

Newsletter Belgian Solar Observers

Results and news for solar observers

Volume 16

Number 181

March 2011

Franky Dubois Poelkappellestraat 57 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

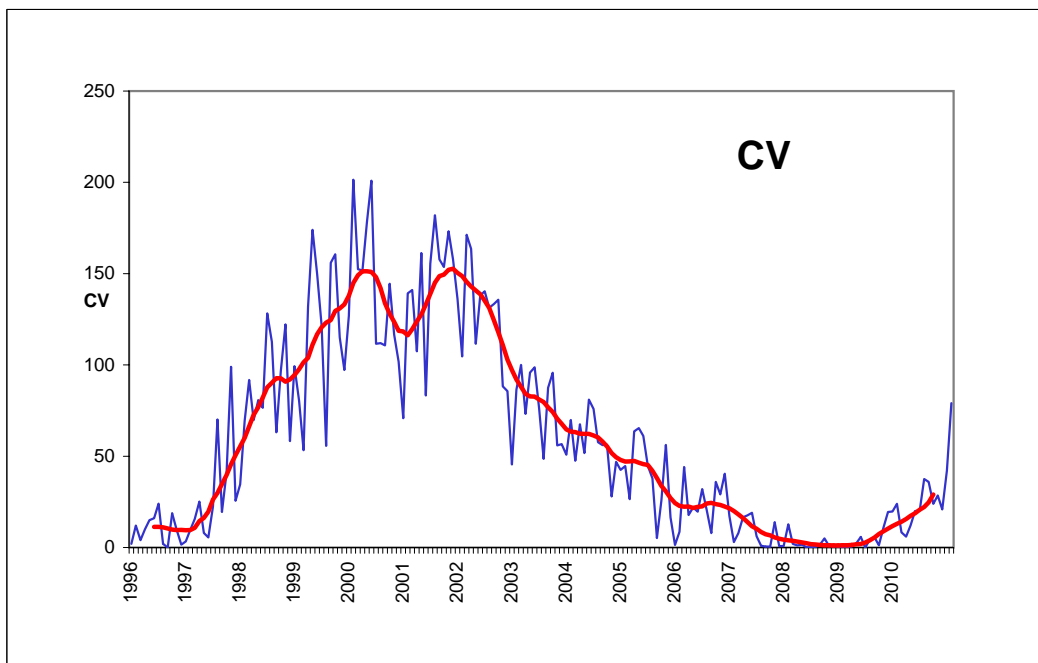
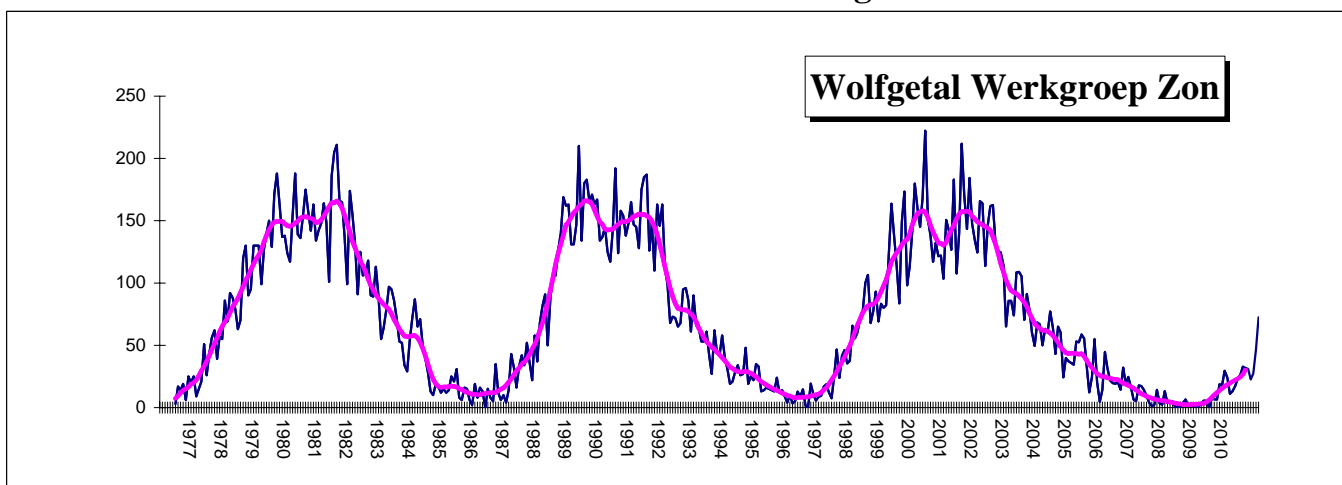
Monthly sunspot report

Polar faculae and CV numbers

Prominence numbers by the members

Monthly prominence report

Photo album and drawings



Mean of March observations

Groups :	N	2,93	<u>Wolfnumb</u> N	51,4	<u>Beck :</u>	725,4
	S	1,36	S	21	<u>CV</u>	79,1
	N+S	4,29	N+S	72,4		
453 observations	26 observers					

Sunspotnumbers VVS Belgium

Month: **March 2011**

Day	GROUPS			WOLFNUMBER			RE'	CV	OBS
	N	S	N+S	N	S	N+S			
1	2	1	3	42,1	16,5	58,6	722	63,6	15
2	2	1	3	32,1	15,4	47,5	609	68,8	16
3	3	1	4	51,9	8	59,6	598	83,6	20
4	4	1	5	72,2	19,6	91,8	972	106,1	22
5	5	1	6	98,3	25,8	124,1	1038	112	6
6	5	1	6	85,4	29,2	114,6	1525	134,7	22
7	5	2	7	94,8	27	121,6	1696	147,4	24
8	4	2	6	91,1	21,7	112,8	1492	150	23
9	3	1	4	70,1	13,2	83,3	1284	138	7
10									
11	3	0	3	67,8	0	67,8	15,6	93,8	14
12	3	0	3	65,6	0	65,6	952	94,3	15
13	3	0	3	81,6	0	81,6	580	97	5
14	3	0	3	53,0	0	53,0	482	67	7
15	3	0	3	45,3	0	45,3	257	40,3	17
16	1	1	2	16,6	14,8	31,4	170	34,7	16
17									
18									
19	2	1	3	24,5	5,1	29,6	136	13,4	19
20	2	0	2	30,8	0	30,8	124	12,4	19
21	1	0	1	24,4	0	24,4	219	27,9	20
22	3	1	4	30,5	14	44,4	292	70,1	21
23	3	1	4	23,0	16	39,4	260	53,4	21
24	2	2	4	25,3	28	53,4	291	42	19
25	3	3	6	36,7	61	97,2	861	72,1	19
26	3	3	6	39,1	57	96,4	943	71	16
27	4	4	8	53,4	56	109,5	963	97,7	20
28	3	4	7	52,3	58,4	110,7	1148	98,2	21
29	3	3	6	48,0	49,2	97,2	1191	93	20
30	2	3	5	45,7	36,1	81,8	935	71	7
31	2	1	3	38,5	15,5	54,0	559	60,5	2
	2,93	1,36	4,29	51,4	21,0	72,4	725,5	79,1	453

Monthly mean: **72,4** Covering: **28/31** Spotless days: **0**
 Observations: **453** Number of observers: **26**

V.V.S. BELGIUM SOLAR SECTION FRANKY DUBOIS

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

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: **March 2011**

Day	Q	Wedel	H	e	Rp	el. Obs	Stdev	OBS
1	3,3	1,8	5	8,7	58,7	1	8,9	4
2	3	2,5	4,8	6,5	54,5	2	10,6	6
3	3,3	2	7,8	11,1	89,1		13,5	8
4	3,4	1,4	7,6	10,9	86,9	2	19	9
5	3,2	1,8	6,3	11,3	74,3	1	2,1	4
6	3,5	1,9	6,6	10,4	76,4	2	14,8	10
7	3,3	2,1	7,8	10,2	88,2	2	19,5	11
8	3,4	2	6	9,9	69,9	1	14,1	11
9	2,8	2	8,5	14	99		0	2
10								
11	3,8	1,8	8	10	90	1	1,4	3
12	3,3	2	7,7	13,2	90,2	2	19,6	8
13	3,8	1,8	8	13	93			2
14	4	1,5	8	17	97			1
15	3,4	2,2	8,3	16,8	99,8		10,4	6
16	3,5	2,3	6,7	10,3	77,3	1	17,3	4
17								
18								
19	3,8	1,8	8,3	12,3	95,3	4	13,1	10
20	3,8	1,5	7,5	16,5	91,5	1	18,1	5
21	3,8	1,8	7,3	15,8	88,8	1	11,1	7
22	3,7	1,9	6,2	11,3	73,3	1	14,6	10
23	3,6	1,6	9	13,5	103,5	1	11,4	9
24	3,6	2,1	7	10,9	80,9	2	13,9	9
25	3,3	2	5,7	7,3	64,3	2	14,7	5
26	4	1,5	5,2	10,2	62,2	1	16,3	7
27	2,7	1,9	7,3	12,6	85,6	2	17,1	10
28	3,7	1,9	7,4	13,4	87,4	1	15,9	9
29	3,9	1,6	6,8	12,8	80,8		15,9	8
30								
31								
	3,50	1,87	7,1	11,9	83,0	31	13,1	178

Monthly mean: **83,0** Covering: **26/31**
 Observations: **178** 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 ; De Ceuninck ; Coeckelberghs ; Janssens ; Feys
 Hambsch ; Claes ; G.Gubbels ; T.Spaninks ; R.Blondeel;R.Verboven

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 : March 2011

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 Hesseche	Mean	G. Gubbels	F. Dubois	R. Verboven	O. Steen	J. Carels	Mean	F. Dubois	J. Carels	G. Gubbels	Mean
1	39	59	66				79	75		63,6	143	65				87,3	30		45	37,5
2	95	68	55	59			65	71		68,8	93	71		63		75,7	32		38	35,0
3	80	107	77	85		50	86	85	99	83,6	97	85	78	73		83,3	41		42	41,5
4	108	110	94	86		174	85	86		106,1	131	100	194	109		133,5	52		70	61,0
5		122		122			92			112,0	118			110		114,0			67	67,0
6	121	151		154	105	135	133	144		134,7	162	146	132	140		145,0	84		63	73,5
7	177	181	175	152	123	93	148	160	118	147,4	161	217	178	148		176,0	105		76	90,5
8	193	154	152	129	142	99	145	206	130	150,0	178	199	259	189		206,3	65		55	60,0
9	137	122					155			138,0	166	142		143		150,3	58		60	59,0
10										#####						#####				#DEEL/0!
11	80	105		105				85		93,8			98	102		100,0	51			51,0
12	97	98		97	97		102	104	65	94,3	101	87		95		94,3	50		49	49,5
13		97							97	97,0				80		80,0				#DEEL/0!
14	58	70						73		67,0		41		64		52,5	15			15,0
15	24	48	59			18	69	24		40,3	100	27	37	29		48,3	23		27	25,0
16	24	49		30			54	27	24	34,7	37	35		39		37,0	10		14	12,0
17										#####						#####				#DEEL/0!
18										#####						#####				#DEEL/0!
19	12	24	15	6		5	27	5		13,4	40	28	50	33		37,8	22		16	19,0
20	14	13		15		12	16	6	11	12,4	25	22	18	28		23,3	16		19	17,5
21	22	42	22	28			25	28	28	27,9	35	24		39		32,7	12		11	11,5
22	74	80	77	83			53	75	54	70,1	54	53	79	54		60,0	22		23	22,5
23	61	59	45	62		25	71	53	51	53,4	60	59	35	37		47,8	20		22	21,0
24	50	51	24	59		26	51	33		42,0	43	45	61	41		47,5	22		21	21,5
25	74	78	67	75			80	85	46	72,1	115	111		95		107,0	54		65	59,5
26	86	66		83	59	70	87		46	71,0	108	102	141	84		108,8	45		43	44,0
27	114	72	113	106		76	117		86	97,7	137	134	183	122		144,0	53		58	55,5
28	102	65	119	98		81	124			98,2	203	131	169	93		149,0	60		79	69,5
29	71	77		94			137		86	93,0	198	132		115		148,3	61		90	75,5
30	67	75								71,0		102		77		89,5	42			42,0
31	67	54								60,5		93		67		80,0	25			25,0
##	79	82,0	77	82,3	105	65,5	88	74	68	#####	109	90	115	83	#####	#####	41,2	#####	46	#DEEL/0!

Becknumber

Date	F. Dubois	O. Steen	L. Meeus	De Backer	J. Carels	G. Gubbels	E. De Ceuninck	D. Van Hesseche	R. Verboven	F. Freys	A. T. Son	J. Bourgeois	H. Coeckelberghs	P. J. Obs Mira	De Wit B.	Mean	Date			
1	652	520	758	708		889				1485	807	630				806	1			
2	643	503	581	540	595	760	532						470			609	2			
3	648	770	715	662	738	845	541	404	355	1477	418		481			671	3			
4	843	964	1010	760	1276	1163	940		887	1118	831	756	1041			966	4			
5		1117			837	1159				1887						1250	5			
6	1491	1531		1172	1624	1532	1814		1596	2997	1440	1012				1621	6			
7	2177	1641	1647	1634	1931	1593	1887	1709	965	2456	2149		1326			1760	7			
8	1359	1609	1894	1971	1418	1130	1856	1265	1103	1611	1312		1500			1502	8			
9	1237	1210			1673	1016										1284	9			
10																#####	10			
11	1204	1725		1275	1508		1819			1150						1447	11			
12	826	752		971	803	1537		825		983						957	12			
13		384						775		3411						1523	13			
14	418	504		527						2133						896	14			
15	304	196	172	185		436	270		229	754	264	474				328	15			
16	104	156		114	104	176	108	94		336	124		546			186	16			
17																#####	17			
18																#####	18			
19	132	246	112	72	128	210	146		64	188	112					141	19			
20	100	144		68	144	108	168	80	72	240	132	160	220			136	20			
21	198	261	270	234	270	180	270	216		128	144		162			212	21			
22	272	328	272	292	252	318	274	348	254	252	366	252	234			286	22			
23	250	257	196	234	238	356	291	358	233	230	254		188			257	23			
24	303	436	284	226	230	294	266		328	276	254					290	24			
25	948	975	988	780	925	1028	940	610		628	656	16	755			771	25			
26	874	820			984	972		873	1133	1226		86				871	26			
27	866	771	1419		1096	1453	557	880	866	915	762	170				887	27			
28	1141	789	1046		1556	1449	941		1502	1743	808	280	1104			1124	28			
29	1205	1376			1204	2158	1060	777		1817	811	549	940			1190	29			
30	936	861								1636	1008					1110	30			
31	580	537														559	31			
##	758,1	764	758	654	851	931	785	658	685	1290	674	377	#####	690	#####	#####				

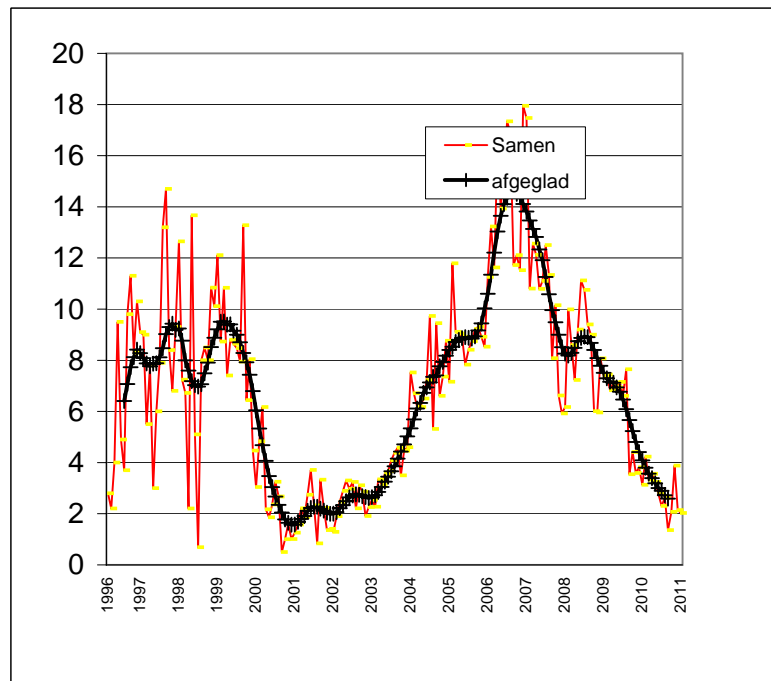
Belgian Solar Observers

Polar Faculae

Month: March 2011

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										1	2	3,5									
2	0	3	3							0	2	3									
3	1	3	3							0	2	3	1	3	3						
4	4	3	3	0	0	„,5	1	0	4	0	3	4									
5										0	1	4									
6				0	1	3,5	1	0	4	0	2	4				0	0	4			
7	0	3	4	0	1	3,5	0	0	4	1	3	3				0	0	3			
8				0	0	3,5	0	0	4	0	2	3,5				0	0	3			
9	0	2	3							0	2	2,5									
10																					
11				0	3	4,0	0	0	4												
12										0	3	3				0	0	3			
13																					
14																					
15				0	0	3,5	0	0	3	1	3	3									
16										0	2	3									
17																					
18																					
19	0	3	3	0	2	3,5	0	0	4	1	3	4									
20				1	2	4,0	0	0	4	2	2	3	1	0	4						
21	0	2	4	2	4	4,0	0	0	4	1	3	4	0	0	4						
22	0	4	4	0	3	4,0	0	0	4	0	3	3,5	0	0	4						
23	1	2	3	0	2	4,0	0	0	4	0	2	3,5	0	3	4						
24	1	0	3	0	2	4,0				1	2	3	0	1	3						
25	0	3	0	0	4	4,0				0	3	3,5									
26	0	4	4							1	2	2				0	0	4			
27							0	0	4	0	2	3									
28	0	6	4	0	2	4,0	0	0	4	0	3	4	0	3	4						
29	1	3	4	0	3	4,0	0	0	5	1	4	4,5									
30																					
31																					
	0,57	2,93		0,20	1,93		0,1	0,0		0,4	2,4		0,29	1,43		0,00	0,00		#####	#####	##

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



SIDC Weekly bulletin on Solar and Geomagnetic activity
WEEK 526 from 2011 Jan 24

SOLAR ACTIVITY

NOAA AR 1149 was the most active region during the week, it produced several C-class flares: a C1.4 at 06:25 UT on 24 Jan, a C1.2 at 12:05 UT on 27 Jan, a C1.5 at 04:25 UT on 28 Jan and another C1.5 at 10:22 UT on 28 Jan. A stronger, M1.3, flare was also associated with NOAA AR 1149. It occurred at 01:03 UT on 28 Jan. This flare was associated with a Type II radio burst, a CME and a proton flux increase. There were CMEs occurring every day of the week, none of them were believed to be directed towards the Earth.

GEOMAGNETIC ACTIVITY

The geomagnetic conditions were quiet to unsettled the whole week.

SIDC Weekly bulletin on Solar and Geomagnetic activity
WEEK 527 from 2011 Jan 31

SOLAR ACTIVITY

There was a very low solar activity over the entire week. The X-ray background stayed at A level, with only a few B sub-flares, mainly on Feb.4 when several small active regions emerged simultaneously. A large recurrent coronal hole started to influence the Earth magnetosphere late on Jan.31. It reached its maximum speed on Feb.1 at 530km/s, and then declined. There was only one large halo CME on Feb.1 at 23:48UT. LASCO and STEREO coronagraphs indicate that this was a backside event. Barring the emergence of a new large active region, solar activity is expected to remain low over the coming days.

GEOMAGNETIC ACTIVITY

The week started with quiet to unsettled geomagnetic conditions on Jan.31 and Feb.1 due to the coronal hole influence. Then, conditions were mostly quiet on Feb. 2 and 3. On Feb.4 at 1:30 UT, a weak CME shock was recorded in the solar wind by the ACE spacecraft. There was only a small speed increase to 400km/s, without any significant geomagnetic effect. Then around 19:00, the wind speed rose again steeply to 650km/s, marking the arrival of the associated magnetic cloud. This triggered a major geomagnetic storm (Kp=6) that lasted for a few hours, until Feb.5, 1:00UT. The origin of this very effective CME is unclear: the only possible association is a filament eruption and streamer blowout that occurred on Jan.30, but had however a very low initial speed of 230 km/s and was not detected in LASCO coronagraph images.

The solar wind speed reached a maximum of about 650km/s on Feb.5 around 3:00UT. It then slowly declined down to 500km/s by the end of Feb.6. The Earth magnetosphere remained unsettled over the last two days of the week, due to the high wind speed, with a last brief active episode on Feb.6. Quieter geomagnetic conditions are expected for the first days of the new week.

SIDC Weekly bulletin on Solar and Geomagnetic activity
WEEK 528 from 2011 Feb 07

SOLAR CONDITIONS

Solar activity was dominated in the beginning of the period by NOAA AR 11153 which strengthened into a beta-gamma group while rotating out of field over the solar west limb. The region triggered a handful of C-flares, and on Feb 12 an M1.9 flare.

More firework originated in NOAA AR 11159, from Feb 12 in the C-class and on Feb 13, 17:38 a M6.6 flare.

GEOMAGNETIC CONDITIONS

The period was characterized by a moderate solar wind speed between 350 km/s and 500 km/s.

Geomagnetic activity was therefore very low with Kp at most reach values Kp=3 in the beginning of the period and at most Kp=2 after mid Feb 8.

SIDC Weekly bulletin on Solar and Geomagnetic activity
WEEK 529 from 2011 Feb 14

SOLAR CONDITIONS

Solar activity ranged from moderate to high during the whole week and it was dominated by NOAA AR 1158. It produced an X2.2 flare peaking at 01:56 UT on February 15. This has been the strongest flare in more than four years. This AR also produced the following M-class flares: M6.6 at 17:38 UT on February 13,

M2.2 at 17:26 UT on February 14, M1.0 at 01:39 UT on February 16, M1.6 at 14:25 UT on February 16, M6.6 at 10:11 UT on February 18, M1.4 at 13:03 on February 18. NOAA AR 1161 produced an M1.0 flare at 07:44 UT on February 16. NOAA AR 1162 was active on February 18 with an M1.0 at flare 10:26, an M1.0 flare at 14:08 UT and an M1.3 at 21:04 UT. The M6.6 flare on February 13, the M2.2 on February 14 and the X2.2 on February 15 were associated with Earth directed CMEs and radio bursts

GEOMAGNETIC CONDITIONS

On February 14, a shock arrived to ACE and it was followed by strong magnetic fields which created active conditions. This disturbance is believed to have originated on February 9-10 on the Sun. On February 18, the combination of the three Earth directed CMEs described in the solar section arrived to the Earth and produced a minor geomagnetic storm. A more lasting and powerful geomagnetic effect was not seen due to the absence of a strong long lasting negative Bz. The Earth seems to have gone through a sheath region right after the shock that arrived at 00:40 UT on February 18, until 19:40 UT on the same day. After that the solar wind signatures could be related to a passage through a leg/flank of a magnetic cloud.

SIDC Weekly bulletin on Solar and Geomagnetic activity
WEEK 530 from 2011 Feb 21

SOLAR CONDITIONS

At the beginning of the week, AR NOAA 1158 that had produced the first X flares in four years, turned behind the limb. Solar activity was mostly quiet or at C-class flaring level during this week. Returning active region NOAA 1163 produced a M3.5 flare on

Feb 24 before it turned onto the disk. A westward directed fast CME was associated with it. A filament from the northern hemisphere erupted on Feb 25.

GEOMAGNETIC CONDITIONS

Geomagnetic conditions were quiet during the whole week. The week ended with a large returning coronal hole at central meridian.

SIDC Weekly bulletin on Solar and Geomagnetic activity
WEEK 531 from 2011 Feb 28

SOLAR CONDITIONS

Solar activity remained at eruptive levels most of the week with several C flares and one M flare. The main source of this activity was NOAA AR 1164. Several active regions appeared during the week and helped maintaining this activity level, with C flares from AR 1165, 1166 and 1169. A CME with no clear on disk signatures was observed by the SOHO/LASCO and STEREOA/COR2 coronagraphs on March 3rd, heading to the Earth direction, to the south.

GEOMAGNETIC CONDITIONS

Geomagnetic activity was dominated by a geomagnetic storm from March 1st 1200 UT to March 2nd 0600UT. At maximum of intensity, it reached major storm level (Kp=6) at planetary levels. Only active conditions were observed at Dourbes station in Belgium. Geomagnetic activity remained very calm the rest of the week.

SIDC Weekly bulletin on Solar and Geomagnetic activity
WEEK 532 from 2011 Mar 07

SOLAR ACTIVITY

The Sun was very active this week: we observed 16 M flares and 1 X flare. In the first half of the week, mainly NOAA AR 11164 (Catania 18) and NOAA AR 1165 (Catania 19) were responsible for all this activity. When these regions turned over the solar limb, NOAA AR 11166 (Catania 22) took over. It is this last region that produced the X1.5 on Wednesday March 9 at 23h23. All three active regions had a beta-gamma-delta configuration of their photospheric magnetic field.

Several clear CMEs were observed by the SOHO/LASCO and STEREO/COR2 instruments. On Monday March 7 there was a CME linked to M1.9 flare at 14h30 and one associated to an M3.7 flare at 20h12. Tuesday March 8, we observed two more CMEs: these were associated to a M1.5 flare at 3h58 and a M1.4 flare at 20h16. None of these CMEs were headed directly towards Earth, but we did receive a glancing blow from them on March 10 and 11.

The long duration event on Monday March 7 at 20h12 (M3.7 flare) was associated with an EIT wave (observed by SWAP) and a >10MeV proton event that lasted until March 10, seen in the GOES measurements.

GEOMAGNETIC ACTIVITY

Geomagnetic conditions were mostly quiet in the beginning of the week. Kp reached level 4 during one period (around 21h) on March 7 due to the arrival of a CME observed on the 3rd of March.

Late on March 10, we observed geomagnetic storm conditions that lasted until early morning on March 12th. The maximum Kp value that was reached, was 6. This storm was the result of the CMEs that were observed on March 7 and 8.

SIDC Weekly bulletin on Solar and Geomagnetic activity
WEEK 533 from 2011 Mar 14

SOLAR ACTIVITY

The solar activity was high in the beginning of the week, mainly due to Catania sunspot groups 22 and 26 (NOAA ARs 1166 and 1169). These sunspot groups produced numerous C-class flares on March 14-16. Catania sunspot group 26 (NOAA AR 1169) produced two M-class flares (M4.2 and M1.0 on March 14 and 15 respectively). The CMEs associated with these flares were not directed to the Earth. Further on, the flaring activity of the Sun decreased. The solar X-ray background flux decreased, and no flaring activity above the C-level was detected during March 17-20. On March 20, the solar X-ray background flux started to grow due to a returning active region at the south-east limb (NOAA AR 1165 during the previous rotation).

A partial halo CME was first detected in the LASCO C2 field of view at 12:48 UT on March 17. According to STEREO/SECCHI data, it was originating on the far side of the Sun, therefore, it had no geomagnetic consequences.

GEOMAGNETIC ACTIVITY

After the period of elevated solar wind speed on March 14 and early on March 15, the Earth entered the slow solar wind flow, where it stayed until the end of the week. The geomagnetic conditions were quiet throughout the whole week.

SIDC Weekly bulletin on Solar and Geomagnetic activity
WEEK 534 from 2011 Mar 21

SOLAR ACTIVITY

The proton flux was elevated on Mar 21 and 22. The curve passed slightly and for a very short time the proton event threshold. The initial increase was probably linked with a back sided CME of Mar 21, 02:54UT. The Earth is magnetically connected with the source site behind the Sun. The Parker spiral has bended magnetic field lines that guide the electrically charged protons. The Earth is near such field lines along which these protons travel. This is a rare but non unprecedented event. That same day, a long duration C-flare took place. The source region was Cat 35/AR 1176. A long duration event is an indication of an associated CME. Since the group was at that moment located near the very east of the solar disk, the CME was not Earth directed.

This active region, 1176 had a rather complex magnetic structure: beta-gamma and was responsible for almost all flaring activity further this week. This group exerted three moderate M-flares on Mar 23-24-25, one a day. None of the CME's was Earth directed, except for a very slow plasma structure that left the Sun on Mar 25. Since it was very slow, it is probably overtaken by the ambient solar wind.

GEOMAGNETIC ACTIVITY

Mar 22-23, we had unsettled conditions probably induced by a small North-South oriented coronal hole.

SIDC Weekly bulletin on Solar and Geomagnetic activity
WEEK 535 from 2011 Mar 28

SOLAR ACTIVITY

Solar activity was low during the whole week despite the simultaneous presence of up to 7 sunspot groups on the solar disc. There were only a few occasional C flares. The main active regions were NOAA1176 (Catania #35), which experienced a continuous decline, and NOAA1183 (Catania #41), which was stable with just a slight growth on April 1st followed by a final decline.

Late on March 29, a weak shock and solar wind disturbance, possibly associated with a CME ejected on March 24, reached the Earth. On April 1st, the Earth crossed a sector boundary in the solar wind, which was followed on April 2 by a fast solar wind stream. The solar wind reached a maximum speed of 600 km/s on April 2 and slowly declined over the following days. The origin of this stream remains uncertain as no significant low-latitude coronal hole crossed the solar disk during this week.

GEOMAGNETIC ACTIVITY

The week started with quiet geomagnetic conditions resulting from a slow solar wind. The weak disturbance of March 29 only caused temporary unsettled conditions in the first few UT hours of March 30. After a new quiet spell from March 30 to April 1st, the geomagnetic field became unsettled to active on April 2 and 3, in response to the aforementioned fast solar wind stream. Minor storm levels (Kp=5) were briefly reached at a few ground stations. This activity started to decline by the end of April 3.

SIDC Weekly bulletin on Solar and Geomagnetic activity
WEEK 536 from 2011 Apr 04

SOLAR ACTIVITY

Solar activity was rather moderate during the week, with only a handset of C-class flares. The strongest one was a C1.9 flare in NOAA AR 1185, occurring on April 6th, 1807 UT (peak time).

GEOMAGNETIC ACTIVITY

Geomagnetic activity remained low during most of the week with the exception of April 6th, when isolated minor storm conditions (kp=6 and 5 between 1200 and 1800 UT) were observed at planetary levels in response to a sudden jump in the interplanetary magnetic field B_t and B_z values. The origin is probably a sudden and temporary sector boundary crossing.

SIDC Weekly bulletin on Solar and Geomagnetic activity
WEEK 537 from 2011 Apr 11

SOLAR ACTIVITY

Six ARs were active in producing mostly C-class flares during the week (NOAA ARs 1185, 1186, 1189, 1190, 1191 and 1193). There was an M1.3 flare from AR 1190, at 17:12 UT on April 15. CMEs occurred every day with only one directed partially towards the Earth, consequence of a filament eruption in the southeast of the Sun on April 14 around 23:00 UT.

GEOMAGNETIC ACTIVITY

A fast solar wind stream arrived to the Earth on April 12 and produced a minor geomagnetic storm with two three-hour periods of Kp=5.

SIDC Weekly bulletin on Solar and Geomagnetic activity
WEEK 538 from 2011 Apr 18

SOLAR ACTIVITY

During the past week, 7 different NOAA active regions were visible on the solar disk. In the beginning of the week NOAA AR 1193 (Catania 55) with a beta-gamma configuration was responsible for most of the solar activity, producing several C-flares. However, when NOAA AR 1195 (Catania 58) turned over the east limb on April 19th, it took over this role. Cat 58 was the source of a large number of C-flare throughout the week, in addition to 2 M-flares on April 22. (an M1.8 flare peaking at 04h45 and an M1.2 flare around 15h53). Afterwards solar activity returned to quiet levels with the X-ray background flux at B-level.

The STEREO/COR2 and LASCO chronograph images did not show any clear CME linked to any of these flares. However, Cactus detected a CME at 04h12 UT on the morning of April 18, originating from AR 1190. As this region was located on the west limb during the eruption, this CME was not directed towards the earth. SDO/AIA 304 and STEREO-B/COR2 images showed a filament eruption that took place on April 19. Cactus detected the associated CME in LASCO at 22h24 in the NE with a speed of 500 km/s. The CME was directed mostly northwards, and did not reach the Earth. Finally, LASCO also observed a CME at 05h24 on April 21 morning in the NE quadrant, most probably originating from the AR just behind the limb there.

GEOMAGNETIC ACTIVITY

A discontinuity was observed in the solar wind around 06h00 UT on April 18. It was most probably linked to the arrival of the CME that was observed late on April 15th and caused one period of unsettled conditions (Kp=4). Geomagnetic conditions became active in the morning of April 20, due to the arrival of a fast coronal wind stream (starting the day before around 20h). The solar wind speed increased up to 550 km/s. The local K index in Dourbes reached a maximum of K=4 (and Kp=5 for one period).
