Solar Influences Data analysis Center

Data Analysis Service supported by the FAGS

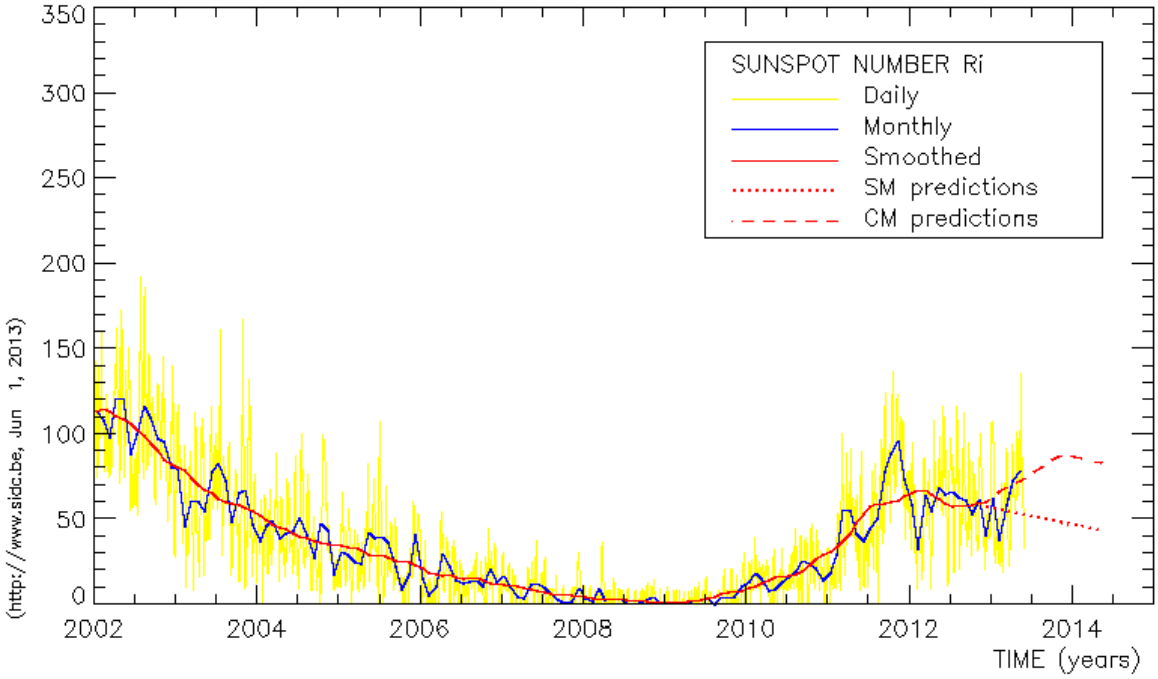
SUNSPOT BULLETIN

2013 n° 5

Provisional international and normalized hemispheric daily sunspot numbers for May 2013

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	93	36	57
2	68	30	38
3	64	25	39
4	80	36	44
5	72	32	40
6	71	29	42
7	76	22	54
8	80	31	49
9	76	45	31
10	82	54	28
11	88	52	36
12	93	60	33
13	100	62	38
14	105	69	36
15	113	70	43
16	135	72	63
17	120	70	50
18	87	51	36
19	83	47	36
20	73	47	26
21	74	45	29
22	86	50	36
23	71	35	36
24	71	36	35
25	77	32	45
26	63	24	39
27	60	22	38
28	51	15	36
29	47	11	36
30	48	15	33
31	33	9	24
Monthly mean	**78.7**	**39.8**	**38.9**
Cooperating stations	**72**	**64**	**64**



Predictions of the monthly smoothed Sunspot Number

using the last provisional value, calculated for November 2012: 59.7 (± 5%)

	SM	CM		SM	CM		SM	CM
2012 Dec	58	60	2013 Jun	53	75	2013 Dec	48	88
2013 Jan	57	63	Jul	52	78	2014 Jan	47	87
Feb	57	66	Aug	51	81	Feb	46	86
Mar	56	69	Sep	50	83	Mar	46	85
Apr	55	70	Oct	50	86	Apr	45	84
May	54	72	Nov	49	87	May	44	83

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

Brussels, June 1, 2013 08:48 UT

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

Date	R'_i	PPSI	600	2800	COS	SFI	XI	Ak	SEA
30	101	148	-	154	////	14	0/0	10	
1	93	143	-	159	////	16	0/0	28	
2	68	131	-	149	////	25	1/0	12	
3	64	120	-	148	////	104	2/0	6	
4	80	112	-	142	////	8	0/0	7	
5	72	87	-	137	////	25	1/0	12	
6	71	83	-	131	////	6	0/0	12	
7	76	94	-	129	////	3	0/0	10	
8	80	61	-	127	////	1	0/0	9	
9	76	54	-	128	////	4	0/0	4	
10	82	40	-	125	////	14	2/0	5	
11	88	41	-	137	////	6	0/0	4	
12	93	89	-	147	////	1	2/0	6	
13	100	110	-	150	////	29	1/2	6	
14	105	138	-	148	////	11	0/1	9	
15	113	119	-	146	////	103	0/1	11	
16	135	152	-	145	////	11	1/0	24	
17	120	150	-	136	////	108	1/0	12	
18	87	96	-	132	////	8	0/0	19	
19	83	63	-	135	////	21	0/0	14	
20	73	52	-	132	////	30	1/0	10	
21	74	47	-	125	////	20	0/0	6	
22	86	48	-	133	////	113	1/0	13	
23	71	71	-	135	////	29	0/0	11	
24	71	87	-	127	////	12	0/0	28	
25	77	89	-	121	////	2	0/0	33	
26	63	70	-	120	////	5	0/0	22	
27	60	60	-	110	////	0	0/0	20	
28	51	42	-	105	////	0	0/0	10	
29	47	27	-	107	////	2	0/0	2	
30	48	12	-	104	////	1	0/0	2	
31	33	11	-	102	////	2	1/0	12	

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 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 MAY 2013

DATE	UT	NUMBER OF GROUPS	NUMBER OF SPOTS	RELATIVE SUNSPOT NUMBERS TOTAL	NORTH	SOUTH	CENTRAL	PPSI 10-5 WM-2	QUAL	OBS
1	705	7	66	136	43	93	61	103.8	3	OL
2	935	4	53	93	46	47	61	100.6	3	OL
3	730	4	53	93	36	57	45	59.9	3	OL
4	650	5	56	106	37	69	58	62.3	3	OL
5	715	6	39	99	44	55	44	53.9	3	OL
6	700	5	31	81	32	49	23	35.1	3	OB
7	800	6	22	82	27	55	42	33.8	2	OB
8	710	7	24	94	29	65	41	17.9	2	OB
9	730	7	20	90	51	39	26	22.7	2	OB
13	1100	7	58	128	79	49	54	69.6	2	OL
15	1120	7	76	146	94	52	94	63.9	3	OL
19	700	7	34	104	61	43	33	56.6	2	OL
22	1000	6	17	77	36	41	0	19.9	3	SV
23	815	5	23	73	24	49	14	62.4	2	SV
25	620	5	39	89	30	59	78	86.1	2	SV
27	700	5	31	81	35	46	48	58.8	2	AE
28	645	6	21	81	29	52	18	37.9	2	AE
31	1230	3	5	35	11	24	13	4.0	1	AE

The relative mean sunspot number is 93.8.

NORMALISED UCCLE OBSERVATIONAL SUNSPOT NUMBERS U'=K'U FOR MAY 2013

K'= 0.779 (*)

1	106	7	64	13	100	19	81	25	69
2	72	8	73	14	***	20	***	26	***
3	72	9	70	15	114	21	***	27	63
4	83	10	***	16	***	22	60	28	63
5	77	11	***	17	***	23	57	29	***
6	63	12	***	18	***	24	***	30	***
								31	27

The normalised relative monthly mean sunspot number is 73.

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

The Sun has been observed 18 days on 31 possible.

NOTICE

Following the transfer of our entire software to a new server, because of technical constraints, the table of possible returns of large sunspot groups based on Uccle data will be discontinued. We plan to restart the production of this table at a later stage, after development of an entirely new active region tracking program.