

# Newsletter Belgian Solar Observers

Results and news for solar observers

Volume 15

Number 170

April 2010

Franky Dubois Poelkappellestraat 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

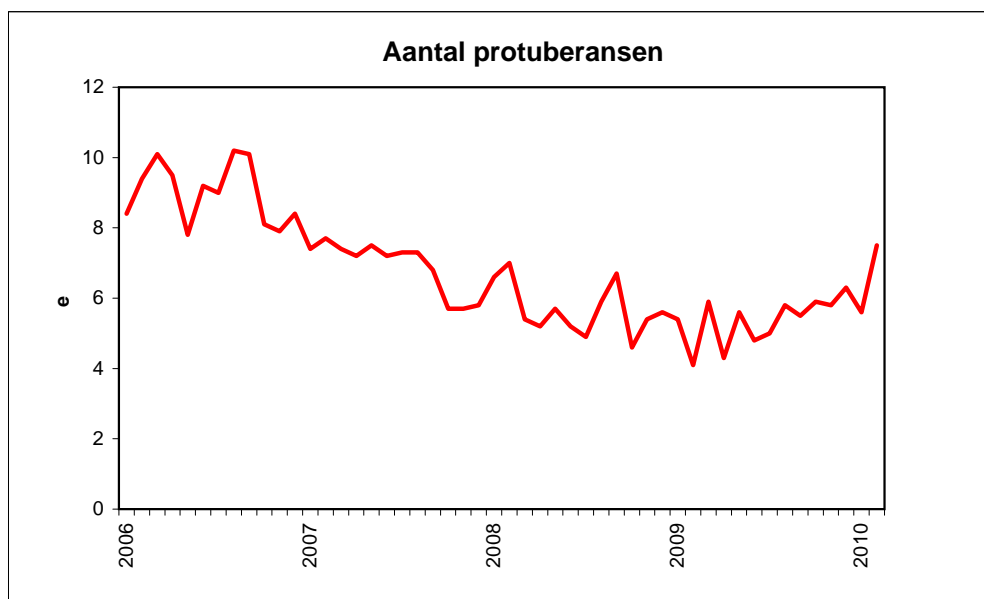
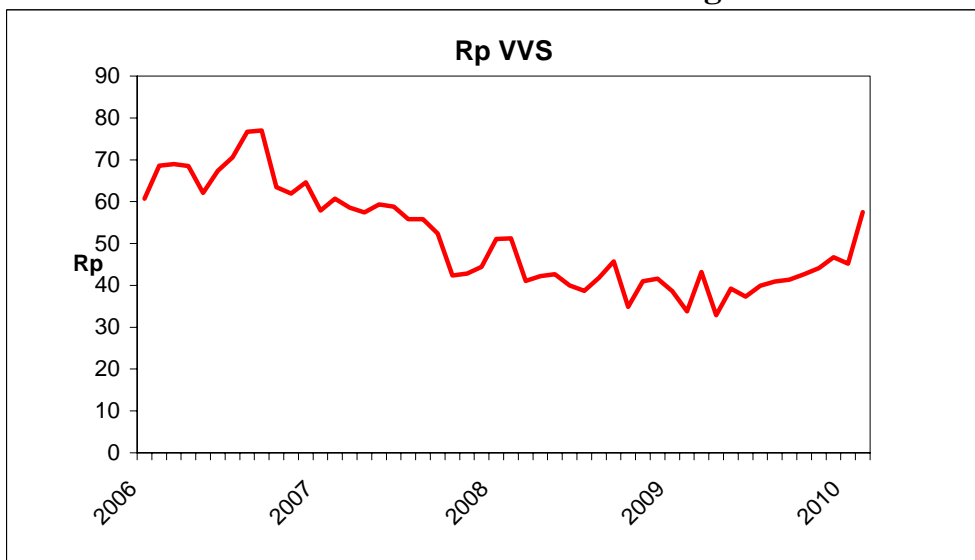
Monthly sunspot report

Polar faculae and CV numbers

Prominence numbers by the members

Monthly prominence report

Photo album and drawings



### Mean of April observations

Groups :	N	0,80	Wolfnumb N	7,6	Beck :	44,5
	S	0,30	S	3,4	CV	8,3
	N+S	1,10	N+S	11,04		
523 observations	27 observers					



# Sunspotnumbers VVS Belgium

Month: April 2010

Day	GROUPS			WOLFNUMBER			RE'	CV	OBS
	N	S	N+S	N	S	N+S			
1	1	1	2	13,8	13,2	27,0	218	32	18
2	1	1	2	14,1	13,4	27,5	275	42	17
3	1	1	2	13,4	14,9	28,3	226	42	12
4	3	1	4	29,2	13,8	43,0	156	34	11
5	2	1	3	21,5	10,9	32,4	56	14	14
6	2	1	3	26,5	9,3	35,8	147	29	21
7	3	0	3	29,1	0	29,1	87	21	12
8	3	0	3	21,9	0	21,9	38	10	16
9	1	0	1	11,9	0	11,9	43	9	21
10	1	0	1	11,2	0	11,2	19	4	19
11	0	0	0	0	0	0	0	0	18
12	0	2	2	0	16,9	16,9	31	5	19
13	0	1	1	0	9,7	9,7	12	2	23
14	0	0	0	0	0	0	0	0	18
15	0	0	0	0	0	0	0	0	20
16	0	0	0	0	0	0	0	0	14
17	0	0	0	0	0	0	0	0	22
18	0	0	0	0	0	0	0	0	18
19	0	0	0	0	0	0	0	0	17
20	0	0	0	0	0	0	0	0	22
21	1	0	1	7,9	0	7,9	5	1	16
22	1	0	1	6,6	0	6,6	5	1	23
23	0	0	0	0	0	0	0	0	19
24	0	0	0	0	0	0	0	0	19
25	1	0	1	5	0	5,3	4	1	18
26	0	0	0	0	0	0	0	0	16
27	1	0	1	2,0	0	2,0	2	1	17
28	1	0	1	6,4	0	6,4	4	1	16
29	0	0	0	0	0	0	0	0	14
30	1	0	1	8	0	8,2	7	1	13
	0,80	0,30	1,10	7,6	3,4	11,04	44,5	8,3	523

Monthly mean: **11,0** Covering: **30/30** Spotless days: **12**  
 Observations: **523** Number of observers: **27**

V.V.S. BELGIUM SOLAR SECTION FRANKY DUBOIS

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

Observers:

De Ceuninck ; Janssens ; Publ obs Mira ; Bourgeois ; R.Dezeure ; F.Feys  
 De Backer; Dubois ; Gysel ; Kleber ; Deman ; Taillieu ; Carels ; Dewaele  
 Mees ; 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

VVS Belgian Solar Observers Prominence number Rp

Main table for April 2010 observations by J. Janssens, F. Dubois, E. De Ceunick, F. Feys, J. Hamsch, G. Deman, and Lille. Columns include Day, time, Q, W, H, e, Rp, and summary statistics at the bottom.

Main table for April 2010 observations by O. Steen, H. Coekelberghs, J. Claes, A. Gabriel, T. Spaninks, and G. Gubbels. Columns include Day, time, Q, W, H, e, Rp, and summary statistics at the bottom.

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: April 2010

Day	Q	Wedel		H	e	Rp	el. Obs	Stdev	OBS
1	3,4	1,9		5,5	7,5	62,5	1	10,7	7
2	2,8	2,4		5,0	8	58		10,1	8
3	3,4	1,7		4,5	6,3	51,3		7,1	6
4	3,3	1,6		5,5	6,8	61,8	1	10,2	5
5	3,5	2		4,3	6	49	1	5,8	4
6	3,5	1,6		7	13,7	83,7	2	8	8
7	3,3	1,7		7	11,3	81,3	1	2,1	4
8	3,3	1,4		7,5	10,7	85,7	2	12,9	8
9	3,8	1,7		6,2	11,7	73,7	2	11,9	8
10	3,6	1,8		4,6	6,3	52,3	2	13,3	9
11	3,4	1,6		5,1	9,1	60,1	2	10,8	9
12	3,1	1,9		5,7	14,1	71,1		11	7
13	3,8	2,1		5,7	8	65		16,1	9
14	3,4	2,1		4,8	7,5	55,5	1	11,1	7
15	3,6	1,8		3,7	6,4	43,4		12,3	9
16	3,4	2		5	7,2	57,2		11	9
17	3,5	1,7		5,3	8,3	61,3	2	16,1	9
18	3,8	1,5		5,1	8,6	59,6	2	20	9
19	3	2,5		5,5	7,8	62,8	2	11,3	6
20	3,2	2,1		5,4	8,6	62,6		12,2	8
21	3,5	1,7		6,5	9	74	2	5,1	6
22	3,3	2,1		5,4	7,3	61,3	1	8,5	10
23	3,4	2,1		5,5	8,1	63,1	2	12,2	10
24	3,2	2,2		6,5	9,3	74,3	3	16,9	9
25	3,5	2		5,3	7,9	60,9	1	12,8	8
26	4	2		6	9	69	2	12	7
27	4,1	1,5		5,5	10,2	65,2	3	11,8	8
28	3,3	2		4,3	8,4	51,4	1	7	8
29	3,7	2,4		3	5,3	35,3	1	9,5	5
30	3,3	1,8		4,2	7,8	49,8	1	6,2	6
	<b>3,45</b>	<b>1,90</b>		<b>5,4</b>	<b>8,5</b>	<b>62,1</b>	<b>38</b>	<b>10,9</b>	<b>226</b>

Monthly mean: **62,1**    Covering: **30/30**  
 Observations: **226**    Number of observers: **10**

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

Poekapellestraat 39  
 B8920 Langemark  
 Belgium  
 e-mail : [astrosun@skynet.be](mailto:astrosun@skynet.be)

### Observers:

Steen ; Dubois ; Meeus ; De Ceuninck ; Coeckelberghs ; Janssens ; Feys  
 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 :  $H*10+e$

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

**Different Relative Sunspotnumbers**

**Month : April 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 Hessche	R.verboven	Mean	G.Gubbels	F.Dubois	P.J. Dekelver	O.Steen	J.Carels	Mean	F.Dubois	J.Carels	G.Gubbels	P.J. Dekelver	Mean	
1	47	14	21	8		77	45	44	47		37,9		23	24	24	21	20	22,4	7	3	18	8	9,0
2	46	17	48				47	44		47	41,5		23	22		21		22,0	9		10		9,5
3	45	19		51			50			47	42,4		23	22		25	24	23,5	10	9	9		9,3
4	50	11		11			63				33,8		37	35		21	25	29,5	13	10	15		12,7
5	10	9		14		5	23				12,2		26	23	10	19	16	18,8	17	9	11	13	12,5
6	26	22		24		33	41		30	32	29,7		50	36	40	26	34	37,2	14	10	19	18	15,3
7	29	12		23		64					32,0			25	34	22	30	27,8	10	6		12	9,3
8	14	11		7			10		10	10	10,3		10	16		12	14	13,0	8	6	1		5,0
9	10	10		4		19	10		10	10	10,4		10	10	11	10	10	10,2	1	1	3	3	2,0
10	5	1		1	1	7	10		0	10	4,4		10	12	10	1	1	6,8	4	1	1	2	2,0
11	0	0		0	0	0	0	0	0		0,0		0	0	0	0	0	0,0	0	0	0	0	0,0
12	2	3	6	3		9	6	10			5,6		15	6	19	4	5	9,8	7	6	9	12	8,5
13	1	3	1	1		9	2	1		5	2,9		5	1	13	5	1	5,0	1	1	6	6	3,5
14	0	0		0		0	0	0	0		0,0		0	0	0	0		0,0	0	0	0	0	0,0
15	0	0		0		0	0	0	0		0,0		0	0	0	0		0,0	0	0	0	0	0,0
16	0	0		0		0	0	0	0		0,0		0	0	0	0		0,0	0	0	0	0	0,0
17	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
18	0	0	0	0	0		0	0	0		0,0		0	0	0	0		0,0	0	0	0	0	0,0
19	0	0		0		0	0	0	0		0,0		0	0	0	0		0,0	0	0	0	0	0,0
20	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	1	1	1	1		1	1	0	0	1	0,8		2	1	1	1	1	1,2	1	1	3	1	1,5
22	2	2	1	1		0	1	1	1	1	1,1		2	3	0	3	1	1,8	4	1	3	0	2,0
23	0	1	0	0	0		0	0	0	0	0,1		0	0		1	0	0,3	0	0	0		0,0
24	0	0	0	0	0		0	0	0	0	0,0		0	0	0	0	0	0,0	0	0	0		0,0
25	0	1		1	1	0	0	0	0	0	0,4		0	0	0	2	3	1,0	0	3	0	0	0,8
26	0	0	0	0		0	0	0	0		0,0		0	0	0	0		0,0	0	0	0		0,0
27	0	0	0	2		0	0	0	0		0,3		0	0	0	2		0,5	0	2	0		0,7
28	1	1	2	1		2	0				1,2		3	1		1	1	1,5	1	1	4		2,0
29	0	0		0			0				0,0		0		0	0		0,0	0	0			0,0
30	1	1					1				1,0			2		2		2,0	3				3,0
##	9,7	4,6	5,7	5,7	0,3	14,0	11,5	4,6	9,7	11,6	8,9		8,9	8,0	10,1	6,6	7,0	7,81	3,7	2,6	4,1	4,7	3,62

**Becknumber**

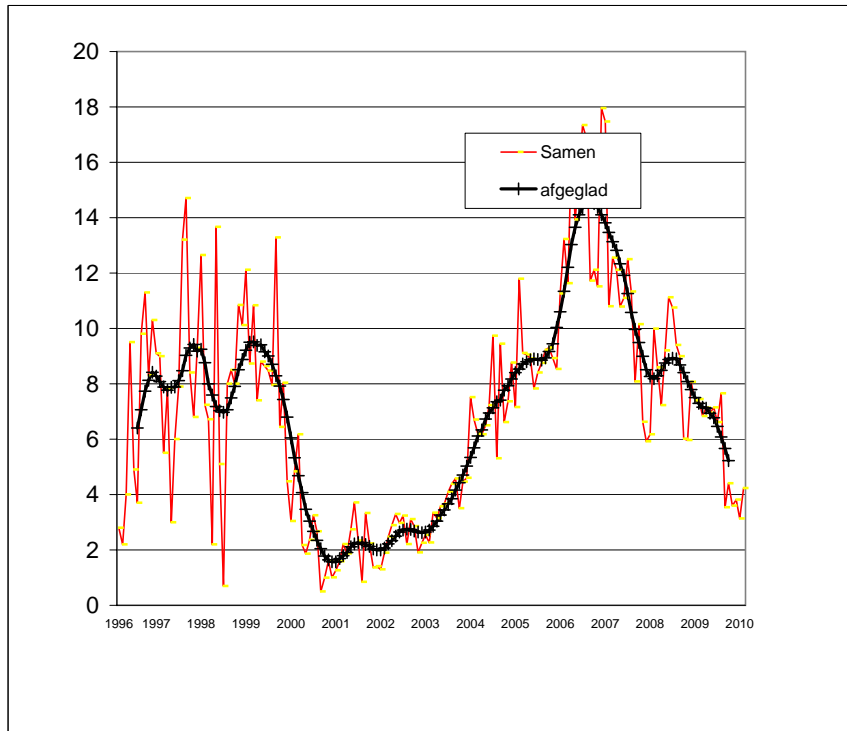
Date	F.Dubois	O.Steen	L.Meeus	P.J. Dekelver	J.Carels	G.Gubbels	E.De Ceuninck	D.Van Hessche	R.Verboven	F.Feys	A.T.Son	J.Bourgeois	H.Coeckelberghs	De Backer	Pbj Obs Mira	J.Claes	Mean	Date	
1	229	111	192	264	81	380	48	250						412	484	208		242	1
2	287	185	208			324	72	280	456	384				287		269		275	2
3	172	188			172	280	88	280	405									226	3
4	188	72			168	200	62		244									156	4
5	76	56		40	40	106	44		60	24								56	5
6	108	92		174	104	198	100	128	142	190	160	80			352	80		147	6
7	52	36		132	91		44			219	36							87	7
8	48	24			32	37	28	37	37	60								38	8
9	37	37		16	37	74	8	37	37	74	74	74	44			16		43	9
10	45	4		44	4	37	16	0	37							4		21	10
11	0	0		0	0	0	0		12	0				0	0	0		1	11
12	24	16	44	88	20	48	4		20	24	12			37		32		31	12
13	4	20	4	40	4	20	4	40	12	4	4	0	4			8		12	13
14	0	0		0	0	0	0	0	16	0	0	0	0	0	0	0		2	14
15	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0		0	15
16	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0		0	16
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	17
18	0	0	0		0	0	0	0	0	0		0	0	0	0	0		0	18
19	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	0	0	0		0	20
21	4	4	4	4	4	8	4	0	4	20	4							5	21
22	12	8	4	0	4	8	4		4	16	4	0	0	4		0		5	22
23	0	4	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	24
25	0	12		0	12	0	0		0	24	0	0	0	0				4	25
26	0	0	0		0	0	0		0	0	0	0	0	0		0		0	26
27	0	0	0		8	0	0		8	0	0	0	0	0		0		2	27
28	4	4	8		4	12	8		0	0	0			0		0		4	28
29	0	0		0	0	0	0		28	0	0			0		0		4	29
30	8	12				4			12					4		0		7	30
	43,27	29,5	33,1	50,1	29,1	64	18	45	62	69	36	13	9	34	418	32		45,6	

# Belgian Solar Observers

## Polar Faculae

Month: April 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	North	South
1	1	7	4	1	3	3,5	2	8	3	2	10	3	0	0	4				1	1	4	2	4	3,5	2	10			
2										3	12	2																	
3				0	3	3,5				3	10	2							0	0	4	1	3	1,5					
4	4	6	3							2	10	3										2	4	3	2	8			
5										2	8	3	0	0	2,5							1	3	1,5	3	11			
6				0	3	3,5				2	8	4	0	0	2				0	0	4	3	4	4	4	4	11		
7	0	6	4	1	2	3,5				1	7	3	0	0	2,5											3	9		
8				1	2	3,5				1	7	3						0	0	4	0	2	4						
9	2	7	4	2	3	4,0	3	4	3	4	8	4	0	6	2,5			0	0	4	1	4	4						
10				2	2	4,0	0	5	4	2	7	4	0	0	3	0	0	4	1	0	4	2	4	3,5	2	10			
11	1	5	4	2	4	4,0				1	8	3	0	0	3	0	0	3	0	0	4	1	3	3,5	3	7			
12										1	6	3	3	1	2							2	5	3	4	7			
13	0	5	4	0	4	3,5				1	5	4	0	0	2,5				0	2	4	1	4	3,5	4	14			
14							6	4	4	3	6	4	0	0	2							2	4	4	2	5			
15	1	6	4	2	3	4,0	2	5	3	2	6	5	0	0	2,5				0	0	4	1	3	3,5	1	4			
16							3	6	3	3	6	3							0	0	4	1	5	4	1	5			
17	2	5	4	3	4	4,0				1	7	4	0	0	2,5	0	0	4	0	0	3	1	3	3,5	3	7			
18				3	5	4,0				1	5	4				0	0	4	0	0	4	0	3	4	3	7			
19	4	7	4	2	2	3,5				0	5	3									2	5	2	2	9				
20	1	4	4	1	2	3,5	1	4	3	1	6	3	0	0	2				2	0	4	2	4	2,5	1	13			
21	1	5	3	1	3	3,5				0	3	3	0	0	4							1	3	3,5	3	6			
22				2	4	3,5				1	6	3	0	0	3				0	0	3	2	4	3,5	2	8			
23				3	2	4,0	3	4	3	0	5	4				0	0	4	0	0	3	2	5	3,5	2	9			
24	3	5	3	2	3	4,0				2	6	4				0	2	4	0	0	4	2	3	4	2	5			
25				0	2	3,5				2	5	4	0	0	2	0	1	3	0	1	4	1	3	3,5	2	9			
26	1	4	3	1	4	3,5	2	5	3	3	4	4													3	5			
27	3	4	4	2	2	4	4	4	3	4	6	4							1	0	4	3	5	4					
28	0	3	4	1	1	4	3	4	3	3	5	3							0	0	4	3	5	4	2	8			
29	4	6	3	2	3	4,0				2	4	4																	
30										2	4	3														1	9		
31																													
	1,75 5,31			1,48 2,87			2,6 4,8			1,8 6,5			0,19 0,44			0,00 0,43			0,26 0,21			1,56 3,80			2,38 8,17				





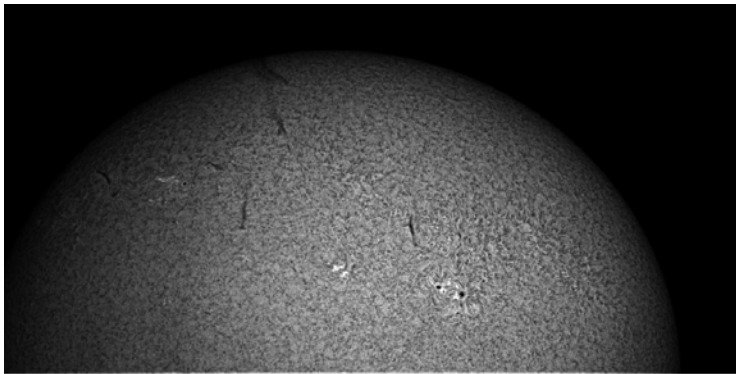


# Sunspot activity from organisations all over de world

Month :

**March 2010**

Organisation	Wolf	Wolf	Wolf	Groups	Faculae	CV	Beck	Pettis	Intersol	Area	prom	prom	Filam &	Radio	Naked	
	Total	North	South													number
NOAA SWO	24,7														83,3	
SIDC	15,4	11,6	3,8													
Kanzelhöhe	17,40															
G.F.O.E.S France	12,9															0,15
BSO Belgium	24,0	17,6	6,5	1,87		23,90	136,3									
S.O.G.S.A.S. Switzerland	19,3			1,4												
BAA	19,4			1,29							2,81		2,48			
GsRSI Italy	25,1											44,4				
CV Helios Network						19,3										
AAVSO (Raw Mean )	21,6															
Sonne Germany Preliminary	17,5	13,3	4,3	1,10			196,0									0,14
O.A.A. Japan	18,9	14,2	4,6													
Solar Observer Society TOS Poland																
Astronomical League of the Philippines	16			1,17												



6 april 2010 A.Gabriel

**1 april 2010**  
**11u 02m UT**

**NOAA 11057**

**200 mm Refractor f/15 Canon A540, 150 x**  
**80 ASA, 1/1250, f/3.5**

**© Europlanetarium/LZW/Guido Gubbels**

SIDC Weekly bulletin on Solar and Geomagnetic activity  
WEEK 485 from 2010 Apr 12

#### SOLAR ACTIVITY

Solar activity was low during the whole week with no significant flares. The main point to notice is a CME which occurred on April 13. It was linked to a rather spectacular polar crown filament eruption observed by a ground based Halpha coronagraph and different EUV space born telescopes. The CME was partially halo as seen from Earth but in the end, it did not trigger any geomagnetic disturbances.

#### GEOMAGNETIC ACTIVITY

Geomagnetic activity was moderate during the week, with a brief period of major storm conditions observed at planetary (Kp=6) and local (K=7 at Dourbes) levels on April 12. The cause of this was the halo CME of April 8, whose associated interplanetary shock reached the ACE spacecraft on April 11.

---

SIDC Weekly bulletin on Solar and Geomagnetic activity  
WEEK 486 from 2010 Apr 19

#### SOLAR ACTIVITY

Flaring activity was low. The X-ray background flux stayed in the A-level.

There was only one sunspot, Catania 62 present.

Two small high latitude coronal holes were present: one in the Northern and one in the Southern hemisphere. They reached almost at the same time a geoeffective position.

#### GEOMAGNETIC ACTIVITY

The geomagnetic conditions reached one period on Apr 23 the minor storm level.

This was due to the solar wind emanating from a coronal hole carried a relatively strong Bz component of the interplanetary magnetic field.

The rest of the week was quiet .

---

SIDC Weekly bulletin on Solar and Geomagnetic activity  
WEEK 487 from 2010 Apr 26

#### SOLAR ACTIVITY

The visible solar disk was spotless until April 29 when sunspot group NOAA number

11063 (Catania 66) was reported. On May 1 sunspot group NOAA 11064 appeared, but these sunspot groups didn't produce any flare beyond the B level.

Flaring activity was low the whole week, on April 30 - May 1 there were two C-class flares associated with an unnumbered active region rotating into the solar disk.

There was an important coronal hole facing the Earth on April 30.

#### GEOMAGNETIC ACTIVITY

The geomagnetic conditions were quiet until April 29 when unsettled periods were observed due to a weak coronal hole solar wind stream. On May 2 the fast solar wind from another coronal hole arrived to the Earth. This solar wind stream arrived earlier and stronger than predicted and caused a major geomagnetic storm with Kp reaching 6 and lasting over a day.

SIDC Weekly bulletin on Solar and Geomagnetic activity  
WEEK 488 from 2010 May 03

#### SOLAR ACTIVITY

Solar activity was characterized by the passage of NOAA AR 11069 from central meridian to the NW solar limb.

The region had a beta-gamma configuration on May 5 (Dai) and produced, besides a number of large C-flares, an M1.2 flare at 17:19 on May 5.

#### GEOMAGNETIC ACTIVITY

The week started with high geomagnetic activity (Kp ~ 5) as a consequence of a high speed wind stream that had arrived the day before the start of the period (May 2). Solar wind speed gradually dropped from 700km/s in the beginning of the week down to 400 km/s at the end of the period. Meanwhile geomagnetic activity decayed down to Kp=2-3 from May 4 PM onwards.

---

SIDC Weekly bulletin on Solar and Geomagnetic activity  
WEEK 489 from 2010 May 10

#### SOLAR ACTIVITY

Solar activity was very low during the week, with no significant flaring activity.

The 10.7 cm flux decreased to the low 70s by the middle of the week.

#### GEOMAGNETIC ACTIVITY

Geomagnetic activity was very low during the whole week.

---

SIDC Weekly bulletin on Solar and Geomagnetic activity  
WEEK 490 from 2010 May 17

#### SOLAR ACTIVITY

There was a filament disappearance between May 21 and May 22 in the northern hemisphere.

This is evident from H-alpha images from Kanzelhoehe solar observatory (Austria). The on disk signatures in SOHO/EIT were faint. STEREO.B/SECCHI COR2 show a cloud ejected to the NW from the point of view of STEREO.B, this is well above the ecliptic.

A B1.4 long duration flare peaked at 18:01UT on May 23. A coronal dimming and post-flare loops are visible in the neighbourhood where the filament disappeared on May 21-22. A halo CME came into view of SOHO/C3 at 19:42 UT. STEREO.B/SECCHI COR2 indicates that the cloud intersects with the ecliptic. It is a slow CME however, with an projected estimated speed of 220 km/s.

The source region was not identified as a sunspot or active region. On May 23, the source region was situated near the central meridian.

A coronal hole in the northern and the southern hemisphere was visible. The central meridian was reached on May 15 by the northern one and on May 16 by the southern one.

#### GEOMAGNETIC ACTIVITY

The co-rotating interaction region associated with the coronal hole in the northern hemisphere arrived on May 19. The Kp reached once 4, early May 20. The presence of the southern coronal hole could not be determined from ACE-data. The influence of those coronal holes was limited. The conditions became again quiet on May 21.

The partial halo CME might arrive on May 26-27.