

# Newsletter Belgian Solar Observers

Results and news for solar observers

Volume 15

Number 175

September 2010

Franky Dubois Poelkappellestraat 39 langemark 8920

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## Content Newsletter

Graphics and relative number for this month

Daily Wolfnumbers by the members

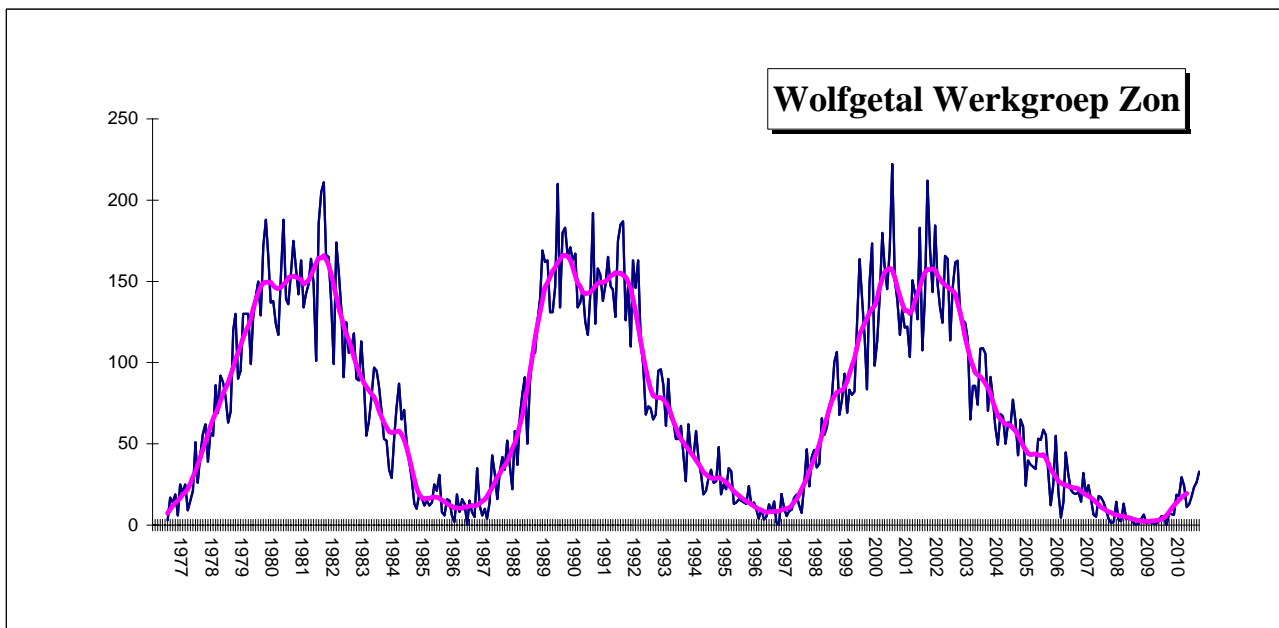
Monthly sunspot report

Polar faculae and CV numbers

Prominence numbers by the members

Monthly prominence report

Photo album and drawings



### Mean of September observations

Groups :	N	1,37	Wolfnumb	N	19,2	Beck :	275,7
	S	1,13		S	13,7	CV	37,5
	N+S	2,50		N+S	32,9		
383 observations	28 observers						



# Sunspotnumbers VVS Belgium

Month: **September 2010**

Day	GROUPS			WOLFNUMBER			RE'	CV	OBS
	N	S	N+S	N	S	N+S			
1	3	0	3	36,3	0	36,3	162	19	14
2	4	0	4	51,5	0	51,5	197	22	15
3	4	0	4	47,4	0	47,4	252	19	10
4	4	0	4	52,0	0	52,0	437	32	18
5	3	0	3	44,8	0	44,8	467	28	20
6	2	0	2	23,9	0	23,9	156	14	17
7	1	0	1	14,2	0	14,2	47	7	9
8	0	0	0	0	0	0	0	0	7
9	1	0	1	2,2	0	2,2	2	1	15
10	0	0	0	0	0	0	0	0	3
11	0	1	1	0	11,3	11,3	57	10	21
12	1	1	2	6,2	14,3	20,5	61	11	11
13	0	2	2	0	22,6	22,6	80	13	19
14	0	1	1	0	20	20,0	180		1
15	0	2	2	0	22,4	22,4	204	12	17
16	0	3	3	0	38,1	38,1	436	46	15
17	0	4	4	0	47,4	47,4	606	67	21
18	0	4	4	0	45,7	45,7	478	71	13
19	0	4	4	0	42,6	42,6	408	61	12
20	0	3	3	0	34,3	34,3	352	55	19
21	1	2	3	8,9	26,1	35,0	216	49	19
22	2	1	3	16,6	14,7	31,3	251	60	18
23	1	1	2	21,8	13,9	35,7	350	65	10
24	1	1	2	23,7	12,4	36,1	404	69	11
25	1	1	2	25,6	10,7	36,3	488	78	16
26	2	1	3	26,0	13,3	39,3	533	68	12
27	2	1	3	40,3	10,5	50,8	569	64	5
28	2	1	3	41,0	11	52,0	394		1
29	3	0	3	53,6	0	53,6	273	58	5
30	3	0	3	40,4	0	40,4	211	50	9
	<b>1,37</b>	<b>1,13</b>	<b>2,50</b>	<b>19,2</b>	<b>13,7</b>	<b>32,9</b>	<b>275,7</b>	<b>37,5</b>	<b>383</b>

Monthly mean: **32,9** Covering: **30/30** Spotless days: **2**  
 Observations: **383** Number of observers: **28**

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

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Observers:

E.De Ceuninck ; J.Janssens ; Publ obs Mira ; J.Bourgeois ; R.Dezeure ; F.Feys  
 H. De Backer; F.Dubois ; B.Taillieu ; J.Carels ; K. Dewaele  
 L.Meeus ; O.Steen ; KSB ; L.Claeys ; B.Thooris ; J.Bonse  
 J.Claes ; R.Verboven ; F. Van Loo ; A.T.Son ; H.Coeckelberghs  
 G.Gubbels ; J Bavais ; D.Van Hessche; E.Neven ; R.De Laet



# Prominence number Rp

## Belgian solar observers

Month: September 2010

Day	Q	Wedel		H	e	Rp	el. Obs	Stdev	OBS
1	3,6	1,9		6,1	10,3	<b>71,3</b>	1	15,7	8
2	2,8	2,4		6,0	9,3	<b>69,3</b>	2	12,4	6
3	3,7	1,8		6,2	10,8	<b>72,8</b>	1	11	6
4	4,1	2,4		5,5	7,3	<b>62,3</b>	2	15,6	8
5	3,3	2,4		6	11,6	<b>71,6</b>	2	15,5	11
6	3,6	1,9		8	11	<b>91</b>	2	15,2	7
7	3,1	2,1		3,8	6,2	<b>44,2</b>		14,9	5
8	3,4	1,3		7,2	13,8	<b>85,8</b>		8	5
9	3,8	1,9		7,5	12,5	<b>87,5</b>		13,4	6
10	4	1		8	14	<b>94</b>			1
11	3,7	2		7,6	12,6	<b>88,6</b>		7,8	10
12	4,2	2		6	9	<b>69</b>	1	14,5	4
13	3,1	1,6		6,3	13,7	<b>76,7</b>	2	12,5	9
14	4	1		5	14	<b>64</b>			1
15	3,5	1,8		5,9	10,7	<b>69,7</b>		15,9	10
16	4,1	1,4		7,8	19,4	<b>97,4</b>	2	15,1	7
17	3,6	1,8		6,9	13,1	<b>82,1</b>	1	16,6	9
18	3,5	1,7		7	11,3	<b>81,3</b>	1	12,4	4
19	2,5	2		6	11,7	<b>71,7</b>	1	3,5	4
20	3,4	1,8		6,2	9,2	<b>71,2</b>		10,2	6
21	3,6	1,8		5,1	10,4	<b>61,4</b>	1	13,8	9
22	3,4	2		6	9,7	<b>69,7</b>	2	14,1	9
23	3,7	1,5		9,7	23,7	<b>120,7</b>	2	7,1	5
24	3,5	2		8	14	<b>94</b>	1	11,4	4
25	3,5	2,1		5,9	7,7	<b>66,7</b>	3	16,4	10
26	3,8	2,6		6	8	<b>68</b>	2	15,6	4
27	3,5	1,5		8	13	<b>93</b>			1
28	4	1		8	15	<b>95</b>			
29									
30	3,3	2		7,3	9,3	<b>82,3</b>		14,6	3
	<b>3,56</b>	<b>1,82</b>		<b>6,7</b>	<b>11,8</b>	<b>78,4</b>	<b>29</b>	<b>12,9</b>	<b>172</b>

Monthly mean: **78,4** Covering: **29/30**  
 Observations: **172** Number of observers: **11**

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

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**Observers:**

**Steen ; Dubois ; De Ceuninck ; Coeckelberghs ; Janssens ; Feys  
 Hamsch ; Claes ; G.Gubbels ; T.Spaninks ; R.Blondeel**

**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/>**

Different Relative Sunspotnumbers

Month : September 2010

CV

Pettisindex SN

Intersol IS

Date	F.Dubois	O.Steen	L.Meeus	J.Carels	J.Janssens	R.verboven	G.Gubbels	H.De Backer	D.Van Hoesche	Mean	G.Gubbels	F.Dubois	O.Steen	J.Carels	R.Verboven	Mean	F.Dubois	J.Carels	G.Gubbels	Mean
1	18	24	18	17						19,0	47	23	30	27		31,8	9	14	17	13,3
2	21	23		20			22			21,5	63	27	30	35		38,8	13	20	39	24,0
3	17	17					23			19,0	67	30	30			42,3	15		38	26,5
4	34	35	29	29		32	29	34		31,7	54	49	46	51	76	55,2	25	27	32	28,0
5	26	32	24	26	26	32	28	26		27,5	67	46	60	65	80	63,6	21	30	34	28,3
6	9	10		16			22			14,3	60	19	21	37		34,3	12	12	21	15,0
7	8	8	8	5						7,3		12	12	14		12,7	5	6		5,5
8			0				0			0,0	0					0,0			0	0,0
9	1	0	0	1						0,5		1		1		0,7	1	1		1,0
10	0			10						5,0		0		10		5,0	0	1		0,5
11	10	10	10	10	10	10	10	10		10,0	10	10	10	10	10	10,0	1	1	4	2,0
12	12	12	11	10			12	10	11	11,1	19	14	13	25		17,8	6	8	13	9,0
13	12	14	13	13			11	12		12,5	17	16	18	26		19,3	9	11	10	10,0
14																				
15	9	9		9			21	13		12,2	30	15	16	29		22,5	7	12	14	11,0
16	55	50	65	12			37	55		45,7	53	49	34	44		45,0	24	19	19	20,7
17	67	71	67				52	74	68	66,5	72	73	44			63,0	31		26	28,5
18		75		60				77		70,7			49	51		50,0		18		18,0
19	52	47					53	74	78	60,8	60	35	36			43,7	12		21	16,5
20	43	40	69	50			57	71		55,0	69	30	15	35		37,3	16	10	32	19,3
21	43	39	49	43			57	60		48,5	40	23	13	26		25,5	7	10	24	13,7
22	47	63	58	63			71	56		59,7	44	25	33	42		36,0	13	10	15	12,7
23		84			57		62	56		64,8	42		38			40,0			12	12,0
24	85	84		60			59	56		68,8	45	39	37	37		39,5	17	15	13	15,0
25	75	84		69	69	54	87	90	93	77,6	64	59	49	52	36	52,0	16	20	22	19,3
26	76	57		93			88	63	33	68,3	60	62	55	58		58,8	19	25	27	23,7
27				64				64		64,0				50		50,0			14	14,0
28																				
29		48					51	76		58,3	66		35			50,5			40	40,0
30	51	49		31				68		49,8		35	29	37		33,7	21	13		17,0
##	34	39,4	30,1	32,3	41	32,0	40	57	44,1	37,5	48	30	30,1	35	51	34,9	13,0	13,5	22	15,88

Becknumber

Date	F.Dubois	O.Steen	L.Meeus	De Backer	J.Carels	G.Gubbels	E.De Cauninck	D.Van Hoesche	R.Verboven	F.Feys	A.T.Son	J.Bourgeois	H.Coeckelberghe	Pbl Obs Mira	Mean	Date
1	114	113	175		96	192	130		358		120				162	1
2	168	126			195	340	126		275		267			80	197	2
3	146	175				404	256		271		257				252	3
4	405	356	436		418	472	361	406	386	589	479	494			437	4
5	414	451	473		541	554	397	415	386	839	170	524	444		467	5
6	88	92			198	360	162			224	120	120		36	156	6
7	32	32	24		40		64			88					47	7
8			0			0				0					0	8
9	4	0	0		4		0		0	4					2	9
10	0				37				0						12	10
11	37	37	37		37	132	37	37	88	74	37	74			57	11
12	36	28	16	111	52	80	44	32		148					61	12
13	64	56	44	127	72	72	108			144	80	56		56	80	13
14										180					180	14
15	48	160		48	233	468	300		198	48			332		204	15
16	164	419	780	180	162	656	700		1038	144			120		436	16
17	978	148	828	345		738	550	472	1494	636	420	458	204		606	17
18		234		322	351				1150	402	406				478	18
19	175	132		281		552	500	720	750	293	272				408	19
20	102	108	320	273	316	912	258		750	341	266		224		352	20
21	73	100	122	131	391	588	181		362			92	120		216	21
22	47	257	186	274	304	346	186		372				286		251	22
23		438		284		258			418						350	23
24	436	413		294	388	250	486		562						404	24
25	388	388		576	532	538	399	438	495		635				488	25
26	402	487		582	619	602	437	469				662			533	26
27				596	574				466		640				569	27
28									394						394	28
29		140		394		284									273	29
30	212	168		423	244		112					104			211	30
	197,1	202	246	308	264	400	263	374	339	429	207	324	376	162	276	

N.O.A.A.	ZICHTBAAR		N.O.A.A.		MAX	MAX	classificatie							
Regio	van	tot	breedte	lengte	AREA	LENGTE	Macintosh							
11093	04-08-10	15-08-10	N11	352	0250	09	CAO	CSO	HSX	CSO	HSX			
11094	05-08-10	07-08-10	N26	104	0050	10	CSO	BXO						
11095	05-08-10	11-08-10	S19	360	0010	01	BXO	HAX	AXX					
11096	08-08-10	12-08-10	N22	12	0060	07	AXX	BXO	CRI	BXO	AXX			
11097	10-08-10	12-08-10	N33	272	0010	01	AXX							
11098	11-08-10	18-08-10	N15	301	0040	06	DRO	BXO						
11099	13-08-10	16-08-10	N18	347	0090	07	BXO	CRO	CRI	BXO				
11100	16-08-10	18-08-10	S27	204	0010	01	AXX							
11101	24-08-10	05-09-10	N12	85	0150	05	HRX	CSO	HSX					
11102	29-08-10	03-09-10	N26	104	0100	07	CRO	DRO	CAO	CRO	AXX			
11103	01-09-10	05-09-10	N25	83	0020	07	BXO	CRO	AXX					
11104	01-09-10	01-09-10	N24	75	0010	02	BXO							
11105	02-09-10	08-09-10	N19	49	0150	10	BXO	DRI	CAI	HAX	AXX			
11106	10-09-10	21-09-10	S18	208	0110	18	HRX	CSO	FAO	FSO	FSI	FSO	BXO	
11107	12-09-10	12-09-10	N33	204	0010	01	AXX							
11108	16-09-10	28-09-10	S30	142	0420	18	CKO	EHO	ESO	HHX	HSX			
11109	21-09-10	04-10-10	N22	65	0420	14	HRX	DKO	DSO	EHO	EHI	ESI	DHI	CKO
11110	26-09-10	02-10-10	N21	85	0050	06	AXX	DSO	BXO	AXX				
11111	29-09-10	05-10-10	N24	341	0030	06	AXX	BXO	CRO	DRO	AXX			

Sunspot AR1108 on 20100926 @ 12:49h UT.



TEC140 APO f/7 + Baader Hershel wedge + Baader Solar Continuum filter + TV 5x Powermate + SKYnyx 2-0.  
 Image processing in Registax 5.1 + Photoshop.  
 (c) Geert Vandenbulcke, Belgium.

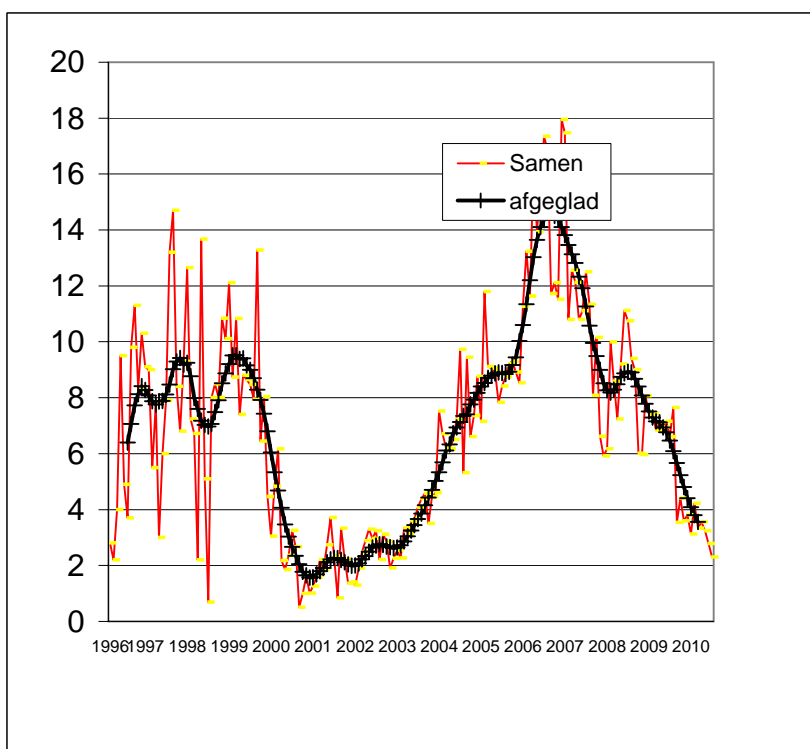
# Belgian Solar Observers

## Polar Faculae

Month: September 2010

Date	Dubois 125mm F20			Steen 102mm F15			T.Spaninks 127mm F15			G.Gubbels 114mm F7,8			J.Carels			Janssen 200mmF10			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
1	4	1	4	2	0	3,5	0	0	4	6	2	3,5	0	0	3				4	5	
2										5	2	2,5	0	0	2						
3	2	0	3	3	0	4,0				4	2	4							4	5	
4				3	0	3,5	0	0	3	5	2	3,5	1	1	3						
5				4	1	3,0	1	0	3	4	1	4	0	0	3	2	0	3			
6										4	1	2,5	0	0	2						
7													2	0	3						
8							0	0	4	4	2	2,5							7	3	
9	7	2	4	4	2	4,0	0	0	4												
10													0	0	3						
11	7	1	3	1	2	3,5	0	0	3	3	1	4	0	0	3	3	0	4			
12										4	2	3,5							8	5	
13				3	0	3,5	0	0	4	4	1	3	0	0	3						
14																					
15	4	1	3	5	2	3,5	0	0	4	3	0	3	4	2	4						
16	5	3	4	0	1	3,5				5	2	4	0	0	3						
17	6	3	4	1	2	3,5				4	2	3							13	5	
18				1	1	3,5	0	0	4				0	0	3						
19										0	4	3,5							9	7	
20	2	0	3							1	3	3,5	0	0	3						
21	3	1	4	3	0	4,0				0	2	3,5	1	0	3						
22	3	1	3	1	0	3,5	0	0	4	0	2	3	0	0	3						
23																0	0	3			
24																					
25				2	1	3,5	0	2	4	2	0	4				0	0	4			
26				1	1	3,5				3	0	3,5	0	0	4						
27													0	0	4						
28																					
29										5	0	3							6	5	
30													0	0	4						
	4,30	1,30		2,27	0,87		0,1	0,2		3,3	1,6		0,44	0,17		1,25	0,00		7,29	5,00	##

Obs of M.Szulc are not included in the monthly average !

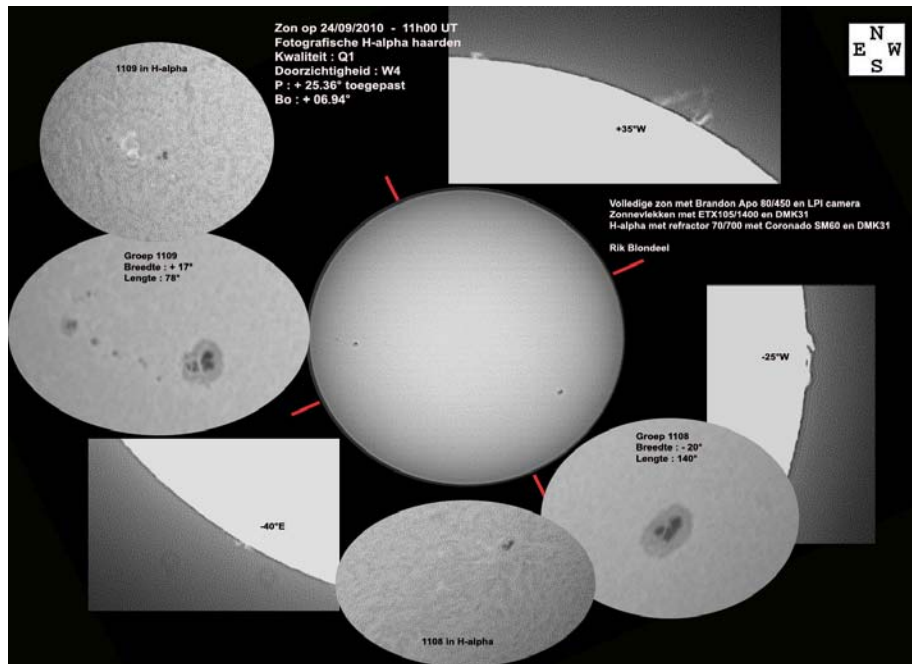




# Sunspot activity from organisations all over de world

Month : **August 2010**

Organisation	Wolf Total	Wolf North	Wolf South	Groups number	Faculae	CV	Beck	Pettis index	Intersol	Area	prom MDF	prom Rp	Filam & plages	Radio flux	Naked eye
NOAA SWO	35,6													81,1	
SIDC	25,2														
Kanzelhöhe	21,3														
G.F.O.E.S France	17														0,05
BSO Belgium	26,4	22,2	4,2	2,27		20,2	112					79,1			
S.O.G.S.A.S. Switzerland	24			1,9											
BAA	23,4			1,81							3,66		2,45		
GsRSI Italy	31,6											80,2			
CV Helios Network						20,2									
AAVSO (Raw mean)	25,4														
Sonne Germany Preliminary															
O.A.A. Japan	24,4	20,5	3,9												
Solar Observer Society TOS Poland	27,7				3,1	21				305					
Astronomical League of the Philippines															



SISIDC Weekly bulletin on Solar and Geomagnetic  
WEEK 509 from 2010 Sep 27

SOLAR ACTIVITY

There were four active regions present on the solar disk of which three were situated in the northern hemisphere (NOAA 1109, 1110 and 1111) and one in the south (1108). Solar flaring activity was restricted to two C-flares on Sept 28: a C1.7 flare erupted from NOAA AR 1109 peaking at 09:48 UT and a C2.0 flare from NOAA AR 1110 peaking around 22:11 UT. During this week two filament eruptions occurred, both in the northern hemisphere: one erupted on Sept 28 around 8 UT from the North-East and it was clearly observable in SDO/AIA 193 and 304 movies. A faint CME was observed in the eastward direction in STEREO COR2-A and in LASCO, lifting off on Sept 28 around 17 UT with a speed of about 500 km/s.

GEOMAGNETIC ACTIVITY

Geomagnetic conditions were quiet during the whole week with a period of unsettled conditions on Sep 28. This was caused because the Earth was encountering some fast wind from the northern coronal hole.

SIDC Weekly bulletin on Solar and Geomagnetic  
WEEK 510 from 2010 Oct 04

SOLAR ACTIVITY

Flaring activity was low during the past week. There were quite a lot of B-flares, but the only flare of C-level this week occurred on Monday Oct. 4 around 16h35. It was a C2.3 flare originating from NOAA AR 1109, which was already turning over the west limb at that time. A first filament eruption was observed on Oct. 6 around 2h08. Linked to this event, there was a long duration B-flare and a slow CME (seen in STEREO/A COR2 around 6h54 UT). Another filament eruption occurred on the morning of Oct. 7 and was observed heading north in STEREO and LASCO data. On Oct. 8 there was a back-sided CME observed in STEREO/A images.

GEOMAGNETIC ACTIVITY

Geomagnetic conditions were quiet during the past week. Kp reached a maximum level of 3.

SIDC Weekly bulletin on Solar and Geomagnetic  
WEEK 511 from 2010 Oct 11

SOLAR ACTIVITY

A filament located in the south east of the solar disk erupted late on Oct 10. In SOHO/LASCO images, the CME was seen as a partial CME. In STEREO Ahead/Behind COR2 it is seen from aside. The speed calculated from STEREO Ahead images by the CACTus software, is 297 km/s; from STEREO Behind images, 337 km/s.

Oct 16, AR 1112 was responsible for an M2.9 flare peaking at 19:12UT. The event lasted only for 8 minutes.

In SWAP images, a small coronal dimming is visible. Although the large filament in the vicinity of this active region did not erupt. SOHO/LASCO and STEREO/SECCHI didn't show any evidence of an associated, strong CME.

The first part of a small, horizontal oriented coronal hole (CH) reached the central meridian on Oct 16. Comparing with previous rotation, the CH shrunk in size.

GEOMAGNETIC ACTIVITY

Oct 06, a filament erupted. The shock and the CME arrived on Oct 11. The total interplanetary magnetic field (IMF) rose to values between 10 and 15 nT. ACE passed the shock heading the actual CME.

We suspect that ACE passed along a leg of the plasma cloud measuring a negative Bz for a long period.

The Bz was shifting slowly to zero. This negative Bz of the IMF is optimal for reconnection and lead to a short minor geomagnetic storm on Oct 11.

ACE data showed a rather sudden enhancement of the magnetic field carried in the solar wind on Oct 15. The speed jumped at 03UT from 280 km/s to 290 km/s. The density increased slightly. This was possibly the passage through the shock in front of the CME associated with the filament eruption of late Oct 10.

The IMF stayed turbulent until Oct 17. Probably, ACE passed side away along the shock. This glancing blow lead to one period with active conditions on Oct 17.

SIDC DEFINITIVE INTERNATIONAL AND HEMISPHERIC  
SUNSPOT NUMBERS FOR 2010

Date	APRIL			MAY			JUNE		
	Ri	Rn	Rs	Ri	Rn	Rs	Ri	Rn	Rs
1	17	9	8	8	8	0	11	0	11
2	17	9	8	13	13	0	13	0	13
3	18	9	9	25	16	9	15	0	15
4	25	17	8	32	16	16	20	0	20
5	26	18	8	29	29	0	19	8	11
6	19	19	0	12	12	0	9	0	9
7	16	16	0	10	10	0	13	7	6
8	22	22	0	10	10	0	10	0	10
9	7	7	0	0	0	0	21	0	21
10	8	8	0	0	0	0	28	0	28
11	8	0	8	0	0	0	33	14	19
12	8	0	8	0	0	0	33	15	18
13	7	0	7	0	0	0	18	18	0
14	0	0	0	0	0	0	10	10	0
15	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	9	9	0
18	0	0	0	0	0	0	9	9	0
19	0	0	0	0	0	0	19	19	0
20	0	0	0	0	0	0	13	13	0
21	7	7	0	9	0	9	10	10	0
22	7	7	0	13	0	13	11	11	0
23	0	0	0	14	0	14	10	10	0
24	0	0	0	12	0	12	9	9	0
25	12	12	0	15	0	15	12	6	6
26	0	0	0	10	0	10	13	0	13
27	0	0	0	8	0	8	8	0	8
28	8	8	0	8	0	8	8	0	8
29	0	0	0	12	6	6	16	0	16
30	7	7	0	18	10	8	8	0	8
31				11	6	5			
MEAN :	8.0	5.8	2.2	8.7	4.4	4.3	13.6	5.6	

ACE	Advanced Composition Explorer	<a href="http://www.swpc.noaa.gov/ace/MAG_SWEPAM_3d.html">http://www.swpc.noaa.gov/ace/MAG_SWEPAM_3d.html</a>
Ap	Equivalent amplitude geomagnetic activity index (0-400)	<a href="http://www.swpc.noaa.gov/info/glossary.html#a">http://www.swpc.noaa.gov/info/glossary.html#a</a>
AR	Active region	<a href="http://www.raben.com/maps/">http://www.raben.com/maps/</a>
B	Latitude	
B0	Heliographic latitude of the center of the solar disc	<a href="http://www.petermeadows.com/html/sunfromearth.html">http://www.petermeadows.com/html/sunfromearth.html</a>
BSO	Belgian Solar Observers	<a href="http://www.bso.vvs.be/index_en.php">http://www.bso.vvs.be/index_en.php</a>
Bz	Measure of the north/south orientation of the IMF perpendicular to the ecliptic plane	<a href="http://www.solarcycle24.com/solarwind.htm">http://www.solarcycle24.com/solarwind.htm</a>
C-flare	Small X-ray solar flare	<a href="http://spaceweather.com/glossary/flareclasses.html">http://spaceweather.com/glossary/flareclasses.html</a>
CH	Coronal Hole	<a href="http://solarscience.msfc.nasa.gov/feature3.shtml">http://solarscience.msfc.nasa.gov/feature3.shtml</a>
CME	Coronal Mass Ejection	<a href="http://solarscience.msfc.nasa.gov/CMEs.shtml">http://solarscience.msfc.nasa.gov/CMEs.shtml</a>
CV	Classification Value	<a href="http://www.cv-helios.net/">http://www.cv-helios.net/</a>
e	Individual prominence structures ("einzel")	<a href="http://users.telenet.be/j.janssens/Halpha/Halfaeng.html#Haarden">http://users.telenet.be/j.janssens/Halpha/Halfaeng.html#Haarden</a>
E	East	
el.	eliminated	
EUV	Extreme Ultra-Violet	<a href="http://en.wikipedia.org/wiki/Electromagnetic_spectrum">http://en.wikipedia.org/wiki/Electromagnetic_spectrum</a>
f	Number of sunspots ("fleck")	<a href="http://solarscience.msfc.nasa.gov/feature1.shtml#Sunspots">http://solarscience.msfc.nasa.gov/feature1.shtml#Sunspots</a>
F	Focal ratio	<a href="http://en.wikipedia.org/wiki/F-number">http://en.wikipedia.org/wiki/F-number</a>
g	Number of sunspot groups	<a href="http://www.nmm.ac.uk/explore/astronomy-and-time/astronomy-facts/solar-system/sunspots">http://www.nmm.ac.uk/explore/astronomy-and-time/astronomy-facts/solar-system/sunspots</a>
G	Geomagnetic Storm (level 1-5)	<a href="http://www.swpc.noaa.gov/NOAAscales/#GeomagneticStorms">http://www.swpc.noaa.gov/NOAAscales/#GeomagneticStorms</a>
H	Prominence Hearths	<a href="http://users.telenet.be/j.janssens/Halpha/Halfaeng.html#Haarden">http://users.telenet.be/j.janssens/Halpha/Halfaeng.html#Haarden</a>
IMF	Interplanetary Magnetic Field	<a href="http://pluto.space.swri.edu/image/glossary/IMF.html">http://pluto.space.swri.edu/image/glossary/IMF.html</a>
IS	Paderborn Intersol index	<a href="http://www.digilife.be/club/Franky.Dubois/sol.htm">http://www.digilife.be/club/Franky.Dubois/sol.htm</a>
ISN	International smoothed Sunspot Number	<a href="http://sidc.oma.be/news/106/sunspotnumberclarified.pdf">http://sidc.oma.be/news/106/sunspotnumberclarified.pdf</a>
k-factor	Personal reduction coefficient	<a href="http://sidc.oma.be/news/106/sunspotnumberclarified.pdf">http://sidc.oma.be/news/106/sunspotnumberclarified.pdf</a>
keV	Kilo electronvolt	<a href="http://nl.wikipedia.org/wiki/Elektronvolt">http://nl.wikipedia.org/wiki/Elektronvolt</a>
Km/s	Kilometers/second	
Kp	Geomagnetic activity index (0-9)	<a href="http://sidc.oma.be/educational/classification.php#geol">http://sidc.oma.be/educational/classification.php#geol</a> <a href="http://www.spaceweather.com/glossary/kp.html">http://www.spaceweather.com/glossary/kp.html</a>
L	Longitude	
L0	Heliographic longitude of the apparent center of the sun	<a href="http://www.petermeadows.com/html/sunfromearth.html">http://www.petermeadows.com/html/sunfromearth.html</a>
L1	First Lagrangian Point	<a href="http://en.wikipedia.org/wiki/Lagrangian_point">http://en.wikipedia.org/wiki/Lagrangian_point</a>
M-flare	Moderate X-ray solar flare	<a href="http://spaceweather.com/glossary/flareclasses.html">http://spaceweather.com/glossary/flareclasses.html</a>
MDF	Mean Daily Frequency	<a href="http://www.britastro.org/~solar/index.php?style=new">http://www.britastro.org/~solar/index.php?style=new</a>
MeV	Mega electronVolt	<a href="http://nl.wikipedia.org/wiki/Elektronvolt">http://nl.wikipedia.org/wiki/Elektronvolt</a>
mm	millimeter	
N	North	
NOAA	National Oceanic and Atmospheric Administration	<a href="http://www.noaa.gov/">http://www.noaa.gov/</a>
nT	nanoTesla	<a href="http://en.wikipedia.org/wiki/Tesla_(unit)">http://en.wikipedia.org/wiki/Tesla_(unit)</a>
Obs	Number of Observations	
P	Position angle between the solar axis and the north-south direction in the sky	<a href="http://www.petermeadows.com/html/sunfromearth.html">http://www.petermeadows.com/html/sunfromearth.html</a>
PF	Polar Faculae	<a href="http://bso.vvs.be/joinus_en.php">http://bso.vvs.be/joinus_en.php</a>
pfu	Particle Flux Unit	<a href="http://www.swpc.noaa.gov/info/glossary.html#particleflux">http://www.swpc.noaa.gov/info/glossary.html#particleflux</a>
PST	Personal Solar Telescope	
Q	Seeing (SIDC, Mount Wilson)	<a href="http://astro.ucla.edu/~obs/150_draw.html">http://astro.ucla.edu/~obs/150_draw.html</a>
R	Wolfnumber (=10.g + f)	<a href="http://en.wikipedia.org/wiki/Wolf_number">http://en.wikipedia.org/wiki/Wolf_number</a>
R	Radio Blackout (level 1-5)	<a href="http://www.swpc.noaa.gov/NOAAscales/#RadioBlackouts">http://www.swpc.noaa.gov/NOAAscales/#RadioBlackouts</a>
RE'	Becknumber	<a href="http://www.digilife.be/club/Franky.Dubois/sol.htm">http://www.digilife.be/club/Franky.Dubois/sol.htm</a>
Rp	Prominence number (=10.H + e)	<a href="http://users.telenet.be/j.janssens/Halpha/Halfaeng.html#Getal">http://users.telenet.be/j.janssens/Halpha/Halfaeng.html#Getal</a>
S	South	
S	Solar Radiation Storm (level 1-5)	<a href="http://www.swpc.noaa.gov/NOAAscales/#SolarRadiationStorms">http://www.swpc.noaa.gov/NOAAscales/#SolarRadiationStorms</a>
SC	Solar Cycle	<a href="http://solarscience.msfc.nasa.gov/SunspotCycle.shtml">http://solarscience.msfc.nasa.gov/SunspotCycle.shtml</a>
SDO	Solar Dynamics Observatory	<a href="http://sdo.gsfc.nasa.gov/data/">http://sdo.gsfc.nasa.gov/data/</a>
SN	Pettisindex	<a href="http://www.digilife.be/club/Franky.Dubois/sol.htm">http://www.digilife.be/club/Franky.Dubois/sol.htm</a>
SIDC	Solar Influences Data analysis Center	<a href="http://sidc.oma.be/">http://sidc.oma.be/</a>
SOHO	Solar and Heliospheric Observatory	<a href="http://sohowww.nascom.nasa.gov/data/realtime-images.html">http://sohowww.nascom.nasa.gov/data/realtime-images.html</a>
StDev	Standard Deviation	<a href="http://en.wikipedia.org/wiki/Standard_deviation">http://en.wikipedia.org/wiki/Standard_deviation</a>
STEREO	Solar TERrestrial RELations Observatory	<a href="http://stereo.gsfc.nasa.gov/">http://stereo.gsfc.nasa.gov/</a>
SWPC	Space Weather Prediction Center	<a href="http://www.swpc.noaa.gov/Data/index.html">http://www.swpc.noaa.gov/Data/index.html</a>
UT	Universal Time	<a href="http://www.timeanddate.com/library/abbreviations/timezones/">http://www.timeanddate.com/library/abbreviations/timezones/</a>
VVS	Vereniging Voor Sterrenkunde	<a href="http://www.vvs.be/">http://www.vvs.be/</a>
W	West	
W	Wedel transparency scale	<a href="http://users.telenet.be/j.janssens/Halpha/Halfaeng.html#Beeld">http://users.telenet.be/j.janssens/Halpha/Halfaeng.html#Beeld</a>
X-flare	Strong X-ray solar flare	<a href="http://spaceweather.com/glossary/flareclasses.html">http://spaceweather.com/glossary/flareclasses.html</a>