

# NIEUWSBRIEF V.V.S. WERKGROEP ZON

Waarnemingsresultaten en nieuws voor zonnewaarnemers

Jaargang : 15

Nummer: 174

Augustus 2010

Franky Dubois Poelkappellestraat 39 langemark 8920

Web site: <http://www.bso.vvs.be/> e-mail [astrosun@skynet.be](mailto:astrosun@skynet.be)

## Geslaagde bijeenkomst werkgroep zon !



Petra Van Lommel

### Gemiddelden werkgroep zon Augustus 2010

Groepen :	N	1,77	Wolfgetal :	N	22,2	RE'	111,8
	S	0,50		S	4,2	CV	20,2
	N+S	2,27		N+S	26,4		

454 waarnemingen    28 waarnemers



# Sunspotnumbers VVS Belgium

Month: **August 2010**

Day	GROUPS			WOLFNUMBER			RE'	CV	OBS
	N	S	N+S	N	S	N+S			
1	2	0	2	19	0	19	96	32	17
2	2	0	2	20	0	20,3	169	38	17
3	1	0	1	16	0	15,5	178	37	21
4	2	1	3	28	5,5	33	278	58	13
5	3	1	4	42	7,3	48,8	167	38	19
6	3	1	4	39	11,8	50,6	160	43	23
7	3	1	4	30	11,4	41,7	131	40	9
8	2	1	3	24	13,7	37,4	144	36	17
9	3	1	4	39	13	51,7	210	37	21
10	3	2	5	47	12,6	59,3	227	24	14
11	4	1	5	53	11	64,1	202	28	19
12	4	0	4	48	0	47,6	178	21	16
13	3	0	3	37	0	36,7	132	17	20
14	3	0	3	33	0	32,5	246	19	19
15	2	0	2	26	0	26	146		1
16									
17	1	1	2	13	9,3	22	50	8	6
18	1	1	2	9	12,8	22,2	23	3	13
19	0	1	1	0	9,9	9,9	5	1	17
20	0	1	1	0	2,4	2,4	1	1	19
21	0	0	0	0	0	0	0	0	17
22	0	0	0	0	0	0	0	0	15
23	0	0	0	0	0	0	0	0	12
24	1	0	1	11	0	11,1	35	9	17
25	1	1	2	13	2	14,6	47	10	11
26	1	1	2	13	3,3	16	43	10	5
27	1	0	1	11	0	11,3	44	10	10
28	1	0	1	12	0	11,8	46	10	20
29	2	0	2	28	0	27,5	86	14	12
30	2	0	2	29	0	29,1	164	23	16
31	2	0	2	29,8	0	29,8	145	20	18
	<b>1,77</b>	<b>0,50</b>	<b>2,27</b>	<b>22,2</b>	<b>4,2</b>	<b>26,4</b>	<b>111,8</b>	<b>20,24</b>	<b>454</b>

Monthly mean: **26,4** Covering: **30/31** Spotless days: **3**  
 Observations: **545** Number of observers: **28**

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

Poekapellestraat 39  
 B8920 Langemark  
 Belgium  
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**Observers:**

**De Ceuninck ; Janssens ; Publ obs Mira ; Bourgeois ; R.Dezeure ; F.Feys**  
**De Backer; Dubois ; Taillieu ; Carels ; Dewaele**  
**Meeus ; Steen ; KSB ; Claeys ; Thooris ; J.Bonse**  
**Claes ; Verboven ; Van Loo ; Son ; Coeckelberghs ; Dekelver**  
**G.Gubbels ; J Bavais ; Van Hessche**

# VVS Belgian Solar Observers Prominence number Rp

Month : August 2010											Lille												Lunt												asm												Lunt
J. Janssens						PST	F. Dubois						20/20	E. De Ceunick						PST	F. Feys						60	J. Hamsch						60	G. Gubbels						60						
Day	time	Q	W	H	e	Rp	time	Q	W	H	e	Rp	time	Q	W	H	e	Rp	time	Q	W	H	e	Rp	time	Q	W	H	e	Rp	time	Q	W	H	e	Rp											
1							6,32	3	1,5	5	10	60	08.30	3,5	4	5	9	59	7,37	4	1	9	16	106							7,23	3,5	1	7	31	101											
2	7:00	4	2	6	13	73	11,43	2	2	5	6	56	11.30	3,5	3,5	5	5	55	5,22	2,5	1,5	7	15	85							15,40	3,5	1,5	8	29	109											
3	6:35	3,5	2,5	6	12	72	6,55	4	1	6	11	71	08.00	3,5	3,5	4	4	44	7,42	4	1,5	6	11	71	16u00	4	2	5	8	58																	
4							14,38	4	1	5	7	57	11.00	3,5	3,5	4	4	44	15,25	4	1	8	15	95																							
5	5:55	4	1,5	5	17	67	6,48	4	1	5	9	59	08.30	4,0	3,5	5	8	58	14,45	4	1	5	12	62	16u45	4	2	6	9	69	5,40	3	1,5	5	17	67											
6	7:40	3	1,5	6	14	74	7,26	3	1	9	13	103	08.30	4,5	3	8	9	89	6,25	4,5	1	9	25	115	17u45	4	2	9	11	101	6,47	4	1	8	31	111											
7							8,25	3	2	4	7	47							6,17	4	1	8	13	93																							
8													09.00	4,0	3,5	7	9	79	7,03	4,5	1	13	23	153							6,47	4	1	9	24	114											
9	6:20	3	1,5	5	14	64	7,37	3	2	7	10	80	09.30	4,0	2,5	9	11	101	6,45	4,5	1	7	19	89	17u00	3	3	8	11	91	7,05	4	1	8	34	114											
10																			6,27	3	1	9	17	107							6,52	4	1	9	32	122											
11							7,17	4	1,5	7	13	83	09.15	3,5	4	5	6	56	6,05	4,5	1	9	13	103							6,08	4,5	1	8	27	107											
12																			6,29	4,5	1	5	9	59						9,39	4	1,5	9	30	120												
13							7,27	3	1	5	11	61	08.00	4,0	4	3	4	34	6,14	4	1	10	15	115							7,44	4	1	7	19	89											
14	5:50	5	1,5	6	9	69							07.30	4,5	3	7	7	77	6,05	3	1	11	13	123																							
15							8,45	4	1	6	9	69							15,20	2	1	1	1	11																							
16							7,40	4	1	7	13	83							7,55	3	1	6	9	69																							
17							7,53	4	1	8	14	94							6,35	3	1	5	12	62																							
18	8:45	4	2	5	12	62							08.00	4,0	3	6	9	69	6,47	5	1	7	15	85																							
19	8:30	3	2	6	13	73	11,31	3	2	6	12	72	08.15	4,0	3,5	5	5	55	6,37	3,5	1	7	20	90							7,23	3,5	1,5	7	22	92											
20	6:55	4	1,5	10	22	122	8,22	4	1	7	12	82	08.00	4,0	3	8	11	91	6,32	4	1	9	10	100	15u15	4	2	7	11	81	8,30	4	1	7	22	92											
21							12,17	4	1	6	10	70	09.30	4,0	3	8	8	88							12u45	4	2	5	7	57	7,58	3,5	1,5	5	20	70											
22							7,32	3	1,5	6	11	71							6,00	2,5	1	6	7	67	10u30	3	3	5	6	56	10,20	3	2,5	4	12	52											
23													11.00	4,0	3	8	8	88	6,32	3	1	8	12	92	17u20	4	2	5	17	67	17,10	3,5	1	6	20	80											
24													08.00	4,5	2,5	7	10	80	6,00	3,5	1	6	11	71							6,10	3	1,5	7	22	92											
25							8,08	4	1	6	11	71	10.30	3,5	3,5	5	5	55	6,45	4	1	8	16	96																							
26																			6,10	3	1,5	5	11	61																							
27																			6,42	4	1	8	13	93																							
28	6:15	4	2	5	6	56							08.00	4,0	2,5	5	6	56	6,10	5	1	8	20	100							6,35	3,5	1	9	20	110											
29	7:45	3	3	5	9	59							09.15	4,0	3,5	7	9	79	6,10	4,5	1	9	14	104							8,03	3	2,5	0	0	0											
30													08.30	3,5	3,5	5	7	57	6,53	5	1	9	15	105							15,40	3,5	1,5	7	21	91											
31							9,16	3	1	8	13	93	08.30	4	3,5	5	8	58	6,40	4,5	1	6	14	74							6,08	4	1	9	30	120											
11	3,7	1,9	5,9	13	71,9		19	3,5	1,3	6,2	10,6	72,7	22	3,9	3,3	6,0	7,4	66,9	30	3,8	1,1	7,47	13,9	88,5	8	3,8	2,3	6,3	10,0	72,5	20	3,7	1,0	6,95	23,2	92,7											

											From												Lunt																	
O. Steen						PST	H. Coekelberghs						PST	J. Claes						PST	T.Spaninks						Viewer	R.De Laet						PST	L.Mees					
Day	time	Q	W	H	e	Rp	time	Q	W	H	e	Rp	time	Q	W	H	e	Rp	time	Q	W	H	e	Rp	time	Q	W	H	e	Rp	time	Q	W	H	e	Rp				
1																									10:30	3	2	10	23	123										
2	16:25	3	2	6	9	69																			9:40	2,5	2	11	22	132										
3	6:40	4	2	7	9	79							17:00	4	1	6	11	71																						
4	14:44	3,5	2	8	11	91																																		
5	15:50	3,5	2	7	8	78																																		
6	6:30	4	2	8	12	92							15:00	4	1	7	14	84								6:15	3	2	11	22	132									
7	11:00	3	2,5	5	6	56																																		
8	6:40	4	2	6	8	68																																		
9	7:10	3,5	2	6	10	70							11:00	3	2	6	18	78								15:02	3	3	8	12	92	13:00	3	2	7	14	84			
10	6:05	3,5	2,5	4	6	46																				5:46	4	2	8	13	93	6:15	3	2	10	16	116			
11	7:50	4	2	5	5	55																																		
12	8:20	4	2	4	4	44																																		
13	6:55	3,5	2	7	8	78							13:00	3	2	5	7	57								6:04	3	3	5	6	56	6:15	4	2	9	13	103			
14	7:15	4	2	7	8	78							14:00	4	1	6	13	73								6:15	3	2	7	7	77	10:45	3	2	10	12	112			
15							10:20	5	4	11	21	131	14:00	3	2	7	11	81																						
16																																								
17																																								
18	7:45	3,5	2	6	8	68																																		
19	6:10	3,5	2	6	9	69																																		
20	7:20	3,5	2	9	11	101							17:00	4	1	6	13	73																						
21	9:50	3	2	7	9	79							10:00	4	1	7	12	82																						
22	7:50	3,5	2	6	8	68	0,45	4	4	18	26	206	10:00	4	1	5	9	59																						

# Prominence number Rp

## Belgian solar observers

Month: August 2010

Day	Q	Wedel	H	e	Rp	el. Obs	Stdev	OBS
1	3,3	1,5	8,5	21,5	106,5	3	11,7	7
2	3	2,2	5,8	9,6	67,6	1	12,5	6
3	3,9	1,9	5,7	9,4	66,4	2	11,7	9
4	3,8	1,5	8	13	93	2	2,8	4
5	3,6	1,9	5,1	10,4	61,4		13,2	8
6	3,8	1,6	7,9	14,9	93,9	3	12,6	10
7	3	2,3	4,5	6,5	51,5	1	6,4	3
8	3,5	2,6	7	10,8	80,8	2	10	6
9	3,4	2	6,9	13,3	82,3	2	12,8	9
10	3,7	1,3	8,7	20,7	107,7	2	14,5	5
11	4,3	1,2	8	17,7	97,7	2	12,9	5
12	3,6	2	4,8	6,5	54,5	3	6,8	7
13	3,4	1,3	6	10,3	70,3	3	15,7	9
14	3,8	1,9	6,5	8,2	73,2	3	9,8	9
15	3	1	6	9	69	1		2
16	3,5	1	6,5	11	76		9,9	2
17	3,5	1,5	7,5	13	88	1	8,5	3
18	3,9	2,2	6,4	12	76		14,1	5
19	3,1	2,2	6,1	12,6	73,6		13,6	8
20	3,8	1,6	8	14,4	94,4		17	10
21	3,8	1,8	6,3	11	74	4	11	10
22	3	1,8	5	8,1	58,1		12,7	7
23	3,3	1,8	6,3	11,8	74,8		13,8	6
24	3,3	1,9	6,4	11,4	75,4	2	10,7	7
25	3,7	1,3	7	13	83	1	12,5	4
26	3	1,8	6	10,5	70,5		13,4	2
27	4	1	7	14,5	84,5		12	2
28	3,7	1,9	8,3	15,4	98,4	2	15,2	9
29	3,5	2,8	6,3	9	72	2	11,5	5
30	3,8	1,3	7,7	15,8	92,8	1	13,1	7
31	3,4	1,3	7,4	12,2	86,2	2	15,6	7
	<b>3,53</b>	<b>1,72</b>	<b>6,7</b>	<b>12,2</b>	<b>79,1</b>	<b>45</b>	<b>11,9</b>	<b>193</b>

Monthly mean: **79,1** Covering: **31/31**  
 Observations: **193** Number of observers: **11**

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

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

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 : August 2010**

CV														Pettisindex SN						Intersol IS					
Date	F.Dubois	O.Steen	L.Meeus	J.Carels	J.Janssens	P.J. Deketver	G.Gubbels	H.De Backer	D.Van Hesseche	R.Verboven	Mean	G.Gubbels	F.Dubois	P.J. Deketver	O.Steen	J.Carels	R.Verboven	Mean	F.Dubois	J.Carels	G.Gubbels	P.J. Deketver	Mean		
1	42	41		38			49	11		12	32,2	25	15		14	14		17,0						8,0	
2	41	41	44		41		51	11			38,2	12	15		13			13,3	7	7	17			12,0	
3	40	40	41	37	40		50	10	37		36,9	20	11		11	12		13,5	3	4	12			6,3	
4	48	49				75	98	18			57,6	55	23	25	34			34,3	8		26	12		15,3	
5	65	55		21	24		54	27	23		38,4	49	46		41	34		42,5	16	18	24			19,3	
6	49	56	39	54	30	54	65	31	27	21	42,6	49	42	26	33	42	25	36,2	18	18	19	12		16,8	
7	56	23									39,5		32		23			27,5	6					6,0	
8	54	22		22			56	28			36,4	34	31		24	25		28,5	5	8	9			7,3	
9	54	24	56	21	27		54	36	23		36,9	35	30		32	22		29,8	14	5	21			13,3	
10	12	18				49	17	27	23		24,3	40	29	45	33			36,8	14		29	24		22,3	
11	20	22	22	20			16	67			27,8	36	32		34	46		37,0	18	20	24			20,7	
12	11	45	18	11			12	40	11		21,1	21	18		28	50		29,3	13	15	16			14,7	
13	40	16	14				10	17	13	10	17,1	17	21		33			23,7	17		12			14,5	
14	35	13	14	9	12			28	12	28	18,9		44		34	40	28	36,5	21	15				18,0	
15																									
16																									
17			6					9			7,5														
18	2	3		3	5			4			3,4		3		3	3		3,0	4	4				4,0	
19	1	1		1	1		1	0		0	0,7	1	1		1	1	0	0,8	1	1	1			1,0	
20	0	0		0	0		0	0		0	0,0	0	0		0	0	0	0,0	0	0	0			0,0	
21	0	0		0			0	0		0	0,0	0	0		0	0	0	0,0	0	0	0			0,0	
22	0						0	0		0	0,0	0			0		0	0,0						0,0	
23	0	0					0	0		0	0,0	0			0		0	0,0						0,0	
24		10	10	10		9	10	4	10		9,0	10		10	10	10		10,0		1	1	3		1,7	
25		10		10			12	7			9,8	14			10	10		11,3		1	6			3,5	
26	13	10						7			10,0		13		10			11,5	6					6,0	
27	10	10						10			10,0		10		10			10,0	1					1,0	
28	10	10	10	10	10		10	10	10		10,0	10	10		10	10		10,0	1	1	1			1,0	
29	12	13			16		15				14,0	26	14		16			18,7	6		9			7,5	
30	19	19	15	26			35				22,8	35	25		27	27		28,5	8	11	10			9,7	
31	19	22	21	16			21			21	20,0	29	29		26	29		28,3	13	14	14			13,7	
##	27	20,5	22,1	17,2	18,7	46,8	28	16,1	18,9	9,2	20,2	23	21	27	18,2	21	7,6	19,2	8,7	7,9	11	13		8,70	

**Becknumber**

Date	F.Dubois	O.Steen	L.Meeus	P.J. Deketver	J.Carels	G.Gubbels	E.De Ceuninck	D.Van Hesseche	R.Verboven	F.Feys	A.T.Son	J.Bourgeois	H.Coeckelberghs	De Backer	Pbl Obs Mira	J.Claes	Mean	Date						
1	56	144			48	144	132		144	72	68			56				96	1					
2	48	184	72			612	132			64				72				169	2					
3	132	132	48		176	550	132	88		220	88			176	220			178	3					
4	148	168		148		768	236			188				291				278	4					
5	182	148			113	216	210	125		252				136	124			167	5					
6	144	128	163	84	188	230	112	183	68	162	332			128				160	6					
7	126	86					97			213								131	7					
8	155	69			77	92	162			275	169			150				144	8					
9	121	159	221		119	192	154	155		212	210			242	528			210	9					
10	146	186		300		252		164		268	193			310				227	10					
11	158	182	178		207	192	132			312	122			334				202	11					
12	152	148	150		188	132		106		310	224			190				178	12					
13	176	126	106			116	102	118	112	176	192			140	88			132	13					
14	168	229	159		228		544	273	180	237		142	302					246	14					
15										146								146	15					
16										225								225	16					
17			44							36				69				50	17					
18	12	12			12		12			52				37				23	18					
19	4	4			4	4	8		0	20	0			0				5	19					
20	0	0			0	0	4		0	4	0			0				1	20					
21	0	0			0	0	0		0	0	0		0	0				0	21					
22		0			0	0	0		0	4	0			0				1	22					
23		0	0		0	0	0		0	0				0				0	23					
24		37	37	16	37	37	37	37		37	37		37	37				35	24					
25		37			37	60	45			37	37			74				47	25					
26	24	37								37				74				43	26					
27	37	37					37			37				74				44	27					
28	37	37	37		37	44	37	74		74				37				46	28					
29	53	61				100	85			130								86	29					
30	85	101	154		199	188	163			197				224				164	30					
31	138	101	175		125	124	200		160	157				124				145	31					
	95,92	91,2	110	137	100	176	111	132	66	134	111		60	117	218			115,4						

# Belgian Solar Observers

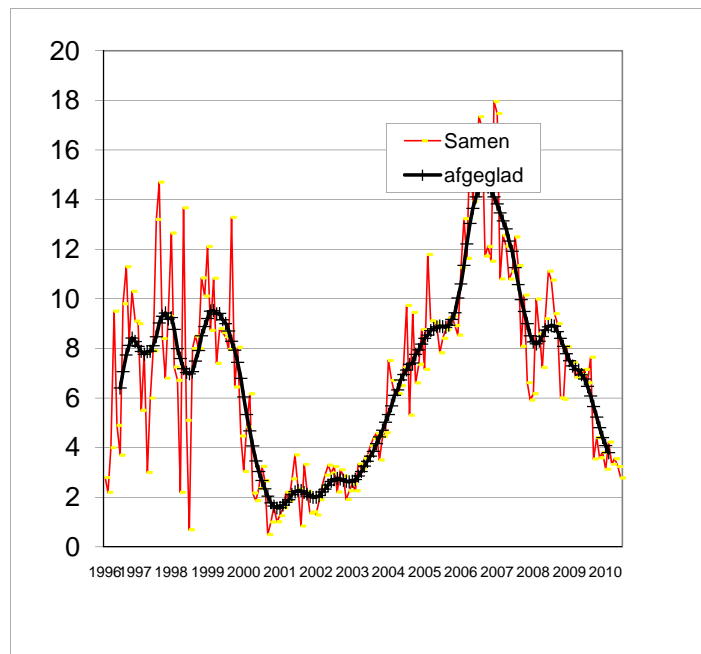
## Polar Faculae

Month: August 2010

Date	Dubois 125mm F20			Steen 102mm F15			T.Spaninks 127mm F15			G.Gubbels 114mm F7,8			Dekelver 150mm F8			Janssen 200mm F10			J.Carels			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		
	1	2	0	3																						
2																										
3	3	0	4	4	1	4,0	0	0	4	8	3	3,5				4	0	4			3	0	4			
4				2	1	3,5				4	3	3	0	0	3						2	0	4			
5	2	0	4	3	0	3,5				4	2	3,5				0	0	4			0	0	4			
6	2	0	4	3	0	4,0				4	2	4	0	0	4	2	0	3			0	0	4			
7																										
8	2	2	3	3	2	4,0	0	0	4	4	2	4								4	0	4				
9	3	1	4							4	2	4				0	0	3								
10				0	0	3,5	0	0	4	4	0	4	0	0	3,5											
11				0	1	3,5	0	0	4	3	1	3,5								0	0	3				
12				3	1	4,0	0	0	4	4	2	3														
13	5	2	4	3	1	4,0	0	0	4	3	2	4														
14	4	4	4	3	0	3,5										0	0	5			3	2	3			
15																										
16																										
17																										
18	2	0	3	0	1	3,5	0	0	4							0	0	4								
19										4	1	3,5				2	0	3								
20	2	2	3	2	2	3,5	1	0	4	3	2	4				0	0	4								
21							0	0	4	5	1	3,5														
22				1	0	3,5				4	2	2,5														
23				0	0	3,5	2	1	3	4	1	3														
24				2	2	3,5	0	1	4	4	1	2,5	0	0	4					0	0	3				
25							0	0	4	3	2	3,5								0	0	2				
26																										
27	2	3	4																							
28	3	1	4	2	1	4,0	0	0	4	3	2	3,5				0	0	4,0		0	0	4				
29				1	0	3,5				5	2	3				1	1	3,0								
30				2	0	4,0	1	0	4	5	2	3,5								1	0	3				
31	3	1	4	1	0	3,5	0	0	4	6,0	3,0	4								0	0	3				
	2,69	1,23		1,84	0,68		0,3	0,1		4,1	1,8					0,00	0,00		1,09	0,09		2,60	0,18	##	####	####

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

3



# Sunspot activity from organisations all over de world

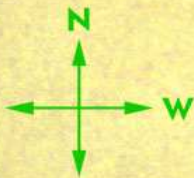
Month : **July 2010**

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
NOAA SWO	28,2													79,9	
SIDC	19,6	16	3,6												
Kanzelhöhe	21,6														
G.F.O.E.S France	13,6														0,05
BSO Belgium	26,4	22,2	4,2	2,27		20,20	111,8					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						20,24									
AAVSO (Raw mean)	25,4														
Sonne Germany Preliminary															
O.A.A. Japan	19,7	9,5	10,3												
Solar Observer Society TOS Poland	27,74					21									
Astronomical League of the Philippines															

**4 augustus 2010 7u 57 UT**

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

**NOAA 11092**



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SIDC Weekly bulletin on Solar and Geomagnetic  
WEEK 503 from 2010 Aug 16

#### SOLAR ACTIVITY

NOAA AR 1098 was the dominant active region during the period. On Aug 18 it was positioned on the North West limb and triggered the biggest flare of the period: a C4.5 long duration flare at 05:48. The event was associated with a coronal mass ejection and an increase in solar proton fluxes, that however did not pass the event threshold levels (10 fpu at 10 MeV).

Following this event, the active region rotated behind the North West limb, an SIDC ALL QUIET ALERT was issued and indeed, no more flaring activity was observed.

#### GEOMAGNETIC ACTIVITY

Geomagnetic activity was very low during the period and never went higher than the  $K_p=3$  level.

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SIDC Weekly bulletin on Solar and Geomagnetic  
WEEK 504 from 2010 Aug 23

#### SOLAR ACTIVITY

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

#### GEOMAGNETIC ACTIVITY

The week was dominated by the influence of a coronal hole that triggered active to minor storm conditions at planetary levels from Aug. 23rd, 21UT until Aug. 25th 06UT. Minor storm conditions were only observed during 6 hours on Aug. 25th.

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SIDC Weekly bulletin on Solar and Geomagnetic  
activity WEEK 505 from 2010 Aug 30

#### SOLAR ACTIVITY

There was no activity worth mentioning.

#### GEOMAGNETIC ACTIVITY

The geomagnetic activity was very low this week. There was a southern coronal hole at the central meridian on Sep 01. The co-rotating interaction region arrived on Sep 05. The geomagnetic response was limited:  $K_p$  became 3 at most.

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SIDC Weekly bulletin on Solar and Geomagnetic  
activity WEEK 506 from 2010 Sep 06

#### SOLAR ACTIVITY

Solar activity was very low over the whole week. Only two small active regions were observed. The Sun was spotless on Sept.8 and 9. There was only one significant flare (C3.3 on Sept.8) but the largest event of the week was a large filament eruption in the North-East quadrant of the Sun early on Sept. 11. This event produced a semi-halo CME.

Two moderately fast solar wind streams pushed the solar wind speed to maxima of 450-500km/s on Sept.8 and 10, before declining by Sept. 11 until the end of the week.

#### GEOMAGNETIC ACTIVITY

The Earth magnetosphere was quiet to unsettled from Sept.6 to Sept.9 due to the aforementioned solar wind streams. The  $B_z$  component of the interplanetary magnetic field stayed for a few hours at  $-5nT$  on Sept.8, causing locally active geomagnetic conditions. After Sept.9, the geomagnetic field became very quiet ( $K_p=0-1$ ).

A possible geomagnetic disturbance is expected on Sept.13 in association with the CME of Sept.11.

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SIDC Weekly bulletin on Solar and Geomagnetic  
activity WEEK 507 from 2010 Sep 13

#### SOLAR ACTIVITY

Solar activity was very low during the week. A new active region, NOAA AR 1108 began its transit on the East limb of the Sun on September 16th and produced a C1.3 flare on Sept. 17th at 01:22 UT (peak time). No further significant flaring activity was observed until the end of the week.

#### GEOMAGNETIC ACTIVITY

Geomagnetic activity remained at quiet levels during the whole week. There was a brief period of active conditions at planetary levels ( $K_p=4$ ) on September 15th (0-3 UT) which might be due to the crossing of a sector boundary.

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SIDC Weekly bulletin on Solar and Geomagnetic  
WEEK 508 from 2010 Sep 20

#### SOLAR ACTIVITY

According to the Catania observatory, four sunspot groups were observed on the Sun during the week. Catania sunspot groups 38 and 41 (NOAA ARs 1106 and 1108 respectively) were observed since the beginning of the week. They produced only a weak flaring activity (below the C-level). Catania sunspot group 38 disappeared behind the west solar limb on September 22.

On September 22, Catania sunspot groups 42 and 43 (attributed a single NOAA AR number 1109) appeared from behind the east limb. This active region (returning NOAA AR 1105) produced a significant flaring activity (four C-class flares) on September 20-21, while still behind the limb. The strongest flare (C2.1) peaked on September 20 at 19:45 UT. Further on, the flaring activity of this group decreased, with only B-class flares detected by GOES.

A low-latitude coronal hole in the northern hemisphere (elongated in the east-west direction) passed through the solar central meridian on September 20-22. Another low-latitude coronal hole in the northern hemisphere passed the central meridian on September 24-25.

#### GEOMAGNETIC ACTIVITY

In the beginning of the week, the Earth was situated inside the slow solar wind flow, and the geomagnetic conditions were quiet. A faster flow (probably originating from the elongated low-latitude coronal hole in the northern hemisphere) arrived on September 21. The solar wind speed reached only 450 km/s, and the interplanetary magnetic field (IMF) magnitude did not reach values above 10 nT, so the geomagnetic conditions remained quiet. Another slow wind interval without significant geomagnetic consequences followed on September 22.

On September 23 the solar wind speed started to grow indicating the arrival of the interaction region between the slow and fast solar wind streams. The IMF magnitude in the interaction region reached 13 nT, but the speed was still relatively low for a geomagnetic disturbance to occur. The fast flow (probably originating from the second low-latitude coronal hole in the northern hemisphere) arrived on September 24, and the solar wind speed reached its peak values (around 650 km/s) on September 25. Due to weak to average values of the IMF magnitude (3-4 nT) in the fast stream, the geomagnetic conditions remained quiet (peak values of  $K = 3$ ). On September 26 the solar wind speed decreased to 450 km/s, still with the quiet level of the geomagnetic conditions.

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>