



Center

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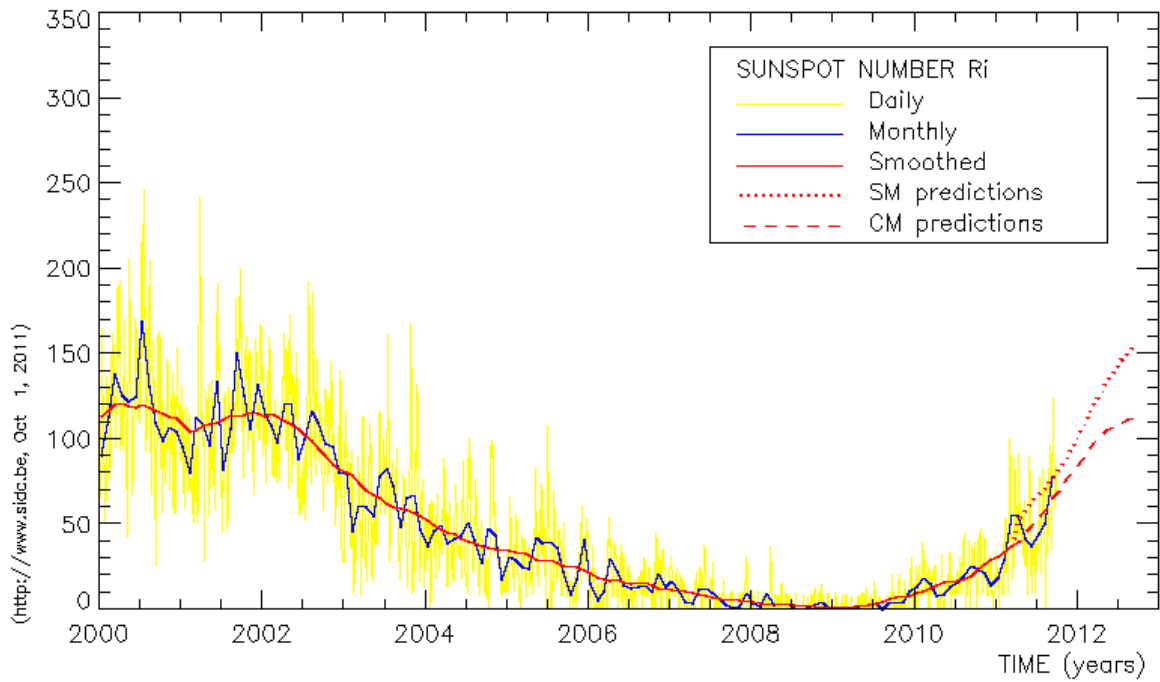
SUNSPOT BULLETIN

2011 n° 9

Provisional international and normalized hemispheric daily sunspot numbers for September 2011

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

Date	R' ₁	R' _N	R' _S
1	85	59	26
2	88	72	16
3	91	71	20
4	68	48	20
5	74	53	21
6	58	38	20
7	47	31	16
8	35	27	8
9	47	28	19
10	52	33	19
11	61	37	24
12	90	53	37
13	94	54	40
14	110	64	46
15	124	89	35
16	124	86	38
17	104	73	31
18	93	79	14
19	92	78	14
20	80	68	12
21	70	61	9
22	71	56	15
23	59	59	0
24	75	68	7
25	79	69	10
26	73	73	0
27	67	67	0
28	71	71	0
29	83	83	0
30	75	75	0
Monthly mean	78.0	60.8	17.2
Cooperating stations	74	69	69



Predictions of the monthly smoothed Sunspot Number
 using the last provisional value, calculated for March 2011: 36.9 ($\pm 5\%$)

	SM	CM		SM	CM		SM	CM
2011 Apr	40	40	2011 Oct	68	70	2012 Apr	104	102
May	45	45	Nov	73	76	May	112	105
Jun	49	49	Dec	78	81	Jun	120	107
Jul	54	54	2012 Jan	83	86	Jul	127	109
Aug	59	59	Feb	89	91	Aug	134	111
Sep	63	65	Mar	96	97	Sep	140	112

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 method 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	96	47	-	109	////	8	0/0	1	
1	85	84	-	112	////	5	0/0	3	
2	88	86	-	115	////	12	0/0	6	
3	91	59	-	119	////	18	0/0	13	
4	68	61	-	119	////	4	1/0	12	
5	74	58	-	119	////	2	2/0	10	
6	58	57	-	112	////	111	1/1	7	
7	47	53	-	113	////	110	0/1	6	
8	35	61	-	110	////	14	1/0	2	
9	47	78	-	112	////	27	2/0	38	
10	52	81	-	116	////	2	1/0	38	
11	61	96	-	121	////	2	0/0	17	
12	90	78	-	124	////	0	0/0	30	
13	94	91	-	129	////	3	0/0	20	
14	110	105	-	143	////	23	0/0	6	
15	124	106	-	141	////	7	0/0	7	
16	124	119	-	143	////	48	0/0	3	
17	104	130	-	145	////	2	0/0	32	
18	93	112	-	150	////	5	0/0	6	
19	92	75	-	141	////	7	0/0	3	
20	80	83	-	144	////	18	0/0	6	
21	70	73	-	144	////	116	1/0	4	
22	71	52	-	151	////	127	1/1	6	
23	59	77	-	158	////	44	3/0	3	
24	75	95	-	190	////	125	6/1	4	
25	79	118	-	169	////	250	6/0	5	
26	73	140	-	148	////	130	2/0	35	
27	67	155	-	139	////	10	0/0	28	
28	71	193	-	133	////	24	1/0	18	
29	83	164	-	137	////	7	0/0	20	
30	75	143	-	138	////	16	1/0	7	

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 : $1 \times \text{Sn} + 10 \times "1" + 100 \times ">1"$).
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 Observatory, 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 2011

DATE	UT	NUMBER		RELATIVE SUNSPOT NUMBERS			PPSI 10-5 WM-2	QUAL	OBS	
		OF GROUPS	OF SPOTS	TOTAL	NORTH	SOUTH				CENTRAL
1	755	7	55	125	79	46	48	61.9	2	OB
2	645	6	53	113	88	25	36	48.7	2	OB
3	755	6	41	101	86	15	15	24.5	3	OB
5	815	5	53	103	69	34	44	32.4	3	OL
6	700	5	30	80	53	27	42	30.5	2	OL
7	715	4	31	71	45	26	32	14.1	2	OL
10	735	5	19	69	42	27	12	51.9	3	OL
12	800	9	35	125	77	48	62	36.9	3	OB
13	810	8	46	126	78	48	69	54.4	3	OB
14	725	10	47	147	82	65	43	70.1	3	OL
15	915	10	66	166	123	43	30	53.0	3	OB
16	815	11	74	184	132	52	49	73.7	3	OB
18	1045	7	63	133	113	20	93	61.8	3	OB
19	905	7	59	129	108	21	66	36.1	3	SV
20	1035	6	56	116	100	16	26	74.0	4	SV
22	855	6	46	106	84	22	11	33.2	3	SV
23	1100	3	25	55	55	0	14	43.7	2	SV
24	730	5	46	96	85	11	33	57.3	3	SV
25	750	6	31	91	76	15	33	52.1	3	SV
26	705	5	51	101	101	0	79	85.4	3	OL
27	715	7	63	133	133	0	97	70.1	4	OL
28	710	7	53	123	123	0	65	75.5	3	OL
29	710	6	31	91	91	0	44	48.1	2	OL
30	1200	7	53	123	112	11	77	39.9	4	OL

The relative mean sunspot number is 112.8.

NORMALISED UCCLE OBSERVATIONAL SUNSPOT NUMBERS U'=K'U FOR SEPTEMBER 2011

K'= 0.844 (*)

1	105	7	60	13	106	19	109	25	77
2	95	8	***	14	124	20	98	26	85
3	85	9	***	15	140	21	***	27	112
4	***	10	58	16	155	22	89	28	104
5	87	11	***	17	***	23	46	29	77
6	68	12	105	18	112	24	81	30	104

The normalised relative monthly mean sunspot number is 95.

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

The Sun has been observed 24 days on 30 possible.

UCCLE OBSERVATIONAL MAJOR SUNSPOT GROUPS FOR SEPTEMBER 2011
E AND F BRUNNER'S TYPE GROUPS

Uccle Nø	East Limb		Date and type			West Limb	
	Date		1st obs	CMP	Last obs	Date	
28-2114	9	11.5	14 C	9 18.2	25 A	9	25.0
4-2115	9	21.9	23 E	9 28.7	30 G	10	5.4

PROBABLE RETURN OF MAJOR GROUPS FOR OCTOBER 2011

Nø	New East Limb		New CMP	New West Limb	
28	10	9.2	10 15.9	10	22.7

ANNOUNCEMENT

The "SIDC monthly sunspot bulletin" will no longer contain a "Monthly summary of solar and geomagnetic activity".

The "SIDC Weekly bulletin on Solar and Geomagnetic activity" will remain to exist in its current format. All the issues can be found on <http://www.sidc.be/products/bul/index.php>, under 'Archive'.

We would like to take the opportunity to announce the birth of a new "Solar-Terrestrial Centre of Excellence - **STCE News Letter**". With this new bulletin we will inform you on a weekly basis about the solar activity, the general geomagnetic activity and on measurements done in Dourbes. We give an update of the radio events seen by our scientists operating in our radio station Humain. We will let you know about the PROBA2-satellite. We will present solar and space weather highlights and background information about the STCE science.

The first issue of the STCE News Letter is planned in December 2011. It will appear as an online News Letter where you can jump to the information that you need or attracts your attention. Past editions will be available online. We send a notification email when a new issue appears.

All present subscribers to the SIDC monthly sunspot bulletin will automatically receive the new STCE News Letter. You will have the opportunity to unsubscribe after the first edition.

We hope that the STCE News Letter will grow into a mature product accessible for interested people, scientists, students and users.

The STCE team