

  
 Sunspot Index      Data Center  
**SUNSPOT BULLETIN**

Data Analysis Service supported by the FAGS

1991                      n° 8  
 Provisional Sunspot numbers for August 1991

From observations at the Locarno Specola Solare  
 completed with data from an international network,  
 computed at the Observatoire Royal de Belgique  
 34 cooperating stations on September 1st, 10 UT

Day	Ri	Day	Ri
1	132	16	212
2	138	17	257
3	143	18	279
4	136	19	280
5	148	20	291
6	119	21	300
7	120	22	294
8	106	23	275
9	89	24	250
10	75	25	215
11	86	26	177
12	98	27	147
13	126	28	157
14	122	29	171
15	164	30	166
		31	167

Mean = 175.5

Predictions of the smoothed monthly Sunspot Numbers

Classical Method		SIDC Adjusted values
1991 Sep. 133(± 32)	1992 Mar. 118(± 37)	1991 Sep. 132(± 33)
Oct. 130	Apr. 116	Oct. 130
Nov. 128	May 113	Nov. 130
Dec. 125	Jun. 111	Dec. 130
1992 Jan. 123	Jul. 109	1992 Jan. 130
Feb. 121	Aug. 107	Feb. 128

forecasted on the basis of the most recent provisional monthly smoothed Sunspot Number calculated for 1991 February : 147.6 (± 5%)

Provisional smoothed values :

1991 Mar. 146(± 21)	1991 May 142	1991 Jul. 137
Apr. 144	Jun. 139	Aug. 135

Brussels, 1991 September 01                      A. KOECKELENBERGH and P. CUGNON  
 Reproduction permitted if source mentioned.  
 Ed. Resp. Dr. André Koeckelenbergh, avenue Circulaire, 3 B-1180 BRUXELLES - BELGIUM  
 Telex 21565obsbel    Fax 32-2-374 98 22    Tel 02-373 03 11 /373 02 76  
 e-mail : arille@astro.oma.be

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

1991 AUGUST R<sub>IM</sub> = 175.5

Date	R <sub>i</sub>	PPSI	600	2800	COS	XFI	XI	Ak	SEA	MAG	
31	165	165	53	219	805	143	2/1	8			2b(0045);1n(2247)+T
1	132	178	56	225	812	28	3/0	34	1448		2b(1510)+SEA+T;T(2152)
2	138	200	59	207	798	113	0/1	33			2b(0306)
3	143	235	56	213	800	43	4/0	36			1b(0121)+T;2b(2213)
4	136	203	54	193	813	21	1/0	40			1n(1812)
5	148	180	52	174	812	28	1/0	32		2046	
6	119	114	50	167	797	26	1/0	29			
7	120	94	50	165	802	20	1/0	19			
8	106	65	48	159	808	9	0/0	13			
9	89	62	48	150	824	4	0/0	16			
10	75	62	43	142	819	1	0/0	13			
11	86	60	43	139	824	3	0/0	22		0253	
12	98	59	42	147	824	8	0/0	48		2353	sfe?(1439)
13	126	74	42	155	---	11	0/0	12			
14	122	89	44	175	822	10	0/0	20			
15	164	128	48	215	826	10	0/0	32			
16	212	222	50	264	824	24	2/0	21	0618		
17	257	295	52	271	813	34	1/0	22	1936		
18	279	384	53	284	815	36	1/0	27	1250	1833	SEA(1439)
19	280	414	54	290	788	14	0/0	56			
20	291	395	53	286	794	34	1/0	49	1213	0800	2n(1211)
21	300	552	55	285	796	10	0/0	36			
22	294	436	56	285	801	38	2/0	38			
23	275	288	54	270	814	15	0/0	12			
24	250	220	53	249	821	37	2/0	14	1634		
25	215	162	54	238	826	160	4/1	11			2b(0039)+T
26	177	134	52	210	828	19	4/0	9	1421		p(1740)
27	147	151	53	196	830	23	1/0	32		1514	pca(0646);p(1830)
28	157	171	50	190	812	21	1/0	20	1557		
29	171	189	49	195	821	32	1/0	14			
30	166	242	50	196	---	25	1/0	25			
31	167	242	49	196	815	17	1/0	45			

Typical post maximum activity.

R<sub>i</sub>,R<sub>IM</sub>: 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

AUGUST 1991

DATE	UT	NUMBER OF GROUPS	NUMBER OF SPOTS	RELATIVE SUNSPOT NUMBER	REL NUMB CENTRAL ZONE	PPSI 10-5 WM-2	QUAL	OBS
1	735	9	101	191	114	180.2	4	AK
2	710	11	97	207	125	180.8	4	AK
3	810	12	112	232	130	190.5	4	AK
4	840	11	85	195	115	182.4	2	AK
5	1025	12	85	205	53	100.6	3	AK
6	730	10	56	156	15	90.5	4	AK
7	650	11	62	172	23	84.2	3	AK
9	730	9	23	113	24	70.1	4	AK
12	835	8	30	110	49	69.9	4	AK
13	1315	11	48	158	45	88.5	2	AK
14	840	10	38	138	31	109.4	2	AK
15	905	13	77	207	14	117.0	4	AK
16	1230	16	84	244	24	238.9	2	AK
17	1020	20	118	318	82	361.5	2	AK
18	755	21	197	407	181	429.8	4	AK
19	630	16	160	320	197	380.6	2	VI
20	1229	17	142	312	181	366.0	1	VI
21	922	20	199	399	240	400.8	3	VI
22	643	19	131	321	174	384.0	2	VI
23	741	20	117	317	145	269.2	2	VI
24	1250	20	162	362	119	218.3	2	FC
25	750	19	100	290	47	242.1	4	PC
26	955	16	77	237	34	177.3	4	PC
27	738	11	49	159	27	183.3	3	VI
28	738	9	57	147	82	203.8	3	VI
29	803	12	98	218	155	260.5	3	VI
30	806	9	103	193	143	310.2	3	VI
31	702	12	140	260	157	347.3	4	PC

The Sun has been observed 28 days on 31 possible.  
The relative mean sunspot number is 235.3.

Ed. resp. Dr. ANDRE KOECKELENBERGH  
3, Avenue Circulaire, B-1180 BRUXELLES, BELGIUM.  
Telex : 21565 OBSBEL - Tel. : (322) 373 03 11  
Fax : (322) 374 98 22 - E\_mail : arille@astro.oma.be

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

1991 AUGUST

$K' = 0.764$  (\*)

1	145	7	131	13	120	19	244	25	221
2	158	8	***	14	105	20	238	26	181
3	177	9	86	15	158	21	304	27	121
4	149	10	***	16	186	22	245	28	112
5	156	11	***	17	243	23	242	29	166
6	119	12	84	18	311	24	276	30	147
								31	198

The Sun has been observed 28 days on 31 possible.  
The normalized relative monthly mean Wolf number is 179.

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

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

Uccle N*	East Limb Date	Date and type			West Limb Date
		1st obs	CMP	Last Obs	
4-1845	7 20.2	21 D	7 26.9	2 H	8 2.7
20-1845	7 27.5	30 C	8 3.3	9 G	8 10.0
49-1845	8 12.4	13 C	8 19.1	25 F	8 25.9
52-1845	8 12.8	14 D	8 19.5	25 H	8 26.3
54-1845	8 11.6	15 C	8 18.3	23 G	8 25.1
56-1845	8 14.0	15 D	8 20.8	26 G	8 27.5
6-1846	8 16.7	17 C	8 23.5	29 H	8 30.2
16-1846	8 21.2	24 D	8 27.9	31 H	9 3.7
19-1846	8 23.7	24 E	8 30.5	31 F	9 6.2
21-1846	8 23.8	25 A	8 30.6	31 F	9 6.3

PROBABLE RETURN OF MAJOR GROUPS FOR 1991 SEPTEMBER

N*	New East Limb	New CMP	New West Limb
4	8 16.6	8 23.3	8 30.1
20	8 23.8	8 30.6	9 6.3
49	9 9.6	9 16.3	9 23.1
19	9 20.1	9 26.9	10 3.6
21	9 19.7	9 26.4	10 3.2