



Sunspot Index Data Center  
**SUNSPOT BULLETIN**

Data Analysis Service supported by the FAGS

1991 n° 9  
 Provisional Sunspot numbers for September 1991

From observations at the Locarno Specola Solare  
 completed with data from an international network,  
 computed at the Observatoire Royal de Belgique  
 39 cooperating stations on October 1st, 13 UT

Day	Ri	Day	Ri
1	170	16	101
2	153	17	103
3	147	18	101
4	147	19	84
5	132	20	80
6	137	21	115
7	111	22	124
8	135	23	129
9	122	24	112
10	127	25	111
11	123	26	117
12	130	27	120
13	143	28	133
14	147	29	144
15	123	30	138

Mean = 125.3

Predictions of the smoothed monthly Sunspot Numbers

Classical Method		SIDC Adjusted values	
1991 Oct. 132(± 31)	1992 Apr. 117(± 37)	1991 Oct. 132(± 33)	
Nov. 129	May 115	Nov. 132	
Dec. 127	Jun. 112	Dec. 131	
1992 Jan. 124	Jul. 110	1992 Jan. 131	
Feb. 122	Aug. 108	Feb. 129	
Mar. 119	Sep. 106	Mar. 127	

forecasted on the basis of the most recent provisional monthly smoothed  
 Sunspot Number calculated for 1991 March : 146.6 (± 5%)

Provisional smoothed values :

1991 Apr. 145(± 21)	1991 Jun. 141	1991 Aug. 137
May 143	Jul. 138	Sep. 134

Brussels, 1991 October 01

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

1991 SEPTEMBER R'IM = 125.3

Date	R'i	PPSI	600	2800	COS	XFI	XI	Ak	SEA	MAG
31	167	242	49	196	815	17	1/0	45		
1	170	188	48	176	821	13	0/0	44		
2	153	127	47	181	819	19	0/0	25	1902	
3	147	123	43	175	824	31	0/0	14		
4	147	106	42	171	831	30	2/0	14	1156	SEA(1426)
5	132	94	42	164	833	48	4/0	22		1b(0107);1n(2200)+T
6	137	85	42	176	840	17	0/0	19	0934	SEA(1000);1135;1220
7	111	87	42	174	---	158	4/1	15	0718	2b(1920)+T;SEA (1115;1231)
8	135	106	42	196	860	149	4/1	22	0932 0908	2n(0905)+T+mgst
9	122	125	--	181	847	15	1/0	45		
10	127	147	51	185	851	1	1/0	30		
11	123	145	50	178	846	4	0/0	22		
12	130	125	48	183	851	4	0/0	9		
13	143	120	48	185	848	1	0/0	17		
14	147	129	50	181	839	6	0/0	27		
15	123	98	51	180	843	1	0/0	12		
16	101	112	50	174	852	3	0/0	10		
17	103	78	51	177	854	14	1/0	6		
18	101	90	51	181	850	6	0/0	6		
19	84	93	49	172	849	3	0/0	12		
20	80	75	50	170	851	5	0/0	8		
21	115	68	49	177	856	7	0/0	6		
22	124	56	48	188	854	9	0/0	12		
23	129	39	49	185	863	21	1/0	6		
24	112	27	51	180	---	21	1/0	8		1n(0750)+T
25	111	120	50	181	862	16	0/0	37		
26	117	101	49	201	865	15	3/0	32	1226	
27	120	132	50	178	869	11	0/0	42	1257	
28	133	186	50	176	865	12	0/0	31		
29	144	238	50	195	856	26	1/0	23	1516	4b(1512)
30	138	287	49	200	804	26	1/0	24		

R'i,R'IM: 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 subtract from the mean solar constant.  
 600 : 600 Mhz solar flux from Humain station (Belgium).  
 2800: 2800 Mhz solar flux from Ottawa (origin: Ursigrams).  
 COS : thousands of the cosmic ray counts (origin: Ursigrams).  
 XFI : X-flares index from the S.I.D.C. (origin: Ursigrams).  
 XI : X-flares index from the Ursigrams (M-flares/X-flares).  
 Ak : planetary geomagnetic index from Wingst (Germany from Ursigrams).  
 SEA : sudden enhancements of atmospherics from Uccle & Humain (Belgium).  
 MAG : magnetic events from Dourbes station (Royal Météo. Institute Belgium).  
 Remarks: sid(sudden ionospheric disturbance); ssc(sudden storm commencement) mgst(magnetic storm); sfe(solar flare effect); s-1-2-3-4(class of flares); II-IV radio-burst; T(ten cm radio-burst); P(proton flare); p(proton event); gle(ground level event: neutron event); si(sudden impulse); F(Forbush)

## OBSERVATOIRE ROYAL DE BELGIQUE

## DEPARTEMENT 4 RADIOASTRONOMIE ET PHYSIQUE SOLAIRE

## DAILY PROVISIONAL

## RELATIVE SUNSPOT NUMBERS

STATION UCCLE BELGIUM

SEPTEMBER 1991

DATE	UT	NUMBER OF GROUPS	NUMBER OF SPOTS	RELATIVE SUNSPOT NUMBER	REL NUMB CENTRAL ZONE	PPSI 10-5 WM-2	QUAL	OBS
1	853	9	111	201	110	262.0	4	AK
2	1253	10	66	166	79	148.9	2	VI
3	701	9	95	185	79	102.6	2	VI
4	746	9	78	168	36	99.2	3	VI
5	728	10	47	147	42	89.8	2	VI
6	657	10	63	163	0	90.0	2	VI
8	645	7	83	153	66	115.5	2	PC
9	730	8	72	152	65	111.7	2	PC
10	918	9	74	164	64	175.6	3	PC
11	814	8	59	139	41	136.1	2	PC
12	645	9	48	138	34	139.2	2	VI
13	750	10	54	154	53	137.1	3	VI
14	900	11	107	217	64	171.4	3	CG
17	646	7	47	117	84	108.5	2	VI
18	822	8	44	124	96	105.4	2	VI
19	746	5	42	92	69	98.6	2	VI
20	740	5	37	87	65	86.5	2	VI
21	926	10	67	167	44	75.4	4	AK
23	804	9	65	155	59	35.6	1	VI
24	917	7	34	104	54	19.6	1	VI
27	1304	8	62	142	24	93.1	2	VI
29	1120	7	115	185	46	164.5	2	CG
30	1045	6	107	167	91	174.3	1	VI

The Sun has been observed 23 days on 30 possible.  
The relative mean sunspot number is 151.6.

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NORMALISED UCCLE OBSERVATIONAL SUNSPOT NUMBERS  $U'=K'U$  FOR

1991 SEPTEMBER

$K' = 0.884 (*)$

1	177	7	***	13	136	19	81	25	***
2	146	8	135	14	191	20	76	26	***
3	163	9	134	15	***	21	147	27	125
4	148	10	144	16	***	22	***	28	***
5	129	11	122	17	103	23	136	29	163
6	144	12	121	18	109	24	91	30	147

The Sun has been observed 23 days on 30 possible.

The normalized relative monthly mean Wolf number is 133.

\*  $K'$  is the mean of the monthly  $K$ 's for the last five years.

UCCLE OBSERVATIONAL MAJOR SUNSPOT GROUPS FOR 1991 SEPTEMBER  
E AND F BRUNNER'S TYPE GROUPS

Uccle N'	East Limb Date	Date and type			West Limb Date
		1st obs	CMP	Last Obs	
16-1846	8 21.2	24 D	8 27.9	2 H	9 3.7
19-1846	8 23.7	24 E	8 30.5	6 G	9 6.2
21-1846	8 23.8	25 A	8 30.6	2 G	9 6.3
37-1846	8 28.4	5 C	9 4.2	10 G	9 10.9
40-1846	9 3.5	8 D	9 10.2	14 G	9 17.0
16-1847	9 24.5	27 F	10 1.2	30 F	10 8.0

PROBABLE RETURN OF MAJOR GROUPS FOR 1991 OCTOBER

N'	New East Limb	New CMP	New West Limb
19	9 20.6	9 27.4	10 4.1
37	9 24.6	10 1.3	10 8.1
40	9 30.7	10 7.4	10 14.2