Solar Influences Data analysis Center

Data Analysis Service supported by the FAGS

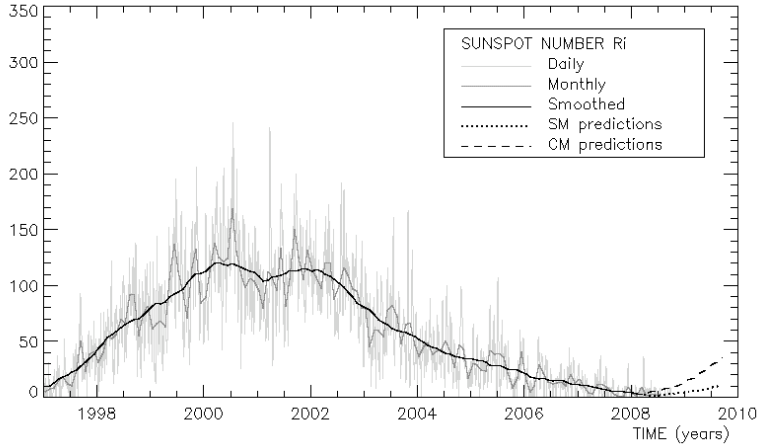
SUNSPOT BULLETIN

2008 n° 9

Provisional international and normalized hemispheric daily sunspot numbers for September 2008

computed at the *Royal Observatory of Belgium* using observations from an international network with the *Locarno Specola Solare* as reference station.

Date	R'_I	R'_N	R'_S
1	0	0	0
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0
7	0	0	0
8	0	0	0
9	0	0	0
10	0	0	0
11	7	7	0
12	0	0	0
13	0	0	0
14	0	0	0
15	0	0	0
16	0	0	0
17	0	0	0
18	0	0	0
19	0	0	0
20	0	0	0
21	0	0	0
22	8	8	0
23	9	9	0
24	0	0	0
25	0	0	0
26	0	0	0
27	0	0	0
28	0	0	0
29	8	0	8
30	0	0	0
Monthly mean	**1.1**	**0.8**	**0.3**
Cooperating stations	**67**	**60**	**60**



Predictions of the monthly smoothed Sunspot Number
using the last provisional value, calculated for March 2008 : 3.3 (± 5%)

	SM	CM		SM	CM		SM	CM
2008 Apr	4	4	2008 Oct	2	10	2009 Apr	5	22
May	3	5	Nov	3	11	May	6	24
Jun	3	6	Dec	3	12	Jun	6	27
Jul	2	7	2009 Jan	4	15	Jul	7	30
Aug	2	8	Feb	4	17	Aug	8	32
Sep	2	9	Mar	5	19	Sep	9	36

SM : SIDC classical method : based on an interpolation of Waldmeier's standard curves; the estimated error ranges from 7% (first month) to 35% (last month)
CM : Combined method : the combined method is a regression technique coupling a dynamo-based estimator with Waldmeier's idea of standard curves, due to K. Denkmayr.
ref. : **K. Denkmayr, P. Cugnon**, 1997 : "About Sunspot Number Medium-Term Predictions", in "Solar-Terrestrial Prediction Workshop V", eds G. Heckman et al., Hiraiso Solar Terrestrial Research Center, Japan, 103

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S.I.D.C. SUMMARY OF THE URSIGRAMS

Date	R'i	PPSI	600	2800	COS	SFI	XI	Ak	SEA
31	0	///	-	67	////	0	0/0	7	
1	0	0	-	66	////	0	0/0	3	
2	0	0	-	66	////	0	0/0	4	
3	0	///	-	66	////	0	0/0	13	
4	0	0	-	66	////	0	0/0	33	
5	0	///	-	65	////	0	0/0	10	
6	0	0	-	66	////	0	0/0	11	
7	0	///	-	67	////	0	0/0	10	
8	0	0	-	67	////	0	0/0	12	
9	0	0	-	67	////	0	0/0	5	
10	0	0	-	67	////	0	0/0	6	
11	7	1	-	67	////	0	0/0	3	
12	0	0	-	66	////	0	0/0	1	
13	0	///	-	66	////	0	0/0	1	
14	0	0	-	67	////	0	0/0	9	
15	0	0	-	68	////	0	0/0	18	
16	0	0	-	69	////	0	0/0	12	
17	0	0	-	67	////	0	0/0	4	
18	0	0	-	67	////	0	0/0	6	
19	0	0	-	68	////	0	0/0	6	
20	0	0	-	68	////	0	0/0	2	
21	0	0	-	68	////	0	0/0	2	
22	8	3	-	69	////	0	0/0	4	
23	9	2	-	69	////	0	0/0	3	
24	0	0	-	68	////	0	0/0	3	
25	0	0	-	68	////	0	0/0	5	
26	0	0	-	68	////	0	0/0	4	
27	0	0	-	67	////	0	0/0	4	
28	0	0	-	67	////	0	0/0	2	
29	8	1	-	67	////	0	0/0	2	
30	0	2	-	66	////	0	0/0	6	

R'i : provisional international sunspot numbers from the S.I.D.C.

PPSI : prompt photometric sunspot index from the S.I.D.C. in 10-5 w/m^2 : the quantity to be subtracted from the mean solar constant to account for the sunspot contribution.

600 : 600 Mhz solar flux from the station at Humain (Belgium).

2800 : 2800 Mhz solar flux from Ottawa (origin : Ursigrams - UGEOI). The 10.7cm Flux data are a service of the National Research Council of Canada.

COS : thousands of the cosmic ray counts (origin : Ursigrams - UCOSE Terre Adélie).

SFI : From October 1992, Solar Flare Index from the S.I.D.C. (origin : Ursigrams – UGEOR, evaluation : 1 x Sn+10 x "1"+100 x ">1".

XI : X-flares index from the Ursigrams (M-flares/X-flares) (origin : Ursigrams – UGEOR, UGEOI).

Ak : geomagnetic index from Wingst, Germany (origin : Ursigrams).

SEA : sudden enhancements of atmospherics from Uccle & Humain (Royal Obsεrvatory, Belgium).

Note that due to problems of interferences saturating our receivers, no SEA could be detected this month

SOLAR PHYSICS DEPARTMENT

UCCLE DAILY PROVISIONAL RELATIVE SUNSPOT NUMBERS FOR SEPTEMBER 2008

DATE	UT	NUMBER OF GROUPS	NUMBER OF SPOTS	RELATIVE SUNSPOT NUMBERS TOTAL	NORTH	SOUTH	CENTRAL	PPSI 10-5 WM-2	QUAL	OBS
1	700	0	0	0	0	0	0	0.0	2	AE
2	1430	0	0	0	0	0	0	0.0	3	AE
4	730	0	0	0	0	0	0	0.0	2	AE
6	930	0	0	0	0	0	0	0.0	2	AE
8	815	0	0	0	0	0	0	0.0	1	OB
9	800	0	0	0	0	0	0	0.0	2	OB
10	845	0	0	0	0	0	0	0.0	2	OB
11	840	0	0	0	0	0	0	0.0	2	OB
12	1445	0	0	0	0	0	0	0.0	2	OB
14	715	0	0	0	0	0	0	0.0	3	OB
15	730	0	0	0	0	0	0	0.0	2	SV
16	720	0	0	0	0	0	0	0.0	3	SV
17	1007	0	0	0	0	0	0	0.0	2	SV
18	825	0	0	0	0	0	0	0.0	3	SV
19	1120	0	0	0	0	0	0	0.0	3	SV
20	725	0	0	0	0	0	0	0.0	3	SV
21	740	0	0	0	0	0	0	0.0	2	SV
22	1250	1	4	14	14	0	14	1.3	3	SV
24	1330	0	0	0	0	0	0	0.0	3	OL
25	1048	0	0	0	0	0	0	0.0	3	OL
26	710	0	0	0	0	0	0	0.0	2	OL
27	712	0	0	0	0	0	0	0.0	3	OL
28	730	0	0	0	0	0	0	0.0	3	OL

The relative mean sunspot number is 0.6.

NORMALISED UCCLE OBSERVATIONAL SUNSPOT NUMBERS U'=K'U FOR SEPTEMBER 2008

K'= 0.844 (*)

1	0	7	***	13	***	19	0	25	0
2	0	8	0	14	0	20	0	26	0
3	***	9	0	15	0	21	0	27	0
4	0	10	0	16	0	22	12	28	0
5	***	11	0	17	0	23	***	29	***
6	0	12	0	18	0	24	0	30	***

The normalised relative monthly mean sunspot number is 1.

(*) K' is the mean of the monthly K' for the last five years.

The Sun has been observed 23 days on 30 possible.

UCCLE OBSERVATIONAL MAJOR SUNSPOT GROUPS FOR SEPTEMBER 2008
E AND F BRUNNER'S TYPE GROUPS

NONE

PROBABLE RETURN OF MAJOR GROUPS FOR OCTOBER 2008
NONE

MONTHLY SUMMARY OF SOLAR AND GEOMAGNETIC ACTIVITY

I. Solar Activity

Solar activity was again low. A new cycle sunspot was visible for two days. Three coronal holes could be seen in EIT195.

No flaring activity was measured by GOES this month. The 10cm flux did not pass the level of 70 sfu.

A recurrent horizontal Y-shaped coronal hole with a small front part transited the solar disk during the first week of September. The first dark area reached the central meridian (CM) on Sep 01. A second small coronal hole passed the CM on Sep 10. This hole had a latitudinal extend of more then 30° and was mainly situated in the northern hemisphere. A third equatorial coronal hole reached the central meridian on Sep 28.

II. Geomagnetic Activity

Geomagnetic activity was low. Two periods with relative small disturbances can be distinguished.

A co-rotating interaction region (CIR) with a compressed magnetic field and compressed plasma density arrived on Sep 03. The solar wind speed reached a first maximum of 600 km/s on Sep 04. The estimated NOAA Kp index became two times 6 and three times 4 on this day. After a slight decrease, the solar wind accelerated again to values above 600 km/s. This solar wind originated from the second part of the coronal hole. In spite of the large spatial extent of the Y-shaped coronal hole, no geomagnetic disturbances were measured after Sep 04.

The next geomagnetic disturbance was induced on Sep 14 by the arrival of another CIR. ACE data showed the in-situ signature of the second coronal hole. The north-south component of the interplanetary magnetic field switched continuously from negative to positive values on Sep 15. The impact of this coronal hole was limited to unsettled conditions at planetary levels (Kp=4) and at local levels (Dourbes, K=4).

The third CIR arrived on Sep 30. The geomagnetic disturbances were measured only in Oct 2008.

III. Noticeable solar events

No M- or X-class flares occurred.

IV. Halo CME list

No CME alert was sent.