



Sunspot Index Data Center

SUNSPOT BULLETIN

Data Analysis Service supported by the FAGS

1989 , No 5

Provisional Sunspot-Numbers for MAY 1989

Dependent on observations at LOCARNO Specola Solare
complemented by an international network and
determined at the Observatoire Royal de BELGIQUE.
Thirty eight coop. stations on JUNE 1989,1st,0900UT

Table with 4 columns: Day, R'i, Day, R'i. It lists sunspot numbers for each day from 1 to 31.

Mean = 138 . 4

Predictions of the smoothed monthly Sunspot Numbers
Classical Method S.I.D.C. Adjusted values
1989 JUN.178(+44) 1989 DEC.178(+59) 1989 JUN.189(+46)
JUL.182 1990 JAN.175 JUL.193
AUG.184 FEB.171 AUG.195
SEP.184 MAR.166 SEP.195
OCT.183 APR.162 OCT.194
NOV.182(+47) MAY 157(+52) NOV.193(+48)
Forecasted values on the basis of the latest provisional monthly
smoothed Sunspot Number:1988 NOVEMBER = 130 . 3 +5%
Provisional smoothed values:
1988 DEC.141 1989 FEB.154 1989 APR.165
1989 JAN.147 MAR.159 MAY 171

Brussels, 1989 JUNE ,1st

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

1989 MAY R' = 138.4
im

Date	R' i	PPSI	600	2800	COS	XFI	XI	Ak	SEA
30	114	108	44	175	858	8	0/0	16	
1	93	99	46	178	854	25	1/0	10	ten(0056)+sid
2	94	113	47	181	847	52	3/0	16	1401+1601;2b(1846)+ten
3	85	134	49	186	858	138	1/1	13	1118;3b(0324)+ten+sid
4	97	128	51	196	860	113	8/0	20	0818+1103+1510+1612+1737 sn(0817);2n(1100);ssc(2351)
5	83	136	51	191	837	170	1/1	36	0722+0748 3b(0720)+sid;p(0905)
6	105	133	50	194	843	48	3/0	12	0528+1443+1654;p(0235)
7	134	123	50	200	839	37	1/0	38	0700;ssc(0512)
8	149	115	55	208	834	30	2/0	7	2n(0118;2b(0121);2n(0121))
9	137	103	55	203	841	20	1/0	6	
10	123	92	53	207	842	7	1/0	4	
11	115	107	53	200	842	7	0/0	7	
12	115	107	52	195	841	25	1/0	12	
13	129	128	54	194	841	12	0/0	11	1500;ssc(1444)
14	123	140	56	190	847	17	0/0	12	
15	148	139	53	192	854	13	0/0	14	
16	161	133	47	186	856	8	0/0	9	
17	160	133	49	181	856	4	0/0	8	
18	177	139	50	183	864	14	0/0	8	
19	191	167	49	184	868	11	0/0	6	
20	195	267	48	198	871	27	0/0	16	ssc(0956)+(1545)
21	168	232	48	213	867	74	4/0	8	1734
22	156	181	47	199	868	53	2/0	15	1515 2b(0017)+ten
23	180	164	46	206	858	38	2/0	48	p(1135-1655)pca(1312+1919) ssc(1346)
24	196	175	47	202	833	48	2/0	52	1346 p(0730)
25	173	153	46	198	822	42	1/0	25	
26	157	153	47	184	832	20	1/0	19	2b(2224-2333)
27	163	124	46	171	831	7	0/0	17	
28	130	135	46	169	828	35	2/0	17	1219
29	121	122	47	171	831	57	3/0	17	
30	122	146	44	179	834	18	3/0	12	
31	111	157	44	189	845	9	1/0	18	

Ri,Rim: 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 at 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).
 Remarks:sid(sudden ionospheric disturbance);ssc(sudden storm commencement)
 mgst(magnetic storm);s-1-2-3-4(class of flares);II-IV radio-burst;
 ten(ten cm radio-burst);P(proton flare);p(proton event)

OBSERVATOIRE ROYAL DE BELGIQUE

DEPARTEMENT 4 RADIOASTRONOMIE ET PHYSIQUE SOLAIRE

NOMBRES RELATIFS DE WOLF JOURNALIERS

PROVISOIRES

PROVISIONAL

SUNSPOT RELATIVE NUMBERS

STATION UCCLE BELGIUM

MAI 1989

DATE	UT	NOMBRE DE GROUPE	NOMBRE DE TACHES	NOMBRE DE WOLF	NOMB REL ZONE CENTRALE	PPSI 10-6 WM-2	QUAL	OBS
1	0720	8	49	129	38	885.	3	AK
2	1402	6	84	144	70	956.	2	ST
3	0653	4	103	143	65	1013.	3	ST
4	0730	4	93	133	0	1052.	4	ST
5	0558	5	64	114	11	1028.	5	HB
6	0918	7	54	124	29	716.	2	HB
7	0931	9	76	166	11	1261.	2	HB
8	0727	10	83	183	67	1403.	4	HB
9	0738	8	96	176	52	979.	4	ST
10	1036	7	60	130	78	990.	1	VI
12	1027	11	75	185	59	1141.	2	VI
13	0745	9	66	156	76	1577.	2	PC
14	0913	9	64	154	62	1683.	2	HB
15	1018	11	62	172	74	1674.	4	HB
16	0714	14	104	244	112	1528.	2	ST
17	0928	14	99	239	103	1555.	2	ST
18	0841	14	80	220	123	1549.	2	VI
19	0828	15	101	251	122	1604.	2	VI
20	0719	14	174	314	200	2471.	3	ST
21	0830	11	160	270	137	2461.	2	CG
22	0726	10	147	247	87	2415.	3	ST
23	0831	13	164	294	110	1866.	4	ST
24	0758	18	151	301	88	1814.	4	ST
25	0807	12	92	212	11	1207.	4	VI
26	1220	11	72	182	16	1008.	2	CG
27	0850	13	58	188	28	1017.	2	PC
28	0935	11	81	191	75	1116.	4	AK
29	0710	10	48	148	82	1180.	4	VI
30	0653	8	56	136	89	1245.	2	VI
31	0808	8	79	159	102	876.	1	ST

LE SOLEIL A ETE OBSERVE 30 JOURS SUR 31 POSSIBLES
LE NOMBRE RELATIF DE WOLF MOYEN EST DE 190.2

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NORMALISED UCCLE OBSERVATIONAL SUNSPOT NUMBERS

U* = K*U FOR 1989				MAY					
K* = .886 (*)									
1	114	7	147	13	138	19	222	25	187
2	127	8	162	14	136	20	278	26	161
3	126	9	155	15	152	21	239	27	166
4	117	10	115	16	216	22	218	28	169
5	100	11	***	17	211	23	260	29	131
6	109	12	163	18	194	24	266	30	120
								31	140

THE SUN WAS OBSERVED 30 DAYS ON 31 POSSIBLE
 THE NORMALISED RELATIVE MONTHLY MEAN WOLF NUMBER IS 167

* K* IS THE MEAN OF THE MONTHLY K'S FOR THE LAST FIVE YEARS

UCCLE OBSERVATIONAL MAJOR SUNSPOTS FOR 1989
 E AND F BRUNNER'S TYPE GROUPS

UCCLE NO	EAST LIMB DATE	DATE AND TYPE				WEST LIMB DATE
		IST OBS	CMP	LAST OBS		
2-1815	4 24.7	27 E	5 1.5	8 G	5 8.2	
6-1815	4 28.7	30 D	5 5.5	10 H	5 12.2	
13-1815	5 4.2	6 D	5 10.9	16 H	5 17.7	
32-1815	5 12.5	17 A	5 19.3	25 G	5 26.0	
35-1815	5 16.5	18 A	5 23.3	29 G	5 30.0	
8-1816	5 24.6	26 A	5 31.4	31 E	6 7.1	

PROBABLE RETURN OF MAJOR GROUPS FOR 1989
 NEW EAST LIMB NEW CMP NEW WEST LIMB

NO	NEW EAST LIMB	NEW CMP	NEW WEST LIMB
32	6 9.0	6 15.8	6 22.5
35	6 12.8	6 19.6	6 26.3
8	6 20.5	6 27.3	7 4.0