19			
20						72				20	12			74					45	20				
21										96									96	21				
22			138	228		204					312			64					189	22				
23					136														136	23				
24																				24	24			
25	88																		88	25				
26	64	120	56		40	104				32				40		40	56		61	26				
27										84							4		44	27				
28	74	37			40					238				74			24		81	28				
29		8								20									14	29				
30	0	0	0	0	0	0		0		16				0			0		2	30				
31	126	180	64		32		108	225	80	52				126		32	144		106	31				
##	122	106,3	97,6	114,0	59,5	146	####	77	176	300	155	#####	270	99	####	198	108		181,0					

# Sunspot activity from organisations all over de world

Month : **December 2009**

Organisation	Wolf Total	Wolf North	Wolf South	Groups	Faculae number	CV	Beck	Pettis index	Intersol	Area	prom MDF	prom Rp	Filam & plages	Radio flux	Naked eye	Polar Faculae
<b>NOAA SWO</b>	<b>15,7</b>													<b>76,8</b>		
<b>SIDC</b>	<b>10,6</b>	<b>6,9</b>	<b>3,7</b>													
<b>Kanzelhöhe</b>	<b>9,60</b>															
<b>G.F.O.E.S France</b>	<b>9</b>														<b>0</b>	
<b>BSO Belgium</b>	<b>15,8</b>	<b>11,5</b>	<b>4,3</b>	<b>1,04</b>			<b>85,2</b>	<b>15,3</b>	<b>7,24</b>			<b>46,7</b>				
<b>S.O.G.S.A.S. Switzerland</b>	<b>12,7</b>			<b>0,7</b>												
<b>BAA</b>	<b>13</b>			<b>0,79</b>							<b>1,52</b>		<b>0,47</b>			
<b>GsRSI Italy</b>	<b>16,3</b>											<b>37,9</b>				
<b>CV Helios Network</b>						<b>12,7</b>										
<b>AAVSO</b>																
<b>Sonne Germany Preliminary</b>	<b>10,1</b>															
<b>O.A.A. Japan</b>	<b>13</b>	<b>8,6</b>	<b>4,4</b>													
<b>Solar Observer Society TOS Poland</b>	<b>14,2</b>				<b>1,38</b>	<b>13,6</b>				<b>136</b>						
<b>Astronomical League of the Philippines</b>																





SIDC Weekly bulletin on Solar and Geomagnetic activity  
WEEK 472 from 2010 Jan 11

#### SOLAR ACTIVITY

Solar activity was low to moderately active with the transit of NOAA AR 1040, which was about 20 degrees east of the central meridian on Jan. 11th. It produced 3 C-flares during the week.

#### GEOMAGNETIC ACTIVITY

Geomagnetic activity was extremely low during the whole week.

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SIDC Weekly bulletin on Solar and Geomagnetic activity  
WEEK 473 from 2010 Jan 18

#### SOLAR ACTIVITY

The week started with NOAA AR 11040 disappearing over the west limb, on January 18.

On January 19, NOAA AR 11041 (ex NOAA AR 11039, Catania number 37, Beta magnetic configuration) rotated onto the visible solar disk and created the largest peak in solar activity in 2 years. It produced 6 M-class flares in 48 hours, the largest one was an M3.4 flare with peak at 17:55 UT on January 20, location S24E88. From January 21 onwards, solar activity decayed and no more M-class flares were seen. On January 22, a sunspot group with Catania number 38 (Beta magnetic configuration, it was given NOAA number 11042 on January 23) emerged at N21W19, but it did not produce any significant activity.

#### GEOMAGNETIC ACTIVITY

There was a minor geomagnetic storm during one 3-hour period (Kp=5) starting at 15:00 UT on January 20, caused by the late arrival of the fast solar wind from a coronal hole. No more disturbances were recorded.

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SIDC Weekly bulletin on Solar and Geomagnetic activity  
WEEK 474 from 2010 Jan 25

#### SOLAR ACTIVITY

Three sunspot groups were recorded on the solar disk during the week: Catania numbers 37, 38 and 39 (NOAA ARs 1041, 1042 and 1043 respectively). Catania sunspot group 38 was active in the beginning of the week. It produced several B-class flares on January 26-27, the strongest one being the B6.7 flare on January 26. Late on January 27 it disappeared behind the west limb. Catania sunspot group 37 produced several B-class flares on January 27-28, the strongest one being the B4.0 flare on January 28. Catania sunspot group 39 emerged rapidly on January 30 and produced several B-class flares on January 30-31, including the B4.8 flare on January 31.

#### GEOMAGNETIC ACTIVITY

During the most of the week, the Earth was inside a slow solar wind stream (speed below 400 km/s). The geomagnetic conditions were quiet. On January 30-31 a slightly faster solar wind stream arrived (peak speed  $\mu$

around 450 km/s), accompanied by the interplanetary sector boundary crossing early on January 31. The interplanetary magnetic field north-south component in the stream interaction region was fluctuating and not very strong (down to -5 nT only). The geomagnetic conditions remained quiet.

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SIDC Weekly bulletin on Solar and Geomagnetic activity  
WEEK 475 from 2010 Feb 01

#### SOLAR ACTIVITY

Solar activity was very quiet until Feb. 5th when a new active region appeared at about N25E35. It was labeled AR 1045 the next day by NOAA. It produced 3 M-class flares between Feb. 6th and Feb. 7th, the biggest one peaking at M6.4 on Feb. 7th, 02:34 UT. It was linked to a halo CME observed by the LASCO coronagraphs.

#### GEOMAGNETIC ACTIVITY

Geomagnetic activity was rather weak during the whole week. There was a brief period of unsettled conditions (k=4), observed at Dourbes observatory, on Feb. 2nd, due to the crossing of a fast solar wind stream by the Earth.

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SIDC Weekly bulletin on Solar and Geomagnetic activity  
WEEK 476 from 2010 Feb 08

#### SOLAR ACTIVITY

Several M-flares occurred this week. The source region was NOAA AR 1045/Catania 40. NOAA AR 1046/Catania 41 was responsible for the M8.3 flare of Feb 12.

The M6.4 flare of Feb 07, peaking at 02:34UT was associated with a plasma eruption which was Earth directed. The active region 1045 was at that moment located near the central meridian. The projected speed of the CME was calculated to be 339 km/s by CACTus, a software to automatically detect CMEs in LASCO images. On Feb 13, at the position N30E30, a coronal dimming and a running wave front in a series of EIT-images are visible. The event started at 12:36T. The dimming and the EIT wave are on-disk signatures of the ejection of a plasma cloud. CACTus detected a very small cloud at 14:06UT. The only flaring activity, a C9.5 flare, at that moment came from an active region at that moment behind the east limb. The flare and the coronal dimming/EIT-wave are probably not associated. However, CACTus spotted a partial halo CME with an projected speed of 306 km/s at 19:54UT.

#### GEOMAGNETIC ACTIVITY

Geomagnetic activity was low this week.

ACE data show the arrival of two magnetic structures. Early Feb 11, a jump in the magnetic field strength occurred. This structure is possibly linked with the CME associated with the M6.4 flare of Feb 07. The geomagnetic response was minor: Kp became 2.

On Feb 15, another magnetic structure arrived. This can be redrawn to the partial halo CME seen on Feb 13. The Kp went up to 4 late Feb 15-early Feb 16.