

Newsletter Belgian Solar Observers

Results and news for solar observers

Volume 15

Number 169

March 2010

Franky Dubois Poelkappellestraat 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

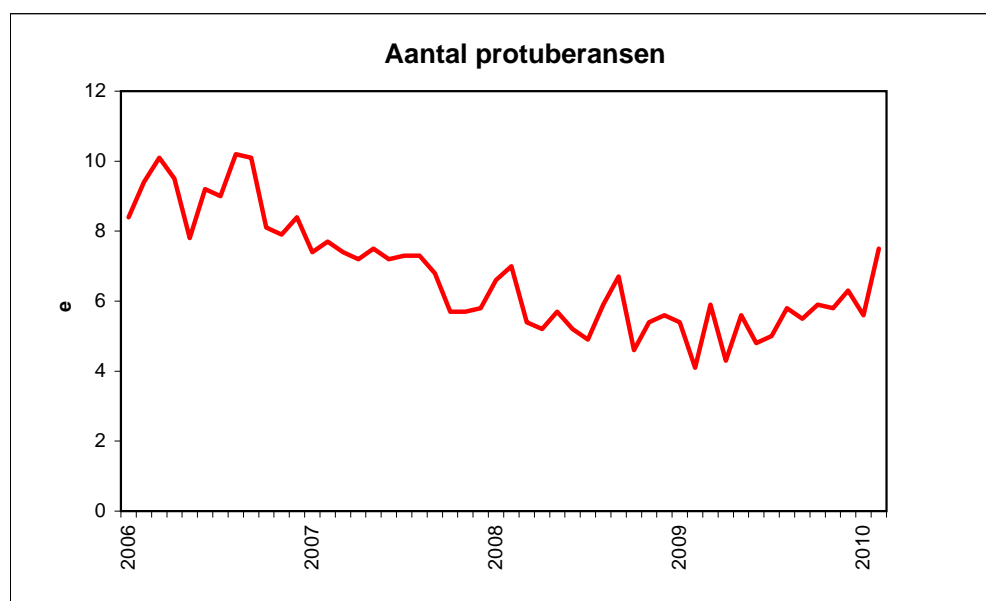
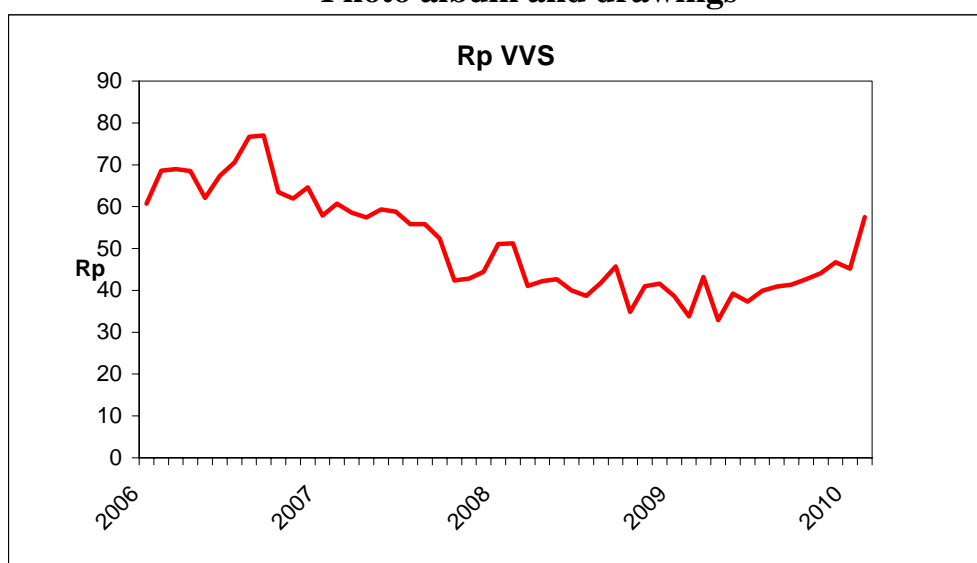
Monthly sunspot report

Polar faculae and CV numbers

Prominence numbers by the members

Monthly prominence report

Photo album and drawings



Mean of March observations

Groups :	N	1,26	Wolfnumb N	17,6	Beck :	136,3
	S	0,61	S	6,5	CV	23,9
	N+S	1,87	N+S	24		
454 observations	27 observers					

Sunspotnumbers VVS Belgium

Month: **March 2010**

Day	GROUPS			WOLFNUMBER			RE'	CV	OBS
	N	S	N+S	N	S	N+S			
1	1	2	3	12,9	14,8	27,7	71	8	13
2	1	2	3	10,8	26,2	37,0	88	13	24
3	1	2	3	12,8	25,7	38,5	58	8	14
4	1	2	3	10,4	28,1	38,5	64	10	21
5	1	2	3	8,1	21,1	29,2	33	10	15
6	0	0	0	0	0	0	0	0	19
7	1	0	1	8,5	0	8,5	11	1	22
8	2	0	2	11,9	0	11,9	10	2	9
9	0	0	0	0	0	0	0	0	20
10	1	0	1	4,0	0	4,0	4	1	17
11	1	1	2	18,2	14,2	32,4	118	24	12
12	1	1	2	22,3	7,8	30,1	270	23	7
13	1	0	1	27,7	0	27,7	346	37	10
14	1	0	1	31,6	0	31,6	507	48	8
15	2	0	2	26,7	0	26,7	333	32	20
16	2	0	2	27,4	0	27,4	247	25	13
17	2	0	2	28,4	0	28,4	96	13	17
18	2	0	2	28,4	0	28,4	69	12	14
19	2	0	2	21,4	0	21,4	16	1	7
20	1	1	2	15,5	2,1	17,6	33	5	18
21	1	1	2	22,6	4,4	27,0	104	9	4
22	1	0	1	18,2	0	18,2	56	10	17
23	2	0	2	19,4	0	19,4	46	12	11
24	2	0	2	16,6	0	16,6	113	41	15
25	2	0	2	22,6	0	22,6	95	45	19
26	2	0	2	20,7	0	20,7	132	48	12
27	1	1	2	22,6	10,3	32,9	265	65	19
28	1	1	2	20,1	11,0	31,1	210	65	18
29	1	1	2	22,4	10,9	33,3	359	67	12
30	1	1	2	18,8	10,9	29,7	283	58	13
31	1	1	2	13,4	13,3	26,7	189	47	14
	1,26	0,61	1,87	17,6	6,5	24,0	136,3	23,9	454

Monthly mean: **24,0** Covering: **31/31** Spotless days: **2**
 Observations: **454** 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 ; Deman ; Taillieu ; Carels ; Dewaele
 Meeus ; Steen ; KSB ; Gabriel ; Claeys ; Thooris ; J.Bonse ; P.De Reu
 Claes ; Verboven ; Van Loo ; Son ; Coeckelberghs ; Dekelver
 G.Gubbels ; J Bavais ; A. De Kerchove ; Van Hessche**

Prominence number Rp

Belgian solar observers

Month: March 2010

Day	Q	Wedel	H	e	Rp	el. Obs	Stdev	OBS
1	3,3	1,8	4,5	8,8	53,8	1	10	5
2	3,7	1,9	2,0	2,9	22,9	2	9,2	9
3	3,1	2,2	2,8	7	35		11,3	6
4	3,3	1,9	2,4	5,4	29,4		7,2	8
5	3	2	2,7	4,3	31,3		6,9	3
6	3,3	1,8+	4,2	7	49	2	9,4	8
7	3,1	1,7	6,5	10,5	75,5	1	10	9
8	3,3	1,7	6,7	11,3	78,3		5,3	3
9	3,6	1,5	6,2	12	74	3	16	9
10	3,6	1,6	8,1	14,1	95,1	2	10,6	9
11	3,2	2,2	5	8	58		14	4
12	3	2,8	4	5	45	1	9,5	4
13	3	2	3,7	7,7	44,7		9,5	3
14	3	2	5	7,5	57,5		2,1	2
15	3,3	2,4	3,8	5,4	43,4		12,5	5
16	3,3	2	4,7	6,7	53,7	1	8,2	8
17	2,8	2,8	3,7	3,7	40,7	1	6,4	4
18	3,4	2,3	4	4,8	44,8		11,8	5
19	3	2	6,5	9,5	74,5		0,7	2
20	3,5	1,5	4,7	7,7	54,7	1	11,1	8
21			8	12	92			1
22	3	2,4	3,2	6,6	38,6	2	10	7
23	3	2	4,8	6,8	54,8		4,9	4
24	3,2	2,5	5,5	10	65		22,1	4
25	3,1	2	5	9,3	59,3	1	15,1	5
26	3,5	2	5,2	7,8	59,8		8,9	5
27	3,4	2,1	6,4	7,8	71,8		8,5	9
28	3,5	2,1	3,3	6	39	1	11,3	5
29	3,3	1,8	4	7	47		11,6	5
30	3,2	2,3	2,3	2,8	25,8	2	5,2	6
31	3,3	1,7	5,8	9,5	67,5		6,4	4
	3,24	2,04	4,7	7,6	54,3	21	9,5	169

Monthly mean: **54,3** Covering: **31/31**
 Observations: **169** Number of observers: **10**

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 ; 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 : $H \cdot 10 + e$

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

Different Relative Sunspotnumbers

Month : March 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	2	5		14							7,0		2	5	34		13,7		5	9			7,0		
2	5	6	27	8	8		11	22	13		12,5		29	14		11	8	15,5		17	10	24		17,0	
3	4	7	3		6		9	13			7,0		30	10		10		16,7		12		25		18,5	
4	9	6		8	6		6	23		3	8,7		21	17		9	20	16,8		11	13	24		16,0	
5	10	4				3	4	1	30		8,7		8	23	4	4		9,8		7		10	6	7,7	
6	0	0	0	0			0	0	0		0,0		0	0		0	0	0,0		0	0	0		0,0	
7	4	1	1	1	1	1	1	1			1,4		2	11	2	2	2	3,8		2	2	3	2	2,3	
8	2	3						2			2,3		4		3			3,5		5				5,0	
9	0	0	0	0		0	0	0	0		0,0		0	0	0	0	0	0,0		0	0	0	0	0,0	
10	1	2	0	0		0	0	0			0,4		0	3	0	2	0	1,0		4	0	0	0	1,0	
11	24	6		9				39			19,5		31		10	27		22,7		16	21			18,5	
12	23	24									23,5		30		27			28,5		21				21,0	
13		55		31			49		31		41,5		41		35	41		39,0			22	21		21,5	
14	56	47					44	43			47,5		40	43		27		36,7		24				20,5	
15	48	23	23			23	44	36	19		30,9		45	30	35	27		34,3		18		20	25	21,0	
16	23	23					25	26			24,3		66	37		35		46,0		18		33		25,5	
17	14	10	10			12	21	12	9		12,6		56	28	19	15		29,5		15		26	15	18,7	
18	10	6				11	14	13			10,8		43	18	27	11		24,8		11		28	11	16,7	
19								0			0,0														
20	3	4		6		3	2	12		2	4,6		6	8	6	4	15	7,8		9	7	7	7	7,5	
21	9	6									7,5		21		20			20,5		15				15,0	
22	8	2		12		9	8	12			8,5		19	13	14	7	17	14,0		5	9	13	7	8,5	
23	5	4				18		13			10,0		11	14	7			10,7		4			16	10,0	
24	43	19		55		49	44	13			37,2		32	21	21	20	40	26,8		6	5	7	4	5,5	
25	43	56	59				44	20	58	43	46,1		23	20		12		18,3		3		10		6,5	
26	44	55	46				43	58			49,2		23	22		32		25,7		9		8		8,5	
27	53	56			62	83	56	56	86	56	63,5		42	31	35	33		35,3		12		8	24	14,7	
28	56	56	62	56		83	56	56	98	56	64,3		43	32	33	34	33	35,0		11	9	10	12	10,5	
29	65	66				84	57	63			67,0		55	56	32	55		49,5		16		12	11	13,0	
30	56	39					54	63			53,0		44	34		36		38,0		8		13		10,5	
31	53	18	19				54	60			40,8		35	30		21		28,7		4		17		10,5	
##	23,2	20,3	20,8	15,4	16,6	27,1	26,9	24,3	34,4	32,0	22,9		29,3	20,7	17,3	17,1	18,2	21,74		9,9	8,2	14,0	10,0	11,95	

Becknumber

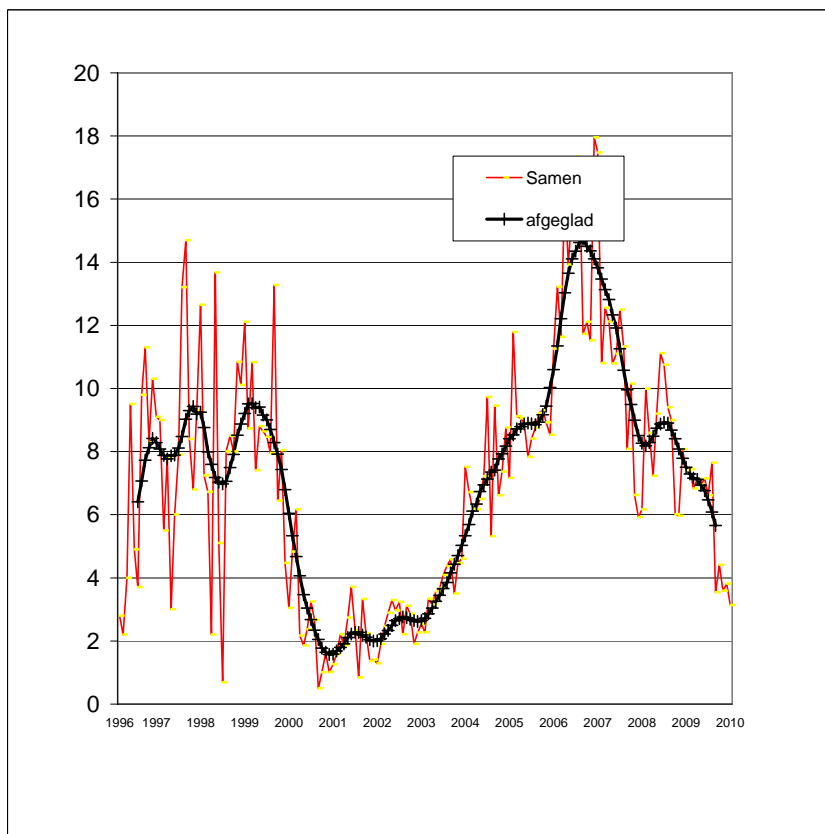
Date	F.Dubois	O.Steen	L.Meeus	P.J. Dekelver	J.Carels	G.Gubbels	E.De Ceuninck	D.Van Hessche	R.Verboven	F.Feys	A.T.Son	J.Bourgeois	H.Coeckelberghs	De Backer	Pbl Obs Mira	J.Claes	Mean	Date						
1	16	20			85	12				222								71	1					
2	56	44	120		98	244	20	86		131	64			86	20			88	2					
3	40	40	36			100				127	40			53	24			58	3					
4	64	36			68	84	52		24	0	32		168	77	36			58	4					
5	61	16		16		32	20	77		36				4				33	5					
6	0	0	0		0	0	0	0		4				0	0			0	6					
7	74	8	4	8	8	8	4			0	8		0	4	0			11	7					
8	16	12					12			0				12	0			9	8					
9	0	0	0	0	0	0	0	0		0				0				0	9					
10	12	8	0	0	0	0	12			0				0	0			3	10					
11	182	40			128		116			112				132				118	11					
12	300	192					264			324								270	12					
13		234				378	360			504								346	13					
14	575	375				400	342			925				424				507	14					
15	404	184	325	404		475	216	252		324	396			354				333	15					
16	260	188				649	184			198	112			206	175			247	16					
17	96	52	88	100		292	48	64		88	76			60				96	17					
18	52	44		60		208	56			88	64		0	52				69	18					
19										32	16			0				16	19					
20	32	16		24	48	24	16		20	44	20			56	64			33	20					
21	112	96					104			104								104	21					
22	32	28		48	64	96	32			112	48			56	48			56	22					
23	32	28		112			24			44				36				46	23					
24	90	72		54	72	94	72			206	264			90				113	24					
25	36	58	112			148	40	36	126	0	224			76	94			86	25					
26	130	108	108			126	130			144				180				132	26					
27	217	199		569		152	266	260	170	380	238			217	242			265	27					
28	199	181	188	269	163	188	208	242	206	380	41			217	242			210	28					
29	290	312		332		294	358			452				474				359	29					
30	145	237				332	191			488	264			324				283	30					
31	73	53	40			508				286	320			183		52		189	31					
124	96,0	85,1	142,6	85,5	201	104	127	109	186	131	#####	56	125	#####	71			135,8						

Belgian Solar Observers

Polar Faculae

Month: March 2010

Date	Dubois 125mm F20			Steen 102mm F15			Deman 150mm F15			Gabriel 250 mm F20			Dekelver 150mm F8			Janssen 200mm F10			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	0	3	3																													
2	0	5	4	1	2	3,5	0	9	4	1	11	4				0	1	4	0	1	4				4	9	1					
3																																
4	1	6	3	1	5	4,0																		2	3	4,5						
5	1	4	3																						3	6	4	3	7	1		
6																									3	5	3,5	3	8	1		
7				0	2	3,0																			2	5	3,5	4	9	1		
8				0	2	3,0	0	10	2	1	10	3	0	0	2,5	1	3	3	1	4	4	2	0	4	3	4	3,5	3	9	1		
9	1	4	3	2	3	3,5				2	9	3	2	9	3																	
10	0	4	3	2	5	4,0	2	9	3	1	11	4	0	2	4																	
11				1	2	3,0				0	8	3	0	0	4																	
12																																
13																																
14																																
15	1	5	3	1	3	3,5																										
16																																
17				0	1	3,5																										
18																																
19																																
20																																
21				0	2	3,5																										
22																																
23																																
24	0	6	4																													
25																																
26				2	3	3,0																										
27				0	1	3,0																										
28				1	3	4																										
29				0	2	4																										
30	1	7	3	0	2	3,5																										
31				1	4	3,5																										
	0,56	4,89		0,75	2,63		0,7	9,3		1,9	9,9		0,21	0,14		0,20	2,20		0,27	0,91		2,00	4,00		4,32	8,95						



Sunspot activity from organisations all over de world

Month : **February 2010**

Organisation	Wolf Total	Wolf North	Wolf South	Groups	Faculae number	CV	Beck	Pettis index	Intersol	Area	prom MDF	prom Rp	Film & plages	Radio flux	Naked eye
NOAA SWO	31,0													84,7	
SIDC	18,6	13,9	4,7												
Kanzelhöhe	19,6														
G.F.O.E.S France	16														0,02
BSO Belgium	29,5	20,5	9	1,84		19,70	207,2	31,5	15,53			57,5			
S.O.G.S.A.S. Switzerland	22,1			1,5											
BAA	25,3			1,59							2,96		1,28		
GsRSI Italy	29,8											47,5			
CV Helios Network						19,2									
AAVSO	26,8														
Sonne Germany Preliminary	21,9	16,3	5,6	1,30			295								
O.A.A. Japan	24,8	18,3	6,4												
Solar Observer Society TOS Poland	26,1				2,13	22				93,1					
Astronomical League of the Philippines	19,7			1,39											



28/03/2010
André Gabriel

SIDC Weekly bulletin on Solar and Geomagnetic activity
WEEK 482 from 2010 Mar 22

SOLAR ACTIVITY

Solar activity was mostly quiet in the beginning of the week. Starting from March 27, activity picked up with several C-flares, originating from NOAA AR 1057. This NOAA AR 1057 (Catania 54) was the most prominent active region on the solar disk this week. The largest solar flare it launched was a C3.8 flare, peaking at 18h29 on March 27. A CME originating from the same location was detected by LASCO at 00h30 on March 24. STEREO-A data showed it was partially earth-directed. Because of this increased chance for C-flares and the possible geomagnetic disturbance of the CME, the SIDC all quiet alert was halted on March 24.

On March 26, another earth-directed CME was detected by both STEREO spacecrafts at 08h39.

GEOMAGNETIC ACTIVITY

There were no big geomagnetic disturbances during the week. The maximum level K_p reached was 3 and this happened during only one period on March 28. The solar wind speed was very low (~300 km/s) at the beginning of the week. On March 25, there was a jump in all solar wind parameters due to a sector crossing. The wind speed went up to ~430 km/s.

For the rest of the week, the geomagnetic conditions were quiet to unsettled, also due to the influence of a coronal hole that crossed the central meridian on March 23 and the arrival of the CME that was detected on March 24.

SIDC Weekly bulletin on Solar and Geomagnetic activity
WEEK 483 from 2010 Mar 29

SOLAR ACTIVITY

Two sunspot groups were observed on the Sun during the last week: Catania numbers 54 and 56, NOAA ARs 1057 and 1059 respectively. The Catania sunspot group 54 did not produce any noticeable flaring activity.

Catania sunspot group 56 (NOAA AR 1059) situated at S15E40 was the source of the CME first detected by SOHO/LASCO C2 at 03:08 UT on March 30. The angular extent of the CME was around 110 degrees. It was accelerating to reach the speed of around 350 km/s in the LASCO C3 field of view. The CME was not associated with any reported flare. However, coronal dimmings and post-eruption loops were observed by SECCHI/EUVI onboard STEREO B starting from around 03:00 UT. The CME was the driver of the interplanetary shock wave detected on April 2 (see below).

A partial halo CME (angular width around 243 degrees) was detected on April 3. It was first seen at 10:33 UT (by LASCO) and at 09:54 UT (by SECCHI/COR2 onboard STEREO A). The CME was moving at a projected plane-of-the-sky speed of around 500 km/s (according to the LASCO data). The source region of the CME was the Catania sunspot group 56 (NOAA AR 1059) located at that moment around S25W05. The CME was accompanied by a filament disappearance, a post-eruption arcade, coronal dimmings, an EIT wave (as seen by SOHO/EIT) and a B7.4 flare peaking at 09:54 UT.

The arrival of the corresponding ICME (possibly an interplanetary flux rope) at the Earth was expected to occur late on April 5 - early on April 6 (the corresponding CME-driven shock wave actually arrived at 07:59 UT on April 5

according to the SOHO/CELIAS data). The flux rope orientation as inferred from the SOHO/EIT and SOHO/MDI data is ESW, although it may change during propagation. STEREO A and B data indicate that the bulk of the CME was propagating to the south of the ecliptic (according to the COR2 data). If the ICME will arrive, it may produce a major geomagnetic disturbance (peak Dst around -100 nT, peak K index around 6).

Another partial halo CME first observed by LASCO at 08:54 UT on March 29 was backside according to the STEREO/SECCHI data.

GEOMAGNETIC ACTIVITY

During the whole week, the Earth was situated inside a slow solar wind flow with average interplanetary magnetic field (IMF) magnitude. An interplanetary sector boundary was crossed by ACE on March 29 around noon, but no faster solar wind stream followed.

An interplanetary shock wave was detected by ACE and SOHO/CELIAS at 06:45 UT on April 2. The solar source of this shock is probably the CME detected on March 30 (see above). Due to the position of the erupting active region away from the solar central meridian and non-halo appearance of the CME, the corresponding ICME missed the Earth and only a shock was detected. The IMF magnitude reached 7 nT in the post-shock sheath. However, the IMF north-south component was fluctuating, so the K index reached only 3 (as reported by IZMIRAN and NOAA). Quiet geomagnetic conditions (with isolated intervals of unsettled conditions with K = 4) were thus reported during the whole week.

The shock arrival was not associated with any solar energetic particle event.

SIDC Weekly bulletin on Solar and Geomagnetic activity
WEEK 484 from 2010 Apr 05

SOLAR ACTIVITY

Solar activity was rather low during the week. A halo CME occurred on April 8, in conjunction with a B3.7 flare, which peaked at 0325 UT.

The source region was NOAA AR 1060, at that time about 20 degrees East of the central meridian. A southward EUV coronal wave was observed.

GEOMAGNETIC ACTIVITY

Geomagnetic activity was dominated from April 5 to 6 by a major geomagnetic storm (K_p=6), with brief periods of severe storm conditions (K_p=7) on April 5. Geomagnetic conditions were still at active levels (K_p=4) on April 7. The source of such disturbances is a halo CME, which occurred on April 3. A strong interplanetary shock was observed by the ACE spacecraft at 0756 UT on April 5. In addition, a fast solar wind stream linked to a coronal hole quickly followed the arrival of the shock and maintained at active levels an already disturbed situation. Conditions returned to quiet levels on April 8.

A weak interplanetary shock was observed by the ACE spacecraft on April 11 at 1215 UT, in relation with the halo CME of April 8. A brief period of active conditions (K=4) was observed at Dourbes station on that day between

18 and 21 UT, while planetary conditions remained at quiet levels.