Solar Influences Data analysis Center

Data Analysis Service supported by the FAGS

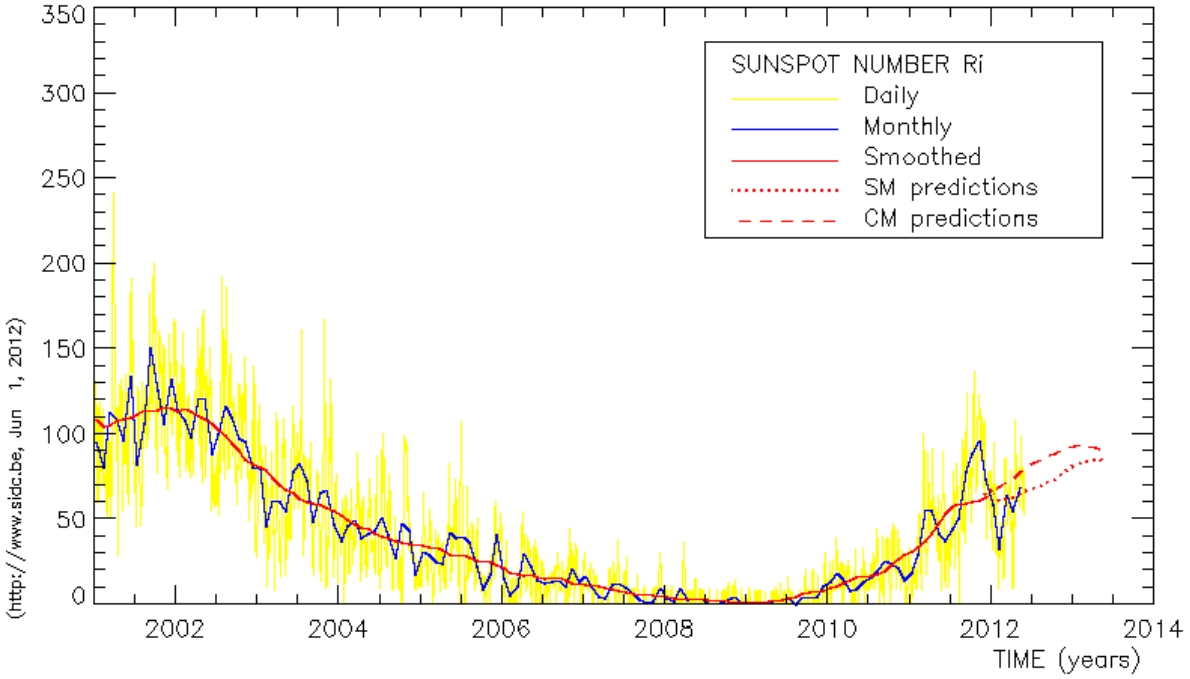
SUNSPOT BULLETIN

2012 n° 5

Provisional international and normalized hemispheric daily sunspot numbers for May 2012

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	69	10	59
2	68	11	57
3	69	15	54
4	62	15	47
5	63	25	38
6	62	33	29
7	57	35	22
8	61	39	22
9	65	40	25
10	69	41	28
11	79	51	28
12	72	51	21
13	75	51	24
14	85	51	34
15	87	50	37
16	98	54	44
17	79	57	22
18	73	58	15
19	78	56	22
20	83	61	22
21	79	58	21
22	57	57	0
23	55	46	9
24	62	48	14
25	67	45	22
26	57	30	27
27	59	29	30
28	78	29	49
29	56	17	39
30	52	8	44
31	64	14	50
Monthly mean	**69.0**	**38.2**	**30.8**
Cooperating stations	**68**	**62**	**62**



Predictions of the monthly smoothed Sunspot Number

using the last provisional value, calculated for November 2011: 61.1 (± 5%)

	SM	CM		SM	CM		SM	CM
2011 Dec	65	63	2012 Jun	67	81	2012 Dec	79	93
2012 Jan	67	66	Jul	68	83	2013 Jan	81	93
Feb	61	69	Aug	70	85	Feb	83	94
Mar	62	72	Sep	72	87	Mar	85	93
Apr	63	74	Oct	74	88	Apr	85	92
May	65	78	Nov	76	91	May	85	91

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
30	67	58	-	114	////	8	0/0	3	
1	69	53	-	110	////	4	0/0	6	
2	68	74	-	116	////	5	0/0	6	
3	69	74	-	114	////	9	0/0	10	
4	62	62	-	114	////	5	0/0	4	
5	63	43	-	116	////	4	1/0	3	
6	62	78	-	117	////	17	2/0	6	
7	57	74	-	122	////	12	1/0	4	
8	61	102	-	123	////	12	1/0	12	
9	65	144	-	127	////	31	3/0	31	
10	69	176	-	131	////	125	2/0	12	
11	79	191	-	136	////	27	0/0	12	
12	72	172	-	130	////	25	0/0	12	
13	75	152	-	131	////	13	0/0	14	
14	85	95	-	130	////	106	0/0	4	
15	87	59	-	129	////	8	0/0	4	
16	98	85	-	131	////	3	0/0	12	
17	79	74	-	136	////	10	1/0	5	
18	73	112	-	132	////	3	0/0	11	
19	78	88	-	131	////	2	0/0	6	
20	83	90	-	131	////	2	0/0	14	
21	79	80	-	125	////	3	0/0	6	
22	57	62	-	121	////	3	0/0	25	
23	55	47	-	117	////	2	0/0	16	
24	62	42	-	116	////	2	0/0	9	
25	67	39	-	117	////	2	0/0	8	
26	57	43	-	110	////	4	0/0	4	
27	59	42	-	111	////	2	0/0	4	
28	78	66	-	110	////	3	0/0	10	
29	56	64	-	106	////	0	0/0	8	
30	52	55	-	111	////	0	0/0	11	
31	64	42	-	117	////	9	0/0	13	

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 2012

DATE	UT	NUMBER OF GROUPS	NUMBER OF SPOTS	RELATIVE SUNSPOT NUMBERS TOTAL	NORTH	SOUTH	CENTRAL	PPSI 10-5 WM-2	QUAL	OBS
1	815	5	20	70	0	70	44	13.4	3	SV
4	1050	5	17	67	22	45	21	9.6	1	SV
7	830	3	27	57	31	26	0	44.0	2	OB
8	1315	5	38	88	41	47	23	66.6	2	AE
9	1400	3	16	46	23	23	0	87.0	1	AE
11	1255	2	20	40	28	12	28	112.3	2	AE
12	930	3	42	72	60	12	47	122.1	2	AE
13	830	4	27	67	44	23	43	124.2	1	AE
14	750	5	38	88	50	38	13	116.5	3	OB
15	1210	6	41	101	64	37	34	45.9	3	OB
16	920	8	51	131	79	52	66	105.2	2	OB
17	900	4	30	70	58	12	20	31.7	3	SV
18	835	4	50	90	78	12	65	93.8	3	SV
19	830	5	33	83	58	25	37	84.4	2	AE
20	900	6	32	92	66	26	31	52.2	2	AE
21	1050	5	43	93	67	26	33	46.5	3	OL
22	1050	5	42	92	80	12	12	33.2	2	OL
23	1150	5	21	71	59	12	12	24.8	3	OL
24	725	6	29	89	76	13	24	41.8	3	OL
25	735	6	29	89	64	25	26	33.4	3	OL
26	720	5	37	87	56	31	21	29.8	3	OL
27	730	5	37	87	45	42	36	33.8	3	OL
28	630	4	28	68	26	42	37	70.2	3	SV
29	710	4	23	63	22	41	41	56.3	3	SV
30	810	2	27	47	0	47	47	58.6	3	SV
31	830	4	14	54	12	42	31	58.0	2	OL

The relative mean sunspot number is 77.0.

NORMALISED UCCLE OBSERVATIONAL SUNSPOT NUMBERS U'=K'U FOR MAY 2012

K'= 0.779 (*)

1	55	7	44	13	52	19	65	25	69
2	***	8	69	14	69	20	72	26	68
3	***	9	36	15	79	21	72	27	68
4	52	10	***	16	102	22	72	28	53
5	***	11	31	17	55	23	55	29	49
6	***	12	56	18	70	24	69	30	37
								31	42

The normalised relative monthly mean sunspot number is 60.

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

The Sun has been observed 26 days on 31 possible.

UCCLE OBSERVATIONAL MAJOR SUNSPOT GROUPS FOR MAY 2012
E AND F BRUNNER'S TYPE GROUPS

Uccle Nø	East Limb Date	Date and type 1st obs	CMP	Last obs	West Limb Date
12-2123	5 4.8	7 F	5 11.5	14 F	5 18.3
21-2123	5 10.6	15 D	5 17.3	22 C	5 24.1

PROBABLE RETURN OF MAJOR GROUPS FOR JUNE 2012

Nø	New East Limb	New CMP	New West Limb
21	6 7.1	6 13.8	6 20.6