

Newsletter Belgian Solar Observers

Results and news for solar observers

Volume 12

Number 134

April 2007

Franky Dubois Poelkapellestraat 39 langemark 8920

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Content Newsletter

Graphics and relative number for this month

Daily Wolfnumbers by the members

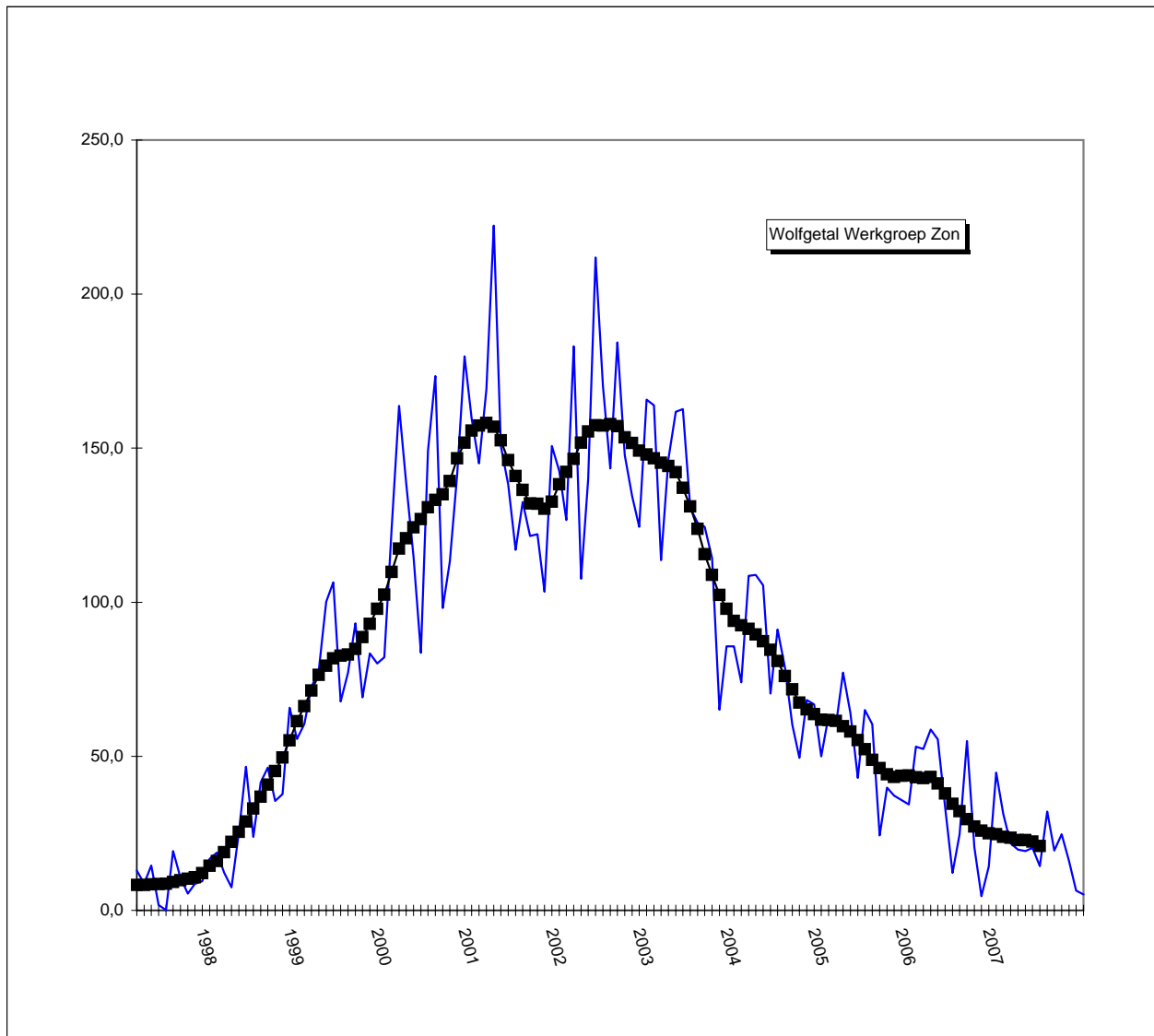
Monthly sunspot report

Polar faculae and CV numbers

Prominence numbers by the members

Monthly prominence report

Photo album and drawings



Mean of April observations

Groups :	N	0,07	Wolfnumb N	0,3	Beck :	64,7
	S	0,47	S	4,8	CV	7,9
	N+S	0,53	N+S	5,2		
609 observations	28 observers					

Wolfnumbers Belgian Solar Observers

Month: **April 2007**

Dag	SIDC			L. Meeus			H.Coeckelberghs			Publ Obs Mira			O. Steen			F. Dubois			L. Claeys			G. Deman			A.T.Son			H. De Backer			Macharis			A Gabriel			Dag			
	R	g	f	R	g	f	R	g	f	R	g	f	R	g	f	R	g	f	R	g	f	R	g	f	R	g	f	R	g	f	R	g	f	R	g	f				
1	10	1	5	15	0	0	0	1	8	18	1	4	14	1	6	16	1	17	27	1	6	16	0	0	0	0	0	0	0	0	0	0	1	3	13	1				
2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	11	1	12	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2				
3	10				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3				
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4				
5	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5				
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6				
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7				
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8				
9	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	12	0	0	0	0	0	0	0	0	0	0	0	1	2	12	9			
10	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10			
11	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11		
12	0							1	1	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12		
13	0				0	0	0	0	0	0	1	2	12	1	1	11	0	12	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	11	13			
14	0				0	0	0	0	0	0	1	1	11	0	0	0	0	0	0	0	0	1	1	11	0	0	0	0	0	0	0	0	0	0	0	0	0	14		
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15			
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16			
17	7				0	0	0	0	0	0	1	2	12	1	2	12	0	13	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	12	17			
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18			
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19			
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20			
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21			
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22			
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23			
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24			
25	8	1	3	13				1	1	11	1	4	14	1	3	13	1	3	13	1	2	12	1	2	12	1	2	12	1	2	12	1	2	12	1	2	12	25		
26	10	1	5	15				1	4	14	1	6	16	1	6	16	1	6	16	1	8	18	1	6	16	1	6	16	1	5	15	1	5	15	1	5	15	26		
27	11	1	8	18	1	3	13	1	3	13	1	9	19	1	7	17	1	8	18	1	10	20	1	9	19	1	9	19	1	9	19	1	9	19	1	9	19	27		
28	14	2	13	33	1	3	13	2	18	38	2	16	36	1	9	19	2	14	34	1	9	19	1	15	25	2	16	36	2	16	36	2	16	36	2	16	36	28		
29	20	2	17	37	1	1	11	1	7	17	2	18	38	2	20	40	1	9	19	2	14	34	1	6	16	1	16	26	2	23	43	2	23	43	2	23	43	29		
30	21	2	13	33	2	5	25	2	7	27	2	10	30	2	14	34	2	14	34	2	16	36	2	11	31	2	17	37	2	19	39	2	19	39	2	19	39	30		
31																																						31		
#	3,7	7,8			4,1			6,7			7,2			6,9			6,4			9,2			3,1			4,5			####			7,1								

Observations of the SIDC are not included in the Belgian monthly Wolfnumber.
 Publ Obs Mira : observers : Francis Meeus , Guido Mattheus and Marc Rayen

Dag	SIDC			J. Devriese			J. Bourgeois			KSB			Carels			L. Gysel			R. Gadyne			E. De Ceuninck			S. Kleber			B. Taillieu			Dewaele			F. van Loo			Dag
	R	g	f	R	g	f	R	g	f	R	g	f	R	g	f	R	g	f	R	g	f	R	g	f	R	g	f	R	g	f	R	g	f	R	g	f	
1	10				0	0	0	1	4	14	1	3	13							1	3	13	0	0	0	1	3	13				0	0	0	1		
2	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				1	3	13	0	0	0				0	0	0	0	0	2
3	10				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0	0	0	0	0	0				0	0	0	0	0	3
4	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0	0	0	0	0	0				0	0	0	0	0	4
5	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0	0	0	0	0	0				0	0	0	0	0	5
6	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0	0	0	0	0	0				0	0	0	0	0	6
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0	0	0	0	0	0				0	0	0	0	0	7
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0	0	0	0	0	0				0	0	0	0	0	8
9	0	0	0	0	0	0	0	0	0	0	2	3	23	0	0	0	0	0	0				0	0	0	0	0	0				0	0	0	0	0	9
10	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0	0	0	0	0	0				0	0	0	0	0	10
11	0				0	0	0	0	0	0	1	1	11	0	0	0	0	0	0				0	0	0	0	0	0				0	0	0	0	0	11
12	0				0	0	0	0	0	0	1	1	11	0	0	0	0	0	0				1	2	12	0	0	0				0	0	0	0	0	12
13	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				1	2	12	0	0	0				0	0	0	0	0	13
14	0	0	0	0	0	0	0	0	0	0	1	1	11	0	0	0	0	0	0				1	1	11	0	0	0				0	0	0	0	0	14
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0	0	0	0	0	0				0	0	0	0	0	15
16	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0	0	0	0	0	16
17	7				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0	0	0	0	0	0				0	0	0	0	0	17
18	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0	0	0	0	0	0				0	0	0	0	0	

Sunspotnumbers VVS Belgium

Month: April 2007

Day	GROUPS			WOLFNUMBER			RE'	CV	OBS
	N	S	N+S	N	S	N+S			
1	1	0	1	8	0	8	11	1	24
2	1	0	1	2,1	0	2,1	2	1	23
3	0	0	0	0	0	0	0	0	10
4	0	0	0	0	0	0	0	0	24
5	0	0	0	0	0	0	0	0	17
6	0	0	0	0	0	0	0	0	21
7	0	0	0	0	0	0	0	0	21
8	0	0	0	0	0	0	0	0	23
9	0	1	1	0	2,5	2,5	2	1	20
10	0	0	0	0	0	0	0	0	15
11	0	0	0	0	0	0	0	0	18
12	0	1	1	0	2,5	2,5	2	1	18
13	0	1	1	0	2,4	2,4	1	1	20
14	0	1	1	0	3,1	3,1	2	1	19
15	0	0	0	0	0	0	0	0	23
16	0	0	0	0	0	0	0	0	23
17	0	1	1	0	2	2	2	1	18
18	0	0	0	0	0	0	0	0	19
19	0	0	0	0	0	0	0	0	19
20	0	0	0	0	0	0	0	0	22
21	0	0	0	0	0	0	0	0	22
22	0	0	0	0	0	0	0	0	22
23	0	0	0	0	0	0	0	0	18
24	0	0	0	0	0	0	0	0	14
25	0	1	1	0	12	12	113	25	20
26	0	1	1	0	15,6	15,6	213	41	21
27	0	1	1	0	17,9	17,9	281	39	22
28	0	2	2	0	25	25	447	41	23
29	0	2	2	0	30,7	30,7	496	42	25
30	0	2	2	0	31,5	31,5	369	43	25
	0,07	0,47	0,53	0,3	4,8	5,2	64,7	7,9	609

Monthly mean: 5,2 Covering: 30/30 Spotless days: 17
 Observations: 609 Number of observers: 28

V.V.S. BELGIUM SOLAR SECTION FRANKY DUBOIS

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 Belgium
 e-mail : astrosun@skynet.be

Observers:

Devriese ; De Ceuninck ; Janssens ; Publ obs Mira ; Bourgeois ; Macharis
 De Backer; Dubois ; Gysel ; Kleber ; Deman ; Taillieu ; Carels ; Dewaele
 Meeus ; Steen ; KSB ; Gabriel ; Claeys ; Devriese ; Thooris ; Vanleenhove
 Claes ; Verboven ; Van Loo ; Son ; Coeckelberghs ; Gadyne
 S.Dufoer ; G.Gubbels ; jeugdwerking Astrolab ; J Bavais

Prominence number Rp

Belgian solar observers

Month: April 2007

Day	Q	Wedel		H	e	Rp	el. Obs	Stdev	OBS
1	3	2		6,8	8,8	76,8		10,7	11
2	2,9	2,1		5,8	6,6	64,6		4,9	8
3	2,5	3		4	4,7	44,7		0,6	3
4	2,7	2		6,6	8,9	74,9	1	14,1	9
5	3,1	2,4		3,7	6,2	43,2		15,9	6
6	3,1	2,3		3,3	4,4	37,4		9,3	9
7	2,5	2,5		5,3	7,8	60,8	1	9,9	6
8	2,9	2,1		6,1	8,3	69,3		9,7	9
9	3,1	2,2		6,7	10,2	77,2		13,5	9
10	3,5	2		5,8	6,5	64,5	1	10,5	5
11	3	2		5,4	8,8	62,8		6,6	5
12	2,8	2,4		4	8,3	48,3	1	12	7
13	2,9	2,3		2,2	4,6	26,6	1	10,1	6
14	2,9	2,3		4,7	6,8	53,8	1	12	7
15	3,3	2		6,5	8,9	73,9	2	11,8	10
16	3,2	1,9		4,4	6,6	50,6		4,9	7
17	2,8	2,3		2,5	3,8	28,8		9	6
18	2,8	2,1		3,6	4,4	40,4		11	7
19	2,9	2		3,4	5,1	39,1		8,2	8
20	2,9	2		4,6	5,1	51,1	1	8,5	8
21	2,8	2,2		5,3	9,9	62,9		9,5	9
22	3,7	1,9		5,4	9,6	63,6	2	9,7	9
23	3,3	2,2		6,6	10,4	76,4		11	5
24	2,5	2,6		7	9	79		7,8	4
25	3,2	2		5,5	8,5	63,5	1	9,3	7
26	2,9	2,4		5,4	6,7	60,7		9,4	7
27	2,8	2		4,1	5,9	46,9		6,8	8
28	3,6	1,9		4,3	5,3	48,3	2	8,8	8
29	3,3	2		6,3	10	73	1	11,7	9
30	2,9	2		5,1	6,6	57,6	2	10,1	10
	2,99	2,17		5,0	7,2	57,4	17	9,6	222

Monthly mean: **57,4** Covering: **30/30**
 Observations: **222** Number of observers: **11**

V.V.S. BELGIUM SOLAR SECTION FRANKY DUBOIS

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Observers:

Steen ; Dubois ; Meeus ; De Ceuninck ; Coeckelberghs ; Janssens
 Hamsch ; Claes ; Gabriel ; Blondeel ; Deman ; G.Gubbels

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/>

Cv numbers for april 2007

Mean

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
O. Steen	1	0		0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	40	40	37	38	39	39	8,2
L.Meeus	2	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	43	37	44	39	39	10,2	
J. Carels	2	0		0	0	0	0	0	2	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	40	37	37	40	39	39	8,2	
F.Dubois	2	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	8	43	40	41	45	45	7,6		
J.Janssen	0	0		0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0							8,6		
Sj Dufoer	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			46	46	51	51	12,9		

CV New (J. Janssens)

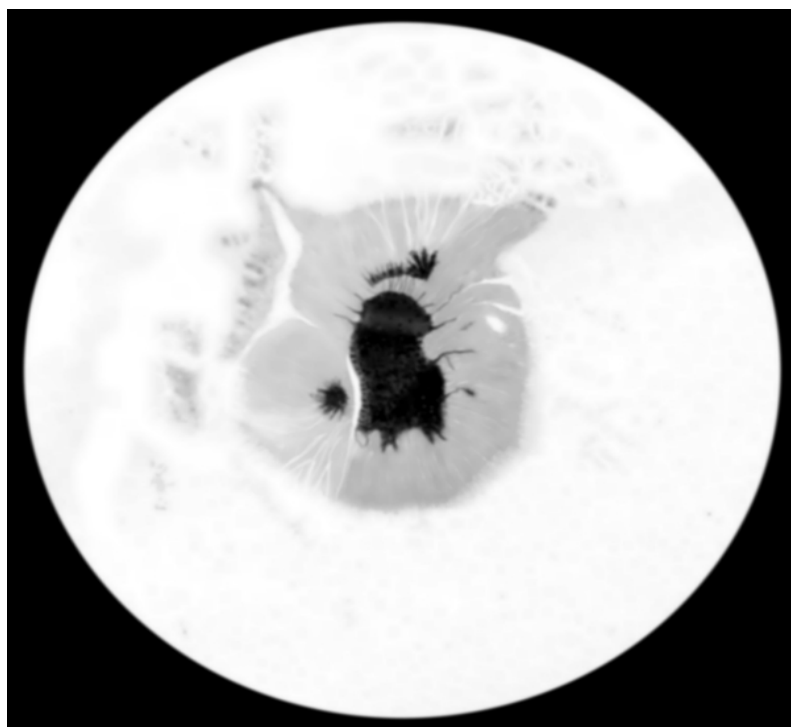
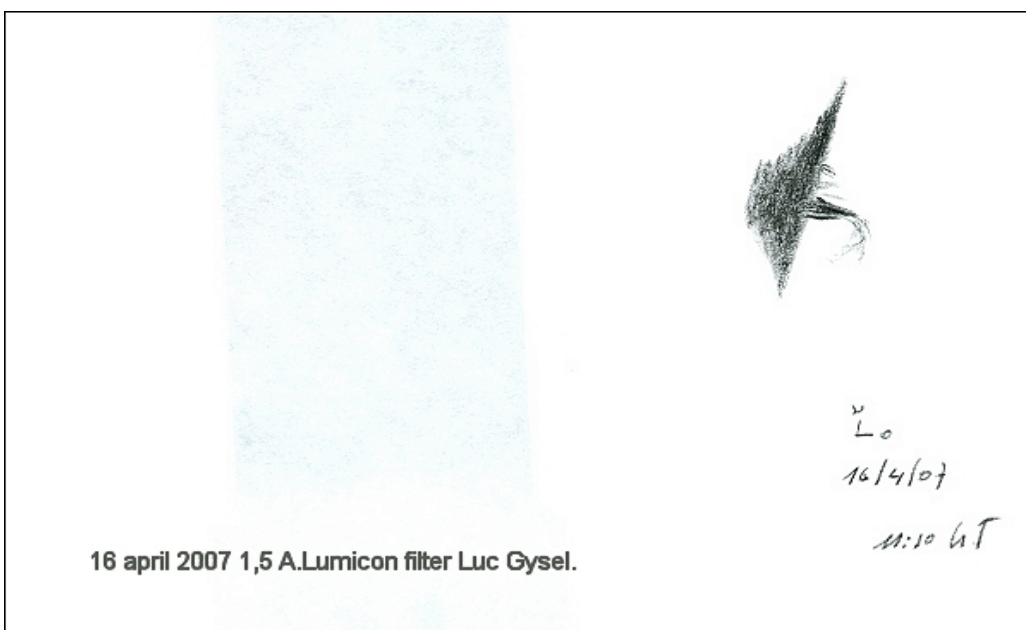
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
O. Steen	2	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	2	0	0	0	0	0	0	0	57	57	52	54	55	55	11,3

CV New

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
O. Steen	2	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	2	0	0	0	0	0	0	0	57	57	52	54	55	55	11,3

Special events and observations in april 2007

- 27/apr/07 lightbridge type d in 953 (Dubois)
- 28/apr/07 lightbridge type m in 953 (Dubois)
- 25/apr/07 Naked eye spot (Gubbels)
- 26/apr/07 Naked eye spot (Gubbels)
- 27/apr/07 Naked eye spot (Gubbels , Carels)
- 28/apr/07 Naked eye spot (Gubbels , Carels)
- 29/apr/07 Naked eye spot (Deman , Janssens , Steen , Gubbels , Carels)
- 30/apr/07 Naked eye spot (Deman , Janssens , Steen , Gubbels , Carels)



Date : April 29, 2007
 Time : 14.45UT
 Scope : ETX 105/1470
 Vixen LV Zoom eyepiece at 8mm
 Power : 183
 Filter : Baader AstroSolar filter.
 Seeing : 2/5

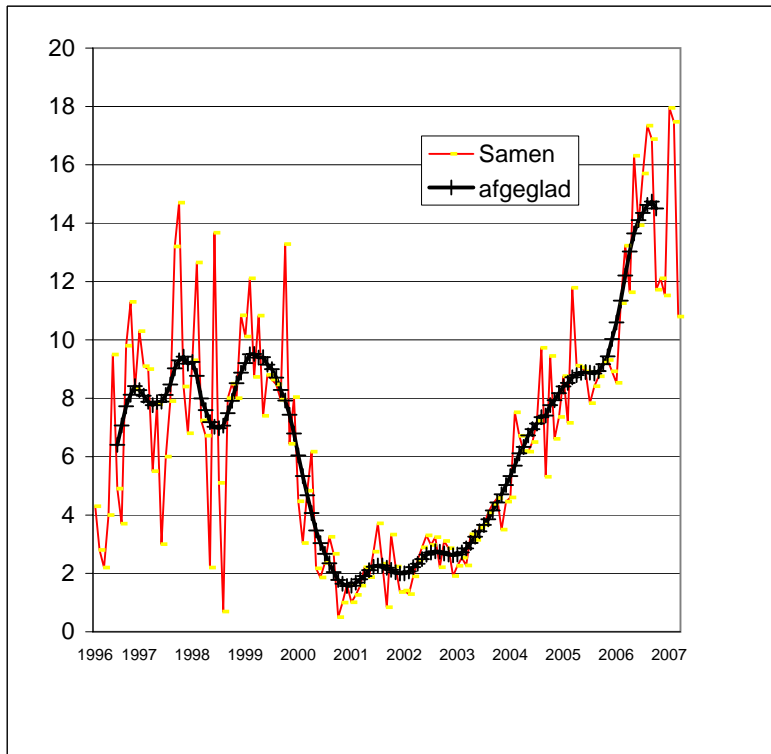
Sketch Orientation : N up, W right.
 Digital sketch made with PhotoPaint, based on a raw pencil sketch.

Belgian Solar Observers

Polar Faculae

Month: April 2007

Date	Dubois 125mm F20			Steen 102mm F15			Deman 150mmF15			Gabriel 250 mm F20			Carels 150mm F8			Janssen 200mmF10			T.Spaninks 127mm F15		
	North	South	Q	North	South	Q	North	South	Q	North	South	Q	North	South	Q	North	South	Q	North	South	Q
1				6	10	3,5				14	49	4	0	6	3	5	14	4,0	0	5	4
2	11	26	4	4	6	3	5	44		15	44	3	0	8	3	5	16	3,5	2	0	4
3																					
4				5	4	3,0				21	62	4				2	11	3,0	0	0	4
5										19	68	5									
6				6	10	4,0	15	53		19	56	4				2	7	4,0	2	2	4
7	3	10	3	4	7	3,0									0	4	2,5	0	0	4	
8				3	7	3,0			9	41	4	0	3	4				0	2	3	
9				4	8	3,5	9	34		14	46	4	0	1	4	2	7	3,5	0	0	4
10	5	10	3	5	6	3,5	12	43		16	45	5									
11	8	13	4	6	11	3,5							2	6	4				0	0	4
12				5	7	3,5				22	46	4							0	0	4
13				5	7	3,5				11	42	4				2	8	3,5	0	0	4
14	4	12	3	5	5	4	9	34		14	38	4									
15	5	10	3	5	8	3,5	12	36		15	45	5	1	6	5	1	4	3,5	1	4	4
16				5	10	3,5	10	38		15	39	5							2	5	4
17	3	11	3																6	4	4
18	8	19	4							12	47	3									
19				5	7	3,0				17	67	4	1	3	3				0	0	4
20				6	7	3,5	14	49		16	53	3	1	4	3						
21	4	7	4	6	8	3,5				14	52	4	0	2	3	2	6	3,5			
22	12	21	4	7	9	4,0	17	40		12	44	4	2	11	4	1	5	3,5	1	1	5
23	7	17	4	6	9	3,5				19	41	4							1	0	4
24																					
25				8	8	3,5				12	43	3	0	2	3						
26				4	7	3,5	10	35		19	41	4	1	2	3				0	0	4
27	4	9	3	4	7	3,5				15	39	3	1	4	3				1	1	4
28				8	10	3,5	8	23		8	38	5	2	0	3	4	10	4,0	0	1	4
29				7	9	3,5	7	22								5	6	3,5	1	4	4
30							5	31		12	28	4				2	8	2,5	0	0	4
	6,17	13,75		5,38	7,79		10,2	37,1		15,00	46,42		0,80	4,07		2,54	8,15		0,77	1,32	



SIDC Weekly bulletin on Solar and Geomagnetic activity
WEEK 327 from 2007 Apr 02
SOLAR ACTIVITY

The solar activity was quiet during the whole week. No sunspot groups were reported by Catania, and only two weak active regions were reported by NOAA (0949 on April 2-4 and 0950 on April 4). No noticeable flaring activity was detected.

A low-latitude coronal hole in the southern hemisphere was situated at the central meridian on April 7-8. The fast flow emanating from this coronal hole might have had only a glancing blow on the Earth (on April 9).

GEOMAGNETIC ACTIVITY

In the beginning of the week the Earth was situated inside the fast solar wind flow from a low-latitude coronal hole. Kp index reached 5 on April 2 and 4 on April 3 (according to the NOAA data). Otherwise the geomagnetic conditions were quiet. Since April 5 the Earth was embedded in the slow solar wind flow with weak to average interplanetary magnetic field. Geomagnetic conditions were quiet.

SIDC Weekly bulletin on Solar and Geomagnetic activity
WEEK 328 from 2007 Apr 09
SOLAR ACTIVITY

Solar activity was minimal for the entire week. The background soft X-ray flux remained below the A-class threshold for the duration, with the output measured at shorter wavelengths by GOES-11 rising to A-class level on April 12th. No sunspot groups were reported by Catania, and while NOAA AR 0951 was numbered on April 15th it appeared to contain only a single spot.

A low-latitude coronal hole in the southern hemisphere rotated over the W limb during the first few days of the week, while a smaller and apparently new hole could be seen transiting the central meridian before the weekend. Any fast flow from this latter hole was expected at the beginning of the following week.

GEOMAGNETIC ACTIVITY

At the beginning of the week the Earth was situated inside the fast solar wind flow from a low-latitude coronal hole. However, by comparison with previous rotations the hole had evolved significantly and the fast stream, as measured by ACE, was substantially slower than anticipated: ~550km/s as opposed to 700km/s previously. Accordingly, the Kp index rose to 4 for an isolated 3-hr period on April 9 and geomagnetic conditions remained quiet to unsettled thereafter. The fast stream had waned by April 14th and quiet solar wind and geomagnetic conditions were recorded over the weekend.

SIDC Weekly bulletin on Solar and Geomagnetic activity
WEEK 329 from 2007 Apr 16
SOLAR ACTIVITY

The solar activity was extremely low during the entire week. Only two minor spots were seen on April 17 and 18, but the Sun was spotless the rest of the time. The GOES X-ray flux remained well below A level and the F10.7cm radio flux stayed at 69sfu.

The main solar features were thus coronal holes: mainly a recurrent coronal hole that rotated in a geoeffective position for the second part of the week, but also a small transient equatorial hole that was the probable source of the enhanced geomagnetic activity early in the week. In the coming week, the Sun is expected to remain completely inactive, as the solar cycle minimum is approaching. Although a couple of weak reversed dipoles have been recorded recently in solar magnetograms, no sunspot groups associated with the new solar cycle were observed yet during this week.

GEOMAGNETIC ACTIVITY

The week started with a slow solar wind and quiet geomagnetic conditions, but the solar wind picked up speed late on April 16 and April 17, reaching a moderate 400km/s. However, this came together with -10nT

excursions of the Bz component of the IMF. The magnetosphere responded with unsettled to active conditions on April 17 and early April 18. By April 19, the wind speed started to decline continuously until April 21. During that period, the geomagnetic field remained quiet. Although the abovementioned recurrent coronal hole was in geoeffective position since April 19, it is only on April 22 that the Earth actually entered the associated fast stream. A rise of the wind speed and magnetic field was observed, but by the end of the week, it had not yet reached 500km/s. A progressive increase of the geomagnetic activity was also observed, but active levels were only reached by early April 23. It seems that the source coronal hole has been eroding away over the last two solar rotations, leading to slower top speeds and also a delay in the arrival of the associated disturbance (tighter Parker spiral).

Next week is thus expected to start with one or two days of active geomagnetic conditions before the influence of this recurrent fast stream declines again thereafter.

SIDC Weekly bulletin on Solar and Geomagnetic activity
WEEK 330 from 2007 Apr 23
SOLAR ACTIVITY

Solar activity was mostly quiet during the week, with moderate flaring activity no bigger than C2.8. The source of this activity is a new active region, NOAA AR 0953 which appeared on the East limb on April 24th and produced this single C2.8 flare on that day at about 22:43 UT. Since then, this big H-type sunspot produced only B-class flares although it grew slowly until the end of the week. Its magnetic configuration was beta-gamma on April 29th.

A large recurrent low-latitude coronal hole rotated into geoeffective position at the end of the week.

GEOMAGNETIC ACTIVITY

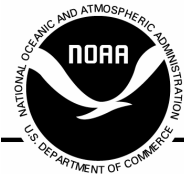
Geomagnetic activity was dominated by the effects of two fast solar wind streams emanating from coronal holes. The first one produced active conditions on April 23rd, with K index peaking at 4 between 0 and 9 UT at Dourbes station, while Kp indices revealed isolated minor storms conditions (Kp=5) during the same period. The following days showed very quiet conditions until April 27th when the second high-speed solar wind stream was encountered (maximum speed of 700km/s). Active conditions were observed at 16 UT on that day (Kp=4), with isolated minor storm conditions on April 28th (0-6 UT) and April 29th (0-9UT). K indices from Dourbes station showed only isolated active conditions (K=4) on April 27th, but no measurements were available from April 28th 15UT onward.

SIDC Weekly bulletin on Solar and Geomagnetic activity
WEEK 331 from 2007 Apr 30
SOLAR ACTIVITY

Flaring activity was little more agitated than usual. A C8.5, a C4.2 and a B9.8 flare occurred respectively on May 02, 05 and 06. The source of this activity was Catania sunspot group 32 (NOAA AR 0953). A smaller group was lagging behind and disappeared on May 05. The flare of May 02 was seen as a peak on top of a long duration B-flare and was accompanied by a slow west-ward CME. An associated EIT wave was visible. A recurrent southern coronal hole was present and crossed the central meridian on May 03.

GEOMAGNETIC ACTIVITY

The beginning of the week, we were still in the aftermath of a recurrent southern coronal hole which caused a minor storm during a long period. The co-rotating interaction region arrived on Apr 27. Geomagnetic conditions became again quiet late Apr 30. No geomagnetic disturbances were reported for the rest of the week. The coronal hole mentioned in the section solar activity, became geoeffective only on May 07.



NEWS FROM NOAA

NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION • US DEPARTMENT OF COMMERCE

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FOR IMMEDIATE RELEASE
April 25, 2007

NEXT SOLAR STORM CYCLE WILL BE LATE, NOT EXTREME --EXPERTS SPLIT OVER INTENSITY--

The next 11-year cycle of solar storms will most likely start next March and peak in late 2011 or mid-2012—up to a year later than expected—according to a forecast issued today by NOAA’s Space Environment Center in coordination with an international panel of solar experts. Expected to start last fall, the delayed onset of the next bout of space weather, known as Solar Cycle 24, has stymied the panel and left them evenly split on whether a weak or strong season of solar storms lies ahead, but neither group predicts a record-breaker. NOAA/SEC led the prediction panel and issued the forecast at its annual Space Weather Workshop in Boulder. NASA sponsored the panel.

During an active solar season, violent eruptions occur more often on the Sun. Solar flares and vast explosions, known as coronal mass ejections, shoot energetic photons and highly charged matter toward Earth, jolting the planet’s ionosphere and geomagnetic field and potentially bringing down power grids, disrupting critical military and airline communications, threatening astronauts with harmful radiation, knocking out satellites, and swamping Global Positioning System signals. These same storms illuminate night skies with brilliant sheets of red and green, called auroras, also known as the northern or southern lights.

“The Space Environment Center’s space-weather alerts, warnings, and forecasts are a critical component of NOAA’s seamless stewardship of the Earth’s total environment, from the Sun to the sea,” says retired Vice Adm. Conrad C. Lautenbacher, Ph.D., undersecretary of commerce for oceans and atmosphere and NOAA administrator.

SEC is the nation’s first alert of solar activity and its affects on Earth. Just as NOAA’s hurricane experts predict the upcoming season of Atlantic storms and forecast individual hurricanes, the agency’s space weather experts issue outlooks for the next 11-year solar “season” and warn of storms occurring on the Sun that could impact Earth. Both the National Hurricane Center and SEC are among NOAA’s nine National Centers for Environmental Prediction. SEC is also the world warning agency of the International Space Environment Service (ISES), a consortium of 11 member nations.

Solar cycle intensity is measured in maximum number of sunspots—dark blotches on the Sun that mark areas of heightened magnetic activity. The more sunspots there are, the more likely it is that major solar storms will occur.

In the cycle forecast issued today, half of the panel predicts a moderately strong cycle of 140 sunspots, give or take 20, expected to peak in February of 2012. The other half predicts a moderately weak cycle of 90 sunspots, plus or minus 10, peaking in August of 2012. An average solar cycle ranges from 75 to 155 sunspots. The late

decline of Cycle 23 has helped shift the panel away from its earlier leaning toward a strong Cycle 24. Now the group is evenly split between strong and weak.

“By giving a long-term outlook, we’re advancing a new field—space climate—that’s still in its infancy,” says SEC director Thomas Bogdan. “Issuing a cycle prediction this far in advance of the onset lies on the very edge of what we know about the Sun.”

Scientists have issued cycle predictions only twice before. In 1989, a panel met to predict Cycle 22, which peaked that same year. Scientists met again in September of 1996 to predict Cycle 23—six months after the cycle had begun. Both groups did better at predicting timing than intensity, according to NOAA/SEC scientist Douglas Biesecker, who chairs the current panel. He describes the group’s confidence level as “high” for its estimate of a March 2008 onset and “moderate” overall for the two estimates of peak sunspot number and when those peaks would occur.

One disagreement among the current panel members centers on the importance of magnetic fields around the Sun’s poles as the previous cycle decays. End-cycle polar fields are the bedrock of the approach predicting a weak Cycle 24. The strong-cycle forecasters place more importance on other precursors extending over a several-cycle history. Another clue will be whether Cycle 24 sunspots appear by mid 2008. If not, the strong-cycle group might change their minds.

The first year after solar minimum, marking the end of Cycle 23, will provide the information scientists need to arrive at a consensus. NOAA and the panel decided to issue their best estimate now and update the forecast as the cycle progresses, since SEC customers have been requesting a forecast for over a year.

“The panelists in each camp have clear views on why they believe in their prediction, why they might be wrong, and what it would take to change their minds,” says NOAA/SEC scientist Douglas Biesecker, who chaired the prediction panel. “We’re on the verge of understanding and agreeing on which precursors are most important in predicting future solar activity.”

The National Oceanic and Atmospheric Administration, an agency of the U.S. Commerce Department, is celebrating 200 years of science and service to the nation. From the establishment of the Survey of the Coast in 1807 by Thomas Jefferson to the formation of the Weather Bureau and the Commission of Fish and Fisheries in the 1870s, much of America’s scientific heritage is rooted in NOAA.

NOAA is dedicated to enhancing economic security and national safety through the prediction and research of weather and climate-related events and information service delivery for transportation, and by providing environmental stewardship of our nation’s coastal and marine resources. Through the emerging Global Earth Observation System of Systems (GEOSS), NOAA is working with its federal partners, more than 60 countries and the European Commission to develop a global monitoring network that is as integrated as the planet it observes, predicts and protects. The National Science Foundation sponsors the annual Space Weather Workshop.

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On the Web:

NOAA: <http://www.noaa.gov>

SEC: <http://www.sec.noaa.gov>